

Installation Instructions

Underground Fibre Distribution Cabinet L 3.0 with / for LFMS



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1 General information

These installation instructions describe the use of the underground fibre distribution cabinet.



Note:

Any person involved in the assembly, operation, maintenance and repair of the product must first have read and understood these instructions and follow them precisely. We accept no liability for damage and operating malfunctions caused by failure to comply with these instructions.

Langmatz GmbH warns against the misuse of the product.

The product described here corresponds to the latest state-of-the-art technology at the time of printing and is delivered in an operationally safe condition.

Unauthorised modifications, particularly to safety-related parts, are prohibited.

Langmatz GmbH warns against the misuse of the product.

The operator is responsible for the following:

- Preventing danger to life and limb of users and third parties,
- Ensuring safe operation of the system,
- Preventing downtime and environmental impact due to incorrect handling.

In the interest of further development, we reserve the right to change individual assemblies and accessories as considered necessary for enhanced safety and performance improvements, while preserving the main features.

The copyright of these instructions remains with Langmatz GmbH.

2 Safety information



- Note the possibility of laser/LED radiation in the non-visible spectrum!
- Never look into open fibre ends if there is an unknown level of risk posed by laser/LED radiation.



Attention!

The level of risk should ultimately be decided by the system fitter/operator of the communication system, who is responsible for labelling the system accordingly (e.g. attaching warning signs in accordance with DIN EN/IEC 60825-1, as revised, and in compliance with the BGV (Employers' Liability Association) B2 "Laser radiation", as revised).

If the technical data changes, and this affects the level of risk, the warnings must be adapted accordingly and occupational safety measures should be taken, see also DIN EN/IEC 60825-2, as revised.

- Use of a damaged product is prohibited. Please contact the hotline (see 19 Contacts).
- The operator is responsible for installing, operating and maintaining the fixtures.



Note:

The relevant occupational safety regulations must be adhered to during installation, operation and repair work.

3 Product description

These instructions describe the correct installation and population of the underground fibre distribution cabinet L 3.0.

3.1 Dimensions

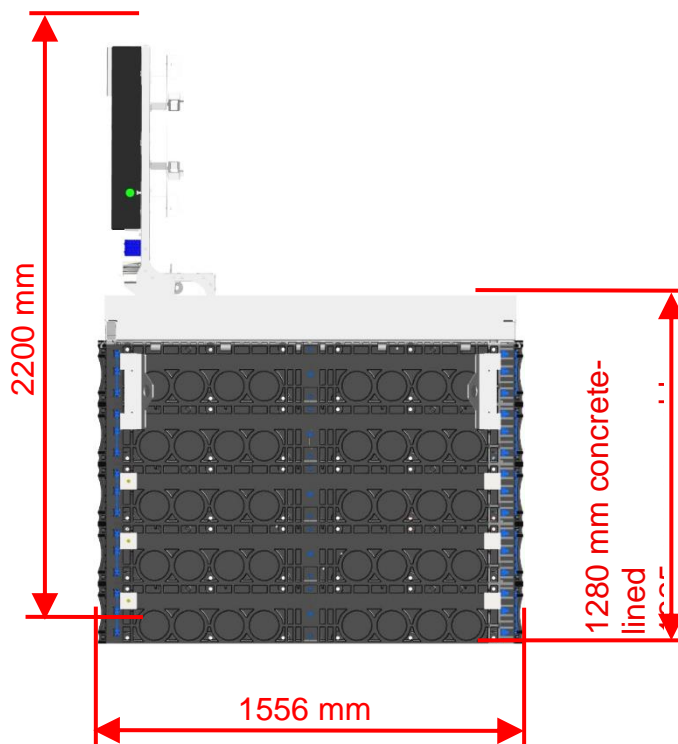


Fig. 1

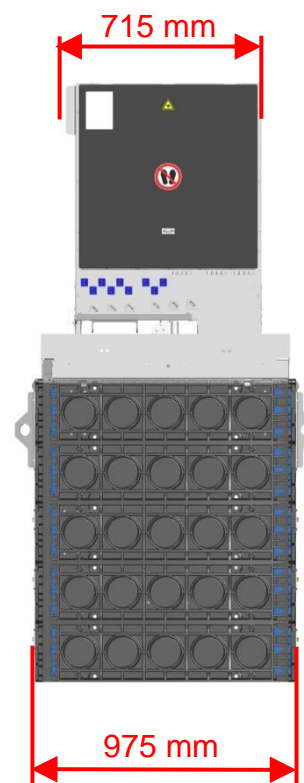


Fig. 2

3.2 Technical data

Clear dimensions:	800 x 1400 mm
Total weight:	concrete-lined cover 725 kg paveable cover 756.5 kg
Frame component / base plate material:	polycarbonate (PC) / polypropylene (PP)
Degree of protection of swivel frame / mounting panel:	IP47

4 Scope of delivery

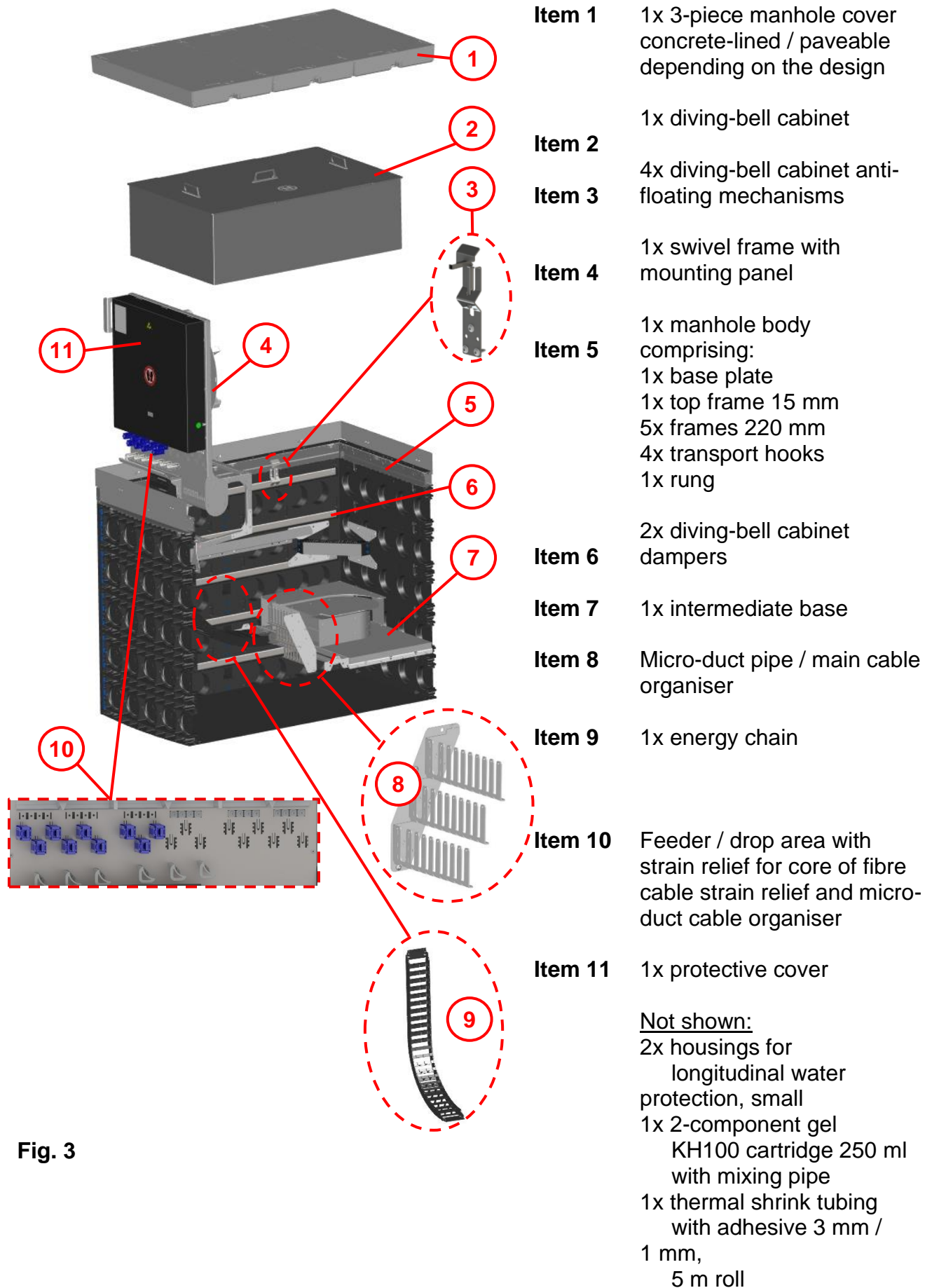


Fig. 3

5 Required tools

(not included)



Fig. 4

Key with lifting hook for Colt / Telenet locking mechanism



Fig. 5

Hammer for predetermined breaking points and dowel mounting plugs, where required



Fig. 6

Hex screwdriver AF5 for height adjustment



Fig. 7

Hot air gun for thermal shrink tubing

6 Installing the manhole

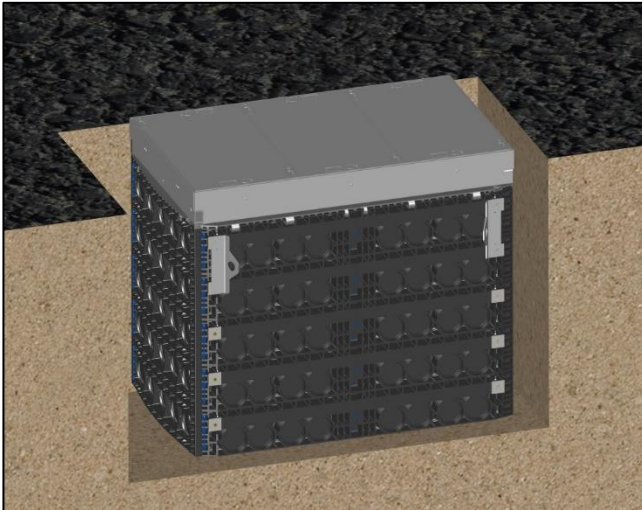


Fig. 8

Note:

Refer to the **Installation and assembly instructions for polycarbonate manholes** for the installation, opening and creation of the predetermined breaking points of the manhole (see QR code on the Quick Guide).

Caution!

Carefully plan and pay attention to the direction of installation! Refer to section 9 for this!

7 Opening the diving-bell cabinet

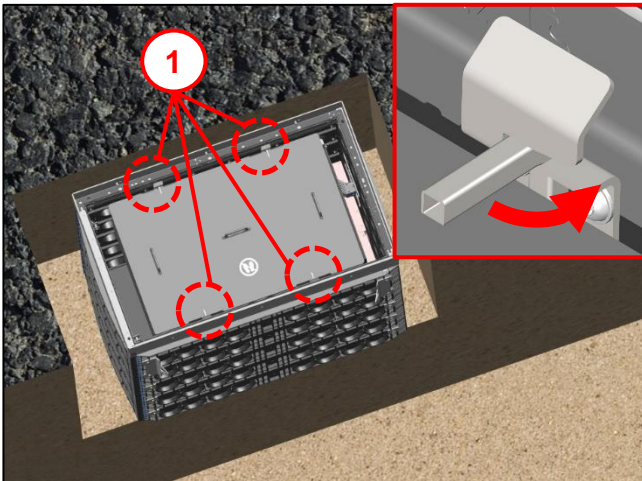


Fig. 9

- Open the 4x anti-floating mechanisms (1).

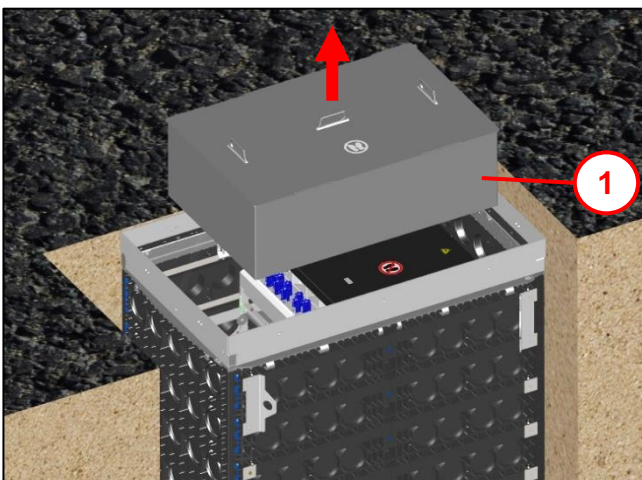


Fig. 10

- Lift out the diving-bell cabinet (1) upwards.

8 Operating the swivel frame

8.1 Folding out the swivel frame

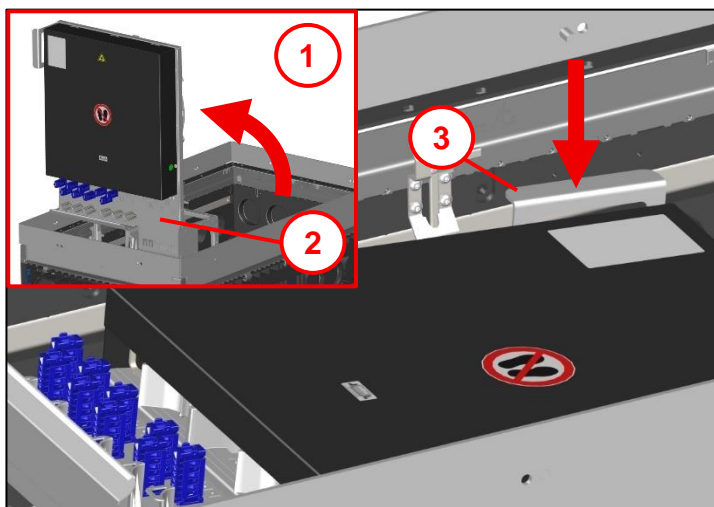


Fig. 11

- To release the fastening clamp, press down the handle (3) of the swivel frame (2) approx. 10 cm until you feel some resistance.
- Then allow the swivel frame to automatically swivel upwards (1).

8.2 Folding in the swivel frame

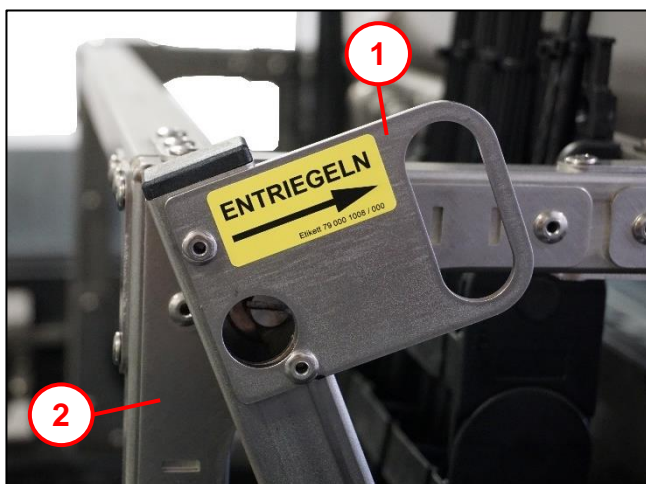


Fig. 12

- Pull the handle (1) in the direction of the arrow.
- Swivel the swivel frame (2) downwards until you feel some resistance.

Note: The fastening clamp engages automatically in its locking position.

9 Micro-duct pipes / feeder cables in the manhole

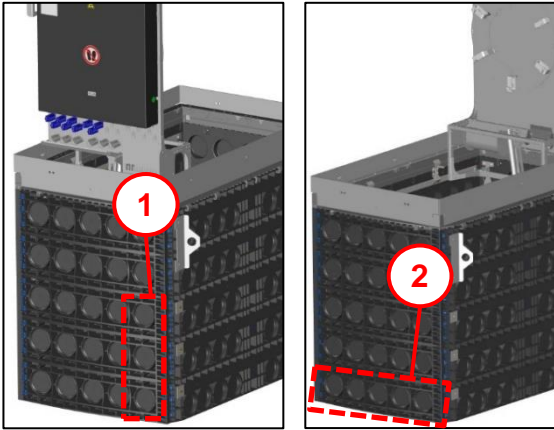


Fig. 13

Recommendation for optimum micro-duct pipe / cable routing in the manhole:

- (1) Feeder cables: use the three entries as shown.
- (2) Drop cables: use the lower entries as shown.

9.1 Inserting the micro-duct pipes / feeder cables

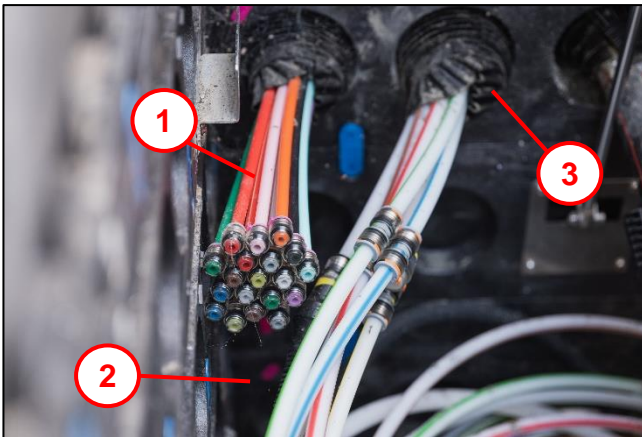


Fig. 14

- Insert the micro-duct pipes (1) / feeder cables (2) into the manhole through the protective pipe seals (3).

Note!

Protective pipe seals are not included , see section 13 Accessories.

9.2 Fixing the micro-duct pipes / feeder cables

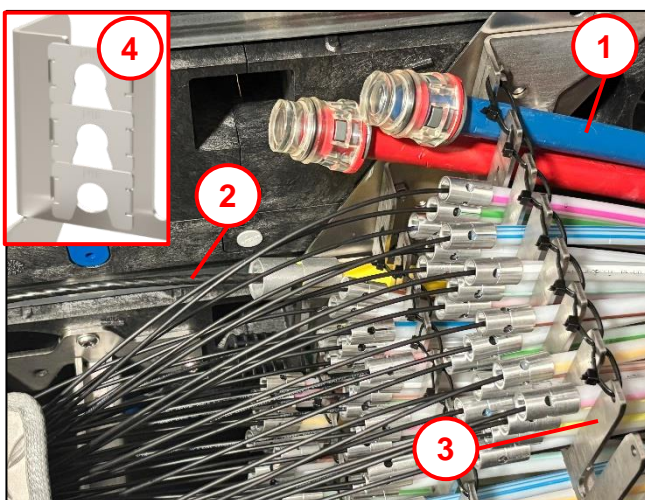


Fig. 15

- Store micro-duct pipes (1) / feeder cables (2) in the micro-duct pipe / feeder cable organiser (3).
- Use strain relief for micro-duct pipes (4) or cable ties to fix the micro-duct pipes / feeder cables in the micro-duct pipe / feeder cable organiser.
- Strip the micro-duct pipes to the feeder / drop cables.

Note!

Strain relief for micro-duct pipes is not included, see section 13 Accessories.

Note!

Fixing is possible on the feeder side with strain relief for micro-duct pipes or cable ties. Fixing on the drop side can be done using cable ties.

9.3 Continued routing of the feeder / drop cables

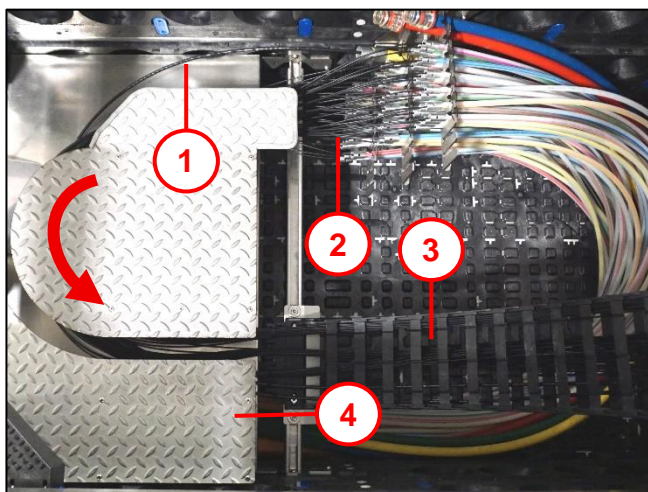


Fig. 16

- Route the drop cables (2) and feeder cables (1) through the cable routing in the intermediate base (4) into the energy chain (3).

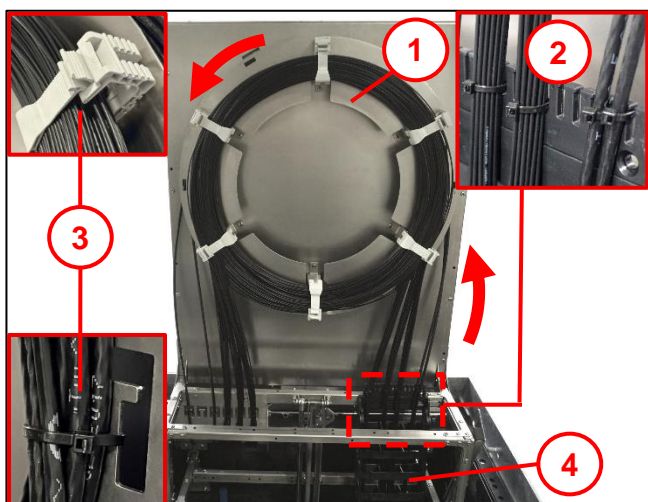


Fig. 17

- Fix the feeder and drop cables above the energy chain (4) with cable ties (2).
- Continue routing the feeder and drop cables through the excess fibre cable tray (1) and fix in place (3).

Note!

It is beneficial to use the front storage ring for the feeder cables and front ring for the drop cables.

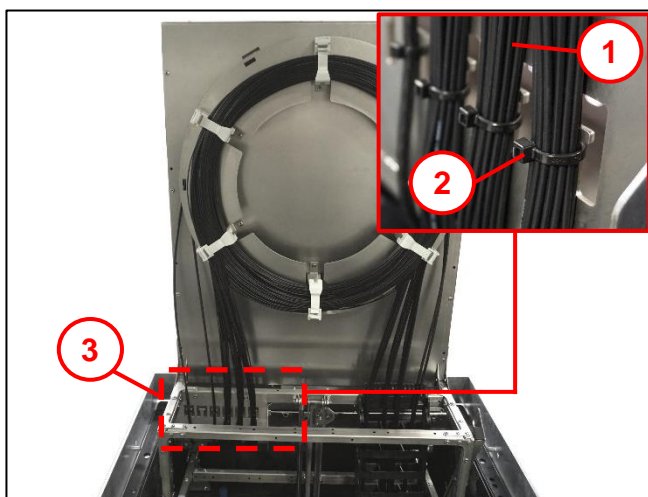


Fig. 18

- Use cable ties (2) to fix the feeder and drop cables (2) to strain-relief lugs (3).
- Continue routing the feeder and drop cables via the diverter forward onto the mounting panel.

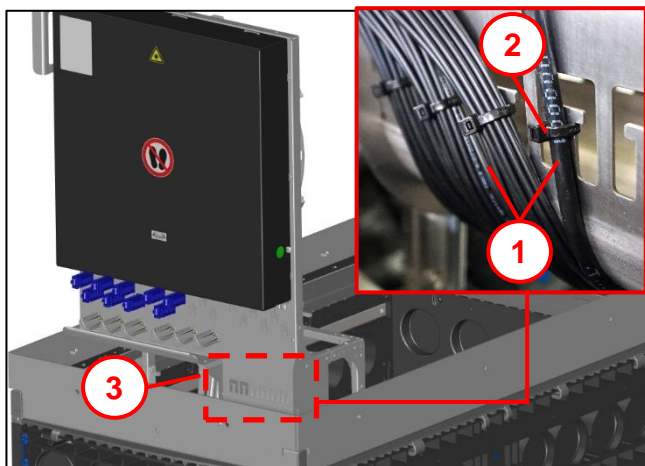


Fig. 19

- Use cable ties **(2)** to fix the feeder and drop cables **(1)** to the mounting panel **(3)**.

10 Mounting panel

10.1 Operating the protective cover

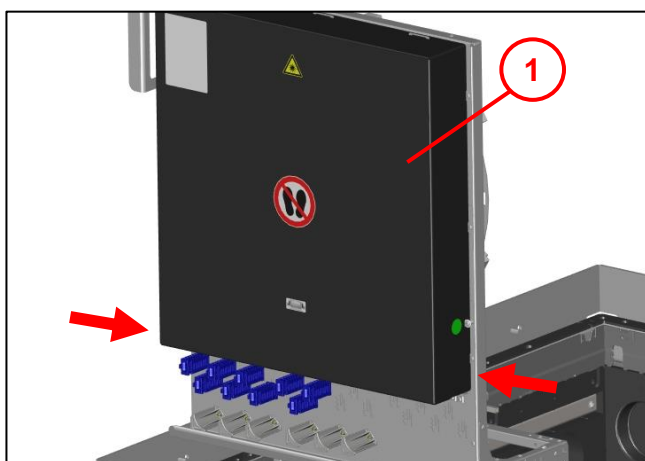


Fig. 20

- Loosen the protective cover **(1)** by pressing on the green points on both sides (left / right).
- Push the protective cover up and unhinge it.

10.2 Installing feeder and drop cables on the mounting panel

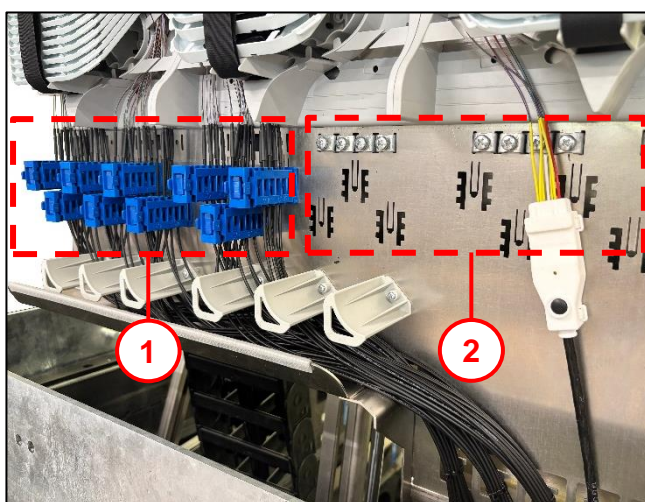


Fig. 21

Note!

Ensure sufficiently loose cable routing around the radius limiters when organising the feeder and drop cables.

The strain relief for the feeder cables **(2)** and organiser for the drop cables **(1)** are located below the Langmatz fibre management system.

Note!

The micro-duct cable organisation shown below (in blue) is suitable for cable diameters of 2.3 - 4.6 mm.

Refer to section 13 Accessories for cable diameters of 1.2 - 2.5 mm.

10.2.1 Installing the feeder cables

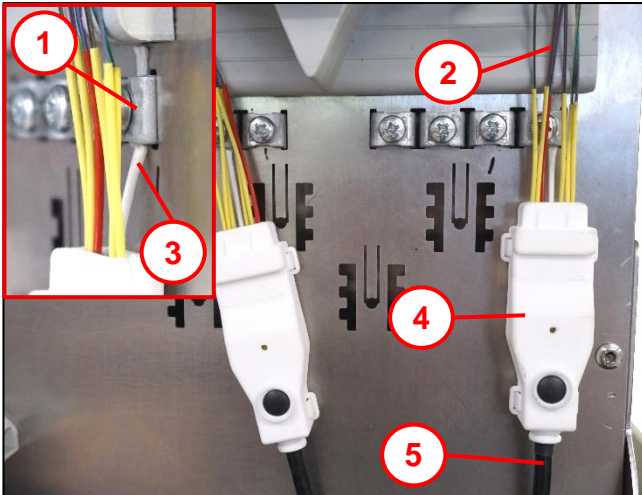


Fig. 22

- Seal the feeder cable **(5)** with the housing for longitudinal water protection, small **(4)**.
- Insert the core of fibre cable **(3)** through the clamping yoke **(1)** and secure in place.
- Continue routing the bundled loose tube fibre **(2)** and strip it to fibre level in the stripping area of the end piece.

Note!

- Pay attention to the installation instructions for the housing for longitudinal water protection, small.
- Also refer to the product data sheet for 2-component gel KH100.
- 2x housings for longitudinal water protection, small, are included, see section 13 Accessories.

10.2.2 Installing the drop cables

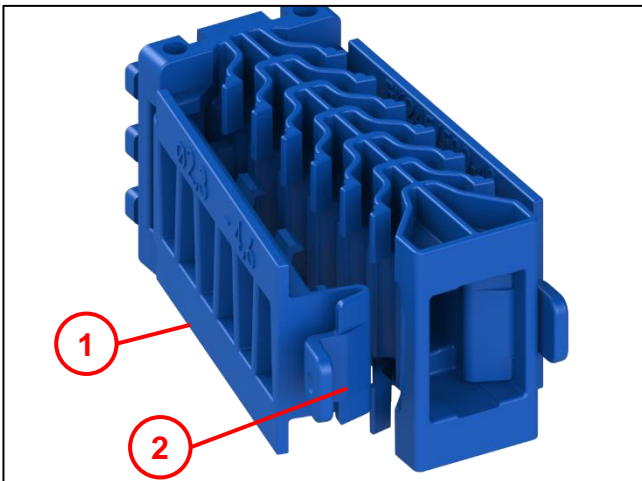


Fig. 23

- Push the snap tab **(2)** backwards. Swivel the cover **(1)** outwards and remove it.

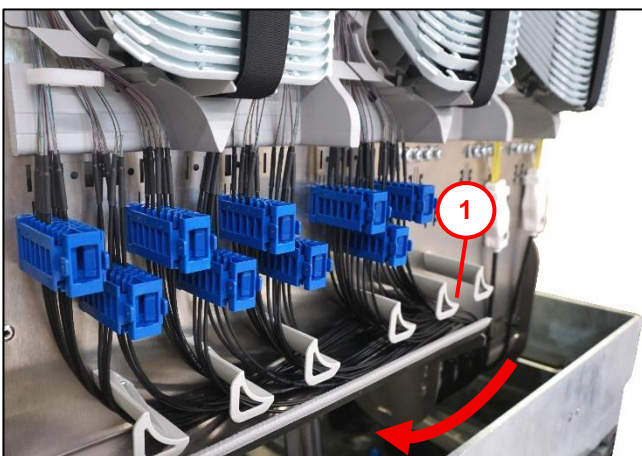


Fig. 24

Route the micro-duct cables around the cable diverter with radius limiter **(1)**.

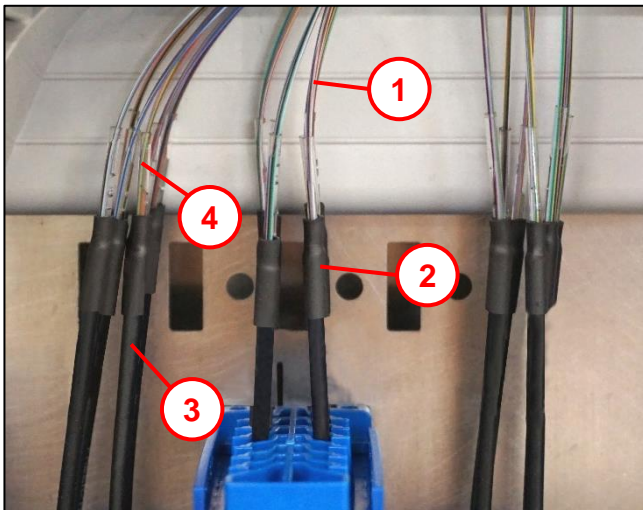


Fig. 25

- Seal the drop cables **(1)** with thermal shrink tubing **(2)**.
- Strip the thermal shrink tubing to its outer **(3)** (here black) and inner **(4)** (here transparent) protective cable sheath.

Note!

- Ensure a minimum distance of 10 mm between the thermal shrink tubing and micro-duct cable organiser to avoid the thermal shrink tubing from being pushed up (due to temperature-related length change).
- To avoid breaks to fibres, push the sections of thermal shrink tubing onto the drop cables before stripping to fibre level.

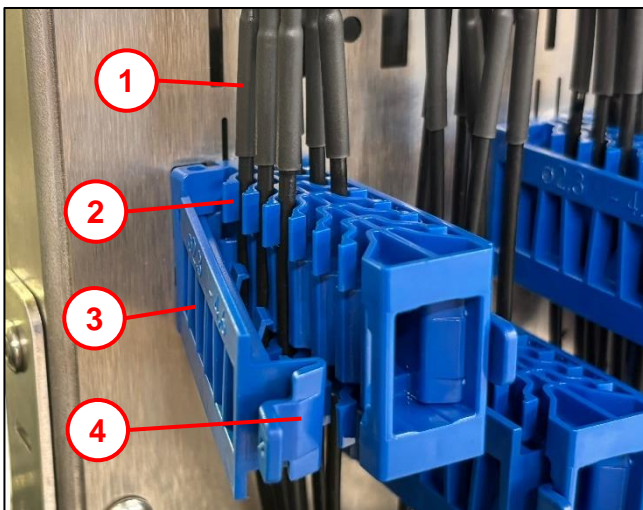


Fig. 26

- Press the drop cables **(1)** into the clamping points **(2)**, referring to Fig. 27 for the length of cable sheath to be stripped above the clamping points.
- Insert the cover **(3)**. Push the cover back and swivel it fully in until the snap tab **(4)** audibly clicks into place.

Note!

For optimum handling, start populating from the back to the front to simplify organisation.

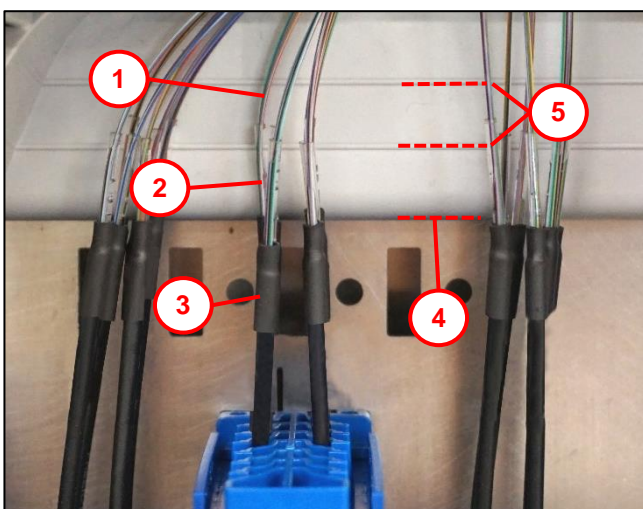


Fig. 27

- Strip the outer protective cable sheath (here black) of the drop cables with thermal shrink tubing **(3)** at the lower edge of the end piece **(4)**.
- Strip the inner protective sheath (here transparent) **(2)** between the two designated lines **(5)** of the end piece and
- route the fibres **(1)** into the Langmatz fibre management system.

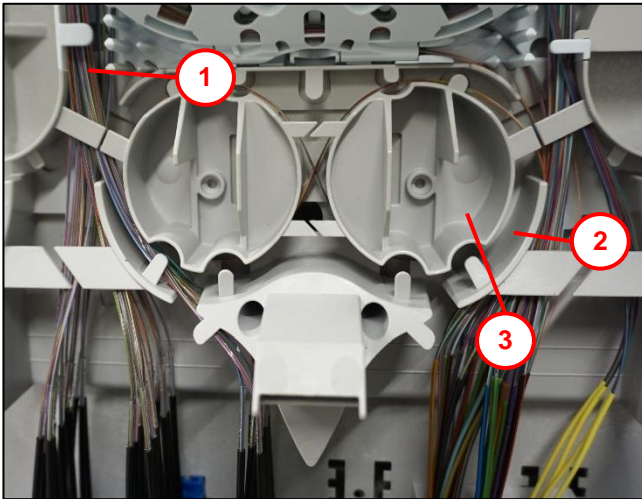


Fig. 28

- Route the fibres over the fibre management spools **(3)** to change the fibre ducts **(1)** (left / right) within the end piece **(2)**.

11 Description and handling of Langmatz fibre trays

11.1 Description of the L fibre tray with shrink-splice protection management

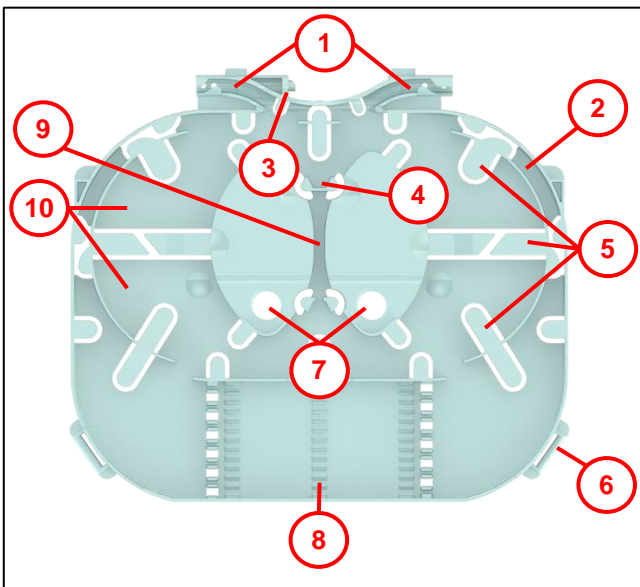


Fig. 29

- | | |
|----------------|-----------------------------------|
| Item 1 | Fibre entry / exit |
| Item 2 | Outer fibre tray |
| Item 3 | Snap lug |
| Item 4 | Termination mount |
| Item 5 | Down-holder for fibres |
| Item 6 | Mounting for fibre tray clips |
| Item 7 | Mounting for fibre tray cover |
| Item 8 | Tray for shrink-splice protectors |
| Item 9 | Guide for direction switch |
| Item 10 | Internal fibre placement |

11.2 Inserting the fibre tray

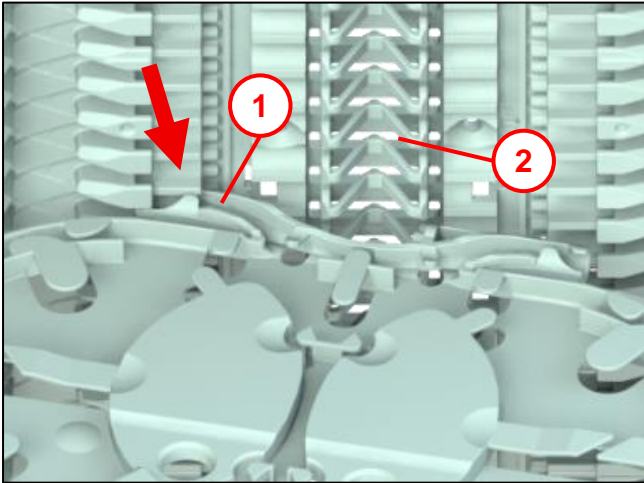


Fig. 30

- Insert the fibre entry / exit **(1)** of the fibre tray into the round indentation on the left of the organiser module **(2)**.

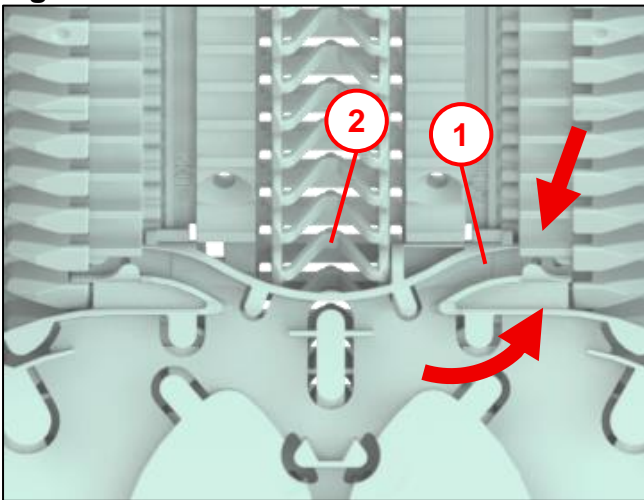


Fig. 31

- Engage the fibre entry / exit **(1)** of the fibre tray into the round indentation on the right of the organiser module **(2)**.

11.3 Removing the fibre tray

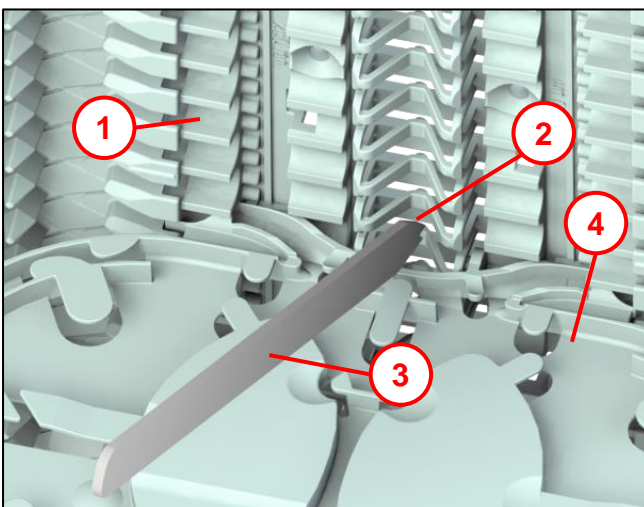


Fig. 32

- To remove the fibre tray **(4)**, position it vertically to the organiser **(1)**.
- To remove the fibre tray, press the centre of the resting mount **(2)** backwards using the installation tool **(3)**.
- Remove the fibre tray to the front.

12 Inserting and splicing optical fibres

12.1 Side optical fibre cable guide

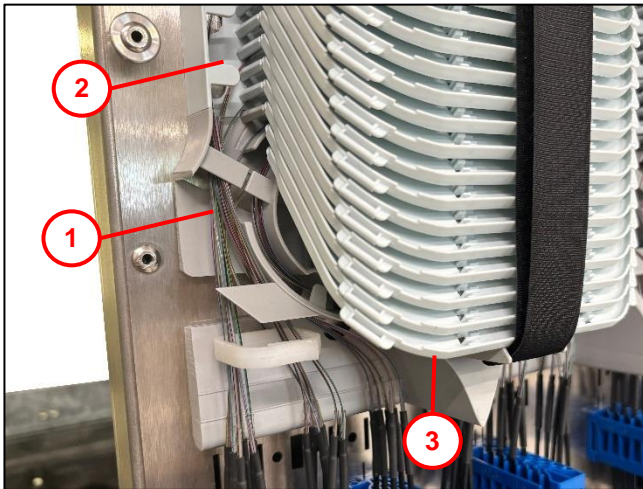


Fig. 33

- Route the optical fibres **(1)** along the guide **(2)** to the fibre tray **(3)**.

12.2 Feeder fibres to the fibre tray

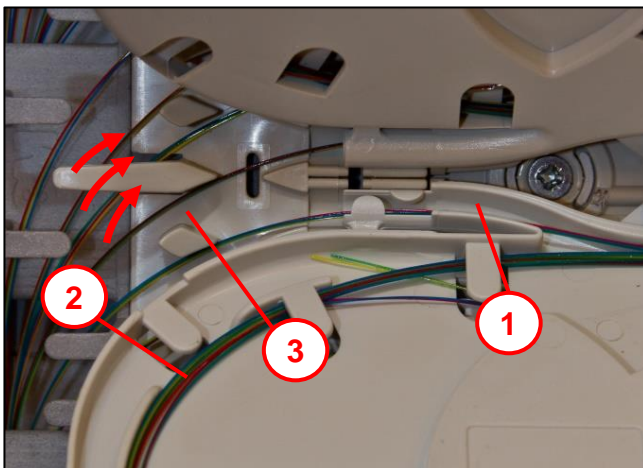


Fig. 34

- Route the optical fibres **(2)** over the guide **(3)** on the organiser module to the fibre tray.
- Entry into the fibre tray through the fibre inlet / fibre outlet channel **(1)**.

12.3 Fibre bridge

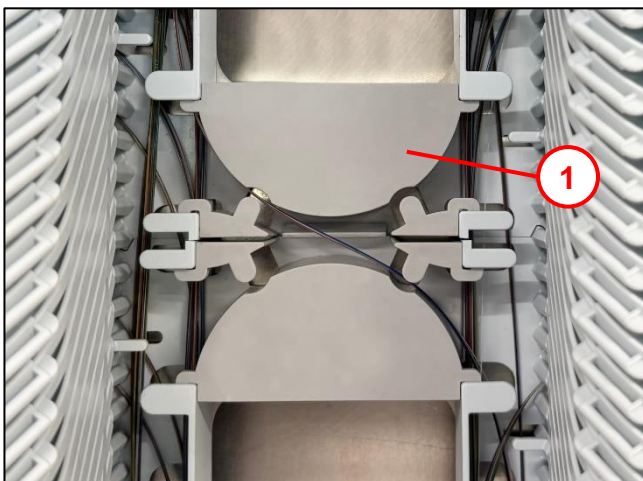


Fig. 35

- There are 3 single-fibre bridges **(1)** between the rows of fibre trays for manoeuvring between the fibre tray stacks.
- Fibre bridges provide the necessary protection and ensure the minimum bending radius of the fibres.

12.4 Fibre tray cover



Fig. 36

- The top fibre tray is fitted with a transparent cover **(1)** to protect the fibres and splices.
- All other fibre trays are protected by the respective fibre tray above.

12.5 Splicing fibres

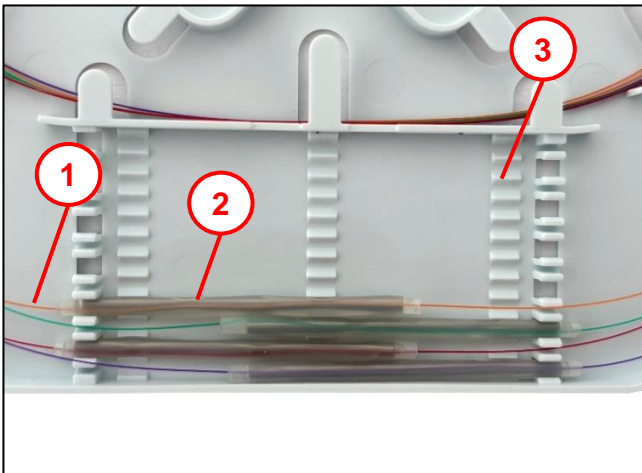


Fig. 37

- Determine the fibre lengths according to the specification.
- Splice the fibres **(1)**.
- Place the shrink splice protector **(2)** into the splice protection holder **(3)**.

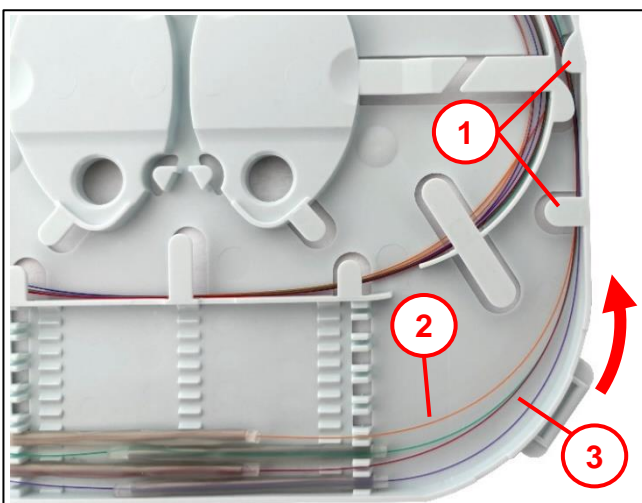


Fig. 38

- Place the optical fibre cables **(2)**, starting from the left or right, into the outer fibre tray **(3)** under the down-holder **(1)**.
- Route the optical fibres downwards in a semicircle.

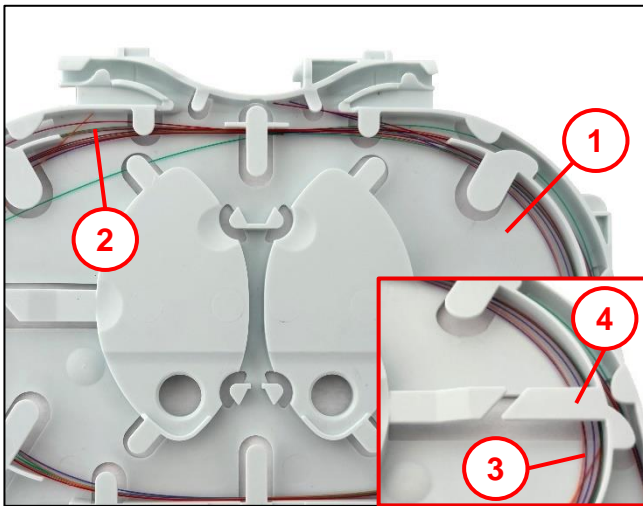


Fig. 39

- Route the optical fibres from the outer fibre tray (2) to the inner fibre tray (1).
- When inserting the optical fibres (3), press down the large down-holder (4).
- Store the fibres in the inner fibre tray and insert a minimum of three or more fibre windings.

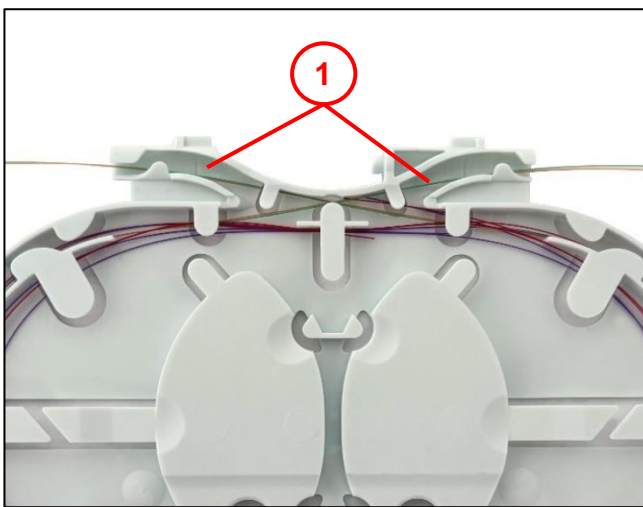


Fig. 40

- Finally check whether all optical fibres are correctly placed in the fibre inlet / fibre outlet channels (1) and are under the down-holders.

12.6 Change in direction of the fibres in the fibre tray

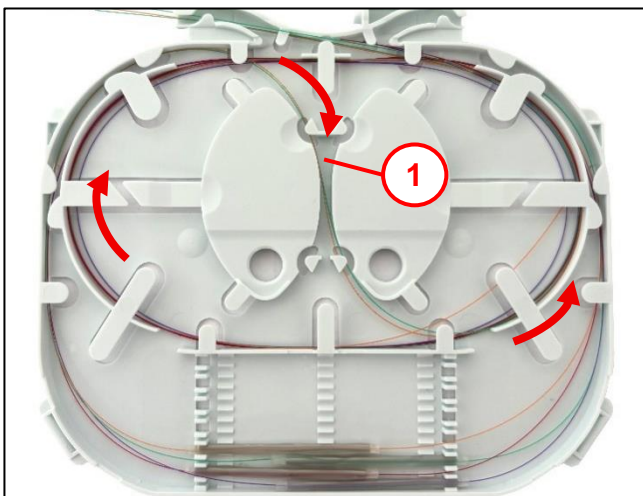
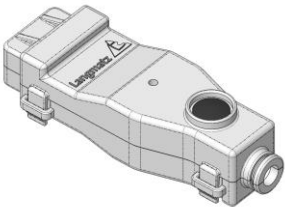
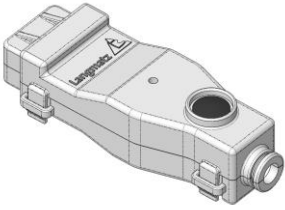
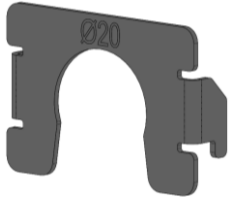
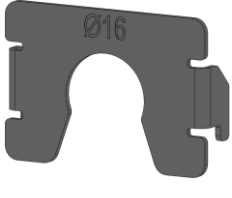
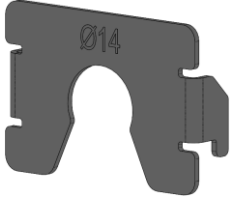
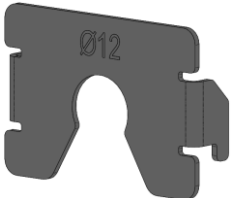
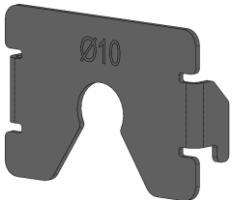


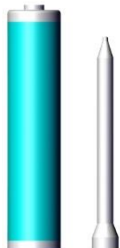


Fig. 41

- Change the direction of the optical fibres in the middle area of the fibre tray (1) as shown (creating a "figure of eight").

13 Accessories

No.	Article	Designation	Figure
1	093750200/005	Housing for longitudinal water protection, small, packaging unit 5x Including 1x fixing set and 1x 2-component GEL KG100 cartridge 250 ml with mixing pipe	
2	093750250/001	Housing for longitudinal water protection, small, packaging unit 1x Including fixing set	
3	700861913/004	Strain relief for micro-duct pipe 20 mm Packaging unit 4x	
4	700861921/004	Strain relief for micro-duct pipe 16 mm Packaging unit 4x	
5	700861914/004	Strain relief for micro-duct pipe 14 mm Packaging unit 4x	
6	700861915/004	Strain relief for micro-duct pipe 12 mm Packaging unit 4x	
7	700861916/004	Strain relief for micro-duct pipe 10 mm Packaging unit 4x	

8	081863110	Protective pipe seal ø110 Packaging unit 10x	
9	700893844E	Thermal shrink tubing with adhesive ø3 mm / 1 mm Packaging unit 5 m roll	
10	700826300	2-component GEL KG100 cartridge 250 ml with mixing pipe Packaging unit 1x	

14 Material defects

Langmatz GmbH accepts liability for material defects in the product as per Section 434 BGB (German Civil Code) for 24 months, starting from the date on the purchase receipt.

Within the scope of liability, all parts that become damaged due to manufacturing faults or material defects will be replaced or repaired free of charge.

The purchaser must report any deficiency complaints immediately in writing.

Claims by the purchaser for damages due to material defects or for whatever legal reason will not be accepted.

Any damage or failure caused by the following are also excluded from liability

Incorrect use,

Natural wear and tear,

Intervention by third parties.

We accept no liability for damage caused by force majeure or transport.

Repairs due to a complaint about a defect do not extend the warranty period for the replaced parts or for the product.

This product conforms to the latest state-of-the-art technology. Nevertheless, if you experience any problems with it, please contact our hotline (section 19).

15 Recycling

The materials mainly used for the optical fibre distribution cabinet are polycarbonate and ABS and are fully recyclable.

16 Cleaning, repainting

Normally soiled cabinets can be cleaned with standard household cleaning agents.

The cabinets can be coated with a two-component paint on site.

17 Quality management

Langmatz GmbH's quality management system is certified according to DIN EN ISO 9001.

18 Disclaimer/Warranty

The information in this technical document is presented appropriately and correctly in compliance with the technical regulations, and to the best of our knowledge. However, this does not confer any guarantee of particular characteristics. In this context, the operator of the Langmatz GmbH products is expressly obliged to decide, based on their own judgement, whether the products are suitable and appropriate for the application or use being considered. The product liability accepted by Langmatz GmbH relates exclusively to our conditions of sale, delivery, and payment.

Langmatz GmbH accepts no liability on the basis of random, indirect and resultant consequential damage, or of any damage attributable to any use of the product other than its intended purpose as described.

19 Contact

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