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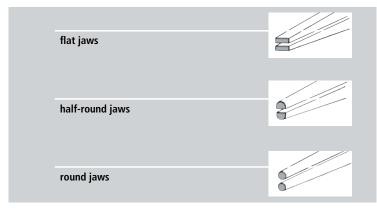






PLIERS ABC TECHNICAL BASICS

BASIC SHAPES OF THE JAWS







Cutting Pliers

for cutting or nipping (diagonal, centre and end cutters, carpenters' pincers etc.)

Gripping Pliers (flat-, long-nose and water pump pliers

JOINT CONNECTIONS



Forged-in joint axle

The rivet is part of one handle (forged from one piece)

- high stability for highest strain
- long service life



Joint with inserted rivet

A proved, sturdy and precise rivet connection for all standard pliers.



Bolted joint

For particularly demanding requirements in terms of precision and smooth operation, e.g. in circlip pliers and cable shears (even the finest multi-stranded conductors have to be cut cleanly).



Combined Pliers

for cutting and gripping (combination, stork beak and radio pliers etc.)



Special Pliers

for special applications, e.g. notching or punching different types of materials (sheet-metal nibbler, tile nibbling pincers etc)

TYPES OF JOINTS

Lap ioint

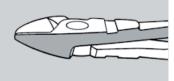
The two plier halves lie on top of each other but are not milled out.

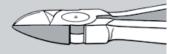


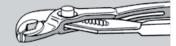
Half the thickness in each pliers handle is milled away in the joint area so that both handles can be laid into each other.

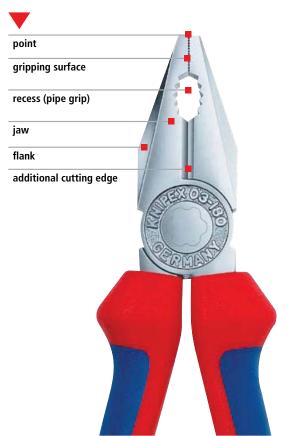


One handle on the pliers is slit.
The other handle is pushed through this slot. This joint connection can withstand a high level of load and strain because the joint bolt is supported on both sides and the inside handle is guided on both sides.











CUTTING CAPACITIES

The maximum values indicated always stay for the performance limit under the most favourable cutting conditions, when the wire is placed as near as possible to the joint.

| Article no |). | | | | | page |
|------------|--------|-----------|------|------|------|---------|
| | Length | ø mm | ø mm | ø mm | ø mm | |
| 61 0 | 200 | 1,0 - 6,0 | 4,0 | 3,5 | 3,0 | 67 |
| 62 12 | 120 | 0,3 - 1,0 | 0,7 | | | 67 |
| 64 0 | 115 | 2,0 | 1,0 | 0,6 | | 68 |
| 64 11 | 115 | 1,4 | 0,8 | | | 68 |
| 64 12 | 115 | 2,0 | 0,8 | 0,5 | | 68 / 70 |
| 64 22 | 115 | 0,8 | | | | 68 |
| 64 32 | 120 | 1,5 | 1,0 | 0,5 | | 68 / 70 |
| 64 42 | 115 | 1,5 | 1,0 | 0,5 | | 68 |
| 64 52 | 115 | 1,3 | | | | 68 |
| 64 62 | 120 | 0,6 | | | | 68 / 70 |
| 64 72 | 120 | 1,5 | | | | 68 |
| 67 0 | 140 | 4,0 | 3,1 | 2,0 | 1,5 | 71 |
| | 160 | 4,5 | 3,4 | 2,5 | 2,0 | 71 |
| | 200 | 5,0 | 3,8 | 3,0 | 2,5 | 71 |
| 68 01 | 160 | 4,0 | 2,8 | 2,3 | | 71 |
| | 180 | 4,0 | 3,2 | 2,5 | | 71 |
| | 200 | 4,0 | 3,5 | 2,8 | | 71 |
| 69 0 | 130 | 0,4 - 2,0 | 0,8 | 0,8 | 0,8 | 71 |
| 70 | 110 | 3,0 | 2,0 | 1,2 | | 73 |
| | 125 | 3,0 | 2,3 | 1,5 | | 73 |
| | 140 | 4,0 | 2,5 | 1,8 | | 73 |
| | 160 | 4,0 | 2,8 | 2,0 | | 73 |
| | 180 | 4,0 | 3,0 | 2,5 | | 73 |
| 71 | 200 | 6,0 | 5,2 | 4,0 | 3,6 | 74 |
| 74 0. | 140 | | 3,1 | 2,0 | 1,5 | 80 |
| | 160 | | 3,4 | 2,5 | 2,0 | 80 |
| | 180 | | 3,8 | 2,7 | 2,2 | 80 |
| | 200 | | 4,2 | 3,0 | 2,5 | 80 |
| | 250 | | 4,6 | 3,5 | 3,0 | 80 |
| 74 91 | 250 | 5,0 | 5,0 | 3,8 | 3,5 | 79 |
| 75 02 | 125 | 0,2 - 1,3 | 1,0 | 0,6 | 0,4 | 82 |
| 75 12 | 125 | 0,2 - 1,3 | 1,0 | 0,6 | 0,4 | 82 |
| 75 22 | 125 | 0,2 - 1,3 | 0,9 | 0,4 | 0,3 | 82 |
| 75 32 | 125 | 0,2 - 1,3 | 0,9 | 0,4 | 0,3 | 82 |
| 75 52 | 125 | 0,2 - 0,8 | 0,5 | 0,3 | | 82 |
| 76 01 | 125 | 0,4 - 3,0 | 2,3 | 1,5 | 0,6 | 83 |
| 76 03/05 | 125 | 0,4 - 2,5 | 1,8 | 1,0 | 0,6 | 83 |

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| 76 12 | 125 | 0,4 - 2,5 | 1,8 | 1,0 | 0,6 | 83 |
| 76 22 | 125 | 0,4 - 2,5 | | | | 83 |
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| 77 01/02 | 115 | 0,3 - 1,6 | 1,2 | 0,6 | | 84 |
| | 130 | 0,3 - 2,0 | 1,5 | 0,8 | | 84 |
| 77 11/12 | 115 | 0,3 - 1,6 | 1,2 | 0,6 | | 84 |
| 77 21 | 115 | 0,3 - 1,3 | 1,0 | | | 84 |
| | 130 | 0,3 - 1,6 | 1,3 | | | 84 |
| 77 22 | 115 | 0,3 - 1,3 | 1,0 | | | 84 / 85 |
| | 130 | 0,3 - 2,0 | 1,5 | | | 84 |
| 77 32 | 115 | 0,3 - 1,3 | 1,0 | 0,5 | | 84 / 85 |
| 77 42 | 115 | 0,3 - 1,3 | 0,8 | | | 84 / 85 |
| | 130 | 0,3 - 1,6 | 1,3 | | | 84 |
| 77 52 | 115 | 0,3 - 1,0 | 0,8 | 0,5 | | 84 / 85 |
| 77 72 | 115 | 0,3 - 0,8 | | | | 84 / 85 |
| 78 03/13 | 125 | 0,2 - 1,6 | 1,0 | | | 86 / 88 |
| 78 23 | 125 | 0,2 - 1,0 | 0,6 | | | 86 |
| 78 31/41 | 125 | 0,2 - 1,0 | | | | 86 |
| 78 61/71 | 125 | 0,2 - 1,6 | 1,2 | | | 86 / 88 |
| 78 81/91 | 125 | 0,2 - 1,6 | 1,2 | 0,6 | | 86 |
| 79 02 | 120 | 0,2 - 1,4 | 1,0 | 0,6 | | 90 / 91 |
| 79 02 | 125 | 0,2 - 1,7 | 1,3 | 0,7 | | 90 / 91 |
| 79 12 | 125 | 0,3 - 1,7 | 1,3 | 1,0 | 0,6 | 90 / 91 |
| 79 22 | 120 | 0,1 - 1,3 | 0,8 | | | 90 / 91 |
| 79 22 | 125 | 0,1 - 1,7 | 1,0 | | | 90 / 91 |
| 79 32 | 125 | 0,2 - 1,5 | 1,1 | 0,6 | | 90 / 91 |
| 79 42 | 125 | 0,1 - 1,5 | 0,8 | | | 90 / 91 |
| 79 52 | 125 | 0,2 - 1,3 | 0,9 | 0,5 | | 90 / 91 |
| 79 62 | 125 | 0,1 - 1,3 | 0,8 | | | 90 / 91 |
| 99 0 | 200 | | 1,8 | 1,4 | | 64 |
| | 220 | | 2,4 | 1,6 | | 64 |
| | 250 | | 2,4 | 1,6 | | 64 |
| | 280 | | 2,8 | 1,8 | | 64 |
| | 300 | | 3,1 | 1,8 | | 64 |
| 99 1 | 250 | | 3,3 | 1,8 | | 65 |
| | 300 | | 3,8 | 2,0 | | 65 |
| | | | | | | |

SYMBOLS

| | flat jaws | |
|------------|---|--|
| Θ | half-round jaws | |
| 8 | round jaws | |
| | flat and pointed jaws | |
| | box joint | |
| F 3 | bolted joint | |
| | smooth gripping surfaces | |
| | serrated gripping surfaces | |
| | cross-hatched, knurled gripping surfaces | |
| M | with opening spring | |

| \angle | angle |
|-----------|---------------|
| | |
| | |
| | |
| | |
| D4 | contro suttor |

with lead catcher

| centre cutter |
|-------------------------------------|
| cutting edges with bevel |
| cutting edges with small bevel |
| cutting edges with very small bevel |
| cutting edges without bevel |

| | electrostatic discharging, dissipative |
|-----------------|--|
| X | electronics |
| | VDE tested, also in conformance to GPSG (Equipment and Product Safety Act) |
| <u></u> 1000 V | insulated according to IEC 60900, usable up to 1000 V AC/1500 V DC |
| ⊜ 1000 V | insulated according to DIN VDE 0680/1, suitable for the application up to 1000 V AC / 1500 V DC |
| CE | conforms to a European directive |
| Cear Cear | mechanically tested in accordance with the equipment and product safety act |
| 泫 | WEEE marking (Waste Electrical and Electronic |

Equipment Directive)

| $\Delta^{\dagger}\Delta$ | weight |
|--------------------------|--------|
| ← | length |
| | |

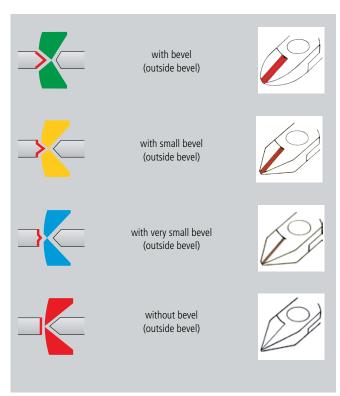
| | soft wire |
|----|--|
| | medium hard wire |
| | hard wire |
| | piano wire |
| | Cu + Al multi-conductor cab- le, solid and multi-stranded |
| | wire rope |
| Fe | iron |



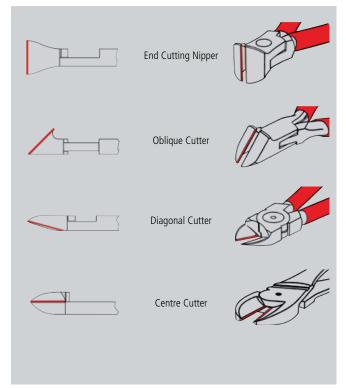
CUTTING EDGES TECHNICAL BASICS

CUTTING EDGE SHAPES

CONFORMING TO DIN ISO 5742



DIRECTION AND POSITION OF CUTTING EDGES



Safety instruction
Each tool should only be used for its specified purpose. When using cutting pliers: beware of wire ends flying off. Wear protective goggles and - if needed - gloves. Be aware of bystanders! Only handles marked with the symbol & 1000 V are insulating.





ARTICLE NUMBER



STRUCTURE OF ARTICLE NUMBER HEAD/HANDLES

| Basic model e.g.: Combination Pliers | Style e.g.: straight | Finish e.g.: head polis- hed, handles black atra- mentized | Length e.g.: 180 mm |
|---|----------------------------|--|----------------------------------|
| 03 | 0 | 0 | 180 |

| IILADI | IIANDLLS | |
|--------|---|-------------------|
| 0 | Pliers black atramentized, head polished | |
| 1 | Head polished, handles plastic coated | |
| 2 | Head polished, handles with multi- component grips | |
| 3 | Pliers chrome plated, handles plastic coated | |
| 4 | Pliers chrome plated | |
| 5 | Pliers chrome plated, handles with multi- component grips | |
| 6 | Pliers chrome plated, handles insulated with multi-component grips, VDE-tested DIN EN/IEC 60900 | ≜ 1000 V |
| 7 | Pliers chrome plated, handles with dipped insulation, VDE-tested DIN EN/IEC 60900 | № ≜ 1000 V |
| | | |

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| Con-Pearl® | PARAT-WERK Schönenbach GmbH + Co. KG |
|---------------------------------|--|
| Duspol® | Benning, Elektrotechnik and Elektronik GmbH & Co. KG |
| gesis® | Wieland Electric GmbH |
| Kapton®, KEVLAR®, Teflon® | E. I. du Pont de Nemours and Company |
| Radox® | HUBER+SUHNER AG |
| Phillips® | Phillips Screw Company |
| Pozidriv [®] | European Industrial Service Ltd. |
| systainer® | TANOS GmbH |
| MC® | Multi-Contact AG |
| Solarlok® | Tyco Electronics |

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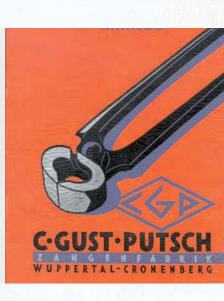
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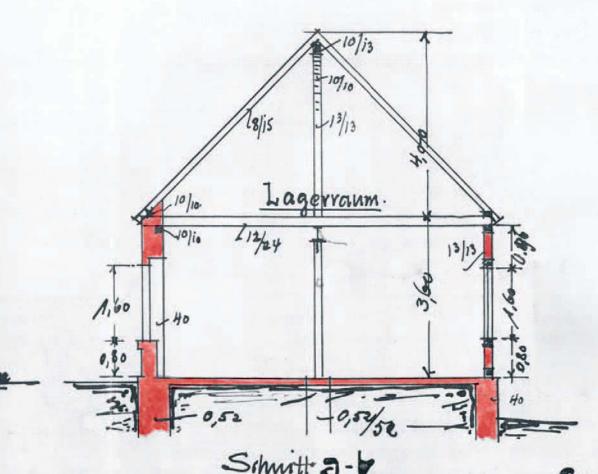




Flan

zu einer Schmiedewerkstelle Fur Herm Gust Putsch Oberkamp bei Cronenberg.





Simitta-b

Cronenberg, den 25

10 3. 1:100

Der Banherr.

HOW EVERYTHING BEGAN – AND A SIMPLE PRINCIPLE





1882 Carl Gustav Putsch set up his own small forge shop in Cronenberg (now a part of Wuppertal).

1922 Carl Putsch takes over management. The company develops into an industrial firm.

1942 KNIPEX, the brand, is created and registered.

1954 Karl Putsch (photo left), the grandson of the company founder, takes over management of the family-owned company. Numerous innovations and modern production technology characterise the development.

1987 Ralf Putsch joins the company. International sales are seriously expanded. Other tool manufacturers become part of the KNIPEX Group.

Carl Gustav Putsch wanted to stand on his own two feet after completing his apprenticeship as blacksmith with his father. He therefore set up his own business in 1882 and forged carpenters' and farriers' pincers with two journeymen, 60 pieces per day. The other processes were also carried out in careful manual labour. The quality was sought after, the small enterprise grew.

The next generations were able to build continuously on these foundations. We have retained an independent family-owned company up to the present day. A lot has changed since the first years. Over time, the workshop turned into a factory with modern machinery and continuously improving technology. New types of pliers and pioneering innovations were added. The number of supplied countries grew steadily.

However, our fundamental principle has stayed in place: remain faithful to a product group, concentrate all strengths on it and be "simply the best" in pliers. Don't get side-tracked, instead create more performance and quality in a single segment. This is what KNIPEX stands for as today's leading brand in pliers.



FOR WHOM WE MAKE PLIERS

They are constantly in our mind: People who work with tools professionally. Who need to be able to rely on their tools, even when the going gets tough. Who expect their tools to last a long time. In other words: Users who are demanding in every respect and who want only the best.

We offer these users a range of around 1,000 different pliers. With this choice we can provide exactly the right tool for every application - and always in a suitable design and size.

Because the verdict of the professionals is our benchmark, we are always looking for their feedback. About how they work with their pliers and what's important to them, so that we can understand precisely and in detail what matters to them.

Paramount is to know what makes their work easier, quicker and safer. That is, the subject of ergonomics, adapting working appliances to their users. Despite high performance, tools should never stress a user more than necessary. Here, for example, the good design of pliers handles is not the only criterion. We always find new ways of saving strength and relieving the whole hand-arm system.

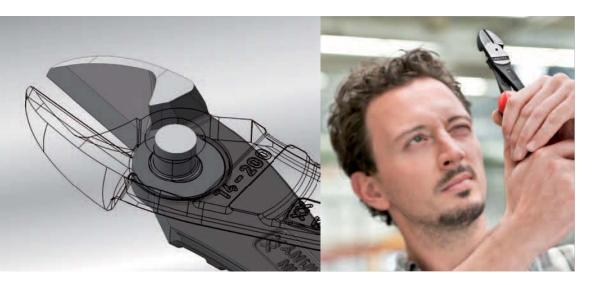






QUALITY IN EVERY DETAIL





Sometimes we give our pliers a really hard time. We try to destroy them to find out what makes them good and long-lasting. Because we don't want to leave anything to chance, we take a long, careful look.

Many trials, for example, have shown us that high-leverage diagonal cutters for very hard wire should be alloyed at best with 0.8~% carbon and certain defined parts of chromium and vanadium.

Correctly hardened, this steel guarantees optimum cutting performance and service life. That's why we use it for our pliers — even if it has to be produced especially for us, costs more and is hard to process. But our high product demands require this.

The rivet of the high-leverage diagonal cutter also has to stand up to a lot of stress. That's why we literally give it backup: we forge it straight onto the pliers. This means extra effort — we have to precision mill the rivet to a few hundredth millimeters. Satisfied users are worth this effort.

And then there are, no less important: the angles, the sharpness, the hardness, the toughness of the cutting edges. The precision and smooth movement of the joint. The handle design and the finish: we keep reviewing these subjects, we research, test and improve.

MADE IN WUPPERTAL, GERMANY

A lot has to come together so that we can make the best pliers.

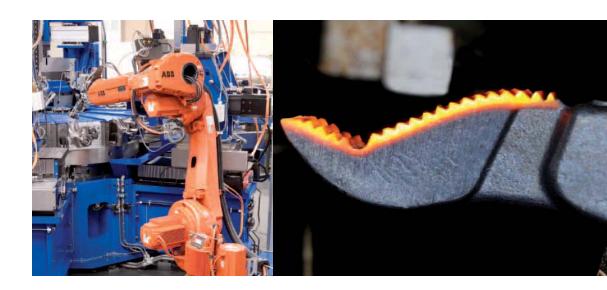
First of all, the special material. Then: modern processing methods and machines. We want to work with high precision and efficiently at all times.

The machines we require for our special needs are not always available on the market. Then we construct these ourselves. Our mechanical engineers come up with state-of-the-art solutions even for tricky tasks.

And last but not least: our employees. With their comprehensive experience, their knowledge and skills they make sure that everything turns out precisely as our customers expect. So that we can keep the KNIPEX promise.

Our pliers run through many production steps which are all carefully coordinated. From forging to machining, hardening, surface finishing and all the way to packing, these steps are all carried out under the one roof. This means that we can have a direct and complete influence on how our products are created.

The short distances allow us to respond quickly and implement improvements immediately.

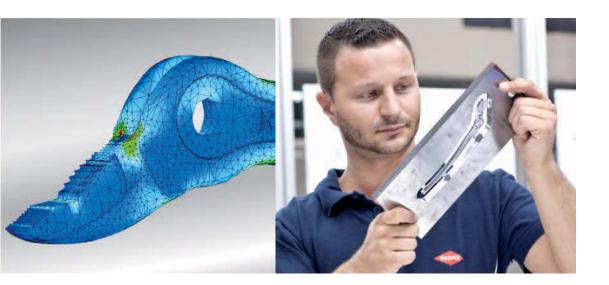






THE THINK TANK





When we have achieved something we are happy — but we don't stop there. For us, better is the enemy of the good. And we like to be the first to have the good ideas for better pliers.

We continuously work on new products and product advantages which offer our users tangible added value. For example by saving handforce when cutting or they can adjust pliers for gripping quicker and with more precision. Or they can do without a heavy tool because a more compact one can do the same job.

No matter whether it's a small improvement or a totally new idea: everything is meticulously thought out and designed with state-of-the-art software. New models are then put through the acid test — with the help of computer simulations in the test lab and in user testing. The results are then used to further optimise the product, it is re-tested and finally released for production.

By the time they're on the market our pliers have already come a long, hard way.



OUR CUSTOMERS

Reliably, confidently and long-term — this is how we wish to collaborate with our customers. We have been doing precisely this for decades with many of them. We offer high quality, performance, good service and contact partners who know what it's all about. We want working with us to be easy and pleasant.

Our brand is known and appreciated by consumers. We offer various support for the sale of our products. We visit users together with our distributors to present our tools. We train our partners' field salesforce because a lot can be said about our pliers which the salesperson can use as convincing arguments.



Our understanding of partnership also means that we do not sell directly to end users. And there are no exceptions.

Today, customers in more than 100 countries bank on our products. We reach them via a constantly enlarging, worldwide network of agencies, our own subsidiaries and importers. By observing the many markets we can gain insights and discover important trends, which will be beneficial to the up-to-dateness and competence of our range. Our customers also benefit from this.



PINZE FOG ZANGE TANG πενσα KLEŠTĚ KLIJEŠTA 钳子 PINCES



OUR VALUES – OUR EMPLOYEES



We want to be successful and do a lot to achieve this. But we don't want economic success at any price and not at the expense of values which are important to us.

Our aspirations are to act and operate sustainably. The longevity of our products is only one aspect of many.

We feel closely linked with our location. That is why we are particularly aware that we have a responsibility towards our environment and society — and thereby our future generations. We want to treat resources carefully and not burden nature more than absolutely necessary.

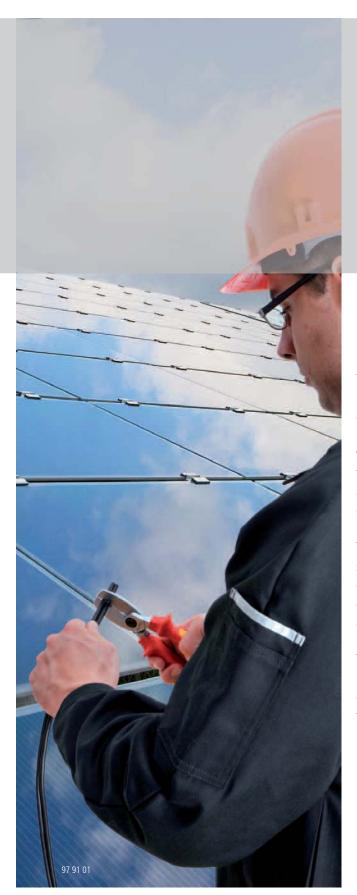
We engage ourselves in many ways in our sphere, in particular in the sectors of education, social policy and culture.

Our employees are particularly important to us. They provide the basis for our success with their knowledge and skills, their commitment and ideas. We train them very thoroughly and support them when they want to develop themselves and learn something new. We put emphasis on a good an fair cooperation and know that we can only attain our high targets jointly.



SPECIAL TOOLS FOR PHOTOVOLTAICS

ALL WORK STEPS WELL CO-ORDINATED FOR BEST RESULTS





There is a steadily increase of electrical power produced by photovoltaic plants (PV systems). The output from this environmentally friendly source of energy rises each year by about 20 % worldwide. However, the share in the total power generation is still below 0.3 % worldwide, which means there is still rich potential for growth. This makes photovoltaic a profitable sphere of activities for trade and for electrical contractors.

The photovoltaic tools from KNIPEX, customized for cutting, stripping and crimping the special photovoltaic cables and connectors, offer professional and reliable work results and ensure that the relevant requirements, such as e.g. Ral GZ 966, are met.

The requirements for a technically perfect installation of the photovoltaic systems are very high. It is a demanding task to create an electrically efficient and constantly reliable connection in combination with high mechanical requirements.





for contacts from:

Huber + Suhner Multi-Contact Hirschmann Tyco Wieland and others

Tool Case for Photovoltaics

Article No. 97 91 01: all tools required for assembly in one case equipped with crimping dies for standard solar cable connectors

SPECIAL PHOTOVOLTAIC RANGE FROM KNIPEX



Cut effected with a Cable Shears: easy, clean cut without any deformation of the cable.



High demands in terms of results require the use of high-quality special tools also. These must be adapted precisely to suit systems from various manufacturers.



As the systems are not compatible with each other, each type of connector requires a set of individual crimping dies. The range is completed by locators to support quick, easy and precise work.



Combination Pliers Chrome Vanadium

DIN ISO 5746 IEC 60900 DIN EN 60900



- with cutting edges for soft, hard and piano wire
- long cutting edges for thicker cables

for heaviest duty

versatile use

 cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC

• with gripping zones for flat and round material, suitable for

- particularly wear resistant gripping jaws; hardness of the gripping jaws approx. 53 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened

| 01 06 190 | | |
|------------------|------------|--|
| <u></u> ★ 1000 V | Æ € | |

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Ø mm | O | apacities Ø mm | ∰ mm² | o d g |
|-------------|-----------------|--------------|----------|-----------------------|--------------------------------|------|------|-------------------|----------|-------------|
| 01 06 160 | 040729 | 100 | | insulated with multi- | 2.0 | 1.5 | 10.0 | 16.0 | 220 | |
| 01 06 190 | 040415 | 190 | X 1000 A | Cilionie piated | component grips, VDE-tested | 2.5 | 2.0 | 13.0 | 25.0 | 320 |

08

Mini Combination Pliers



- compact combination pliers for professionals and hobbyists
- with gripping zones for flat and round material, suitable for versatile use
- with cutting edges for soft and hard wire
- cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC
- Vanadium electric steel; forged, oil-hardened

| Article No. | EAN 4003773- | ←→ mm | Pliers | Handles | | | apacities Ø mm | ❸ | ∆'∆ g |
|-------------|-----------------|-----------------|---------------|----------------------------|-----|-----|-------------------|----------|----------|
| 08 05 110 | 034957 | 110 | chrome plated | with multi-component grips | 2.5 | 1.6 | 9.0 | 10.0 | 85 |

High Leverage Combination Pliers

DIN ISO 5746





- 35 % less effort required than with conventional combination pliers
- easier work due to optimised leverage
- with cutting edges (hardness approx. 63 HRC) for soft and hard wire and piano wire
- long cutting edges for thicker cables
- with gripping zones for flat and round material, suitable for versatile use
- High-grade special tool steel, forged, oil-hardened











| | FAN | | | | | | Cutting o | apacities | | | |
|-------------|-----------------|-----------------|--|--------------------|--|-------------------------------|-----------|-----------|------|------|--------|
| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Ø mm | Ø mm | Ø mm | mm² | ∆ g |
| 02 01 180 | 033134 | 180 | | | | | 2.5 | 2.0 | 11.5 | 16.0 | 202 |
| 02 01 200 | 039679 | 200 | | black atramentized | atramentized polished plastic coated | plastic coated | 2.8 | 2.2 | 13.0 | 25.0 | 298 |
| 02 01 225 | 013198 | 225 | | | | 3.0 | 2.5 | 14.0 | 25.0 | 358 | |
| 02 02 180 | 034896 | 180 | | | black atramentized polished with multi-component | 2.5 | 2.0 | 11.5 | 16.0 | 240 | |
| 02 02 200 | 034902 | 200 | | black atramentized | | grips | 2.8 | 2.2 | 13.0 | 25.0 | 342 |
| 02 02 225 | 043379 | 225 | | | | grips | 3.0 | 2.5 | 14.0 | 25.0 | 409 |
| 02 05 180 | 043072 | 180 | | | ł | of te | 2.5 | 2.0 | 11.5 | 16.0 | 238 |
| 02 05 200 | 043089 | 200 | | chrome plated | | with multi-component grips | 2.8 | 2.2 | 13.0 | 25.0 | 342 |
| 02 05 225 | 010005 | 225 | | | | | 3.0 | 2.5 | 14.0 | 25.0 | 400 |
| 02 06 180 | 010012 | 180 | | | | insulated with | 2.5 | 2.0 | 11.5 | 16.0 | 247 |
| 02 06 200 | 010029 | 200 | ≙ 1000 V △ ← △ △ | chrome plated | | multi-component | 2.8 | 2.2 | 13.0 | 25.0 | 343 |
| 02 06 225 | 010036 | 225 | | | | grips, VDE-tested | 3.0 | 2.5 | 14.0 | 25.0 | 401 |
| 02 07 200 | 022299 | 200 | ↑ 1000 V ♠ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ | shrama platad | | with plastic dipped | 2.8 | 2.2 | 13.0 | 25.0 | 380 |
| 02 07 225 | 022305 | 225 | ≙ 1000 V △♠ □ □ | chrome plated | insulation, VDE-tested | 3.0 | 2.5 | 14.0 | 25.0 | 486 | |

Combination Pliers

☆1000V 🏤 🚭 💷 💌

DIN ISO 5746



- with gripping zones for flat and round material, suitable for versatile use
- with cutting edges for soft and hard wire
- long cutting edges for thicker cables
- cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC
- Special tool steel, forged, oil-hardened







| | | | | | | | | Cutting o | apacities | | |
|-------------|----------|-----------|------------------------------|--------------------------|--------------------------------|-------------------------------|------|-----------|-----------|----------|-----|
| Article No. | EAN | ←→ | | Pliers | Head | Handles | | | ๋� | ⊕ | 4 |
| | 4003773- | mm | | | | | Ø mm | Ø mm | Ø mm | mm² | g |
| 03 00 180 | 015161 | 180 | | | | | 3.4 | 2.2 | 12.0 | 16.0 | 205 |
| 03 00 200 | 015178 | 200 | | black atramentized | polished | | 3.8 | 2.5 | 13.0 | 16.0 | 255 |
| 03 00 250 | 015185 | 250 | | | | | 3.8 | 2.5 | 15.0 | 25.0 | 444 |
| 03 01 140 | 015192 | 140 | | | | | 2.8 | 1.8 | 9.0 | 10.0 | 112 |
| 03 01 160 | 013235 | 160 | | | | | 3.1 | 2.0 | 10.0 | 16.0 | 187 |
| 03 01 180 | 013242 | 180 | | black atramentized | polished | plastic coated | 3.4 | 2.2 | 12.0 | 16.0 | 216 |
| 03 01 200 | 013259 | 200 | | | | | 3.8 | 2.5 | 13.0 | 16.0 | 276 |
| 03 01 250 | 015222 | 250 | | | | | 3.8 | 2.5 | 15.0 | 25.0 | 489 |
| 03 02 160 | 023203 | 160 | | black atramentized polis | | with multi-com- | 3.1 | 2.0 | 10.0 | 16.0 | 223 |
| 03 02 180 | 023197 | 180 | | | polished | ponent grips | 3.4 | 2.2 | 12.0 | 16.0 | 254 |
| 03 02 200 | 034940 | 200 | | | | ponent grips | 3.8 | 2.5 | 13.0 | 16.0 | 322 |
| 03 05 140 | 039730 | 140 | | | | | 2.8 | 1.8 | 9.0 | 10.0 | 139 |
| 03 05 160 | 039518 | 160 | | chrome plated | with multi-cor ponent grips | with multi-com- | 3.1 | 2.0 | 10.0 | 16.0 | 222 |
| 03 05 180 | 034933 | 180 | | chionie plateu | | ponent grips | 3.4 | 2.2 | 12.0 | 16.0 | 254 |
| 03 05 200 | 041146 | 200 | | | | | 3.8 | 2.5 | 13.0 | 16.0 | 324 |
| 03 06 160 | 021902 | 160 | | | | insulated with | 3.1 | 2.0 | 10.0 | 16.0 | 228 |
| 03 06 180 | 021926 | 180 | ≙ 1000 V △♣ ■■ | chrome plated | | multi-com- ponent grips, | 3.4 | 2.2 | 12.0 | 16.0 | 264 |
| 03 06 200 | 033776 | 200 | | | | VDE-tested | 3.8 | 2.5 | 13.0 | 16.0 | 326 |
| 03 07 160 | 015307 | 160 | | | | | 3.1 | 2.0 | 10.0 | 16.0 | 254 |
| 03 07 180 | 015314 | 180 | ☆ 1000 V △ ← □ □ ► | chromo plated | | with plastic dip- | 3.4 | 2.2 | 12.0 | 16.0 | 285 |
| 03 07 200 | 015321 | 200 | ₹ 1000 A mmm | chrome plated | | ped insulation, VDE-tested | 3.8 | 2.5 | 13.0 | 16.0 | 339 |
| 03 07 250 | 015345 | 250 | | | A DT-162160 | 3.8 | 2.5 | 15.0 | 25.0 | 597 | |

Lineman's Pliers

American style

DIN ISO 5746 ASME B107.20







- solid construction for heaviest strain; universally applicable
- high transmission ratio for easy cutting
- requires 40 % less effort compared with conventional combination pliers thanks to optimised transmission ratio
- ergonomically optimised handle shape for firm contact to the hand and fatigue reducing operation
- particularly effective cross-hatched knurled gripping zone in the jaws – for strong gripping and pulling
- additional gripping zone below the joint for powerful leverage and pressing performance
- with cutting edges for soft and hard wire
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- Vanadium electric steel; forged, oil-hardened

09 11 240 / 09 12 250

with fish tape puller in the joint gap; with universal mandrel crimping point below the joint



Cross-hatched, knurled gripping zone for firm gripping and pulling, e.g. for fence construction



Gripping zone below the joint for powerful leverage



Long cutting edges for cutting flat cables



 $09\ 11/12\ 240$ fish tape puller in the joint gap



09 11/12 240: universal mandrel crimping area below the joint

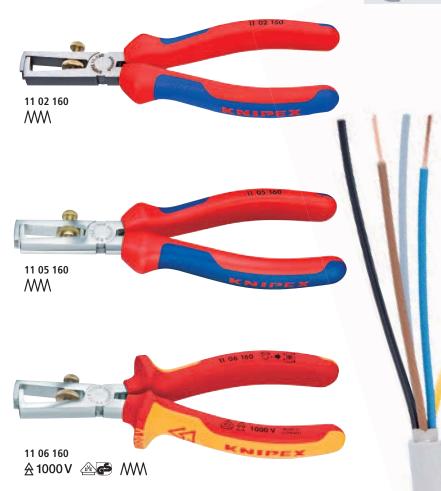
| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | Cutting of Outling outlin | apacities Ø mm | Δ [†] Δ g |
|-------------|-----------------|-----------------|--------------------|----------|-------------------------------|--|-----------------|-----------------------|
| 09 01 240 | 064992 | 240 | black atramentized | polished | with non-slip plastic coating | 4.6 | 3.0 | 435 |
| 09 02 240 | 065005 | 240 | black atramentized | polished | with multi-component grips | 4.6 | 3.0 | 470 |
| 09 11 240 | 071952 | 240 | black atramentized | polished | with non-slip plastic coating | 4.6 | 3.0 | 435 |
| 09 12 240 | 071969 | 240 | black atramentized | polished | with multi-component grips | 4.6 | 3.0 | 470 |

Insulation Strippers



- for single, multiple and fine stranded conductors with plastic or rubber insulation max. 5.0 mm dia. or resp. 10.0 mm² cable cross section
- easy adjustment to the required diameter of solid or stranded wire with knurled screw and lock nut
- Special tool steel, forged, oil-hardened







Prismatic blade: The red area is cut over four surfaces. Works with highly-elastic materials also.

| Article No. | EAN 4003773- | ←→ | | Pliers | Head | Handles | Stripping Ø mm | capacities mm² | AWG | ۵'۵ |
|-------------|-----------------|-----------|---|-----------------------|----------|--|-------------------|-------------------|-----|-----|
| | | mm | | | | | | | | g |
| 11 01 160 | 013556 | 160 | MM | black atramentized | polished | plastic coated | 5.0 | 10.0 | 7 | 131 |
| 11 02 160 | 023180 | 160 | MM | black atramentized | polished | with multi-component grips | 5.0 | 10.0 | 7 | 165 |
| 11 05 160 | 039570 | 160 | MM | chrome plated | | with multi-component grips | 5.0 | 10.0 | 7 | 157 |
| 11 06 160 | 021933 | 160 | ≙ 1000 V △€ | chrome plated | | insulated with multi-component grips, VDE-tested | 5.0 | 10.0 | 7 | 166 |
| 11 07 160 | 015499 | 160 | <u>A</u> 1000 V △ ← → → → → → → → → → → → → → → → → → → | chrome plated | | with plastic dipped insulation, VDE- tested | 5.0 | 10.0 | 7 | 180 |
| 11 12 160 | 034964 | 160 | | black atramentized | polished | with multi-component grips | 5.0 | 10.0 | 7 | 156 |
| 11 15 160 | 042471 | 160 | | chrome plated | | with multi-component grips | 5.0 | 10.0 | 7 | 155 |
| 11 17 160 | 015505 | 160 | ≙ 1000 V △ | chrome plated | | with plastic dipped insulation, VDE- tested | 5.0 | 10.0 | 7 | 181 |

Electronics Wire Stripping Shears



- for cutting and stripping single, multiple and fine-stranded conductors with diameters up to 1.0 mm
- easy adjustment to the required diameter of solid or stranded wire with knurled screw and lock nut
- with opening spring
- Special tool steel, oil-hardened







| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Stripping capacities Ø mm | Δ ΄ Δ g | |
|-------------|-----------------|-----------------|-------------|----------|----------------------------|------------------------------|-------------------|--|
| 11 82 130 | 071648 | 130 | ₩ MM | polished | with multi-component grips | 0.03-1.0 | 75 | |

Electronics Wire Stripper



- for single, multiple and fine stranded cables having a diameter from 0.1 up to 0.8 mm, with plastic or rubber insulation
- easy adjustment to the required diameter of solid or stranded wire with knurled screw and lock nut
- with opening spring
- the mirror polish together with a fine film of oil offer effective rust protection - no circuit faults caused by peeling chrome from plated tools
- Special tool steel, forged, oil-hardened

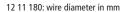
| Article No. | EAN 4003773- | ↔ mm | | Head | Handles | Stripping capacities Ø mm | ∆†∆ g |
|-------------|-----------------|---------|--------------|-----------------|----------------------------|------------------------------|----------|
| 11 92 140 | 016908 | 140 | ₩ M M | mirror polished | with multi-component grips | 0.1 - 0.8 | 99 |

Insulation Strippers with shaped blades



- with replaceable blades for 4 or 6 different conductor cross-sections
- leave wire undamaged thanks to precision-ground blade shapes, even multi-stranded conductors are stripped gently
- during stripping, the wire is held firmly by clamping jaws
- with length stop for constant stripping length during repetitive work
- a spring leads the stripper back to the starting position
- Pliers body: aluminium
- Blade: special tool steel, oil-hardened







12 21 180: wire cross-sections in mm²

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Stripping capacities Ø mm | Stripping capacities mm² | AWG | Δ'Δ g |
|-------------|-----------------|-----------------|---------|------------------------|--------------------|------------------------------|---|--------------------------------|----------|
| 12 11 180 | 000792 | 180 | | | | 0.5 / 1.2 / 1.6 / 2.0 | | | 368 |
| 12 21 180 | 000815 | 180 | WM | black lacquered | with plastic grips | | 0.5-0.75 / 1.0 / 1.5 / 2.5 / 4.0 / 6.0 | 20-19 / 17 /15 / 13 /11/ 10 | 366 |
| 12 19 180 | 022145 | 1 nair | of char | e blades for 12 11 180 | | | | | |
| 12 19 180 | 022143 | | | e blades for 12 11 180 | | | | | |

Precision Insulation Strippers

with adapted blades

(PATENTED)



12 12 02 WW



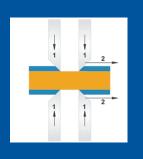
12 12 06 MM



12 12 11 WW

Precisely and reliably

Two pairs of blades (1) cut the insulation to a complete extent. Then the blade pairs move apart, and thus the insulation is removed form-fit (2). The pliers open automatically after the stripping procedure.



- form-fit stripping also of difficult-to-remove insulating materials such as PTFE, silicone, Radox[®], Kapton[®] and rubber; multi-layer too
- a second pair of blades holds the remaining insulation reliably in place
- blades are shaped precisely to the respective conductor cross-section
- with an adjustable length stop when cutting the same stripping lengths during repetitive work
- Pliers body: steel
- Blade: special tool steel, oil-hardened

12 12 02

with additional cable guide for exact positioning of the cable in the stripping area of the blade

12 12 11 / 12 12 12 for solar cables

specially adapted to multi-layered and Radox® insulation; with additional cable support for a better centring of multi-layer insulated conductors in the stripping profiles

Kapton® is a registered trademark of E. I. du Pont de Nemours and Company



12 12 02

maximum cable cross-section (in mm²) per profile:









12 12 06 12 12 10 12 12 11 12 12 12

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Stripping capacities mm² | AWG | ∆ d g |
|-------------|-----------------|-----------------|-------|-----------|----------------------------|-----------------------------|---------|-------------|
| 12 12 02 | 048077 | 195 | | | | 0.03 - 2.08 | 32 - 14 | 447 |
| 12 12 06 | 049005 | 195 | MM | burnished | with multi-component grips | 0.14 - 6.00 | 26 - 10 | 445 |
| 12 12 10 | 049012 | 195 | | | | 2.5 - 10.0 | 13 - 7 | 445 |
| 12 12 11 | 062998 | 195 | MM | burnished | with multi component grins | 1.5 - 6.0 | 15 - 10 | 449 |
| 12 12 12 | 073758 | 195 | /۷۷۷\ | | with multi-component grips | 4.0 - 10.0 | 11 - 7 | 450 |

| 12 19 02 | 049036 | 1 set of spare blades for 12 12 02 |
|----------|--------|------------------------------------|
| 12 19 06 | 049043 | 1 set of spare blades for 12 12 06 |
| 12 19 10 | 049050 | 1 set of spare blades for 12 12 10 |
| 12 19 11 | 063001 | 1 set of spare blades for 12 12 11 |
| 12 19 12 | 073765 | 1 set of spare blades for 12 12 12 |

WIRE STRIPPERS AND DISMANTLING TOOLS



Principle of operation with adapted blades

Properly and precise stripping with an annular cut through the complete insulation. This is particularly important with conductors, which must be stripped precisely.

This works without any problem even with difficult materials such as Teflon®, Radox® and multilayer insulations.



12 12 02 with cable guide and length stop



Precise cutting of the insulation to a complete extent



Positive stripping thanks to precise shape of the blades



Automatic stripping of the insulation





Self-Adjusting Insulation Strippers



- for single, multiple and fine stranded conductors with plastic or rubber insulation
- adapts automatically to the respective cable cross-section; prevents damage to the conductor
- cutting depth can be adjusted for different insulation materials
- with wire cutter for copper and aluminium wires, multiple stranded up to 10.0 mm² and single stranded up to 6.0 mm²
- smoothly operating mechanism
- stripping blades and clamping jaws easily replaceable
- low weight
- Body: plastic, fibreglass-reinforced
- Blade: special tool steel, oil-hardened

12 40 200

for thin ribbon cables up to 10.0 mm width in a single pass





Wire cutter for multiple stranded wire cables up to 10.00 mm²



Adjustable length stop



Precise stripping prevents damage to

| Article No. | EAN 4003773- | ←→ mm | | Stripping capacities mm² | AWG | Length stop mm | Δ'Δ g |
|-------------|-----------------|-----------------|----|-----------------------------|--------|-------------------|----------|
| 12 40 200 | 026662 | 200 | MM | 0.03 - 10.0 | 32 - 7 | 3.0 - 18.0 | 202 |
| 12 50 200 | 034407 | 200 | MM | 2.5 - 16.0 | 13 - 5 | | 200 |

| 12 49 01 | 026679 | 1 pair of spare blades for 12 40 200 |
|----------|--------|---|
| 12 49 02 | 026686 | 1 pair of spare clamping jaws for 12 40 200 |
| 12 49 03 | 026693 | Spare length stop for 12 40 200 |
| 12 59 01 | 034414 | 1 pair of spare blades for 12 50 200 |
| 12 59 02 | 034421 | 1 pair of spare clamping jaws for 12 50 200 |

KNIPEX MultiStrip 10

Automatic Insulation Stripper

(PATENTED)



Mode of operation of straight cutters

Models 12 40 200 and 12 42 195

An incision is made in the red area only.

Not suitable for highly-flexible or armoured insulation materials or for multi-layered insulation.

Patented mechanics

The incision depth of the stripping blade adjusts fully automatically to the diameter of the wire and accordingly also to the thickness of all standard insulating materials. There is no need for any manual adjustment which is still necessary when other conventional pliers with a wide wire-stripping range are used.

Stripping without re-adjustment from 0.03 to 10.0 mm²

- fully automatic adjustment to commercially used single-, multi- and fine-stranded conductors with standard insulation throughout the entire capacity range from 0.03 to 10.0 mm²
- no manual fine adjustment required, no damage to the conductors
- the clamping jaws made of steel with integrated cutting edge hold the cable in a way that prevents slipping without damaging the remaining insulation
- with wire cutter for copper and aluminium conductors, multistranded up to 10.0 mm² and single-stranded up to 6.0 mm²
- particularly smooth-running mechanics and very low weight
- replaceable blades block and length stop
- handle with soft-plastic zone for a steady grip
- Body: plastic, fibreglass-reinforced
- Blade: special tool steel, oil-hardened



Wire cutter for multiple stranded wire cables up to 10.0 mm²



Steel restrain jaws with cutting edges avoid



Precise stripping from 0.03 to 10.0 mm²

| Article No. | EAN 4003773- | ←→ mm | | Stripping capacities mm ² | AWG | Δ'Δ g |
|-------------|-----------------|--------------|----------|---|--------|----------|
| 12 42 195 | 054580 | 195 / | ΛΜ | 0.03 - 10.0 | 32 - 7 | 136 |
| | | | | | | |
| 12 49 21 | 057581 | Spare bla | ades blo | ck for 12 42 195 | | |
| 12 49 23 | 057604 | Spare ler | ngth sto | p for 12 42 195 | | |

Automatic Insulation Stripper



- compact standard tool at a favourable price for all current cable cross-sections and insulating materials
- for single, multiple and fine stranded cables of 0.2 up to 6.0 mm² with standard insulation
- adapts automatically to the respective cable cross-section; prevents damage to the conductor
- high operation comfort thanks to handy shape and low weight
- narrow head style for use in confined areas
- with wire cutter for copper an aluminium wires up to 2.5 mm²
- with adjustable length stop from 6.0 18.0 mm for cutting the same stripping lengths during repetitive work
- Body: plastic, fibreglass-reinforced
- Blades: special tool steel, oil-hardened, interchangeable















Stripping in confined areas

| Article No. | EAN 4003773- | ←→ mm | | Stripping capacities mm ² | AWG | Δ ['] Δ g |
|-------------|-----------------|--------------|----|---|---------|-----------------------|
| 12 62 180 | 054573 | 180 | MM | 0.2 - 6.0 | 24 - 10 | 151 |

| 12 69 21 | 060093 | 1 pair of spare blades for 12 62 180 |
|----------|--------|--------------------------------------|
| 12 69 23 | 067115 | Spare length stop for 12 62 180 |

Automatic Insulation Stripper for flat cable



12 64 180 WW

- for PVC insulated flat cables up to a max. 12 mm width and 0.75 to 2.5 mm²
- adapts automatically to the various conductor heights; prevents damage to the conductor
- long stripping lengths possible
- blade replaceable
- smoothly operating mechanism
- low weight
- Body: plastic, fibreglass-reinforced
- Blade: special tool steel, oil-hardened



| , | Article No. | EAN 4003773- | ←→ mm | | Stripping capacities mm² | AWG | Δ [†] Δ g |
|---|-------------|-----------------|-----------------|----|-----------------------------|---------|-----------------------|
| | 12 64 180 | 073284 | 180 | MM | 0.75 - 2.5 | 19 - 13 | 125 |

| 12 69 31 073932 1 pair of spare blades for 12 64 180 |
|---|
|---|

Mini Stripping Tool



12 80 100 SB MM

- precise stripping, stepwise adjustment to the conductor diameters
- with wire cutter
- adjustable length stop from 4.0 15.0 mm
- with locking device
- Housing: plastic, impact-proof

12 80 040 SB

for thin copper conductors dia. 0.12 to 0.4 mm





| Article No. | | | Stripping capacities Ø mm | AWG | ∆ d g | |
|--------------|--------|-----|------------------------------|------------|-------------|----|
| 12 80 040 SB | 071655 | 100 | MM | 0.12 - 0.4 | 36 - 26 | 35 |
| 12 80 100 SB | 043119 | 100 | /۷۷۷\ | 0.30 - 1.0 | 28 - 18 | 34 |

Wire Stripper for fibre optics



12 82 130 SB

- to remove primary and secondary coating of fibre optics
- Chrome vanadium electric steel in special quality, oil-hardened



| Article No. EAN ← Pliers mm | | Pliers | Handles | Stripping capacities Ø mm | Δ [†] Δ g | |
|-----------------------------|--------|--------|-----------|------------------------------|---|----|
| 12 82 130 SB | 050094 | 130 | burnished | with plastic handles | primary-coating: 0.125 mm secondary-coating: 0.250 mm | 69 |

Stripping Tool for fibre optics



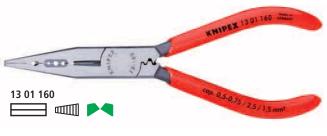
12 85 100 SB

- to remove primary coating of fibre optics Ø 0.125 mm
- blade dia. 0.18 mm, hole for cable feeding 0.30 mm dia.
- adjustable length stop
- Housing: plastic, impact-proof

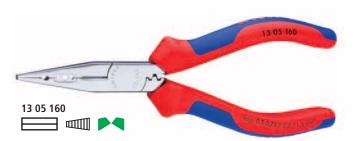


| Article No. EAN 400377 | | ←→ mm | Stripping capacities Ø mm | |
|------------------------|--------|-----------------|--|----|
| 12 85 100 SB | 043126 | 100 | to remove primary coating of fibre optics \emptyset 0.125 mm | 44 |

Electricians' Pliers







- the ideal pliers for cable work
- for gripping and bending wire
- for cutting soft, medium and hard wire
- precision cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC
- with precision stripping holes
- for crimping end sleeves (ferrules)
- Vanadium electric steel; forged, oil-hardened



Gripping



Stripping



Cutting



Crimping 0.5 to 2.5 mm²

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | Stripping capacities mm ² | Cutting c Ø mm | apacities Ø mm | δ g |
|-------------|-----------------|-----------------|--------------------|----------|----------------------------|---|-----------------|-----------------|--------|
| 13 01 160 | 034971 | 160 | black atramentized | polished | plastic coated | 0.5 - 0.75 / 1.5 / 2.5 | 2.5 | 1.6 | 112 |
| 13 02 160 | 010470 | 160 | black atramentized | polished | with multi-component grips | 0.5 - 0.75 / 1.5 / 2.5 | 2.5 | 1.6 | 139 |
| 13 05 160 | 071426 | 160 | chrome plated | | with multi-component grips | 0.5 - 0.75 / 1.5 / 2.5 | 2.5 | 1.6 | 139 |

Universal Pliers for STP data cables



13 72 160 SB

- for cutting the entire cable, the single conductor, the shield and the plastic core
- steel needle at the joint for longitudinal scratching of the shield foil
- prismatic blades below the joint for dismantling the cables
- Chrome vanadium electric steel in special quality, oil-hardened







| Article No. | EAN 4003773- | ←→ mm | Pliers | Handles | Δ [†] Δ g |
|--------------|-----------------|-----------------|-----------|----------------------------|-----------------------|
| 13 72 160 SB | 052319 | 160 | burnished | with multi-component grips | 102 |

Diagonal Insulation Strippers





- the essential pliers for electrical installation work
- precision stripping holes for single (solid) conductors of 1.5 and 2.5 mm²
- induction hardened precision blades for soft wire up to 4.0 mm dia., cutting edge hardness approx. 60 HRC
- Vanadium electric steel; forged, oil-hardened



Multi-functional: cutting and stripping

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Stripping capacities mm ² | AWG | Cutting of Ø mm | apacities Ø mm | σg |
|-------------|-----------------|-----------------|-----------------|-----------------------|----------|--|---|---------|--------------------|-----------------|-----|
| 14 22 160 | 034988 | 160 | | black atramentized | polished | with multi-compo- nent grips | 1.5 + 2.5 | 15 + 13 | 2.5 | 1.5 | 206 |
| 14 25 160 | 028697 | 160 | | chrome plated | | with multi-compo- nent grips | 1.5 + 2.5 | 15 + 13 | 2.5 | 1.5 | 206 |
| 14 26 160 | 040279 | 160 | ≙ 1000 V | chrome plated | | insulated with multi-component grips, VDE-tested | 1.5 + 2.5 | 15 + 13 | 2.5 | 1.5 | 216 |

Stripping Tweezers for Coated-Wire



15 11 120

| Artikel-Nr. | EAN 4003773- | ←→ mm | Stripping capacities Ø mm | ∆ d g |
|-------------|-----------------|-----------------|------------------------------|-------------|
| 15 11 120 | 015550 | 120 | 0.6 | 34 |

- for stripping off varnished insulation on copper wires
- blades for other wire diameters available as spare parts
- Tweezers body: spring steel, oil-hardened
- Handle shells: plastic



| Article No. | EAN 4003773- | |
|-------------|-----------------|---|
| 15 19 005 | 021551 | 1 pair of spare blades for 15 11 120 Ø 0.5 mm |
| 15 19 006 | 021568 | 1 pair of spare blades for 15 11 120 Ø 0.6 mm |
| 15 19 008 | 021575 | 1 pair of spare blades for 15 11 120 Ø 0.8 mm |
| 15 19 010 | 021582 | 1 pair of spare blades for 15 11 120 Ø 1.0 mm |

Insulation Strippers



- for stripping thin cables
- accurate boring to match diameter of wire, precise stripping prism; non-adjustable
- with opening spring
- Chrome vanadium electric steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Stripping capacities Ø mm | Δ'Δ g |
|-------------|-----------------|-----------------|----|-------------------------|---------|------------------------------|----------|
| 15 51 160 | 044451 | 160 | | polished plastic coated | | 0.5 | 101 |
| 15 61 160 | 014843 | 160 | MM | | 0.6 | 102 | |
| 15 81 160 | 015574 | 160 | | | | 0.8 | 102 |



Dismantling Tools



- for stripping all common round cables
- self-tightening holding lever
- with adjusting screw for cutting depth adjustment
- turnable blade for circular and longitudinal cutting
- spare blade inside the handle
- secure grip due to soft component material on handle and holding lever to avoid slipping







| Article No. | EAN 4003773- | ←→ mm | | Stripping capacities Ø mm | ∆'∆ g |
|--------------|-----------------|-----------------|-------|------------------------------|----------|
| 16 20 16 SB | 060451 | 130 | MM | 4.0 - 16.0 | 95 |
| 16 20 28 SB | 060468 | 130 | /۷۷۷\ | 8.0 - 28.0 | 95 |
| 16 20 165 SB | 043133 | 165 | WW | 8.0 - 28.0 | 85 |

| 16 29 165 | 043140 | Spare blade for 16 20 16 SB / 16 20 28 SB / |
|-----------|--------|---|
| 10 29 103 | 043140 | 16 20 165 SB |





Dismantling Tool



- for dismantling round cable sheaths made of PVC, rubber, silicone or PTFE from 6.0 - 29.0 mm dia.
- self-tightening holding lever
- with knurled nut for cutting depth adjustment
- changing from circular to longitudinal cutting by turning the tool body
- spiral cutting for removing intermediate pieces
- replaceable blade
- Housing: plastic, impact-proof



| Article No. | EAN 4003773- | ←→ mm | | Stripping capacities Ø mm | ∆∆ g | |
|--------------|-----------------|------------------------------|----|------------------------------|---------|--|
| 16 30 135 SB | 033349 | 135 | WW | 6.0 - 29.0 | 120 | |
| | | | | | | |
| 16 39 135 | 027317 | Spare blade for 16 30 135 SB | | | | |





Dismantling Tool



- for dismantling round cables exceeding 25.0 mm dia.
- removes all kinds of insulation layers
- suitable for longitudinal and circular cutting
- cutting depth can be adjusted up to 5.0 mm
- replaceable blade (both sides can be used)
- Tool body: plastic, fibreglass-reinforced



Adjustable cutting depth



Setting the tool for longitudinal cut



Longitudinal cut

| Article No. | EAN 4003773- | ←→ mm | Stripping capacities Ø mm | og g |
|-------------|-----------------|---------------------|------------------------------|---------|
| 16 40 150 | 026709 | 150 | > 25 | 210 |
| | | | | |
| 16 49 150 | 026716 | olade for 16 40 150 | | |



Turning the tool for circumferential cut



Circular cut

Stripping Tool for coax cables



16 60 05 SB WW





Dismantling of a coax-cable in three steps

- for stripping coax cables (RG 58, RG 59 and RG 62)
- for stripping outer sheath, shield and insulation in a single pass
- with three built-in blades
- the cutting depth of each blade can be adjusted individually by means of a hexagonal key (Allen key)
- the blade spacing remains constant
- Housing: plastic, impact-proof





3 stripping steps in one operation

| Article No. | EAN 4003773- | ←→ mm | | Cable type | ∆ d g |
|-------------|-----------------|-----------------|----|------------------------|-------------|
| 16 60 05 SB | 044888 | 105 | MM | RG 58, RG 59 and RG 62 | 73 |

Stripping Tool for coax cables



WW

- for dismantling and stripping all common coax cables between 4.8 - 7.5 mm dia. (e.g. for TV- and satellite antenna), also suitable for PVC round cable 3 x 0.75 mm²
- with length scale 5.0 20.0 mm
- double shell, folding back stripping tool
- with opening spring and locking device
- Body: plastic, fibreglass-reinforced







| Article No. | | EAN 4003773- | ←→ mm | | Stripping capacities Ø mm | Δ'Δ g |
|-------------|------|-----------------|--------------|----|---|----------|
| 16 60 100 |) SB | 040811 | 100 | MM | Coax-cables 4.8 - 7.5 round cables 3 x 0.75 mm ² | 39 |

Dismantling Tool for data cables



16 65 125 SB WW

- for stripping UTP and STP data cables with diameters of 4.5 to 10.0 mm
- stripping device for cross-sections 0.2 / 0.3 / 0.8 / 1.5 / 2.5 / 4.0 mm²
- double shell, folding back stripping tool
- with opening spring and locking device
- practical clip for easy transport
- Body: plastic, fibreglass-reinforced



| Article No. | EAN 4003773- | ←→ mm | | Types of cables | Stripping capacities Ø mm | Stripping capacities mm² | ∆ d g | |
|--------------|-----------------|----------|----|---|------------------------------|-----------------------------|-------------|--|
| 16 65 125 SB | 043157 | 125 | WM | CAT 5, CAT 6, CAT 7, Twisted-Pair (UTP/STP) | 4.5 - 10.0 | 0.2 - 4.0 | 50 | |

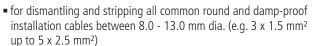
Universal Dismantling Tools



16 80 125 SB



16 85 125 SB WW



- also for use in conduit and distribution boxes
- double shell, folding back stripping tool
- with opening spring and locking device
- practical clip for easy transport
- Body: plastic, fibreglass-reinforced

with additional blade for longitudinal cuts; telescopic blade inside; stripping device for cross-sections 0.2 / 0.3 / 0.8 / 1.5 / 2.5 / 4.0 mm²



| Article No. | EAN 4003773- | ←→ mm | | Stripping capacities Ø mm | Types of cables | ΔΔ g |
|--------------|-----------------|-----------------|----|------------------------------|--|---------|
| 16 80 125 SB | 040828 | 125 | MM | 8.0 - 13.0 | round cable, e.g.: 3 x 1.5 mm ² up to 5 x 2.5 mm ² | 71 |
| 16 85 125 SB | 060444 | 125 | WW | 8.0 - 13.0 | round cable, e.g.: 3 x 1.5 mm ² up to 5 x 2.5 mm ² | 67 |

Round Nose Pliers with cutting edge

(Jewellers' Pliers)

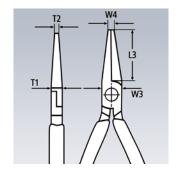
DIN ISO 5743



- for gripping and manipulating fine wires, e.g. in jewellery work
- ideal for cutting and bending activities, also in electronics
- for bending wire loops
- precision-ground round jaws with fine, pointed tips
- cutting edges additionally induction hardened, cutting edge hardness approx. ca. 60 HRC
- Vanadium electric steel; forged, oil-hardened







| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | D1 mm | Dii L3 mm | mensic T1 mm | W3 | W4 mm | Cutting of Outling of Outline of | apacities Ø mm | ∆'∆ g |
|-------------|-----------------|-----------------|---|-----------------------|----------|----------------|----------|-----------------|--------------------|------|----------|---|-----------------|----------|
| 19 01 130 | 034995 | 130 | 8 | black atramentized | polished | plastic coated | 1.0 | 32.0 | 8.0 | 13.5 | 2.0 | 2.2 | 1.6 | 73 |
| 19 03 130 | 014348 | 130 | 8 | chrome plated | | plastic coated | 1.0 | 32.0 | 8.0 | 13.5 | 2.0 | 2.2 | 1.6 | 72 |

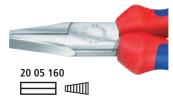
20

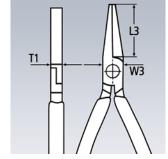
Flat Nose Pliers

DIN ISO 5745



- flat, short, wide jaws
- knurled gripping surfaces
- Chrome vanadium electric steel, forged, oil-hardened









| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Di L3 mm | mensio W3 mm | ns T1 mm | g g |
|-------------|-----------------|-----------------|--------------------------|-----------------------|-----------|--|----------------|------------------------|----------------|--------|
| 20 01 125 | 014447 | 125 | | | | | 27.0 | 14.5 | 8.0 | 75 |
| 20 01 140 | 014454 | 140 | | | | | 28.0 | 15.5 | 9.5 | 107 |
| 20 01 160 | 015017 | 160 | | black atramentized | polished | plastic coated | 30.0 | 17.0 | 9.5 | 144 |
| 20 01 180 | 015666 | 180 | | | | | 35.0 | 19.0 | 10.0 | 188 |
| 20 01 200 | 015673 | 200 | | | | | 38.0 | 21.0 | 12.0 | 268 |
| 20 02 140 | 043386 | 140 | | black atramentized | polished | with multi-component grips | 28.0 | 15.5 | 9.5 | 137 |
| 20 02 160 | 035008 | 160 | | DIACK attattietitizeu | polistieu | with muiti-component grips | 30.0 | 17.0 | 9.5 | 172 |
| 20 05 140 | 042464 | 140 | | chrome plated | | with multi-component grips | 28.0 | 15.5 | 9.5 | 136 |
| 20 05 160 | 042457 | 160 | | cilionie piateu | | with muti-component grips | 30.0 | 17.0 | 9.5 | 176 |
| 20 06 160 | 033783 | 160 | ≙ 1000 V △ | chrome plated | | insulated with multi-component grips, VDE-tested | 30.0 | 17.0 | 9.5 | 176 |

Round Nose Pliers

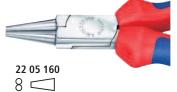
DIN ISO 5745

22 02 160

8

- for bending wire loops
- round, short jaws; finely ground
- Chrome vanadium electric steel, forged, oil-hardened

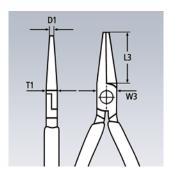












| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | L3 mm | Dimer W3 mm | nsions D1 mm | T1 mm | ∆ d g |
|-------------|-----------------|--------------|--------------------------------------|--------------------|----------|--|----------|-------------------|--------------------|----------|-------------|
| 22 01 125 | 014461 | 125 | | | | | 27.0 | 14.5 | 2.0 | 8.0 | 75 |
| 22 01 140 | 013013 | 140 | 0— | 11.1.4.2.2.1 | 15.1 | | 28.0 | 16.5 | 2.5 | 9.5 | 100 |
| 22 01 160 | 015024 | 160 | 8 | black atramentized | polished | plastic coated | 30.0 | 18.0 | 3.0 | 9.5 | 140 |
| 22 01 180 | 015819 | 180 | | | | | 35.0 | 21.0 | 3.5 | 10.5 | 177 |
| 22 02 140 | 043430 | 140 | 0— | 11.1.4. 8.1. | 11.1.1 | fol te e | 28.0 | 16.5 | 2.5 | 9.5 | 129 |
| 22 02 160 | 023173 | 160 | 8 | black atramentized | polished | with multi-component grips | 30.0 | 18.0 | 3.0 | 9.5 | 170 |
| 22 05 140 | 042891 | 140 | 0—1 | -1 | | | 28.0 | 16.5 | 2.5 | 9.5 | 127 |
| 22 05 160 | 042907 | 160 | 8 | chrome plated | | with multi-component grips | 30.0 | 18.0 | 3.0 | 9.5 | 169 |
| 22 06 160 | 033790 | 160 | ☆1000 V ◎♣ 8 | chrome plated | | insulated with multi-component grips, VDE-tested | 30.0 | 18.0 | 3.0 | 9.5 | 175 |
| 22 07 160 | 015901 | 160 | ≙ 1000 V △€ 8 ◯ | chrome plated | | with plastic dipped insulation, VDE-tested | 30.0 | 18.0 | 3.0 | 9.5 | 196 |

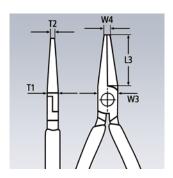
Flat Nose Pliers with cutting edges

(precision mechanics pliers)



- suitable for gripping and cutting work in fine mechanics
- flat, long jaws, tapering
- cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC

 High-grade special tool steel,
- forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | Head | Handles | Cutting ca Ø mm | apacities D Ø mm | T1 mm | Di L3 mm | mensio W3 mm | ns W4 mm | T2 mm | σg |
|-------------|-----------------|----------|----------|----------------|--------------------|------------------------|----------|----------------|--------------------|----------------|----------|----|
| 23 01 140 | 041290 | 140 | polished | plastic coated | 2.5 | 1.6 | 7.0 | 35.0 | 12.5 | 3.0 | 4.5 | 75 |

Snipe Nose Side Cutting Pliers

(Radio Pliers)



- suitable for finer gripping and cutting work
- pointed, half-round jaws
- knurled gripping surfaces
- with cutting edges for soft, medium-hard and hard wire
 cutting edges additionally induction hardened, cutting edge hardness approx. 61 HRC
- Vanadium electric steel; forged, oil-hardened



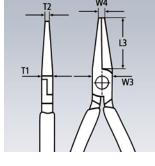


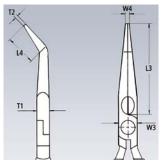










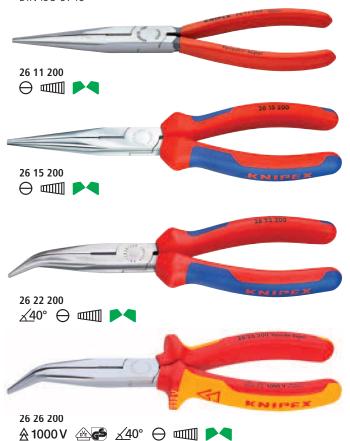


| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Cutting c Ø mm | apacities Ø mm | L3 mm | L4 mm | Dimer W3 mm | nsions T1 mm | W4 mm | T2 mm | ΔΔ g |
|-------------|-----------------|-----------------|---|-----------------------|----------|---|-----------------|-----------------|----------|----------|-------------------|--------------------|----------|----------|---------|
| 25 01 125 | 015932 | 125 | | | | | 2.2 | 1.6 | 27.0 | | 13.0 | 7.0 | 2.5 | 1.8 | 73 |
| 25 01 140 | 013082 | 140 | $\Theta \blacksquare \blacksquare$ | black | polished | plastic coated | 2.5 | 1.6 | 42.0 | | 15.0 | 8.0 | 2.5 | 2.0 | 89 |
| 25 01 160 | 013099 | 160 | | atramentized | | | 2.5 | 1.6 | 50.0 | | 16.5 | 9.0 | 3.0 | 2.5 | 113 |
| 25 02 140 | 023159 | 140 | | black | | with multi- | 2.5 | 1.6 | 42.0 | | 15.0 | 8.0 | 2.5 | 2.0 | 109 |
| 25 02 160 | 023166 | 160 | | atramentized | polished | component grips | 2.5 | 1.6 | 50.0 | | 16.5 | 9.0 | 3.0 | 2.5 | 144 |
| 25 03 125 | 043065 | 125 | $\Theta \blacksquare \blacksquare \blacksquare$ | shrome pleted | | plastic coated | 2.2 | 1.6 | 27.0 | | 13.0 | 7.0 | 2.5 | 1.8 | 72 |
| 25 03 160 | 014492 | 160 | | chrome plated | | plastic coated | 2.5 | 1.6 | 50.0 | | 16.5 | 9.0 | 3.0 | 2.5 | 116 |
| 25 05 140 | 035015 | 140 | | | | with multi- | 2.5 | 1.6 | 42.0 | | 15.0 | 8.0 | 2.5 | 2.0 | 111 |
| 25 05 160 | 022817 | 160 | | chrome plated | | component grips | 2.5 | 1.6 | 50.0 | | 16.5 | 9.0 | 3.0 | 2.5 | 144 |
| 25 06 160 | 033806 | 160 | ≙ 1000 V △€ | chrome plated | | insulated with multi-com- ponent grips, VDE-tested | 2.5 | 1.6 | 50.0 | | 16.5 | 9.0 | 3.0 | 2.5 | 146 |
| 25 21 160 | 015994 | 160 | <u>∠40°</u> ⊖ □□□ | black atramentized | polished | plastic coated | 2.5 | 1.6 | 50.0 | 23.0 | 16.5 | 9.0 | 3.0 | 2.5 | 112 |
| 25 25 160 | 016007 | 160 | ∠ 40° ⊖ □□□ | chrome plated | | with multi- component grips | 2.5 | 1.6 | 50.0 | 23.0 | 16.5 | 9.0 | 3.0 | 2.5 | 143 |
| 25 26 160 | 052111 | 160 | £ 1000 V ♠€ ∠40° ⊖ □□□□ | chrome plated | | insulated with multi-com- ponent grips, VDE-tested | 2.5 | 1.6 | 50.0 | 23.0 | 16.5 | 9.0 | 3.0 | 2.5 | 144 |

Snipe Nose Side Cutting Pliers

(Stork Beak Pliers)

DIN ISO 5745

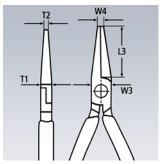


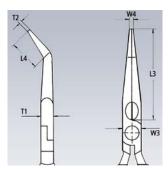
Elastic tips: dimensionally stable even when twisted

- distortion-tolerant, elastic precision tips
- half-round, long, pointed jaws
- with cutting edges (hardness approx. 61 HRC) for soft, medium-hard and hard wire
- Vanadium electric steel; forged, oil-hardened









| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Cutting c Ø mm | apacities Ø mm | L3 mm | L4 mm | Dimer T1 mm | nsions W3 mm | W4 mm | T2 mm | ΔΔ g |
|-------------|-----------------|-----------------|---|-----------------------|----------|--|-----------------|-----------------|----------|----------|-------------------|--------------------|----------|----------|---------|
| 26 11 200 | 022824 | 200 | $\Theta \blacksquare \triangleright \blacksquare$ | black atramentized | polished | plastic coated | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 170 |
| 26 12 200 | 023142 | 200 | $\Theta \blacksquare \blacksquare \blacksquare$ | black atramentized | polished | with multi-com- ponent grips | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 201 |
| 26 13 200 | 040590 | 200 | Θ | chrome plated | | plastic coated | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 169 |
| 26 15 200 | 035022 | 200 | $\Theta \blacksquare \triangleright \blacksquare$ | chrome plated | | with multi-com- ponent grips | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 198 |
| 26 16 200 | 022831 | 200 | ≙ 1000 V △ ← ⊖ | chrome plated | | insulated with multi-component grips, VDE-tested | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 206 |
| 26 17 200 | 016069 | 200 | ☆ 1000 V △← → | chrome plated | | with plastic dipped insulation, VDE-tested | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 212 |
| 26 21 200 | 022848 | 200 | <u>√40°</u> ⊖ ■ ■ | black atramentized | polished | plastic coated | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 171 |
| 26 22 200 | 023135 | 200 | ∠ 40° ⊖ □ □ | black atramentized | polished | with multi-com- ponent grips | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 197 |
| 26 23 200 | 016076 | 200 | ∠ 40° ⊖ □ | chrome plated | | plastic coated | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 171 |
| 26 25 200 | 035039 | 200 | <u>√40°</u> ⊖ ■ ▶◀ | chrome plated | | with multi-com- ponent grips | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 199 |
| 26 26 200 | 022855 | 200 | ½ 1000 V △€ ∠40° ⊖ □□□□ ▶◀ | chrome plated | | insulated with multi-component grips, VDE-tested | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 204 |
| 26 27 200 | 016090 | 200 | ½ 1000 V △€ ∠40° ⊖ □□□ ► | chrome plated | | with plastic dipped insulation, VDE-tested | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 220 |

Snipe Nose Pliers with centre cutter

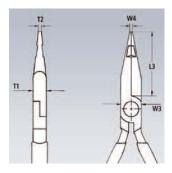
(Telephone Pliers)

DIN ISO 5743



- for gripping and separating of single wires in harnesses
- with centre cutter for soft wire
- half-round jaws
- knurled gripping surfaces
- Chrome vanadium electric steel, forged, oil-hardened





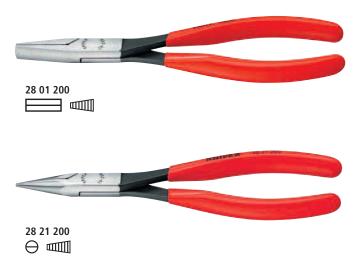


| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | L3 mm | D W3 mm | imensior T1 mm | ns W4 mm | T2 mm | ΔΔ g |
|-------------|-----------------|-----------------|---|----------|----------------|----------|---------------|----------------------|----------------|----------|---------|
| 27 01 160 | 016106 | 160 | $\Theta \blacksquare \blacksquare \blacksquare \blacksquare \blacksquare$ | polished | plastic coated | 47.0 | 16.5 | 9.5 | 3.0 | 2.0 | 120 |

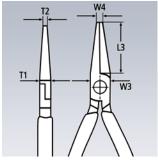
28

Assembly Pliers

DIN ISO 5743



- specially suitable for gripping and assembly work with a higher prehensile power
- knurled gripping surfaces
- High-grade special tool steel, forged, oil-hardened

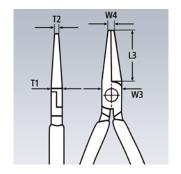


| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | L3 mm | W3 mm | imensior T1 mm | W4 mm | T2 mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|----------|--------------------|----------|----------------|----------|----------|----------------------|----------|----------|-----------------------|
| 28 01 200 | 044468 | 200 | | black atramentized | polished | plastic coated | 33.0 | 13.5 | 10.5 | 4.0 | 10.5 | 197 |
| 28 21 200 | 028246 | 200 | Θ | black atramentized | polished | plastic coated | 34.0 | 13.5 | 10.5 | 3.0 | 3.0 | 187 |

Telephone Pliers



- gripping surfaces cross-hatched, knurled
- Chrome vanadium electric steel, forged, oil-hardened



Style 2 extra slim, fine tips; also suitable for soldering work

| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | L3 mm | Dii W3 mm | mensio T1 mm | ons W4 mm | T2 mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|----------|-------|--------------------|----------|----------------------------|----------|-----------------|--------------------|-----------------|----------|-----------------------|
| 29 11 160 | 016175 | 160 | | 1 | black atramentized | polished | plastic coated | 55.0 | 14.0 | 8.0 | 2.5 | 8.5 | 103 |
| 29 21 160 | 043454 | 160 | Θ | 2 | black atramentized | polished | plastic coated | 54.0 | 14.0 | 9.0 | 2.0 | 2.0 | 112 |
| 29 25 160 | 043478 | 160 | Θ | 2 | chrome plated | | with multi-component grips | 54.0 | 14.0 | 9.0 | 2.0 | 2.0 | 139 |

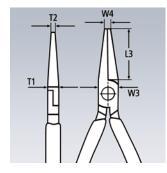


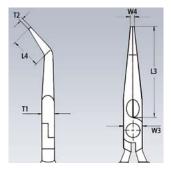


- precision pliers for very exact assembly, bending and adjusting work
 with extra long jaws: length of jaws 55.0 mm
 smooth ground gripping surfaces

- edges carefully deburred
- Chrome vanadium electric steel, forged, oil-hardened







| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | L3 mm | L4 mm | Dimer W3 mm | nsions T1 mm | W4 mm | T2 mm | Δ'Δ g |
|-------------|-----------------|-----------------|-----------------------|--------------------|----------|----------------------------|----------|----------|-------------------|--------------------|----------|----------|----------|
| 31 11 160 | 044475 | 160 | | black atramentized | polished | plastic coated | 55.0 | | 16.0 | 7.5 | 2.0 | 2.5 | 100 |
| 31 15 160 | 016465 | 160 | | chrome plated | | with multi-component grips | 55.0 | | 16.0 | 7.5 | 2.0 | 2.5 | 124 |
| 31 21 160 | 046790 | 160 | <u>√45°</u> ⊟ <u></u> | black atramentized | polished | plastic coated | 55.0 | 27.0 | 16.0 | 7.5 | 2.0 | 2.5 | 97 |
| 31 25 160 | 016489 | 160 | <u>∡45°</u> ⊟ □ | chrome plated | | with multi-component grips | 55.0 | 27.0 | 16.0 | 7.5 | 2.0 | 2.5 | 123 |

Long Nose Pliers

DIN ISO 5745



- heavy-duty and hard-wearing gripping pliers
- different jaw styles
- Chrome vanadium electric steel, forged, oil-hardened

Style

long, trapezoidal jaws; knurled gripping surfaces

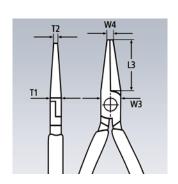
Style 2

long, half-round jaws; knurled gripping surfaces

Style 3

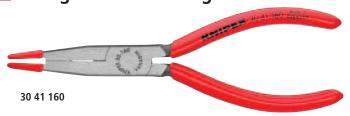
long, round jaws; smooth gripping surfaces



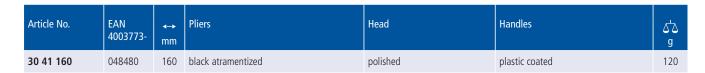


| | | | | | | | | | Di | mensio | ns | | |
|-------------|-----------------|--------------|--------------------------|-------|--------------------|----------|---|----------|----------|----------|----------|----------|--------|
| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | L3 mm | W3 mm | T1 mm | W4 mm | T2 mm | ∆ g |
| 30 11 140 | 033936 | 140 | | | | | | 42.0 | 15.0 | 8.0 | 2.5 | 4.0 | 86 |
| 30 11 160 | 023128 | 160 | | 1 | black atramentized | polished | plastic coated | 46.5 | 16.5 | 9.5 | 3.0 | 5.0 | 121 |
| 30 11 190 | 013051 | 190 | | | | | | 50.0 | 18.5 | 9.5 | 3.0 | 7.0 | 140 |
| 30 13 140 | 016298 | 140 | | 1 | chrome plated | | plastic coated | 42.0 | 15.0 | 8.0 | 2.5 | 4.0 | 87 |
| 30 13 160 | 043485 | 160 | | ' | chiome plateu | | plastic coated | 46.5 | 16.5 | 9.5 | 3.0 | 5.0 | 118 |
| 30 15 140 | 042914 | 140 | | | | | with multi-component | 42.0 | 15.0 | 8.0 | 2.5 | 4.0 | 106 |
| 30 15 160 | 035046 | 160 | | 1 | chrome plated | | grips | 46.5 | 16.5 | 9.5 | 3.0 | 5.0 | 149 |
| 30 15 190 | 001881 | 190 | | | | | 962 | 50.0 | 18.5 | 8.0 | 3.0 | 7.0 | 171 |
| 30 16 160 | 001904 | 160 | <u>A</u> 1000 V <u>A</u> | 1 | chrome plated | | insulated with multi- component grips, VDE-tested | 46.5 | 16.5 | 9.5 | 3.0 | 5.0 | 150 |
| 30 21 140 | 042433 | 140 | | | | | | 42.0 | 15.0 | 8.0 | 2.5 | 2.0 | 95 |
| 30 21 160 | 035053 | 160 | Θ | 2 | black atramentized | polished | plastic coated | 50.0 | 16.5 | 9.5 | 3.0 | 2.5 | 121 |
| 30 21 190 | 016366 | 190 | | | | | | 50.0 | 18.5 | 8.0 | 3.0 | 2.4 | 135 |
| 30 23 140 | 016373 | 140 | Θ | 2 | chrome plated | | plastic coated | 42.0 | 15.0 | 8.0 | 2.5 | 2.0 | 95 |
| 30 25 140 | 001980 | 140 | | | | | | 42.0 | 15.0 | 8.0 | 2.5 | 2.0 | 114 |
| 30 25 160 | 035060 | 160 | Θ | 2 | chrome plated | | with multi-component | 50.0 | 16.5 | 9.5 | 3.0 | 2.5 | 151 |
| 30 25 190 | 043515 | 190 | | | | | grips | 50.0 | 18.5 | 8.0 | 3.0 | 2.4 | 168 |
| 30 31 140 | 042426 | 140 | 8 | 3 | black atramentized | poliched | plastic coated | 37.5 | 15.0 | 8.0 | 4.0 | 2.0 | 82 |
| 30 31 160 | 035077 | 160 | 8 | 3 | DIACK atramentized | polished | plastic coated | 41.0 | 16.5 | 9.5 | 5.0 | 2.5 | 110 |
| 30 33 160 | 043539 | 160 | 8 | 3 | chrome plated | | plastic coated | 41.0 | 16.5 | 9.5 | 5.0 | 2.5 | 111 |
| 30 35 140 | 043102 | 140 | 0—7 | 2 | shroma platad | | with multi-component | 37.5 | 15.0 | 8.0 | 4.0 | 2.0 | 102 |
| 30 35 160 | 035084 | 160 | 8 | 3 | chrome plated | | grips | 41.0 | 16.5 | 9.5 | 5.0 | 2.5 | 138 |
| 30 36 160 | 002123 | 160 | ≙1000 V △€ | 3 | chrome plated | | insulated with multi- component grips, VDE-tested | 41.0 | 16.5 | 9.5 | 5.0 | 2.5 | 141 |

Halogen Bulb Exchange Pliers



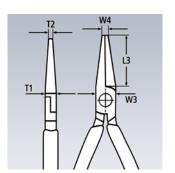
- for the installation of wedge base bulbs
- gripping surfaces plastic coated
- Chrome vanadium electric steel, forged, oil-hardened



Relay Adjusting Pliers



- for gripping components and wires of the smallest diameters and for bending contact and relay springs
- polished gripping surfaces
- edges carefully deburred
- Chrome vanadium electric steel, forged, oil-hardened



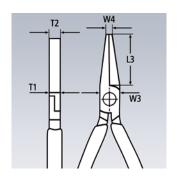


| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | L3 mm | Di W3 mm | mensio T1 mm | ns W4 mm | T2 mm | Δ ¹ Δ g |
|-------------|-----------------|-----------------|----------------------|--------------------|----------|----------------|----------|----------------|--------------------|----------------|----------|-----------------------|
| 32 11 135 | 035091 | 135 | | black atramentized | polished | plastic coated | 34.0 | 12.5 | 7.0 | 1.4 | 1.5 | 73 |
| 32 21 135 | 043553 | 135 | | black atramentized | polished | plastic coated | 34.0 | 12.5 | 7.0 | 1.4 | 3.5 | 74 |
| 32 23 135 | 042921 | 135 | | chrome plated | | plastic coated | 34.0 | 12.5 | 7.0 | 1.4 | 3.5 | 73 |
| 32 31 135 | 043560 | 135 | <u>∡4</u> 0° <u></u> | black atramentized | polished | plastic coated | 32.0 | 12.5 | 7.0 | 1.4 | 3.5 | 73 |

Duckbill Pliers



- duckbill shaped jaws 9 mm wide at the tip and tapering to 1.5 mm thickness
- smooth gripping surfaces
- Chrome vanadium electric steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | L3 mm | W3 mm | imensior T1 mm | ns W4 mm | T2 mm | Δ g |
|-------------|-----------------|-----------------|--------------------|----------|----------------|----------|----------|----------------------|--------------------|----------|--------|
| 33 01 160 | 016663 | 160 | black atramentized | polished | plastic coated | 55.0 | 15.0 | 7.5 | 3.0 | 9.0 | 103 |
| 33 03 160 | 016670 | 160 | chrome plated | | plastic coated | 55.0 | 15.0 | 7.5 | 3.0 | 9.0 | 103 |

Precision Electronics Gripping Pliers

DIN ISO 9655













• for gripping, holding and bending smoothly ground gripping surfaces, edges finely rounded approx. 20 % lighter than conventional electronics pliers

KNIPEX precision electronics pliers are made of high-quality ball bearing steel and processed with the highest degree of care. Each opening movement is gentle and even without backlash. Each work step proceeds reliably and precisely.

- bolted joint and carefully manufactured joint surfaces for even, low-friction movement throughout the entire opening range smooth-running double spring for a gentle and even opening
- ergonomically optimised multi-component handles

This makes work much easier for professionals.

• forged from chrome vanadium ball-bearing steel

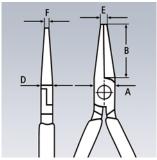
The subtle difference

Style 1 flat, wide jaws

Style 2 half-round jaws

Style 3 round, pointed jaws





| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | B mm | Di A mm | mensio D mm | ns E mm | F mm | ∆'∆ g |
|-------------|-----------------|-----------------|-------------------------|-------|-----------|----------|---------------------------------|---------|---------------|-------------------|---------------|---------|----------|
| 34 12 130 | 061458 | 135 | *==== | 1 | burnished | polished | with multi-com- ponent grips | 21.9 | 11.2 | 6.5 | 1.4 | 3.5 | 61 |
| 34 22 130 | 061472 | 135 | *OCIEMM | 2 | burnished | polished | with multi-com- ponent grips | 22.7 | 11.2 | 6.5 | 1.6 | 1.6 | 61 |
| 34 32 130 | 061496 | 135 | №8 □ ■■■M | 3 | burnished | polished | with multi-com- ponent grips | 23.7 | 11.2 | 6.5 | 2.0 | 1.0 | 59 |

Precision Electronics Gripping Pliers ESD

DIN ISO 9655







- electrostatic energy is discharged through the handles in a gradual and controlled manner
- which protects components endangered by electrostatic discharge
- in accordance with applicable standards, e.g. IEC TR 61 340-5, DIN EN 61 340-5, SP Method 2472
- for very precise assembly work, e.g. in electronics and fine mechanics
- for gripping, holding and bending
- electrically discharging handles dissipative
- smoothly ground gripping surfaces, edges finely rounded
- approx. 20 % lighter than conventional electronics pliers
- bolted joint and carefully manufactured joint surfaces for even, lowfriction movement throughout the entire opening range
- smooth-running double spring for a gentle and even opening
- ergonomically optimised multi-component handles
- forged from chrome vanadium ball-bearing steel



34 32 130 ESD





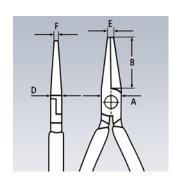
flat, wide jaws

Style 2

half-round jaws

Style 3

round, pointed jaws



Pliers Sets, see page 197

| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | B mm | Di A mm | mensio D mm | ns E mm | F mm | g g |
|---------------|-----------------|-----------------|------------------------------|-------|-----------|----------|----------------------------|---------|---------------|-------------------|---------------|---------|--------|
| 34 12 130 ESD | 061632 | 135 | | 1 | burnished | polished | with multi-component grips | 21.9 | 11.2 | 6.5 | 1.4 | 3.5 | 62 |
| 34 22 130 ESD | 061656 | 135 | ▲ *⊖□ 13 MM | 2 | burnished | polished | with multi-component grips | 22.7 | 11.2 | 6.5 | 1.6 | 1.6 | 65 |
| 34 32 130 ESD | 061670 | 135 | ▲ \$8 □5 | 3 | burnished | polished | with multi-component grips | 23.7 | 11.2 | 6.5 | 2.0 | 1.0 | 62 |

Electronics Pliers



- precision pliers for fine assembly work, e.g. in electronics and fine mechanics
- for gripping, holding and bending
- sturdy, zero backlash box joint
- smooth ground gripping surfaces
- edges carefully deburred
- low-friction double spring for gentle and even opening
 the polish or mirror polish (only finish 2) together with a fine film of oil offer effective rust protection – no circuit faults caused by peeling chrome from plated tools
- Special tool steel, forged, oil-hardened

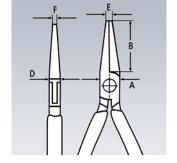






















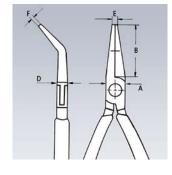




35 62 145 ***** ⊖ □ □ MM

35 72 145 ***8** ■ □ MM

35 82 145 **№** <u>∠45°</u> ⊖ □ □ MM



| | | | | | | | Di | mensio | ns | | |
|-------------|-----------------|-----------|-------------------------|-----------------|----------------------------|---------|---------|---------|---------|---------|-----|
| Article No. | EAN 4003773- | ←→ | | Head | Handles | B mm | A mm | D mm | E mm | F mm | ₫ |
| | | mm | | | | | | | | | g |
| 35 11 115 | 016694 | 115 | *==== | polished | plastic coated | 22.5 | 9.5 | 6.5 | 2.0 | 4.0 | 61 |
| 35 12 115 | 035107 | 115 | | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 4.0 | 72 |
| 35 21 115 | 016724 | 115 | ₩⊖□⊑M | polished | plastic coated | 22.5 | 9.5 | 6.5 | 2.0 | 1.5 | 59 |
| 35 22 115 | 035114 | 115 | ₩⊖□⊡M | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 1.5 | 73 |
| 35 31 115 | 016762 | 115 | №8 □□ M | polished | plastic coated | 22.5 | 9.5 | 6.5 | 2.0 | 1.0 | 58 |
| 35 32 115 | 035121 | 115 | №8 | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 1.0 | 72 |
| 35 42 115 | 040736 | 115 | \$ <u>45°</u> ⊖ □ □ M | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 1.5 | 74 |
| 35 52 145 | 039389 | 145 | | mirror polished | with multi-component grips | 40.0 | 12.0 | 7.5 | 1.5 | 4.0 | 102 |
| 35 62 145 | 039556 | 145 | ₩⊖□⊑M | mirror polished | with multi-component grips | 40.0 | 12.0 | 7.5 | 2.5 | 1.5 | 103 |
| 35 72 145 | 043607 | 145 | №8 □□M | mirror polished | with multi-component grips | 40.0 | 12.0 | 7.5 | 2.5 | 1.3 | 98 |
| 35 82 145 | 039396 | 145 | \$ <u>₹45°</u> ⊖ □ □ MM | mirror polished | with multi-component grips | 35.0 | 12.0 | 7.5 | 2.5 | 1.0 | 102 |

Electronics Pliers ESD



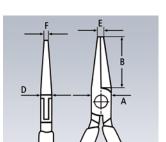




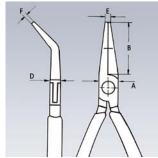


ESD pliers (electrostatic discharge)

- electrostatic energy is discharged through the handles in a gradual and controlled manner
- which protects components endangered by electrostatic discharge
- in accordance with applicable standards, e.g. IEC TR 61 340-5, DIN EN 61 340-5, SP Method 2472
- precision pliers for fine assembly work, e.g. in electronics and fine mechanics
- for gripping, holding and bending
- electrically discharging handles dissipative
- sturdy, zero backlash box joint
- smooth ground gripping surfacesedges carefully deburred
- low-friction double spring for gentle and even opening
- the mirror polish together with a fine film of oil offer effective rust protection — no circuit faults caused by peeling chrome from plated tools
- with two-colour dual component handles, black/grey
- Special tool steel, forged, oil-hardened







| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | B mm | Dii A mm | mensic D mm | ns E mm | F mm | ∆¹∆ g |
|---------------|-----------------|--------------|---------------------------|-----------------|----------------------------|---------|----------------|-------------------|---------------|---------|----------|
| 35 12 115 ESD | 024835 | 115 | △ *■□□ M | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 4.0 | 74 |
| 35 22 115 ESD | 024842 | 115 | △ *⊖□□ MM | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 1.5 | 74 |
| 35 32 115 ESD | 024859 | 115 | ▲ \$8 □□ M | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 1.0 | 70 |
| 35 42 115 ESD | 024866 | 115 | ▲ ¾ ∠ 45° ⊖ □ □ MM | mirror polished | with multi-component grips | 22.5 | 9.5 | 6.5 | 2.0 | 1.5 | 74 |

Electronics Mounting Pliers

DIN ISO 5743





36 12 130 to bend wire in shape for the distance to the board

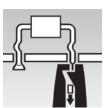




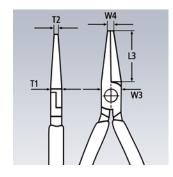
36 22 125 to bend and cut wire at 1.6 mm length below the board

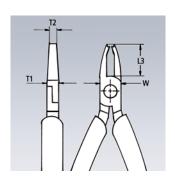
- precision pliers for very fine assembly and repair work in electronics
- for bending and cutting off wire ends on components
- sturdy, zero backlash box joint
- smooth ground gripping surfaces
- edges carefully deburred
- low-friction double spring for gentle and even opening
- the mirror polish together with a fine film of oil offer effective rust protection – no circuit faults caused by peeling chrome from plated tools
- High-grade special tool steel, forged, oil-hardened





36 32 125 to crunch and cut wire at 1.6 mm length below the board





| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Cutting capacities Ø mm | L3 mm | Di W mm | mensio T1 mm | ns W1 mm | T2 mm | ∆ d g |
|-------------|-----------------|-----------------|-----------------------|-----------------|----------------------------|--------------------------|----------|---------------|--------------------|----------------|----------|-------------|
| 36 12 130 | 016861 | 130 | ₩ ⊑ / M | mirror polished | with multi-component grips | | 23.0 | 12.0 | 9.5 | 5.5 | 6.0 | 94 |
| 36 22 125 | 046967 | 125 | *⊑™ | mirror polished | with multi-component grips | 1.2 | 18.0 | 11.5 | 7.5 | 7.5 | 2.6 | 94 |
| 36 32 125 | 016885 | 125 | * ⊆MM | mirror polished | with multi-component grips | 1.0 | 18.0 | 11.5 | 7.5 | 7.5 | 4.0 | 108 |

Gripping Pliers for precision mechanics

DIN ISO 9655





- precision pliers for fine assembly work, e.g. in electronics and fine mechanics
- for gripping, holding, bending and adjustingtips precision ground
- smooth gripping surfaces
- edges carefully deburred
- lap joint
- Chrome vanadium electric steel, forged, oil-hardened

Style 1 flat, wide jaws

Style 2

flat, concave and pointed jaws

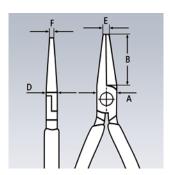
Style 3 half-round jaws

Style 4

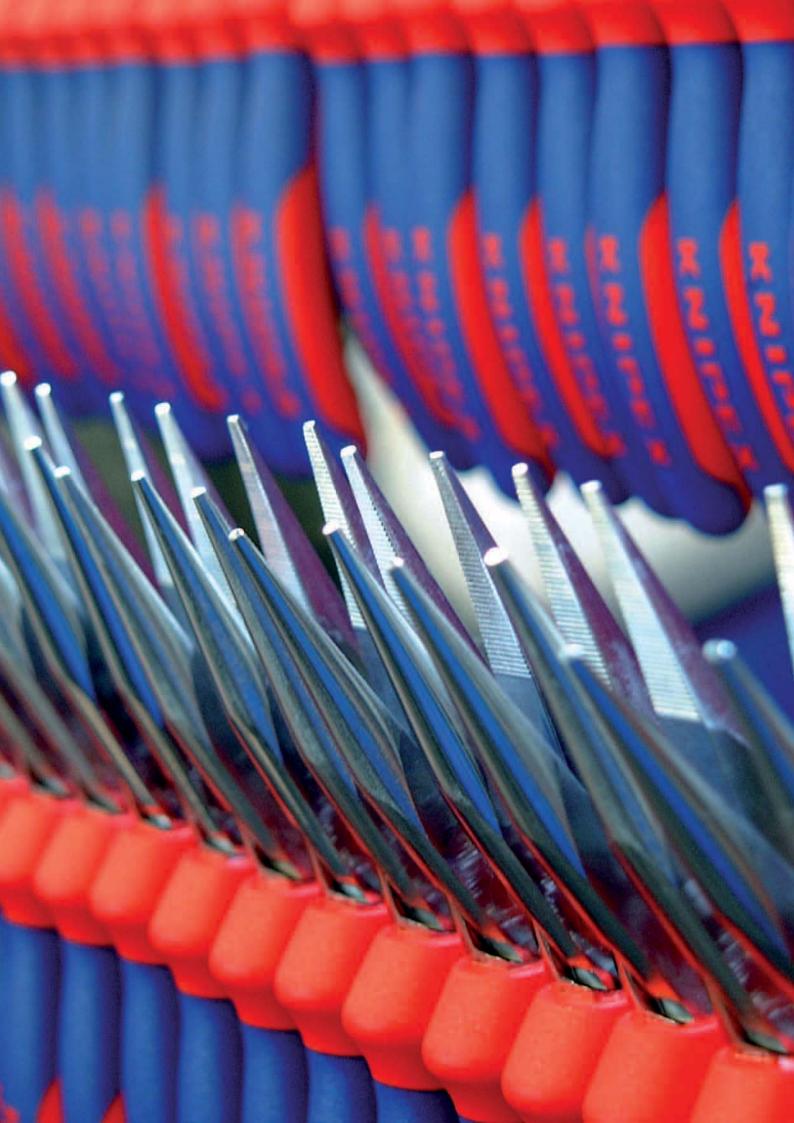
round, pointed jaws to bend wire loops







| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | B mm | A mm | imensior D mm | is E mm | F mm | ∆ d g |
|-------------|-----------------|--------------|----|-------|--------------------|----------|----------------|---------|---------|---------------------|---------------|---------|-------------|
| 37 11 125 | 014287 | 125 | | 1 | black atramentized | polished | plastic coated | 27.0 | 12.5 | 7.0 | 2.0 | 5.5 | 76 |
| 37 13 125 | 043638 | 125 | | 1 | chrome plated | | plastic coated | 27.0 | 12.5 | 7.0 | 2.0 | 5.5 | 71 |
| 37 21 125 | 035138 | 125 | | 2 | black atramentized | polished | plastic coated | 27.0 | 12.5 | 7.0 | 2.0 | 2.0 | 74 |
| 37 23 125 | 043645 | 125 | | 2 | chrome plated | | plastic coated | 27.0 | 12.5 | 7.0 | 2.0 | 2.0 | 72 |
| 37 31 125 | 035145 | 125 | Θ□ | 3 | black atramentized | polished | plastic coated | 27.0 | 12.5 | 7.0 | 2.0 | 1.6 | 74 |
| 37 33 125 | 016960 | 125 | 0 | 3 | chrome plated | | plastic coated | 27.0 | 12.0 | 7.0 | 2.0 | 1.6 | 78 |
| 37 41 125 | 035152 | 125 | 8 | 4 | black atramentized | polished | plastic coated | 27.0 | 14.5 | 8.0 | 2.0 | 1.0 | 76 |
| 37 43 125 | 043652 | 125 | 8 | 4 | chrome plated | | plastic coated | 27.0 | 14.5 | 8.0 | 2.0 | 1.0 | 76 |



Mechanics' Pliers



- high bending strength of the pliers jaws/tipsgripping surfaces cross-hatched, knurled
- Vanadium electric steel; forged, oil-hardened













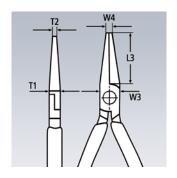


∠70° ⊖ **∞**



70° angled, half-round jaws, suitable for pulling split pins; for gripping at points that are difficult to access.







38 91 200 <u>√</u>45° ⊖ ∞

| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | L3 mm | Di W3 mm | mensio T1 mm | ns W4 mm | T2 mm | Δ̈́Δ |
|-------------|-----------------|-----------------|------------------|-------|--------------------|----------|----------------------------|----------|----------------|------------------------|--------------------|----------|------|
| 38 11 200 | 035169 | 200 | ⊖⋘ | 1 | black atramentized | polished | plastic coated | 73.0 | 17.5 | 9.5 | 3.0 | 2.5 | 179 |
| 38 15 200 | 039594 | 200 | Θ | 1 | chrome plated | | with multi-component grips | 73.0 | 17.5 | 9.5 | 3.0 | 2.5 | 209 |
| 38 21 200 | 035176 | 200 | <u> </u> | 2 | black atramentized | polished | plastic coated | 73.0 | 17.5 | 9.5 | 3.0 | 2.5 | 175 |
| 38 25 200 | 043669 | 200 | <u>∡40°</u> ⊖ ∞∞ | 2 | chrome plated | | with multi-component grips | 73.0 | 17.5 | 9.5 | 3.0 | 2.5 | 209 |
| 38 31 200 | 040712 | 200 | Θ | 3 | black atramentized | polished | plastic coated | 73.0 | 17.5 | 9.5 | 3.0 | 2.5 | 176 |
| 38 35 200 | 017134 | 200 | Θ | 3 | chrome plated | | with multi-component grips | 73.0 | 17.5 | 9.5 | 3.0 | 2.5 | 205 |
| 38 41 190 | 017141 | 190 | | 4 | black atramentized | polished | plastic coated | 50.0 | 18.0 | 8.0 | 2.0 | 8.0 | 139 |
| 38 45 190 | 043676 | 190 | | 4 | chrome plated | | with multi-component grips | 50.0 | 18.0 | 8.0 | 2.0 | 8.0 | 171 |
| 38 71 200 | 017202 | 200 | <u>√</u> 70° ⊖ ∞ | 7 | black atramentized | polished | plastic coated | 73.0 | 17.5 | 9.5 | 3.0 | 2.0 | 174 |
| 38 91 200 | 017219 | 200 | <u> </u> | 9 | black atramentized | polished | plastic coated | 73.0 | 17.5 | 9.5 | | 2.5 | 177 |
| 38 95 200 | 017233 | 200 | <u>√4</u> 5° ⊠ | 9 | chrome plated | | with multi-component grips | 73.0 | 17.5 | 9.5 | | 2.5 | 207 |

Universal Grip Pliers



- hold round, profile and flat material securely
- heavy duty model
- with adjustment screw and release lever
- one-hand operation
- high clamping pressure due to toggle lever action
- Pliers body: rolled steel, high-strength
- Gripping jaws: chrome vanadium electric steel, forged

| Article No. | EAN 4003773- | ←→ mm | | OJ mm | □⊒ mm | | Δ'∆ g |
|-------------|-----------------|-----------------|----|----------|----------|----|----------|
| 40 04 180 | 022190 | 180 | | 35 | 25 | 32 | 310 |
| 40 04 250 | 002710 | 250 | шШ | 35 | 30 | 32 | 521 |

41

Grip Pliers

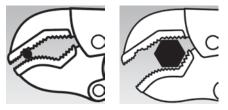


- hold round, profile and flat material securely
- heavy duty model
- with adjustment screw and release lever
- one-hand operation
- high clamping pressure due to toggle lever action
- Pliers body: rolled steel, high-strength
- Gripping jaws: chrome vanadium electric steel, forged















41 34 165 Style 3
Long-Nose Grip Pliers, narrow, long jaws

| Article No. | EAN 4003773- | ←→ mm | Style | Pliers | | □] mm | ⊜ <u></u> mm | ΔΔ g |
|-------------|-----------------|-----------------|-------|---------------|----|----------|-----------------|---------|
| 41 04 180 | 002741 | 180 | | | 30 | 20 | 30 | 363 |
| 41 04 250 | 002758 | 250 | 0 | nickel plated | 40 | 20 | 30 | 517 |
| 41 04 300 | 022183 | 300 | | | 65 | 30 | 34 | 923 |
| 41 14 250 | 023470 | 250 | 1 | nickel plated | 36 | 36 | 36 | 557 |
| 41 24 225 | 023487 | 225 | 2 | nickel plated | 25 | 16 | 30 | 504 |
| 41 34 165 | 047858 | 165 | 3 | nickel plated | 20 | 10 | 24 | 189 |

Welding Grip Pliers



- for gripping, clamping and holding of diverse profiles
- heavy duty modelwith adjustment screw and release lever
- one-hand operation
- high clamping pressure due to toggle lever action
- Pliers body: rolled steel, high-strength

42 14 280

heat resistant malleable cast iron jaws; section or flat material items lying side by side are held in place during welding; also for section material with vertical webs up to 25 mm height



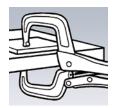




42 24 280

heat resistant malleable cast iron jaws; round or tubular material items lying centrally side by side are held securely during welding





42 34 280

gripping jaws of chrome vanadium steel, drop forged; clamps cumbersome workpieces and sections with high webs up to 40 mm

| Article No. | EAN 4003773- | ←→ mm | Pliers | | mm | ∆ g |
|-------------|-----------------|----------|---------------|-------|----|--------|
| 42 14 280 | 022206 | 280 | nickel plated | 30-65 | 50 | 917 |
| 42 24 280 | 022213 | 280 | nickel plated | 10-70 | | 850 |
| 42 34 280 | 022220 | 280 | nickel plated | | 90 | 692 |

Circlip Pliers

to assemble internal circlips into bores



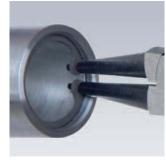








- for fitting circlips into bores, range of application from 8 - 140 mm dia.
- solid style, forgednon-slip, solid tips
- Pliers body and tips: chrome vanadium steel, forged, oil-hardened



Style 1 DIN 5256 C, straight tips

Style 2 DIN 5254 B; 90° angled tips

Style 3 45° angled tips

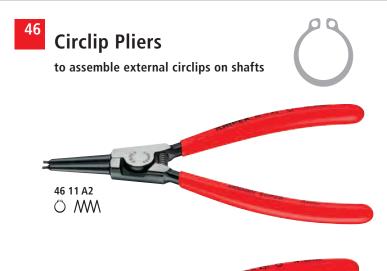




Pliers Sets, see page 193

| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | Size of bore Ø mm | Δ̈́Δ |
|-------------|-----------------|--------------|-----------------------|-------|--------------------|----------|-----------------|----------------------|------|
| 44 11 J0 | 040286 | 140 | | | | | | 8 - 13 | 88 |
| 44 11 J1 | 022862 | 140 | | | | | | 12 - 25 | 88 |
| 44 11 J2 | 022879 | 180 | O | 1 | black atramentized | polished | plastic coated | 19 - 60 | 135 |
| 44 11 J3 | 033943 | 225 | | | | | Ċ | 40 - 100 | 196 |
| 44 11 J4 | 042549 | 320 | | | | | | 85 - 140 | 469 |
| 44 13 J0 | 048176 | 140 | | | | | | 8 - 13 | 89 |
| 44 13 J1 | 042938 | 140 | | | | | | 12 - 25 | 88 |
| 44 13 J2 | 042945 | 180 | O | 1 | chrome plated | | plastic coated | 19 - 60 | 138 |
| 44 13 J3 | 042952 | 225 | | | | | | 40 - 100 | 194 |
| 44 13 J4 | 017301 | 320 | | | | | | 85 - 140 | 463 |
| 44 21 J01 | 040132 | 130 | | | | | | 8 - 13 | 88 |
| 44 21 J11 | 022886 | 130 | | | | | | 12 - 25 | 88 |
| 44 21 J21 | 022893 | 170 | ⊜ <u>√9</u> 0° | 2 | black atramentized | polished | plastic coated | 19 - 60 | 139 |
| 44 21 J31 | 033769 | 215 | ⊜ <u>√</u> 90° | | | | | 40 - 100 | 196 |
| 44 21 J41 | 043683 | 300 | | | | | | 85 - 140 | 462 |
| 44 23 J01 | 017325 | 140 | | | | | | 8 - 13 | 87 |
| 44 23 J11 | 042969 | 130 | ⊖ <u>√</u> 90° | 2 | shrama platad | | plactic control | 12 - 25 | 89 |
| 44 23 J21 | 042976 | 170 | ○ <u>× 3</u> 0° | 2 | chrome plated | | plastic coated | 19 - 60 | 138 |
| 44 23 J31 | 042983 | 215 | | | | | | 40 - 100 | 200 |
| 44 31 J02 | 066941 | 140 | | | | | | 8 - 13 | 90 |
| 44 31 J12 | 066958 | 140 | | | | | | 12 - 25 | 90 |
| 44 31 J22 | 066965 | 180 | ⊘ <u>√</u> 45° | 3 | black atramentized | polished | plastic coated | 19 - 60 | 140 |
| 44 31 J32 | 066972 | 225 | | | | | | 40 - 100 | 195 |
| 44 31 J42 | 066989 | 310 | | | | | | 85 - 140 | 465 |

46 21 A21 Ů <u>√</u>90° MM



- for fitting circlips on shafts, range of application from 3 - 140 mm dia.
- solid style, forgednon-slip, solid tips
- Pliers body and tips: chrome vanadium steel, forged, oilhardened



Style 1 DIN 5254 A; straight tips

Style 2 DIN 5254 B; 90° angled tips

Style 3 45° angled tips





Pliers Sets, see page 193



| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | Size of shaft Ø mm | ΔΔ g |
|-------------|-----------------|--------------|-------------------|-------|--------------------|----------|----------------|-----------------------|---------|
| 46 11 A0 | 033950 | 140 | | | | | | 3 - 10 | 85 |
| 46 11 A1 | 022909 | 140 | | | | | | 10 - 25 | 86 |
| 46 11 A2 | 022916 | 180 | OWW | 1 | black atramentized | polished | plastic coated | 19 - 60 | 134 |
| 46 11 A3 | 033974 | 210 | | | | | | 40 - 100 | 220 |
| 46 11 A4 | 042532 | 320 | | | | | | 85 - 140 | 505 |
| 46 13 A0 | 017417 | 140 | | | | | | 3 - 10 | 85 |
| 46 13 A1 | 042990 | 140 | 25 4444 | | | | 1.0 | 10 - 25 | 82 |
| 46 13 A2 | 043003 | 180 | O/WW | 1 | chrome plated | | plastic coated | 19 - 60 | 133 |
| 46 13 A3 | 043010 | 210 | | | | | | 40 - 100 | 211 |
| 46 21 A01 | 033967 | 125 | | | | | | 3 - 10 | 85 |
| 46 21 A11 | 023005 | 125 | | | | | | 10 - 25 | 85 |
| 46 21 A21 | 022923 | 170 | ○ ★90° WW | 2 | black atramentized | polished | plastic coated | 19 - 60 | 132 |
| 46 21 A31 | 033981 | 200 | | | | | | 40 - 100 | 219 |
| 46 21 A41 | 039365 | 300 | | | | | | 85 - 140 | 510 |
| 46 23 A01 | 017509 | 125 | | | | | | 3 - 10 | 84 |
| 46 23 A11 | 043027 | 125 | 65 (00° AAAA | 2 | -1 | | | 10 - 25 | 84 |
| 46 23 A21 | 043034 | 170 | O \$ 30° /VVV | 2 | chrome plated | | plastic coated | 19 - 60 | 132 |
| 46 23 A31 | 043041 | 200 | | | | | | 40 - 100 | 221 |
| 46 31 A02 | 066996 | 130 | | | | | | 3 - 10 | 83 |
| 46 31 A12 | 067009 | 130 | | | | | | 10 - 25 | 85 |
| 46 31 A22 | 067016 | 185 | © <u>∡4</u> 5° MM | 3 | black atramentized | polished | plastic coated | 19 - 60 | 133 |
| 46 31 A32 | 067023 | 210 | | | | | | 40 - 100 | 213 |
| 46 31 A42 | 067030 | 310 | | | | | | 85 - 140 | 511 |



- for assembling circlips into bores within the range of Ø 122 - 400 mm
- with locking device, can be released
- with replaceable tips made of tempered steel
- black powder coated
- Pliers body: rolled steel, high-strength
- Tips: special tool steel, oil-hardened

Style 1

DIN 5256 C, straight tips

Style 2

DIN 5254 B; 90° angled tips

| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Size of bore Ø mm | ΔΔ g |
|-------------|-----------------|-----------------|-------------|-------|---------------------|----------------------|---------|
| 44 10 J5 | 024910 | 570 | om | 1 | black powder-coated | 122 - 300 | 1738 |
| 44 10 J6 | 024927 | 580 | | ı | black powder-coated | 252 - 400 | 1755 |
| 44 20 J51 | 024958 | 590 | () 1/90° ₽€ | 2 | black powder-coated | 122 - 300 | 1803 |
| 44 20 J61 | 024965 | 600 | O APO E | Z | black powder-coated | 252 - 400 | 1723 |

| 44 19 J5 | 024934 | 1 pair of spare tips for 44 10 J5 |
|-----------|--------|------------------------------------|
| 44 19 J6 | 024941 | 1 pair of spare tips for 44 10 J6 |
| 44 29 J51 | 024972 | 1 pair of spare tips for 44 20 J51 |
| 44 29 J61 | 024989 | 1 pair of spare tips for 44 20 J61 |

45

Special Retaining Ring Pliers

for retaining rings on shafts DIN ISO 5743



- for fitting horseshoe-shaped spring retaining rings and circlips without grip holes
- for shaft retaining devices
- with opening spring
- Chrome vanadium electric steel, forged, oil-hardened









45 10 170

45 21 200

45 21 200

45 10 170

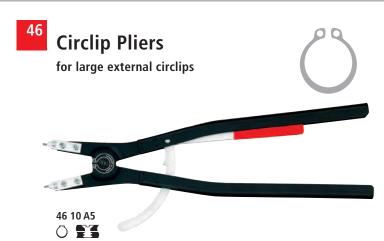
for retaining rings with a minimum ring split gap of 3.6 mm

45 21 200

anlged jaws with centering hole; for snap rings larger than 12.0 mm dia., e.g. for securing cardan shafts in a motor vehicle; minimum ring split gap of the rings $2.2\ \text{mm}$



| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Δ ['] Δ g |
|-------------|-----------------|-----------------|---------------|-----------|----------------|-----------------------|
| 45 10 170 | 017370 | 170 | 00 ∞ ₩ | burnished | | 156 |
| 45 21 200 | 031208 | 200 | O ○ ₹30° WW | burnished | plastic coated | 186 |



- for assembling circlips on shafts within the range of \varnothing 122 400 mm
- with locking device, can be released
- with replaceable tips made of tempered steel
- black powder coated
- Pliers body: rolled steel, high-strength
- Tips: special tool steel, oil-hardened

Style 1

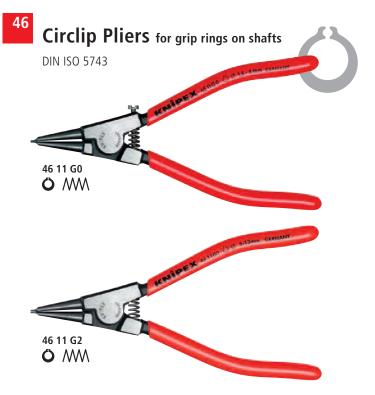
DIN 5254 A; straight tips

Style 2

DIN 5254 B; 90° angled tips

| AN 003773- | ←→ mm | | Style | Pliers | Size of shaft Ø mm | Δ̈́Δ g |
|---------------|-------------------------|---|--------------------------------------|--|---|--|
| 24996 | 560 | ○ 1 3 | 1 | bladi - siida - satad | 122 - 300 | 1773 |
| 25009 | 570 | | I | black powder-coated | 252 - 400 | 1795 |
| 25023 | 570 | | 2 | black powder-coated | 122 - 300 | 1832 |
| 25030 | 580 | | 2 | | 252 - 400 | 1826 |
| 12 | 24996 25009 25023 | 003773- mm 24996 560 25009 570 25023 570 | 003773- mm 24996 560 25009 570 | 003773- mm 24996 560 25009 570 1 1 25023 570 | 24996 560 25009 570 1 black powder-coated 25023 570 | 003773- mm mm Ø mm 24996 560 560 122 - 300 25009 570 25023 570 25023 570 |

| 46 19 A5 | 024316 | 1 pair of spare tips for 46 10 A5 |
|-----------|--------|------------------------------------|
| 46 19 A6 | 025016 | 1 pair of spare tips for 46 10 A6 |
| 46 29 A51 | 025047 | 1 pair of spare tips for 46 20 A51 |
| 46 29 A61 | 025054 | 1 pair of spare tips for 46 20 A61 |



- for fitting grip rings on shafts from 1.5 30 mm dia.
- with opening spring
- solid style, forged
- non-slip, solid tips
- Pliers body and tips: chrome vanadium steel, forged, oil-hardened

46 11 G0

for rings of 1.5 - 4.0 mm dia., with adjustable stop screw to prevent overstretching

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Size of shaft Ø mm | ∆ d g |
|-------------|-----------------|--------------|-----|--------------------|----------|----------------|-----------------------|-------------|
| 46 11 G0 | 047896 | 140 | OWW | black atramentized | polished | plastic coated | 1.5 - 4.0 | 87 |
| 46 11 G1 | 031062 | 140 | | black atramentized | | | 4.0 - 7.0 | 85 |
| 46 11 G2 | 031079 | 140 | A | | 12.1 | plastic coated | 5.0 - 13.0 | 85 |
| 46 11 G3 | 031086 | 140 | OWW | | polished | | 14.0 - 18.0 | 86 |
| 46 11 G4 | 031093 | 180 | | | | | 20.0 - 30.0 | 134 |

Precision Circlip Pliers

to assemble internal circlips into bores





Tiptop quality

Easy and reliable assembly: form-fitting inserted and pressed-in tips made of high-density spring steel offer a high level added resilience against excessive stress and strain, e.g. when removing stuck rings. The large supporting surfaces and the position of the tips make it more difficult for the rings to bounce off.

With inserted tips for reliable work

- heavy duty in continuous operation: up to 10 times longer service life compared to turned tips
- joint with screw: precise, zero backlash operation of pliers
- non-slip plastic coating on the handles
- Pliers body: chrome vanadium electric steel, forged, oil-hardened
- Inserted tips: spring steel wire, drawn

Style 1 DIN 5256 C, straight tips

Style 2

DIN 5256 D; 90° angled tips











Precision and durability

High-density spring steel with a score-free surface is used for the tips. This increases the tips' resistance to dynamic and static strain. The tips are 30 % more stable than conventional pliers when subjected to one-off overloading while still allowing good accessibility during assembly. Subjected to dynamic strain, the tips' resistance capacity is up to 10 times

The tips on the precision circlip pliers are non-detachable!



Sturdy, inserted tips: made from highdensity spring steel



Tight fit through compression

| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Handles | Size of bore Ø mm | Tips Ø mm | ΔΔ g |
|-------------|-----------------|-----------------|--------------------------|-------|-------------------|-------------------------------|----------------------|--------------|---------|
| 48 11 J0 | 048510 | 140 | | | | | 8 - 13 | 0.90 | 105 |
| 48 11 J1 | 048527 | 140 | | | | | 12 - 25 | 1.25 | 105 |
| 48 11 J2 | 048534 | 180 | om | 1 | grey atramentized | with non-slip plastic coating | 19 - 60 | 1.80 | 175 |
| 48 11 J3 | 048541 | 225 | | | | | 40 - 100 | 2.25 | 266 |
| 48 11 J4 | 048558 | 320 | | | | | 85 - 140 | 3.20 | 580 |
| 48 21 J01 | 048619 | 130 | | | | | 8 - 13 | 0.90 | 105 |
| 48 21 J11 | 048633 | 130 | | | | | 12 - 25 | 1.25 | 105 |
| 48 21 J21 | 048640 | 165 | O ₹ 90° €₹ | 2 | grey atramentized | with non-slip plastic coating | 19 - 60 | 1.80 | 175 |
| 48 21 J31 | 048657 | 210 | | | | | 40 - 100 | 2.25 | 265 |
| 48 21 J41 | 048664 | 305 | | | | | 85 - 140 | 3.20 | 576 |

Precision Circlip Pliers

to assemble external circlips on shafts



With inserted tips for reliable work

- heavy duty in continuous operation: up to 10 times longer service life compared to turned tips
- large contact faces on the tips: no distortion of circlips, easy fitting
- joint with screw: precise, zero backlash operation of pliers
- internal opening spring, protected and captive
- non-slip plastic coating on the handles
- Pliers body: chrome vanadium electric steel, forged, oil-hardened
- Inserted tips: spring steel wire, drawn

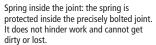
49 31 A0 / Style 3

with additional opening limiter (infinitely adjustable opening width); avoids overstretching of small external circlips; DIN 5254 A; straight tips

49 41 A01 / Style 4

with additional opening limiter (infinitely adjustable opening width); avoids overstretching of small external circlips; DIN 5254 B; 90° angled tips



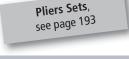




Style 3 / style 4: with adjustable opening restriction



Bolted joint: high precision and smooth action





KNIPEX Precision Circlip Pliers: fit circlips without distortion; easy and quick assembling



Circlips are held reliably: large contact areas and the position of the tips make it difficult for the circlip to bounce off



Conventional Circlip Pliers: distortion of the circlip when widening the circlip

| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Handles | Size of shaft Ø mm | Tips Ø mm | ΔΔ g |
|-------------|-----------------|-----------------|-------------------------------|-------|-------------------|-------------------------------|-----------------------|--------------|---------|
| 49 11 A0 | 048718 | 140 | | | | | 3 - 10 | 0.90 | 101 |
| 49 11 A1 | 048725 | 140 | | | | 91 1 2 | 10 - 25 | 1.25 | 100 |
| 49 11 A2 | 048732 | 180 | | 1 | grey atramentized | with non-slip plastic coating | 19 - 60 | 1.80 | 170 |
| 49 11 A3 | 048749 | 225 | | | | Coating | 40 - 100 | 2.25 | 270 |
| 49 11 A4 | 048756 | 320 | | | | | 85 - 140 | 3.20 | 599 |
| 49 21 A01 | 048817 | 130 | Ů ∕ 90° € € M M | 2 | | | 3 - 10 | 0.90 | 100 |
| 49 21 A11 | 048824 | 130 | | | | | 10 - 25 | 1.25 | 102 |
| 49 21 A21 | 048831 | 165 | | | grey atramentized | with non-slip plastic coating | 19 - 60 | 1.80 | 169 |
| 49 21 A31 | 048848 | 210 | | | | | 40 - 100 | 2.25 | 272 |
| 49 21 A41 | 048855 | 305 | | | | | 85 - 140 | 3.20 | 601 |
| 49 31 A0 | 061748 | 140 | ° P3 MM | 3 | grey atramentized | with non-slip plastic coating | 3 - 10 | 0.90 | 103 |
| 49 41 A01 | 061755 | 130 | ○ ₹30° £ 3 WW | 4 | grey atramentized | with non-slip plastic coating | 3 - 10 | 0.90 | 102 |

Carpenters' Pincers

DIN ISO 9243



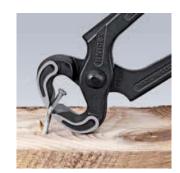
extreme wear resistance and well balancedcutting edges additionally

specially favoured by craftsmen

for their precise workmanship

for heaviest duty

- cutting edges additionally hardened; cutting edge hardness approx. 60 HRC
- Special tool steel, forged, oil-hardened





50 01 225



| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Cutting capacities Ø mm | Δ'Δ g |
|-------------|-----------------|--------------|--|--------------------|----------|----------------|--------------------------|----------|
| 50 00 130 | 014423 | 130 | | | | | 1,6 | 135 |
| 50 00 160 | 013129 | 160 | | | | | 1,8 | 215 |
| 50 00 180 | 013136 | 180 | | | | | 2,0 | 303 |
| 50 00 210 | 013143 | 210 | | black atramentized | polished | | 2,2 | 398 |
| 50 00 225 | 013150 | 225 | | | | | 2,2 | 427 |
| 50 00 250 | 013167 | 250 | | | | | 2,2 | 563 |
| 50 00 300 | 015710 | 300 | | | | | 2,4 | 862 |
| 50 01 130 | 015789 | 130 | | | | | 1,6 | 141 |
| 50 01 160 | 015802 | 160 | | | | | 1,8 | 223 |
| 50 01 180 | 016021 | 180 | | | | | 2,0 | 316 |
| 50 01 210 | 016052 | 210 | | black atramentized | polished | plastic coated | 2,2 | 411 |
| 50 01 225 | 016083 | 225 | | | | | 2,2 | 437 |
| 50 01 250 | 016267 | 250 | | | | | 2,2 | 583 |
| 50 01 300 | 016915 | 300 | | | | | 2,4 | 903 |

51

Hammerhead Style Carpenters' Pincers

DIN ISO 9243



- with striking face for driving in nails
- cutting edges additionally hardened; cutting edge hardness approx. 60 HRC
- Special tool steel, forged, oil-hardened



Multi-functional: driving in and pulling nails

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | ∆†∆ g |
|-------------|-----------------|----------|--------------------|----------|----------------|----------|
| 51 01 210 | 023104 | 210 | black atramentized | polished | plastic coated | 413 |

Farriers' Pincers

(Tear-off Pliers for vehicle bodywork)

DIN ISO 5743





- also suitable for dismantling work in vehicle body workshops
 - cutting edges additionally hardened; cutting edge hardness approx. 59 HRC

• the ideal pliers for the farrier • with small head and anvil for

redirecting horseshoe-nails

Special tool steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Head width mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|--------------------|----------|------------------|-----------------------|
| 55 00 300 | 014072 | 300 | black atramentized | polished | 20,0 | 786 |



Unsoling Pincer for horseshoes

DIN ISO 5743



| for | the | ta | rrie | 1 |
|-----|-----|----|------|---|

- also suitable for dismantling work in vehicle body workshops
- also for dismantling work on timber and metal
- cutting edges additionally hardened; cutting edge hardness approx. 59 HRC
- Special tool steel, forged, oil-hardened

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Head width mm | ΔΔ g |
|-------------|-----------------|-----------------|--------------------|----------|------------------|---------|
| 57 00 360 | 017622 | 360 | black atramentized | polished | 30,5 | 1164 |



Potters' Pincers (Brick Pincers)

DIN ISO 5743



- for pottery work
- with wire cutter for soft wire
- cutting edges additionally hardened; cutting edge hardness approx. 59 HRC
- Special tool steel, forged, oil-hardened

58 10 225 head width 10 mm

58 30 225 head width 20 mm

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Head width mm | Δ ['] Δ g |
|-------------|-----------------|--------------|--------------------|----------|------------------|-----------------------|
| 58 10 225 | 017646 | 225 | black atramentized | polished | 10,0 | 328 |
| 58 30 225 | 014331 | 225 | black atramentized | polished | 20,0 | 347 |





Concretors' Nippers

(Tower Pincers, Steel Fixers' Nippers)

DIN ISO 9242



- to twist and cut wire in one operation: fast, reliable and economical
- unobtained precision and long service life make these the bestselling concretors' nippers in the world
- cutting edges additionally hardened; cutting edge hardness approx. 61 HRC
- High-grade special tool steel, forged, oil-hardened

99 00 220 K12

with 12 mm head, particularly suitable for tile paving work















| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Cutting o | capacities Ø mm | ΔΔ g |
|---------------|-----------------|--------------|--|--------------------|----------|----------------|-----------|------------------|---------|
| 99 00 200 | 014393 | 200 | | | | | 1,8 | 1,4 | 230 |
| 99 00 220 | 013273 | 220 | | black atramentized | | | 2,4 | 1,6 | 315 |
| 99 00 250 | 013280 | 250 | | | polished | | 2,4 | 1,6 | 335 |
| 99 00 280 | 014096 | 280 | | | | | 2,8 | 1,8 | 455 |
| 99 00 300 | 014409 | 300 | | | | | 3,1 | 1,8 | 510 |
| 99 00 220 K12 | 027812 | 220 | | black atramentized | polished | | 2,4 | 1,6 | 315 |
| 99 01 200 | 021452 | 200 | | | | | 1,8 | 1,4 | 247 |
| 99 01 220 | 021469 | 220 | | | | plastic coated | 2,4 | 1,6 | 334 |
| 99 01 250 | 021483 | 250 | | black atramentized | polished | | 2,4 | 1,6 | 427 |
| 99 01 280 | 021490 | 280 | | | | | 2,8 | 1,8 | 499 |
| 99 01 300 | 014416 | 300 | | | | | 3,1 | 1,8 | 548 |
| 99 04 220 | 048398 | 220 | | | | | 2,4 | 1,6 | 321 |
| 99 04 250 | 048213 | 250 | | nickel plated | | | 2,4 | 1,6 | 398 |
| 99 04 280 | 048220 | 280 | | | | | 2,8 | 1,8 | 457 |

High Leverage Concretors' Nippers

high lever transmission

DIN ISO 9242









- to lace concrete reinforcing steel with binding wire from a roll
- wire is twisted and cut in a single pass
- high-leverage joint, minimising strain, even when thick binding wires are used
- extra-slim form for tying deep mounted steel rods
- the high damping of the cutting stroke on cutting through the binding wire reduces the strain on tendons and muscles
- cutting edges additionally hardened; cutting edge hardness approx. 61 HRC
- High-grade special tool steel, forged, oil-hardened











| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Cutting ca Ø mm | pacities Ø mm | Head width mm | ∆∆ g |
|-------------|-----------------|--------------|----|-----------------------|-------------------|--------------------|------------------|------------------|------------------|---------|
| 99 10 250 | 071396 | 250 | | black atramentized | polished | | 3,3 | 1,8 | 23,0 | 350 |
| 99 10 300 | 022398 | 300 | | DIACK AUAMEMUZEO | polistied | | 3,8 | 2,0 | 25,0 | 501 |
| 99 11 250 | 071402 | 250 | P4 | black atramentized | mentized polished | hed plastic coated | 3,3 | 1,8 | 23,0 | 350 |
| 99 11 300 | 042365 | 300 | | DidCK difdifferffized | | | 3,8 | 2,0 | 25,0 | 537 |
| 99 14 250 | 071419 | 250 | P4 | nickel plated | | | 3,3 | 1,8 | 23,0 | 350 |
| 99 14 300 | 028116 | 300 | | Hicker plateu | | | 3,8 | 2,0 | 25,0 | 499 |



Bolt End Cutting Nippers

high lever transmission

DIN ISO 5743

powerful, compact, comfortable



- compared to conventional lever-assisted end cutting nippers, greater cutting capacity, less effort required and better handling
- for all classes of wire including piano wire
- exceptional cutting capacity due to high-leverage joint
- cutting edges additionally induction hardened; cutting edge hardness approx. 64 HRC
- Vanadium electric steel; forged, oil-hardened



Extraordinary cutting performance: also for piano wire







Almost flush cutting of bolts, nails etc.

Particularly efficient for fence construction

61 02 200

with slim two-colour multi-component sleeves without collar for better handling and easier transport; with large contact surface on the handles for better allotment of pressure and more comfort at work

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | • | O | pacities O mm | 0 | ΔΔ g |
|-------------|-----------------|--------------|-----------------|--------------------|----------|---------------------------------|-----------|----------|---------------------|-----|---------|
| 61 01 200 | 033172 | 200 | <u>√8</u> 5° ▶◀ | black atramentized | polished | plastic coated | 1.0 - 6.0 | 4.0 | 3.5 | 3.0 | 435 |
| 61 02 200 | 067047 | 200 | <u> </u> | black atramentized | polished | with slim multi-component grips | 1.0 - 6.0 | 4.0 | 3.5 | 3.0 | 435 |

62

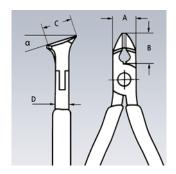
Electronics Oblique Cutting Nipper

DIN ISO 9654



- with cutting edges for soft and medium hard wire
- without bevel, for flush cutting
- cutting edges additionally induction hardened; cutting edge hardness approx. 58 HRC
- low-friction double spring for gentle and even opening
- sturdy, zero backlash box joint
- the polish together with a fine film of oil offer effective rust protection – no circuit faults caused by peeling chrome from plated tools

High-grade special tool steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Cutting cap Ø mm | oacities Ø mm | | Dimer B mm | | C mm | Δ ['] Δ g |
|-------------|-----------------|----------|--------------------------------------|----------|----------------------------|---------------------|----------------|----|------------------|-----|---------|-----------------------|
| 62 12 120 | 048008 | 120 | \$ £15° / □ ► ► ► ► ► ► ► ► ■ | polished | with multi-component grips | 0.3 - 1.0 | 0.7 | 11 | 10 | 7.5 | 17 | 93 |

Electronics End Cutting Nippers







- precision pliers for ultra fine cutting work, e.g. in electronics and fine mechanics
- sturdy, zero backlash box joint
- low-friction double spring for gentle and even opening
- the polish or mirror polish (only finish 2) together with a fine film of oil offer effective rust protection – no circuit faults caused by peeling chrome from plated tools
- cutting edges additionally induction hardened; hardness at least 56 HRC
- High-grade special tool steel, forged, oil-hardened

Style 0

End Cutter, with bevel

64 11 115

End Cutter, without bevel

64 12 115

End Cutter, with small bevel

Style 2:

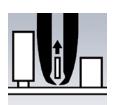
End Cutter, mini-blade with small bevel

Style 3

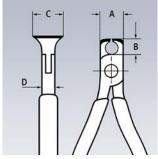
Oblique End Cutter, short head, with small bevel, $\alpha = 15^{\circ}$

Style 4

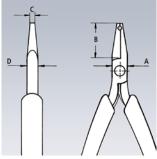
Oblique End Cutter, short head, with small bevel, α =27°



64 22 115



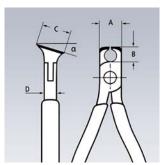
64 01/02/11/12



64 22 115







64 32/42/52



Style 5

Oblique End Cutter, short head, without bevel, for flush cutting, $\alpha = 27^{\circ}$

Style 6 Oblique End Cutter, mini-blade with small bevel, $\alpha=65^{\circ}$

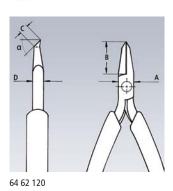
Oblique End Cutter, mini-blade with small bevel, head with recess, $\alpha = 35^{\circ}$







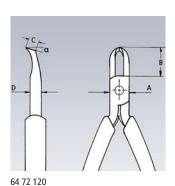
64 62 120







64 72 120



| | | | | | | | Cutti | ng capa | cities | | Dimer | sions | | |
|-------------|-----------------|-----------------|--|-------|-----------------|----------------------------|-------|---------|--------|---------|---------|---------|---------|---------|
| Article No. | EAN 4003773- | ←→ mm | | Style | Head | Handles | Ø mm | Ø mm | Ø mm | A mm | B mm | D mm | C mm | ΔΔ g |
| 64 01 115 | 017745 | 115 | ₩ <u>1</u> 90° • □ | 0 | polished | plastic coated | 2.0 | 1.0 | 0.6 | 11.0 | 6.0 | 7.5 | 16.0 | 76 |
| 64 02 115 | 035343 | 115 | ₩ 4 90° ▶4 □ | 0 | mirror polished | with multi-component grips | 2.0 | 1.0 | 0.6 | 11.0 | 6.0 | 7.5 | 16.0 | 94 |
| 64 11 115 | 017769 | 115 | ₩ \$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\ | 1 | polished | plastic coated | 1.4 | 0.8 | | 11.0 | 6.0 | 7.0 | 16.0 | 74 |
| 64 12 115 | 040743 | 115 | ₩ ∠ 90° | 1 | mirror polished | with multi-component grips | 2.0 | 0.8 | 0.5 | 11.0 | 6.0 | 7.0 | 16.0 | 91 |
| 64 22 115 | 017806 | 115 | ₩ \$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\ | 2 | mirror polished | with multi-component grips | 0.8 | | | 10.0 | 20.0 | 6.0 | 3.0 | 65 |
| 64 32 120 | 017820 | 120 | ₩ ∡15° / ☐ | 3 | mirror polished | with multi-component grips | 1.5 | 1.0 | 0.5 | 11.0 | 10.0 | 7.0 | 17.0 | 92 |
| 64 42 115 | 017844 | 115 | | 4 | mirror polished | with multi-component grips | 1.5 | 1.0 | 0.5 | 10.5 | 10.0 | 7.0 | 12.0 | 69 |
| 64 52 115 | 040439 | 115 | \$ ∠27° | 5 | mirror polished | with multi-component grips | 1.3 | | | 10.5 | 10.0 | 7.0 | 12.0 | 69 |
| 64 62 120 | 046998 | 120 | ₩ <u>∠65°</u> <u> </u> | 6 | mirror polished | with multi-component grips | 0.6 | | | 9.5 | 18.5 | 6.0 | 5.0 | 70 |
| 64 72 120 | 017882 | 120 | W ∠ 35° / □ | 7 | mirror polished | with multi-component grips | 1.5 | | | 12.0 | 19.5 | 7.0 | 5.0 | 95 |

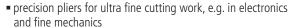
Electronics End-Cutting Nippers ESD

DIN ISO 9654





- electrostatic energy is discharged through the handles in a gradual and controlled manner
- which protects components endangered by electrostatic discharge
- in accordance with applicable standards, e.g. IEC TR 61 340-5, DIN EN 61 340-5, SP Method 2472



- electrically discharging handles dissipative
- strudy, zero backlash box joint
- low-friction double spring for gentle and even opening
- the mirror polish together with a fine film of oil offer effective rust protection – no circuit faults caused by peeling chrome from plated tools
- cutting edges additionally induction hardened; hardness at least 56 HRC
- with two-colour dual component handles, black/grey
- High-grade special tool steel, forged, oil-hardened



Style 1

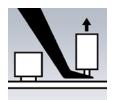
End Cutter, with small bevel

Style 3

Oblique End Cutter, short head, with small bevel, $a=15^{\circ}$

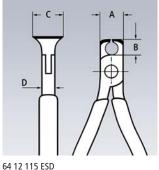


Oblique End Cutter, mini-blade with small bevel, $a = 65^{\circ}$

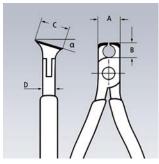


64 62 120 ESD

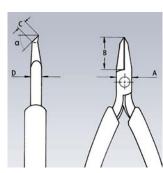








64 32 120 ESD



64 62 120 ESD

| Article No. | EAN 4003773- | ←→ mm | | Style | Head | Handles | Cutti Ø mm | ng Capa Ø mm | $ \bigcirc $ | A mm | Dimer B mm | nsions D mm | C mm | Δ [†] Δ g |
|---------------|-----------------|-----------------|-----------------------------------|-------|--------------------|---------------------------------|---------------|-----------------|----------------|---------|------------------|-------------------|---------|-----------------------|
| 64 12 115 ESD | 024323 | 115 | ▲ % √ 90° / | 1 | mirror polished | with multi-compo- nent grips | 2.0 | 0.8 | 0.5 | 11.0 | 6.0 | 7.0 | 16.0 | 94 |
| 64 32 120 ESD | 025078 | 120 | ▲ ★ 1 5° / | 3 | mirror polished | with multi-compo- nent grips | 1.5 | 1.0 | 0.5 | 11.0 | 10.0 | 7.0 | 17.0 | 92 |
| 64 62 120 ESD | 025085 | 120 | ▲ \$ <u>√</u> 65° / | 6 | mirror polished | with multi-compo- nent grips | 0.6 | | | 9.5 | 18.5 | 6.0 | 5.0 | 70 |

High Leverage End Cutting Nippers

DIN ISO 5748



- with cutting edges for soft, hard and piano wire
- high cutting capacity with little effort due to optimum coordination of cutting edge angle and transmission ratio
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened



| Article No. | EAN | ←→ | Pliers | Head | Handles | | | | | 47 |
|-------------|----------|-----------|--------------------|----------|----------------------------|------|------|------|------|-----|
| | 4003773- | mm | | | | Ø mm | Ø mm | Ø mm | Ø mm | g |
| 67 01 140 | 043690 | 140 | | | | 4.0 | 3.1 | 2.0 | 1.5 | 152 |
| 67 01 160 | 040620 | 160 | black atramentized | polished | plastic coated | 4.5 | 3.4 | 2.5 | 2.0 | 237 |
| 67 01 200 | 040637 | 200 | | | | 5.0 | 3.8 | 3.0 | 2.5 | 318 |
| 67 05 140 | 017929 | 140 | | | | 4.0 | 3.1 | 2.0 | 1.5 | 176 |
| 67 05 160 | 017936 | 160 | chrome plated | | with multi-component grips | 4.5 | 3.4 | 2.5 | 2.0 | 266 |
| 67 05 200 | 017943 | 200 | | | | 5.0 | 3.8 | 3.0 | 2.5 | 361 |

68

End Cutting Nippers

DIN ISO 5748



- with cutting edges for soft and hard wire
- also suitable for twisting and cutting binding wire
- cutting edges additionally induction hardened, cutting edge hardness approx. 61 HRC
- High-grade special tool steel, forged, oil-hardened



Also suitable for wire netting in reinforced concrete construction

| Austria Nia | FANI | | | Diama | need. | Handler | Cutti | ng capac | ities | |
|-------------|-----------------|-----------|--|--------------------|----------|----------------|-------|----------|----------|-----------------|
| Article No. | EAN 4003773- | ←→ | | Pliers | Head | Handles | | | U | $\Delta \Delta$ |
| | 4003773- | mm | | | | | Ømm | Ø mm | Ømm | g |
| 68 01 160 | 013792 | 160 | | | | | 4.0 | 2.8 | 2.3 | 202 |
| 68 01 180 | 013808 | 180 | | black atramentized | polished | plastic coated | 4.0 | 3.2 | 2.5 | 284 |
| 68 01 200 | 013815 | 200 | | | | | 4.0 | 3.5 | 2.8 | 319 |

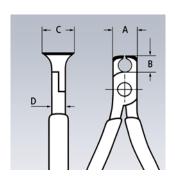
69

End Cutting Nippers for mechanics

DIN ISO 5748



- with cutting edges for soft, hard and piano wire; also suitable for thin copper wires
- lap joint
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened



| | N FAN | | | | | Cutting capacities | | | | Dimensions | | | | |
|-------------|----------|-----------|--------------------|----------|----------------|--------------------|------|------------------------|---------|------------|-----|----|----|-----|
| Article No. | EAN | ←→ | Pliers | Head | Handles | | | $\mid \mathbb{O} \mid$ | \circ | Α | В | D | С | 44 |
| | 4003773- | mm | | | | Ø mm | Ø mm | Ø mm | Ø mm | mm | mm | mm | mm | g |
| 69 01 130 | 017974 | 130 | black atramentized | polished | plastic coated | 0.4 - 2.0 | 1.3 | 1.0 | 0.8 | 16 | 7.5 | 10 | 20 | 111 |
| 69 03 130 | 018001 | 130 | chrome plated | | plastic coated | 0.4 - 2.0 | 1.3 | 1.0 | 0.8 | 16 | 7.5 | 10 | 20 | 111 |



Diagonal Cutters

☆1000V △△←



- the essential cutting tool for versatile use
- high quality material and precise workmanship for long service life
- precision cutting edges additionally induction hardened (cutting edge hardness approx. 62 HRC) for soft and hard wire
 clean cutting of thin copper wires, also at the cutting-edge tips

- narrow head style for use in confined areas
 Vanadium electric steel; forged, oil-hardened



Cuts fine wires cleanly along the complete length of the blades



Slim head style and precise cut at blade tips: Advantageous when working in confined areas



| | | | | | | | Cutti | ing capa | | |
|-------------|-----------------|-----------|---------------------------|-----------------------|-----------|--|-------|------------------|-----|-----|
| Article No. | EAN 4003773- | ←→ | | Pliers | Head | Handles | | $ \mathbf{O} $ | | ₹2 |
| | 4003773- | mm | | | | | Ømm | Ømm | Ømm | g |
| 70 01 110 | 014324 | 110 | | | | | 3.0 | 2.0 | 1.2 | 80 |
| 70 01 125 | 013402 | 125 | | black | | | 3.0 | 2.3 | 1.5 | 80 |
| 70 01 140 | 013419 | 140 | | atramentized | polished | plastic coated | 4.0 | 2.5 | 1.8 | 126 |
| 70 01 160 | 013426 | 160 | | attamentizea | | | 4.0 | 2.8 | 2.0 | 171 |
| 70 01 180 | 018070 | 180 | | | | | 4.0 | 3.0 | 2.5 | 200 |
| 70 02 125 | 034025 | 125 | | | | | 3.0 | 2.3 | 1.5 | 119 |
| 70 02 140 | 023098 | 140 | | black | polished | with multi-component grips | 4.0 | 2.5 | 1.8 | 150 |
| 70 02 160 | 034032 | 160 | | atramentized | polistieu | with mutti-component grips | 4.0 | 2.8 | 2.0 | 206 |
| 70 02 180 | 034049 | 180 | | | | | 4.0 | 3.0 | 2.5 | 252 |
| 70 04 140 | 018100 | 140 | | chrome plated | | | 4.0 | 2.5 | 1.8 | 114 |
| 70 05 125 | 039501 | 125 | | | | | 3.0 | 2.3 | 1.5 | 119 |
| 70 05 140 | 039488 | 140 | P4 | chrome plated | | with multi-component grips | 4.0 | 2.5 | 1.8 | 154 |
| 70 05 160 | 039600 | 160 | | chiome plateu | | with main-component grips | 4.0 | 2.8 | 2.0 | 207 |
| 70 05 180 | 043706 | 180 | | | | | 4.0 | 3.0 | 2.5 | 246 |
| 70 06 125 | 018124 | 125 | | | | | 3.0 | 2.3 | 1.5 | 121 |
| 70 06 140 | 040293 | 140 | ☆ 1000 V △♣ | chrome plated | | insulated with multi-component | 4.0 | 2.5 | 1.8 | 160 |
| 70 06 160 | 021995 | 160 | ₹ 1000 V @ G | chrome plated | | grips, VDE-tested | 4.0 | 2.8 | 2.0 | 216 |
| 70 06 180 | 033813 | 180 | | | | | 4.0 | 3.0 | 2.5 | 254 |
| 70 07 160 | 018155 | 160 | A 1000 V A - | chrome plated | | with dipped inculation VDE tested | 4.0 | 2.8 | 2.0 | 227 |
| 70 07 180 | 018179 | 180 | ☆ 1000 V △♣ | Cironie piated | | with dipped insulation, VDE-tested | 4.0 | 3.0 | 2.5 | 269 |
| 70 11 110 | 018193 | 110 | M | black atramentized | polished | plastic coated | 3.0 | 2.0 | 1.2 | 91 |
| 70 15 110 | 029649 | 110 | ▶ ₩ | chrome plated | | with multi-component grips | 3.0 | 2.0 | 1.2 | 98 |
| 70 26 160 | 018223 | 160 | ≙ 1000 V △€ | chrome plated | | insulated with multi-component grips, VDE-tested | 4.0 | 2.8 | 1.8 | 216 |

KNIPEX CoBolt® Compact Bolt Cutters

DIN ISO 5743











71 41 200 <u>⁄2</u>0°

$60\ \%$ less effort required compared to conventional high-leverage diagonal cutters

The ingenious lever-action mechanism ensures an extremely favourable lever ratio with very little friction. The cutting force is about 20 times higher than the hand force applied.

Clever muscle man

- precision cutting edges for soft and hard wire and piano wire
- cuts components like bolts, nails, rivets, etc. up to 5.2 mm dia.
- exceptional cutting performance with minimum effort because of unsurpassedly effective lever action design
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened

71 02 200

with slim two-colour multi-component sleeves without collar for better handling and easier transport; with large contact surface on the handles for better allotment of pressure and more comfort at work

71 12 200 / 71 22 200 / 71 32 200

opening spring and locking device are integrated in the handles also for comfortable work and protected transport



20° angled head with single-sided joint bar and diagonal cutting edge for flush cutting; with space for gripping

Style 3

the recess in the blade allows easier cutting of thicker wires, e.g. for anchor bolts in false ceilings

Style 4

the recess in the blade allows easier cutting of thicker wires, e.g. for anchor bolts in false ceilings; 20° angled head with single-sided joint bar and diagonal cutting edge for flush cutting; with space for gripping



Opening spring and transport lock





Comparison between 71 0x 200 and 71 2x 200

Conventional toggle lever assisted side cutter:

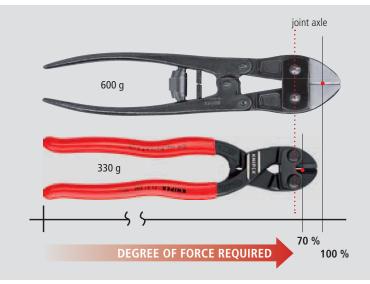
max. opening approx. 3.5 mm great weight = 600 g double toggle lever joint cumbersome

New KNIPEX-Model e.g. 71 31 200 CoBolt®:

weight only 330 g good handling small size 30 % less effort required

hard wire Ø 2 mm

picture not true to scale





71 31/32/41 200: The cutting edge recess near the joint holds thicker wires in a favourable cutting position (optimum lever ratio). The re-positioning that is usual with bolt cutters is not needed here.



| | | | | | | (| Cutting c | apacities | 5 | | |
|-------------|-----------------|-----------------|-----------------|-------|--------------------|---------------------------------|-----------|-----------|------|------|-----------------------|
| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Handles | Ø mm | Ø mm | Ø mm | Ø mm | Δ ['] Δ g |
| 71 01 200 | 033165 | 200 | ▶ 4 | 0 | black atramentized | plastic coated | 6.0 | 5.2 | 4.0 | 3.6 | 335 |
| 71 02 200 | 047056 | 200 | ▶4 | 0 | black atramentized | with slim multi-component grips | 6.0 | 5.2 | 4.0 | 3.6 | 365 |
| 71 12 200 | 066859 | 200 | ▶ | 1 | black atramentized | with slim multi-component grips | 6.0 | 5.2 | 4.0 | 3.6 | 375 |
| 71 21 200 | 066866 | 200 | <u>√2</u> 0° ▶◀ | 2 | black atramentized | plastic coated | 6.0 | 5.2 | 4.0 | 3.6 | 320 |
| 71 22 200 | 066873 | 200 | <u>√2</u> 0° | 2 | black atramentized | with slim multi-component grips | 6.0 | 5.2 | 4.0 | 3.6 | 375 |
| 71 31 200 | 042327 | 200 | ▶4 | 3 | black atramentized | plastic coated | 6.0 | 5.2 | 4.0 | 3.6 | 330 |
| 71 32 200 | 066880 | 200 | ▶₩ | 3 | black atramentized | with slim multi-component grips | 6.0 | 5.2 | 4.0 | 3.6 | 370 |
| 71 41 200 | 066897 | 200 | <u>√2</u> 0° ▶ | 4 | black atramentized | plastic coated | 6.0 | 5.2 | 4.0 | 3.6 | 335 |

Bolt Cutters

cuts hard components up to 48 HRC









- cutting capacity up to 48 HRC hardness
- robust cutting edges are additionally induction hardened, cutting-edge hardness approx. 62 HRC
- forged-in stopper with comfortable shock-absorber
- good access due to very flat construction of head and joint area
- ergonomically angled handles to minimise effort
- sturdy non-slip two-colour dual component handle sleeves
- precise adjustment (12 positions) by eccentric bolt
- high cutting performance with minimum effort due to optimum co-ordination of the cutting edge angle, transmission ratio and ergonomic handle shape
- bolted cutter head, replaceable
- Blade: chrome vanadium heavy-duty steel, forged, oil-hardened
- Joint: special tool steel, forged
- Handle: steel tube, powder-coated







Forged-in stopper with damping inserts: cushions the cutting stroke comfortably



| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Cutt HRC 19 Ø mm | ting capac HRC 40 Ø mm | ities HRC 48 Ø mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|--------------|-------------------|----------------------------|------------------------|------------------------------|-----------------------------|-----------------------|
| 71 72 460 | 066750 | 460 | 14 | grey atramentized | with multi-component grips | 8 | 6 | 5 | 2100 |
| 71 72 610 | 066767 | 610 | P43 | grey atramentized | with multi-component grips | 9 | 8 | 7 | 2550 |
| 71 72 760 | 066774 | 760 | P45 3 | grey atramentized | with multi-component grips | 11 | 9 | 8 | 4250 |
| 71 72 910 | 066781 | 910 | 141 | grey atramentized | with multi-component grips | 13 | 10 | 9 | 4950 |

| 71 79 460 | 066804 | Spare cutter head for 71 72 460 complete with screws |
|-----------|--------|--|
| 71 79 610 | 066811 | Spare cutter head for 71 72 610 complete with screws |
| 71 79 760 | 066828 | Spare cutter head for 71 72 760 complete with screws |
| 71 79 910 | 066835 | Spare cutter head for 71 72 910 complete with screws |

Concrete Mesh Cutter



- cutting capacity up to 48 HRC hardness
- robust cutting edges additionally induction hardened, cutting-edge hardness approx. 62 HRC
- forged-in stopper with comfortable shock-absorber
- good access due to very flat construction of head and joint area
- ergonomically angled handles to minimise effort
- sturdy non-slip two-colour dual component handle sleeves
- precise adjustment (12 positions) by eccentric bolt
- high cutting performance with minimum effort due to optimum co-ordination of the cutting edge angle, transmission ratio and ergonomic handle shape
- bolted cutter head, replaceable
- Blade: chrome vanadium heavy-duty steel, forged, oil-hardened
- Joint: special tool steel, forged
- Handle: steel tube, powder-coated







The special shape of the mesh cutter head, 71 82 950, enable it to cut structural steel that is lying down flat.

| N ←→ 1 03773- mm | Head | Handles | HRC 19 Ø mm | | HRC 48 Ø mm | |
|---------------------|-------------------|----------------------------|----------------|---|----------------|-----------|
| 1111111 | grey atramentized | with multi-component grips | 11 | 9 | 6 | g 4060 |

| 71 00 050 | 066942 | Spare cutter head for 71 92 0E0 complete with coroug |
|-----------|--------|--|
| 71 29 950 | 066842 | Spare cutter head for 71.82.950 complete with scre |

Diagonal Cutters for plastics

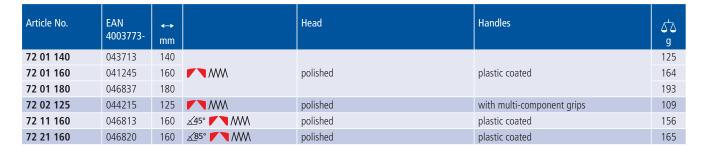
DIN ISO 5743











- cutting face flush ground
- non-bevelled, for separating moulded plastic components from sprues
- cuts soft materials such as lead in a flush cut
- with opening spring
- Vanadium electric steel; forged, oil-hardened





Diagonal Cutter for fibre optics

(glass fibre cable)

DIN ISO 5743



- specially developed for cutting fibre optics (glass fibre cables)
- cutting face flush ground
- cutting edges additionally induction hardened
- with opening spring
- Vanadium electric steel; forged, oil-hardened



The KEVLAR® fibres in strain relief are cut with the 95 03 160 shears.

| A | Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Δ ['] Δ g |
|---|-----------------------|-----------------|----------|----|----------|----------------|-----------------------|
| 7 | ⁷ 2 51 160 | 028031 | 160 | MM | polished | plastic coated | 166 |

KEVLAR® is a registered trademark of E. I. du Pont de Nemours and Company

High Leverage Centre Cutters

DIN ISO 5743



- with integrated forged axle for heaviest duty
- with precision cutting edges for soft, hard and piano wire
- cuts thick wires with less effort than other diagonal cutters of the same length
- centric precision cutting edges
- high cutting performance with minimum effort due to optimum co-ordination of the cutting edge angle, transmission ratio and ergonomic handle shape
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened



The cutting edges are in the centre of the cutter head



| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | • | Cutting c | . O | Ø mm | ∆'∆ g |
|-------------|-----------------|-----------------|----------|--------------------|----------|----------------|-----|-----------|-----|------|----------|
| 74 91 250 | 034070 | 250 | M | black atramentized | polished | plastic coated | 5.0 | 5.0 | 3.8 | 3.5 | 395 |

High Leverage Diagonal Cutters

DIN ISO 5749













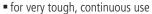
74 21 200 <u>12°</u>



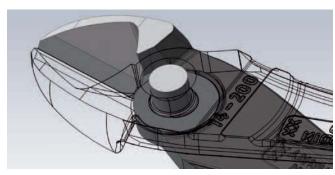
20 % less effort required

compared to conventional diagonal cutters of the same length.

With integrated forged joint axle.



- high cutting performance with minimum effort due to optimum co-ordination of the cutting edge angle, transmission ratio and ergonomic handle shape
- precision cutting edges additionally induction hardened (cutting edge hardness approx. 64 HRC) for all sorts of wire including piano wire
- Chrome vanadium heavy-duty steel, forged, oil-hardened



With integrated forged joint axle for very tough, continuous use

Style 1 with opening spring; to be activated if required



74 12: opening spring in deactivated position



74 12: just gentle sliding with your thumb will activate the opening spring

Style 2

12° angled head offers clearance for gripping



20 % less hand force required

leverage comparison between the diagonal cutter <=> high leverage diagonal cutter

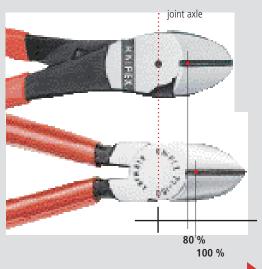
High transmission of power High Leverage Diagonal Cutter:

High Leverage Diagonal Cutter: 290 N hand force required to cut hard wire (dia. 2 mm)

Standard transmission of power

Diagonal Cutter: 370 N hand force required to cut hard wire (dia. 2 mm)

hard wire (dia. 2 mm)



DEGREE OF FORCE REQUIRED

20 % reduction thanks to high leverage power joint

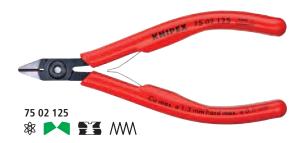


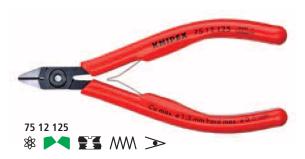


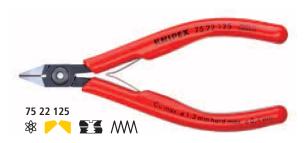
| | | | | | | | | Cutti | ing capa | cities | |
|-------------|-----------------|--------------|--------------------------|--|---------------------|----------|--------------------------------|-------|----------|--------|---------|
| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Head | Handles | Ø mm | Ø mm | Ø mm | ∆∆ g |
| 74 01 140 | 039747 | 140 | | | | | | 3.1 | 2.0 | 1.5 | 131 |
| 74 01 160 | 033141 | 160 | | | | | | 3.4 | 2.5 | 2.0 | 178 |
| 74 01 180 | 022008 | 180 | | 0 | black atramentized | polished | plastic coated | 3.8 | 2.7 | 2.2 | 241 |
| 74 01 200 | 034056 | 200 | | | | | | 4.2 | 3.0 | 2.5 | 263 |
| 74 01 250 | 034063 | 250 | | | | | | 4.6 | 3.5 | 3.0 | 391 |
| 74 02 140 | 042419 | 140 | | | | | | 3.1 | 2.0 | 1.5 | 157 |
| 74 02 160 | 023081 | 160 | | | | | | 3.4 | 2.5 | 2.0 | 209 |
| 74 02 180 | 023074 | 180 | | 0 | black atramentized | polished | with multi-component grips | 3.8 | 2.7 | 2.2 | 273 |
| 74 02 200 | 040309 | 200 | | | | | | 4.2 | 3.0 | 2.5 | 304 |
| 74 02 250 | 042402 | 250 | | | | | | 4.6 | 3.5 | 3.0 | 437 |
| 74 05 140 | 039617 | 140 | | 0 chrome plated with multi-component grips | 3.1 | 2.0 | 1.5 | 157 | | | |
| 74 05 160 | 022961 | 160 | | 0 chrome plated with multi-component grips | 3.4 | 2.5 | 2.0 | 209 | | | |
| 74 05 180 | 022978 | 180 | | | 3.8 | 2.7 | 2.2 | 270 | | | |
| 74 05 200 | 035367 | 200 | | | | | | 4.2 | 3.0 | 2.5 | 303 |
| 74 05 250 | 039754 | 250 | | | | | | 4.6 | 3.5 | 3.0 | 440 |
| 74 06 160 | 040705 | 160 | | | | | | 3.4 | 2.5 | 2.0 | 215 |
| 74 06 180 | 022985 | 180 | <u>A</u> 1000 V <u>A</u> | | | | insulated with multi-component | 3.8 | 2.7 | 2.2 | 280 |
| 74 06 200 | 033820 | 200 | X 1000 V ES | 0 | chrome plated | | grips, VDE-tested | 4.2 | 3.0 | 2.5 | 308 |
| 74 06 250 | 041955 | 250 | | | | | gps/ 102 tested | 4.6 | 3.5 | 3.0 | 453 |
| 74 07 200 | 018414 | 200 | ≙ 1000 V △ | | | | with dipped insulation, | 4.2 | 3.0 | 2.5 | 328 |
| 74 07 250 | 018421 | 250 | | 0 | chrome plated | | VDE-tested | 4.6 | 3.5 | 3.0 | 510 |
| 74 12 160 | 065111 | 160 | | | | | | 3.4 | 2.5 | 2.0 | 209 |
| 74 12 180 | 060192 | 180 | M | 1 | black atramentized | polished | with multi-component grips | 3.8 | 2.7 | 2.2 | 273 |
| 74 21 160 | 034322 | 160 | | | | | | 3.4 | 2.5 | 2.0 | 181 |
| 74 21 180 | 069973 | 180 | <u>√1</u> 2° ▶◀ | 2 | black atramentias d | noliched | plastic contod | 3.8 | 2.7 | 2.2 | 235 |
| 74 21 200 | 050483 | 200 | A12 | 2 | black atramentized | polished | plastic coated | 4.2 | 3.0 | 2.5 | 258 |
| 74 21 250 | 045021 | 250 | | | | | 4.6 | 3.5 | 3.0 | 390 | |
| 74 22 200 | 051831 | 200 | | | | | | 4.2 | 3.0 | 2.5 | 300 |
| 74 22 250 | 071372 | 250 | <u>√1</u> 2° ▶◀ | 2 bla | black atramentized | polished | with multi-component grips | 4.6 | 3.5 | 3.0 | 437 |

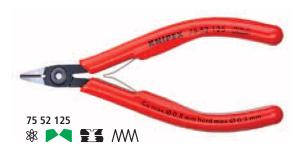
Electronics Diagonal Cutters

DIN ISO 9654









- bolted joint for high precision and stress tolerance
- for ultra fine cutting work, e.g. in electronics and fine mechanics
- with sharp, ground cutting edges for soft and hard wire and piano wire
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- low-friction double spring for gentle and even opening
- High-grade special tool steel, forged, oil-hardened

Style 0

with bevel

Style 1

with bevel and lead catcher, no uncontrolled loss of cut wire ends



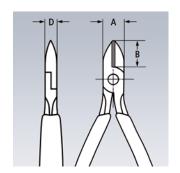
with small bevel



particularly narrow head, with bevel



Bolted joint



| | | | | | | | Cı | ıtting ca | pacities | | Di | mensio | ns | |
|-------------|-----------------|-----------------|------------------|-------|-----------|--------------------|-----------|-----------|----------|------|---------|---------|---------|--------|
| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Handles | Ø mm | Ø mm | Ø mm | Ø mm | A mm | B mm | D mm | g g |
| 75 02 125 | 040491 | 125 | ₩▶4\$\$ | 0 | burnished | with plastic grips | 0.2 - 1.3 | 1.0 | 0.6 | 0.4 | 10.5 | 14 | 6.5 | 81 |
| 75 12 125 | 040514 | 125 | ₩►13 | 1 | burnished | with plastic grips | 0.2 - 1.3 | 1.0 | 0.6 | 0.4 | 10.5 | 14 | 6.5 | 80 |
| 75 22 125 | 040538 | 125 | ₩ / 1 1 3 | 2 | burnished | with plastic grips | 0.2 - 1.3 | 0.9 | 0.4 | 0.3 | 10.5 | 14 | 6.5 | 79 |
| 75 52 125 | 040576 | 125 | ₩▶453 | 5 | burnished | with plastic grips | 0.2 - 0.8 | 0.5 | 0.3 | | 10.5 | 14 | 6.5 | 79 |

Diagonal Cutters for electromechanics

DIN ISO 5749





- with sharp, precisely aligned cutting edges for soft, hard wire and piano wire
- cutting edges additionally induction hardened, cutting edge hardness approx. 63 HRC
- lap joint
- Vanadium electric steel; forged, oil-hardened

Style 1

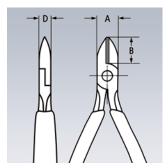
low-friction double spring for gentle and even opening

Style

without bevel for flush cutting of soft wires; low-friction double spring for gentle and even opening

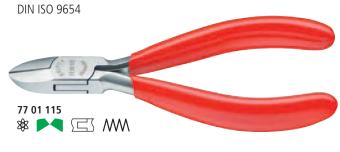
Style 8

particularly tapered head with small bevel for work in confined areas (cable harnesses, multiple stranded wires)

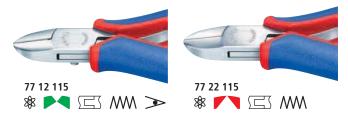


| | | | | | | | C | utting ca | pacities | | Dir | nensio | ns | |
|-------------|-----------------|-----------------|------------------------|-----------------------|----------|---------------------------------|-----------|-----------|----------|------|---------|---------|---------|----------|
| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Ø mm | Ø mm | Ø mm | Ø mm | A mm | B mm | D mm | Δ΄Δ g |
| 76 01 125 | 018490 | 125 | ₩ ▶◀ | black atramentized | polished | plastic coated | 0.4 - 3.0 | 2.3 | 1.5 | 0.6 | 14.5 | 16 | 9 | 90 |
| 76 03 125 | 018506 | 125 | ₩ ▶◀ | chrome plated | | plastic coated | 0.4 - 2.5 | 1.8 | 1.0 | 0.6 | 14.5 | 16 | 9 | 90 |
| 76 05 125 | 005315 | 125 | ₩ ▶◀ | chrome plated | | with multi-com- ponent grips | 0.4 - 2.5 | 1.8 | 1.0 | 0.6 | 14.5 | 16 | 9 | 118 |
| 76 12 125 | 048015 | 125 | * ►• M M | black atramentized | polished | with multi-com- ponent grips | 0.4 - 2.5 | 1.8 | 1.0 | 0.6 | 14.5 | 16 | 9 | 112 |
| 76 22 125 | 048022 | 125 | * / MM | black atramentized | polished | with multi-com- ponent grips | 0.4 - 2.5 | | | | 14.5 | 16 | 9 | 107 |
| 76 81 125 | 018544 | 125 | 2\$K / | black atramentized | polished | plastic coated | 0.4 - 1.7 | 1.3 | 0.8 | | 14.5 | 16 | 9 | 87 |

Electronics Diagonal Cutters











- for fine cutting work, e.g. in electronics and fine mechanics
- sturdy, zero-backlash box joint
- low-friction double spring for gentle and even opening
- the polish or mirror polish (only finish 2) together with a fine film of oil offer effective rust protection – no circuit faults caused by peeling chrome from plated tools
- cutting edges additionally induction hardened, cutting edge hardness approx. 62 HRC
- High-grade special tool steel, forged, oil-hardened

77 01 115 / 77 02 130 round head, with bevel

77 02 115 / 77 22 130

round head, with small bevel

77 11 115 / 77 22 115 round head, with bevel and lead catcher – no uncontrolled loss of cut wire ends

77 21 115

77 32 115

pointed head, without bevel

※ / □ **M**



77 22 115

round head, without bevel; cutting edge hardness approx. 57 HRC

77 32 115

pointed head, with small bevel

77 /2 115

pointed head, without bevel; cutting edge hardness approx. 57 HRC

77 52 115

pointed, flat head, with small bevel; cutting edge hardness approx. 57 HRC

77 72 115

pointed mini-head, with small bevel

Pliers Sets, see page 197

| | | | | | | Cuttin | g capacit | ies | Di | mensio | ns | |
|------------------------|-----------------|-----------------|----------------------------|--------------------|----------------------------|-----------|-----------|------|---------|---------|------------|-----|
| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Ø mm | Ø mm | Ø mm | B mm | A mm | D mm | d d |
| 77 01 115 | 018568 | 115 | * ▶ □ MM | polished | plastic coated | 0.3 - 1.6 | 1.2 | 0.6 | 14.0 | 11.0 | 7.5 | 67 |
| 77 01 130 77 02 115 | 018575 | 130 115 | * ▶ □ M M | mirror polished | with multi-component grips | 0.3 - 2.0 | 1.5 | 0.8 | 18.0 | 15.0 | 9.5 7.5 | 108 |
| 77 02 130 | 039341 | 130 | * ►¶⊆MM | mirror polished | with multi-component grips | 0.3 - 2.0 | 1.5 | 0.8 | 18.0 | 15.0 | 9.5 | 124 |
| 77 11 115 | 018629 | 115 | * ▶ ■□ M >> | polished | plastic coated | 0.3 - 1.6 | 1.2 | 0.6 | 14.0 | 11.0 | 7.5 | 70 |
| 77 12 115 | 043768 | 115 | * ►¶□M> | mirror polished | with multi-component grips | 0.3 - 1.6 | 1.2 | 0.6 | 14.0 | 11.0 | 7.5 | 80 |
| 77 21 115 | 018650 | 115 | ₩ ✓\⊑\MM | polistied | plastic coated | 0.3 - 1.3 | 1.0 | | 14.0 | 11.0 | 7.5 | 64 |
| 77 21 130 | 018667 | 130 | | polistica | plastic coated | 0.3 - 1.6 | 1.3 | | 18.0 | 14.0 | 9.5 | 110 |
| 77 22 115 | 043782 | 115 | ® ✓☐MM | mirror polished | with multi-component grips | 0.3 - 1.3 | 1.0 | | 14.0 | 11.0 | 7.0 | 80 |
| 77 22 130 | 040446 | 130 | ₩ ► □ M | mirror polished | with multi-component grips | 0.3 - 2.0 | 1.5 | | 18.0 | 15.0 | 9.0 | 124 |
| 77 32 115 | 044307 | 115 | ₩ ► □ M | mirror polished | with multi-component grips | 0.3 - 1.3 | 1.0 | 0.5 | 14.0 | 11.0 | 7.5 | 80 |
| 77 42 115 | 039761 | 115 | * ✓\G\M | mirror | with multi-component grips | 0.3 - 1.3 | 0.8 | | 14.0 | 11.0 | 7.5 | 80 |
| 77 42 130 | 018773 | 130 | 46 ► 151 /VVV | polished | with muth-component grips | 0.3 - 1.6 | 1.3 | | 18.0 | 15.0 | 9.5 | 122 |
| 77 52 115 | 040750 | 115 | * ▶ □ MM | mirror polished | with multi-component grips | 0.3 - 1.0 | 0.8 | 0.5 | 14.0 | 11.0 | 7.5 | 77 |
| 77 72 115 | 040958 | 115 | * ▶ □ MM | mirror polished | with multi-component grips | 0.3 - 0.8 | | | 10.5 | 9.5 | 6.0 | 69 |

Electronics Diagonal Cutters ESD































ESD pliers (electrostatic discharge)

- electrostatic energy is discharged through the handles in a gradual and controlled manner
- which protects components endangered by electrostatic discharge
- in accordance with applicable standards, e.g. IEC TR 61 340-5, DIN EN 61 340-5, SP Method 2472
- for fine cutting work, e.g. in electronics and fine mechanics
- electrically discharging handles dissipative
- sturdy, zero-backlash box joint
- low-friction double spring for gentle and even opening
- the mirror polish together with a fine film of oil offer effective rust protection — no circuit faults caused by peeling chrome from plated tools
- cutting edges additionally induction hardened, cutting edge hardness approx. 62 HRC
- with two-colour dual component grips, black/grey
- High-grade special tool steel, forged, oil-hardened

77 02 115 ESD

round head, with small bevel

77 12 115 ESD

round head, with bevel and lead catcher - no uncontrolled loss of cut wire ends

77 22 115 ESD

round head, without bevel

77 32 115 ESD

pointed head, with small bevel

77 42 115 ESD

pointed head, without bevel

77 52 115 ESD

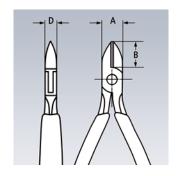
pointed, flat head, with small bevel

77 72 115 ESD

pointed mini-head, with small bevel

Pliers Sets, see page 197



























| | | | | | | Cuttin | g capaci | ties | Di | mensio | ns | |
|---------------|-----------------|-----------------|--|-----------------|---------------------------------|-----------|----------|------|---------|---------|---------|---------|
| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Ø mm | Ø mm | Ø mm | B mm | A mm | D mm | ∆∆ g |
| 77 02 115 ESD | 025092 | 115 | ▲ ≉►TEIMM | mirror polished | with multi-compo- nent grips | 0.3 - 1.6 | 1.2 | 0.6 | 14.0 | 11.0 | 7.5 | 82 |
| 77 12 115 ESD | 025108 | 115 | ▲ *▶ □ □ M >> | mirror polished | with multi-compo- nent grips | 0.3 - 1.6 | 1.2 | 0.6 | 14.0 | 11.0 | 7.5 | 80 |
| 77 22 115 ESD | 025115 | 115 | ▲ * / □ | mirror polished | with multi-compo- nent grips | 0.3 - 1.3 | 1.0 | | 14.0 | 11.0 | 7.5 | 80 |
| 77 32 115 ESD | 025122 | 115 | ▲ * | mirror polished | with multi-compo- nent grips | 0.3 - 1.3 | 1.0 | 0.5 | 14.0 | 11.0 | 7.0 | 79 |
| 77 42 115 ESD | 031901 | 115 | ▲ * / □ / / / / / / / / / / | mirror polished | with multi-compo- nent grips | 0.3 - 1.3 | 0.8 | | 14.0 | 11.0 | 7.0 | 78 |
| 77 52 115 ESD | 025139 | 115 | ▲ * | mirror polished | with multi-compo- nent grips | 0.3 - 1.0 | 0.8 | 0.5 | 11.5 | 14.0 | 7.0 | 79 |
| 77 72 115 ESD | 024330 | 115 | ▲ *► □ M | mirror polished | with multi-compo- nent grips | 0.3 - 0.8 | | | 10.5 | 9.5 | 6.0 | 69 |

Electronic Super Knips®

DIN ISO 9654

78 13 125

***** ✓ MM >



78 23 125

№ <u>√60°</u>

M

- precision pliers for ultra fine cutting work, e.g. in electronics and fine mechanics
- ground, very sharp cutting edges without bevel for flush cutting
- precision shaped tips cut wires resting on a board from 0.2 mm dia.
- joint with stainless steel rivet
- cutting edges additionally induction hardened
- extremely smooth movement for minimum operator fatigue
- with opening spring and restricted opening
- in INOX or special tool steel

78 03 125 / 78 23 125

INOX – stainless steel; cutting edge hardness approx. 54 HRC

78 13 125

INOX – stainless steel; cutting edge hardness approx. 54 HRC; with lead catcher – no uncontrolled loss of cut wire ends

78 31 125

cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC; with narrow head; special tool steel, burnished

78 41 125

cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC; with narrow head; with lead catcher – no uncontrolled loss of cut wire ends; special tool steel, burnished

78 61 125

cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC; also suitable for cutting glass fibre cables (fibre optics)

78 71 125

special tool steel, burnished; with lead catcher – no uncontrolled loss of cut wire ends; cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC

78 81 125

precision ground cutting edges with very small bevel suitable **also for hard wire**; special tool steel, burnished; cutting-edge hardness approx. 64 HRC

78 91 125

precision ground cutting edges with very small bevel suitable **also for hard wire**; with lead catcher – no uncontrolled loss of cut wire ends; special tool steel, burnished; cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC





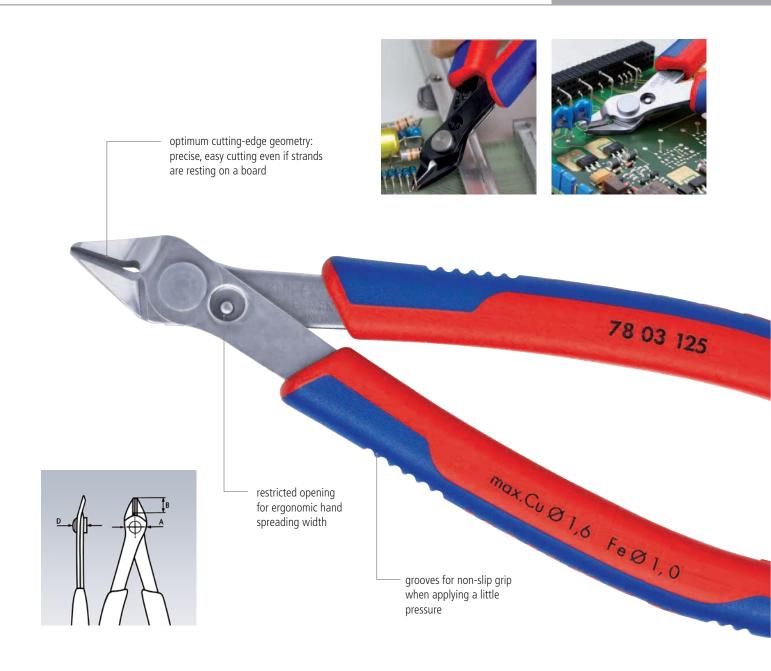


***** /\ \









| | | | | | | | Cuttin | g capaci | ties | Di | mensio | ns | |
|-------------|-----------------|-----------------|------------------------------|-----------|----------|----------------------------|-----------|----------|------|---------|---------|---------|--------|
| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Ø mm | Ø mm | Ø mm | B mm | A mm | D mm | g g |
| 78 03 125 | 035381 | 125 | * MM | | polished | with multi-component grips | 0.2 - 1.6 | 1.0 | | 9.0 | 13.5 | 7.5 | 56 |
| 78 13 125 | 035398 | 125 | * / M > | | polished | with multi-component grips | 0.2 - 1.6 | 1.0 | | 9.0 | 13.5 | 7.5 | 57 |
| 78 23 125 | 043096 | 125 | 88 ₹60° ► WW | | polished | with multi-component grips | 0.2 - 1.0 | 0.6 | | 5.5 | 13.5 | 7.5 | 55 |
| 78 31 125 | 039778 | 125 | * MW | burnished | | with multi-component grips | 0.2 - 1.0 | | | 9.0 | 12.5 | 7.5 | 55 |
| 78 41 125 | 040767 | 125 | * / / / / / / / / / / | burnished | | with multi-component grips | 0.2 - 1.0 | | | 9.0 | 12.5 | 7.5 | 57 |
| 78 61 125 | 035404 | 125 | 38 MW | burnished | | with multi-component grips | 0.2 - 1.6 | 1.2 | | 9.0 | 13.5 | 7.5 | 56 |
| 78 71 125 | 043799 | 125 | * / MM > | burnished | | with multi-component grips | 0.2 - 1.6 | 1.2 | | 9.0 | 13.5 | 7.5 | 57 |
| 78 81 125 | 065074 | 125 | 28 MW | burnished | | with multi-component grips | 0.2 - 1.6 | 1.2 | 0.6 | 9.0 | 13.5 | 7.5 | 57 |
| 78 91 125 | 065081 | 125 | * / MM > | burnished | | with multi-component grips | 0.2 - 1.6 | 1.2 | 0.6 | 9.0 | 13.5 | 7.5 | 57 |

Electronic Super Knips® ESD

DIN ISO 9654









ESD pliers (electrostatic discharge)



- which protects components endangered by electrostatic discharge
- in accordance with applicable standards, e.g. IEC TR 61 340-5, DIN EN 61 340-5, SP Method 2472
- precision pliers for ultra fine cutting work, e.g. in electronics and fine mechanics
- electrically discharging handles dissipative
- ground, very sharp cutting edges without bevel for flush cutting
- precision shaped tips cut wires resting on a board from 0.2 mm dia.
- joint with stainless steel rivet
- extremely smooth movement for minimum operator fatigue
- with opening spring and restricted opening

78 03 125 ESD

INOX - stainless steel; cutting edge hardness approx. 54 HRC

78 13 125 ESD

INOX - stainless steel; cutting edge hardness approx. 54 HRC; with lead catcher – no uncontrolled loss of cut wire ends

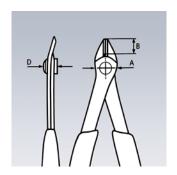
78 61 125 ESD

cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC; special tool steel, burnished

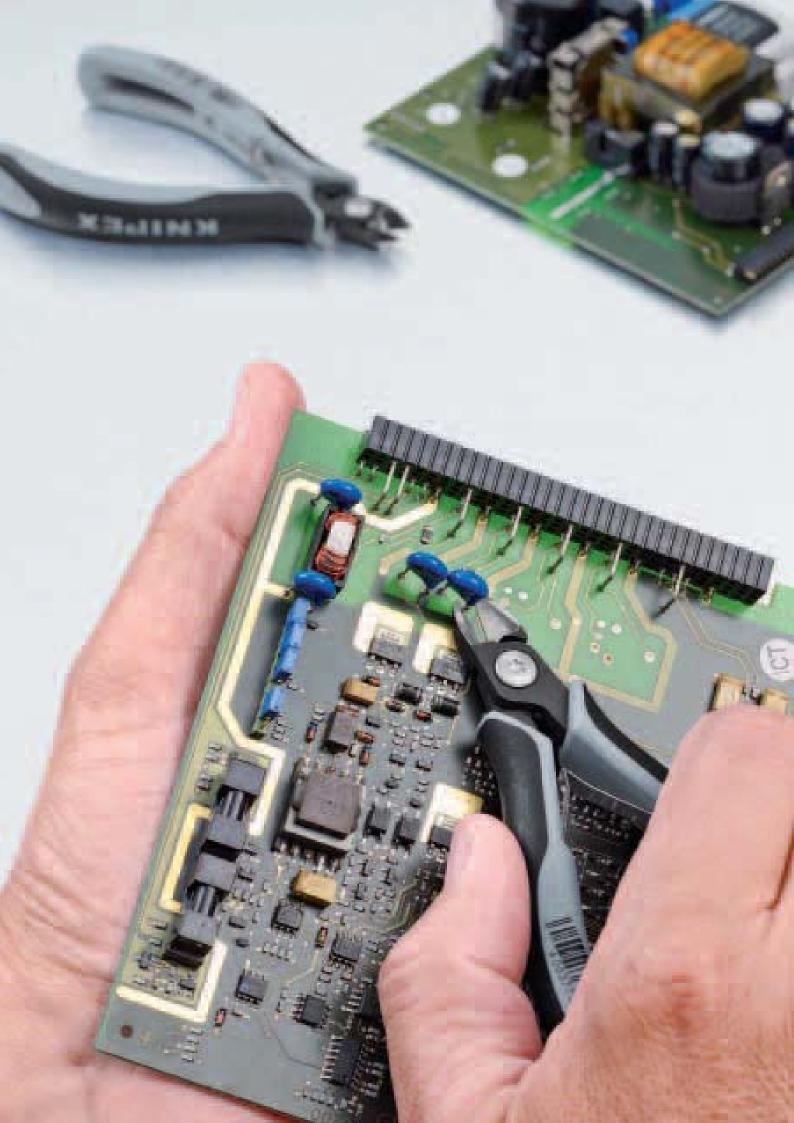
78 71 125 ESD

with lead catcher — no uncontrolled loss of cut wire ends; cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC; special tool steel, burnished





| | Article No. | EAN | | | Pliers | Hood | Handles | Cutting c | apacities | Dii | mensio | ns | |
|---|---------------|----------|-----------------|------------------|-----------|----------|----------------------------|-----------|-----------|---------|---------|---------|----|
| | Article No. | 4003773- | d→ mm | | Pileis | Head | nanuies | Ø mm | Ø mm | B mm | A mm | D mm | |
| ı | 78 03 125 ESD | 025146 | 125 | ▲ ※ / \ | | poliched | with multi-component grips | 0.2 - 1.6 | 1.0 | 9.0 | 13.5 | 7.5 | 55 |
| | | | | | | | 1 31 | | | | | | |
| | 78 13 125 ESD | 025153 | 125 | ▲*/\\\\\\ | | polished | with multi-component grips | 0.2 - 1.6 | 1.0 | 9.0 | 13.5 | 7.5 | 57 |
| | 78 61 125 ESD | 025184 | 125 | ₩ / \ | burnished | | with multi-component grips | 0.2 - 1.6 | 1.2 | 9.0 | 13.5 | 7.5 | 56 |
| | 78 71 125 ESD | 025191 | 125 | ▲*/\\\\\\ | burnished | | with multi-component grips | 0.2 - 1.6 | 1.2 | 9.0 | 13.5 | 7.5 | 57 |



Precision Electronics Diagonal Cutters











Pliers Sets, see page 197

The subtle difference

KNIPEX precision electronics pliers are made of high-quality ball bearing steel and processed with the highest degree of care. Each opening movement is gentle and even without backlash. Each work step proceeds reliably and precisely. This makes work much easier for professionals.

- precision pliers for ultra fine cutting work, e.g. in electronics and fine mechanics
- very precisely ground and sharp cutting edges with very small bevels for exact cutting on delicate electronic components; also available without bevel for flush cutting
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- approx. 20 % lighter than conventional electronics pliers
- bolted joint with particularly carefully manufactured joint surfaces for even, low-friction movement throughout the entire opening range
- smooth-running double spring for a gentle and even opening
- ergonomically optimised multi-component handles
- forged from chrome vanadium ball-bearing steel

79 02 120 / 79 22 120 mini-head

79 02 125 / 79 22 125 round head

79 12 125

specially for cutting through hard wire and piano wire

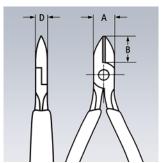




79 32 125 / 79 42 125 pointed head

79 52 125 / 79 62 125pointed head; with lead catcher —
no uncontrolled loss of cut wire ends





| | | | | | | | | | *** | | ъ. | | | |
|-------------|----------|-----------|---|-----------|----------|---------------------------------|-----------|-----------|-----|-----|-----|--------|-----|-----------------|
| | | | | DI. | | | _ | utting ca | | | Di | mensic | ns | |
| Article No. | EAN | ←→ | | Pliers | Head | Handles | | | | | В | Α | D | $\Delta \Delta$ |
| | 4003773- | mm | | | | | Ø mm | Ømm | Ømm | Ømm | mm | mm | mm | g |
| 79 02 120 | 061403 | 120 | * * * * * * * * * * * * * * * * * * * | burnished | polished | with multi-compo- nent grips | 0.2 - 1.4 | 1.0 | 0.6 | | 6.5 | 9 | 6.5 | 57 |
| 79 02 125 | 061281 | 125 | * * * * * * * * * * * * * * * * * * * | burnished | polished | with multi-compo- nent grips | 0.2 - 1.7 | 1.3 | 0.7 | | 10 | 11 | 6.5 | 59 |
| 79 12 125 | 071365 | 125 | | burnished | polished | with multi-compo- nent grips | 0.3 - 1.7 | 1.3 | 1.0 | 0.6 | 10 | 11 | 6.5 | 59 |
| 79 22 120 | 061427 | 120 | * * * * * * * * * * * * * * * * * * * | burnished | polished | with multi-compo- nent grips | 0.1 - 1.3 | 0.8 | | | 6.5 | 9 | 6.5 | 56 |
| 79 22 125 | 061342 | 125 | * * * * * * * * * * * * * * * * * * * | burnished | polished | with multi-compo- nent grips | 0.1 - 1.7 | 1.0 | | | 10 | 11 | 6.5 | 60 |
| 79 32 125 | 061366 | 125 | * - S MM | burnished | polished | with multi-compo- nent grips | 0.2 - 1.5 | 1.1 | 0.6 | | 11 | 11 | 6.5 | 58 |
| 79 42 125 | 061380 | 125 | * | burnished | polished | with multi-compo- nent grips | 0.1 - 1.5 | 0.8 | | | 11 | 11 | 6.5 | 58 |
| 79 52 125 | 065135 | 125 | * M = M > M | burnished | polished | with multi-compo- nent grips | 0.2 - 1.3 | 0.9 | 0.5 | | 11 | 11 | 6.5 | 58 |
| 79 62 125 | 065142 | 125 | */\\$#\> | burnished | polished | with multi-compo- nent grips | 0.1 - 1.3 | 0.8 | | | 11 | 11.0 | 6.5 | 58 |

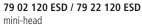
79 42 125 ESD

▲ ※ / ■ ■ M

79

Precision Electronics Diagonal Cutters ESD





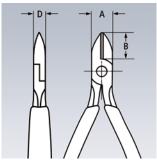
79 02 125 ESD / 79 22 125 ESD round head

79 12 125 ESD specially for cutting through hard wire and piano wire

ESD pliers (electrostatic discharge)

- electrostatic energy is discharged through the handles in a gradual and controlled manner
- which protects components endangered by electrostatic discharge
- in accordance with applicable standards, e.g. IEC TR 61 340-5, DIN EN 61 340-5, SP Method 2472
- precision pliers for ultra fine cutting work, e.g. in electronics and fine mechanics
- very precisely ground and sharp cutting edges with very small bevels for exact cutting on delicate electronic components; also available without bevel for flush cutting
- electrically discharging handles dissipative
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- approx. 20 % lighter than conventional electronics pliers
- bolted joint with particularly carefully manufactured joint surfaces for even, low-friction movement throughout the entire opening range
- smooth-running double spring for a gentle and even opening
- ergonomically optimised multi-component handles
- forged from chrome vanadium ball-bearing steel





Pliers Sets, see page 197

79 32 125 ESD / 79 42 125 ESD pointed head

79 62 125 ESD / **79 62 125 ESD** pointed head; with lead catcher - no uncontrolled loss of cut wire ends

| | | | | | | | _ C | utting ca | pacities | | Dii | nensio | ns | |
|---------------|-----------------|-----------|---|-----------|----------|---------------------------------|-----------|-----------|----------|---------|------|--------|-----|-----------------|
| Article No. | EAN 4003773- | ←→ | | Pliers | Head | Handles | | | | \circ | В | Α | D | $\Delta \Delta$ |
| | 4003773- | mm | | | | | Ømm | Ømm | Ø mm | Ø mm | mm | mm | mm | g |
| 79 02 120 ESD | 061595 | 120 | ▲ | burnished | polished | with multi-com- ponent grips | 0.2 - 1.4 | 1.0 | 0.6 | | 6.5 | 9.0 | 6.5 | 60 |
| 79 02 125 ESD | 061519 | 125 | ▲*>\$\$\$\$\$\$\$\$\$\$\$\$\$ | burnished | polished | with multi-com- ponent grips | 0.2 -1.7 | 1.3 | 0.7 | | 10 | 11 | 6.5 | 61 |
| 79 12 125 ESD | 071389 | 125 | ▲*►••••••••••••• | burnished | polished | with multi-com- ponent grips | 0.3 - 1.7 | 1.3 | 1.0 | 0.6 | 10 | 11 | 6.5 | 61 |
| 79 22 120 ESD | 061618 | 120 | | burnished | polished | with multi-com- ponent grips | 0.1 - 1.3 | 0.8 | | | 6.5 | 9.0 | 6.5 | 61 |
| 79 22 125 ESD | 061533 | 125 | | burnished | polished | with multi-com- ponent grips | 0.1 - 1.7 | 1.0 | | | 10 | 11 | 6.5 | 61 |
| 79 32 125 ESD | 061557 | 125 | ▲*►••••••••••••• | burnished | polished | with multi-com- ponent grips | 0.2 - 1.5 | 1.1 | 0.6 | | 10.5 | 11 | 6.5 | 61 |
| 79 42 125 ESD | 061571 | 125 | ▲ * / 1 5 // / / / / / / / / | burnished | polished | with multi-com- ponent grips | 0.1 - 1.5 | 0.8 | | | 10.5 | 11 | 6.5 | 58 |
| 79 52 125 ESD | 065159 | 125 | ▲ | burnished | polished | with multi-com- ponent grips | 0.2 - 1.3 | 0.9 | 0.5 | | 11 | 11 | 6.5 | 58 |
| 79 62 125 ESD | 065166 | 125 | ▲ * ► 3 M | burnished | polished | with multi-com- ponent grips | 0.1 - 1.3 | 0.8 | | | 11 | 11 | 6.5 | 58 |

Pipe Gripping Pliers

for tube fittings and connectors



- ideal for tightening and releasing plastic pipe joints, round union nuts, etc. from 25 up to 65 mm dia.
- with serrated gripping jaws
- 4-position adjustable slip joint
- Chrome vanadium electric steel, forged, oil-hardened





with plastic jaws for careful installation up to 60 mm dia.

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Working Capacity Ø mm | Δ ['] Δ g | | | | |
|---|-----------------|--------------|--|---------------|----------------|--------------------------|-----------------------|--|--|--|--|
| 81 03 230 | 018957 | 230 | | chrome plated | plastic coated | 25 - 65 | 294 | | | | |
| 81 13 230 | 050117 | 230 | | chrome plated | plastic coated | 25 - 60 | 288 | | | | |
| | | | | | | | | | | | |
| 81 19 230 050124 2 pairs of plastic jaws for 81 13 230 | | | | | | | | | | | |





- for very narrow screw connections
- Special tool steel, forged, oil-hardened

84 11 200 straight head

84 21 200 20° angled head

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Recess Ø mm | Head thickness mm | ΔΔ g |
|-------------|-----------------|-----------------|-----------------------|--------------------|----------|----------------|----------------|----------------------|---------|
| 84 11 200 | 051923 | 200 | | black atramentized | polished | plastic coated | 6 / 10 | 3.5 | 177 |
| 84 21 200 | 051930 | 200 | √ 20° □ | black atramentized | polished | plastic coated | 6 / 10 | 3.5 | 182 |

Pipe Wrenches 90°

DIN 5234



83 10 015 **√90°** ■

- Swedish pattern
- 90° angled jaws
- jaws with offset teeth in opposite direction
- teeth additionally induction hardened
- I-beam handle design
- captive adjusting nut
- red powder coated, jaws bright ground

• Chrome vanadium electric steel, forged, oil-hardened





| Article No. | EAN 4003773- | ←→ mm | | Pliers | O] ø mm | O⊒ Ø Inch | (C): Inch | Clamping width mm | ∆†∆ g |
|-------------|-----------------|-----------------|-----------------|-------------------|------------|--------------|--------------|----------------------|----------|
| 83 10 010 | 014188 | 310 | | | 42 | 1 5/8 | 1 | 42 | 779 |
| 83 10 015 | 014195 | 420 | | red powder-coated | 60 | 2 3/8 | 1 1/2 | 60 | 1415 |
| 83 10 020 | 014201 | 560 | <u>√</u> 90° ШШ | | 70 | 2 3/4 | 2 | 70 | 2600 |
| 83 10 030 | 022329 | 650 | | | 110 | 4 3/8 | 3 | 110 | 3433 |
| 83 10 040 | 022336 | 750 | | | 130 | 5 1/8 | 4 | 130 | 4921 |



Pipe Wrenches 45°

DIN 5234



∡45° □□□

- Swedish pattern
- 45° angled jaws
- jaws with offset teeth in opposite direction
- teeth additionally induction hardened
- I-beam handle design
- captive adjusting nut
- red powder coated, jaws bright ground

 Chrome vanadium electric steel, forged, oil-hardened





| , | Article No. | EAN 4003773- | ←→ mm | | Pliers | OJ ø mm | O⊒ Ø Inch | (C): Inch | Clamping width mm | ∆'∆ g |
|---|-------------|-----------------|-----------------|-----------------|-------------------|------------|--------------|--------------|----------------------|----------|
| 8 | 83 20 010 | 014218 | 320 | | | 42 | 1 5/8 | 1 | 42 | 817 |
| 8 | 83 20 015 | 014225 | 430 | <u>√45</u> ° ШШ | red powder-coated | 60 | 2 3/8 | 1 1/2 | 60 | 1408 |
| 8 | 83 20 020 | 014232 | 570 | | | 70 | 2 3/4 | 2 | 70 | 2596 |



Pipe Wrenches S-Type

DIN 5234



83 30 015

- Slim, S-type jaw
- jaws with offset teeth in opposite direction
- teeth additionally induction hardened
- three-point contact on pipes, self-locking
- I-beam handle design
- captive adjusting nut
- red powder coated, jaws bright ground

• Chrome vanadium electric steel, forged, oil-hardened





| Article No. | EAN 4003773- | ←→ mm | | Pliers | | O⊒ Ø Inch | (); Inch | Clamping width mm | ∆†∆ g |
|-------------|-----------------|----------|--|-------------------|-----|--------------|-------------|----------------------|----------|
| 83 30 005 | 025221 | 245 | | | 35 | 1 1/2 | 1/2 | 35 | 472 |
| 83 30 010 | 014249 | 320 | | red powder-coated | 42 | 1 5/8 | 1 | 42 | 836 |
| 83 30 015 | 014256 | 420 | | | 60 | 2 3/8 | 1 1/2 | 60 | 1540 |
| 83 30 020 | 014263 | 540 | | | 70 | 2 3/4 | 2 | 70 | 2669 |
| 83 30 030 | 014164 | 680 | | | 120 | 4 3/4 | 3 | 100 | 4366 |

Pliers Wrenches

(PATENTED)

pliers and wrench in a single tool

DIN ISO 5743





86 03 180



The smooth jaws grip all parallel surfaces in the capacity range with a high degree of pressure if necessary and open up almost unlimited application possibilities for the pliers wrench: e.g. for tightening locknuts, exerting pressure to activate the adhesive power of contact adhesives, edge breaking in tile work, snapping cable ties, utilisation as a small vice.

- adjustable tool for tightening screws
- also excellent for gripping, holding, pressing and bending workpieces
- replaces a set of spanners, metric and imperial
- smooth jaws for cautious installation of plated fittings
- zero backlash jaw pressure prevents damage to edges of sensitive components
- adjustment at the touch of a button directly on the workpiece
- parallel jaws allow infinitely variable gripping of all widths to the specified maximum size
- reliable catching of the hinge bolt: no unintentional shifting
- the action of the jaws allows quick tightening and release of bolted connections using the ratchet principle
- lever transmission greater than 10 1 for strong gripping power
- Chrome vanadium electric steel, forged, oil-hardened



86 03 300



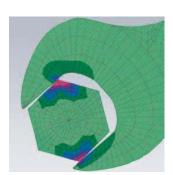
the mini pliers wrench for precision mechanics; ideal multi-purpose wrench in pocket size; indispensable companion in emergency tool kit

Length 180 mm

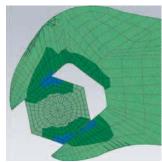
with narrow gripping jaws – for tightening situations that require a slim tool



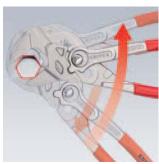
Working on plated fittings without damage



Conventional open end wrench: edge pressure causes surface damage



Pliers wrench: zero backlash contact pressure, no damage to edges



Working using the ratchet principle



Fast adjustment by pushing a button

PIPE WRENCHES AND WATER PUMP PLIERS











| Article No. | EAN 4003773- | ←→ mm | Pliers | Handles | ◯] Inch | | Adjustment positions | D B1 mm | imensior B2 mm | ns B3 mm | Δ g |
|-------------|-----------------|-----------------|------------------|----------------------------|------------|----|----------------------|---------------|----------------------|----------------|--------|
| 86 03 150 | 069676 | 150 | | | 1 | 27 | 14 | 4.7 | 7.0 | 10.5 | 175 |
| 86 03 180 | 035466 | 180 | nickel | plastic coated | 1 3/8 | 35 | 13 | 5.0 | 8.0 | 12.0 | 254 |
| 86 03 250 | 033837 | 250 | plated | | 1 3/4 | 46 | 17 | 8.0 | 8.0 | 14.0 | 536 |
| 86 03 300 | 041429 | 300 | | | 2 3/8 | 60 | 22 | 9.5 | 9.5 | 15.0 | 729 |
| 86 05 150 | 069928 | 150 | | | 1 | 27 | 14 | 4.7 | 7.0 | 10.5 | 193 |
| 86 05 180 | 047162 | 180 | nickel plated | with multi-component grips | 1 3/8 | 35 | 13 | 5.0 | 8.0 | 12.0 | 277 |
| 86 05 250 | 047841 | 250 | | | 1 3/4 | 46 | 17 | 8.0 | 8.0 | 14.0 | 571 |

KNIPEX Cobra® Hightech Water Pump Pliers

DIN ISO 8976

(PATENTED)



87 01 125



87 01 150





87 01 250



87 01 300



87 02 250





87 05 250

KNIPEX Cobra® – the Hightech Water Pump Pliers. No more time-consuming presetting of the required opening size. Just position the upper jaw to the workpiece, push button and move close the lower jaw, ingeniously simple.

- adjustment at the touch of a button directly on the workpiece
- fine adjustment for optimum adaptation to different sizes of workpieces and a comfortable handle width
- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC: low wear and stable gripping
- box-joint design: high stability because of double guide
- reliable catching of the hinge bolt: no unintentional shifting
- guard prevents operators' fingers being pinched
- Chrome vanadium electric steel, forged, oil-hardened

Length 125 mm

for use in precision mechanics, hobbies and home activities; improved access in very confined areas

Length 180 mm

good access to the workpiece

Length 250 mm / 300 mm

very large gripping capacity; good access to the workpiece; high load capacity having a slim design



Teeth set against the direction of rotation have a self-locking effect and prevent slipping on



Fine adjustment by pushing a button: fast and comfortable



Fast and firm adjustment directly on the workpiece





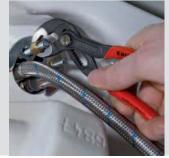














| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | ○] Ø Inch | O] Ø mm | ⊜ | Adjustment positions | Δ ['] Δ g |
|-------------|-----------------|-----------------|-------------------|----------|-------------------------------|--------------|------------|----|----------------------|-----------------------|
| 87 01 125 | 069935 | 125 | grey atramentized | polished | with non-slip plastic coating | 1 | 27 | 27 | 13 | 85 |
| 87 01 150 | 060116 | 150 | | | | 1 1/4 | 32 | 30 | 11 | 145 |
| 87 01 180 | 022015 | 180 | grey atramentized | polished | with non-slip plastic coating | 1 1/2 | 42 | 36 | 18 | 170 |
| 87 01 250 | 022022 | 250 | | | | 2 | 50 | 46 | 25 | 314 |
| 87 01 300 | 034087 | 300 | grey atramentized | polished | with non-slip plastic coating | 2 3/4 | 70 | 60 | 30 | 530 |
| 87 02 180 | 042396 | 180 | | | | 1 1/2 | 42 | 36 | 18 | 196 |
| 87 02 250 | 040316 | 250 | grey atramentized | polished | with multi-component grips | 2 | 50 | 46 | 25 | 376 |
| 87 02 300 | 029144 | 300 | | | | 2 3/4 | 70 | 60 | 30 | 580 |
| 87 03 125 | 073949 | 125 | | | | 1 | 25 | 27 | 13 | 85 |
| 87 03 180 | 005667 | 180 | chrome plated | | with non-slip plastic coating | 1 1/2 | 42 | 36 | 18 | 175 |
| 87 03 250 | 043805 | 250 | cinome piateu | | with hon-slip plastic coating | 2 | 50 | 46 | 25 | 314 |
| 87 03 300 | 041382 | 300 | | | | 2 3/4 | 70 | 60 | 30 | 530 |
| 87 05 250 | 005681 | 250 | chrome plated | | with multi component grins | 2 | 50 | 46 | 25 | 376 |
| 87 05 300 | 014126 | 300 | cilionie piateu | | with multi-component grips | 2 3/4 | 70 | 60 | 30 | 579 |

KNIPEX Cobra® XL/XXL PATENTED

Pipe Wrenches and Water Pump Pliers

DIN ISO 5743



Both the KNIPEX Cobra® XL and XXL offer the performance and comfort of water pump pliers while being lighter in weight and having a greater gripping capacity than comparable pipe wrenches. The Cobra® XL can e.g. grip a 2" pipe fitting and weighs 50 % less than a 2" pipe wrench, which has a much lower gripping capacity. With its handy length of 400 mm, the Cobra® XL also fits into a plumber's tool kit.

The Cobra® XXL comes along with the weight of a 2" pipe wrench but offers a back-up gripping capacity up to 4 1/2".



87 01 560





Fine adjustment by pushing a button: fast and comfortable

- greater gripping capacity but much lower weight than comparable pipe wrenches
- fast push-button adjustment directly on the workpiece, no unintentional slipping of the joint
- fine adjustment for optimum adaptation to different sizes of workpieces and a comfortable handle width
- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC: low wear and stable gripping
- box-joint design: high stability because of double guide
- quard prevents operators' fingers being pinched
- Chrome vanadium electric steel, forged, oil-hardened

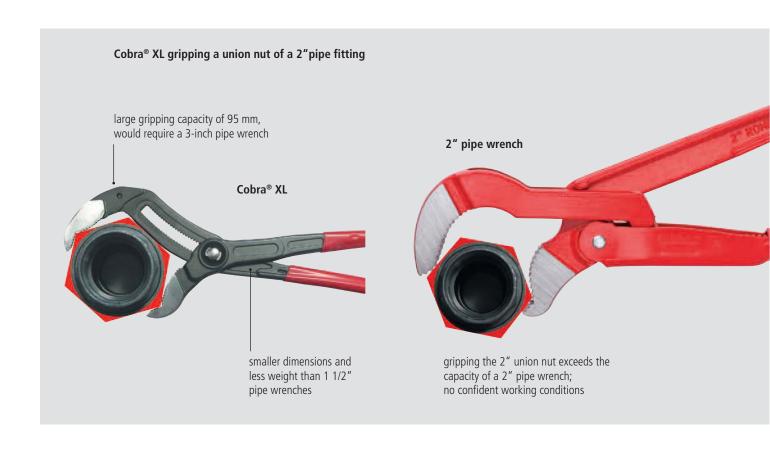


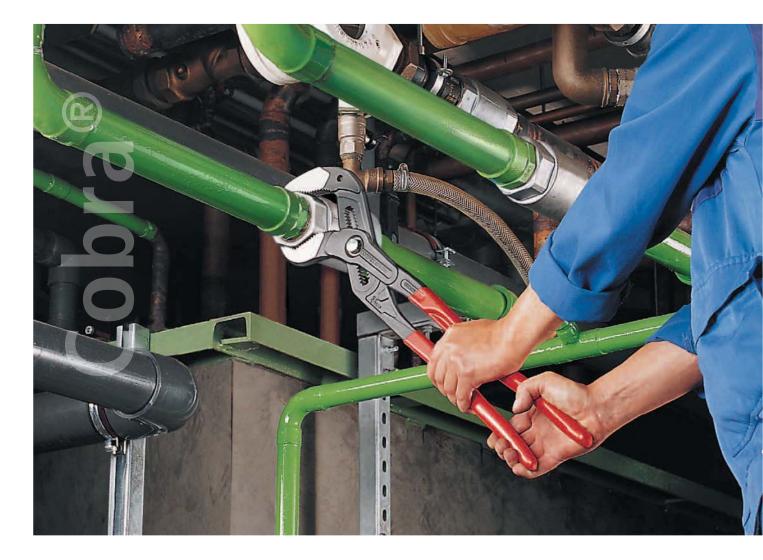
Self-locking on pipes and nuts. No slipping on the workpiece and less hand force required.



Fast and firm adjustment directly on the workpiece.

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | O⊒ Ø Inch | | ⊜ mm | Adjustment positions | ΔΔ g |
|-------------|-----------------|--------------|-------------------|----------|----------------|--------------|-----|---------|----------------------|---------|
| 87 01 400 | 005636 | 400 | grey atramentized | polished | plastic coated | 3 1/2 | 90 | 95 | 27 | 1214 |
| 87 01 560 | 044321 | 560 | grey atramentized | polished | plastic coated | 4 1/2 | 115 | 120 | 20 | 2750 |





KNIPEX SmartGrip®

Water Pump Pliers with automatic adjustment

DIN ISO 8976





Automatic adjustment: no time-consuming trial and error-adjusting to find the correct opening size in case of differently sized workpieces (e.g. the red highlighted nuts and fittings). Everything done with a single grasp.



Slim dimensions for good access to the workpiece using one-hand operation



Locking lever for space saving transport with reliable closed handles



Self-locking on pipes and nuts: no slipping on the workpiece

Adjustment to suit the workpiece is automatic with the KNIPEX SmartGrip®! Place the outer jaw on the workpiece, squeeze the handles - turn!

- ideal for frequent changeovers to workpieces of different sizes
- automatic adjustment per one-hand operation both for right-handed and left-handed use
- good access to the workpiece thanks to the slim dimensions in the head and joint area and flush joint bolt
- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC: low wear and stable gripping
- box-joint design: high stability because of double guide
- guard prevents operators' fingers being pinched
- locking lever for space saving transport with reliable closed handles
- Chrome vanadium electric steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | O⊒ Ø Inch | O] Ø mm | ⊜‡ mm | σg |
|-------------|-----------------|-----------------|-------------------|----------|-------------------------------|--------------|------------|----------|-----|
| 85 01 250 | 061304 | 250 | grey atramentized | polished | with non-slip plastic coating | 1 1/4 | 32 | 36 | 370 |

KNIPEX Cobra®...matic

(PATENTED)

Water Pump Pliers

DIN ISO 8976



87 11 250 M S M ■ all features of the KNIPEX Cobra® 87 01 250

Special feature:

- automatic adjustment at the touch of a button directly on the workpiece
- the sheltered positioned spring ensures that the pliers close automatically once the push-button is activated (one-hand operation!)

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | O] Ø Inch | O] Ø mm | ⊜] mm | Adjustment positions | ∆ d g |
|-------------|-----------------|-----------------|-----------------------|-------------------|----------|----------------------------------|--------------|------------|----------|----------------------|-------------|
| 87 11 250 | 035473 | 250 | ■ □ □ M | grey atramentized | polished | with non-slip plastic coating | 2 | 50 | 46 | 25 | 335 |

87 19 250 022640 Spare spring for 87 11 250



KNIPEX Cobra® VDE

(PATENTED)

Hightech Water Pump Pliers, insulated

DIN ISO 8976 IEC 60900 DIN EN 60900





The adjustment procedure to adapt to the workpiece is easy and reliable with the KNIPEX Cobra® VDE: place the upper gripping jaw of the opened pliers on the workpiece, push pliers handle to close, done!



- adjustment by shifting one jaw directly on to the workpiece: fast, reliable and comfortable handling
- opening at the touch of a button off the workpiece
- fine adjustment for optimum adaptation to different sizes of workpieces and a comfortable handle width
- good access to the workpiece due to slim size in the head and joint area
- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC: low wear and stable gripping
- box-joint design: high stability because of double guide
- guard prevents operators' fingers being pinched
- Chrome vanadium electric steel, forged, oil-hardened



Ouick setting without using a push-button



Just push the pliers handle to adjust!

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | O⊒ Ø Inch | O] Ø mm | ⊜ mm | Adjustment positions | ΔΔ g |
|-------------|-----------------|--------------|---------------------------------|------------------|--|--------------|------------|---------|-------------------------|---------|
| 87 26 250 | 071495 | 250 | ≙ 1000 V △♣ ■ □ □ | chrome plated | insulated with multi-component grips, VDE-tested | 2 | 50 | 46 | 24 | 340 |

Multiple Slip Joint Spanner

(PATENTED)

DIN ISO 5743



The KNIPEX Multiple Slip Joint Spanner combines the convenience of the comfortable push-button adjustment on the workpiece and the function of an all-purpose tightening tool. Jaw gripping with zero backlash prevents slipping on the bolt head or rounding edges. Even rusty or thick coated bolted connections which have no surfaces capable of being gripped reliably by a conventional spanner can be managed by the exceptionally powerful closing gripping jaws of this spanner.

- for metric and imperial nuts and screws with widths across flats from 10 to 32 mm (3/8" up to 1 1/4"); self-locking in the range from 17 mm on: no slipping on the workpiece
- zero-backlash gripping of metric or imperial hexagonal headed screws, no rounding of bolt heads
- reliable and tight gripping of rounded, rusty, or thick coated bolts and screws
- ideal for work on vehicle brake systems
- quick tightening of bolted connections using ratchet action
- adjustment at the touch of a button directly on the workpiece, also possible with one hand only
- fine adjustment for optimum adaptation to different sizes of workpieces and a comfortable handle width
- box-joint design: high stability because of double guide
- reliable catching of the hinge bolt: no unintentional shifting
- favourable lever action: optimum transmission of force
- quard prevents operators' fingers being pinched
- replaces a set of wrenches, ideal for tightening locknuts
- Chrome vanadium electric steel, forged, oil-hardened





In operation on rusted nut with rounded edges



Self-locking: no slip on workpieces; less effort required



Fine adjustment by pushing a button: fast and comfortable



Multiple Slip Joint Spanner as the second spanner for tightening locknuts

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | ◯ Inch | ⊜⊒ mm | Adjustment positions | Δ ['] Δ g |
|-------------|-----------------|-----------------|-------------------|----------|-------------------------------|------------------|----------|-------------------------|-----------------------|
| 87 41 250 | 054566 | 250 | grey atramentized | polished | with non-slip plastic coating | 3/8 - 1 1/4 | 10 - 32 | 15 | 328 |

KNIPEX Cobra® ES

(PATENTED)

Water Pump Pliers extra-slim

DIN ISO 8976



87 51 250

Due to the increasing compactness of components and machines the workspace becomes more confined. However, the requirements on the gripping force and capacity of the tools do not decrease on the other hand. KNIPEX-"Cobra" ES allows powerful gripping in confined

- ideal for service, maintenance and equipment repair, in automotive and general industry
- long, narrow jaws
- particularly good access to the workpiece due to very slim construction of head and joint area
- firm grip also on flat material due to three-point rest
- adjustment at the touch of a button directly on the workpiece
- fine adjustment for optimum adaptation to different sizes of workpieces and a comfortable handle width
- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- box-joint design: high stability because of double guide
- reliable catching of the hinge bolt: no unintentional shifting
- favourable lever action: optimum transmission of force
- guard prevents operators fingers being pinched
- Chrome vanadium electric steel, forged, oil-hardened



Grips nuts up to 34 mm (1 5/8") across flats



Very slim design in the complete head and joint area (compared to conventional water pump pliers)



Fine adjustment by pushing a button: fast and comfortable



Optimum access to the workpiece. Ideal for service, maintenance and equipment repair, in automotive and general industry



| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | O⊒ Ø Inch | Ø mm | ∰ mm | max. parallel opening width | max. gripping depth | Adjustment positions | ∆ d g |
|-------------|-----------------|-----------------|----------------------|----------|----------------------------------|--------------|------|---------|--------------------------------------|---------------------------|-------------------------|-------------|
| 87 51 250 | 061267 | 250 | grey atramentized | polished | with non-slip plastic coating | 1 1/4 | 32 | 34 | 37.0 | 42.0 | 19 | 328 |

KNIPEX Alligator® Water Pump Pliers

DIN ISO 8976



- KNIPEX 88.01.250 and residence

 | State of the State of t
- 88 02 250



- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC: low wear and stable gripping
- box-joint design: high stability because of double guide
- robust construction, insensitive to dirt; particularly suitable for outdoor work
- guard prevents operators' fingers being pinched
- Chrome vanadium electric steel, forged, oil-hardened

Length 250 / 300 mm

more output and comfort compared to conventional water pump pliers of the same length: 9-notch adjustment positioning for 30 % more gripping capacity; good access to the workpiece due to slim size in the head and joint area



Self-locking on pipes and nuts: no slipping on the workpiece; the complete actuating force can be used to turn the workpieces; not having to squeeze the pliers handles reduces the required effort



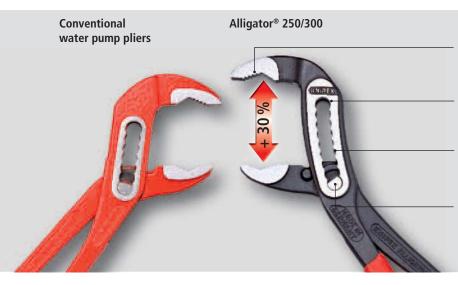












specially hardened teeth

high resistance to wear, allowing durable, reliable gripping

robust adjusting mechanism

insensitive to dirt, particularly suitable for outdoor work

9-notch curved adjustment positioning

30 % more gripping capacity, optimised adjustment to the workpiece and a handy handle position, slim design

box joint, double guide no loosening of the joint connection, continuous heavy duty

Alligator® 250: convincing alternative



Conventional 250-mm water pump pliers do not offer appropriate fit and they have an unfavourable handle position (gripping capacity exceeded)

Alligator® 300 instead of a 1 1/2" pipe wrench





| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | ○] Ø Inch | O] ø mm | ⊜] mm | Adjustment positions | ΔΔ g |
|-------------|-----------------|--------------|---------------------------|-----------------------|-------------|--|--------------|------------|----------|----------------------|---------|
| 88 01 180 | 035480 | 180 | | | | | 1 1/4 | 32 | 30 | 7 | 180 |
| 88 01 250 | 022992 | 250 | | black atramentized | polished | with non-slip plastic coating | 2 | 50 | 46 | 9 | 319 |
| 88 01 300 | 034094 | 300 | | attattietttizeu | tramentized | | 2 3/4 | 70 | 60 | 9 | 511 |
| 88 02 180 | 044222 | 180 | | | | | 1 1/4 | 32 | 30 | 7 | 215 |
| 88 02 250 | 019282 | 250 | | black atramentized | polished | with multi-component grips | 2 | 50 | 46 | 9 | 357 |
| 88 02 300 | 029151 | 300 | | atiamentized | | | 2 3/4 | 70 | 60 | 9 | 565 |
| 88 03 180 | 042860 | 180 | | | | | 1 1/4 | 32 | 30 | 7 | 181 |
| 88 03 250 | 005742 | 250 | | chrome plated | | with non-slip plastic coating | 2 | 50 | 46 | 9 | 317 |
| 88 05 180 | 060130 | 180 | | | | | 1 1/4 | 32 | 30 | 7 | 214 |
| 88 05 250 | 035497 | 250 | | chrome plated | | with multi-component grips | 2 | 50 | 46 | 9 | 354 |
| 88 05 300 | 042389 | 300 | | | | | 2 3/4 | 70 | 60 | 9 | 560 |
| 88 06 250 | 039303 | 250 | ≙ 1000 V △€ | chrome plated | | insulated with multi-component grips, VDE-tested | 2 | 50 | 46 | 9 | 374 |
| 88 07 250 | 019343 | 250 | ≙ 1000 V △ | chromo platad | | with dipped insulation, | 2 | 50 | 46 | 9 | 420 |
| 88 07 300 | 022350 | 300 | | chrome plated | | VDE-tested | 2 3/4 | 70 | 60 | 9 | 661 |

89

Water Pump Pliers with tongue and groove joint

DIN ISO 8976



- easy, convenient engagement in 5 different positions due to milled tongue
- non-slip joint
- jaw profile designed to fit screws and nuts
- joint design reduces strain of the centre bolt, hence no wear on pivot
- guard prevents operators' fingers being pinched
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC for tool length 250 mm: low wear for stable grip
- Chrome vanadium electric steel, forged, oil-hardened



Length 250 mm

self-locking on pipes and nuts: no slipping on the workpiece and low hand force required

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | ○] Ø Inch | O] Ø mm | ⊜] mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|-------------------------|----------|----------------------------|--------------|------------|----------|-----------------------|
| 89 01 200 | 013327 | 200 | black atramentized | polished | plastic coated | 1 1/4 | 32 | 30 | 231 |
| 89 01 250 | 013334 | 250 | DIACK attainentizeu | | plastic coated | 1 5/16 | 34 | 36 | 340 |
| 89 03 250 | 015086 | 250 | chrome plated | | plastic coated | 1 5/16 | 34 | 36 | 338 |
| 89 05 250 | 043836 | 250 | chrome plated | | with multi-component grips | 1 5/16 | 34 | 36 | 371 |

90

Mini Water Pump Pliers

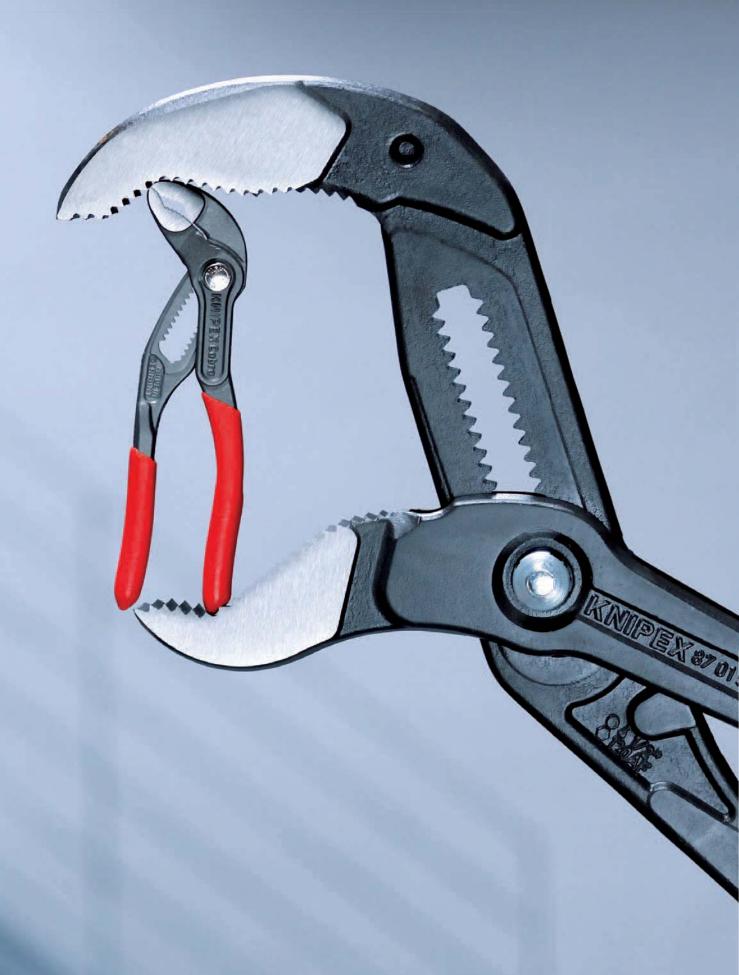
with tongue and groove joint

DIN ISO 8976

- easy, convenient engagement in 4 different positions
- non-slip joint
- joint design reduces strain of the centre bolt, hence no wear on pivot
- Chrome vanadium electric steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | ○ <u>]</u> Ø Inch | | ⊜⊒ mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|--------------------|----------|----------------|----------------------|----|----------|-----------------------|
| 90 01 125 | 035503 | 125 | black atramentized | polished | plastic coated | 11/16 | 17 | 14 | 103 |
| 90 03 125 | 050490 | 125 | chrome plated | | plastic coated | 11/16 | 17 | 14 | 105 |



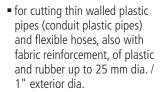


Pipe Cutter for plastic conduit pipes and hoses



90 20 185 ////

Turning the cutter slightly when cutting prevents brittle pipes splintering.



- not suitable for cutting cables
- with opening spring and locking lever
- Tool body: plastic, fibreglass-reinforced
- Blades: special tool steel, oil-hardened, interchangeable



with replaceable blade







Pipe Cutter

for composite pipes and protective tubes

(PATENTED)



90 25 20 ////

- for cutting composite pipes with diameters from 12.0 to 20.0 mm and for cutting flexible protective tubes with a diameter of 18.0 35.0 mm without damaging a potenially pipe inside
- a calibration arbor can be fitted, for example for Geberit composite pipes with 11.5 and 15.0 mm dia.
- Tool body: high-grade chrome vanadium electric steel, oil-hardened
- Blades: special tool steel, oil-hardened, interchangeable



Composite pipes of 12 - 25 mm dia. are cut cleanly and without deformation



Clean cut of protective tubes 18 - 35 mm

| Article No. | EAN | ←→ | | Tool | Handles | Cutting cap Composite pipes | | Blade length | 77 |
|-------------|----------|-----------|----|------------|----------------------------|--------------------------------|---------|--------------|-----|
| | 4003773- | mm | | | | Ø mm | Ø mm | mm | g |
| 90 25 20 | 046004 | 210 | MM | galvanized | with multi-component grips | 12 - 25 | 18 - 35 | 25 | 332 |
| | | | | | | | | | |

| 90 29 01 | 031932 | Spare blade for 90 25 20 (composite pipes) |
|----------|--------|--|
| 90 29 02 | 031949 | 1 pair of spare blades for 90 25 20 (protective pipes) |
| 90 29 15 | 031956 | Calibration arbor for 90 25 20 (Geberit pipes) |

Pipe Cutter for composite and plastic pipes

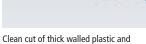
(PATENTED)



90 25 40 WW

- for cutting thick walled plastic and composite pipes with diameters from 26.0 to 40.0 mm
- cuts pipes using the ratchet principle in several strokes
- self-adapting pipe support positions pipes of various diameters correctly for a rectangular cut
- Tool body: high-grade chrome vanadium electric steel, oil-hardened
- Blades: special tool steel, oil-hardened, interchangeable





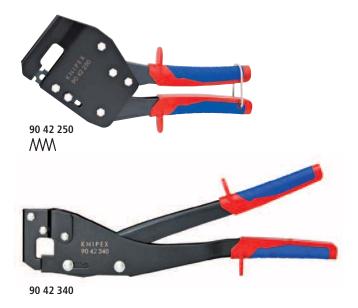
composite pipes



Not suitable for thin-walled plastic pipes. Please use article number 90 20 185 for

| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Cutting capacities Ø mm | Cutting edge length mm | ∆'∆ g |
|-------------|-----------------|-----------------|-----------------|------------|----------------------------|----------------------------|---------------------------|----------|
| 90 25 40 | 045182 | 210 | MM | galvanized | with multi-component grips | 26 - 40 | 40 | 500 |
| | | | | | | | | |
| 90 29 40 | 045199 | Spare | blade for 90 25 | 5 40 | | | | |

Punch Lock Riveters



- to join metal section sheets used in dry walling with a lock seam
- for U- and C-shaped sections with max 1.2 mm metal (2 x 0.6 mm)
- minimum handforce required due to optimum lever transmission
- Pliers body: special tool steel, rolled, oil-hardened

90 42 250 for one-hand operation



Setting the pliers for connection of two



The punching tool is squeezed through the metal section sheets

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Capacity | Δ'Δ g |
|-------------|-----------------|-----------------|----|------------|----------------------------|----------------------|----------|
| 90 42 250 | 047865 | 250 | MM | burnished | with multi-component grips | max. 1,2 (2 x 0,6) | 676 |
| 90 42 340 | 071884 | 340 | | burnished | with multi-component grips | max. 1,2 (2 x 0,6) | 901 |
| 30 42 340 | 071004 | 340 | | buttistied | with main-component grips | 111dX. 1,2 (2 X 0,0) | 301 |

| 90 49 340 | 028079 | Spare punch for 90 41 340 and 90 42 340 |
|-------------|--------|---|
| 90 49 340 M | 028499 | Spare die for 90 41 340 and 90 42 340 |

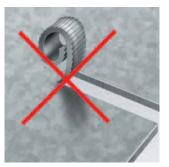


Sheet Metal Nibbler



- for cutting iron, copper or aluminium sheet metal up to max. 1.2 mm thickness, plastic up to max. 2.0 mm thickness
- materials are cut without deformation
- clean cut edges no trimming activities needed
- with chip breaker
- easy handling
- cutting width: 2.7 mm
- Tool body: special tool steel, rolled, oil-hardened
- Blades: special tool steel, oil-hardened, interchangeable





Notching and chip breaking in a single pass

Notching without chip breaking

| Article No. | EAN 4003773- | ←→ | | Tool | Handles | 47 |
|-------------|-----------------|-----------|---------------|---------------|----------------------------|-----|
| | 4003773- | mm | | | | g |
| 90 55 280 | 026730 | 280 | WW 5 3 | nickel plated | with multi-component grips | 461 |
| | | | | | | |
| 90 59 280 | 027355 | Spare | | | | |

Notching Pliers





The KNIPEX Notching Pliers produces the most common notches in plastic ledges and cable ducts in a simple, fast and clean way. No time-consuming sawing out or nibbling and no additional work required.

- special pliers for notching recesses into plastic ledges and plastic casings for electric and sanitary installation
- notches can be enlarged by initial and final cut
- clean cut edges no trimming activities needed
- easy handling
- with opening spring, opening limiter and locking lever
- Pliers body: special tool steel, rolled, oil-hardened

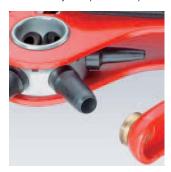
| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Capacity | Δ ['] Δ g |
|-------------|-----------------|--------------|-------|-----------|--------------------|------------|-----------------------|
| 90 61 16 | 051947 | 250 | MM | burnished | with plactic grips | 16 x 32 mm | 403 |
| 90 61 20 | 051954 | 250 | /٧٧٧\ | burnished | with plastic grips | 20 x 29 mm | 414 |



Revolving Punch Pliers



- to punch holes into leather, textiles and plastic material
- with six interchangeable punches: 2.0 / 2.5 / 3.0 / 3.5 / 4.0 / 5.0 mm dia.
- with opening spring and locking lever
- powder-coated for reliable protection against rust
- Pliers body and punches: special tool steel, oil-hardened





Interchangeable punches

| Α | rticle No. | EAN 4003773- | ←→ mm | | Pliers | Finish | ∆†∆ g | |
|---|------------|-----------------|----------|----|-------------------|---------------|----------|--|
| 9 | 0 70 220 | 019411 | 220 | WW | red powder-coated | powder coated | 251 | |

Tile Nibbling Pincer (parrot beak pincer)

- enlarges holes in tiles and forms tile edges
- Special tool steel, forged, oil-hardened



| 91 | 00 | 200 | |
|----|----|-----|--|
| 91 | 00 | 200 | |

| Article No. | EAN 4003773- | ←→ mm | Pliers | Head | Δ [†] Δ g |
|-------------|-----------------|-----------------|--------------------|----------|-----------------------|
| 91 00 200 | 013754 | 200 | black atramentized | polished | 158 |



Tile Breaking Pincer



- for breaking tiles to a scored line
- moveable, self-aligning jaw, rubberlined to protect the tile
- Special tool steel, forged, oil-hardened

| Art | iicle No. | EAN 4003773- | ←→ mm | Pliers | Handles | Δ ['] Δ g |
|-----|-----------|-----------------|-----------------|-----------------|----------------|-----------------------|
| 91 | 11 190 | 042310 | 190 | black lacquered | plastic coated | 317 |

Glass Breaking Pincer

DIN ISO 5743



- for breaking glass to a scored line
- Special tool steel, forged, oil-hardened

| Arti | cle No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Jaw width mm | ΔΔ g |
|------|---------|-----------------|--------------|------|--------------------|----------|----------------|-----------------|---------|
| 91 | 31 180 | 069744 | 180 | ammi | black atramentized | polished | plastic coated | 24 0 | 245 |

Glass Nibbling Pincers

DIN ISO 5743



- for breaking off narrow strips of glass to a scored line
- for finishing off glass edges to required profile
- Special tool steel, forged, oil-hardened

91 71 160

narrow version, with opening spring

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | Jaw width mm | ∆†∆ g |
|-------------|-----------------|-----------------|----------|--------------------|----------|----------------|-----------------|----------|
| 91 51 160 | 014355 | 160 | | black atramentized | polished | plastic coated | 9,5 | 148 |
| 91 71 160 | 019565 | 160 | W | black atramentized | polished | plastic coated | 4,0 | 141 |



Flat Nose Grozing Pliers

DIN ISO 5743



- with soft gripping jaws
- for trimming glass edges, e.g. when making leaded glass windows
- Special tool steel, forged, oil-hardened

| Arti | icle No. | EAN 4003773- | ←→ mm | Pliers | Head | Handles | Jaw width mm | Δ̈́Δ g |
|------|----------|-----------------|-----------------|--------------------|----------|----------------|-----------------|-----------|
| 91 | 61 160 | 019527 | 160 | black atramentized | polished | plastic coated | 9,5 | 141 |

92 02 54

Precision Tweezers







| Article No. | EAN 4003773- | ←→ mm | | Finish | ∆'∆ g |
|-------------|-----------------|--------------|-------------------------|--------------------------------------|----------|
| 92 02 53 | 054603 | 120 | 8 <u>√4</u> 5° □ | stainless, anti-magnetic | 16 |
| 92 02 54 | 054610 | 120 | № <u>44</u> 5° □ | stainless, anti-magnetic | 15 |
| 92 02 55 | 054627 | 115 | ₩□ | stainless, anti-magnetic, acid-proof | 16 |
| 92 12 52 | 054658 | 120 | x8x √85° ┌── | stainless anti-magnetic | 20 |

^{*} SMD-Technology: technique for soldering surface mounted components on printed circuit boards without using holes

smooth gripping surfaces

• non-reflective matt finished

92 12 52

№ <u>√85°</u> □

92 02 53

for SMD-technology*; angled tips, width approx. 1 mm; gripping surfaces matt finished for optimum grip; Chrome nickel steel: stainless, anti-magnetic (18/10), very popular electronics quality

92 02 54

for SMD-technology*; angled tips, width approx. 1 mm; gripping jaws 3.5 mm wide, integrated profile for reliable gripping of cylindrical components of 0.6 mm dia.; gripping surfaces matt finished for optimum grip; Chrome nickel steel: stainless, anti-magnetic (18/10), very popular electronics quality

92 02 55

gripping jaws 3.5 mm wide, for cylindrical components of 0.8 mm dia.; serrated handles; stainless, anti-magnetic and acid-proof

92 12 52

angled tips; extra strong tips; stainless, anti-magnetic

Precision Tweezers pointed shape



| Article No. | EAN 4003773- | ←→ mm | | Finish | Δ ['] Δ g |
|-------------|-----------------|-----------------|----|--|-----------------------|
| 92 22 04 | 054665 | 130 | ₩□ | stainless, anti-magnetic | 20 |
| 92 22 06 | 054672 | 120 | ₩□ | stainless, anti-magnetic | 15 |
| 92 22 07 | 054689 | 115 | ₩□ | stainless, anti-magnetic, acid-proof | 12 |
| 92 23 05 | 054726 | 120 | ₩□ | Titanium, anti-magnetic, acid-proof, stainless | 10 |
| 92 24 01 | 054733 | 120 | ₩□ | nickel plated | 15 |

- for fine mounting work
- straight pattern
- smooth gripping surfaces
- particularly slim tips

92 22 04

non-reflective matt finished; gripping surfaces matt finished for optimum grip; Chrome nickel steel: stainless, anti-magnetic (18/10), very popular electronics quality

92 22 06

non-reflective matt finished; gripping surfaces matt finished for optimum grip; Chrome nickel steel: stainless, anti-magnetic (18/10), very popular electronics quality

92 22 07

non-reflective matt finished; stainless, anti-magnetic and acid-proof

92 23 05

Titanium; electrically conductive; lightweight; non-reflective matt finished; stainless, anti-magnetic and acid-proof

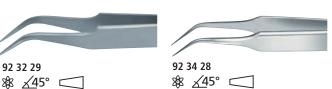
92 24 01

mirror finish nickel plated and polished

Precision Tweezers needle-pointed shape







| Article No. | EAN 4003773- | ←→ mm | | Finish | Δ g |
|-------------|-----------------|-----------------|-------------------------|--------------------------------------|--------|
| 92 22 12 | 054696 | 105 | *□ | stainless, anti-magnetic | 13 |
| 92 22 13 | 054702 | 135 | ₩□ | stainless, anti-magnetic, acid-proof | 21 |
| 92 32 29 | 054818 | 120 | \$ <u>∡45°</u> □ | stainless, anti-magnetic | 16 |
| 92 34 28 | 054825 | 105 | \$ <u>4</u> 5° □ | stainless, anti-magnetic | 12 |

- for ultra fine mounting work
- extra fine tips
- smooth gripping surfaces
- stainless, anti-magnetic
- non-reflective matt finished

92 22 12

straight pattern

92 22 13

American shape, solid; straight pattern; stainless, anti-magnetic and acid-proof

sickle-shaped tips; Chrome nickel steel: stainless, anti-magnetic (18/10), very popular electronics quality; gripping surfaces matt finished for optimum grip

92 34 28

angled tips

Precision Tweezers with centering pin

pointed shape



- universally applicable
- narrow tips
- gripping surfaces with fine transverse serration
- serrated handles



| Article No. | EAN 4003773- | ←→ mm | | Finish | Δ ['] Δ g |
|-------------|-----------------|-----------------|--------------------------------|--------------------------------------|-----------------------|
| 92 22 35 | 054719 | 155 | * = = = * | stainless, anti-magnetic, acid-proof | 22 |
| 92 24 34 | 054740 | 155 | ₩ ■ ■ | nickel plated | 21 |
| 92 34 36 | 054832 | 155 | № <u>√4</u> 5° □ | nickel plated | 23 |
| 92 34 37 | 054849 | 155 | № <u>√4</u> 5° □ | black lacquered | 21 |

92 22 35

straight pattern; non-reflective matt finished; stainless, anti-magnetic and acid-proof

92 24 34

straight pattern; nickel plated

92 34 36

angled tips; nickel plated

92 34 37

angled tips; black non-reflective lacquered

Precision Tweezers round slim shape

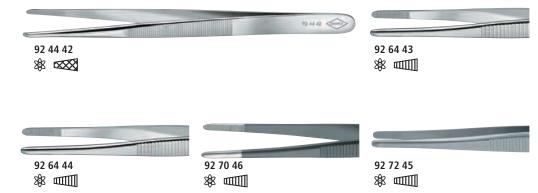
- round tips, approx. 2 mm wide
- smooth gripping surfaces
- stainless, anti-magnetic and acid-proof
- Chrome nickel steel, stainless, non-magnetic, acid-proof



| Article No. | EAN 4003773- | ←→ mm | | Finish | ΔΔ g |
|-------------|-----------------|--------------|---|--------------------------------------|---------|
| 92 52 23 | 054894 | 120 | * | stainless, anti-magnetic, acid-proof | 17 |

92

Precision Tweezers blunt shape



| Article No. | EAN 4003773- | ←→ mm | | Finish | Δ g |
|-------------|-----------------|--------------|---------------|--------------------------------------|--------|
| 92 44 42 | 054887 | 140 | \$ ∞∞ | nickel plated | 21 |
| 92 64 43 | 054917 | 120 | ® ==== | nickel plated | 17 |
| 92 64 44 | 054924 | 145 | ® ==== | nickel plated | 23 |
| 92 70 46 | 055075 | 145 | ® ==== | black lacquered | 26 |
| 92 72 45 | 054962 | 145 | ₩ | stainless, anti-magnetic, acid-proof | 27 |

- universally applicable
- straight pattern
- wide, round tips
- serrated handles

92 44 42

jewellers' tweezers; round tips, approx. 2 mm wide; gripping jaws with fine crosswise serration (cross-hatched); nickel plated

92 64 43

round tips, approx. 3.0 mm wide; gripping surfaces with fine transverse serration; nickel plated

92 64 44

round tips, approx. 3.5 mm wide; gripping surfaces with fine transverse serration; nickel plated

92 70 46

round tips, approx. 3.5 mm wide; gripping surfaces with fine transverse serration; black non-reflective lacquered

92 72 45

round tips, approx. 3.5 mm wide; serrated gripping surfaces; non-reflective matt finished; stainless, anti-magnetic and acid-proof

Plastic Tweezers



- trapezoidal tips, approx. 3.5 mm wide
- serrated gripping surfaces
- serrated handles
- \blacksquare Tweezers body: solid plastic, temperature-resistant up to 130°C

| Article No. | EAN 4003773- | ←→ mm | | Finish | ∆'∆ g |
|-------------|-----------------|-----------------|--------------|---------|----------|
| 92 69 84 | 054948 | 130 | * = = | plastic | 19 |

Precision Tweezers rectangular blunt



- mounting tweezers
- rectangular tips, approx. 0.9 mm wide
- gripping surfaces with fine transverse serration
- nickel plated
- Spring steel, high-strength

| X X | |
|------------|--|
| | |
| | |

| Article No. | EAN 4003773- | ←→ mm | | Finish | ∆†∆ g | |
|-------------|-----------------|-----------------|---------------|---------------|----------|--|
| 92 84 18 | 054986 | 125 | ® ==== | nickel plated | 19 | |

92

Cross-Over Tweezers



- for holding small parts without finger pressure
- for efficient clamping
- nickel plated
- Spring steel, high-strength



92 9/ 91

trapezoidal tips; straight pattern; gripping surfaces with fine transverse serration; serrated handles

92 95 89

narrow tips; straight pattern; gripping surfaces with fine transverse serration; handles with plastic attachement

92 95 90

narrow tips; angled tips; gripping surfaces with fine transverse serration; handles with plastic attachement



| Article No. | EAN 4003773- | ←→ mm | | Finish | Δ ['] Δ g |
|-------------|-----------------|-----------------|---------|---------------|-----------------------|
| 92 94 91 | 055006 | 160 | * ==== | nickel plated | 35 |
| 92 95 89 | 055013 | 160 | ₩ ==== | nickel plated | 30 |
| 92 95 90 | 055020 | 160 | | nickel plated | 32 |

92

Precision Tweezers insulated

92 27 61 **☆ 1000 V ※ □**

№ <u>√45°</u> ■

- tested according IEC 60900 : 2004
- with dipped insulation
- nickel plated
- Spring steel, high-strength

92 27 61

for ultra fine mounting work; extra fine tips; straight pattern; gripping surfaces matt finished for optimum grip

92 27 62

straight pattern; gripping surfaces with fine transverse serration

92 37 64

angled tips; gripping surfaces with fine transverse serration

92 67 63

straight pattern; serrated gripping surfaces

| Article No. | EAN | ←→ | | Finish | 44 |
|-------------|----------|-----------|------------------------------------|------------------------|----|
| | 4003773- | mm | | | g |
| 92 27 61 | 054757 | 130 | ≙1000 V ⊗ □ | with dipped insulation | 32 |
| 92 27 62 | 054764 | 150 | ☆1000V இ □□□□ | with dipped insulation | 35 |
| 92 37 64 | 054856 | 150 | ☆1000V ※ ∡ 45° □ □□□ | with dipped insulation | 34 |
| 92 67 63 | 054931 | 145 | ☆1000V ※ □□□ | with dipped insulation | 43 |

½1000V ፠ **□**







92 67 63 ☆ 1000 V ※ □□□

Precision Tweezers ESD



- Chrome nickel steel: stainless, anti-magnetic (18/10), very popular electronics quality
- ESD coating: non-reflective black, with a surface resistance of approx. 10⁵ Ohm
- tips non-reflective brushed
- gripping surfaces matt finished for optimum grip
- Chrome nickel steel, stainless, anti-magnetic



92 28 71 ESD

92 38 75 ESD

№ △ △45° □

₩ 💪 <

92 08 78 ESD

for SMD-technology*; angled tips; smooth gripping surfaces

shaped to grip horizontal cylindrical components of 1.0 mm dia.; smooth gripping surfaces; serrated handles

92 28 69 ESD

straight pattern; strong tip; smooth gripping surfaces

92 28 70 ESD

straight pattern; fine tip; smooth gripping surfaces

92 28 71 ESD

needle-pointed tips; straight pattern; smooth gripping surfaces

92 28 72 ESD

American shape, solid; long tips; straight pattern; smooth gripping surfaces

92 38 75 ESD

sickle-shaped tips; smooth gripping surfaces

92 58 74 ESD

round tips, approx. 2 mm wide; straight pattern; smooth gripping surfaces

round tips, approx. 3.5 mm wide; straight pattern; serrated gripping surfaces; serrated handles

92 88 73 ESD

rectangular tips, approx. 0.9 mm wide; gripping surfaces with fine transverse serration





92 88 73 ESD

92 28 70 ESD

92 28 72 ESD

※ 💪 □



| Article No. | EAN 4003773- | ←→ mm | | Finish | ∆ d g |
|--------------|-----------------|-----------------|-----------------------|--|-------------|
| 92 08 78 ESD | 054634 | 120 | ★ 45° | stainless, anti-magnetic, electrically dissipative | 16 |
| 92 08 79 ESD | 054641 | 120 | * ▲ □ | stainless, anti-magnetic, electrically dissipative | 16 |
| 92 28 69 ESD | 054771 | 130 | ₩ 🖾 🖂 | stainless, anti-magnetic, electrically dissipative | 20 |
| 92 28 70 ESD | 054788 | 110 | * ▲ □ | stainless, anti-magnetic, electrically dissipative | 13 |
| 92 28 71 ESD | 054795 | 110 | ₩ 🖾 🖂 | stainless, anti-magnetic, electrically dissipative | 14 |
| 92 28 72 ESD | 054801 | 135 | * ▲ □ | stainless, anti-magnetic, electrically dissipative | 22 |
| 92 38 75 ESD | 054863 | 120 | \$ △ △ 45° □ | stainless, anti-magnetic, electrically dissipative | 17 |
| 92 58 74 ESD | 054900 | 120 | * ← □ | stainless, anti-magnetic, electrically dissipative | 19 |
| 92 78 77 ESD | 054979 | 145 | ※ ▲ ■■ | stainless, anti-magnetic, electrically dissipative | 27 |
| 92 88 73 ESD | 054993 | 130 | ※ ▲ □□□ | stainless, anti-magnetic, electrically dissipative | 20 |

^{*} SMD-Technology: technique for soldering surface mounted components on printed circuit boards without using holes

Pipe Cutter for plastic conduit pipes (electrical installation work)



- for clean cutting of plastic pipes (e.g. plastic conduit pipes) with 6 - 35 mm dia.
- not suitable for cutting cables
- blade is replaceable and can be retracted from any position
- low force requirement due to special blade geometry and optimum transmission
- minimum operator fatigue due to ergonomic handle design and incremental ratchet blade feed
- Housing: die-cast aluminium, red lacquered

■ Blade: special tool steel, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | | Body | Capacity Ø mm | Cutting edge length mm | ∆ g |
|-------------|-----------------|-----------------|-----------------|--|------------------|---------------------------|--------|
| 94 10 185 | 047025 | 185 | MM | die-cast aluminium body, red lacquered | 6.0 - 35.0 | 35 | 583 |
| 94 19 185 | 047032 | Spare | olade for 94 10 | 185 | | | |

Cutter for ribbon cable



MM **1**

- for crushing-free cutting of ribbon cable up to 56 mm width
- exchangeable cutting base with try square for rectangular cuts
- with opening spring and locking
- Tool body: tool steel, rolled, oil-hardened
- Blade: standard trapezoidal blade, replaceable



| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Blade length mm | Δ ['] Δ g | | | |
|-------------|-----------------|-----------------|--|---------------|--------------------|--------------------|-----------------------|--|--|--|
| 94 15 215 | 046011 | 215 | WW \$ | chrome plated | with plastic grips | 56 | 346 | | | |
| | | | | | | | | | | |
| 94 19 215 | 046219 | Set wit | Set with 10 spare blades for 94 15 215 / 94 35 215 | | | | | | | |



Mitre Shears for plastic and rubber sections



- for crushing-free cutting of plastic, rubber and soft timber sections; also for ribbon cable up to 56 mm width
- exchangeable cutting base try square angle for 45°-cuts and markings for 60°-, 75°-, and 90°-cuts
- with opening spring and locking lever
- Tool body: special tool steel, rolled, oil-hardened
- Blade: standard trapezoidal blade, replaceable

| 34 33 Z | 13 |
|---------|----|
| WW | 11 |

| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Blade length mm | ∆†∆ g |
|-------------|-----------------|-----------------|--------------|---------------|--------------------|--------------------|----------|
| 94 35 215 | 046028 | 215 | WW \$ | chrome plated | with plastic grips | 56 | 397 |



Vinyl Shears also for cable ducts

(PATENTED)





- special lever transmission
- very effective blade geometry
- Tool body: high-grade chrome vanadium electric steel, oil-hardened
- Blade: special tool steel, oil-hardened

95 02 10

for plastic material up to approx. 6.0 mm thickness (e.g. PE with up to 63 Shore)

95 02 21

for cutting and shortening cable ducts, also for plastic material up to 4.0 mm thickness $\,$





95 02 10: powerful cutting of plastics up to 6.0 mm in thickness

95 02 21: blade length 110 mm for cutting wide cable ducts

| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Cutting capacities mm | Blade length mm | ∆†∆ g |
|-------------|-----------------|-----------------|----|-----------|----------------------------|--------------------------|--------------------|----------|
| 95 02 10 | 047872 | 225 | MM | burnished | with multi-component grips | 4.0 - 6.0 | 60 | 459 |
| 95 02 21 | 052128 | 275 | MM | burnished | with multi-component grips | max. 4.0 | 110 | 665 |



Shears for KEVLAR® fibres



- only for cutting fibres of KEVLAR® in optical fibre cables, not recommended for other materials
- precisely ground blades with serration prevent the fibres from slipping and guarantee a clean cut
- riveted precision joint, for low-friction movement and smooth and even cutting of the thin KEVLAR® fibres
- hard-chrome plated, ground surface
- Shears body: chrome vanadium electric steel, oil-hardened
- User-friendly handles: plastic, impact-proof



KEVLAR® is a registered trademark of E. I. du Pont de Nemours and Company

| Article No. | EAN 4003773- | ←→ mm | Shears | Handles | Δ [†] Δ g |
|--------------|-----------------|--------------|---------------|----------------|-----------------------|
| 95 03 160 SB | 043362 | 160 | chrome plated | plastic coated | 85 |

95 05

Combination Shears



- for cutting cardboard, plastics, aluminium, brass and copper foils
- not suitable for steel wire or iron sheets
- precision ground, hardened blades
- with opening spring and locking lever
- guard prevents operators' fingers being pinched
- adjustable bolted joint
- Shears body: surgical steel, stainless, vacuum-hardened
- Handles: plastic, impact-resistant

95 05 185

angled shape - for easy execution of long cuttings; ergonomically shaped plastic handles



| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | ∆ [†] ∆ g |
|-------------|-----------------|-----------------|-----------------------|----------|----------------|-----------------------|
| 95 05 140 | 019589 | 140 | | polished | plastic coated | 67 |
| 95 05 185 | 060277 | 185 | <u>∡4</u> 0° € | polished | plastic coated | 115 |
| 95 05 190 | 019602 | 190 | | polished | plastic coated | 116 |

95

Cable Shears



- not suitable for steel wire and hard drawn copper conductors
- precision ground, hardened blades
- no crushing, slight deformation of the cable only
- guard prevents operators' fingers being pinched
- adjustable bolted joint
- Shears body: surgical steel, stainless, vacuum-hardened
- Handles: plastic, impact-proof

95 05 165

cuts cables up to 10 mm dia. / 24 mm^2 ; with opening spring and locking lever; blades made of stainless steel; oil-hardened and tempered

95 06 230

for copper single conductors up to $16~\text{mm}^2$, multiple stranded wires up to $50~\text{mm}^2$, fine stranded up to $70~\text{mm}^2$ and aluminium conductors multiple stranded wires up to $70~\text{mm}^2$; easy cutting with one-hand operation due to high transmission ratio; stainless – special grade – steel, oil-hardened and tempered

| | | | | | | Cutting c | | | |
|-------------|----------|-----------|--|----------|-------------------------------|-----------|-----|-----|-----|
| Article No. | EAN | ←→ | | Head | Handles | ₩ | ₩ | AWG | 44 |
| | 4003773- | mm | | | | Ø mm | mm² | | g |
| 95 05 165 | 019596 | 165 | *** ********************************* | polished | plastic coated | 10 | 24 | 3 | 111 |
| 95 06 230 | 006305 | 230 | ≙ 1000 V △€ ♀ ♀⑤ | polished | plastic insulated, VDE-tested | 16 | 50 | 1/0 | 274 |



95

Cable Shears





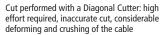




- not suitable for steel wire and hard drawn copper conductors
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- easy cutting with one-hand operation
- guard prevents operators' fingers being pinched
- adjustable bolted joint, self-retaining screw
- High-grade special tool steel, forged, oil-hardened

Style 2 internal opening spring, protected and captive







Cut performed with a Cable Shears: easy, clean cut without any deformation of the cable



| A | FAN | | | C. I | | | | capacities | AVAIC | |
|-------------|-----------------|----------|--|-------|------------------|--|------|-----------------|-------|------------|
| Article No. | EAN 4003773- | d→ mm | | Style | Tool | Handles | Ø mm | ₩ mm² | AWG | ∆ ∆ g |
| 95 11 165 | 040323 | 165 | *1 | 1 | burnished | plastic coated | 15 | 50 | 1/0 | 215 |
| 95 12 165 | 029182 | 165 | *1 | 1 | burnished | with multi-component grips | 15 | 50 | 1/0 | 250 |
| 95 16 165 | 039648 | 165 | <u>A</u> 1000 V <u>A</u> € ⊕ E S | 1 | chrome plated | insulated with multi-component grips, VDE-tested | 15 | 50 | 1/0 | 262 |
| 95 21 165 | 069805 | 165 | ** ********************************** | 2 | burnished | plastic coated | 15 | 50 | 1/0 | 215 |
| 95 22 165 | 069812 | 165 | *** | 2 | burnished | with multi-component grips | 15 | 50 | 1/0 | 254 |
| 95 26 165 | 069980 | 165 | <u>A</u> 1000 V <u>A</u> € ⊕ E MM | 2 | chrome plated | insulated with multi-component grips, VDE-tested | 15 | 50 | 1/0 | 275 |



Cable Shears with twin cutting edge

(PATENTED)







- for cutting copper and aluminium cables
- not suitable for steel wire and hard drawn copper conductors
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- by dividing the cutting actions into initial cut (insulating sheath in the front cutting area) and final cut (conductor in the back cutting area), cables up to Ø 20 mm can be cut in one-hand operation
- less effort required due to favourable lever ratio and optimised cutting-edge geometry
- guard prevents operators' fingers beng pinched
- adjustable bolted joint, self-retaining screw
- High-grade special tool steel, forged, oil-hardened







Initial cut: using the front cutting edge to cut the insulating sheath on larger cable diameters leaves an ergonomic handle opening width.



Final cut: after cutting the sheath in the front profile the cut is finished through the metal part of the cable in the rear profile. Initial cut in the front profile, final cut in the rear profile – to keep iit as easy as possible.

| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Cutting of the Court of the Cou | apacities mm² | AWG | Δ ['] Δ g |
|-------------|-----------------|-----------------|---------------------------------|---------------|--|--|------------------|-----|-----------------------|
| 95 11 200 | 043928 | 200 | * | burnished | plastic coated | 20 | 70 | 2/0 | 283 |
| 95 12 200 | 047834 | 200 | * * * * * * * * * * | burnished | with multi-component grips | 20 | 70 | 2/0 | 324 |
| 95 16 200 | 026761 | 200 | ≙ 1000 V △ ← ⇔ 🖺 | chrome plated | insulated with multi-component grips, VDE-tested | 20 | 70 | 2/0 | 340 |
| 95 17 200 | 026952 | 200 | ☆ 1000 V △♣ ♦ ₽ 3 | chrome plated | with dipped insulation, VDE-tested | 20 | 70 | 2/0 | 360 |

Cable Shears





- for cutting copper and aluminium conductors as well as multiple stranded cables
- not suitable for steel wire and wire ropes
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- low handforce required due to favourable lever ratio and special blade geometry
- short design, length only 500 mm
- low weight
- guard prevents operators' fingers being pinched
- adjustable bolted joint
- Cutter head: vanadium electric steel, forged, oil-hardened
- Handles: aluminium tube, high-strength



Large cutting capacity: max. 27 mm dia. / 150 mm²

| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Cutting c Ø mm | apacities mm² | AWG | ΔΔ g |
|-------------|-----------------|--------------|--------------------|-----------|------------------------------------|-------------------|------------------|-----|---------|
| 95 12 500 | 069966 | 500 | * | burnished | with multi-component grips | 27 | 150 | 5/0 | 1090 |
| 95 17 500 | 026785 | 500 | ☆ 1000 V △◆ | polished | with dipped insulation, VDE-tested | 27 | 150 | 5/0 | 1477 |

95

Cable Shears



- for cutting copper and aluminium conductors as well as multiple stranded cables
- not suitable for steel wire and wire ropes
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- favourable transmission ratio due to double lever
- quard prevents operators' fingers being pinched
- adjustable bolted joint
- bolted cutter head, replaceable
- Blade head: high-grade chrome vanadium electric steel, forged, oil-hardened
- Handles: steel tube

| Article No | | FAN | | | | | | Cutting capacities | | |
|------------|-------------|----------|-----------|-------------------------------|----------|------------------------------------|------|--------------------|-----|--------|
| | Article No. | EAN | ←→ | | Head | Handles | ❸ | | AWG | \Box |
| | | 4003773- | mm | | | | Ø mm | mm² | | g |
| | 95 21 600 | 025252 | 600 | * | polished | with plastic grips | 27 | 150 | 5/0 | 1836 |
| | 95 27 600 | 021797 | 600 | ≙ 1000 V △♠ ♦ 1 | polished | with dipped insulation, VDE-tested | 27 | 150 | 5/0 | 2301 |
| | | | | | | | | | | |

| 95 29 600 | 021803 | Spare cutter head for 95 21 600 / 95 27 60 |
|-----------|--------|---|
| JJ 2J 000 | 021003 | 3pare catter fieda for 33 21 000 / 33 27 00 |



Cable Cutters (ratchet action)

(PATENTED)



95 31 250 **♦ ₩ •**



95 31 280 **⊗** MM **€3**



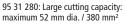
95 36 250

- for cutting copper and aluminium single conductors as well as multiple stranded cables
- not suitable for steel wire and wire ropes
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- one-hand operation using ratchet principle
- little handforce required due to very high transmission ratio
- two-stage ratchet drive for easy cutting
 simple handling as a result of low weight and compact design can be used even in confined areas
- guard prevents operators' fingers being pinched
- High-grade special tool steel, forged, oil-hardened

95 31 / 36 280

suitable for aluminium sector cable up to 4 x 150 mm²







Ratchet principle and two-stage ratchet drive for easier cutting



95 31 250 / 280: Fixed handle with support area as an aid to position the cutters on a flat surface

| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Cutting c Ø Ø mm | apacities mm² | MCM | ∆ d g |
|-------------|-----------------|-----------------|--|-----------------|--|------------------------|------------------|-----|-------------|
| 95 31 250 | 043935 | 250 | ⊕ MM E | black lacquered | with multi-component grips | 32 | 240 | 500 | 676 |
| 95 31 280 | 043942 | 280 | ************************************* | black lacquered | with multi-component grips | 52 | 380 | 750 | 860 |
| 95 36 250 | 026884 | 250 | ≙ 1000 V △♠ ♦ //// 1 | black lacquered | insulated with multi-component grips, VDE-tested | 32 | 240 | 500 | 652 |
| 95 36 280 | 026891 | 280 | ≙1000 V △ ⊕ ♦ MM | black lacquered | insulated with multi-component grips, VDE-tested | 52 | 380 | 750 | 835 |

| 95 39 250 | 022244 | Movable spare blade for 95 31 250 / 95 36 250 |
|-----------|--------|---|
| 95 39 280 | 025283 | Movable spare blade for 95 31 280 / 95 36 280 |

95

Cable Shears (ratchet action)

with telescopic handles

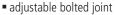


Handles adjustable in length and angular position for easier work: set the handle length to the optimum lever for powerful cutting; put the handles at an angle for a comfortable gripping position

Cable shears with adjustable telescopic handles allowing angular positioning

- for cable diameters up to 38 mm, handles can be positioned at an angle to set the optimum handle width, which makes the shear also suitable for work in confined areas
- comfortable work thanks to ratchet action and low weight
- heavy duty telescopic handles made of oval aluminium tubing; extendable up to 770 mm for maximum leverage on large cable diameters; retractable down to 570 mm for minimum space requirements during transport
- replaceable cutting head
- extensive cutting range up to max. Ø 38 mm or max. 280 mm² (e.g. 4 x 70 mm² NYY) in copper and aluminium cables

 easier, neater cut due to optimised cuttingedge geometry



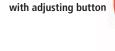
Cutting head: special quality high-grade tool steel, oil-hardened

Handles: high-strength oval aluminium tubing



Setting of a favourable handle width









After the first partial cut, the handles open by ratchet action



Repeat cutting and opening actions until the cable is cut through



| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Cutting c Ø mm | apacities mm² | МСМ | Δ ['] Δ g |
|-------------|-----------------|-----------------|------------|-----------|----------------------------|-------------------|------------------|-----|-----------------------|
| 95 32 038 | 071556 | 570 | 913 | burnished | with multi-component grips | 38 | 280 | 550 | 1980 |

| 95 39 038 | 073260 | Spare cutter head for 95 32 038 |
|-----------|--------|---------------------------------|
| | | |

Cable Cutters (ratchet action)

with telescopic handles



■ handle length with multiple position adjustment from 400 - 600 mm (short transport length, individual adaptation to working conditions

- for copper and aluminium single conductors as well as multiple stranded cables also with hard rubber or plastic sheath
- not suitable for steel wire and wire ropes
- also suitable for cables with iron sheath reinforcement
- little hand force required for cutting due to optimum transmission ratio
- high cutting capacity due to two-hand operation and ratchet
- the blade can be opened in any cutting position
- Blade: special-quality highgrade tool steel, oil-hardened
- Handles: high-strength oval aluminium tubing



tool in length: 630 to 830 mm; weight only approx. 3820 g





| | | | | | | Cutting capacities | | | | | | |
|-------------|----------|--|----------------|---------------------------------------|----------------------------|--------------------|------|-----|------|------|--|--|
| Article No. | EAN | ←→ | | Head | Handles | | | ₩ | MCM | 47 | | |
| | 4003773- | mm | | | | | Ø mm | mm² | | g | | |
| 95 32 060 | 071563 | 630 | 053 | burnished with multi-component grips | with multi-component grips | | 60 | 740 | 1400 | 3820 | | |
| 95 32 100 | 071570 | 680 | W = 3 | | with muti-component grips | | 100 | 960 | 1900 | 4980 | | |
| | | | | | | | | | | | | |
| 95 39 720 | 025290 | Movab | le spare blade | spare blade for 95 31 720 / 95 32 060 | | | | | | | | |
| 95 39 870 | 025306 | 025306 Movable spare blade for 95 31 870 / 95 32 100 | | | | | | | | | | |

Wire Rope Shears forged

double function: neat cutting, precise crimping



Cuts all wire ropes without splaying, including those that are extremely strong, such as for example tyre cord

- with two crimping dies for end caps on Bowden cable sheaths and end ferrules for traction cables
- comfortable work thanks to handy, slim design and internal opening spring
- bolted joint for precise blade guidance, re-adjustable
- high leverage for reduced effort
- cutting-edge hardness approx. 64 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened

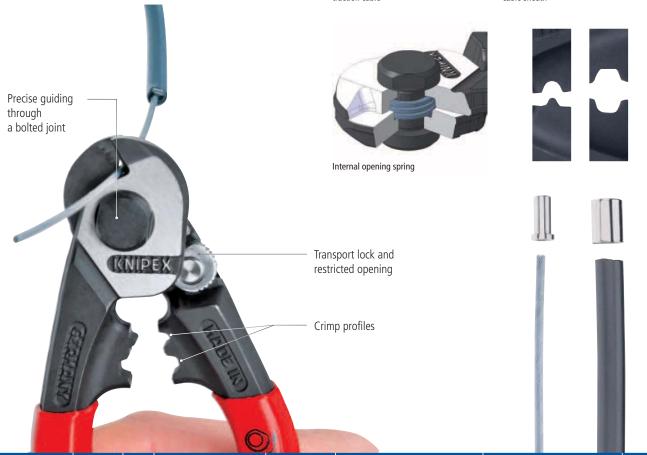






Crimping of the end ferrule onto the

Crimping of the end caps on the Bowden cable sheath



| | | | | | | (| Cutting c | apacities | | |
|-------------|----------|-----------|--|----------|----------------------------|------|-----------|-----------|------|-----|
| Article No. | EAN | ←→ | | Head | Handles | ♣ | | | | 47 |
| | 4003773- | mm | | | | Ø mm | Ø mm | Ø mm | Ø mm | g |
| 95 61 190 | 040651 | 190 | | polished | plastic coated | 7 | 6 | 4.0 | 2.5 | 314 |
| 95 62 190 | 071976 | 190 | ************************************* | polished | with multi-component grips | 7 | 6 | 4 | 2.5 | 314 |

95₆

Bowden Cable Cutter



- for Bowden cables and soft wire rope up to 3.0 mm dia. (also V2A)
- smooth and clean cutting due to special shape of the cutting edges
- sickle shape cutting edges surround the material and prevent the wire rope fanning out
- little handforce required due to very high transmission ratio
- with opening spring and locking device
- cutting edges additionally induction hardened

 High-grade special tool steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | | Shears | Head | Handles | Cutting capacities Ø mm | ΔΔ g |
|-------------|-----------------|-----------------|---------------|--------------------|----------|----------------|--------------------------|---------|
| 95 61 150 | 065197 | 150 | \$5 MM | black atramentized | polished | plastic coated | 3 | 205 |

95

Wire Rope and ACSR-Cable Cutters





- for wire ropes and steel rods, copper and aluminium cables
- suitable for cutting overhead cables with strain relief wire (ACSR-cables)
- angular cutting blades allow cutting of single rope wire
- optimum transmission ratio for high cutting performance
- bolted cutter head, replaceable
- low weight
- Cutter head: high-grade special tool steel, oil-hardened
- Handles: aluminium, high-strength



95 81 600

with reinforced cutter head for higher performance, also cuts piano wire

| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | mm² | Cutting c | | Ø mm | AWG | ΔΔ g |
|-------------|-----------------|-----------------|--|----------|------------------------|-----|-----------|------|------|-----|---------|
| 95 71 445 | 014522 | 445 | 801 | polished | with plastic grips | 95 | 10.0 | 7.0 | | 3/0 | 1083 |
| 95 71 600 | 014539 | 600 | * 1 | polished | with plastic grips | 150 | 14.0 | 9.0 | | 5/0 | 1716 |
| 95 77 600 | 025313 | 600 | ≙ 1000 V ♦ ◎ ■ 3 | polished | with dipped insulation | 150 | 14.0 | 9.0 | | 5/0 | 2359 |
| 95 81 600 | 025344 | 600 | * • • • • • • • • • • • • • • • • • • • | polished | with plastic grips | 150 | 16.0 | 10.0 | 4.5 | 5/0 | 2256 |

| 95 79 445 | 025320 | Spare cutter head for 95 71 445 |
|-----------|--------|---|
| 95 79 600 | 025337 | Spare cutter head for 95 71 600 / 95 77 600 |
| 95 89 600 | 025351 | Spare cutter head for 95 81 600 |

Crimp Grip Pliers



- for solder-free electrical connections
- quick release lever
- high contact pressure with minimum handforce using toggle lever transmission
- reproducible crimping quality with high tensile strength because of zero point lock
- adjustable crimping pressure
- Special steel, high-strength

97 00 215 D

crimps conductor and insulation in one single operation

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Head | Handles | | | Applications | Capacity mm ² | AWG | Number of crimping positions | Δ ['] Δ g |
|-------------|-----------------|-----------------|----|-----------|-----------|------------------|----------|------------------|---|-----------------------------|---------|------------------------------|-----------------------|
| 97 00 215 A | 006497 | 215 | MM | burnished | | | <u>-</u> | 3 | insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 520 |
| 97 00 215 B | 006503 | 215 | MM | | burnished | nickel plated | <u>~</u> | Service Services | non-insulated open plug-type connectors (plug width 6.3 mm) | 0.5 - 6.0 | 20 - 10 | 3 | 520 |
| 97 00 215 D | 006527 | 215 | MM | burnished | | | 5 | 3 | insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 513 |



⁹⁷ Crimping Pliers



- for cutting cables, stripping wire and crimping insulated and non-insulated terminals, connectors and plug type connectors
- with threaded holes for cutting copper and brass screws threaded M 2.6 / 3.0 / 3.5 / 4.0 and 5.0 mm
- Special steel, high-strength







| Article No. | EAN 4003773- | ←→ mm | Pliers | Handles | | | Applications | Capacity mm² | AWG | Number of crimping positions | ۵ ^ن ۵ g |
|---------------------|-----------------|-----------------|----------------------|-----------------------|----------|-------------|---|-----------------|---------|------------------------------|-----------------------|
| 97 21 215 | 019688 | 215 | burnished | with plastic grips | <u>-</u> | 350 | insulated terminals and plug connectors | 0.75 - 6.0 | 18 - 10 | 3 | 224 |
| 97 21 215 B | 019695 | 215 | burnished | with plastic grips | <u>~</u> | Carlo Carlo | non-insulated open plug-type connectors (plug width 6.3 mm) | 0.5 - 2.5 | 20 - 13 | 3 | 221 |
| 97 21 215 C | 019701 | 215 | burnished | with plastic grips | v | 0 | non-insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 222 |
| | | | black lacque | with multi- | 7 | 350 | insulated terminals and plug connectors | 0.75 - 6.0 | 18 - 10 | 3 | |
| 97 22 240 07 | 070726 | 240 | black lacque- red | component | <u>~</u> | · · | non-insulated open plug-type connectors (plug width 6.3 mm) | 0.5 - 6.0 | 20 - 10 | 3 | 300 |

Crimping Pliers



non-insulated terminals and connectors

• with threaded holes for cutting copper and brass screws threaded M 2.6 / 3.0 / 3.5 / 4.0 and 5.0 mm

• for cutting cables, stripping wire and crimping insulated and

■ Special steel, high-strength

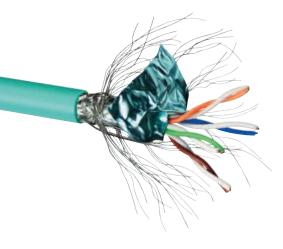


| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | | Applications | Capacity mm ² | AWG | Number of crimping positions | Δ [†] Δ g |
|-------------|-----------------|-----------------|-----|----------------|--------------|----------|---|---|---|-----------|------------------------------------|-----------------------|
| | 019718 | 225 | MM | burni- shed | with plastic | <u>-</u> | 3 | insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 240 |
| | | 019718 | 223 | 70001 | Sileu | grips | v | 0 | non-insulated terminals and plug connectors | 0.5 - 2.5 | 20 - 13 | 3 |

Insertion tool for LSA-Plus and identical



- tool for putting on boards, sockets and fields
- pushing down and cutting in one operation
- for UTP and STP cables, conductor 0.4 0.8 mm dia.
- with integrated pulling hook and release blade
- Housing: plastic, impact-proof





Putting down and cutting the cable in one operation



With integrated pulling hook

| Article No. | EAN 4003773- | ←→ mm | Head | Applications | Capacity Ø mm | Δ ¹ Δ g |
|-------------|-----------------|--------------|-----------|---|------------------|-----------------------|
| 97 40 10 | 044895 | 175 | burnished | UTP- and STP-cables, LSA-Plus and identical | 0.4 - 0.8 | 100 |

KNIPEX MultiCrimp®

Crimping Pliers with quick changer magazine



Compact, inexpensive and light-weight crimping pliers for fitting and repairs. The electrician needs only one tool now instead of five as before.

- just one tool for the most common crimping applications
- crimping dies changed guickly and easily without any additional tool
- secure and protected storage of the interchangeable dies in a round magazine
- comfortable, powerful crimping pliers in professional quality
- same reliable crimping results as with fixed crimping dies
- repetitive, high crimping quality due to precision dies and integral lock (self-releasing mechanism)
- Chrome vanadium electric steel in special quality, oil-hardened
- Round magazine: plastic, fibreglass-reinforced





Changing position: service lever opens out for parallel jaw positioning

97 33 01

Crimping pliers with round magazine and three interchangeable die sets for non-insulated open plug connectors (4.8 + 6.3 mm width) from 0.5 - 6.0 mm²; insulated terminals + plug connectors from 0.5 - 6.0 mm²; end sleeves (ferrules) from 0.25 - 6.0 mm²

97 33 02

Crimping pliers with round magazine and five interchangeable die sets for noninsulated open plug connectors (4.8 + 6.3 mm width) from 0.5 - 6.0 mm²; insulated terminals + plug connectors from 0.5 - 6.0 mm²; end sleeves (ferrules) from 0.25 - 6.0 mm²; non-insulated terminals and plug connectors from 0.5 - 10 mm²; non-insulated butt connectors from 1.5 - 10 mm²

The MultiCrimp® Pliers are not available in the U.S.A.



Changing the crimping dies: unlock the magazine position, take out the set of dies which the pliers have been pushed on



Fold in the service lever and press the pliers – ready for use again

CRIMPING PLIERS



Magazine for crimping dies can be carried on a belt



Clearly visible marking on the crimping dies with pictograms

The MultiCrimp® Pliers are not available in the U.S.A.

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | F | | Applications | Capacity mm² | AWG | Number of crimping positions | ΔΔ g |
|-------------|-----------------|-----------------|----|--|---------------------------------|---------|-------------|--|--------------------------|-------------------|------------------------------|---------|
| | | | | | | <u></u> | Carlo Carlo | non-insulated, open plug- type connectors | 0.5 - 6.0 | 20 - 10 | 3 | |
| 97 33 01 | 066927 | 250 | MM | burnished | with multi-com- ponent grips | | 300 | insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 770 |
| | | | | | | | | End Sleeves (ferrules) | 0.25 - 6.0 | 23 - 10 | 5 | |
| | | | | non-insulated, open plugtype connectors 0.5 - 6.0 insulated terminals and plug connectors 0.5 - 6.0 | 0.5 - 6.0 | 20 - 10 | 3 | | | | | |
| | | | | | | | 9 | | 0.5 - 6.0 | 20 - 10 | 3 | |
| 97 33 02 | 066934 | 250 | MM | burnished | with multi-com- ponent grips | | | End Sleeves (ferrules) | 0.25 - 6.0 | 23 - 10 | 5 | 870 |
| | | | | | | v | 0 | non-insulated terminals and plug connectors | 0.5 - 10.0 | 20 - 7 | 4 | |
| | | | | | | | - | non-insulated butt connectors | 1.5 - 4.0 6.0 + 10.0* | 15 - 11 10 + 7 | 3 2 | |

| 97 39 05 | 070078 | Crimping dies for non-insulated open plug-type connectors 4.8 + 6.3 mm | Carlo Carlo |
|----------|--------|--|----------------|
| 97 39 06 | 070085 | Crimping dies for insulated terminals + plug connectors | 3 |
| 97 39 08 | 070092 | Crimping dies for end sleeves (ferrules) | |
| 97 39 13 | 070108 | Crimping dies for non-insulated terminals + plug connectors | 0 |
| 97 39 30 | 070115 | Crimping dies for non-insulated butt connectors | Carried States |
| 97 39 90 | 070061 | Quick Changer Magazine empty | |

 $[\]ensuremath{^{\star}}$ compression joints in conformance to DIN 46267

Crimp System Pliers

(PATENTED)

for exchangeable crimping dies





97 43 200 A MM



- just one tool for almost 1000 crimping applications
- almost parallel crimping die movement
- repetitive, high crimping quality due to precision dies and integral lock (self-releasing mechanism)
- crimping pressure has been set precisely (calibrated) in the factory, re-adjustable
- optimum transmission of force due to lever action for fatigue-reduced operation
- ergonomically designed handles
- different locators for precise positioning of the connectors
- crimping dies for applications not covered in the range offered here, may be available on request
- Chrome vanadium electric steel in special quality, oil-hardened

97 43 200

comes in a plastic case; foam insert with recesses for crimping dies and locators; with service tool (Allen key), screws and nuts; without crimping dies

Pliers without crimping dies, without case

with attached crimping dies for non-insulated open plug-type connectors (4.8 and 6.3 mm connector width)

with attached crimping dies for insulated terminals and plug connectors



Crimp System Pliers 97 43 200 with crimping dies 94 49 30 for non-insulated



Crimp System Pliers 97 43 200 with crimping dies 97 49 35 for spark plug



97 43 200 with crimping dies 97 49 61 and revolvable locator 97 49 90 for turned types of connectors with varying pin diameters



97 43 400 Crimp System Pliers with crimping dies 97 49 24 and locator 97 49 93 for D-Sub plugs

| Article No. | EAN 4003773- | ←→ mm | | | | Pliers | Handles | Applications | Capacity mm ² | AWG | Number of crimping positions | ∆ g |
|-------------|-----------------|-----------------|----|----------|-------------|-----------|---------------------------------|--|-----------------------------|---------|------------------------------------|--------|
| 97 43 200 | 030812 | 200 | MM | | | burnished | with multi-com- ponent grips | see crimping dies table | | | | 988 |
| 97 43 200 A | 071587 | 200 | MM | | | burnished | with multi-com- ponent grips | see crimping dies table | | | | 574 |
| 97 43 05 | 031031 | 200 | MM | <u>~</u> | Carlo Carlo | burnished | with multi-com- ponent grips | Crimp System Pliers for non-insulated open plug-type connectors (4.8 and 6.3 mm connector width) | 0.5 - 6.0 | 20 - 10 | 3 | 618 |
| 97 43 06 | 031048 | 200 | MM | <u>-</u> | 3 | burnished | with multi-com- ponent grips | Crimp System Pliers for insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 610 |

AR CONNECTORS

Crimping Dies for Crimp System Pliers

Special profiles on request

| Crimp | ing D | ies | for Cr | imp System Pliers | | | | - 1 | | |
|-------------|-----------------|----------------|--|--|--|--------------------|------------------------------------|-------------------------------------|------------------------------|----------|
| Article No. | EAN 4003773- | | | Applications | Capacity mm ² | AWG | Capacity SW mm | Sleeves Ø mm | Number of crimping positions | Δ'Δ g |
| 97 49 04 | 030850 | M | Carlo Carlo | non-insulated Plug Connectors | 0.1 - 2.5 | 27 - 13 | | | 4 | 42 |
| 97 49 05 | 030867 | M | · · | non-insulated Plug Connectors | 0.5 - 6.0 | 20 - 10 | | | 3 | 46 |
| 97 49 06 | 030836 | <u>-</u> | 300 | insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | | | 3 | 45 |
| 97 49 08 | 030874 | U | | End Sleeves (ferrules) | 0.25 - 6.0 | 23 - 10 | | | 5 | 49 |
| 97 49 09 | 030881 | \blacksquare | | End Sleeves (ferrules) | 10 / 16 / 25 | 7/ 5/ 3 | | | 3 | 50 |
| 97 49 13 | 030843 | V | | non-insulated terminals and plug connectors | 0.5 - 10.0 | 20 - 7 | | | 4 | 37 |
| 97 49 15 | 043164 | | W. | lug connectors and non-insulated open plug type connectors (plug width 6.3 mm) | 1.25-2.5 + 3.0-6.0 | 17 - 13; 12 - 9 | | | 2 + 1 | 56 |
| 97 49 16 | 040675 | ^ | P | insulated terminals and plug connectors | 10.0 - 16.0 | 7 / 5 | | | 2 | 46 |
| 97 49 18 | 063186 | T | | Twin end sleeves (ferrules) for two flexible conductors | 2x6 / 10 / 16 | 10 / 7 / 5 | | | 3 | 48 |
| 97 49 19 | 030898 | ¥ | | End Sleeves (ferrules) | 35 - 50 | 2/0 | | | 2 | 46 |
| 97 49 20 | 045069 | | C | F-connectors for TV and satellite connections | | | 7.0; 8.4; 8.1 | 7.7; 9.5; 9.5 | 3 | 50 |
| 97 49 23 | 052135 | v | | non-insulated terminals and plug connectors | 16 + 25 | 5 + 3 | | | 2 | 45 |
| 97 49 24 | 030911 | ^ | - Ville | D Sub; HD 20; HDE plug | 0.03 - 0.56 | 32 - 20 | | | 3 | 41 |
| 97 49 30 | 030904 | | · | non-insulated butt connectors | 1.5 - 4.0 6.0 + 10.0* | 15 - 11 10 + 7 | | | 3 2 | 37 |
| 97 49 35 | 034315 | <u> </u> | | spark plug connectors and distributors | 1 | 17 | | | 5 | 52 |
| 97 49 40 | 030959 | | O | Coax connectors RG 58, 59, 62, 71, 223 | | | 5.4; 6.48; 1.72 | 6.4; 7.6; 2.1 | 3 | 57 |
| 97 49 44 | 041443 | M | was the same of th | rolled contacts | 0.14 - 1.5 | 26 - 15 | | | 3 | 45 |
| 97 49 50 | 030966 | | OFF. | Coax connectors / Car phone RG 58, 174, 188, 316 | | | 3.25; 4.52; 5.41; 1.72; 1.07 | 3.9, 5.4; 6.4; 2.1; 1.3; 0.95 | 6 | 48 |
| 97 49 54 | 041450 | M | UN TELL | modular plugs | 0.5 - 2.5 | 20 - 13 | | | 4 | 49 |
| 97 49 59 | 073734 | • | ختنسس | solar cable connectors Helios H4 (Amphenol) | 2.5 + 4.0 + 6.0 mm ² | 13 - 10 | | | 3 | 35 |
| 97 49 60 | 030928 | | | turned contacts (HTS + Harting) | 0.14 - 4.0 | 26 - 11 | | | 4 | 53 |
| 97 49 62 | 063179 | ≥ 0 | | solar cable connectors (Huber + Suhner) | 2.5 + 4.0 | 13 + 11 | | | 3 | 41 |
| 97 49 63 | 066675 | → • | | solar cable connectors (Huber + Suhner) | 4.0 + 6.0 | 11 + 10 | | | 3 | 33 |
| 97 49 64 | 044055 | • | | ABS connectors | 1.0 - 6.0 | 17 - 10 | | | 2 | 73 |
| 97 49 65 | 066682 | | and the same of | solar cable connectors MC3 (Multi-Contact) | 2.5 - 6.0 | 13 - 10 | | | 3 | 33 |
| 97 49 66 | 066699 | M | Contract of the contract of th | solar cable connectors MC4 (Multi-Contact) | 2.5 - 6.0 | 13 - 10 | | | 3 | 33 |
| 97 49 66 4 | 072096 | <u>~</u> | Control of the Contro | solar cable connectors MC4 (Multi-Contact) cutting - stripping - crimping | 4.0 | 11 | | | 1 | 35 |
| 97 49 66 6 | 072102 | | Carle Marie | solar cable connectors MC4 (Multi-Contact) cutting - stripping - crimping | 6.0 | 10 | | | 1 | 35 |
| 97 49 67 | 066705 | M | Sandy Sandy | solar cable connectors (Hirschmann) | 2.5 - 6.0 | 13 - 10 | | | 3 | 33 |
| 97 49 68 | 066712 | • | Carried States | solar cable connectors (Tyco) | 1.5 - 6.0 | 15 - 10 | | | 4 | 33 |
| 97 49 69 1 | 072119 | | | solar cable connectors (Wieland) | 1.5 - 2.5 | 15 + 13 | | | 2 | 35 |
| 97 49 69 2 | 072126 | • | | solar cable connectors (Wieland) | 4.0 - 10.0 | 11 - 7 | | | 3 | 35 |
| 97 49 70 | 030942 | <u></u> | | Western plugs | 4, 6, 8-poles RJ 10 / 11 / 12 / 45 | | | | 3 | 72 |
| 97 49 74 | 044062 | <u>-</u> | | unshielded Molex plugs | 4, 6, 8-poles RJ 10 / 11 / 12 / 45 | | | | 3 | 42 |
| 97 49 76 | 047513 | = | | shielded Stewart plugs | | | | | 2 | 50 |
| 97 49 81 | 042778 | | 35 | Harting connectors for fibre optics | | | 3.0; 4.95; 6.5 | 3.5; 6.0; 7.5 | 3 | 52 |
| 97 49 82 | 042785 | | 330 | Telegärtner connectors for fibre optics | | | 3.25; 3.65; 4.52 | 3.6; 4.0; 5.4 | 3 | 58 |
| | n inints in co | r | | NIN 46267 | | 4 4 1 | The second second | THE RESERVE OF THE | | |

^{*} compression joints in conformance to DIN 46267

Crimping Dies for Crimp System Pliers

| Article No. | EAN 4003773- | | Applications | Capacity mm² | AWG | Capacity SW mm | Sleeves Ø mm | Number of crimping positions | Δ ['] Δ g |
|-------------|-----------------|-----|--|-----------------|-----|-------------------|------------------|------------------------------------|-----------------------|
| 97 49 83 | 044079 | 32 | F-SMA, ST-,SC + STSC/K-connectors for fibre optics | | | 3.65; 4.2; 5.0 | 4.3; 5.4; 6.0 | 3 | 60 |
| 97 49 84 | 042792 | 315 | Harting/Suhner connectors for fibre optics | | | 3.8; 4.3; 4.95 | 4.5; 5.2; 6.0 | 3 | 52 |
| 97 49 87 | 043331 | 325 | F-SMA, ST and MIC connectors for fibre optics | | | 8.7 | 9.5 | 1 | 46 |

^{*} compression joints in conformance to DIN 46267

Locators for crimping pliers and crimping dies

| Article No. | EAN 4003773- | Applications | ∆ d g |
|-------------|-----------------|---|-------------|
| 97 49 59 1 | 073741 | Locator for 97 49 59 | 55 |
| 97 49 65 1 | 066729 | Locator for 97 49 65 (solar cable connectors MC3) | 72 |
| 97 49 66 1 | 066736 | Locator for 97 49 66 (solar cable connectors MC4) | 72 |
| 97 49 68 1 | 066743 | Locator for 97 49 68 (solar cable connectors Solarlok) | 72 |
| 97 49 69 11 | 072133 | Locator for 97 49 69 1 and 97 49 69 2 | 55 |
| 97 49 90 | 031017 | Locator for 97 49 60 (HTS+Harting) | 69 |
| 97 49 93 | 047926 | Locator for 97 49 24 (D-Sub-plugs) | 39 |
| 97 49 94 | 030997 | Locator for 97 49 04 / 97 52 04 / 97 52 34 | 69 |
| 97 49 95 | 031000 | Locator for 97 49 05 / 97 52 05 / 97 52 35 | 22 |
| 97 59 65 2 | 071600 | Locator for 97 52 65 / 97 52 65 A / 97 52 65 DG / 97 52 65 DG A | 237 |



Locator 97 59 65 2 for four-mandrel crimping pliers, adjustable in length and diameter for various plugs

Mounting Tool for MC3 connectors



- for easy and quick assembly of MC3 solar cable connectors
- for fit solar sleeves for connectors from 2.5 to 10.0 mm²
- three capsules (2.5 / 4.0; 6.0; 10.0 mm²) for pulling on the sleeves, integrated in the detachable handle
- Body: plastic, fibreglass-reinforced



The assembly tool comes with three torpedo mandrels for the various cable cross-sections

SOLAR TOOL

| Article No. | EAN 4003773- | ←→ mm | Capacity mm ² | ∆ d g |
|-------------|-----------------|-----------------|-----------------------------|-------------|
| 97 49 65 2 | 072010 | 325 | 2.5 - 10.0 | 460 |

Set of Mounting Tools

for solar cable connectors MC4 (Multi-Contact)



- set of two mounting tools
- to tighten cable glands of MC4 solar plugs
- to open the locking of MC4 housings (even in case of mounted lock clip)
- Tool: plastic, fibreglass reinforced

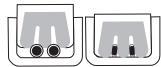
SOLAR TOOL

| Article No. | EAN | ←→ | ∆†∆ |
|-------------|----------|-----------|-----|
| | 4003773- | mm | g |
| 97 49 66 2 | 074106 | 115 | 18 |

Crimping Pliers for Scotchlok connectors with side cutter



- for crimping plastic-insulated telecommunication or signal cables using the U-contact principle in single Scotchlok connectors
- no stripping necessary, U-shaped elements establish the connection
- cutting edges additionally induction hardened
- with opening spring
- Vanadium electric steel; forged, oil-hardened



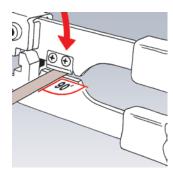
| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Applications | Capacity Ø mm | ΔΔ g |
|-------------|-----------------|-----------------|----|----------|----------------|----------------------------|------------------|---------|
| 97 50 01 | 028239 | 155 | MM | polished | plastic coated | Scotchlok single connector | 0.4 - 1.1 | 135 |

Crimping Pliers for Western plugs

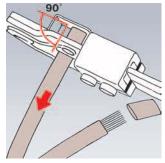




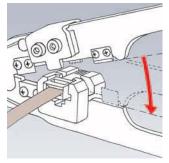
- for cutting and stripping unshielded ribbon telephone cables
- for crimping 4-pole Western plugs type RJ 10 (7.65 mm wide)
- Chrome vanadium electric steel in special quality, oil-hardened



Cut cables







Crimp Western plugs

| Article No. | EAN 4003773- | ←→ mm | | | | Pliers | Handles | Capacity | Number of crimping positions | ΔΔ g | |
|-------------|---|-----------------|----|-----------|--|-----------|--------------------|-------------------------|------------------------------------|---------|--|
| 97 51 04 | 028048 | 190 | WW | <u></u> - | | burnished | with plastic grips | RJ 10 (4-poles) 7.65 mm | 1 | 218 | |
| | | | | | | | | | | | |
| 97 59 06 | 029700 4 spare blades for 97 51 04 / 97 51 10 | | | | | | | | | | |



Crimping Pliers for Western plugs



- professional tool for cutting and stripping unshielded ribbon telephone cables
- for crimping 6- and 8-pole Western plugs type RJ 11/12 (9.65 mm width) and type RJ 45 (11.68 mm width)
- exact crimping process due to parallel crimping
- repetitive, high crimping quality due to integral lock (self-releasing mechanism)
- with length cutter and dismantling knife for ribbon cables 6 and 12 mm length
- with additional stripping device for round cables
- Chrome vanadium electric steel in special quality, oil-hardened





| Article No. | EAN 4003773- | ←→ mm | | | | Pliers | Handles | Capacity | Number of crimping positions | ΔΔ g |
|-------------|-----------------|--------------|--------------------------------------|----------|---------|--------|----------------------------|--|------------------------------------|---------|
| 97 51 10 | 043171 | 190 | MM | <u>-</u> | burnisl | | with multi-component grips | RJ 11/12 (6-poles) 9.65 mm RJ 45 (8-poles) 11.68 mm | 2 | 340 |
| | | | | | | | | | | |
| 97 59 06 | 029700 | 4 spar | spare blades for 97 51 04 / 97 51 10 | | | | | | | |

Crimping Pliers for Western plugs





- professional tool for cutting and stripping unshielded ribbon telephone cables
- for crimping 4-, 6- and 8-pole Western plugs type RJ 10 (7.65 mm width), type RJ 11/12 (9.65 mm width) and type RJ 45 (11.68 mm width)
- exact crimping process due to parallel crimping
- repetitive, high crimping quality due to integral lock (self-releasing mechanism)
- optimum transmission of force due to toggle lever action for fatigue-reduced operation
- with length cutter and dismantling knife for ribbon cables 6 and 12 mm length

- with additional stripping device for round cables
- Chrome vanadium electric steel in special quality, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | | | | Pliers | Handles | Capacity | Number of crimping positions | ∆ [†] ∆ g |
|-------------|-----------------|-----------------|----|----------|-----------|--------|---------------------------------|---|------------------------------|-----------------------|
| 97 51 12 | 043188 | 200 | MM | <u> </u> | burnished | | with multi-compo- nent grips | RJ 10 (4-poles) 7.65 mm RJ 11/12 (6-poles) 9.65 mm RJ 45 (8-poles) 11.68 mm | 3 | 522 |
| | 0.500.07 | | | 0.7 | = 4 4 5 | | | | | |
| 97 59 12 | 069997 | Spare | | | | | | | | |

Crimping Pliers also for two-hand operation







97 52 06 MM



97 52 09 WW





97 52 10 WW

97 49 94

97 49 95

030997

031000



First step: move the handle with two fingers only until both jaws touch the connector to be crimped

Locator for 97 49 04 / 97 52 04 / 97 52 34

Locator for 97 49 05 / 97 52 05 / 97 52 35



• for solder-free electrical connections

lock (self-releasing mechanism)

re-adjustable

compared with regular crimping pliers

head and ergnomically shaped handles

• the ingenious lever transmission reduces the handforce up to 30 %

• repetitive, high crimping quality due to precision dies and integral

• crimping pressure has been set precisely (calibrated) in the factory,

• two-hand operation for easy crimping of large conductor diameters • easy handling as a result of well balanced centre of gravity, angled

• Chrome vanadium electric steel in special quality, oil-hardened

Second step: now use the whole hand for further crimping procedure



Third step: when greater hand force is required, such as e.g. when crimping insulated connectors 6.0 mm², two-hand operation is possible by the longer handles

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | | Applications | Capacity mm² | AWG | Number of crimping positions | Δ ['] Δ g |
|-------------|-----------------|--------------|----|-----------|-----------------------------|----------|------------------------|---|-----------------|---------|------------------------------------|-----------------------|
| 97 52 04 | 025450 | 250 | MM | burnished | with non-slip plastic grips | M | Contract of the second | non-insulated, open plug-type connectors | 0.1 - 2.5 | 27 - 13 | 4 | 562 |
| 97 52 05 | 025467 | 250 | MM | burnished | with non-slip plastic grips | M | · · | non-insulated, open plug-type connectors | 0.5 - 6.0 | 20 - 10 | 3 | 572 |
| 97 52 06 | 025474 | 250 | MM | burnished | with non-slip plastic grips | <u>-</u> | - | insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 565 |
| 97 52 08 | 025481 | 250 | MM | burnished | with non-slip plastic grips | | | End Sleeves (ferrules) | 0.25 - 6.0 | 23 - 10 | 5 | 565 |
| 97 52 09 | 025498 | 250 | MM | burnished | with non-slip plastic grips | | | End Sleeves (ferrules) | 10 / 16 / 25 | 7/ 5/ 3 | 3 | 571 |
| 97 52 10 | 023678 | 250 | MM | burnished | with non-slip plastic grips | ○ | 6 | Coax-, BNC- and TNC- connectors | | | 3 | 577 |
| 97 52 13 | 048084 | 250 | MM | burnished | with non-slip plastic grips | v | 0 | non-insulated terminals and plug connectors | 0.5 - 10.0 | 20 - 7 | 4 | 558 |
| 97 52 19 | 052142 | 250 | MM | burnished | with non-slip plastic grips | ¥ | - | End Sleeves (ferrules) | 35 + 50 | 2 + 0 | 2 | 567 |
| 97 52 23 | 052159 | 250 | MM | burnished | with non-slip plastic grips | v | 0 | non-insulated terminals and plug connectors | 16 + 25 | 5 + 3 | 2 | 565 |
| | | | | | | | | | | | | |



97 Crimping Pliers short design



- repetitive, high crimping quality due to precision dies and integral lock (self-releasing mechanism)
- crimping pressure has been set precisely (calibrated) in the factory, re-adjustable
- optimum transmission of force due to toggle lever action for fatigue-reduced operation
- good handling due to 20° angled head, low weight and short design
- Chrome vanadium electric steel in special quality, oil-hardened



97 52 14

available as accessory: locator for non-insulated open plug-type connectors

| 97 52 14 026808 195 MM burnished with multi-component grips non-insulated open plug type connectors (plug width 2.8 + 4.8 mm) 0.10 - 1.5 27 - 16 4 | Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | | Applications | Capacity mm ² | AWG | Number of crimping positions | ΔΔ g |
|--|-------------|-----------------|-----------------|----|-----------|---------------------------------|---|-----------------|-----------------------|-----------------------------|---------|------------------------------|---------|
| Coax-, BNC- and With multi-compo- | 97 52 14 | 026808 | 195 | MM | burnished | | A | Service Service | type connectors (plug | 0.10 - 1.5 | 27 - 16 | 4 | 387 |
| 97 52 20 026853 195 MM burnished with multi-component grips with multi-component grips TNC-connectors RG 58/59/62/71/223 | 97 52 20 | 026853 | 195 | M | burnished | with multi-compo- nent grips | | 6 | TNC-connectors RG | | | 3 | 380 |

97 59 14 026976 Locator for 97 52 14

KNIPEX PreciForce® Crimping Pliers



For daily crimping applications, the specialist likes crimping pliers that work precisely and reliably. In addition, they should be light, comfortable to use, robust and reasonably priced: PreciForce®.

- repetitive, high crimping quality due to precision dies and integral lock (self-releasing mechanism)
- crimping pressure has been set precisely (calibrated) in the factory, re-adjustable
- high transmission of force thanks to toggle lever action for fatiguereduced working
- good handling thanks to favourable handle position, low weight, compact design and ergonomically shaped handles
- Chrome vanadium electric steel in special quality, oil-hardened





97 52 36

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | | Applications | Capacity mm ² | AWG | Number of crimping positions | Δ g |
|-------------|-----------------|-----------------|----|-----------|-------------------------------|----------|---|---|-----------------------------|-------------------|------------------------------|--------|
| 97 52 30 | 051855 | 220 | MM | burnished | with multi-component grips | | San | non-insulated butt connectors | 1.5 - 4.0 6.0 + 10.0* | 15 - 11 10 + 7 | 3 2 | 477 |
| 97 52 33 | 051862 | 220 | MM | burnished | with multi-component grips | v | | non-insulated terminals and plug connectors | 0.5 - 10.0 | 20 - 7 | 4 | 478 |
| 97 52 34 | 051879 | 220 | MM | burnished | with multi-component grips | M | Carlo Carlo | non-insulated open plug type connectors (plug width 2.8 + 4.8 mm) | 0.1 - 2.5 | 27 - 13 | 4 | 483 |
| 97 52 35 | 051886 | 220 | MM | burnished | with multi-component grips | M | · · | non-insulated open plug type connectors (plug width 4.8 + 6.3 mm) | 0.5 - 6.0 | 20 - 10 | 3 | 494 |
| 97 52 36 | 051893 | 220 | MM | burnished | with multi-component grips | • | 3 | insulated terminals and plug connectors | 0.5 - 6.0 | 20 - 10 | 3 | 487 |
| 97 52 37 | 063193 | 220 | MM | burnished | with multi-component grips | 5 | | heat shrinkeable sleeve connectors | 0.5 - 6.0 | 20 - 10 | 3 | 478 |
| 97 52 38 | 051909 | 220 | MM | burnished | with multi-component grips | ₩ | | End Sleeves (ferrules) | 0.25 - 6.0 | 23 - 10 | 5 | 493 |
| 97 52 50 | 051916 | 220 | MM | burnished | with multi-component grips | O | O | Coax-, BNC- and TNC-connectors for RG 58/174/188/316 | | | 6 | 498 |

| 97 49 94 | 030997 | Locator for 97 49 04 / 97 52 04 / 97 52 34 |
|----------|--------|--|
| 97 49 95 | 031000 | Locator for 97 49 05 / 97 52 05 / 97 52 35 |

^{*} compression joints in conformance to DIN 46267

Four-Mandrel Crimping Pliers for turned contacts



Turned contacts are used for particularly demanding plug-type connections, e.g. in medical industry and aeronautics. Extremely reliable crimping connections can be achieved only with pliers that work with absolute precision and maintain the required crimping depth in the 1/100 mm

- for crimping turned contacts
- four-mandrel crimping for top-quality crimping connections
- mandrel gauge to check the basic setting
- repetitive, high crimping quality due to integral lock (self-releasing mechanism)
- optimum transmission of force due to highly effective lever action for fatigue-reduced operation
- high operation comfort thanks to handy shape
- Chrome vanadium electric steel in special quality, oil-hardened

fine adjustment of pressure depending on the conductor's diameter by means of adjusting wheel; pliers in the plastic case with foam insert and standard locator for precise positioning of the contacts

97 52 63 DG

fine adjustment of pressure depending on the conductor's diameter by means of adjusting wheel; with digital display of the preset crimping capacities; display reversible between mm / inch and MIL numerical values; pliers in a plastic case with foam insert and standard locator for precise positioning of the contacts

pressure adjustment depending on the conductor's diameter by means of adjusting wheel in 4 different positions; locator for positioning the contacts

97 52 65

fine adjustment of pressure depending on the conductor's diameter by means of adjusting wheel; locator for positioning the contacts; with table for calculating the settings; pliers in a plastic case with foam insert

97 52 65 DG

fine adjustment of pressure depending on the conductor's diameter by means of adjusting wheel; with digital display of the preset crimping capacities; display reversible between mm / inch and MIL numerical values; with table for calculating the settings; pliers in a plastic case with foam insert and standard locator for precise positioning of the contacts

fine adjustment of pressure depending on the conductor's diameter by means of adjusting wheel; with table for calculating the settings; pliers in a plastic case with foam insert

97 52 65 DG A

fine adjustment of pressure depending on the conductor's diameter by means of adjusting wheel; with digital display of the preset crimping capacities; display reversible between mm / inch and MIL numerical values; with table for calculating the settings; pliers in a plastic case with foam insert; without locator

97 59 65 2

Universal Locator for 97 52 65 / 97 52 65 A / 97 52 65 DG / 97 52 65 DG A; Chrome vanadium electric steel in special quality, oil-hardened

■ locator that is universally adjustable (in length and diameter) for the repeatable exact alignment of turned contacts in crimping pliers; can be set to all commercially available contacts in the four-mandrel crimping pliers' capacity range

97 59 65 2



Standard locator



| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | | Applications | Capacity mm ² | AWG | Number of crimping positions | ΔΔ g |
|---------------|-----------------|--------------|-------------|------------------|-----------------------------------|------|-----------|---|-----------------------------|---------|------------------------------|---------|
| 97 52 63 | 050148 | 180 | (PATENTED) | nickel plated | with multi- component grips | × | - | turned contacts | 0.08 - 2.5 | 28 - 13 | 1 | 388 |
| 97 52 63 DG | 063209 | 195 | (PATENTED) | nickel plated | with multi- component grips | × | | turned contacts | 0.08 - 2.5 | 28 - 13 | 1 | 388 |
| 97 52 64 | 044093 | 180 | MM | nickel plated | with multi- component grips | × | | turned contacts | 0.08 - 2.5 | 28 - 13 | 1 | 424 |
| 97 52 65 | 045236 | 230 | (PATENTED) | nickel plated | with multi- component grips | × | | turned contacts (Harting; Ilme; Phoenix; Amphenol; Walther; HTS; Contact; Weidmüller) | 0.14 - 6.0 | 25 - 10 | 1 | 676 |
| 97 52 65 DG | 063216 | 250 | PATENTED | nickel plated | with multi- component grips | × | <i>_</i> | turned contacts (Harting; Ilme; Phoenix; Amphenol; Walther; HTS; Contact; Weidmüller) | 0.14 - 6.0 | 25 - 10 | 1 | 633 |
| 97 52 65 A | 071594 | 250 | PATENTED | nickel plated | with multi- component grips | × | | turned contacts (Harting; Ilme; Phoenix; Amphenol; Walther; HTS; Contact; Weidmüller) | 0.14 - 6.0 | 25 - 10 | 1 | 604 |
| 97 52 65 DG A | 071990 | 250 | PATENTED | nickel plated | with multi- component grips | × | فتتشر | turned contacts (Harting; Ilme; Phoenix; Amphenol; Walther; HTS; Contact; Weidmüller) | 0.14 - 6.0 | 25 - 10 | 1 | 633 |
| 97 59 65 2 | 071600 | Univers | cal Locator | for 07 E2 C | E / 07 E2 6F A | / 07 | E 2 & E D | G / 97 52 65 DG A | | | | |

97 59 65 2 071600 Universal Locator for 97 52 65 / 97 52 65 A / 97 52 65 DG / 97 52 65 DG

Self-Adjusting Crimping Pliers for end sleeves (ferrules) with lateral access

(PATENTED)



97 53 04







Compact crimping pliers for end sleeves (ferrules) with two great advantages for the user:

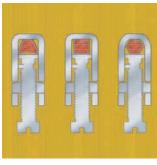
- Automatic self-adjustment to the end sleeve (ferrule) used: this allows the specialist to work with less strain and enables secure, reliable and quick crimping.
- Extensive range of applications: square crimping 0.08 to 10.0 mm², hexagon crimping 0.08 to 6.0 mm²
- for crimping end sleeves (ferrules) according to DIN 46228 parts 1 + 4
- self-adjusting adaptation to the desired end sleeve (ferrule) size: no wrong crimps caused by using the wrong die
- fits all twin ferrules within the application range
- lateral access of the end sleeves (ferrules) into the tool
- repetitive, high crimping quality due to integral lock (self-releasing mechanism)
- these tools have been set precisely (calibrated) in the factory, re-adjustable
- optimum transmission of force due to toggle lever action for fatigue-reduced operation
- high operation comfort thanks to handy shape and low weight
- Chrome vanadium electric steel in special quality, oil-hardened

square crimping for optimum contact areas in the clamp connection

97 53 14

hexagonal crimping for optimum positioning in confined areas





The square crimping allows better contact. The hexagonal crimping comes very close to the space-saving round shape. Compared with the square crimp, it has the same cross-section and can make optimum contact in narrow round terminal connectors. With both crimping shapes the often tricky feeding into the terminal connection is no longer necessary.



Square-crimped end sleeves (ferrules) always ensure good contact surfaces in the clamped connection

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | Applications | Capacity mm ² | AWG | Number of crimping positions | σg |
|-------------|-----------------|----------|----|----------------|-------------------------------|-----------|---------------------------|-----------------------------|---------|------------------------------------|-----|
| 97 53 04 | 028017 | 180 | MM | burni- shed | with multi-component grips | \$ | End Sleeves (ferrules) | 0.08 - 10 | 28 - 7 | 1 | 405 |
| 97 53 14 | 041474 | 180 | MM | burni- shed | with multi-component grips | | End Sleeves (ferrules) | 0.08 - 6.0 | 28 - 10 | 1 | 404 |

Self-Adjusting Crimping Pliers for end sleeves (ferrules) with front loading

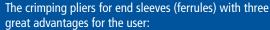


97 53 08 WW









- Automatic self-adjustment to the end sleeve (ferrule) used: This allows the specialist to work with less strain and enables secure, reliable and quick crimping.
- Range of applications also for large cross-sections: square crimping 0.08 to 10.0 + 16.0 mm²
- Front loading: very helpful under difficult working conditions in confined spaces.
- for crimping end sleeves (ferrules) according to DIN 46228 parts 1 + 4
- self-adjusting adaptation to the desired end sleve (ferrule) size: no wrong crimps caused by using the wrong die
- fits all twin-ferrules within the application range
- front loading of the end sleeves (ferrules) into the tool
- repetitive, high crimping quality due to integral lock (self-releasing
- crimping pressure has been set precisely (calibrated) in the factory, re-adjustable
- optimum transmission of force due to toggle lever action for fatigue-reduced operation
- high operation comfort thanks to handy shape and low weight
- Chrome vanadium electric steel in special quality, oil-hardened

97 53 08

crimping from 0.08 - 10.0 mm² in one profile; end sleeves (ferrules) up to 2.5 mm² can also be loaded parallely from the side

97 53 09

crimping from 0.08 - 10.0 and 16.0 mm² in one profile; with selector lever for setting the crimping area either to 0.08 - 10 mm² or 16 mm²



Square crimping



Front loading of end sleeves (ferrules) e.g. in switchboards



97 53 08: lateral loading of end sleeves (ferrules) up to 2.5 mm² parallely from the side e.g. in confined areas

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | Applications | Capacity mm² | AWG | Number of crimping positions | Δ ['] Δ g |
|-------------|-----------------|--------------|----|----------------|-------------------------------|---|---------------------------|-----------------|------------|------------------------------|-----------------------|
| 97 53 08 | 040187 | 190 | MM | burni- shed | with multi-component grips | Ø | End Sleeves (ferrules) | 0.08 - 10 | 28 - 7 | 1 | 477 |
| 97 53 09 | 044550 | 190 | MM | burni- shed | with multi-component grips | M | End Sleeves (ferrules) | 0.08 - 10 + 16 | 28 - 7 + 5 | 1 | 486 |

Crimping Pliers for micro plugs

parallel crimping



- parallel crimping performance to satisfy the particularly high standards of small connectors
- repetitive, high crimping quality due to precision dies and integral lock (self-releasing mechanism)
- fixed locator for D-Sub micro plugs for an exact positioning of connector and cable
- crimping pressure has been set precisely (calibrated) in the factory, re-adjustable
- optimum transmission of force due to toggle lever for fatiguereduced operation

- crimping pliers for other mini plugs as e.g. HD 22, Modu IV, Micro Timer, MQS, ... on request
- Chrome vanadium electric steel in special quality, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | | | Applications | Capacity mm ² | AWG | Number of crimping positions | ΔΔ g |
|-------------|-----------------|-----------------|----|-----------|----------------------------|---|--------|---------------------------|-----------------------------|---------|------------------------------|---------|
| 97 54 24 | 060215 | 190 | MM | burnished | with multi-component grips | ^ | - CORL | D Sub; HD 20; HDE plug | 0.03 - 0.56 | 32 - 20 | 3 | 305 |

Crimping Pliers for end sleeves (ferrules)



- for crimping end sleeves (ferrules) according DIN 46228 parts 1 + 4 in the range from 0.25 up to 2.5 mm²
- crimping in marked trapezoidal dies for reliable connections between the sleeve and the conductor
- Vanadium electric steel; forged, oil-hardened

| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | | | Capacity mm ² | AWG | Number of crimping positions | Δ ['] Δ g |
|-------------|-----------------|-----------------|-----------------|----------|--|----------------|---------|-----------------------------|---------|------------------------------|-----------------------|
| 97 61 145 A | 035558 | 145 | | polished | plastic coated | \blacksquare | | 0.25 - 2.5 | 23 - 13 | 6 | 140 |
| 97 61 145 F | 043980 | 145 | MM | polished | plastic coated | ┙ | | 0.25 - 2.5 | 23 - 13 | 6 | 140 |
| 97 62 145 A | 060154 | 145 | | polished | with multi-component grips | | | 0.25 - 2.5 | 23 - 13 | 6 | 170 |
| 97 68 145 A | 071754 | 145 | ≙ 1000 V | polished | insulated with multi-component grips, VDE-tested | U | <i></i> | 0.25 - 2.5 | 23 - 13 | 6 | 175 |

Crimping Pliers for end sleeves (ferrules)



- ullet for crimping end sleeves (ferrules) according DIN 46228 parts 1 + 4 from 0.25 to 16 mm²
- crimping in marked half-round dies for reliable connections between the sleeve and the conductor
- 9 particularly deep dies with conical side faces
- Special tool steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | Head | Handles | | Applications | Capacity mm ² | AWG | Number of crimping positions | Δ ['] Δ g |
|-------------|-----------------|-----------------|----------|----------------------------|--------|------------------------|-----------------------------|--------|------------------------------------|-----------------------|
| 97 71 180 | 040668 | 180 | polished | plastic coated | \Box | End Sleeves (ferrules) | 0.25 - 16.0 | 23 - 5 | 9 | 240 |
| 97 72 180 | 060185 | 180 | polished | with multi-component grips | | End Sleeves (ferrules) | 0.25 - 16.0 | 23 - 5 | 9 | 283 |

Crimping Pliers for end sleeves (ferrules) with front loading



- ullet for crimping end sleeves (ferrules) according DIN 46228 parts 1 + 4 in the range 0.5 to 6.0 mm²
- ideal for work in confined areas, e.g. in narrow and deep switch boxes
- Special tool steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | Head | Handles | | Applications | Capacity mm ² | AWG | Number of crimping positions | Δ <mark>'</mark> Δ g |
|-------------|-----------------|----------|---------------|----------------|----------|------------------------|-----------------------------|---------|------------------------------|-------------------------|
| 97 81 180 | 019794 | 180 | polis- hed | plastic coated | ~ | End Sleeves (ferrules) | 0.5 - 6.0 | 20 - 10 | 1 | 227 |

Crimp Assortments for cable connectors













- two stackable plastic inserts with 6 trays each for connectors
- with an assortment of standard cable connectors





97 90 00

with Crimp Grip Pliers 97 00 215 A

97 90 01

with Crimping Pliers 97 32 225

97 90 21

with Crimping Pliers "PreciForce" 97 52 36 (for insulated terminals and plug connectors)

97 90 22

with Self-Adapting Universal Insulation Stripper "Multistrip 10" 12 42 195; with Crimping Pliers "PreciForce" 97 52 36 (for insulated terminals and plug connectors)







| Article No. | EAN | Pliers | | | Cable Connectors | I Units | Cable | 4 |
|----------------|----------|--|-----------|-------|--|---------|-----------|------|
| , in area area | 4003773- | | | | | 05 | mm² | g |
| | | | | | Female Sockets 6.0 x 0.8 mm ² | 25 | 0.5 - 1.0 | |
| | | | | CA TO | Female Sockets 6.0 x 0.5 mm ² | 25 | 1.5 - 2.5 | |
| 97 90 00 | 025375 | 97 00 215 A | | | Female Sockets 8.0 x 0.8 mm ² | 25 | 1.5 - 2.5 | 1391 |
| | | 1 10 9 | | | Round Sockets 4.0 mm Ø | 25 | 0.5 - 1.0 | |
| | | | | | Round Pin Plugs 4.0 mm Ø | 25 | 1.5 - 2.5 | |
| | | | | 4 | Cable Connectors, eye type 4.0 mm Ø | 25 | 0.5 - 1.0 | |
| | | | | | Cable Connectors, eye type 4.0 mm Ø | 25 | 1.5 - 2.5 | |
| 07.00.04 | 025202 | 07.22.225 | | 3 | Cable Connectors, eye type 5.0 mm Ø | 25 | 1.5 - 2.5 | 1123 |
| 97 90 01 | 025382 | 97 32 225 | | | Cable Connectors, eye type 5.0 mm Ø | 25 | 4.0 - 6.0 | 1123 |
| | | | | | Cable Connectors, eye type 6.0 mm Ø | 25 | 4.0 - 6.0 | |
| | | A STATE OF THE PARTY OF THE PAR | | | Insulated Butt Connectors | 25 | 0.5 - 1.0 | |
| | | | | 1 | Insulated Butt Connectors | 25 | 1.5 - 2.5 | |
| | | | | | Female Sockets 6.0 x 0.8 mm ² | 25 | 0.5 - 1.0 | |
| 97 90 21 | 062134 | 97 52 36 | | Ch. | Female Sockets 6.0 x 0.5 mm ² | 25 | 1.5 - 2.5 | 1416 |
| 3, 30 2. | 002131 | 37 32 30 | | | Cable Connectors, eye type 4.0 mm Ø | 25 | 0.5 - 1.0 | 1110 |
| | | | | | Cable Connectors, eye type 5.0 mm Ø | 25 | 0.5 - 1.0 | |
| | | U Ma | | | Cable Connectors, eye type 5.0 mm Ø | 20 | 4.0 - 6.0 | |
| | | | | - J | Cable Connectors, eye type 4.0 mm Ø | 25 | 1.5 - 2.5 | |
| | | | | | Cable Connectors, eye type 5.0 mm Ø | 25 | 1.5 - 2.5 | |
| 97 90 22 | 062141 | 97 52 36 | 12 42 195 | | Cable Connectors, eye type 6.0 mm Ø | 25 | 1.5 - 2.5 | 1527 |
| 37 30 22 | 002141 | 37 32 30 | 12 12 133 | | Cable Connectors, eye type 8.0 mm Ø | 20 | 4.0 - 6.0 | 1327 |
| | | | | | Insulated Butt Connectors | 25 | 0.5 - 1.0 | |
| | | | | 1 | Insulated Butt Connectors | 25 | 1.5 - 2.5 | |
| | | | | | Insulated Butt Connectors | 20 | 4.0 - 6.0 | |

Crimp Assortments for end sleeves (ferrules)











■ in a TANOS MINI-systainer® (solid plastic box)

- two stackable plastic inserts with 6 trays each for connectors
- with an assortment of standard cable connectors

97 90 05

with Crimping Pliers for end sleeves 97 71 180; end sleeves (ferrules) without collar

97 90 06

with Crimping Pliers for end sleeves 97 71 180; End Sleeves (ferrules) with collar

97 90 09

with Self-Adjusting Crimping Pliers for End Sleeves (ferrules) 97 53 04

97 90 10

with Self-Adjusting Insulation Stripper 12 40 200; with Self-Adjusting Crimping Pliers for End Sleeves (ferrules) 97 53 04

97 90 12

with Self-Adjusting Insulation Stripper 12 40 200; with Self-Adjusting Crimping Pliers for End Sleeves (ferrules) 97 53 08

97 90 23

with Crimping Pliers "PreciForce" for End Sleeves (ferrules) 97 52 38

97 90 24

with Self-Adapting Universal Insulation Stripper "Multistrip 10" 12 42 195; with Self-Adjusting Crimping Pliers for End Sleeves (ferrules) 97 53 08









Several boxes can be connected with each other

| Article No. | EAN 4003773- | Pliers | | 200 x mm² | 150 x mm² | 100 x mm² | 75 x mm² | 50 x mm² | 40 x mm² | Δ g |
|-------------|-----------------|----------------------|---------|------------------------------------|--------------|--------------|-------------|-------------|-------------|--------|
| 97 90 05 | 025535 | 97 71 180 | | 0.5 / 0.75 / 1.0 / 1.5 / 2.5 | 4.0 / 6.0 | | | 10.0 / 16.0 | | 930 |
| 97 90 06 | 025542 | 97 71 180 | <i></i> | 0.5 / 0.75 / 1.0 / 1.5 | 2.5 | | 4.0 / 6.0 | 10.0 | 16.0 | 1000 |
| 97 90 09 | 028574 | 97 53 04 | | 0.5 / 0.75 / 1.0 / 1.5 / 2.5 | | 4.0 / 6.0 | | 10.0 | | 1420 |
| 97 90 10 | 046202 | 97 53 04 / 12 40 200 | <i></i> | 0.5 / 0.75 / 1.0 / 1.5 / 2.5 | | 4.0 / 6.0 | | 10.0 | | 1353 |
| 97 90 12 | 048916 | 97 53 08 / 12 40 200 | | 0.5 / 0.75 / 1.0 / 1.5 / 2.5 | | 4.0 / 6.0 | | 10.0 | | 1427 |
| 97 90 23 | 062158 | 97 52 38 | - | 0.5 / 0.75 / 1.0 / 1.5 / 2.5 | | 4.0 / 6.0 | | | | 1226 |
| 97 90 24 | 062394 | 97 53 08 / 12 42 195 | | 0.5 / 0.75 / 1.0 / 1.5 / 2.5 | | 4.0 / 6.0 | | 10.0 | | 1348 |



Tool Case for Photovoltaics



- with tools for photovoltaics
- without crimping dies for individual equipment please order separately (see ref. 97 49 ...)
- with service tools (hexagonal key) for the change of crimping dies
- shock-resistant plastic case
- foam insert with recesses for tools, crimping dies and locators external dimensions (W x H x D): 345 x 80 x 280 mm

| Article No. | EAN 4003773- | | | | Units | ΔΔ g |
|-------------|-----------------|-----------------|--|-------------------------------|-------|---------|
| 97 91 01 | 070351 | Tool Case for F | Photovoltaics | | | 1964 |
| | | 12 12 11 | Precision Insulation Stripper with shaped blades | MM | 1 | |
| | | 95 16 165 | Cable Shears | ≙ 1000 V △♠ ♦ 1 | 1 | |
| | | 97 43 200 | Crimp System Pliers | MM | 1 | |

not included (please order separately):

| 97 49 62 | 063179 | Crimping dies for solar cable connectors (Huber + Suhner) |
|-------------|--------|---|
| 97 49 63 | 066675 | Crimping dies for solar cable connectors (Huber + Suhner) |
| 97 49 65 | 066682 | Crimping dies for solar cable connectors MC3 (Multi-Contact) |
| 97 49 65 1 | 066729 | Locator for 97 49 65 (solar cable connectors MC3) |
| 97 49 65 2 | 072010 | Mounting Tool for MC3 connectors |
| 97 49 66 | 066699 | Crimping dies for solar cable connectors MC4 (Multi-Contact) |
| 97 49 66 1 | 066736 | Locator for 97 49 66 (solar cable connectors MC4) |
| 97 49 66 4 | 072096 | Crimping dies for solar cable connectors MC4 (Multi-Contact) cutting - stripping - crimping |
| 97 49 66 6 | 072102 | Crimping dies for solar cable connectors MC4 (Multi-Contact) cutting - stripping - crimping |
| 97 49 67 | 066705 | Crimping dies for solar cable connectors SunCon (Hirschmann) |
| 97 49 68 | 066712 | Crimping dies for solar cable connectors Solarlok (Tyco) |
| 97 49 68 1 | 066743 | Locator for 97 49 68 solar cable connectors (Solarlok) |
| 97 49 69 1 | 072119 | Crimping dies for solar cable connectors gesis® PST 40 (Wieland) |
| 97 49 69 2 | 072126 | Crimping dies for solar cable connectors gesis® PST 40 (Wieland) |
| 97 49 69 11 | 072133 | Locator for 97 49 69 1 and 97 49 69 2 |
| 97 49 59 | 073734 | Crimping dies for solar cable connectors Helios H4 (Amphenol) |
| | | |





Tool Case for Photovoltaics, MC3 (Multi-Contact)

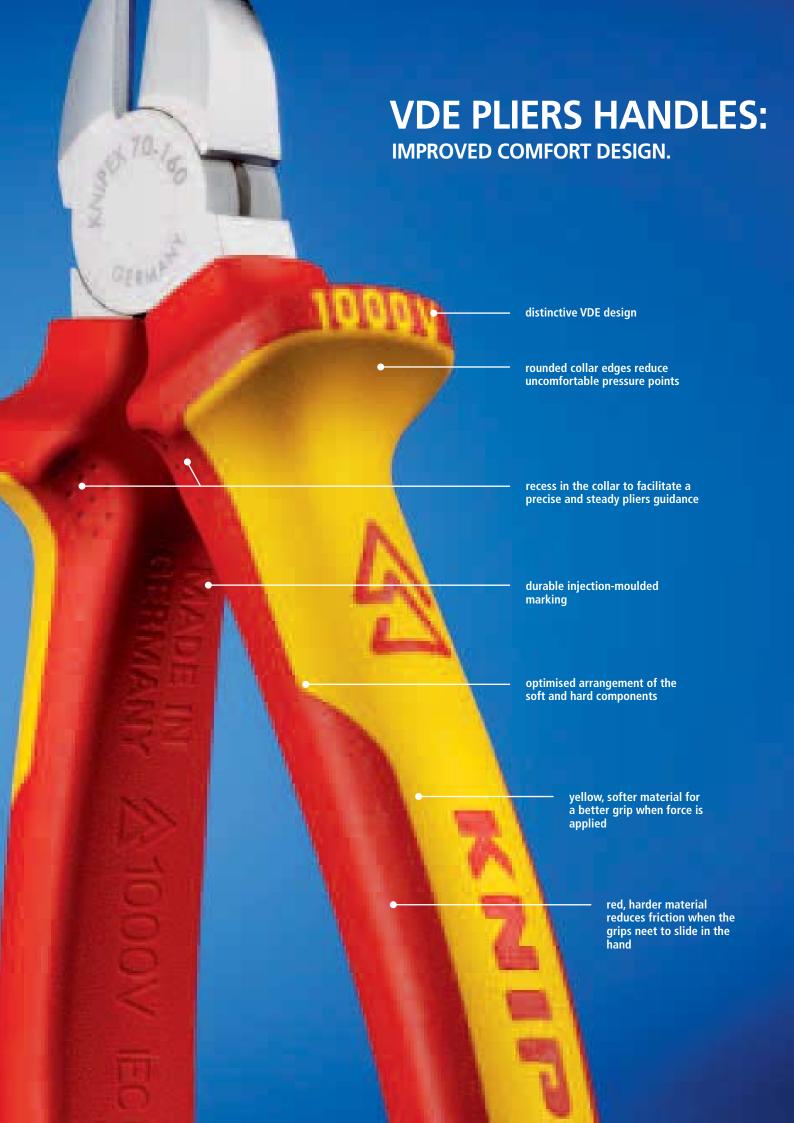


- the complete tool set to install MC3 connectors
- shock-resistant plastic case
- foam insert with recesses for the tools, crimping dies and locators
- with four empty plastic boxes for consumables for individual
- dimensions, exterior (W x H x D): 360 x 105 x 300 mm

| Units | Δ [†] Δ g |
|-------|-----------------------|
| | 3280 |
| 1 | |
| 1 | |
| 1 | |
| 1 | |
| 1 | |
| 1 | |
| | 1 1 1 |

97 91 02 LE 074090 Tool Case for Photovoltaics, MC3 (Multi-Contact) empty

| Article No. | EAN 4003773- | | Designation | Width x Thickness mm² | Plug Ø mm | Screws Ø mm | Cable mm² | AWG | Colour | Quantity |
|-------------|-----------------|-----------|--------------------------------------|-----------------------------|--------------|----------------|--------------|---------|------------|----------|
| 97 99 01 | 025559 | | Blade Terminal Sockets | 6.3 x 0.8 | | | 0.5 - 1.0 | 20 - 17 | red | 75 |
| 97 99 02 | 025566 | | Blade Terminal Sockets | 6.3 x 0.8 | | | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 03 | 025573 | | Blade Terminal Sockets | 6.3 x 0.8 | | | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 04 | 025580 | | Blade Terminal Sockets | 8.0 x 0.8 | | | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 05 | 025597 | | Blade Terminal Plugs | 6.3 x 0.8 | | | 0.5 - 1.0 | 20 - 17 | red | 75 |
| 97 99 06 | 025603 | 458 | Blade Terminal Plugs | 6.3 x 0.8 | | | 1.5 - 2.5 | 15 - 13 | blue | 75 |
| 97 99 07 | 025610 | | Round Sockets | | 4.0 | | 0.5 - 1.0 | 20 - 17 | red | 25 |
| 97 99 08 | 025627 | 0 | Round Sockets | | 5.0 | | 1.5 - 2.5 | 15 - 13 | blue | 25 |
| 97 99 09 | 025634 | | Round Pin Plugs | | 4.0 | | 0.5 - 1.0 | 20 - 17 | red | 75 |
| 97 99 10 | 025641 | | Round Pin Plugs | | 5.0 | | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 11 | 025658 | | Flat Pin Accessory Distributors | 6.3 x 0.8 | | | 0.5 - 1.0 | 20 - 17 | red | 25 |
| 97 99 12 | 025665 | 4 | Flat Pin Accessory Distributors | 6.3 x 0.8 | | | 1.5 - 2.5 | 15 - 13 | blue | 25 |
| 97 99 13 | 025672 | | Cable Connectors, eye type | | | 3 | 0.5 - 1.0 | 20 - 17 | red | 100 |
| 97 99 14 | 025689 | | Cable Connectors, eye type | | | 4 | 0.5 - 1.0 | 20 - 17 | red | 100 |
| 97 99 15 | 025696 | | Cable Connectors, eye type | | | 5 | 0.5 - 1.0 | 20 - 17 | red | 100 |
| 97 99 16 | 025702 | | Cable Connectors, eye type | | | 4 | 1.5 - 2.5 | 15 - 13 | blue | 100 |
| 97 99 17 | 025719 | | Cable Connectors, eye type | | | 5 | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 18 | 025719 | 200 | Cable Connectors, eye type | | | 6 | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 10 | 025720 | 0 | Cable Connectors, eye type | | | 8 | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 19 | 025733 | | | | | 5 | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| | | | Cable Connectors, eye type | | | | | | , | |
| 97 99 21 | 025757 | | Cable Connectors, eye type | | | 6 | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 22 | 025764 | | Cable Connectors, eye type | | | 8 | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 23 | 025771 | | Cable Connectors, eye type | | | 10 | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 24 | 025788 | | Cable Connectors, forked | | | 4 | 0.5 - 1.0 | 20 - 17 | red | 100 |
| 97 99 25 | 025795 | | Cable Connectors, forked | | | 4 | 0.5 - 1.0 | 20 - 17 | red | 100 |
| 97 99 26 | 025801 | | Cable Connectors, forked | | | 5 | 0.5 - 1.0 | 20 - 17 | red | 75 |
| 97 99 27 | 025818 | 1 | Cable Connectors, forked | | | 4 | 1.5 - 2.5 | 15 - 13 | blue | 75 |
| 97 99 28 | 025825 | | Cable Connectors, forked | | | 5 | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 29 | 025832 | | Cable Connectors, forked | | | 5 | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 30 | 025849 | | Cable Connectors, forked | | | 6 | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 31 | 025856 | | Round Pattern Cable Connectors | | | | 0.5 - 1.0 | 20 - 17 | red | 100 |
| 97 99 32 | 025863 | | Round Pattern Cable Connectors | | | | 1.5 - 2.5 | 15 - 13 | blue | 100 |
| 97 99 33 | 025870 | | Round Pattern Cable Connectors | | | | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 34 | 025887 | | insulated Butt Connectors | | | | 0.5 - 1.0 | 20 - 17 | red | 50 |
| 97 99 35 | 025894 | | insulated Butt Connectors | | | | 1.5 - 2.5 | 15 - 13 | blue | 50 |
| 97 99 36 | 025900 | | insulated Butt Connectors | | | | 4.0 - 6.0 | 11 - 10 | yellow | 25 |
| 97 99 37 | 025917 | | Two-Way-Sockets | 6.3 - 0.8 | | | | | , | 25 |
| 97 99 38 | 025924 | 4 | Piggyback Disconnect | 6.3 - 0.8 | | | | | | 50 |
| 97 99 40 | 025931 | | End Sleeves (ferrules) | | | | 0.5 | 20 | | 200 |
| 97 99 41 | 025948 | | End Sleeves (ferrules) | | | | 0.75 | 18 | | 200 |
| 97 99 42 | 025955 | | End Sleeves (ferrules) | | | | 1.0 | 17 | | 200 |
| 97 99 43 | 025962 | | End Sleeves (ferrules) | | | | 1.5 | 15 | | 200 |
| 97 99 44 | 025979 | | End Sleeves (ferrules) | | | | 2.5 | 13 | | 200 |
| 97 99 45 | 025986 | | End Sleeves (ferrules) | | | | 4.0 | 11 | | 150 |
| 97 99 46 | 025993 | | End Sleeves (ferrules) | | | | 6.0 | 10 | | 150 |
| 97 99 47 | 025993 | | End Sleeves (ferrules) | | | | 10.0 | 7 | | 50 |
| 97 99 47 | 026006 | | End Sleeves (ferrules) | | | | 16.0 | 5 | | 50 |
| | | | · · | | | | | | | |
| 97 99 49 | 026020 | | End Sleeves (ferrules) with collar | | | | 25.0 | 3 | ya da ik - | 50 |
| 97 99 70 | 024248 | | End Sleeves (ferrules) with collar | | | | 0.5 | 20 | white | 200 |
| 97 99 71 | 024255 | | End Sleeves (ferrules) with collar | | | | 0.75 | 18 | grey | 200 |
| 97 99 72 | 024262 | | End Sleeves (ferrules) with collar | | | | 1.0 | 17 | red | 200 |
| 97 99 73 | 024279 | | End Sleeves (ferrules) with collar | | | | 1.5 | 15 | black | 200 |
| 97 99 74 | 024286 | | End Sleeves (ferrules) with collar | | | | 2.5 | 13 | blue | 200 |
| 97 99 75 | 026037 | | End Sleeves (ferrules) with collar | | | | 4.0 | 11 | grey | 150 |
| 97 99 76 | 026044 | | End Sleeves (ferrules) with collar | | | | 6.0 | 10 | yellow | 150 |
| 97 99 77 | 026051 | | End Sleeves (ferrules) with collar | | | | 10.0 | 7 | red | 50 |
| 97 99 78 | 026068 | | End Sleeves (ferrules) with collar | | | | 16.0 | 5 | blue | 50 |
| 97 99 79 | 026075 | | End Sleeves (ferrules) with collar | | | | 25.0 | 3 | yellow | 50 |
| 97 99 92 | 031123 | | non-insulated Blade Terminal Sockets | | | | 2.8 - 1.5 | 15 | | 150 |
| 97 99 93 | 031130 | fia | non-insulated Blade Terminal Sockets | | | | 4.8 - 1.5 | 15 | | 150 |
| 97 99 95 | 031147 | Comments. | non-insulated Blade Terminal Sockets | | | | 6.3 - 1.5 | 15 | | 100 |
| | 031154 | | non-insulated Blade Terminal Sockets | | | | 6.3 - 2.5 | 13 | | 100 |



INSULATED TOOLS

Work on electrical installations is subject to the special protection tasks of authorities and insurance companies. This resulted in the creation of diverse national and international safety standards (e.g. in Germany the VDE 0105 and BGR A3, internationally EN 50110 or IEC 60364). Only a qualified electrician who respects and follows these regulations is permitted to carry out work on electrical installations (including live working). He has to use special tools for this particular work that have been specifically made for this kind of work and have been thoroughly tested.

KNIPEX insulated tools are made of high-quality materials, which have been manufactured and tested in conformance with the regulations of national and international standards. If the prescribed method for working on electrical installations (see above), are observed, these tools offer the greatest possible protection even when it is necessary to work live up to AC 1000 V (alternating current) and DC 1500 V (direct current).

Since 1987 the IEC 60900 has specified worldwide requirements for tools for live working, while DIN EN 60900 made these mandatory for the EU countries as from 1995. Tests on KNIPEX tools which bear the special mark ★1000 V include subjecting them to routine tests with 10,000 volts to check their dielectric strength. This gives the user a considerable buffer of additional protection even if work on electrical installations needs to be performed live.

The mark \$\triangle 1000 \textbf{V}\$ identifies KNIPEX insulated tools as being suitable for live working. The specified standard also shows the requirements our claim can be measured against. The manufacturer name KNIPEX on the insulation indicates that we accept responsibility for the correctness of this information. The marks prove: The observation of these requirements is monitored not only by the KNIPEX quality assurance team but also e.g. by VDE (Association of German Electricians).

Because the purchase of insulated hand tools is a matter of trust.



Type examination, manufacturing inspections and stock monitoring by the neutral VDE testing centre.

COVER INSULATION

(VERSION 6)

KNIPEX pliers with the two-colour multi-component handle cover insulation meet the requirements of VDE 0682 Part 201 and corresponding international standards (e.g. EN 60900 or IEC 60900). This claim is confirmed by the VDE/GS mark awarded by an obligatorily neutral inspection body.



The slip guard is designed so that the hand cannot slip unintentionally on conductive metal parts on the head of the pliers.

DIPPED INSULATION

(VERSION 7)

Other hand tools such as open ended spanners/ single ended box wrenches, socket wrenches, ratchets etc. are insulated at KNIPEX using a plastic dipping method. These also meet all requirements of the VDE standard and corresponding international standards (such as IEC 60900 or DIN EN 60900). To round off this range, KNIPEX also insulates pliers in a dipping process to adapt these tools concerning appearance and production method to the other dipped insulated tools. These pliers also bear the VDE/GS mark.



The firmly bonded double dipped insulation is made of insulating material which is free of harmful substances and more than 1 mm thick at each point.

Extra thick insulation at the ends of the handles. This prevents cracks following an impact.

Always comply with the currently valid regulations and observe the SAFETY INSTRUCTIONS given below:

- Insulated tools must be transported in a manner that will prevent any damage to the insulation.
- Check before every use whether the insulation is damaged in any way, defective tools must be discarded.
- Always keep your insulated tools clean and dry.
- Wear protective goggles when working with cutting nippers or working overhead.
- Always wear goggles or a facial mask when working on live equipment.
- Make sure the workplace is clean and orderly, particularly when you are working on live installations.
- Wear protective clothing and use SAFETY equipment (e.g. insulating gloves, insulating mats, protective covers) especially in confined working spaces.
- Use only a tool with suitable dimensions.
 That will prevent slipping on the workpiece and unintentional contact with non-insulated parts.
- Make sure that detached parts or cut-off ends of conductors do not fall onto live parts.

KNIPEX INSULATED TOOLS – 100 % TESTED, ONE BY ONE





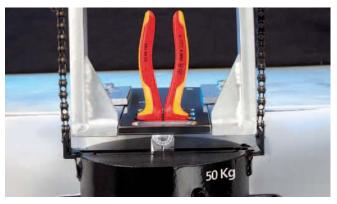
Testing dielectric strength

Each KNIPEX \triangle 1000 V insulated tool has been tested individually. This individual testing is done with a test voltage of AC 10,000 volts. This test load, which is 10 times as high as the maximum permitted voltage during work, inspires the user to trust a reliable insulation when live working.



Testing low temperature impact strength

The tools are cooled down to -25°C. The insulation material must retain the toughness necessary to ensure that it does not break when hit or knocked.



Testing the adhesion of the insulating coating

The adhesion of the insulation coating is tested after storage of 168 hours at 70°C. In case of pliers a tensile load of 500 N is applied. The insulating material must remain firmly bonded to the basic tool.



Testing burning behaviour

KNIPEX uses only flame-resistant and self-extinguishing plastics for insulation.



Testing electrical insulation

After submersion in water for 24 hours, the tools are tested with AC 10,000 V for 3 minutes including measuring of the leakage current. The reading of the leakage current must stay below the limits defined in the standards.



Testing indentation resistance

The insulation heated to 70°C must prove under standardised test conditions that the warm plastic has sufficient mechanical strength to resist expected loads.

Combination Pliers Chrome Vanadium

DIN ISO 5746 IEC 60900 DIN EN 60900



- for heaviest duty
- with gripping zones for flat and round material, suitable for versatile use
- with cutting edges for soft, hard and piano wire
- long cutting edges for thicker cables
- cutting edges additionally induction hardened, cutting edge hardness approx. 64 HRC
- particularly wear resistant gripping jaws; hardness of the gripping jaws approx. 53 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | • | Cutting colors Ø mm | apacities Ø mm | mm² | Δ [†] Δ g |
|-------------|-----------------|-----------------|--|--------|---------------------------------------|-----|----------------------|-------------------|------|-----------------------|
| 01 06 160 | 040729 | 160 | A 1000 V A 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | chrome | insulated with multi-component grips, | 2.0 | 1.5 | 10.0 | 16.0 | 220 |
| 01 06 190 | 040415 | 190 | ≙ 1000 V △♣ □□□ | plated | VDE-tested | 2.5 | 2.0 | 13.0 | 25.0 | 320 |

02

High Leverage Combination Pliers

DIN ISO 5746 IEC 60900 DIN EN 60900





- 35 % saving in power due to improved lever action compared with conventional combination pliers
- easier work due to optimised leverage
- with cutting edges (hardness approx. 63 HRC) for soft and hard wire and piano wire
- long cutting edges for thicker cables
- with gripping zones for flat and round material, suitable for versatile use
- High-grade special tool steel, forged, oil-hardened

| Article No. | EAN | | | Pliers | Handles | | Cutting capacities | | | | | |
|-------------|--------|------|--|------------------|---|-----|--------------------|------|------|-----|--|--|
| Article No. | 400377 | }- | | Pilers | nanules | | $\frac{1}{2}$ | | ₩, | Δ'Δ | | |
| | 100377 | ' mm | | | | Ømm | Ømm | Ømm | mm² | g | | |
| 02 06 180 | 010012 | 180 | | -l | in a class of a citals and later and a constraint | 2.5 | 2.0 | 11.5 | 16.0 | 247 | | |
| 02 06 200 | 010029 | 200 | ≙ 1000 V △♠ □ □ ▶ ¬ | chrome plated | insulated with multi-component grips, VDE-tested | 2.8 | 2.2 | 13.0 | 25.0 | 343 | | |
| 02 06 225 | 010036 | 225 | | piateu | VDE tested | 3.0 | 2.5 | 14.0 | 25.0 | 401 | | |
| 02 07 200 | 022299 | 200 | ☆ 1000 V △♣ □□□ | chrome | with dipped insulation, VDE-tested | 2.8 | 2.2 | 13.0 | 25.0 | 380 | | |
| 02 07 225 | 022305 | 225 | ∑ 1000 A | plated | with dipped insulation, VDL-tested | 3.0 | 2.5 | 14.0 | 25.0 | 486 | | |

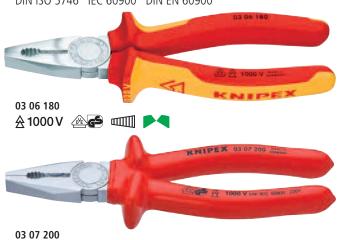
Combination Pliers

☆1000V △★ ● ■ ■ ■

11 07 160

☆1000V △△ ← △ // // //

DIN ISO 5746 IEC 60900 DIN EN 60900



- with gripping zones for flat and round material, suitable for versatile use
- with cutting edges for soft and hard wire
- long cutting edges for thicker cables
- cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC
- Special tool steel, forged, oil-hardened

| | | | | | | | Cutting capacities | | | | | |
|-------------|----------|-----------|-------------------------------|------------------|--|------|--------------------|------|------|-----|--|--|
| Article No. | EAN | ←→ | | Pliers | Handles | | | | | 44 | | |
| | 4003773- | mm | | | | Ø mm | Ø mm | Ø mm | mm² | g | | |
| 03 06 160 | 021902 | 160 | | eb rom o | in and the state of the same o | 3.1 | 2.0 | 10.0 | 16.0 | 228 | | |
| 03 06 180 | 021926 | 180 | ≙ 1000 V △← □□□ | chrome plated | insulated with multi-component grips, VDE-tested | 3.4 | 2.2 | 12.0 | 16.0 | 264 | | |
| 03 06 200 | 033776 | 200 | | piatea | vol tested | 3.8 | 2.5 | 13.0 | 16.0 | 326 | | |
| 03 07 160 | 015307 | 160 | | | | 3.1 | 2.0 | 10.0 | 16.0 | 254 | | |
| 03 07 180 | 015314 | 180 | ☆ 1000 V △ | chrome | with dipped insulation, VDE-tested | 3.4 | 2.2 | 12.0 | 16.0 | 285 | | |
| 03 07 200 | 015321 | 200 | ₩ 1000 A 65.65 mmm | plated | with dipped insulation, VDE-tested | 3.8 | 2.5 | 13.0 | 16.0 | 339 | | |
| 03 07 250 | 015345 | 250 | | | | 3.8 | 2.5 | 15.0 | 25.0 | 597 | | |

Insulation Strippers IEC 60900 DIN EN 60900



- for single, multiple and fine stranded conductors with plastic or rubber insulation max. 5.0 mm dia. or resp. 10.0 mm² cable cross section
- easy adjustment to the required diameter of solid or stranded wire with knurled screw and lock nut
- Special tool steel, forged, oil-hardened





| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Stripping capacities Ø mm | Stripping capacities mm² | AWG | g |
|-------------|-----------------|-----------------|--|------------------|--|---------------------------------|--------------------------------|-----|-----|
| 11 06 160 | 021933 | 160 | ≙ 1000 V △€ //// | chrome plated | insulated with multi-component grips, VDE-tested | 5.0 | 10.0 | 7 | 166 |
| 11 07 160 | 015499 | 160 | ☆1000 V ♠♠ //// | chrome plated | with dipped insulation, VDE-tested | 5.0 | 10.0 | 7 | 180 |
| 11 17 160 | 015505 | 160 | chrome plated with dipped insulation, VDE-tested | | 5.0 | 10.0 | 7 | 181 | |

Diagonal Insulation Stripper

IEC 60900 DIN EN 60900



- the essential pliers for electrical installation work
- precision stripping holes for single (solid) conductors of 1.5 and 2.5 mm²
- induction hardened precision blades for soft wire up to 4.0 mm dia., cutting edge hardness approx. 60 HRC
- Vanadium electric steel; forged, oil-hardened



Multi-functional: cutting and stripping

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Stripping capacities mm² | AWG | Cutting of the Country of the Countr | apacities D Ø mm | g g |
|-------------|-----------------|-----------------|---------------------|------------------|--|--------------------------------|---------|--|------------------------|--------|
| 14 26 160 | 040279 | 160 | <u>A</u> 1000 V A ← | chrome plated | insulated with multi-component grips, VDE-tested | 1.5 + 2.5 | 15 + 13 | 2.5 | 1.5 | 216 |

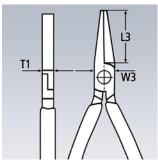
20

Flat Nose Pliers

DIN ISO 5745 IEC 60900 DIN EN 60900



- short, flat jaws
- serrated gripping surfaces
- Chrome vanadium electric steel, forged, oil-hardened



| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | L3 mm | imensior W3 mm | rs T1 mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|---|------------------|---|----------|----------------------|----------------|-----------------------|
| 20 06 160 | 033783 | 160 | ≙1000 V △ ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← | chrome plated | insulated with multi-component grips, VDE-tested | 30.0 | 17.0 | 9.5 | 176 |

Round Nose Pliers

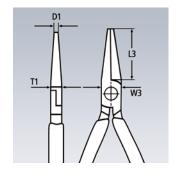
≙1000V △ 6 8 **□**

DIN ISO 5745 IEC 60900 DIN EN 60900



- for bending wire loops
- precision ground, short, round jaws
- smooth tips
- Chrome vanadium electric steel, forged, oil-hardened









| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | L3 mm | Dimer W3 mm | nsions D1 mm | T1 mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|---------------------------------|------------------|--|----------|-------------------|--------------------|----------|-----------------------|
| 22 06 160 | 033790 | 160 | <u>A</u> 1000 V <u>A</u> €8 < □ | chrome plated | insulated with multi-component grips, VDE-tested | 30.0 | 18.0 | 3.0 | 9.5 | 175 |
| 22 07 160 | 015901 | 160 | ≙1000 V △► 8 □ | chrome plated | with dipped insulation, VDE-tested | 30.0 | 18.0 | 3.0 | 9.5 | 196 |

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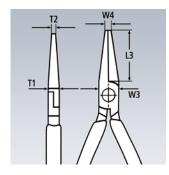
Snipe Nose Side Cutting Pliers

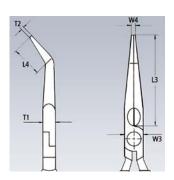
(Radio Pliers)

DIN ISO 5745 IEC 60900 DIN EN 60900

- suitable for finer gripping and cutting work
- pointed, half-round jaws
- serrated gripping surfaces
- with cutting edges for medium hard and hard wire
- cutting edges additionally induction hardened, cutting edge hardness approx. 61 HRC
- Vanadium electric steel; forged, oil-hardened







| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Cutting c Ø mm | apacities Ø mm | L3 mm | L4 mm | Dimer W3 mm | nsions T1 mm | W4 mm | T2 mm | Δ ['] Δ g |
|-------------|-----------------|--------------|---|------------------|---|-----------------|-------------------|----------|----------|-------------------|--------------------|----------|----------|-----------------------|
| 25 06 160 | 033806 | 160 | ≙1000V △← → □□□ | chrome plated | insulated with multi-com- ponent grips, VDE-tested | 2.5 | 1.6 | 50.0 | | 16.5 | 9.0 | 3.0 | 2.5 | 146 |
| 25 26 160 | 052111 | 160 | ≙ 1000 V △ △ △ 40° ○ □ □ ○ | chrome plated | insulated with multi-com- ponent grips, VDE-tested | 2.5 | 1.6 | 50.0 | 23.0 | 16.5 | 9.0 | 3.0 | 2.5 | 144 |

Snipe Nose Side Cutting Pliers

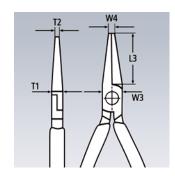
(Stork Beak Pliers)

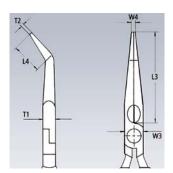
DIN ISO 5745 IEC 60900 DIN EN 60900





- high loadable, elastic precision points
- half-round, long jaws
- serrated gripping surfaces
- with cutting edges for medium hard wire max. dia. 3.2 mm and hard wire max. dia. 2.2 mm
- cutting edges additionally induction hardened, cutting edge hardness approx. 61 HRC
- Vanadium electric steel; forged, oil-hardened



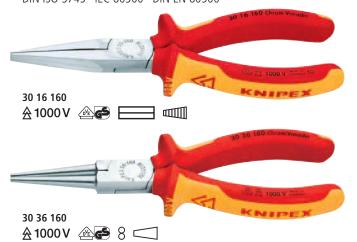


| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | Cutting control of the control of th | apacities ① Ø mm | L3 mm | L4 mm | Dimer T1 mm | nsions W3 mm | W4 mm | T2 mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|----------------------------|------------------|---|--|------------------------|----------|----------|-------------------|--------------------|----------|----------|-----------------------|
| 26 16 200 | 022831 | 200 | ≙ 1000 V △€ | chrome plated | insulated with multi-com- ponent grips, VDE-tested | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 206 |
| 26 17 200 | 016069 | 200 | ≙ 1000 V △← | chrome plated | with dipped insulation, VDE-tested | 3.2 | 2.2 | 73.0 | | 9.5 | 17.5 | 3.0 | 2.5 | 212 |
| 26 26 200 | 022855 | 200 | £ 1000 V | chrome plated | insulated with multi-com- ponent grips, VDE-tested | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 204 |
| 26 27 200 | 016090 | 200 | ½1000 V △↓€ √40° ⊖ □□□□ | chrome plated | with dipped insulation, VDE-tested | 3.2 | 2.2 | 73.0 | 23.0 | 9.5 | 17.5 | 3.0 | 2.5 | 220 |

30

Long Nose Pliers

DIN ISO 5745 IEC 60900 DIN EN 60900



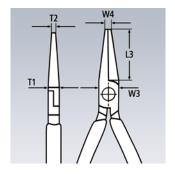
- heavy duty and wear resisting
- different jaw styles
- Chrome vanadium electric steel, forged, oil-hardened

Style 1

long, trapezoidal jaws; knurled gripping surfaces

Style 3

long, round jaws; smooth gripping surfaces



| Article No. | EAN 4003773- | ←→ mm | | Style | Pliers | Handles | L3 mm | Di W3 mm | mensio T1 mm | ns W4 mm | T2 mm | ΔΔ g |
|-------------|-----------------|-----------------|-----------------------------|-------|------------------|---|----------|----------------|--------------------|--------------------|----------|---------|
| 30 16 160 | 001904 | 160 | À 1000 V △ ← ← ← ← | 1 | chrome plated | insulated with multi-component grips, VDE-tested | 46.5 | 16.5 | 9.5 | 3.0 | 5.0 | 150 |
| 30 36 160 | 002123 | 160 | ☆1000 V △← 8 | 3 | chrome plated | insulated with multi-compo- nent grips, VDE-tested | 41.0 | 16.5 | 9.5 | 5.0 | 2.5 | 141 |

Diagonal Cutters

DIN ISO 5749 IEC 60900 DIN EN 60900





- the indispensable diagonal cutter for all-round use
- high quality material and precise workmanship for long service life
- precision cutting edges for soft and hard wire
- clean cutting of thin copper wires, also at the cutting-edge tips
- precision cutting edges additionally induction hardened, cutting edge hardness approx. 62 HRC
- narrow head style for use in confined areas
- Vanadium electric steel; forged, oil-hardened



Slim head style and precise cut at blade tips: Advantageous when working in confined areas

| | | | | | | Cutt | ing capad | cities | |
|-------------|----------|-----------|---------------------------|------------------|--|------|-----------|--------|---|
| Article No. | EAN | ←→ | | Pliers | Handles | | | | \ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \ |
| | 4003773- | mm | | | | Ø mm | Ø mm | Ø mm | g |
| 70 06 125 | 018124 | 125 | | | | 3.0 | 2.3 | 1.5 | 121 |
| 70 06 140 | 040293 | 140 | A 1000 V A A | chrome | insulated with multi-component grips, VDE-tested | 4.0 | 2.5 | 1.8 | 160 |
| 70 06 160 | 021995 | 160 | 2 1000 V (%) | plated | | 4.0 | 2.8 | 2.0 | 216 |
| 70 06 180 | 033813 | 180 | | | | 4.0 | 3.0 | 2.5 | 254 |
| 70 07 160 | 018155 | 160 | ☆ 1000 V △♣ | chrome | with dipped insulation, VDE-tested | 4.0 | 2.8 | 2.0 | 227 |
| 70 07 180 | 018179 | 180 | ₹ 1000 V @ G | plated | with dipped histiation, VDE-tested | 4.0 | 3.0 | 2.5 | 269 |
| 70 26 160 | 018223 | 160 | ≙ 1000 V △← | chrome plated | insulated with multi-component grips, VDE-tested | 4.0 | 2.8 | 1.8 | 216 |

High Leverage Diagonal Cutters

DIN ISO 5749 IEC 60900 DIN EN 60900



20 % less effort required

compared to conventional diagonal cutters of the same length.

With integrated forged joint axle.

- with forged-in axle for heaviest duty
- suitable for all types of wire including piano wire
- high cutting performance with minimum effort due to optimum coordination of the cutting edge angle, transmission ratio and ergonomic handle shape
- precision cutting edges additionally induction-hardened, cutting edge hardness approx. 64 HRC
- Chrome vanadium heavy-duty steel, forged, oil-hardened

| | | | | | | Cutt | ing capa | cities | |
|-------------|----------|-----|-------------------------------|--------|--|------|----------|--------|--------|
| Article No. | EAN | ←→ | | Pliers | Handles | | | | \Box |
| | 4003773- | mm | | | | Ø mm | Ø mm | Ø mm | g |
| 74 06 160 | 040705 | 160 | | | | 3.4 | 2.5 | 2.0 | 215 |
| 74 06 180 | 022985 | 180 | <u>A</u> 1000 V <u>A</u> | chrome | insulated with multi-component grips, VDE-tested | 3.8 | 2.7 | 2.2 | 280 |
| 74 06 200 | 033820 | 200 | ₹ 1000 / ੑ | plated | insulated with multi-component grips, VDL-tested | 4.2 | 3.0 | 2.5 | 308 |
| 74 06 250 | 041955 | 250 | | | | 4.6 | 3.5 | 3.0 | 453 |
| 74 07 200 | 018414 | 200 | <u>A</u> 1000 V <u>@</u> € ▶◀ | chrome | with dipped inculation VDE tested | 4.2 | 3.0 | 2.5 | 328 |
| 74 07 250 | 018421 | 250 | ₹ 1000 A कि | plated | with dipped insulation, VDE-tested | | 3.5 | 3.0 | 510 |



Pliers Wrench insulated

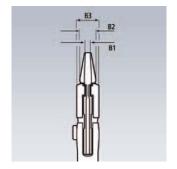
IEC 60900 DIN EN 60900

(PATENTED)



- pliers and wrench in a single tool
- also excellent for gripping, holding, pressing and bending workpieces
- zero backlash jaw pressure prevents damage to edges of sensitive and soft nuts (Cu)
- with scale for presetting the opening width apart from the workpiece
- no unintentional shift of the gripping jaws and no slipping of the joint
- parallel jaws allow infinitely variable gripping of all widths to the specified maximum size
- the action of the jaws allows quick tightening and release of bolted connections using the ratchet principle
- lever transmission greater than 10 1 for strong gripping power
- Chrome vanadium electric steel, forged, oil-hardened





Scale for setting the opening width, apart from the workpiece

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | O] Inch | | Adjustment positions | B1 mm | imensior B2 mm | ns B3 mm | ∆ d g |
|-------------|-----------------|----------|--------------------------|--------|-------------------------|------------|----|----------------------|----------|----------------------|--------------------|-------------|
| 86 07 250 | 065067 | 250 | ≙ 1000 V △ | nickel | with dipped insulation, | 1 3/4 | 46 | 17 | 8.0 | 8 | 14 | 615 |

88

KNIPEX Alligator® Water Pump Pliers

DIN ISO 8976 IEC 60900 DIN EN 60900



- box-joint design: high stability because of double guide
- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- guard prevents operators' fingers being pinched
- favourable lever action: optimum transmission of force
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC: low wear and stable gripping
- Chrome vanadium electric steel, forged, oil-hardened



Length 250 mm

more output and comfort compared to conventional water pump pliers of the same length: 9-notch adjustment positioning for 30 % more gripping capacity; good access to the workpiece due to slim size in the head and joint area

| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | O] Ø Inch | OJ ø mm | ⊜‡ mm | Adjustment positions | ΔΔ g |
|-------------|-----------------|-----------------|-------------------------------|-------------------|---|--------------|------------|----------|-------------------------|---------|
| 88 06 250 | 039303 | 250 | ≙1000 V △€ □ □ | chrome plated | insulated with multi-com- ponent grips, VDE-tested | 2 | 50 | 46 | 9 | 374 |
| 88 07 250 | 019343 | 250 | ^ 1000V △ ← ﺳﺲ ڪ | chrome | with dipped insulation, | 2 | 50 | 46 | 9 | 420 |
| 88 07 300 | 022350 | 300 | ≙ 1000 V △€ □ □ | plated VDE-tested | | 2 3/4 | 70 | 60 | 9 | 661 |



KNIPEX Cobra® VDE

Hightech Water Pump Pliers, insulated

DIN ISO 8976 IEC 60900 DIN EN 60900

w





Quick setting without using a push-button

The adjustment procedure to adapt to the workpiece is easy and reliable with the KNIPEX Cobra® VDE: place the upper gripping jaw of the opened pliers on the workpiece, push pliers handle to close, done!

- adjustment by shifting one jaw directly on to the workpiece: fast, reliable and comfortable handling
- opening at the touch of a button off the workpiece
- fine adjustment to fit very different workpiece sizes with a comfortable handle position
- good access to the workpiece due to slim size in the head and joint area
- self-locking on pipes and nuts: no slipping on the workpiece and low hand force required
- gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC: low wear and reliable gripping

- box-joint design: high stability because of double guide
- guard prevents operators' fingers being pinched
- Chrome vanadium electric steel, forged, oil-hardened



Just push the pliers handle to adjust!



| Article No. | EAN 4003773- | ←→ mm | | Pliers | Handles | O∄ Ø Inch | | O⊒ mm | Adjustment positions | ∆ d g |
|-------------|-----------------|----------|-------------------------------|------------------|--|--------------|----|----------|----------------------|-------------|
| 87 26 250 | 071495 | 250 | ≙1000V △€ ■ □ □ | chrome plated | insulated with multi-component grips, VDE-tested | 2 | 50 | 46 | 24 | 340 |

Precision Tweezers

IEC 60900 DIN EN 60900









92 67 63 **☆ 1000 V ※ □**

- tested according IEC 60900: 2004
- with dipped insulation
- nickel plated
- Spring steel, high-strength

92 27 6

for ultra fine mounting work; extra fine tips; straight pattern; gripping surfaces matt finished for optimum grip

92 27 62

straight pattern; gripping surfaces with fine transverse serration

92 37 64

angled tips; gripping surfaces with fine transverse serration

92 67 63

straight pattern; serrated gripping surfaces

| Article No. | EAN 4003773- | ←→ mm | | Finish | ∆ d g |
|-------------|-----------------|-----------------|-------------------------------------|------------------------|-------------|
| 92 27 61 | 054757 | 130 | ≙1000 V இ □ | with dipped insulation | 32 |
| 92 27 62 | 054764 | 150 | ≙ 1000 V □□□ | with dipped insulation | 35 |
| 92 37 64 | 054856 | 150 | <u>A</u> 1000 V № <u>√</u> 45° □□□□ | with dipped insulation | 34 |
| 92 67 63 | 054931 | 145 | ☆1000V | with dipped insulation | 43 |



Cable Shears

IEC 60900 DIN EN 60900



- for cutting copper and aluminium cables
- not suitable for steel wire and hard drawn copper conductors
- precision ground, hardened blades
- no crushing, slight deformation of the cable only
- guard prevents operators' fingers being pinched
- adjustable bolted joint
- Shears body: surgical steel, stainless, vacuum-hardened
- Handles: plastic, impact-proof

95 06 230

for copper single conductors up to 16 mm², multiple stranded wires up to 50 mm², fine stranded up to 70 mm² and aluminium conductors multiple stranded wires up to 70 mm²; easy cutting with one-hand operation due to high transmission ratio; stainless – special grade – steel, oil-hardened and tempered

| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Cutting c Ø mm | apacities mm² | AWG | ∆†∆ g |
|-------------|-----------------|----------|---------------------------------|----------|-------------------------------|-------------------|------------------|-----|----------|
| 95 06 230 | 006305 | 230 | ≙ 1000 V △♣ ♦ ₽ 3 | polished | plastic insulated, VDE-tested | 16 | 50 | 1/0 | 274 |



Cable Shears

IEC 60900 DIN EN 60900





- for cutting copper and aluminium single conductors as well as multiple stranded cables
- not suitable for steel wire and hard drawn copper conductors
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- easy cutting with one-hand operationguard prevents operators' fingers being pinched
- adjustable bolted joint, self-retaining screwHigh-grade special tool steel, forged, oil-hardened

Style 2

internal opening spring, protected and captive



Cut performed with a Diagonal Cutter: high effort required, inaccurate cut, considerable deforming and crushing of the cable



Cut effected with a Cable Shear: easy, clean cut without any deformation of the cable



| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Cutting c Ø mm | apacities mm² | AWG | Δ g |
|-------------|-----------------|-----------------|---|------------------|---|-----------------|------------------|-----|--------|
| 95 16 165 | 039648 | 165 | <u>A</u> 1000 V <u>A</u> € ⊕ £ € | chrome plated | insulated with multi-component grips, VDE-tested | 15 | 50 | 1/0 | 262 |
| 95 26 165 | 069980 | 165 | <u>A</u> 1000 V <u>A</u> € ⊕ ¶ MM | chrome plated | insulated with multi-component grips, VDE-tested | 15 | 50 | 1/0 | 275 |

Cable Shears with twin cutting edge

IEC 60900 DIN EN 60900

(PATENTED)





- for cutting copper and aluminium cables
- not suitable for steel wire and hard drawn copper conductors
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- easy cutting with one-hand operation
- initial and final cut (upper and lower blade) allows cables of up to 20 mm dia. to be cut
- low hand force required due to favourable lever ratio and new blade geometry
- guard prevents operators' fingers being pinched
- adjustable bolted joint, self-retaining screw
- High-grade special tool steel, forged, oil-hardened



Initial cut: using the front cutting edge to cut the insulating sheath on larger cable diameters leaves an ergonomic handle opening width.



Final cut: after cutting the sheath in the front profile the cut is finished through the metal part of the cable in the rear profile. Initial cut in the front profile, final cut in the rear profile - to keep it as easy as possible.

| Article No. | EAN 4003773- | ←→ mm | | Ttool | Handles | Cutting of the Country of the Countr | apacities mm² | AWG | Δ ['] Δ g |
|-------------|-----------------|----------|---------------------------------|------------------|---|--|------------------|-----|-----------------------|
| 95 16 200 | 026761 | 200 | ≙ 1000 V △← ♦ ♦ ♦ | chrome plated | insulated with multi-component grips, VDE-tested | 20 | 70 | 2/0 | 340 |
| 95 17 200 | 026952 | 200 | ≙ 1000 V △← ♦ € 5 | chrome plated | with dipped insulation, VDE-tested | 20 | 70 | 2/0 | 360 |

Cable Shears

IEC 60900 DIN EN 60900



- for cutting copper and aluminium single conductors as well as multiple stranded cables
- not suitable for steel wire and wire ropes
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- less effort required due to favourable lever ratio and optimised cutting-edge geometry
- short design, length only 500 mm
- low weight
- guard prevents operators' fingers being pinched
- adjustable bolted joint
- Cutter head: Vanadium electric steel, forged, oil-hardened
- Handles: aluminium tube, high-strength



Large cutting capacity: max. 27 mm dia. / 150 mm²

| | Article No. | EAN | | | Head | Handles | Cutting o | apacities | AWG | | |
|---|-------------|----------|-----------|---------------------------------|----------|------------------------------------|-----------|-----------|------|-----------------|--|
| | Article No. | | ←→ | | пеац | natiules | ₩ | ₩ ₩ | DVVA | $\Delta \Delta$ | |
| | | 4003773- | mm | | | | Ø mm | mm² | | g | |
| ĺ | 95 17 500 | 026785 | 500 | ≙ 1000 V △♠ ♦ ♦ ♦ | polished | with dipped insulation, VDE-tested | 27 | 150 | 5/0 | 1477 | |



Cable Shears



- for cutting copper and aluminium single conductors as well as multiple stranded cables
- not suitable for steel wire and wire ropes
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
 favourable transmission ratio due to double lever
- favourable lever ratio due to toggle lever
- quard prevents operators' fingers being pinched
- adjustable bolted joint
- bolted cutter head, replaceable
- Blade head: high-grade chrome vanadium electric steel, forged, oil-hardened
- Handles: steel tube

| Article No. | EAN | ↔ | | Head | Handles | Cutting o | apacities | AWG | 44 |
|-------------|----------|----------|---------------------------------|----------|------------------------------------|-----------|-----------|-----|------|
| | 4003773- | mm | | | | Ø mm | mm² | | g |
| 95 27 600 | 021797 | 600 | ≙ 1000 V △♣ ♦ ₽ § | polished | with dipped insulation, VDE-tested | 27 | 150 | 5/0 | 2301 |
| | | | | | | | | | |
| 95 29 600 | 021803 | Spare | cutter head for 95 21 600 / 9 | 5 27 600 | | | | | |

Cable Cutters ratchet action

IEC 60900 DIN EN 60900

(PATENTED)



95 36 280 ★ 1000 V ▲ ◆ ◆ MM ► ■

- for cutting copper and aluminium single conductors as well as multiple stranded cables
- not suitable for steel wire and wire ropes
- precision ground, hardened blades
- clean and smooth cut without crushing and deformation
- one-hand operation using ratchet principle
- little hand force required due to very high transmission ratio
- two-stage ratchet drive for easy cutting
- simple handling as a result of low weight and compact design can be used even in confined areas
- quard prevents operators' fingers being pinched
- High-grade special tool steel, forged, oil-hardened

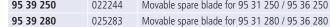
95 36 280

suitable for aluminium sector cable up to $4 \times 150 \text{ mm}^2$



Ratchet principle and two-stage ratchet drive for easier cutting

| Article No. | EAN 4003773- | ←→ mm | | Tool | Handles | Cutting c Ø mm | apacities mm² | МСМ | ΔΔ g |
|-------------|-----------------|-----------------|--|-----------------|--|-----------------|------------------|-----|---------|
| 95 36 250 | 026884 | 250 | ≙ 1000 V △ ← ◆ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ | black lacquered | insulated with multi-component grips, VDE-tested | 32 | 240 | 500 | 652 |
| 95 36 280 | 026891 | 280 | <u>A</u> 1000 V <u>A</u> € ⊕ MM I I | black lacquered | insulated with multi-component grips, VDE-tested | 52 | 380 | 750 | 835 |
| | | | | | | | | | |
| 95 39 250 | 022244 | Movab | le spare blade for 95 31 250 / 9 | 95 36 250 | | | | | |





Wire Rope and ACSR-Cable Cutter

IEC 60900 DIN EN 60900



Spare cutter head for 95 71 600 / 95 77 600

- for wire ropes and steel rods, copper and aluminium cables
- suitable for cutting overhead line cables with strain relief wire (ACSR cables)
- angular cutting blades allow cutting of single rope wire
- optimum transmission ratio for high cutting performance
- bolted cutter head, replaceable
- high-strength aluminium handles
- low weight

- Cutter head: high-grade special tool steel, oil-hardened
- Handles: aluminium, highstrength



| Article No. | EAN 4003773- | ←→ mm | | Head | Handles | Cutt mm² | ing capa Ø Ø mm | ities ① Ø mm | AWG | g |
|-------------|-----------------|--------------|--------------------------------------|----------|------------------------|-------------|-----------------------|-----------------|-----|------|
| 95 77 600 | 025313 | 600 | ≙ 1000 V ♦ ◎ ₹3 | polished | with dipped insulation | 150 | 14.0 | 9.0 | 5/0 | 2359 |
| | | | | | | | | | | |

95 79 600

025337



Crimping Pliers for end sleeves (ferrules)



- for crimping end sleeves (ferrules) according DIN 46228 parts 1 + 4 in an area of application from 0.25 up to 2.5 mm²
 crimping in marked trapezoidal dies for reliable connections between
- the sleeve and the conductor
- Vanadium electric steel; forged, oil-hardened

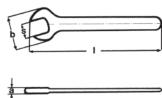
| Article No. | EAN 4003773- | ←→ mm | | | Head | Handles | Capacity mm ² | AWG | Number of crimping positions | Δ ['] Δ g |
|-------------|-----------------|-----------------|-------------------|--|----------|--|-----------------------------|---------|------------------------------|-----------------------|
| 97 68 145 A | 071754 | 145 | ☆ 1000 V △ | | polished | insulated with multi-component grips, VDE-tested | 0.25 - 2.5 | 23 - 13 | 6 | 175 |



Open End Wrenches

- jaw 15° angled
- basic tool chrome plated
- Chrome vanadium steel, forged, oil-hardened





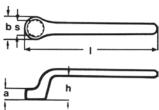
| Article No. | EAN 4003773- | | Width across flats S mm | Width across flats S Inch | Length I max. mm | Head width b max. mm | Head thickness a max. mm | ∆ g |
|---------------|-----------------|--------------------------|----------------------------|------------------------------|---------------------|-------------------------|-----------------------------|--------|
| 98 00 07 | 019824 | | 7.0 | | 105.0 | 20.0 | 4.0 | 15 |
| 98 00 08 | 019831 | | 8.0 | | 105.0 | 22.0 | 4.0 | 31 |
| 98 00 09 | 019848 | | 9.0 | | 105.0 | 24.0 | 4.0 | 29 |
| 98 00 10 | 019893 | | 10.0 | | 105.0 | 27.0 | 5.0 | 40 |
| 98 00 11 | 019909 | | 11.0 | | 120.0 | 30.0 | 5.5 | 45 |
| 98 00 12 | 019923 | | 12.0 | | 125.0 | 32.0 | 5.5 | 70 |
| 98 00 13 | 019930 | | 13.0 | | 130.0 | 34.0 | 6.5 | 68 |
| 98 00 14 | 019947 | | 14.0 | | 135.0 | 35.0 | 6.5 | 86 |
| 98 00 15 | 019954 | | 15.0 | | 145.0 | 37.0 | 7.0 | 80 |
| 98 00 16 | 019961 | | 16.0 | | 155.0 | 38.0 | 7.0 | 112 |
| 98 00 17 | 019978 | | 17.0 | | 155.0 | 42.0 | 8.0 | 119 |
| 98 00 18 | 019985 | | 18.0 | | 160.0 | 44.0 | 8.0 | 149 |
| 98 00 19 | 019992 | ≙ 1000 V ○ | 19.0 | | 165.0 | 47.0 | 9.0 | 154 |
| 98 00 22 | 020004 | | 22.0 | | 190.0 | 52.0 | 9.0 | 216 |
| 98 00 24 | 020011 | | 24.0 | | 210.0 | 56.0 | 9.0 | 262 |
| 98 00 27 | 020028 | | 27.0 | | 215.0 | 63.0 | 9.0 | 307 |
| 98 00 1/4" | 019886 | | | 1/4 | 108.0 | 20.0 | 4.0 | 32 |
| 98 00 5/16" | 020073 | | | 5/16 | 108.0 | 22.0 | 4.0 | 36 |
| 98 00 3/8" | 020042 | | | 3/8 | 108.0 | 27.0 | 5.0 | 37 |
| 98 00 7/16" | 020097 | | | 7/16 | 120.7 | 30.0 | 5.5 | 53 |
| 98 00 1/2" | 019879 | | | 1/2 | 139.7 | 34.0 | 6.5 | 60 |
| 98 00 9/16" | 020110 | | | 9/16 | 152.4 | 35.0 | 6.5 | 102 |
| 98 00 5/8" | 020080 | | | 5/8 | 165.1 | 38.0 | 7.0 | 124 |
| 98 00 3/4" | 020035 | | | 3/4 | 190.5 | 47.0 | 9.0 | 164 |
| 98 00 1 1/16" | 019855 | | | 1 1/16 | 215.0 | 63.0 | 9.0 | 400 |



Box Wrenches



- cranked
- basic tool chrome platedChrome vanadium steel, forged, oil-hardened



| Article No. | EAN 4003773- | | Width across flats S mm | Length I max. mm | Head width b max. mm | Head thickness a max. mm | Depth of crank h max. mm | ∆ d g |
|-------------|-----------------|-------------------------|----------------------------|---------------------|-------------------------|-----------------------------|-----------------------------|-------------|
| 98 01 07 | 020134 | | 7.0 | 150.0 | 12.0 | 7.0 | 18.0 | 55 |
| 98 01 08 | 020141 | | 8.0 | 155.0 | 14.0 | 7.0 | 19.0 | 68 |
| 98 01 09 | 020158 | | 9.0 | 165.0 | 15.5 | 8.0 | 19.0 | 78 |
| 98 01 10 | 020196 | | 10.0 | 160.0 | 17.0 | 9.0 | 20.0 | 75 |
| 98 01 11 | 020202 | | 11.0 | 165.0 | 18.5 | 10.0 | 21.0 | 93 |
| 98 01 12 | 020226 | | 12.0 | 185.0 | 18.5 | 10.0 | 23.0 | 118 |
| 98 01 13 | 020233 | | 13.0 | 185.0 | 21.5 | 11.0 | 23.0 | 125 |
| 98 01 14 | 020240 | <u></u> 1000 V ○ | 14.0 | 195.0 | 23.0 | 12.0 | 24.0 | 147 |
| 98 01 15 | 020257 | | 15.0 | 200.0 | 24.0 | 12.0 | 24.0 | 143 |
| 98 01 16 | 020264 | | 16.0 | 200.0 | 26.0 | 12.0 | 26.0 | 172 |
| 98 01 17 | 020271 | | 17.0 | 205.0 | 27.0 | 13.0 | 26.0 | 184 |
| 98 01 18 | 020288 | | 18.0 | 210.0 | 29.0 | 13.0 | 28.0 | 210 |
| 98 01 19 | 020295 | | 19.0 | 225.0 | 30.0 | 14.0 | 28.0 | 245 |
| 98 01 22 | 020301 | | 22.0 | 225.0 | 35.0 | 15.0 | 30.0 | 268 |
| 98 01 24 | 020318 | | 24.0 | 265.0 | 38.0 | 16.0 | 30.0 | 961 |



Nut Drivers with screwdriver handle

IEC 60900 DIN EN 60900



- ergonomically optimised dual component handle for fatigue reduced work and optimum transmission of force
- handle design prevents rolling
- Chrome vanadium molybdenum steel



| Article No. | EAN 4003773- | ←→ mm | | Tip | Handle | Width across flats S mm | Blade length mm | Handle length mm | Head dia. mm | ∆ d g |
|-------------|-----------------|--------------|-----------------|-----------|-------------------|-------------------------------|--------------------|------------------------|-----------------|-------------|
| 98 03 04 | 071679 | 230 | | | | 4.0 | 125.0 | 107 | 9.0 | 70 |
| 98 03 05 | 071686 | 230 | | | | 5.0 | 125.0 | 107 | 10.0 | 70 |
| 98 03 055 | 026082 | 232 | | | | 5.5 | 125.0 | 107 | 11.0 | 87 |
| 98 03 06 | 026099 | 232 | | | | 6.0 | 125.0 | 107 | 12.0 | 88 |
| 98 03 07 | 026105 | 237 | ☆ 1000 V | | insulating multi- | 7.0 | 125.0 | 112 | 14.0 | 123 |
| 98 03 08 | 024095 | 237 | △ | burnished | component handle, | 8.0 | 125.0 | 112 | 15.0 | 125 |
| 98 03 09 | 026112 | 237 | 0 | | VDE-tested | 9.0 | 125.0 | 112 | 16.0 | 129 |
| 98 03 10 | 026129 | 237 | | | | 10.0 | 125.0 | 112 | 17.0 | 118 |
| 98 03 11 | 026136 | 237 | | | | 11.0 | 125.0 | 112 | 19.0 | 148 |
| 98 03 12 | 026143 | 237 | | | 12.0 | 125.0 | 112 | 20.0 | 150 | |
| 98 03 13 | 026150 | 237 | | | | 13.0 | 125.0 | 112 | 21.0 | 152 |

Nut Drivers with T-handle









| Article No. | EAN 4003773- | ←→ mm | | Width across flats S mm | Handle length max. mm | Head dia. mm | Δ g |
|-------------|-----------------|----------|--------------------------|----------------------------|--------------------------|-----------------|--------|
| 98 04 08 | 071341 | 200 | | 8.0 | 90 | 15.0 | 344 |
| 98 04 10 | 026167 | 200 | À 1000 V △ ♣ ◆ | 10.0 | 155 | 19.5 | 324 |
| 98 04 13 | 026198 | 200 | | 13.0 | 155 | 23.5 | 344 |
| 98 04 17 | 026211 | 200 | <u>₩</u> 1000 V @ | 17.0 | 155 | 28.5 | 426 |
| 98 04 19 | 020424 | 200 | | 19.0 | 155 | 31.0 | 525 |
| 98 04 22 | 026228 | 200 | | 22.0 | 155 | 34.5 | 560 |
| 98 05 13 | 026273 | 300 | | 13.0 | 155 | 23.5 | 409 |
| 98 05 17 | 026297 | 300 | <u>A</u> 1000 V △ | 17.0 | 155 | 28.5 | 544 |
| 98 05 19 | 026303 | 300 | | 19.0 | 155 | 31.0 | 674 |



Adjustable Wrench



- parallel smooth gripping jaws
- continuously variable gripping width
- with scaling for presetting the width apart from the workpiece
- Chrome Vanadium steel



| Article No. | EAN 4003773- | ←→ mm | | Tool | Handle | O⊒ mm | O] | Jaw width mm | Head width mm | Width mm | Depth mm | δΔ g |
|-------------|-----------------|-----------------|--------|------------------|------------------------|----------|-------|-----------------|------------------|-------------|-------------|---------|
| 98 07 250 | 071518 | 260 | £1000V | chrome plated | with dipped insulation | 30 | 1 1/8 | 8.0 | 16.0 | 73.0 | 20.0 | 500 |



Screwdrivers for hexagon socket screws

IEC 60900 DIN EN 60900



98 13 30

☆1000V △△← ○



- ergonomically optimised dual component handle for fatigue reduced work and optimum transmission of force
- handle design prevents rollingChrome vanadium molybdenum steel



| Article No. | EAN 4003773- | ←→ mm | | Tip | Handle | Width across flats S mm | Blade length mm | Length of non-insulated blade mm | Handle length mm | Δ g |
|-------------|-----------------|-----------------|----------------|-------------|--|-------------------------------|--------------------|--|------------------------|--------|
| 98 13 20 | 071693 | 175 | | | | 2.0 | 75.0 | 15.0 | 102 | 40 |
| 98 13 25 | 026334 | 177 | | | | 2.5 | 75.0 | 15.0 | 102 | 32 |
| 98 13 30 | 026341 | 182 | <u></u> 1000 V | burnished | insulating multi- component handle, | 3.0 | 75.0 | 15.0 | 107 | 49 |
| 98 13 40 | 026358 | 182 | ≙ € | Dulliislieu | VDE-tested | 4.0 | 75.0 | 15.0 | 107 | 55 |
| 98 13 50 | 026365 | 187 | | | | 5.0 | 75.0 | 15.0 | 112 | 82 |
| 98 13 60 | 026372 | 212 | | | | 6.0 | 100.0 | 15.0 | 112 | 98 |

Screwdrivers for hexagon socket **SCIEWS** with T-handle

■ Special tool steel, oil-hardened

IEC 60900 DIN EN 60900



| Article No. | EAN 4003773- | ←→ mm | | Width across flats S mm | Length of non-insulated blade ± 2 mm | T-handle length mm | ∆ g |
|-------------|-----------------|--------------|--------------------------|----------------------------|---|-----------------------|--------|
| 98 14 05 | 020431 | 120 | | 5.0 | 9.0 | 90.0 | 220 |
| 98 14 06 | 020448 | 120 | <u></u> 1000 V ○ | 6.0 | 10.0 | 90.0 | 208 |
| 98 14 08 | 020455 | 120 | | 8.0 | 11.0 | 90.0 | 286 |
| 98 15 05 | 020479 | 250 | | 5.0 | 9.0 | 90.0 | 363 |
| 98 15 06 | 020486 | 250 | ☆ 1000 V ○ | 6.0 | 10.0 | 90.0 | 452 |
| 98 15 08 | 020493 | 250 | | 8.0 | 11.0 | 90.0 | 359 |



Screwdrivers for slotted screws

IEC 60900 DIN EN 60900

- 98 20 55 **☆1000V △△♦**
- ergonomically optimised dual component handle for fatigue reduced work and optimum transmission of force
- handle design prevents rolling
- Chrome vanadium molybdenum steel

98 21 45

especially for meter assembly with blade length of 180 \mbox{mm}

| Article No. | EAN 4003773- | ←→ mm | | Tip | Handle | Blade width mm | Blade thickness mm | Length of blade mm | Length of non- insulated blade mm | Handle length mm | ∆ d g |
|-------------|-----------------|-----------------|-----------------|------------|--|-------------------|-----------------------|--------------------------|---|------------------------|-------------|
| 98 20 10 | 026396 | 320 | | | | 10.0 | 1.6 | 200 | 15 | 120 | 184 |
| 98 20 25 | 062325 | 177 | | | | 2.5 | 0.4 | 75 | 15 | 102 | 32 |
| 98 20 30 | 062332 | 202 | | | insulating multi- | 3.0 | 0.5 | 100 | 15 | 102 | 35 |
| 98 20 35 | 024217 | 202 | <u></u> | burnished | component | 3.5 | 0.6 | 100 | 15 | 102 | 35 |
| 98 20 40 | 026402 | 202 | | bullistieu | handle, VDE- | 4.0 | 0.8 | 100 | 15 | 102 | 38 |
| 98 20 55 | 024224 | 232 | | | tested | 5.5 | 1.0 | 125 | 15 | 107 | 69 |
| 98 20 65 | 026419 | 262 | | | | 6.5 | 1.2 | 150 | 15 | 112 | 105 |
| 98 20 80 | 024231 | 295 | | | | 8.0 | 1.2 | 175 | 15 | 120 | 152 |
| 98 21 45 | 026426 | 287 | ≙ 1000 V | burnished | insulating multi-compo- nent handle, VDE-tested | 4.5 | 0.8 | 180 | 15 | 107 | 66 |



Screwdrivers for cross-recessed **SCIEWS** Phillips®

IEC 60900 DIN EN 60900

- ergonomically optimised dual component handle for fatigue reduced work and optimum transmission of force
- handle design prevents rolling
- Chrome vanadium molybdenum steel



| JU 24 UJ | |
|-----------------|---|
| <u>A</u> 1000 V | 0 |

| Article No. | EAN 4003773- | ←→ mm | | Tip | Handle | Size | Blade length mm | Length of non-insulated blade mm | Handle length mm | Δ ¹ Δ g | |
|-------------|-----------------|-----------------|-----------------|-----------|--|------|--------------------|-------------------------------------|------------------------|-----------------------|-----|
| 98 24 00 | 026433 | 162 | | | insulating multi- component handle, VDE-tested | PH 0 | 60 | 15 | 102 | 32 | |
| 98 24 01 | 026440 | 187 | A 400014 | | | PH 1 | 80 | 15 | 107 | 58 | |
| 98 24 02 | 026457 | 212 | <u>A</u> 1000 V | burnished | | | PH 2 | 100 | 18 | 112 | 94 |
| 98 24 03 | 026464 | 270 | | | | | PH 3 | 150 | 18 | 120 | 165 |
| 98 24 04 | 026471 | 320 | | | | PH 4 | 200 | 18 | 120 | 244 | |



Screwdrivers for cross-recessed **SCrews** Pozidriv®

IEC 60900 DIN EN 60900



- ergonomically optimised dual component handle for fatigue reduced work and optimum transmission of force
- handle design prevents rolling
- Chrome vanadium molybdenum steel

98 25 03 **☆1000V △△←**

| Article No. | EAN 4003773- | ↔ mm | | Тір | Handle | Size | Blade length mm | Length of non-insulated blade mm | Handle length mm | ∆ d g | |
|-------------|-----------------|---------|-----------------|-----------|--|------|--------------------|-------------------------------------|------------------------|-------------|----|
| 98 25 00 | 062370 | 162 | | | insulating multi- component handle, VDE-tested | PZ 0 | 60 | 15 | 102 | 40 | |
| 98 25 01 | 031260 | 187 | A 400014 | | | 9 | PZ 1 | 80 | 15 | 107 | 58 |
| 98 25 02 | 031277 | 212 | <u>A</u> 1000 V | burnished | | | PZ 2 | 100 | 18 | 112 | 94 |
| 98 25 03 | 031284 | 270 | | | | PZ 3 | 150 | 18 | 120 | 165 | |
| 98 25 04 | 062387 | 320 | | | | PZ 4 | 200 | 18 | 120 | 85 | |



Screwdrivers for Torx® screws

IEC 60900 DIN EN 60900



- ergonomically optimised dual component handle for fatigue reduced work and optimum transmission of force
- handle design prevents rolling
- Chrome vanadium molybdenum steel

98 26 30 **☆1000V △△♠**

| Article No. | EAN 4003773- | ←→ mm | | Тір | Handle | Size | Blade length mm | Length of non-insulated blade mm | Handle length mm | Δ [†] Δ g | |
|-------------|-----------------|--------------|-----------------|-----------|--|-------------------|--------------------|-------------------------------------|------------------------|-----------------------|----|
| 98 26 10 | 071709 | 160 | | | insulating multi- component handle, VDE-tested | TX 10 | 60 | 15 | 102 | 25 | |
| 98 26 15 | 071716 | 185 | | | | TX 15 | 80 | 15 | 107 | 25 | |
| 98 26 20 | 071723 | 185 | <u>A</u> 1000 V | burnished | | component handle, | TX 20 | 80 | 15 | 107 | 25 |
| 98 26 25 | 071730 | 185 | - C | | | TX 25 | 80 | 15 | 107 | 25 | |
| 98 26 30 | 071747 | 210 | | | | TX 30 | 100 | 18 | 112 | 25 | |



T-handle with driving square 3/8" or 1/2"

IEC 60900 DIN EN 60900



- for use with sockets
- quick, easy and reliable locking of attached sockets
- basic tool chrome plated
- High-grade special tool steel, forged, oil-hardened

| Article No. | EAN 4003773- | ←→ mm | | Handle length mm | Square drive Inch | ∆∆ g |
|-------------|-----------------|-----------------|--------------------------|------------------------|-------------------------|---------|
| 98 30 | 026488 | 200 | ≙ 1000 V ¾ | 165 | 3/8 | 447 |
| 98 40 | 026501 | 200 | <u>A</u> 1000 V ☑ | 165 | 1/2 | 631 |

Reversible Ratchets

with driving square 3/8" or 1/2"

IEC 60900 DIN EN 60900



☆1000V 38

- for use with sockets
- reversible for clockwise and anti-clockwise directions
- extremely smooth action
- quick, easy and reliable locking of attached sockets
- Chrome vanadium steel, forged

| Article No. | EAN 4003773- | ←→ mm | | Square drive Inch | ∆¹∆ g |
|-------------|-----------------|-----------------|--------------------------|----------------------|----------|
| 98 31 | 026495 | 190 | ☆ 1000 V ¾ | 3/8 | 324 |
| 98 41 | 026518 | 265 | <u>A</u> 1000 V 🔀 | 1/2 | 625 |

Extension Bars

with internal and driving square 3/8" or 1/2"

IEC 60900 DIN EN 60900



98 35 125

☆1000V ¾ ¾



98 45 250 **☆1000V ½ ②**

- for use with sockets
- with internal and external square
- quick, easy and reliable locking of attached sockets
- Chrome vanadium steel, forged

| Article No. | EAN 4003773- | ←→ mm | | Square drive Inch | Δ ['] Δ g |
|-------------|-----------------|-----------------|-----------------------|----------------------|-----------------------|
| 98 35 125 | 020530 | 125 | ☆ 1000 V ¾ ⅓ | 3/8 | 149 |
| 98 35 250 | 020547 | 250 | <u>₹</u> 1000 V 🔊 🕲 | 3/8 | 294 |
| 98 45 125 | 020813 | 125 | ☆ 1000 V ½ ๋ ๋ | 1/2 | 258 |
| 98 45 250 | 020820 | 250 | ₹ 1000 V M | 1/2 | 490 |

Hexagon Sockets for hexagonal screws

for internal square 3/8" or 1/2"

IEC 60900 DIN EN 60900



98 37 17 **☆1000V ◇ ③**

- for metric and imperial hexagonal head screwsbasic tool chrome plated
- Chrome Vanadium steel



| Article No. | EAN 4003773- | ←→ mm | | Width across flats S mm | Width across flats S Inch | dia. of effective tool side d max. mm | Square drive Inch | ΔΔ g |
|--------------|-----------------|--------------|----------------------------|-------------------------------|---------------------------------|--|----------------------|---------|
| 98 37 10 | 020578 | | | 10.0 | | 18.7 | 3/8 | 32 |
| 98 37 11 | 020585 | | | 11.0 | | 20.0 | 3/8 | 32 |
| 98 37 12 | 020608 | | | 12.0 | | 21.2 | 3/8 | 33 |
| 98 37 13 | 020615 | | | 13.0 | | 22.5 | 3/8 | 33 |
| 98 37 14 | 020622 | | | 14.0 | | 23.7 | 3/8 | 39 |
| 98 37 17 | 020639 | | | 17.0 | | 27.5 | 3/8 | 61 |
| 98 37 19 | 020646 | | | 19.0 | | 30.0 | 3/8 | 73 |
| 98 37 5/16" | 020684 | | ≙ 1000 V ○ ③ | | 5/16 | 16.2 | 3/8 | 30 |
| 98 37 3/8" | 020677 | | | | 3/8 | 18.7 | 3/8 | 31 |
| 98 37 7/16" | 020707 | | | | 7/16 | 20.0 | 3/8 | 31 |
| 98 37 1/2" | 020554 | | | | 1/2 | 22.5 | 3/8 | 33 |
| 98 37 9/16" | 020721 | | | | 9/16 | 23.7 | 3/8 | 39 |
| 98 37 5/8" | 020691 | | | | 5/8 | 26.2 | 3/8 | 51 |
| 98 37 3/4" | 020660 | | | | 3/4 | 30.0 | 3/8 | 71 |
| 98 37 1/4" | 020561 | | | | 1/4 | 14.7 | 3/8 | 30 |
| 98 47 10 | 020882 | | | 10.0 | | 19.5 | 1/2 | 63 |
| 98 47 11 | 020899 | | | 11.0 | | 20.7 | 1/2 | 61 |
| 98 47 12 | 020912 | | | 12.0 | | 23.0 | 1/2 | 64 |
| 98 47 13 | 020929 | | | 13.0 | | 23.2 | 1/2 | 64 |
| 98 47 14 | 020943 | | | 14.0 | | 24.5 | 1/2 | 67 |
| 98 47 16 | 027287 | | | 16.0 | | 26.9 | 1/2 | 69 |
| 98 47 17 | 020967 | | | 17.0 | | 28.2 | 1/2 | 75 |
| 98 47 18 | 027294 | | | 18.0 | | 29.0 | 1/2 | 81 |
| 98 47 19 | 020974 | | | 19.0 | | 30.7 | 1/2 | 99 |
| 98 47 22 | 020981 | | ≙1000∨⊘ ③ | 22.0 | | 34.5 | 1/2 | 125 |
| 98 47 24 | 020998 | | | 24.0 | | 37.0 | 1/2 | 151 |
| 98 47 27 | 021001 | | | 27.0 | | 41.0 | 1/2 | 183 |
| 98 47 1/2" | 020875 | | | | 1/2 | 23.2 | 1/2 | 67 |
| 98 47 9/16" | 021094 | | | | 9/16 | 24.5 | 1/2 | 64 |
| 98 47 5/8" | 021063 | | | | 5/8 | 26.9 | 1/2 | 72 |
| 98 47 11/16" | 020905 | | | | 11/16 | 28.2 | 1/2 | 88 |
| 98 47 3/4" | 021018 | | | | 3/4 | 30.7 | 1/2 | 97 |
| 98 47 7/8" | 021087 | | | | 7/8 | 34.5 | 1/2 | 124 |
| 98 47 1" | 020868 | | | | 1 | 41.0 | 1/2 | 167 |



98

Hexagon Sockets for hexagon socket

SCIEWS for internal square 3/8" or 1/2"

DIN 7422 IEC 60900 DIN EN 60900

- for metric internal hexagonal head screws
- basic tool chrome plated
- Special tool steel





98 39 06 ★1000 V **③**

| Article No. | EAN 4003773- | ←→ mm | | Width across flats S mm | Length of non-insulated blade ± 2 mm | Square drive Inch | σg |
|-------------|-----------------|--------------|----------------------------|----------------------------|---|----------------------|----|
| 98 39 05 | 020776 | 75 | ≙ 1000 V ○ 🔞 | 5.0 | 9 | 3/8 | 59 |
| 98 39 06 | 020783 | 75 | ₹ 1000 V O ® | 6.0 | 10 | 3/8 | 58 |
| 98 49 05 | 021155 | 75 | | 5.0 | 9 | 1/2 | 68 |
| 98 49 06 | 021162 | 75 | ≙ 1000 V ○ 🔞 | 6.0 | 10 | 1/2 | 72 |
| 98 49 08 | 021179 | 75 | | 8.0 | 11 | 1/2 | 87 |



Reversible Ratchet with driving square 1/2"

ISO 3315 IEC 60900 DIN EN 60900



- reversible for clockwise and anti-clockwise directions
- very reliable retention of the actuating tools ensured by mechanically locked retaining system
- Chrome Vanadium steel

| Article No. | EAN 4003773- | ←→ mm | | Square drive Inch | ∆¹∆ g |
|-------------|-----------------|-----------------|------------------|----------------------|----------|
| 98 42 | 026525 | 265 | <u></u> 1000 V 🔀 | 1/2 | 599 |

98

Torque Wrench with driving square, reversible

DIN EN ISO 6789 IEC 60900 DIN EN 60900



98 43 50 **☆** 1000 V **½**

- reversible for tightening of lefthanded threads
- lockable torque adjustment
- very reliable retention of the actuating tools ensured by mechanically locked retaining system
- transparent insulated scale range
- calibration certificate included
- Chrome Vanadium steel



Transparent insulated scale range

| Article No. | EAN 4003773- | ←→ mm | | Range of Application | Square drive Inch | Δ'Δ g |
|-------------|-----------------|-----------------|-------------------------|----------------------|----------------------|----------|
| 98 33 25 | 072676 | 290 | ☆1000 V ¾ | 5 - 25 Nm | 3/8 | 1230 |
| 98 33 50 | 071761 | 385 | <u>₹</u> 1000 V 78 | 5 - 50 Nm | 3/8 | 1230 |
| 98 43 50 | 071778 | 385 | <u></u> 1000 V 💯 | 5 - 50 Nm | 1/2 | 1230 |

Cable Knives

IEC 60900 DIN EN 60900





98 54 **☆1000V △△**

- ergonomically improved handle shape with comfortable slip guard
- particularly confident grip thanks to slip-proof soft components
- thumb recess and "finger hook" at the end of the handle ensure a good transmission of force when the blade is pulled
- solid, fixed straight blade
- transparent protective cap
- Blade: special tool steel, oil-hardened

back of the blade plastic coated to avoid short circuits

| Article No. | EAN 4003773- | ←→ mm | | Handle | Blade length mm | ΔΔ g |
|-------------|-----------------|-----------------|--------------------------|---|--------------------|---------|
| 98 52 | 035565 | 180 | ☆ 1000 V △ | insulating multi-component handle, VDE-tested | 50 | 67 |
| 98 54 | 026563 | 180 | ≙ 1000 V △ | insulating multi-component handle, VDE-tested | 50 | 68 |

Dismantling Knives

IEC 60900 DIN EN 60900



☆1000V △

- ergonomically improved handle shape with comfortable slip guard
- particularly confident grip thanks to slip-proof soft components
- thumb recess and "finger hook" at the end of the handle ensure a good transmission of force when the blade is pulled
- transparent protective cap

solid, fixed hook blade; suitable for round cables; Blade: special tool steel, oil-hardened

narrow, fixed hook blade, sickle shaped; suitable for sector cables; Blade: special tool steel, oil-hardened

98 55

solid, fixed hook blade, sickle shaped; with guide shoe at the blade point; no damage of the conductor insulation; Blade: surgical steel, stainless, vacuum-hardened

| Article No. | EAN 4003773- | ←→ mm | | Handle | Blade length mm | Radius mm | ∆†∆ g |
|-------------|-----------------|--------------|--------------------------|---|--------------------|--------------|----------|
| 98 53 03 | 026549 | 155 | ☆ 1000 V △ | insulating multi-component handle, VDE-tested | 28 | 7 | 64 |
| 98 53 13 | 026556 | 180 | ≙ 1000 V △ | insulating multi-component handle, VDE-tested | 50 | 40 | 64 |
| 98 55 | 022558 | 155 | ☆ 1000 V △ | insulating multi-component handle, VDE-tested | 38 | 23.5 | 68 |



Cable Knife with replaceable blade

IEC 60900 DIN EN 60900



- straight blade with special sharpening; replaceable
- with hinged blade guard, integrated in the handle, captive
- back of the blade plastic coated to avoid short circuits
- ergonomically shaped insulating handle
- Blade: surgical steel, stainless, vacuum hardened

| Article No. | EAN 4003773- | ←→ mm | | Blade length mm | ΔΔ g |
|-------------|-----------------|-----------------|--------------------------|--------------------|---------|
| 98 56 | 026570 | 185 | ≙ 1000 V △ | 50 | 64 |
| | | | | | |
| 98 56 09 | 030829 | Spare l | olade for 98 56 | | |



Voltage tester with load application

DUSPOL® compact

DIN VDE 0682-401 IEC 61243-3 EN 61243-3



- overvoltage category: CAT IV 500 V, III 690 V
- LED display shows direct and alternating current levels 12, 24, 50, 120, 230, 400 and 750 V
- polarity test with direct voltage
- intentional RCCB tripping
- protection class: IP 64 (dust-proof and splash-proof)



| Article No. | EAN 4003773- | ←→ mm | | Δ ['] Δ g |
|-------------|-----------------|-----------------|--------------------------|-----------------------|
| 98 60 04 | 051961 | 1400 | ☆ 1000 V △ | 188 |



Flat Nose Pliers of plastic, insulating

IEC 60900 DIN EN 60900 ASTM F1505



- the insulating construction reduces risk of short circuits
- for meter installation and meter blocking
- Plastic material, fibreglass reinforced

| 98 62 01 ★ 1000 V △ ← □ □ □ □ □ | |
|------------------------------------|--|

| Article No. | EAN 4003773- | ←→ mm | | Δ ['] Δ g |
|-------------|-----------------|--------------|------------------------------|-----------------------|
| 98 62 01 | 073956 | 180 | ≙ 1000 V △← ── | 130 |



Snipe Nose Pliers of plastic, insulating

IEC 60900 DIN EN 60900 ASTM F1505



- the insulating construction reduces risk of short circuits
- Plastic material, fibreglass reinforced

| Article No. | EAN 4003773- | ←→ mm | | Δ'Δ g |
|-------------|-----------------|-----------------|----------------------------------|----------|
| 98 62 02 | 073963 | 220 | <u>A</u> 1000 V A ← ⊖ ■ ■ | 140 |
| | | | | |

Insulating Clamp solid plastic, insulating



- for holding insulating mats in place
- with integrated spring
- the insulating construction reduces the risk of short circuits
- Solid plastic, fibreglass-reinforced

| Article No. | EAN 4003773- | ←→ mm | | Clamping capacity mm | Δ ['] Δ g |
|-------------|-----------------|-----------------|--------------------|----------------------------|-----------------------|
| 98 64 02 | 021193 | 150 | ₽1000 V XXX | 15 | 61 |



Plastic Slip-On Caps conical

DIN VDE 0680-1



98 65 01 **♣ 1000 V**

- to cover bare live cable ends (max. 10 mm dia.)
- Plastic

| Article No. | EAN 4003773- | ←→ mm | | | Δ'Δ g |
|-------------|-----------------|-----------------|----------------|---|----------|
| 98 65 01 | 021209 | 80 | | 1 | 7 |
| 98 65 02 | 021216 | 80 | ₿1000 V | 2 | 8 |
| 98 65 03 | 021223 | 80 | | 3 | 8 |



Self-Clamping Slip-On Caps

DIN VDE 0680-1



98 65 30 **♣ 1000 V**

- to cover bare live cable ends
- Plastic

| Article No. | EAN 4003773- | ←→ mm | | Inside dia. mm | ∆ d g |
|-------------|-----------------|-----------------|-----------------|-------------------|-------------|
| 98 65 10 | 021230 | 80 | | 10 | 9 |
| 98 65 20 | 021247 | 100 | ⇔ 1000 V | 20 | 39 |
| 98 65 30 | 021261 | 110 | | 30 | 52 |



Electricians' Gloves

IEC 60903 DIN EN 60903



98 65 40 **☆ 1000 V**

- for added protection when working live or close to live parts
- classification: 0

| Article No. | EAN 4003773- | | Size | ∆'∆ g |
|-------------|-----------------|-----------------|------|----------|
| 98 65 40 | 021285 | ☆ 1000 V | 9 | 290 |
| 98 65 41 | 021292 | ₹ 1000 4 | 10 | 288 |



Insulating Mats from rubber

DIN VDE 0680-1



98 67 05 ₽ 1000 V @ € • for added protection when working live or close to live parts

| Article No. | EAN 4003773- | | Dimensions mm | Thickness mm | ΔΔ g |
|-------------|-----------------|-----------------|------------------|-----------------|---------|
| 98 67 05 | 026600 | ₽ 1000 V | 500 x 500 | 1.0 | 301 |
| 98 67 10 | 026617 | ⊕ 1000 V | 1000 x 1000 | 1.0 | 1200 |



PUK[®] Junior Hacksaw

IEC 60900 DIN EN 60900



• saw blade for metal and wood with 25 teeth per inch, exchangeable

| Article No. | EAN 4003773- | ←→ mm | | Saw blade length mm | ∆∆ g |
|-------------|-----------------|-----------------|----------------|------------------------|---------|
| 98 90 | 028321 | 240 | <u></u> 1000 V | 150 | 174 |



Compact Tool Case 17 parts

with insulated tools for works on electrical installations

IEC 60900 DIN EN 60900

- shock-resistant plastic case
- containing a range of insulated KNIPEX tools for works on electrical installations
- foam inserts with recesses for the tools
- fixable partition wall
- dimensions, exterior (W x H x D): 360 x 110 x 310 mm



| Article No. | EAN 4003773- | | | Units | | ΔΔ g |
|-------------|-----------------|-------------|--|-------|-------------------------------|---------|
| 98 99 11 | 026624 | Compact Too | ol Case 17 parts | | | 3675 |
| | | 03 07 200 | Combination Pliers | 1 | ≙ 1000 V △♠ ■ ■ | |
| | | 70 07 160 | Diagonal Cutter | 1 | ≙ 1000 V △♠ | |
| | | 98 20 35 | C | 1 | | |
| | | 98 20 40 | Screwdrivers for slotted screws | 1 | ≙ 1000 V ← ← | |
| | | 98 20 55 | Sciews | 1 | | |
| | | 98 24 00 | Screwdrivers for cross-recessed screws | 1 | ≙ 1000 V △← | |
| | | 98 42 | Reversible Ratchet | 1 | ☆1000 V | |
| | | 98 45 125 | Extension Bars | 1 | ☆ 1000 V ½ ③ | |
| | | 98 45 250 | Extension pars | 1 | X 1000 V 12 (2) | |
| | | 98 47 10 | | 1 | | |
| | | 98 47 11 | | 1 | | |
| | | 98 47 12 | Hayagan Cadrata for | 1 | | |
| | | 98 47 13 | Hexagon Sockets for hexagonal screws | 1 | ≙ 1000 V ○ ⑤ | |
| | | 98 47 14 | gonar screws | 1 | | |
| | | 98 47 17 | | 1 | | |
| | | 98 47 19 | | 1 | | |
| | | 98 52 | Cable Knife | 1 | ≙ 1000 V △ | |

Standard Tool Case 26 parts

with insulated tools for works on electrical installations

IEC 60900 DIN EN 60900



- containing a range of insulated KNIPEX tools for works on electrical installations
- shock-resistant plastic case
- foam inserts with recesses for the tools
- fixable partition wall
- dimensions, exterior (W x H x D): 440 x 105 x 385 mm

| Article No. | EAN 4003773- | | | Units | | Δ'Z g |
|-------------|-----------------|-----------------------|--|-------|-------------------------------|----------|
| 98 99 12 | 026631 | Standard Tool Case 26 | parts | | | 423 |
| | | 03 07 200 | Combination Pliers | 1 | ≙ 1000 V △€ ■ ■ | |
| | | 70 07 160 | Diagonal Cutter | 1 | ≙ 1000 V △€ | |
| | | 98 00 10 | | 1 | | |
| | | 98 00 11 | | 1 | | |
| | | 98 00 12 | | 1 | ≙ 1000 ∨ ○ | |
| | | 98 00 13 | Open End Wrench | 1 | | |
| | | 98 00 14 | | 1 | | |
| | | 98 00 17 | | 1 | | |
| | | 98 00 19 | | 1 | | |
| | | 98 53 03 | Dismantling Knife for round cable | 1 | <u>A</u> 1000 V △ | |
| | | 98 20 25 | | 1 | | |
| | | 98 20 35 | Screwdrivers for slotted screws | 1 | ≙ 1000 V △€ ● | |
| | | 98 20 40 | Screwarivers for slotted screws | 1 | ₹ 1000 V 🖽 🖨 | |
| | | 98 20 55 | | 1 | | |
| | | 98 24 00 | | 1 | | |
| | | 98 24 01 | Screwdrivers for cross-recessed screws, Philips® | 1 | ≙ 1000 V △€ | |
| | | 98 24 02 | | 1 | | |
| | | 98 40 | T-handle | 1 | ≙ 1000 V 🌠 | |
| | | 98 47 10 | | 1 | | |
| | | 98 47 11 | | 1 | | |
| | | 98 47 12 | | 1 | | |
| | | 98 47 13 | Hexagon Socket for hexagonal screws | 1 | ≙ 1000 V ○ ② | |
| | | 98 47 14 | | 1 | | |
| | | 98 47 17 | | 1 | | |
| | | 98 47 19 | | 1 | | |
| | | 98 52 | Cable Knife | 1 | ≙ 1000 V △ | |



Tool Roll 15 parts

with insulated tools for works on electrical installations

IEC 60900 DIN EN 60900IEC 60900 DIN EN 60900

- tool roll made of hard-wearing polyester fabricwith practical, adjustable quick release fastener
- containing a range of insulated KNIPEX tools for works on electrical installations



98 99 13 <u></u> **☆ 1000 V**

| Article No. | EAN 4003773- | | | Units | | Δ'Δ g |
|-------------|-----------------|-----------------|--------------------------------|-------|---------------------------------------|----------|
| 98 99 13 | 026648 | Tool Roll 15 pa | rts | | | 2455 |
| | | 03 07 200 | Combination Pliers | 1 | ≙ 1000 V △ ♠ ● ■ ■ | |
| | | 11 07 160 | Insulation Stripper | 1 | ≙ 1000 V △ ← / / / / / | |
| | | 26 17 200 | Snipe Nose Side Cutting Pliers | 1 | ≙ 1000 V △ ← ○ □ □ □ | |
| | | 70 07 160 | Diagonal Cutter | 1 | ≙ 1000 V △♠ | |
| | | 95 17 200 | Cable Shear | 1 | ☆ 1000 V △ ♦ ♦ 1 | |
| | | 98 00 10 | | 1 | | |
| | | 98 00 13 | | 1 | | |
| | | 98 00 14 | Open End Wrench | 1 | ≙ 1000 V ○ | |
| | | 98 00 17 | | 1 | | |
| | | 98 00 19 | | 1 | | |
| | | 98 20 25 | | 1 | | |
| | | 98 20 40 | Screwdriver for slotted screws | 1 | ☆ 1000 V △♠ | |
| | | 98 20 55 | Screwariver for slotted screws | 1 | X 1000 V | |
| | | 95 20 65 | | 1 | | |
| | | 98 52 | Cable Knife | 1 | ☆ 1000 V △ | |

98

Universal Tool Case 48 parts

with insulated tools for works on electrical installations

IEC 60900 DIN EN 60900



98 99 14

- hard-wearing case made of ABS material, red; containing a range of KNIPEX tools for works on electrical installations, tested according to DIN EN/IEC 60900, as well as insulating mats, clamps and gloves for added protection
- sturdy aluminium frame with D-shape rings for belt and fix, sturdy centre board with multi-purpose push-in facilities by elastic loops and 12 small pockets
- comfortable handle and mounting device for a "Trolley" embedded in the bottom (available ordering ref. 00 21 40 T)
- metal hinges
- 30 kg maximum load
- can be opened on one or both sides; bottom tray and cover can be opened independently
- stands stable in any opening position due to lid-holders and hinge mechanisms on both sides, that register in a position of 45° and 90°
- 3-digit lock and two flip-locks for fixation of the cover
- removable document compartment and removable tool board, with 13 push-in compartments on one side
- two flip-locks to fix the bottom
- base tray, height 58 mm, can be subdivided by flexible inserts; cover plate with six large push-in compartments, can be fixed by popper
- dimensions, external (W x H x D): 490 x 255 x 410 mm dimensions, internal (W x H x D): 445 x (105 + 105) x 350 mm



- telescopic handle for rolling transport of tool case
- applicable for cases: 00 21 40 LE Tool Case "BIG Twin", 98 99 14 Universal Tool Case
- height adjustable handle with catch
- integrated mechanism for fixation to the case, for rapid assembly and removal
- with two smooth running rolls
- dimensions: 60 x 245 x 400 (1.000) mm (extended)





INSULATED TOOLS

| Article No. | EAN 4003773- | | | | Quantity | | ΔΔ g |
|-------------|-----------------|---------------|---------------------------------------|------------------|----------|---------------------------------|---------|
| 98 99 14 | 026655 | Universal Too | ol Case 48 parts | | | | 16250 |
| | | 03 07 200 | Combination Pliers | 200 mm | 1 | ≙ 1000 V △♣ ■ ■ | |
| | | 11 17 160 | Insulation Stripper | 160 mm | 1 | ≙ 1000 V △ | |
| | | 70 07 160 | Diagonal Cutter | 160 mm | 1 | ≙ 1000 V △△♠ | |
| | | 88 07 250 | KNIPEX Alligator® | 250 mm | 1 | ≙ 1000 V △♣ ■ □ □ | |
| | | 95 17 200 | Cable Shears | 200 mm | 1 | ☆ 1000 V △♠ ♦ ●⑤ | |
| | | 98 00 10 | | SW 10 mm | 1 | | |
| | | 98 00 13 | | SW 13 mm | 1 | | |
| | | 98 00 14 | Open End Wronch | SW 14 mm | 1 | | |
| | | 98 00 17 | Open End Wrench | SW 17 mm | 1 | | |
| | | 98 00 19 | | SW 19 mm | 1 | | |
| | | 98 00 22 | | SW 22 mm | 1 | A 10001/ C | |
| | | 98 01 10 | | SW 10 mm | 1 | ≙ 1000 V ○ | |
| | | 98 01 13 | | SW 13 mm | 1 | | |
| | | 98 01 14 | Day Mara ak | SW 14 mm | 1 | | |
| | | 98 01 17 | Box Wrench | SW 17 mm | 1 | | |
| | | 98 01 19 | | SW 19 mm | 1 | | |
| | | 98 01 22 | | SW 22 mm | 1 | | |
| | | 98 67 05 | Insulating Mat | 500 x 500 1.6 mm | 3 | ₽ 1000 V @ ₽ | |
| | | 98 20 25 | | 2.5 mm | 1 | | |
| | | 98 20 40 | 6 1: 6 1:: 1 | 4.0 mm | 1 | A 1000V A 6 | |
| | | 98 20 55 | 65 6.5 PH | 5.5 mm | 1 | ≙ 1000 V △♠ | |
| | | 98 20 65 | | 6.5 mm | 1 | | |
| | | 98 24 01 | | PH 01 | 1 | ≙ 1000 V △ | |
| | | 98 24 02 | Screwdriver for cross-recessed screws | PH 02 | 1 | | |
| | | 98 40 | T-Handle | 165 mm | 1 | A 10001/ T | |
| | | 98 42 | Reversible Ratchet | 265 mm | 1 | <u>A</u> 1000 V ☑ | |
| | | 98 45 125 | F D | 125 mm | 1 | A 10001/ E | |
| | | 98 45 250 | Extension Bar | 250 mm | 1 | <u>A</u> 1000 V ☑ ⑨ | |
| | | 98 47 10 | | SW 10 mm | 1 | | |
| | | 98 47 11 | | SW 11 mm | 1 | | |
| | | 98 47 12 | | SW 12 mm | 1 | | |
| | | 98 47 13 | | SW 13 mm | 1 | | |
| | | 98 47 14 | Hexagon Socket for hexagonal screws | SW 14 mm | 1 | ≙ 1000 V ○ ③ | |
| | | 98 47 17 | | SW 17 mm | 1 | | |
| | | 98 47 19 | | SW 19 mm | 1 | | |
| | | 98 47 22 | | SW 22 mm | 1 | | |
| | | 98 47 24 | | SW 24 mm | 1 | | |
| | | 98 52 | Cable Knife | 180 mm | 1 | A 400014 A 🗗 | |
| | | 98 53 03 | Dismantling Knife for round cable | 155 mm | 1 | <u> </u> | |
| | | 98 64 02 | Insulating Clamp | 150 mm | 6 | ₽ 1000 V ///// | |
| | | 98 65 40 | Electricians' Gloves | 9 | 1 | ☆1000 V | |
| 98 99 14 LE | 060703 | | l Case, empty | | | | 7960 |
| 00 21 40 T | 062981 | Trolley | | | | | 1200 |

Model 99 Concretors'
Nippers,
see starting from Page 64



Control Cabinet Keys

for all standard cabinets and shut-off systems



00 11 02 short version, total length 44 mm

- for control cabinets and shut-off systems in the supply of gas, water and electricity
- for technical installations in buildings, e.g. air conditioning and ventilation systems, shut-off valves, mains switchboards, etc.
- with bit insert: slot 1.0 x 7 mm and cross recess PH 2
- with adapter for 1/4" bits on chained to key
- additional bit adapter for 1/4" bits inside one profile
- Zinc die-casted



| Article No. | EAN 4003773- | ←→ mm | O ∃ | △ ∃ | -O⊒ mm | Δ'Δ g |
|-------------|-----------------|-----------------|------------|------------|-----------|----------|
| 00 11 02 | 048947 | 44 | 5/6/8 | 9 | 3 - 5 | 65 |
| 00 11 03 | 041658 | 76 | 5/6/8 | 9 | 3 - 5 | 88 |



Profi-Key

for all standard shut-off systems



- key for heating, air conditioning, sanitary and building technology, e.g. for door and window handles or for radiator-bleeding
- with bit insert: slot 1.0 x 7 mm and cross recess PH 2
- with adapter for 1/4" bits chained to key
- additional bit adapter for 1/4" bits inside one profile
- total length: 90 mm
- Zinc die-casted



| Article No. | EAN 4003773- | ←→ mm | O ⊒ | ∆ ⊒ | mm | ∆ d g |
|-------------|-----------------|-----------------|------------|------------|---------|-------------|
| 00 11 04 | 048954 | 90 | 5/7/8 | 9 - 10 | 6/7/8/9 | 86 |



Universal Key

for all standard cabinets and shut-off systems



- for locking systems in electrical engineering, the supply of gas and water, air conditioning and ventilation systems, industry, technical installations in buildings, etc.
- 9 different die-cast zinc key-profiles in 1 tool
- with detachable chain and snap hook
- total length: 90 mm
- Zinc die-casted



| Article No. | EAN 4003773- | ←→ mm | ○ ⊒ mm | ⊘ ∃ mm | ∙ ⊡ mm | O∃ mm | ∆ d g |
|-------------|-----------------|-----------------|------------------|-------------------|------------------|----------|-------------|
| 00 11 06 | 071334 | 90 | 5/6/7-8/9-10 | 7 / 8-9 / 10 - 11 | 3 - 5 | 6 | 220 |



Pen-Style Control Cabinet Key

for all standard cabinets and shut-off systems



00 11 07

| Article No. | EAN 4003773- | ←→ mm | O ⊒ | △ □ mm | O ⊒ mm | ∆†∆ g |
|-------------|-----------------|-----------------|------------|------------------|------------------|----------|
| 00 11 07 | 063018 | 145 | 5/6/8 | 9 | 3 - 5 | 152 |

- easy to carry pen-style control cabinet key with fastening clip
- four different key profiles can be utilized by swivelling the key holder
- for control cabinets and shut-off systems in the supply of gas, water and electricity
- for technical installations in buildings, e.g. air conditioning and ventilation systems, shut-off valves, mains switchboards, etc.
- universal 1/4" bit adapter for standard bits (permanent magnet for
- additional bit adapter for 1/4" bits inside one key profile
- with inserted bit: cross recess PH 2 and possibility of safekeeping
- Tool body: plastic, fibreglass-reinforced
- Key profiles: zinc die-casted







Pen-Style Profi-Key

for all standard shut-off systems



00 11 08

| Article No. | EAN 4003773- | ←→ mm | O∃ mm | ∆ ∃ | mm | ΔΔ g |
|-------------|-----------------|-----------------|----------|------------|---------|---------|
| 00 11 08 | 063025 | 145 | 5/8 | 9 | 6/7/8/9 | 142 |

- easy to carry pen-style control cabinet key with fastening clip
- three different key profiles can be utilized by swivelling the key
- multi-purpose wrench for access on construction sites with profiles for the areas of heating, air conditioning, plumbing and building technology, e.g. for door and window handles or for radiator-bleeding
- universal 1/4" bit adapter for standard bits (permanent magnet for retaining)
- additional bit adapter for 1/4" bits inside one key profile
- with inserted bit: cross recess PH 2 and possibility of safekeeping a
- Tool body: plastic, fibreglass-reinforced
- Key profiles: zinc die-casted







Pen-Style Control Cabinet Key

with voltage detector

for all standard cabinets and shut-off systems



- easy to carry pen-style control cabinet key with fastening clip
- contactless detection of alternating current with optical indication; range of voltage 50 - 600 V; frequency range 50 - 60 Hz
- on / off button
- indicated by means of a bright LED: start-up self test, battery control and live conductor close-by detection
- battery case with bayonet catch
- four different key profiles can be utilized by swivelling the key holder
- for control cabinets and shut-off systems in the supply of gas, water and electricity
- for technical installations in buildings, e.g. air conditioning and ventilation systems, shut-off valves, mains switchboards, etc.
- universal 1/4" bit adapter for standard bits (permanent magnet for retaining)
- additional bit adapter for 1/4" bits inside one key profile
- with inseted bit: cross recess PH 2
- Tool body: plastic, fibreglass-reinforced
- Key profiles: zinc die-casted





| Article No | | 3773- | | O ∃ mm | ⊘ ∃ mm | •O⊒ mm | ∆ d g |
|------------|------|---------|----------------------|------------------|------------------|-----------|-------------|
| 00 11 17 | 0683 | 396 155 | ■ (€ <u>×</u> | 6/8 | 9 | 3 - 5 | 136 |



Counter Displays

• made from high-quality paperboard printed with high gloss finish





00 19 12 V02

| Article No. | EAN 4003773- | | Contents | Quantity | Width mm | Height mm | Depth mm | ∆†∆ g |
|--------------|-----------------|-----------|--------------------|----------|-------------|--------------|-------------|----------|
| 00 19 12 V01 | 070368 | 86 03 150 | Mini Pliers Wrench | 8 | 170 | 288 | 345 | 1590 |
| 00 19 12 V02 | 070375 | 86 05 150 | Mini Pliers Wrench | 8 | 170 | 290 | 345 | 1775 |
| 00 19 12 V03 | 070740 | 87 01 125 | KNIPEX Cobra® | 12 | 290 | 280 | 160 | 1245 |



Counter Displays 10 parts



- all-round colouring with neutral header
- small size, minimum space required at the point of sales

- dimensions, assembled (W x H x D): 225 x 435 x 225 mm
 dimensions, packed (W x H x D): 260 x 350 x 260 mm
 other contents (5 + 5 or 10 pieces) possible, minimum quantity and delivery time on request
- Material: solid cardboard, printed

| Article No. | EAN 4003773- | Contents | Δ ['] Δ g |
|--------------|-----------------|-------------------------------|-----------------------|
| 00 19 19 V01 | 073147 | 10 x 68 01 200 | 3610 |
| 00 19 19 V02 | 073154 | 10 x 87 01 250 | 3560 |
| 00 19 19 V03 | 073161 | 10 x 88 01 180 | 2220 |
| 00 19 19 V04 | 073178 | 10 x 88 01 250 | 3610 |
| 00 19 19 V05 | 073185 | 10 x 99 01 280 | 5420 |
| 00 19 19 V06 | 073192 | 5 x 68 01 160 / 5 x 68 01 180 | 2850 |
| 00 19 19 V07 | 073208 | 5 x 85 01 250 / 5 x 87 41 250 | 3910 |
| 00 19 19 V08 | 073215 | 5 x 86 03 180 / 5 x 86 03 250 | 4370 |
| 00 19 19 V09 | 073222 | 5 x 87 01 180 / 5 x 87 01 250 | 2540 |
| 00 19 19 V10 | 073239 | 5 x 87 01 250 / 5 x 87 01 300 | 4645 |
| 00 19 19 V11 | 073246 | 5 x 88 01 250 / 5 x 88 01 300 | 4570 |
| 00 19 19 V12 | 073253 | 5 x 99 00 250 / 5 x 99 00 280 | 4370 |
| 00 19 19 V13 | 073789 | 10 x 71 01 200 | 3820 |



Cobra® range in sales display



- attractive sales display for presentation of the Cobra® familiy
- solid style; can be fixed on tool bar systems, also suitable as counter display
- with integrated brochure holder for "Cobra®" leaflets
- with transparent label holders
- please do always request leaflets and labels
 includes three "Cobras®" each 87 01 150/180/250/300/400/560
- Material: steel wire, silver powder coated

| Article No. | EAN 4003773- | Contents | Quantity | Width mm | Height mm | Depth mm | Δ ['] Δ g |
|-------------|------------------------|---|----------|-------------|--------------|-------------|-----------------------|
| 00 19 29 | 00 19 29 052340 | Sales Display for KNIPEX Cobra® Water Pump Pliers | | 610 | 445 | 250 | 19600 |
| | 87 01 150 | 3 | | | | | |
| | | 87 01 180 | 3 | | | | |
| | | 87 01 250 | 3 | | | | |
| | | 87 01 300 | 3 | | | | |
| | | 87 01 400 | 3 | | | | |
| | | 87 01 560 | 3 | | | | |



Tool Roll 11 parts



- for telecommunications and electrical engineers
- tool roll made of hard-wearing polyester fabric
- with practical, adjustable quick release fastener
- contains eight pliers and three scewdrivers
- pliers with chrome plated heads and two-colour dual component
- screwdrivers VDE tested according to DIN EN/IEC 60900 1000V

00 19 41

| Article No. | EAN 4003773- | | Contents | | Quantity | | Δ΄Δ g |
|-------------|-----------------|-----------------|---------------------------------------|--------|----------|---|----------|
| 00 19 41 | 024729 | Tool Roll 11 pa | rts | | | | 1620 |
| | | 03 05 160 | Combination Pliers | | 1 | | |
| | | 11 15 160 | Insulation Stripper | | 1 | | |
| | | 25 05 160 | Snipe Nose Side Cutting Pliers | | 1 | $\Theta \blacksquare \triangleright \P$ | |
| | | 30 15 160 | Long Nose Pliers | | 1 | | |
| | | 30 35 160 | Long Nose Pliers | | 1 | 8 | |
| | | 31 15 160 | Gripping Pliers | | 1 | | |
| | | 67 05 140 | High Leverage End Cutting Nipper | | 1 | | |
| | | 70 05 140 | Diagonal Cutter | | 1 | | |
| | | 98 20 25 | Screwdriver for slotted screws | 2.5 mm | 1 | ≙ 1000 V △♣ | |
| | | 98 20 40 | Screwdriver for slotted screws | 4.0 mm | 1 | ≙ 1000 V △€ | |
| | | 98 24 01 | Screwdriver for cross-recessed screws | PH 01 | 1 | ≙ 1000 V △♦ | |



Circlip Pliers Sets 4 parts







00 19 57 OO

- tool roll made of hard-wearing polyester fabric
- with practical, adjustable quick release fastener

00 19 56

contains four common Circlip Pliers for internal and external circlips

contains common Precision Circlip Pliers for highest requirements

| Article No. | EAN 4003773- | | Contents | Style | Tips Ø mm | Quantity | | ∆ d g |
|-------------|-----------------|----------------------|----------------------------|---------------|--------------|----------|---------------------|-------------|
| 00 19 56 | 030973 | Circlip Pliers Set | Circlip Pliers Set 4 parts | | | | | |
| | | 44 11 J2 | Circlip Pliers | straight tips | 19 - 60 | 1 | O | |
| | | 44 21 J21 | Circlip Pliers | angled tips | 19 - 60 | 1 | ⊖ <u>√</u> 90° | |
| | | 46 11 A2 | Circlip Pliers | straight tips | 19 - 60 | 1 | OW | |
| | | 46 21 A21 | Circlip Pliers | angled tips | 19 - 60 | 1 | [∆] 20° MM | |
| 00 19 57 | 050056 | Circlip Pliers Set 4 | 4 parts | | | | | 665 |
| | | 48 11 J1 | Precision Circlip Pliers | straight tips | 12 - 25 | 1 | OM | |
| | | 48 11 J2 | Precision Circlip Pliers | straight tips | 19 - 60 | 1 | OM | |
| | | 49 11 A1 | Precision Circlip Pliers | straight tips | 10 - 25 | 1 | O S S MM | |
| | | 49 11 A2 | Precision Circlip Pliers | straight tips | 19 - 60 | 1 | O E S MM | |



Precision Circlip Pliers Sets



00 20 03 SB 00



00 20 04 SB 00

- attractive sales packaging with Euro standard perforationcontains common Precision Circlip Pliers for highest requirements
- sturdy plastic packaging, also suitable for storage of the pliers

00 20 03 SB 4 parts

00 20 04 SB 8 parts

| Article No. | EAN 4003773- | Contents | Style | Tips Ø mm | Quantity | | Δ'Δ g |
|---------------------------|-----------------|------------------------------|---------------|--------------|----------|-----------------------------|----------|
| 00 20 03 SB | 050100 | Precision Circlip Pliers Set | | | | | 685 |
| | | 48 11 J1 | straight tips | 12 - 25 | 1 | on | |
| | | 48 11 J2 | straight tips | 19 - 60 | 1 | | |
| | | 49 11 A1 | straight tips | 10 - 25 | 1 | OSS | |
| | 49 11 A2 | straight tips | 19 - 60 | 1 | | | |
| 00 20 04 SB 062417 | 062417 | Precision Circlip Pliers Set | | | | | 1275 |
| | | 48 11 J1 | straight tips | 12 - 25 | 1 | OM | |
| | | 48 11 J2 | straight tips | 19 - 60 | 1 | | |
| | | 49 11 A1 | straight tips | 10 - 25 | 1 | OSSMM | |
| | | 49 11 A2 | straight tips | 19 - 60 | 1 | O E 3 / V V V V | |
| | | 48 21 J11 | angled tips | 12 - 25 | 1 | 63 (000 57 | |
| | | 48 21 J21 | angled tips | 19 - 60 | 1 | O ₹30° ₹ | |
| | | 49 21 A11 | angled tips | 12 - 25 | 1 | Ů ∕ 90° ₽ ₹ ₩ | |
| | | 49 21 A21 | angled tips | 19 - 60 | 1 | O ₹30 ₹3///// | |

Pliers Sets in a foam tray



00 20 01 V01



00 20 01 V02



00 20 01 V03

- in a foam tray for workbenches and tool trolleysclearly organised storage of tools

- precisely-sized recesses for holding the pliers
 foam tray dimensions (L x W x H): 335 x 165 x 33 mm
 Material: two colour, closed pore foam

00 20 01 V01

four pliers in a foam tray

00 20 01 V02

six circlip pliers in a foam tray

00 20 01 V03 three pliers in a foam tray





| Article No. | EAN 4003773- | | Contents | Quantity | | Δ ['] Δ g | | |
|--------------|-----------------|----------------------|--|----------|---|-----------------------|--|--|
| 00 20 01 V01 | 069645 | Pliers Set "Basic" | 4 pliers in a foam tray | | | 1095 | | |
| | | 03 05 180 | Combination Pliers | 1 | | | | |
| | | 26 15 200 | Snipe Nose Side Cutting Pliers | 1 | $\Theta \blacksquare \triangleright \P$ | | | |
| | | 74 05 180 | High Leverage Diagonal Cutter | 1 | | | | |
| | | 87 01 250 | KNIPEX Cobra® | 1 | | | | |
| 00 20 01 V02 | | Circlip Pliers Set 6 | Pliers Set 6 circlip pliers in a foam tray | | | | | |
| | | 48 11 J1 | Precision Circlip Pliers | 1 | ON | | | |
| | | 48 11 J2 | Precision Circlip Pliers | 1 | | | | |
| | | 48 21 J21 | Precision Circlip Pliers | 1 | ○ ▼ 30° ■ ■ | | | |
| | | 49 11 A1 | Precision Circlip Pliers | 1 | OFIM | | | |
| | | 49 11 A2 | Precision Circlip Pliers | 1 | O E 3 / V V V V | | | |
| | | 49 21 A21 | Precision Circlip Pliers | 1 | ○ <u>190°</u> \$ \$ \\\\\ | | | |
| 00 20 01 V03 | 069669 | Water Pump Pliers | Set 3 pliers in a foam tray | | | 1065 | | |
| | | 85 01 250 | KNIPEX SmartGrip® | 1 | | | | |
| | | 87 41 250 | Multiple Slip Joint Spanner | 1 | | | | |
| | | 87 51 250 | KNIPEX Cobra® ES | 1 | | | | |



Pliers Sets



00 20 09 V01



00 20 10









tools VDE-tested in conformance with DIN EN/IEC 60900 1000V,



00 20 12



00 20 13

• tools in a plastic deep-drawn tray with transparent lid attractive sales packaging with Euro standard perforation

pliers with polished heads; handles with non-slip plastic coating or

pliers VDE-tested in conformance with DIN EN/IEC 60900 1000V, pliers chrome-plated; handles with multi-component grips

pliers chrome-plated; handles with multi-component grips

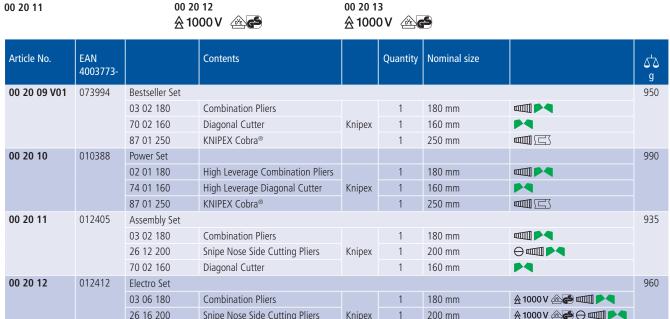
■ dimensions (W x H x D): 170 x 370 x 40 mm Material: sturdy cardboard packaging, printed

pliers with polished heads and plastic coated handles

with two-colour multi-components grips

pliers with two-colour multi-component grips

00 20 11





Compact-Box 4 parts

with insulated pliers



- high quality, versatile, shock-resistant plastic case
- foam insert with honeycomb structure for variable equipment
- dimensions, exterior (H x W x D): 65 x 327 x 275 mm

all pliers VDE tested according to DIN EN/IEC 60900 1000V, pliers finish $6\,$

00 21 15 LE

without tools

| Article No. | EAN 4003773- | | Contents | Quantity | | Δ ['] Δ g |
|-------------|-----------------|---------------------|--------------------------------|----------|--------------------------------|-----------------------|
| 00 20 15 | 024804 | Compact-Box 4 parts | | | | 1430 |
| | | 03 06 180 | Combination Pliers | 1 | ≙ 1000 V △€ ■■ | |
| | | 11 06 160 | Wire Stripper | 1 | ≙ 1000 V △♠ //// | |
| | | 26 16 200 | Snipe Nose Side Cutting Pliers | 1 | ≙ 1000 V △♠ ⊖ ■■ | |
| | | 70 06 160 | Diagonal Cutter | 1 | ≙ 1000 V △♠ | |
| 00 21 15 LE | 045175 | | | | | 530 |



Electronics Pliers Sets

for working on electronic components













00 20 16

7 parts, contains 6 electronics pliers and one pair of precision tweezers; case made of hard-wearing polyester fabric, pliers are held by elastic band, zippered

00 20 16 P

6 parts, contains 6 precision electronics pliers; case made of hard-wearing polyester fabric, pliers are held by elastic band, zippered

00 20 16 P ESD

6 parts, contains 6 ESD precision electronics pliers, electrically discharging version; case made of hardwearing polyester fabric, pliers are held by elastic band, zippered

00 20 17

6 parts, contains 6 ESD electronics pliers, electrically discharging version; case made of hard-wearing polyester fabric, pliers are held by elastic band, zippered

00 20 18

8 parts, contains 2 electronics pliers and 6 electronics screwdrivers; practical storage box, shock-resistant plastic, with foam insert

00 20 18 ESD

8 parts, contains 2 electronics pliers and 6 electronics screwdrivers, ESD electrically discharging version; practical storage box, shock-resistant plastic, with foam insert

| Article No. | EAN 4003773- | Contents | ∆†∆ g |
|----------------|-----------------|---|----------|
| 00 20 16 | 022619 | 35 12 115 / 35 22 115 / 35 32 115 / 64 32 120 / 77 02 115 / 77 42 115 / 92 34 36 | 720 |
| 00 20 16 P | 063223 | 34 12 130 / 34 22 130 / 34 32 130 / 79 02 120 / 79 02 125 / 79 42 125 | 575 |
| 00 20 16 P ESD | 063230 | 34 12 130 ESD / 34 22 130 ESD / 34 32 130 ESD / 79 02 120 ESD / 79 02 125 ESD / 79 42 125 ESD | 585 |
| 00 20 17 | 031222 | 35 12 115 ESD / 35 22 115 ESD / 35 42 115 ESD / 64 32 120 ESD / 77 02 115 ESD / 77 32 115 ESD | 695 |
| 00 20 18 | 033073 | 35 22 115 / 77 02 115 / Screwdrivers 0.4 x 2.5 / 0.5 x 3.0 / 0.6 x 3.5 / 0.8 x 4.0 / PH 0 / PH 1 | 460 |
| 00 20 18 ESD | 051848 | 35 22 115 ESD / 77 02 115 ESD / Screwdrivers 0.4 x 2.5 / 0.5 x 3.0 / 0.6 x 3.5 / 0.8 x 4.0 / PH 0 / PH 1 | 465 |



KNIPEX Minis in belt pouch 2 parts



00 20 72 V01

- KNIPEX Minis as "little helpers" in a practical belt pouch
- made of hard-wearing polyester fabric
- with hook and loop fastener
- with elastic side holder for small flash lamp, pen or suchlike
- with practical belt loop
- dimensions (W x H x D): 70 x 170 x 50 mm

| Article No. | EAN 4003773- | | Contents | Quantity | ∆†∆ g |
|--------------|-----------------|-----------------|-----------------------------------|----------|----------|
| 00 20 72 V01 | 070832 | KNIPEX Minis in | NIPEX Minis in belt pouch 2-piece | | 350 |
| | | 86 03 150 | Pliers Wrench | 1 | |
| | | 87 01 125 | KNIPEX Cobra® | 1 | |



Tool Bag 24 parts

for electrical contractors, top model



- contains 24 brand name quality tools, partly VDE tested according to DIN EN/IEC 60900, 1000 V
- comfortable bag of hard-wearing leather, with front bag, adjustable retaining loops and belt
- with galvanised steel base tray
- edges of the tool case reinforced with aluminium
- dimensions, interior (W x H x D): 420 x 250 x 160 mm

| Article No. | EAN 4003773- | | Contents | | Quantity | Nominal size | | ے ا و |
|-------------|-----------------|---------------|--|-------------|----------|--------------------|-----------------------------|-------------|
| 00 21 01 TL | 032694 | Tool Bag 24 p | parts | | | | | 69 |
| | | 306125 | PUK® Junior Hacksaw | Haunstätter | 1 | 150 x 240 mm | | |
| | | 03 06 180 | Combination Pliers | | 1 | 180 mm | ☆ 1000 V △ | |
| | | 11 06 160 | Insulation Stripper | | 1 | 160 mm | <u>A</u> 1000 V △ ← ← MM | |
| | | 16 20 165 | Dismantling Tool | 14. 1 | 1 | 165 mm | MM | |
| | | 25 06 160 | Snipe Nose Side Cutting Pliers | Knipex | 1 | 160 mm | ≙ 1000 V △← ⊖ | |
| | | 70 06 160 | Diagonal Cutter | | 1 | 160 mm | <u>A</u> 1000 V △ | |
| | | 98 52 | Cable Knife | | 1 | 185 mm | ☆ 1000 V △ | |
| | | 7165/50 | Plasterer's bowl | Nölle | 1 | 125 x 90 mm | | |
| | | 101-0300 | Locksmith's hammer | | 1 | 300 g | | |
| | | 30490-800 | Chipping hammer | Picard | 1 | 800 g | | |
| | | 75040-015 | Flat brush | | 1 | 40 mm | | |
| | | 75075-040 | Painter's spatula | | 1 | 40 mm | | |
| | | 71510-000 | Metre ruler (yardstick) | | 1 | 2 m | | |
| | | 361 252 1 | Electrician's Chisel | Daniela in | 1 | 250 x 10 mm | | |
| | | 340 300 1 | Mason's Chisels | Rennsteig | 1 | | | |
| | | 006100 | | | 1 | 0.4 x 2.5 x 80 mm | • | |
| | | 006110 | C 1: C 1:: 1 | | 1 | 0.5 x 3.0 x 100 mm | • | |
| | | 006120 | Screwdrivers for slotted screws | | 1 | 1.0 x 5.5 x 125 mm | • | |
| | | 006125 | | | 1 | 1.2 x 6.5 x 150 mm | • | |
| | | 006152 | C 1: (| Wera | 1 | PH1 x 80 mm | O | |
| | | 006154 | Screwdrivers for cross recessed Phillips® screws | | 1 | PH 2 x 100 mm | 0 | |
| | | 007620 | c 1: (1 !! ! | | 1 | 1.0 x 6.0 x 125 mm | • | |
| | | 110010 | Screwdrivers for slotted screws | | 1 | 1.2 x 6.5 x 150 mm | • | |
| | | 465608 | Voltage Detector | | 1 | 0.5 x 3.0 x 70 mm | 0 | |



Tool Bag 24 parts

apprentices tool bag for electrical contractors



- comfortable bag of hard-wearing leather, with front bag, adjustable retaining loops and belt
- front, rear and lid made of calf leather, black
- semi-fold-out front with adjustable loops and exterior document compartment
- front additionally reinforced with aluminium brackets
- with galvanised steel base tray
- handle
- dimensions, interior (W x H x D): 420 x 250 x 160 mm

contains 24 brand name quality tools, partly VDE tested according to DIN EN/IEC 60900, 1000 V

00 21 02 LE without tools

| Article No. | EAN 4003773- | | Contents | | Quantity | Nominal size | | g g |
|-------------|-----------------|----------------|---------------------------------|-------------|----------|--------------------|---|--------|
| 00 21 02 SL | 050162 | Tool Bag 24 pa | rts | | | | | 6980 |
| | | 306125 | PUK® Junior Hacksaw | Haunstätter | 1 | 150 x 240 mm | | |
| | | 03 05 180 | Combination Pliers | | 1 | 180 mm | | |
| | | 11 05 160 | Insulation Stripper | | 1 | 160 mm | MM | |
| | | 16 20 165 | Dismantling Tool | Vninov | 1 | 165 mm | /۷۷۷ | |
| | | 25 05 160 | Snipe Nose Side Cutting Pliers | Knipex | 1 | 160 mm | $\Theta \blacksquare \triangleright \P$ | |
| | | 70 05 160 | Diagonal Cutter | | 1 | 160 mm | | |
| | | 98 52 | Cable Knife | | 1 | 185 mm | <u>A</u> 1000 V △ | |
| | | 7165/50 | Plasterer's bow | Nölle | 1 | 125 x 90 mm | | |
| | | 101-0300 | Locksmith's hammer | | 1 | 300 g | | |
| | | 401-1000 | Sledge hammer | | 1 | 1000 g | | |
| | | 75040-015 | Flat brush | Picard | 1 | 40 mm | | |
| | | 75075-040 | Painter's spatula | | 1 | 40 mm | | |
| | | 71501-024 | Carpenter's pencil | | 1 | 24 cm | | |
| | | 361 252 1 | Electrician's Chisel | D | 1 | 250 x 10 mm | | |
| | | 340 250 1 | Mason's Chisels | Rennsteig | 1 | 250 mm | | |
| | | 031580 | | | 1 | 0.4 x 2.5 x 80 mm | ≙ 1000 V △△← | |
| | | 031582 | 6 1: 6 11 | | 1 | 0.6 x 3.5 x 100 mm | ≙ 1000 V △♣ | |
| | | 031587 | Screwdrivers for slotted screws | | 1 | 1.0 x 5.5 x 125 mm | ≙ 1000 V △ ← | |
| | | 031588 | | | 1 | 1.2 x 6.5 x 150 mm | ≙ 1000 V △△♦ | |
| | | 031601 | Screwdrivers for cross recessed | Wera | 1 | PH1 x 80mm | ≙ 1000 V △€ | |
| | | 031603 | Phillips® screws | | 1 | PH2 x 100 mm | <u>A</u> 1000 V △ 🗗 🗘 | |
| | | 031611 | Screwdrivers for cross recessed | | 1 | PZ1 x 80 mm | ≙ 1000 V △♣ | |
| | | 031613 | Pozidriv [®] screws | | 1 | PZ2 x 100 mm | <u>A</u> 1000 V <u>A</u> € | |
| | | 005655 | Voltage Detector | | 1 | 0.5 x 3.0 x 70 mm | O | |
| 00 21 02 LE | 057499 | | | | | | | 2970 |



Tool Box 7 parts

for electrical contractors



- high quality, versatile, shock-resistant plastic case
- foam insert with honeycomb structure for variable equipment
- dimensions, exterior (H x W x D): 65 x 327 x 275 mm

00 21 15

all pliers and screwdrivers except Water Pump Pliers VDE tested according to DIN EN/IEC 60900

00 21 15 LE

without tools

| Article No. | EAN 4003773- | | Contents | | Quantity | Nominal size | | Δ ['] Δ g |
|-------------|-----------------|---------------|--|--------|----------|--------------------|---------------------------------|-----------------------|
| 00 21 15 | 042853 | Tool Box 7 pa | arts | | | | | 1520 |
| | | 03 06 180 | Combination Pliers | | 1 | 180 mm | ≙ 1000 V △€ ■ ■ | |
| | | 26 16 200 | Snipe Nose Side Cutting Pliers | Knipex | 1 | 200 mm | ≙ 1000 V △♠ ⊖ □□□ | |
| | | 70 06 160 | Diagonal Cutter | | 1 | 160 mm | ≙ 1000 V △♠ | |
| | | 88 03 180 | KNIPEX Alligator® | | 1 | 180 mm | | |
| | | 006100 | Screwdrivers for slotted screws | | 1 | 0.4 x 2.5 x 80 mm | ≙ 1000 V △ ♠ ● | |
| | | 006115 | Screwarivers for stotled screws | Wera | 1 | 0.8 x 4.0 x 100 mm | ≙ 1000 V △€ | |
| | | 006152 | Screwdrivers for cross recessed Phillips® screws | vvcid | 1 | PH1 x 80 mm | ≙ 1000 V △ 😂 | |
| 00 21 15 LE | 045175 | | | | | | | 530 |



Tool Case "Electric" 20-parts



- heavy duty ABS material, black
- with circumferential double aluminium frame
- register hinges working as lid holder
- strong, ergonomic handle
- two flip-locks, lockable
- one removable tool board in the lid with 15 push-in compartments on the bottom side and six big push-in compartments and a clamp compartment (400 mm width) on the lid side, fixed by popper
- base tray, height 58 mm, can be subdivided by flexible inserts; cover plate with six large push-in compartments, can be fixed by popper
- cover and tool plate made of Con-Pearl® material
- 20 kg maximum load
- dimensions, exterior (W x H x D): 480 x 175 x 370 mm dimensions, interior (W x H x D): 460 x 170 x 310 mm

00 21 20

with 20 brand name tools, partly VDE tested according to DIN EN/IEC 60900

00 21 20 LE without tools

| Article No. | EAN 4003773- | | Contents | | Quantity | Nominal size | | ∆ d g |
|-------------|-----------------|----------------|------------------------------------|--------|----------|--------------------|-----------------------------------|-------------|
| 00 21 20 | 052166 | Tool Case "Ele | ctric" 20 parts | | | | | 7225 |
| | | 03 06 180 | Combination Pliers | | 1 | 180 mm | ☆ 1000 V △ ← □ □ | |
| | | 26 16 200 | Crina Naca Cida Cuttina Dliare | | 1 | 200 mm | ≙ 1000 V △♠ ♦ □ □ □ | |
| | | 26 26 200 | Snipe Nose Side Cutting Pliers | | 1 | 200 mm | £ 1000 V ♠♠ ∡40° ⊖ ■■■ ▶◀ | |
| | | 70 06 160 | Diagonal Cutter | | 1 | 160 mm | ☆ 1000 V △ ← ▶ | |
| | | 74 06 200 | High Leverage Diagonal Cutter | | 1 | 200 mm | | |
| | | 95 16 200 | Cable Shears | Knipex | 1 | 200 mm | ☆ 1000 V △ ← ◆ ● ■ | |
| | | 98 56 | Cable Knife | | 1 | 185 mm | ☆ 1000 V △ | |
| | | 86 03 180 | Pliers Wrench | | 1 | 180 mm | | |
| | | 87 03 250 | KNIPEX Cobra® | | 1 | 250 mm | | |
| | | 12 40 200 | Self-Adjusting Insulation Stripper | | 1 | 200 mm | AAAA | |
| | | 16 80 125 | Universal Dismantling Tool | | 1 | 125 mm | MM | |
| | | 006100 | | | 1 | 0.4 x 2.5 x 80 mm | ☆ 1000 V △△← | |
| | | 006115 | Screwdrivers for slotted screws | | 1 | 0.8 x 4.0 x 100 mm | <u>A</u> 1000 V <u>A</u> € | |
| | | 006120 | ociewanivers for Stotled Sciews | | 1 | 1.0 x 5.5 x 125 mm | <u>A</u> 1000 V <u>A</u> € | |
| | | 006125 | | | 1 | 1.2 x 6.5 x 150 mm | ≙ 1000 V △€ | |
| | | 006152 | Screwdrivers for cross recessed | Wera | 1 | PH1 x 80 mm | <u>A</u> 1000 V <u>A</u> | |
| | | 006154 | Phillips [®] screws | | 1 | PH2 x 100 mm | ≙ 1000 V △€ | |
| | | 006162 | Screwdrivers for cross recessed | | 1 | PZ1 x 80 mm | ≙ 1000 V △♠ | |
| | | 006164 | Pozidriv® screws | | 1 | PZ2 x 100 mm | ≙ 1000 V △♣ | |
| | | 005655 | Voltage Detector | | 1 | 0.5 x 3.0 x 70 mm | 0 | |
| 00 21 20 LE | 044567 | | | | | | | 4485 |



Tool Case for electrical contractors

23 parts



- contains 23 brand name quality tools, partly VDE tested according to DIN EN/IEC 60900, 1000 V
- hard-wearing ABS hard-shell construction with aluminium frame and circular buffer protection
- document compartment and pen holding straps
- one removable tool plate, with elastic loops on both sides
- one cover plate with elastic loops and tool protection cloth
- large base tray with variable separations (e.g. for measuring and testing devices). Interior dimensions: 420 x 320 x 85 mm
- sturdy metal locks and 3-digit-lock
- strong, ergonomic handle
- feet on both sides
- colour: silver / aluminium look

| Article No. | EAN 4003773- | | Contents | | Quantity | Nominal size | | ΔΔ g |
|-------------|-----------------|------------------|--|---------|----------|--------------------|---------------------------------------|---------|
| 00 21 30 | 051084 | Tool Case for el | lectrical contractors 23 parts | | | | | 9440 |
| | | 03 06 180 | Combination Pliers | | 1 | 180 mm | ≙ 1000 V △ ♠ □ □ □ | |
| | | 26 16 200 | Snipe Nose Side Cutting Pliers | | 1 | 200 mm | ≙ 1000 V △♠ ⊖ □□□□ | |
| | | 26 26 200 | Shipe Nose side Cutting Filers | | 1 | 200 mm | ☆ 1000 V △♠ △4 0° ○ ■■■ | |
| | | 70 06 125 | Diagonal Cutter | | 1 | 125 mm | ☆ 1000 V △▲ ← ▶ | |
| | | 70 06 160 | Diagonal Cutter | | 1 | 160 mm | X 1000 V 25 45 | |
| | | 92 27 62 | Precision Tweezers | Knipex | 1 | 150 mm | ≙1000 V இ □□□□ | |
| | | 98 56 | Cable Knife | Kilipex | 1 | 185 mm | ≙ 1000 V △ | |
| | | 00 11 03 | Control Cabinet Key | | 1 | 76 mm | | |
| | | 12 40 200 | Self-Adjusting Insulation Stripper | | 1 | 200 mm | M M | |
| | | 16 80 125 | Universal Dismantling Tool | | 1 | 125 mm | / V V V | |
| | | 86 03 180 | Pliers Wrench | | 1 | 180 mm | | |
| | | 87 03 250 | KNIPEX Cobra® | | 1 | 250 mm | | |
| | | 006100 | | | 1 | 0.4 x 2.5 x 80 mm | ≙ 1000 V △€ | |
| | | 006110 | | | 1 | 0.6 x 3.5 x 100 mm | ≙ 1000 V △€ | |
| | | 006115 | c 1: (1 l | | 1 | 0.8 x 4.0 x 100 mm | ≙ 1000 V △€ | |
| | | 006120 | Screwdrivers for slotted screws | | 1 | 1.0 x 5.5 x 125 mm | ≙ 1000 V △ ← | |
| | | 006125 | | Wera | 1 | 1.2 x 6.5 x 150 mm | ≙ 1000 V △ ← | |
| | | 006130 | | | 1 | 1.2 x 8.0 x 175 mm | ≙ 1000 V △ ← | |
| | | 006150 | | | 1 | PH0 x 80 mm | ≙ 1000 V △€ | |
| | | 006152 | Screwdrivers for cross recessed Phillips® screws | | 1 | PH1 x 80 mm | ≙ 1000 V △♦ | |
| | | 006154 | Tillilips sciews | | 1 | PH2 x 100 mm | <u>A</u> 1000 V <u>A</u> € | |
| | | 006162 | Screwdrivers for cross recessed | | 1 | PZ1 x 80 mm | ≙ 1000 V △← | |
| | | 006164 | Pozidriv® screws | | 1 | PZ2 x 100 mm | ☆ 1000 V △ | |



Belt Pouch for two pliers



- for two pliers up to 150 mm length
- made of hard-wearing polyester fabric
- with hook and loop fastener
- with elastic side holder for flash lamp, pen or suchlike
- with practical belt loop

| Article No. | EAN 4003773- | Width mm | Height mm | Depth mm | Δ ¹ Δ g |
|-------------|-----------------|-------------|--------------|-------------|-----------------------|
| 00 19 72 LE | 070191 | 65 | 155 | 25 | 65 |

Belt Tool Pouch empty



- made of hard-wearing polyester fabric and leather
- with pockets for up to 8 tools
- tool loops made of leather, riveted
- with snap hook

| Article No. | EAN | Width | Height | Depth | ΔΔ |
|-------------|----------|-------|--------|-------|-----|
| | 4003773- | mm | mm | mm | g |
| 00 19 73 LE | 072065 | 170 | 235 | 75 | 210 |

Tool Bag "New Classic Basic" empty



00 21 02 LE

- comfortable bag of hard-wearing leather, with front bag, adjustable retaining loops and belt
- front, rear and lid made of calf leather, black
- front additionally reinforced with aluminium brackets
- semi-fold-out front with adjustable loops and exterior document compartment
- with galvanised steel base tray
- handle
- dimensions, exterior (W x H x D): 450 x 300 x 190 mm; dimensions, interior (W x H x D): 420 x 250 x 160 mm

| Article No. | EAN 4003773- | exterior (interior) width mm | Dimension exterior (interior) height mm | exterior (interior) depth mm | Δ ['] Δ g |
|-------------|-----------------|------------------------------|---|---------------------------------|-----------------------|
| 00 21 02 LE | 057499 | 450 (420) | 300 (250) | 190 (160) | 2970 |



Tool Case "Basic" empty



- heavy duty ABS material, black
- circumferential aluminium frame with D-shape rings for the shoulder strap (included)
- 3-digit lock and two flip-locks for fixation of the cover
- strong, ergonomic handle
- metal hinges
- lid holder with hinge-joint mechanism
- document compartment in the cover
- removable tool board in the lid with nine push-in compartments and an elastic loop on the lid side; with ten slim and one large push in compartments on the bottom side
- base tray, height 55 mm, can be subdivided by inserts; cover plate with 12 large push-in compartments and a flat compartment, can be fixed by popper
- load capacity: 15 kg
- dimensions, exterior (W x H x D): 465 x 200 x 410 mm dimensions exterior (W x H x D): 440 x 180 x 350 mm

| A C L N | FAN | | Dimension | | |
|-------------|-----------------|---------------------------------|-------------------------------|---------------------------------|----------|
| Article No. | EAN 4003773- | exterior (interior) width mm | exterior (interior) height mm | exterior (interior) depth mm | Δ Δ g |
| 00 21 05 LE | 056904 | 465 (440) | 200 (180) | 410 (350) | 5680 |



Tool Case "Standard" empty



00 21 20 LE

- heavy duty ABS material, black
- with circumferential double aluminium frame
- register hinges working as lid holder
- strong, ergonomic handle
- two flip-locks, lockable
- one removable tool board in the lid with 15 push-in compartments on the bottom side and six big push-in compartment and a clamp compartment (400 mm width) on the lid side, fixed by popper
- base tray, height 58 mm, can be subdivided by flexible inserts; cover plate with six large push-in compartments, can be fixed by popper
- cover and tool plate made of Con-Pearl® material
- 20 kg maximum load
- dimensions, exterior (W x H x D): 480 x 175 x 370 mm dimensions, interior (W x H x D): 460 x 170 x 310 mm

| | | Dimension | | | | |
|-------------|-----------------|------------------------------|----------------------------------|---------------------------------|---------|--|
| Article No. | EAN 4003773- | exterior (interior) width mm | exterior (interior) height mm | exterior (interior) depth mm | ΔΔ g | |
| 00 21 20 LE | 044567 | 480 (460) | 175 (170) | 370 (310) | 4485 | |



Tool Case "Classic II" empty



- heavy duty ABS material, black
- with circumferential double aluminium frame
- register hinges working as lid holder
- sturdy multi-component handle with grip recesses
- two flip-locks, lockable
- document compartment in the cover
- one removable tool board in the lid with CP7-tool holder (thickness 11 mm) on the bottom side
- one tool board in the lid with CP7-tool holder (thickness 11 mm) on the lid side and CP7-tool holder (thickness 15 mm) on the
- base tray, height 58 mm, can be subdivided by flexible inserts; cover plate with CP7-tool holder (thickness 25 mm) on the lid side, can be fixed by popper
- cover and tool plate made of Con-Pearl® material
- 30 kg maximum load
- dimensions, exterior(W x H x D): 480 x 177 x 370 mm dimensions, interior (W x H x D): 460 x 170 x 310 mm

| | | Dimension | | | | | |
|-------------|-----------------|---------------------------------|----------------------------------|---------------------------------|---------|--|--|
| Article No. | EAN 4003773- | exterior (interior) width mm | exterior (interior) height mm | exterior (interior) depth mm | ΔΔ g | | |
| 00 21 32 LE | 057536 | 480 (460) | 180 (165) | 365 (300) | 5235 | | |



Tool Case "Classic III" empty



- heavy duty ABS material, black
- extra large in height, width and depth
- with circumferential double aluminium frame
- register hinges working as lid holder
- sturdy multi-component handle with grip recesses
- two flip-locks, lockable
- document compartment in the cover
- one tool board in the lid with 13 push-in compartments on the bottom side and twelve push-in compartments as well as a clamp compartment (width 400 mm) on the lid side
- base tray, height 88 mm, can be subdivided by flexible inserts; cover plate with 15 push-in compartments and a clamp compartment (width 400 mm), can be fixed by 2 poppers
- cover and tool plate made of Con-Pearl® material
- 30 kg maximum load
- dimensions, exterior (W x H x D): 490 x 205 x 420 mm dimensions, interior (W x H x D): 470 x 180 x 360 mm

| Article No. | EAN 4003773- | exterior (interior) width mm | Dimension exterior (interior) height mm | exterior (interior) depth mm | ∆'∆ g |
|-------------|-----------------|---------------------------------|---|---------------------------------|----------|
| 00 21 33 LE | 057543 | 490 (470) | 205 (180) | 420 (360) | 5620 |



Tool Case "BIG Twin" empty





00 21 40 LE

- heavy duty ABS material, black
- sturdy aluminium frame with D-shape rings for belt and fix, sturdy centre board with multi-purpose push-in facilities by elastic loops and twelve small pockets
- comfortable handle and mounting device for a "Trolley" embedded in the bottom (available ordering ref. 00 21 40 T)
- metal hinges
- 30 kg maximum load
- can be opened on one or both sides; bottom tray and cover can be opened independently
- stands stable in any opening position due to lid-holders and hinge mechanisms on both sides, that register in a position of 45° and 90°
- 3-digit lock and two flip-locks for fixation of the cover
- removable document compartment and removable tool board, with 13 push-in compartments on one side
- two flip-locks to fix the bottom
- base tray, height 58 mm, can be subdivided by flexible inserts; cover plate with six large push-in compartments, can be fixed by popper
- dimensions, exterior (W x H x D): 490 x 255 x 410 mm dimensions, interior (W x H x D): 445 x (105 + 105) x 350 mm

00 21 40 T

- telescopic handle for rolling transport of tool case
- applicable for cases: 00 21 40 LE Tool Case "BIG Twin", 98 99 14 Universal Tool Case
- height adjustable handle with catch
- integrated mechanism for fixation to the case, for rapid assembly and removal
- with two smooth castors
- dimensions: 60 x 245 x 400 (1,000) mm (extended)





| Article No. | EAN 4003773- | exterior (interior) width mm | Dimension exterior (interior) height mm | exterior (interior) depth mm | g g |
|-------------|-----------------|------------------------------------|---|---------------------------------|--------|
| 00 21 40 LE | 057673 | 490 (445) | 255 (105 + 105) | 410 (350) | 7550 |
| | | | | | |
| 00 21 40 T | 062981 | Trolley for rolling case transport | | | |



Tool Case "BIG Twin-Move"

with integrated rollers and telescopic handle empty



- heavy duty ABS material, black
- all-round aluminium frame and firmly mounted sturdy centre board, each side offering multi-purpose push-in facilities by elastic loops and 12 small pockets
- pull-out handle embedded in the base and two integrated smooth in-line skater runners
- 30 kg maximum load
- can be opened on one or both sides (V form); base tray and cover can be partially or fully opened independently of each other; stands securely in all opening positions; the special runners are gentle to the floor and ensure stability
- lockable
- removable document compartment and removable tool panel with 13 tool pouches
- base tray, height 60 mm, can be subdivided by flexible inserts; tool panel as cover plate with 13 tool pouches
- dimensions, exterior (W x H x D): 510 x 270 x 410 mm
- dimensions, lid, interior (W x H x D): 480 x 105 x 370 mm
- dimensions, base, interior (W x H x D): 445 x 105 x 330 mm









| | | | | Dimension | | |
|-------|----------|-----------------|---------------------------------|----------------------------------|---------------------------------|-------------|
| Artic | cle No. | EAN 4003773- | exterior (interior) width mm | exterior (interior) height mm | exterior (interior) depth mm | ∆ d g |
| 00 2 | 21 41 LE | 071549 | 510 (480/445) | 270 (105) | 410 (370/330) | 8600 |



Test Supports





00 19 21 T

00 19 20

for testing the self-locking function of the "Alligator" and "Cobra" Water Pump Pliers; steady stand, high stability; without pliers

00 19 20 T

for testing the self-locking function of the "Alligator®" and "Cobra®" Water Pump Pliers; collapsible to space saving transport; without pliers

00 19 21 T

for testing the ratchet principle of Pliers Wrenches; can be fixed on the wall; without pliers

| Article No. | EAN 4003773- | Width mm | Height mm | Depth mm | ∆ d g |
|-------------|-----------------|-------------|--------------|-------------|-------------|
| 00 19 20 | 024637 | 230 | 165 | 310 | 1385 |
| 00 19 20 T | 031192 | 140 | 225 | 135 | 810 |
| 00 19 21 T | 027461 | 85 | 85 | 150 | 728 |



Sales Display



- for 5 x 6 pliers
- small size, minimum space required at the point of sales
- with informative header and slide-in strip for product detail labels
- assortment on request
- when ordering, do always ask for product detail header (see table) and product detail labels
- without pliers
- Material: steel wire, silver powder coated



C320 00187

| Article No. | EAN 4003773- | Width mm | Height mm | Depth mm | ΔΔ g |
|-------------|-----------------|-------------|--------------|-------------|---------|
| 00 19 24 | 029656 | 325 | 415 | 190 | 925 |

| C320 00110 | 051473 | Header general programme |
|------------|--------|---|
| C320 00187 | 603009 | Header Comfort, for pliers with multi-component grips |

Sales Display



- for 8 x 7 pliers
- solid style; can be fixed on tool bar systems, also suitable as counter display
- with explanatory header
- assortment on request
- when ordering do always ask for product detail header (see table)
- without pliers
- Material: sheet steel / steel wire, silver powder coated



C320 00176



C320 00231

| Article No. | EAN 4003773- | Width mm | Height mm | Depth mm | σg |
|-------------|-----------------|--------------------------|--------------|-------------|------|
| 00 19 25 | 014027 | 490 | 400 | 310 | 4140 |
| | | | | | |
| C320 00132 | 601807 | Header general programme | | | |

| C320 00132 | 601807 | Header general programme |
|------------|--------|---|
| C320 00176 | 602927 | Header Comfort, for pliers with multi-component grips |
| C320 00231 | 051428 | Header Precision Circlip Pliers 48/49 |



Rotary Sales Stand



00 19 28

- for 16 x 3 pliers
- attractive, compact rotary construction for the counter
- with 16 hooks 00 19 33
- assortment on request
- when ordering, do always ask for product detail labels
- without pliers
- Material: sheet steel / steel wire, silver powder coated

| Article No. | EAN | Diameter | Height | Δ |
|-------------|----------|----------|--------|------|
| | 4003773- | mm | mm | g |
| 00 19 28 | 032083 | 400 | 610 | 5950 |



Tool Bars (Pegboards) and Accessories





00 19 30



00 19 30 2

00 19 30

for the promotional, extensive product presentation; completely with supports, 5 peg boards, shelf and illuminated transparent advertising fascia panel; can be equipped either with pliers on hooks, carded pliers and/or sales displays; with power cable and 230 V plug; Material: sheet steel/ steel tubing, silver powder coated

00 19 30 3

for the promotional, extensive product presentation; completely with supports, 5 peg boards, shelf; without illuminated transparent advertising facia; can be equipped either with pliers on hooks, carded pliers and/or sales displays; Material: sheet steel/ steel tubing, silver powder coated

00 19 30 66

for the space saving presentation; completely with supports, 5 peg boards, shelf; without illuminated transparent advertising fascia panel; with magnetic advertising fascia panel; can be equipped either with pliers on hooks, carded pliers and/or sales displays; Material: sheet steel/ steel tubing, silver powder coated





00 19 30 16



00 19 30 19



00 19 30 17



00 19 30 18



00 19 30 20

| Article No. | EAN 4003773- | | Width mm | Height mm | Depth mm | ∆ [†] ∆ g |
|-------------|-----------------|--|-------------|--------------|-------------|-----------------------|
| 00 19 30 | 024644 | Tool Bar with illuminated fascia panel | 1000 | 2200 | 500 | 58000 |
| 00 19 30 3 | 052524 | Toolbar without illuminated fascia panel | 1000 | 2200 | 500 | 47000 |
| 00 19 30 66 | 055211 | Tool Bar | 660 | 2200 | 500 | 40000 |
| 00 19 30 2 | 046783 | Illuminated fascia panel, to affix to tool bar systems | 1000 | 200 | 400 | 9140 |
| 00 19 30 15 | 071891 | Magnetic label for tool bar | 980 | 100 | | 310 |
| 00 19 30 16 | 071907 | Magnetic label for tool bar | 980 | 100 | | 310 |
| 00 19 30 19 | 071938 | Magnetic label for tool bar | 980 | 200 | | 610 |
| 00 19 30 17 | 071914 | Magnetic label for tool bar 00 19 30 66 | 650 | 100 | | 410 |
| 00 19 30 18 | 071921 | Magnetic label for tool bar 00 19 30 66 | 650 | 100 | | 410 |
| 00 19 30 20 | 071945 | Magnetic label for tool bar 00 19 30 66 | 650 | 200 | | 410 |



Show-Cabinets for product presentation

for assembly to tool bar systems





00 19 30 VIT

00 19 30 VIT 1

- with two glass sliding doors, lockable
- illumination unit with plug for series connection
- with power cable and 230 V plug
- Material: aluminium section, silver colour

00 19 30 VIT

hanging show-cabinet for assembly on tool bar systems; with shelf, top cover and transparent advertising fascia panel; easy to assemble collapsible frame construction

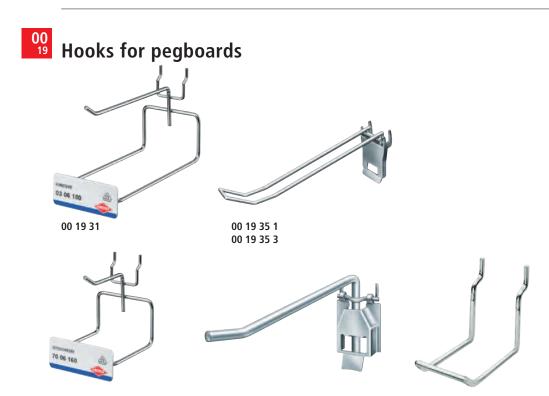
00 19 30 VIT 1

basic show-cabinet for assembly to tool bar systems; with top cover and transparent advertising fascia panel

00 19 30 VIT 2

unit show-cabinet for assembly to tool bar systems, for extension of basic show-cabinet 00 19 30 VIT1; with top cover and transparent advertising fascia panel

| Article No. | EAN 4003773- | Designation | Width mm | Height mm | Depth mm | Δ g |
|----------------|-----------------|---|-------------|--------------|-------------|--------|
| 00 19 30 VIT | 034186 | Hanging Show-Cabinet for Tool Bar | 1000 | 1200 | 400 | 39000 |
| 00 19 30 VIT 1 | 048978 | Basic Show-Cabinet for Product Presentation | 1000 | 2000 | 400 | 59000 |
| 00 19 30 VIT 2 | 048985 | Unit Show-Cabinet for 00 19 30 VIT - Expansion Module | 1000 | 2000 | 400 | 51000 |



00 19 33 2

00 19 31

160 mm length; for 6 pliers, with face plate for label; when ordering, do always ask for product detail labels

00 19 33

90 mm length; for 3 pliers, with faceplate for label; when ordering, do always ask for product detail labels

00 19 33 2

200 mm length; heavy duty for mounting pipe wrenches, etc.; with pivoting clamping device for easy fastening and release

00 19 35 1 / 00 19 35 3

200 mm length; for self-service packs with Euro standard perforations; with pivoting clamping device for easy fastening and release

00 19 35 2

50 mm length; for self-service (carded) packs and leaflets with Euro standard

| Article No. | EAN 4003773- | Designation | Hole spacing mm | Depth mm | Δ g |
|-------------|-----------------|---|--------------------|-------------|--------|
| 00 19 31 | 014874 | for 6 pliers | 30 | 160 | 93 |
| 00 19 33 | 014881 | for 3 pliers | 30 | 90 | 70 |
| 00 19 33 2 | 042112 | for large size water pump pliers, pipe wrenches, etc. | 30 | 200 | 150 |
| 00 19 35 1 | 045168 | for self-service packs | 25 | 200 | 93 |
| 00 19 35 2 | 028284 | for brochures + carded tools | 30 | 50 | 10 |
| 00 19 35 3 | 051787 | for self-service packs | 30 | 200 | 95 |

00 19 35 2

00 19 33

Brochure Holder for pegboards

- for approx. 250 A4-size leaflets
- Material: steel wire, silver powder coated



00 19 36

| Article No. | EAN | Width | Height | Depth | ∆†∆ |
|-------------|----------|-------|--------|-------|-----|
| | 4003773- | mm | mm | mm | g |
| 00 19 36 | 024682 | 230 | 290 | 90 | 80 |

Pliers Racks for pegboards



00 19 34



00 19 34 1

00 19 32 for 3 x 6 pliers

00 19 34 for 5 x 6 pliers

00 19 34 1 for 5 x 6 carded pliers; with header sign

00 19 34 2 for 15 x 6 pliers



00 19 34 2

| Article No. | EAN 4003773- | Designation | Width mm | Height mm | Depth mm | ΔΔ g |
|-------------|-----------------|-------------------------|-------------|-----------|-------------|---------|
| 00 19 32 | 024651 | for 3 x 6 pliers | 195 | 98 | 175 | 344 |
| 00 19 34 | 024668 | for 5 x 6 pliers | 325 | 98 | 175 | 400 |
| 00 19 34 1 | 051824 | for 5 x 6 carded pliers | 480 | 200 | 225 | 1065 |
| 00 19 34 2 | 052364 | for 15 x 6 pliers | 995 | 145 | 215 | 2250 |



Sales Displays



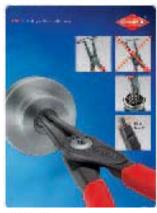
00 19 34 3 for pliers finish 0; 1; 3 or 4

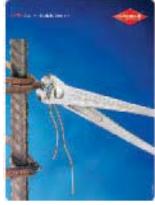


00 19 34 4 for pliers finish 2; 5 or 6

| Article No. | EAN 4003773- | Designation | Width mm | Height mm | Depth mm | ΔΔ g |
|-------------|-----------------|--|-------------|--------------|-------------|---------|
| 00 19 34 3 | 054450 | for 3 x 6 pliers; for pliers finish 0/1/3 or 4 | 240 | 320 | 310 | 2345 |
| 00 19 34 4 | 054467 | for 3 x 6 pliers; for pliers finish 2/5/6 | 240 | 320 | 310 | 2340 |
| | | | | | | |
| C320 00275 | 054535 | Header Precision Circlip Pliers 48/49 | | | | |
| C320 00286 | 054504 | Header Concretors' Nippers | | | | |
| C320 00297 | 054481 | Header Cobra®; Pliers Wrenches | | | | |
| C320 00319 | 054498 | Header Stripping, Crimping | | | | |
| C320 00330 | 054511 | Header General Programme | | | | |
| C320 00352 | 060284 | Header Multiple Slip Joint Spanners | | | | |
| C320 00363 | 060291 | Header Self-adjusting Insulation Strippers | | | | |
| C320 00429 | 062271 | Header for 74 12 | | | | |
| C320 00451 | 063032 | Header Cobra® ES | | | | |
| C320 00462 | 063049 | Header SmartGrip® | | | | |
| C320 00517 | 065869 | Header Lineman's Pliers | | | | |
| C320 00528 | 065876 | Header Insulated Pliers Wrenches | | | | |
| C320 00605 | 070214 | Header KNIPEX Alligator® | | | | |

SALES AIDS





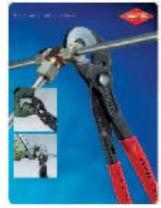


C320 00275

C320 00286

C320 00297







C320 00330

C320 00352

C320 00462





C320 00517

C320 00605

| 1011 1012 | | | | | | | | | | | | | | |
|--|--------------|-----|-------------|--------|--------------|--------|---------------|----|-----------|----|---------------|--------|---------------|--------|
| Mathematics | 00 11 02 | 188 | 00 21 40 LE | 206 | 13 02 160 | 32 | 30 21 140 | 44 | 44 19 J5 | 58 | 50 01 210 | 62 | 74 02 160 | 81 |
| | | | | | | | | | | | | | | |
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| Mathematics | | | | | | | | | | | | | | |
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| 0.19 1.10 1. | | | | | | 33/158 | | 44 | | | | 63 | | |
| 0.919 100 | 00 11 17 | 190 | 02 01 200 | 21 | 15 11 120 | 34 | 30 25 190 | 44 | 44 21 J21 | 56 | 57 00 360 | 63 | 74 05 180 | 81 |
| 0.9 19 19 19 19 19 19 19 19 19 19 19 19 19 | 00 19 12 V01 | 191 | 02 01 225 | 21 | 15 19 005 | 34 | 30 31 140 | 44 | 44 21 J31 | 56 | 58 10 225 | 63 | 74 05 200 | 81 |
| 0.019 19.99 19. 19 | 00 19 12 V02 | 191 | 02 02 180 | 21 | 15 19 006 | 34 | 30 31 160 | 44 | 44 21 J41 | 56 | 58 30 225 | 63 | 74 05 250 | 81 |
| 00 19 19 100 19 10 | | 191 | | 21 | | 34 | | 44 | | | | | | 81/161 |
| 00 19 19 19 19 19 19 19 10 20 50 20 22 11 55 11 60 34 20 35 160 44 42 33 21 55 6 671 120 77 74 06 20 00 19 11 11 11 11 11 11 11 11 11 11 11 11 | | | | | | | | | | | | | | |
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| 09 19 19 100 1 00 20 20 20 20 1155 6 20 28 58 34 3 115 1600 43 44 31 M2 56 4 12 155 69 74 12 160 81 019 19 19 10 10 20 20 22 1155 6 29 155 15 34 31 25 160 41 44 31 M2 56 64 22 115 50 76 74 21 160 81 019 19 19 10 10 20 20 20 22 16 20 150 35 34 31 25 160 41 44 31 M2 56 64 22 115 50 76 74 22 160 81 10 19 19 19 10 10 20 20 20 22 16 60 150 56 35 32 31 155 16 64 44 31 M2 56 64 22 115 50 76 74 22 20 81 10 19 19 19 10 10 20 20 20 22 16 60 150 56 35 32 31 155 16 64 44 31 M2 56 64 22 115 50 76 74 22 20 81 10 19 19 19 12 10 20 20 20 22 16 60 150 56 35 32 32 31 155 16 64 44 31 M2 56 64 22 115 50 76 74 22 20 81 10 19 19 19 19 19 19 19 19 10 20 20 20 20 16 60 150 56 35 32 32 31 155 16 64 45 10 M2 56 16 16 16 16 16 16 16 16 16 16 16 16 16 | | | | | | 34 | 30 41 160 | 45 | | | | 69 | | |
| 091919W7 191 020 2225 21156 16 20165 28 14 31 21 1600 43 1 4431112 56 4412115 69 74 21 1600 81 1001919W7 191 020 2220 21156 163 103 58 15 32 11 1500 48 14 31 122 56 64 21 150 69 74 21 160 81 1001919W7 191 020 2220 21 150 103 58 15 32 11 1500 48 14 31 122 56 64 21 120 69 17 42 11 100 100 100 100 100 100 100 100 100 | 00 19 19 V05 | 191 | 02 06 180 | 21/156 | 16 20 16 SB | 34 | 31 11 160 | 43 | 44 29 J61 | 58 | 64 11 115 | 69 | 74 07 250 | 81/161 |
| 00 19 19 19 19 10 10 20 20 22 11 156 16 29 165 34 31 25 160 43 143 122 56 42 21 15 69 7, 42 21 160 81 01 19 19 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10 | 00 19 19 V06 | 191 | 02 06 200 | 21/156 | 16 20 28 SB | 34 | 31 15 160 | 43 | 44 31 J02 | 56 | 64 12 115 | 69 | 74 12 160 | 81 |
| 0.0 19 19 19 10 | 00 19 19 V07 | 191 | 02 06 225 | 21/156 | 16 20 165 SB | 34 | 31 21 160 | 43 | 44 31 J12 | 56 | 64 12 115 ESD | 70 | 74 12 180 | 81 |
| 0.0 19 19 19 10 | 00 19 19 V08 | 191 | 02 07 200 | 21/156 | 16 29 165 | 34 | 31 25 160 | 43 | 44 31 122 | 56 | 64 22 115 | 69 | 74 21 160 | 81 |
| 00 19 19 11 19 10 03 00 18 00 22 16 16 19 16 35 35 32 22 13 15 6 16 44 31 142 56 64 22 10 15 10 70 42 22 50 81 01 19 19 11 19 10 30 00 200 20 20 16 16 10 18 35 32 22 13 15 6 16 45 146 146 147 147 147 147 147 147 147 147 147 147 | | | | | | | | | | | | | | |
| 00 19 19 171 1 30 03 00 020 22 16 640 150 35 32 32 315 45 45 04 10 170 88 644 2115 69 74 21 2200 81 00 19 19 171 31 03 01 140 22 16 640 150 83 32 31 150 64 65 46 10 A5 65 50 64 21 150 69 74 22 2200 81 00 19 19 171 31 03 01 140 22 16 65 152 88 37 34 12 130 150 64 65 10 A5 6 | | | | | | | | | | | | | | |
| 019 19 11 2 10 03 03 05 0 22 16 69 150 58 6 32 31 31 35 45 45 21 200 58 64 52 12 56 77 74 22 200 81 00 19 19 17 3 03 01 160 22 1 160 010 58 8 6 33 30 31 60 45 46 10 A5 59 64 62 120 55 70 74 31 250 75 75 10 19 19 19 19 19 19 19 19 19 19 19 19 19 | | | | | | | | | | | | | | |
| 00 19 19 13 19 03 01 10 0 22 16 60 07 58 36 33 01 100 45 46 10 A5 95 64 62 12 05 06 74 722 25 08 10 01 92 07 72 03 01 1100 42 1 16 60 125 18 33 01 1200 45 46 46 11 A6 77 64 72 17 0 67 07 07 12 12 12 12 10 10 10 12 12 12 12 12 12 12 12 12 12 12 12 12 | | | | | | | | | | | | | | |
| 00 19 20 1 20 8 03 01 100 22 1 66 07 10 28 10 33 03 10 0 45 46 10 A 57 6 A 57 10 A 57 07 79 12 50 70 10 19 20 11 20 8 03 01 120 0 22 1 16 50 125 58 37 34 12 130 50 47 46 11 AU 57 67 07 140 71 75 12 125 82 01 19 21 12 12 12 12 12 12 12 12 12 12 12 12 | | | | | | | | | | | | | | |
| 00 19 20 1 20 8 03 01 100 22 16 06 125 58 37 34 12 130 50 40 46 11 AU 57 67 01 140 71 75 121 55 82 01 134 20 30 03 02 120 22 16 30 125 83 37 34 12 130 55 47 40 46 11 AU 57 67 01 140 71 75 22 125 82 01 134 20 30 03 02 120 22 16 03 133 33 34 22 130 55 47 40 46 11 AU 57 67 01 160 71 75 22 125 83 00 19 30 72 10 03 02 120 21 10 33 38 34 22 130 55 40 46 11 AU 57 67 01 160 71 75 22 125 83 00 19 30 22 10 03 05 160 22 20 01 125 83 35 34 22 130 55 40 40 11 AU 57 67 01 160 71 75 22 125 83 00 19 30 2 210 03 05 160 22 20 01 160 38 38 34 22 130 55 40 40 41 161 4 95 76 05 140 71 77 07 05 125 83 00 19 30 2 210 03 05 160 22 20 01 160 38 35 34 22 115 50 48 46 11 61 99 68 01 160 71 76 02 125 83 00 19 30 2 210 03 05 160 22 20 01 160 38 35 35 12 11 55 48 46 11 62 99 68 01 160 71 76 12 125 83 01 133 03 14 14 14 14 15 15 14 14 14 15 14 14 15 14 14 15 14 14 15 14 14 14 15 14 14 15 14 14 15 14 14 15 14 14 14 15 14 14 15 14 14 14 15 14 14 14 15 14 14 15 14 14 14 15 14 14 14 15 14 14 14 15 14 14 14 15 14 14 14 15 14 14 14 15 14 14 14 15 14 14 14 15 14 14 14 14 15 14 14 14 15 14 14 14 14 14 14 14 14 14 14 14 14 14 | 00 19 19 V13 | 191 | 03 01 140 | 22 | 16 60 05 SB | 36 | 33 01 160 | 45 | 46 10 A5 | 59 | 64 62 120 | 69 | 74 22 250 | 81 |
| 0.019.11 208 | 00 19 20 | 208 | 03 01 160 | 22 | 16 60 100 SB | 36 | 33 03 160 | 45 | 46 10 A6 | 59 | 64 62 120 ESD | 70 | 74 91 250 | 79 |
| 00 19 24 280 90 1250 022 168 1255 8 37 34 22 130 60 46 141 A2 57 67 161 60 71 75 2125 82 00 19 28 299 03 02 160 22 19 03 130 38 34 22 130 650 47 64 61 1A3 57 67 67 107 07 17 75 52 125 82 00 19 28 299 03 02 160 22 20 01 100 38 34 22 10 1650 17 40 46 11 A4 57 67 67 107 07 17 75 52 125 82 10 12 10 12 10 12 10 12 12 12 12 12 12 12 12 12 12 12 12 12 | 00 19 20 T | 208 | 03 01 180 | 22 | 16 65 125 SB | 37 | 34 12 130 | 46 | 46 11 A0 | 57 | 64 72 120 | 69 | 75 02 125 | 82 |
| 00 19 24 280 90 1250 022 168 1255 8 37 34 22 130 60 46 141 A2 57 67 161 60 71 75 2125 82 00 19 28 299 03 02 160 22 19 03 130 38 34 22 130 650 47 64 61 1A3 57 67 67 107 07 17 75 52 125 82 00 19 28 299 03 02 160 22 20 01 100 38 34 22 10 1650 17 40 46 11 A4 57 67 67 107 07 17 75 52 125 82 10 12 10 12 10 12 10 12 12 12 12 12 12 12 12 12 12 12 12 12 | 00 19 21 T | 208 | 03 01 200 | 22 | 16 80 125 SB | 37 | 34 12 130 ESD | 47 | 46 11 A1 | 57 | 67 01 140 | 71 | 75 12 125 | 82 |
| 00 19 25 29 09 03 02 180 02 190 130 38 43 22 130 540 46 11 A4 57 70 170 100 71 75 21 25 82 00 19 29 190 03 02 180 02 21 190 130 38 34 22 130 540 46 11 A4 57 70 70 140 77 76 11 25 83 00 19 29 190 130 20 10 22 20 11 150 38 34 22 130 540 46 11 A4 57 70 70 140 77 76 11 25 83 00 19 20 12 10 03 05 140 22 20 11 150 38 34 22 130 540 46 11 A4 57 87 67 65 140 71 76 12 125 83 01 180 32 21 10 03 05 140 22 20 11 160 38 35 11 11 15 40 46 11 A4 15 47 87 67 65 140 71 76 12 125 83 10 180 180 180 180 180 180 180 180 180 | | | | | | | | | | | | | | |
| 00 19 29 19 29 03 02 20 02 22 20 11 50 3 18 24 22 130 50 46 46 11 60 59 67 05 160 71 76 03 125 83 40 01 93 00 210 03 05 140 22 20 11 160 38 35 11 115 48 46 11 60 59 67 05 160 71 76 03 125 83 10 193 03 210 03 05 140 22 20 11 160 38 35 12 115 48 46 11 60 59 67 05 160 71 76 12 125 83 10 193 03 210 03 05 160 22 20 11 180 38 35 12 115 48 46 11 60 59 67 05 160 71 76 12 125 83 10 193 03 210 03 05 160 22 20 11 180 38 35 12 115 48 46 11 60 59 67 05 160 71 76 12 125 83 10 193 03 210 03 05 160 22 20 11 180 38 35 12 115 84 180 11 180 180 | | | | | | | | | | | | | | |
| 00 19 30 17 20 18 20 30 2 200 0 22 20 11 25 38 34 22 30 5 20 47 46 11 61 59 67 65 50 71 76 65 125 83 00 19 30 2 210 0 30 5 160 22 20 11 60 38 35 11 115 48 46 11 61 59 68 61 160 71 76 12 125 83 00 19 30 2 210 0 30 5 160 22 20 11 60 38 35 12 115 50 49 46 11 63 59 68 61 180 71 76 12 125 83 00 19 30 17 71 00 30 5 180 72 32 20 11 60 38 35 12 115 50 49 46 11 63 59 68 61 180 71 76 22 125 83 00 19 30 17 71 00 30 5 180 72 72 70 10 10 30 5 180 72 71 70 11 30 84 40 11 63 59 68 61 180 71 77 70 11 30 84 40 11 90 | | | | | | | | | | | | | | |
| 00 19 30 0 21 0 0 30 5 140 0 22 20 01 140 38 35 11 115 48 46 11 61 59 67 570 71 76 76 12 12 58 30 01 19 30 3 710 0 30 5 160 22 20 11 80 38 35 12 115 48 46 11 62 59 68 01 130 71 76 12 12 58 30 10 19 30 17 210 03 05 160 22 20 10 10 38 35 12 115 58 46 46 11 64 59 68 01 130 71 76 21 21 58 30 10 19 30 15 21 0 03 05 200 21 77 20 01 140 38 35 21 115 58 46 46 11 64 59 68 01 20 71 77 61 21 22 58 30 10 19 30 15 21 0 03 05 200 21 77 20 01 140 38 35 22 115 58 46 46 13 AM 57 68 10 130 71 77 01 115 68 11 25 78 11 11 11 11 11 11 11 11 11 11 11 11 11 | | | | | | | | | | | | | | |
| 00 19 30 02 2100 03 05 160 22 20 01 160 38 35 12 11 15 48 46 11 162 99 68 01 160 71 76 12 125 83 00 19 30 15 210 03 05 200 22 20 01 200 38 35 21 115 48 46 11 164 59 68 01 200 71 76 81 125 83 00 19 30 15 210 03 05 200 22 105 02 115 20 02 160 38 35 22 115 68 46 13 A0 77 69 01 130 71 77 71 115 83 00 19 30 17 210 03 05 160 02 22 157 20 02 160 38 35 22 115 68 46 13 A0 77 69 113 07 71 77 70 11 115 83 00 19 30 17 210 03 05 160 02 22 157 20 02 160 38 35 22 115 68 46 13 A0 77 69 113 07 77 70 11 31 15 84 05 10 19 30 18 07 10 10 10 10 10 10 10 10 10 10 10 10 10 | | | | | | | | | | | | | | |
| 01 93 01 93 02 710 03 05 180 22 20 01 180 38 35 12 115 ESD 40 46 11 63 99 66 01 180 71 76 22 125 83 00 193 01 62 100 03 06 160 22 1157 20 05 140 38 35 22 115 548 46 13 Au 57 66 03 130 71 77 01 115 58 30 00 193 01 71 77 01 115 54 84 61 340 57 66 00 13 07 11 77 01 115 54 84 61 340 57 66 00 13 07 11 77 01 115 58 30 00 193 01 91 71 77 01 115 54 84 61 340 57 66 00 13 07 11 77 01 115 54 84 61 340 57 66 00 13 07 11 77 01 115 54 84 61 340 57 60 01 32 01 71 77 01 115 54 84 61 340 57 60 01 32 01 71 77 01 115 54 84 61 340 57 60 01 32 01 71 77 01 115 54 84 61 340 57 60 01 32 01 71 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 01 115 54 84 61 340 57 70 11 10 77 77 77 11 77 77 11 77 77 11 77 77 77 | | | | | | | | | | | | | | |
| 00 19 30 16 5 210 00 50 200 22 20 10 100 38 85 21 115 48 46 11 164 59 66 01 200 71 76 81 125 82 100 19 30 17 210 00 50 610 22 157 20 02 160 38 52 21 15 64 46 13 A1 57 69 01 330 71 71 77 01 130 84 100 19 30 19 210 03 05 200 72 157 20 05 160 38 55 21 115 48 46 13 A2 57 70 01 1125 73 77 07 01 130 84 100 19 30 19 210 03 05 200 22 157 20 05 160 38 35 21 115 48 46 13 A2 57 70 01 1125 73 77 02 115 80 100 19 30 19 210 03 05 160 22 157 20 05 160 38 05 35 21 115 48 46 13 A2 57 70 01 1125 73 77 02 115 80 100 19 30 10 11 03 07 250 71 75 20 1125 38 35 21 115 48 46 13 A2 57 70 01 1125 73 77 02 115 80 100 19 30 10 11 03 07 250 71 75 20 1125 38 35 21 115 48 46 13 A3 57 70 01 1125 73 77 02 115 80 100 19 30 10 11 03 07 250 71 75 22 01 125 38 35 22 115 59 46 46 13 A3 57 70 01 1125 73 77 02 115 80 100 19 30 11 11 03 07 250 71 75 22 01 125 38 35 22 115 59 46 46 13 A3 57 70 01 1125 73 77 02 115 80 100 19 30 11 11 03 07 250 71 75 22 01 125 38 35 22 115 59 46 46 13 A3 59 70 01 160 73 77 11 115 82 10 19 10 19 11 12 03 07 250 11 10 10 30 24 12 00 11 10 10 10 10 10 10 10 10 10 10 10 | | | | | | | | | | | | | | |
| 01 93 01 6 210 03 06 160 22157 20 02 140 38 85 22 115 84 46 13 AU 57 69 01 130 71 77 01 115 84 60 193 01 72 10 03 06 160 22157 20 05 140 38 55 21 115 84 46 13 AU 57 69 01 130 71 77 01 115 88 60 193 01 92 100 03 07 160 22157 20 05 140 38 55 21 115 84 46 13 AU 57 70 01 110 73 77 07 01 15 85 85 100 193 02 02 100 03 07 160 22157 20 05 160 38 55 21 115 84 46 13 AU 57 70 01 110 73 77 07 01 15 85 85 100 193 02 02 100 03 07 160 22157 20 05 160 38 53 21 115 84 46 13 AU 57 70 01 110 73 77 07 01 15 85 85 100 193 02 02 100 03 07 260 22157 20 05 160 38 53 21 115 84 46 13 AU 57 70 01 110 73 77 07 01 15 85 85 100 193 02 02 10 03 07 260 22157 20 05 160 38 35 21 115 84 46 13 AU 57 70 01 110 73 77 01 115 84 100 193 04 12 11 100 12 12 13 93 35 24 115 85 14 46 13 AU 57 70 11 110 110 73 77 01 115 84 100 193 04 12 11 100 12 12 13 10 10 10 12 13 10 10 10 10 10 10 10 10 10 10 10 10 10 | | | | | | | | | | | | | | |
| 00 19 30 17 210 03 06 180 22/157 05 05 140 38 35 22/15 150 49 46 13 A1 57 69 03 130 71 77 07 130 84 00 19 30 19 210 03 07 160 22/157 20 05 140 38 35 32 115 150 48 46 13 A3 57 70 01 110 73 77 02 130 84 00 19 30 06 210 03 07 200 22/157 22 01 125 39 35 42 115 150 49 46 19 A5 59 70 01 140 73 77 02 130 84 00 19 30 WI 1 211 03 07 250 22/157 22 01 140 39 35 42 115 150 49 46 19 A5 59 70 01 160 73 77 11 115 84 00 19 30 WI 1 211 03 07 250 22/157 22 01 140 39 35 42 115 150 49 46 19 A5 59 70 01 160 73 77 11 115 84 00 19 30 WI 1 211 03 07 250 22/157 22 01 140 39 35 42 115 150 49 46 20 A5 1 59 70 01 180 73 77 11 115 84 00 19 30 WI 1 210 09 01 240 23 22 01 160 39 35 52 115 145 48 46 19 A5 69 70 02 125 73 77 12 115 88 10 19 30 WI 1 210 09 01 240 23 22 01 160 39 35 52 145 48 46 20 A6 1 59 70 02 125 73 77 12 115 89 10 19 30 WI 2 213 09 01 240 23 22 02 150 39 35 62 145 48 46 20 A6 1 59 70 02 125 73 77 12 115 89 10 19 30 WI 2 213 09 11 240 23 22 02 150 39 35 62 145 48 46 21 A6 1 13 77 70 02 180 73 77 72 115 89 10 19 33 2 213 09 11 240 23 22 02 150 39 35 62 145 48 46 61 1A2 1 57 70 02 180 73 77 72 115 84 00 19 34 1 213 11 05 160 24 22 05 160 39 36 22 125 50 46 23 A6 1 15 70 70 02 180 73 77 72 115 84 00 19 34 1 213 11 05 160 24 22 05 160 39 150 52 140 25 14 | | 210 | 03 05 200 | 22 | 20 01 200 | 38 | 35 21 115 | 48 | 46 11 G4 | | 68 01 200 | 71 | 76 81 125 | 83 |
| 00 19 30 19 20 0 30 37 60 00 22/157 20 05 160 38 35 21 115 48 48 61 34 A2 57 70 01 1105 73 77 02 115 58 50 01 19 30 02 0 20 0 30 37 80 22/157 20 01 156 38 35 22 115 55 49 46 19 A5 59 70 01 140 73 77 02 130 84 00 19 30 WIT 211 03 07 750 22/157 22 01 140 39 35 42 115 50 49 46 19 A5 59 70 01 140 73 77 11 115 84 00 19 30 WIT 211 03 07 750 22/157 22 01 140 39 35 42 115 50 49 46 20 A5 1 59 70 01 140 73 77 12 115 58 00 19 30 WIT 211 03 07 750 22/167 22 11 60 39 35 42 115 50 49 46 20 A5 1 59 70 01 180 73 77 12 115 58 00 19 30 WIT 2 11 03 07 750 22 40 23 22 01 180 39 35 62 145 48 46 21 A0 1 57 70 02 140 73 77 21 115 58 00 19 32 WIT 2 11 03 02 40 23 22 02 140 39 35 62 145 48 46 21 A0 1 57 70 02 140 73 77 21 115 58 03 00 19 32 WIT 2 13 09 11 240 23 2 20 160 39 35 62 145 48 46 21 A0 1 57 70 02 140 73 77 22 115 58 00 19 32 2 213 09 12 A40 23 2 20 160 39 35 62 145 48 46 21 A2 1 57 70 02 140 73 77 22 115 58 00 19 32 2 213 10 10 10 10 24 22 00 140 39 35 62 145 48 46 21 A2 1 57 70 02 140 73 77 22 115 58 00 19 32 2 213 10 10 10 02 A4 22 05 140 39 35 62 145 48 46 21 A2 1 57 70 02 140 73 77 72 115 58 00 19 32 A2 213 110 160 0 24 22 00 160 39 13 56 21 45 40 40 40 40 40 40 40 40 40 40 40 40 40 | 00 19 30 16 | 210 | 03 06 160 | 22/157 | 20 02 140 | 38 | 35 22 115 | 48 | 46 13 A0 | 57 | 69 01 130 | 71 | 77 01 115 | 84 |
| 00193020 9 210 0307160 22157 006160 3818 35321155 04 48 4613A3 57 7001125 73 7702105 84 001930VT 1 211 0307250 22157 201140 39 35421155 04 48 4619A6 59 7001160 73 7712115 84 001930VT 1 211 0307250 22157 201160 39 35421155 04 48 4620A61 59 7002125 73 7712115 84 001930VT 1 211 0307250 22157 201180 39 3552145 48 4620A61 59 7002125 73 7712115 84 001930VT 1 211 0307250 22157 2216180 39 3552145 48 4620A61 59 7002125 73 7712115 84 001932 12 10 9012A0 23 220146 39 3552145 48 4620A61 59 7002146 73 772115 84 001932 12 10 9012A0 23 220146 39 3552145 48 4621A01 57 7002146 73 772115 84 001932 12 10 9012A0 23 220146 39 3552145 48 4621A01 57 7002146 73 772115 84 001932 12 10 10160 24 22 026160 39 3612130 50 4621A31 57 7002146 73 7722115 84 001932 12 11 10160 24 22 026160 39 3612130 50 4621A31 57 7006140 73 7722115 88 001934 213 1105160 24 22 026160 39 3612130 50 4621A31 57 7005140 73 7722115 88 001934 213 1105160 24 22 026160 39159 3632125 50 4621A41 57 7005140 73 7732115 88 001934 213 1105160 24 52 02160 39159 3632125 50 4621A41 57 7005140 73 7732115 88 001934 213 1105160 24 52 02160 39159 3711125 51 4623A31 57 7005140 73 7732115 88 001934 213 1105160 24157 201125 40 39 3711125 51 4623A31 57 7005140 73 7732115 88 001934 213 1105160 24157 201125 40 3731125 51 4623A31 57 7005140 73 7732115 88 001934 212 11115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 001934 212 11115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019353 212 1115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019353 212 1115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019354 212 1115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019354 212 1115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019354 212 1115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019354 212 1115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019354 24 212 1115100 24 25 2501160 40 3721125 51 4623A31 57 7005140 73 7732115 88 0019354 24 21 11 | 00 19 30 17 | 210 | 03 06 180 | 22/157 | 20 02 160 | 38 | 35 22 115 ESD | 49 | 46 13 A1 | 57 | 69 03 130 | 71 | 77 01 130 | 84 |
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| 00 19 33 2 212 10 10 160 24 220 51 60 39 36 12 130 50 46 21 A41 57 70 00 125 73 77 22 115 ESD 85 00 19 34 2 13 11 02 160 24 22 05 160 39 152 25 50 46 23 A41 57 70 05 125 73 77 22 115 ESD 85 00 19 34 1 213 110 51 60 24 22 07 160 39 159 37 11125 51 46 23 A41 57 70 05 126 73 77 32 115 ESD 85 00 19 34 2 213 11 06 160 24 157 25 01 125 40 37 21 1125 51 46 23 A41 57 70 05 150 73 77 32 115 ESD 85 00 19 34 2 213 11 06 160 24 157 25 01 125 40 37 21 125 51 46 23 A41 57 70 05 150 73 77 32 115 ESD 85 00 19 34 2 214 110 71 06 24 157 25 01 125 40 37 21 125 51 46 23 A51 57 70 05 150 73 77 42 115 ESD 85 00 19 34 4 214 112 160 24 25 01 140 40 37 37 23 125 51 46 29 A61 59 70 06 150 73 167 77 21 15 ESD 85 00 19 35 2 212 11 17 160 24 15 25 01 160 40 37 31 125 51 46 29 A61 59 70 06 150 73 161 77 42 115 ESD 85 00 19 35 3 212 11 82 130 25 25 02 140 40 37 31 125 51 46 29 A61 59 70 06 150 73 161 77 21 15 ESD 85 00 19 35 3 212 11 82 130 25 25 03 125 40 37 41 125 51 46 31 A22 57 70 06 150 73 161 77 21 15 ESD 85 00 19 36 21 12 11 12 10 25 25 03 125 40 37 41 125 51 46 31 A22 57 70 07 160 73 161 77 72 115 ESD 85 00 19 36 21 12 11 12 02 26 25 03 140 40 38 15 200 53 46 31 A42 57 70 07 160 73 161 77 21 115 ESD 85 00 19 36 13 12 12 02 26 25 05 140 40 38 15 200 53 46 31 A42 57 70 07 160 73 161 77 21 115 ESD 85 00 19 36 12 12 11 12 02 26 25 05 140 40 38 15 200 53 46 31 A42 57 70 07 160 73 161 77 72 115 ESD 85 00 19 36 12 12 11 12 02 26 25 05 140 40 38 15 200 53 46 31 A42 57 70 07 161 07 73 161 77 72 115 ESD 85 00 19 36 12 12 12 12 20 26 25 05 140 40 38 15 200 53 46 31 A42 57 70 07 161 07 73 161 77 72 115 ESD 85 00 19 36 12 12 12 12 20 26 25 05 140 40 38 15 200 53 46 11 40 14 11 12 12 12 26 25 05 140 40 38 15 200 53 46 11 14 10 14 11 11 10 73 78 80 3125 ESD 85 00 19 37 12 12 10 26 25 25 161 00 40 38 31 200 53 48 31 11 10 60 71 01 200 75 78 13 125 ESD 85 00 19 37 12 12 10 26 25 25 161 00 40 38 31 200 53 48 31 11 10 60 71 01 200 75 78 13 125 ESD 85 00 19 30 12 12 12 12 26 26 150 01 41 38 150 05 38 41 11 10 60 71 12 200 75 78 1125 ESD 85 00 10 10 10 1 | | | | | | | | | | | | | | |
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| 00 19 34 1 213 110 2160 24 22 05 1660 39/159 36 32 125 50 46 23 Add 57 77 07 00 5160 73 77 32 115 ESD 85 00 19 34 2 213 110 6160 24/157 25 01 1140 39 37 13 125 55 1 46 23 Add 57 77 00 5160 73 77 32 115 ESD 85 00 19 34 2 213 110 6160 24/157 25 01 1125 51 46 23 Add 57 77 00 5160 73 77 32 115 ESD 85 00 19 34 4 214 11 12 160 24 25 01 140 40 37 37 125 51 46 23 Add 57 77 00 5160 73 77 32 115 ESD 85 00 19 34 4 214 11 12 160 24 25 01 140 40 37 23 1125 51 46 29 Add 57 97 00 61 26 73/161 77 42 115 ESD 85 00 19 35 2 212 11 17 160 24 25 01 140 40 37 13 125 51 46 29 Add 57 97 00 61 26 73/161 77 42 115 ESD 85 00 19 35 3 212 118 21 30 25 25 02 140 40 37 31 125 51 46 31 Ad2 57 70 06 180 73/161 77 52 115 ESD 85 00 19 35 3 212 118 21 30 25 25 03 125 40 37 41 125 51 46 31 Ad2 57 70 06 180 73/161 77 22 115 ESD 85 00 19 35 3 212 118 21 30 25 25 03 125 40 37 41 125 51 46 31 Ad2 57 70 06 180 73/161 77 22 115 ESD 85 00 19 36 212 119 21 40 25 25 03 125 40 37 41 125 51 46 31 Ad2 57 70 07 06 180 73/161 77 22 115 ESD 85 00 19 36 212 11 12 10 25 25 05 140 40 38 11 20 53 46 31 Ad2 57 70 07 07 180 73/161 77 22 115 ESD 85 00 19 36 21 21 21 12 02 26 25 05 140 40 38 11 20 05 34 46 31 Ad2 57 70 10 180 73/161 77 22 115 ESD 85 00 19 36 21 22 11 12 10 25 25 05 140 40 38 11 20 05 34 46 31 Ad2 57 70 10 180 73/161 77 22 115 ESD 85 00 19 36 21 22 11 180 25 25 05 140 40 38 11 20 05 34 46 31 Ad2 57 70 10 181 10 73 78 80 31 25 ESD 85 00 19 37 12 20 26 25 05 140 40 38 11 20 05 34 46 31 Ad2 57 70 11 110 73 78 80 31 25 ESD 85 00 19 37 12 12 10 26 25 05 140 40 38 12 20 05 34 48 11 11 60 71 01 200 75 78 13 11 25 ESD 85 00 19 37 12 12 10 26 25 25 16160 40 38 31 200 53 48 11 11 60 71 01 200 75 78 13 11 25 ESD 85 00 19 37 12 12 10 26 25 25 16160 40 38 31 200 53 48 11 11 60 71 01 200 75 78 13 1125 ESD 85 00 19 37 12 12 10 26 25 25 160 40 38 31 20 10 53 48 11 11 60 71 12 200 75 78 13 1125 ESD 85 00 19 30 12 12 12 12 26 26 12 20 01 41 38 45 190 53 48 11 11 60 71 12 200 75 78 13 1125 ESD 85 00 10 10 10 10 10 10 10 10 10 10 10 10 | | | | | | | | | | | | | | |
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| 00 19 35 2 212 11 17 160 24/157 25 02 140 40 37 33 125 51 46 31 A02 57 70 06 180 73/161 77 52 115 ESD 85 00 19 36 212 11 182 130 25 25 02 160 40 37 41 125 51 46 31 A02 57 70 07 160 73/161 77 72 115 ESD 85 00 19 41 192 12 11 180 25 25 03 160 40 37 41 125 51 46 31 A02 57 70 07 180 73/161 77 72 115 ESD 85 00 19 41 192 12 11 180 25 25 03 160 40 38 11 200 53 46 31 A22 57 70 11 110 73 78 03 125 ESD 85 00 19 57 193 12 12 02 26 25 05 160 40 38 15 200 53 46 31 A42 57 70 11 110 73 78 03 125 ESD 86 00 19 57 193 12 12 06 26 25 05 160 40 38 21 200 53 48 11 10 60 70 26 160 73/161 78 13 125 ESD 86 70 19 73 LE 203 12 10 26 25 05 160 40 38 21 200 53 48 11 11 60 70 26 160 73/161 78 13 125 ESD 86 70 19 73 LE 203 12 12 10 26 25 05 160 40 38 31 200 53 48 11 11 60 71 02 200 75 78 13 125 ESD 86 70 19 73 LE 203 12 12 11 26 25 25 160 40 38 31 200 53 48 11 11 60 71 02 200 75 78 13 125 ESD 86 70 19 73 LE 203 12 12 11 26 25 25 160 40 38 35 200 53 48 11 11 60 71 02 200 75 78 23 125 87 70 10 200 10 194 12 12 12 26 25 25 160 40 38 35 200 53 48 11 14 60 71 12 200 75 78 31 125 87 70 10 200 10 194 12 19 10 26 26 11 200 41 38 41 190 53 48 11 14 60 71 12 200 75 78 61 125 87 70 10 200 10 194 12 19 10 26 26 11 200 41 38 47 120 53 48 21 111 60 71 32 200 75 78 61 125 ESD 87 70 10 200 10 195 12 19 10 26 26 11 200 41 38 91 200 53 48 21 111 60 71 32 200 75 78 61 125 ESD 87 70 10 200 10 195 12 19 10 26 26 26 12 200 41 38 91 200 53 48 21 11 60 71 32 200 75 78 61 125 ESD 87 70 10 200 10 195 12 19 10 26 26 26 12 200 41 38 91 200 53 48 21 11 60 71 32 200 75 78 61 125 ESD 87 70 20 20 11 195 12 29 180 25 26 16 200 41 14 10 42 50 54 49 11 A0 60 71 12 200 75 78 71 125 ESD 87 70 20 20 11 195 12 29 180 25 26 16 200 41 14 10 41 20 54 49 11 A0 60 71 12 200 75 78 71 125 ESD 87 70 20 20 11 195 12 29 180 25 26 26 200 41 14 10 41 20 54 49 11 A0 60 71 12 200 75 78 71 125 ESD 87 70 20 20 20 20 20 20 20 20 20 20 20 20 20 | 00 19 35 1 | 212 | 11 15 160 | 24 | 25 01 160 | 40 | 37 31 125 | 51 | 46 29 A61 | 59 | | 73/161 | 77 52 115 | 84 |
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| 00 19 73 LE 203 12 12 11 26 25 25 160 40 38 31 200 53 48 11 12 60 71 02 200 75 78 23 125 87 00 20 01 V02 194 12 19 02 26 25 25 160 40 40 159 38 41 190 53 48 11 13 60 71 12 200 75 78 31 125 87 00 20 01 V02 194 12 19 02 26 25 26 160 40 159 38 41 190 53 48 11 14 60 71 21 200 75 78 31 125 87 00 20 01 V03 194 12 19 06 26 26 12 10 0 41 38 45 190 53 48 11 14 60 71 22 200 75 78 61 125 ESD 87 00 20 04 58 193 12 19 10 26 26 12 200 41 38 87 12 00 53 48 21 111 60 71 32 200 75 78 61 125 ESD 88 00 20 04 58 193 12 19 11 26 26 13 200 41 38 89 12 00 53 48 21 121 60 71 32 200 75 78 61 125 ESD 88 00 20 04 58 193 12 19 12 26 26 15 200 41 38 89 12 00 53 48 21 121 60 71 32 200 75 78 71 125 ESD 88 00 20 04 58 193 12 19 12 26 26 16 200 41 10 40 40 41 4 | | | | | | | | | | | | | | |
| 00 20 01 V01 194 12 12 12 26 25 25 160 40 38 35 200 53 48 11 13 60 71 12 200 75 78 31 125 87 00 20 11 V03 194 12 19 02 26 25 26 160 40 1/59 38 41 190 53 48 21 101 60 71 22 200 75 78 41 125 87 00 20 11 V03 194 12 19 06 26 26 11 200 41 38 45 190 53 48 21 101 60 71 22 200 75 78 61 125 ESD 88 00 20 04 SB 193 12 19 10 26 26 15 200 41 38 91 200 53 48 21 101 60 71 31 200 75 78 61 125 ESD 88 00 20 04 SB 193 12 19 11 26 26 15 200 41 38 91 200 53 48 21 101 60 71 31 200 75 78 61 125 ESD 88 00 20 04 SB 193 12 19 11 26 26 15 200 41 38 91 200 53 48 21 101 60 71 32 200 75 78 61 125 ESD 88 00 20 10 195 12 19 180 25 26 16 200 41 1/160 40 04 180 54 48 21 11 60 71 72 460 76 78 81 125 87 00 20 10 195 12 21 180 25 26 16 200 41 1/160 40 04 180 54 48 21 11 60 71 72 460 76 78 81 125 87 00 20 12 195 12 29 180 25 26 20 20 41 41 04 180 54 49 11 A0 61 71 72 610 76 78 91 125 87 00 20 13 195 12 40 200 28 26 22 200 41 41 04 180 54 49 11 A0 61 71 72 610 76 79 02 120 90 00 20 13 195 12 40 200 28 26 26 200 41 41 04 300 54 49 11 A0 61 71 72 910 76 79 02 120 50 00 20 16 197 12 49 01 28 26 25 200 41 41 04 300 54 49 11 A0 61 71 79 910 76 79 02 120 50 00 20 16 197 12 49 01 28 26 25 200 41 41 04 300 54 49 11 A0 61 71 79 910 76 79 02 120 50 10 02 016 PED 197 12 49 01 28 26 25 200 41 41 04 300 54 49 11 A0 61 71 79 910 76 79 02 125 90 02 016 PED 197 12 49 01 28 26 25 200 41 41 04 300 54 49 11 A0 61 71 79 910 76 79 12 125 ESD 91 00 20 16 PED 197 12 49 01 28 26 25 200 41 41 04 300 54 49 11 A0 61 71 79 910 76 79 12 125 ESD 91 00 20 16 PED 197 12 49 01 28 26 25 200 41 41 04 300 54 49 11 A0 61 71 79 910 76 79 12 125 ESD 91 00 20 16 PED 197 12 49 01 28 26 26 200 41 41 04 250 54 49 11 A0 61 71 79 910 76 79 12 125 ESD 91 00 20 16 PED 197 12 49 01 28 26 26 200 41 41 05 55 49 21 A01 61 71 79 910 76 79 12 125 ESD 91 00 20 16 PED 197 12 49 21 29 29 27 01 160 42 42 24 280 55 49 21 A01 61 71 79 910 76 79 12 125 ESD 91 00 20 18 ESD 197 12 49 21 29 29 27 01 160 43 44 10 15 58 49 21 A01 61 71 79 950 77 79 22 120 ESD 91 00 210 EE 204 12 29 20 12 28 29 12 160 43 44 10 15 | | | | | | | | | | | | | | |
| 00 20 01 V02 194 12 19 02 26 25 26 160 40/159 38 41 190 53 48 11 J4 60 71 21 200 75 78 41 125 87 00 20 01 V03 194 12 19 06 26 26 11 200 41 38 45 190 53 48 21 J01 60 71 22 200 75 78 61 125 ESD 88 00 20 04 SB 193 12 19 10 26 26 12 200 41 38 71 200 53 48 21 J01 60 71 31 200 75 78 61 125 ESD 88 00 20 04 SB 193 12 19 11 26 26 13 200 41 38 91 200 53 48 21 J01 60 71 31 200 75 78 71 125 ESD 88 00 20 04 SB 193 12 19 11 26 26 13 200 41 38 91 200 53 48 21 J01 60 71 32 200 75 78 71 125 ESD 88 00 20 10 195 12 19 180 25 26 16 200 41/160 40 40 480 54 48 21 J01 60 71 32 200 75 78 71 125 ESD 88 00 20 10 195 12 19 180 25 26 16 200 41/160 40 40 480 54 48 21 J01 60 71 72 460 76 78 81 125 87 00 20 11 195 12 29 180 25 26 12 200 41 41 04 38 05 4 49 11 A0 61 71 72 610 76 78 91 125 87 00 20 12 195 12 29 180 25 26 22 200 41 41 04 300 54 49 11 A0 61 71 72 610 76 79 02 120 90 00 20 13 195 12 40 200 28 26 22 200 41 41 04 300 54 49 11 A2 61 71 72 760 76 79 02 120 90 00 20 15 196 12 42 195 29 26 23 200 41 41 04 300 54 49 11 A2 61 71 72 910 76 79 02 120 ESD 91 00 20 16 P 197 12 49 01 28 26 25 200 41 41 10 43 30 54 49 11 A3 61 71 79 610 76 79 02 125 ESD 91 00 20 16 P 197 12 49 01 28 26 25 200 41 41 14 250 54 49 11 A3 61 71 79 610 76 79 02 125 ESD 91 00 20 16 P 197 12 49 01 28 26 26 200 41/160 41 24 225 54 49 21 A01 61 71 79 760 76 79 12 125 ESD 91 00 20 16 P ESD 197 12 49 21 29 27 01 160 42 42 14 280 55 49 21 A01 61 71 79 760 76 79 12 125 ESD 91 00 20 18 ESD 197 12 49 21 29 27 01 160 42 42 14 280 55 49 21 A01 61 71 89 950 77 79 22 120 ESD 90 00 20 18 ESD 197 12 59 01 28 28 29 11 160 43 44 10 J5 58 49 21 A01 61 71 89 950 77 79 22 120 ESD 90 00 21 01 EL 20 41 20 28 29 11 160 43 44 10 J5 58 49 21 A01 61 71 89 950 77 79 22 120 ESD 91 00 21 01 EL 20 41 20 23 30 30 30 11 140 44 44 11 J1 56 50 00 130 62 72 21 1160 78 79 32 125 ESD 91 00 21 01 EL 20 41 20 20 30 30 30 30 30 30 30 30 30 30 30 30 30 | | | | | | | | | | | | | | |
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| 00 20 09 V01 | 00 20 04 SB | 193 | | | | | | | | | 71 32 200 | 75 | | |
| 00 20 10 | | 195 | | | | | | | 48 21 J31 | | | | | |
| 00 20 11 | | | | | | | | | | | | | | |
| 00 20 12 | | | | | | | | | | | | | | |
| 00 20 13 | | | | | | | | | | | | | | |
| 00 20 15 | | | | | | | | | | | | | | |
| 00 20 16 | | | | | | | | | | | | | | |
| 00 20 16 P 197 12 49 02 28 26 26 200 41/160 41 24 225 54 49 21 A01 61 71 79 760 76 79 12 125 90 00 20 16 P ESD 197 12 49 03 28 26 27 200 41/160 41 34 165 54 49 21 A11 61 71 79 910 76 79 12 125 ESD 91 00 20 17 197 12 49 21 29 27 01 160 42 42 14 280 55 49 21 A21 61 71 82 950 77 79 22 120 90 00 20 18 197 12 49 23 29 28 01 200 42 42 24 280 55 49 21 A31 61 71 89 950 77 79 22 120 ESD 91 00 20 18 ESD 197 12 50 200 28 28 21 200 42 42 24 280 55 49 21 A41 61 72 01 140 78 79 22 125 ESD 91 00 20 72 V01 198 12 59 01 28 29 11 160 43 44 10 J5 58 49 31 A0 61 72 01 160 78 79 22 125 ESD 91 00 21 01 TL 198 12 59 02 28 29 21 160 43 44 10 J6 58 49 41 A01 61 72 01 180 78 79 32 125 ESD 91 00 21 02 LE 203 12 62 180 30 29 25 160 43 44 11 J0 56 50 00 130 62 72 01 180 78 79 32 125 ESD 91 00 21 02 LE 203 12 64 180 30 30 11 140 44 44 11 J1 56 50 00 160 62 72 21 160 78 79 42 125 ESD 91 00 21 05 LE 204 12 69 21 30 30 11 160 44 44 11 J3 56 50 00 180 62 72 21 160 78 79 42 125 ESD 91 00 21 15 LE 196/200 12 69 23 30 30 13 140 44 44 11 J4 56 50 00 210 62 72 51 160 79 79 52 125 ESD 91 00 21 20 LE 201/204 12 80 040 SB 31 30 13 160 44 44 13 J1 56 50 00 250 62 74 01 140 81 79 52 125 ESD 91 00 21 20 LE 201/204 12 80 100 SB 31 30 15 160 44 44 13 J1 56 50 00 1100 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J1 56 50 00 1100 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J1 56 50 00 1100 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J1 56 50 00 1100 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J3 56 50 01 130 62 74 01 180 81 79 62 125 ESD 91 00 21 32 LE 205 12 85 100 SB 32 30 15 190 44 44 13 J3 56 50 01 160 62 74 01 120 81 81 33 230 92 | | | | | | | | | | | | | | |
| 00 20 16 P ESD | | | | | | | | | | | | | | |
| 00 20 17 | | | | | | | | | | | | | | |
| 00 20 18 | | | | | | | | | | | | | | |
| 00 20 18 ESD | | | | | | | | | | | | | | |
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| 00 21 05 LE 204 12 69 21 30 30 11 160 44 44 11 J2 56 50 00 180 62 72 21 160 78 79 42 125 ESD 91 00 21 15 200 12 69 23 30 30 11 190 44 44 11 J3 56 50 00 210 62 72 51 160 79 79 52 125 90 00 21 15 LE 196/200 12 69 31 30 30 13 140 44 44 11 J4 56 50 00 225 62 74 01 140 81 79 52 125 ESD 91 00 21 20 LE 201/204 12 80 040 SB 31 30 13 160 44 44 13 J0 56 50 00 250 62 74 01 160 81 79 62 125 90 00 21 20 LE 201/204 12 80 100 SB 31 30 15 160 44 44 13 J1 56 50 00 300 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J2 56 50 01 130 62 74 01 200 <th></th> | | | | | | | | | | | | | | |
| 00 21 15 200 12 69 23 30 30 11 190 44 44 11 J3 56 50 00 210 62 72 51 160 79 79 52 125 90 00 21 15 LE 196/200 12 69 31 30 30 13 140 44 44 11 J4 56 50 00 225 62 74 01 140 81 79 52 125 ESD 91 00 21 20 L2 201 12 80 040 SB 31 30 13 160 44 44 13 J0 56 50 00 250 62 74 01 160 81 79 62 125 90 00 21 20 LE 201/204 12 80 100 SB 31 30 15 140 44 44 13 J1 56 50 00 300 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J2 56 50 01 130 62 74 01 200 81 81 03 230 92 00 21 32 LE 205 12 85 100 SB 32 30 15 190 44 44 13 J3 56 50 01 160 62 74 01 250 81 81 13 230 92 | | | | | | | | | | | | | | |
| 00 21 15 LE 196/200 12 69 31 30 30 13 140 44 44 11 J4 56 50 00 225 62 74 01 140 81 79 52 125 ESD 91 00 21 20 201 12 80 040 SB 31 30 13 160 44 44 13 J0 56 50 00 250 62 74 01 160 81 79 62 125 90 00 21 20 LE 201/204 12 80 100 SB 31 30 15 140 44 44 13 J1 56 50 00 300 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J2 56 50 01 130 62 74 01 200 81 81 03 230 92 00 21 32 LE 205 12 85 100 SB 32 30 15 190 44 44 13 J3 56 50 01 160 62 74 01 250 81 81 13 230 92 | | | | | | | | | | | | | | |
| 00 21 20 201 12 80 040 SB 31 30 13 160 44 44 13 J0 56 50 00 250 62 74 01 160 81 79 62 125 90 00 21 20 LE 201/204 12 80 100 SB 31 30 15 140 44 44 13 J1 56 50 00 300 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J2 56 50 01 130 62 74 01 200 81 81 03 230 92 00 21 32 LE 205 12 85 100 SB 32 30 15 190 44 44 13 J3 56 50 01 160 62 74 01 250 81 81 13 230 92 | | | | | | | | | | | | | | |
| 00 21 20 LE 201/204 12 80 100 SB 31 30 15 140 44 44 13 J1 56 50 00 300 62 74 01 180 81 79 62 125 ESD 91 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J2 56 50 01 130 62 74 01 200 81 81 03 230 92 00 21 32 LE 205 12 85 100 SB 32 30 15 190 44 44 13 J3 56 50 01 160 62 74 01 250 81 81 13 230 92 | | | | | | | | | | | | | | |
| 00 21 30 202 12 82 130 SB 31 30 15 160 44 44 13 J2 56 50 01 130 62 74 01 200 81 81 03 230 92 00 21 32 LE 205 12 85 100 SB 32 30 15 190 44 44 13 J3 56 50 01 160 62 74 01 250 81 81 13 230 92 | | | | | | | | | | | | | | |
| 00 21 32 LE 205 12 85 100 SB 32 30 15 190 44 44 13 J3 56 50 01 160 62 74 01 250 81 81 13 230 92 | | | | | | | | | | | | | | |
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| 83 10 020 | 93 | 92 08 79 ESD | 117 | 97 00 215 B | 130 | 97 52 34 | 141 | 97 99 46 | 152 | 98 04 17 | 172 | 98 47 1" | 177 |
| 83 10 030 | 93 | 92 12 52 | 113 | 97 00 215 D | 130 | 97 52 35 | 141 | 97 99 47 | 152 | 98 04 19 | 172 | 98 47 1/2" | 177 |
| 83 10 040 | 93 | 92 22 04 | 113 | 97 21 215 | 130 | 97 52 36 | 141 | 97 99 48 | 152 | 98 04 22 | 172 | 98 47 3/4" | 177 |
| 83 20 010 | 93 | 92 22 06 | 113 | 97 21 215 B | 130 | 97 52 37 | 141 | 97 99 49 | 152 | 98 05 13 | 172 | 98 47 5/8" | 177 |
| 83 20 015 | 93 | 92 22 07 | 113 | 97 21 215 C | 130 | 97 52 38 | 141 | 97 99 70 | 152 | 98 05 17 | 172 | 98 47 7/8" | 177 |
| 83 20 020 | 93 | 92 22 12 | 114 | 97 22 240 | 130 | 97 52 50 | 141 | 97 99 71 | 152 | 98 05 19 | 172 | 98 47 9/16" | 177 |
| 83 30 005 | 93 | 92 22 13 | 114 | 97 32 225 | 131 | 97 52 63 | 143 | 97 99 72 | 152 | 98 07 250 | 173 | 98 47 10 | 177 |
| 83 30 010 | 93 | 92 22 35 | 113 | 97 33 01 | 133 | 97 52 63 DG | 143 | 97 99 73 | 152 | 98 13 20 | 173 | 98 47 11 | 177 |
| 83 30 015 | 93 | 92 23 05 | 113 | 97 33 02 | 133 | 97 52 64 | 143 | 97 99 74 | 152 | 98 13 25 | 173 | 98 47 11/16" | 177 |
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| 84 21 200 | 92 | 92 27 62 | 116 | 97 39 13 | 133 | 97 52 65 DG A | 143 | 97 99 78 | 152 | 98 13 60 | 173 | 98 47 16 | 177 |
| 85 01 250 | 100 | 92 27 62 | 164 | 97 39 30 | 133 | 97 53 04 | 144 | 97 99 79 | 152 | 98 14 05 | 174 | 98 47 17 | 177 |
| 86 03 150 | 95 | 92 28 69 ESD | 117 | 97 39 90 | 133 | 97 53 08 | 145 | 97 99 92 | 152 | 98 14 06 | 174 | 98 47 18 | 177 |
| 86 03 180 | 95 | 92 28 70 ESD | 117 | 97 40 10 | 131 | 97 53 09 | 145 | 97 99 93 | 152 | 98 14 08 | 174 | 98 47 19 | 177 |
| 86 03 250 | 95 | 92 28 71 ESD | 117 | 97 43 05 | 134 | 97 53 14 | 144 | 97 99 95 | 152 | 98 15 05 | 174 | 98 47 22 | 177 |
| 86 03 300 | 95 | 92 28 72 ESD | 117 | 97 43 06 | 134 | 97 54 24 | 146 | 97 99 96 | 152 | 98 15 06 | 174 | 98 47 24 | 177 |
| 86 05 150 | 95 | 92 32 29 | 115 | 97 43 200 | 134 | 97 59 06 | 137 | 98 00 1 1/16" | 170 | 98 15 08 | 174 | 98 47 27 | 177 |
| 86 05 180 | 95 | 92 34 28 | 115 | 97 43 200 A | 134 | 97 59 06 | 138 | 98 00 1/2" | 170 | 98 20 10 | 174 | 98 49 05 | 179 |
| 86 05 250 | 95 | 92 34 36 | 115 | 97 49 04 | 135 | 97 59 12 | 138 | 98 00 1/4" | 170 | 98 20 25 | 174 | 98 49 06 | 179 |
| 86 07 250 | 162 | 92 34 37 | 115 | 97 49 05 | 135 | 97 59 14 | 140 | 98 00 3/4" | 170 | 98 20 30 | 174 | 98 49 08 | 179 |
| 87 01 125 | 97 | 92 37 64 | 117/164 | 97 49 06 | 135 | 97 59 65 2 | 136 | 98 00 3/8" | 170 | 98 20 35 | 174 | 98 52 | 180 |
| 87 01 150 | 97 | 92 38 75 ESD | 117 | 97 49 08 | 135 | 97 59 65 2 | 143 | 98 00 5/8" | 170 | 98 20 40 | 174 | 98 53 03 | 180 |
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| 87 01 250 | 97 | 92 52 23 | 114 | 97 49 13 | 135 | 97 61 145 F | 146 | 98 00 07 | 170 | 98 20 65 | 174 | 98 54 | 180 |
| 87 01 300 | 97 | 92 52 23 92 58 74 ESD | 117 | 97 49 15 | 135 | 97 62 145 A | 146 | 98 00 7/16" | 170 | 98 20 80 | 174 | 98 55 | 180 |
| 87 01 400 | 98 | 92 64 43 | 117 | 97 49 15 | 135 | 97 68 145 A | 146 | 98 00 7/16 | 170 | 98 21 45 | 174 | 98 56 | 181 |
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| 87 02 250 | 97 | 92 69 84 | 115 | 97 49 20 | 135 | 97 72 180 | 147 | 98 00 10 | 170 | 98 24 02 | 175 | 98 62 01 | 181 |
| 87 02 300 | 97 | 92 70 46 | 115 | 97 49 23 | 135 | 97 81 180 | 147 | 98 00 11 | 170 | 98 24 03 | 175 | 98 62 02 | 181 |
| 87 03 125 | 97 | 92 72 45 | 115 | 97 49 24 | 135 | 97 90 00 | 148 | 98 00 12 | 170 | 98 24 04 | 175 | 98 64 02 | 182 |
| 87 03 180 | 97 | 92 78 77 ESD | 117 | 97 49 30 | 135 | 97 90 01 | 148 | 98 00 13 | 170 | 98 25 00 | 175 | 98 65 01 | 182 |
| 87 03 250 | 97 | 92 84 18 | 115 | 97 49 35 | 135 | 97 90 05 | 149 | 98 00 14 | 170 | 98 25 01 | 175 | 98 65 02 | 182 |
| 87 03 300 | 97 | 92 88 73 ESD | 117 | 97 49 40 | 135 | 97 90 06 | 149 | 98 00 15 | 170 | 98 25 02 | 175 | 98 65 03 | 182 |
| 87 05 250 | 97 | 92 94 91 | 116 | 97 49 44 | 135 | 97 90 09 | 149 | 98 00 16 | 170 | 98 25 03 | 175 | 98 65 10 | 182 |
| 87 05 300 | 97 | 92 95 89 | 116 | 97 49 50 | 135 | 97 90 10 | 149 | 98 00 17 | 170 | 98 25 04 | 175 | 98 65 20 | 182 |
| 87 11 250 | 101 | 92 95 90 | 116 | 97 49 54 | 135 | 97 90 12 | 149 | 98 00 18 | 170 | 98 26 10 | 175 | 98 65 30 | 182 |
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| 87 41 250 | 102 | 94 19 185 | 118 | 97 49 60 | 135 | 97 90 23 | 149 | 98 00 24 | 170 | 98 26 25 | 175 | 98 67 05 | 183 |
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| 88 01 250 | 105 | 95 02 10 | 119 | 97 49 64 | 135 | 97 91 02 | 151 | 98 01 08 | 171 | 98 31 | 176 | 98 99 11 | 183 |
| 88 01 300 | 105 | 95 02 10 | 119 | 97 49 65 | 135/150 | | 151 | 98 01 09 | 171 | 98 33 25 | 179 | 98 99 12 | 184 |
| 88 02 180 | 105 | 95 03 160 SB | 119 | | 136/150 | 97 99 01 | | | | 98 33 50 | 179 | 98 99 13 | 185 |
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| 88 02 300 | 105 | 95 05 165 | 120 | 97 49 66 | 135/150 | 97 99 03 | 152 | 98 01 12 | 171 | 98 35 250 | 176 | 98 99 14 LE | 187 |
| 88 03 180 | 105 | 95 05 185 | 120 | 97 49 66 1 | | 97 99 04 | 152 | 98 01 13 | 171 | 98 37 1/2" | 177 | 99 00 200 | 64 |
| 88 03 250 | 105 | 95 05 190 | 120 | 97 49 66 2 | 136 | 97 99 05 | 152 | 98 01 14 | 171 | 98 37 1/4" | 177 | 99 00 220 | 64 |
| 88 05 180 | 105 | 95 06 230 | | 97 49 66 4 | | 97 99 06 | 152 | 98 01 15 | 171 | 98 37 3/4" | 177 | 99 00 220 K12 | 64 |
| 88 05 250 | 105 | 95 11 165 | 122 | 97 49 66 6 | | 97 99 07 | 152 | 98 01 16 | 171 | 98 37 3/8" | 177 | 99 00 250 | 64 |
| 88 05 300 | 105 | 95 11 200 | 123 | 97 49 67 | | 97 99 08 | 152 | 98 01 17 | 171 | 98 37 5/8" | 177 | 99 00 280 | 64 |
| 88 06 250 | 105/162 | 95 12 165 | 122 | 97 49 68 | 135/150 | 97 99 09 | 152 | 98 01 18 | 171 | 98 37 5/16" | 177 | 99 00 300 | 64 |
| 88 07 250 | 105/162 | 95 12 200 | 123 | 97 49 68 1 | 136/150 | 97 99 10 | 152 | 98 01 19 | 171 | 98 37 7/16" | 177 | 99 01 200 | 64 |
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| 89 01 200 | 106 | 95 16 165 | 122/165 | 97 49 69 2 | 135/150 | 97 99 12 | 152 | 98 01 24 | 171 | 98 37 10 | 177 | 99 01 250 | 64 |
| 89 01 250 | 106 | 95 16 200 | 123/166 | 97 49 69 11 | 136/150 | 97 99 13 | 152 | 98 03 04 | 172 | 98 37 11 | 177 | 99 01 280 | 64 |
| 89 03 250 | 106 | 95 17 200 | 123/166 | 97 49 70 | 135 | 97 99 14 | 152 | 98 03 05 | 172 | 98 37 12 | 177 | 99 01 300 | 64 |
| 89 05 250 | 106 | 95 17 500 | | 97 49 74 | 135 | 97 99 15 | 152 | 98 03 06 | 172 | 98 37 13 | 177 | 99 04 220 | 64 |
| 90 01 125 | 106 | 95 21 165 | 122 | 97 49 76 | 135 | 97 99 16 | 152 | 98 03 07 | 172 | 98 37 14 | 177 | 99 04 250 | 64 |
| 90 03 125 | 106 | 95 21 600 | 124 | 97 49 81 | 135 | 97 99 17 | 152 | 98 03 08 | 172 | 98 37 17 | 177 | 99 04 280 | 64 |
| 90 20 185 | 108 | 95 22 165 | 122 | 97 49 82 | 136 | 97 99 18 | 152 | 98 03 09 | 172 | 98 37 19 | 177 | 99 10 250 | 65 |
| 90 25 20 | 108 | 95 26 165 | | 97 49 83 | 136 | 97 99 19 | 152 | 98 03 10 | 172 | 98 39 05 | 179 | 99 10 300 | 65 |
| 90 25 40 | 109 | 95 27 600 | | 97 49 84 | 136 | 97 99 20 | 152 | 98 03 11 | 172 | 98 39 06 | 179 | 99 11 250 | 65 |
| 90 29 01 | 108 | 95 29 600 | | 97 49 87 | 136 | 97 99 21 | 152 | 98 03 12 | 172 | 98 40 | 176 | 99 11 300 | 65 |
| 90 29 02 | 108 | 95 31 250 | 125 | 97 49 90 | 136 | 97 99 22 | 152 | 98 03 13 | 172 | 98 41 | 176 | 99 14 250 | 65 |
| 90 29 15 | 108 | 95 31 280 | 125 | 97 49 93 | 136 | 97 99 23 | 152 | 98 03 055 | 172 | 98 42 | 179 | 99 14 300 | 65 |
| 90 29 40 | 109 | 95 32 038 | 126 | 97 49 94 | | 97 99 24 | | 98 04 08 | 172 | 98 43 50 | 179 | 33 14 300 | 03 |
| | | | | | | | 152 | 90 04 00 | 1/2 | 90 43 30 | 1/9 | | |
| 90 29 185 | 108 | 95 32 060 | 127 | 97 49 94 | 141 | 97 99 25 | 152 | | | | | | ٠. |
| 90 42 250 90 42 340 | 109 | 95 32 100 | 127 | 97 49 95 | 136/139 | 97 99 26 | 152 | It is not pe | rmissi | ble to copy th | e cata | logue or parts (| ot it |
| | 109 | 95 36 250 | | 97 49 95 | 141 | 97 99 27 | 152 | in any way | withc | out our approv | al. | | |
| | | 95 36 280 | 125/168 | 97 50 01 | 137 | 97 99 28 | 152 | , , | | | | | |
| 90 49 340 | 109 | | | | | | 152 | C. I | | 1.0 | | | |
| 90 49 340 90 49 340 M | 109 | 95 39 038 | 126 | 97 51 04 | 137 | 97 99 29 | | | mada | | - 224 | tachnical chanc | 200 |
| 90 49 340 90 49 340 M 90 55 280 | 109 110 | 95 39 038 95 39 250 | 126 125/168 | 97 51 04 97 51 10 | 138 | 97 99 30 | 152 | Subject to | model | modification | s and | technical chang | ges. |
| 90 49 340 90 49 340 M 90 55 280 90 59 280 | 109 110 110 | 95 39 038 95 39 250 95 39 280 | 126 125/168 125/168 | 97 51 04 97 51 10 97 51 12 | 138 138 | 97 99 30 97 99 31 | 152 152 | , | | | | _ | |
| 90 49 340 90 49 340 M 90 55 280 90 59 280 90 61 16 | 109 110 110 110 | 95 39 038 95 39 250 95 39 280 95 39 720 | 126 125/168 125/168 127 | 97 51 04 97 51 10 97 51 12 97 52 04 | 138 | 97 99 30 97 99 31 97 99 32 | 152 | Illustration | s, dim | ensions and v | veight | s are just appro | xi- |
| 90 49 340 90 49 340 M 90 55 280 90 59 280 | 109 110 110 | 95 39 038 95 39 250 95 39 280 | 126 125/168 125/168 | 97 51 04 97 51 10 97 51 12 | 138 138 | 97 99 30 97 99 31 | 152 152 | Illustration | s, dim | ensions and v | veight | s are just appro | xi- |
| 90 49 340 90 49 340 M 90 55 280 90 59 280 90 61 16 | 109 110 110 110 | 95 39 038 95 39 250 95 39 280 95 39 720 | 126 125/168 125/168 127 | 97 51 04 97 51 10 97 51 12 97 52 04 | 138 138 139 | 97 99 30 97 99 31 97 99 32 | 152 152 152 | Illustration | s, dim | ensions and v | veight | _ | xi- |
| 90 49 340 90 49 340 M 90 55 280 90 59 280 90 61 16 90 61 20 | 109 110 110 110 110 | 95 39 038 95 39 250 95 39 280 95 39 720 95 39 870 | 126 125/168 125/168 127 127 | 97 51 04 97 51 10 97 51 12 97 52 04 97 52 05 | 138 138 139 139 | 97 99 30 97 99 31 97 99 32 97 99 33 | 152 152 152 152 | Illustration mate. No I | s, dim iability | ensions and v | veight or mis | s are just appro prints or errors. | xi- |
| 90 49 340 90 49 340 M 90 55 280 90 59 280 90 61 16 90 61 20 90 70 220 | 109 110 110 110 110 111 | 95 39 038 95 39 250 95 39 280 95 39 720 95 39 870 95 61 150 | 126 125/168 125/168 127 127 129 | 97 51 04 97 51 10 97 51 12 97 52 04 97 52 05 97 52 06 | 138 138 139 139 139 | 97 99 30 97 99 31 97 99 32 97 99 33 97 99 34 | 152 152 152 152 152 | Illustration mate. No I | s, dim iability | ensions and v | veight or mis | s are just appro prints or errors. | xi- |
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