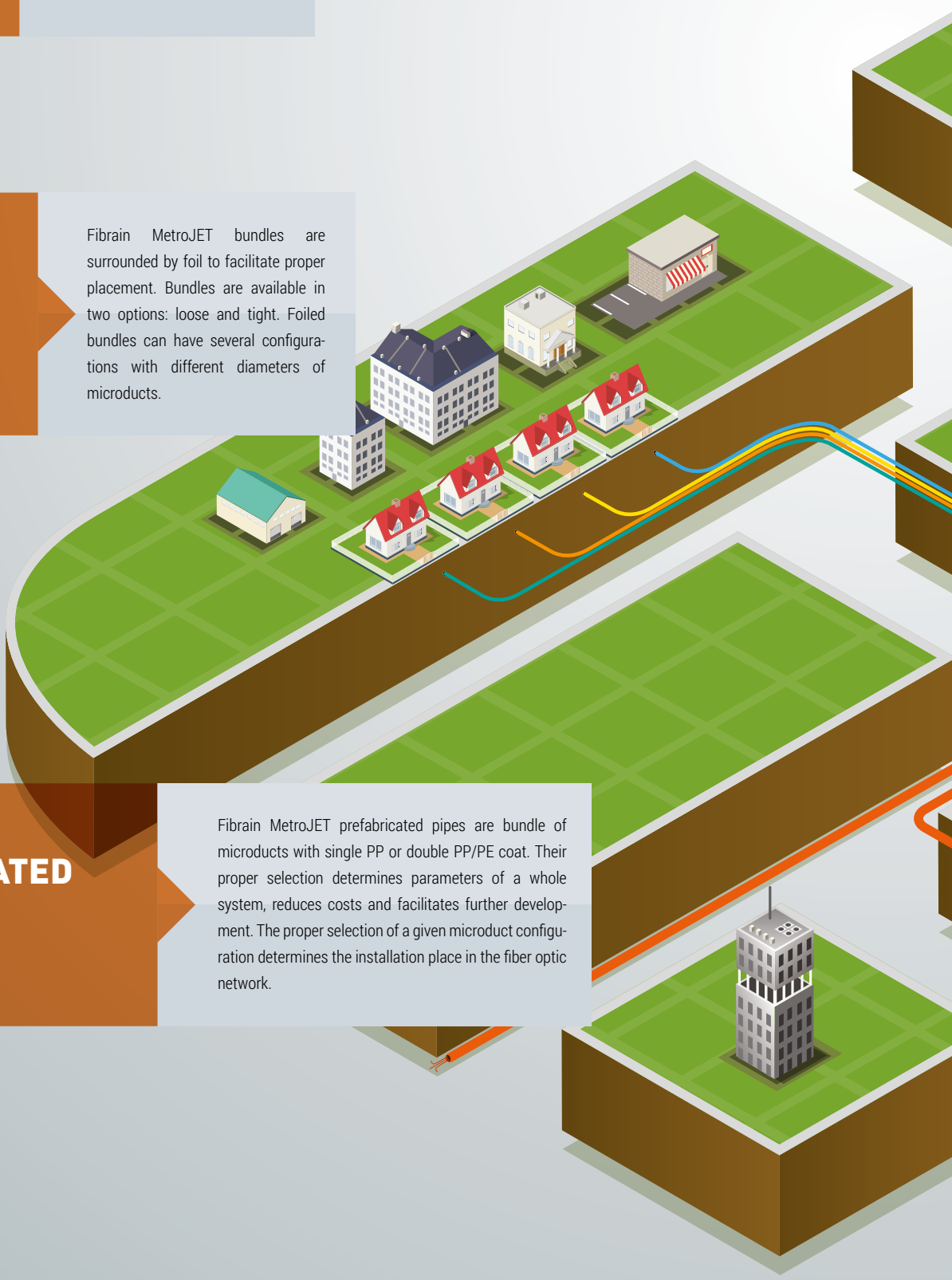

METROJET
MICRODUCTING 2016
FIBRAIN
Fiber Optic Solutions

MICRODUCTS
Page 6

Microducts are main elements of Fibrain MetroJET microdcut system. Their proper selection determines parameters of a whole system, reduces costs and facilitates further development.

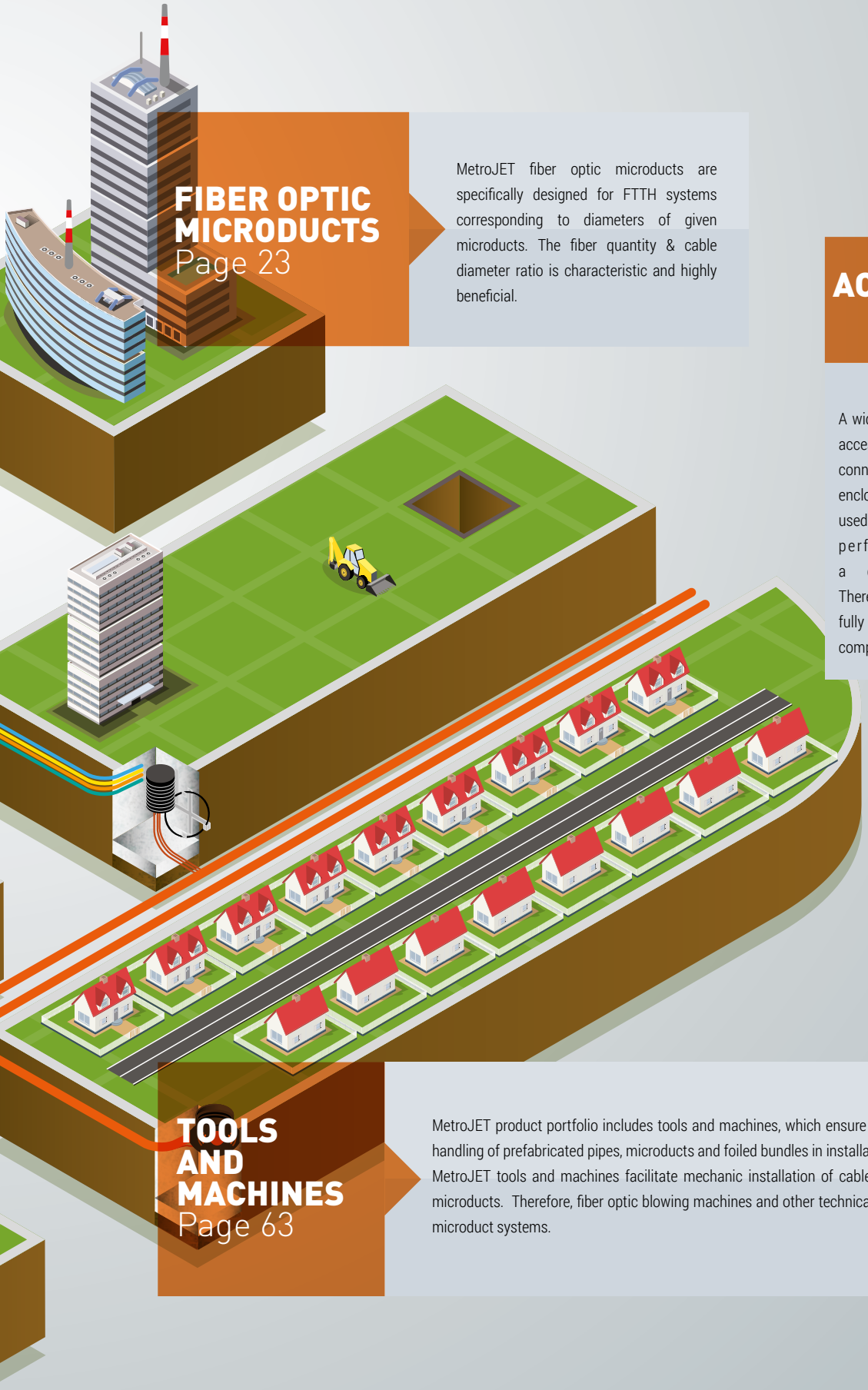
FOILED MICRODUCT BUNDLES
Page12

Fibrain MetroJET bundles are surrounded by foil to facilitate proper placement. Bundles are available in two options: loose and tight. Foiled bundles can have several configurations with different diameters of microducts.



PREFABRICATED PIPES
Page 18

Fibrain MetroJET prefabricated pipes are bundle of microducts with single PP or double PP/PE coat. Their proper selection determines parameters of a whole system, reduces costs and facilitates further development. The proper selection of a given microduct configuration determines the installation place in the fiber optic network.



FIBER OPTIC MICRODUCTS
Page 23

MetroJET fiber optic microducts are specifically designed for FTTH systems corresponding to diameters of given microducts. The fiber quantity & cable diameter ratio is characteristic and highly beneficial.

ACCESSORIES
Page 34

A wide range of Fibrain MetroJET accessories includes microduct connectors, end stops, clips, enclosures and sealings. They are used to connect microducts, perform sealings or reduce a diameter of microducts. Therefore, microduct accessories fully comply with other Fibrain components.

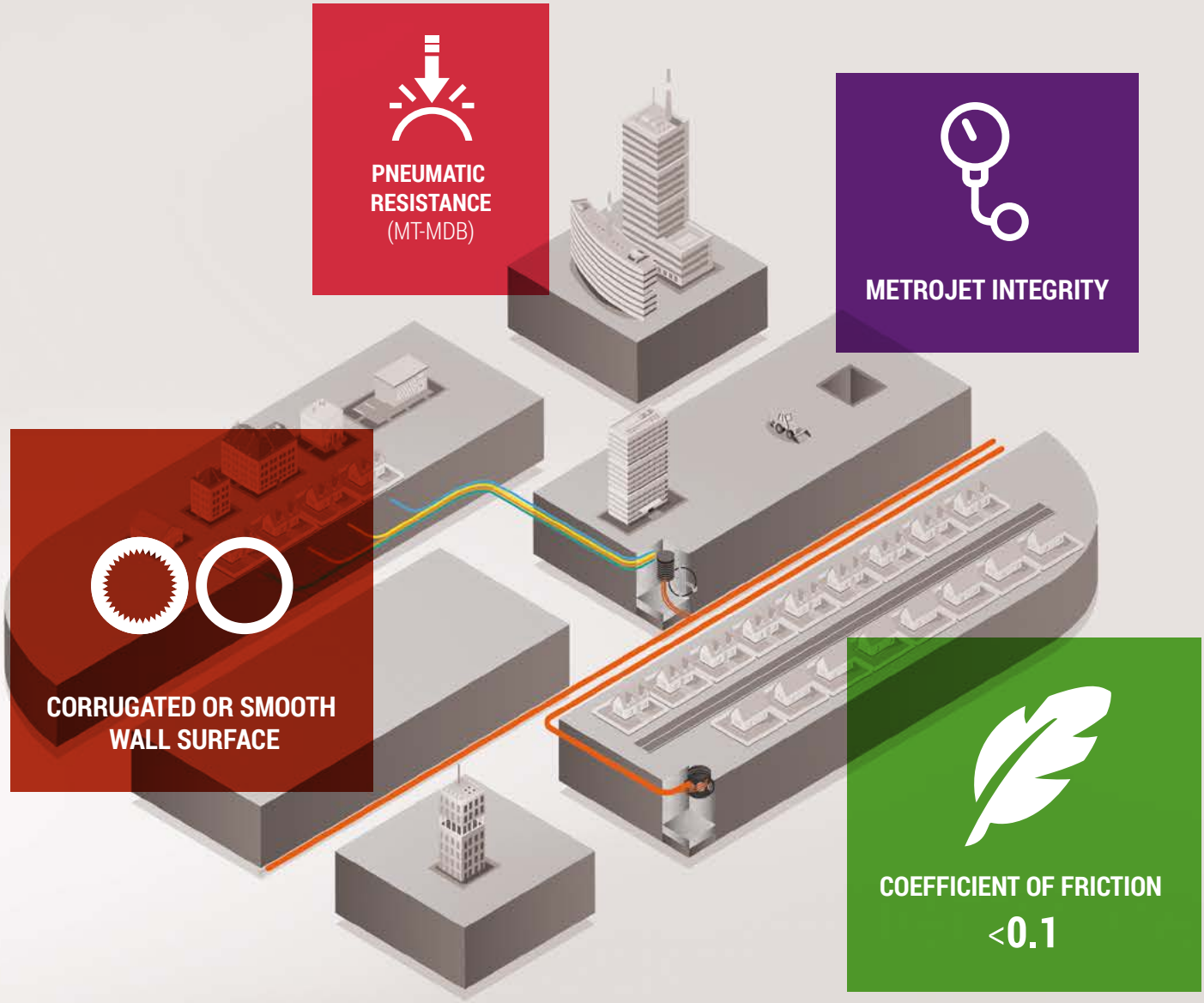
TOOLS AND MACHINES
Page 63

MetroJET product portfolio includes tools and machines, which ensure proper installation and further handling of prefabricated pipes, microducts and foiled bundles in installation works.
MetroJET tools and machines facilitate mechanic installation of cables, microducts and bundles of microducts. Therefore, fiber optic blowing machines and other technical equipment are used to install microduct systems.

Symbols

 MetroJET integrity	 Easy installation	 Easy branchings	 Corrugated wall
 Various configurations with microducts	 Low friction	 Crushproof	 Direct-buried applications
 Modular design	 LSOH	 Thermic proof	 E120 fire proof
 Fire proof	 Pneumatic resistance	 Blowing installation	 1-st generation microduct
 Waterproof	 Gas proof	 Gas & water proof	 Silt proof
 IP40 protection level	 IK10 protection level	 Flexible	 Corrugated wall
 Standard thin-walled	 Direct-buried applications	 Single gum rubber protection	 Double gum rubber protection
 Divisible housing	 Transparent housing	 Supplied with set	 Unique sponge shape
 Reusable	 Reduced dimensions	 Bendsafe	 FTTX
 Last mile connection	 Telecom	 Reduced diameter	

MICRODUCTS



MICRODUCTS

Microducts are main elements of Fibrain MetroJET microdcut system. Their proper selection determines parameters of a whole system, reduces costs and facilitates further development.

TYPES

Standard thin-walled

Direct-buried with reinforced wall

LSOH inside buildings

APPLICATIONS

Telecom

CATV

Metro networks

C&I

FTTX

COLORS


red


orange


green


grey


pink


yellow


aqua


black


violet

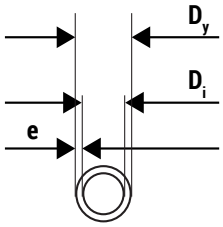

brown

MICRODUCTS

STANDARD MT-MDI MICRODUCTS

MetroJET integrity | Easy installation | Low friction | Pneumatic resistance

MT-MDI dimensions



D_y outer diameter
D_i inner diameter
e wall thickness

Technical data

MT-MDI STANDARD MICRODUCT FOR MICRODUCT CABLES			
Type	**D_y [mm]**	**D_i [mm]**	**e [mm]**
MT-MDI-05038	5.0	3.8	0.6
MT-MDI-07055	7.0	5.5	0.75
MT-MDI-1008	10.0	8.0	1.0
MT-MDI-1210	12.0	10.0	1.0
MT-MDI-1411	14.0	11.0	1.5
MT-MDI STANDARD MICRODUCT FOR MICRODUCT CABLES WITH A ROPE			
Type	**D_y [mm]**	**D_i [mm]**	**e [mm]**
MT-MDIP-05038	5.0	3.8	0.6

COLORS

Microduct	1	2	3	4	5	6	7	8	9	10	11	12
Color	red	white	yellow	blue	green	violet	brown	black	orange	aqua	pink	grey
Code	R	WH	Y	BL	GR	V	BR	BK	OR	AQ	P	GY

ORDERING INFORMATION

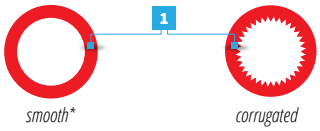
MT-MDI Standard microducts	
MT-MDI-05038.x	MetroJET standard microduct 5/3.8 mm, x- color according to color code
MT-MDI-07055.x	MetroJET standard microduct 7/5.5 mm, x- color according to color code
MT-MDI-1008.x	MetroJET standard microduct 10/8 mm, x- color according to color code
MT-MDI-1210.x	MetroJET standard microduct 12/10 mm, x- color according to color code
MT-MDI-1411.x	MetroJET standard microduct 14/11 mm, x- color according to color code
MT-MDIP Standard microducts with a rope **	
MT-MDIP-05038.x	MetroJET standard microduct 5/3.8 mm with a rope, x- color according to color code

****** - other diameters of microducts with a rope are available after consulting with our Sales Department.

MT-MDI construction

1. HDPE outer jacket

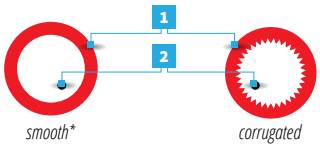
MT-MDI



MT-MDIP construction

1. HDPE outer jacket
2. Rope

MT-MDIP



***** for Di = 3.8 mm

Overview

MetroJET microducts are main elements of a microduct system. Their proper selection defines parameters of a whole system, reduces costs and facilitates further development. Bearing all these things in mind, a full range of high quality microducts is available in our MetroJET system portfolio. Therefore, MT-MDI can be blown into cable pipes as they are characterized by high pneumatic resistance (up to 12 bar), which facilitates cables blowing at longer distances.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Inner corrugated sheath for Di >3.8 mm
- Available in 12 colors
- Coefficient of friction < 0.1
- Inner sheath with a permanent anti-slip and anti-electrostatic layer
- HDPE material in accordance with telecommunication requirements
- Selected microducts are equipped with a rope

ADDITIONAL ACCESSORIES

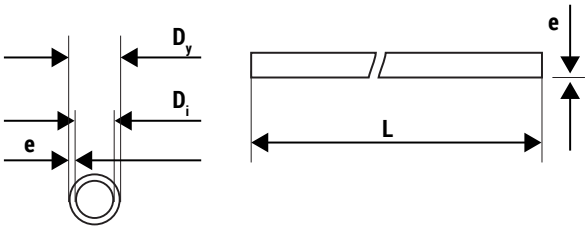
End cap, connectors	Tools
MT-ZDI	MT-TC
MT-ZTDI	
MT-ZG	
MT-ZU	
MT-ZW	
MT-ZR	

MICRODUCTS

MT-MDB DIRECT BURIED MICRODUCTS

MetroJET integrity | Easy installation | Low friction | Crushproof

MT-MDB dimensions



D_y outer diameter
D_i inner diameter
e wall thickness
L length

Technical data

MT-MDB DIRECT BURIED MICRODUCTS FOR MICRODUCT CABLES			
Type	**D_y [mm]**	**D_i [mm]**	**e [mm]**
MT-MDB-0704	7.0	4.0	1.5
MT-MDB-1208	12.0	8.0	2.0
MT-MDB-1410	14.0	10.0	2.0
MT-MDBP DIRECT BURIED MICRODCUTS FOR MICRODUCT CABLES WITH A ROPE			
Type	**D_y [mm]**	**D_i [mm]**	**e [mm]**
MT-MDBP-0704	7.0	4.0	1.5

COLORS

Microduct	1	2	3	4	5	6	7	8	9	10	11	12
Color	red	white	yellow	blue	green	violet	brown	black	orange	aqua	pink	grey
Code	R	WH	Y	BL	GR	V	BR	BK	OR	AQ	P	GY

ORDERING INFORMATION

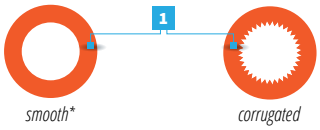
MT-MDB direct buried microducts	
MT-MDB-0704.x	MetroJET direct buried microduct 7/4 mm, x- color according to color code
MT-MDB-1208.x	MetroJET direct buried microduct 12/8 mm, x- color according to color code
MT-MDB-1410.x	MetroJET direct buried microduct 14/10 mm, x- color according to color code
MT-MDBP Microducts direct-buried with a rope**	
MT-MDBP-0704.x	MetroJET direct buried microduct 7/4 mm with a rope, x- color according to color code

** - other diameters of microducts with a rope are available after consulting with our Sales Department.

MT-MDB construction

1. HDPE PE80 outer jacket

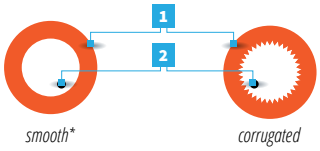
MT-MDB



MT-MDBP construction

1. HDPE PE80 outer jacket
2. Rope

MT-MDBP



* for Di = 4.0 mm

Overview

MT-MDB MetroJET microducts with reinforced walls are specifically designed to be directly placed in the ground. Thanks to a proper selection of wall thickness, MT-MDB microducts can be connected with MT-MDI ones with the use of reduction couplings. Therefore, mechanical pulling enables placing MT-MDB microducts in a microduct system. Also, high compressive and bending strength are characteristics features of these products.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- To be directly placed in the ground
- Corrugated anti-slip layer
- Available in 12 colors
- Coefficient of friction < 0.1
- Inner sheath with a permanent anti-slip and anti-electrostatic layer;
- HDPE material in accordance with telecommunication requirements
- Available with a rope to pull the microduct cable

ADDITIONAL ACCESSORIES

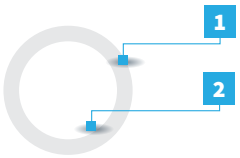
End cap, connectors	Tools
MT-ZDB	MT-TC
MT-ZTDB	
MT-ZDI	
MT-ZR	

MICRODUCTS

LSOH MT-MLH NON-FLAMMABLE MICRODUCTS

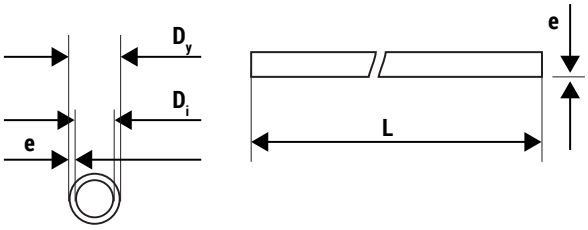
MetroJET integrity | Easy installation | Low friction | LSOH

MT-MLH construction



1. LSOH outer jacket
2. Inner sheath with slippery layer

Dimensions MT-



D_y outer diameter
D_i inner diameter
e wall thickness
L length

Technical data

MT-MLH NON-FLAMMABLE MICRODUCT			
Type	D_y [mm]	D_i [mm]	e [mm]
MT-MLH-05035	5.0	3.5	0.75
MT-MLH-07055	7.0	5.5	0.75
MT-MLH-1008	10.0	8.0	1.0
MT-MLH-1210	12.0	10.0	1.0

ORDERING INFORMATION

MT-MLH non-flammable microduct	
MT-MLH-05035	MetroJET non-flammable microduct 5/3.5 mm
MT-MLH-07055	MetroJET non-flammable microduct 7/5.5 mm
MT-MLH-1008	MetroJET non-flammable microduct 10/8 mm
MT-MLH-1210	MetroJET non-flammable microduct 12/10 mm

Overview

→ MetroJET non-flammable microducts are specifically designed to construct microduct systems inside the buildings. Microducts are made of non-halogen material and are low smoke, thus the fire doesn't spread. Available in natural polyethylene (white).

Applications

→ Indoor networks of MetroJET system
→ FTTx indoor networks

Features & benefits

→ Inner smooth surface
→ White microducts available
→ Coefficient of friction 0.13
→ Inner sheath with a permanent anti-slip layer;
→ HDPE material in accordance with telecommunication requirements
→ Inner anti-electrostatic layer

ADDITIONAL ACCESSORIES

End cap, connectors	Tools
MT-ZDI	MT-TC
MT-ZTDI	
MT-ZG	
MT-ZU	
MT-ZW	
MT-ZR	

FOILED MICRODUCT BUNDLES

FOILED BUNDLES

Fibrain MetroJET bundles are surrounded by foil to facilitate proper placement. Bundles are available in two options: loose and tight. Foiled bundles can have several configurations with different diameters of microducts.

TYPES

Standard

Direct-buried

Flat direct-buried

APPLICATIONS

Telecom

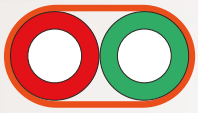
CATV

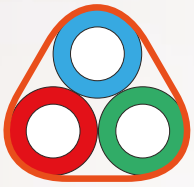
Metro networks

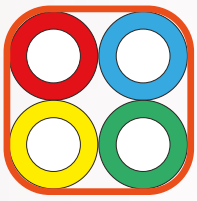
C&I

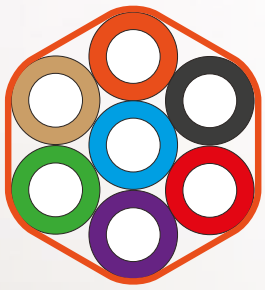
FTTX

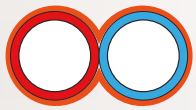
SHAPES

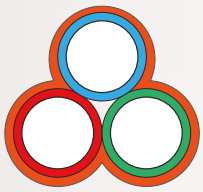


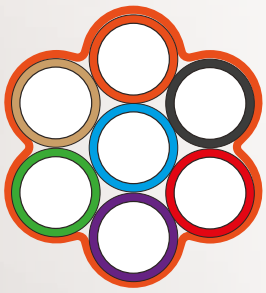






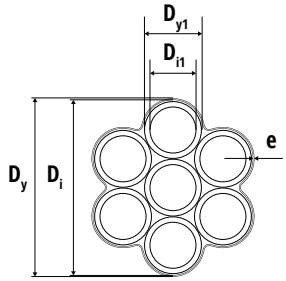






FOILED BUNDLES

MT-WDI STANDARD FOILED BUNDLES OF MICRODUCTS



MT-WDI dimensions

D_y outer diameter of foiled bundles
D_i inner diameter of foiled bundles
D_{y1} outer diameter of microduct
D_{i1} inner diameter of microduct
e wall thickness

MetroJET integrity | Easy installation | Multiplication of openings | Various configurations with microducts | Easy branchings

Technical data

MT-WDI STANDARD FOILED BUNDLES OF MICRODUCTS						
Type	D_y [mm]	D_i [mm]	D_{y1} [mm]	D_{i1} [mm]	e [mm]	Central microduct
MT-WDI-0512	21.8	20.8	5.0	3.5	0.5	-
MT-WDI-0519	26.0	25.0	5.0	3.5	0.5	-
MT-WDI-1003	22.6	21.6	10.0	8.0	0.5	-
MT-WDI-1005	28.0	27.0	10.0	8.0	0.5	yes (1x7/5.5 mm)
MT-WDI-1007	31.0	30.0	10.0	8.0	0.5	-
MT-WDI-1203	26.9	25.9	12.0	10.0	0.5	-

ORDERING INFORMATION

MT-WDI standard foiled bundles of microducts	
MT-WDI-0512	MetroJET secondary foiled bundle 12 microducts 5/3.5 mm
MT-WDI-0519	MetroJET secondary foiled bundle 19 microducts 5/3.5 mm
MT-WDI-1003	MetroJET secondary foiled bundle 3 microducts 10/8 mm
MT-WDI-1005	MetroJET secondary foiled bundle 5 microducts 10/8 mm + 1 microduct 7/5.5 mm
MT-WDI-1007	MetroJET secondary foiled bundle 7 microducts 10/8 mm
MT-WDI-1203	MetroJET secondary foiled bundle 3 microducts 12/10 mm

Overview

→ MT-WDI foiled bundles of microducts are wrapped with PE foil to facilitate placing. Prefabricated bundle of thin- wall microducts include several configurations of microducts with various diameters. The place in a fiber optic network determines the choice of a proper configuration. Therefore, MT-WDI foiled bundles can be installed in a secondary or primary microduct system.

Applications

→ Metro networks of MetroJET system
→ Distribution networks of MetroJET system
→ FTTx networks of MetroJET system

Features & benefits

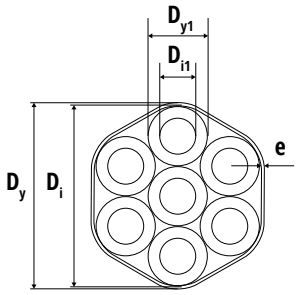
→ Thin-walled PE microducts wrapped with foil
→ To be installed with the use of pneumatic& mechanic methods in cable pipelines
→ Hybrid construction with various microducts

ADDITIONAL ACCESSORIES

End cap, connectors, enclosures	Tools
MT-OP	MT-TC
MT-OY	
MT-OT	
MT-OH	

FOILED BUNDLES

MT-WDB DIRECT-BURIED FOILED BUNDLES OF MICRODUCTS



MT-WDB dimensions

D_y bundle outer diameter
D_i bundle inner diamete
D_{y1} microduct outer diameter
D_{i1} microduct inner diameter
e wall thickness

MetroJET integrity
Easy installation
Multiplication of openings
Various configurations with microducts
Easy branchings
Direct-buried applications

Technical data

MT-WDB FOILED BUNDLES DIRECT-BURIED						
Type	D_y [mm]	D_i [mm]	x – micro-pipes qty	D_{y1} [mm]	D_{i1} [mm]	e [mm]
MT-WDB-0703	16.9	16.15	3	7.0	4.0	0.75
MT-WDB-0707	22.8	22.05	7	7.0	4.0	0.75
MT-WDB-0712	31.1	30.35	12	7.0	4.0	0.75
MT-WDB-1203	27.4	26.65	3	12.0	8.0	0.75
MT-WDB-1204	30.5	29.75	4	12.0	8.0	0.75
MT-WDB-1205	33.5	32.75	5	12.0	8.0	0.75
MT-WDB-1207	37.5	36.75	7	12.0	8.0	0.75
MT-WDB-1404	36.0	35.25	4	14.0	10.0	0.75
MT-WDB-1405	40.3	39.55	5	14.0	10.0	0.75
MT-WDB-1407	43.8	43.05	7	14.0	10.0	0.75

ORDERING INFORMATION

MT-WDB Foiled bundles	
MT-WDB-0703	MetroJET direct-buried foiled bundle 3 microducts 7/4 mm
MT-WDB-0707	MetroJET direct-buried foiled bundle 7 microducts 7/4 mm
MT-WDB-0712	MetroJET direct-buried foiled bundle 12 microducts 7/4 mm
MT-WDB-1203	MetroJET direct-buried foiled bundle 3 microducts 12/8 mm
MT-WDB-1204	MetroJET direct-buried foiled bundle 4 microducts 12/8 mm
MT-WDB-1205	MetroJET direct-buried foiled bundle 5 microducts 12/8 mm
MT-WDB-1207	MetroJET direct-buried foiled bundle 7 microducts 12/8 mm
MT-WDB-1404	MetroJET direct-buried foiled bundle 4 microducts 14/10 mm
MT-WDB-1405	MetroJET direct-buried foiled bundle 5 microducts 14/10mm
MT-WDB-1407	MetroJET direct-buried foiled bundle 7 microducts 14/10mm

Overview

MT-WDB foiled bundles of microducts are wrapped with PE foil to facilitate placing. Pre-fabricated bundle of thin - wall microducts includes several configurations of microducts with various diamaters. The place in a fiber optic network determines the choice of a proper configuration. Therefore, MT-WDI microducts with PE foil facilitate performing branchings.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

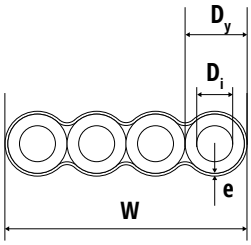
- Foiled bundles of microducts wrapped with PE foil
- To be directly placed in the ground
- To be directly installed in the primary microduct system
- Perfect solution for networks in a star and tree typology
- Ease of performing branchings

ADDITIONAL ACCESSORIES

End cap, connectors, enclosures	Tools
MT-ZDB	MT-TC
MT-ZDBI	MT-TC1
MT-ZTDB	

FOILED BUNDLES

MT-WDBF FLAT FOILED BUNDLES OF MICRODUCTS



MT-WDBF dimensions

D_y microduct outer diameter
D_i microduct inner diameter
e wall thickness
W bundle width

MetroJET integrity

Easy installation

Multiplication of openings

Various configurations with microducts

Easy branchings

Direct-buried applications

Technical data

MT-WDBF flat foiled bundles of microducts					
Type	W [mm]	D_y [mm]	D_i [mm]	x – micro-pipes qty	e [mm]
MT-WDBF-1203	38.0	12.0	8.0	3	1.0
MT-WDBF-1204	50.0	12.0	8.0	4	1.0
MT-WDBF-1205	62.0	12.0	8.0	5	1.0
MT-WDBF-1206	74.0	12.0	8.0	6	1.0
MT-WDBF-1404	58.0	14.0	10.0	4	1.0
MT-WDBF-1405	72.0	14.0	10.0	5	1.0

ORDERING INFORMATION

MT-WDBF flat foiled bundles of microducts	
MT-WDBF-1203	MetroJET direct-buried foiled flat bundle 3 microducts 12/8 mm
MT-WDBF-1204	MetroJET direct-buried foiled flat bundle 4 microducts 12/8 mm
MT-WDBF-1205	MetroJET direct-buried foiled flat bundle 5 microducts 12/8 mm
MT-WDBF-1206	MetroJET direct-buried foiled flat bundle 6 microducts 12/8 mm
MT-WDBF-1404	MetroJET direct-buried foiled flat bundle 4 microducts 14/10 mm
MT-WDBF-1405	MetroJET direct-buried foiled flat bundle 5 microducts 14/10 mm

Overview

MT-WDBF foiled bundles of microducts are wrapped with PE foil to facilitate placing directly in the ground. Flat shape, which makes them perfect solution to be used in micro-trenching method, is the characteristic feature of these foiled bundles. Therefore, they can have several configurations of microducts with various diameters. The place in a fiber optic network determines the choice of a proper configuration.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

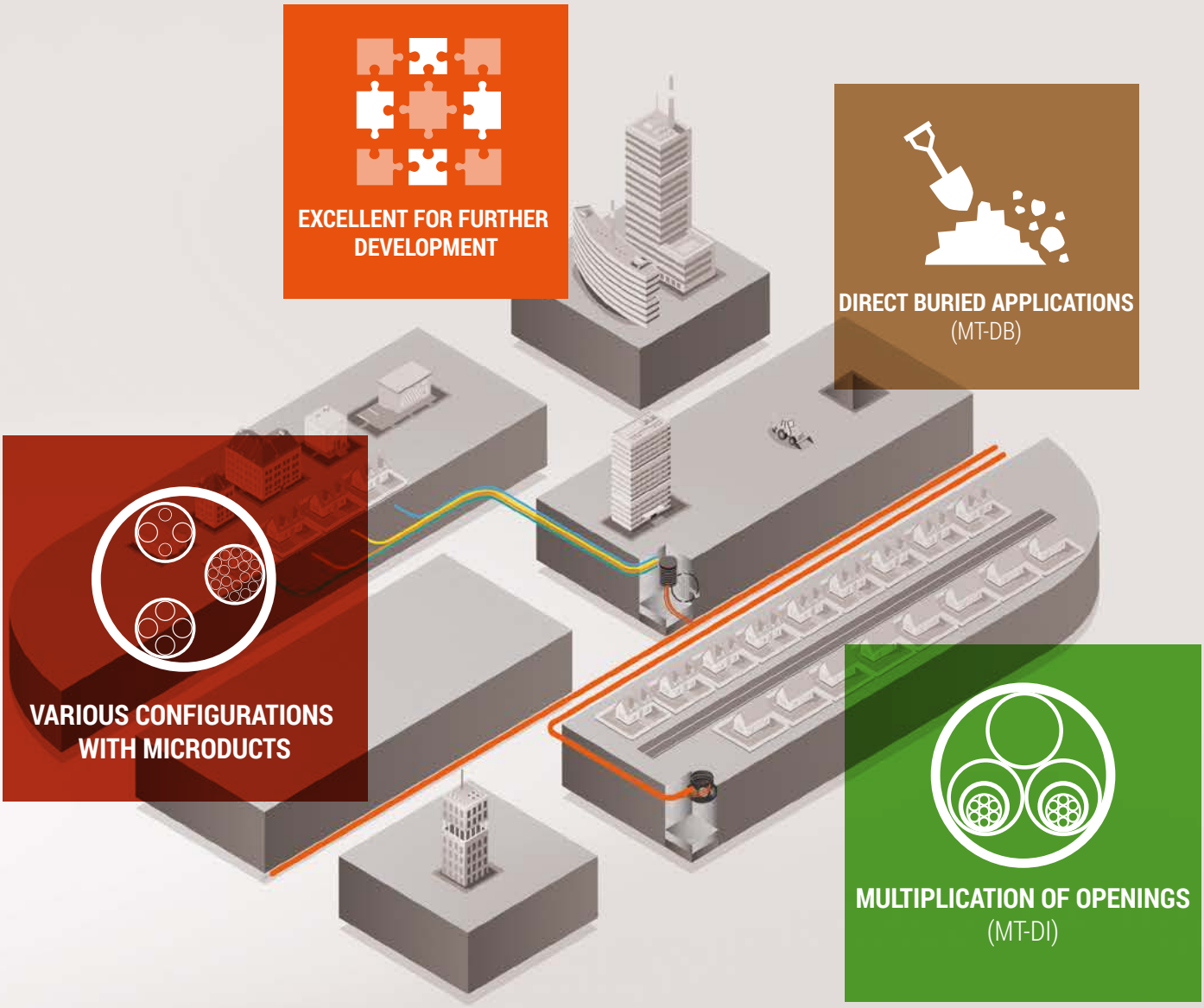
Features & benefits

- Foiled bundles of microducts wrapped with PE foil
- To be directly placed in the ground
- To be directly installed in the primary microduct system
- Flat shape
- Ease of performing branchings

ADDITIONAL ACCESSORIES

End cap, connectors	Tools
MT-ZDB	MT-TC
MT-ZTDB	MT-TC1

PREFABRICATED PIPES



PREFABRICATED PIPES

Fibrain MetroJET prefabricated pipes are bundle of microducts with single PP or double PP/PE coat. Their proper selection determines parameters of a whole system, reduces costs and facilitates further development. The proper selection concerning microduct configuration determines the installation place in the fiber optic network.

TYPES

Prefabricated secondary pipes

Prefabricated primary pipes

APPLICATIONS

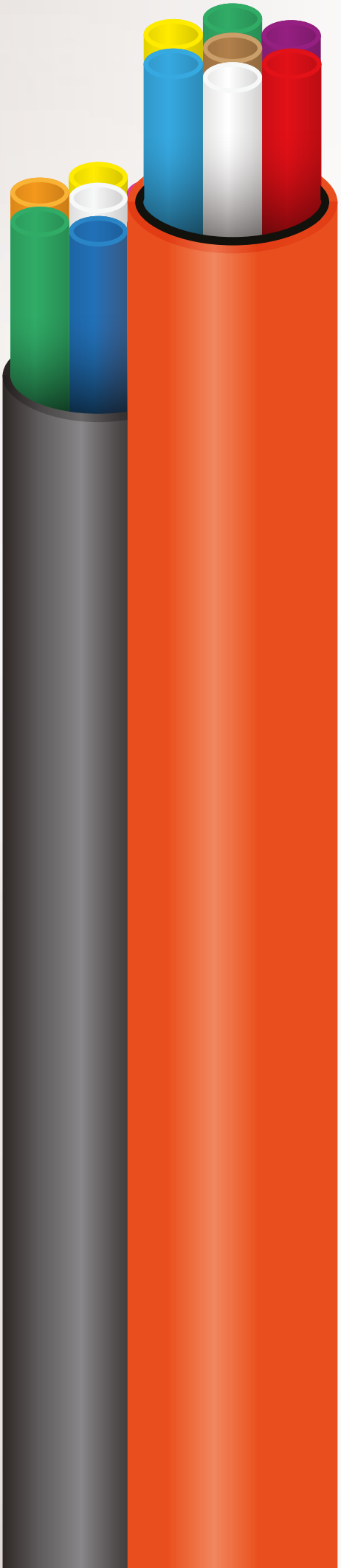
Telecom

CATV

Metro networks

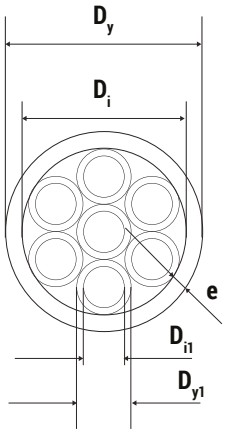
C&I

FTTX



PREFABRICATED PIPES

MT-DI PREFABRICATED SECONDARY PIPE



MT-DI dimensions

D_y outer diameter of prefabricated pipe
D_i inner diameter of prefabricated pipe
D_{y1} outer diameter of microduct
D_{i1} inner diameter of microduct
e wall thickness

MetroJET integrity

Easy installation

Multiplication of openings

Various configurations with microducts

Easy branchings

Overview

MT-DI prefabricated pipes of FibrainMetroJET system are a bundle of microducts in a single polypropylene coat, designed to be placed in a secondary microduct system. MT-DI pipes are used to develop secondary microduct system and multiply number of holes while maintaining compliance of diameters for standard pipes. Outer sheath of MT-DI is black.

Technical data

MT-DI PREFABRICATED SECONDARY PIPES						
Type	D_y [mm]	D_i [mm]	D_{y1} [mm]	D_{i1} [mm]	e [mm]	Central microduct
MT-DI-0507	18.4	15.0	5.0	3.8	1.7	-
MT-DI-0513	30.6	26.0	5.0	3.8	2.3	yes (1x 16/12.8 mm)
MT-DI-0519	28.8	25.0	5.0	3.8	1.8	-
MT-DI-0524	33.4	30.0	5.0	3.8	1.7	yes (1x10/8.0 mm)
MT-DI-0703	18.1	15.1	7.0	5.5	1.5	-
MT-DI-0707	25.0	21.0	7.0	5.5	2.0	-
MT-DI-1003	25.0	21.6	10.0	8.0	1.7	-
MT-DI-1007	33.4	30.0	10.0	8.0	1.7	-

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Prefabricated pipes with a single PP coat
- To be directly installed in the primary microduct system
- Possibility of hybrid construction with various microducts

ORDERING INFORMATION

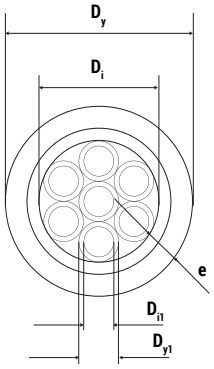
MT-DI prefabricated secondary pipes	
MT-DI-0507	MetroJET prefabricated secondary pipe 7 microducts 5/3.8 mm
MT-DI-0513	MetroJET prefabricated secondary pipe 13 microducts 5/3.8 mm + 1 microduct 16/14 mm
MT-DI-0519	MetroJET prefabricated secondary pipe 19 microducts 5/3.8 mm
MT-DI-0524	MetroJET prefabricated secondary pipe 24 microducts 5/3.8 mm + 1 microduct 10/8 mm
MT-DI-0703	MetroJET prefabricated secondary pipe 3 microducts 7/5.5 mm
MT-DI-0707	MetroJET prefabricated secondary pipe 7 microducts7/5.5 mm
MT-DI-1003	MetroJET prefabricated secondary pipe 3 microducts 10/8 mm
MT-DI-1007	MetroJET prefabricated secondary pipe 7 micropipes 10/8 mm

ADDITIONAL ACCESSORIES

End cap, enclosures	Tools
MT-OP	MT-TC
MT-OY	MT-TC1
MT-OT	MT-TC2
MT-OH	MT-TC3
MT-ZTT	

PREFABRICATED PIPES

MT-DB PREFABRICATED PIPES



MT-DB dimensions

D_y prefabricated pipe outer diameter
D_i prefabricated pipe inner diameter
D_{y1} microduct outer diameter
D_{i1} microduct inner diameter
e wall thickness

MetroJET integrity
Easy installation
Multiplication of openings
Various configurations with microducts
Easy branchings
Direct-buried applications

Technical data

MT-DB PREFABRICATED PRIMARY PIPE						
Type	D_y [mm]	D_i [mm]	D_{y1} [mm]	D_{i1} [mm]	e [mm]	Central microduct
MT-DB-0507	22.2	15.0	5.0	3.5	3.6±0.4	-
MT-DB-0512	28.0	20.8	5.0	3.8	3.6±0.4	-
MT-DB-0518	43.0	35.0	5.0	3.8	4.0±0.4	yes (3x10/8. 0mm)
MT-DB-0519	33.4	25.0	5.0	3.8	4.2±0.4	-
MT-DB-0524	38.4	30.0	5.0	3.5	4.2±0.4	yes (1x10/8 mm)
MT-DB-0703	20.5	13.1	7.0	5.5	3.7±0.4	-
MT-DB-0707	28.0	21.0	7.0	5.5	3.5±0.4	-
MT-DB-1003	27.4	21.6	10.0	8.0	2.9±0.4	-
MT-DB-1005	34.8	27.0	10.0	8.0	3.9±0.4	yes (1x7/5.5 mm)
MT-DB-1007	38.4	30.0	10.0	8.0	4.2±0.4	-
MT-DB-1207	44.4	36.0	12.0	10.0	4.2±0.4	-
MT-DB PREFABRICATED PIPES WITH A DUCT LOCATOR						
Type	D_y [mm]	D_i [mm]	D_{y1} [mm]	D_{i1} [mm]	e [mm]	Central microduct
MT-DB-1007-PL05	38.4	30.0	10.0	8.0	4.2±0.4	-

ORDERING INFORMATION

MT-DB PREFABRICATED PRIMARY PIPE	
MT-DB-0507	MetroJET prefabricated primary pipe 7 microducts 5/3.8 mm
MT-DB-0512	MetroJET prefabricated primary pipe 12 microducts 5/3.8 mm
MT-DB-0518	MetroJET prefabricated primary pipe 18 microducts 5/3.8 mm + 3 microducts 10/8 mm
MT-DB-0519	MetroJET prefabricated primary pipe 19 microducts 5/3.8 mm
MT-DB-0524	MetroJET prefabricated primary pipe 24 microducts 5/3.8 mm + 1 microduct 10/8 mm
MT-DB-0703	MetroJET prefabricated primary pipe 3 microducts 7/5.5 mm
MT-DB-0707	MetroJET prefabricated primary pipe 7 microducts 7/5.5 mm
MT-DB-1003	MetroJET prefabricated primary pipe 3 microducts 10/8 mm
MT-DB-1005	MetroJET prefabricated primary pipe 5 microducts 10/8 mm + 1 microduct 7/5.5 mm
MT-DB-1007	MetroJET prefabricated primary pipe 7 microducts 10/8 mm
MT-DB-1207	MetroJET prefabricated primary pipe 7 microducts 12/10 mm
MT-DB prefabricated pipes with a duct locator	
MT-DB-1007-PL05	MetroJET prefabricated primary pipe 7 microducts 10/8 mm with 0.5 mm duct locator

Overview

MT-DB prefabricated and direct-buried pipes of Fibrain MetroJET system are bundle of microducts in a double polypropylene and polyethylene (PP/HDPE) coat. Sturdy construction provides high pressure resistance from 750N to even 3,5kN. Such parameters provide the possibility of using pipes in any direct-buried installations with no need to use other pipes. Therefore, MT-DB pipes can be placed in almost all of the mechanized systems – including the use of cable ploughing machines. Double coat protects against water penetration, especially in the rocky ground.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Prefabricated pipes with double PP/HDPE coat
- To be directly installed in the ground
- Possibility of hybrid construction with various microducts

ADDITIONAL ACCESSORIES

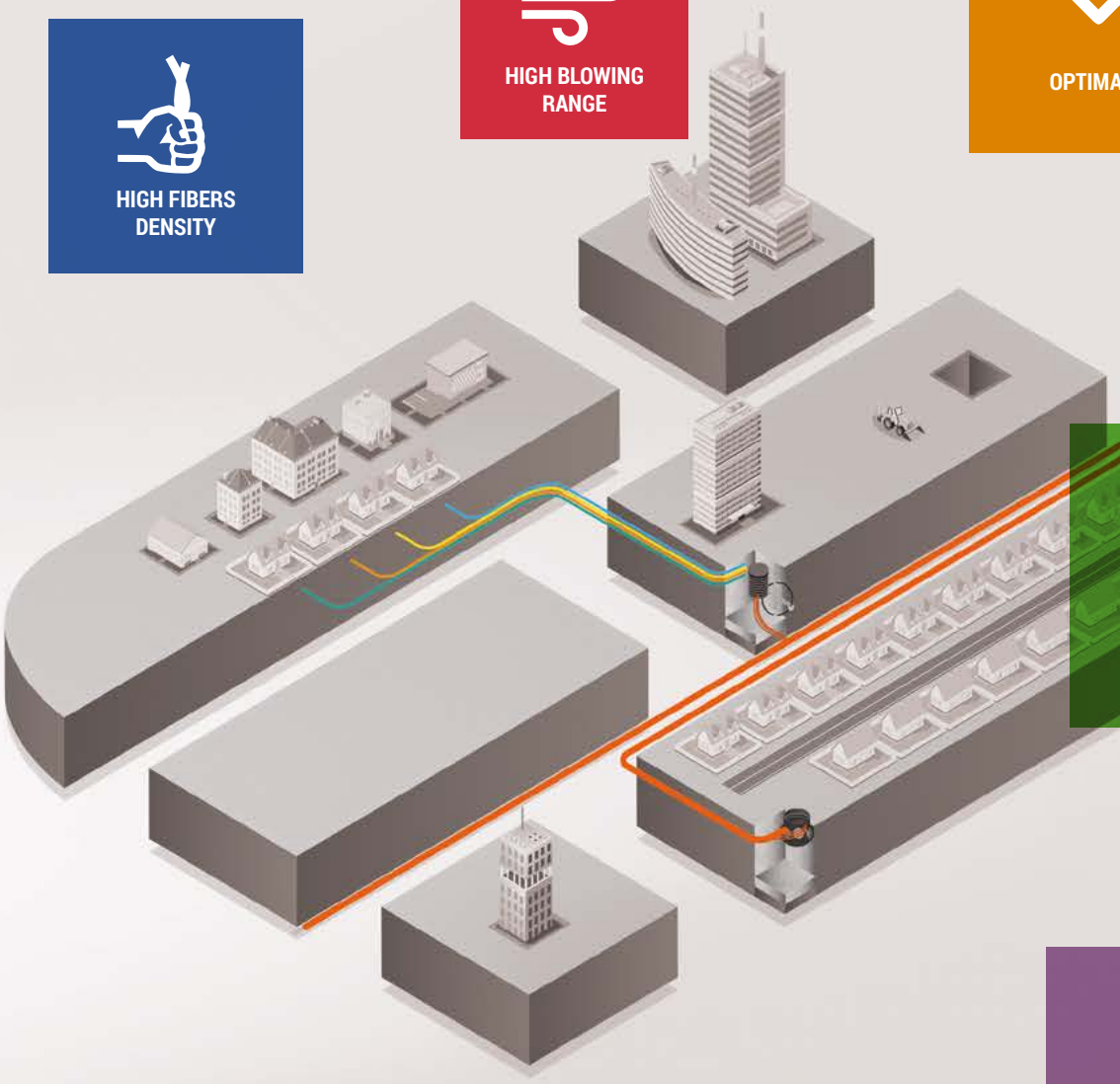
End cap, enclosures	Tools
MT-OP	MT-TC
MT-OY	MT-TC1
MT-OT	MT-TC2
MT-OH	MT-TC3
MT-ZTT	

MICRODUCTS

HIGH FIBERS DENSITY

HIGH BLOWING RANGE

OPTIMAL DIAMETER



LOW COEFFICIENT OF FRICTION

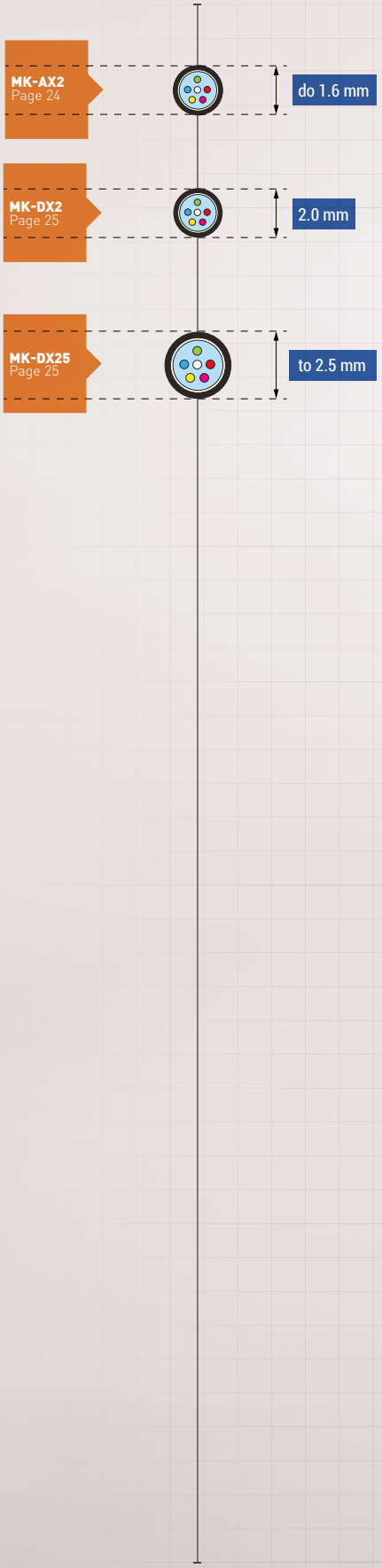
UNIT DESIGN

MICRODUCTS

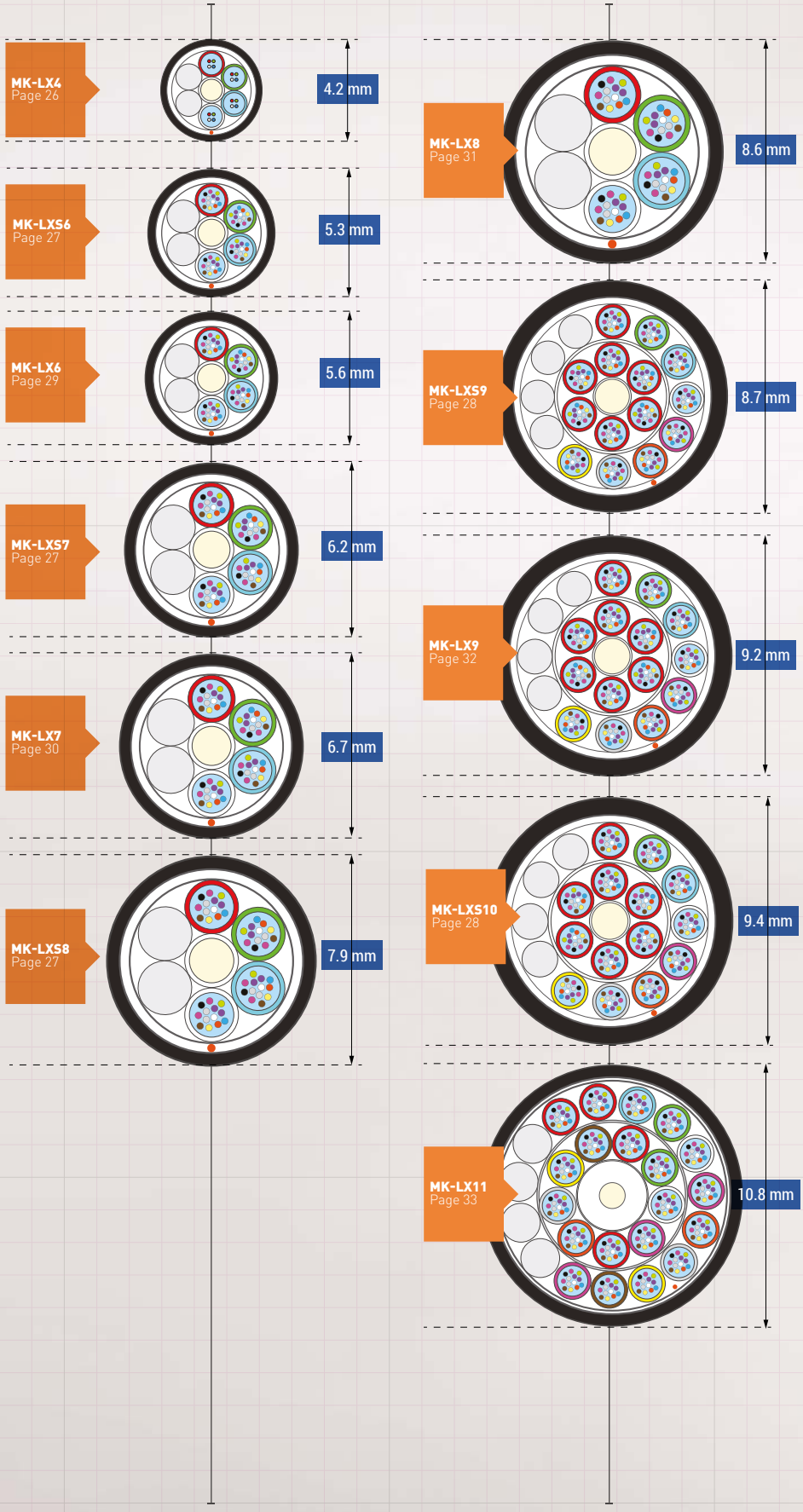
MetroJET fiber optic microducts are specifically designed for FTTH systems corresponding to diameters of given microducts. The fiber quantity & cable diameter ratio is characteristic and highly beneficial.

LOOSE TUBE CABLES

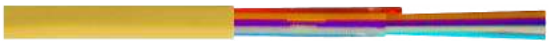
CENTRAL TUBE



MULTI-TUBE

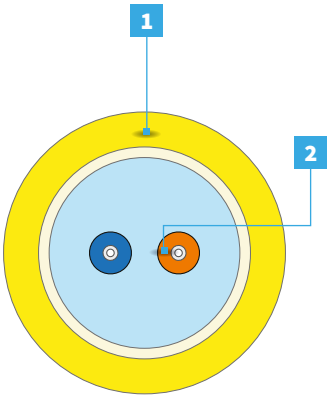


MICRODUCTS CABLES MK-AX2



Cable structure

1. Polymeric jacket with low coefficient of friction
2. 250 µm colored fibers



1-st generation microduct · FTTX · Last mile connection · Blowing installation · Flexible · Reduced dimensions · Bendsafe

Configuration

METROJET MK-AX2					
Version	Fibers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. install. tension [N]	Crush [N/10 cm]
1T x 2F	2	1.1	1.2	15	100
1T x 4F	4	1.1	1.4		
1T x 6F	6	1.5	1.6		
1T x 8F	8	1.5	1.8		
1T x 10F	10	1.6	2.0		
1T x 12F	12	1.6	2.2		

Applications

- Microduct air-blowing application
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

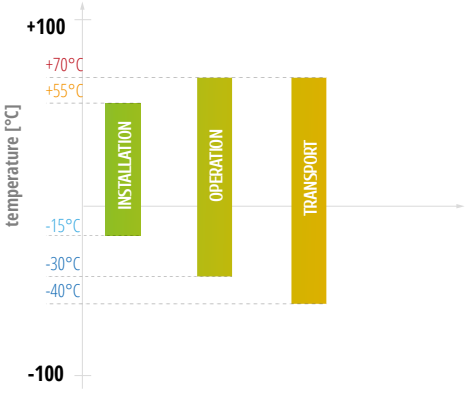
- Polymeric jacket with low coefficient of friction
- Central tube without gel
- 250 µm colored fibers

Compatibility table

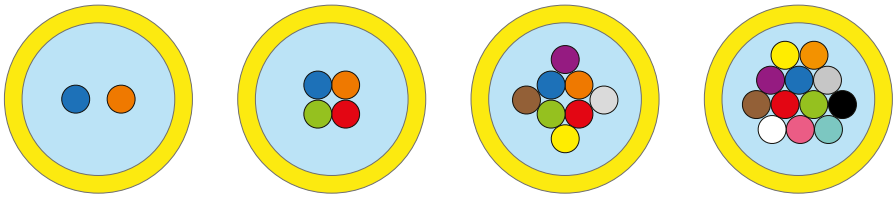
STANDARD MICRODUCT				
Version	Outer Ø [mm]	Inner Ø [mm]	MK-AX2	
			2-4F	6-12F
3/2.1	3	2.1	✓	-
5/3.5	5	3.5	✓	✓
7/5.5	7	5.5	✓	✓
10/8	10	8		
12/10	12	10		
14/12	14	12		
Fiber qty			2-12	

DIRECT BURRIED DUCTS				
Version	Outer Ø [mm]	Inner Ø [mm]	MK-AX2	
			2-4F	6-12F
7/3.5	7	3.5	✓	
7/3.8	7	3.8	✓	
7/4	7	4	✓	
10/5.5	10	5.5	✓	
12/8	12	8	-	
14/10	14	10	-	
Fiber qty			2-12	

Operating temperature



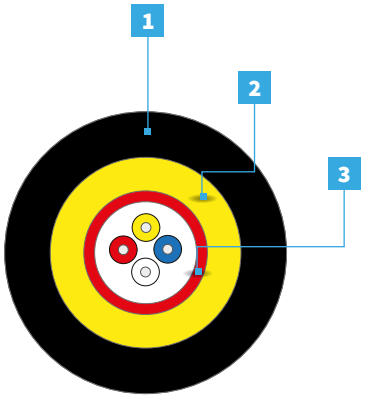
Available colors



MK-DX2/25

Cable structure

1. HDPE with low coefficient of friction
2. Aramid yarns
3. Central Loose tube (PBT) with 250 µm colored fibers in filling gel



1-st generation microduct | FTTX | Last mile connection | Blowing installation | Flexible | Reduced dimensions | Bendsafe

METROJET MK-DX2/25					
Version	Fibers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. installation tension [N]	Crush [N/10 cm]
1T x 2F	2	2.0	3,9	300	500
1T x 4F	4	2.0	3.9		
1T x 6F	6	2.3	4.4		
1T x 8F	8	2.3	4.5		
1T x 10F	10	2.3	4.6		
1T x 12F	12	2.3	4.6		

Applications

- Microduct cabling system
- FTTH & Distribution networks
- Flexible network design
- Last mile connection
- Blowing & pulling installation method

Features & benefits

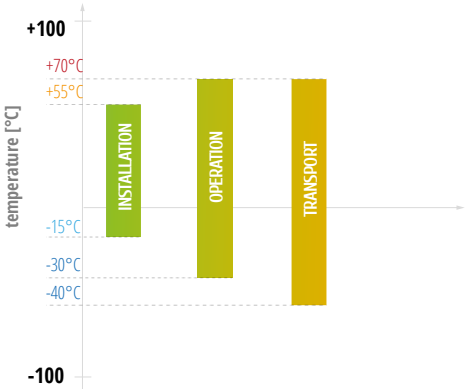
- HDPE with low coefficient of friction
- Aramid yarns
- Central tube with gel
- 250 µm colored fibers
- Microbending resistant fiber G657A1 as standard

Compatibility table

STANDARD MICRODUCT				
Version	Outer Ø [mm]	Inner Ø [mm]	MK-DX2	MK-DX25
3/2.1	3	2.1	-	-
5/3.5	5	3.5	✓	-
7/5.5	7	5.5	✓	✓
10/8	10	8	✓	✓
12/10	12	10	-	-
14/12	14	12	-	-
Fiber qty			2-4	4-12

DIRECT BURRIED DUCTS				
Version	Outer Ø [mm]	Inner Ø [mm]	MK-DX2	MK-DX25
7/3.5	7	3.5	✓	-
7/3.8	7	3.8	✓	✓
7/4	7	4	✓	✓
10/5.5	10	5.5	✓	✓
12/8	12	8	✓	✓
14/10	14	10	-	-
Fiber qty			2-4	4-12

Operating temperature



Available colors

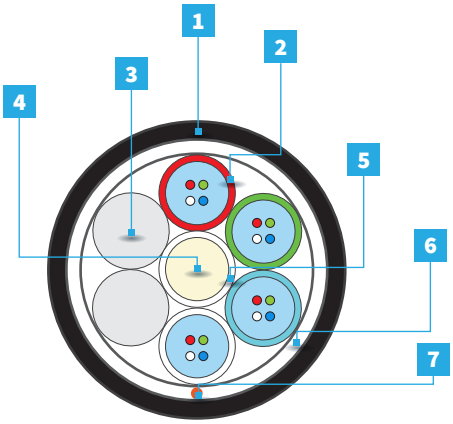
T-TELECOM (ACCORDING TO IEC 60304) - Fibers in tube

1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

MICRODUCTS CABLES MK-LX4

Cable structure (MK-LX4)

1. HDPE outer jacket
2. Loose tubes (PBT) with colored fibers in filling gel
3. Fillers
4. Central strength member (FRP)
5. Water blocking yarns
6. Water blocking yarns on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LX4										
Version	Fibers	Fibers per tube	Total ele-ments	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	oper-ation	
1T x 4F	4	4	6	1	5	4.2	8	250	150	500
2T x 4F	8	4	6	2	4	4.2	8			
3T x 4F	12	4	6	3	3	4.2	9			
4T x 4F	16	4	6	4	2	4.2	9			
5T x 4F	20	4	6	5	1	4.2	10			
6T x 4F	24	4	6	6	0	4.2	10			

Other fiber counts available after consulting with our Sales Department

Applications

- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

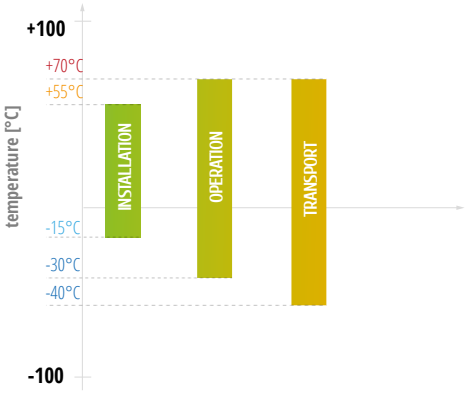
- HDPE, UV stabilized outer jacket with low friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes with max. 4 optical fibers
- Smaller outer diameter for blowing into 5.5 mm (ID) ducts

Compatibility table

STANDARD MICRODUCT			
Version	Outer Ø [mm]	Inner Ø [mm]	MK-LX4
3/2.1	3	2.1	-
5/3.5	5	3.5	-
7/5.5	7	5.5	✓
10/8	10	8	✓
12/10	12	10	✓
14/12	14	12	-
Fiber qty			4-24

DIRECT BURRIED DUCTS			
Version	Outer Ø [mm]	Inner Ø [mm]	MK-LX4
7/3.5	7	3.5	-
7/3.8	7	3.8	-
7/4	7	4	-
10/5.5	10	5.5	✓
12/8	12	8	✓
14/10	14	10	✓
Fiber qty			4-24

Operating temperature



Available colors

T-TELECOM (ACCORDING TO IEC 60304) - Fibers

1-12	1	2	3	4
Code	■	■	■	□
Color	red	green	blue	white

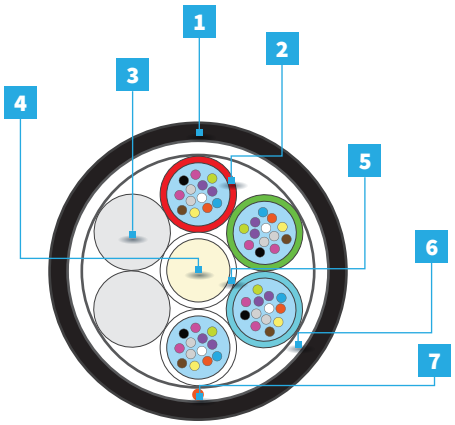
*In case of lower fiber count some tubes can be replaced by fillers.

T-TELECOM (ACCORDING TO IEC 60304) - Tubes

Tube	1	2	3	4	5	6
Code	■	■	■	□	■	■
Color	red	green	blue	white	violet	orange

Cable structure (MK-LXS6)

1. HDPE outer jacket
2. Loose tubes (PBT) with colored fibers in filling gel
3. Fillers
4. Central strength member (FRP)
5. Water blocking yarns on FRP
6. Water blocking yarns on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LXS6

Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
6T x 4F	24	4	6	6	0	5.3	18	650	200	500
6T x 6F	36	6	6	6	0	5.3	18			
6T x 8F	48	8	6	6	0	5.3	19			
6T x 10F	60	10	6	6	0	5.3	19			
4T x 12F	48	10	6	4	2	5.3	20			
6T x 12F	72	12	6	6	0	5.3	21			

METROJET MK-LXS7

Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
8T x 4F	32	4	8	8	0	6.2	28	1200	350	500
8T x 6F	48	6	8	8	0	6.2	28			
8T x 8F	64	8	8	8	0	6.2	29			
8T x 10F	80	10	8	8	0	6.2	30			
8T x 12F	96	12	8	8	0	6.2	31			

METROJET MK-LXS8

Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
12T x 4F	48	4	12	12	0	7.8	47	1500	550	500
12T x 6F	72	6	12	12	0	7.8	48			
12T x 8F	96	8	12	12	0	7.8	49			
12T x 10F	120	10	12	12	0	7.8	50			
12T x 12F	144	12	12	12	0	7.8	52			

Other fiber counts available after consulting with our Sales Department

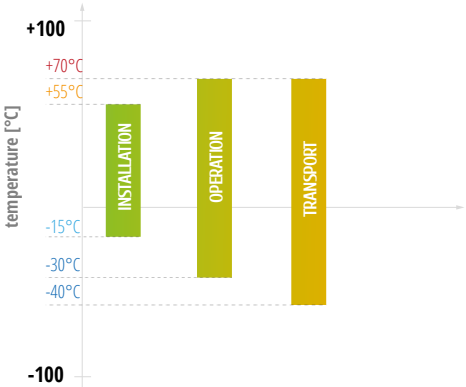
Applications

- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

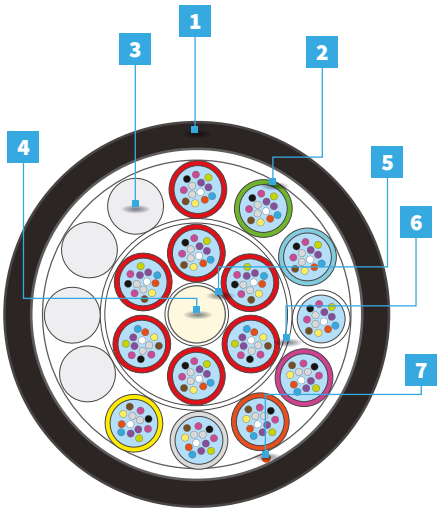
- HDPE, UV stabilized outer jacket with low coeffi-cient of friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes with max. 12 optical fibers

Operating temperature



Cable structure (MK-LX9)

1. HDPE outer jacket
2. Loose tubes (PBT) with colored fibers in filling gel
3. Fillers
4. Central strength member (FRP)
5. Water blocking yarns on FRP
6. Water blocking tape on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LXS9									
Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]	Crush [N/10 cm]
								instal-lation / opera-tion	
14T x 12F	168	12	18	14	4	8.7	53	650 / 200	500
16T x 12F	192	12	18	16	2	8.7	54		
18T x 12F	216	12	18	18	0	8.7	55		

METROJET MK-LXS10									
Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]	Crush [N/10 cm]
								instal-lation	opera-tion	
24T x 12F	288	12	24	24	0	9.4	72	1000	250	500

Other fiber counts available after consulting with our Sales Department

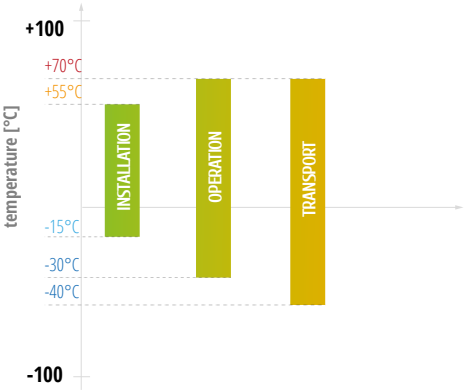
Applications

- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

- HDPE, UV stabilized outer jacket with low coeffi-cient of friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes with max. 12 optical fibers

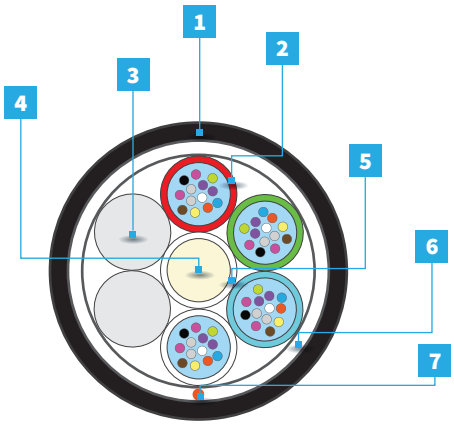
Operating temperature



MICRODUCTS CABLES MK-LX6

Cable structure (MK-LX6)

1. HDPE outer jacket
2. Loose tubes (PBT) with colored fibers in filling gel
3. Fillers
4. Central strength member (FRP)
5. Water blocking yarns on FRP
6. Water blocking yarns on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LX6										
Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
1T x 4F	4	4	6	1	5	5.6	28	750	250	1000
1T x 6F	6	6	6	1	5	5.6	28			
1T x 8F	8	8	6	1	5	5.6	28			
2T x 6F	12	6	6	2	4	5.6	29			
4T x 6F	24	6	6	4	2	5.6	29			
6T x 6F	36	6	6	6	0	5.6	29			
1T x 12F	12	12	6	1	5	5.6	30			
2T x 12F	24	12	6	2	4	5.6	30			
3T x 12F	36	12	6	3	3	5.6	30			
4T x 12F	48	12	6	4	2	5.6	31			
5T x 12F	60	12	6	5	1	5.6	32			
6T x 12F	72	12	6	6	0	5.6	33			

Other fiber counts available after consulting with our Sales Department

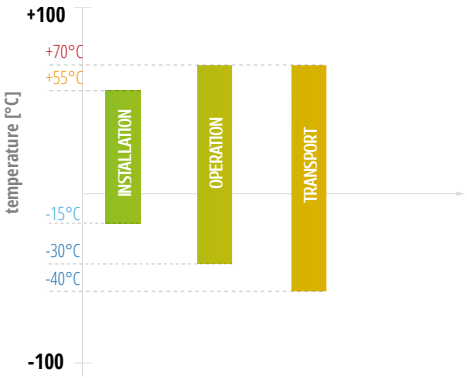
Applications

- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

- HDPE, UV stabilized outer jacket with low friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes containing 4-12 optical fibers
- Smallest diameter for blowing into 8 mm (ID) ducts

Operating temperature



Available colors

T-TELECOM (ACCORDING TO IEC 60304) - Fibers

1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

T-TELECOM (ACCORDING TO IEC 60304) - Tubes

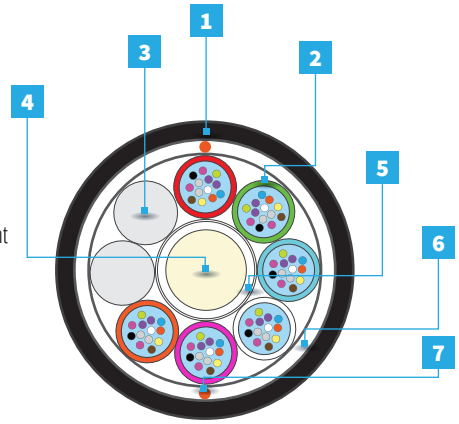
Tube	1	2	3	4	5	6
Code						
Color	red	green	blue	white	violet	orange

*In case of lower fiber count some tubes can be replaced by fillers.

MICRODUCTS CABLES MK-LX7

Cable structure (MK-LX7)

1. HDPE outer jacket
2. Loose tubes (PBT) with colored fibers in filling gel
3. Fillers
4. Central strength member (FRP)
5. Water blocking yarns on FRP
6. Water blocking yarns on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LX7										
Version	Fibers	Fibers per tube	Total ele-ments	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
8T x 4F	32	4	8	8	0	6.7	36	1600	600	1000
8T x 6F	48	6	8	8	0	6.7	37			
8T x 8F	64	8	8	8	0	6.7	38			
8T x 12F	96	12	8	8	0	6.7	39			

Other fiber counts available after consulting with our Sales Department

Available colors

T-TELECOM (ACCORDING TO IEC 60304) - Fibers

1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

T-TELECOM (ACCORDING TO IEC 60304) - Tubes

Tube	1	2	3	4	5	6	7	8
Code								
Color	red	green	blue	white	violet	orange	grey	yellow

*In case of lower fiber count some tubes can be replaced by fillers.

Applications

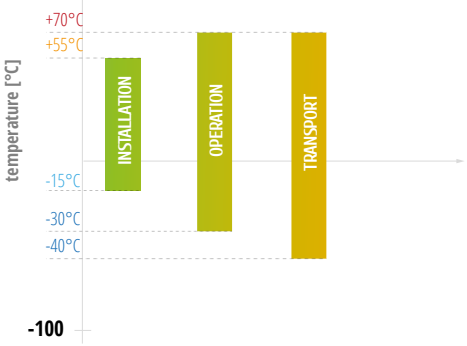
- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

- HDPE, UV stabilized outer jacket with low friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes containing 4-12 optical fibers
- Smallest diameter for blowing into 8* and 10 mm (ID) ducts

* - blowing range may be lower

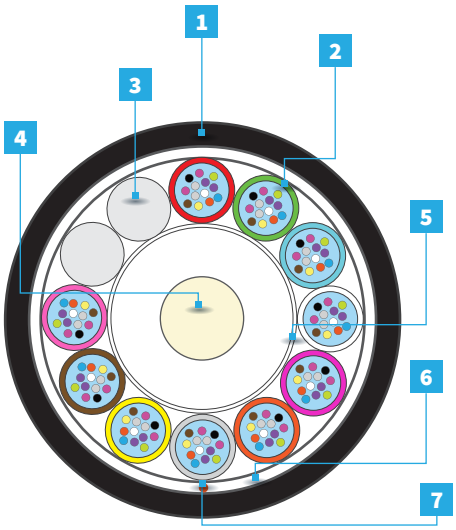
Operating temperature



MICRODUCTS CABLES MK-LX8

Cable structure

1. HDPE outer jacket
2. Loose tubes (PBT) with colored fibers in filling gel
3. Fillers
4. Central strength member (FRP)
5. Water blocking yarns on FRP
6. Water blocking yarns on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LX8										
Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
1T x 12F	12	12	12	1	11	8.6	53	2500	600	1000
2T x 12F	24	12	12	2	10	8.6	54			
3T x 12F	36	12	12	3	9	8.6	55			
4T x 12F	48	12	12	4	8	8.6	56			
5T x 12F	60	12	12	5	7	8.6	57			
6T x 12F	72	12	12	6	6	8.6	57			
8T x 12F	96	12	12	8	4	8.6	59			
12T x 12F	144	12	12	12	0	8.6	62			

Other fiber counts available after consulting with our Sales Department

Applications

- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

- HDPE, UV stabilized outer jacket with low friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes containing 4-12 optical fibers
- Smallest diameter for blowing into 12 mm (ID) ducts

Available colors

T-TELECOM (ACCORDING TO IEC 60304) - Fibers

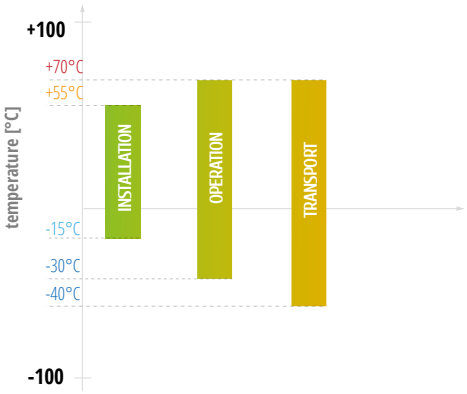
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

T-TELECOM (ACCORDING TO IEC 60304) - Tubes

Tube	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

*In case of lower fiber count some tubes can be replaced by fillers.

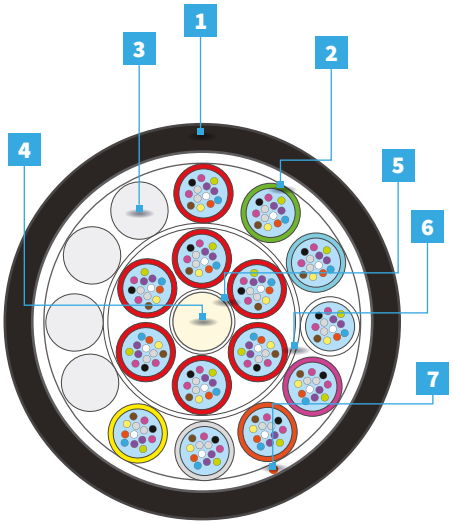
Operating temperature



MICRODUCTS CABLES MK-LX9

Cable structure

1. HDPE outer jacket
2. Loose tubes (PBT) with colored fibers in filling gel
3. Fillers
4. Central strength member (FRP)
5. Water blocking yarns on FRP
6. Water blocking yarns on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LX9										
Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
14T x 12F	168	12	18	14	4	8.8	62	750	250	1000
16T x 12F	192	12	18	16	2	8.8	63			
18T x 12F	216	12	18	18	0	8.8	64			

Other fiber counts available after consulting with our Sales Department

Applications

- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

- HDPE, UV stabilized outer jacket with low friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes with max. 12 optical fibers
- Smallest diameter for blowing into 12 mm (ID) ducts

Available colors

T-TELECOM (ACCORDING TO IEC 60304) - Fibers

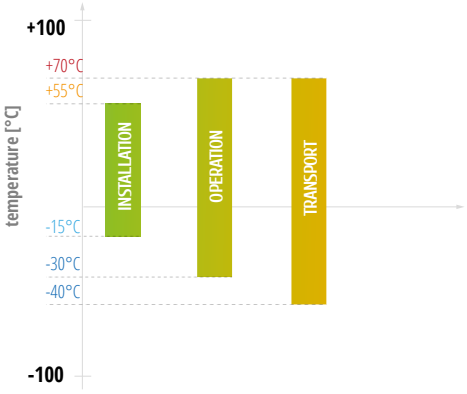
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

T-TELECOM (ACCORDING TO IEC 60304) - Tubes

Tube	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

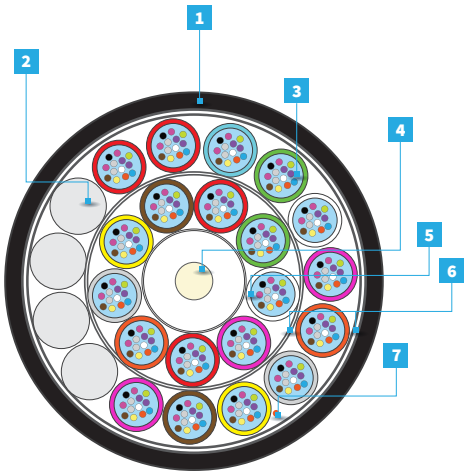
*In cable with a multi-layer construction color of the tubes will be repeated in second layer
**In case of lower fiber count some tubes can be replaced by fillers

Operating temperature



Cable structure

1. HDPE outer jacket
2. Fillers
3. Loose tubes (PBT) with colored fibers in filling gel
4. Central strength member (FRP)
5. Water blocking yarns on FRP
6. Water blocking yarns on strand element
7. Ripcord



Reduced diameter | Low friction | Telecom | Blowing installation | 1-st generation microduct

Configuration

METROJET MK-LX11										
Version	Fibers	Fibers per tube	Total elements	Active tubes	Fillers	Ø ± 5% [mm]	Nominal weight ±10% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
								instal-lation	opera-tion	
20T x 12F	240	12	24	20	4	10.8	85	900	350	1000
22T x 12F	264	12	24	22	2	10.8	86			
24T x 12F	288	12	24	24	0	10.8	87			

Other fiber counts available after consulting with our Sales Department

Applications

- Microduct cabling air-blowing system
- Metro networks
- Flexible network design
- Distribution network

Features & benefits

- HDPE, UV stabilized outer jacket with low friction
- Loose tubes (and fillers), SZ stranded around the CSM
- PBT tubes with max. 12 optical fibers
- Smaller outer diameter for blowing into 12 mm (ID) ducts

Available colors

T-TELECOM (ACCORDING TO IEC 60304) - Fibers

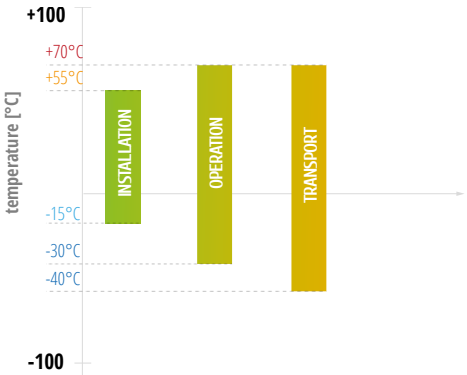
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

T-TELECOM (ACCORDING TO IEC 60304) - Tubes

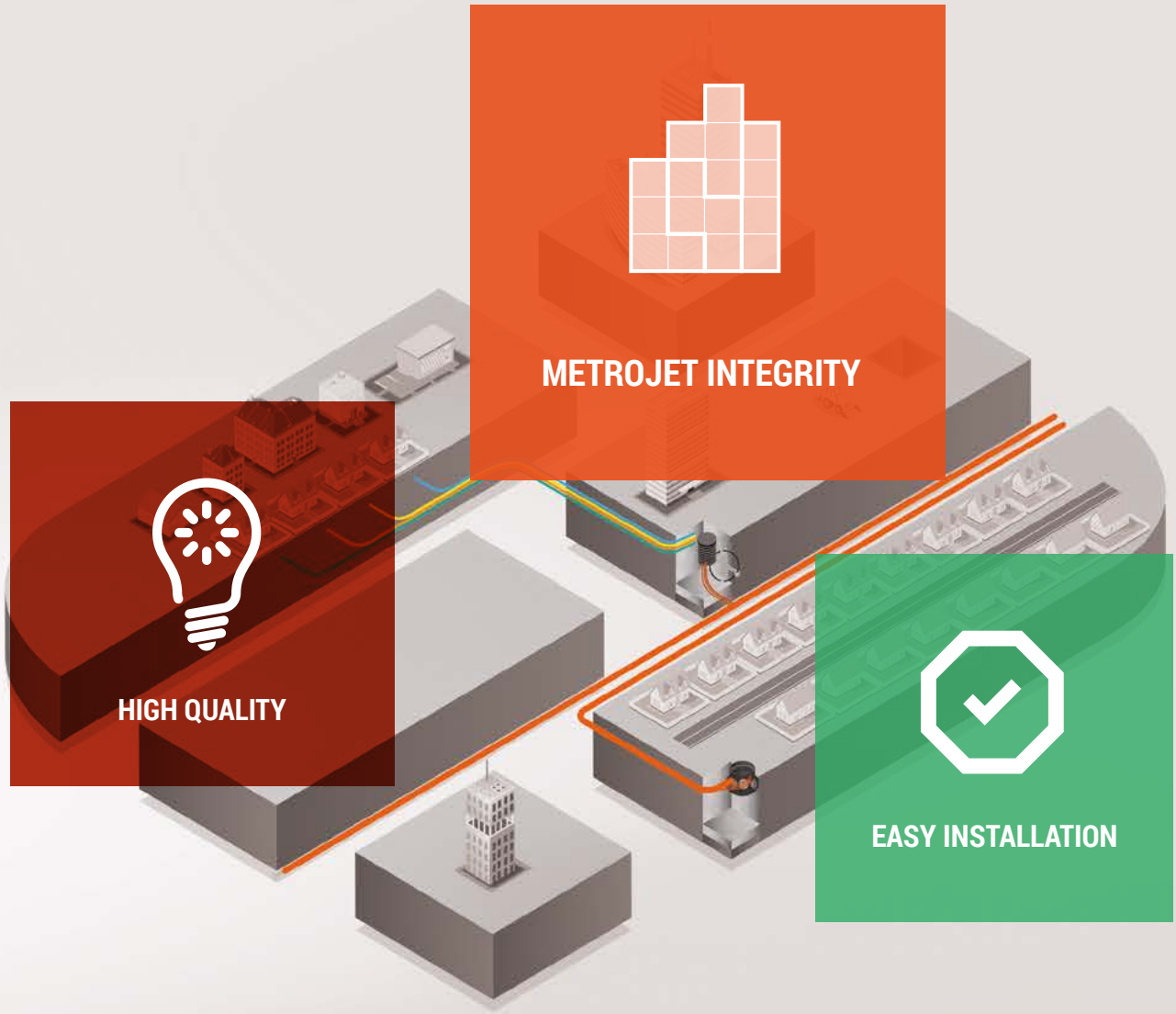
Tube	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Color	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

*In cable with a multi-layer construction color of the tubes will be repeated in second layer
**In case of lower fiber count some tubes can be replaced by fillers

Operating temperature



ACCESSORIES



ACCESSORIES

A wide range of Fibrain MetroJET accessories include microduct connectors, end caps, clips, enslosures and sealings. They are used to connect microducts, perform sealings or reduce a diameter of microducts. Therefore, microduct accessories fully comply with other Fibrain components.

ENCLOSURES

MT-OH

MT-OP
MT-OPL

MT-OY

MT-OT

CONNECTORS

MT-ZDI
MT-ZDIT

MT-ZDB

MT-ZR

MT-ZW

MT-ZG

END CAPS AND CLIPS

MT-ZUD

MT-ZTDI
MT-ZTDIT

MT-ZU

MT-ZTDB

MT-ZTSZ

MT-ALB
MT-ALC

SEALINGS

Building

Pipe & microducts

Connectors

ACCESSORIES

STRAIGHT MICRODUCT CONNECTORS MT-ZDI & MT-ZDIT

MT-ZDI

MT-ZDIT

MetroJET integrity

Easy installation

Transparent housing

Pneumatic resistance

Technical data

MT-ZDI & MT-ZDIT	
Housing material	PA
Outer cover material	PP
Sealing material	Nitrile/NBR
Clip material	Stainless steel
Working temperature	-15°C to +45°C
Pressure	15 bar (23°C)
Short-time pressure (10s)	25 bar (23°C)
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZDI & MT-ZDIT Straight microduct connector	
MT-ZDI-05035	MetroJET straight microduct connector 5/3.5 mm
MT-ZDIT-05035	MetroJET straight microduct connector 5/3.5 mm
MT-ZDI-07055	MetroJET straight microduct connector 7/5.5 mm
MT-ZDIT-07055	MetroJET straight microduct connector 7/5.5 mm
MT-ZDI-07038	MetroJET straight microduct connector 7/3.8 mm
MT-ZDI-08035	MetroJET straight microduct connector 8/3.5 mm
MT-ZDI-1008	MetroJET straight microduct connector 10/8 mm
MT-ZDIT-1008	MetroJET straight microduct connector 10/8 mm
MT-ZDI-1208	MetroJET straight microduct connector 12/8 mm
MT-ZDI-1210	MetroJET straight microduct connector 12/10 mm
MT-ZDIT-1210	MetroJET straight microduct connector 12/10 mm
MT-ZDI-1410	MetroJET straight microduct connector 14/10 mm
MT-ZDI-1412	MetroJET straight microduct connector 14/12 mm
MT-ZDIT-1412	MetroJET straight microduct connector 14/12 mm

Overview

MetroJET straight connectors are used to connect HDPE microducts as they are specifically selected to the given types of microducts. These elements guarantee efficient and optimum selection of pipes to facilitate fiber cable blowing, whereas during operation ensure waterproof and integrity of the cables. Therefore, the housing of the fitting is constructed from sturdy and transparent material, which provides no-tool multiple assembly and disassembly. Moreover, the housing facilitates identification of microduct cables inside a microduct. The assembly and protection against split is guaranteed thanks to single metal rings, which are located in a housing of separable fittings. To block the mechanism which releases the microduct from a port - the installation of specifically designed MT-ALC locking clip is required. When using MT-ZDIT end clips no extra locking clips are needed.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Waterproof
- Tool less assembly
- Transparent housing facilitates locating microducts

ADDITIONAL ACCESSORIES

Code	Overview
MT-ALC MT-ALB	MetroJET locking clips (see page 48)

MT-ALC/ALB

ADDITIONAL ACCESSORIES

Code	Overview
MT-ZTZ-10	MetroJET end stop 10 mm
MT-ZTZ-12	MetroJET end stop 12 mm

MT-ZTZ

ACCESSORIES

STRAIGHT & DIRECT-BURIED MICRODUCT CONNECTORS MT-ZDB

MetroJET integrity

Easy installation

Transparent housing

Pneumatic resistance

Direct-buried applications

Technical data

MT-ZDB	
Housing material	PA
Outer cover material	PP
Sealing material	Nitrile/NBR
Clip material	Stainless steel
Working temperature	-15°C to +45°C
Pressure	15 bar (23°C)
Short-time pressure (10s)	25 bar (23°C)
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZDB Straight & direct-buried connectors for microducts	
MT-ZDB-0704	MetroJET straight & direct-buried connector for microduct 7/4 mm
MT-ZDB-10055	MetroJET straight & direct-buried connector for microduct 10/5.5 mm
MT-ZDB-1208	MetroJET straight & direct-buried connector for microduct 12/8 mm
MT-ZDB-1410	MetroJET straight & direct-buried connector for microduct 14/10 mm
MT-ZDB-1612	MetroJET straight & direct-buried connector for microduct 16/12 mm

Overview

MetroJET microduct direct-buried connectors are used to connect HDPE microducts which are specifically selected to the given types of MetroJET microducts. These elements guarantee efficient and optimum selection of microducts to facilitate fiber cable blowing, whereas during operation guarantee waterproof and integrity of the cables. Therefore, the housing of the fitting is constructed from PA resistant and transparent material, which guarantees no-tool multiple assembly and disassembly. Also, extra polypropylene cover is mounted on the microduct connector and functions as a blocking mechanism as well as ensures mechanical resistance. Moreover, a transparent housing facilitates identification of microduct cables inside a microduct. The assembly and protection against split is guaranteed thanks to single metal rings, which are located in a housing of separable fittings.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Waterproof
- Tool less assembly
- Transparent housing facilitates microduct cables location
- Mounting directly in the ground

ACCESSORIES

REDUCTION MICRODUCT CONNECTOR MT-ZR

MetroJET integrity | Easy installation | Transparent housing | Pneumatic resistance | Waterproof

Technical data

MT-ZR	
Housing material	PA
Outer cover material	Nitrile/NBR
Sealing material	Stainless steel
Clip	-15°C to +45°C
Working temperature	15 bar (23°C)
Short-time pressure (10 s)	25 bar (23°C)
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZR Reduction microduct connector	
MT-ZR-0503	MetroJET reduction microduct connector 5/3 mm
MT-ZR-0703	MetroJET reduction microduct connector 7/3 mm
MT-ZR-0704	MetroJET reduction microduct connector 7/4 mm
MT-ZR-0705	MetroJET reduction microduct connector 7/5 mm
MT-ZR-0805	MetroJET reduction microduct connector 8/5 mm
MT-ZR-0807	MetroJET reduction microduct connector 8/7 mm
MT-ZR-1007	MetroJET reduction microduct connector 10/7 mm
MT-ZR-1008	MetroJET reduction microduct connector 10/8 mm
MT-ZR-1207	MetroJET reduction microduct connector 12/7 mm
MT-ZR-1210	MetroJET reduction microduct connector 12/10 mm
MT-ZR-1412	MetroJET reduction microduct connector 14/12 mm

Overview

MetroJET reduction connectors are used to connect HDPE microducts which are specifically selected to the given types of MetroJET microducts. These elements guarantee efficient and optimum selection of microducts to facilitate fiber cable blowing, whereas during operation guarantee waterproof and integrity of the cables. Therefore, the housing of the fitting is constructed from resistant and transparent material, which guarantees no-tool multiple assembly and disassembly. Also, extra cover made from polypropylene is mounted on the microduct connector and functions as a blocking mechanism. Moreover, a transparent housing facilitates identification of microduct cables inside a microduct. The assembly and protection against split is guaranteed thanks to single metal rings, which are located in a housing of separable fittings. To block the mechanism which releases the microduct from a port - the installation of specifically designed MT-ALC locking clip is required.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Waterproof
- Tool less assembly
- Transparent housing facilitates microduct cables location

ADDITIONAL ACCESSORIES

Code	Overview
MT-ALC	MetroJET locking clips (see page 48.)

MT-ALC

ACCESSORIES

STRAIGHT & WATERPROOF MICRODUCT CONNECTOR MT-ZW

MetroJET integrity | Easy installation | Transparent housing | Pneumatic resistance | Waterproof | Single gum rubber protection

Technical data

MT-ZW	
Housing material	PA
Outer cover material	Nitrile/NBR + gum rubber protection
Sealing material	Stainless steel
Clip	-15°C to +45°C
Working temperature	15 bar (23°C)
Short-time pressure (10 s)	25 bar (23°C)
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZW Straight waterproof connectors	
MT-ZW-05038	MetroJET size-adjustable & waterproof connectors for microduct 5/3.8 mm
MT-ZW-07055	MetroJET size-adjustable & waterproof connectors for microduct 7/5.5 mm
MT-ZW-0704	MetroJET size-adjustable & waterproof connectors for microduct 7/4 mm
MT-ZW-1008	MetroJET size-adjustable & waterproof connectors for microduct 10/8 mm
MT-ZW-1210	MetroJET size-adjustable & waterproof connectors for microduct 12/10 mm

Overview

MetroJET microduct straight & waterproof connectors are equipped with easily adjustable sealings, which form waterproof protection between side parts of micropipe, and microduct cables installed inside. The housing provides the possibility of air-blowing cables. Therefore, the housing of the fitting is constructed from resistant and transparent material, which guarantees no-tool multiple assembly and disassembly without any tool. Moreover, a transparent housing facilitates identification of microduct cables inside a microduct. The assembly and protection against split is guaranteed thanks to single metal rings, which are located in a housing of separable fittings. To block the mechanism which releases the microduct from a port - the installation of specifically designed MT-ALC locking clip is required.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Waterproof
- Tool less assembly
- Transparent housing facilitates microduct cables location
- Single layer of gum rubber

ADDITIONAL ACCESSORIES

Code	Overview
MT-ALC	MetroJET locking clips (see page 48.)

MT-ALC

ACCESSORIES

WATER & GAS PROOF STRAIGHT MICRODUCT CONNECTOR MT-ZG

MetroJET integrity | Easy installation | Transparent housing | Pneumatic resistance | Gas & water proof | Double gum rubber protection

Technical data

MT-ZG	
Housing material	PA
Sealing material	Nitrile/NBR + double layer of gum rubber
Clip material	Stainless steel
Working temperature	-20°C to +50°C
Pressure	min. 20 bar
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZG Water & gas proof straight microduct connector	
MT-ZG-05038	Water & gas proof straight microduct connector 5/3.8 mm
MT-ZG-0704/1.0-3.8	Water & gas proof straight microduct connector 7/4 mm for microduct cables 1-3.8 mm
MT-ZG-07055/2.5-5.5	Water & gas proof straight microduct connector 7/5.5 mm for microduct cables 2.5-5.5 mm
MT-ZG-1008/5.0-8.0	Water & gas proof straight microduct connector 10/8 mm for microduct cables 5.0-8.0 mm
MT-ZG-1208/3.0-6.0	Water & gas proof straight microduct connector 12/8 mm for microduct cables 3.0-6.0 mm
MT-ZG-1210	Water & gas proof straight microduct connector 12/10 mm
MT-ZG-1612/5.0-8.0	Water & gas proof straight microduct connector 16/12 mm for microduct cables 5.0-8.0 mm

Overview

MetroJET water & gas proof straight microduct connectors are equipped with easily adjustable sealings, which form waterproof protection between side parts of micropipe, and microduct cables installed inside. The housing provides the possibility of air-blowing cables. Therefore, the housing of the fitting is constructed from resistant and transparent material, which guarantees no-tool multiple assembly and disassembly. A transparent housing facilitates identification of microduct cables inside a microduct. The assembly and protection against split is guaranteed thanks to single metal rings, which are located in a housing of separable fittings. To block the mechanism which releases the microduct from a port - the installation of a specifically designed locking clip is required.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Waterproof
- Tool less assembly
- Transparent housing facilitates microduct cables location
- Double layer of gum rubber
- Gas proof

ADDITIONAL ACCESSORIES

Code	Overview
MT-ALC	MetroJET locking clips (see page 48.)

MT-ALC

End cap & clips

ACCESSORIES

DIVISIBLE MICRODUCT SEALS MT-ZUD

MetroJET integrity | Easy installation | Divisible housing | Gas & water proof

Technical data

MT-ZUD	
Housing material	PC
Sealing material	TPE
Working temperature	-20°C to +50°C
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZUD Divisible microduct seal	
MT-ZUD-05/0.9	MetroJET divisible miroduct seal 5 mm, microduct cable (0.9 mm)
MT-ZUD-05/1.25	MetroJET divisible miroduct seal 5 mm, microduct cable (1.25 mm)
MT-ZUD-05/1.6	MetroJET divisible miroduct seal 5 mm, microduct cable (1.6 mm)
MT-ZUD-05/2.1	MetroJET divisible miroduct seal 5 mm, microduct cable (2.1 mm)
MT-ZUD-05/2.5	MetroJET divisible miroduct seal 5 mm, microduct cable (2.5 mm)
MT-ZUD-07/0.9	MetroJET divisible miroduct seal 7 mm, microduct cable (0.9 mm)
MT-ZUD-07/1.25	MetroJET divisible miroduct seal 7 mm, microduct cable (1.25 mm)
MT-ZUD-07/1.6	MetroJET divisible miroduct seal 7 mm, microduct cable (1.6 mm)
MT-ZUD-07/2.1	MetroJET divisible miroduct seal 7 mm, microduct cable (2.1 mm)
MT-ZUD-07/2.5	MetroJET divisible miroduct seal 7 mm, microduct cable (2.5 mm)
MT-ZUD-10/1.5-2.5	MetroJET divisible miroduct seal 10 mm, microduct cable (1.5-2.5 mm)
MT-ZUD-10/2.5-3.5	MetroJET divisible miroduct seal 10 mm, microduct cable (2.5-3.5 mm)
MT-ZUD-10/3.5-5	MetroJET divisible miroduct seal 10 mm, microduct cable (3.5-5 mm)
MT-ZUD-10/5-6.5	MetroJET divisible miroduct seal 10 mm, microduct cable (5.0-6.5 mm)
MT-ZUD-10/6.5-7.5	MetroJET divisible miroduct seal 10 mm, microduct cable (6.5-7.5 mm)
MT-ZUD-12/1.5-2.5	MetroJET divisible miroduct seal 12 mm, microduct cable (1.52.5 mm)
MT-ZUD-12/2.5-3.5	MetroJET divisible miroduct seal 12 mm, microduct cable (2.5-3.5 mm)
MT-ZUD-12/3.5-5	MetroJET divisible miroduct seal 12 mm, microduct cable (3.5-5 mm)
MT-ZUD-12/5-6.5	MetroJET divisible miroduct seal 12 mm, microduct cable (5.0-6.5 mm)
MT-ZUD-12/6.5-8	MetroJET divisible miroduct seal 12 mm, microduct cable (6.5-8 mm)
MT-ZUD-14/3.5-5	MetroJET divisible miroduct seal 14 mm, microduct cable (3.5-5 mm)
MT-ZUD-14/5-6.5	MetroJET divisible miroduct seal 14 mm, microduct cable (5-6.5 mm)
MT-ZUD-14/6.5-8	MetroJET divisible miroduct seal 14 mm, microduct cable (6.5-8 mm)
MT-ZUD-14/8-10	MetroJET divisible miroduct seal 14 mm, microduct cable (8-10 mm)

Overview

MetroJET divisible microduct seals protect HDPE end of microducts. These elements seal the end pipes and protect against water and dust penetration, while during operation guarantee proper water & gas proof level. This modular system can be used onto new and existing installations. Due to compact design, the seals can be installed in all situations, even in locations with difficult access.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Sealing microduct cable
- Water & gas proof
- Tool less assembly
- Divisible housing

ACCESSORIES

MICRODUCT END CAP MT-ZTDI & MT-ZTDIT

MT-ZTDI

MT-ZTDIT

MetroJET integrity

Easy installation

Transparent housing

Waterproof

Pneumatic resistance

Technical data

MT-ZTDI & MT-ZTDIT	
Housing material	PA
Sealing material	Nitrile/NBR
Clip material	Stainless steel
Working temperature	-15°C to +45°C
Working pressure	15 bar (23 °C)
Short time pressure (10 s)	25 bar (23 °C)
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZTDI & MT-ZTDIT microduct end cap	
MT-ZTDIT-05	MetroJET end cap for microduct 5 mm
MT-ZTDI-05	MetroJET end cap for microduct 5 mm
MT-ZTDIT-07	MetroJET end cap for microduct 7 mm
MT-ZTDI-07	MetroJET end cap for microduct 7 mm
MT-ZTDI-08	MetroJET end cap for microduct 8 mm
MT-ZTDIT-10	MetroJET end cap for microduct 10mm
MT-ZTDI-10	MetroJET end cap for microduct 10 mm
MT-ZTDIT-12	MetroJET end cap for microduct 12 mm
MT-ZTDI-12	MetroJET end cap for microduct 12 mm
MT-ZTDIT-14	MetroJET end cap for microduct 14 mm
MT-ZTDI-14	MetroJET end cap for microduct 14 mm
MT-ZTDI-16	MetroJET end cap for microduct 16 mm

Overview

MetroJET microduct end cap connectors are used to protect end part of microducts, constructed from HDPE material, as they are specifically selected to the given type as well as diameter of MetroJET microducts. These elements guarantee efficient and optimum seal of pipes to protect against any water or dust penetration, whereas during operation guarantee pipes integrity. Therefore, the housing of the fitting is constructed from resistant and transparent material, which guarantees no-tool multiple assembly and disassembly. Due to a single metal ring, which is located in a housing of separable fittings, secure assembly and high protection against split are guaranteed. To block the mechanism which releases the microduct from a port in case of MT-ZTID end cap, it is recommended to use a MT-ALC locking clip. When using MT-ZTIDT end cap with precise mechanism, there is no need to use any additional clips.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Waterproof protection
- Tool less assembly
- Transparent housing

ADDITIONAL ACCESSORIES

Code	Overview
MT-ALC MT-ALB	MetroJET blocking clips (see page 48.)

MT-ALC/ALB

ACCESSORIES

END SEALING CAPS MT-ZU

MetroJET integrity | Easy installation | Transparent housing | Waterproof

Technical data

MT-ZU	
Housing material	PA
Sealing material	Nitrile/NBR
Clip material	Stainless steel
Working temperature	-15°C to +45°C
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZU End sealing cap	
MT-ZU-05/1.4	MetroJET end sealing cap for microduct 5 mm and for microduct cable 1.4 mm
MT-ZU-07/4	MetroJET end sealing cap for microduct 7 mm and for microduct cable 4 mm
MT-ZU-10/5	MetroJET end sealing cap for microduct 10 mm and for microduct cable 5 mm
MT-ZU-10/6	MetroJET end sealing cap for microduct 10 mm and for microduct cable 6 mm
MT-ZU-12/5	MetroJET end sealing cap for microduct 12 mm and for microduct cable 5 mm
MT-ZU-12/7	MetroJET end sealing cap for microduct 12 mm and for microduct cable 7 mm
MT-ZU-14/6	MetroJET end sealing cap for microduct 14 mm and for microduct cable 6 mm

Overview

MetroJET microduct end cap are used to protect end part of microducts, constructed from HDPE material, as they are specifically selected to the given type as well as diameter of MetroJET microduct cables installed inside. These elements guarantee efficient and optimum seal of pipes to protect against any water or dust penetration, whereas during operation guarantee pipes integrity. Therefore, the housing of the fitting is constructed from resistant and transparent material, which guarantees no-tool multiple assembly and disassembly. Due to a single metal ring, which is located in a housing of separable fittings, secure assembly and high protection against split are guaranteed. To block the mechanism which releases the microduct from a port, it is recommended to use a MT-ALC locking clip.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- High sealing
- Waterproof
- Tool less assembly
- Installation directly in the ground

ADDITIONAL ACCESSORIES

Code	Overview
MT-ALC	MetroJET locking clips (see page 48.)

MT-ALC

ACCESSORIES

DIRECT-BURIED END CAP CONNECTORS MT-ZTDB

MetroJET integrity | Easy installation | Transparent housing | Waterproof | Pneumatic resistance | Direct-buried applications

Technical data

MT-ZTDB	
Housing material	PA
Sealing material	Nitrile/NBR
Clip material	Stainless steel
Working temperature	-15°C to +45°C
Working pressure	15 bar (23°C)
Short time pressure (10 s)	25 bar (23°C)
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZTDB Direct-buried end cap connectors	
MT-ZTDB-07	MetroJET direct-buried end cap connectors for microduct 7 mm
MT-ZTDB-10	MetroJET direct-buried end cap connectors for microduct 10 mm
MT-ZTDB-12	MetroJET direct-buried end cap connectors for microduct 12 mm
MT-ZTDB-14	MetroJET direct-buried end cap connectors for microduct 14 mm

Overview

MetroJET direct-buried end stops are used to protect end part of microducts, constructed from HDPE material, as they are specifically selected to the given type as well as diameter of MetroJET microduct cables installed inside. These elements guarantee efficient and optimum seal of pipes to protect against any water or dust penetration, whereas during operation guarantee pipes integrity. Therefore, the housing of the fitting is constructed from resistant and transparent material, which guarantees no-tool multiple assembly and disassembly. Due to a single metal ring, which is located in a housing of separable fittings, secure assembly and high protection against split are guaranteed.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Waterproof
- Tool less assembly
- Transparent housing
- Installation directly in the ground

ADDITIONAL ACCESSORIES

Code	Overview
MT-ALB	MetroJET locking clips (see page 48)

MT-ALB

ACCESSORIES

PNEUMATIC VALVES MT-ZTSZ

MetroJET integrity | Easy installation | Pneumatic resistance | Waterproof

Technical data

MT-ZTSZ	
Housing material	PA + steel
Working temperature	-15°C to +45°C
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-ZTSZ Pneumatic valves	
MT-ZTSZ-05	MetroJET pneumatic valve for microduct 5 mm
MT-ZTSZ-07	MetroJET pneumatic valve for microduct 7 mm
MT-ZTSZ-10	MetroJET pneumatic valve for microduct 10 mm
MT-ZTSZ-12	MetroJET pneumatic valve for microduct 12 mm
MT-ZTSZ-40	MetroJET pneumatic valve for microduct 40 mm

Overview

MetroJET microduct pneumatic valves are used to protect end part of microducts, constructed from HDPE material, as they are specifically selected to the given type as well as diameter of MetroJET microducts. These elements guarantee efficient and optimum seal of pipes to prevent penetration of water or dust, whereas during operation ensure pneumatic sealing. Therefore, they are used to multiply existing pipelines with the use of bundle of microducts.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Sealing pneumatic connectors
- Tool less assembly
- Standard pneumatic valve

ACCESSORIES

LOCKING CLIPS MT-ALB I MT-ALC

MetroJET integrity

Easy installation

Reusable

Technical data

MT-ALB & MT-ALC	
Housing material	POM (polyoxymethylene)
Working temperature	-50°C to +90°C
Installation temperature	-15°C to +45°C

ORDERING INFORMATION

MT-ALB clips for MT-ZDIT/ZDBT/ZTDIT/ZDB/ZTDB	
MT-ALB-05	MetroJET locking clips 5 mm
MT-ALB-07	MetroJET locking clips 7 mm
MT-ALB-08	MetroJET locking clips 8 mm
MT-ALB-10	MetroJET locking clips 10 mm
MT-ALB-12	MetroJET locking clips 12 mm
MT-ALB-14	MetroJET locking clips 14 mm
MT-ALB-16	MetroJET locking clips 16 mm
MT-ALC clips for MT-ZDI/ZR/ZW/ZG/ZTID/ZU	
MT-ALC-04	MetroJET locking clips 4 mm
MT-ALC-05	MetroJET locking clips 5 mm
MT-ALC-07	MetroJET locking clips 7 mm
MT-ALC-08	MetroJET locking clips 8 mm
MT-ALC-10	MetroJET locking clips 10 mm
MT-ALC-12	MetroJET locking clips 12 mm
MT-ALC-14	MetroJET locking clips 14 mm

Overview

MetroJET locking clips are used to block the release mechanism of microduct. These elements are reusable and installed by placing a connector or an end cap between its housing. No extra tools are required. Locking clips need to be specifically selected to a given type and diameter of microduct connectors or end cap. It should be remembered that connectors require two clips, whereas an end cap only one. MT-ALC locking clips are specifically designed for the following components: MT-DI/ZR/ZW/ZG/ZTID/ZU/ZDB/ZTDB, whereas MT-ALB clips for MT-ZDIT/ZDBT connectors.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Block the release mechanism
- Tool less assembly
- Reusable

Enclosures and accessories

ACCESSORIES

ENCLOSURES MT-OP & MT-OPL

MT-OP

MT-OPL

MetroJET integrity

IP40 protection level

IK10 protection level

Easy branchings

Silt proof

Direct-buried applications

Technical data

ENCLOSURES MT-OP & MT-OPL	
Housing color	black
Housing material	HDPE/ High Impact Polypropylene
Ring material	ABS/POM
Tolerance of port diameter	± 2.5 mm
Protection level: penetration of solid bodies and water-proof (according to PN-EN 60529:2003)	IP40 (silt proof)
Impact resistance (according to EN 50102)	IK10 (20 J)
Tensile strength (25 mm/1 min)	>1500 N

ORDERING INFORMATION

MT-OP & MT-OPL Enclosures	
MT-OP-3232	MetroJET enclosure 32/32
MT-OP-4040	MetroJET enclosure 40/40
MT-OP-5050	MetroJET enclosure 50/50
MT-OPL-4040	MetroJET enclosure 40/40 LONG
MT-OPL-5050	MetroJET enclosure 50/50 LONG

MT-RP

MT-AOY

Overview

MT-OP & MT- OPL enclosures protect microduct connectors from mechanical damages, connect 2 prefabricated pipes on the straight distance or are used to perform 1-4 branchings of pipes, direct-buried ones too. As the housing is fully divisible (including the nuts and a ring), it can be installed in any place of the pipeline, even in locations with difficult access. The use of extra components like port reductors (MT-RP) facilitates the assembly of pipe with small diameters. In addition, sturdy construction prevents from silt or water penetration.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- High protection against mechanical damages
- Installed directly on the prefabricated pipes
- Can be installed as a input/output cover panel on the microduct path
- Protection level: IP40 and IK10
- Divisible housing
- Divisible nuts&ring

Port reductors	Overview
MT-RP-4012	MetroJET port reductor 40/12 mm for enclosure MT-OXXX
MT-RP-4032	MetroJET port reductor 40/32 mm for enclosure MT-OXXX
MT-RP-5032	MetroJET port reductor 50/32 mm for enclosure MT-OXXX
MT-RP-5040	MetroJET port reductor 50/40 mm for enclosure MT-OXXX

Output ports	Overview
MT-AOY-1x40	MetroJET Y shape 40 mm for enclosure MT-OPLXXX
MT-AOY-2x12	MetroJET Y shape 2x12 mm for enclosure MT-OPLXXX

ACCESSORIES

MICRODUCT ENCLOSURES MT-OT

MetroJET integrity | IP40 protection level | IK10 protection level | Easy branchings | Silt proof | Direct-buried applications

Technical data

MT-OT ENCLOSURES	
Housing color	black
Housing material	HDPE/ High Impact Polypropylene
Ring material	ABS/POM
Tolerance of port diameter	± 2.0 mm @ port 40 mm ± 1.0 mm @ port 32 mm ± 0.5 mm @ port 25 mm
Protection level: penetration of solid bodies and water-proof (according to PN-EN 60529:2003)	IP40 (silt proof)
Impact resistance (according to EN 50102)	IK10 (20 J)
Tensile strength (25 mm/1 min)	>1500 N

ORDERING INFORMATION

MT-OT Enclosures	
MT-OT-2525	MetroJET T shape encloure for microduct 25/25/25 mm divisible, direct buried
MT-OT-3232	MetroJET T shape encloure for microduct 32/32/32 mm divisible, direct buried
MT-OT-4025	MetroJET T shape encloure for microduct 40/40/25 mm divisible, direct buried
MT-OT-4032	MetroJET T shape encloure for microduct 40/40/32 mm divisible, direct buried
MT-OT-4031	MetroJET T shape encloure for microduct 40/32/32 mm divisible, direct buried
MT-OT-4040	MetroJET T shape encloure for microduct 40/40/40 mm divisible, direct buried
MT-OT-5032	MetroJET T shape encloure for microduct 50/50/32 mm divisible, direct buried
MT-OT-5050	MetroJET T shape encloure for microduct 50/50/50 mm divisible, direct buried
MT-OY-5050	MetroJET Y shape encloure for microduct 50/50/50 mm, divisible, direct buried

Overview

→ MT-OT enclosures protect microduct connectors from mechanical damages, connect 2 prefabricated pipes on the straight distance and perform branchings with 1-4 microducts or 1-4 single direct-buried microducts. Due to mechanical parameters, enclosures can be used in cable wells as direct-buried in the ground. As the housing is fully divisible (including the nuts and a ring) and has 3 ports, it can be installed in any place of the pipeline, even in locations with difficult access. The use of extra components like port reductors (MT-RP), the assembly of pipe with small diameters is facilitated.

Applications

→ Metro networks of MetroJET system
→ Distribution networks of MetroJET system
→ FTTx networks of MetroJET system

Features & benefits

→ High protection against mechanical damages
→ Due to mechanical parameters it can be installed in a cable well or directly in the ground
→ Protection level: IP40 and IK10
→ Available for HDPE pipes
→ Divisible housing, thus can be installed in an existing pipe with microduct cables
→ Silt & water proof

ACCESSORIES

MICRODUCT ENCLOSURES MT-OY

MetroJET integrity

IP40 protection level

IK10 protection level

Easy branchings

Silt proof

Direct-buried applications

Technical data

MT-OY MICRODUCT ENCLOSURES	
Housing color	black
Housing material	HDPE/ High Impact Polypropylene
Ring material	ABS/POM
Tolerance of port diameter	± 2.0 mm @ port 40 mm ± 1.0 mm @ port 32 mm ± 0.5 mm @ port 25 mm
Protection level: penetration of solid bodies and water-proof (according to PN-EN 60529:2003)	IP40 (silt proof)
Impact resistance (according to EN 50102)	IK10 (20 J)
Tensile strength (25 mm/1 min)	>1500 N

ORDERING INFORMATION

MT-OY Microduct enclosures	
MT-OY-4040	MetroJET Y shape encloure for microduct rur 40/40/40 mm direct-buried, divisible
MT-OY-5025	MetroJET Y shape encloure for microduct rur 50/50/25 mm direct-buried, divisible
MT-OY-5032	MetroJET Y shape encloure for microduct rur 50/50/32 mm direct-buried, divisible
MT-OY-5040	MetroJET Y shape encloure for microduct rur 50/50/40 mm direct-buried, divisible
MT-OY-5050	MetroJET Y shape encloure for microduct rur 50/50/50 mm direct-buried, divisible

Overview

MT-OY enclosures protect microduct connectors from mechanical damages, connect 2 prefabricated pipes on the straight distance and perform branchings (45°angle) with with 1-2 microducts or 1-2 single direct-buried microducts. Due to mechanical parameters, enclosures can be used in cable wells as direct-buried in the ground. Due to mechanical parameters, enclosures can be used in cable wells as direct-buried in the ground. As the housing is fully divisible (including the nuts and a ring) and has 3 ports, it can be installed in any place of the pipeline ,even in locations with difficult access. The use of extra components like port reductors (MT-RP), the assembly of pipe with small diameters is facilitated.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- High protection against mechanical damages
- Connect 2 prefabricated pipes on the straight distance and perform branchings (45° angle) with 1-2 microducts or 1-2 single direct-buried microducts
- Due to mechanical parameters it can be installed in a cable well or directly in the ground
- Protection level: IP40 and IK10

ACCESSORIES

ENCLOSURES MT-OH

MetroJET integrity

IP40 protection level

IK10 protection level

Easy branchings

Silt proof

Direct-buried applications

Technical data

MT-OH ENCLOSURES	
Housing color	black
Housing material	HDPE/ High Impact Polypropylene
Ring material	ABS/POM
Tolerance of port diameter	± 2.5 mm @ port 50 mm ± 2.0 mm @ port 40 mm ± 1.0 mm @ port 32 mm
Protection level: penetration of solid bodies and water-proof (according to PN-EN 60529:2003)	IP40 (silt proof)
Impact resistance (according to EN 50102)	IK10 (20 J)
Tensile strength (25 mm/1 min)	>1500 N

ORDERING INFORMATION

MT-OH Enclosures	
MT-OH-3232	MetroJET H shape enclosure short for microduct 2x32/2x32 mm direct-buried, divisible
MT-OH-4040	MetroJET H shape enclosure short for microduct 2x40/2x40 mm direct-buried, divisible
MT-OH-5050	MetroJET H shape enclosure short for microduct 2x50/2x50 mm direct-buried, divisible
MT-OH-5050L	MetroJET H shape enclosure long for microduct 2x50/2x50 mm direct-buried, divisible
MT-OH-4032	MetroJET H shape enclosure short for microduct 2x40/2x32 mm direct-buried, divisible

Overview

MT-OH enclosures protect microduct connectors from mechanical damages, connect 4 prefabricated pipes on the straight distance or perform branching (including direct-buried ones). Therefore, the enclosure functions as an input & output cover panel in cable spare loop or cabinet on the microduct pipes route (in a place of two Y enclosures). Due to mechanical parameters, enclosures can be used in cable wells as direct-buried in the ground. As the housing is fully divisible (including the nuts and a ring), has 4 ports and it can be installed in all situations e.g. to perform branchings even in locations with difficult access. In case of high number of microducts, we recommend to use long enclosure.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

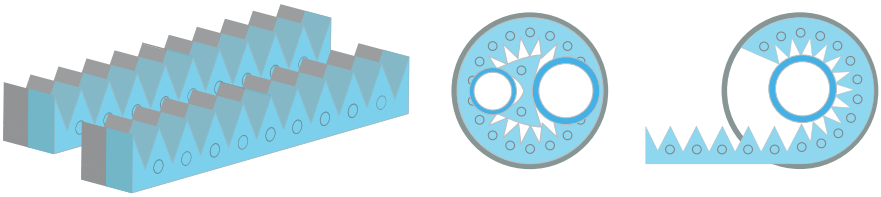
Features & benefits

- High protection against mechanical damages
- Installed directly on the prefabricated pipes
- Can be installed as a input/output cover panel on the microduct path
- Protection level: IP40 and IK10
- Divisible housing
- Divisible nuts&ring

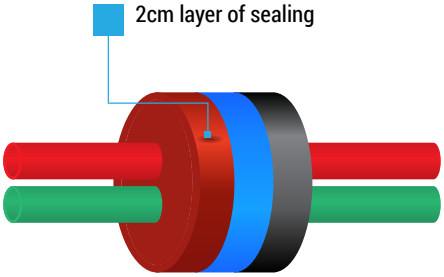
Building sealings

BUILDING SEALINGS

MT-UPS-FS



MetroJET integrity | Easy installation | E120 fire proof | Unique sponge shape | Thermic proof



Technical data

MT-UPS-FS	
Fireproof	< 2 hours
Density	1.2 g/cm³
Displacement	2 mm
Color	red-brown
Case-harden	1.5 mm / 24h
Hardness	30 Shore A
Resistance to breakdown	1
Tensile strength	0.8 N/mm²
Working temperature	5°C to +40°C
Temperature resistance	40°C to +120°C

ORDERING INFORMATION

FiloSeal sealing pass and cable/pipe	
MT-UPS-FS-125/1x95	MetroJET FiloSeal sealing + pass 125 mm and cable/pipe max. 95 mm
MT-UPS-FS-200/1x160	MetroJET FiloSeal sealing + pass 200 mm and cable/pipe max. 160 mm

Overview

→ MT-UPS-FS sealing of Fibrain MetroJET system consist of a sponge, which has got unique shape, and a sealant paste. MT-UPS-FS component facilitates performing water & gas proof microducts pass, which enables placing or removing extra microducts or cables, if there is a need. The unique shape of the sponge guarantees its precise placing around the microducts or cables, regardless of their quantity or dimensions. The sealant paste provides fire proof protection as it hardens automatically under the influence of moisture and then fire resistance amounts to E120.

Applications

- → Metro networks of MetroJET system
- → Distribution networks of MetroJET system
- → FTTx networks of MetroJET system

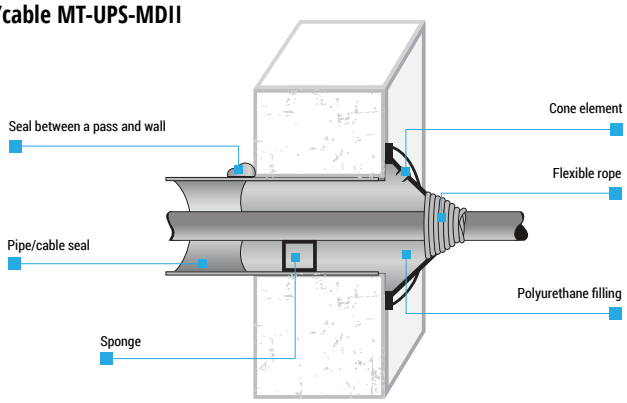
Features & benefits

- → Easy installation
- → Unique shape of the sponge ensuring its precise placing around the microducts or cables regardless of their quantity or dimensions
- → Sealant paste hardens automatically under the influence of moisture
- → E120 fire resistance

BUILDING SEALINGS

SEALINGS MT-UPS-MDII & MT-UPS-MDIII

Seals for a wall pass & pipe/cable MT-UPS-MDII

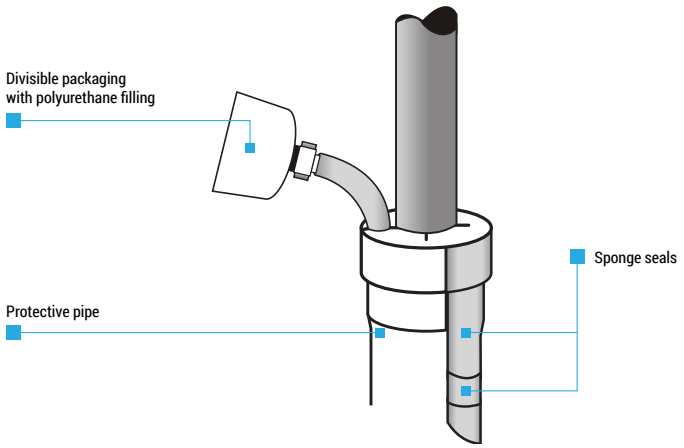


MetroJET integrity | Easy installation | Gas & water proof | Supplied with set | Thermic proof

ORDERING INFORMATION

MT-UPS-MDII Seal of pass and cable/pipe	
MT-UPS-MDII-50/1x40	MetroJET MDII seal of pass 50 mm and cable/pipe max. 40 mm
MT-UPS-MDII-110/1x70	MetroJET MDII seal of pass 110 mm and cable/pipe max. 70 mm
MT-UPS-MDII-125/1x90	MetroJET MDII seal of pass 125 mm and cable/pipe max. 90 mm
MT-UPS-MDII-160/1x130	MetroJET MDII seal of pass 160 mm and cable/pipe max. 130 mm
MT-UPS-MDII-200/1x160	MetroJET MDII seal of pass 200 mm and cable/pipe max. 160 mm

Seal of pass and cable/pipe MT-UPS-MDIII



ORDERING INFORMATION

MT-UPS-MDII Seal of pass and cable/pipe	
MT-UPS-MDIII-25/1x8	MetroJET MDIII seal of pass 25 mm and cable/pipe 8 mm
MT-UPS-MDIII-50/1x20	MetroJET MDIII seal of pass 50 mm and cable/pipe 20 mm
MT-UPS-MDIII-75/1x40	MetroJET MDIII seal of pass 75 mm and cable/pipe 40 mm
MT-UPS-MDIII-110/1x80	MetroJET MDIII seal of pass 110 mm and cable/pipe 80 mm
MT-UPS-MDIII-160/1x130	MetroJET MDIII seal of pass 160 mm and cable/pipe 130 mm
MT-UPS-MDIII-200/1x160	MetroJET MDIII seal of pass 200 mm and cable/pipe 160 mm
MT-UPS-MDIII-220/1x190	MetroJET MDIII seal of pass 220 mm and cable/pipe 190 mm

Overview

MetroJET MT-UPS-MDII components are used to seal the opening with a bundle of microducts or prefabricated pipes. The sealing is performed with the use of limiters and two-component water & proof foam attached to a set. Simple installation and low cost make our solution not only popular, but also sensible, whenever a pass is perpendicular to a wall. Therefore, a bending radius of microducts bandle can be easily verified with the use specifically designed tools- a handle with a limiter mounted above the pass.

MetroJET MT-UPS-MDIII components are used to perform sealing of the existing microduct with a cable, prefabricated pipes or bundle of foiled microducts. MT-UPS-MDIII solutions also use two-component foam and limiters. We recommend to use them, in places where lots of microducts are located close to each other, thus there is not enough space to place MT-UPS-MDII set.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Easy installation
- Low cost
- Specifically designed two-component foam
- Supplied in a ready-to-use set

BUILDING SEALINGS

MT-UP-FS & MT-UP-FWS

MT-UP-FS

MT-UP-FWS

MetroJET integrity | Easy installation | Fire proof | Gas & water proof | Supplied with set | Thermic proof

Technical data

MT-UP-FS & MT-UP-FWS BUILDING SEALINGS		
Parametr	**MT-UP-FS**	**MT-UP-FWS**
Fireproof	-	< 2h
Density	1.4 gr/cm³	1.2 gr/cm³
Thixotropy	proper	
Color	white	red-brown
Drying time	3 mm/24h	1.5 mm/24h
Hardness	55 shore A	30 shore A
Extension	250%	700%
Tensile strength	1.7 N/mm	0.8 N/mm
Change in volume	< 3%	
Shear strength	2.5 N/mm²	2.0 N/mm²
Working temperature range	+5° to +40°	
Temperature resistance	- 40° to +120°	

ORDERING INFORMATION

MT-UP-FS & MT-UP-FWS Building sealings	
MT-UP-FS-290	MetroJET sealant fill&seal 290 ml
MT-UP-FWS-310	MetroJET sealant fire&water seal 310 ml

Overview

→ MT-UP-FS , MT-UPFWS FILL&SEAL sealant is a high quality product used as a filling in a fiber optic microduct system. The sealant includes hybrid MS polymer and absorbs the moisture, then binds itself in a constant and durable elastomer. Therefore, MT-UP-FWS can be characterized by resistance to fire.

Applications

→ Metro networks of MetroJET system
→ Distribution networks of MetroJET system
→ FTTx networks of MetroJET system

Features & benefits

→ Perfect filling& sealing, extra fire resistance of MT-UP-FWS option
→ Fully flexible
→ Long-lasting & excellent adhesion

Pipe & microduct seals

SEALS

DIVISIBLE PIPE SEAL MT-UWD

MetroJET integrity | Gas & water proof | Modular design | Divisible housing | Easy installation

Technical data

MT-UWD	
Housing material	strengthened with fiber glass
Sealing material	EPDM
Working temperature	-15°C to +45°C
Guarantee of working parameters	20 years

ORDERING INFORMATION

MT-UWD divisible seals with MT-UWD bundle of microducts	
MT-UWD-32/3x10	MetroJET pipe seal 32 mm for bundle 3 x 10 mm, divisible
MT-UWD-40/5x10	MetroJET pipe seal 40 mm for bundle 5 x 10 mm, divisible
MT-UWD-40/10x7	MetroJET pipe seal 40 mm for bundle 10 x 7 mm, divisible
MT-UWD-40/7x10	MetroJET pipe seal 40 mm for bundle 7 x 10 mm, divisible
MT-UWD-40/4x12	MetroJET pipe seal 40 mm for bundle 4 x 12 mm, divisible
MT-UWD-40/3x14	MetroJET pipe seal 40 mm for bundle 3 x 14 mm, divisible
MT-UWD-50/7x10	MetroJET pipe seal 50 mm for bundle 7 x 10 mm, divisible
MT-UWD-50/7x12	MetroJET pipe seal 50 mm for bundle 7 x 12mm, divisible

Overview

MT-UWD divisible seals for HDPE pipes are specifically designed to be used in a microduct system and guarantee water&gas proofness. The modular housing of the seals facilitates installing microdcuts with various diameters for different combinations, according to our customers' needs.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Perfect sealing
- Gas & water proof
- Toll less assembly
- Divisible housing

SEALS

RUBBER END-CAP SEAL MT-UW-KR

MetroJET integrity

Easy installation

Waterproof

Technical data

MT-UW-KR	
Sealing material	Synthetic rubber TPE
Hardness	40 Shore A
Protection level	waterproof

ORDERING INFORMATION

MT-UW-KR Pipe seal	
MT-UW-KR-25/1X3.5-4.5/1x7	MetroJET pipe seal 25 mm for bundle 1x3.5-4.5 mm+1x7 mm (rubber end cap)
MT-UW-KR-32/1X6-16	MetroJET pipe seal 32 mm for bundle 1x6-16 mm (rubber end cap)
MT-UW-KR-40/5X10	MetroJET pipe seal 40 mm for bundle 5x10 mm (rubber end cap)
MT-UW-KR-40/7X7	MetroJET pipe seal 40 mm for bundle 7x7 mm (rubber end cap)
MT-UW-KR-40/1X6-22	MetroJET pipe seal 40 mm for bundle 1x6-22 mm (rubber end cap)
MT-UW-KR-50/1X14	MetroJET pipe seal 50 mm for bundle 1x14 mm (rubber end cap)

Overview

Rubber end-cap seals guarantee high secure of microducts and water resistance between bundle of microducts and HDPE25/40 pipes. Therefore, the seals do not change (make bigger) the outer diameter of HDPE pipe after installation. Available in various combinations, selected and fitted to a given bundle of microducts. Can be also characterized by easy installation.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Sealing protection as a rubber end-cap between microduct bundles and HDPE pipes
- Water&dust proof
- Toll-less assembly
- Do not change diameter of a pipe

SEALS

MICRODUCT BUNDLE SEALS (END CAP) MT-UW-KP

MetroJET integrity

Easy installation

Waterproof

Technical data

MT-UW-KP	
Sealing material	Synthetic rubber TPE
Hardness	40 Shore A
Protection level	waterproof

ORDERING INFORMATION

MT-UW-KP Pipe seal	
MT-UW-KP-40/2x10	MetroJET pipe seal 40 mm for bundle 2x10 mm (rubber end cap)
MT-UW-KP-40/4X10	MetroJET pipe seal 40 mm for bundle 4x10 mm (rubber end cap)
MT-UW-KP-40/5X10	MetroJET pipe seal 40 mm for bundle 5x10 mm (rubber end cap)
MT-UW-KP-40/10X7	MetroJET pipe seal 40 mm for bundle 10x7 mm (rubber end cap)
MT-URZ-KP-40	MetroJET pipe seal 40 mm closed (rubber end cap)
MT-UW-KP-50/7X10	MetroJET pipe seal 50 mm for bundle 7x10 mm (rubber end cap)
MT-UW-KP-50/14X7	MetroJET pipe seal 50 mm for bundle 14x7 mm (rubber end cap)

Overview

Rubber end-cap seals guarantee high secure of microducts and water resistance between bundle of microducts and HDPE40/50 pipes. Therefore, the seals can be used as end part of prefabricated pipes in cable wells or containers. Rubber end-caps are also often used as sealing of port's housing or in a microduct system to seal cables or HDPE pipes. They are available in various options and designed to almost all combinations of pipes and microdcuts.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Sealing protection as a rubber end-cap between microduct bund les and HDPE pipes
- Water&dust proof
- Toll-less assembly
- Do not change (make bigger) inside diameter of pipe

METROJET INTEGRITY

TOOLS & MACHINES

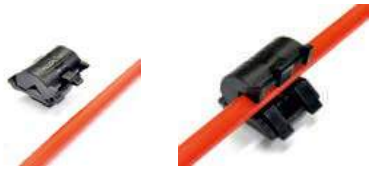
MetroJET product portfolio includes tools and machines, which ensure proper installation and further handling of prefabricated pipes, microducts and foiled bundles in installation works.
MetroJET tools and machines facilitate mechanic installation of cables, microducts and bundles of microducts. Therefore, fiber optic blowing machines and other technical equipment are used to install microduct systems.

METROJET
TOOLS & MACHINES

TOOLS & MACHINES
INSTALLATION TOOLS

Tools for microduct and prefabricated pipes

MT-TC
Microduct cutter



MT-TC1
Prefabricated pipe cutter

MT-TC2
Rotary cutter. Designed to remove outer sheath of prefabricated pipes.

MT-TC3
Longitudinal cutter. Designed to cut prefabricated pipes.

MT-TCWA
MetroJET Tool case

Tool case

MT-TC	MT-TC1
MT-TC2	MT-TC3

Overview

MetroJET product portfolio includes tools and machines, which ensure proper installation and further handling of prefabricated pipes, microducts and foiled bundles in installation works. MetroJET tools and machines facilitate work of engineer teams and specialists who perform mechanic installation of cables, microducts and bundles of microducts in existing microduct systems. Microduct cables miroduct system- proper installation method as well as equipment and necessary knowledge of specialists guarantee high quality MetroJET system installation.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Provide proper installation and MetroJET products
- Complete set of tools facilitating work

TOOLS & MACHINES

BREEZE CABLE BLOWING MACHINE

Technical data

CABLE BLOWING MACHINE BREEZE	
Microduct cable diameter	Ø1.0 - Ø8 mm
Microduct cable	Ø5.0 - Ø16 mm
Cable blowing speed	0-50 m/min
Maxiumum air pressure	15 bar
Clamping force	16 Kg
Dimensions (Height x Length x Width) [mm]	230V AC50/60 Hz
Weight	0.1 - 4 N
Dimensions (Height x Length x Width) [mm]	250 x 390 x 270
Weight	23 kg

ADDITIONAL ACCESSORIES

MICRODUCT ACCESSORIES	
C-1300-TBC-05	BREEZE sealing set for microducts 5 mm
C-1300-TBC-07	BREEZE sealing set for microducts 7 mm
C-1300-TBC-08	BREEZE sealing set for microducts 8 mm
C-1300-TBC-10	BREEZE sealing set for microducts 10 mm
C-1300-TBC-12	BREEZE sealing set for microducts 12 mm
C-1300-TBC-14	BREEZE sealing set for microducts 14 mm
C-1300-TBC-16	BREEZE sealing set for microducts 16 mm

CABLE GUIDES	
C-1300-AS1041-3880	BREEZE cable guide for microduct cables 1.0 - 2.5 mm & 3.8-8.0 mm
C-1300-AS1041-2538	BREEZE cable guide for microduct cables 2.5 - 3.8 mm

ENTRY SET FOR MICRODUCT CABLES	
C-1300-CBL-101024	BREEZE entry set for microduct cables 1-2.4 mm
C-1300-CBL-2530	BREEZE entry set for microduct cables 2.5 - 3.0 mm
C-1300-CBL-3038	BREEZE entry set for microduct cables 3.0 - 3.8 mm
C-1300-CBL-3850	BREEZE entry set for microduct cables 3.8 - 5.0 mm
C-1300-CBL-5064	BREEZE entry set for microduct cables 5.0 - 6.4 mm
C-1300-CBL-6480	BREEZE entry set for microduct cables 6.4 - 8.0 mm

Overview

BREEZE Cable Blowing Machine is used to install fiber optic cables in METROJET microduct system. Small and portable with ergonomic controls, it is ideally suited for external or internal use. The compliant double driven cable rollers provide secure grip whilst safely handling the cable. The pushing force can be set to match the cable stiffness, and the speed control is fully adjustable. Recent improvements to the machine implement a high/low torque switch giving greater sensitivity when adjusting low-end torque. This allows the installation of a greater range of cables down to 1mm in diameter. The machine is retained in a lightweight, robust aluminium housing and supplied completed with working/carrying case, in which all the necessary accessories can be kept.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Air-blown microduct cables Ø1-8mm
- Microduct diameter Ø5.0-16mm
- Electric drive
- Controlled and assisted installation by the belt drive system

OTHER ACCESSORIES	
C-1300-DW-S-KIT	BREEZE drive wheel kit
C-1300-DW-P-RUBBER	BREEZE drive wheels
C-M17	KAESER compressor M17 15 bar /1000 l/min
C-TRANS-CM7501-F	BREEZE Step down transformer 230V/110V IP65
C-LUB-1000	Lubricant SLUB 1000 ml
C-LUB-5000	Lubricant SLUB 5000 ml
C-1315-20-08	BREEZE cable fleeter 8 mm x 2000 m
D-01156	Cable drum rack 250 kg

TOOLS & MACHINES

AIRSTREAM CABLE BLOWING MACHINE

Technical data

CABLE BLOWING MACHINE AIRSTREAM	
Microduct cable diameter	Ø2.5 - Ø11 mm
Microduct diameter	Ø5.0 - Ø16 mm
Cable blowing speed	0-80 m/min
Clamping force	20 kg
Max. air pressure	15 bar
Power supply	90-305V 50/60Hz (with the use of voltage converter)
Weight	31 kg
Dimensions (Height x Length x Width) [mm]	266 x 460 x 305

ADDITIONAL ACCESSORIES

ACCESSORIES DO MICRODUCTS	
C-1700-TBC-05	AIRSTREAM sealing set for microducts 5 mm
C-1700-TBC-07	AIRSTREAM sealing set for microducts 7 mm
C-1700-TBC-08	AIRSTREAM sealing set for microducts 8 mm
C-1700-TBC-10	AIRSTREAM sealing set for microducts 10 mm
C-1700-TBC-12	AIRSTREAM sealing set for microducts 12 mm
C-1700-TBC-14	AIRSTREAM sealing set for microducts 14 mm
C-1700-TBC-16	AIRSTREAM sealing set for microducts 16 mm

CABLE GUIDES	
C-1700-CG-02025	AIRSTREAM cable guide for microduct cables 2.5 mm
C-1700-CG-02503	AIRSTREAM cable guide for microduct cables 2.5-3.0 mm
C-1700-CG-0306	AIRSTREAM cable guide for microduct cables 3.0-6.0 mm
C-1700-CG-0611	AIRSTREAM cable guide for microduct cables 6.0-11.0 mm

ENTRY SET FOR MICRODUCT CABLES	
C-1700-CBL-2530	AIRSTREAM entry set for microduct cables 2.5-3.0 mm
C-1700-CBL-3038	AIRSTREAM entry set for microduct cables 3.0-3.8 mm
C-1700-CBL-3850	AIRSTREAM entry set for microduct cables 3.8-5.0 mm
C-1700-CBL-5064	AIRSTREAM entry set for microduct cables 5.0-6.4 mm
C-1700-CBL-6480	AIRSTREAM entry set for microduct cables 6.4-8.0 mm
C-1700-CBL-8095	AIRSTREAM entry set for microduct cables 8.0-9.5 mm
C-1700-CBL-9511	AIRSTREAM entry set for microduct cables 9.5-11 mm

Overview

AIRSTREAM Cable Blowing Machine is used to install fiber optic cables in METROJET microduct system. Small and portable with ergonomic controls, it is ideally suited for external or internal use. The compliant double driven cable rollers provide secure grip whilst safely handling the cable. The pushing force can be set to match the cable stiffness, and the speed control is fully adjustable. Recent improvements to the machine implement a high/low torque switch giving greater sensitivity when adjusting low-end torque. This allows the installation of a greater range of cables down to 1mm in diameter. The machine is retained in a lightweight, robust aluminium housing and supplied completed with working/carrying case, in which all the necessary accessories can be kept. Therefore, the AIRSTREAM cable blowing machine is also equipped with an electric power generator.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Air-blown microduct cables Ø1-8 mm
- Microduct diameter Ø5.0-16 mm
- Electrive drive
- Controlled and assisted installation by the belt drive system

OTHER ACCESSORIES	
C-1700-DB-0105	AIRSTREAM set of belt drives for microduct cables 2.5-5.0 mm
C-1700-DB-0311	AIRSTREAM set of belt drives for microduct cables 3.0 - 11.0 mm
C-M17	KAESER compressor M17 15 bar / 1000 l/min
C-LUB-1000	Lubricant SLUB 1000 ml
C-LUB-5000	Lubricant SLUB 5000 ml
C-1315-20-08	Cable fleeter 8 mm x 2000 m
D-01156	Cable drum rack 250 kg

TOOLS & MACHINES

ACCELAIR 2 CABLE BLOWING MACHINE

Technical data

CABLE BLOWING MACHINE ACCELAIR 2	
Microduct cable diameter	Ø0.8 - Ø3.0 mm
Microduct diameter	Ø5.0 - Ø10 mm
Cable blowing speed	0-50 m/min
Max. air pressure	15 bar
Power supply	24 V DC/85-265 V 47-63 Hz
Weight	3 kg
Dimensions (Height x Length x Width) [mm]	166 x 184 x 120

ADDITIONAL ACCESSORIES

ACCESSORIES DO MICRODUCTS	
C-1800-TBC-05	ACCELAIR 2 sealing set for microducts 5 mm
C-1800-TBC-07	ACCELAIR 2 sealing set for microducts 7 mm
C-1800-TBC-08	ACCELAIR 2 sealing set for microducts 8 mm
C-1800-TBC-10	ACCELAIR 2 sealing set for microducts 10 mm

CABLE GUIDES	
C-1800-CG-2	ACCELAIR 2 cable guide for microduct cables to 2 mm
C-1800-CG-3	ACCELAIR 2 cable guide for microduct cables 2 - 3 mm

ENTRY SET FOR MICRODUCT CABLES	
C-1800-FBP-CX.X	ACCELAIR 2 entry set for microduct cables od 0.8 - 3.0 mm

Example: C-1800-FBP-C2.5 - ACCELAIR 2 entry set for microduct cables 2.5 mm.

Overview

ACCELAIR 2 Cable Blowing Machine is used to install fiber optic cables in METROJET microduct system. Small and portable with ergonomic controls, it is ideally suited for external or internal use. The compliant double driven cable rollers provide secure grip whilst safely handling the cable. The pushing force can be set to match the cable stiffness, and the speed control is fully adjustable. Recent improvements to the machine implement a high/low torque switch giving greater sensitivity when adjusting low-end torque. This allows the installation of a greater range of cables down to 1mm in diameter. The machine is retained in a lightweight, robust aluminium housing and supplied completed with working/carrying case, in which all the necessary accessories can be kept. Therefore, the AIRSTREAM cable blowing machine is also equipped with an electric power generator.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Air-blown microduct cables Ø0.8-3.0 mm
- Microduct diameter Ø5.0-10 mm
- Electric drive
- Controlled and assisted installation by the belt drive system

OTHER ACCESSORIES	
C-1800-T1	ACCELAIR 2 gaskets of drive wheels for microduct cables 0.8-2.0 mm
C-1800-T1	ACCELAIR 2 gaskets of drive wheels for microduct cables 2.0-3.0 mm
C-1800-BS	ACCELAIR 2 buckles 5 szt.
C-1800-DC-KIT	ACCELAIR 2 storage batteries with set of accessories

TOOLS & MACHINES

JETSTREAM CABLE BLOWING MACHINE

Technical data

CABLE BLOWING MACHINE JETSTREAM	
Microduct cable diameter	Ø6.0 - Ø20 mm
Secondary pipe diameter	Ø12 - Ø50 mm
Cable blowing speed	0-85 m/min
Clamping force	60 kg
Max. air pressure	15 bar
Power supply	Hydraulic pump
Weight	60 kg
Dimensions (Height x Length x Width) [mm]	550 x 700 x 590

ADDITIONAL ACCESSORIES

ACCESSORIES FOR SECONDARY PIPES AND MICRODUCTS	
C-1900-D-12	JETSTREAM sealing set for microducts 12 mm
C-1900-D-14	JETSTREAM sealing set for microducts 14 mm
C-1900-D-16	JETSTREAM sealing set for microducts 16 mm
C-1900-D-18	JETSTREAM sealing set for microducts 18 mm
C-1900-D-25	JETSTREAM sealing set for secondary pipe 25 mm
C-1900-D-32	JETSTREAM sealing set for secondary pipe 32 mm
C-1900-D-40	JETSTREAM sealing set for secondary pipe 40 mm
C-1900-D-50	JETSTREAM sealing set for secondary pipe 50 mm

ENTRY SET FOR CABLES AND MICRODUCT CABLES	
C-1900-C-0609	JETSTREAM entry set for cables and microduct cables 6-9 mm
C-1900-C-0912	JETSTREAM entry set for cables and microduct cables 9.0-12 mm
C-1900-C-1216	JETSTREAM entry set for cables 12-16 mm
C-1900-C-1620	JETSTREAM entry set for cables 16-20 mm

Overview

JETSTREAM Cable Blowing Machine is used to install cables&microduct cables in HDPE pipes installed in METROJET microduct system. The machines provides maximum cable protection, combined with the performance and reliability of hydraulic drive. The profiled double drive belt system is driven by hydraulic motor, powered by a supplied power pack with oil cooler. The electronic monitoring system provides read-out of speed and distance, helps protect against duct obstructions and includes an emergency stop. The JETSTREAM is adjustable to suit a wide range of cable diameters. The machine is supplied completed with working/carrying case, in which all the necessary accessories can be kept. Therefore, the JETSTREAM cable blowing machine is also equipped with a hydraulic pump and hydraulic hoses.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Air-blown micorduct cables Ø6-20 mm
- Microduct diameter Ø12-50 mm
- Hydraulic drive
- Controlled and assisted installation by the belt drive system

OTHER ACCESSORIES	
C-M100	KAESER compressor M100 7 bar / 10.2 m³/min
C-M17	KAESER compressor M17 15 bar / 1 m³/min
C-LUBE-02-F	Lubricant for cables 20 l
C-LUB-1000	Lubricant SLUB 1000 ml
C-LUB-5000	Lubricant SLUB 5000 ml
C-1315-20-08	Cable fleeter 8 mm x 2000 m
D-01156	Cable drum rack 250 kg

TOOLS & MACHINES

TORNADO CABLE AND BUNDLE BLOWING MACHINE

Technical data

CABLE BLOWING MACHINE TORNADO	
Microduct cable diameter	Ø6.0 - Ø32 mm
Secondary pipe diameter	Ø25 - Ø50 mm
Cable blowing speed	0-80 m/min
Clamping force	100 kg
Max. air pressure	12 bar
Power supply	Hydraulic pump
Weight	70 kg
Dimensions (Height x Length x Width) [mm]	1230 x 1060 x 700

ADDITIONAL ACCESSORIES

ACCESSORIES DO RUR RHDPE	
C-1258-0200-25	TORNADO handle of secondary pipe 25 mm
C-1257-0202-25	TORNADO sealing of secondary pipe 25 mm
C-1258-0200-32	TORNADO handle of secondary pipe32 mm
C-1257-0202-32	TORNADO sealing of secondary pipe 32 mm
C-1258-0200-40	TORNADO handle of secondary pipe40 mm
C-1257-0202-40	TORNADO sealing of secondary pipe 40 mm
C-1258-0200-50	TORNADO handle of secondary pipe 50 mm
C-1257-0202-50	TORNADO sealing of secondary pipe 50 mm

Overview

TORNADO cable blowing machine comprising an air box and cable pusher, has been designed to provide an effective and safe method of fibre optic cable installation. The system installs fibre optic cable of 6mm to 32mm overall diameter, at speeds up to 90m/min (300ft/min), into 25-50 mmRHDPE OD pipes. The system operates on the viscous drag principle employing compressed air to install the cable, controlled and assisted by the belt drive system. The cable is propelled by compressed air, fed into the duct via a venturi principle, while the hydraulically powered belt drive system controls the fibre optic cable. The electronic monitoring system provides read out of speed and distance, gives protection against duct obstructions and includes an emergency stop facility. The system is mounted on an anti-corrosion treated, sturdy, height adjustable, wheeled, tubular steel trolley. This allows the unit to be wheeled around on site.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Air-blown microduct cables Ø6-32 mm
- Microduct and pipes diameter Ø25-50 mm
- Hydraulic drive
- Controlled and assisted installation by the belt drive system
- Possibility of blowing microduct bundles

OTHER ACCESSORIES	
C-M100	KAESER compressor M100 12 bar /11 m³/min
C-LUBE-02-F	Lubricant LUBE 20 l
C-1265-20-01-R3	TORNADO cable fleeter 2000 m x 12 mm

TOOLS & MACHINES

TORNADO CABLE AND BUNDLE BLOWING MACHINE

ADDITIONAL ACCESSORIES

PLATES FOR FIBER OPTIC CABLES	
C-1256-0104-06-09	TORNADO pneumatic chamber cover plate for microduct cable 6-9 mm
C-1256-0103-06-09	TORNADO cable guide for microduct cable 6-9 mm
C-1256-0104-09-12	TORNADO pneumatic chamber cover plate for microduct cable 9-12 mm
C-1256-0103-09-12	TORNADO cable guide for microduct cable 9-12 mm
C-1256-0104-12-16	TORNADO pneumatic chamber cover plate for microduct cable 12-16 mm
C-1256-0103-12-16	TORNADO cable guide for microduct cable 12-16 mm
C-1256-0104-16-20	TORNADO pneumatic chamber cover plate for microduct cable 16-20 mm
C-1256-0103-16-20	TORNADO cable guide for microduct cable 16-20 mm
C-1256-0104-20-24	TORNADO pneumatic chamber cover plate for microduct cable 20-24 mm
C-1256-0103-20-24	TORNADO cable guide for microduct cable 20-24 mm
C-1256-0104-24-28	TORNADO pneumatic chamber cover plate for microduct cable 24-28 mm
C-1256-0103-24-28	TORNADO cable guide for microduct cable 24-28 mm
C-1256-0104-28-32	TORNADO pneumatic chamber cover plate for microduct cable 28-32 mm
C-1256-0103-28-32	TORNADO cable guide for microduct cable 28-32 mm

PLATES FOR FIBER OPTIC CABLES	
C-1250-CON-3x12	TORNADO converting set for bundle 3x12 mm
C-1250-CON-4x12	TORNADO converting set for bundle 4x12 mm
C-1250-CON-7x10	TORNADO converting set for bundle 7x10 mm
C-1250-CON-5x10	TORNADO converting set for bundle 5x10 mm
C-1250-CON-4x10	TORNADO converting set for bundle 4x10 mm
C-1250-CON-3x10	TORNADO converting set for bundle 3x10 mm
C-1250-CON-10x7	TORNADO converting set for bundle 10x7 mm
C-1250-CON-7x7	TORNADO converting set for bundle 7x7 mm
C-1250-CON-6x7	TORNADO converting set for bundle 6x7 mm
C-1250-TBK-2x12	TORNADO set for bundle 2x12 mm
C-1250-TBK-3x12	TORNADO set for bundle 2x12 mm
C-1250-TBK-4x12	TORNADO set for bundle 4x12 mm
C-1250-TBK-7x10	TORNADO set for bundle 7x10 mm
C-1250-TBK-5x10	TORNADO set for bundle 5x10 mm
C-1250-TBK-4x10	TORNADO set for bundle 4x10 mm
C-1250-TBK-3x10	TORNADO set for bundle 3x10 mm
C-1250-TBK-2x10	TORNADO set for bundle 2x10 mm
C-1250-TBK-10X7	TORNADO set for bundle 10x7 mm
C-1250-TBK-7x7	TORNADO set for bundle 7x7 mm
C-1250-TBK-6x7	TORNADO set for bundle 6x7 mm
C-1250-TBK-5x7	TORNADO set for bundle 5x7 mm

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OTHER ACCESSORIES	
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C-LUBE-02-F	Lubricant LUBE 20 l
C-1265-20-01-R3	TORNADO cable fleeter 2000 m x 12 mm

TOOLS & MACHINES

BLOWING MACHINE COMPRESSORS

KAESER C-M17 Compressor for BREEZE, ACCELAIR 2 I AIRSTREAM cable blowing machines

Technical data

COMPRESSOR KAESER C-M17	
Air delivery	1 m³/min
Working pressure	15 bar
Engine	HONDA GX 670
Rater motor power	15.3 kW
Weight	192 kg
Fuel tank capacity	20 l
Air connection	1 x G½

Overview

KAESER compressor is used together with cable blowing machines to perform the installations effectively. To ensure proper parameters of compressed air, the machine is equipped with external compressed air after-cooler for cool and condensate-free compressed air. Compact design, pneumatic tyres, a low centre of gravity and a long, stowable towbar make manoeuvrability and transport simple.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- 15-bar pressure
- Air delivery 1m³/min
- HONDA petrol engine
- Compressed air system
- 20m flat pressure hose

KAESER C-M114 Compressor for TORNADO and JETSTREAM cable blowing machines

Technical data

COMPRESSOR KAESER C-M114	
Air delivery	9.7 m³/min
Working pressure	10 bar
Engine	DEUTZ TCD 3.6 L4
Rater motor power	85 kW
Weight	1865 kg
Fuel tank capacity	170 l
Air connection	3x G¾, 1 x G1½

Overview

KAESER compressor is used together with cable blowing machines to perform the installations effectively. To ensure proper parameters of compressed air, the machine is equipped with external compressed air after-cooler for cool and condensate-free compressed air. Oversized fuel tank, power-saving Sigma Profile rotary screw airend and heavy-duty Deutz Tier 4 Interim diesel engine guarantee over 10 hours of uninterrupted operation. Therefore, Steel chassis, torsion bar suspension, over-sized tires and instrument and light package ensure easy portability and optimal road handling.

Applications

- Metro networks of MetroJET system
- Distribution networks of MetroJET system
- FTTx networks of MetroJET system

Features & benefits

- Max. 10-bar pressure
- Air delivery 9,7m³/min
- Deutz Tier 4 Interim diesel engine
- Compressed air system

NOTES

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