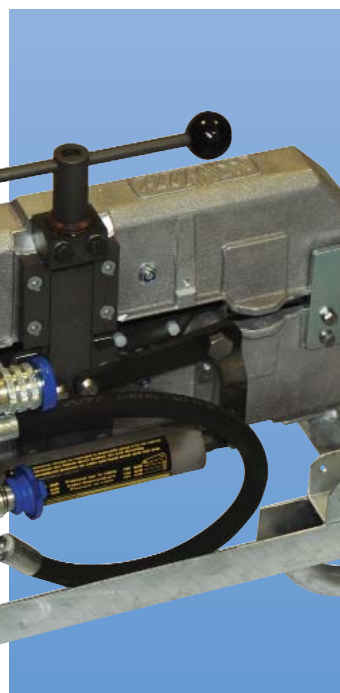
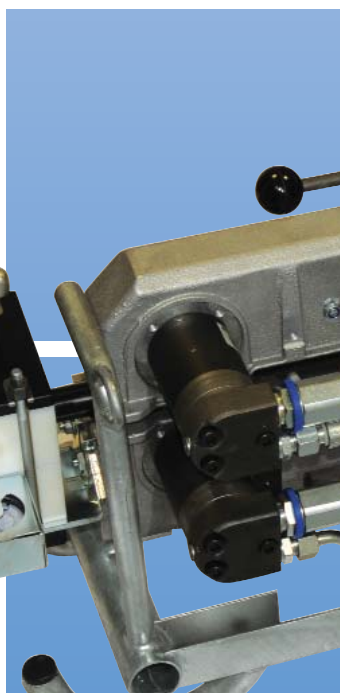
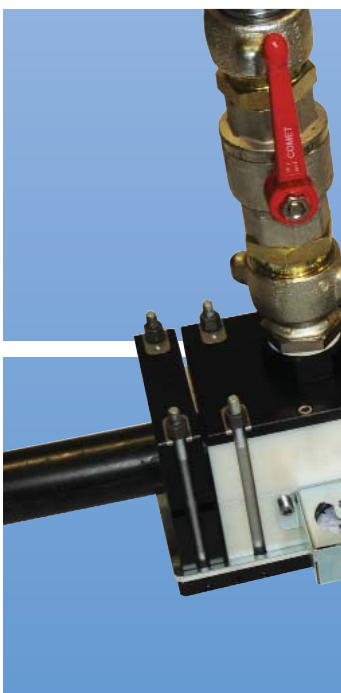
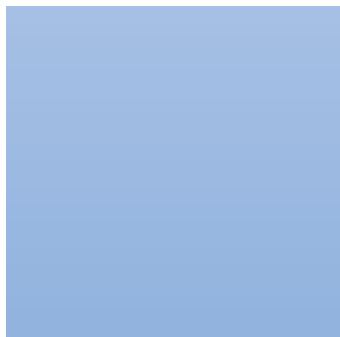
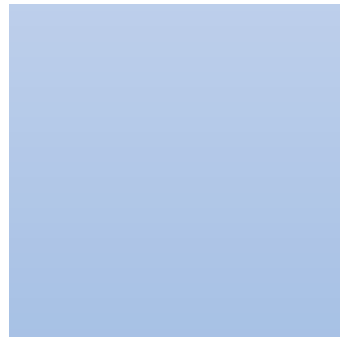
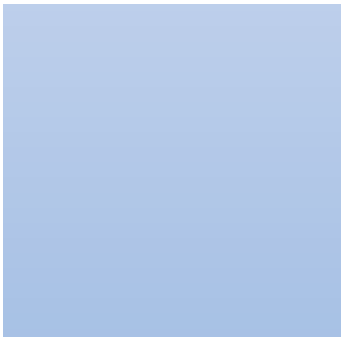
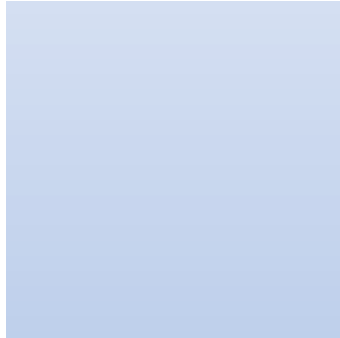


Blowing-in and pulling units for subducts





Blowing-in and pulling units for subducts

SuperJet for cables D 14-32 mm and subducts in all sizes

Compressors for blowing-in subducts

Subduct drum unwinding units up to 8 drums

High air pressure test sets

Calibration-sets and detectors for subducts

Cable conduit saw for duct-Ø 31-150 mm

Air distributors and regulators for subducts

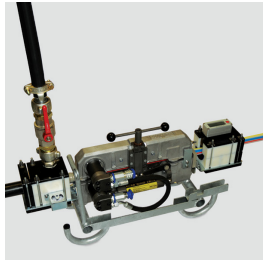
Cutter and burring tools for plastic cable ducts

Lubricants for fibre optic cables and subducts

DuctRepair-Boxx for damaged subducts

Pulling-in equipment for 1 to 20 subducts

Cable lead-in tubes and rollers

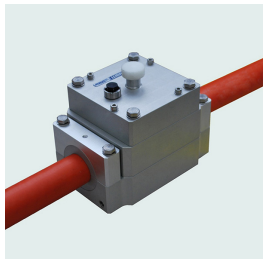


SuperJet for FOC D 12-34 mm

SuperJet for tension-free blowing-in of bigger fibre optic cables and bundles of sub ducts D 7-14 mm each. A very long belt drive of 330 mm secures a correct guide of cables and sub ducts. With digital length and speed meter. Including hydraulic power pack with petrol engine and control instruments. Worldwide thousand fold proven blowing machine. For successful blowing-in of big length, in ducts of D 50 mm a compressor of 12 bar and 10 m³/min. is necessary. Basic machine without belts, cable and duct inserts. See accessory below. Basic equipment consist of the following details:

- Petrol-hydraulic pack with hoses
- Length- and speed meter
- Ball valve 1 1/2" with screw couplings.
- Air pressure hose 1 1/2", length 10 m.
- Compressor of min. 10 m³/12 bar for duct dia. 50x4,6

Code	Type	Cable-D	Subducts	Chain band	Duct-D	kg
410314	SJH 34	14-32	D 7-14	330	28-63	125,00



Lubricator L24 - 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	K-D	Ro-AD	kg
423507	L 24	9-24	20-50	5,00



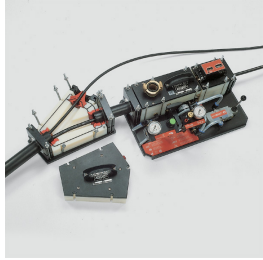
Accessory for FOC-floating

Accessory for FOC-floating with water for CableJet and SuperJet.

- The CableJet and SuperJet are also able to float-in very long lengths of cables with water.
- Cable lengths of 10 km were floated very successfully.
- The procedure is very simple and big length will certainly be achieved.
- Please ask for our special systems documents.



Code	Type	Suitable to	C-D	D-OD	Press.	kg
275210	REC 15/1W	CableJet	9-19	28-63	4-8 bar	4,80
275213	RES 15/1W	SuperJet	14-32	28-63	4-8 bar	3,45
275216	GMT 600	SuperJet	Lubricant funnel	for all	for all	1,00



Y-duct connector

Y-duct connector for blowing-in a second or third cable in occupied ducts. Please select for this the corresponding cable and duct inserts. See table below of CableJet or SuperJet.

- Allows to blow-in second or third cable in the same duct.
- Also necessary for blowing of additional subducts in occupied ducts.

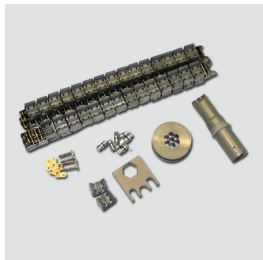
Code	Type	Duct inserts	Cable inserts	kg
410220	YK 5050	2x for D-OD 50 incl.	for 2 cables order separately	16,00
41024510	KEY 18	-	for 3rd cable order separately	0,46



Creeper chain for cables

Creeper chain with rubber cams for blowing-in cables of D 14-32 mm with the SuperJet. Two are required.

Code	Type	Suitable for	C-D	Required	kg
042500209	PRO 0820	SuperJet	14-32	2	1,60
0425002095	PRS 0821	SuperJet	Chain joint	2	0,02



Driving chains for sub ducts

Driving chains for blowing-in subducts with the SuperJet, combination see table below.

Code	Type	D-OD	Subducts	In D-OD	kg
42107007	KET 7/007	7	7	50 or 40	4,70
42107010	KET 7/010	7	10	50 or 40	4,70
42111005	KET 10/345	10	3/4/5	50 or 40	4,85
42111007	KET 10/007	10	7	50	4,70
42111205	KET 12/345	12	3/4/5	50 or 40	10,20
42111207	KET 12/007	12	7	63	4,70
42111403	KET 14/023	14	2/3	50	5,20
42111404	KET 14/004	14	4	50	11,00
42111410	KET 14/102	14/10	2/2	50	11,00
42111633	KET 16/003	16	3	50	11,00



Flat rubber chain

Flat rubber chain single incl. chain joint. This chain is mounted on the top to complete the existing chain of 5x7 / 5x10 / 5x12 and 3x16 for further subducts of 2x7 / 3x7 / 2x10 / 2x12 and 2x16 mm.

Code	Type	D-OD	Subducts	In D-OD	kg
042113931	flat chain	see text	see text	50 or 40	1,00



Cable inserts

Cable inserts suitable to CableJet and SuperJet. Also necessary for the Y-piece to blow-in a second or third cable in one duct. One set of cable sealing for the hole range of cable diameters is included.

Code	Type	C-D	kg
41015014	KEJ 14	12,5-14,0	0,44
41015015	KEJ 15	14,0-15,5	0,44
41015018	KEJ 18	15,5-18,0	0,45
41015022	KEJ 22	17,5-22,0	0,41
41015024	KEJ 24	22,0-24,0	0,45
41015028	KEJ 28	24,0-28,0	0,41
41015032	KEJ 32	28,0-32,0	0,41



Cable sealing

Cable sealing for CableJet. These are also useable in the Y-piece for blowing-in of further cables in the same duct.

Code	Type	C-D	For insert	Set of	kg
415140	KDR 14	12,5-14,0	KEJ 14	20 half seals	0,01
415150	KDR 15	14,0-15,5	KEJ 15	20 half seals	0,02
415180	KDR 18/16	15,0-16,0	KEJ 18	20 half seals	0,02
41518018	KDR 18/18	16,0-18,0	KEJ 18	20 half seals	0,02
415200	KDR 20/18	17,0-18,0	KEJ 18	20 half seals	0,04
41520020	KDR 20/20	18,0-20,0	KEJ 22	20 half seals	0,04
41522022	KDR 20/22	20,0-22,0	KEJ 22	20 half seals	0,04
415230	KDR 24	22,0-24,0	KEJ 22	20 half seals	0,03
415280	KDR 25	23,0-25,0	KEJ 22	20 half seals	0,05
41528028	KDR 28	25,0-28,0	KEJ 28	20 half seals	0,05
41535030	KDR 32/30	28,0-30,0	KEJ 32	20 half seals	0,12
41535033	KDR 32/32	30,0-32,0	KEJ 32	20 half seals	0,12



Subduct chain inserts

Subduct chain inserts suitable to SuperJet to blow-in a bundle of subducts. Sealing set is included. Suitable to chains see table below.

Code	Type	For subduct chains KET	kg
41015035	SDJ 36	7/007 (7/010) (10/345) (10/007)	0,36
41015042	SDJ 42	12/345 (12/0079) (14/023) (14/004) (16/003)	0,36



Subduct sealing

Subduct-sealing to subduct-inserts for SuperJet.

Code	Type	For insert	Set of	kg
41535038	SDR 36	SDJ 36	4 half seals	0,01
41542044	SDR 42	SDJ 37	2 cpl. seal	0,06



Duct inserts

Duct inserts suitable to CableJet, SuperJet. Also necessary for the Y-piece to blow-in a second or third cable in one duct.

Code	Type	D-OD	kg
41018032	REJ 32	32	1,40
41018040	REJ 40	40	1,40
41018050	REJ 50	50	1,40
41018063	REJ 63	63	1,40



Compressor diesel engine

High powered compressors for blowing-in bigger fibre optic cables. Suitable for CableJet and SuperJet and for duct ID up to 41 mm. Mounted on single axle trailer with height adjustable overrun drawbar. Incl. Diesel-Oxidation filter and particle filter. Emission standard V and US-standard EPA Tier 4. Equipped with Telematics 36 @ Mobilair.

- Deutz Diesel-engine, 105 kW. Compressor dimension: 5180x2130x1790
- Flow rate 10,70 m³, at 12 bar working pressure
- With integrated after cooler and water separator.
- Air discharge valves: 1 x G 1 1/2" and 3 x G 3/4"

Code	Type	Air	Press.	D-ID	C-D	kg
960127	M 125	9,7-11,5 m³/min.	14-7 bar, s. above	to 41	to 30	2.088,00



Pressure release valve

Pressure release valve with sound absorber for compressors. Max. pressure 15 bar.

Code	Type	Press.	For compressor	kg
096010038	EVK 34	15 bar	MK 17, M 27, M 59 and M 125	1,30



Pressure release valve

Pressure release valve with sound absorber for compressors. Max. pressure 15 bar.

Code	Type	Press.	For compressor	kg
275220	EVK 15	15 bar	M 125	2,70



Compressed air hose

Air hose, special flat, for blowing-in fibre optic cables and subducts. Complete with screw fittings.

Code	Type	Size	Working	Bursting	Length	kg
410420	KFS 15/1,5"	1 1/2"	20 bar	60 bar	15 m	9,12
231660	KFS 15/1"	1"	15 bar	45 bar	15 m	4,70
23165910	KFS 10/1"	1"	15 bar	45 bar	10 m	3,50



Drum unwinding stand

Drum transporting and unwinding stand for subduct drums of different suppliers. For several application e.g. on platforms of trucks or for placing on the ground or on the trailer TRA 8120, see below. Equipped with 2 lightweight aluminium shafts D 75 mm with 2 clamps and 6 spacer tubes.

Drum unwinding stand dismounted for shipment ex works. With small efforts the customer can screw it together. If not used for longer time, it can again be dismounted and stocked at a very small place.

- Sturdy steel construction, hot galvanized, screw mounted, easy dismountable for transport.
- Pay load for 8 / 6 full subduct drums, total weight without trailer 2500 kg possible.
- Two crank spindles to lift the stand for unwind the subducts in any position.

Code	Type	Drums/D	Drum width	Int. width	L/W/H mm	kg
344100	TRG 8120	8 max. 1200	max. 440	2160	2770/2330/770	277,00
344110	TRG 8120S	6 max. 1200	max. 440	1720	2770/1900/770	250,00



Platform Trailer

Tandem trailer prepared for mounting the drum unwinding stand TRG 8120 or for universal use for other goods. Height adjustable draw bar with overrun and parking brake. With eye and interchangeable ball coupling. Two rear crank spindles. Chamber to lodge the aluminium loading ramps. accessory 4 folding down alu-boards and 2 aluminium loading ramps. Trailer checked by Technical Inspection Agency.

Code	Type	Total	Payl.	Hitch	L/W/H mm	kg
344300	TRA 8120	2000 kg	1245 kg	100 kg	5430/2450/600	800,00



Aluminium boards to trailer

Folding down aluminium boards to tandem trailer, four parts, height 300 mm.

Code	Type	Height	kg
344301	TRA board	300	50,00





Drum loading ramps

Drum loading ramps, light aluminium construction for easy loading subduct drums on the trailer by only one person.

Code	Type	Suitable to	Dimension	kg
344302	TRA Ramp	TRA 8120	2500x300x55	20,00



Cable bundle stand

Bundle stand, triangle changeable up or downgrade, on tripod with height adjustment, steel construction galvanized.

Code	Type	Roller-D	Mat.	SWL	L/W/H mm	kg
203910	BNB 3	42x320	Steel	200 kg	900x900x1300	13,20



High pressure test

The new pressure test device combines three test methods in one electronic device. General test rules? individual selectable acc. requirements from the customer - The requirement from Deutsche Telekom acc. ?ZTV-TKNETZ 40? - The low-pressure test acc. EN 1610:2015 as well as worksheet DWA-A-139:2009

The high-pressure test is presently the most frequent test method in the range of pressure tests for protective ducts. This test method will be performed at thick-walled protective ducts and subducts (micro ducts). With regards to the protective ducts, ducts with OD 50/40/32 mm are most frequently used application. For subducts a wider range of ducts can be tested from 7x1,5 until 20x2,5 mm. The high-pressure test distinguish between two different targets:

- Verification of optimal blowing-in performance, which is guaranteed only by a pressure-tight duct system (short-term target)
- Assurance of pressure-tight duct, the joints and connectors against water intrusion and the subsequent intrusion of soiling with sand. This results in incrustations, which causes problems during the blowing-in process and possibly later at blowing-out of cables (long-term target)

Code	Type	Explanation	kg
231700	High pressure	See the following devices	0,00

High and low air pressure testing devices

The DPG 17U Universal pressure test device for test of cable ducts with regards to protective ducts and subducts working in the range of 0?7 bar. The operation is made by a 7? colour-graphic-touch display. The new device support the user through a simple and menu-driven operation. With the help of a matrix (table) three different test methods can be selected. Those are ?General test rules? individual selectable acc. requirements from the customer, the requirement from Deutsche Telekom acc. ?ZTV-TKNETZ 40? and the low-pressure test acc. ?EN 1610:2015?. This results in a maximum support for the user.

The result of the pressure test is summarized in a clear test protocol with three core areas. The test protocol will be stored on the device and can be loaded by a USB-interface to a customary PC. ?

The left shown 1. protocol shows a passed test ?Test criteria fulfilled? ?

The left shown 2. protocol shows a failed test ?Test criteria not fulfilled?

- Upper area: General data like: Contracting company with name of operator, construction site, duct, temperature, times, measurement data with calibration status
- Middle area: Result of the pressure test through colour-marked message: "Test criteria fulfilled" or "Test criteria not fulfilled"
- Lower area: Graph with the two phases settling time and main test



Code	Type	Designation	Press.	Application	kg
231740	DPG 17U	Universal pressure test device	0-7 bar	Cable conduits	6,40

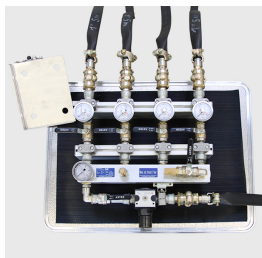


High air pressure testing NE2 and NE3

Pressure test distribution units for high-pressure tests of 1 duct acc. network level NE2 and NE3.

This test method will be performed at thick-walled protective ducts and subducts (micro ducts). With regards to the protective ducts the 50x4,6 duct is the most frequently used application. For subducts a wider range of ducts can be tested from 7x1,5 until 20x2,5 mm. For the connection of the ducts the right accessories have to be used to perform the test.

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

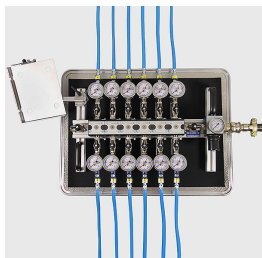


High air pressure testing NE2 and NE3

Pressure test distribution units for high-pressure tests of 1-4 ducts acc. network level NE2 and NE3.

This test method will be performed at thick-walled protective ducts and subducts (micro ducts). With regards to the protective ducts the 50x4,6 duct is the most frequently used application. For subducts a wider range of ducts can be tested from 7x1,5 until 20x2,5 mm. For the connection of the ducts the right accessories have to be used to perform the test.

Code	Type	Designation	Ports	Press.	kg
2316293	DPV 4	Pressure test distribution unit	4	0-10 bar	43,00

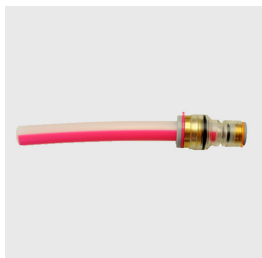


High air pressure testing NE3

Pressure test distribution units for high-pressure tests of 1-12 ducts acc. network level NE2 and NE3.

This test method will be performed at thick-walled protective ducts and subducts (micro ducts). With regards to the protective ducts the 50x4,6 duct is the most frequently used application. For subducts a wider range of ducts can be tested from 7x1,5 until 20x2,5 mm. For the connection of the ducts the right accessories have to be used to perform the test.

Code	Type	Designation	Ports	Press.	kg
231680	DPV 12	Pressure test distribution unit	12	0-7 bar	52,00



Reducing coupling for high pressure test

Reducing coupling D 10-7, with duct 10x2/100, for D-OD 7 mm, for coupling subduct OD 7 mm with pressure test distribution units DPV 12, necessary to order 275750 DAK 10.

Code	Type	D-OD	Press.	kg
231686	AKR 07	7 mm	0-7 bar	0,02



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 mm	0-7 bar	0,39
275752	DAK 12	12 mm	0-7 bar	0,41
275754	DAK 14	14 mm	0-7 bar	0,40
275756	DAK 16	16 mm	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 mm	0-7 bar	0,40
23165140	KRA 25	25 mm	0-7 bar	0,46



Connection coupling

Connection coupling for subducts, made of steel, plug-in type, for distribution device DPV 12

Code	Type	For subduct	To device	Max. Press.	kg
231690	AKS 10	D 10 mm	DPV 12	0-7 bar	0,13
231691	AKS 12	D 12 mm	DPV 13	0-7 bar	0,13
231692	AKS 14	D 14 mm	DPV 14	0-7 bar	0,14
231693	AKS 16	D 16 mm	DPV 15	0-7 bar	0,15
231694	AKS 20	D 20 mm	DPV 16	0-7 bar	0,21



Duct plug

Duct plug of plastic, 0-7 bar, for subducts D 5-20 mm

Code	Type	For subduct	Max. Press.	kg
272552	ESM 05	D 5 mm	0-7 bar	0,03
272556	ESM 07	D 7 mm	0-7 bar	0,01
272560	ESM 10	D 10 mm	0-7 bar	0,01
272562	ESM 12	D 12 mm	0-7 bar	0,02
272564	ESM 14	D 14 mm	0-7 bar	0,03
272568	ESM 16	D 16 mm	0-7 bar	0,02
272572	ESM 20	D 20 mm	0-7 bar	0,02



Test manometer for conduits

Testing manometer 10 bar, as end section of cable conduits, for high pressure tests, with safety coupling 42 mm. For air distribution devices DPV 1 + DPV 4. Max. air pressure 7 bar. To apply with conduit plugs KRA 20-110.

Code	Type	For	Together with	Max. Press.	kg
231633	PMK 10	DPV 1+DPV 4	KRA 20-110	0-7 bar	0,70



Test manometer for subducts

Testing manometer 10 bar, as end section of subducts for high pressure tests, with safety coupling NW 7,4. For air distribution devices DPV 12. Max. air pressure 7 bar. To apply with conduit plugs AKS 10-20.

Code	Type	For	Together with	Max. Press.	kg
231696	PME 10	DPV 12	AKS 10-20	0-7 bar	0,41



Case for accessory

Case for accessory of high pressure test devices, without parts, with 12 shelves as following:

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

Code	Type	Dimension	kg
231698	KZD 6040	600x400x155 mm	4,35



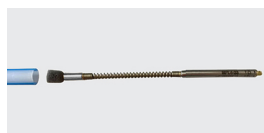
Subduct calibration sets

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	8-10	---	0,17
231954	SKS 07	Micro transmitter	9,8-10	---	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



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



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 tense 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



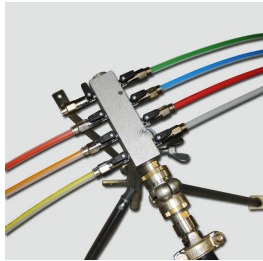
Code	Type	Device	For D-OD	kg
273212	SRS 6.1	Saw as above	32-150	6,50
273228	RFP 32	Guide plate	32	0,35
273230	RFP 40	Guide plate	40	0,32
273232	RFP 50	Guide plate	50	0,26
273234	RFP 63	Guide plate	63	0,26
273237	RFP 64+	Guide plate	64-150	0,20
273222	ESB 6	Spare blade	---	0,03



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 transmitters 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



Air distributor for sub ducts

Air distributor device for 8 sub ducts

Code	Type	Subducts	D-OD	kg
275629	DVA 10	8	10	2,44
275631	DVA 12	8	12	2,80



Spiral air hose for sub ducts

Spiral air hose with coupling for air filling of sub ducts

Code	Type	D-OD	kg
275633	SPS 12	7-14	0,75



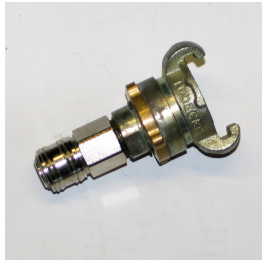
Air distributor for subducts

Air distributor for subducts, existing of alu-distributor, manometer, plug-in coupling and ball valve with release valve.

If other subduct diameters are to be connected to the VKM 10S and VKM 12S, please select one of the reduction couplings below:

Code	Type	D-OD	Reduction coupling	kg
275620	VKM 10S	10	-	0,46
275625	VKM 12S	12	-	0,48
272520	RSM 10/07	Reduction coupling	Subducts-D 10 on D 7	0,01
272522	RSM 12/10	Reduction coupling	Subducts-D 12 on D 10	0,03
272523	RSM 14/10	Reduction coupling	Subducts-D 14 on D 10	0,01
272524	RSM 14/12	Reduction coupling	Subducts-D 14 on D 12	0,02
272525	RSM 16/12	Reduction coupling	Subducts-D 16 on D 12	0,03
272526	RSM 16/14	Reduction coupling	Subducts-D 16 on D 14	0,03

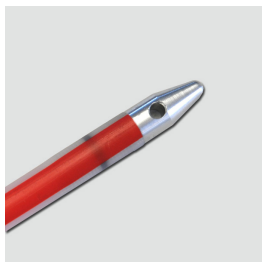




Air connector for sub-ducts

Air connector for blowing up single sub ducts .

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



Plug and pulling head

Plug, blowing and pulling head of aluminium for subducts

Code	Type	For D-D	Set of	Size	kg
2739904	SDV 0707	7x0,75	10	D 7,2x44	0,51
2739908	SDV 0715	7x1,50	10	D 7,2x40	0,03
2739912	SDV 1010	10x1,00	10	D 10,2x50	0,22
2739914	SDV 1211	12x1,10	5	D 12,2x50	0,06
2739922	SDV 1413	14x1,30	5	D 14,2x50	0,08
2739928	SDV 1620	16x20	5	D 16,2x56	0,21



Air regulator valves for sub-ducts

Air regulator valves with tripod and 5 m exit hose. Entry hose as accessory. An important regulator for calibration and pressure tests of cable conduits and to pressure of subducts prior blowing in conduits.

Code	Type	Press.	Hose	kg
23163016	DLR 16	0-16 bar	Exit 5 m	11,30
231655	KFS 5/1	0-16 bar	Entry 5 m accessory	2,20



Duct coupling and plug for testing subducts

Duct coupling and plug for testing subducts

Code	Type	Article	D-ID	Press.	kg
275635	AKM 10	Coupling	10x1,0	6 bar	0,05
275636	AKM 12	Coupling	12x1,0 + 1,1	6 bar	0,10
275645	VST 10	Plug	10x1,0	6 bar	0,07
275646	VST 12	Plug	12x1,0 + 1,1	6 bar	0,13

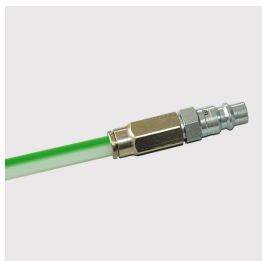


Locating device for micro transmitter in subducts

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 mm	0-7 bar	0,39
275752	DAK 12	12 mm	0-7 bar	0,41
275754	DAK 14	14 mm	0-7 bar	0,40
275756	DAK 16	16 mm	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 mm	0-7 bar	0,40
23165140	KRA 25	25 mm	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



Conduit cutters

Conduit cutters for plain cuts.

Code	Type	D-OD	Length	kg
273171	MRS 43	to 42	215	0,45
273172	MRS 50	to 50	265	0,60
273173	MRS 63	to 63	285	0,70
273174	MRS 75	to 75	485	1,60



Burring tools

Burring tools for in- and outside of plastic conduits.

Paring knife MSM 40, for separating multiple conduits.

Code	Type	D-OD	Burring	Mat.	kg
273185	MRA 63	20-63	only extern	Poly.	0,25
273180	MRE 50	28-50	ext. /intern	Alu	0,43
273200	MSM 40	Paring knife	---	Steel	0,50



Conduit and cable slitter

Conduit slitter 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



Sub duct slitter

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

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



Sub duct slitter

Sub duct slitter 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.

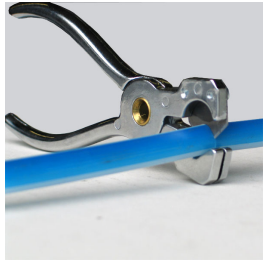
Code	Type	D-OD	For subducts	kg
272400	SDC 0312	3-12	occupied + empty	0,02



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-ID	Dimension	kg
273175	MRE 26	3-26	D 36x90	0,39



Lubricant for FOC

Jettinglube 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. 0,5 l per 1000 m at duct-ID 40 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
234960	CJL 1032	1 bottle 0,95 l	1,00
234965	CJL 1032	12 bottles 0,95 l	12,00
234961	CJL 378	1 bottle 3,80 l	4,00
234970	CJL 378	4 bottles 3,80 l	16,00



Lubricant liquid

Cable lubricant Softenol, liquid, for blowing-in and for pulling-in fibre optic cables.

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
235800	SOF 05	1 canister 5 l	5,60
235810	SOF 10	1 canister 10 l	11,00
235830	SOF 25	1 canister 25 l	26,50
235890	SOF 190	1 barrel 190 l	200,00



Duct cleaning sponge

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

Code	Type	D-OD	D-ID	Cellular	Qty.	kg
275408	RSM 28	32	28	D 45x90	1 pcs.	0,01
275410	RSM 35	40	35	D 55x90	1 pcs.	0,01
275412	RSM 40	50	40	D 65x90	1 pcs.	0,01
275414	RSM 51	63	51	D 78x90	1 pcs.	0,02



DuctRepair-Boxx

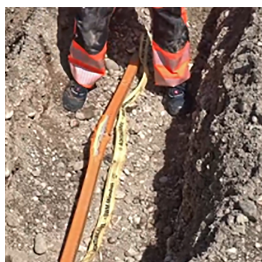
The DuctRepair-Boxx is a precision tool set that offers a solution for the sustainable repair of damaged, occupied subducts without endangering the intact cables.

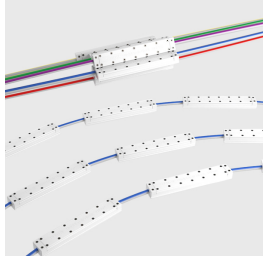
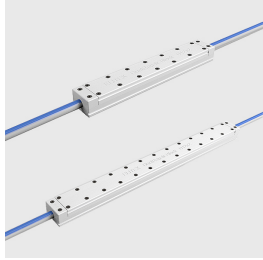
By using the newly developed, professional precision tools, damaged areas in the subducts for outside diameters of 7/10/12/14/16/20 mm and wall thicknesses of 0.75/1.0/1.1/1.3/1.5/2.0/2.5 mm can again be repaired without transition so that they can be blown in and out. The repair area is thus sealed pressure-tight and remains unrestrictedly calibratable and blowable.

The precision tools allow a longitudinal as well as a circular cut of the subduct without damaging the fibre optic cable running through it. The DuctRepair-Boxx does not include DuctRepair blocks in the scope of delivery, please order these separately as required. Delivery takes place in a robust case set. The standard scope of delivery includes the following parts:

- DuctTool lengthwise cutter set. Tool and inserts to cut covered subducts lengthwise.
- DuctTool circular cutter set. Tool and inserts to cut all around covered subducts.
- Subduct slitter MLS 20.
- DuctMarker, consisting of two markers for locating the repair site.
- Hexagonal spanner with T-handle wrench size 3 for installation DuctRepair Block.
- Hexagonal spanner with T-handle wrench size 2,5 for adjusting the tools.

Code	Type	D-OD mm	Wall thickness mm	kg
272100	DRBM 0720	7/10/12/14/16/20	0,75/1,0/1,1/1,3/1,5/2,0/2,5	5,41





DuctRepair-Blocks

Permanently buriable block for repairing damaged, already occupied subducts for different diameters with repair lengths (rep. l.) of 200 and 400 mm. The pipe system remains sustainably inflatable and deflatable after repair by the DuctRepair block.

- Suitable for permanent burial.
- Is applied seamlessly to the outer and inner diameters of the subduct.
- High tensile strength.
- Pressure tightness 15 bar at max. 40 °C for one hour.

Code	Type	Subduct	Tensile	Rep.-L.	LxWxH mm	kg
272162	DRB 0775/200	7x0,75	200 N	200 mm	252x33x26	0,54
272163	DRB 0775/400	7x0,75	200 N	400 mm	452x33x26	0,98
272164	DRB 0715/200	7x1,5	200 N	200 mm	252x33x26	0,54
272165	DRB 0715/400	7x1,5	200 N	400 mm	452x33x26	0,98
272166	DRB 1010/200	10x1,0	400 N	200 mm	252x36x26	0,54
272167	DRB 1010/400	10x1,0	400 N	400 mm	452x36x26	0,98
272168	DRB 1020/200	10x2,0	400 N	200 mm	252x36x26	0,54
272169	DRB 1020/400	10x2,0	400 N	400 mm	452x36x26	0,98
272170	DRB 1211/200	12x1,1	500 N	200 mm	252x39x26	0,54
272171	DRB 1211/400	12x1,1	500 N	400 mm	252x39x26	0,98
272172	DRB 1220/200	12x2,0	500 N	200 mm	252x39x26	0,54
272173	DRB 1220/400	12x2,0	500 N	400 mm	252x39x26	0,98
272174	DRB 1413/200	14x1,3	550N	200 mm	252x40x26	0,54
272175	DRB 1413/400	14x1,3	550N	400 mm	252x40x26	0,98
272176	DRB 1420/200	14x2,0	550N	200 mm	252x40x26	0,54
272177	DRB 1420/400	14x2,0	550N	400 mm	252x40x26	0,98
272178	DRB 1620/200	16x2,0	600 N	200 mm	252x42x36	0,79
272179	DRB 1620/400	16x2,0	600 N	400 mm	452x42x36	1,40
272180	DRB 2020/200	20x2,0	700 N	200 mm	252x46x36	0,79
272181	DRB 2020/400	20x2,0	700 N	400 mm	452x46x36	1,40
272182	DRB 2025/200	20x2,5	700 N	200 mm	252x46x36	0,79
272183	DRB 2025/400	20x2,5	700 N	400 mm	452x46x36	1,40



DuctTool lengthwise cutter set

Professional and highly precise cutting tool made of anodised aluminium to cut damaged subducts lengthwise. The precise adjustment feature allows the cut to be set to any size of damaged subduct without damaging the blown-in fibre optic cable. Delivery takes place in a robust case set with foam inlay.

- Longitudinal cutter base body incl. Knife.
- Depth of cut adjustment according to wall thickness of the subduct.
- Outer dimension star for setting the outer diameter.
- Two spacers for precise adjustment of the cutting length.
- Hexagonal spanner with T-handle wrench size 2,5 for adjusting the tools.

Code	Type	D-OD mm	Wall thickness mm	kg
272120	DTLK 0720	7/10/12/14/16/20	0,75/1,0/1,1/1,3/1,5/2,0/2,5	1,03
0272120102	2 spare knives	7/10/12/14/16/20	0,75/1,0/1,1/1,3/1,5/2,0/2,5	0,01



DuctTool circular cutter

Professional and high-precision cutting tool made of anodised aluminium to cut damaged subducts all around. The precise adjustment feature allows the cut to be set to any size of damaged subduct without damaging the blown-in fibre optic cable. Die Delivery takes place in a robust case set with foam inlay.

- Round cutter basic body incl. knife.
- 3x support prism for tube diameters 7-10 / 12-14 / 16-20 mm.
- 6x circular cutting blades for wall thicknesses 0.75 / 1.0 / 1.3 / 1.5 / 2.0 / 2.5 mm.
- Hexagonal spanner with T-handle wrench size 2,5 for adjusting the tools.
- Wall thickness 1.1 mm can be cut with cutting tool 1.0 mm.

Code	Type	Wall thickness	kg
272130	DTRK 0720	to 2,5 mm	0,48
027213020	2 spare knives	0,75 mm	0,02
027213022	2 spare knives	1,0 mm	0,02
027213024	2 spare knives	1,3 mm	0,02
027213026	2 spare knives	1,5 mm	0,02
027213028	2 spare knives	2,0 mm	0,02
027213030	2 spare knives	2,5 mm	0,02



DuctMarker

Set of two markers for marking and locating a damaged area by attaching the marker to a subduct, KR pipe or pipe union. Contains passive RF reflector that responds to the emitted signal from tracking devices.

- Colour orange for telecommunication with common frequency 101.4 kHz.
- Protection class IP68.
- Cable tie 7 mm wide and 2 mm thick.
- Locating depth horizontal position 0.6-1.0 m, vertical position 1.5-2.0 m.

Code	Type	Wall thickness	kg
272140	DM 1014	bis 2,5 mm	0,20

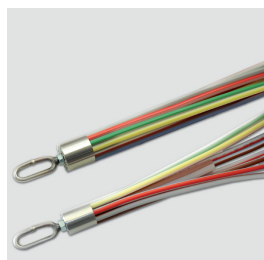


Cutting unit

To achieve a big packing density of subducts in pipes a subduct-bundle with many single ducts from only one single drum is pulled into the duct. The cover of the subduct-bundle is to cut open and to remove manual before the bundle is pulled in. This is done with the cutting unit for subduct bundles. Consisting of double knife, 8 leading rollers and leading tongue made of stainless steel.

- With double knives, 8 leading rollers and tongue made of stainless steel.
- Lead-in width 70, lead-in height 15-30

Code	Type	Dimension	kg
273905	SVR 70	480x330x290	30,10

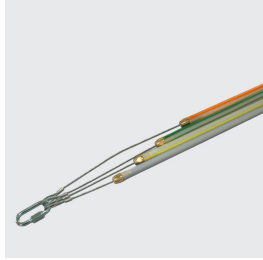


Sub duct pulling heads

Subduct pulling heads for subduct bundles in short duct length. Pulling head of stainless steel, pulling eye of steel.

- Important to meet the max. allowed pulling forces given by the producer.
- Depending on the friction and allowed pull forces length to 300 m are possible.
- At a high utilization of the duct volume the pulling lengths could be shorter.

Code	Type	Subducts	In centre	Head-D	D-ID	kg
2739513	ZK 24/07X	24 x D 7x1,50	1xD14,0x2,00	48,5	min. 51,0	0,85
2739533	ZK 18/07	18 x D 7x1,50	non	36,0	min. 40,8	0,59
2739535	ZK 14/07	14 x D 7x1,50	non	36,0	min. 40,8	0,51
2739543	ZK 10/07X	10 x D 7x1,50	1xD 14,0x2,00	35,0	min. 40,8	0,43
2739563	ZK 10/07	10 x D 7x1,50	non	28,5	min. 32,6	0,36
2739573	ZK 8/07X	8 x D 7x1,50	1xD 14,0x2,00	28,5	min. 32,6	0,22
2739575	ZK 6/07	6 x D 7x1,50	non	24,0	min. 27,4	0,27



Sub duct pulling units

Subduct pulling units for pulling of odd parts of subducts through shorter ducts. The pulling units are divisible and can be easily combined by the user in any configuration.

- Consisting of screw link, ropes with brass nipples.
- Mind the max. allowed pulling forces given by the producer of the subducts.
- In consideration of friction and allowed pulling forces of the duct 300 m could be achieved.
- At a high filling ration pulling lengths can be much shorter.

Code	Type	Subduct-D	D-OD	Subduct-D	D-OD	kg
2739795	ZE 7/0707	7 pcs. 7x0,75	from 32	---	---	0,14
2739797	ZE 7/1010	---	from 40	7 pcs. 10x2,00	from 40	0,37
2739801	ZE 1/1012	1 pcs. 10x1,00	from 32	1 pcs. 12x2,00	from 32	0,05
2739802	ZE 2/1012	2 pcs. 10x1,00	from 32	2 pcs. 12x2,00	from 32	0,08
2739803	ZE 3/1012	3 pcs. 10x1,00	from 32	3 pcs. 12x2,00	from 40	0,11
2739804	ZE 4/1012	4 pcs. 10x1,00	from 40	4 pcs. 12x2,00	from 40	0,14
2739805	ZE 5/1012	5 pcs. 10x1,00	from 40	5 pcs. 12x2,00	from 50	0,17
2739807	ZE 7/1012	7 pcs. 10x1,00	from 40	7 pcs. 12x2,00	from 50	0,23
2739808	ZE 8/1012	8 pcs. 10x1,00	from 50	8 pcs. 12x2,00	from 63	0,26
2739811	ZE 1/1214	1 pcs. 12x1,10	from 32	1 pcs. 14x2,00	from 32	0,06
2739812	ZE 2/1214	2 pcs. 12x1,10	from 32	2 pcs. 14x2,00	from 40	0,10
2739813	ZE 3/1214	3 pcs. 12x1,10	from 32	3 pcs. 14x2,00	from 40	0,14
2739814	ZE 4/1214	4 pcs. 12x1,10	from 40	4 pcs. 14x2,00	from 50	0,18
2739815	ZE 5/1214	5 pcs. 12x1,10	from 50	5 pcs. 14x2,00	from 63	0,22
2739817	ZE 7/1214	7 pcs. 12x1,10	from 50	7 pcs. 14x2,00	from 63	0,30
2739823	ZE 3/1414	3 pcs. 14x1,30	from 50	---	---	0,19
2739827	ZE 7/1414	7 pcs. 14x1,30	from 63	---	---	0,39
2739831	ZE 1/1616	1 pcs. 16x2,00	from 32	---	---	0,20
2739833	ZE 3/1616	3 pcs. 16x2,00	from 63	---	---	0,35
2739834	ZE 4/1616	4 pcs. 16x2,00	from 63	---	---	0,50
2739838	ZE 8/1616	8 pcs. 16x2,00	from 75	---	---	0,61
2739843	ZE 4/2025	4 pcs. 20x2,50	from 75	---	---	0,60
2739850	ZE 4/2020	4 pcs. 20x2,00	from 75	---	---	0,54



Cable shaft entrance roller

Cable shaft entrance roller bow, without or with base support. Roller bow 45°, Radius 600 mm, for fibre optic cables, steel construction galvanized with 4 polyamide rollers with ball bearings, diam. 80/30x50 mm.

Code	Type	Device	kg
274020	LRB 45	Roller bow, without support	3,60
274060	LSE 4	Shaft entrance roller with base support	7,30



Cable lead-in roller

Cable lead-in roller for protection of the cable and the duct. With steel tubes galvanized with fixing clamp to the duct.

Code	Type	D-ID	Tube-L	Roller-D	kg
274420	LER 22/1	22	240	80/30x38/50	0,60
274430	LER 25/1	25	240	80/30x38/50	0,70
274440	LER 28/1	28	240	80/30x38/50	0,70
274470	LER 35/1	35	240	80/30x38/50	0,82
274490	LER 40/1	40	240	80/30x38/50	0,80
274530	LER 54/1	54	240	80/30x38/50	0,90
274580	LER 74/1	74	240	80/30x38/50	1,20