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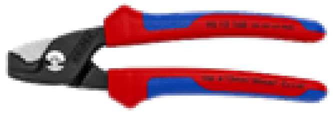
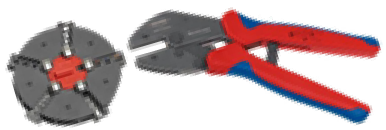
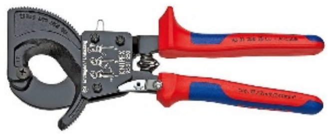
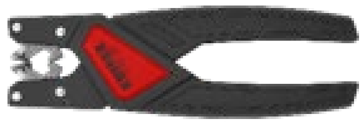
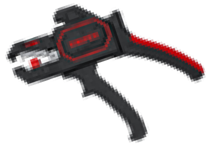
KNIPEX

Pliers and tools for electrical installation

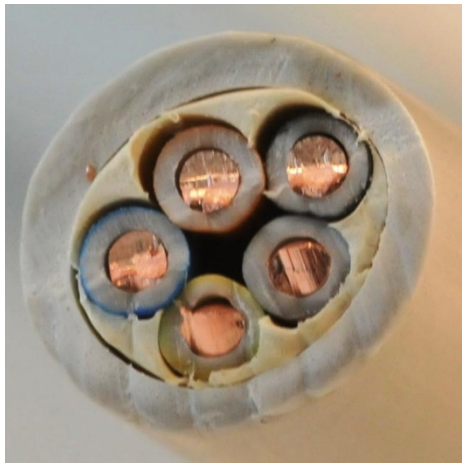
Welcome !

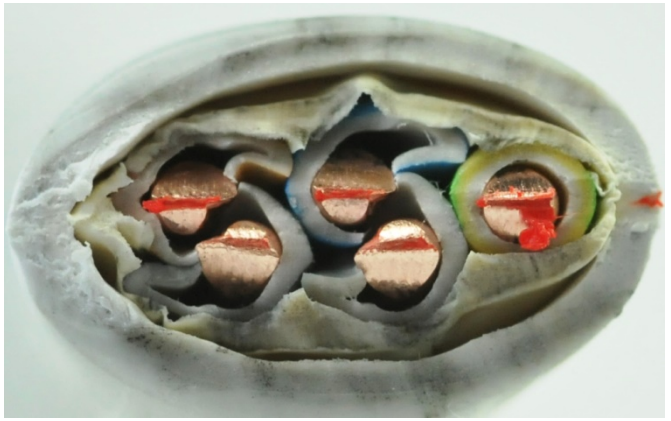

KNIPEX – Quality made in Germany
1.380 employees
Wuppertal Cronenberg
2.090 employees in the group
costumers in
105 countries
12.7 Mio. pliers
produced
2020
600 tons of
steel per month
50,000 m² Production area
Industry
Craftsmanship
Automotive
Construction
Electrical
Agriculture
Aviation
Sanitary
Production site
Wuppertal Cronenberg (Germany)
1
900 different
varieties of pliers
Quelle: https://www.knipex.de/nc/de/home/

Tools for electrical installation… a small overview

Cable cutting	**Stripping** *Outer jacket*	**Stripping** *single conductor*	**Crimping**
			
			
			
			
			
			

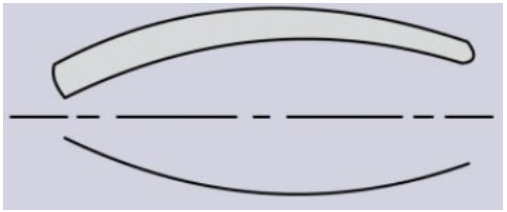
Comparison of cable shears and diagonal cutters



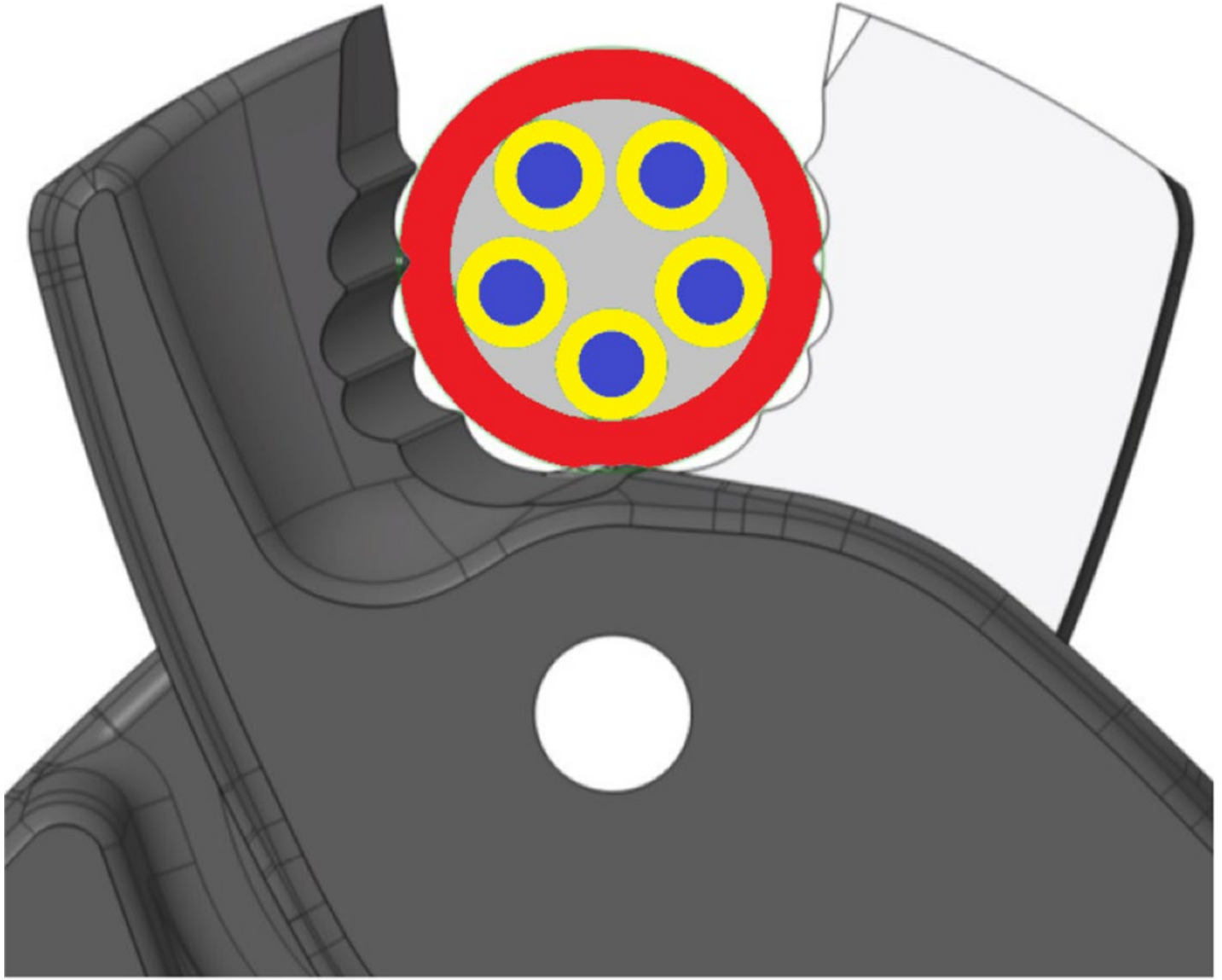


Cable cutter „StepCut“

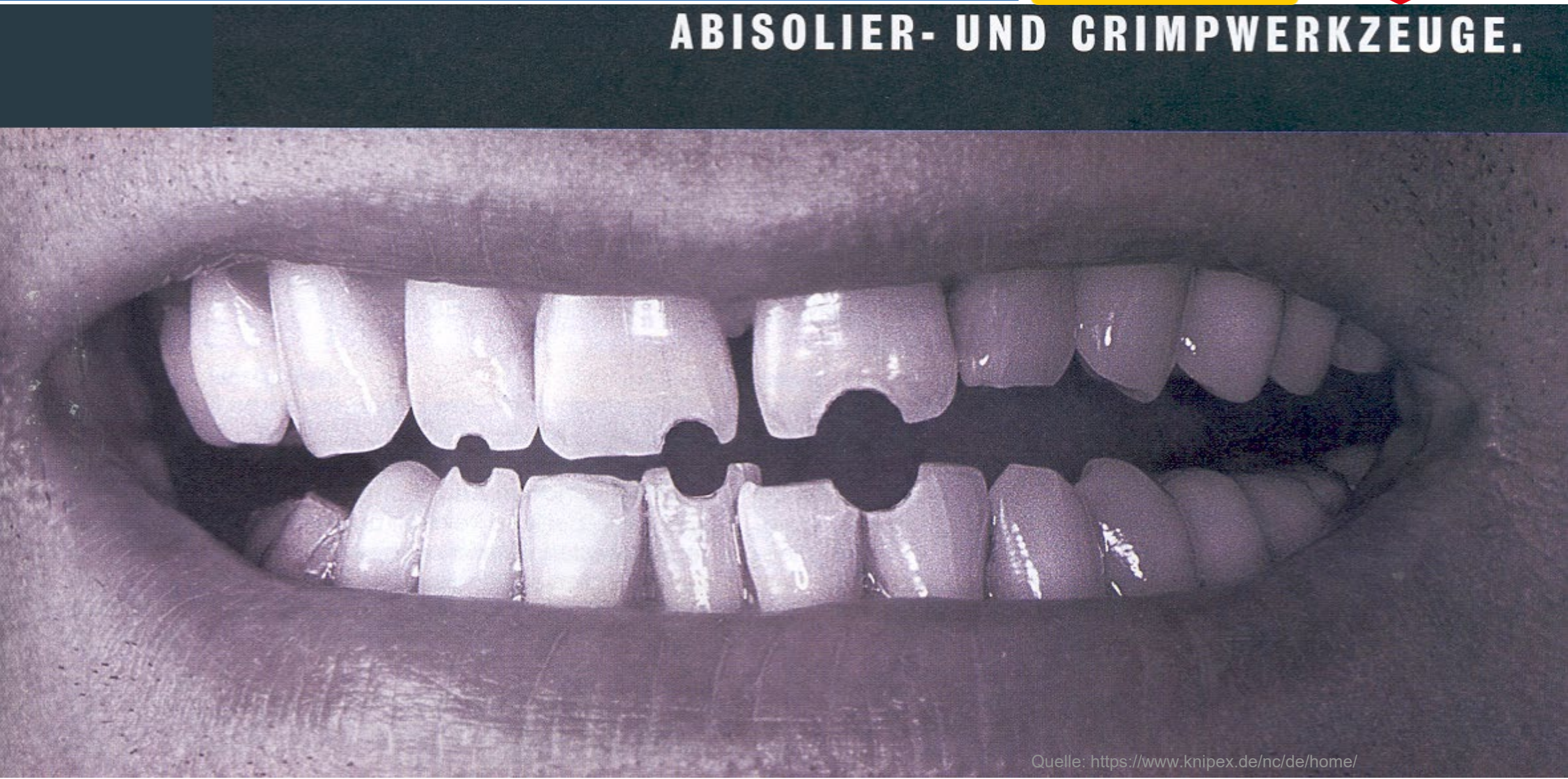
- **Up to 40% reduced hand force**
  (compared to similar cable shears)
- Ergonomically designed handles
- 3 Variants



the individual wires are cut one after the other



Stripping tools



Quelle: https://www.knipex.de/nc/de/home/

Stripping is the most difficult part of wire processing

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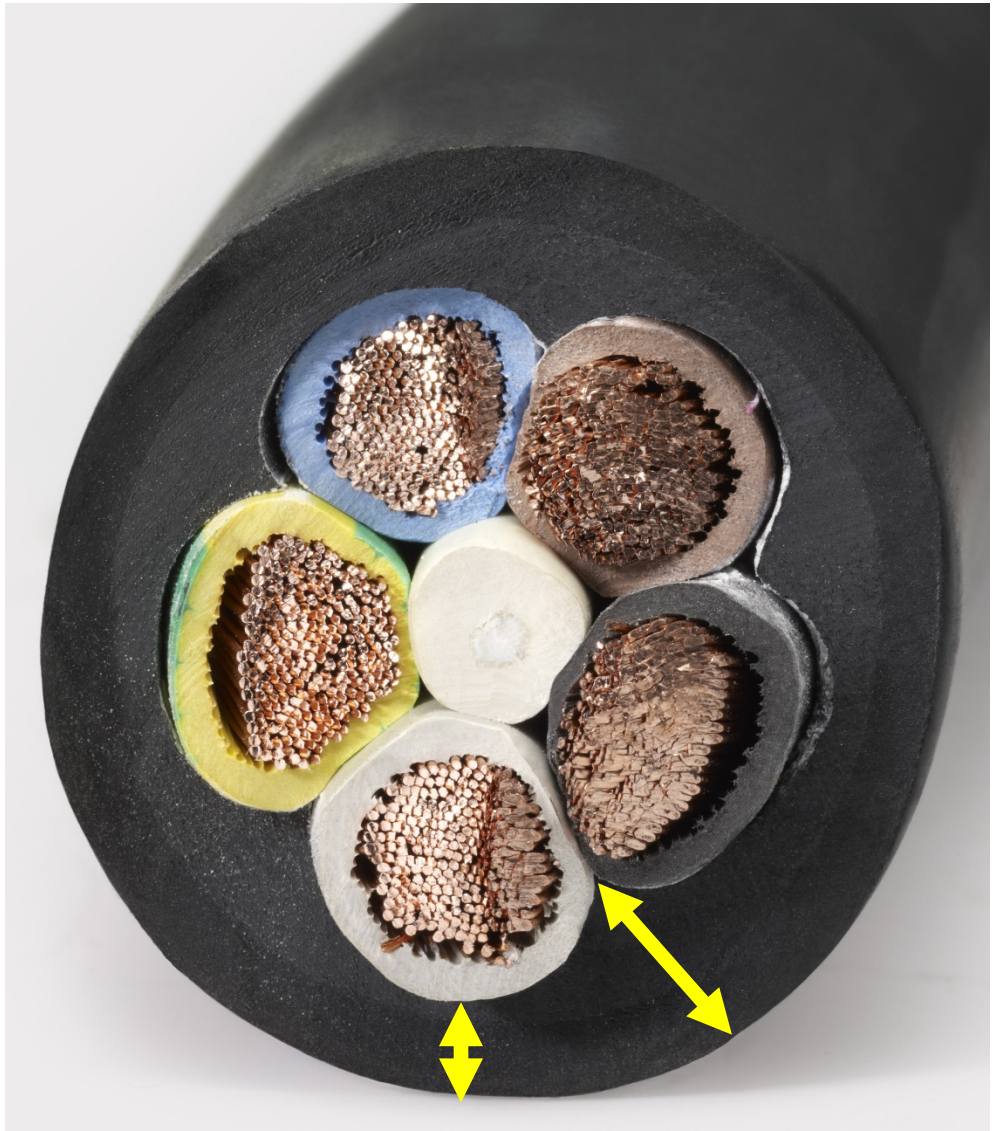
One tool for everything? > This is not possible

Very flexible rubber cables with thicker insulation



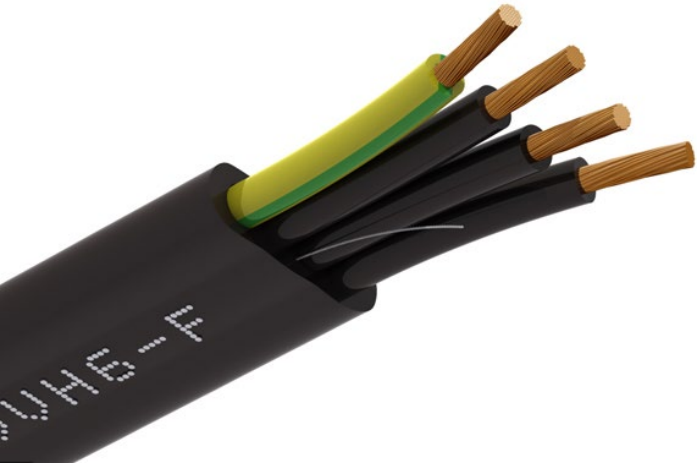
Safety first

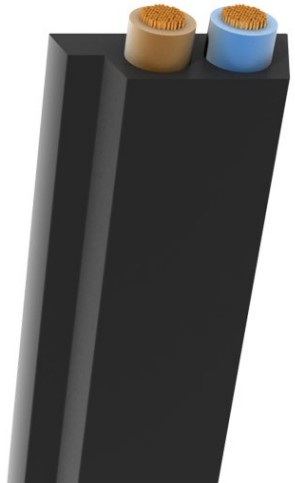
+

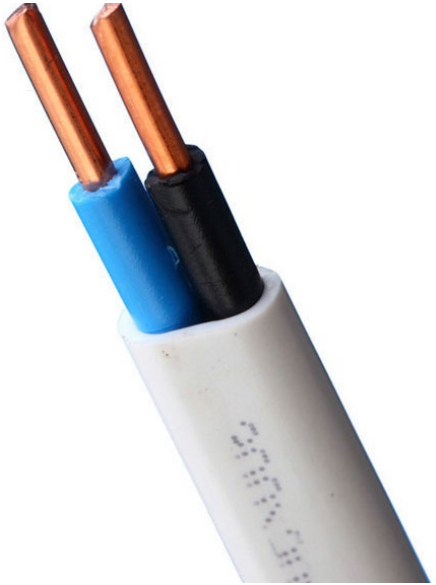
Use cut protection gloves

Flat cable is not round cable…

There are large differences in the characteristics of flat cables worldwide







Stripping flat cable

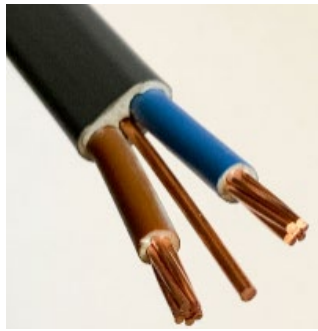
Due to the rectangular shape, there is no professional solution in stripping tools for flat cables

Stripping tools for round cables cannot be used for flat cables

Tools for flat cable

16 64 125 SB

Somewhat awkward with hard insulation. But safer than an open blade. Max. cable width: 13mm (24,50 €)



12 64 180

Very easy, safe and fast stripping. A little more difficult with hard plastic. Somewhat more expensive to purchase. Max. cable width: 12mm (86,10 €)

98 53 03

Universal knife with special knife geometry. When used correctly, no damage to the underlying wires. Warning sharp blade! High risk of injury if not used correctly. Can be used for all cable sizes. (14,45 €)

Stripping Knives

- Ergonomically designed handle shape with comfortable slip guard
- “Finger hook" at the end of the handle ensure a good transmission of handforce
- Transparent protective cap

> → Suitable for round and flat cables

sickle shaped

→ Suitable for sector cables

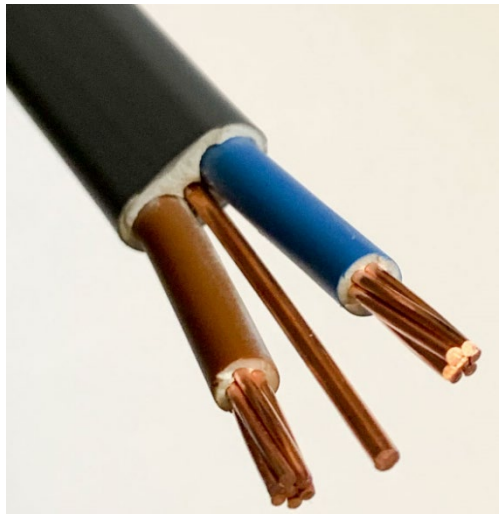
sickle shaped, with guide shoe

→ No damage of the conductor insulation

Quelle: https://www.knipex.de/nc/de/home/

How to strip British flat cable

2 x 1 +1mm²	 12 64 180	 16 64 125 SB
2 x 2,5 +1,5mm²	 12 64 180	 16 64 125 SB
2 x 4 +1,5mm²	 12 64 180	 16 64 125 SB
2 x 6 +1,5mm²	 12 64 180	 16 64 125 SB
3 x 1,5 +1mm²	 12 64 180	 16 64 125 SB
3 x 2,5 +1mm²	 12 64 180	 16 64 125 SB
2 x 6 +6mm²	 16 64 125 SB	 98 53 03
2 x 10 +4mm²	 98 53 03	
2 x 16 +16mm²	 98 53 03	



Of course, knives can also be used for the smaller cable sizes. However, due to the increased risk of injury, I have not listed these with the small sizes. For flat cables, blades with a different geometry can also be used, such as 98 52 or 98 55 SB.

KNIPEX ErgoStrip® Universal Stripping Tool

16 95 01 SB

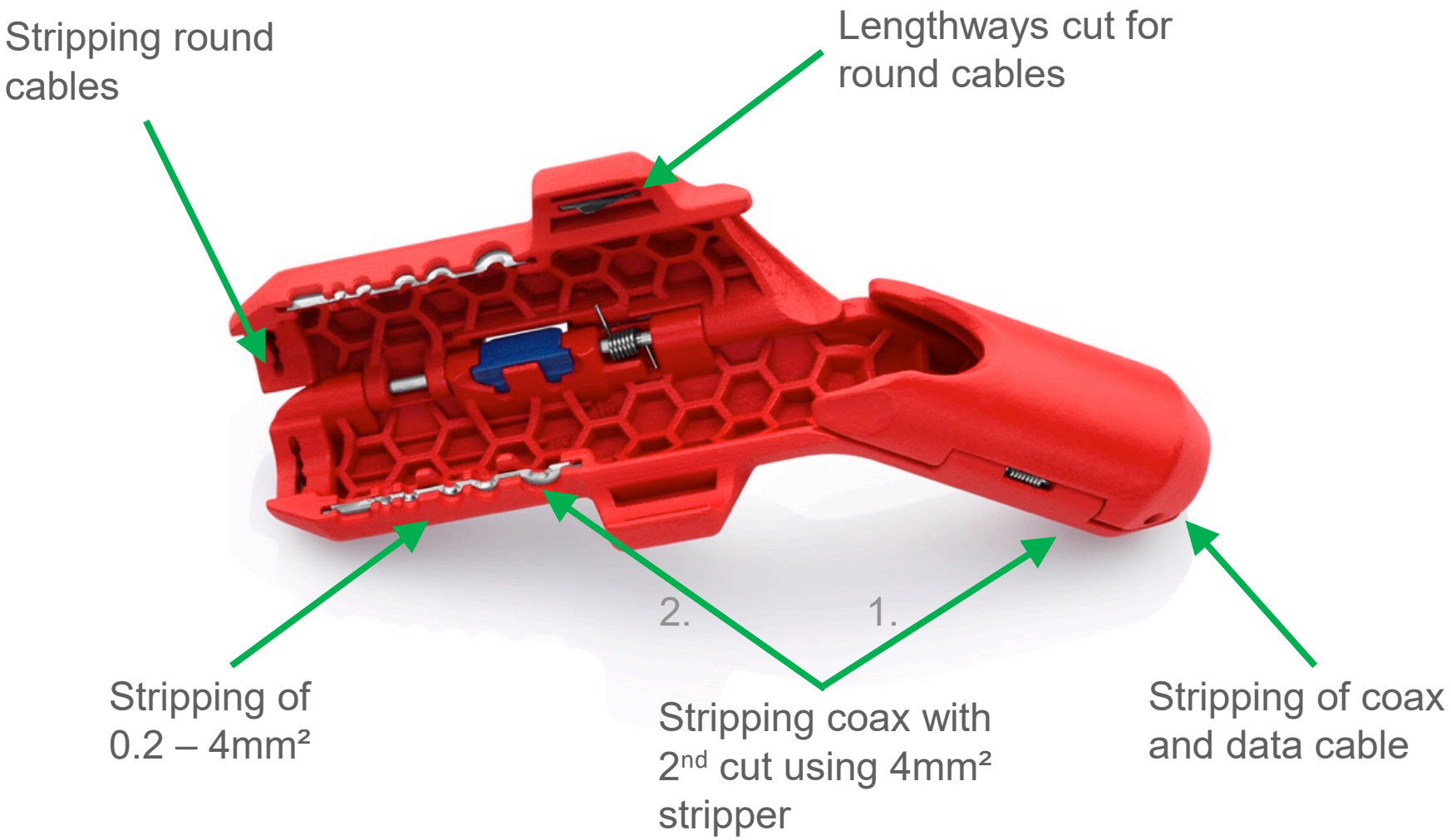
right-handed

16 95 02 SB

left-handed

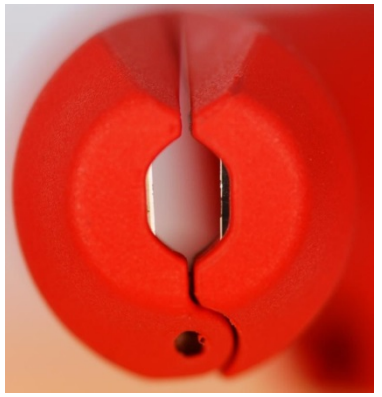
Quelle: https://www.knipex.de/nc/de/home/

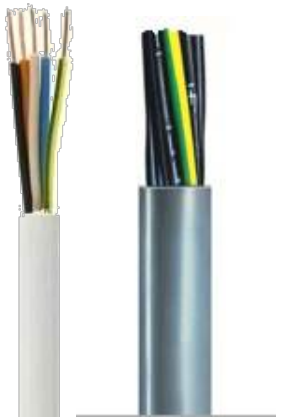
KNIPEX ErgoStrip®– main functions



Quelle: https://www.knipex.de/nc/de/home/

KNIPEX ErgoStrip® – attributes





> Long side

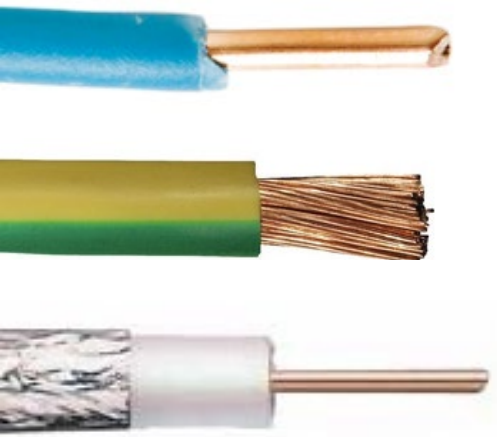
- Locked by slide latch
- Opened by opening spring

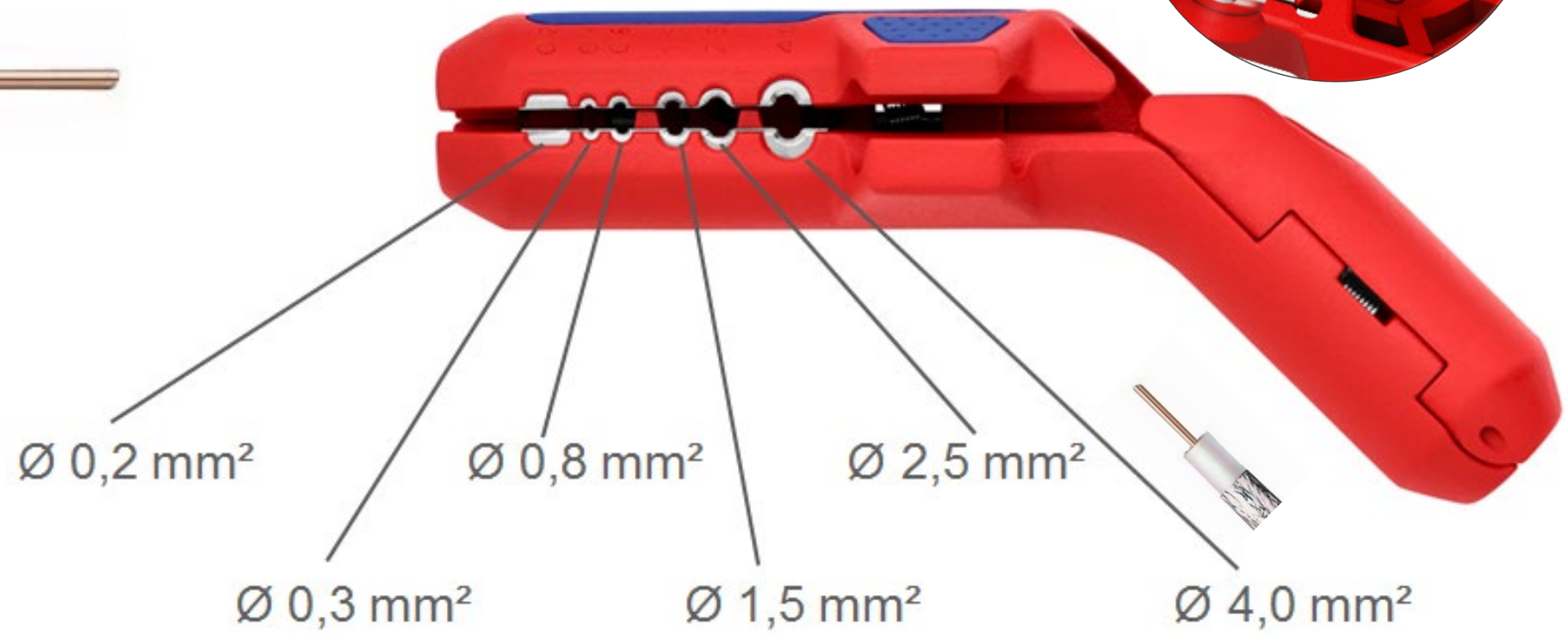
Short side

- Locked by spring
- With introduction aid

Quelle: https://www.knipex.de/nc/de/home/

KNIPEX ErgoStrip®– Strip long side

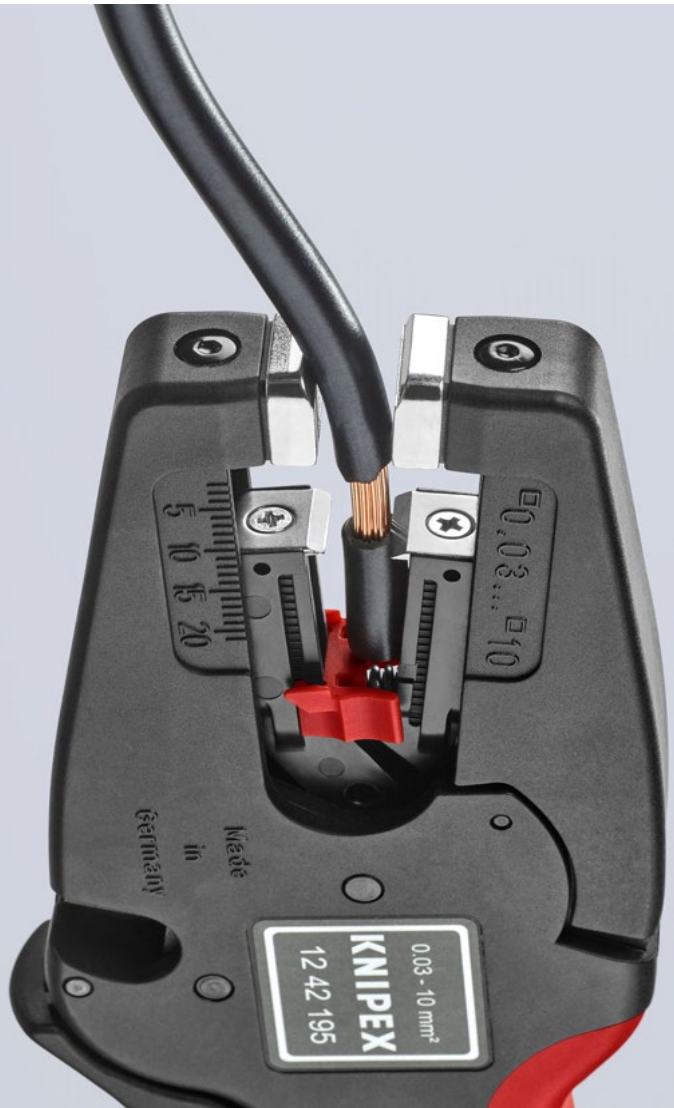




Quelle: https://www.knipex.de/nc/de/home/

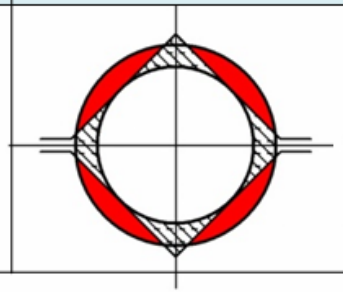
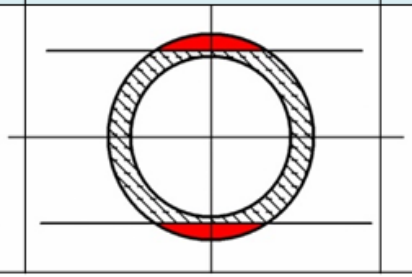
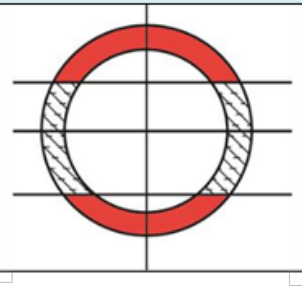
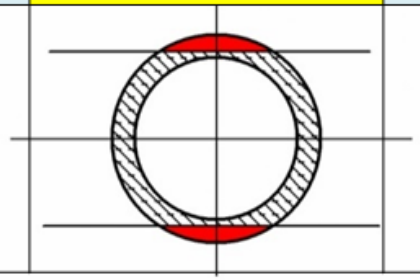
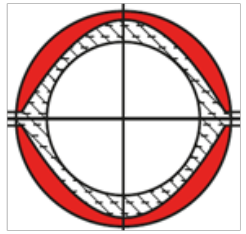
KNIPEX Quality – Made in Germany

Automatic Stripping Pliers

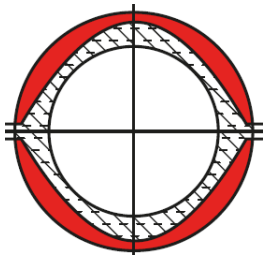


Automatik Stripping Pliers - Overview

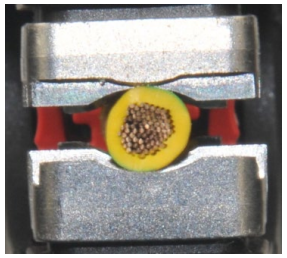
NEW

					
Article number	**12 62 180**	**12 40 200**	12 50 200	**12 42 195**	**12 52 195**
Capacity mm²	0,2 - 6	0,03 - 10	2,5 - 16	0,03 - 10	0,08 - 16
Cutting area mm²	2,5	10	10	10	16
Price 2022	**37,50 €**	**70,00 €**	**107,50 €**	**93,00 €**	**99,40 €**
Adjustable	Yes	Yes	Yes	**No**	Yes
Blade shape					

PreciStrip16 - Features



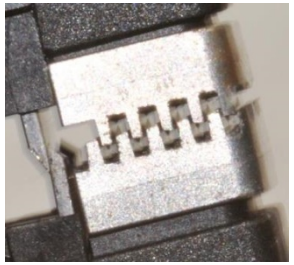
Parabolic blades

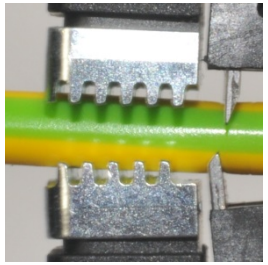


Half-round clamping jaws

Adjustable
in 8 Positions
+/- (16 setting options)

TT Tools
Compatible





Interlocking gripping
zone

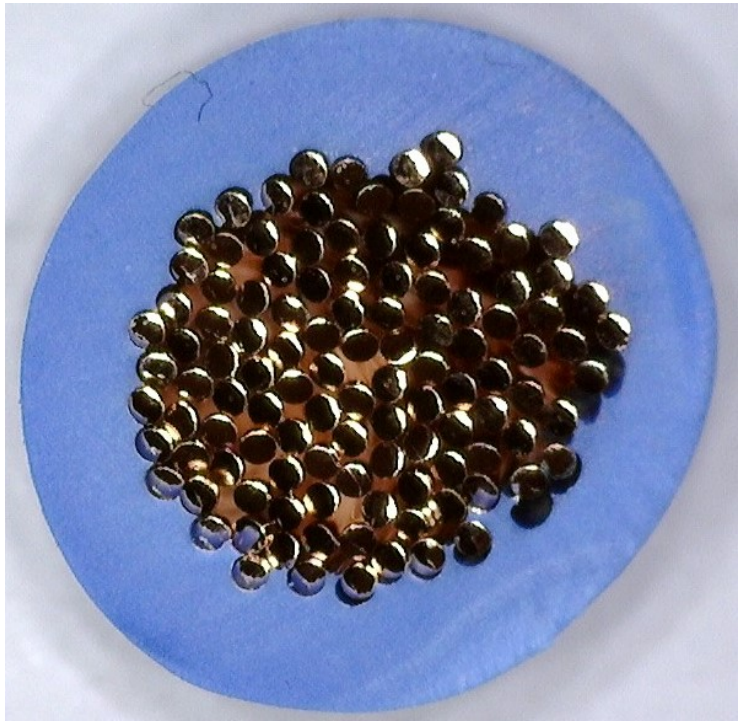
Personalization

Why fine adjustment?

The most important criteria for stripping:

- The hardness of the insulation
- Insulation thickness

6 mm²



6 mm²

Spare blade block and alternative blades

> **Spare blade block for 12 52 195**

> **Art.No.: 12 49 31**
> **18,65 €**

Alternative knife block with modified blade geometry for heavy insulation from 4 – 16 mm²

Art.No.: 12 49 32
18,65 €, brutto

Spare length stop 12 49 23 can be used

Automatic Stripping Pliers - 12 74 180 SB

- **PUR**
- **TPE-U**
- **PVC**
- **Rubber (H05…)**
- **Oil-resistant**
- **Halogen free**

extension cable

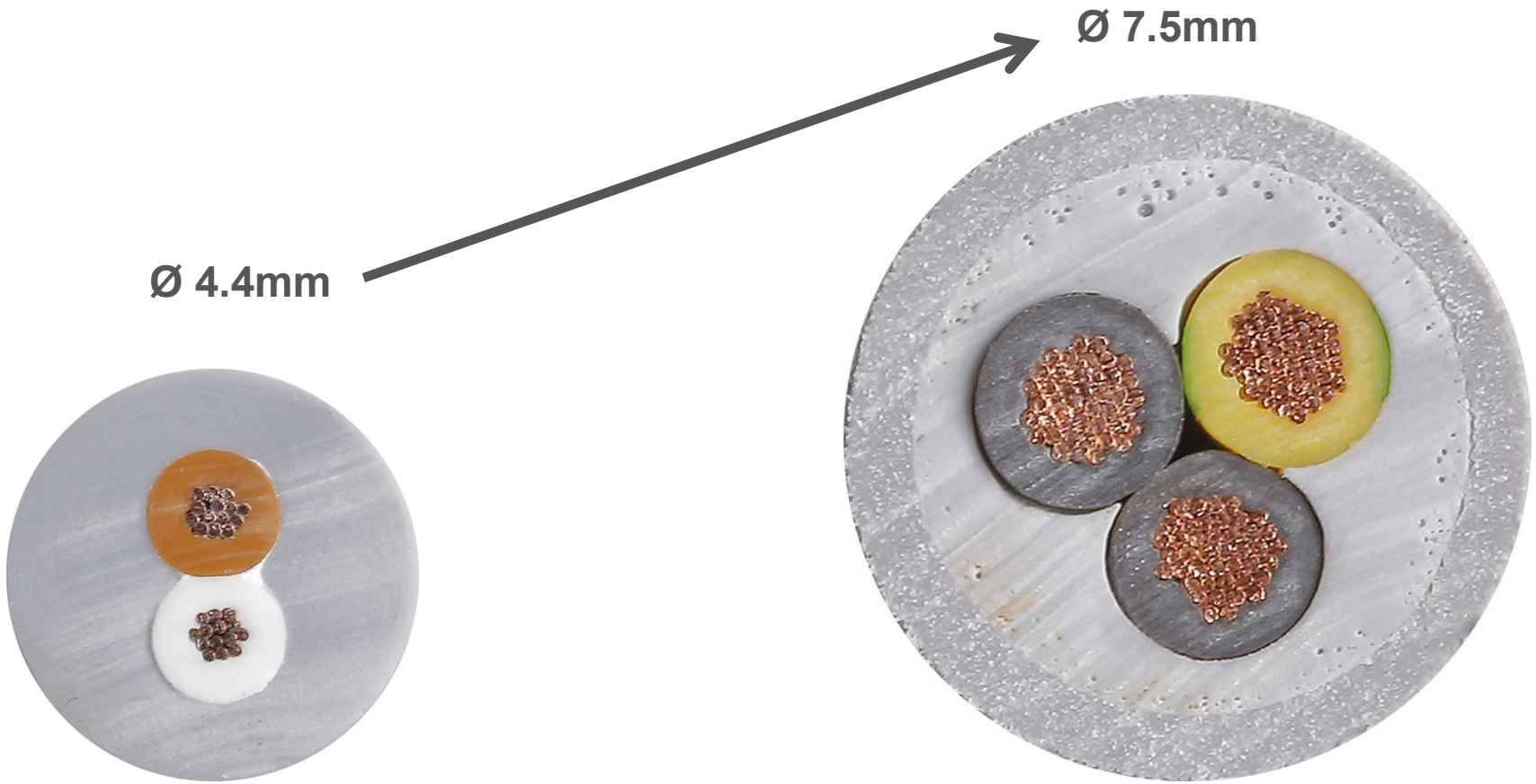
sensor cable

Multi-core cables

control cables

Quelle: https://www.knipex.de/nc/de/home/

Automatic Stripping Pliers - 12 74 180 SB



For cables with uneven sheath thickness

Quelle: https://www.knipex.de/nc/de/home/

The KNIPEX-World of crimping tools

Quelle: https://www.knipex.de/nc/de/home/

All Knipex crimping pliers with integral lock

integral lock = Ensure the completion of the crimping process.

→ Requirements in DIN 41641 > Hand crimping tools

→ Requirements in DIN EN 60352-2 > Solderless electrical connections

Quelle: https://www.knipex.de/nc/de/home/

The KNIPEX-World of crimping tools

PreciForce®
(one-hand operation)
8 different pliers

crimp dies are not interchangeable

Crimp plieres
(Two-hand operation possible)
10 different pliers

crimp dies are not interchangeable

MultiCrimp®
5 profiles in the quick change magazine

includes 5 crimp dies

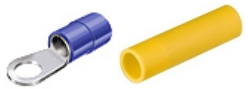
Crimp System Plier (without crimp dies)
→ 50 interchangeable profiles
→ 10 Locator
→ approx. 1,400 special profiles available

Interchangeable crimp dies

Quelle: https://www.knipex.de/nc/de/home/

A selection of connectors and terminals

Ferrules



Insulated terminals

Insulated heat shrink tubing connectors

Non-insulated terminals

Non-insulated open plug connectors 2,8 / 4,8 / 6,3

F-connectors

Coax connectors

Shielded data plugs

Unshielded western plugs

Fibre-optic connectors

Turned contact

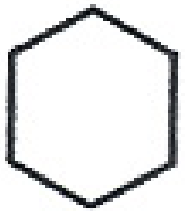
ABS-plug turned contact

Rolled contact

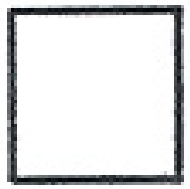
Modul plug

D-Sub-plug

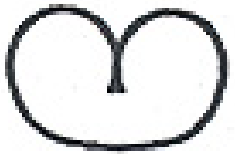
Crimp forms (presented in a simplified way)



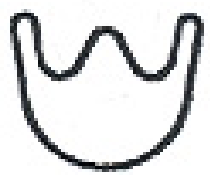
Hexagon-Crimp



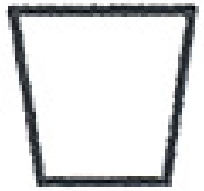
Square-Crimp



B-Crimp

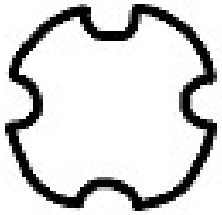


W-Crimp



Trapezoid-Crimp

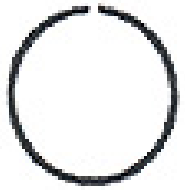
Oval-Crimp



Four Indent-Crimp

Indent-Crimp

OVL-Crimp



O-Crimp

Quelle: https://www.knipex.de/nc/de/home/

Which crimp form fits which standard-connector ?

6- Hexagon

Oval

W-Crimp

B-Crimp

4- Square

Indent
-Crimp

Trapezoid

6-Hexagon
Watch out! Possible overpressing

Insulated connectors (former DIN 46 237)

97 52 36

97 52 06

97 33 02

97 43 200 + 97 49 06

97 21 215

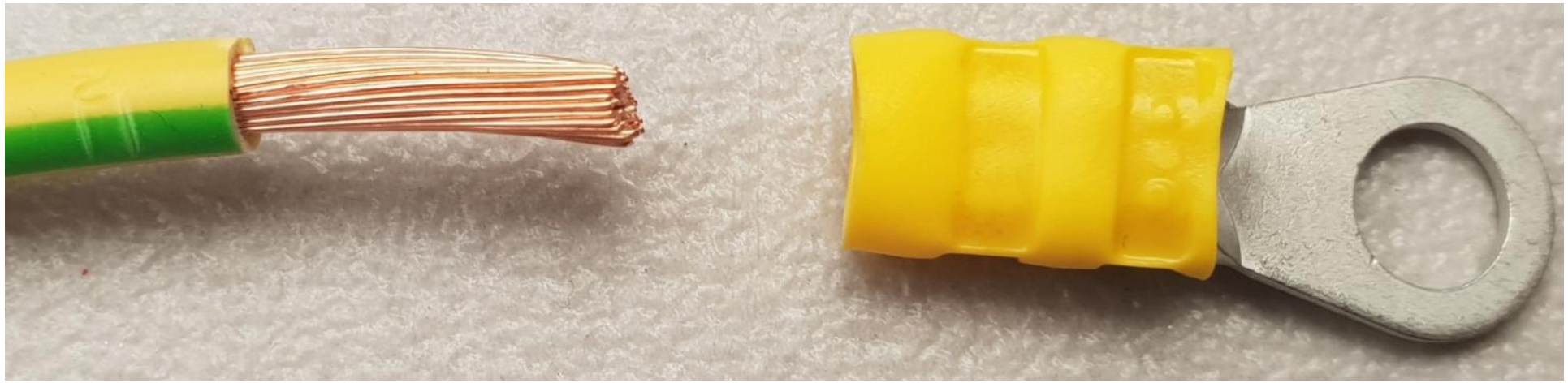
Quelle: https://www.knipex.de/nc/de/home/

Problem solving

"Connector loosens from cable after crimping"

Reasons can be:
Wrong pliers / Wrong crimp nest ; Underfilled cables ; Cheap Asian plugs.

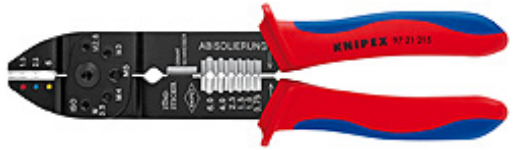
Problem solution:
Use insulated connectors from Knipex. These have been adapted to our crimp form. (97 99 xx > see list)



Technical details – Connector

	Designation + technical information	Article No.	EAN 4003773-	DIN color series	Capacity mm²	AWG	Dimensions
Insulated terminals							
	Blade terminal sockets, insulated Material: brass, tin plated; Insulation: Nylon; Max. temperature: 105°C; Max. electrical load: 600 V	**97 99 001**	075882	red	0,5 – 1,0	22 – 16	2,8
		97 99 010	075899	red	0,5 – 1,0	22 – 16	4,8
		97 99 011	075905	blue	1,5 – 2,5	16 – 14	4,8
		97 99 020	075912	red	0,5 – 1,0	22 – 16	6,3
		97 99 021	075929	blue	1,5 – 2,5	16 – 14	6,3
		97 99 022	075936	yellow	4,0 – 6,0	12 – 10	6,3
		97 99 030	075943	blue	1,5 – 2,5	16 – 14	8,0
	Flat Pin Accessory Distributors, insulated Material: brass, tin plated; Insulation: Nylon; Max. temperature: 105°C; Max. electrical load: 600 V	**97 99 090**	075998	red	0,5 – 1,0	22 – 16	6,3
		97 99 091	076001	blue	1,5 – 2,5	16 – 14	6,3
		97 99 092	076018	yellow	4,0 – 6,0	12 – 10	6,3
	Blade terminal plugs, insulated Material: brass, tin plated; Insulation: Nylon; Max. temperature: 105°C; Max. electrical load: 600 V	**97 99 110**	076025	red	0,5 – 1,0	22 – 16	6,3
		97 99 111	076032	blue	1,5 – 2,5	16 – 14	6,3
		97 99 112	076049	yellow	4,0 – 6,0	12 – 10	6,3
	Round sockets, insulated Material: brass, tin plated; Insulation: Nylon Max. temperature: 105°C; Max. electrical load: 600 V	**97 99 130**	076056	red	0,5 – 1,0	22 – 16	Ø 4
		97 99 131	076063	blue	1,5 – 2,5	16 – 14	Ø 5
	Round pin plugs, insulated Material: brass, tin plated; Insulation: Nylon; Max. temperature: 105°C; Max. electrical load: 600 V	**97 99 150**	076070	red	0,5 – 1,0	22 – 16	Ø 4
		97 99 151	076087	blue	1,5 – 2,5	16 – 14	Ø 5
	Cable connectors, eye type, insulated DIN 46237 Material: copper, tin plated; Insulationl: Nylon; Max. temperature: 105°C; Max. electrical load: 600 V	**97 99 170**	076094	red	0,5 – 1,0	22 – 16	Ø 3
		97 99 171	076100	red	0,5 – 1,0	22 – 16	Ø 4
		97 99 172	076117	red	0,5 – 1,0	22 – 16	Ø 5
		97 99 173	076124	blue	1,5 – 2,5	16 – 14	Ø 4
		97 99 174	076131	blue	1,5 – 2,5	16 – 14	Ø 5
		97 99 175	076148	blue	1,5 – 2,5	16 – 14	Ø 6
		97 99 176	076155	blue	1,5 – 2,5	16 – 14	Ø 8
		97 99 177	076162	yellow	4,0 – 6,0	12 – 10	Ø 5
		97 99 178	076179	yellow	4,0 – 6,0	12 – 10	Ø 6
		97 99 179	076186	yellow	4,0 – 6,0	12 – 10	Ø 8
		97 99 180	076193	yellow	4,0 – 6,0	12 – 10	Ø 10
	Butt connectors, insulated Material: copper, tin plated; Insulation: Nylon; Max. temperature: 105°C; Max. electrical load: 600 V	**97 99 270**	076346	red	0,5 – 1,0	22 – 16	
		97 99 271	076353	blue	1,5 – 2,5	16 – 14	
		97 99 272	076360	yellow	4,0 – 6,0	12 – 10	
Heat shrinkable butt connectors							
	Heat shrinkable butt connectors Material: copper, tin plated; Insulation: Nylon; Operating temperature: -55°C – +105°C; Shrink temperature: 180°C; Max. electrical load: 600 V	**97 99 250**	076315	red	0,5 – 1,0	22 – 16	
		97 99 251	076322	blue	1,5 – 2,5	16 – 14	
		97 99 252	076339	yellow	4,0 – 6,0	12 – 10	

Insulated shrink tubing connectors

	**97 52 37** **180-50-313**
	**97 43 200 + 97 49 07** **180-54-611 + 302-23-039**
	**97 21 215** **180-48-071**

Quelle: https://www.knipex.de/nc/de/home/

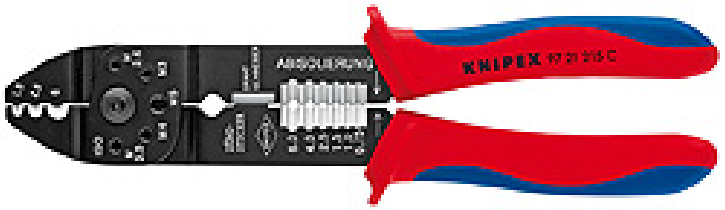
Unisolated connectors **0,5 – 25mm²**

97 52 33

97 52 13

97 33 02

97 43 200 + 97 49 14

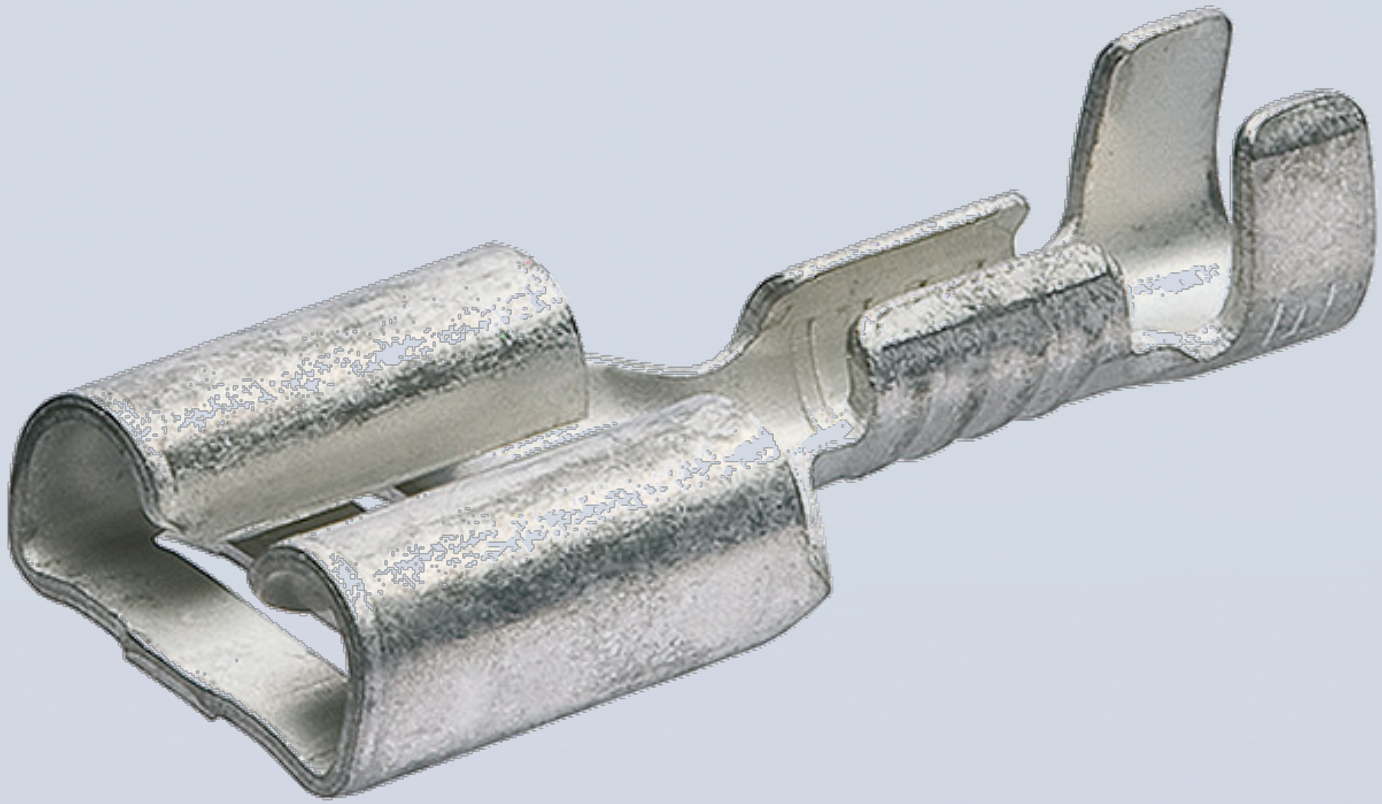


97 21 215 C

(DIN 46234; DIN 46341) > thin sheet

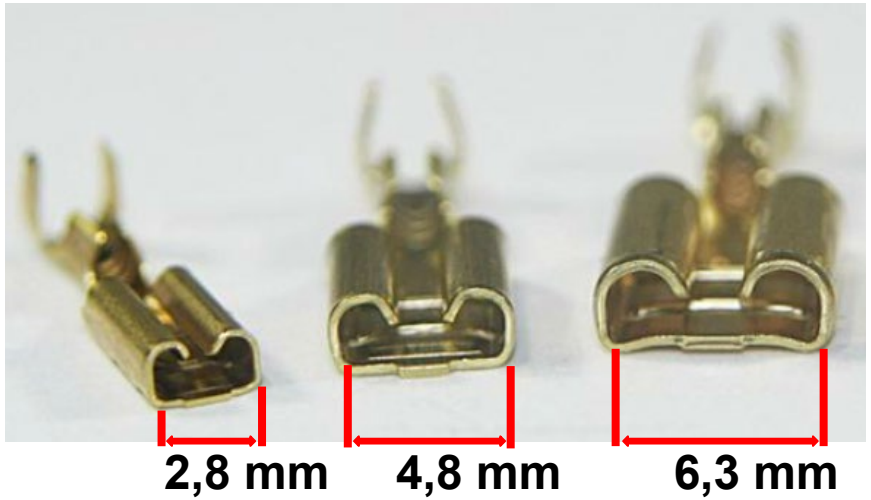
Quelle: https://www.knipex.de/nc/de/home/

Non-insulated Blade Terminal Sockets

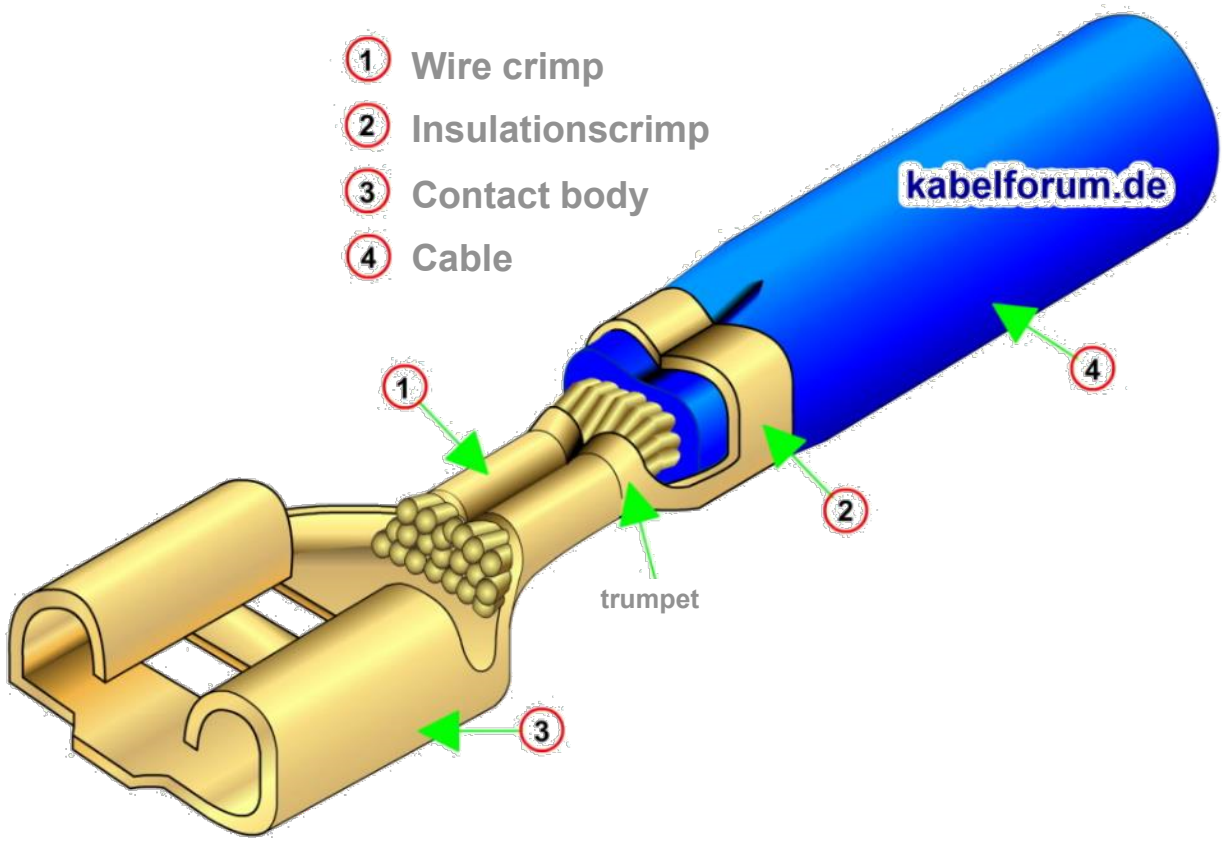


Un-insulated, open flat connectors

With this type of plug you can do the most wrong...



DIN 46 247
DIN 46 346
DIN 46 346



Quelle: https://kabelforum.com/

Un-insulated, open flat connectors

DIN 46 247
DIN 46 346
DIN 46 346

connector width : 2,8 mm 4,8 mm 6,3 mm

97 52 34
97 52 35

97 52 04
97 52 05

97 33 02

97 43 200 + 97 49 04 / 05

97 21 215 B

Quelle: https://www.knipex.de/nc/de/home/

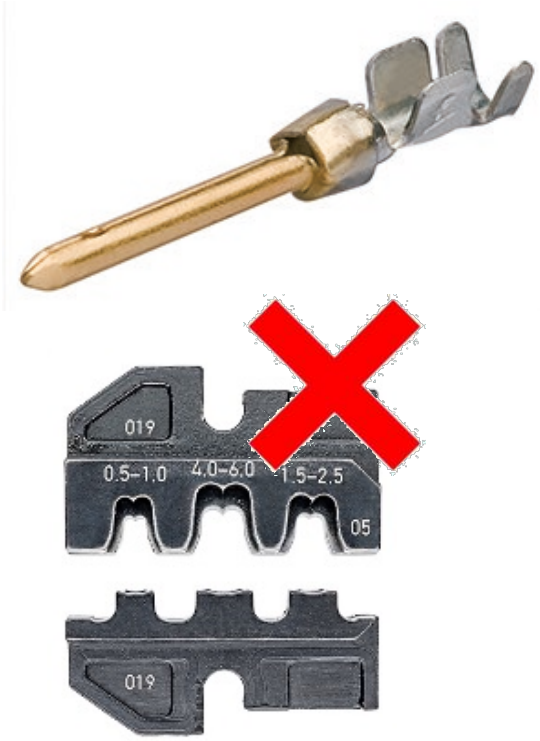
Producer of connectors and terminals

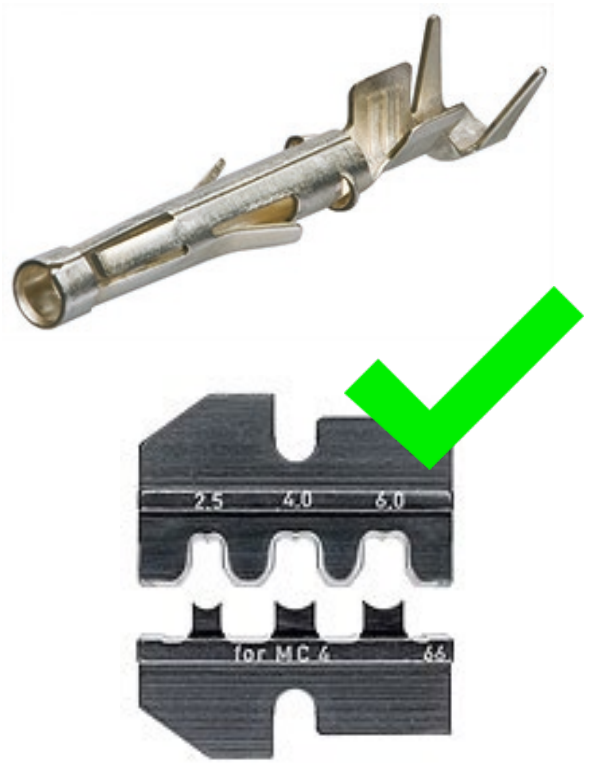
Open flat connectors not according to DIN

Not standardized!

Each manufacturer uses different dimensions. Therefore, for each series you need a crimp insert that is customised to the geometry of the connector.

→ 1,5 Mio different connectors worldwide





Quelle: https://www.knipex.de/nc/de/home/

Crimp System Pliers for exchangeable crimping dies

voltimum

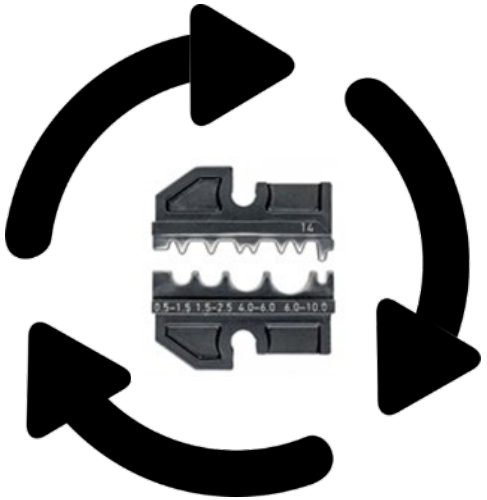
KNIPEX

1,400 solutions in one system

1,400 solutions in one system

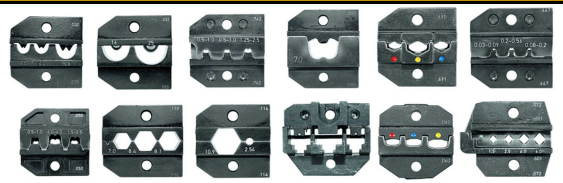
voltimum

KNIPEX



RENNSTEIG

Crimp System Pliers for exchangeable crimping dies

97 43 200	97 43 200 A
	
180 - 54 - 611	
50 Standard dies at KNIPEX	
10 Positioning devices at KNIPEX	
More than 1,400 crimping dies at Rennsteig	RENNSTEIG
Parallel crimp movement	

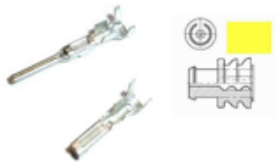
Crimp Matrix for download

	Description	DIN EN ISO	Colour	Size	Cable mm²	Preci Force	Crimping pliers (two hand)	Multi-Crimp	97 43 200
	Insulated terminals	DIN 46237 or similar; PIDG			0,1 - 0,5				97 49 21
					0,5 - 1	97 52 36	97 52 06	97 33 01 97 33 02 (97 39 06)	97 43 06 97 49 06 97 49 06 PI
					1,5 - 2,5				
					4 - 6				
					10				97 49 16
					16				
	Non-insulated terminals				0, 1 - 0,5				97 49 21
					0,5 - 1	97 52 33	97 52 13	97 33 02 (97 39 13)	97 49 10 (0,5-2,5) 97 49 11 (4/6/10) 97 49 14 (0,5-10)
					1,5 - 2,5				
					4 - 6				
					10				
					16		97 52 23		97 49 23
					25				
	Heat shrinkeable terminals	No norm			0,5 - 1	97 52 37			97 49 07
					1,5 - 2,5				
					4 - 6				
	Non-insulated open plug connectors	DIN 46247 DIN 46345	plug width	2,8	0,1 - 1	97 52 34 (0,1 - 2,5) 97 52 35 (0,5 - 6)	97 52 34 (0,1 - 2,5) 97 52 35 (0,5 - 6)		97 49 04 (0,1 - 2,5) 97 49 05 (0,5 - 6)
				4,8	0,5 - 2,5			97 33 01 97 33 02 (97 39 05)	
				6,3	0,5 - 6				

Crimp Matrix for download

	Description	Colour according to DIN 46228-4: 2020-03	Length (Normal; Long)	Length	Cable mm²	97 53 04	97 53 14	97 53 09	97 53 18	Preci Force	Crimping pliers (two hand)	Multi-Crimp	97 43 200	97 6 145
Knipex Art.No.		may vary depending on the standard												
97 99 333	 Insulated ferrule		N	14mm / 8mm	1,5							97 33 02		
97 99 334			N	14mm / 8mm	2,5							(97 39 08)		
97 99 335			N	17mm / 10mm	4									
97 99 336			N	20mm / 12mm	6									
97 99 337			N	22mm / 12mm	10									
97 99 338			N	24mm / 12mm	16						97 52 09	97 33 02	97 49 09	
97 99 339			N	30mm / 16mm	25							(97 39 09)		
xxx			N	30mm / 16mm	35						97 52 19		97 49 19	
xxx			N	36mm / 20mm	50									
xxx			N	37mm / 21mm	70									
xxx			N	44mm / 25mm	95									
97 99 350	 Insulated ferrules (long version)		L	16mm / 10mm	0,5									
97 99 351			L	16mm / 10mm	0,75									
97 99 352			L	16mm / 10mm	1									
97 99 353			L	16mm / 10mm	1,5					97 52 38	97 52 08	97 33 01	97 49 08	
97 99 354			L	16mm / 10mm	2,5							97 33 02		
97 99 355			L	20mm / 12mm	4							(97 39 08)		
97 99 356			L	26mm / 18mm	6									
97 99 357			L	28mm / 18mm	10									
97 99 358			L	28mm / 18mm	16						97 52 09	97 33 02	97 49 09	
97 99 359			L	32mm / 18mm	25							(97 39 09)		
xxx			L	39mm / 25mm	35						97 52 19		97 49 19	

Crimp Matrix for download

A	B	C	D	E	F
KNIPEX	Description	Cable AWG	Cable mm²	 97 43 200	
	D-Sub-; HD 20-; HDE-Connector	32 - 20	0,03 - 0,56	**97 49 24** *> optional 97 49 93*	**97 54 24**
	Micro-Fit (Molex)	30 - 20	xxxxxx	**97 49 25** *> optional 97 49 25 1*	**97 54 25**
	Mini-Fit (Molex)	24 - 16	xxxxxx	**97 49 26** *> optional 97 49 26 1*	**97 54 26**
	MQS (AMP, TE)	24 - 20	0,25 - 0,5	**97 49 27** *> optional 97 49 27 1*	**97 54 27**
	AMP Superseal-Connector 1.5 (TE) 0-0183024-1 Pin 0-0183025-1 Socket 0-0183035-1 Socket 0-0183036-1 Pin		0,35 - 1,5	**97 49 28** *> optional 97 49 28 1*	
	Junior Power Timer (JPT, TE) 927777 Socket 927779 Socket 927781 Socket 927783 Socket 963885 Socket	20 - 13	0,5 - 2,5	**97 49 54**	

KNIPEX MultiCrimp® Crimping pliers with quick changer magazine

5 in 1

One tool for 80% of all crimp applications

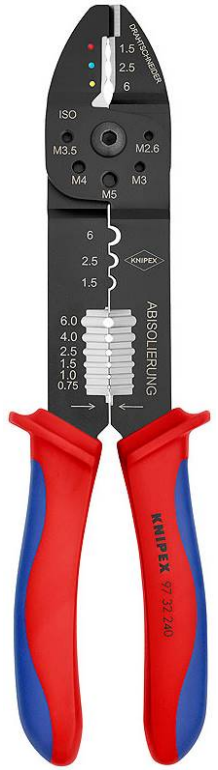
			
0,5 - 10mm²	**0,5 - 6mm²**	**0,5 - 6mm²**	**0,5 - 25mm²**
			

97 33 02

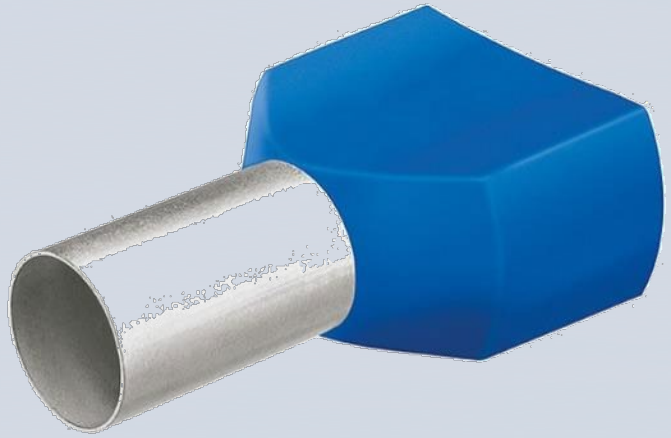
Not compatible with crimping dies 97 49 xx of the crimping system pliers

Quelle: https://www.knipex.de/nc/de/home/

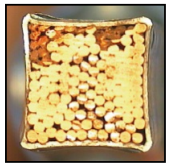
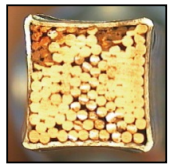
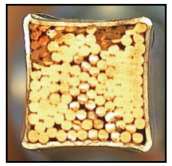
Multifunctional crimping pliers

				
97 21 215	**97 21 215 B**	**97 21 215 C**	**97 22 240**	**97 32 240**
				
				
0,5 - 6mm²	**0,5 - 6mm²**	**0,5 - 6mm²**	**0,5 - 6mm²**	**0,5 - 6mm²**

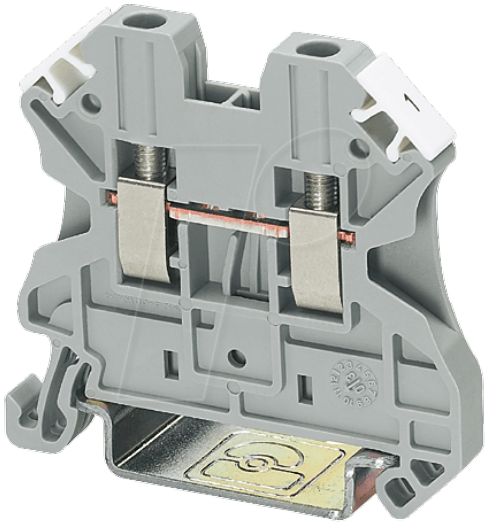
End ferrules



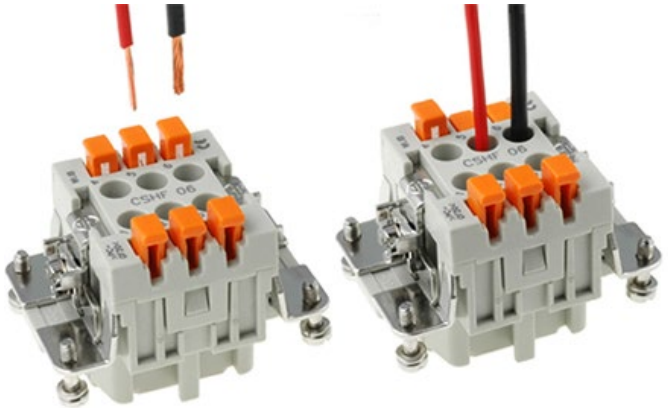
Automatic crimping pliers Wire end ferrules

0,08 - 10 mm²	0,08 - 16 mm²	0,08 - 16 mm²	0,14 - 16 mm²
			
			
97 53 14	97 53 04	97 53 09	97 53 18

Why is the crimp form so important ?



Screw terminals



Spring clamps

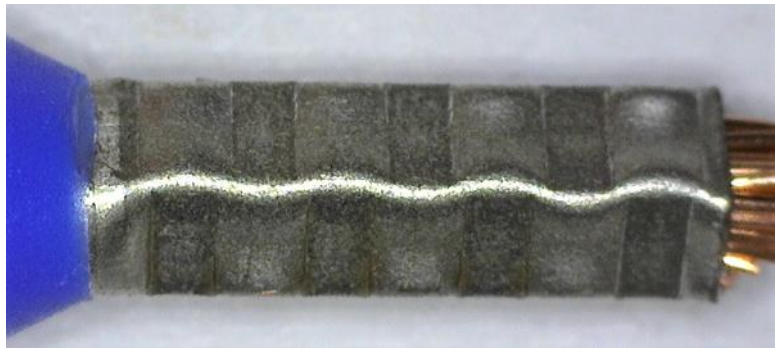
Quelle: https://www.knipex.de/nc/de/home/

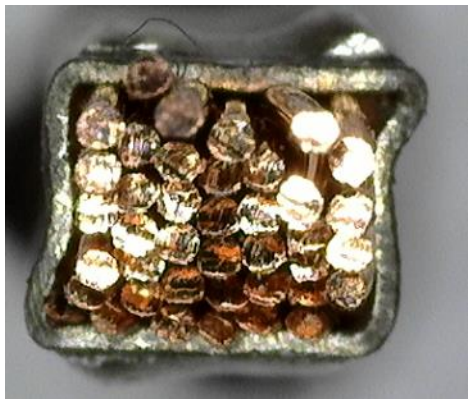
Comparison Knipex with cheap tools from Asia (2,5mm²)

voltimum

KNIPEX

KNIPEX – 97 53 09



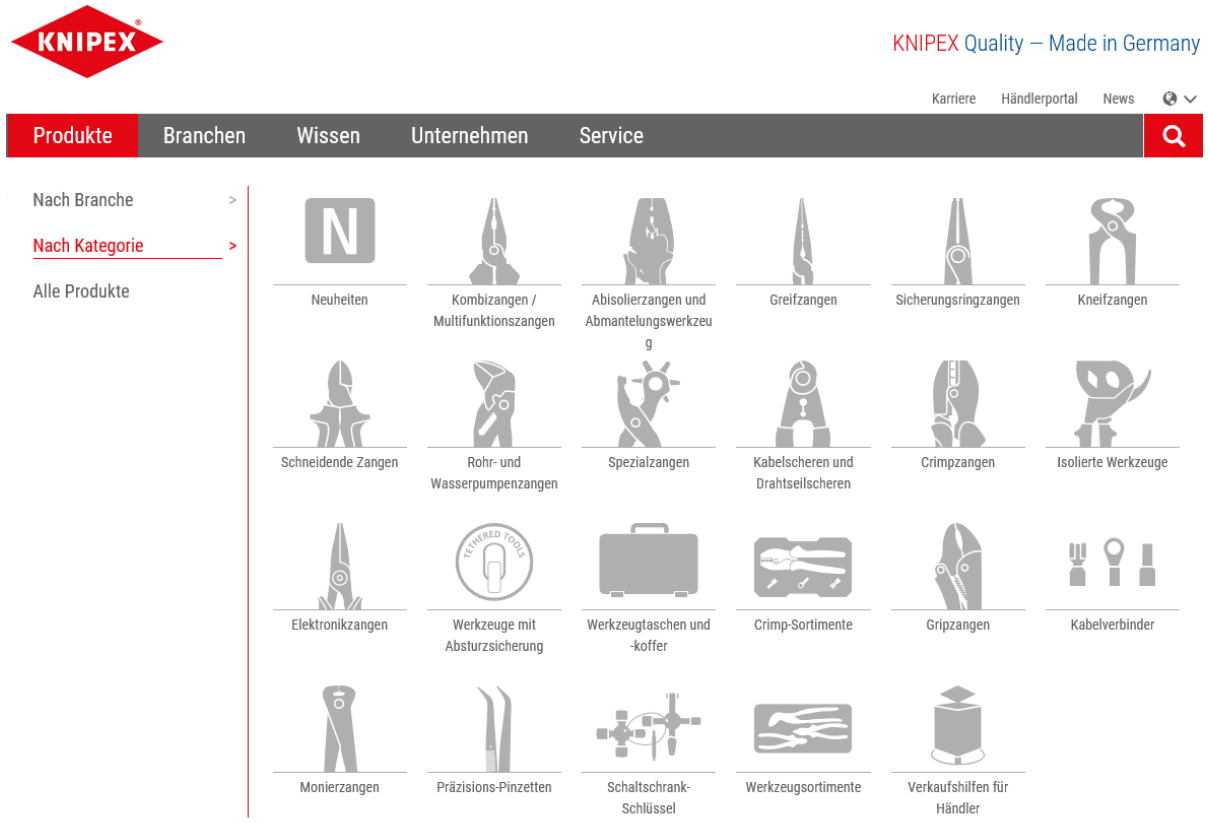


Cheap copy

More details can be found here

voltimum

KNIPEX



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or contact us

info@knipex.de

Thank you very much for your attention!