STÄUBLI

Tools and accessories

Renewable Energy | Solar Photovoltaics

EN

THE ORIGINAL
MC4
SINCE 1996

Content

ASSEMBLY TOOLS

MC4 and MC4-Evo 2 crimping pliers

MC4 and MC4-Evo 2 crimping pliers
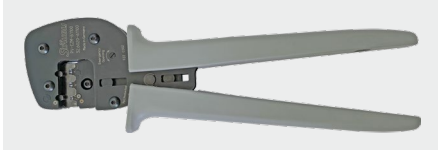
PV-CZM...

MC4-Evo 2 locator

PV-LOC-MC4-Evo 2...

MC4 locator

PV-LOC-MC4...

Crimping die

PV-ES-CZM...

- PV-CZM-60100 and PV-CZM-61100 are designed to crimp open crimp contacts. Each plier comes with one crimping die and two locators for crimping MC4 and MC4-Evo 2 contacts.
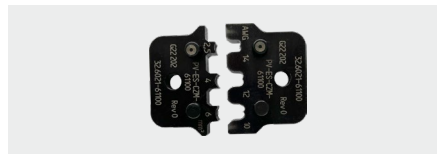- PV-CZM-63100 is designed to crimp MC4 barrel crimp contacts.
- Crimping kit PV-CZM-64100 comes with crimping die PV-ES-CZM-61100 and locator for MC4 open crimp contacts and crimping die PV-ES-CZM-63100 and locator for MC4 barrel crimp contacts.
- TÜV and UL certified product.
- Registered design feature providing traceability information about crimping tool on each individual crimped connection.

Checking crimped connections using crimp die identifier

A crimped connection made with the MC4 and MC4-Evo 2 crimping tool and the appropriate crimping die can be identified by the visible crimp die identifier. This crimp die identifier is a registered design feature. It provides information about the conductor cross-section, crimp height, and crimp width. For further information, see the MA704 assembly instructions.

Crimping die   crimp die identifier
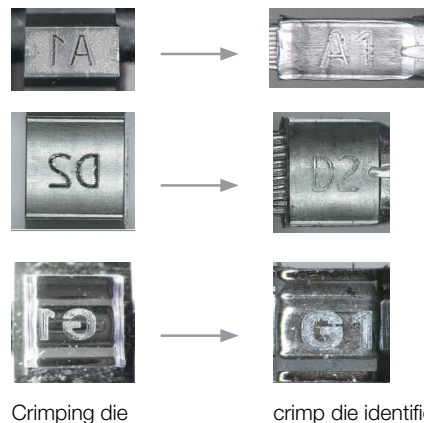
Usage matrix

Type	Conductor cross section	Open crimp contacts B-Crimp	Closed crimp contacts* O-Crimp	Crimping pliers			Crimping die			Locators				
				PV-CZM-60100 32.6020-60100	PV-CZM-61100 32.6020-61100	PV-CZM-63100 32.6020-63100	PV-ES-CZM-60100 32.6021-60100	PV-ES-CZM-61100 32.6021-61100	PV-ES-CZM-63100 32.6021-63100	4 mm², 6 mm², 10 mm² PV-LOC-MC4 32.6081	2.5 mm², 4 mm², 6 mm² PV-LOC-MC4 32.6082	4 mm², 6 mm², 10 mm² PV-LOC-MC4-Evo 2 32.6083	2.5 mm², 4 mm², 6 mm² PV-LOC-MC4-Evo 2 32.6084	14 AWG, 12-10 AWG, 8 AWG PV-LOC-MC4 14/12/10/8 32.6085
PV-KBT4/2,5...-UR, PV-KST4/2,5...-UR	2.5 mm²	✓			✓			✓			✓			
	14 AWG	✓			✓			✓			✓			
PV-KBT4/6...-UR, PV-KST4/6...-UR	4 mm²	✓		✓	✓		✓	✓		✓	✓			
	12 AWG	✓		✓	✓		✓	✓		✓	✓			
	6 mm²	✓		✓	✓		✓	✓		✓	✓			
	10 AWG	✓		✓	✓		✓	✓		✓	✓			
PV-KBT4/10..., PV-KST4/10...	10 mm²	✓		✓			✓			✓				
PV-KST4-EVO 2/2.5...-UR PV-KBT4-EVO 2/2.5...-UR	2.5 mm²	✓			✓			✓					✓	
	14 AWG	✓			✓			✓					✓	
PV-KST4-EVO 2/6...-UR PV-KBT4-EVO 2/6...-UR	4 mm²	✓		✓	✓		✓	✓				✓	✓	
	12 AWG	✓		✓	✓		✓	✓				✓	✓	
	6 mm²	✓		✓	✓		✓	✓				✓	✓	
	10 AWG	✓		✓	✓		✓	✓				✓	✓	
PV-KST4-EVO 2A/6... PV-KBT4-EVO 2A/6...	4 mm²	✓		✓	✓		✓	✓				✓	✓	
	12 AWG	✓		✓	✓		✓	✓				✓	✓	
	6 mm²	✓		✓	✓		✓	✓				✓	✓	
	10 AWG	✓		✓	✓		✓	✓				✓	✓	
PV-KST4-EVO 2A/10... PV-KBT4-EVO 2A/10...	10 mm²	✓		✓			✓					✓		
	8 AWG	✓		✓			✓					✓		
PV-KBT4/5...-UR, PV-KST4/5...-UR PV-KBT4/5...UR AU PV-KST4/5...UR AU	14 AWG		✓			✓			✓					✓
	12 AWG		✓			✓			✓					✓
	10 AWG		✓			✓			✓					✓
PV-KBT4/8...-UR, PV-KST4/8...-UR PV-KBT4/8...UR AU PV-KST4/8...UR AU	8 AWG		✓			✓			✓					✓

Ordering information

Order-No.	Type	Designation	B-Crimp	O-Crimp	mm²	AWG
32.6020-61100	PV-CZM-61100	**Size 1:** Crimping pliers incl. locators for MC4 and MC4-Evo 2	×		2.5 mm²; 4 mm²; 6 mm²	14 AWG; 12 AWG; 10 AWG
Consists of:						
32.6082	PV-LOC-MC4 2.5/4/6	MC4 locator	×		2.5 mm²; 4 mm²; 6 mm²	14 AWG; 12 AWG; 10 AWG
32.6084	PV-LOC-MC4-Evo 2 2.5/4/6	MC4-Evo 2 locator	×			
32.6021-61100	PV-ES-CZM-61100	Crimping die	×			
32.6020-60100	PV-CZM-60100	**Size 2:** Crimping pliers incl. locators for MC4 and MC4-Evo 2	×		4 mm²; 6 mm²; 10 mm²	12 AWG; 10 AWG; 8 AWG
Consists of:						
32.6081	PV-LOC-MC4 4/6/10	MC4 locator	×		4 mm²; 6 mm²; 10 mm²	12 AWG; 10 AWG; 8 AWG
32.6083	PV-LOC-MC4-Evo 2 4/6/10	MC4-Evo 2 locator	×			
32.6021-60100	PV-ES-CZM-60100	Crimping die	×			
32.6020-63100	PV-CZM-63100	**Size 3:** Crimping pliers incl. locator for MC4		×		14 AWG; 12 – 10 AWG; 8 AWG
Consists of:						
32.6085	PV-LOC-MC4 14/12-10/8	MC4 locator		×		14 AWG; 12 – 10 AWG; 8 AWG
32.6021-63100	PV-ES-CZM-63100	Crimping die		×		
32.6020-64100	PV-CZM-64100	**Size 4:** Crimping pliers incl. locators for MC4	×	×	2.5 mm²; 4 mm²; 6 mm²	14 AWG; 12 AWG; 10 AWG; 8 AWG
Consists of:						
32.6320	PV-CZM-	MC4 crimping pliers				
32.6082	PV-LOC-MC4 2.5/4/6	MC4 locator	×		2.5 mm²; 4 mm²; 6 mm²	14 AWG; 12 AWG; 10 AWG
32.6021-61100	PV-ES-CZM-61100	Crimping die	×			
32.6085	PV-LOC-MC4 14/12-10/8	MC4 locator		×		14 AWG; 12 – 10 AWG; 8 AWG
32.6021-63100	PV-ES-CZM-63100	Crimping die		×		

Further information

Assembly instructions

For assembly instructions for "MC4 and MC4-Evo 2 crimping pliers" please consult:
www.staubli.com/re-downloads.html ➡ English ➡ Assembly info ➡ **MA704**

MC4 crimping pliers for closed crimp contacts

MC4 crimping pliers for closed crimp contacts

PV-CZLX/6AWG...

- Manual crimping pliers for closed 6 AWG crimp terminals of the MC4 product family (PV-KBT4/13II-UR and PV-KST/13II-UR).
- Locator included for correct positioning of the crimping.

Ordering information

Order No.	Type	Designation	Connector system	Crimp range		Crimptype	
				mm²	AWG	Open AWG	Closed AWG
32.0349	PV-CZLX/6AWG	Crimping pliers, incl. locator	MC4		6		6
Individual parts							
32.0350	PV-CZL/6AWG-LOC	Locator	MC4		6		6

Further information

Assembly instructions

For assembly instructions for "MC4 crimping pliers for closed crimp contacts (PV-CZLX/6AWG)" please consult: www.staubli.com/re-downloads.html ➜ English ➜ Assembly info ➜ **MA710**

MC4 crimping pliers for semi-professional use (IEC)

MC4 crimping pliers for semi-professional use

PV-CZM-BS

- Application: For occasional field assembly of IEC certified Stäubli connectors.
- Not UL certified.

Ordering information

Order No.	Type	Designation	Pliers cross sections	Connector system
			mm²	
32.6025	PV-CZM-BS	Crimping pliers	2.5; 4; 6	MC4

Further information

Assembly instructions

For assembly instructions for "MC4 crimping pliers for semi-professional use" please consult:
www.staubli.com/re-downloads.html ➜ English ➜ Assembly info ➜ **MA289**

Stripping pliers

Stripping pliers

PV-AZM...

- Suitable for all PV leads; in particular Flex-Sol-Evo leads.
- For stripping small amounts of lead.
- With length stop.

Ordering information

Order No.	Type	Designation	Pliers cross sections	
			mm²	AWG
32.6027-156	PV-AZM-156	Stripping pliers incl. built-in stripping blades	1.5; 2.5; 4; 6	
32.6027-410	PV-AZM-410	Stripping pliers incl. built-in stripping blades	4; 6; 10	
32.6027-128	PV-AZM-128	Stripping pliers incl. built-in stripping blades		12; 10; 8
32.6027-106	PV-AZM-106	Stripping pliers incl. built-in stripping blades		10; 8; 6
32.6057-156	PV-M-AZM-156	Stripping blades set	1.5; 2.5; 4; 6	
32.6057-410	PV-M-AZM-410	Stripping blades set	4; 6; 10	
32.6057-128	PV-M-AZM-128	Stripping blades set		12; 10; 8
32.6057-106	PV-M-AZM-106	Stripping blades set		10; 8; 6

Further information

Assembly instructions

For assembly instructions for "Stripping pliers" please consult:

www.staubli.com/re-downloads.html ➜ English ➜ Assembly info ➜ **MA267**

Open-end spanner and unlocking tool

MC4 open-end spanner set

PV-MS

MC4-Evo 2 unlocking tool

PV-MS-MC4-Evo 2

- For pre-tightening and loosening the cap nut.
- For MC4 and MC4-Evo 2, also for releasing the locking of the plug-in connection.

MC4 and MC4-Evo 2 open-end spanner set

PV-MS-PLS

MC4-Evo ready open-end spanner set

PV-MS-MC4-EVO READY

Ordering information

Order No.	Type	Designation	Material
32.6024	PV-MS	MC4 open-end spanner set (2 pcs.)	Plastic
32.6058	PV-MS-PLS	MC4 and MC4-Evo 2 open-end spanner set (2 pcs.)	Metal
32.6066	PV-MS-MC4-Evo 2	MC4-Evo 2 unlocking tool	Plastic
32.6070	PV-MS-MC4-EVO READY	MC4-Evo ready open-end spanner set (2 pcs.)	Plastic

Further information

Assembly instructions
For assembly instructions for "MC4 and MC4-Evo 2 open-end spanner set" please consult:
www.staubli.com/re-downloads.html ➜ English ➜ Assembly info ➜ **MA270**

Cable cutter

Cable cutter

PV-WZ-KS

- Cable cutter with a special cutting blade geometry for an easy, clean cut.
- Ergonomic one-handed operation as it is fitted with an opening spring.
- No crushing or deformation of wire.
- To cut single stranded, multiple stranded, and finely stranded copper and aluminum conductors and wires.

Ordering information

Order No.	Type	Designation	Max. wire diameter
32.6080	PV-WZ-KS	Cable cutter	15 mm

Note

Not to be used on steel wire, wire rope, and hard-drawn copper cable.

Further information

Assembly instructions

For assembly instructions for "Cable cutter" please consult:
www.staubli.com/re-downloads.html ➡ English ➡ Assembly info ➡ **MA705**

Torque tool set

Torque tool set

PV-WZ-TORQUE-SET

- Adjustable torque tool set with optimized design.
- Easy insertion and removal of the lead to be assembled.
- Ergonomic handle
- One-handed operation
- For manual final assembly of the cap nut with the correct torque for original MC4 and MC4-Evo 2 connectors.

- Comes with a multi-component special pistol grip which provides a safe and comfortable fit in the hand and high-power transfer.

Technical data

Technical data	
Range	3.0 N m – 6.0 N m
Accuracy	±6 % (EN ISO 6789)
Display of the set torque	Numerical scale

Ordering information

Order No.	Type	Designation
32.0065	PV-WZ-TORQUE-SET	Torque tool set: consisting of torque tool (incl. extra tool integrated in handle to set torque), adapter and socket wrench insert

TOOL CASES AND TOOL BELT

MC4 and MC4-Evo 2 tool case (IEC)

MC4 and MC4-Evo 2 tool case (IEC)

PV-Installer Tool Case SET
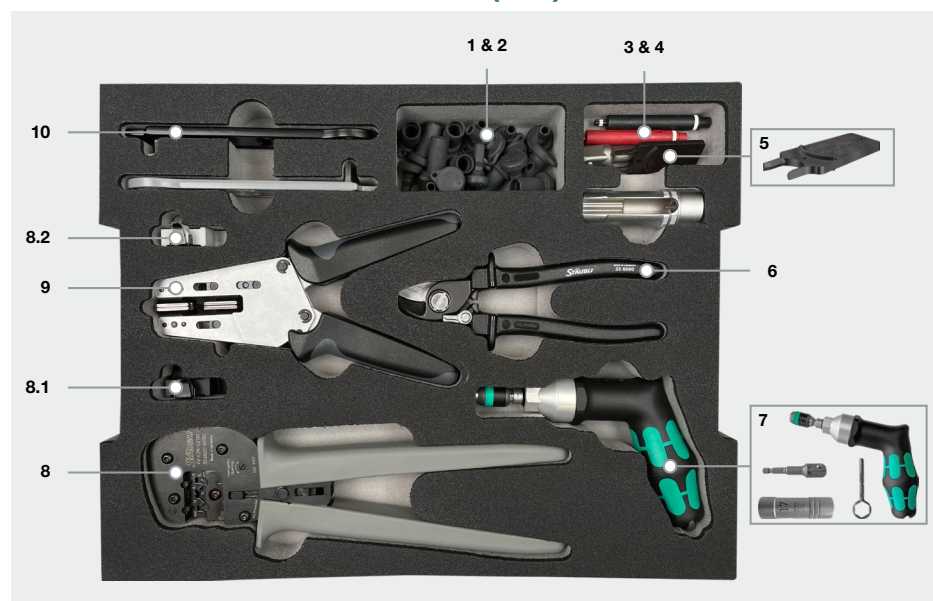
- Robust plastic case with tools for the assembly of MC4 and MC4-Evo 2.
- Equipped for metric cable sizes (mm²).
- Equipped for open crimp contacts (4 mm², 6 mm², 10 mm²).

Ordering information

| Pos.	Order No.	Type	Description	Dimensions (length × width × height)
	32.6126	PV-Installer Tool Case SET	MC4 and MC4-Evo 2 tool case	444 mm × 350 mm × 118 mm

Consisting of:

Pos.	Order No.	Type	Description	
1	32.0716	PV-BVK4	Sealing caps socket (10 pcs.)	
2	32.0717	PV-SVK4	Sealing caps plug (10 pcs.)	
3	32.6028	PV-PST	MC4 test plug	
4	32.6073	PV-EVO-PST	MC4-Evo 2 test plug	
5	32.6066	PV-MS-MC4-Evo 2	MC4-Evo 2 unlocking tool	
6	32.6080	PV-WZ-KS	Cable cutter	
7	32.0065	PV-WZ-TORQUE-SET	Torque tool set	
8	32.6020-60100	PV-CZM-60100	MC4 and MC4-Evo 2 crimping pliers	
8.1	32.6081	PV-LOC-MC4	MC4 locator	
8.2	32.6083	PV-LOC-MC4-Evo 2	MC4-Evo 2 locator	
9	32.6027-410	PV-AZM-410	Stripping pliers	
10	32.6058	PV-MS-PLS	MC4 and MC4-Evo 2 open-end spanner set	

MC4 tool case (UL)

MC4 tool case (UL)
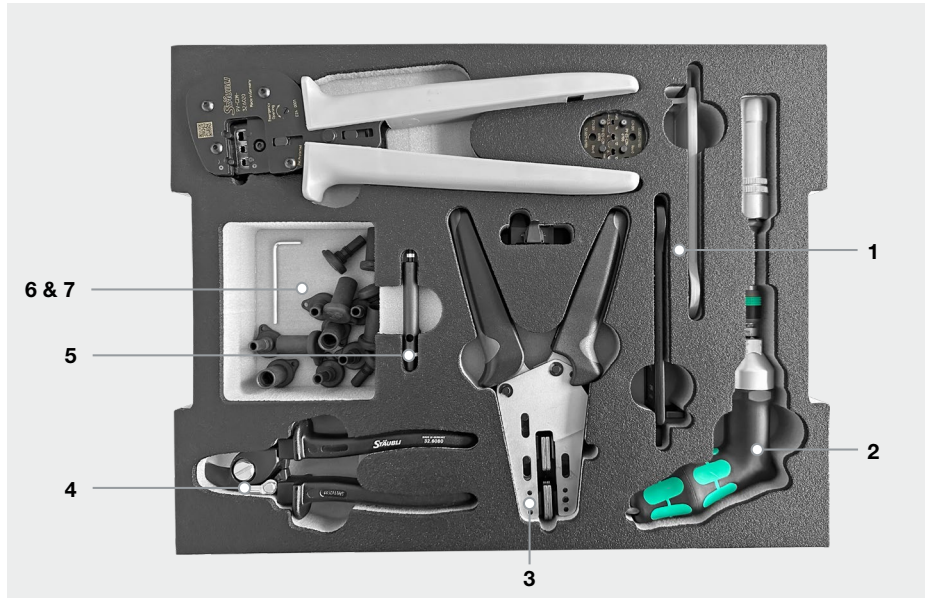
PV-WZ/AWG-SET-64100

- Robust plastic case with tools for assembly of MC4 connectors.
- Configured for American Wire Gauge (AWG) cable sizes (14 AWG to 8 AWG).
- Available fully populated with basic content and crimp tool kit PV-CZM-64100. The kit includes crimping plier PV-CZM with crimp insert PV-ES-CZM-63100 and locator PV-LOC-MC4 14/12-10/8 preinstalled for crimping of closed crimp contacts. It also includes crimp insert PV-ES-CZM-61100 and locator PV-LOC-MC4 2.5/4/6 for crimping of open crimp contacts.
- Also available only with basic content (no crimping pliers).

Ordering information

Pos.	Order No.	Type	Designation	Dimension (length × width × height)
	32.6128-64100	PV-WZ/AWG-SET-64100	Includes basic content and tool kit PV-CZM-64100 (open contacts 14/12/10 AWG, closed contacts 14/12/10/8 AWG)	444 mm × 350 mm × 118 mm
	32.6128-00000	PV-WZ/AWG-SET	Includes basic content (crimping pliers not included)	

Basic content

1	32.6058	PV-MS-PLS	MC4 and MC4-Evo 2 open-end spanner set, (2 pcs.), metal	
2	32.0065	PV-WZ-TORQUE-SET	Torque tool set	
3	32.6027-128	PV-AZM-128	Stripping pliers (cable sizes 12/10/8 AWG)	
4	32.6080	PV-WZ-KS	Cable cutter	
5	32.6028	PV-PST	MC4 test plug	
6	32.0716	PV-BVK4	Sealing cap for female cable couplers (10 pcs.)	
7	32.0717	PV-SVK4	Sealing cap for male cable couplers (10 pcs.)	

Tool belt for MC4 and MC4-Evo 2

Tool pouch

Material pouch

MC4 and MC4-Evo 2 tool belt

Installer Tool Belt SET

- The correct tool is always at hand in the MC4 and MC4-Evo 2 tool belt.
- The MC4 and MC4-Evo 2 tool belt consists of:
  - a tool bag with leather holders, integrated elastic compartments, and D-ring to keep all tools needed for on-site assembly.
  - a material bag with zipper for safe storage of connectors and other small parts. The material bag can be kept open thanks to a snap fastener.
  - a belt with quick fastener.
- Long-lasting thanks to heavy-duty, weatherproof material.
- Easy to put the tool belt on and take it off thanks to an adjustable snap fastener.
- Stable seating, the tool belt will not twist.

Note:

The MC4 und MC4-Evo 2 tool belt is delivered without the tools and materials shown here.

Ordering information

Order No.	Type	Designation	Dimensions (length × width × height)
32.0387	Installer Tool Belt SET	MC4 and MC4-Evo 2 tool belt	
Consists of:			
		Tool pouch	26 cm × 14.5 cm × 27 cm
		Material pouch	17.5 cm × 10.5 cm × 18.5 cm
		Belt with quick fastener	155 cm × 5.5 cm

ACCESSORIES

MC4 test plug

MC4 test plug

PV-PST

- This test plug is used to verify the correct location of the MC4 contact in the insulation.

Ordering information

Order No.	Type
32.6028	PV-PST

MC4-Evo 2 test plug

MC4-Evo 2 test plug

PV-EVO-PST

- This test plug is used to verify the correct location of the MC4-Evo 2 metal contact in the insulation.

Ordering information

Order No.	Type
32.6073	PV-EVO-PST

MC4 and MC4-Evo 2 sealing caps

MC4 and MC4-Evo 2 sealing cap for female cable couplers

PV-BVK4

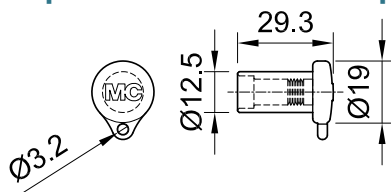## MC4 and MC4-Evo 2 sealing cap for male cable couplers

PV-SVK4

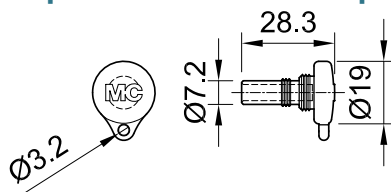- Sealing caps for protective purpose of unplugged PV connectors.

Dimensional drawings

Dimensions in mm

MC4 and MC4-Evo 2 sealing cap for female cable couplers

PV-BVK4

MC4 and MC4-Evo 2 sealing cap for male cable couplers

PV-SVK4

Ordering information

Order No.	Type	Suitable for socket side	Suitable for plug side	Material	Connector system	Piece
32.0716P100	PV-BVK4	×		TPE	MC4 and MC4-Evo 2	100
32.0717P100	PV-SVK4		×	TPE	MC4 and MC4-Evo 2	100

Further information

Assembly instructions

For assembly instructions for "MC4 and MC4-Evo 2 sealing caps" please consult:
www.staubli.com/re-downloads.html ➡ English ➡ Assembly info ➡ **MA258**

Safety lock clip

Safety lock clip

PV-SSH4

- The pluggable safety lock clip secures the PV plug connection. The plug connection can only be unlocked with the open-end spanner set (PV-MS or PV-MS-PLS).
- The safety lock clip is suitable for MC4 connector systems.

Ordering information

Order No.	Type	Designation	Connector system
32.5280	PV-SSH4	Safety lock clip	MC4

Further information

Assembly instructions

For assembly instructions for "Safety lock clip" please consult:
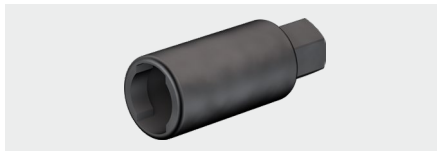www.staubli.com/re-downloads.html ➜ English ➜ Assembly info ➜ **MA252**

Socket wrench insert

Socket wrench insert to tighten
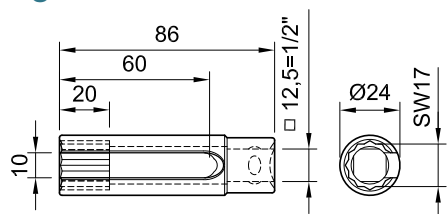
PV-WZ-AD/GWD

Socket wrench insert to secure

PV-SSE-AD4

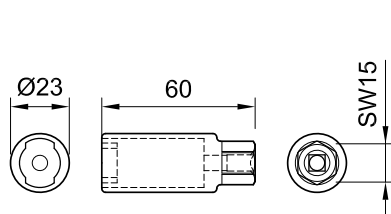- Stäubli recommends these socket wrench inserts for a simple and safe assembly of the panel receptacles.

Dimensional drawings

Dimensions in mm

Socket wrench insert to tighten

PV-WZ-AD/GWD

Socket wrench insert to secure

PV-SSE-AD4

Ordering information

Order No.	Type	Designation
32.6006	PV-WZ-AD/GWD	Socket wrench insert to tighten
32.6026	PV-SSE-AD4	Socket wrench insert to secure

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