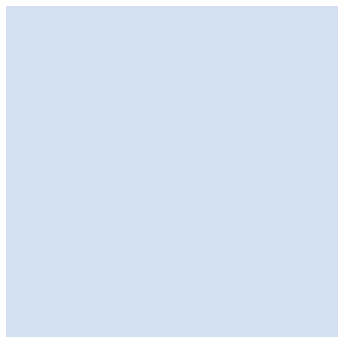
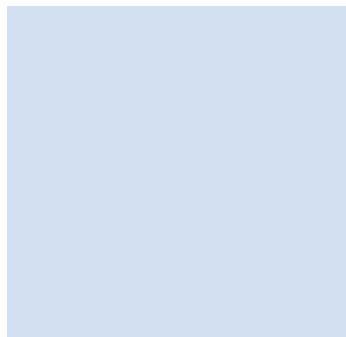
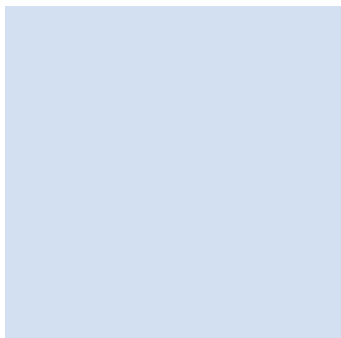


## Mini and Micro cable blowing-in devices





**IntelliJet blowing units for cable D 4-12 mm**

**MiniJet blowing units for cable D 4-12 mm**

**Intelli-MicroJet and MicroJets for cable D 0,8-7,5 mm**

**MicroJets for cable D 0,8-7,5 mm**

**Duct sealing to IntelliJet and MiniJet**

**OptiJet? Reporting**

**OptiJet accessory set**

**Cable and duct inserts for OptiJets**

**Cable guides for OptiJets**

**UltimaZ E25 and P2P for cables D 0.8-4.0 mm**

**Cable inserts and sealings for UltimaZ E25 and P2P**

**Lubricator L 9 for MiniJet, MicroJet**

**Lubricator L 24 for CableJet and SuperJet**

**Lubricator L 18 for CableJet and SuperJet**

**Intermediate cable blowing head for C-D 3,4-12,4 mm**

**Lubricator L4 and accessory for UltimaZ ULV, P2P, and MicroJets**

**Cable guiding heads for screwing on cables D 2,0-14,0 mm**

**Cable crash test tube for limiting the pushing force**

**Subduct calibration sets and detectors**

**Air connectors and plugs for subducts**

**Duct and cable cutting tools**

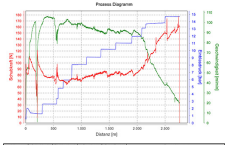
**FigarinO - cable basket for blowing-in big length**

**Compressor for blowing-in fibre optic cables**



## **Mini and micro cable blowing-in devices**

### **Cable drum unwinder for mini fibre optic cables**



## IntelliJet for micro- and mini-cables - complete new device

The first semi-automatic cable blowing unit with blowing assistant and electronic blowing data memory. Now in series production.

The new IntelliJet is a pioneering, intelligent blowing system that facilitates the blowing of fibre optic mini cables for the operator and improves installation quality. Cable layers as well as clients benefit from these improvements.

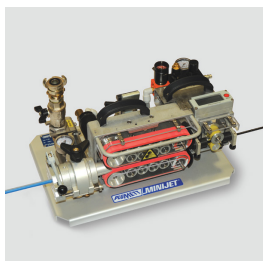
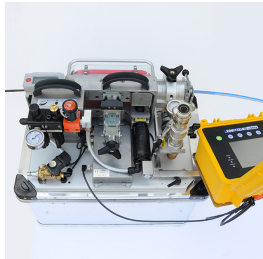
At the heart of the innovation is the measurement, presentation and control of the pushing force, which is transferred onto the cable by the drive system. The pushing force is constantly verified against the maximum permissible pushing force, which is determined through the crash test, and which will be specified in the cable data sheet in the future. A second assistant monitors the cable slippage. Both assistants give the operator an indication as soon the blowing procedure approaches a critical range and provide information on counter-measures. If the critical range is exceeded, the blowing unit stops. In this way, damage to cables can be avoided, the responsibility of the blow-in operator is relieved and the blowing quality is increased.

A clear blowing log with an electronic data transfer completes the new system. The new IntelliJet not only helps meet the minimum requirements for automatic logging of Deutsche Telekom but also the far-reaching demands for automated blowing processes. In addition to the new device, the IntelliJet can also be created from the tried and tested ?MiniJet? blowing unit by means of an upgrade. With the IntelliJet, sustainability for further automation levels is also guaranteed. The main benefits for cable layers are:

- Operators with little blowing experience can also achieve optimal blowing results with sensitivity and technical skill ?? the problem with the currently tight labour market can thus be alleviated.
- The two blowing assistants indicate critical operating conditions and stop the blowing procedure before damage to the cable occurs.
- Time savings for the blowing team and in order processing thanks to automatic data logging, archiving and electronic transmission.
- The logging of blowing parameters can provide evidence of bad subduct routes and is thus a basis for legitimate variation orders.
- The handling on the construction site is simple and nearly identical to current work with the MiniJet.
- Customers also benefit from the use of the IntelliJet:
- The automation of the blowing process will improve blowing performance and quality and reduce damage to cables, which increases the efficiency of FTTx projects.
- Precise and clear logging of the agreed blowing performance facilitates the error detection, financial settlement and data archiving.
- If damage to cables occurs at a later point, the original blowing log provides a reference for the blowing-out capability of the cable and can thereby reduce the repair time required (simplification of crisis scenario).
- Always both positions IntelliJet (Pi 02 OB) and IntelliBox (IBN 02) must be ordered!

Code	Type	C-D	Duct-D	Air-supply	Push force	kg
424302	PI 02 OB	4-16	7-42	16 bar	300 N	47,00





### Upgrade of customer MiniJet P01 and P02, from 2011

A customer MiniJet of the P01 and P02 (from 2011) series can be upgraded at Vetter to the IntelliJet version. An upgrade machine such as this has no disadvantages compared with the new device when put to practical use on the construction site.

Upon customer request, during this upgrade the condition of the MiniJet can also be checked at the same time, a maintenance offer issued, if necessary, and carried out on acceptance of the service. In this way, the overhauled, newly upgraded IntelliJet blowing unit will once again be well prepared for the upcoming challenges of the various blowing projects.

- Always both positions IntelliJet Upgrade Set (PIU OB Upgrade) and IntelliBox (IBN 02) must be ordered!

Code	Type	C-D	Duct-D	Air-supply	Push force	kg
424330	PIU OB Upgrade	4-16	7-42	16 bar	300 N	3,10

### IntelliBox

IntelliBox IBN 02 for displaying and checking the thrust force and cable slip during cable laying. Both assistants of the blow-in unit give the operator a hint via the IntelliBox as soon as the blow-in process approaches a critical area and inform about countermeasures. The IntelliBox automatically recognises the connected machine type of the injection unit. The clear injection protocol can be transmitted very easily via the WiFi function of the IntelliBox to any receiver device such as a tablet or notebook.

- Time saving for the blow-in team and order processing through automatic data logging, archiving and electronic transmission via WiFi.
- IoT-capable for future "digital services"
- The logging of the injection parameters can prove bad micro pipe routes and is thus a basis for justified supplements.
- Precise and clear logging of the agreed injection performance facilitates error detection, billing and data archiving.
- In the event of subsequent cable damage, the original blow-in protocol provides a guideline for the blow-out capability of the cable and can thus reduce the necessary repair time (simplification of the average scenario).

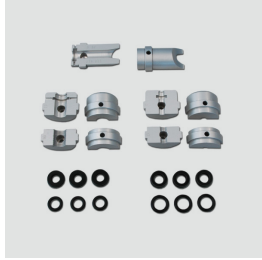
Code	Type	kg
424346	IBN 02	18,00

### MiniJet for Fibre Optic Cables

MiniJet, further development of the CableJet and MicroJet. For blowing-in mini fibre optic cables in long distances. Long and soft pneumatic belt drive especially for delicate cables. Produces high daily output. Electronic length and speed meter. Without cable and duct inserts. accessory and technical details see below.

- Very careful but high power transmission to the cable through the soft belts.
- Suitable excellent for very long cable distances with complicated design.
- Simple control, high safety for operator and for cable.
- Small dimension of 635x400x255, weight of the machine only 21,6 kg
- For compressed air to max. 16 bar, airflow to 5 m³/min.

Code	Type	C-D	D-OD	Air max.	Push force	kg
420100	P 02	4-16	7-42	16 bar	300 N	41,00



### Accessory-set for MiniJet and IntelliJet

accessory-set for MiniJet and IntelliJet. All cable and duct inserts for a certain cable and duct diameter range, see below.

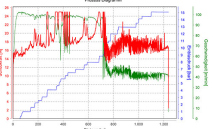
Code	Type	C-D	In duct-D	kg
420130	SET 40-83	4,0-8,3	10 + 12	0,57
420140	SET 80-124	8,0-12,4	14 + 16	0,56



### Duct inserts

Duct inserts for MiniJet for duct of D 7-42 mm.

Code	Type	D-OD	kg
420218	REM 07	7	0,15
420228	REM 20	20	0,20
420230	REM 25	25	0,20
420232	REM 32	32	0,20
420240	REM 40	40	0,20
420242	REM 42	42	0,20



### Intelli-MicroJet for FOC - complete new device

The first semi-automatic cable blowing unit with blowing assistant and electronic blowing data memory. Now in series production.

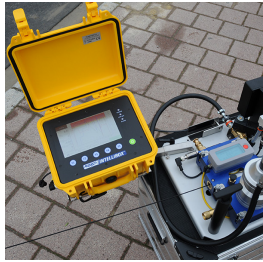
The new Intelli-MicroJet is a pioneering, intelligent blowing system that facilitates the blowing of fibre optic mini cables for the operator and improves installation quality. Cable layers as well as clients benefit from these improvements.

At the heart of the innovation is the measurement, presentation and control of the pushing force, which is transferred onto the cable by the drive system. The pushing force is constantly verified against the maximum permissible pushing force, which is determined through the crash test, and which will be specified in the cable data sheet in the future. A second assistant monitors the cable slippage. Both assistants give the operator an indication as soon the blowing procedure approaches a critical range and provide information on counter-measures. If the critical range is exceeded, the blowing unit stops. In this way, damage to cables can be avoided, the responsibility of the blow-in operator is relieved and the blowing quality is increased.

A clear blowing log with an electronic data transfer completes the new system. The new Intelli-MicroJet not only helps meet the minimum requirements for automatic logging of Deutsche Telekom but also the far-reaching demands for automated blowing processes. In addition to the new device, the Intelli-MicroJet can also be created from the tried and tested ?MicroJet? blowing unit by means of an upgrade. With the Intelli-MicroJet, sustainability for further automation levels is also guaranteed. The main benefits for cable layers are:

- Operators with little blowing experience can also achieve optimal blowing results with sensitivity and technical skill ?? the problem with the currently tight labour market can thus be alleviated.
- The two blowing assistants indicate critical operating conditions and stop the blowing procedure before damage to the cable occurs.
- Time savings for the blowing team and in order processing thanks to automatic data logging, archiving and electronic transmission.
- The logging of blowing parameters can provide evidence of bad subduct routes and is thus a basis for legitimate variation orders.
- The handling on the construction site is simple and nearly identical to current work with the MicroJet.
- Customers also benefit from the use of the Intelli-MicroJet:
- The automation of the blowing process will improve blowing performance and quality and reduce damage to cables, which increases the efficiency of FTTx projects.
- Precise and clear logging of the agreed blowing performance facilitates the error detection, financial settlement and data archiving.
- If damage to cables occurs at a later point, the original blowing log provides a reference for the blowing-out capability of the cable and can thereby reduce the repair time required (simplification of crisis scenario).
- Always both positions Intelli-MicroJet (PRMI 196OB) and IntelliBox (IBN 02) must be ordered!

Code	Type	Motor	C-D	Duct-D	Air-supply max.	Push	kg
424202	PRMI 196OB	Pneumatic	0,8-7,5	3-16	16 bar/1-2 m³/min.	140 N	28,00



### Upgrade of customer MicroJets PRM 196, PR 196 and PR 140

A customer MicroJet of the PRM 196; PR 196; PR 140 (from 2011) series with electronic counter VL 20 can be upgraded at Vetter to the Intelli-MicroJet version. An upgrade machine such as this has no disadvantages compared with the new device when put to practical use on the construction site. Earlier series before 2011 must be completed before the upgrade by a counter VL 20. All upgraded machines have the same performance as any new machine.

Upon customer request, during this upgrade the condition of the MicroJet can also be checked at the same time, a maintenance offer issued, if necessary, and carried out on acceptance of the service. In this way, the overhauled, newly upgraded Intelli-MicroJet blowing unit will once again be well prepared for the upcoming challenges of the various blowing projects.

- Always both positions Intelli-MicroJet Upgrade Set (PMIU OB Upgrade) and IntelliBox (IBN 02) must be ordered!

Code	Type	Motor	C-D	Duct-D	Air-supply max.	Push	kg
424230	PMIU OB Up.	Pneumatic	0,8-7,5	3-16	16 bar/1-2 m³/min.	140 N	15,00

### IntelliBox

IntelliBox IBN 02 for displaying and checking the thrust force and cable slip during cable laying. Both assistants of the blow-in unit give the operator a hint via the IntelliBox as soon as the blow-in process approaches a critical area and inform about countermeasures. The IntelliBox automatically recognises the connected machine type of the injection unit. The clear injection protocol can be transmitted very easily via the WiFi function of the IntelliBox to any receiver device such as a tablet or notebook.

- Time saving for the blow-in team and order processing through automatic data logging, archiving and electronic transmission via WiFi.
- IoT-capable for future "digital services"
- The logging of the injection parameters can prove bad micro pipe routes and is thus a basis for justified supplements.
- Precise and clear logging of the agreed injection performance facilitates error detection, billing and data archiving.
- In the event of subsequent cable damage, the original blow-in protocol provides a guideline for the blow-out capability of the cable and can thus reduce the necessary repair time (simplification of the average scenario).

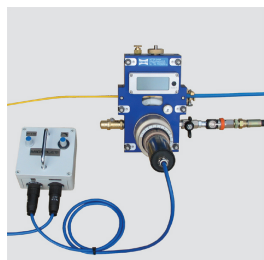
Code	Type	kg
424346	IBN 02	18,00

### MicroJet for FOC, pneumatic

MicroJet pneumatic drive, combined machine with adjustable magnetic clutch for bundle fibres and for micro and mini cables from D 0,8-7,5 mm in ducts from D 3-12 mm. Air pressure 16 bar/1-2 m³/min. With digital length and speed meter. Without cable and duct inserts. Accessory and technical details see below.

- Very careful but high power transmission to the cable through a magnetic clutch.
- Suitable excellent for very long cable distances with complicated design.
- Simple control, high safety for operator and for cable.

Code	Type	Motor	C-D	D-OD	Air-supply	Push	kg
422210	PRM 196	Pneumatic	0,8-7,5	3-12	16 bar/1-2 m³/min.	adj. 0-140 N	23,60



### MicroJet for FOC, electro

MicroJet for blowing-in micro fibre optic cables. Electric drive with fine adjustment, especially for delicate cables and bundle fibres. With digital length and speed meter. Without cable and duct inserts. Accessory and technical details see below.

- Very careful but high power transmission to the cable through a magnetic clutch.
- Suitable excellent for very long cable distances with complicated design.
- Simple control, high safety for operator and for cable.

Code	Type	El-Motor	C-D	D-OD	Air-supply	Push	kg
422200	EM 25	24 Volt	0,8-3,5	3-7	15 bar/0,6 m³/min.	adj. 0-25 N	16,30



### Receiver to EM 25

Receiver for connecting the MicroJet EM 25 to the net or to the compressor.

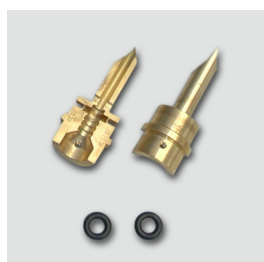
Code	Type	Supply from	Tension	kg
275600	NGE 24	Net	230 to 24 volt	1,00



### Accessory-set for MicroJets

Accessory-set for MicroJet EM 25, PR 140, PRM 196 and PRMI 196. All cable driving disc and cable and duct inserts for a certain cable and duct diameter range, according to table below.

Code	Type	Suitable for	C-D	D-OD	kg
422231	SET 10-35	EM 25, PRM, PRMI 196	1,0-3,5	7, 10, 12	3,50
422237	SET 36-76	PR, PRM, PRMI 196	3,6-7,5	10, 12	3,50



### Duct insert for MicroJets

Duct insert separate for MicroJet PR 140, PR 196 and PRM 196, for bigger ducts OD 5 mm and for cables up to D 1.8 mm.

Code	Type	Suitable for	C-D	D-OD	kg
42230119	REM 52	PR 140/PR 196/PRM 196	to 1.8	5	0,14
42230122	REM 72	PR 140/PR 196/PRM 196	to 1.5	7	0,14
42230132	REM 148	PR 140/PR 196/PRM 196	to 7.5	14	0,12
42230134	REM 168	Cable sealing	to 7.5	16	0,12

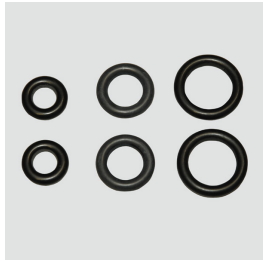


### Cable inserts

Cable inserts for MicroJet, for cables with D 0,8-1,1, without cable sealing

Code	Type	C-D	Set	kg
42230110	KEM 10	0,8-1,1	1	0,15





### Duct sealing for MicroJets and MiniJets

Duct sealing, sets of 6 pcs. suitable for cable blowing machines and duct-diam. according to table shown below.

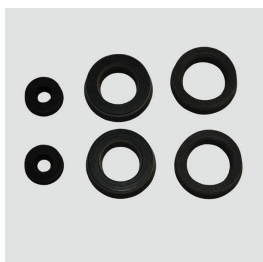
Code	Type	D-OD	Set	kg
42230163	RAD 03	3	PRM196/EM25	0,01
42230164	RAD 04	4	PRM196/EM25	0,01
42230165	RAD 05	5	PRM196/EM25	0,01
42230167	RAD 07	7	6	0,01
42230168	RAD 08	8	6	0,01
42230170	RAD 10	10	6	0,01
42230172	RAD 12	12	6	0,01
42024014	RAD 14	14	6	0,01
42024016	RAD 16	16	6	0,01
42024020	RAD 20	20	6	0,01
42024025	RAD 25	25	6	0,01
42024032	RAD 32	32	6	0,01
42024040	RAD 40	40	1	0,01
420240404	RAD 40L	40	6	0,01
42024042	RAD 42	42	1	0,01
420240424	RAD 42L	42	6	0,01
42024050	RAD 50	50	6	0,01



### Cable inserts

Cable inserts for MiniJet and IntelliJet, for larger cables with D 12-16, see table below.

Code	Type	C-D	Set	kg
420213	KEM 16	12,5-16	6	0,15

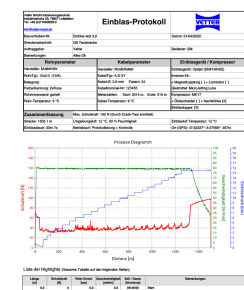


### Cable sealing

Cable sealing, sets of 6 pcs., Mini-, Micro-, Intelli-, Intelli-MicroJets, NBK 483, cable-diam. according to table shown below.

Code	Type	C-D	Set	kg
42230147	KAD 43	3,4-4,3	6	0,01
42230149	KAD 53	4,4-5,3	6	0,01
42230151	KAD 63	5,4-6,3	6	0,01
42230152	KAD 70	6,4-7,0	6	0,01
42230154	KAD 77	7,1-7,7	6	0,01
42230156	KAD 83	7,8-8,4	6	0,01
42021508	KAD 90	8,0-9,0	6	0,01
42021509	KAD 107	8,5-10,7	6	0,01
42021511	KAD 124	10,8-12,4	6	0,01
42021513	KAD 147	12,5-14,7	6	0,01

42021515      KAD 160      14,8-16,0      6      0,01



## OptiJet? Reporting

The most innovative and compact semi-automatic cable blowing unit for bundle fibres, micro-cables and small mini-cables.

The new OptiJet? Reporting is a powerful, smart and pioneering blowing unit that sets new standards in the blowing of fi-bre-optic micro-cables and mini-cables as well as bundle fibres. It can blow cable diameters of 1.5 to 8.0 mm into duct out-er diameters of 5 to 16 mm with a pushing force of maximum 150 N. The OptiJet? Reporting ensures maximum cable lay-ing quality, provides optimum operator support and requires less experience, to the benefit of both cable layers and cli-ents.

The new belt drive system allows uniform power transfer to the cable and guarantees optimum cable protection. The auto-matic crash test function is an absolute innovation. The OptiJet? Reporting provides the operator with maximum support in this and makes the crash test a simple and fast routine. This objective measurement of the maximum pushing force relieves the operator of the responsibility for subjective cable damage assessment and thus guarantees a high level of protection against such damage. The unit monitors important parameters for cable protection, such as pushing force and cable slip-page, during cable installation.

Its new drive technology using electric motors in combination with a self-sufficient battery system facilitates quiet working. The compressor's entire air output can thus be used for laying the cable.

Also new is the wireless, robust IP68 industry tablet with intuitive user interface.

Combined cable/duct inserts reduce the number of accessories, simplify conversion and significantly shorten conversion times.

Precise and clear logging of the agreed blowing services facilitates error detection in the event of an accident, billing and data backup.

- Inputs for the blowing procedure and configuration of the machine via touch display
- Favourites with the essential laying parameters allow faster work
- Display of the entire blowing procedure and subsequent creation of blowing logs in PDF format
- Wireless export via WIFI/Bluetooth or through other platforms (e-mail, etc.) using a SIM card
- The assistance systems and partial automation help operators with less experience to blow successfully. The issue of currently tight labour markets can thus be alleviated.
- Simple, quick and automated performance of the crash test
- Cable protection thanks to belt drive, display and the monitoring of critical parameters
- Automatic logging and easy transmission of the logs
- Significantly simplified handling and maximum operator support
- Proven and commonly used battery system using brand-name batteries

Code	Type	Motor	C-D	D-D	Pushing force	kg
424600	OptiJet? Reporting	Electric	1,5 to 8,0	5-16	150 N	44,80



### OptiJet?

Please note the following:

The OptiJet?"? can not be upgraded to an OptiJet?"? Reporting.

This unit cannot be used for logging.

The OptiJet?"? can blow cable diameters of 1.5 to 8.0 mm into duct outer diameters of 5 to 16 mm with a pushing force of maximum 150 N. The OptiJet?"? guarantees maximum cable laying quality and optimum cable protection thanks to the new belt drive system.

The main benefits for cable layers:

- Electric motor driv enables quiet working and the full air output of the compressor can be used for laying the cable
- Self sufficient battery system
- The assistance systems and partial automation help operators with less experience to blow successfully. The issue of currently tight labour markets can thus be alleviated
- Automated performance of the crash test
- The assistance systems and partial automation help operators with less experience to blow successfully. The issue of currently tight labour markets can thus be alleviated.
- Cable protection thanks to belt drive, display and the monitoring of critical parameters (pushing force, slippage)
- Proven and commonly used battery system using brand-name batteries
- Working with innovative technology
- Reduced number of accessories, simplified conversion, shorter conversion times

Code	Type	Motor	C-D	D-D	Pushing force	kg
424500	OptiJet?	Electric	1,5 to 8,0	5-16	150 N	43,20



### OptiJet accessory set

Compact plastic case with smart accessories for the OptiJet.

This case must be ordered with the respective version of the OptiJet.

The accessories include:

Code	Type	LxWxH	for	kg
424506	Accessory set	600x400x155	OptiJet?"? Reporting	10,10
424508	Accessory set	600x400x155	OptiJet?"?	11,80



### OptiJet external power supply

External power supply to operate the OptiJet without batteries.

Use with generator or indoors on sockets.

- Input: 100 to 240 V AC, 2.2 to 5.5 A, type C
- Output: 48 V DC, 10 A, adapter to OptiJet charging socket

Code	Type	kg
424510	SVO 220	3,00



### OptiJet battery pack

Backpack battery with the power of approx. 5.5 individual 18 V/6 Ah batteries. With charge level indicator, ON/OFF button and charger. Using an additional adapter and without having to interrupt operation, it can be connected to the charging socket of the OptiJet to considerably increase the available blowing time.

The adapter for the charging socket on the OptiJet, item no. 424.514, is required for this.

Technical data:

- Battery: Lithium-ion
- Voltage: 2x 18 V/40 V
- Power output: 33,5 Ah (1,200 Wh)
- Charging time: 360 min. (charger included in the scope of supply)
- Dimensions: 369 x 261 x 139 mm

Code	Type	kg
424512	MAP 335	10,40
424514	AAO 335	0,70



### Additional batteries

Additional 18 V/6.0 Ah lithium-ion batteries, on top of the batteries supplied as standard with OptiJet/OptiJet"? Reporting.

Attention: It is recommended to always order two batteries, as the OptiJet is powered by two batteries.

As standard, the OptiJet"? Reporting is delivered with 4 batteries.

Code	Type	kg
042450050	Makita Akku 18 V / 6,0 Ah	0,80



### OptiJet accessory sets

OptiJet accessory set. All cable/duct inserts as well as 6 cable and duct seals each according to below table.

Belts for cable diameters 1.5 to 3.0 mm and 3.1 to 8.0 mm are included as standard in the OptiJets scope of supply.

Separately available cable/duct inserts: REO 52, REO 53, REO 74, REO 123

Code	Type	C-D	D-OD	kg
424571	SET Micro	1,5-4,0	7, 10, 12	1,40
424573	SET Mini	4,1-8,0	10, 12, 14 , 16	0,80

### Seperately available OptiJet cable/duct inserts

Combined OptiJet cable/duct inserts for duct and cable diameters according to table. (incl. 6 duct seals each)

Code	Type	C-D	D-OD	kg
424540	REO 52	1,5-2,0	5	0,15
424542	REO 53	2,1-3,0	5	0,15
424544	REO 72	1,5-2,0	7	0,15
424546	REO 73	2,1-3,0	7	0,15
424548	REO 74	3,1-4,0	7	0,15
424550	REO 103	2,1-3,0	10	0,15
424552	REO 104	3,1-4,0	10	0,15
424554	REO 108	4,1-8,0	10	0,15
424556	REO 123	2,1-3,0	12	0,15
424558	REO 124	3,1-4,0	12	0,15
424560	REO 128	4,1-8,0	12	0,15
424562	REO 148	4,1-8,0	14	0,15
424564	REO 168	4,1-8,0	16	0,15

### Seperately available OptiJet cable guides

OptiJet cable guides for cable diameters according to table.

Easy to install by snapping into the corresponding holder on the unit.

Code	Type	C-D	kg
424530	KFO 20	1,5-2,0	0,13
424532	KFO 30	2,1-3,0	0,13
424534	KFO 40	3,1-4,0	0,13
424536	KFO 80	4,1-8,0	0,13

### OptiJet Lubricator inserts

Cable guide for Lubricator L9, only required for mounting on OptiJets

Code	Type	C-D	kg
423586	KBF 152	1,5-2,0	0,03
423588	KBF 213	2,1-3,0	0,03
423590	KBF 314	3,1-4,0	0,03
423592	KBF 418	4,1-8,0	0,03





### UltimaZ E25 for in-house installation, professional device

ULTIMAZ E25, blow fibre units and micro cable blowing device especially for in-house cabling up to lengths of approx. 300 m. The ULTIMAZ E25 is a consequent further development of the version ULTIMAZ P2P. The comfort features E25 is also designed for in-house installation of mini cables and fibres. The performance is improved and its handling is comfortable. The battery operated electric drive enables an eight hours operation. The pushing force can be adapted electronically by the operator in six steps from 5 to 22 N. The correct pushing force is found out as usual by crash-tests. This precise adjustment of the pushing force is the basic principle to avoid damages to the delicate mini cables and fibres. The ease of use is increased by the automatic contact pressure of the driving roller system. The contact pressure is automatically determined in dependency of the adjusted pushing force. The maximum speed of 80-180 m/min. is also controlled electronically in dependency of the pushing force.

In in-house installation with micro ducts and due to many bows and with special fire protected cables high air pressure of 10-12 bar is necessary.

Because of low air volume small manageable compressors (see below) or compressed air bottles are sufficient.

Accessory and performance see technical details below. Without cable and duct inserts, see accessory below.

- Fast and easy starting operation in any spot
- The battery operated electric drive with electronic controlling
- The operator does not need large cable blowing experience
- Small dimension of 80x255x195 mm, weight only approx. 4,3 kg of the basic machine

Code	Type	C-D	D-OD	Push	Press.	kg
423210	E25	0,8-4,0	3-12	0-22 N	10-12 bar	9,40



### UltimaZ P2P for in-house installation, start-up device

UltimaZ P2P blow fibre units and micro cable blowing device especially for in-house cabling up to lengths of approx. 200 m. The UltimaZ P2P makes it possible to continue the last mile from the underground floor to all flats. Drive through an accu-driven hand-drill, accessory.

In in-house installation with micro ducts and due to many bows and with special fire protected cables high air pressure of 10-12 bar is necessary. Because of low air volume small manageable compressors (see below) or compressed air bottles are sufficient.

The torque can be adjusted by fine steps from 0-20 N. This avoids largely damages of the cables. Accessory and performance see technical details below. Without cable and duct inserts, see accessory and techn. details below.

- Fast and easy starting operation in any spot
- Feeding drive through accu drilling machine of 500 t/min. not included
- The operator does not need large cable blowing experience
- Small dimension of 210x75x135, only approx. 2,4 kg of weight for comfortable application

Code	Type	C-D	D-OD	Push	Press.	kg
423200	P2P	0,8-4,0	3-12	0-20 N	10-12 bar	3,90

### Compressed air hose

Compressed air hose DN 10, L 7 m, with swing-coupling and connecting standard nipple for UltimaZ P2P to compressor VE 100

Code	Type	DN	Press.	Length	kg
042334017	DLS 10/7	10	15 bar	7 m	1,60





## Air connector for compressor

Air connector for connecting hose DLS 10/7 with a compressor

Code	Type	D-OD	kg
275610	DAS 42K	7-14	0,44



## Air regulator

Air regulator with manometer for subduct calibration set.

With safety couplings for air pressure hoses.

Code	Type	Adjustable	kg
275724	DMP 16	0-16 bar	1,90



## Pressure wheels to P2P

Pressure wheels to P2P, D 40 mm, NBR-tyres or aluminium

Code	Type	C-D	Material	kg
423341	KAPR 40N	1,0-4,0	NBR-tyre plane	0,02
423342	KAP 40A	1,0-4,0	Aluminium plane	0,07



## Drive wheels to P2P

Drive wheel to UltimaZ P2P, steel D 40, with groove.

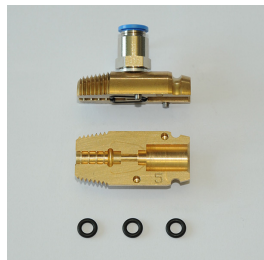
Code	Type	C-D	Material	kg
423345	KAP 41N	1,5-2,0	NBR-tyre groove	0,02
423341	KAPR 40N	1,0-2,0	NBR-tyre plane	0,02



## Drive wheels to P2P

Drive wheel to UltimaZ P2P, steel D 40, with groove.

Code	Type	C-D	Material	kg
423346	KAR 42	1,6-2,0	Steel, groove	0,06
423347	KAR 402	2,1-2,5	Steel, groove	0,05
423348	KAR 43	2,6-3,0	Steel, groove	0,06
423349	KAR 404	3,1-3,5	Steel, groove	0,05
423350	KAR 44	3,6-4,0	Steel, groove	0,08



### Duct insert divisible for P2P

Duct insert divisible for P2P, for duct-OD 3-12 mm and cable-Ø 1,8-4,0 mm, incl. 6 duct seals.

Code	Type	D-OD	C-D	For device	kg
423230	RET 3018	3	1,8	UltimaZ P2P	0,01
423232	RET 4025	4	2,5	UltimaZ P2P	0,01
423234	RET 5033	5	3,3	UltimaZ P2P	0,01
423236	RET 6040	6	4	UltimaZ P2P	0,01
423238	RET 7040	7	4	UltimaZ P2P	0,01
423240	RET 8040	8	4	UltimaZ P2P	0,01
423242	RET 10040	10	4	UltimaZ P2P	0,01
423244	RET 12040	12	4	UltimaZ P2P	0,01



### Cable insert divisible for UltimaZ P2P

Cable insert divisible for UltimaZ P2P, for cable-Ø 1,0-4,0 mm, for cable lead in.

Code	Type	C-D	For device	kg
423250	KFT 180	0,8-1,8	UltimaZ P2P	0,01
423252	KFT 250	1,9-2,6	UltimaZ P2P	0,01
423254	KFT 400	2,7-4,0	UltimaZ P2P	0,01



### Duct insert not divisible for P2P

Duct insert not divisible for P2P, for duct-OD 3-12 mm and cable-Ø 1,8-4,0 mm, without sealing KAD.

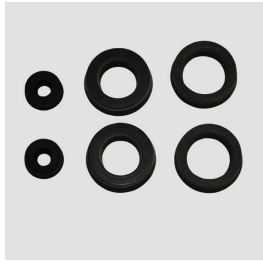
Code	Type	D-OD	C-D	For device	kg
423260	REN 3418	3-4	1,8	UltimaZ P2P	0,01
423262	REN 5640	5-6	3,3	UltimaZ P2P	0,01
423264	REN 71240	7/8/10/12	4	UltimaZ P2P	0,23



### Cable insert not divisible for UltimaZ P2P

Cable insert not divisible for UltimaZ P2P, for cable lead in.

Code	Type	C-D	For device	kg
423270	KFN 180	1,0-1,8	UltimaZ P2P	0,18
423272	KFN 250	1,9-2,6	UltimaZ P2P	0,18
423274	KFN 400	2,7-4,0	UltimaZ P2P	0,18



## Cable sealing-set to P2P

Cable sealing-set to UltimaZ P2P, to RET 3018 up to RET 12040, sets of see table below

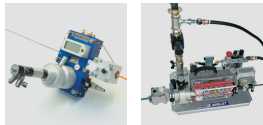
Code	Type	C-D	For device	Set	kg
42230140	KAD 10	0,8-1,1	UltimaZ P2P	10	0,01
42230141	KAD 12	1,2-1,4	UltimaZ P2P	10	0,01
42230142	KAD 18	1,4-1,8	UltimaZ P2P	6	0,01
42230143	KAD 24	1,8-2,4	UltimaZ P2P	6	0,01
42230144	KAD 33	2,4-3,3	UltimaZ P2P	6	0,01
42230145	KAD 40	3,4-4,0	UltimaZ P2P	6	0,01



## Lubricator L 9 - automatic device

Lubricator L 9 for continuous greasing of the cables blown by MicroJet, MiniJet and UltimaZ. Performance and techn. details see below.

- The Lubricator L 9 guarantees an uniform lubrication on the whole cable and duct length.
- To mount on MiniJet there are adapters, see below.
- In the Lubricator L 9 is included an adapter for the MicroJets EM 25, PR 140 and PRM 196



Code	Type	Suitable to	C-D	D-OD	kg
423500	L 9	MiniJet+MicroJet	1-9	4-16	2,20



## Cable guide for Lubricator L 9

Cable guide for the Lubricator L 9 only necessary when used with the MicroJet

Code	Type	Required for	For C-D	kg
423520	KBF 125	for Lubricator L 9with MicroJets	1,0-2,5	0,02
423522	KBF 254	for Lubricator L 9with MicroJets	2,5-4,0	0,02
423524	KBF 408	for Lubricator L 9with MicroJets	4,0-9,0	0,02

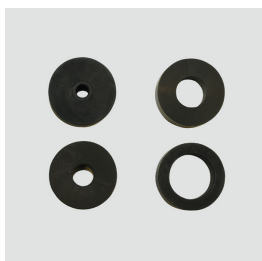


## Duct inserts for Lubricator L 9

Duct inserts with 2 sealing for Lubricator L 9 for duct-D see table below.

Code	Type	D-OD	For device	kg
423530	RES 4	4	Lubricator	0,04
423532	RES 5	5	Lubricator	0,04
423534	RES 7	7	Lubricator	0,03
423536	RES 8	8	Lubricator	0,03
423538	RES 10	10	Lubricator/Intermed. blowing head	0,03
423540	RES 12	12	Lubricator/Intermed. blowing head	0,03
423542	RES 14	14	Lubricator/Intermed. blowing head	0,03

423544	RES 15	15	Lubricator/Intermed. blowing head	0,03
423546	RES 16	16	Lubricator/Intermed. blowing head	0,03
423548	RES 20	20	Intermediate blowing head	0,03



### Duct single sealings for Lubricator L 9

Duct single sealing to Lubricator L 9 and intermediate blowing head, for ducts-D see table below.

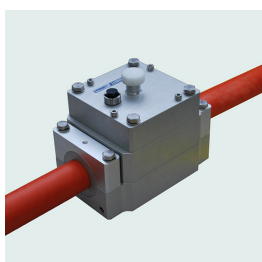
Code	Type	D-OD	For device	kg
042353801	RDL 4	4	Lubricator L 9	0,01
042353802	RDL 5	5	Lubricator L 9	0,01
042353803	RDL 7	7	Lubricator L 9	0,01
042353804	RDL 8	8	Lubricator L 9	0,01
042353805	RDL 10	10	Lubricator L 9 + Intermed. head	0,01
042353807	RDL 12	12	Lubricator L 9 + Intermed. head	0,01
042353809	RDL 14	14	Lubricator L 9 + Intermed. head	0,01
042353810	RDL 15	15	Lubricator L 9 + Intermed. head	0,01
042353811	RDL 16	16	Lubricator L 9 + Intermed. head	0,01
042353814	RDL 20	20	Intermed. Head NBK 475	0,01



### Adapter Lubricator L 9 - MiniJet

Adapter for mounting the Lubricator L 9 on the MiniJet included cable guides and duct clamp for subducts.

Code	Type	For	D-OD	For C-D	kg
423561	LA 9M	MiniJet	3-15	4,0-9,0	0,48



### Lubricator automatic device

Lubricator L 24 for automatic continuous greasing of the cable blown by Mini-, Intelli-, Cable- or SuperJet. This lubricator L 24 is especially recommended when blowing bigger cables in ducts 20 - 50 mm. Performance and technical details see below.

- The Lubricator L 24 guarantees an uniform lubrication on the whole length duct length.
- With the Lubricator L 24 the blowing cable lengths can be increased of approx. 20-40 %.
- This bigger Lubricator L 24 is only for use with Mini-, Intelli-, Cable- and SuperJet machines.

Code	Type	C-D	D-OD	kg
423507	L 24	9-24	20-50	5,00

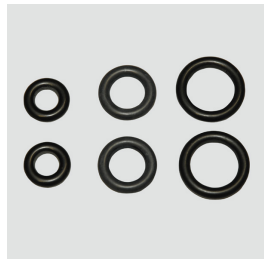




### Duct insert for Lubricator L 24

Duct insert with two duct sealings for Lubricator L 24 for duct-OD see table below. Two sets are necessary for L 24.

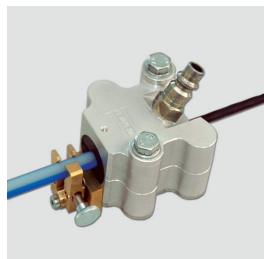
Code	Type	D-OD	Suitable to	kg
423610	RES 20	20	Lubricator L 24	0,10
423612	RES 25	25	Lubricator L 24	0,20
423614	RES 32	32	Lubricator L 24	0,20
423616	RES 40	40	Lubricator L 24	0,20
423618	RES 42	42	Lubricator L 24	0,20
423620	RES 50	50	Lubricator L 24	0,20



### Duct sealing for Lubricator L 24

Duct sealing, sets of 6 pcs. suitable for cable blowing machines and duct-diam. according to table shown below.

Code	Type	D-OD	Suitable to	Set	kg
42024020	RAD 20	20	Lubricator L 24	6	0,01
42024025	RAD 25	25	Lubricator L 24	6	0,01
42024032	RAD 32	32	Lubricator L 24	6	0,01
42024040	RAD 40	40	Lubricator L 24	6	0,01
42024042	RAD 42	42	Lubricator L 24	1	0,01
42024050	RAD 50	50	Lubricator L 24	6	0,01



### Intermediate cable blowing head

Intermediate blowing head for finishing the left loops after blowing in two direction. Without duct inserts, without cable sealing. Max. pressure 16 bars.

Code	Type	C-D	D-OD	kg
275700	NBK 483	3,4-8,3	7-16	1,40
275703	NBK 812	8,0-12,4	12-20	1,50
275710	DAP 08	Air connector	for NBK 483	0,50
275712	DAP 11	Air connector	for NBK 812	0,73





### Lubricator automatic device

Lubricator for continuous greasing of the cables blown by UltimaZ P2P, by MicroJets PR/PRM 196. Performance and techn. details see below.

- The Lubricator guarantees an uniform lubrication on the whole length duct length.
- With the Lubricator the performance is approximatively 20-40 % higher.
- Weight machine only 0,6 kg

Code	Type	C-D	D-OD	For device	kg
423490	L 4	0,8-4,0	3-12	see above	3,00



### Lubricant for FOC

Micro Jetting Lube, lubricant for blowing-in fibre optic cables. Excellent lubricating effect. Adheres to the duct wall and leaves the cable nearly dry, an advantage for over blowing and working in cascades with further blowing machines. Consumption approx. 10 ml per 1000 m at duct-ID 10 mm. For other duct-ID analogue

For lubrication unique and ultimate classification, Water pollution class - non-hazardous, acc. to VCI-Conception. Safety data sheets are available.

Code	Type	Pack. drums	kg
234975	MJL 240	1 bottle 0,24 l	0,32



### Duct cleaning sponge

Sponge for sub duct cleaning and pre-lubricating prior to cable blowing

Code	Type	D-OD	D-ID	Cellular	Qty.	kg
275398	RSM 04	7	4	D 8x30	20 pcs.	0,01
275400	RSM 06	7-10	5-6	D 12x30	20 pcs.	0,01
275402	RSM 08	10-12	8	D 16x50	20 pcs.	0,02
275404	RSM 10	12-16	10-12	D 20x50	20 pcs.	0,03



### Cable guiding heads

Cable guiding heads for screwing on the cable heads for friction-low sliding during cable-blowing.

Code	Type	D/L	C-D	Set of	kg
275517	KFM 23	2,3/8	2	10	0,01
275520	KFM 28	2,8/14	2,5	10	0,01
275522	KFM 38	3,8x12	3,5	10	0,03
275523	KFM 44	4,4/17	4	10	0,02
275526	KFM 54	5,4/22	5	10	0,02
275529	KFM 64	6,4/23	6	10	0,03
275532	KFM 67	6,7/23	6,5	10	0,03
275535	KFM 74	7,4/23	7	10	0,03
275538	KFM 84	8,4/28	8	10	0,06

275541	KFM 88	8,8/28	8,5	10	0,06
275544	KFM 93	9,3/28	9	10	0,06
275547	KFM 103	10,3/31	10	10	0,09
275550	KFM 113	11,3/34	11	10	0,12
275553	KFM 123	12,3/36	12	10	0,14
275556	KFM 133	13,3/38	13	10	0,18
275559	KFM 143	14,3/40	14	10	0,18



### Cable crash test tube

Cable crash test tube transparent with sealing end. For limiting the pushing force of the blowing-in machines. Tests without compressed air. For determination of the cable stiffness up to the crash. Safe packed in reusable plastic duct.

Essential for fail-safe adjustment of the pushing force of all different cable blowing machines. Duct-length 1 m.

Code	Type	D-OD	D-ID	For C-D	kg
275296	CTR 05/03	5	3	to 2,0	0,70
275300	CTR 10/04	10	4	to 3,0	0,70
275301	CTR 10/06	10	6	to 4,0	1,00
275303	CTR 12/08	12	8	to 6,5	0,80
275306	CTR 14/10	15	10	to 8,0	1,10
275307	CTR 16/12	16	12	to 9,0	1,10
275309	CTR 20/16	20	16	to 12,0	1,10



### Duct-connector

Sub duct connector with two couplings. For closing an intermediate blowing position of a duct-OD 10 mm, on a length of max. 400 mm. Set of 3 pcs.

Code	Type	D-OD	D-ID	Length	kg
273770	RV 1014	14	10	500	0,24



### Subduct calibration sets

The calibration sets MKV 0810 and MKV 1116 in conjunction with the accessory micro-transmitter SKS 06 (code-no. 231941) and SKS 07 (code-no. 231954) are destined for the calibration of subducts with an internal diameter 8,0 to 16,0 mm. The calibration can be done for single subducts as well as for multi subducts. By the calibration defects or blockages on the subducts can be detected in advance thus a good blowing-in performance can be achieved.

The MKV 0810 set contains two calibres with different diameters for the calibration of subducts with internal diameter 8,0 or 9,8-10,0 mm. The MKV 1116 set contains three different calibres for testing subducts of ID 11,4-16,0 mm. The calibres are easily screwed onto the micro-transmitter and blown through the subducts by air-pressure. The set also contains all essential connectors, reducing nipples as well as a catcher for the micro-transmitter. The catcher has to be used in order to avoid damages to the micro-transmitter. The air-pressure for the calibration has to be limited to max. 4 bars for MKV 0810 and to max. 2 bars for MKV 1116. By applying a higher pressure the micro-transmitter might be damaged by hitting duct blockages or by hard crashing into the catcher at the very end. The set contains the following parts:

- MKV 0810 with: each 3 calibre D 6,8 for ID 8,0 / 3 calibre D 8,5 for ID 9,8-10
- MKV 1116 with: each 3 calibre D 9,5 / ID 11,4-12 / 3 calibre D 11,0 / ID 15-16 / 3 calibre D 12,5 / ID 15-16.
- 6 washers to each calibre
- 5 sponges for each calibre. 1 general catcher and different connectors and duct-reducers
- Depending on the duct diameters different air connectors are necessary, see the following tables.
- SKS 06 for locating depth up to 2.0 m, D 6.5x84
- SKS 07 for locating depth up to 5.0 m, D 7.5x115

Code	Type	Device	Subduct-ID	Case	kg
231950	MKV 0810	Calibration set	8-10	180x140x80	1,43
231952	MKV 1116	Calibration set	11,4-16	442x357x151	5,00
231941	SKS 06	Micro transmitter	8-16	---	0,17
231954	SKS 07	Micro transmitter	9,8-16	---	0,01
231943	BAT 06	Set of batteries	10 each	---	0,04
231962	BAT 07	Set of batteries	10 each	---	0,01

### Calibration Set for Subducts 10/06

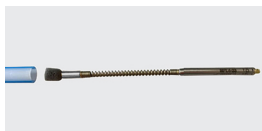
The calibration set MKK 0606 in conjunction with the micro transmitter SKS 04 is foreseen to calibrate subducts with inner diameter D 6.0 mm only. The calibration can be performed for single subducts as well as for multi subducts in buried and protective pipe installed versions. This new calibration set supports the blowing-in of mini- and micro cables on a completely new level since the quality of a sub duct installation can be checked in general.

The set comprises of 3 calibres with protection sponge having a diameter of 4.8 mm, a collecting device for the pipe end, a spare battery cover and 2 spare batteries.

The calibre will be simply unscrewed on the micro transmitter and with the sponge ahead blown-into the pipes using compressed air. The micro transmitter is a precision engineered measuring device, which has to be handled in the civil engineering with special care. Never operate the transmitter without protection sponge, bumper and collecting device fixed at the end of the pipe. Attentions should be paid to max. possible bending radius and air injection pressure ??" too high air pressure can cause damages on the calibration set.

During backward blowing the enclosed collecting device has to be used or at least a sufficient padding of another collecting device shall be implemented.

- Calibration set MKK 0606 including 3 calibres D 4,8 for ID 6,0 mm
- 20 sponges and collecting device at the pipe end for collection of the calibre
- 1 Micro Transmitter SKS 04, detection frequency 33 kHz, sensitivity in earth max. 2,0 m
- Max. injection pressure 5 bar, 4 bar is sufficient for horizontal routes
- Min. bending radius for subducts 175 mm, smaller radius cause unavoidable a blockage
- Batteries of the larger micro transmitter SKS 06 are used



Code	Type	Device	Subduct-ID	Case	kg
231930	MKK 0606	Calibration set	6,0	180x140x80	1,00
231943	BAT 06	Set of batteries	10 pcs.	--	0,04



### Detection of multi ducts with average duct in the centre

Multi ducts can be detected in short distances through the average duct of dia. 12x2,0 or 14x2,0 mm laying in the centre. The micro transmitter SKS 06 of diam. 6,4 mm and SKS 07 of diam. 7,5 mm are screwed on the M5 thread of the mini-rod diam. 3 mm. The obtainable pushing length depends on the local condition but is limited anyway by the max. length of the mini rod of 50 m. Using lubricant relieves pushing and pulling back the transmitter. Detection depth in the ground is max. 2 m. The yellow or red mini rod can be used for inserting the micro transmitter.

Code	Type	Device	Subduct-ID	kg
231941	SKS 06	Micro transmitter	8-16	0,17
231954	SKS 07	Micro transmitter	9,8-16	0,01
231943	BAT 06	Battery set	---	0,04
231962	BAT 07	Battery set	---	0,01



### Catching device Micro transmitter

The catching device guarantees that the micro-transmitter is safely caught at the end of the tube and does not hit the ground unprotected.

The micro transmitter enters the catching device and is caught in the circular guide until it comes to a stop. This prevents the micro transmitter from being damaged or destroyed.

- Suitable for tube outer Ø 7-22 mm
- Particularly suitable for blowing back the microphone transmitter
- Dimensions: 390 x 460 x 30 mm

Code	Type	Speed	Transmitter	D-OD	kg
231965	SC39	max. 20 m/s	max. 70 g	7-22 mm	1,20



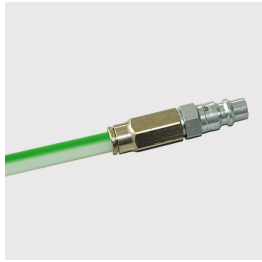
### Locating device for micro transmitter in subducts

Locating device with 2 batteries, for locating blown-in calibres in cable protection pipes or in subducts (micro pipes), as well as for locating non-metallic pipelines and blockages with the pipe coils, yellow or red D 4.5-11. There are the following possible applications:

- For detecting blocked calibre in cable conduits or in subducts
- Yellow conduit rod with screwed on duct transmitter RD 18 for spot detection
- Red conduit rod with screwed on duct transmitter RD 18 for spot detection
- Red conduit rod to transmitted by CAT SEN4, for line detection.
- Red ORS with CAT SEN4 and screwed on transmitter RD 18 for line and spot detection.

Code	Type	Frequency	Transmitter	L/W/H mm	kg
231611	CAT4+	33 kHz,	without	255/70/725	2,80





### Air connector for calibration sets

Air connector for subduct calibration sets.

Included in MicroJet PRM 196 and in Minijet P 02.

Code	Type	D-OD	Press.	kg
275766	DAM 10	10	0-7 bar	0,08



### Air connectors for calibration sets

Air connectors for subduct calibration sets and for high pressure test units.

Code	Type	D-OD	Press.	kg
275750	DAK 10	10	0-7 bar	0,39
275752	DAK 12	12	0-7 bar	0,41
275754	DAK 14	14	0-7 bar	0,40
275756	DAK 16	16	0-7 bar	0,40



### Conduit plug for duct-OD

Conduit plug for fixing on duct-OD with hose safety coupling applicable for duct calibration, duct pressure tests, duct cleaning etc.

Code	Type	D-OD	Press.	kg
2316512	KRA 20	20	0-7 bar	0,40
23165140	KRA 25	25	0-7 bar	0,46



### Sealing plug

Conduit sealing plug applicable for duct pressure tests.

Code	Type	D-OD	Press.	kg
273569	ENSA 20	20	0-7 bar	0,07



### Air regulator for calibration sets

Air regulator with manometer for subduct calibration set.

Included in MicroJet PRM 196

Code	Type	Adjustable	kg
275747	DMM 16N	0-16 bar	1,30



### Air regulator for calibration sets

Air regulator with manometer for subduct calibration set.

With safety couplings for air pressure hoses.

Code	Type	Adjustable	kg
275724	DMP 16	0-16 bar	1,90



### Pressure test distribution unit

DPV 1 pressure test distribution unit from 0-10 bar with 2 ball valves, with measuring connection 1215 for DRG 10 and DPG 17U for high pressure testing of tube OD 7-110 mm, for KR tube or 1 subduct (micro tube)?

Consisting of:

- DLR 10S Compressed air control. Unit
- Tripod for effortless working
- 5 m compressed air flat hose
- without duct plug and end cap plug

Code	Type	Designation	Ports	Press.	kg
23163007	DPV 1	Pressure test distribution unit	1	0-10 bar	11,30



### Case for accessory

Case for micro cabling accessory, with 9 shelves as following:

- 4 cases each 132x82x105
- 4 cases each 168x131x105
- 1 case of 286x168x105

Code	Type	Dimension	kg
275638	KZM 6040	600x400x155	4,30

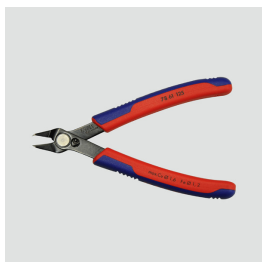


### Cable blow-in stop

Cable blow-in stop for in-house and underground fibre cable installations for cable lengths up to 200 m. Transparent duct with sponge shock absorber.

The standard rope winch is equipped with hand operated rope guide and a rope protection cover according to the rules. The winch can be equipped with the mechanical rope length measuring device SLM 510. For pulling-in fibre optic cables, subducts or delicate cables with the electronic digital line pull data recorder with USB interface, see below. For safety reason the pulling force on the bottom of drum is limited to 5,0 kN.

Code	Type	D-OD	D-ID	kg
275650	KES 0704	7	4	0,03



### FOC-Cable cutter

Cable side cutter for micro and mini FOC cables up to dia. 4,0 mm, length 125 mm. Knife special hardened also for Aramid and Kevlar.

Code	Type	For FOC-D	kg
255960	KSS 4,0	0,5-4,0	0,06



### Cable cutter

Cable cutter for Cu-/Al and FOC cables up to D 20 mm / 70 mm<sup>2</sup>. Precision ground, hardened blades, therefore clean and smooth cut. Insulated with multi-component grips, VDE-tested. Length 200 mm.

Code	Type	For C-D	kg
255965	KSD 20	20	0,36



### Conduit and cable splitter

Conduit splitter for lengthwise and circumferential slitting of plastic conduits and cable covers. Complete reinforced steel version. In case 195x75x45 mm.

Code	Type	To wall thickn.	---	kg
255905	KMS 6	6	195x75x45	0,35
255910	ERM 6	Spare knife	---	0,03



### Cable conduit saw

This cable conduit saw SRS 6.1 is a further development of the proven SRS 6. The saw is suitable for cutting occupied and unoccupied cable conduits without damaging internal cables or subducts. The saw is suitable for conduits at an outer diameter of 32-150 mm and at a max. wall thickness up to 6 mm. The saw can precisely cut lengthwise and crosswise and can also precisely cut windows into the cable conduit. Especially for long cuts on the cable conduits which are necessary for cable line redirections the great benefits of this saw pay off.

The cutting depth can be precisely adjusted to a 1/10 of a millimetre by an adjustment mechanism thus the cables inside the cable conduit are well-protected. The cutting depth has always to be set 0,2 mm less than the conduits wall thickness. The remaining very thin plastic membrane will be removed by a lifter tool thus the cable is also protected during this final step.

The conduit guiding plates allow a high safety at work as well as accurate cuts. The guiding plates are available for the below mentioned conduit-diameters. The cordless saw is handy and small in order to be fit for application also in narrow working conditions its weight is below 2 kg. Included in delivery are the following parts:

- Accu-saw with high-quality blade hard metal equipped and 3 accus with 1 charger
- Precise pre-adjustment of the cutting depth, 1/10 mm accurate sliding calliper.
- Lifter for the window-cutting rest
- Packed and delivered in robust box, 445x355x255, weight app. 6,5 kg
- Only approx. 1,9 kg of weight for comfortable application

Code	Type	Device	For D-OD	kg
273212	SRS 6.1	Saw as above	32-150	6,50
273228	RFP 32	Guide plate	32	0,35
273230	RFP 40	Guide plate	40	0,32



273232	RFP 50	Guide plate	50	0,26
273234	RFP 63	Guide plate	63	0,26
273237	RFP 64+	Guide plate	64-150	0,20
273222	ESB 6	Spare blade	---	0,03

### Sub duct splitter

Sub duct splitter for lengthwise slitting. Supplied with a protecting cap.

Code	Type	Subduct occup.	Subduct empty	Wall	L/W/H mm	kg
255942	MLS 20	from D 10x1,00	from 8x2,00	to 2,00	125x50x30	0,07

### Sub duct splitter

Sub duct splitter for lengthwise slitting and circumferential slitting of plastic conduits and cable covers. Cutter for empty and occupied subducts and dismantler for multiducts. Special thin and grinded turning guide shoe blade. Special shape of handle reduces danger of injury. Incl. 2 spare turning blades, e.g. 4 single blades.

Code	Type	Subduct occup.	Subduct empty	kg
255950	MLS 22	from D 7x1,50	from 5x0,75	0,70
255955	MLE 22	Spare knife	for LMS 22	0,02

### Subduct cutter

Subduct cutter for occupied or empty subducts.

Code	Type	D-OD	For Subducts	kg
272400	SDC 0312	3-12	occupied + empty	0,02

### Subduct cutter

Subduct cutter for occupied or empty subducts.

Code	Type	D-OD	For Subducts	kg
272402	SDC 1420	14/16/20	occupied + empty	0,07



### Subduct cutting tongs

Subduct cutting tongs, only for use with empty subducts.

Code	Type	D-OD	For Subducts	kg
272410	RSK 0214	2-14	only for empty subducts	0,10
0931240272	EM 14	--	5 spare blades for RSK 0214	0,03



### Subduct cutting tongs

Subduct cutting tongs, only for use with empty subducts.

Code	Type	D-OD	For subducts	kg
272420	RSK 0420	4-20	only for empty subducts	0,20
027242110	EM 20	--	Spare blade for RSK 0420	0,05



### Subduct cutting tongs

If the cross-section of a microtube is altered, the DuctDoc helps to return the microtube to its original shape with a round cross-section. Applicable for ID: 3.5 / 4 / 5.5 / 6 / 8 / 10 / 11.4 / 12 / 13 / 15 / 16 mm

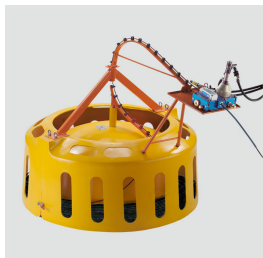
Code	Type	D-OD	For subducts	kg
272435	MKD 3516	see above	only for empty subducts	0,11



### Burring tool

Burring tool for in- and outside of plastic conduits. Of lightweight aluminium

Code	Type	D-OD	Dimension	kg
273175	MRE 26	3-26	D 36x90	0,39



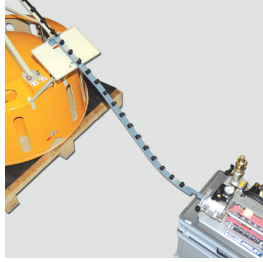
### FigarinO the cable basket

FigarinO. The FOC basket is used if the cable is too long to be blown completely with only one blowing machine. When half of the cable is installed in one direction the remaining cable is pushed into the FigarinO with the blowing machine. Out of the FigarinO this part of the cable can be blown uncut in the opposite direction to finish the installation.

A second application is "overblowing" longer cables. Instead of laying these on figure of eight on the floor they can be blown in the FigarinO. After opening the FigarinO the cable ring can be turned around and the cable can be blown-in totally.

- Cable Cap.: 4600 m D 4 / 2000 m D 6 / 1200 m D 7,5.
- The FigarinO replaces laying figure of 8 on the ground, is clean and space saving.
- The FigarinO is always placed besides the cable drum.

Code	Type	Basket-D	For transport	kg
411150	SLK 120	1260	Divisible in the middle.	71,00



### Cable lead in bow

Cable bow for pushing-in the cable into the FigarinO with the Minijet

Code	Type	Equipment	Suitable to	kg
04111521	KEB 120	Cable bow	IntelliJet+MiniJet-FigarinO	3,90
04111523	KEB 120M	Cable bow	Intelli-MicroJet-FigarinO	4,00



### Compressor diesel engine

High powered compressors for blowing-in bigger fibre optic cables. Suitable for MiniJet, for duct ID up to 41 mm. Mounted on single axle trailer with height adjustable drawbar, without overrun brake.

- Hatz Diesel-engine, 42 kW. Compressor dimension: 4000x1540x1445 mm.
- Flow rate 3,8 m³, at 14 bar working pressure
- With integrated after cooler and water separator.
- Air discharge valve: 2 x G 3/4"

Code	Type	Air	Press.	D-ID	C-D	kg
960123	M 59	3,8 m³/min.	14 bar	3-16,0	to 10	906,00



### Compressor diesel engine

High powered compressors for blowing-in bigger fibre optic cables. Suitable for MiniJet, for duct ID up to 20 mm. Mounted on single axle trailer with height adjustable drawbar, without overrun brake.

- Kubota Diesel-engine, 17,9 kW. Compressor dimension: 3245x1260x1330 mm.
- Flow rate 1,6 m³, at 14 bar working pressure.
- With integrated after cooler and water separator.
- Air discharge valve: 2 x G 3/4" (shown with option EVK 34)

Code	Type	Air	Press.	D-ID	C-D	kg
960120	M 27	1,60 m³/min.	14 bar	3-16,0	bis 10	600,00



### Compressor petrol engine

Compressor with petrol engine and after cooler. For blowing-in fibre optic mini cables, fibres and bundle fibres. Suitable for all MicroJets and for MiniJet P 02. The external after cooler reduces the compressed air temperature approx. 8° C above ambient temperature. The compressor is equipped with a sound absorption cover. It is portable by two pneumatic wheels.

- With Honda-petrol engine 15,50 kW. Dimension: 1080x800x796
- Flow rate 1000 l/min. at 15,0 bar working pressure.
- With separate after cooler electrical feeded by the compressor. Air discharge valve: 1 x G 3/4"
- As accessory see tiltable support for after cooler, table below.

Code	Type	Air	Press.	D-ID	C-D	kg
9601184	MK 17.4	1,0 m³/min.	15 bar	3-12,0	0,8-9,0	216,00





### Compressor petrol engine with mounting frame for after cooler

Compressor with petrol engine and after cooler. For blowing-in fibre optic mini cables, fibres and bundle fibres. Suitable for all MicroJets and for MiniJet P 02. The external after cooler reduces the compressed air temperature approx. 8° C above ambient temperature. The compressor is equipped with a sound absorption cover. It is portable by two pneumatic wheels.

- With Honda-petrol engine 15,50 kW. Dimension: 1080x800x796
- Flow rate 1000 l/min. at 15,0 bar working pressure.
- With separate after cooler electrical feeded by the compressor. Air discharge valve: 1 x G 3/4"
- inclusive folding mounting frame for aftercooler, see next table below.

Code	Type	Air	Press.	D-ID	C-D	kg
9601187	MK 17.4	1,0 m³/min.	15 bar	3-12,0	0,8-9,0	225,00



### Support for after cooler

Support for the after cooler on compressor MK 17.2. Steel frame hot galvanized. With this the after cooler is fixed safe and rubbery-elastic by four elements.

To transport the compressor in a van the after cooler is tiltable, please mind the total height of approx. 1,10 m. The after cooler can easily be dismounted from the support.

- Dimension with vertical positioned after cooler, L/W/H 1170/800/1220
- Dimension for transportation with tilted after cooler, total height only 1100

Code	Type	Material	kg
960147	KHN 17.4L	Steel profiles, galvanized	9,00



### Compressor electric motor

Compressor with electric motor. For blowing-in fibre optic micro cables, fibres and bundle fibres. Mounted on 2 wheels, which enables the transport on stairs for one person alone. Suitable for UltimaZ P2P.

- Electric motor 1,5 kW, 230 Volt, compressor dimensions: 570/440/1050 mm.
- Sound insulation bonnet, sound pressure level 79 dB(A).
- Constant, infinitely adjustable delivery pressure due to new piston compressor principle.
- Oil-free operation, no oil change, no check, oil- and water-free air.

Code	Type	Air	Press.	D-ID	C-D	kg
960104	i. Comp 3	0,12m³/min.	11 bar	2,5-6,0	0,8-4,0	29,00



### Compressor electric motor

Compressor with electric motor for blowing-in optic bundle fibres and mini cables in in-house installation. 230 Volt, without after cooler. Portable and transportable on 2 wheels. Soundproof hood. Suitable for UltimaZ P2P.

- Electric motor 1,1 kW, 230 Volt, compressor dimensions: 560/350/560
- Capacity 100 l/min. at 12 bar.
- Soundproof hood 71 dB(A).
- Pressure reservoir 4 litre

Code	Type	Air	Press.	D-ID	C-D	kg
960102	VE 100	100 l/min.	12 bar	2,5-5,5	0,8-4,0	31,00



### Compressed air hose

Compressed air hose DN 10, L 7 m, with swing-coupling and connecting standard nipple for UltimaZ P2P to compressor VE 100

Code	Type	DN	Press.	Length	kg
042334017	DLS 10/7	10	15 bar	7 m	1,60



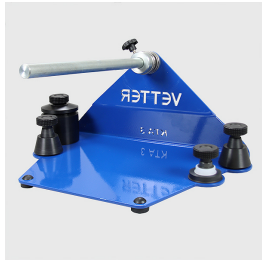
### Y-piece with accessory

Y-piece for connection of 2 compressors VE 100, with same pressure and volume of 15 bar and 0,24m³/min. Incl. 2 non-return valves. Connection parts are not included, the need is as following:

- For duct-Ø 10 - Code 275.766, DAM 10, Air-connector
- For duct-Ø 12 - Code 275.768, DAM 12, Air-connector
- For compressor connection: 2 air hoses Code 0423.340.15, DLS 10/7, see below



Code	Type	Max. press.	D-OD	kg
275775	YVE 16	15 bar	---	1,10
275766	DAM 10	10 bar	10	0,08
275768	DAM 12	10 bar	12	0,10



### Cable unwinder

Cable drum unwinder for very small drums with one or two flanges. The unwinder can accommodate a wide variety of drums with a bore from 20 mm by combining different cones. Due to its low weight of only 6.4 kg, it is very handy and yet has a high stability. This makes it very safe to use, e.g. for in-house cabling.

- For drum D up to 300 mm and drum width up to 220 mm, weight max. 5 kg
- Clamping bearings for easy running and small pull-off forces
- All cones are included and attached to the unit

Code	Type	Equipment	Shaft	Cones for	kg
320630	KTA 3	Winder as above	D 25	Hole D 25-50	6,40

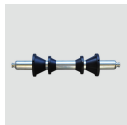


### Cable unwinder

Cable unwinder for small drums, even with damaged flanged wheels for electric installation works. Tubular steel construction galvanized. Consisting of: basic frame with 2 rubber coated wheels, one drum shaft D 25 mm with 2 cones of polyamide for hole diameter 25-80 mm.

- Collapsible for easy transportation to the site.
- Easy movable with the drum through big rubber coated wheels.
- For drum-D to 800 and drum widths to 530, drum weight max. 200 kg
- As accessory steel tube drum shaft D 50, ball bearings, 2 clamps, for cones see table below.

Code	Type	Equipment	Shaft	Cones for	kg
320290	KTA 8	Winder as above	D 25	Hole D 25-80	11,60
320292	KTA 8W	Steel tube shaft	D 50	See next line	2,05
315504	ZKP 50-80	Poly-cone (1 each)	D 50	Hole-D 50-80	0,15
3155045	ZKP 50-108	Poly-cone (1 each)	D 50	Hole-D 50-108	0,39

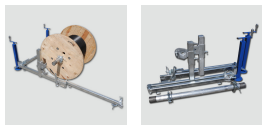


### Drum unwinding stand for FOC

Drum unwinding stand for FOC or subduct drums, galvanized. Equipped with a lightweight aluminium shaft D 75 mm with drum shaft securing and 2 clamps.

- Sturdy steel construction, hot galvanized, easy dismountable by hand for transportation.
- Two crank spindles to lift the stand for unwind cables in any position.
- High stability under load even in uneven places.
- For drum-D to 1400, and drum width to 900, drum weight max. 500 kg.
- As accessory alu-drum shaft D 50, ball bearings, order clamps and cones separately, see table below.
- Dimensions mounted: L/W/H 1450/1400/689.

Code	Type	Equipment	Shaft	Cones for	kg
344355	TRG 1140	Winder as above	D 75	---	96,00
350592	TAK 5013	Alu drum shaft	D 50	---	7,40
315030	KSV 51	Shaft clamps	D 50	---	1,30
315504	ZKP 50-80	Poly-cone (1 each)	D 50	Hole-D 50-80	0,15
3155045	ZKP 50-108	Poly-cone (1 each)	D 50	Hole-D 50-108	0,39





### Cable trailer straight or adjustable drawbar

Cable drum trailer with straight or height adjustable draw bar and overrun brake for speeds up to 80 km/h. For loading the support arms are swung down and then raised picking up the drum by a single hand winch. Rotatable aluminium shaft as accessory, see below

Payload without accessories. If accessories are mounted like hydr. drum drives etc. the payload reduces according to their weights.

- Types G - with straight draw bar can only be equipped with ball coupling
- Types H - with adjustable draw bar equipped with eye coupling, ball coupling as accessory
- Suitable for one-man operation
- Complete trailer hot galvanized
- Rotating alu shafts as accessory, please order shaft clamps separately.
- Drum band brake as accessory, see below.
- Position lighting at the front of the cable drum trailer

Code	Type	Payl.	Total	Drum-D	Hitch	Int./Ext.	kg
342088	KVS 1000/80G	980 kg	1300 kg	600-1650	75 kg	1300/2140	320,00
342131	KVS 1500/80G	1500 kg	2100 kg	600-2400	100 kg	1580/2450	581,00
342146	KVS 2000/80G	2000 kg	2600 kg	600-2400	100 kg	1580/2450	581,00
Code	Type	Payl.	Total	Drum-D	Hitch	Int./Ext.	kg
342093	KVS 1000/80H	930 kg	1300 kg	600-1650	75 kg	1300/2140	370,00
342136	KVS 1500/80H	1500 kg	2200 kg	600-2400	120 kg	1580/2450	670,00
342151	KVS 2000/80H	2000 kg	2700 kg	600-2400	120 kg	1580/2450	700,00

### Rear protection gate

Rear protection gate, for Cable trailers KVS 1000-2000 G+H, hot galvanized.

The need of a rear protection is subject to national regulations. Independent of this, the rear protection offers a higher safety in the road traffic.

Code	Type	Suitable for	Trailer ext. width	kg
349820	KUF 100	KVS 1000G+H	2140	16,00
349826	KUF 200	KVS 1500-2000G+H	2450	30,00