



Product Information

77 22 115

Electronics Diagonal Cutter

With box joint



- Durable, load-optimised design with backlash-free box joint
- High, slim sleeves for fine and comfortable gripping between thumb and index finger
- Less physical effort due to very high transmission ratio
- Load-optimised for a more direct feel when working
- Low-friction double spring for smooth and even opening
- The mirror polish in combination with a fine oil film provides rust protection - no circuit faults caused by peeling chrome from plated tools
- Cutters additionally laser hardened, cutter hardness at least 62 HRC
- Round head, without bevel



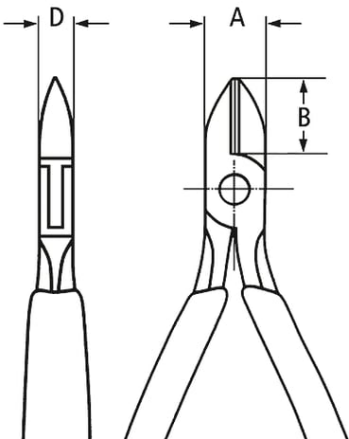
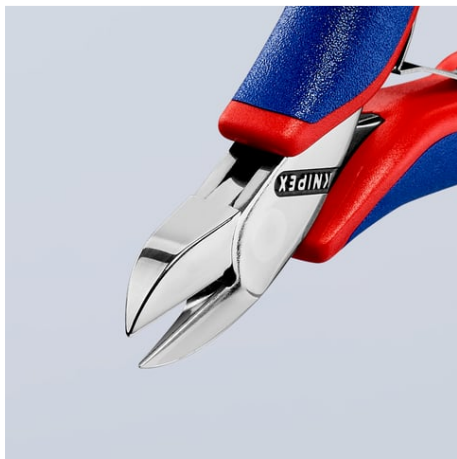
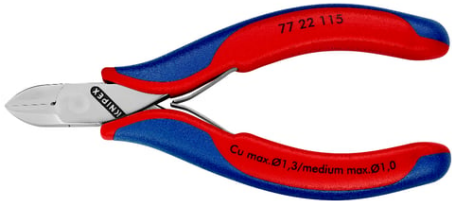
General	
Part No.	77 22 115
EAN	4003773043782
Head	mirror polished
Handles	with multi-component handles
Weight	70 g
Dimensions	115 x 65 x 17 mm
Standard	DIN ISO 9654
REACH compliant	does not contain SVHC
RoHS compliant	not applicable
Technical details	
Cutting capacities medium hard wire (diameter)	Ø 1.0 mm
Cutting capacities soft wire (diameter)	Ø 01 mm
Jaw length (B)	14 mm
Jaw thickness (joint) (D)	7 mm
Head width (A)	11 mm

Technical changes and errors excepted

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 Bản quyền nội dung thuộc về **KNIPEX**







1	Point
2	Gripping surface
3	Recess (pipe grip)
4	Additional cutting edge
5	Jaw
6	Flank

Direction and position of the cutting edges

Cutting edge transverse to the longitudinal direction		
Oblique cutting edge position		
Cutting edge in longitudinal direction – diagonal cutter		
Cutting edge in longitudinal direction – centre cutter		

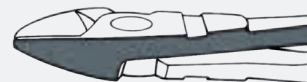
Cutting edge shapes DIN ISO 5742

With bevel (outside bevel)		
With small bevel (outside bevel)		
With very small bevel (outside bevel)		
Flush cut		
Flush cut		

Joint types

Lap joint

With the lap joint, which is used on carpenters' pincers, concretors' nippers and high leverage diagonal cutters, the two halves of the pliers lie on top of each other without being milled out. The pliers handle can thus be designed to be very robust.



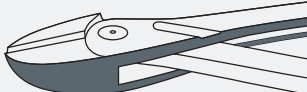
Single joint

With the single joint, half the thickness of each pliers handle is milled. Both pliers handles can thus be fitted into one another. The outer sides in the rivet area are smooth and not indented.



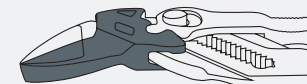
Box joint

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.



Slip joint

Slip joints enable optimal adaptation of the gripping jaws of pliers to various workpiece sizes. The opening width of the jaws is increased or decreased for this purpose. This occurs through shifting the two pliers handles with respect to one another.



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.



Care instructions

A drop of oil (e.g. Ballistol®) on the polished surfaces and in the joint keeps your pliers in good working order and extends their service life!



Basic jaw shapes

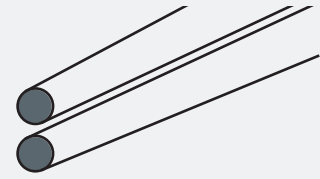
Flat nose pliers



Snipe nose pliers



Round nose pliers



Examples of different handle types on a pair of pliers



Straight handles, fully-metal design without plastic grips
are used when the hand must be placed at various positions when gripping. This is often the case with carpenters' pliers and concretors' nippers.



S-shaped handles, thin plastic coatings
render pliers slip resistant and pleasant to grip. They support a precise hand position, which can be useful in screwing motions, for example. The typical handle for water pump pliers.



Curved handles, thin plastic coatings
support the hand at the front and rear. This is always beneficial where high forces are required, for example with diagonal cutters.



Multi-component grips
Compared to handles with a thin plastic coating, comfort handles offer the hand a larger contact surface, enabling better distribution of force and thus making work more comfortable. The red, hard component ensures a firm grip on the thumb, the softer blue component ensures ergonomic contact with fingers and the heel of the hand.



Comfort Handles
The third, grey component in the thumb rest allows more control due to its special surface texture. The ends of the handles each have a KNIPEXtend interface for extending the functionality, for example with TetheredTool Clips for attaching fall protection devices.



VDE*-insulated handles, multi-component grips
Insulated grips for working on electrical systems. Approved to DIN EN/IEC 60900, these pliers comply with significantly more stringent technical and safety standards.



VDE*-insulated handles with dip-insulation
The dipped VDE-handles guarantee the same electrical protection as other VDE insulated handles. In particular, energy companies use these different looking VDE-pliers to help prevent the wrong tool from being used.



ESD-grips, multi-component grips**
Dissipative sleeves enable a gradual, controlled equalisation of any prevailing differences in electric potential between the operator and sensitive electronic components.

* Association for Electrical, Electronic and Information Technologies

** electrostatic discharge

Cutting value table

Article No.	Length mm	 Ø mm	 Ø mm	 Ø mm	 Ø mm	Page
01 0	160			2.0	1.5	14
	190			2.5	2.0	14
02 0	180			2.5	2.0	11
	200			2.8	2.2	11
03 0	225			3.0	2.5	11
	140		2.8	1.8		10
	160		3.1	2.0		10
	180		3.4	2.2		10
	200		3.8	2.5		10
	250		3.8	2.5		10
08 0	110		2.5	1.6		14
08 2	145		3.0	2.0		12
	185		3.8	3.0		12
09	240		4.6	3.0		15
13 0	160		2.5	1.6		40
13 4	165		3.2	2.2		41
14 2	160	2.5	1.5			48
19 0	130		2.2	1.6		52
25 01/03	125		2.2	1.6		55
25 0/21/25/26	140		2.5	1.6		55
	160		2.5	1.6		55
	200		3.2	2.2		56
26 1/26 2	160		1.8			86
	180		2.0			86
	210		2.2			86
	225		2.2			86
	250		2.2			86
51 01	210		2.2			86
55 00 300	300	2.0–3.0				87
61 0	200	1.0–6.0	4.0	3.5	3.0	110
62 12	120	0.3–1.0	0.7			273
64 0	115	2.0	1.0	0.6		272
64 11/12	115	1.4	0.8			272
64 22	115	0.8				272
64 32	120	1.5	1.0	0.5		272
64 42	115	1.5	1.0	0.5		272
64 52	115	1.3				272
64 62	120	0.6				272
64 72	120	1.5				272
67 0	140	4.0	3.1	2.0	1.5	111
	160	4.5	3.4	2.5	2.0	111
	200	5.0	3.8	3.0	2.5	111
	160	4.0	2.8	2.3		111
68 01	180	4.0	3.2	2.5		111
	200	4.0	3.5	2.8		111
	280	4.5	4.0	3.2		111
	110	3.0	2.0	1.2		96
70	125	3.0	2.3	1.5		96
	140	4.0	2.5	1.8		96
	160	4.0	3.0	2.0		96
	180	4.0	3.0	2.5		96
71	160	5.3	4.4	3.2	3.0	104
	200	6.0	5.2	4.0	3.6	105, 106
71 31	250		5.6	4.0	3.8	107
	160	5.3	4.8	3.6	3.3	104
	250		6.0	4.3	4.2	107

Article No.	Length mm	 Ø mm	 Ø mm	 Ø mm	 Ø mm	Page
72 62	200	6.0				93
73 0	160	4.8	3.8	2.7	2.2	99
73 7	180	5.5	4.6	3.2	3.0	102
74 0	140		3.1	2.0	1.5	100
	160		3.4	2.5	2.0	100
	180		3.8	2.7	2.2	100
	200		4.2	3.0	2.5	100
	250		4.6	3.5	3.0	100
74 91	250	5.0	5.0	3.8	3.5	103
75 02/12	125	0.2–1.3	1.0	0.6	0.4	265
75 22	125	0.2–1.3	0.9	0.4	0.3	265
75 52	125	0.2–0.8	0.5	0.3		265
76 01/03/05/12	125	0.4–3.0	2.3	1.5	0.6	98
76 22	125	0.4–2.5				98
76 81	125	0.4–1.7	1.3	0.8		98
77 01	115	0.3–1.6	1.2	0.6		269
77 02	115	0.3–1.6	1.2	0.6		269, 270
	120	2.0	1.4	1.0	0.6	271
	130	0.3–2.0	1.5	0.8		269, 270
	135	2.2	1.6	1.2	0.8	271
77 11/12	115	0.3–1.6	1.2	0.6		269, 270
77 21	115	0.3–1.3	1.0			269
77 22	115	0.3–1.3	1.0			269
77 32	115	0.3–1.3	1.0	0.5		269, 270
	120	1.6	1.0	0.6	0.2	271
	130	0.3–2.0	1.3	0.6		269, 270
	115	1.3	0.8			269
77 41	115	0.3–1.3	0.8			269, 270
77 42	130	0.3–1.6	1.3			269, 270
	115	0.3–1.0	0.8	0.5		269, 270
77 52	115	0.3–0.8				269, 270
77 72	115	0.3–0.8				269, 270
77 82	130	0.3–1.6	1.3			269, 270
78 03/06/13	125	0.2–1.6	1.0			262
78 03	140	0.2–2.1	1.2			264
78 23	125	0.2–1.0	0.6			262
78 31/41	125	0.2–1.0				262
78 61/71	125	0.2–1.6	1.2			262
78 61	140	0.2–2.1	1.4			264
78 81/91	125	0.2–1.6	1.2	0.6		262
79 02	120	0.2–1.4	1.0	0.6		266, 267
79 02	125	0.2–1.7	1.3	0.7		266, 267
79 12	125	0.3–1.7	1.3	1.0	0.6	266, 267
79 22	120	0.1–1.3	0.8			266, 267
79 22	125	0.1–1.7	1.0			266, 267
79 32	125	0.2–1.5	1.1	0.6		266, 267
79 42	125	0.1–1.5	0.8			266, 267
79 52	125	0.2–1.3	0.9	0.5		266, 267
79 62	125	0.1–1.3	0.8			266, 267
95 6	190			4.0	2.5	178
99 0	200		1.8	1.4		88
	220		2.4	1.6		88
	250		2.4	1.6		88
	280		2.8	1.8		88
99 1	300		3.1	1.8		88
	250		3.3	1.8		89
	300		3.8	2.0		89

Wire classes

	Material examples	Type of wire	Tensile strength		
			N/mm ²	kp/mm ²	
	Copper, plastics	soft	220	22	
	Nail, wire pin	medium-hard	750	75	
	Wire rope strand, steel wire	hard	1800	180	
	Spring steel wire	piano wire	2300	230	

Note

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

Structure of article number



Example of the item number on the pliers handle

Basic model e. g. KNIPEX Cobra® Hightech Water Pump Pliers	Style e. g. straight	Finish e. g. head polished, handles with multicomponent grips	Length e. g. 250 mm	Accessory e. g. Tethered- Tools- range
87	0	2	250	T



Safe working: very stable tether attachment, firmly welded to the handle grip for attaching a safety cord or adaptor sling

Head / handles

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 multicomponent grips	
6	Pliers chrome plated, handles insulated with multi-component grips, VDE-tested	
7	Pliers chrome plated, handles with dipped insulation, VDE-tested	

Pictograms

	Packing unit
SB / BK	Carded pliers with euro holes
ESD 	Electrostatic discharging, dissipative
1000 V 	Insulated according to IEC 60900, usable up to 1000 V AC/1500 V DC
 	VDE tested, also in compliance with GPSG (Equipment and Product Safety Act)
	Cu- + Al-multi-conductor cable, solid and multi-stranded
	Wire rope
	Ribbon cable
	Steel wire armoured cable (SWA)
	ACSR cable
	Soft wire
	Medium hard wire
	Hard wire
	Piano wire
	Square crimp automatic
	Hexagonal crimp automatic
	Four mandrel crimp
	Mandrel crimp
	Trapezoid crimp
	Oval crimp
	F-crimp
	Trapezoid indent crimp

	W-crimp
	Hexagonal crimp
	Square crimp
	Tyco crimp
	Western crimp
	Trapezoidal crimp front
	Hexagon
	Hexagonal screw
	Slotted screw
	Cross recessed screw
	PlusMinus cross recessed screw
	Pozidriv cross recessed screw
	Torx
	Capacity double-bit key
	Internal square 3/8"
	Internal square 1/2"
	Hexagonal socket
	12-point
	Driving Square
	Bit holder 1/4" (hexagon socket)
	With opening spring
	With lead catcher

	Internal circlip
	External circlip
	Retaining ring, straight
	Retaining ring, diagonal
	Grip ring
	Flat jaws
	Flat and pointed jaws
	Half-round jaws
	Round jaws
	Angle
	Smooth gripping surfaces
	Smooth-serrated gripping surfaces
	Knurled gripping surfaces
	Cross-hatched, knurled gripping surfaces
	Centre cutter
	Cutting edges with bevel
	Cutting edges with small bevel
	Cutting edges with very small bevel
	Cutting edges without bevel
	For flush cut of soft materials

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L-BOXX®	Sortimo International GmbH
Mini-Fit®, Micro-Fit™	Molex® Inc.
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