



KNIPEX



**PRECISION TOOLS
FOR PHOTOVOLTAIC PROFESSIONALS**

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KNIPEX harnesses passion and commitment to create high-quality tools that are specially tailored to the needs of photovoltaic professionals.

Whether for installation, maintenance, repair or optimisation – our tools will be your reliable partners for many years, ensuring the best utilisation of solar energy. Not only the robustness and long service life of KNIPEX tools are legendary, but also their precision. This precision is particularly important in the field of photovoltaics. Only particularly precise cutting, stripping and crimping can get the best yields out of the sun's energy – and that, in turn, is the best advertisement for you and your company!

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MORE POWERFUL TOOLS FOR PV SYSTEMS

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P. 22



PART NO.:
95 16 165



Cable Shears

**Cut cables with
little effort**

The 95 16 165 cable cutter cuts even multi-strand copper cables up to a diameter of 15 mm with virtually no effort. The sharp cutting edges cut without crushing, which guarantees particularly precise stripping and crimping.

- ▶ **Clean and smooth cut without crushing and deformation**
- ▶ **Easy cutting with one-hand operation**
- ▶ **Adjustable bolted joint, self-retaining screw**
- ▶ **Cuts multi-core stranded copper and aluminium cables up to Ø 15 mm (50 mm²)**
- ▶ **Not suitable for steel wire and hard drawn copper conductors**
- ▶ **Precision-ground, hardened blades**
- ▶ **With pinch guard**


**AVAILABLE
AS A SET:**

KNIPEX Slim Knips (78 03 150)
and tool holster (78 09 LE)
for comfortable and
safe transport!
78 03 150 V01



KNIPEX Slim Knips

Precision cutting pliers for plastics and soft metals

Perfect for cable tie work: ultra-precise cutting, flexible assembly
and disassembly – even in tight spaces.

- ▶ Compact storage, always ready – with optimum accessibility
and **lockable cutting edges for transport**
- ▶ Sharp, slim and purposeful – **space-saving pen shape**
allows cutting with precision and a clear view of materials,
also in tight and confined spaces
- ▶ **Manage cable ties without changing tools** – convenient tightening,
flush cutting and large opening width for cutting
- ▶ Precisely shaped tips cut adjacent wires from 0.2 mm and solid
copper conductors up to 1.3 mm, fine-stranded up to 4 mm
- ▶ Flexible handling: can be held with the entire hand or just between
thumb and index finger for better visibility and accessibility
- ▶ With opening spring for comfortable and repetitive use
- ▶ Durable and rustproof, made from INOX surgical steel (approx. 56 HRC)
- ▶ Handles made of impact-resistant plastic



Transport safety feature:
adjustable as a stop for tightening
cable ties – due to slightly opened
blades without cutting



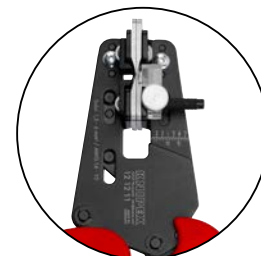


Precision Insulation Stripper

The precise one, especially for hard PV cables

The precision wire stripper 12 12 12 is specially optimised for robust PV cables. Its customised blades for 4/6/10 mm² are precisely matched to the respective conductor cross-section making them ideal for stripping the insulation from PV cables.

- ▶ **Form-fit stripping of difficult-to-remove insulating materials** made of PTFE, silicone, Radox®, Kapton® and rubber; multi-layer too
- ▶ A second pair of blades holds the remaining insulation reliably in place
- ▶ Replaceable shaped blade adapted precisely to the respective **conductor cross-section**
- ▶ **With length stop** for constant stripping length during repetitive work
- ▶ For PV cables, specially designed for multi-layer and Radox® insulation



12 12 11
for 1.5/2.5/4/6 mm²



AVAILABLE AS A SET

For the installation and
maintenance of PV systems
with KNIPEX ErgoStrip® PV
and KNIPEX PreciForce
00 31 31 V01



4

PART NO.:
16 95 03 SB

STRIPPING



KNIPEX ErgoStrip® PV

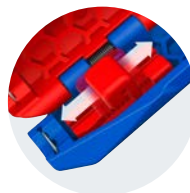
Photovoltaic stripping tool

The KNIPEX ErgoStrip® has long been our most popular tool for stripping single conductors and round cables due to its versatility and ergonomic handling. The new KNIPEX ErgoStrip® PV has been specially optimised for the needs of solar installers: in addition to all standard round and moisture-resistant cables, it can also strip weather-resistant and tough PV cables between 4 and 6 mm².

- For fast and precise stripping of PV cables with 4 and 6 mm² (e. g. H1Z2Z2-K) and all common round and damp-proof installation cables (e.g. NYM cable 3 x 1.5 mm² up to 5 x 2,5 mm²)
- Length stop for PV cables: adjustable from 6–18 mm for consistent stripping lengths, suitable for all standard PV connectors
- Innovative, ergonomic pistol grip design for easy cutting, stripping and longitudinal cut of the sheath
- Simplified insertion of single wires for stripping using location ridges
- Multi-component design with a soft plastic zone for comfortable use and a secure grip



Convenient insertion
of PV cables thanks
to **opening aid**



Adjustable length stop
from 6–18 mm, adjustable
in 1.5 mm increments



**Stripping device
for single wires**
with cross-sections
0.2/0.3/0.8/1.5/2.5/4.0 mm²



**Conical, slimmed
down tool ends**
for better access in
confined areas

PART NO.:
12 52 195



Optionally available:
Blade unit (12 49 32) designed
for very hard halogen-free
cables from 4–16 mm²



With a tether attachment point,
suitable for KNIPEX Tethered Tools accessories

Stripping finely stranded
to solid round cables

0.08 mm²

4 mm²

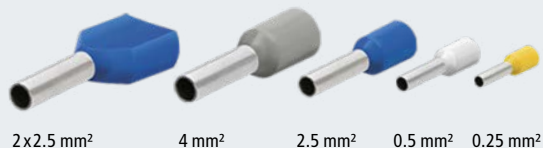
16 mm²

KNIPEX PreciStrip16

Automatic insulation stripper up to 16 mm²

Automatically strips insulation from all standard wires – and thanks to an innovative fine adjustment, it also grips where other automatic devices would fail. The KNIPEX PreciStrip16® strips fine, flexible and solid cables quickly and precisely. The pliers can be easily adjusted to special materials or temperature conditions using the dial. Precise stripping of insulation is ensured through the parabolic stripping blades.

- ▶ **Simple, precise stripping** of fine wires and solid round cables with a wide capacity range from 0.08 to 16 mm² with only one pair of pliers
- ▶ **Good grip provided by semi-circular grooved metal** holding clamps; exact cut thanks to parabolic stripping blade
- ▶ **The depth of the cut is regulated automatically;** the neutral point of the automatism can be adjusted in fine steps in special operating conditions (insulation material, temperature)
- ▶ With adjustable length stop for precision work repeated accurately each time
- ▶ Inscription area for customisation
- ▶ Easily replaceable blade cassette
- ▶ With cable cutter on top for copper and aluminum conductors, flexible up to 16 mm² (AWG 6), solid up to 6 mm² (AWG 10)
- ▶ Not suitable for stripping PV cables



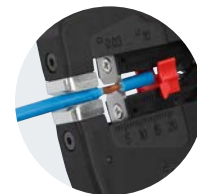
KNIPEX NexStrip®

Multi-Tool for Electricians

Frequent tool changes slow you down – the KNIPEX NexStrip® helps you save time. The electrician's multi-tool reliably helps with most cable work in the home, on electronic devices or in the motorhome – for example on the off-grid PV system on the vehicle roof.

- ▶ **Multi-component** handles ensure non-slip, comfortable handling
- ▶ **Precise stripping:** automatic size adjustment with length stop for precise, repetitive work
- ▶ **Perfect crimping:** crimps wire ferrules evenly, flexibly and quickly; the ratchet mechanism guarantees the required contact pressure
- ▶ Quick, **precise square crimp** of single wire ferrules according to DIN 46228 parts 1+4, self-adjusts for sizes 0.25–4 mm²/2 x 2.5 mm² – allows for quick crimping between different sizes
- ▶ Stripping with fine adjustment – for optimal adjustment to special materials or temperature conditions for flexible and solid conductors between 0.03 and 10 mm² (AWG 32-8)
- ▶ High-quality housing made of glass fibre reinforced plastic
- ▶ Clean cut of copper and aluminium conductors, finely stranded up to 10 mm², solid up to 6 mm²
- ▶ Not suitable for stripping PV cables

Multitool for cutting, stripping and crimping



With a tether attachment point, suitable for KNIPEX Tethered Tools accessories

Greater crimping precision with KNIPEX!

Product finder for photovoltaic connectors

When it comes to PV cables, KNIPEX offers a wide range of crimping pliers to suit every need. Find the right tool for you in this overview.

									Manufacturer	Stäubli		
									Illustration			
Illustration	Product	Part No.	Interchangeable crimping die	Crimping die		Locator		Crimp profile	Plug connectors ▶	MC4®	MC4® Evo 2	
									Capacities ▼			
	KNIPEX PreciForce P. 12	97 52 42	—	—	—	—	—		4/6 mm²	✓	✓	
		97 52 42 6**	—	—	—	—	—		6 mm²	✓	✓	
	KNIPEX MultiCrimp P. 14	97 33 03			97 39 42	—	—		4/6 mm²	✓	✓	
	Crimp System Pliers P. 16	97 43 66			97 49 66	—	—		2.5/4/6 mm²	✓	✓	
						97 49 66 1*	✓		—			
	Crimp System Pliers P. 17	97 43 66 EVO			97 49 71	—	—		4/6/10 mm²	—	✓	
	Crimp System Pliers P. 16	97 43 200 A			97 49 57*	—	—		4/6/10 mm²	—	—	
						97 49 57 1*	—		—			
						97 49 58*	—	—		2.5/4/6 mm²	—	—
								97 49 58 1*		—	—	
								97 49 58 2*		—	—	
						97 49 59*	—	—		2.5/4/6/10 mm²	—	—
								97 49 59 1*		—	—	
						97 49 66*	—	—		2.5/4/6 mm²	✓	✓
								97 49 66 1*		✓	—	
								97 49 66 1 EVO*		—	✓	
						97 49 66 4*	—	—		4 mm²	✓	✓
						97 49 66 6*	—	—		6 mm²	✓	✓
						97 49 71*	—	—		MC4®: 4/6/10 mm² MC4® Evo 2: 4/6 mm²	✓	✓
								97 49 71 1*		✓	—	

* Crimping dies and locators not included in the scope of delivery | ** Cutting, Stripping, Crimping | 1 S&F = stamped and formed contact | 2 CF = turned contact (cold formed)

Amphenol®			
			
H4™ S&F1	H4™ CF2	H4 Plus™ S&F1	H4 Plus™ CF2
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	✓	—	✓
—	✓	—	✓
✓	—	✓	—
✓	—	—	—
—	—	✓	—
—	✓	—	—
—	✓	—	—

i



The optional locators make it easier to guide the contacts during the crimping process.



7
PART NO.:
97 49 66 3

CRIMPING

Set of Mounting Tools

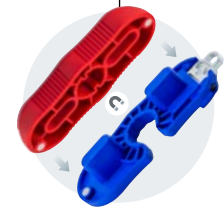
- ▶ Set of two mounting tools
- ▶ For tightening the housing screw connections
- ▶ Allows unlocking of the plug type connector

97 49 66 2
For PV plug type connector MC4®

97 49 66 3
For PV plug type connectors MC4® / MC4® Evo 2



Compact, low-weight construction:
Integrated magnets ensure that the two keys are held firmly together without screws or clamps.



PART NO.:
97 52 42

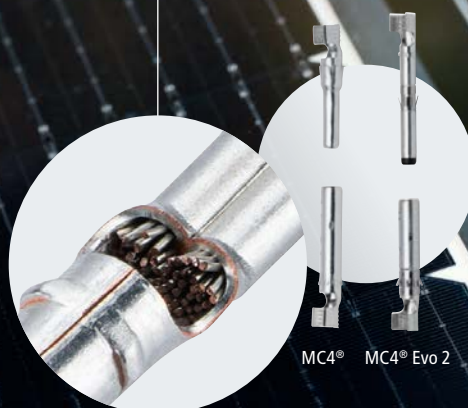
PART NO.:
97 52 42 6

KNIPEX PreciForce

Crimping pliers for MC4®/MC4® Evo 2

The KNIPEX PreciForce is our entry-level model for MC4® and MC4® Evo 2 PV plug type connectors. It is the ideal addition to an existing set of crimping tools for processing DC conductors in PV systems – and therefore perfect for small systems on single-family homes, industrial roofs or stand-alone systems.

- ▶ With improved crimp geometry for very good conductivity
- ▶ Reliable and consistently high crimp quality due to trigger lock in accordance with IEC 60352
- ▶ Precise, factory calibrated crimping pressure
- ▶ Efficient lever action ensures a high crimping force
- ▶ Good handling due to favourable handle position, low weight, short design and ergonomically shaped handles
- ▶ Crimping die is not exchangeable



For very good crimping results:
crimps quickly and cleanly

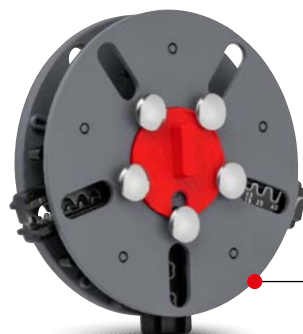


KNIPEX MultiCrimp

Crimping Pliers with changer magazine

The versatile 97 33 03 crimping pliers are the specialist for PV systems in the KNIPEX MultiCrimp family. Supplied ex works with a quick-changer magazine equipped with three crimping dies: for MC4®/MC4® Evo 2, uninsulated cable connectors and wire ferrules. Naturally with all the advantages of the entire family: quick change of crimping dies for all common crimp connectors, professional quality of the tool itself and the crimp connections made with it.

- Universal, powerful crimping pliers with the best features **for photovoltaic systems**
- **Only one tool with three crimping dies** for MC4®/MC4® Evo 2, uninsulated cable connectors and wire ferrules
- Quick and easy change of crimping dies without additional tools
- Safe and secure storage of the interchangeable dies in a round magazine for up to five crimping dies
- For PV cables, earthing conductors* and cabling to the meter cabinet



Expandable with optional crimping dies 97 39 05/06/09



Crimping die 97 39 08:
Crimps AC wires from the inverter to the meter cabinet – with crimping die 97 39 08 for insulated and uninsulated wire ferrules in 0.25–6 mm²



Crimping die 97 39 13:
Crimps connections for earthing cables, for example, for uninsulated cable connectors in 0.25–10 mm²



Crimping die 97 39 42:
Crimps connectors for PV conductors for MC4® and MC4® Evo 2 connectors in 4 and 6 mm²



Crimp System Pliers

The best in class. A genuine all-rounder!

KNIPEX Crimp System Pliers 97 43 XX are one of the best and most flexible crimping pliers in the world! Basic version 97 43 200 A comes without a crimping die, but can be customised with numerous quick-change dies from the optional 97 49 series to meet practically all cable assembly needs. Due to the almost parallel crimping movement, it crimps all types of connectors as perfectly as technically possible. If even greater precision is required, the optionally available locators allow for optimum alignment of the connectors and sleeves, ensuring the best possible conductivity.

KNIPEX offers pre-configured versions with crimping dies for MC4® and MC4® Evo 2 connectors – works especially for the needs of solar installers. Like all system crimping pliers, these variants can also be used to crimp other PV connectors and all standard insulated and non-insulated connectors – wire ferrules, cable terminals, optical fibre connectors and coaxial cables – with the appropriate crimping dies. When fitted with crimping dies from the accessories range, the KNIPEX system crimping pliers can crimp over 1,000 connector sizes and types; for details, see www.knipex.com



The parallel crimping movement of the system pliers ensures that the wire strands are arranged without gaps.

For all connectors
97 43 200 A



For MC4®/MC4® Evo 2
up to 6 mm²
97 43 66



For MC4® Evo 2
up to 10 mm²
97 43 66 EVO



10

PART NO.:
97 43 200 A



The crimping die and locator can be fitted and changed in just a few seconds using a hex key



Numerous contact holders for precise positioning

Crimp System Pliers

For exchangeable crimping dies

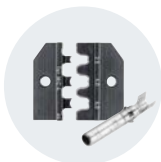
- ▶ Just one tool for practically all PV connectors and many other common connector types
- ▶ Almost parallel crimping motion
- ▶ Consistently high crimping quality due to precision dies and ratchet mechanism (unlockable)
- ▶ Precise, factory calibrated crimping pressure
- ▶ Force amplification through lever transmission – for fatigue-free working
- ▶ Crimping dies for special applications that go beyond the range offered, on request



Crimps practically everything: from wire ferrules...



... including cable terminals and connectors...



... through to special connectors such as MC4®.

THE FLEXIBLE
BASIC MODEL
FOR CUSTOMISED
EQUIPMENT



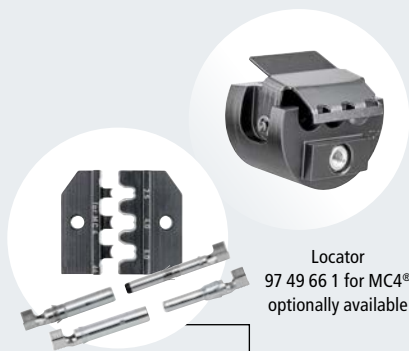
11

PART NO.:
97 43 66

FOR MC4® / MC4®
EVO 2 CONNECTORS
up to 6 mm²

Perfect for MC4® ex works

- ▶ Strong and powerful like the 97 43 200 A
- ▶ Also compatible with all 97 49 XX series crimping dies and contact receptacles
- ▶ Especially for photo-voltaic installations with MC4® plug type connectors



Locator
97 49 66 1 for MC4®
optionally available

Includes crimping die
for MC4® and MC4® Evo 2
plug type connectors in
2.5 mm², 4 mm² and 6 mm²



Crimping die and locator
pre-assembled for precise positioning –
for maximum conductivity

Perfect for MC4® Evo 2 ex works

Solar installers are increasingly turning to MC4® Evo 2 connectors when facing particularly stringent requirements and harsher environments. They are mechanically even more stable, more temperature-resistant and have a higher approved rated voltage than normal MC4® connectors.

The larger connectors, especially for 10 mm² conductors, can only be crimped with the 97 43 66 EVO version of the crimping system pliers. It has an increased jaw opening width specifically for this purpose and is fitted ex works with a special Evo 2 crimping die and locator for 4/6/10 mm² conductors. Like normal crimping system pliers, this special version can also be fitted with all crimping dies and locators from the optional 97 49 series.

**FOR MC4®
EVO 2 CONNECTORS**
up to 10 mm²

- **Specially modified system clamp:**
optimised for MC4® Evo 2 connectors up to 10 mm²
- **Professional standard for large photovoltaic installations**
- For one- and two-handed operation
- Fitting optional locator 97 49 71 1 also allows PV connectors from the MC4® series to be crimped



13

PART NO.:
97 52 18

PART NO.:
97 52 23

**FOR TWIN WIRE
FERRULES**
in 2x6/2x10/
2x16 mm²



**FOR UNINSULATED
CABLE TERMINALS
AND CONNECTORS,**
16 and 25 mm²



Crimping Pliers

For two-hand operation

High-cross-section conductors are required for potential equalisation, even for smaller systems in private homes. The connectors required here need to be crimped with a correspondingly high force, which is why KNIPEX provides crimping pliers specially designed for two-hand operation.

Two models for the most common connection variants are available here:

97 52 18 crimps twin wire ferrules 2x6/2x10/2x16 mm²

97 52 23 crimps uninsulated cable terminals and 16 and 25 mm² cable connectors

- ▶ **Up to 30% reduced manual force** compared to standard commercial crimping pliers due to lever transmission
- ▶ **Consistently high crimp quality** thanks to precision inserts and positive lock (can be unlocked)
- ▶ Precise, factory calibrated crimping pressure
- ▶ Two-hand operation for easy crimping of large wire cross-sections
- ▶ Easy handling as a result of well balanced centre of gravity, angled head and ergonomically shaped handles
- ▶ Crimping die is not exchangeable





The MOLLE straps extend
the capacity of the
KNIPEX Modular X18

Tool Backpack

Modular X18 Electric

The Modular X18 Electric tool backpack comes with 22 high-quality branded tools for all electric professionals ex works and also offers plenty of room for the specific needs of solar installers. Also available empty (00 21 50 LE).

14

PART NO.:
00 21 50 E



High-quality branded tools from



TOOL ASSORTMENTS

TOOL ASSORTMENTS

19

PART NO.:
97 91 04 V01

Tool Case for Photovoltaics

PART NO.:
97 91 04 V02

PART NO.:
97 91 04 V03

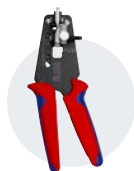
FOR MC4®
up to 6 mm²

FOR MC4®
up to 10 mm²

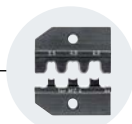


97 91 04 V01

Complete crimping set: with cable cutter, wire stripper with customised blades for PV cables, crimping pliers for MC4® plug type connectors in 2.5/4.0/6.0 mm² and assembly tools for the demands of MC4® connector housings.



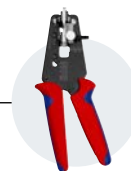
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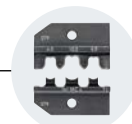
97 49 66



97 49 66 1



12 12 12



97 49 71



97 49 71 1

97 91 04 V02

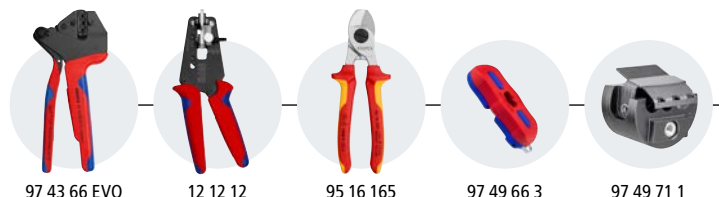
Like the V01, the V02 is also complete, but is intended **for larger cables** with cross-sections of 4/6/10 mm² – and therefore also for higher-current PV systems.

**FOR MC4®/
MC4® EVO 2**
up to 10 mm²



97 91 04 V03

Version V03 comes with high-quality tools for processing MC4® and MC4® Evo 2 PV connectors.



97 43 66 EVO

12 12 12

95 16 165

97 49 66 3

97 49 71 1

**CUSTOMISED
CRIMPING DIE
ASSEMBLY**
s. table p. 10



97 91 01 (for 2.5/4/6 mm²)

Tool configuration as 97 91 04 V01, but without installation tool kit, crimping die and locators; for individual configuration with crimping inserts and locators, see table on p. 10.

97 91 03 (for 4/6/10 mm²)

Tool configuration as 97 91 04 V02, but without installation tool kit, crimping die and locators; for individual configuration with crimping inserts and locators, see table on p. 10.

EVEN MORE POWERFUL HELP FOR SOLAR INSTALLERS



PLIERS WRENCH

PART NO.:

86 03 180

When cordless tools can't be used, the pliers wrench uses the ratchet principle on all connections up to a width across flats of 40.



SNIPE NOSE SIDE CUTTING PLIERS (STORK BEAK PLIERS)

PART NO.:

26 16 200

The "stork beak pliers" also grip hard-to-reach workpieces where other tools have no chance.



PLASTIC GRIPPING PLIERS

PART NO.:

98 62 01

When working in the vicinity of live systems, the all-plastic gripping pliers minimise the risk of short circuits.



KNIPEX TwinGrip

PART NO.:

82 02 200

Slim and grips strongly with the front: even worn screws and bolts can be loosened in hard-to-reach places.



SNIPE NOSE SIDE CUTTING PLIERS (STORK BEAK PLIERS)

PART NO.:

26 26 200

Reaching around the corner: like the 26 16 200, but with tips bent by 40°.



PLASTIC SNIPE NOSE PLIERS

PART NO.:

98 62 02

Same as 98 62 01, but can also be used in tight spaces, for example deep inside electrical cabinets.

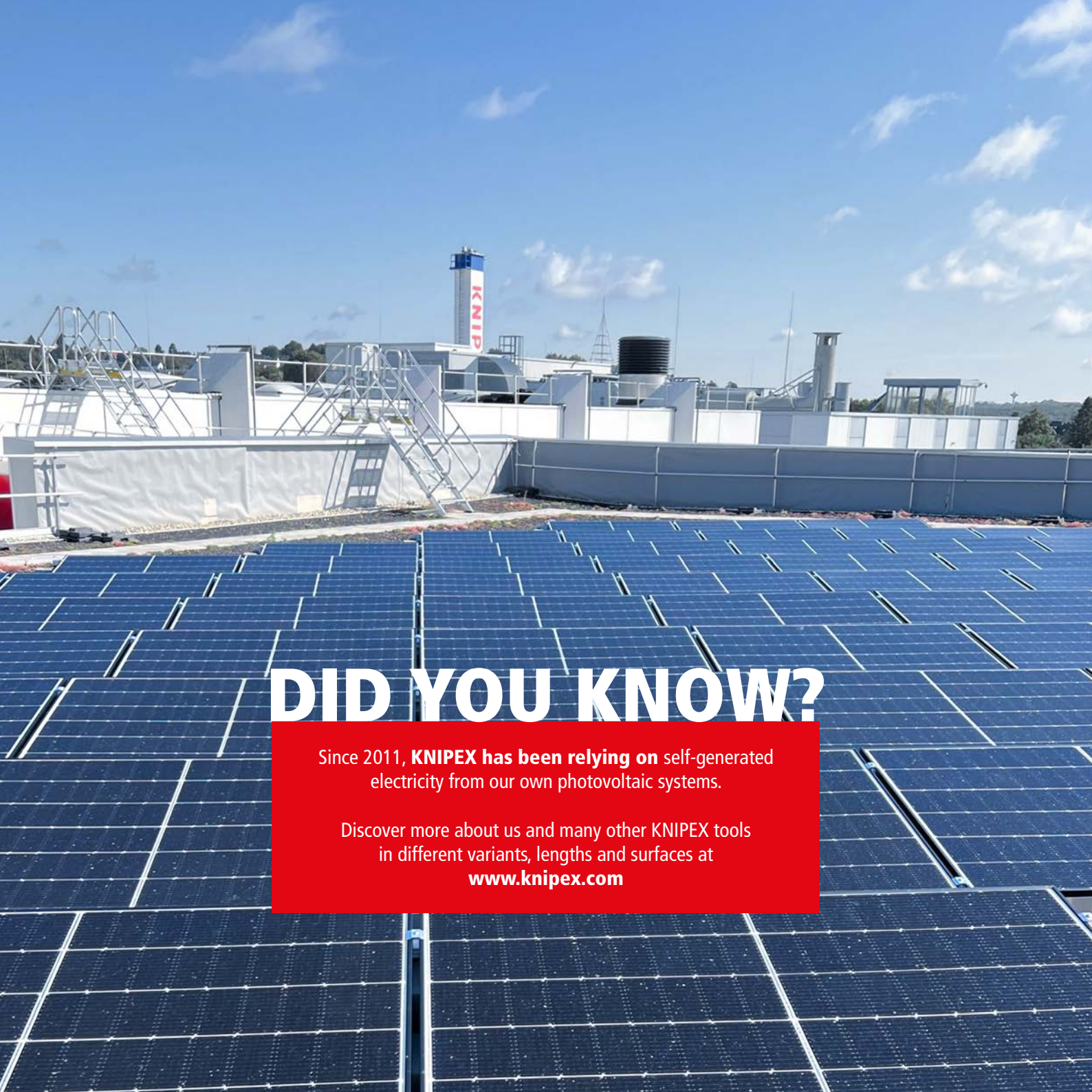


KNIPEX X-Cut®

PART NO.:

73 06 160

High-ratio compact side cutter: considerably easier to work with than conventional side cutters of the same size.



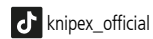
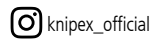
DID YOU KNOW?

Since 2011, **KNIPEX** has been relying on self-generated electricity from our own photovoltaic systems.

Discover more about us and many other KNIPEX tools in different variants, lengths and surfaces at www.knipex.com



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