



INDUSTRIAL TOOLS

---



Connecting technology and experience, Tramontina is confident in offering to the professional market the best in hand tools, as quality is the starting-point that embraces all other actions of the organization. Tramontina was a pioneer in Brazil in the hand tools area and obtained the **ISO 9001** certification which it has had since 1994.

Compromised to the quality and in order to meet user requirements, the Tramontina Garibaldi Centre of Innovation, Research and Development [CIPeD] obtained the technical recognition from a specialized Brazilian organization for torque wrenches calibration and electrical insulation tests. This recognition meets and follows all laboratory requirements according to the **standard ABNT NBR ISO/IEC 17025:2005**.



## IEC 60900 INSULATED TOOLS



- Insulated tools according to IEC 60900 standard.
- Suitable for working in low tension jobs, up to 1.000 V in alternate current and 1500 V in continuous current.
- The Tramontina PRO insulated tools are subjected to several tests to meet requirements of IEC 60900.

\* Each piece is marked with batch order number, allowing the user to download the electrical insulation test certificate through the website: [tramontina.com/pro](http://tramontina.com/pro).











IEC 60900 Insulated Tools



# 13 IEC 60900 INSULATED TOOLS

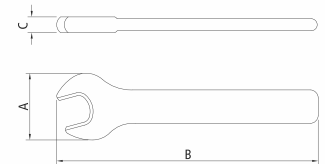
## Chave fixa Millimeters



Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.  
Indicated to works in low tension, up to 1000 V in alternating current and 1500 V in direct current.



| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |      |
|-----------|------|--------|-----------------|-----|------|
|           |      |        | A               | B   | C    |
| 44320/009 | 9    | 40 g   | 26,5            | 107 | 7,5  |
| 44320/010 | 10   | 50 g   | 28,5            | 107 | 8,5  |
| 44320/011 | 11   | 50 g   | 30,5            | 118 | 8,5  |
| 44320/012 | 12   | 60 g   | 32,0            | 127 | 9,0  |
| 44320/013 | 13   | 70 g   | 34,0            | 137 | 9,0  |
| 44320/014 | 14   | 90 g   | 36,5            | 147 | 10,0 |
| 44320/015 | 15   | 100 g  | 38,0            | 152 | 10,0 |
| 44320/016 | 16   | 110 g  | 40,5            | 157 | 10,5 |
| 44320/017 | 17   | 110 g  | 42,5            | 162 | 10,5 |
| 44320/019 | 19   | 140 g  | 47,0            | 177 | 11,5 |
| 44320/022 | 22   | 190 g  | 54,55           | 203 | 11,5 |
| 44320/024 | 24   | 260 g  | 57,0            | 223 | 12,2 |
| 44320/027 | 27   | 370 g  | 63,0            | 249 | 13,2 |
| 44320/030 | 30   | 400 g  | 69,0            | 268 | 14,0 |
| 44320/032 | 32   | 420 g  | 72,0            | 282 | 14,4 |



## Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

## Chave fixa Polegadas | Inches

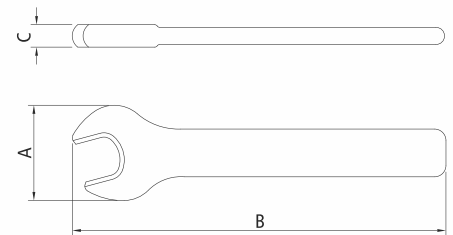


NEW

Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.  
Indicated to works in low tension, up to 1000 V in alternating current and 1500 V in direct current.



| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |      |
|-----------|------|--------|-----------------|-----|------|
|           |      |        | A               | B   | C    |
| 44321/003 | 7/16 | 50 g   | 30,5            | 118 | 8,5  |
| 44321/004 | 1/2  | 65 g   | 34,0            | 137 | 9,0  |
| 44321/008 | 3/4  | 138 g  | 47,0            | 177 | 11,5 |



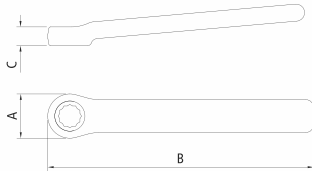
## Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).





| REF.      | SIZE | WEIGHT | Dimensions (mm) |       |      |
|-----------|------|--------|-----------------|-------|------|
|           |      |        | A               | B     | C    |
| 44322/008 | 8    | 80 g   | 17,5            | 115,0 | 8,0  |
| 44322/009 | 9    | 80 g   | 19,0            | 120,0 | 8,5  |
| 44322/010 | 10   | 90 g   | 21,0            | 125,0 | 9,5  |
| 44322/011 | 11   | 110 g  | 22,5            | 130,0 | 10,5 |
| 44322/012 | 12   | 120 g  | 24,5            | 135,5 | 11,0 |
| 44322/013 | 13   | 130 g  | 24,5            | 140,5 | 11,0 |
| 44322/014 | 14   | 150 g  | 27,5            | 150,5 | 12,2 |
| 44322/015 | 15   | 150 g  | 28,5            | 160,5 | 12,5 |
| 44322/017 | 17   | 190 g  | 32,0            | 175,5 | 13,5 |
| 44322/019 | 19   | 230 g  | 35,0            | 190,5 | 14,5 |
| 44322/022 | 22   | 300 g  | 38,5            | 221,0 | 15,5 |
| 44322/024 | 24   | 430 g  | 42,0            | 246,0 | 16,0 |
| 44322/027 | 27   | 440 g  | 46,5            | 286,0 | 16,5 |
| 44322/030 | 30   | 510 g  | 49,5            | 310,0 | 18,0 |
| 44322/032 | 32   | 580 g  | 50,5            | 326,0 | 19,5 |



## Chave estrela

Ring spanners

Millimeters



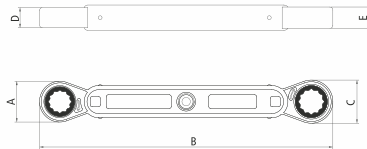
Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

## Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE  | WEIGHT | Dimensions (mm) |     |      |      |      |
|-----------|-------|--------|-----------------|-----|------|------|------|
|           |       |        | A               | B   | C    | D    | E    |
| 44325/001 | 8x9   | 66 g   | 21,0            | 152 | 24,4 | 9,2  | 9,6  |
| 44325/002 | 10x11 | 90 g   | 24,3            | 174 | 25,7 | 10,1 | 10,3 |
| 44325/003 | 12x13 | 120 g  | 27,0            | 195 | 28,8 | 11,2 | 11,4 |
| 44325/004 | 14x15 | 178 g  | 30,3            | 213 | 33,4 | 11,9 | 12,2 |
| 44325/006 | 17x19 | 278 g  | 35,6            | 256 | 37,6 | 13,3 | 14,0 |



## Chave estrela com catraca

Ratchet ring spanner

Millimeters



Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Phosphated ratchet.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.



Insulating material designed to not conduct electricity between two ends.



## Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



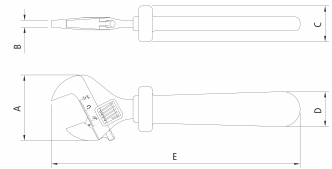
## 13 IEC 60900 INSULATED TOOLS

### Chaves ajustáveis Adjustable wrenches



Forged and hardened chrome vanadium steel.  
Full hardening at the body.  
Polished jaws.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT  | Dimensions (mm) |    |    |      |     |
|-----------|------|---------|-----------------|----|----|------|-----|
|           |      |         | A               | B  | C  | D    | E   |
| 44310/008 | 8"   | 380 g   | 52              | 7  | 25 | 33,0 | 210 |
| 44310/010 | 10"  | 610 g   | 67              | 9  | 32 | 34,0 | 255 |
| 44310/012 | 12"  | 1.040 g | 80              | 11 | 57 | 42,5 | 315 |



#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

### Chaves ajustáveis Adjustable wrenches

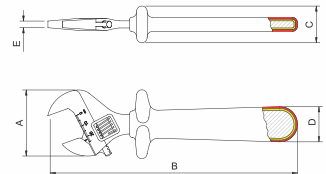


Forged and hardened chrome vanadium steel.  
Polished jaws.  
Full hardening at the body.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT  | Dimensions (mm) |     |      |    |    |
|-----------|------|---------|-----------------|-----|------|----|----|
|           |      |         | A               | B   | C    | D  | E  |
| 44310/208 | 8"   | 380 g   | 54              | 215 | 25,5 | 37 | 8  |
| 44310/210 | 10"  | 610 g   | 67              | 260 | 29,0 | 45 | 9  |
| 44310/212 | 12"  | 1.040 g | 79              | 320 | 33,0 | 50 | 11 |

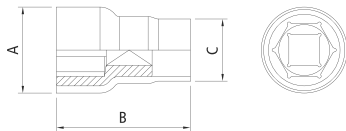


#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE | WEIGHT | Dimensions (mm) |      |    |
|-----------|------|--------|-----------------|------|----|
|           |      |        | A               | B    | C  |
| 44335/008 | 8    | 60 g   | 18,2            | 55,0 | 26 |
| 44335/010 | 10   | 80 g   | 21,0            | 56,0 | 26 |
| 44335/011 | 11   | 80 g   | 21,0            | 56,0 | 26 |
| 44335/012 | 12   | 80 g   | 22,5            | 56,0 | 26 |
| 44335/013 | 13   | 80 g   | 25,0            | 56,0 | 26 |
| 44335/014 | 14   | 80 g   | 25,5            | 56,0 | 26 |
| 44335/015 | 15   | 90 g   | 26,5            | 56,0 | 26 |
| 44335/016 | 16   | 100 g  | 28,0            | 56,0 | 26 |
| 44335/017 | 17   | 100 g  | 30,0            | 56,0 | 26 |
| 44335/019 | 19   | 110 g  | 32,0            | 56,0 | 26 |
| 44335/022 | 22   | 130 g  | 36,0            | 56,0 | 26 |
| 44335/024 | 24   | 150 g  | 38,0            | 56,0 | 26 |
| 44335/027 | 27   | 200 g  | 42,0            | 61,0 | 26 |
| 44335/030 | 30   | 240 g  | 47,0            | 61,5 | 26 |
| 44335/032 | 32   | 260 g  | 50,0            | 63,0 | 26 |



## Soquete sextavado 1/2"

1/2" 6 point socket

Millimeters

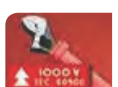


Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

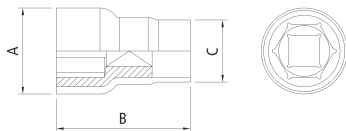


### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE mm | WEIGHT | Dimensions (mm) |      |      |
|-----------|---------|--------|-----------------|------|------|
|           |         |        | A               | B    | C    |
| 44337/002 | 7/16"   | 65 g   | 28              | 55,0 | 23,8 |
| 44337/003 | 1/2"    | 80 g   | 28              | 55,0 | 28   |



## Soquete sextavado 1/2"

1/2" 6 point socket

Inches



NEW

Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.  
Indicated to works in low tension, up to 1000 V in alternating current and 1500 V in direct current.



### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).





## 13 IEC 60900 INSULATED TOOLS

### Maleta com soquetes e acessórios 1/2"

1/2" Socket and accessories set

Millimeters

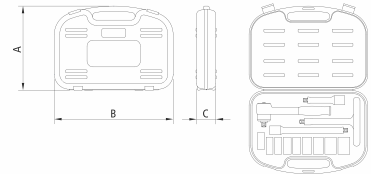


**1000 V**  
IEC 60900

**13**  
PEÇAS | PIECES



| REF.      | SIZE | WEIGHT  | Dimensions (mm) |     |    |
|-----------|------|---------|-----------------|-----|----|
|           |      |         | A               | B   | C  |
| 44335/213 |      | 3.580 g | 280             | 400 | 65 |



| REF.      | PCS | SET INCLUDES                                                |
|-----------|-----|-------------------------------------------------------------|
| 44335     | 9   | 6 point 1/2" sockets: 10, 11, 12, 13, 14, 17, 19, 22, 24 mm |
| 44330/010 | 1   | Ratchet: 10"                                                |
| 44331/005 | 1   | Extension: 5"                                               |
| 44332/010 | 1   | Extension: 10"                                              |
| 44333/008 | 1   | T handle: 8"                                                |
|           | 1   | Plastic case                                                |

### Soquete 1/2"

1/2" Socket

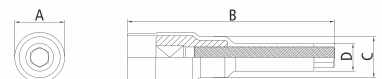
Hexagonal tip



**1000 V**  
IEC 60900



| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |      |    |
|-----------|------|--------|-----------------|-----|------|----|
|           |      |        | A               | B   | C    | D  |
| 44339/005 | 5    | 110 g  | 27,5            | 116 | 21,5 | 13 |
| 44339/006 | 6    | 110 g  | 27,5            | 116 | 21,5 | 13 |
| 44339/008 | 8    | 110 g  | 27,5            | 116 | 21,5 | 13 |



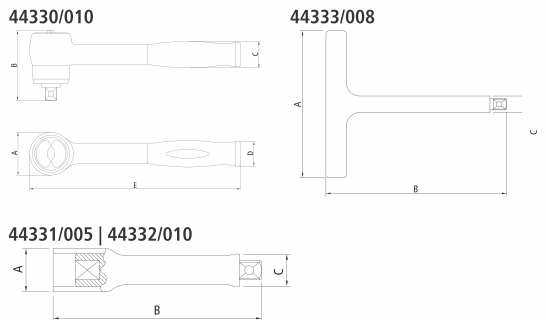
Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Tip in special steel S2.  
Phosphated tip.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | DESCRIPTION | WEIGHT | Dimensions (mm) |     |    |    |     |
|-----------|-------------|--------|-----------------|-----|----|----|-----|
|           |             |        | A               | B   | C  | D  | E   |
| 44330/010 | Ratchet     | 720 g  | 47              | 90  | 30 | 27 | 245 |
| 44331/005 | Extension   | 200 g  | 29              | 140 | 21 |    |     |
| 44332/010 | Extension   | 420 g  | 29              | 263 | 21 |    |     |
| 44333/008 | T bar       | 480 g  | 165             | 205 | 22 |    |     |



## Acessórios

### Accessories

1/2" square drive



44330/010 - 10"



44331/005 - 5"  
44332/010 - 10"



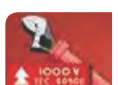
44333/008 - 8"

Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Black PVC grip.  
Electric insulation up to 1,000 V AC.  
Product in accordance to IEC 60900.

## Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

Forged and hardened chrome vanadium steel.  
Chrome plated finishing.  
Electric insulation up to 1,000 V AC.  
Product in accordance to IEC 60900.





# 13 IEC 60900 INSULATED TOOLS

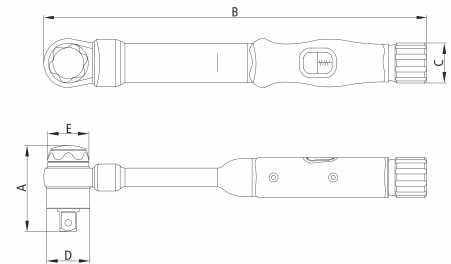
## Torquímetro de estalo isolado

Adjustable clicker insulated



Chrome vanadium steel head.  
Carbon steel barrel.  
Chrome plated finishing.  
Rubber grip.  
Reversible ratchet.  
Clockwise operation.  
N.m working unit.  
Blow mold case and instruction manual.  
Calibration certificate.  
Electric insulation up to 1.000 V AC.  
Product in accordance with IEC 60900 and ISO 6789.

| REF.      | (Nm)   | SQUARE DRIVE | Dimensions (mm) |     |    |    |    |
|-----------|--------|--------------|-----------------|-----|----|----|----|
|           |        |              | A               | B   | C  | D  | E  |
| 44343/101 | 5 - 50 | 1/2"         | 64,2            | 286 | 30 | 32 | 30 |



| REF.      | RESOLUTION (N.m) |
|-----------|------------------|
| 44343/101 | 0,5              |

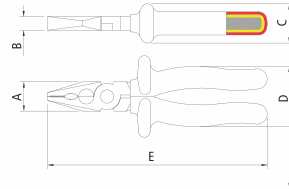
### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).





| REF.      | SIZE | WEIGHT | Dimensions (mm) |      |    |    |     |
|-----------|------|--------|-----------------|------|----|----|-----|
|           |      |        | A               | B    | C  | D  | E   |
| 44300/008 | 8"   | 550 g  | 29              | 13,5 | 38 | 58 | 218 |



### Alicate universal Combination pliers



Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

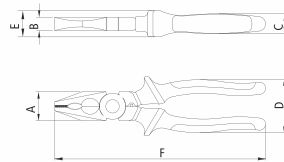
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.



### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |    |    |    |     |
|-----------|------|--------|-----------------|----|----|----|----|-----|
|           |      |        | A               | B  | C  | D  | E  | F   |
| 44300/018 | 8"   | 430 g  | 29              | 14 | 24 | 61 | 32 | 220 |



### Alicate electricista Pinza electricista | Electrician's pliers



Forged chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Electric insulation up to 1000 V AC.  
Product in accordance to IEC 60900.



Crossed grooves on the nose for better gripping.

Larger cutting edge to cut a wide range of wires.

Crimps terminals up to 10 mm<sup>2</sup> without insulation.



Ergonomic insulated guard.

Electric insulation up to 1000 V AC

### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).





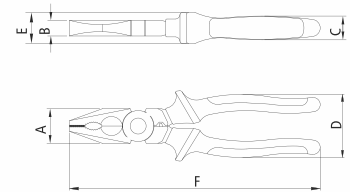
## 13 IEC 60900 INSULATED TOOLS

### Alicate universal Combination pliers



Forged chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Electric insulation up to 1000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |      |    |    |     |
|-----------|------|--------|-----------------|----|------|----|----|-----|
|           |      |        | A               | B  | C    | D  | E  | F   |
| 44300/028 | 8"   | 410 g  | 29              | 14 | 24,5 | 56 | 32 | 220 |



#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

### Alicate corte diagonal Diagonal cutting pliers

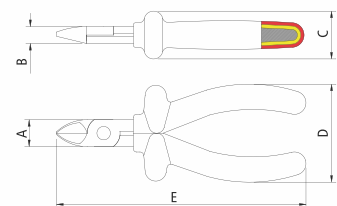


Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |    |    |     |
|-----------|------|--------|-----------------|----|----|----|-----|
|           |      |        | A               | B  | C  | D  | E   |
| 44301/006 | 6"   | 300 g  | 18              | 11 | 35 | 58 | 161 |

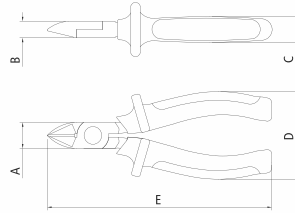


#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |    |    |     |
|-----------|------|--------|-----------------|----|----|----|-----|
|           |      |        | A               | B  | C  | D  | E   |
| 44301/016 | 6"   | 220 g  | 18              | 11 | 21 | 52 | 155 |



### Alicate corte diagonal

Diagonal cutting pliers



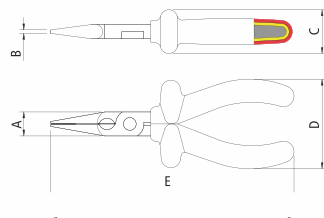
Forged chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Electric insulation up to 1000 V AC  
Product in accordance to IEC 60900.

#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |    |    |     |
|-----------|------|--------|-----------------|-----|----|----|-----|
|           |      |        | A               | B   | C  | D  | E   |
| 44302/006 | 6"   | 280 g  | 17              | 2,5 | 35 | 59 | 169 |



### Alicate meia cana

Snipe nose pliers



Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC  
Product in accordance to IEC 60900.

#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



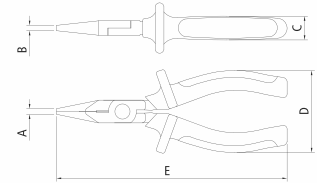
## 13 IEC 60900 INSULATED TOOLS

### Alicate meia cana Snipe nose pliers



Forged chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Electric insulation up to 1000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |    |    |     |
|-----------|------|--------|-----------------|-----|----|----|-----|
|           |      |        | A               | B   | C  | D  | E   |
| 44302/016 | 6"   | 180 g  | 17              | 2,5 | 21 | 52 | 165 |



#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

### Alicate meia cana Snipe nose pliers

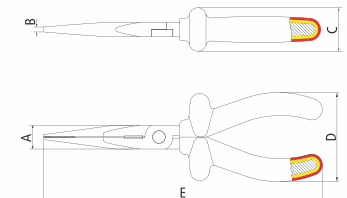


Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double PVC insulated layers:

- Internal layer in yellow color.
- External layer in red color.

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |      |    |     |
|-----------|------|--------|-----------------|-----|------|----|-----|
|           |      |        | A               | B   | C    | D  | E   |
| 44312/008 | 8"   | 277 g  | 17,5            | 2,3 | 36,5 | 58 | 206 |



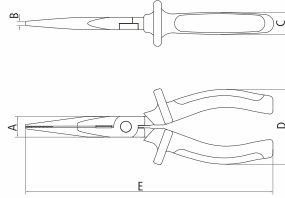
#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).





| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |    |    |     |
|-----------|------|--------|-----------------|-----|----|----|-----|
|           |      |        | A               | B   | C  | D  | E   |
| 44312/018 | 8"   | 190 g  | 17,5            | 2,3 | 21 | 52 | 202 |



### Alicate meia cana Snipe nose pliers

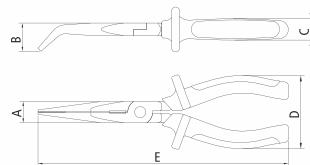


Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Handle with double injection.  
Electric insulation up to 1.000V AC.  
Product in accordance to IEC 60900.

#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |    |    |     |
|-----------|------|--------|-----------------|----|----|----|-----|
|           |      |        | A               | B  | C  | D  | E   |
| 44303/018 | 8"   | 200 g  | 22              | 27 | 21 | 51 | 205 |



### Alicate bico curvo Curved nose pliers



Forged chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Electric insulation up to 1000 V AC.  
Product in accordance to IEC 60900.

#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).





## 13 IEC 60900 INSULATED TOOLS

### Alicate bico curvo Curved nose pliers

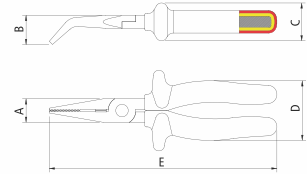


Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |    |    |     |
|-----------|------|--------|-----------------|----|----|----|-----|
|           |      |        | A               | B  | C  | D  | E   |
| 44303/008 | 8"   | 250 g  | 22              | 27 | 36 | 57 | 210 |



#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

### Alicate bico chato Flat nose pliers

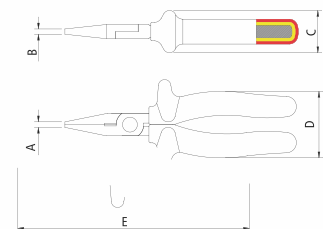


Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |   |    |    |     |
|-----------|------|--------|-----------------|---|----|----|-----|
|           |      |        | A               | B | C  | D  | E   |
| 44304/006 | 6"   | 280 g  | 4,3             | 5 | 35 | 59 | 169 |

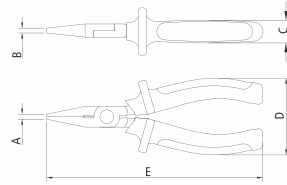


#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE | WEIGHT | Dimensions (mm) |   |    |    |     |
|-----------|------|--------|-----------------|---|----|----|-----|
|           |      |        | A               | B | C  | D  | E   |
| 44304/016 | 6"   | 280 g  | 4,3             | 5 | 21 | 52 | 165 |



### Alicate bico chato

Flat nose pliers

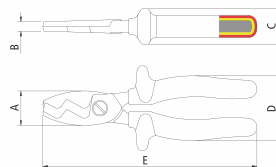


#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |   |    |    |     |
|-----------|------|--------|-----------------|---|----|----|-----|
|           |      |        | A               | B | C  | D  | E   |
| 44305/008 | 8"   | 410 g  | 33              | 9 | 36 | 62 | 206 |



### Alicate corta-cabos

Cable cutting pliers



#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).
- Capacity to cut cables up to 20 mm diameter (considering the PVC cover).

Forged in chrome vanadium steel.  
Phosphated head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.





## 13 IEC 60900 INSULATED TOOLS

### Alicate corta-cabos Cable cutting pliers

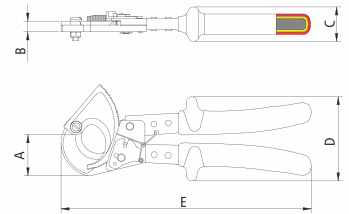


Forged in chrome molybdenum steel blades.  
Black phosphated finishing.  
Full hardening at the blades.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE - mm | WEIGHT  | Dimensions (mm) |    |    |    |     |
|-----------|-----------|---------|-----------------|----|----|----|-----|
|           |           |         | A               | B  | C  | D  | E   |
| 44306/026 | 260       | 1.060 g | 41,5            | 11 | 36 | 55 | 256 |



| Capacity (Ød1 - mm) |        |
|---------------------|--------|
| Aluminum rigid wire | Ø 18mm |
| Copper rigid wire   | Ø 15mm |
| Flexible wire       | Ø 32mm |

#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

### Alicate desencapador de fios Wire stripper

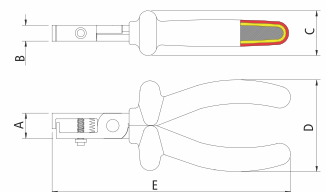


Forged in chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |    |    |     |
|-----------|------|--------|-----------------|----|----|----|-----|
|           |      |        | A               | B  | C  | D  | E   |
| 44307/007 | 7"   | 210 g  | 18              | 11 | 35 | 58 | 165 |

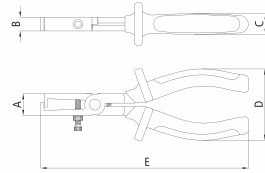


#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE | WEIGHT | Dimensions (mm) |    |    |    |     |
|-----------|------|--------|-----------------|----|----|----|-----|
|           |      |        | A               | B  | C  | D  | E   |
| 44307/017 | 7"   | 180 g  | 18              | 11 | 21 | 50 | 170 |



## Alicate desencapador de fios Wire stripper

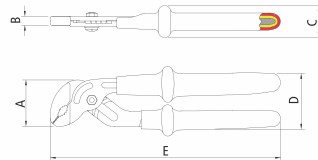


### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

Forged chrome vanadium steel.  
Polished head and joint.  
Full hardening at the body.  
Induction hardening at the cutting edge.  
Electric insulation up to 1000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |    |    |     |
|-----------|------|--------|-----------------|-----|----|----|-----|
|           |      |        | A               | B   | C  | D  | E   |
| 44308/010 | 10"  | 550 g  | 48              | 9,5 | 45 | 61 | 245 |



## Alicate bomba-d'água Water pump pliers



### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).
- Capacity to cut cables up to 20 mm diameter (considering the PVC cover).

Forged in chrome vanadium steel.  
Polished jaws and joint.  
Full hardening at the body.  
Induction hardening at the teeth.  
Grip with double insulated layers:

- Internal layer in yellow color
- External layer in red color

Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

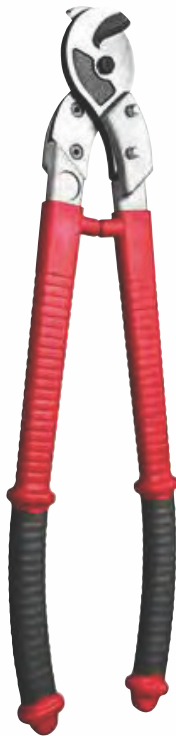






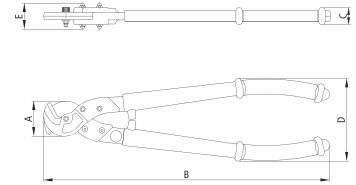
## 13 IEC 60900 INSULATED TOOLS

### Tesoura corta-cabos Cable cutting pliers



Forged in chrome molybdenum steel blades.  
Induction hardening at the cutting edge.  
Polished jaws and joint.  
Injected aluminum handle.  
Black PVC grip.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE | WEIGHT  | Dimensions (mm) |     |      |     |    |
|-----------|------|---------|-----------------|-----|------|-----|----|
|           |      |         | A               | B   | C    | D   | E  |
| 44309/024 | 24"  | 2.370 g | 75              | 610 | 28,5 | 166 | 56 |



| Capacity (Ød1 - mm) |        |
|---------------------|--------|
| Aluminum rigid wire | Ø 12mm |
| Copper rigid wire   | Ø 12mm |
| Flexible wire       | Ø 20mm |

#### Application

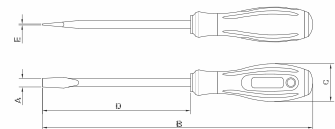
- Used by professionals who work in dangerous places (energized networks and industrial installation).

### Chaves de fenda Screwdrivers Slotted tip



Hardened chrome vanadium steel blade.  
Phosphated tip.  
Handle with double injection.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | SIZE mm         | Dimensions (mm) |       |      |     |     |
|-----------|-----------------|-----------------|-------|------|-----|-----|
|           |                 | A               | B     | C    | D   | E   |
| 44315/010 | 3x75 (1/8x3")   | 3               | 167,5 | 29   | 75  | 0,6 |
| 44315/011 | 3x100 (1/8x4")  | 3               | 192,5 | 29   | 100 | 0,6 |
| 44315/013 | 3x150 (1/8x6")  | 3               | 242,5 | 29   | 150 | 0,6 |
| 44315/021 | 5x100 (3/16x4") | 5               | 204,5 | 32,5 | 100 | 1,0 |
| 44315/023 | 5x150 (3/16x6") | 5               | 254,5 | 32,5 | 150 | 1,0 |
| 44315/030 | 6x100 (1/4x4")  | 6               | 214,5 | 35,5 | 100 | 1,2 |
| 44315/032 | 6x150 (1/4x6")  | 6               | 264,5 | 35,5 | 150 | 1,2 |
| 44315/033 | 6x200 (1/4x8")  | 6               | 314,5 | 35,5 | 200 | 1,2 |
| 44315/041 | 8x175 (5/16x7") | 8               | 272,5 | 39,5 | 125 | 1,2 |
| 44315/042 | 8x150 (5/16x6") | 8               | 272,5 | 39,5 | 150 | 1,2 |
| 44315/043 | 8x200 (5/16x8") | 8               | 322,5 | 39,5 | 200 | 1,2 |
| 44315/050 | 10x200 (3/8x8") | 10              | 320   | 39,5 | 150 | 1,6 |

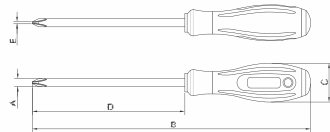


#### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE mm         | NR | Dimensions (mm) |       |      |     |     |
|-----------|-----------------|----|-----------------|-------|------|-----|-----|
|           |                 |    | A               | B     | C    | D   | E   |
| 44316/010 | 3x75 (1/8x3")   | 0  | 3               | 167,5 | 29   | 75  | 0,8 |
| 44316/013 | 3x150 (1/8x6")  | 0  | 3               | 242,5 | 29   | 150 | 0,8 |
| 44316/020 | 5x75 (3/16x3")  | 1  | 5               | 179,5 | 32,5 | 75  | 1,3 |
| 44316/021 | 5x100 (3/16x4") | 1  | 5               | 204,5 | 32,5 | 100 | 1,3 |
| 44316/023 | 5x150 (3/16x6") | 1  | 5               | 254,5 | 32,5 | 150 | 1,3 |
| 44316/030 | 6x100 (1/4x4")  | 2  | 6               | 214,5 | 35,5 | 100 | 2,3 |
| 44316/032 | 6x150 (1/4x6")  | 2  | 6               | 264,5 | 35,5 | 150 | 2,3 |
| 44316/033 | 6x200 (1/4x8")  | 2  | 6               | 314,5 | 35,5 | 200 | 2,3 |
| 44316/042 | 8x150 (5/16x6") | 3  | 8               | 272,5 | 39,5 | 200 | 3,8 |
| 44316/050 | 10x200 (3/8x8") | 4  | 10              | 320   | 39,5 | 200 | 5,1 |



## Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

## Chaves de fenda

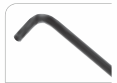
### Screwdrivers

Cross recessed tip



**1000 V**  
IEC 60900

Hardened chrome vanadium steel blade.  
Phosphated tip.  
Handle with double injection.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.



| REF.                                      | PCS | SET INCLUDES                                                                       |
|-------------------------------------------|-----|------------------------------------------------------------------------------------|
| 44315/406                                 |     |                                                                                    |
| 44315                                     | 3   | Screwdriver slotted tip: 3x75, 5x100, 6x150 mm                                     |
| 44316                                     | 3   | Screwdrivers cross recessed tip:<br>(Nr. 0) 3x150, (Nr. 1) 5x100, (Nr. 2) 6x150 mm |
| Held in plastic insert within printed box |     |                                                                                    |

## Jogo de chaves de fenda

### Screwdriver set



**1000 V**  
IEC 60900

**6**  
PEÇAS | PIECES





# 13 IEC 60900 INSULATED TOOLS

## Chaves canhão 6 point nut drivers



Hardened chrome vanadium steel blade.  
Phosphated tip.  
Handle with double injection.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

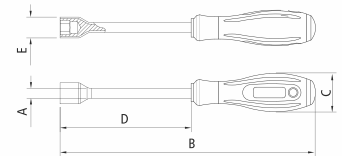
### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE mm | WEIGHT | Dimensions (mm) |     |      |     |      |
|-----------|---------|--------|-----------------|-----|------|-----|------|
|           |         |        | A               | B   | C    | D   | E    |
| 44317/003 | 3       | 80 g   | 10              | 230 | 32,5 | 125 | 11,0 |
| 44317/004 | 4       | 80 g   | 10              | 230 | 32,5 | 125 | 12,0 |
| 44317/005 | 5       | 80 g   | 10              | 230 | 32,5 | 125 | 13,0 |
| 44317/006 | 6       | 100 g  | 11              | 240 | 35,5 | 125 | 14,5 |
| 44317/007 | 7       | 100 g  | 11              | 240 | 35,5 | 125 | 16,0 |
| 44317/008 | 8       | 110 g  | 11              | 240 | 35,5 | 125 | 17,0 |
| 44317/009 | 9       | 110 g  | 11              | 240 | 35,5 | 125 | 18,5 |
| 44317/010 | 10      | 110 g  | 11              | 240 | 35,5 | 125 | 19,5 |
| 44317/011 | 11      | 170 g  | 13              | 248 | 39,5 | 125 | 21,0 |
| 44317/012 | 12      | 170 g  | 13              | 248 | 39,5 | 125 | 22,0 |
| 44317/013 | 13      | 170 g  | 13              | 248 | 39,5 | 125 | 23,5 |
| 44317/014 | 14      | 170 g  | 13              | 248 | 39,5 | 125 | 24,5 |

| REF.      | INCHES | WEIGHT | Dimensions (mm) |     |      |     |      |
|-----------|--------|--------|-----------------|-----|------|-----|------|
|           |        |        | A               | B   | C    | D   | E    |
| 44319/007 | 3/8"   | 120 g  | 11              | 240 | 35,5 | 125 | 17,0 |
| 44319/008 | 7/16"  | 160 g  | 13              | 248 | 39,5 | 125 | 21,0 |
| 44319/009 | 1/2"   | 170 g  | 13              | 248 | 39,5 | 125 | 23,5 |
| 44319/010 | 9/16"  | 170 g  | 13              | 248 | 39,5 | 125 | 24,5 |



## Martelo com bordas plásticas Soft faced hammer

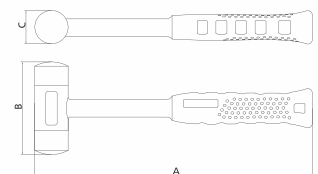
Em ABS | ABD tips



Fully injected body.  
Interchangeable and replaceable tips.  
Electric insulation up to 1.000V AC.  
Product in accordance to IEC 60900.



| REF.      | SIZE mm | WEIGHT | Dimensions (mm) |     |    |
|-----------|---------|--------|-----------------|-----|----|
|           |         |        | A               | B   | C  |
| 44342/030 | 30      | 167 g  | 305             | 88  | 30 |
| 44342/040 | 40      | 241 g  | 305             | 100 | 40 |

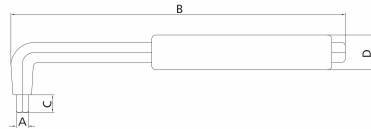


### Application

- Used to strike materials that must not be damaged.
- Indicated to works in low tension, up to 1000 V in alternating current and 1500 V in direct current.
- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | SIZE mm | WEIGHT | Dimensions (mm) |     |    |      |
|-----------|---------|--------|-----------------|-----|----|------|
|           |         |        | A               | B   | C  | D    |
| 44318/003 | 3       | 25 g   | 3               | 138 | 6  | 14,5 |
| 44318/004 | 4       | 29 g   | 4               | 122 | 7  | 15,0 |
| 44318/005 | 5       | 44 g   | 5               | 137 | 7  | 16,0 |
| 44318/006 | 6       | 66 g   | 6               | 152 | 9  | 18,0 |
| 44318/008 | 8       | 116 g  | 8               | 172 | 10 | 21,0 |
| 44318/010 | 10      | 254 g  | 10              | 247 | 11 | 26,0 |
| 44318/012 | 12      | 385 g  | 12              | 277 | 13 | 28,0 |



## Chaves hexagonais

### Hex key

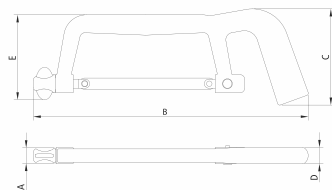


### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

Hardened chrome vanadium steel blade.  
Phosphated finishing.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.

| REF.      | BLADE | WEIGHT | Dimensions (mm) |     |     |    |    |
|-----------|-------|--------|-----------------|-----|-----|----|----|
|           |       |        | A               | B   | C   | D  | E  |
| 44340/010 | 6"    | 130 g  | 20              | 297 | 108 | 22 | 96 |



## Miniarco de serra

### Mini hacksaw



### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).

Injected body.  
HSS blade.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.





## 13 IEC 60900 INSULATED TOOLS

### Conjunto de lâminas para miniarco de serra Mini hacksaw blade set

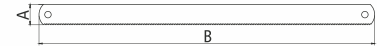
2

PEÇAS | PIECES

HSS blade.  
Special heat treatment on the cutting teeth.



| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |
|-----------|------|--------|-----------------|-----|
|           |      |        | A               | B   |
| 44340/902 | 6"   | 25 g   | 12,5            | 150 |



#### Application

- Used with mini hacksaw 44340/010.

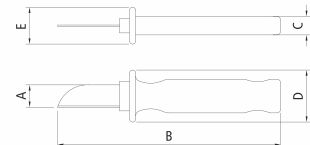
### Faca reta desencapadora de cabos Cable stripper straight knife

1000 V  
IEC 60900

Hardened carbon steel blade.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.



| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |    |    |    |
|-----------|------|--------|-----------------|-----|----|----|----|
|           |      |        | A               | B   | C  | D  | E  |
| 44345/007 | 7"   | 110 g  | 18              | 180 | 11 | 30 | 22 |



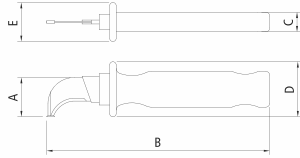
#### Application

- Used by professionals who work in dangerous places  
(energized networks and industrial installation).





| REF.      | SIZE | WEIGHT | Dimensions (mm) |     |    |    |    |
|-----------|------|--------|-----------------|-----|----|----|----|
|           |      |        | A               | B   | C  | D  | E  |
| 44346/007 | 7"   | 100 g  | 28              | 170 | 11 | 30 | 22 |



## Faca curva desencapadora de cabos

Cable stripper curved knife



Hardened carbon steel blade.  
Electric insulation up to 1.000 V AC.  
Product in accordance to IEC 60900.



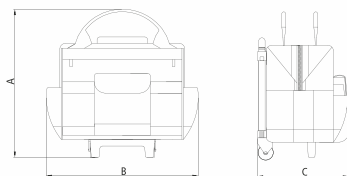
Curved blade with special end to remove PVC cover from electrical cables.

### Application

- Used by professionals who work in dangerous places (energized networks and industrial installation).



| REF.      | CAPACITY | WEIGHT  | Dimensions (mm) |     |     |
|-----------|----------|---------|-----------------|-----|-----|
|           |          |         | A               | B   | C   |
| 44348/001 | 20 Kg    | 4.600 g | 520             | 530 | 305 |



## Bolsa para ferramentas

Tool bag



Body made in nylon.  
Rubber wheels.  
Steel telescopic handle with plastic grip.  
With zipper for safer storage.  
18 pockets.

### Application

- Tool bag used for storage and transportation of hand tools, pieces and accessories.

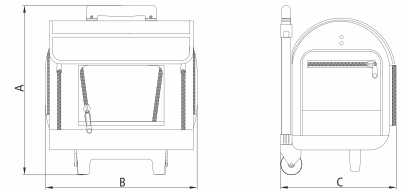


## 13 IEC 60900 INSULATED TOOLS

### Bolsa para ferramentas Tool bag



| REF.      | CAPACITY | WEIGHT  | Dimensions (mm) |     |     |
|-----------|----------|---------|-----------------|-----|-----|
|           |          |         | A               | B   | C   |
| 44348/002 | 20 kg    | 4.206 g | 400             | 380 | 330 |



Body made in nylon.  
Rubber wheels.  
Steel telescopic handle with plastic grip.  
Steel tubular handle at internal compartment with rubber grip and fixed with riveters.  
58 pockets.

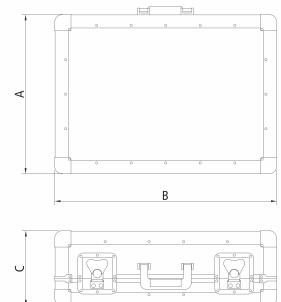
#### Application

- Tool bag used for storage and transportation of hand tools, pieces and accessories.

### Maleta para ferramentas Tool case



| REF.      | CAPACITY | WEIGHT  | Dimensions (mm) |     |     |
|-----------|----------|---------|-----------------|-----|-----|
|           |          |         | A               | B   | C   |
| 44349/000 | 15 kg    | 4.100 g | 330             | 460 | 155 |



Aluminum steel angles.  
Aluminum boards painting in red color.  
Velvet internal covering.  
With PVC internal divisions.

#### Application

- Storage and transportation of hand tools, pieces and accessories.



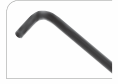
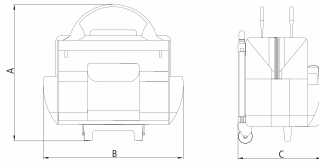
| REF.      | VOLTAGE | WEIGHT   | Dimensions (mm) |     |     |
|-----------|---------|----------|-----------------|-----|-----|
|           |         |          | A               | B   | C   |
| 44348/098 | 127 V   | 18.500 g | 520             | 530 | 305 |
| 44348/099 | 220 V   | 18.500 g | 520             | 530 | 305 |

## Bolsa com ferramentas

Tool bag



**98**  
PEÇAS | PIECES



| REF.      | PCS | SET INCLUDES                                                                                             |
|-----------|-----|----------------------------------------------------------------------------------------------------------|
|           |     | Open end wrenches: 10, 11, 12, 13, 14, 15, 16, 17, 19, 22, 24, 27, 32 mm                                 |
| 44322     | 8   | Ring spanners: 10, 11, 12, 13, 14, 15, 17, 19 mm                                                         |
| 44310/010 | 1   | Adjustable wrench: 10"                                                                                   |
| 44335     | 13  | 6 points 1/2" sockets: 10, 11, 12, 13, 14, 15, 17, 19, 22, 24, 27, 30, 32 mm                             |
| 44339     | 3   | 1/2" sockets hexagonal tip: 5, 6, 8 mm                                                                   |
| 44330/010 | 1   | Ratchet: 10"                                                                                             |
| 44331/005 | 1   | Extension: 5"                                                                                            |
| 44332/010 | 1   | Extension: 10"                                                                                           |
| 44333/008 | 1   | T handle: 200 mm                                                                                         |
| 44300/028 | 1   | Combination pliers 1.000 V insulated: 8"                                                                 |
| 44301/016 | 1   | Diagonal cutting pliers 1.000 V insulated: 6"                                                            |
| 44302/016 | 1   | Snipe nose pliers 1.000 V insulated: 6"                                                                  |
| 44303/018 | 1   | Curved nose pliers 1.000V insulated: 8"                                                                  |
| 44307/017 | 1   | Wire stripper 1.000V insulated: 7"                                                                       |
| 44308/010 | 1   | Water pump pliers 1.000V insulated: 10"                                                                  |
| 44012/010 | 1   | Lock pliers - triangular jaw: 10"                                                                        |
| 44055/101 | 1   | Crimping pliers: 9"                                                                                      |
| 44315     | 6   | Screwdriver slotted tip: 3x75, 3x150, 5x100, 5x150, 6x150, 8x200 mm                                      |
| 44316     | 5   | Screwdrivers cross recessed tip: (Nr 0) 3x150, (Nr 1) 5x100, (Nr 1) 5x150, (Nr 2) 6x150, (Nr 2) 6x200 mm |
| 44317     | 9   | Nut drivers: 6, 7, 8, 9, 10, 11, 12, 13, 14 mm                                                           |
| 40730/205 | 1   | Machinist's hammer: 300 g                                                                                |
| 44460     | 9   | Hex keys: 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm                                                              |
| 44461     | 8   | Hex keys: 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"                                            |
| 44340/010 | 1   | Mini hacksaw: 250 mm                                                                                     |
| 44345/007 | 1   | Cable stripper straight knife: 180 mm                                                                    |
| 44473/019 | 1   | Cold chisels: 19 mm                                                                                      |
| 43752     | 1   | Soldering iron: 70 W - 43752/506: 127 V   43752/507: 220 V                                               |
| 43757/300 | 1   | Flashlight                                                                                               |
|           | 1   | Adhesive tape                                                                                            |
|           | 1   | Brush                                                                                                    |
|           | 1   | Welding tube                                                                                             |
|           | 1   | Welding sucker                                                                                           |
|           | 1   | Digital multimeter                                                                                       |
| 44348/001 | 1   | Tool bag                                                                                                 |



# 13 IEC 60900 INSULATED TOOLS

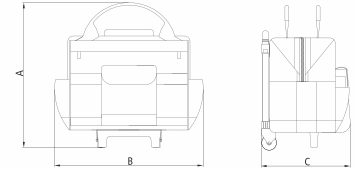
Bolsa com ferramentas  
Tool bag



91  
PEÇAS | PIECES



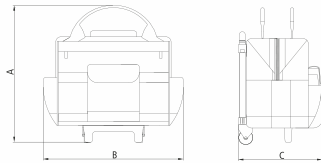
| REF.      | WEIGHT   | Dimensions (mm) |     |     |
|-----------|----------|-----------------|-----|-----|
|           |          | A               | B   | C   |
| 44348/091 | 17.500 g | 520             | 530 | 305 |



| REF.      | PCS | SET INCLUDES                                                                                             |
|-----------|-----|----------------------------------------------------------------------------------------------------------|
| 44320     | 13  | Open end wrenches: 10, 11, 12, 13, 14, 15, 16, 17, 19, 22, 24, 27, 32 mm                                 |
| 44322     | 8   | Ring spanners: 10, 11, 12, 13, 14, 15, 17, 19 mm                                                         |
| 44310/010 | 1   | Adjustable wrench: 10"                                                                                   |
| 44335     | 13  | 6 points 1/2" sockets: 10, 11, 12, 13, 14, 15, 17, 19, 22, 24, 27, 30, 32 mm                             |
| 44339     | 3   | 1/2" sockets hexagonal tip: 5, 6, 8 mm                                                                   |
| 44330/010 | 1   | Ratchet: 10"                                                                                             |
| 44331/005 | 1   | Extension: 5"                                                                                            |
| 44332/010 | 1   | Extension: 10"                                                                                           |
| 44333/008 | 1   | T handle: 200 mm                                                                                         |
| 44300/028 | 1   | Combination pliers 1.000 V insulated: 8"                                                                 |
| 44301/016 | 1   | Diagonal cutting pliers 1.000 V insulated: 6"                                                            |
| 44302/016 | 1   | Snipe nose pliers 1.000 V insulated: 6"                                                                  |
| 44303/018 | 1   | Curved nose pliers 1.000V aislated: 8"                                                                   |
| 44307/017 | 1   | Wire stripper 1.000V aislated: 7"                                                                        |
| 44308/010 | 1   | Water pump pliers 1.000V aislated: 10"                                                                   |
| 44012/010 | 1   | Lock pliers - triangular jaw: 10"                                                                        |
| 44055/101 | 1   | Crimping pliers: 9"                                                                                      |
| 44315     | 6   | Screwdriver slotted tip: 3x75, 3x150, 5x100, 5x150, 6x150, 8x200 mm                                      |
| 44316     | 5   | Screwdrivers cross recessed tip: (Nr 0) 3x150, (Nr 1) 5x100, (Nr 1) 5x150, (Nr 2) 6x150, (Nr 2) 6x200 mm |
| 44317     | 9   | Nut drivers: 6, 7, 8, 9, 10, 11, 12, 13, 14 mm                                                           |
| 44460     | 9   | Hex keys: 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 mm                                                              |
| 44461     | 8   | Hex keys: 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"                                            |
| 40730/205 | 1   | Machinist's hammer: 300 g                                                                                |
| 44340/010 | 1   | Mini hacksaw: 250 mm                                                                                     |
| 44345/007 | 1   | Cable stripper straight knife: 180 mm                                                                    |
| 44473/019 | 1   | Cold chisels: 19 mm                                                                                      |
| 44348/001 | 1   | Tool bag                                                                                                 |



| REF.      | VOLTAGE | WEIGHT   | Dimensions (mm) |     |     |
|-----------|---------|----------|-----------------|-----|-----|
|           |         |          | A               | B   | C   |
| 44348/058 | 127 V   | 10.500 g | 520             | 530 | 305 |
| 44348/059 | 220 V   | 10.500 g | 520             | 530 | 305 |



## Bolsa com ferramentas Tool bag



**58**  
PEÇAS | PIECES



| REF.      | PCS | SET INCLUDES                                                   |
|-----------|-----|----------------------------------------------------------------|
| 44310/010 | 1   | Adjustable wrench: 10"                                         |
| 44300/028 | 1   | Combination pliers 1.000 V insulated: 8"                       |
| 44301/016 | 1   | Diagonal cutting pliers 1.000 V insulated: 6"                  |
| 44302/016 | 1   | Snipe nose pliers 1.000 V insulated: 6"                        |
| 44303/018 | 1   | Curved nose pliers 1.000V aislated: 8"                         |
| 44307/017 | 1   | Wire stripper 1.000V aislated: 7"                              |
| 44055/101 | 1   | Crimping pliers: 9"                                            |
| 44315     | 3   | Screwdriver slotted tip: 3x75, 5x100, 6x150 mm                 |
| 44316     | 2   | Screwdrivers cross recessed tip: (Nr 0) 3x150, (Nr 1) 5x100 mm |
| 44317     | 9   | Nut drivers: 6, 7, 8, 9, 10, 11, 12, 13, 14 mm                 |
| 40730/205 | 1   | Machinist's hammer: 300 g                                      |
| 44460     | 8   | Hex keys: 1.5, 2, 3, 4, 5, 6, 8, 10 mm                         |
| 44461     | 8   | Hex keys: 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"  |
| 44450     | 9   | Trafix hex keys: T7, T8, T9, T10, T15, T20, T25, T30, T40      |
| 44340/010 | 1   | Mini hacksaw: 250 mm                                           |
| 44345/007 | 1   | Cable stripper straight knife: 180 mm                          |
| 44473/019 | 1   | Cold chisels: 19 mm                                            |
| 43752     | 1   | Soldering iron: 70 W - 43752/506: 127 V   43752/507: 220 V     |
| 43757/300 | 1   | Flashlight                                                     |
|           | 1   | Adhesive tape                                                  |
|           | 1   | Brush                                                          |
|           | 1   | Welding tube                                                   |
|           | 1   | Welding sucker                                                 |
|           | 1   | Digital multimeter                                             |
| 44348/001 | 1   | Tool bag                                                       |





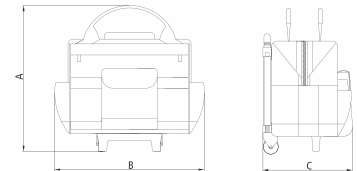
# 13 IEC 60900 INSULATED TOOLS

## Bolsa com ferramentas

Tool bag



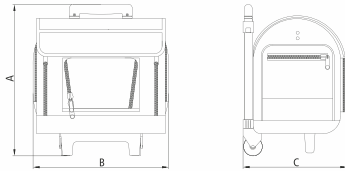
| REF.      | WEIGHT  | Dimensions (mm) |     |     |
|-----------|---------|-----------------|-----|-----|
|           |         | A               | B   | C   |
| 44348/050 | 9.500 g | 520             | 530 | 305 |



| REF.      | PÇS   PZS   PCS | CONTEÚDO   CONTENIDO   SET INCLUDES                            |
|-----------|-----------------|----------------------------------------------------------------|
| 44310/010 | 1               | Adjustable wrench: 10"                                         |
| 44300/028 | 1               | Combination pliers 1.000 V insulated: 8"                       |
| 44301/016 | 1               | Diagonal cutting pliers 1.000 V insulated: 6"                  |
| 44302/016 | 1               | Snipe nose pliers 1.000 V insulated: 6"                        |
| 44303/018 | 1               | Curved nose pliers 1.000V insulated: 8"                        |
| 44307/017 | 1               | Wire stripper 1.000V insulated: 7"                             |
| 44055/101 | 1               | Crimping pliers: 9"                                            |
| 44315     | 3               | Screwdriver slotted tip: 3x75, 5x100, 6x150 mm                 |
| 44316     | 2               | Screwdrivers cross recessed tip: (Nr 0) 3x150, (Nr 1) 5x100 mm |
| 44317     | 9               | Nut drivers: 6, 7, 8, 9, 10, 11, 12, 13, 14 mm                 |
| 40730/205 | 1               | Machinist's hammer: 300 g                                      |
| 44460     | 8               | Hex keys: 1.5, 2, 3, 4, 5, 6, 8, 10 mm                         |
| 44461     | 8               | Hex keys: 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"  |
| 44450     | 9               | Trafix hex keys: T7, T8, T9, T10, T15, T20, T25, T30, T40      |
| 44340/010 | 1               | Mini hacksaw: 250 mm                                           |
| 44345/007 | 1               | Cable stripper straight knife: 180 mm                          |
| 44473/019 | 1               | Cold chisels: 19 mm                                            |
| 44348/001 | 1               | Tool bag                                                       |



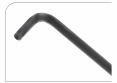
| REF.      | WEIGHT  | Dimensions (mm) |     |     |
|-----------|---------|-----------------|-----|-----|
|           |         | A               | B   | C   |
| 44348/018 | 6.500 g | 400             | 380 | 330 |



## Bolsa com ferramentas Tool bag



**18**  
PEÇAS | PIECES



| REF.      | PÇS   PZS   PCS | CONTEÚDO   CONTENIDO   SET INCLUDES                                                                  |
|-----------|-----------------|------------------------------------------------------------------------------------------------------|
| 44300/018 | 1               | Electrician's pliers 1.000 V insulated: 8"                                                           |
| 44301/016 | 1               | Diagonal cutting pliers 1.000 V insulated: 6"                                                        |
| 44302/016 | 1               | Snipe nose pliers 1.000 V insulated: 6"                                                              |
| 44307/007 | 1               | Wire stripper 1.000V insulated: 7"                                                                   |
| 44315     | 3               | Screwdriver slotted tip: 3x75, 5x100, 6x150 mm                                                       |
| 44316     | 3               | Screwdrivers cross recessed tip:<br>(Nr 0) 3x150, (Nr 1) 5x100, (Nr 2) 6x150 mm                      |
| 44317     | 3               | Nut drivers: 7, 8, 10 mm                                                                             |
| 44345/007 | 1               | Faca reta desencapadora de cabos   Cortadora recta pelacable   Cable stripper straight knife: 180 mm |
| 44092/101 | 1               | Voltage tester: 12 - 380 V                                                                           |
| 43162/002 | 1               | Folding ruler: 2 m                                                                                   |
|           | 1               | Adhesive tape                                                                                        |
| 44348/002 | 1               | Tool bag                                                                                             |



# 13 IEC 60900 INSULATED TOOLS

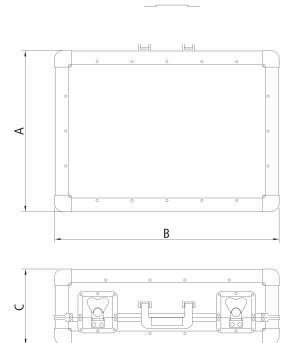
Maleta com ferramentas  
Tool case



34  
PEÇAS | PIECES



| REF.      | WEIGHT  | Dimensions (mm) |     |     |
|-----------|---------|-----------------|-----|-----|
|           |         | A               | B   | C   |
| 44349/034 | 9.960 g | 330             | 460 | 155 |



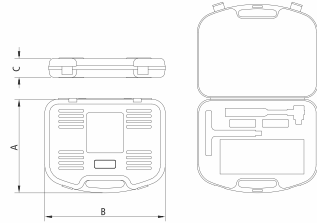
| REF.      | PCS | SET INCLUDES                                                                    |
|-----------|-----|---------------------------------------------------------------------------------|
| 44320     | 10  | Open end wrenches: 10, 11, 12, 13, 14, 15, 16, 17, 19, 22 mm                    |
| 44310/010 | 1   | Adjustable wrench: 10"                                                          |
| 44300/008 | 1   | Combination pliers 1.000 V insulated: 8"                                        |
| 44301/006 | 1   | Diagonal cutting pliers 1.000 V insulated: 6"                                   |
| 44302/006 | 1   | Snipe nose pliers 1.000 V insulated: 6"                                         |
| 44303/008 | 1   | Curved nose pliers 1.000V insulated: 8"                                         |
| 44307/006 | 1   | Wire stripper 1.000V insulated: 7"                                              |
| 44308/010 | 1   | Water pump pliers 1.000V insulated: 10"                                         |
| 44315     | 3   | Screwdriver slotted tip: 3x75, 5x100, 6x150 mm                                  |
| 44316     | 3   | Screwdrivers cross recessed tip: (Nr. 0) 3x150, (Nr. 1) 5x100, (Nr. 2) 6x150 mm |
| 44317     | 8   | Nut drivers: 6, 7, 8, 9, 10, 11, 12, 13 mm                                      |
| 44340/010 | 1   | Mini hacksaw: 250 mm                                                            |
| 44345/007 | 1   | Cable stripper straight knife: 180 mm                                           |
| 40730/205 | 1   | Machinist's hammer: 300 g                                                       |
| 44349/000 | 1   | Tool case                                                                       |



| REF.      | WEIGHT  | Dimensions (mm) |     |    |
|-----------|---------|-----------------|-----|----|
|           |         | A               | B   | C  |
| 44347/207 | 2.810 g | 350             | 450 | 70 |

## Maleta com ferramentas para carros híbridos

Hybrid cars tool case



| REF.      | PCS | SET INCLUDES                                  |
|-----------|-----|-----------------------------------------------|
| 44336     | 2   | 6 points 1/2" long sockets: <b>8, 10 mm</b>   |
| 44333/008 | 1   | T handle: <b>200 mm</b>                       |
| 44343/101 | 1   | Adjustable clicker torque wrench: <b>1/2"</b> |
|           | 1   | Gloves                                        |
|           | 1   | Plastic tool case                             |

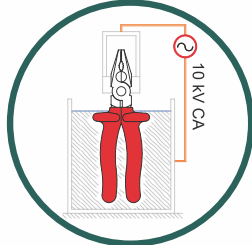
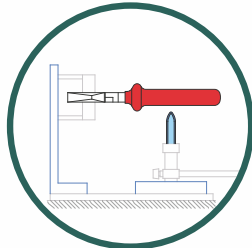
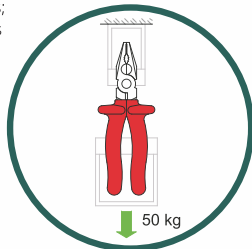
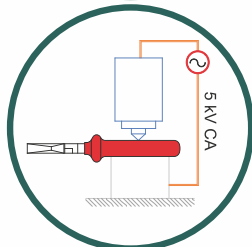
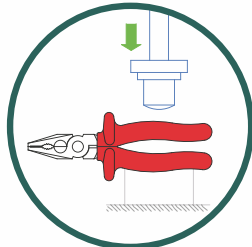


# 13 IEC 60900 INSULATED TOOLS



## Additional information

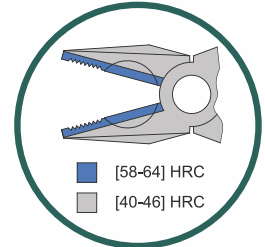
Indicated to works in low tension, up to 1000 V in alternating current and 1500 V in direct current.



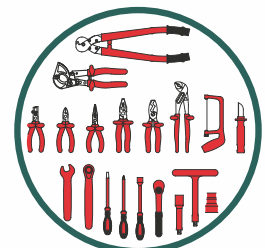
The Tramontina PRO insulated tools are subjected to several tests to meet requirements of IEC 60900<sup>1</sup>:

- Indentation impact at ambient temperature and at -25°C (-13°F);
- 5.000 V dielectric test. 2 Kg compression;
- Insulating material adhesion;
- Flame retardancy test. Exposure to the flame for 10 s;
- 10.000 V dielectric test. Water immersion or stainless steel sphere.

In order to increase the lifetime and performance, the tools with cutting edges have different hardness on this area.

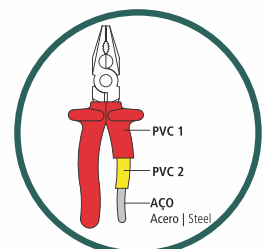


Several tools for safe application in energized networks up to 1.000 V.



All the insulated tools IEC 60900 must be revised periodically. Store them in a place distant from sharpened objects, to avoid any drill in the insulation.

Double insulation layer with different colors to make identification easier if there is any damage to the insulation cover.



<sup>2</sup> A NR 10 é uma norma regulamentadora brasileira que estabelece as condições mínimas para garantir a segurança de trabalhadores que interajam com instalações elétricas e serviços com eletricidade.

<sup>1</sup>IEC 60900 is an international standard that specifies the requirements of insulation tools approval and production. This standard is equivalent to EN 60900 European Standard.





## Additional information

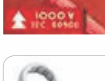
Each piece is marked with batch order number, allowing the user to download the electrical insulation test certificate through the website: [tramontina.com/pro](http://tramontina.com/pro)

| TRAMONTINA PRO                                                                                                               |  | LABORATÓRIO DE ISOLAÇÃO ELÉTRICA - CIPED                                                          |  | NDE METROLOGICA RS                                                                                                                                                                                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| CERTIFICADO DE ENSAIO DE ISOLAÇÃO                                                                                            |  | INSULATION TEST CERTIFICATE                                                                       |  | Pag. 1 de 1                                                                                                                                                                                                                                                                                                                                                     |  |
| 1. Dados Gerais do Ensaio de Isolação / GENERAL TEST DATA                                                                    |  | 2. IDENTIFICAÇÃO DO ITEM ENSAIADO / TESTED ITEM IDENTIFICATION                                    |  | 3. IDENTIFICAÇÃO DO PADRÃO UTILIZADO / STANDARD IDENTIFICATION                                                                                                                                                                                                                                                                                                  |  |
| Data do ensaio / Test date: 01/11/2011                                                                                       |  | Descrição do item de ensaio / Description of the test item: Fica Fica Descontopê de Cobre         |  | Descrição do padrão / Description of the standard: Teste Dielétrico de Isolação                                                                                                                                                                                                                                                                                 |  |
| Local do ensaio / Place: Laboratório de Ensaio de Tramontina Gerbaldi S.A. localizada na Rua Tramontina, 503 - Curitiba - PR |  | Referência / Reference: 44345007                                                                  |  | Modelo / Model: Multímetro digital, Yohogawa, modelo 500-31                                                                                                                                                                                                                                                                                                     |  |
| Condições ambientais / Environment Condition: Temperatura de 19°C a 23°C e umidade relativa de 45 a 75%                      |  | Ordem de Fabricação / Manufacturing order number: 580060                                          |  | Rastreabilidade / Traceability: Calibrado pelo Laboratório LABELO, acreditado pela Conmetro, sob nº CAL004. Certificado de Calibração nº 017112010. Calibração em 23-12-2010, com vencimento em janeiro de 2012.                                                                                                                                                |  |
| Método de ensaio / Test method: Ensaio de Isolação segundo a Norma IEC 60060-2004 - Item 3.8                                 |  | 4. RESULTADO DO ENSAIO CONFORME NORMA IEC 60060 / TEST RESULT IN ACCORDANCE TO IEC 60060 STANDARD |  | OBSERVAÇÕES:                                                                                                                                                                                                                                                                                                                                                    |  |
|                                                                                                                              |  | AMOSTRA / SAMPLE: REFERÊNCIA / REFERENCE: RESULTADO / RESULT                                      |  | a) Os resultados apresentados referem-se exclusivamente à ferramenta ensaiada nas condições especificadas, não sendo extensível a qualquer tipo, material ou aplicação.<br>The results presented in this document are exclusively related to the tested tool, unless the specified conditions.<br>They cannot be extended to any tool, material or application. |  |
|                                                                                                                              |  | 1 44345007 Aprovado (Approved)                                                                    |  | b) A reprodução deste certificado só pode ser feita, a reprodução de partes depende da aprovação, por escrito, do laboratório.<br>The reproduction of this document can only be full. A partial reproduction depends on a written approval of the laboratory.                                                                                                   |  |
|                                                                                                                              |  |                                                                                                   |  | Eng. José Carlos Rizzoli<br>Responsável Técnico do Laboratório / Laboratory Technician<br><a href="http://www.tramontina.com.br/pro">www.tramontina.com.br/pro</a>                                                                                                                                                                                              |  |

| TRAMONTINA PRO                                                                                                               |  | LABORATÓRIO DE ISOLAÇÃO ELÉTRICA - CIPED                                                          |  | NDE METROLOGICA RS                                                                                                                                                                                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| CERTIFICADO DE ENSAIO DE ISOLAÇÃO                                                                                            |  | INSULATION TEST CERTIFICATE                                                                       |  | Pag. 1 de 1                                                                                                                                                                                                                                                                                                                                                     |  |
| 1. Dados Gerais do Ensaio de Isolação / GENERAL TEST DATA                                                                    |  | 2. IDENTIFICAÇÃO DO ITEM ENSAIADO / TESTED ITEM IDENTIFICATION                                    |  | 3. IDENTIFICAÇÃO DO PADRÃO UTILIZADO / STANDARD IDENTIFICATION                                                                                                                                                                                                                                                                                                  |  |
| Data do ensaio / Test date: 10/03/2011                                                                                       |  | Descrição do item de ensaio / Description of the test item: Chave Fica                            |  | Descrição do padrão / Description of the standard: Teste Dielétrico de Isolação                                                                                                                                                                                                                                                                                 |  |
| Local do ensaio / Place: Laboratório de Ensaio de Tramontina Gerbaldi S.A. localizada na Rua Tramontina, 503 - Curitiba - PR |  | Referência / Reference: 44326016                                                                  |  | Modelo / Model: Multímetro digital, Yohogawa, modelo 500-31                                                                                                                                                                                                                                                                                                     |  |
| Condições ambientais / Environment Condition: Temperatura de 19°C a 23°C e umidade relativa de 45 a 75%                      |  | Ordem de Fabricação / Manufacturing order number: 581026                                          |  | Rastreabilidade / Traceability: Calibrado pelo Laboratório LABELO, acreditado pela Conmetro, sob nº CAL004. Certificado de Calibração nº 017112010. Calibração em 23-12-2010, com vencimento em janeiro de 2012.                                                                                                                                                |  |
| Método de ensaio / Test method: Ensaio de Isolação segundo a Norma IEC 60060-2004 - Item 3.8                                 |  | 4. RESULTADO DO ENSAIO CONFORME NORMA IEC 60060 / TEST RESULT IN ACCORDANCE TO IEC 60060 STANDARD |  | OBSERVAÇÕES:                                                                                                                                                                                                                                                                                                                                                    |  |
|                                                                                                                              |  | AMOSTRA / SAMPLE: REFERÊNCIA / REFERENCE: RESULTADO / RESULT                                      |  | a) Os resultados apresentados referem-se exclusivamente à ferramenta ensaiada nas condições especificadas, não sendo extensível a qualquer tipo, material ou aplicação.<br>The results presented in this document are exclusively related to the tested tool, unless the specified conditions.<br>They cannot be extended to any tool, material or application. |  |
|                                                                                                                              |  | 1 44326016 Aprovado (Approved)                                                                    |  | b) A reprodução deste certificado só pode ser feita, a reprodução de partes depende da aprovação, por escrito, do laboratório.<br>The reproduction of this document can only be full. A partial reproduction depends on a written approval of the laboratory.                                                                                                   |  |
|                                                                                                                              |  |                                                                                                   |  | Eng. José Carlos Rizzoli<br>Responsável Técnico do Laboratório / Laboratory Technician<br><a href="http://www.tramontina.com.br/pro">www.tramontina.com.br/pro</a>                                                                                                                                                                                              |  |

| TRAMONTINA PRO                                                                                                               |  | LABORATÓRIO DE ISOLAÇÃO ELÉTRICA - CIPED                                                          |  | NDE METROLOGICA RS                                                                                                                                                                                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| CERTIFICADO DE ENSAIO DE ISOLAÇÃO                                                                                            |  | INSULATION TEST CERTIFICATE                                                                       |  | Pag. 1 de 1                                                                                                                                                                                                                                                                                                                                                     |  |
| 1. Dados Gerais do Ensaio de Isolação / GENERAL TEST DATA                                                                    |  | 2. IDENTIFICAÇÃO DO ITEM ENSAIADO / TESTED ITEM IDENTIFICATION                                    |  | 3. IDENTIFICAÇÃO DO PADRÃO UTILIZADO / STANDARD IDENTIFICATION                                                                                                                                                                                                                                                                                                  |  |
| Data do ensaio / Test date: 10/02/2011                                                                                       |  | Descrição do item de ensaio / Description of the test item: Alicate contínuo                      |  | Descrição do padrão / Description of the standard: Teste Dielétrico de Isolação                                                                                                                                                                                                                                                                                 |  |
| Local do ensaio / Place: Laboratório de Ensaio de Tramontina Gerbaldi S.A. localizada na Rua Tramontina, 503 - Curitiba - PR |  | Referência / Reference: 44320006                                                                  |  | Modelo / Model: Multímetro digital, Yohogawa, modelo 500-31                                                                                                                                                                                                                                                                                                     |  |
| Condições ambientais / Environment Condition: Temperatura de 19°C a 23°C e umidade relativa de 45 a 75%                      |  | Ordem de Fabricação / Manufacturing order number: 519802                                          |  | Rastreabilidade / Traceability: Calibrado pelo Laboratório LABELO, acreditado pela Conmetro, sob nº CAL004. Certificado de Calibração nº 017112010. Calibração em 23-12-2010, com vencimento em janeiro de 2012.                                                                                                                                                |  |
| Método de ensaio / Test method: Ensaio de Isolação segundo a Norma IEC 60060-2004 - Item 3.8                                 |  | 4. RESULTADO DO ENSAIO CONFORME NORMA IEC 60060 / TEST RESULT IN ACCORDANCE TO IEC 60060 STANDARD |  | OBSERVAÇÕES:                                                                                                                                                                                                                                                                                                                                                    |  |
|                                                                                                                              |  | AMOSTRA / SAMPLE: REFERÊNCIA / REFERENCE: RESULTADO / RESULT                                      |  | a) Os resultados apresentados referem-se exclusivamente à ferramenta ensaiada nas condições especificadas, não sendo extensível a qualquer tipo, material ou aplicação.<br>The results presented in this document are exclusively related to the tested tool, unless the specified conditions.<br>They cannot be extended to any tool, material or application. |  |
|                                                                                                                              |  | 1 44320006 Aprovado (Approved)                                                                    |  | b) A reprodução deste certificado só pode ser feita, a reprodução de partes depende da aprovação, por escrito, do laboratório.<br>The reproduction of this document can only be full. A partial reproduction depends on a written approval of the laboratory.                                                                                                   |  |
|                                                                                                                              |  |                                                                                                   |  | Eng. José Carlos Rizzoli<br>Responsável Técnico do Laboratório / Laboratory Technician<br><a href="http://www.tramontina.com.br/pro">www.tramontina.com.br/pro</a>                                                                                                                                                                                              |  |

| TRAMONTINA PRO                                                                                                               |  | LABORATÓRIO DE ISOLAÇÃO ELÉTRICA - CIPED                                                          |  | NDE METROLOGICA RS                                                                                                                                                                                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| CERTIFICADO DE ENSAIO DE ISOLAÇÃO                                                                                            |  | INSULATION TEST CERTIFICATE                                                                       |  | Pag. 1 de 1                                                                                                                                                                                                                                                                                                                                                     |  |
| 1. Dados Gerais do Ensaio de Isolação / GENERAL TEST DATA                                                                    |  | 2. IDENTIFICAÇÃO DO ITEM ENSAIADO / TESTED ITEM IDENTIFICATION                                    |  | 3. IDENTIFICAÇÃO DO PADRÃO UTILIZADO / STANDARD IDENTIFICATION                                                                                                                                                                                                                                                                                                  |  |
| Data do ensaio / Test date: 29/09/2011                                                                                       |  | Descrição do item de ensaio / Description of the test item: Sugador Serrador 12"                  |  | Descrição do padrão / Description of the standard: Teste Dielétrico de Isolação                                                                                                                                                                                                                                                                                 |  |
| Local do ensaio / Place: Laboratório de Ensaio de Tramontina Gerbaldi S.A. localizada na Rua Tramontina, 503 - Curitiba - PR |  | Referência / Reference: 44326013                                                                  |  | Modelo / Model: Multímetro digital, Yohogawa, modelo 500-31                                                                                                                                                                                                                                                                                                     |  |
| Condições ambientais / Environment Condition: Temperatura de 19°C a 23°C e umidade relativa de 45 a 75%                      |  | Ordem de Fabricação / Manufacturing order number: 581026                                          |  | Rastreabilidade / Traceability: Calibrado pelo Laboratório LABELO, acreditado pela Conmetro, sob nº CAL004. Certificado de Calibração nº 017112010. Calibração em 23-12-2010, com vencimento em janeiro de 2012.                                                                                                                                                |  |
| Método de ensaio / Test method: Ensaio de Isolação segundo a Norma IEC 60060-2004 - Item 3.8                                 |  | 4. RESULTADO DO ENSAIO CONFORME NORMA IEC 60060 / TEST RESULT IN ACCORDANCE TO IEC 60060 STANDARD |  | OBSERVAÇÕES:                                                                                                                                                                                                                                                                                                                                                    |  |
|                                                                                                                              |  | AMOSTRA / SAMPLE: REFERÊNCIA / REFERENCE: RESULTADO / RESULT                                      |  | a) Os resultados apresentados referem-se exclusivamente à ferramenta ensaiada nas condições especificadas, não sendo extensível a qualquer tipo, material ou aplicação.<br>The results presented in this document are exclusively related to the tested tool, unless the specified conditions.<br>They cannot be extended to any tool, material or application. |  |
|                                                                                                                              |  | 1 44326013 Aprovado (Approved)                                                                    |  | b) A reprodução deste certificado só pode ser feita, a reprodução de partes depende da aprovação, por escrito, do laboratório.<br>The reproduction of this document can only be full. A partial reproduction depends on a written approval of the laboratory.                                                                                                   |  |
|                                                                                                                              |  |                                                                                                   |  | Eng. José Carlos Rizzoli<br>Responsável Técnico do Laboratório / Laboratory Technician<br><a href="http://www.tramontina.com.br/pro">www.tramontina.com.br/pro</a>                                                                                                                                                                                              |  |



Add: Rua Dr. Albuquerque Lins, 503 . CJ113 . São Paulo . SP, Brazil,  
Postal Code 01232-001 . Phone: +55 11 2589 7600 | Cel.: +55 11 984 960 468 (whatsapp)

*“Bridging the gaps”*

