CAMOZZI
Technopolymers

MICRODUCT CONNECTORS SERIES V4000 PLUS LE

Low emission passive connectors for telecoms applications

About us

CAMOZZI TECHNOPOLYMERS

Founded in 1976, **Camozzi Technopolymers** has been part of the Camozzi Group since 1994. **Specialized in the injection molding** of technical polymers, the company offers customers a complete service, from the **co-design** of components and to the selection of the most suitable materials, through to the production of molds and all finishing and assembly processes.

With significant investment in technological innovation and a continuous focus on R&D, today Camozzi Technopolymers offers unique expertise that places it among the **European leaders** for capability, production techniques, **sustainability and quality standards**.

Key Products

FTTx CONNECTORS

A close synergy with Camozzi Automation has allowed Camozzi Technopolymers to develop the new **Series V4000 PLUS LE -** the latest generation of **low emission** connectors created using **sustainable raw materials**.

These new, transparent, **metal-free** push-in connectors are the perfect solution for **blown fibre applications**.

With a full technopolymer design, **unrivalled impact resistance**, and fast and reliable microduct connection the new Series V4000 PLUS LE makes the ideal solution for your **infrastructure deployment**.

In compliance with:

- **CEI EN 50411-2-8**
- **CEI EN 61386-24**
- **ISO 14067**
- **Reach**
- **RoHS**

Product Certifications

Designed for Direct Buried (DB) and Direct Install (DI) applications

Turning green

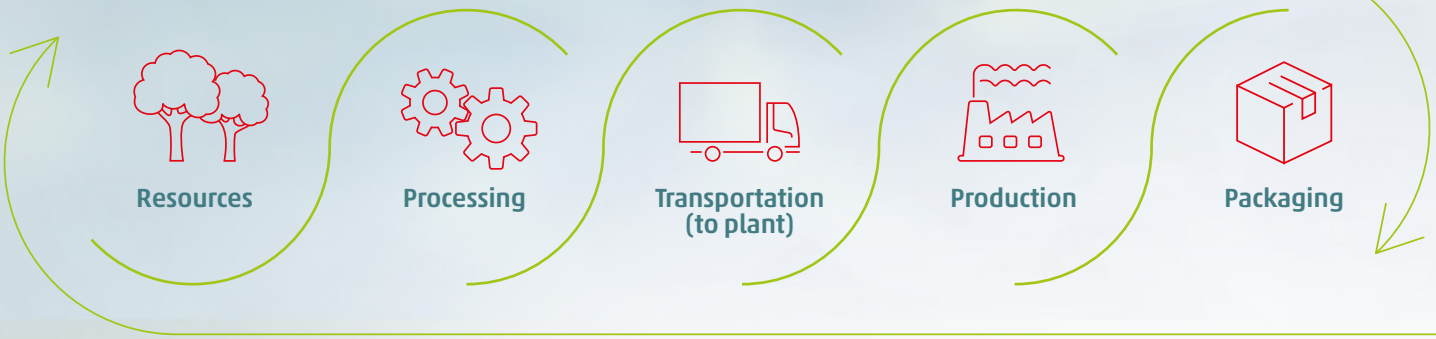
CAMOZZI TECHNOPOLYMERS ACHIEVES ISO 14067

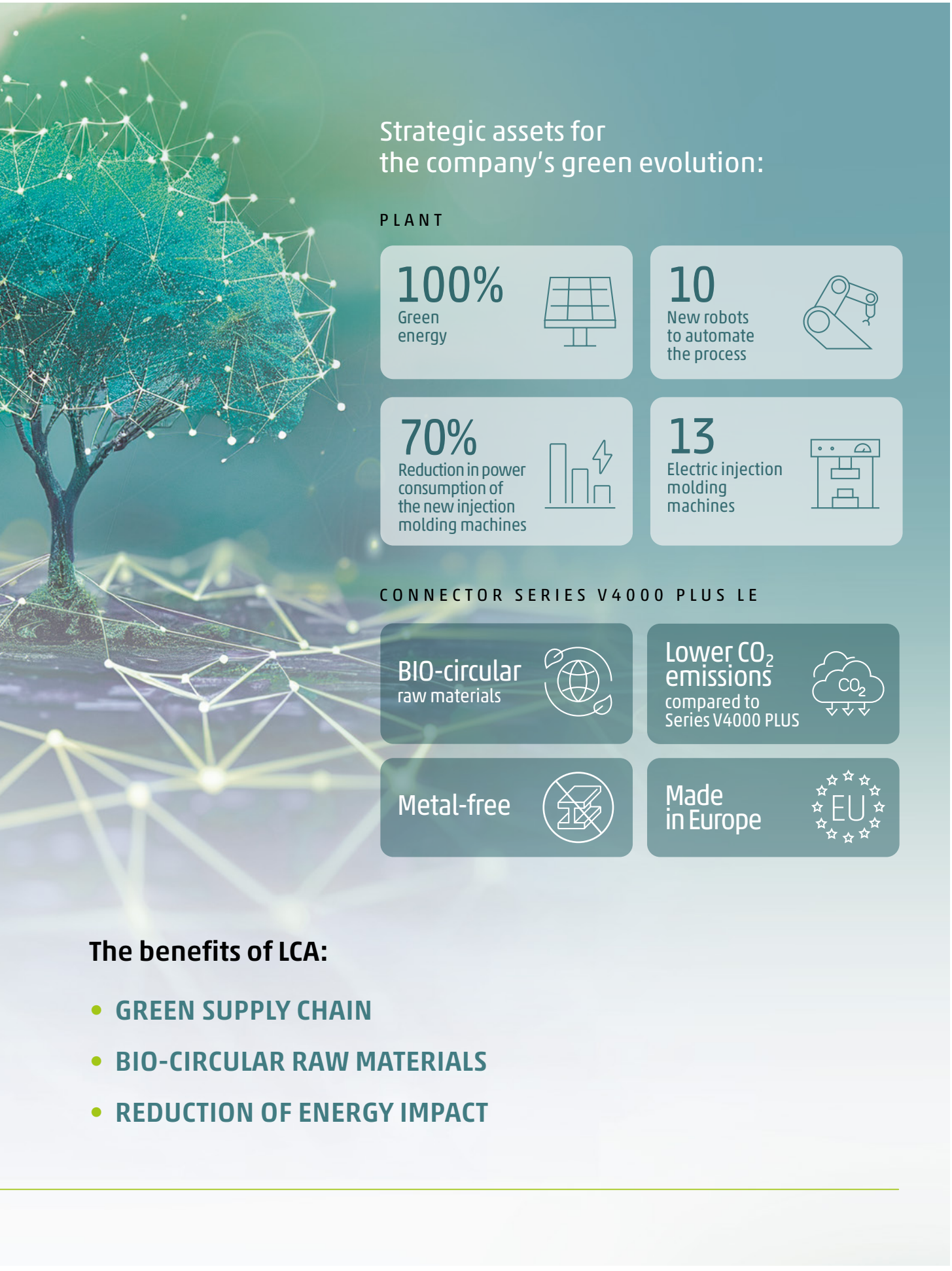
Camozzi Technopolymers has undertaken a **Life Cycle Assessment (LCA)** of the connectors **Series V4000 PLUS LE**, one of the company's core products. LCA is a methodology used to evaluate the overall environmental impact of a product or service by considering all phases of its life cycle, from raw materials acquisition (cradle) to exit from the production facility (gate). This makes it possible to calculate the **Carbon Footprint (CFP)** of these connectors **in accordance with ISO 14067 standards** (and ISO 14040 and 14044, which are the reference points for an LCA analysis).

Due to the company's organizational structure and its expertise in **Environmental Social and Governance (ESG)**, it has also been possible to adopt the systematic application of ISO 14067 to enable the autonomous calculation of the **Carbon Footprint of the product (CFP)**.

All activities, procedures and documentation issued **in compliance with ISO 14067** have been **certified by DNV**, which conducted a critical review of the study report, the procedures implemented by the company, the accuracy of the data, the adoption of correct methodologies, the conformity to guidelines and transparency in communication with stakeholders.

Camozzi Technopolymers Life Cycle Assessment perimeter: from cradle to gate





Strategic assets for the company's green evolution:

PLANT

100% Green energy

10 New robots to automate the process

70% Reduction in power consumption of the new injection molding machines

13 Electric injection molding machines

CONNECTOR SERIES V4000 PLUS LE

BIO-circular raw materials

Lower CO_2 emissions compared to Series V4000 PLUS

Metal-free

Made in Europe

The benefits of LCA:

- GREEN SUPPLY CHAIN
- BIO-CIRCULAR RAW MATERIALS
- REDUCTION OF ENERGY IMPACT

Series V4000 PLUS LE

MICRODUCT CONNECTORS

The **metal-free** push-in connectors of the **Series V4000 PLUS LE** feature a **transparent polycarbonate body** that enhances the **thermal stability** of the connector while providing exceptional **impact resistance**. Their capability to be **connected and disconnected quickly and effortlessly**, as well as their **robust and compact design** and the use of **durable materials**, make these connectors ideal for the most demanding environments, including **Direct Install** (DI) or **Direct Buried** (DB) applications for telecommunication network deployment.

The **TÜV SÜD** certification

Series V4000 PLUS LE connectors are certified by TÜV Süd to CEI EN 50411-2-8 standards, which requires validation to compliance with the criteria listed below, including verification of the related production processes.

STANDARD	TYPE OF TEST
EN 60794-1-2	Impact
EN 61300-2-1	Vibration (sinusoidal)
EN 61300-2-4	Microduct retention
EN 61300-2-5	Torsion/Twist
EN 61300-2-10	Crush resistance
EN 61300-2-22	Change of temperature
EN 61300-2-23	Water immersion
EN 61300-2-26	Salt mist
EN 61300-2-33	Re-entries
EN 61300-2-34	Resistance to solvents and contaminating fluids
EN 61300-2-34	Resistance to stress cracking solvents
EN 61300-2-37	Microduct bending
EN 61300-2-38	Sealing performance after test
EN 61300-2-38	Pressure loss during test
EN 61300-3-1	Visual appearance
EN 60529	Protection rating
EN 61386-24	Conduit systems buried underground

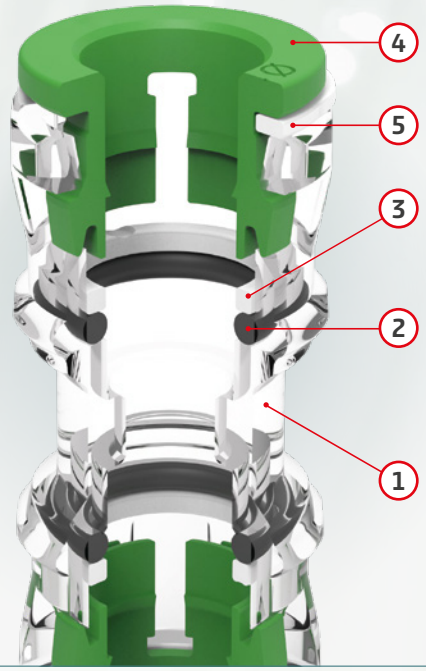
Key features

- Metal-free (full plastic design)
- Suitable for use in Direct Buried (DB) applications
- CO_2 emissions reduced up to 84% compared to Series V4000 PLUS

- Easy "push-in" connection
- Pre-assembled safety clip
- Transparent body

GENERAL INFORMATION	
• **Materials**	**See the operating scheme** **1** = Polycarbonate body **2** = NBR seal **3** = Polyacetal washer **4** = Polyacetal collet **5** = Polyacetal safety clip
• **Versions**	Direct Install (DI), Direct Buried (DB), Reducing, Endstop
• **Installation and blowing temperature**	from -15°C to +50°C
• **Operating temperature (after blowing)**	from -20°C to +70°C
• **Maximum blowing pressure**	20 bar
• **Fluid**	Compressed air with blowing system
• **Microduct to connect**	High-density Polyethylene (HDPE)
• **Microduct outer diameters**	3, 4, 5, 7, 8, 8.5, 10, 12, 12.7, 14, 16, 18, 20 mm
• **Estimated life***	25 years
• **Standards**	CEI EN 50411-2-8 | CEI EN 61386-24 ISO 14067 | Reach | Rohs
• **Patent**	Connectors patent
• **Protection rating**	IP68

OPERATING SCHEME



• **Direct Buried (DB) Use**	CV4580 - CV4581 - CV4582 - CV4750 models can be used in direct buried installations. We do not recommend burying thin microduct which can fail in DB conditions, even though the connector will continue to perform correctly.
• **Warning**	Not to be used in sealed closures without an overpressure safety system.
• **Conflict of Substances**	No liquids may be introduced into the infrastructure except for water-based lubricants specifically designed for optical fibers and compatible with polycarbonate.
• **Storage Conditions**	Store in a dry environment, in the absence of dirt and dust, away from direct sunlight and heat sources.

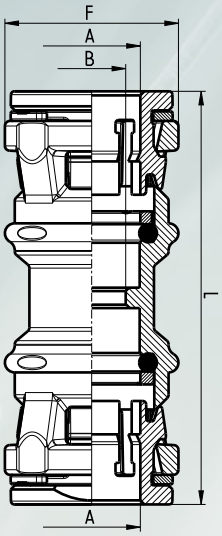
* The Products have been tested in order to simulate a 25 years lifetime.

Series V4000 PLUS LE

TECHNICAL DATA

Straight Connector
Mod. CV4580 PLUS LE

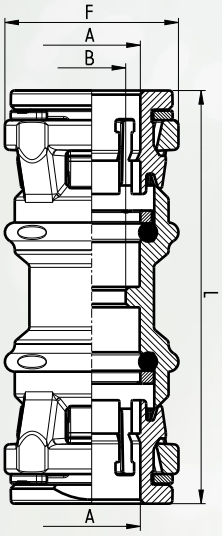
Connector DI (Direct Install)
Also suitable for DB (Direct Buried) use



DIMENSIONS						
Mod.	A	B	F	L	Weight (g)	Package (pieces)
CV4580 PLUS LE 3/2,1	3	2.1	10	30	2	100
CV4580 PLUS LE 4/2,1	4	2.1	10	30	2	100
CV4580 PLUS LE 5/3,5	5	3.5	12.5	39	4	100
CV4580 PLUS LE 8/6	8	6	17.5	43	7	100
CV4580 PLUS LE 8,5/6	8.5	6	17.5	43	7	100
CV4580 PLUS LE 10/8	10	8	20.5	48	9	100
CV4580 PLUS LE 12/10	12	10	23	52	12	100
CV4580 PLUS LE 12,7/10	12.7	10	23	52	12	100
CV4580 PLUS LE 14/12	14	12	25.5	59	16	100

Straight Connector
Mod. CV4581 PLUS LE

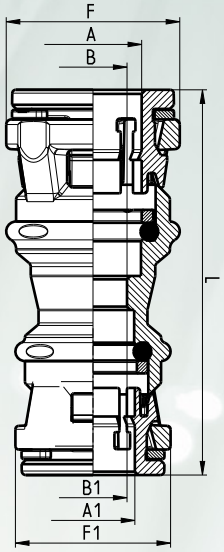
Connector DB (Direct Buried)
Also suitable for DI (Direct Install) use



DIMENSIONS						
Mod.	A	B	F	L	Weight (g)	Package (pieces)
CV4581 PLUS LE 7/3,5	7	3.5	16.5	41.5	6.5	100
CV4581 PLUS LE 7/4	7	4	16.5	41.5	6.5	100
CV4581 PLUS LE 8/4	8	4	17.5	43	7.5	100
CV4581 PLUS LE 8/5	8	5	17.5	43	7.5	100
CV4581 PLUS LE 10/6	10	6	20.5	48	10	100
CV4581 PLUS LE 10/7	10	7	20.5	48	10	100
CV4581 PLUS LE 12/8	12	8	23	52	12	100
CV4581 PLUS LE 14/10	14	10	25.5	59	16	100
CV4581 PLUS LE 16/10	16	10	30	66	26	50
CV4581 PLUS LE 16/12	16	12	30	66	26	50
CV4581 PLUS LE 16/13	16	13	30	66	26	50
CV4581 PLUS LE 18/12	18	12	33.5	77	37	50
CV4581 PLUS LE 18/14	18	14	33.5	77	37	50
CV4581 PLUS LE 20/15	20	15	37.5	81.5	45	50
CV4581 PLUS LE 20/16	20	16	37.5	81.5	45	50

Reducing Connector
Mod. CV4582 PLUS LE

Reducing Connector DI (Direct Install)
and DB (Direct Buried)

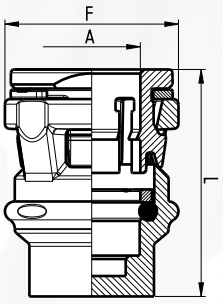


DIMENSIONS

Mod.	A	B	F	A1	B1	F1	L	Weight (g)	Package (pieces)
CV4582 PLUS LE 5/3,5-3/2,1	5	3.5	16.5	3	2.1	10	35	4	100
CV4582 PLUS LE 7/4-4/2,1	7	4	16.5	4	2.1	10	37	4	100
CV4582 PLUS LE 7-5/3,5	7	3.5	16.5	5	3.5	12.5	40	4.5	100
CV4582 PLUS LE 7/4-5/3,5	7	4	16.5	5	3.5	12.5	40	4.5	100
CV4582 PLUS LE 10/6-7/4	10	6	20.5	7	4	16.5	44.5	6	100
CV4582 PLUS LE 10-7/5,5	10	5.5	20.5	7	5.5	16.5	44.5	6	100
CV4582 PLUS LE 12-10/8	12	8	23	10	8	20.5	50	10	100
CV4582 PLUS LE 14-12/10	14	10	25.5	12	10	23	55.5	14	100
CV4582 PLUS LE 16/12-14/10	16	12	30	14	10	25.5	55.5	15	50
CV4582 PLUS LE 20/15-14/10	20	15	37.5	14	10	25.5	74	25	50
CV4582 PLUS LE 20/16-14/10	20	16	37.5	14	10	25.5	74	25	50

Endstop Connector
Mod. CV4750 PLUS LE

Endstop Connector DI (Direct Install)
and DB (Direct Buried)



DIMENSIONS

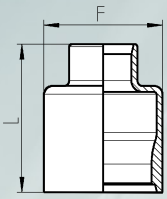
Mod.	A	F	L	Weight (g)	Package (pieces)
CV4750 PLUS LE 3	3	10	16.5	1.5	100
CV4750 PLUS LE 4	4	10	16.5	1.5	100
CV4750 PLUS LE 5	5	12.5	21.5	2.5	100
CV4750 PLUS LE 7	7	16.5	22.5	3.5	100
CV4750 PLUS LE 8	8	17.5	23.5	3.5	100
CV4750 PLUS LE 8,5	8.5	17.5	23.5	3.5	100
CV4750 PLUS LE 10	10	20.5	26	5	100
CV4750 PLUS LE 12	12	23	28	7	100
CV4750 PLUS LE 12,7	12.7	23	28	7	100
CV4750 PLUS LE 14	14	25.5	32.5	9	100
CV4750 PLUS LE 16	16	30	36	13.5	50
CV4750 PLUS LE 18	18	33.5	42	19	50
CV4750 PLUS LE 20	20	37.5	45.5	25	50

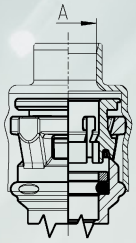
Series V4000 PLUS LE

ACCESSORIES

Protection Cap
Mod. 4708

The **PROTECTION CAP** for Direct Buried (DB) applications can be inserted on the connector to protect it from water, dirt, dust, and other debris (soil, stones, sand, etc...)
Material: thermoplastic rubber
Colour: black





DIMENSIONS

Mod.	A	F	L	Weight (g)	Package (pieces)
4708 5	5	14.5	23.5	1.5	25
4708 7	7	18	25	2	25
4708 8	8	19	25.5	2	25
4708 10	10	21.5	28	3	25
4708 12	12	24	29.5	4	25
4708 14	14	26.6	33.2	5	25
4708 15	15	28.4	34	5	25
4708 16	16	31	37	6	25

Tube Cutter
Mod. PNZ

CHARACTERISTICS

Mod.		Package (pieces)
PNZ-12	for tubes Ø up to 12 mm	1
PNZ-25	for tubes Ø up to 25 mm	1

Microducts Cutter
Mod. PNZP

CHARACTERISTICS

Mod.		Package (pieces)
PNZP-12	for tubes Ø up to 12 mm	1

Series V4000 PLUS LE

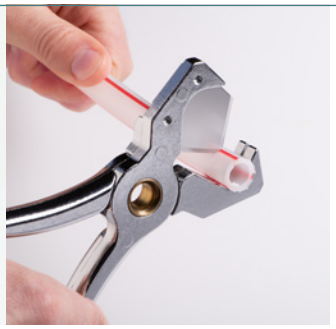
INSTALLATION GUIDELINES

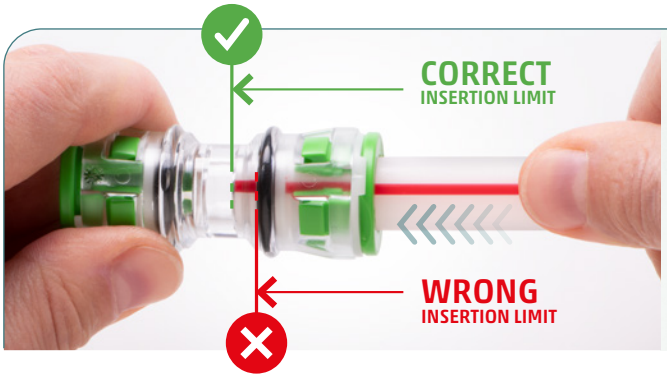
1 Preparing the microduct to be connected

Take the microduct, clean it, **check its right dimension and ovality**.

Cut the microduct with a Camozzi Automation's tube cutter at an **angle of 90°** (± 3°) and remove any burrs by trimming the edges of the microduct with a bevel tool.

AVOID: *Do not use any other tools to cut the microduct.*





2 Installing the connector

With the microduct properly prepared, **insert the connector fully up to the insertion limit** ensuring that the tube reaches the stopping point (removal of safety clip is not required), which indicates the correct position for the microduct in the connector.

AVOID: *During the connection operation, do not twist the connector.*

3 Releasing the connector

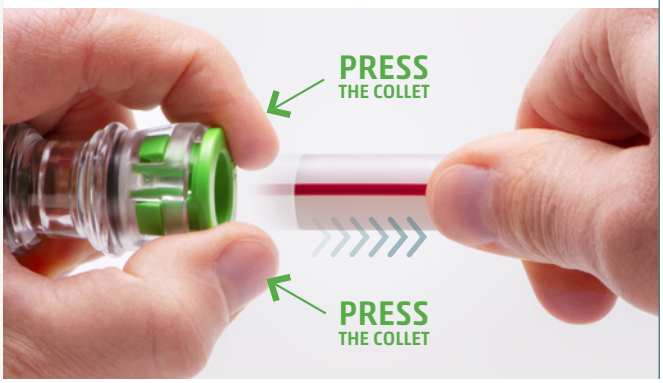
Make sure the system is depressurised before removing the microduct from the connector.

Remove the safety clip and press the collet towards the inside of the connector.

The microduct can be pulled out along the installation axis.

If all operations are carried out manually, without the use of any other tool, and the correct procedure is followed, the connector can be released and installed up to 5 times.

AVOID: *During the disconnection operation, do not twist either the microduct or the connector.*
In case of twist, do not use the same connector for new installations or reinstallations.



4 Position of the connector in the infrastructure

Straight connectors and reducing connectors are designed to work parallel to the axis of installation of the connected microducts. For this reason, it is necessary to allow at least 200 mm overlap of the microduct on each side of the connector.

NOTE: *Although these connectors can be direct buried, we recommend adding a protective cap before the microducts are inserted.*

5 Reinstalling the connector

To reinstall the connector on the infrastructure please refer to point 1 and point 4.

NOTE: *If disconnecting the tube is difficult due to the presence of debris in the coupling/release system, we recommend using a protective cap for any future maintenance on the system.*

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