



Leak testing and rehabilitation

Shut-off, testing and rehabilitation equipment

AIR-PIT hardware

„Testing the organized way!”



Shut-off, testing and rehabilitation equipment

Testing and measuring equipment for a clean environment

This catalogue includes all our products for inspection and rehabilitation of pipes and sewers. In addition, we offer a wide range of bespoke solutions or tailored products. Do not hesitate to ask your questions related to product selection or tailored solutions - our technical consultants will have the answer for you and solve your challenges: phone: +49 (0) 34 292.65 420.



Sealing and pipe testing equipment

AIR-PIT testing equipment	Page 6
Pneumatic pipe plugs	Page 8
Testing set for house connections	Page 14
Pipe joint tester	Page 18
Pneumatic disc pipe stopper	Page 24
Pneumatic accessories	Page 28
Mechanical pipe plugs	Page 32



Rehabilitation equipment

Equipment for rehabilitation	Page 40
House connection packers	Page 44
Bend packers	Page 45
Relining packers & carriers	Page 45



Tracking and locating equipment

Ridgid tracking systems	Page 52
Vivax tracking systems	Page 54
Duct rod	Page 56
Metal detectors	Page 57
Fogging units	Page 58
Water dyeing agents	Page 59



Vans

AIR inspection vans	Page 62
Rehabilitation vans	Page 66
Rehabilitation trailer	Page 68

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A black, ribbed, dome-shaped pipe testing equipment is attached to a concrete pipe. The equipment has a brass-colored fitting protruding from its center. The setup is located in a rocky, grassy environment.

Sealing and pipe testing equipment

... seal safely and measure precisely

Everything needed for leak tests

The tests of pipe sleeve connections or leak tests of a pipe segment are a vital verification in sewer installation. New buried and factory tested pipes in particular allow a sleeve test as a simple alternative and complement of leak tests of a pipe segment. Checks of the individual pipe connections help to locate a failure in the pipe connection.

We offer a large assortment of AIR leak test kits to check sewers, pipes, building drainages, sleeves, small sewage treatment plants, manholes, and settlings tanks or tank farms and their connections for leaks.

Easy operation and modular design are benefits of all our test kits. They may be connected with a PC or laptop for data logging and data analysis. The measuring devices are connected with the USB port to communicate with the inspection software WinCan-PIT installed on PC. Just

enter the object data (GPS data acceptable), select the testing method and the external filling of the testing object: the sealness testing data will be evaluated automatically.

As soon as the testing has been completed, the testing logs can be printed with their test pressure time diagrams and/or project and nominal diameter related summaries.





Multi-purpose pressurized air case Type AIR-PIT



The **multi-purpose pressurized air control case** is used to fill, control, and monitor the test pipe stops and the item to be tested (e. g. to control the pressure in the pipe segment sealed) in case of a leak test or overpressure test. The unit features a compressor port (max. 8 bar), a port for test and/or sealing bladders, and a port to fill and monitor the test item.

Application and properties:

- Rugged control case in 19" size (3 HU)
- To control the internal pressure of shut-off and test bladders up to max. 6 bar
- To fill and monitor the overpressure in the tested item up to max. 0.7 bar

Item No.	Specification	Version	Weight
2 004 103	Multi-purpose pressurized air case type AIR-PIT	Complete system	8.20 kg
2 004 109	Filling hose - for shut-off pipe segments	10m long	0.30 kg



Multi-purpose pressure testing unit Type AIR-PIT Compact



Specification - AIR-PIT Compact

Digital sensor connector	1x
Digital interface	1x USB (2.0)
GPS position data	* optional
Power supply	230 V AC / 12 V DC
Dimensions (H x W x D)	87 x 240 x 280 mm
Weight	2.0 kg

The **AIR-PIT Compact** kit is a compact digital pressure testing unit in splash-proof case. It includes a USB port to connect with a PC or laptop. The external sensors used allow water and separator tests with level probe, overpressure, vacuum, and high pressure measurements.

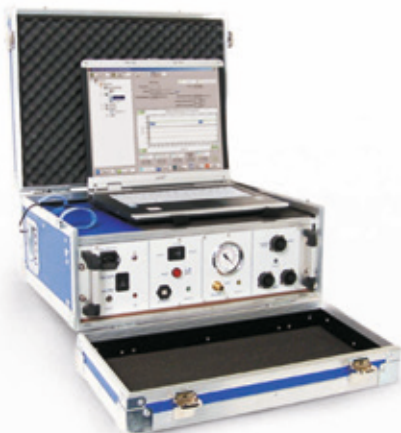
Application and properties:

- Inspection unit to log test data provided by digital sensors
- Incl. WinCan-PIT „Complete" software for pipe sections, sleeves, manhole, and tank inspections
- External digital sensor not included in scope of delivery
- Transport case available as an option

Item No.	Specification	Version	Weight
2 004 101	Pressure testing unit AIR-PIT Compact	Incl. Software	2.00 kg
2 004 126	GPS position receiver for WinCan-PIT	USB	0.10 kg
2 004 108	Transport case for laptop + Compact	Suitable for 15.4"	7.00 kg
2 004 117	Van adaptor for AIR series	12 / 24 V	0.20 kg

2 004 136	Multi-Sensor [digital] (water / air / vacuum)	Between -0.5 and 1 bar	1.80 kg
2 004 137	Level probe sensor [digital] (water)	Between 0 and 20 mbar	2.50 kg
2 004 141	High pressure sensor [digital] max. 20 bar	Between 0 and 20 bar	0.10 kg
2 004 142	High pressure sensor [digital] max. 25 bar	Between 0 and 25 bar	0.10 kg

Multi-pressure testing unit **Type AIR-PIT Digital 2**



Specification - AIR-PIT Digital 2	
Digital sensor connector	3x
Digital interface	1x USB (2.0)
GPS position data	* optional
Power supply	230 V AC / 12 V DC
Dimensions (H x W x T)	350 x 510 x 155 mm
Weight	8.0 kg

The **AIR-PIT Digital 2** is an pressure testing unit with digital USB port to connect with a PC or laptop. The series includes a digital overpressure sensor for tests between -0.5 and 1 bar. As an option, a maximum of 3 different external digital sensors for vacuum or HP tests may be connected. The external sensors used allow water and separator tests with level probe, overpressure, vacuum, and high pressure measurements.

Application and properties:

- Incl. WinCan-PIT „Complete” software for shut-off pipe segments, sleeves, manhole and tank tests
- 19" transport case (3 HU) with handle (also available as laptop version - see figure)
- Internal digital pressure sensor, relative measuring range between -0.5 bar (vacuum) and +1.0 bar
- Pressure gauge with multiple ranges to indicate the actual testing pressure

Item No.	Specification	Version	Weight
2 004 102	Pressure testing unit AIR-PIT Digital 2	Incl. Software	8.00 kg
2 004 126	GPS position receiver for WinCan-PIT	USB	0.10 kg
2 004 106	Transport kit case with laptop holder	19" (3 HU)	4.50 kg
2 004 117	Van adaptor for AIR series	12 / 24 V	0.20 kg
2 004 136	Multi-Sensor [digital] (water / air / vacuum)	Between -0.5 and 1 bar	1.80 kg
2 004 137	Level probe sensor [digital] (water)	Between 0 and 20 mbar	2.50 kg
2 004 141	High pressure sensor [digital] max. 20 bar	Between 0 and 20 bar	0.10 kg
2 004 142	High pressure sensor [digital] max. 25 bar	Between 0 and 25 bar	0.10 kg

Digital level probe **Type AIR-PLUS**



External digital sensor



Digital level probe - AIR-PLUS with tripod

The **digital level probe AIR-PLUS** measures the level changes during leak tests with water performed in separators, small sewage tanks, manholes, and vessels. It measures the water loss or water gain against the zero water level determined before. The height-adjustable telescopic tripod with guiding tube ensures the stable sensor installation for a exact measurement (maybe coupled up to an immersion depth of 2.2 m)

Application and properties:

- Recommended for leak inspections with water in separators (according to standard DIN 1999-100), small sewer systems (acc. to standard DIN EN 12566-3), manholes and manholes with addition inlets (e. g. for house connections) (acc. to standard DIN EN 1610; ATV-M 143 Part 6) and vessels
- Precision (0.1 mm) certified by TÜV Rheinland LGA / measuring range between 0 and 20 mbar (200 mm)

Item No.	Specification	Version	Weight
2 004 137	Level probe sensor [digital] (water)	Between 0 and 20 mbar	2.50 kg
2 004 140	Telescopic tripod with sensor tracking	Aluminum	6.20 kg
2 004 150	5 m extension to external sensors	5 m long, IP67	0.25 kg
2 004 151	10 m extension to external sensors	10 m long, IP67	0.40 kg
2 004 152	50 m cable drum to external sensors	50 m	8.30 kg



Inflatable pipe stoppers

Multi-size DN 22 - 1,200 mm

The **multi-size inflatable pipe stopper** is designed for quick and reliable sealing or retention of sewers, pipes, and drainages. They are recommended mainly for repairs, maintenance, failures, and leak inspections with water or pressurized air acc. to standard DIN EN 1610 performed at new buried or rehabilitated pipes. The pipe stops are available in 2 versions: sewage resistant pipe stops made of quality natural rubber (**NR**) with embedded fabric and oil and chemicals resistant pipe stops of special rubber (**SR**) with embedded fabric. Their benefits are the higher resistance against chemicals, mineral oil, fuel oil etc.

Application and properties:

- To seal and shut-off pipes in case of repairs, maintenance, or failures
- Applied for damaged pipes, flood, sewer inspection, sewer cleaning, maintenance or repair
- Leak tests acc. to standard DIN EN 1610 of new buried or rehabilitated pipes
- Pipe stops resistant against oil and chemicals applied in industrial facilities and in case of chemicals spilled; also useful for oil and gasoline separators tests acc. to standard DIN 1999 T 100
- Resistant against weather and temperatures between -30°C and 80°C

i To avoid risk, we always recommend to use a support or a restrained joint acc. to DGVV Information 201-022 (previously, BGI 802) - see page 17.



Item No. (NR) sewage resistant	Item No. (SR) resistant against chemicals	Specification	Application range	Operating pressure (NR) (SR)	Backpressure (NR) (SR)	Diameter	Cylinder length	Total length	Weight
2 001 100	-	RVA 22-35	22 - 35 mm	2.0 bar	1.0 bar	Ø 18 mm	70 mm	100 mm	0.20 kg
2 001 101	-	RVA 35-50	35 - 50 mm	2.0 bar	1.0 bar	Ø 32 mm	75 mm	105 mm	0.25 kg
2 001 102	-	RVA 50-70	50 - 70 mm	2.0 bar	1.0 bar	Ø 47 mm	80 mm	115 mm	0.30 kg
2 001 103	2 001 420	RVA 50-100	50 - 100 mm	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 47 mm	340 mm	390 mm	0.50 kg
2 001 105	2 001 421	RVA 70-150	70 - 150 mm	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 67 mm	330 mm	380 mm	0.60 kg
2 001 107	2 001 422	RVA 100-200	100 - 200 mm	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 96 mm	510 mm	570 mm	1.50 kg
2 001 108	2 001 423	RVA 150-300	150 - 300 mm	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 135 mm	550 mm	610 mm	2.50 kg
2 001 109	2 001 425	RVA 200-400	200 - 400 mm	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 190 mm	580 mm	640 mm	3.50 kg
2 001 110	2 001 426	RVA 300-600	300 - 600 mm	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 290 mm	730 mm	790 mm	7.70 kg
2 001 112	2 001 427	RVA 500-1000	500 - 1,000 mm	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 450 mm	1,050 mm	1,130 mm	22.0 kg
2 001 115	2 001 428	RVA 600-1200	600 - 1,200 mm	1.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 560 mm	1,290 mm	1,360 mm	32.0 kg

(NR) sewer resistant natural rubber

(SR) oil and chemicals resistant special rubber (nitrile rubber)



Inflatable pipe test stoppers with flexible bypass

Multi-size DN 70 - 1,200 mm

The **multi-size inflatable pipe test stoppers with flexible bypass** are available in two versions, similar to our standard pipe stops: made of quality natural rubber (**NR**) with embedded fabric and oil and chemicals resistant pipe stops of special rubber (**SR**) with embedded fabric. They serve three functions in one: sealing, testing with water or pressurized air, and bypassing / draining. The coreless cylinder and the rugged design allow adaption of the test cushions to the pipe surface and enable wide and flexible application ranges with excellent sealing properties.

Application and properties:

- Sewage bypassing in case of leaky sewers
- Oil and chemicals resistant pipe stops to inspect industrial facilities and oil and petrol separators acc. to standard DIN 1999 T 100
- Retention and controlled drainage of liquids
- Leak tests acc. to standard DIN EN 1610 with pressurized air or water
- Inspection of pipe sections
- Resistant against weather and temperatures between -30°C and 80°C
- Including floating bleeder hose

1 To avoid risk, we recommend to always use a support or an restrained joint acc. to DGV Information 201-022 (previously, BGI 802) - see page 17.



Item No. (NR) sewage resistant	Item No. (SR) resistant against chemicals	Specification	Application range	Bypass	Operating pressure (NR) (SR)	Backpressure (NR) (SR)	Diameter	Cylinder length	Total length	Weight
2 001 200	2 001 429	RVD-F 70-150	70 - 150 mm	1" Geka	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 67 mm	330 mm	440 mm	1.20 kg
2 001 201	2 001 430	RVD-F 100-200	100 - 200 mm	1" Geka	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 96 mm	510 mm	570 mm	1.70 kg
2 001 203	2 001 431	RVD-F 150-300	150 - 300 mm	1" Geka	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 135 mm	550 mm	640 mm	3.80 kg
2 001 205	2 001 432	RVD-F 200-400	200 - 400 mm	2" Storz-C	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 190 mm	580 mm	670 mm	6.50 kg
2 001 208	2 001 433	RVD-F 300-600	300 - 600 mm	2x 2" Storz-C	1.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 290 mm	730 mm	820 mm	13.0 kg
2 001 209	2 001 434	RVD-F 500-1000	500 - 1,000 mm	2x 2" Storz-C	2.5 bar 1.5 bar	1.0 bar 0.5 bar	Ø 450 mm	1,050 mm	1,140 mm	41.0 kg
2 001 210	2 001 435	RVD-F 600-1200	600 - 1,200 mm	2x 2" Storz-C	1.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 560 mm	1,290 mm	1,380 mm	57.0 kg
2 001 231	-	Testing adaptor kit for air and water leakage tests (see page 31)								2.10 kg

(NR) sewer resistant natural rubber

(SR) oil and chemicals resistant special rubber (nitrile rubber)



Inflatable pipe stoppers, short version

Multi-size DN 50 - 300 mm

The **short version of the multi-size inflatable pipe stopper** is recommended for closure of building drainage. Further, they may be used everywhere where flexibility and bend capability are a must, i.e. with short openings and bends, e.g. in heating and sanitary systems.

The pipe stops are available in 2 versions: sewage resistant pipe stops made of quality natural rubber (**NR**) with embedded fabric and oil and chemicals resistant pipe stops of special rubber (**SR**) with embedded fabric. Their benefits are a high resistance against chemicals, mineral oil, fuel oil etc.

Application and properties:

- To shut-off and seal pipes and sewers during repairs or maintenance
- Especially suited for leak inspections of building drainage according to standard DIN EN 1610
- Pipe stops resistant against oil and chemicals applied in industrial facilities and in case of chemicals spilled; also useful for oil and gasoline separators tests acc. to standard DIN 1999 T 100
- Resistant against weather and temperatures between -30°C and 80°C
- Easy handling and fast application
- Filled via standard air couplings

i To avoid risk, we recommend to always use a support or an restrained joint acc. to DGUV Information 201-022 (previously, BGI 802) - see page 17.



Item No. (NR) sewage resistant	Item No. (SR) resistant against chemicals	Specification	Application range	Operating pressure (NR) (SR)	Backpressure (NR) (SR)	Diameter	Cylinder length	Total length	Weight
2 001 150	-	RVK 50-70	50 - 70 mm	2.5 bar	0.5 bar	Ø 46 mm	125 mm	180 mm	0.30 kg
2 001 151	2 001 440	RVK 70-100	70 - 100 mm	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 67 mm	130 mm	185 mm	0.40 kg
2 001 153	2 001 442	RVK 100-150	100 - 150 mm	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 90 mm	160 mm	220 mm	0.60 kg
2 001 155	2 001 443	RVK 150-200	150 - 200 mm	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 140 mm	220 mm	280 mm	1.40 kg
2 001 157	2 001 445	RVK 200-250	200 - 250 mm	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 180 mm	260 mm	320 mm	2.40 kg
2 001 158	2 001 447	RVK 250-300	250 - 300 mm	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 240 mm	290 mm	350 mm	4.20 kg
2 001 163	-	RVK taper form	110 - 150 mm	1.5 bar	0.5 bar	Ø 100 mm	240 mm	305 mm	0.70 kg

(NR) sewer resistant natural rubber

(SR) oil and chemicals resistant special rubber (nitrile rubber)



Inflatable pipe test stoppers with flexible bypass, short version

Multi-size DN 70 - 300 mm

The **short version of the multi-size inflatable pipe test stopper with flexible bypass** is available in two versions, similar to our standard pipe stops. Sewage resistant pipe stops made of quality natural rubber (**NR**) with embedded fabric and oil and chemicals resistant pipe stops of special rubber (**SR**) with embedded fabric. They serve three functions in one: sealing, testing with water or pressurized air, and bypassing / draining. The short version is recommended for building drainage, and all locations with short openings or bends. The coreless cylinder and the rugged design allow adaption of the test cushions to the pipe material and enable wide and flexible application ranges with excellent sealing properties.

Application and properties:

- Easy to use with standard couplings, even with short openings or directly in front of bends
- To bypass sewage of leaky sewers, for retention, and controlled drainage
- Oil and chemicals resistant pipe stops to inspect industrial facilities
also useful for oil and gasoline separators tests acc. to standard DIN 1999 T 100
- Leak tests acc. to standard DIN EN 1610 with pressurized air or water
- Resistant against weather and temperatures between -30°C and 80°C
- Including floating bleeder hose

! To avoid risk, we recommend to always use a support or an restrained joint acc. to DGVV Information 201-022 (previously, BGI 802) - see page 17.



Item No. (NR) sewage resistant	Item No. (SR) resistant against chemicals	Specification	Application range	Bypass	Operating pressure (NR) (SR)	Backpressure (NR) (SR)	Diameter	Cylinder length	Total length	Weight
2 001 223	-	RVD-K 50-70	50 - 70 mm	1/4" Geka	2.5 bar	0.5 bar	Ø 46 mm	125 mm	180 mm	0.30 kg
2 001 220	2 001 451	RVD-K 70-100	70 - 100 mm	1/2" Geka	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 67 mm	130 mm	185 mm	0.80 kg
2 001 221	2 001 452	RVD-K 100-150	100 - 150 mm	1/2" Geka	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 90 mm	160 mm	220 mm	1.00 kg
2 001 222	2 001 453	RVD-K 150-200	150 - 200 mm	1" Geka	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 140 mm	220 mm	280 mm	2.50 kg
2 001 225	2 001 455	RVD-K 200-250	200 - 250 mm	2" Storz-C	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 180 mm	260 mm	320 mm	4.10 kg
2 001 228	2 001 457	RVD-K 250-300	250 - 300 mm	2" Storz-C	2.5 bar 1.5 bar	0.5 bar 0.5 bar	Ø 240 mm	290 mm	350 mm	5.90 kg
2 001 231	-	Testing adaptor kit for air and water leakage tests (see page 31)								2.10 kg

(NR) sewer resistant natural rubber

(SR) oil and chemicals resistant special rubber (nitrile rubber)

High-flow bypass pipe stoppers Multi-size DN 100 - 1,200 mm



The inflatable **pipe stoppers with large central bypass** of stainless steel are a must for larger flow rates. The stainless steel core has a sheet of rugged rubber fabric and may be replaced with ease.

Application and properties:

- To shut off, drain, and bypass pipes and sewers of DN 100 to DN 1,200 mm
- Recommended for sewers with high water flow
- Simple handling, standard air couplings, and Storz couplings
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**)
- Central passage of stainless steel with replaceable sheet of rubber fabric
- For pipe rehabilitation in flooding mode

Item No.	Specification	Application range	Bypass	Operating pressure	Ø x length	Weight
2 001 350	Bypass pipe stop 2" short version	100 - 150 mm	2" Storz-C	1.5 bar	90 x 290 mm	2.90 kg
2 001 351	Bypass pipe stop 2" short version	150 - 200 mm	2" Storz-C	1.5 bar	115 x 290 mm	3.50 kg
2 001 352	Bypass pipe stop 2"	100 - 200 mm	2" Storz-C	1.5 bar	90 x 550 mm	4.50 kg
2 001 354	Bypass pipe stop 4"	150 - 300 mm	4" Storz-A	1.5 bar	145 x 550 mm	6.50 kg
2 001 353	Bypass pipe stop 4"	200 - 500 mm	4" Storz-A	1.5 bar	185 x 620 mm	9.50 kg
2 001 355	Bypass pipe stop	500 - 800 mm	4" - 12" AG	1.5 bar	450 x 680 mm	38.0 kg
2 001 358	Bypass pipe stop	500 - 1,200 mm	4" - 12" AG	1.5 bar	450 x 1,120 mm	48.0 kg

High pressure pipe stoppers Multi-size DN 70 - 600 mm



The inflatable **high pressure pipe stoppers** are used when standard pipe stops cannot be applied because of the high backpressure in the pipe. The higher operating pressure of 6.0 bar is possible because of the special Kevlar fabric insert, it withstands a 30 m water head (3.0 bar).

Application and properties:

- To seal and shut off sewer and feeder lines in case of repairs, maintenance, or failures with backpressures higher than 30 m water head (3.0 bar)
- For leak inspection with higher test pressures - **up to 6.0 bars**
- Resistant against sewage and climate

Item No.	Specification	Application range	Operating pressure	Ø x length	Weight
2 001 404	RV-HD 50-70	50 - 70 mm	6.0 bar	47 x 340 mm	0.50 kg
2 001 400	RV-HD 70-100	70 - 100 mm	6.0 bar	67 x 330 mm	0.60 kg
2 001 401	RV-HD 100-150	100 - 150 mm	6.0 bar	96 x 510 mm	1.50 kg
2 001 402	RV-HD 150-200	150 - 200 mm	6.0 bar	135 x 550 mm	2.50 kg
2 001 403	RV-HD 200-300	200 - 300 mm	6.0 bar	190 x 580 mm	4.90 kg
2 001 405	RV-HD 300-400	300 - 400 mm	6.0 bar	290 x 730 mm	8.50 kg
2 001 407	RV-HD 500-600	500 - 600 mm	6.0 bar	450 x 1,050 mm	25.0 kg



Cone pipe stopper

Universal for all types of pipe profiles



The **universal cone pipe stopper** with double cones system allow the universal application with all circular, ovoid, egg-shaped, elliptical, square and rectangular profiles. They are made of quality Kevlar fabric with a neoprene coating. This makes the folding cushions highly resistant against chemicals and ensures a low weight.

Application and properties:

- To seal and shut-off of all pipe profiles such as circular, ovoid, egg-shaped, elliptical, square and rectangular
- Used for leak tests acc. to standard DIN EN 1610
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**), with special sponge rubber seal
- Resistant against weather and temperatures between -30°C and 80°C
- Resistant against chemicals and process water

Item No.	Specification	Operating pressure	In round profiles	In egg-shape profiles	Weight
2 001 305	Cone pipe stop	1.0 bar	150 - 400 mm	250/375	2.00 kg
2 001 300	Cone pipe stop	1.0 bar	250 - 600 mm	250/375 - 400/600 mm	4.10 kg
2 001 301	Cone pipe stop	1.0 bar	400 - 1,000 mm	500/750 - 700/1,050 mm	11.0 kg
2 001 302	Cone pipe stop	1.0 bar	600 - 1,400 mm	700/1,050 - 1,000/1,500 mm	26.0 kg
2 001 303	Cone pipe stop	1.0 bar	700 - 1,600 mm	1,000/1,500 mm	41.0 kg
2 001 304	Cone pipe stop	1.0 bar	1,200 - 2,200 mm	1,200/1,800 - 1,400/2,100 mm	89.0 kg



Test cone pipe stopper

Universal for all types of pipe profiles, with bypass



The **universal test cone pipe stopper** can be used for all circular, ovoid, egg-shaped, elliptical, square and rectangular profiles. They serve three functions in one: Sealing, testing with water or pressurized air, and bypassing / draining. The quality Kevlar fabric with neoprene coating makes the folding cushions highly resistant against chemicals but maintains the low weight.

Application and properties:

- Bypassing of sewage in case of leaky sewers, retention, and controlled drainage possible in all circular, ovoid, egg-shaped, elliptical, square and rectangular or other profiles
- Used for leak inspection acc. to DIN EN 1610 with pressurized air and water
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**), with special sponge rubber seal
- Resistant against chemicals and process water

Item No.	Specification	Operating pressure	Bypass	In round profiles	In egg-shape profiles	Weight
2 001 315	Test cone RVD	1.0 bar	1" Storz-C	150 - 400	250/375	3.70 kg
2 001 310	Test cone RVD	1.0 bar	2" Storz-C	250 - 600	250/375 - 400/600	10.5 kg
2 001 311	Test cone RVD	1.0 bar	2.5" Storz-C	400 - 1,000	500/750 - 700/1,050	21.0 kg
2 001 312	Test cone RVD	1.0 bar	2.5" Storz-C	600 - 1,400	700/1,050 - 1,000/1,500	36.0 kg
2 001 313	Test cone RVD	1.0 bar	2.5" Storz-C	700 - 1,600	1,000/1,500	52.0 kg
2 001 314	Test cone RVD	1.0 bar	2.5" Storz-C	1,200 - 2,200	1,200/1,800 - 1,400/2,100	102 kg



Testing set for house connections Multi-size DN 100 - 150 mm (optional DN 150 - 200 mm)

The **testing set for house connections** allows the professional to perform leak tests of building drainage, separators, feeder lines, soakaways and ditch inlets, with air overpressure, vacuum, or water. The complete kit suitable for DN 100-150 mm includes all the accessories required.

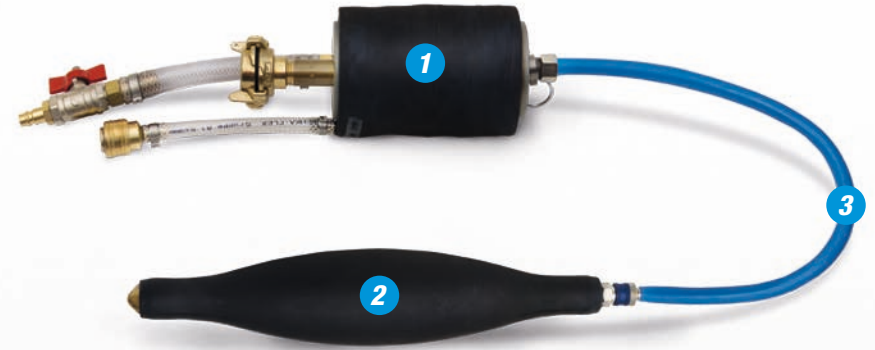
Application and properties:

- To perform leak tests of building drainages, inlets, and short waste water lines with air overpressure, vacuum, or water
- Suitable for DN 100 to DN 150 (with accessories for DN 200 as well)
- The Flex pipe plug with extra flexibility for better push through bends
- Resistant against sewage and climate

Our complete assembly includes:

- ❶ Inspection unit RAG 100-150 and ❷ Flex pipe plug RV 80-150 to push
- ❸ 1x air push hose each, 5 m and 10 m length, smooth PUR hose with integrated steel spiral, extensible
- 1x safety valve 1.5 bar and 1 x pressure gauge 0.5 bar (indication in millibars)
- 1 test adaptor each for air and water tests, 1x bleeder hose for water tests
- 1x rugged transport case

Item No.	Specification	Application range	Weight
2 001 250	Testing set for house connections, complete kit	100 - 150 mm	8.00 kg
2 001 251	Pipe testing unit RAG 100-150	95 - 150 mm	2.00 kg
2 001 253	Pipe testing unit RAG 150-200 (optional)	145 - 200 mm	4.00 kg
2 001 255	Flex-Pipe plug RV 50-90 (optional)	50 - 90 mm	0.35 kg
2 001 256	Flex-Pipe plug RV 80-150	80 - 150 mm	0.40 kg
2 001 258	Flex-Pipe plug RV 120-200 (optional)	120 - 200 mm	1.00 kg
2 001 260	5 m air push hose for house connection testing set	-	1.60 kg
2 001 262	10 m air push hose for house connection testing set	-	3.10 kg
2 001 265	2 m hose for water tests 1/2" (optional)	-	1.10 kg





Flex-pipe plug

Multi-size DN 50 - 200 mm



The **inflatable flex pipe plugs** make it possible to close pipes in difficult installations. Thanks to their special shape and flexibility, an easy and quick installation is possible even with low entry openings. Also available as Flex test plug with passage.

Application and properties:

- To shut-off and seal pipes and sewers during repairs or maintenance in difficult installations with low entry openings
- Excellent bend capability
- Especially suited for leak inspections of building drainage according to standard DIN EN 1610
- Resistant against weather and temperatures between -30°C and 80°C
- Suitable for backpressures of max. 10 m water head (**max. 1.0 bar**) recommended
- Filled via Mini air couplings

Item No.	Specification	Application range	Bypass	Operating pressure	Ø x length	Weight
2 001 255	FRV 50-90	50 - 90 mm	-	2.5 bar	48 x 300 mm	0.35 kg
2 001 256	FRV 80-150	80 - 150 mm	-	2.0 bar	78 x 380 mm	0.48 kg
2 001 258	FRV 120-200	120 - 200 mm	-	1.5 bar	116 x 520 mm	0.95 kg
2 001 252	FPV-D 50-90	50 - 90 mm	4 mm	3.5 bar	48 x 300 mm	0.55 kg
2 001 254	FPV-D 80-150	80 - 150 mm	4 mm	2.6 bar	78 x 380 mm	0.68 kg
2 001 257	FPV-D 120-200	120 - 200 mm	6 mm	2.0 bar	116 x 520 mm	1.17 kg



Halfround Pipe Stoppers

Multi-size DN 50 - 200 mm



The **inflatable half round pipe stoppers** have a very short length (or installation depth). This way, they are perfect for easy and quick closure of feeder lines and building drainage with bends. The semicircular shape makes it possible to install the pipe plug directly in the bend, so pipes with difficult installation can be closed as well.

Application and properties:

- To shut-off and seal pipes and sewers during repairs or maintenance with difficult installation and low depth
- Leak tests acc. to standard DIN EN 1610 with pressurized air or water
- Resistant against weather and temperatures between -30°C and 80°C
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**) recommended

Item No.	Specification	Application range	Operating pressure	Ø x length	Weight
2 001 140	RV-HR 50-70	50 - 70 mm	2.5 bar	46 x 140 mm	0.30 kg
2 001 141	RV-HR 70-100	70 - 100 mm	2.5 bar	67 x 155 mm	0.40 kg
2 001 142	RV-HR 100-150	100 - 150 mm	2.5 bar	90 x 180 mm	0.50 kg
2 001 143	RV-HR 150-200	150 - 200 mm	2.5 bar	140 x 230 mm	1.00 kg



Manhole tester

DN 590 - 625 mm and above

The **manhole tester** is perfect for leak tests of standard sewers with vacuum or water according to DIN EN 1610. This test is a requirement of standard DIN EN 1610 and always has to be accomplished with acceptance of construction works. The standard method fills the manhole with water and measures the sunken water height after the defined test time. However, this method is rather complicated (water consumption, prefilling time etc.), so it is often replaced with a vacuum test instead. The manhole inspection unit **1** has a crossbeam support **2** to install the inspection unit in the manhole ring safely and easily. A threaded spindle allows **3** the height adjustment including all connections required **4** **5** for the tests with air and water.

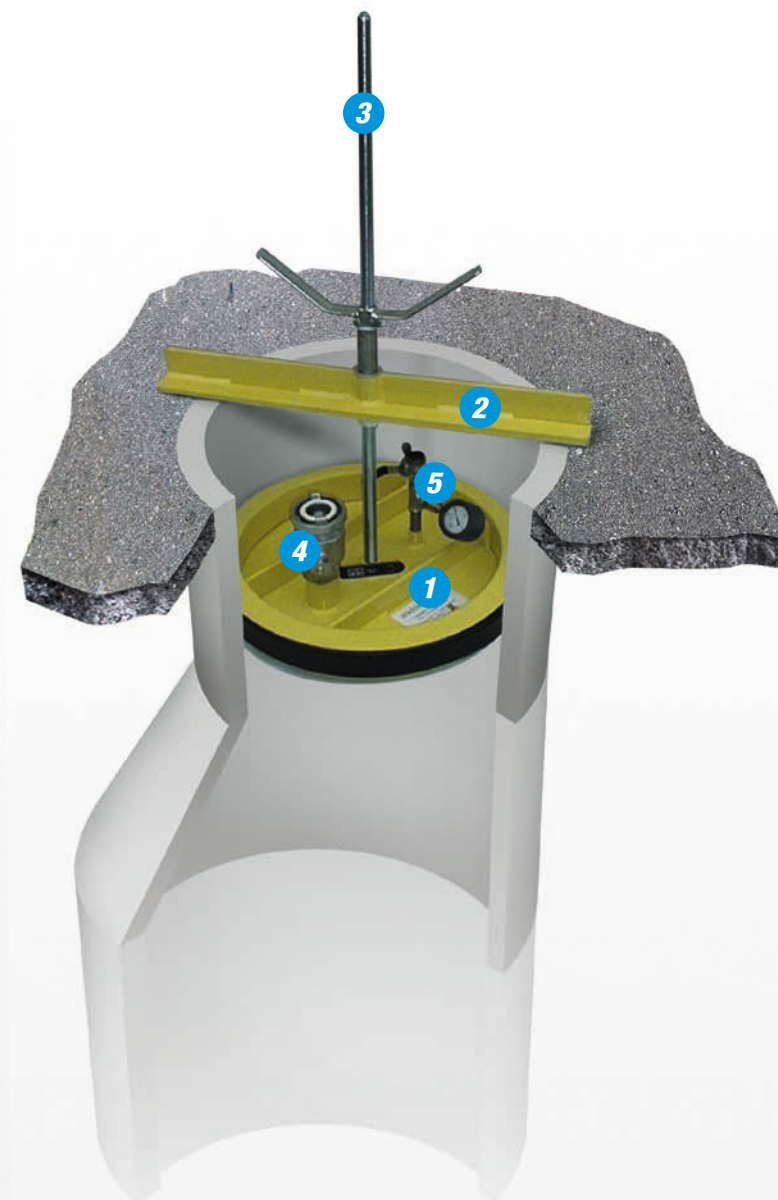
Supported tests:

- **Vacuum test:** Evacuate the air via the vacuum port **4** to generate the test vacuum.
- **Water test:** Open the ball valve and fill the manhole **4** with water. Open the other ball valve to bleed the system **5**. A measuring unit may also be connected with the coupling to record the test performed.

Application and properties:

- To perform leak tests in sewer manholes with vacuum or water for standard manholes of DN 590 to DN 625 (other sizes available at request)
- To shut-off and / or drain for maintenance or in case of disasters
- With crossbeam support to avoid falls and/or drawing-in during vacuum tests
- Height-adjustable by means of spindle
- Maximum operating pressure of the pneumatic test kit 4-6 bar

We offer also manhole tester of other sizes and shapes at request.



Item No.	Specification	Application range	Weight
2 001 370	Manhole tester	590 - 625 mm	27.0 kg

Support for pipe stopper Multi-size DN 100 - 1,200 mm



Our **supports** are a simple but safe solution to ensure that pipe plugs and pipe inspection units cannot be pushed out. Contrary to the conventional timberwork, whose installation is expensive and time consuming, they can be used quickly and as often as required. Thanks to the special rubber coatings, even slippery or smooth pipe walls do not prevent a reliable support.

Application and properties:

- Simple and reliable fixation of pipe plugs and pipe inspection units
- Stepless adjustment of the units according to the sewer application range
- The special rubber coatings have a very high adhesion and withstand extreme backpressure without damage of the pipe wall
- Additional telescopic struts are available for larger dimensions, they ensure a higher load capacity of sewer tubes with diameters of 300 mm and above

Item no.	Specification	Application range	Length x width	Weight
2 001 380	Support type 10/15	100 - 150 mm	350 x 75 mm	2.50 kg
2 001 381	Support type 20/25	200 - 250 mm	400 x 90 mm	3.00 kg
2 001 382	Support type 30/40	300 - 400 mm	780 x 280 mm	13.0 kg
2 001 383	Support type 40/60	400 - 600 mm	900 x 370 mm	14.0 kg
2 001 384	Support type 60/100	600 - 1,000 mm	1,050 x 570 mm	25.0 kg
2 001 385	Support type 80/120	800 - 1,200 mm	1,250 x 570 mm	28.0 kg
2 001 386	Additional strut (extensible to 1,270 mm)	300 - 600 mm	830 x 230 mm	13.0 kg
2 001 387	Additional strut (extensible to 1,250 mm)	600 - 1,000 mm	830 x 230 mm	14.0 kg

Disaster equipment case DN 100 - 300 mm and above



The **disaster equipment case** includes all the accessories needed in case of disasters, is ready to use, simple, absolutely reliable, and quick.

In case of a flood it protects buildings against water entering via the sewer and prevents water from flooding basements or lower floors – the pipe plug is directly put in the building drainage. In case of spills of hazardous substances, it is used for containment. This way, you protect the sewer system or groundwater against contamination by liquids and hazardous substances. **(Pipe plugs resistant against oil and chemicals are available at request.)**

Our complete assembly includes:

- 1x flexible pipe plug of natural rubber RVA 100-200 or RVA 150-300
- 1x foot operated air pump with two cylinders or (option) with 1x 3 litres / 300 bar pressurized air filling unit
- 1x adaptor for air pump valve - 1 m long
- 1x air inlet hose - 10m long
- 1x - rugged transport case (LxWxH 640 x 330 x 165 mm)

Item no.	Specification	Application range	Weight
S 2 001 190	Disaster equipment case 1-2	100 - 200 mm	10.5 kg
S 2 001 191	Disaster equipment case 1-3	150 - 300 mm	11.5 kg
2 001 527	Pressurized air filling unit - complete	3 litres / 300 bar	3.50 kg

i At request, we also provide a tailored disaster equipment case according to your requirements. Select the pipe plugs needed from our wide assortment of pipe plugs and your filling unit and tell us your specification. Questions? Please contact us, we are pleased to answer all questions you might have.

INDUKOM

Joint test system

We have perfected our INDUKOM joint test equipment since 1996. It is the unit for leak tests of round profile pipe sleeves in pipe and sewer systems inaccessible for humans, and suited for inspections of building drainage.

A CCTV crawler inspection system helps us to move and position our INDUKOM system exactly to the point of interest. Our own production facilities allow us adapt rather all CCTV crawler inspection systems to our INDUKOM system.

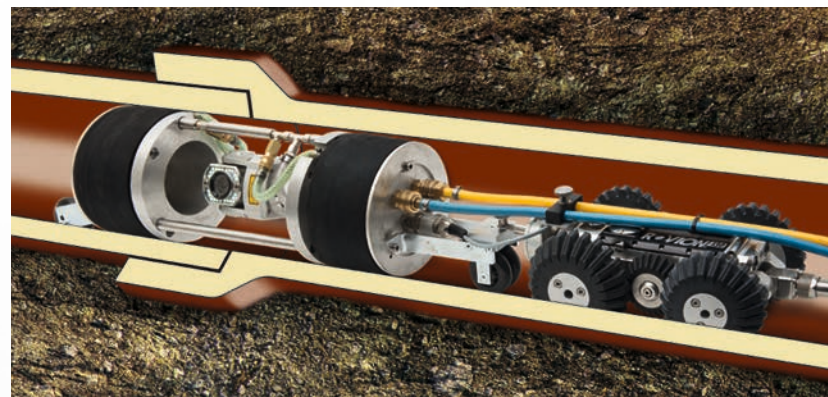
This system is recommended after a negative result of pipe section tests, in case of pipe systems with multiple connections whose branches need not be tested, and after a new sewer installation.





Modular system DN 200 - 600

The INDUKOM system consists of the basic unit for nominal diameters of DN 200 mm. All other nominal diameters up to application ranges DN 600 mm are supported by added discs which can be changed quickly and easily.



Positioning and documentation

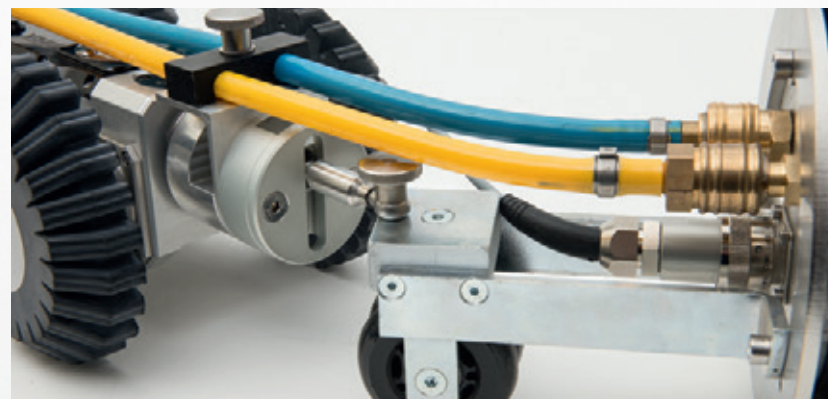
Use the CCTV crawler to position our INDUKOM joint test system exactly to the point of interest. The camera probe located in the test chamber allows a control of the leak tests with simultaneous video documentation through the inspection system connected.



Connection of CCTV inspection system

The INDUKOM joint tester may be equipped with a camera holder, this adaption is possible for rather any camera system. Actually, we offer holders for Ipek systems to install SK80, Rower RC80, Rovion RCX90, and Rovion/Agilios PTP70II camera probes.

Holders for other camera systems available at request.



Variable carriage connection

The INDUKOM system has a height-adjustable crawler receiver which adjusts to the respective crawler and/or wheel sets. In addition, the crawler interface includes a handy test and filling hose management, to avoid friction of the hoses and to facilitate introduction through the manhole.



Indukom joint test system DN150 / DN 200 (optional up to DN 600)



The **Indukom joint test basic system** allows a precise inspection of the joint area of pipes with air overpressure and/or vacuum according to standard DIN-EN1610. The modular basic unit for DN 200 may also be used for sewers up to DN 600 if different test disc kits are installed. [i](#) If you have to inspect sizes of DN 150, we offer a smaller Indukom unit (for DN 150 only - cannot be extended).

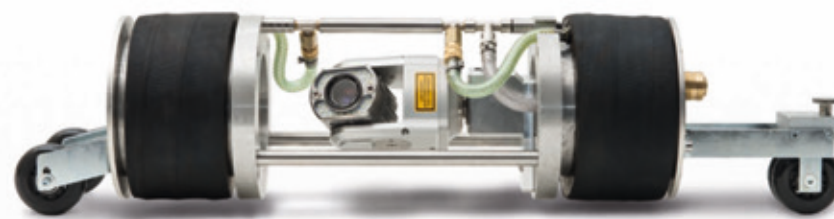
Application and properties:

- For leak tests of round profile pipe connections with air according to standard EN 1610
- Suitable for tests 500 mbar overpressure
- Optimized test chamber to test inlets to the main sewer
- Modular basic system with optimum Indukom disc kits, suitable up to DN 600
- Seal rings made of fabric reinforced rubber with softer external side (especially for concrete pipes)
- Simple handling – the unit may be positioned quickly by means of a camera carriage, air penetrator rods or the duct rod
- Including traction fork and undercarriage for crawler mode

Item no.	Specification	Application range	Filling pressure	Ø	Test chamber	Weight
2 001 700	Indukom Set 150	DN 150	3.5 bar	130 mm	170 mm	5.80 kg
2 001 701	Indukom Set 200	DN 200 - 600	3.5 bar	165 mm	250 mm	10.3 kg



Indukom joint tester for CCTV inspection DN 200 (optional up to DN 600)



The **Indukom joint test basic system for CCTV inspection** allows a precise inspection of the joint area of pipes with air overpressure and/or vacuum according to standard DIN-EN1610. The modular basic unit for CCTV includes a camera holder for inspection systems and may be used for sizes DN 200 and above. Fitted with replaceable test disc kits, it can be used for sewers up to DN 600.

Application and properties:

- For leak tests of round profile pipe connections with air according to standard EN 1610
- Suitable for tests 500 mbar overpressure
- Optimized test chamber for tests of inlets and attachment of a camera probe
- Modular basic system with Indukom test disc kits as an option, suitable up to DN 600
- Seal rings made of fabric reinforced rubber with softer external side (especially for concrete pipes)
- Easy handling – the unit can be positioned precisely with a camera carriage and camera control.
- Including traction fork and height-adjustable undercarriage for connection with a crawler system and pressure and test hose management

Item no.	Specification	Application range	Filling pressure	Ø	Test chamber	Weight
2 001 702	Indukom Set ROVER	DN 200 - 600	3.5 bar	165 mm	250 mm	11.2 kg
2 001 703	Indukom Set ROVION	DN 200 - 600	3.5 bar	165 mm	250 mm	11.4 kg

[i](#) Other CCTV inspection systems available at request.



Indukom test disc kits

Single-size DN 250 - 600 mm and above



The **Indukom test disc kits** make it possible to use the Indukom basic system for pipes and sewers of sizes up to DN 600 inaccessible for human inspection. The development focused on scalability and short setup time. The test discs are completely preassembled; they are simply pushed onto the basic system and fixed with 4 bolts. The air is supplied over air quick couplings.

Application and properties:

- Seal rings made of fabric reinforced rubber with softer external side (especially for concrete pipes)
- Lightweight adaptor discs of cast aluminum
- Short setup time and easy change of the discs possible

Item no.	Specification	Application range	Operating pressure	Ø	Weight
2 001 708	Indukom test disc kit	DN 250	3.5 bar	220 mm	9.50 kg
2 001 709	Indukom test disc kit	DN 300	3.5 bar	265 mm	12.0 kg
2 001 711	Indukom test disc kit	DN 400	3.5 bar	365 mm	18.0 kg
2 001 712	Indukom test disc kit	DN 500	3.5 bar	465 mm	31.5 kg
2 001 715	Indukom test disc kit	DN 600	3.5 bar	565 mm	40.5 kg
2 001 710	Indukom undercarriage for DN 400-600	DN 400-600	-	-	1.10 kg



Accessories for joint test units



The **accessories kit for joint testers** includes all what you need for tests and/or connection of joint testers. Our proven DUO hose drum with 80 m DUO hose allows both a filling and measurements of pipe test and shut-off units.

A documentation of our test units is found on pages 6-7.

Including:

- 1x safety control valve up to 5 bars and 1x safety control valve up to 0.5 bars
- 1x 10 m air inlet hose including air quick couplings
- 1x 30 m air hose drum with air inlet hose and air quick couplings
- 1x 80 m DUO measuring & filling hose coiled on a rugged hose drum with aluminum frame

Item no.	Specification	Version	Weight
2 001 730	Accessories kit for pipe joint test units	Complete kit	42.8 kg
2 001 541	Safety control valve with overflow valve	up to 5 bars	0.80 kg
2 001 530	Safety control valve with overflow valve	up to 0.5 bars	0.80 kg
2 001 501	Air inlet hose, Ø 6 mm, including Couplings	Length: 10 metres	1.00 kg
2 001 516	30 m drum with air inlet hose & couplings	Length: 30 metres	5.00 kg
2 001 735	DUO hose drum with special hose	Length: 80 metres	25.2 kg



Joint tester - for round profiles, in several parts Single-size DN 700 - 1,800 mm and above

The **round profile pipe joint tester** includes several parts and allow disassembly of the inspection unit into 2 or 3 components. This way, it may also be introduced easily through a manhole. At the installation site, the pipe joint tester requires just a few steps to reassemble.

The carriage helps to center the pipe joint tester in the inspection area; the two extra-wide hollow chamber profiles located at both sides of the pipe sleeve are pressurized by means of a foot operated air pump or another generator of pressurized air with a pressure of 4 to 6 bar to seal the test chamber hermetically.

In case of a water leakage test, keep the bleeding valve open and fill test chamber with water until water exits from the bleeding valve. Then close the bleeding valve, wait for the indication of the test pressure selected and close the inlet valve as well to start the test. To perform the air pressure test, the test pressure required is generated in the test chamber.

Application and properties:

- To perform leak tests of round profile pipe connections with air or water acc. to standard EN 1610 and other test standards
- The construction in several parts allows an introduction through manholes for later installation on site
- It is a rugged welded steelwork of several parts with 2 hollow rubber chamber profiles and undercarriage
- Including adaptor quick connectors type 26 (tire valve) and adaptor of Geka coupling to air plug coupling



Item number	Specification	Application range	Construction	Test connection	Filling pressure	Diameter
2 001 800	Joint tester - round profile 700	DN 700	2 components	1/2" Geka	up to 6.0 bars	Ø 670 mm
2 001 803	Joint tester - round profile 800	DN 800	2 components	1/2" Geka	up to 6.0 bars	Ø 770 mm
2 001 805	Joint tester - round profile 900	DN 900	2 components	1/2" Geka	up to 6.0 bars	Ø 870 mm
2 001 807	Joint tester - round profile 1,000	DN 1,000	2 components	1/2" Geka	up to 6.0 bars	Ø 970 mm
2 001 809	Joint tester - round profile 1,200	DN 1,200	2 components	1/2" Geka	up to 6.0 bars	Ø 1,170 mm
2 001 811	Joint tester - round profile 1,300	DN 1,300	3 components	1/2" Geka	up to 6.0 bars	Ø 1,270 mm
2 001 813	Joint tester - round profile 1,400	DN 1,400	3 components	1/2" Geka	up to 6.0 bars	Ø 1,370 mm
2 001 815	Joint tester - round profile 1,600	DN 1,600	3 components	1/2" Geka	up to 6.0 bars	Ø 1,570 mm
2 001 817	Joint tester - round profile 1,800	DN 1,800	3 components	1/2" Geka	up to 6.0 bars	Ø 1,770 mm

i Other sizes and segmentations available at request.

Joint tester - for egg-shaped profiles, including several parts **Single-size DN 300/450 and above - 1600/2400 mm**

The **pipe joint tester for egg-shaped profiles** includes several parts and allow disassembly of the inspection unit into 2 or 3 components This way, it can be introduced through a manhole as well. At the installation site, the pipe joint tester requires just a few steps to reassemble.

The carriage helps to center the pipe joint tester in the inspection area; the two extra-wide hollow chamber profiles located at both sides of the pipe sleeve are pressurized by means of a foot operated air pump or another generator of pressurized air with a pressure of 4 to 6 bar to seal the test chamber hermetically.

In case of a water leakage test, keep the bleeding valve open and fill test chamber with water until water exits from the bleeding valve. Then close the bleeding valve, wait for the indication of the test pressure selected and close the inlet valve as well to start the test. To perform the air pressure test, the test pressure required is generated in the test chamber.

Application and properties:

- To perform leak tests of egg-shaped profile pipe connections with air or water acc. to standard EN 1610 and other test standards
- The construction in several parts allows an introduction through manholes for later installation on site
- It is a rugged welded steelwork of several parts with 2 hollow rubber chamber profiles and undercarriage
- Incl. Adaptor quick connectors type 26 (tire valve) and adaptor Geka coupling of air plug coupling



Item number	Specification	Application range	Construction	Test connection	Filling pressure	Dimensions (W x H)
2 001 830	Joint tester - egg-shaped profile	DN 300/450	1 component	1/2" Geka	up to 6.0 bars	270 x 420 mm
2 001 831	Joint tester - egg-shaped profile	DN 350/525	1 component	1/2" Geka	up to 6.0 bars	320 x 495 mm
2 001 832	Joint tester - egg-shaped profile	DN 400/600	1 component	1/2" Geka	up to 6.0 bars	370 x 570 mm
2 001 833	Joint tester - egg-shaped profile	DN 500/750	1 component	1/2" Geka	up to 6.0 bars	470 x 730 mm
2 001 835	Joint tester - egg-shaped profile	DN 600/900	2 components	1/2" Geka	up to 6.0 bars	570 x 870 mm
2 001 836	Joint tester - egg-shaped profile	DN 700/1,050	2 components	1/2" Geka	up to 6.0 bars	670 x 1,020 mm
2 001 837	Joint tester - egg-shaped profile	DN 800/1,200	2 components	1/2" Geka	up to 6.0 bars	770 x 1,170 mm
2 001 840	Joint tester - egg-shaped profile	DN 900/1,350	3 components	1/2" Geka	up to 6.0 bars	870 x 1,320 mm
2 001 841	Joint tester - egg-shaped profile	DN 1,000/1,500	3 components	1/2" Geka	up to 6.0 bars	970 x 1,470 mm
2 001 842	Joint tester - egg-shaped profile	DN 1,200/1,800	3 components	1/2" Geka	up to 6.0 bars	1,170 x 1,770 mm
2 001 843	Joint tester - egg-shaped profile	DN 1,300/1,950	3 components	1/2" Geka	up to 6.0 bars	1,270 x 1,920 mm
2 001 844	Joint tester - egg-shaped profile	DN 1,400/2,100	3 components	1/2" Geka	up to 6.0 bars	1,370 x 2,070 mm
2 001 845	Joint tester - egg-shaped profile	DN 1,600/2,400	3 components	1/2" Geka	up to 6.0 bars	1,570 x 2,370 mm

 Other sizes and segmentations available at request.



Pneumatic disc pipe stopper

Design of several parts in single-size DN 200 - 1,800 mm



The **pneumatic disc pipe stoppers** in one or several parts are of rugged design and have 2 replaceable hollow chamber seal rings. They allow a safe and reliable retention of drainage sewers. The bolted construction of multiple parts makes it possible to introduce it through a manhole.

Application and properties:

- To shut off, drain, and bypass pipes and sewers of DN 200 to DN 1,800 mm
- Versions of DN 700 and above are available as bolted construction of multiple parts to introduce it through a manhole
- 2 replaceable hollow chamber seal rings
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**) recommended

Item no.	Specification	Construction	Clamping range	Installation depth
2 000 670	Disc pipe plug DN 200	1 component	180 - 215 mm	140 mm
2 000 671	Disc pipe plug DN 250	1 component	230 - 265 mm	140 mm
2 000 672	Disc pipe plug DN 300	1 component	280 - 315 mm	140 mm
2 000 673	Disc pipe plug DN 350	1 component	330 - 365 mm	140 mm
2 000 674	Disc pipe plug DN 400	1 component	380 - 415 mm	140 mm
2 000 675	Disc pipe plug DN 450	1 component	430 - 465 mm	140 mm
2 000 676	Disc pipe plug DN 500	1 component	480 - 515 mm	140 mm
2 000 677	Disc pipe plug DN 550	1 component	530 - 565 mm	140 mm
2 000 678	Disc pipe plug DN 600	1 component	580 - 615 mm	140 mm
2 000 679	Disc pipe plug DN 650	1 component	630 - 665 mm	140 mm
2 000 680	Disc pipe plug DN 700	2 components	680 - 715 mm	210 mm
2 000 681	Disc pipe plug DN 750	2 components	730 - 765 mm	210 mm
2 000 682	Disc pipe plug DN 800	2 components	780 - 815 mm	210 mm
2 000 683	Disc pipe plug DN 900	2 components	880 - 915 mm	210 mm
2 000 684	Disc pipe plug DN 1,000	2 components	980 - 1,015 mm	210 mm
2 000 685	Disc pipe plug DN 1,100	2 components	1,080 - 1,115 mm	210 mm
2 000 686	Disc pipe plug DN 1,200	2 components	1,180 - 1,215 mm	210 mm
2 000 687	Disc pipe plug DN 1,300	2 components	1,280 - 1,315 mm	210 mm
2 000 688	Disc pipe plug DN 1,400	3 components	1,380 - 1,415 mm	210 mm
2 000 689	Disc pipe plug DN 1,500	3 components	1,480 - 1515 mm	210 mm
2 000 690	Disc pipe plug DN 1,600	3 components	1,580 - 1,615 mm	210 mm
2 000 691	Disc pipe plug DN 1,700	3 components	1,680 - 1,715 mm	210 mm
2 000 692	Disc pipe plug DN 1,800	3 components	1,780 - 1,815 mm	210 mm

Other sizes and segmentations available at request.



Pneumatic disc pipe stopper with bypass

Design of several parts in single-size DN 300 - 2,500 mm



The **pneumatic disc pipe stoppers with bypass** in one or several parts are of rugged design and have 2 replaceable hollow chamber seal rings. The passage allows the test of pipes and sewers according to DIN EN 1610 with air or water.

Application and properties:

- To test, shut-off, drain, and revert pipes and sewer lines DN 300 to 2,500 mm
- Versions of DN 700 and above are available as bolted construction of multiple parts to introduce it through a manhole
- 2 replaceable seal rings and passage with ball valve
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**) recommended

Item no.	Specification	Construction	Clamping range	Installation depth	Bypass
2 000 700	Disc pipe plug DN 300	1 component	290 - 315 mm	140 mm	30 mm
2 000 701	Disc pipe plug DN 310	1 component	300 - 325 mm	140 mm	30 mm
2 000 702	Disc pipe plug DN 350	1 component	340 - 365 mm	140 mm	30 mm
2 000 703	Disc pipe plug DN 400	1 component	390 - 415 mm	140 mm	30 mm
2 000 704	Disc pipe plug DN 450	1 component	440 - 465 mm	140 mm	45 mm
2 000 705	Disc pipe plug DN 500	1 component	490 - 515 mm	140 mm	45 mm
2 000 706	Disc pipe plug DN 550	1 component	540 - 565 mm	140 mm	45 mm
2 000 707	Disc pipe plug DN 600	1 component	590 - 615 mm	140 mm	45 mm
2 000 711	Disc pipe plug DN 700	2 components	680 - 715 mm	210 mm	45 mm
2 000 713	Disc pipe plug DN 800	2 components	780 - 815 mm	210 mm	45 mm
2 000 717	Disc pipe plug DN 900	2 components	880 - 915 mm	210 mm	45 mm
2 000 721	Disc pipe plug DN 1,000	2 components	980 - 1,015 mm	210 mm	45 mm
2 000 725	Disc pipe plug DN 1,100	2 components	1,080 - 1,115 mm	210 mm	45 mm
2 000 728	Disc pipe plug DN 1,200	2 components	1,180 - 1,215 mm	210 mm	45 mm
2 000 731	Disc pipe plug DN 1,300	2 components	1,280 - 1,315 mm	210 mm	45 mm
2 000 737	Disc pipe plug DN 1,400	3 components	1,380 - 1,415 mm	210 mm	45 mm
2 000 742	Disc pipe plug DN 1,500	3 components	1,480 - 1,515 mm	210 mm	45 mm
2 000 747	Disc pipe plug DN 1,600	3 components	1,580 - 1,615 mm	210 mm	45 mm
2 000 752	Disc pipe plug DN 1,700	3 components	1,680 - 1,715 mm	210 mm	65 mm
2 000 757	Disc pipe plug DN 1,800	3 components	1,780 - 1,815 mm	210 mm	65 mm
2 000 762	Disc pipe plug DN 2,000	3 components	1,980 - 2,015 mm	210 mm	80 mm
2 000 772	Disc pipe plug DN 2,200	3 components	2,180 - 2,215 mm	210 mm	80 mm
2 000 777	Disc pipe plug DN 2,400	3 components	2,380 - 2,415 mm	210 mm	80 mm

i Other sizes and segmentations available at request.



Pneumatic egg-shaped disc pipe stopper

Design of several parts in single-size DN 250/375 - DN 1,400/2,100 mm



The **pneumatic egg-shaped disc pipe stoppers** in one or several parts are of rugged design and have 2 replaceable hollow chamber seal rings. They allow a safe and reliable retention of drainage sewers. The bolted construction of multiple parts makes it possible to introduce it through a manhole.

Application and properties:

- To shut off, drain, and bypass pipes and sewers of DN 250 /375 mm to DN 1,400 /2,100 mm
- Sizes DN 400/600 and larger consist of several parts which facilitates the introduction through a manhole for example
- 2 replaceable seal rings
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**) recommended

Item no.	Specification	Construction	Installation depth
2 000 850	Egg-shaped disc pipe plug - DN 250 / 375	1 component	140 mm
2 000 852	Egg-shaped disc pipe plug - DN 300 / 450	1 component	140 mm
2 000 854	Egg-shaped disc pipe plug - DN 400 / 600	1 component	140 mm
2 000 856	Egg-shaped disc pipe plug - DN 400 / 600	2 components	140 mm
2 000 858	Egg-shaped disc pipe plug - DN 500 / 750	1 component	140 mm
2 000 860	Egg-shaped disc pipe plug - DN 500 / 750	2 components	140 mm
2 000 862	Egg-shaped disc pipe plug - DN 600 / 900	1 component	210 mm
2 000 684	Egg-shaped disc pipe plug - DN 600 / 900	2 components	210 mm
2 000 866	Egg-shaped disc pipe plug - DN 700 / 1,050	1 component	210 mm
2 000 868	Egg-shaped disc pipe plug - DN 700 / 1,050	2 components	210 mm
2 000 870	Egg-shaped disc pipe plug - DN 800 / 1,200	1 component	210 mm
2 000 872	Egg-shaped disc pipe plug - DN 800 / 1,200	2 components	210 mm
2 000 874	Egg-shaped disc pipe plug - DN 900 / 1,350	1 component	210 mm
2 000 876	Egg-shaped disc pipe plug - DN 900 / 1,350	2 components	210 mm
2 000 878	Egg-shaped disc pipe plug - DN 1,000 / 1,500	1 component	210 mm
2 000 880	Egg-shaped disc pipe plug - DN 1,000 / 1,500	2 components	210 mm
2 000 882	Egg-shaped disc pipe plug - DN 1,200 / 1,800	1 component	210 mm
2 000 884	Egg-shaped disc pipe plug - DN 1,200 / 1,800	2 components	210 mm
2 000 886	Egg-shaped disc pipe plug - DN 1,300 / 1,950	1 component	210 mm
2 000 888	Egg-shaped disc pipe plug - DN 1,300 / 1,950	3 components	210 mm
2 000 890	Egg-shaped disc pipe plug - DN 1,400 / 2,100	1 component	210 mm
2 000 892	Egg-shaped disc pipe plug - DN 1,400 / 2,100	3 components	210 mm

Other sizes and segmentations available at request.



Pneumatic egg-shaped disc pipe stopper with bypass

Design of several parts in single-size DN 250/375 - DN 1,400/2,100 mm



The **pneumatic egg-shaped disc pipe stoppers with bypass** in one or several parts with passage are of rugged design and have 2 replaceable hollow chamber seal rings. The passage allows the test of pipes and sewers according to DIN EN 1610 with air or water.

Application and properties:

- To test, shut-off, drain, and revert pipes and sewer lines Sizes DN 250/375 up to 1,400/2,100 mm
- Sizes DN 400/600 and larger consist of several parts which facilitates the introduction through a manhole for example
- 2 replaceable seal rings and passage with ball valve
- Suitable for backpressures of max. 5 m water head (**max. 0.5 bar**) recommended

Item no.	Specification	Construction	Installation depth	Bypass
2 000 800	Egg-shaped disc pipe plug - DN 250 / 375	1 component	140 mm	30 mm
2 000 801	Egg-shaped disc pipe plug - DN 300 / 450	1 component	140 mm	30 mm
2 000 802	Egg-shaped disc pipe plug - DN 400 / 600	1 component	140 mm	30 mm
2 000 803	Egg-shaped disc pipe plug - DN 400 / 600	2 components	140 mm	30 mm
2 000 805	Egg-shaped disc pipe plug - DN 500 / 750	1 component	140 mm	30 mm
2 000 806	Egg-shaped disc pipe plug - DN 500 / 750	2 components	140 mm	30 mm
2 000 808	Egg-shaped disc pipe plug - DN 600 / 900	1 component	210 mm	45 mm
2 000 809	Egg-shaped disc pipe plug - DN 600 / 900	2 components	210 mm	45 mm
2 000 815	Egg-shaped disc pipe plug - DN 700 / 1,050	1 component	210 mm	45 mm
2 000 816	Egg-shaped disc pipe plug - DN 700 / 1,050	2 components	210 mm	45 mm
2 000 818	Egg-shaped disc pipe plug - DN 800 / 1,200	1 component	210 mm	45 mm
2 000 819	Egg-shaped disc pipe plug - DN 800 / 1,200	2 components	210 mm	45 mm
2 000 820	Egg-shaped disc pipe plug - DN 900 / 1,350	1 component	210 mm	45 mm
2 000 821	Egg-shaped disc pipe plug - DN 900 / 1,350	2 components	210 mm	45 mm
2 000 825	Egg-shaped disc pipe plug - DN 1,000 / 1,500	1 component	210 mm	45 mm
2 000 826	Egg-shaped disc pipe plug - DN 1,000 / 1,500	2 components	210 mm	45 mm
2 000 830	Egg-shaped disc pipe plug - DN 1,200 / 1,800	1 component	210 mm	45 mm
2 000 831	Egg-shaped disc pipe plug - DN 1,200 / 1,800	2 components	210 mm	45 mm
2 000 833	Egg-shaped disc pipe plug - DN 1,300 / 1,950	1 component	210 mm	45 mm
2 000 834	Egg-shaped disc pipe plug - DN 1,300 / 1,950	3 components	210 mm	45 mm
2 000 836	Egg-shaped disc pipe plug - DN 1,400 / 2,100	1 component	210 mm	45 mm
2 000 837	Egg-shaped disc pipe plug - DN 1,400 / 2,100	3 components	210 mm	45 mm

i Other sizes and segmentations available at request.

Fitting controller



The **single fitting controller** includes an overflow valve which limits the testing pressure. You may select safety valve and pressure gauge depending on your pressure range (between 0.5 bar and 5 bar).

Application and properties:

- Filling units with pressure gauge, safety valve, and ball valves
- To limit the testing pressure
- For a safe filling of sealing bladders, pipe test bladders, rehabilitation units and many more

Item no.	Specification	Pressure range	Weight
2 001 530	Single fitting controller	Up to 0.5 bars	0.8 kg
2 001 531	Single fitting controller	Up to 0.7 bars	0.8 kg
2 001 535	Single fitting controller	Up to 1.0 bars	0.8 kg
2 001 536	Single fitting controller	Up to 1.5 bars	0.8 kg
2 001 537	Single fitting controller	Up to 2.0 bars	0.8 kg
2 001 538	Single fitting controller	Up to 2.5 bars	0.8 kg
2 001 541	Single fitting controller	Up to 5.0 bars	0.8 kg

Air hoses



Our **air hoses** consist of a transparent PVC hose with an inner diameter of 6 mm. They are suitable for air, water, hydraulic systems (medium resistance against oil and chemicals), and have air couplings.

Application and properties:

- Resistant to max. pressures of 7 bar
- With standard quick couplings
- Temperature resistant between -20°C and +60°C
- Soft PVC, clear, smooth inside and outside, with embedded polyester yarn
- Inner diameter of 6 mm

Item no.	Specification	Length	Weight
2 001 500	Air hose, Ø 6 mm	5 m	0.7 kg
2 001 501	Air hose, Ø 6 mm	10 m	1.0 kg
2 001 502	Air hose, Ø 6 mm	20 m	2.0 kg
2 001 503	Air hose, Ø 6 mm	25 m	2.5 kg
2 001 504	Air hose, Ø 6 mm	30 m	3.3 kg
2 001 505	Air hose, Ø 6 mm	40 m	4.0 kg
2 001 506	Air hose, Ø 6 mm	50 m	5.0 kg

Air push rods



Our **air push rods** as a bend-capable stable version are a useful add-on to place packers, pipe sleeve test units and pipe sealing cushions. They are available in lengths of 500 - 3,000 mm with swing or safety quick couplings.

Application and properties:

- Stable version, highly bend-capable
- Available with swing or safety quick couplings

Item no.	Specification	Length	Weight
2 001 550	Push rod with swing coupling	0.5 m	0.3 kg
2 001 551	Push rod with swing coupling	1.0 m	0.4 kg
2 001 552	Push rod with swing coupling	1.5 m	0.5 kg
2 001 553	Push rod with swing coupling	2.0 m	0.7 kg
2 001 554	Push rod with swing coupling	2.5 m	0.9 kg
2 001 555	Push rod with swing coupling	3.0 m	1.1 kg
2 001 560	Push rod with safety quick coupling	0.5 m	0.3 kg
2 001 561	Push rod with safety quick coupling	1.0 m	0.4 kg
2 001 562	Push rod with safety quick coupling	1.5 m	0.5 kg
2 001 563	Push rod with safety quick coupling	2.0 m	0.7 kg
2 001 564	Push rod with safety quick coupling	2.5 m	0.9 kg
2 001 565	Push rod with safety quick coupling	3.0 m	1.1 kg

Air hose drums



The **hose drums** made of a special rubber meet all your requirements. The unbreakable synthetic rubber withstands high loads and has a low weight. The versions with 30 m and 50 m air hose allow a quick use on site. The air hose is equipped with air couplings.

Item number	Specification	Length	Weight
2 001 516	Drum with air hose	30 m	5.00 kg
2 001 515	Drum with air hose	50 m	11.0 kg

Test adaptor kit and adaptor



Testing adaptor kit for air and water tests including: 1x Y test adaptor (air), 1x Geka Y test adaptor (water), 1x test adaptor air / Storz D-coupling, 1x test adaptor water / Storz D-coupling, 1x reducer Storz D / C, 1x single fitting safety controller 0.5 bar and 1x transport case

Item no.	Specification	Unique features	Weight
2 001 231	Test adaptor kit for air and water	Complete kit	2.10 kg
2 001 522	Adaptor air pump valve - directly operated	-	0.25 kg
2 001 523	Adaptor air pump valve / actuator	-	0.25 kg

 Other adaptors and couplings available at request.

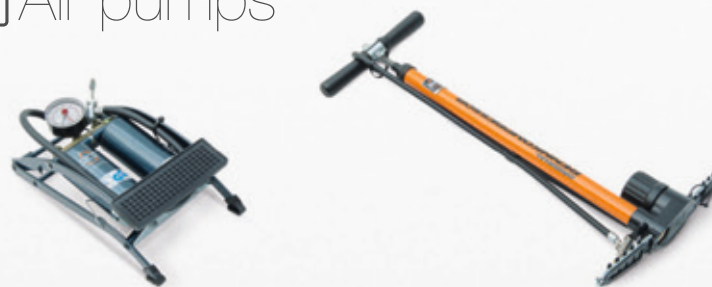
DUO-hose drum



The **DUO hose drum** makes it possible to fill and measure pipe test and sealing units at the same time. The aluminum DUO drum has a rotary joint and air ports. The DUO special hose has air quick couplings.

Item number	Specification	Length	Weight
2 001 735	DUO hose drum with special hose	80 m	25.2 kg

Air pumps



The **air pumps** fill the pipe stops and test bladders. Our pumps have their own pressure gauge and a stable tread with non-slip rubber coating. We also deliver the adaptors to connect car tire valves with quick couplings. (See adaptor)

Item no.	Specification	Unique features	Weight
2 001 520	Foot operated air pump with two cylinders	With pressure gauge	2.20 kg
2 001 521	Floor air pump	With pressure gauge	3.00 kg



Lifting bags

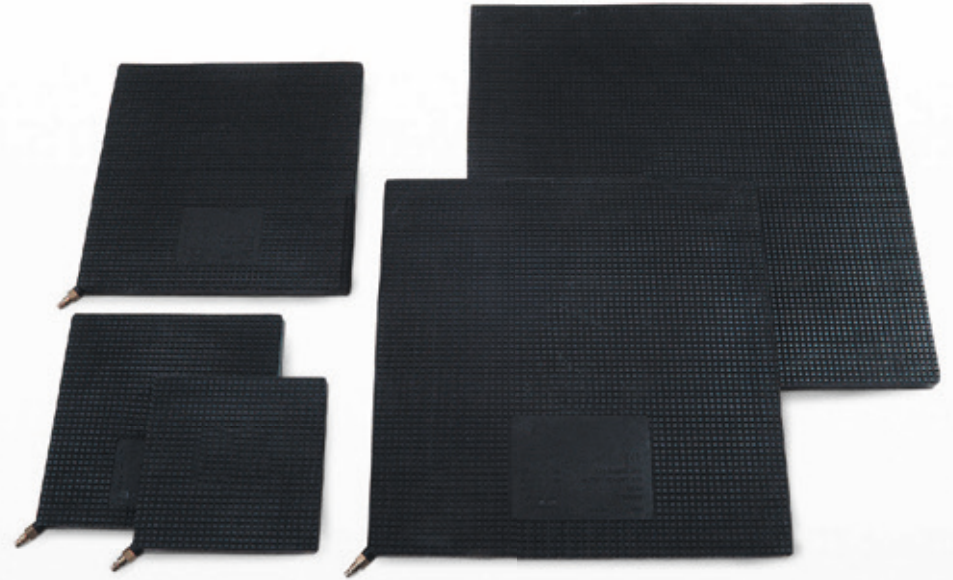
Lifting capacity between 3 and 30 metric tons

High pressure air lifting bags consist of quality rubber, reinforced with Kevlar fabric. They may be used for many applications and lift heavy loads. The basic version includes five types with a lifting capacity between 3 and 30 metric tons.

The lifting bags are a useful aid in case of natural disasters, car or rail accidents, for alignment of heavy components during assembly, lifting of vehicles of any kind and tire replacement. They may be used in many other branches as well, including: fire brigades, in military environment, for assembly and rehabilitation of water, gas and oil pipelines, in quarries to split stone blocks, at airports etc.

Application and properties:

- To lift heavy loads and vehicles
- To align heavy components during assembly
- For special applications, e.g. splitting of stone blocks and many more
- Resistant against weather and temperatures between -30°C and 80°C
- Easy handling and fast application
- Filled via standard air couplings



Item number	Specification	Lifting capacity	Lifting height	Dimensions	Rack height	Air consumption at a pressure of 8 bar	Operating pressure	Burst pressure	Weight
2 003 400	Lifting bag 3 t	Up to 30 kN	120 mm	230 x 230 mm	27 mm	16 litres	8.0 bar	75.0 bar	1.50 kg
2 003 401	Lifting bag 6 t	Up to 60 kN	160 mm	300 x 300 mm	27 mm	38 litres	8.0 bar	64.0 bar	2.40 kg
2 003 404	Lifting bag 10 t	Up to 100 kN	210 mm	390 x 390 mm	27 mm	90 litres	8.0 bar	57.0 bar	4.30 kg
2 003 406	Lifting bag 20 t	Up to 200 kN	300 mm	530 x 530 mm	27 mm	250 litres	8.0 bar	45.0 bar	7.60 kg
2 003 408	Lifting bag 30 t	Up to 300 kN	350 mm	640 x 640 mm	27 mm	470 litres	8.0 bar	36.0 bar	11.2 kg

Fitting controller – 8 bar



The **safety fitting controllers** include an overflow valve to limit the operating pressure to 8 bar. This way, the lifting bag cannot be overfilled. Including ball valve, safety valve, standard air couplings, and pressure gauge at the output.

Item number	Specification	Pressure range	Weight
2 003 430	Single fitting controller	8 bar	0.80 kg
2 003 431	Double fitting controller	8 bar	1.70 kg

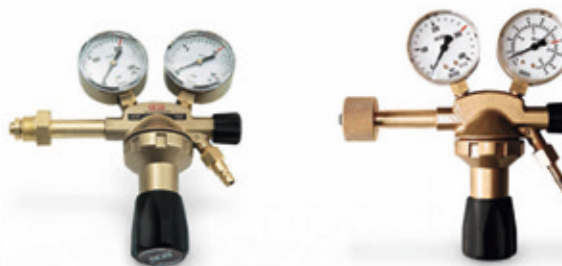
Filling hoses



The **safety and filling hoses** are used to fill the lifting bags.

Item no.	Specification	Length	Weight
2 003 437	Safety filling hose with shut-off valve	0.5 m	0.50 kg
2 003 425	Filling hose with 2x quick couplings (M part)	3.0 m	0.60 kg
2 003 427	Filling hose with quick couplings (V-M part)	5.0 m	0.70 kg
2 003 429	Filling hose with quick couplings (V-M part)	10 m	1.00 kg

Pressure regulator – 8 bar



The **gas cylinder pressure regulator or pressure reducer** is suitable for non-inflammable gases and reduces the cylinder gas pressure of 200 bar / 300 bar to 8 bar. It is used to fill the lifting bags.

Item number	Specification	Pressure range	Weight
2 003 433	Pressure regulator / reducer valve 200	8 bar	1.40 kg
2 003 435	Pressure regulator / reducer valve 300	8 bar	1.40 kg

Pressurized air cylinder



The cylinder with **pressurized air** is the easiest and fastest method to use the lifting bags in case of emergencies, because you need not rely on a compressor.

Item number	Specification	Technical data	Weight
2 003 440	Pressurized air cylinder	7 litres / 300 bar	9.70 kg
2 003 441	Pressurized air cylinder	5 litres / 300 bar	7.20 kg



pipe plugs

DN 15 mm - DN 50 mm (1/2" - 2")



The **pipe plugs made of stainless steel** with a silicone rubber seal are used to shut off small pipe diameters - ideal for heating and sanitary applications. With the silicone seal, the pipe plugs are also suitable for special applications in the food industry and the like.

Application and properties:

- robust, long-life V2A design for shutting off pipelines from DN 12 to DN 50 mm for the heating and sanitary sector as well as for plant construction
- Silicone gasket also suitable for special applications in the food industry
- flame retardant and particularly temperature resistant from -70°C - 250°C
- **Attention: from 1 bar back pressure the plugs must be secured against being pushed out.**

Item no.	Specification	Application	Backpressure	Weight
2 000 125	pipe plug 15	11,8 - 12,5 mm	max. 8,0 bar	0,03 kg
2 000 126	pipe plug 16	15,6 - 16,4 mm	max. 8,0 bar	0,04 kg
2 000 121	pipe plug 20	18,5 - 25 mm	max. 8,0 bar	0,05 kg
2 000 127	pipe plug 25	23,5 - 29 mm	max. 8,0 bar	0,07 kg
2 000 122	pipe plug 30	28,5 - 35 mm	max. 8,0 bar	0,08 kg
2 000 128	pipe plug 35	33,5 - 40 mm	max. 8,0 bar	0,09 kg
2 000 129	pipe plug 40	38,5 - 45 mm	max. 8,0 bar	0,13 kg
2 000 123	pipe plug 45	43 - 50 mm	max. 8,0 bar	0,13 kg
2 000 130	pipe plug 50	48 - 55 mm	max. 8,0 bar	0,16 kg



Aluminium test plugs

DN 50 mm - 600 mm with bypass



The **aluminium test plugs** have an over-average cohesive friction. All plugs are fitted with passages to allow bypass installations. The passages of the standard version are fitted with pressure proof blind plugs.

Application and properties:

- Natural rubber seal (NR) – spare seals are available for special applications

Item no.	Specification	Insert	Clamping range	Bypass	Backpressure	Weight
2 000 150	Aluminium test plug 50	DN 50	49 - 62 mm	1/2"	Max. 3.0 bar	0.20 kg
2 000 151	Aluminium test plug 65	DN 65	62 - 75 mm	1/2"	Max. 2.0 bar	0.30 kg
2 000 152	Aluminium test plug 75	DN 75	73 - 85 mm	1/2"	Max. 1.0 bar	0.30 kg
2 000 155	Aluminium test plug 85	DN 85	84 - 95 mm	1/2"	Max. 1.0 bar	0.40 kg
2 000 156	Aluminium test plug 100	DN 100	94 - 110 mm	1/2"	Max. 1.0 bar	0.40 kg
2 000 157	Aluminium test plug 115	DN 115	112 - 120 mm	1/2"	Max. 0.8 bar	0.60 kg
2 000 160	Aluminium test plug 125	DN 125	121 - 135 mm	1/2"	Max. 0.8 bar	0.70 kg
2 000 161	Aluminium test plug 150	DN 150	148 - 163 mm	1/2"	Max. 0.6 bar	0.80 kg
2 000 162	Aluminium test plug 175	DN 175	178 - 185 mm	1"	Max. 0.3 bar	1.20 kg
2 000 165	Aluminium test plug 200	DN 200	190 - 205 mm	1"	Max. 0.3 bar	1.40 kg
2 000 166	Aluminium test plug 225	DN 225	213 - 230 mm	1"	Max. 0.3 bar	1.80 kg
2 000 167	Aluminium test plug 250	DN 250	235 - 265 mm	1"	Max. 0.3 bar	2.00 kg
2 000 169	Aluminium test plug 300	DN 300	298 - 315 mm	1"	Max. 0.3 bar	3.00 kg
2 000 170	Aluminium test plug 350	DN 350	340 - 375 mm	1"	Max. 0.3 bar	4.50 kg
2 000 171	Aluminium test plug 400	DN 400	390 - 425 mm	1"	Max. 0.3 bar	6.00 kg
2 000 172	Aluminium test plug 500	DN 500	495 - 520 mm	2"	Max. 0.3 bar	14.0 kg
2 000 173	Aluminium test plug 600	DN 600	590 - 630 mm	2"	Max. 0.3 bar	15.0 kg

FIX-Dicht stopper (plastics) **DN 100 mm - DN 150 mm with bypass**



The **FIX-Dicht stopper** is a **safety snap-tite expansion plug of plastic** and ensure a quick, reliable, and safe closure of pipe ends. The telescopic quick fasteners make installation and deinstallation of the stoppers safe and easy, no need to enter the manhole. Thanks to this remote control or a pull rope attached, one man can work alone and nevertheless obey the German safety regulations (BGR 126).

Application and properties:

- The corrosion resistant material ensures a long service life.
- Quick and economical application, since nobody needs to enter the manhole.
- FIX-Dicht may be opened without risk. Use a rope or the telescopic quick fastener (extensible to 3.3 m)
- Used for leak tests acc. to DIN EN 1610 with pressurized air and water (including blank cover)

Item no.	Specification	Application	Bypass	Backpressure	Weight
2 000 220	FIX-Dicht plug 100 (plastic)	96 - 103 mm	1/2"	Max. 0.5 bar	0.24 kg
2 000 221	FIX-Dicht plug 105 (plastic)	102 - 107 mm	1/2"	Max. 0.5 bar	0.24 kg
2 000 223	FIX-Dicht plug 120 (plastic)	116 - 123 mm	1/2"	Max. 0.5 bar	0.36 kg
2 000 225	FIX-Dicht plug 130 (plastic)	125 - 132 mm	1/2"	Max. 0.5 bar	0.40 kg
2 000 226	FIX-Dicht plug 145 (plastic)	144 - 149 mm	1/2"	Max. 0.5 bar	0.48 kg
2 000 228	FIX-Dicht plug 150 (plastic)	147 - 153 mm	1/2"	Max. 0.5 bar	0.48 kg
2 000 230	Remote installation device	1.5 - 3.3 m	-	-	5.00 kg

FIX-Dicht stopper (aluminum) **DN 200 mm - DN 520 mm with bypass**



The **FIX-Dicht stopper** is a **safety snap-tite expansion plug of aluminum**. They are the rugged and long life version of the new stoppers to seal pipe ends fast, reliably, and safe. A pull rope attached makes it possible to remove the pipe stop safely from the manhole without the need to enter. This allows one man working alone with observance of the safety rules to prevent accidents and risks.

Application and properties:

- The rugged design of aluminum and steel ensures a long service life
- Riskless and economical manhole opening, no need to enter; simply attach a rope and pull (one man can work alone)
- Used for leak tests acc. to DIN EN 1610 with pressurized air and water (including blank cover)

Item no.	Specification	Application	Bypass	Backpressure	Weight
2 000 231	FIX-Dicht plug 200 (Aluminum)	175 - 205 mm	1"	Max. 0.5 bar	3.06 kg
2 000 233	FIX-Dicht plug 225 (Aluminum)	205 - 235 mm	1"	Max. 0.5 bar	3.30 kg
2 000 235	FIX-Dicht plug 250 (Aluminum)	220 - 250 mm	1"	Max. 0.5 bar	3.52 kg
2 000 236	FIX-Dicht plug 270 (Aluminum)	240 - 270 mm	1"	Max. 0.5 bar	4.02 kg
2 000 238	FIX-Dicht plug 300 (Aluminum)	280 - 310 mm	1"	Max. 0.5 bar	5.14 kg
2 000 240	FIX-Dicht plug 315 (Aluminum)	293 - 323 mm	1"	Max. 0.5 bar	5.90 kg
2 000 241	FIX-Dicht plug 350 (Aluminum)	325 - 350 mm	1"	Max. 0.3 bar	6.24 kg
2 000 242	FIX-Dicht plug 375 (Aluminum)	352 - 382 mm	1"	Max. 0.3 bar	6.70 kg
2 000 243	FIX-Dicht plug 400 (Aluminum)	375 - 400 mm	1"	Max. 0.3 bar	7.62 kg
2 000 245	FIX-Dicht plug 420 (Aluminum)	400 - 425 mm	1"	Max. 0.3 bar	8.06 kg
2 000 247	FIX-Dicht plug 470 (Aluminum)	449 - 474 mm	1"	Max. 0.3 bar	9.56 kg
2 000 249	FIX-Dicht plug 520 (Aluminum)	496 - 521 mm	1"	Max. 0.3 bar	13.4 kg



High pressure plugs up to 30 bar DN 14 - 300 mm with bypass



The **high pressure test plugs** are mechanical pipe stops used to seal or test pipes or water lines. Applicable in industrial plants, ship building and equipment construction. Our pressure pistons are also available as test component with pressure gauge or as a bleeding component.

Application and properties:

- To seal off and test pipe lines, for industrial facilities, shipbuilding and technical installations
- Also upgradeable as test or bleeding components
- A hollow spindle generates the pressure
- The high pressure plugs have a ball valve to shut off the test chamber
- Version is size dependent: DN 14 - 75 available as plug, and DN 80 - 300 as aluminum discs

i Only use pipe stops with support installed and consider the maximum backpressure. Never exceed the maximum pressure specified!

	Item no.	Specification	Insert	Clamping range	Bypass	Backpressure
Plug shape	2 000 500	High pressure plug 14	DN 14	14 - 16 mm	3 mm	Max. 30 bar
	2 000 502	High pressure plug 20	DN 20	20 - 25 mm	4 mm	Max. 30 bar
	2 000 503	High pressure plug 25	DN 25	25 - 30 mm	4 mm	Max. 30 bar
	2 000 504	High pressure plug 30	DN 30	30 - 35 mm	8 mm	Max. 25 bar
	2 000 505	High pressure plug 35	DN 35	35 - 40 mm	8 mm	Max. 20 bar
	2 000 508	High pressure plug 40	DN 40	40 - 45 mm	8 mm	Max. 20 bar
	2 000 510	High pressure plug 50	DN 50	50 - 55 mm	8 mm	Max. 20 bar
	2 000 511	High pressure plug 60	DN 60	60 - 65 mm	8 mm	Max. 15 bar
	2 000 513	High pressure plug 65	DN 65	65 - 70 mm	8 mm	Max. 15 bar
	2 000 515	High pressure plug 70	DN 70	70 - 75 mm	8 mm	Max. 10 bar
	2 000 516	High pressure plug 75	DN 75	75 - 80 mm	8 mm	Max. 10 bar
Aluminum discs with 2 rubber elements of natural rubber	2 000 517	High pressure plug 80	DN 80	75 - 95 mm	8 mm	Max. 6.0 bar
	2 000 518	High pressure plug 90	DN 90	85 - 105 mm	8 mm	Max. 5.5 bar
	2 000 520	High pressure plug 100	DN 100	95 - 115 mm	8 mm	Max. 5.0 bar
	2 000 521	High pressure plug 110	DN 110	105 - 125 mm	8 mm	Max. 4.5 bar
	2 000 523	High pressure plug 125	DN 125	120 - 140 mm	8 mm	Max. 4.5 bar
	2 000 525	High pressure plug 140	DN 140	135 - 155 mm	8 mm	Max. 4.2 bar
	2 000 526	High pressure plug 150	DN 150	145 - 165 mm	8 mm	Max. 4.0 bar
	2 000 528	High pressure plug 160	DN 160	155 - 175 mm	8 mm	Max. 3.8 bar
	2 000 530	High pressure plug 175	DN 175	170 - 190 mm	8 mm	Max. 3.5 bar
	2 000 531	High pressure plug 190	DN 190	185 - 205 mm	8 mm	Max. 3.2 bar
	2 000 532	High pressure plug 200	DN 200	195 - 215 mm	12 mm	Max. 3.0 bar
	2 000 533	High pressure plug 210	DN 210	205 - 225 mm	12 mm	Max. 2.8 bar
	2 000 534	High pressure plug 225	DN 225	220 - 240 mm	12 mm	Max. 2.6 bar
	2 000 536	High pressure plug 235	DN 235	230 - 250 mm	12 mm	Max. 2.5 bar
	2 000 538	High pressure plug 250	DN 250	245 - 265 mm	12 mm	Max. 2.5 bar
	2 000 540	High pressure plug 260	DN 260	255 - 275 mm	12 mm	Max. 2.4 bar
	2 000 541	High pressure plug 300	DN 300	295 - 315 mm	12 mm	Max. 2.0 bar
Accessories	2 000 549	Allen wrench for High pressure plug DN 20 - 50 / SW17				
	2 000 550	Allen wrench for High pressure plug DN 60 - 210 / SW24				
	2 000 551	Test element upgrade with T-piece and pressure gauge				
	2 000 552	Bleeder element upgrade				

High pressure plugs up to 100 bar **DN 14 - 1,900 mm with bypass**



The **high pressure test plug** is made of solid steel and suited for a max. backpressure of 100 bar. It seals off and tests pipes with high pressures. The larger the pipe inner diameter, the lower will be the pressure permitted! Please consider the pressures applied and the safety regulations.

Application and properties:

- To seal off and test pipes of industrial facilities, in ships and installations with very high backpressures
- A hollow spindle generates the pressure needed
- The high pressure plugs made of solid steel have a ball valve to shut-off the test chamber
- Up to DN 500, a support plate is provided to hold them in the building or pipe trench
- For DN 600 and above, no support plate is needed

i Only use pipe stops with support installed and consider the maximum backpressure. Never exceed the maximum pressure specified!

	Item no.	Specification	Insert	Clamping range	Bypass	Backpressure
Plug shape	2 000 601	High pressure plug 14	DN 14	14 - 16 mm	1/4"	Max. 100 bar
	2 000 603	High pressure plug 20	DN 20	20 - 25 mm	1/4"	Max. 100 bar
	2 000 604	High pressure plug 25	DN 25	25 - 30 mm	1/4"	Max. 100 bar
	2 000 606	High pressure plug 30	DN 30	30 - 35 mm	1/4"	Max. 100 bar
	2 000 607	High pressure plug 35	DN 35	35 - 40 mm	1/4"	Max. 100 bar
	2 000 609	High pressure plug 40	DN 40	40 - 45 mm	1/4"	Max. 100 bar
	2 000 610	High pressure plug 50	DN 50	50 - 55 mm	1/4"	Max. 100 bar
	2 000 611	High pressure plug 60	DN 60	60 - 65 mm	1/4"	Max. 100 bar
	2 000 613	High pressure plug 65	DN 65	65 - 70 mm	1/4"	Max. 100 bar
	2 000 615	High pressure plug 70	DN 70	70 - 75 mm	1/4"	Max. 100 bar
	2 000 616	High pressure plug 75	DN 75	75 - 80 mm	3/8"	Max. 100 bar
	2 000 617	High pressure plug 80	DN 80	76 - 92 mm	1/2"	Max. 100 bar
	2 000 619	High pressure plug 90	DN 90	86 - 106 mm	1/2"	Max. 100 bar
	2 000 620	High pressure plug 100	DN 100	96 - 112 mm	1/2"	Max. 100 bar
	2 000 621	High pressure plug 110	DN 110	106 - 122 mm	1/2"	Max. 95 bar
With support plate	2 000 622	High pressure plug 125	DN 125	121 - 137 mm	3/4"	Max. 92.5 bar
	2 000 623	High pressure plug 140	DN 140	136 - 156 mm	3/4"	Max. 90 bar
	2 000 625	High pressure plug 150	DN 150	146 - 162 mm	3/4"	Max. 90 bar
	2 000 627	High pressure plug 160	DN 160	156 - 172 mm	3/4"	Max. 88 bar
	2 000 628	High pressure plug 175	DN 175	171 - 187 mm	3/4"	Max. 85 bar
	2 000 630	High pressure plug 190	DN 190	186 - 206 mm	3/4"	Max. 80 bar
	2 000 631	High pressure plug 200	DN 200	196 - 212 mm	3/4"	Max. 80 bar
	2 000 632	High pressure plug 210	DN 210	206 - 222 mm	3/4"	Max. 77.5 bar
	2 000 633	High pressure plug 225	DN 225	221 - 237 mm	3/4"	Max. 75 bar
	2 000 635	High pressure plug 250	DN 250	246 - 263 mm	3/4"	Max. 70 bar
	2 000 636	High pressure plug 260	DN 260	256 - 273 mm	3/4"	Max. 65 bar
	2 000 638	High pressure plug 275	DN 275	271 - 288 mm	3/4"	Max. 60 bar
	2 000 640	High pressure plug 300	DN 300	296 - 313 mm	3/4"	Max. 60 bar
	2 000 641	High pressure plug 310	DN 310	306 - 323 mm	3/4"	Max. 57 bar
	2 000 642	High pressure plug 350	DN 350	342 - 370 mm	3/4"	Max. 50 bar
	2 000 643	High pressure plug 400	DN 400	392 - 420 mm	3/4"	Max. 35 bar
Without support plate	2 000 644	High pressure plug 450	DN 450	446 - 463 mm	3/4"	Max. 30 bar
	2 000 645	High pressure plug 500	DN 500	492 - 520 mm	3/4"	Max. 30 bar
	2 000 646	High pressure plug 600	DN 600	592 - 620 mm	2"	Max. 25 bar
	2 000 647	High pressure plug 700	DN 700	696 - 713 mm	2"	Max. 20 bar
	2 000 648	High pressure plug 800	DN 800	796 - 813 mm	2"	Max. 18 bar
	2 000 649	High pressure plug 900	DN 900	896 - 913 mm	2"	Max. 17 bar
	2 000 650	High pressure plug 1,000	DN 1,000	996 - 1,013 mm	2"	Max. 16 bar
	2 000 651	High pressure plug 1,100	DN 1,100	1,096 - 1,113 mm	2"	Max. 13 bar
	2 000 652	High pressure plug 1,200	DN 1,200	1,196 - 1,213 mm	2"	Max. 10 bar
	2 000 653	High pressure plug 1,300	DN 1,300	1,296 - 1,313 mm	2"	Max. 9 bar
	2 000 654	High pressure plug 1,400	DN 1,400	1,396 - 1,413 mm	2"	Max. 8 bar
	2 000 655	High pressure plug 1,500	DN 1,500	1,496 - 1,513 mm	2"	Max. 7 bar
	2 000 656	High pressure plug 1,600	DN 1,600	1,596 - 1,613 mm	2"	Max. 6 bar
	2 000 657	High pressure plug 1,700	DN 1,700	1,696 - 1,713 mm	2"	Max. 5 bar
	2 000 658	High pressure plug 1,900	DN 1,900	1,896 - 1,913 mm	2"	Max. 3 bar



Trenchless rehabilitation equipment

... for rehabilitation of pipes or pipelines



Pipe relining solutions for rehabilitation

Rehabilitation equipment

The special tools to prepare rehabilitation with hydro-mechanical or mechanic procedures allow a roughening of the internal pipe spots to be repaired. This improves the adhesion of the short or long liners.

After installation of the liner, we provide a multitude of milling tools, e.g. to open branches or connections. We are specialists in van upgrades and offer also complete setups of rehabilitation vans and trailers, tailored to your requirements in rehabilitation and other applications (*sample van see page 66*). Questions? Please contact us, we are pleased to answer all questions you might have.

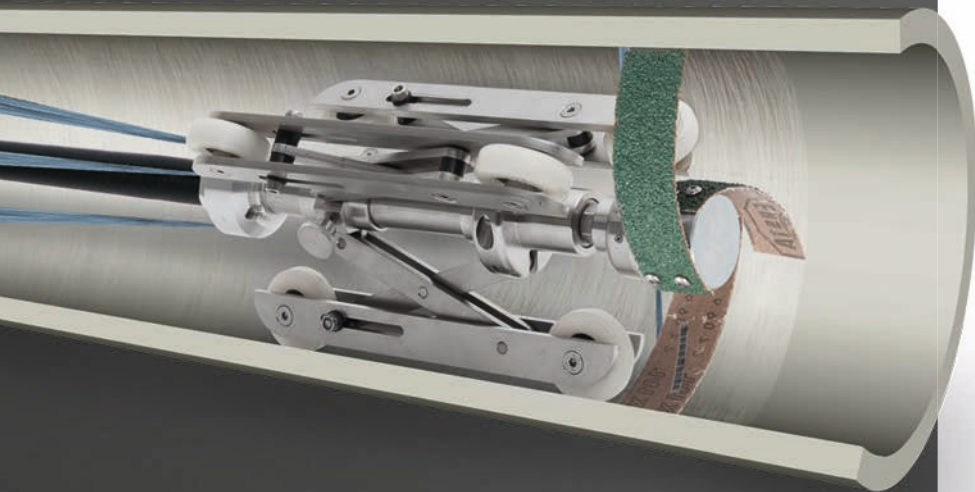
Relining packer

Our relining packers were designed for sewer rehabilitation. They are used to repair local damages of sewers and pipes. They are ideal for repair of cracks, leaks, dislocations, roots, and corroded spots.

We offer our Flex packers in standard sizes. If required, we are also able to produce bespoke versions with a maximum length of 10 m. Our rehabilitation units are available for the pipe nominal diameters DN 50 to 1,000 mm and are

offered in various versions: Building drainage packers, bend packer, Flex packers for short and long liners and egg-shaped profile packers. They are made of a special soft rubber. Its high flexibility allows an excellent smoothness of the contact surfaces and thus optimum transitions. The rugged external sheet ensures the long service life and strength required.

For repair, a fabric net and synthetic resin are applied directly at the damaged spot in the pipe assisted by a camera and pressed against the pipe wall with high pressure. When cured, the damaged spot and the liner form a permanent and solid connection, and the synthetic resin and the embedded fabric form a load bearing pipe inside the pipe. When cured, the rehabilitation packer is depressurized and removed from the pipe.

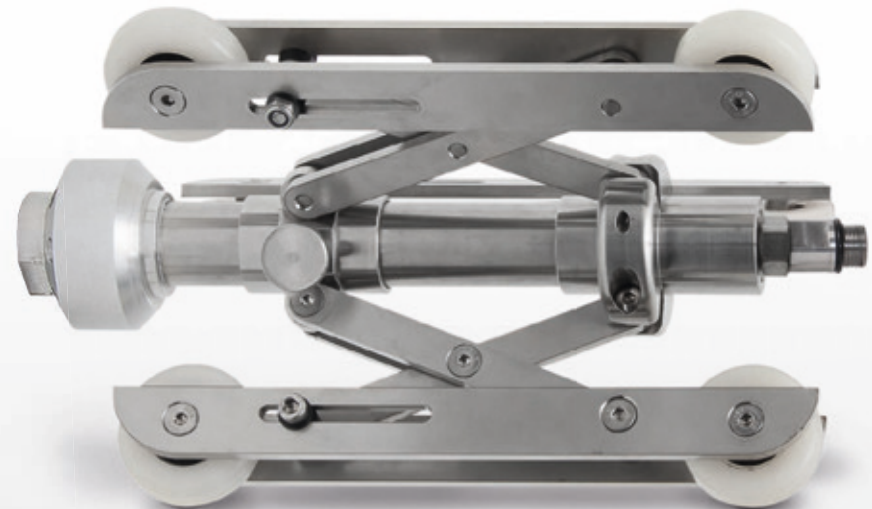


Hydromechanical tools to prepare the rehabilitation

Looking for more products useful for hydrodynamic pipe and sewer cleaning? Check out online at www.ehle-hd.com or order our main catalogue of high pressure equipment for pipe and sewer cleaning.

You have a problem and look for the suitable tools to solve it? We will assist you! Give us a call – our qualified consultants will help you to select the right tools. It goes without saying, you can order our products on a trial basis.

Telephone: +49 (0) 34 292.65 420



A basic unit for 4 applications

Tool carrier with switchable rotation and centering

The **pipe weasel** is a vital tool to prepare the pipe rehabilitation. Just one unit and a large tool assortment clear rather all your problems – flushing, removal of roots and difficult deposits, and roughening of walls in pipes of diameter DN150 - 400.

The killer feature of the pipe weasel is the switchable rotation to increase the pressure of the flushing unit. This makes it possible to attack exactly the spot to be rehabilitated and to avoid damages of the intact pipe wall by the chain knocker, ball knocker, or rehabilitation grinder applied.

Procedure: Measure damages or rooted spots, move the pipe weasel and increase the pressure to switch on the spinning tool. Reduce pressure during removal, to avoid damages of the intact pipe length.



Step 1

Flushing / cleaning

The **spinning nozzle head type KRD** to clean the pipe walls from incrustations, fine roots, sludge clods, grease deposits, and biofilms.

The **auger head type BRD** with its 3 front jets removes partial and total blockades, roots (nested roots), and heavy deposits.



Step 2

Roots removal

The **milling chain holder** with auger head removes roots or deposits like slime or clay, and cement clods.

To remove difficult sediments we recommend the ball knocker.



Step 3

Remove deposits

The **ball knocker** removes even the most difficult drain deposits (e. g. concrete slime or cement clods). This special tool for mechanical pipe cleaning was developed especially with such use in mind. The spinning steel balls crush all deposits formed.

Warning: Not suitable for clay pipes!



Step 4

How to prepare the rehabilitation

The **grinder band head** is used to roughen the pipe walls. This highly improves the adhesion of liners or short liners. Exact preparation with the switchable spinning head – you roughen the pipe precisely at the spot where you have to place the liner.



Before

After



Mechanical tools to prepare the rehabilitation

The milling and cleaning tools presented here were developed especially for rehabilitation, they are made in Germany and consist of certified quality steel. Since this is only a small selection of our ample assortment of tools for mechanical pipe cleaning, check out our homepage www.ehle-hd.com or order our main catalogue related to mechanical pipe cleaning. If you have questions related to proper application or selection of our tools, please contact our consultants or our service hotline. Telephone: +49 (0) 34 292.65 420



with fine impregnation



with coarse impregnation

The **milling chain knocker with carbide band** is used for roughening of drain walls and removal of hard incrustations before rehabilitation. The milling chain knocker is also available as a ring chain knocker with 4 carbide band chains. This special design of a chain knocker makes it possible to disassemble, adjust, and reassemble as often as required.

 Also available with fine or coarse diamond impregnation.



The **saw tooth chain knocker** is especially used to remove roots and hard incrustations or glazing of clay pipes. The soldered carbide saw teeth have a far lower chain wear than the standard spiked chains.



The **ball knocker** removes even the most difficult drain deposits (e. g. concrete slime). The spinning steel balls crush all deposits formed.

 **WARNING: Not suitable for clay pipes!**



The **milling cutter** are used to extend holes, to mill and peel off difficult drain deposits, and to open covered drainage after a pipe rehabilitation. The spiral grooves facilitate material transportation (similar to auger operation). Thanks to the integrated coupling, the size could be reduced, which makes them highly bend-capable. Even 87° bends are not an issue.



The **expander milling cutter** is based on the same principle as the expander cutter. The carbide cutting edges make the difference. Thus this is the ideal tool for rehabilitation preparations (roughening) and for milling of hard incrustations. The excellent tool work for inliner work.



The **carbide hole saw cutters** were developed in particular for pipe rehabilitation. These tools are used to open drainage after rehabilitation, for example.

💎 **Also available with diamond impregnation.**



The **centering unit** for tools with active front side guides and centers the junk mill and hole saw cutters inside the drain. This allows an exact milling with the cutter tools.



The **wire wheel brushes** are used to clean and roughen PVC and cast iron drains before rehabilitation. The female / male assembly couples multiple wire wheel brushes in a row. This enables an optimum cleaning.



The **junk mill cutters** were designed for removal of very hard incrustations, concrete sludge and similar blockages. The carbide teeth are soldered on the auger face with a special method and then tempered. This way, the tool is resistant against impact and break and highly durable.

💎 **Also available with diamond impregnation.**



The **centering skids** for tools with front cutters guide junk mill and hole saw cutters along the drain centerline. This allows an exact milling with the cutter tools. Due to two ball bearings, the guiding skids do not rotate during operation, but remain stationary in the drain.



House connection packer 50 - 70 Multi-size DN 50 - 70 mm



① 50 - 70 mm
⌚ max. 2,5 bar
↔ 1.000 - 3.000 mm

Our **house connection packers DN 50 - 70 mm** with the Flex air coupling enable an excellent bend capability even with 90° bends. The flexible insert between packer coupling and air port is rigid enough to provide an optimum forward movement.

Application and properties:

- The special flexible air couplings are also suited for 90° bends, the rounded, lightweight aluminum cast couplings facilitate installation; they are complemented with drawbar eye and air coupling, raw Ø 35 mm
- Highly extendable hose (extension max. threefold outer diameter) with friction-resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Pressure	Contact length	Weight
2 002 100	House connection packer 50 - 70	1,000 mm	2.5 bar	Approx 900 - 800 mm	0.70 kg
2 002 102	House connection packer 50 - 70	1,200 mm	2.5 bar	Approx 1,100 - 1,000 mm	0.75 kg
2 002 101	House connection packer 50 - 70	1,500 mm	2.5 bar	Approx 1,400 - 1,300 mm	0.80 kg
2 002 103	House connection packer 50 - 70	2,000 mm	2.5 bar	Approx 1,900 - 1,800 mm	0.90 kg
2 002 105	House connection packer 50 - 70	2,500 mm	2.5 bar	Approx 2,400 - 2,300 mm	1.10 kg
2 002 107	House connection packer 50 - 70	3,000 mm	2.5 bar	Approx 2,900 - 2,800 mm	1.20 kg

i Special sizes available at request, we manufacture your packers with a max. length of 10 m.



House connection 80 - 125 Multi-size DN 80 - 125 mm



① 80 - 125 mm
⌚ max. 2,5 bar
↔ 600 - 6.000 mm

The **house connection packers DN 80 - 125 mm** were designed especially for short and long liners in the sewer rehabilitation. For us, lightweight construction and universal application were key. The red special extensible hose made of a soft rubber ensures very smooth contract surfaces and optimum transitions to the liner.

Properties:

- The rounded, lightweight aluminum cast couplings ensure an easy and trouble free installation; equipped with drawbar eye and air coupling, raw dimension Ø 65 mm
- Red, highly extensible hose (extension max. threefold outer diameter) with friction-resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Pressure	Contact length	Weight
2 002 121	House connection packer 80 - 125	600 mm	2.5 bar	Approx 500 - 400 mm	1.30 kg
2 002 122	House connection packer 80 - 125	800 mm	2.5 bar	Approx 700 - 600 mm	1.50 kg
2 002 123	House connection packer 80 - 125	1,000 mm	2.5 bar	Approx 850 - 700 mm	1.60 kg
2 002 120	House connection packer 80 - 125	1,200 mm	2.5 bar	Approx 1,050 - 900 mm	1.70 kg
2 002 125	House connection packer 80 - 125	1,500 mm	2.5 bar	Approx 1,350 - 1,200 mm	2.20 kg
2 002 127	House connection packer 80 - 125	2,000 mm	2.5 bar	Approx 1,850 - 1,700 mm	2.70 kg
2 002 129	House connection packer 80 - 125	3,000 mm	2.5 bar	Approx 2,850 - 2,700 mm	3.80 kg
2 002 131	House connection packer 80 - 125	6,000 mm	2.5 bar	Approx 5,850 - 5,700 mm	7.00 kg

i Special sizes available at request, we manufacture your packers with a max. length of 10 m.

Flex-Packer 100 - 150 Multi-size DN 100 - 150 mm



 100 – 150 mm
 max. 2,5 bar
 400 – 5.000 mm

The **Flex-Packers DN 100-150 mm** were especially designed for short and long liners in sewer rehabilitation. For us, lightweight construction and universal application were key. The red special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions between liner and the pipe to be rehabilitated.

Properties:

- The rounded, lightweight aluminum cast couplings ensure an easy and trouble free installation; equipped with drawbar eye and air coupling, raw dimension Ø 75 mm
- Red, highly extensible hose (extension max. threefold outer diameter) with friction-resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Pressure	Contact length	Weight
2 002 150	Flex-Packer 100 - 150	400 mm	2.5 bar	Approx 300 - 200 mm	2.30 kg
2 002 152	Flex-Packer 100 - 150	800 mm	2.5 bar	Approx 700 - 600 mm	2.80 kg
2 002 156	Flex-Packer 100 - 150	1,200 mm	2.5 bar	Approx 1,050 - 950 mm	3.30 kg
2 002 158	Flex-Packer 100 - 150	1,500 mm	2.5 bar	Approx 1,250 - 1,150 mm	3.60 kg
2 002 160	Flex-Packer 100 - 150	2,000 mm	2.5 bar	Approx 1,800 - 1,700 mm	4.20 kg
2 002 162	Flex-Packer 100 - 150	2,500 mm	2.5 bar	Approx 2,300 - 2,100 mm	4.80 kg
2 002 164	Flex-Packer 100 - 150	3,000 mm	2.5 bar	Approx 2,800 - 2,700 mm	5.40 kg
2 002 165	Flex-Packer 100 - 150	4,000 mm	2.5 bar	Approx 3,800 - 3,700 mm	6.60 kg
2 002 166	Flex-Packer 100 - 150	5,000 mm	2.5 bar	Approx 4,800 - 4,700 mm	7.80 kg

 Special sizes available at request, we manufacture your packers with a max. length of 10 m.

Bend packer Multi-size DN 50 - 165 mm



The **bend packers** of special rubber with embedded fabric facilitate the repair of the pipe, since the material does not kink and extends to its maximum in bends. Further, the slide properties of the bend packer are ideal, it even passes multiple bends to reach the spot to be repaired.

Application and properties:

- To repair bends in pipes and sewers
- Suitable for all pipe materials, may be combined with all conventional ECR glass fiber mats.
- Bend packer of quality rubber with embedded fabrics and low diameter, does not kink and ensures optimum extension at the pipe wall
- Temperature range between -20°C and +80°C

Item no.	Specification	Application	Length	Pressure	Contact length	Weight
2 002 030	Bend packer Ø 32	DN 50 - 70	1,250 mm	3.0 bar	Approx 1,000 mm	0.80 kg
2 002 031	Bend packer Ø 40	DN 70 - 80	1,250 mm	3.0 bar	Approx 1,000 mm	2.00 kg
2 002 032	Bend packer Ø 51	DN 100 - 125	1,250 mm	3.0 bar	Approx 1,000 mm	3.00 kg
2 002 033	Bend packer Ø 65	DN 150 - 165	1,250 mm	2.0 bar	Approx 1,000 mm	5.00 kg



Flex-Packer 150 - 250

Multi-size DN 150 - 250 mm



- 150 - 250 mm
- max. 1,5 bar
- 800 - 4.000 mm
- optional carriage

The **Flex-Packer DN 150 - 250 mm** is available in two versions, with pointed coupling or with wheel system as an option. This way, it is really easy to install short or long liners even over long distances. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner.

Properties:

- Lightweight couplings of cast aluminum, with drawbar eye and air coupling, raw dimension Ø 100 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction-resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

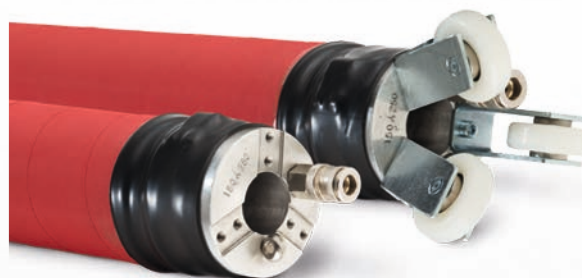
Item no.	Specification	Length	Pressure	Contact length	Weight
2 002 180	Flex-Packer 150 - 250	800 mm	1.5 bar	Approx 650 - 550 mm	3.00 kg
2 002 182	Flex-Packer 150 - 250	1,200 mm	1.5 bar	Approx 1,050 - 950 mm	3.70 kg
2 002 183	Flex-Packer 150 - 250	1,500 mm	1.5 bar	Approx 1,350 - 1,250 mm	4.20 kg
2 002 185	Flex-Packer 150 - 250	2,000 mm	1.5 bar	Approx 1,850 - 1,750 mm	5.00 kg
2 002 188	Flex-Packer 150 - 250	2,500 mm	1.5 bar	Approx 2,250 - 2,150 mm	6.00 kg
2 002 189	Flex-Packer 150 - 250	3,000 mm	1.5 bar	Approx 2,850 - 2,750 mm	6.70 kg
2 002 190	Flex-Packer 150 - 250	4,000 mm	1.5 bar	Approx 3,850 - 3,750 mm	8.50 kg
2 002 216	2-staged carriage	2 x 80 mm	-	-	1.10 kg

Special sizes available at request, we manufacture your packers with a max. length of 10 m.



Flex-Packer 150-250 D

Multi-size DN 150 - 250 mm with bypass



- 150 - 250 mm
- max. 1,5 bar
- 800 - 4.000 mm
- bypass 38 mm
- optional carriage

The **Flex-Packer DN 150 - 250 mm with bypass** enables the repair of pipe segments even in pipes with high water flow. No need for bypassing or pumps. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner.

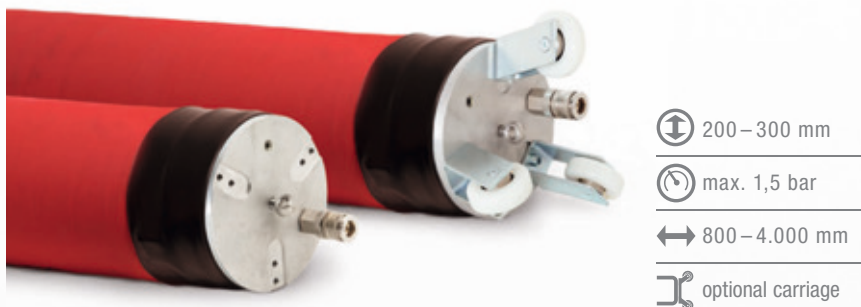
Properties:

- Lightweight couplings of cast aluminum with flexible passage Ø 38 mm, raw dimension Ø 100 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction-resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Bypass	Pressure	Contact length	Weight
2 002 200	Flex-Packer 150 - 250 D	800 mm	Ø 38 mm	1.5 bar	Approx 650 - 550 mm	4.00 kg
2 002 202	Flex-Packer 150 - 250 D	1,200 mm	Ø 38 mm	1.5 bar	Approx 1,050 - 950 mm	5.10 kg
2 002 204	Flex-Packer 150 - 250 D	1,500 mm	Ø 38 mm	1.5 bar	Approx 1,350 - 1,250 mm	5.90 kg
2 002 206	Flex-Packer 150 - 250 D	2,000 mm	Ø 38 mm	1.5 bar	Approx 1,850 - 1,750 mm	7.30 kg
2 002 208	Flex-Packer 150 - 250 D	2,500 mm	Ø 38 mm	1.5 bar	Approx 2,250 - 2,150 mm	8.60 kg
2 002 210	Flex-Packer 150 - 250 D	3,000 mm	Ø 38 mm	1.5 bar	Approx 2,850 - 2,750 mm	10.0 kg
2 002 212	Flex-Packer 150 - 250 D	4,000 mm	Ø 38 mm	1.5 bar	Approx 3,850 - 3,750 mm	12.7 kg
2 002 216	2-staged carriage	2 x 80 mm	-	-	-	1.10 kg

Special sizes available at request, we manufacture your packers with a max. length of 10 m.

Flex-Packer 200 - 300 Multi-size DN 200 - 300 mm



The **Flex-Packer DN 200-300 mm** was developed especially for sewer rehabilitation. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner. As an option, we offer a carriage to facilitate the installation of short or long liners over long distances.

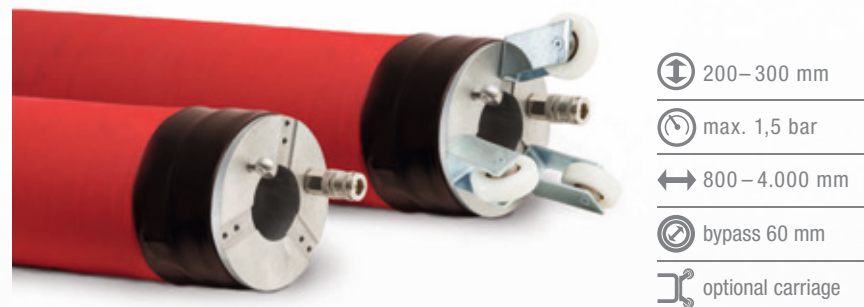
Properties:

- Lightweight couplings of cast aluminum, with drawbar eye and air coupling, raw dimension Ø 150 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction-resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Pressure	Contact length	Weight
2 002 220	Flex-Packer 200 - 300	800 mm	1.5 bar	Approx 650 - 550 mm	5.20 kg
2 002 222	Flex-Packer 200 - 300	1,200 mm	1.5 bar	Approx 1,050 - 950 mm	6.50 kg
2 002 224	Flex-Packer 200 - 300	1,500 mm	1.5 bar	Approx 1,250 - 1,150 mm	7.40 kg
2 002 226	Flex-Packer 200 - 300	2,000 mm	1.5 bar	Approx 1,750 - 1,650 mm	8.80 kg
2 002 228	Flex-Packer 200 - 300	2,500 mm	1.5 bar	Approx 2,250 - 2,150 mm	10.5 kg
2 002 229	Flex-Packer 200 - 300	3,000 mm	1.5 bar	Approx 2,750 - 2,650 mm	11.8 kg
2 002 231	Flex-Packer 200 - 300	4,000 mm	1.5 bar	Approx 3,750 - 3,650 mm	14.8 kg
2 002 216	2-staged carriage	2 x 80 mm	-	-	1.10 kg

 Special sizes available at request, we manufacture your packers with a max. length of 10 m.

Flex-Packer 200 - 300 D Multi-size DN 200 - 300 mm with bypass



The **Flex-Packer DN 200 - 300 mm with bypass** enables the repair of pipe segments even in pipes with high water flow. No need for bypassing or pumps. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner.

Properties:

- Lightweight couplings of cast aluminum with flexible passage Ø 60 mm, raw dimension Ø 150 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction-resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Bypass	Pressure	Contact length	Weight
2 002 240	Flex-Packer 200 - 300 D	800 mm	Ø 60 mm	1.5 bar	Approx 650 - 550 mm	7.50 kg
2 002 242	Flex-Packer 200 - 300 D	1,200 mm	Ø 60 mm	1.5 bar	Approx 1,050 - 950 mm	9.10 kg
2 002 244	Flex-Packer 200 - 300 D	1,500 mm	Ø 60 mm	1.5 bar	Approx 1,250 - 1,150 mm	10.5 kg
2 002 246	Flex-Packer 200 - 300 D	2,000 mm	Ø 60 mm	1.5 bar	Approx 1,750 - 1,650 mm	12.8 kg
2 002 248	Flex-Packer 200 - 300 D	2,500 mm	Ø 60 mm	1.5 bar	Approx 2,250 - 2,150 mm	15.2 kg
2 002 250	Flex-Packer 200 - 300 D	3,000 mm	Ø 60 mm	1.5 bar	Approx 2,750 - 2,650 mm	17.8 kg
2 002 252	Flex-Packer 200 - 300 D	4,000 mm	Ø 60 mm	1.5 bar	Approx 3,750 - 3,650 mm	22.5 kg
2 002 216	2-staged carriage	2 x 80 mm	-	-	-	1.10 kg

 Special sizes available at request, we manufacture your packers with a max. length of 10 m.



Flex-Packer 250 - 400

Multi-size DN 250 - 400 mm



- ⬆ 250 - 400 mm
- ⌚ max. 1,5 bar
- ↔ 1.000 - 4.000 mm
- ⌘ optional carriage

The **Flex-Packers DN 250 - 400 mm** were developed especially for sewer rehabilitation. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner. As an option, we offer a carriage to facilitate the installation of short or long liners over long distances.

Properties:

- Lightweight couplings of cast aluminum, with drawbar eye and air coupling, raw dimension Ø 205 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

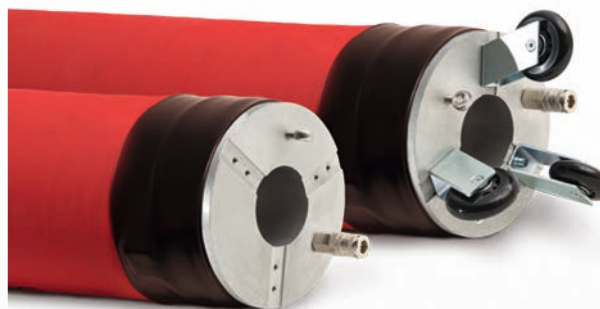
Item no.	Specification	Length	Pressure	Contact length	Weight
2 002 260	Flex-Packer 250 - 400	1,000 mm	1.5 bar	Approx 700 - 550 mm	11.0 kg
2 002 262	Flex-Packer 250 - 400	1,200 mm	1.5 bar	Approx 950 - 850 mm	12.2 kg
2 002 264	Flex-Packer 250 - 400	1,500 mm	1.5 bar	Approx 1,200 - 1,100 mm	14.2 kg
2 002 266	Flex-Packer 250 - 400	2,000 mm	1.5 bar	Approx 1,700 - 1,600 mm	17.2 kg
2 002 268	Flex-Packer 250 - 400	2,500 mm	1.5 bar	Approx 2,200 - 2,100 mm	20.5 kg
2 002 270	Flex-Packer 250 - 400	3,000 mm	1.5 bar	Approx 2,700 - 2,600 mm	23.8 kg
2 002 272	Flex-Packer 250 - 400	4,000 mm	1.5 bar	Approx 3,700 - 3,600 mm	30.2 kg
2 003 114	2-staged carriage	2 x 80 mm	-	-	1.20 kg

i Special sizes available at request, we manufacture your packers with a max. length of 10 m.



Flex-Packer 250 - 400 D

Multi-size DN 250 - DN 400 mm with bypass



- ⬆ 250 - 400 mm
- ⌚ max. 1,5 bar
- ↔ 1.200 - 4.000 mm
- ⌚ bypass 75 mm
- ⌘ optional carriage

The **Flex-Packer DN 250 - 400 mm with bypass** enables the repair of pipe segments even in pipes with high water flow. No need for bypassing or pumps. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner.

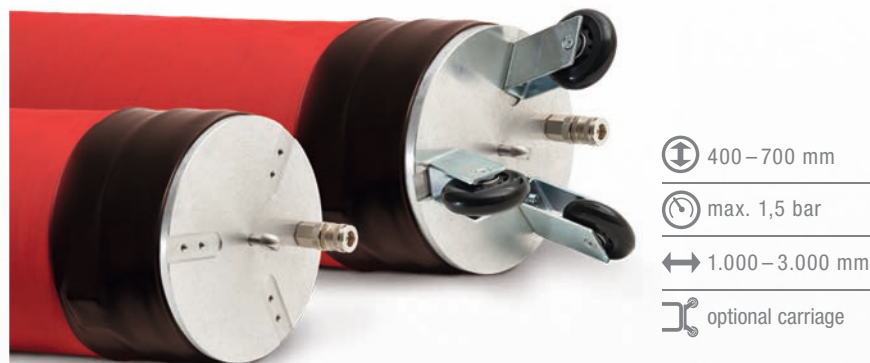
Properties:

- Lightweight couplings of cast aluminum with flexible passage Ø 100 mm, raw dimension Ø 205 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Bypass	Pressure	Contact length	Weight
2 003 100	Flex-Packer 250 - 400 D	1,200 mm	Ø 75 mm	1.5 bar	Approx 950 - 850 mm	15.5 kg
2 003 102	Flex-Packer 250 - 400 D	1,500 mm	Ø 75 mm	1.5 bar	Approx 1,200 - 1,100 mm	18.2 kg
2 003 104	Flex-Packer 250 - 400 D	2,000 mm	Ø 75 mm	1.5 bar	Approx 1,700 - 1,600 mm	22.6 kg
2 003 106	Flex-Packer 250 - 400 D	2,500 mm	Ø 75 mm	1.5 bar	Approx 2,200 - 2,100 mm	27.0 kg
2 003 108	Flex-Packer 250 - 400 D	3,000 mm	Ø 75 mm	1.5 bar	Approx 2,700 - 2,600 mm	31.3 kg
2 003 110	Flex-Packer 250 - 400 D	4,000 mm	Ø 75 mm	1.5 bar	Approx 3,700 - 3,600 mm	40.0 kg
2 003 114	2-staged carriage	2 x 80 mm	-	-	-	1.20 kg

i Special sizes available at request, we manufacture your packers with a max. length of 10 m.

Flex-Packer 400 - 700 Multi-size DN 400 - 700 mm



The **Flex-Packers DN 400 - 700 mm** were developed especially for sewer rehabilitation. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner. As an option, we offer a carriage to facilitate the installation of short or long liners over long distances.

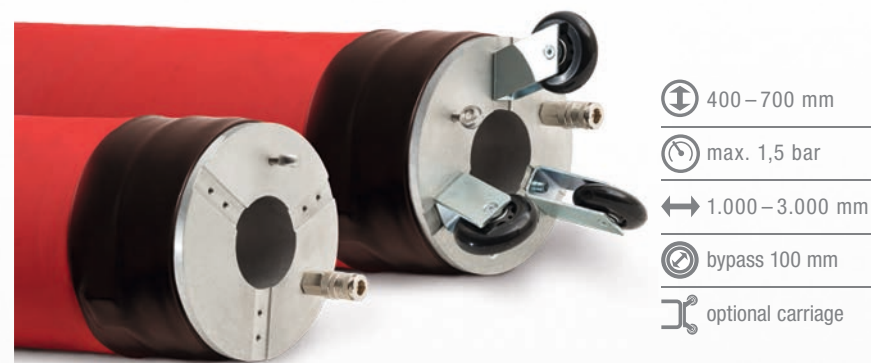
Properties:

- Lightweight couplings of cast aluminum, with drawbar eye and air coupling, raw dimension Ø 330 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Pressure	Contact length	Weight
2 003 001	Flex-Packer 400 - 700	1,000 mm	1.5 bar	Approx 700 - 400 mm	17.2 kg
2 003 002	Flex-Packer 400 - 700	1,500 mm	1.5 bar	Approx 1,100 - 700 mm	19.2 kg
2 003 003	Flex-Packer 400 - 700	2,000 mm	1.5 bar	Approx 1,600 - 1,200 mm	22.2 kg
2 003 004	Flex-Packer 400 - 700	2,500 mm	1.5 bar	Approx 2,100 - 1,700 mm	25.5 kg
2 003 005	Flex-Packer 400 - 700	3,000 mm	1.5 bar	Approx 2,600 - 2,200 mm	28.8 kg
2 003 114	2-staged carriage	2 x 80 mm	-	-	1.20 kg

 At request, we manufacture our Flex-Packer 400 - 700 also in special lengths.

Flex-Packer 400 - 700 D Multi-size DN 400 - 700 mm with bypass



The **Flex-Packer DN 400 - 700 mm with bypass** enables the repair of pipe segments even in pipes with high water flow. No need for bypassing or pumps. The red, special extensible hose made of a soft rubber ensures very smooth contact surfaces and optimum transitions to the liner.

Properties:

- Lightweight couplings of cast aluminum with flexible passage Ø 100 mm, raw dimension Ø 330 mm
- 2-staged 3-point carriage with 6 wheels available as an option
- Red, highly extensible hose (extension max. threefold outer diameter) with friction resistant external sheet (smooth wrap, chequered fabric)
- Temperature range between -25°C and +60°C

Item no.	Specification	Length	Bypass	Pressure	Contact length	Weight
2 003 010	Flex-Packer 400 - 700 D	1,000 mm	Ø 100 mm	1.5 bar	Approx 700 - 400 mm	20.2 kg
2 003 011	Flex-Packer 400 - 700 D	1,500 mm	Ø 100 mm	1.5 bar	Approx 1,100 - 700 mm	23.2 kg
2 003 012	Flex-Packer 400 - 700 D	2,000 mm	Ø 100 mm	1.5 bar	Approx 1,600 - 1,200 mm	28.2 kg
2 003 013	Flex-Packer 400 - 700 D	2,500 mm	Ø 100 mm	1.5 bar	Approx 2,100 - 1,700 mm	34.5 kg
2 003 014	Flex-Packer 400 - 700 D	3,000 mm	Ø 100 mm	1.5 bar	Approx 2,600 - 2,200 mm	38.8 kg
2 003 114	2-staged carriage	2 x 80 mm	-	-	-	1.20 kg

 At request, we manufacture our Flex-Packer 400 - 700 also in special lengths.

A photograph showing two workers in safety vests and hard hats using tracking equipment on a lawn. One worker is kneeling and operating a yellow tracking device, while the other is standing and holding a long, black, cylindrical probe. A yellow control unit with a screen is visible on a stand between them. The background features a large tree and a modern building with blue and white panels.

Tracking systems

... Analysis of the true line route

Tracking and checking of pipe systems

Tracking systems

We offer various tracking systems to pinpoint to damages and challenges in your pipe systems, e.g. pipe pigs or camera probes. We locate and document buried lines found on routes to facilitate future maintenance, planning, extension, and rehabilitation of infrastructure.

We explore the terrain to avoid damages on buried cables or pipes while excavating. We also locate with ease and reliability gate valves, gate actuators, manhole covers or other metallic objects.

Fog and smoke simulators

The check of sewers and correct sewer connections is of vital importance for water works. Fog and smoke simulators may be used for that purpose. In practice, this check is often needed in drainage systems which have been in operation for a longer time. Deficiencies in the construction may develop or modification of the system may have been necessary which affect its operation. In such cases, any wrong connections to sewers, inlets, outfalls or, in general, the route of lines in property drainage systems have to be located. In addition, these units help to find leaks in flat roofs, wastewa-

ter systems or tank farms. They may also be used to locate cavities and underminings in dams and dike constructions. Fire brigades use these units to simulate fires in disaster trainings or to verify the smoke distribution in systems and buildings.




Questions?

If you want to learn more about tracking systems or our fog and smoke simulators, please contact our consultants via our service hotline:

Telephone: +49 (0) 34 292.65 420

Icon overview

Meaning of the icons used in the section

-  Tracking systems (probes, lines, and metal object tracking)
-  Transmitter (frequency generators and probes)
-  Fog and smoke simulators



Pipe and cable locator

Type: Ridgid NaviTrack Scout



Specification - NaviTrack Scout	
Display	LCD
Probe frequencies	512 Hz, 640 Hz, 8 kHz, 33 kHz
Active pipe finding	512 Hz, 8 kHz, 33 kHz
Passive line tracking	AC 50 / 60 Hz,
Receiver antenna	1
Power supply	4 x C-batteries
Operating time	Approx 16 hours
Dimensions (L x W x H)	300 x 105 x 570 mm
Weight	1.40 kg

The **NaviTrack Scout** is a compact tracking device for cameras and probes. It is the ideal tool for users of SeeSnake cameras and other probes who may have to track live power supply lines.

- **Tracking** - be it camera systems with position transmitters, be it live power supply lines and passive AC cables
- **Simple tracking** - just follow the strongest signal and maximize signal level.
- **Precise tracking** - verify location on the map display.
- **Depth indication** - depth is automatically calculated and displayed when you are on top of the target.
- **Standard equipment** - plastics case, 4 x C-batteries, surface markers and clip

Item number	Specification	Version	Weight
R 19 243	NaviTrack Scout position receiver	Complete system	1.40 kg
R 12 543	Marking chips	-	0.02 kg



Pipe and cable locator

Type: Ridgid NaviTrack II



Specification - NaviTrack II	
Display	LCD
Probe frequencies	512 Hz, 640 Hz, 8 kHz, 33 kHz
Active pipe finding	128 Hz, 1 kHz, 8 kHz, 33 kHz, 93.8 kHz
Passive line tracking	AC 50 / 60 Hz,
Receiver antenna	2 (foldable antenna rod)
Power supply	4 x C-batteries
Operating time	Approx 16 hours
Dimensions (L x W x H)	390 x 180 x 800 mm
Weight	2.30 kg

The **NaviTrack II** is a tracking device for cameras and probes. It has a larger display than the NaviTrack Scout, a longer, improved, foldable antenna, a larger frequency range for die active pipe tracking and a permanent depth indicator.

- **Tracking** - be is camera systems with position transmitters, be is live power supply lines and passive AC cables
- **Simple tracking** - just follow the strongest signal and maximize signal level.
- **Precise tracking** - verify the location on the map display.
- **Depth indication** - permanent indication on the display (minimum depth of 35 cm)
- **Standard equipment** - plastics case, 4 x AAA batteries, surface markers and clip

Item number	Specification	Version	Weight
R 13 673	NaviTrack II position receiver	Complete system	2.30 kg
R 12 543	Marking chips	-	0.02 kg

Line transmitter **Transmitter type Ridgid NaviTrack**



Specification - line transmitter	
Output power	10 Watt, variable
Frequencies	128 Hz, 1 kHz, 8 kHz, 33 kHz, 93 kHz
Power supply	8x D batteries or power supply (230 V)
Operating time	Minimum 120 hours
Dimensions (L x W x H)	375 x 160 x 180 mm
Weight	4.00 kg

The **NaviTrack line transmitter** is a rugged and lightweight case unit used to locate active lines, buried cables, TV cables, phone cables, triple play cables, copper wires, and all other material capable of transmitting an electromagnetic signal. This device supports three signal types to be transmitted to buried lines, pipes or cables:

- **Direct connection** - a direct connection with the connection cable of the line.
- **Induction** - Induction transmission to the transmitter housing, without cable connection
- **Inductive signal clamp** - the induction clamp available as an option allows to feed a cable or a line with a signal if no direct connection is possible.
- **Standard assortment** - 2x 4 m long cable cable with clamps, ground rod, 8x D batteries

Item number	Specification	Version	Weight
R 15 003	NaviTrack line transmitter	Complete system	4.00 kg
R 20 973	Induction clamp for all Ridgid transmitters	-	0.40 kg

Position transmitter and adaptor **Remote and floating position transmitter**



Remote position transmitter



Floating position transmitter

The Ridgid position transmitters (512 Hz) are available in two versions. The **remote transmitter** may be connected with a pipe cleaner cable, a HP hose, or a pipe eel to allow tracking of the remote transmitter inside a pipe.

The **floating transmitter** helps to locate cesspools, it will be put in the sewer via the toilet or an inspection opening and will float to the cesspool.

- Both transmitters are battery-operated, a flashing LED indicates if the transmitters are switched on and operate.
- The transmitters fulfill the requirements of FCC class B and EN 55022 class B.

Item number	Specification	Version	Weight
R 16 728	Remote position transmitter (512 Hz)	Battery operation	0.18 kg
R 19 793	Floating transmitter (512 Hz) 2x pack	Battery operation	0.10 kg
2 004 472	Adaptor of pipe eel M8 IG for transmitter	M8 IG	0.02 kg
2 004 470	Transmitter spring coupling with pipe eel M10 IG	M10 IG	0.10 kg
2 004 471	Transmitter spring coupling with pipe eel M12 IG	M12 IG	0.10 kg
R 19 273	Adaptor for Ridgid transmitter assembled on 16 mm	Cable 16 mm	0.01 kg
R 19 268	Adaptor for Ridgid transmitter assembled on 22 mm	Cable 22 mm	0.01 kg

Other adaptors for the remote position transmitter available at request.



Pipe and cable locator

Type Vivax vLoc Pro 2 Rx



Specification - vLoc Pro 2 Rx	
Display	TFT-LCD 3.52"
Probe frequencies	45 frequencies adjustable (e. g. 512 Hz / 640 Hz / 33 kHz)
Active pipe tracking	Between 128 Hz and 200 kHz
Passive pipe tracking	AC 50 / 60 Hz, Radio 100 Hz KKS
Power supply	Li-Ion batteries or 6x 1.5 V AA batteries
Operating time	Max. 40 hours (Li-Ion batteries) Max. 6 hours (batteries operation)
Dimensions (L x W x H)	262 x 122 x 639 mm
Weight	2.10 kg

The Vivax **vLoc Pro 2 Rx** tracker is used to scan for the transmitter frequencies of vCam camera probes, iPEK camera carriages, vLoc 10 Tx transmitters, and the 45 selectable receiving frequencies of external position transmitters of various makers.

- 45 different receiver frequencies selectable (e. g.: 512 Hz / 640 Hz / 33 kHz)
- Including a large, daylight-capable LCD colour display and high speed processor
- Highly rugged, carbon fibre reinforced housing of insulation class IP 54
- Acoustic and visual signals of transmitter position, compass feature, and depth indication
- The receiver tracks probes at a depth of 7 metres and a vCam camera at a depth of about 4,5 metres

Item number	Specification	Version	Weight
2 004 410	vLoc Pro 2 Rx tracking device / battery charger	Complete system	2.10 kg
2 004 418	Transport case for vLoc Pro 2	-	0.25 kg



Line transmitter

Type Vivax vLoc 10 Tx - Sender



Specification - vLoc 10 Tx	
Output power	Up to 10 Watt power, variable
Frequency range	Between 512 Hz and 200 kHz
Power supply	NiMH batteries or 12x 1.5 V D batteries
Operating time	Max. 50 hours (NiMH) Max. 20 hours (Batteries)
Dimensions (L x W x H)	420 x 180 x 185 mm
Weight	3.00 kg (without batteries)

The **vLoc 10 TX** is a rugged and lightweight case unit used to locate active lines, buried cables, TV cables, phone cables, triple play cables, copper wires, and all other material capable of transmitting an electromagnetic signal. This device can feed a signal to buried lines, pipes or cables in three different modes and is also able to detect the signal direction (SD) and the cable fault location.

- **Direct connection** - a direct connection with the connection cable of the line
- **Inductive signal clamp** - the induction clamp available as an option allows to feed a cable or a line with a signal if no direct connection is possible
- **Route verification** - use the GOK50-R coiler (50 m) available as an option
- **Scope of delivery** - 3.5 m XLR cable with clamps, T-ground rod with 10 m cable and system bag

Item number	Specification	Version	Weight
2 004 440	vLoc 10 Tx frequency generator	Complete system	3.00 kg
2 004 441	Induction transmitter clamp for vLoc 10 Tx	Ø 100 mm	0.40 kg

Remote transmitter *Probes / pipe pigs, and adaptors*



MLS-55-33 transmitter (33 kHz, Ø 18.5 mm)



MLS-64-33 transmitter (33 kHz, Ø 64 mm)

The Vivax **position transmitters** (33 kHz) are battery operated, self-sufficient probes of different diameters, lengths, and tracking depths suitable for a wide choice of applications.

- **MLS-55-33 transmitter** - the Mini transmitter (33 kHz, Ø 18.5 mm) is suitable for exact tracking in depths up to 4 m below ground. We deliver the transmitter including connector adapters M12 IG, M10x1 AG, and M10 AG
- **MLS-64-33 transmitter** - the transmitter (33 kHz, Ø 64 mm) is suitable for exact tracking in depth up to 8 m below ground. We deliver the transmitter including connector adapters M12 IG, M10x1 AG, and M10 AG

Item number	Specification	Version	Weight
2 004 414	MLS-55-33 transmitter, 33 kHz (max. depth 4 m)	Ø 18.5 x 85 mm	0.10 kg
2 004 415	MLS-64-33 transmitter, 33 kHz (max. depth 8 m)	Ø 64 x 185 mm	0.20 kg
2 004 420	Spring coupling - transmitter to eel 6 mm	M10 IG to M6 IG	0.10 kg
2 004 425	Spring coupling - transmitter to eel 9/11 mm	M10 IG to M12 IG	0.10 kg

Push cable coiler (duct rod) *Type GOK 50-R - glass fibre tracking cable*



The **GOK50-R** push cable coiler enables the user to track non-metalic pipes and to verify their route and buried depth.

Depending on the coupling type, the push cable can be tracked over its complete length or only at the final point of destination. The integrated sliding contacts allow an easy winding and unwinding of the tracking cable even in tracking mode.

- **Glass fibre tracking cables (Ø 7 mm) are available in lengths of 50, 60, 100 and 150 m**
- Including connectors for routes and probes tracking - depending on the transmitter connector (e. g. vLoc 10 Tx). Both the complete route or only the tip of the push cable may be tracked
- Coiler made of rugged steel frame

Item number	Specification	Version	Weight
2 004 443	GOK 50-R push cable coiler	50 m	4.50 kg



Transmitter duct rod

Push eel type - glass fibre rod with braided copper



The **transmitter duct rod** with braided copper allows a route tracking and verification of non-metallic tubes. The line transmitter or a vLoc 10 TX feeds its signal in the coiler so the complete route of the push cable can be tracked. In addition, they are used to push tracking transmitters, coupling inspection equipment, pipe seals and rehabilitation units.

- Glass fibre rod with braided copper and rugged polypropylene sheet, Ø 6 - 11
- Start and end sleeves with coupling M6 for Ø 6 mm and M12 for Ø 9 mm
- Vertical coiler as rugged steel frame, available with and without wheel system

Item number	Specification	Version	Weight
2 004 701	Transmitter duct rod, Ø 6 mm, coupling M6	60 m	8.30 kg
2 004 702	Transmitter duct rod, Ø 6 mm, coupling M6	80 m, wheel system	9.60 kg
2 004 703	Transmitter duct rod, Ø 9 mm, coupling M12	80 m, wheel system	22.5 kg
2 004 704	Transmitter duct rod, Ø 9 mm, coupling M12	120 m, wheel system	31.3 kg
2 004 705	Transmitter duct rod, Ø 11 mm, coupling M12	120 m, wheel system	38.0 kg
2 004 706	Transmitter duct rod, Ø 11 mm, coupling M12	200 m, wheel system	50.0 kg



Duct rod

Push eel type - glass fibre rod



The **duct rod** is used to push tracking transmitters, coupling inspection equipment, pipe seals, and rehabilitation units.

- Glass fibre rod with rugged polypropylene sheet, Ø 6 - 11 mm
- Start and end sleeves with coupling M6 for Ø 6 mm and M12 for Ø 9 mm
- Vertical coiler as rugged steel frame, available with and without wheel system

Item number	Specification	Version	Weight
2 004 713	Duct rod, Ø 6 mm, coupling M6	40 m	7.20 kg
2 004 716	Duct rod, Ø 9 mm, coupling M12	60 m	11.2 kg
2 004 718	Duct rod, Ø 9 mm, coupling M12	80 m	13.0 kg
2 004 725	Duct rod, Ø 11 mm, coupling M12	120 m, wheel system	38.0 kg
2 004 726	Duct rod, Ø 11 mm, coupling M12	150 m, wheel system	43.0 kg
2 004 729	Duct rod, Ø 11 mm, coupling M12	200 m, wheel system	50.0 kg

Gate covers locator **Type FT80 - metal detector**



Specification - FT80	
Tracking depth	Up to 50 cm
Power supply	1x 9 V block battery E
Operating time	Max. 8 hours
Dimensions (L x W x H)	350 x 280 x 130 mm
Weight	1.20 kg

The **FT80** detector locates hidden gate covers, fire hydrant covers, and other, horizontal metal components with a minimum diameter of 10 cm. It detects all metals (also non-magnetic ones). The unit combines high sensitivity and simple operation with rugged design.

- Allows fast scanning of larger areas
- Rugged, long lasting construction with simple operation
- Detects metallic components with a diameter of 10 cm (also non-magnetic ones)
- Provides an acoustic signal via loudspeakers or optional noise-protected headphones.

Item number	Specification	Version	Weight
2 004 450	FT80 metal detector including Shoulder belt & battery	Complete system	1.20 kg
2 004 451	Transport case of the FT80 metal detector	-	1.00 kg
2 004 453	Headphone KR3 for FT80 metal detector	-	1.00 kg

Metal detector **Type Vivax VM880-B - metal detector**



Specification - VM880-B	
Tracking depth	Up to 2 m
Power supply	2x 9 V Block battery E
Operating time	Max. 26 hours
Dimensions (L x W x H)	1,090 x 88 x 67 mm
Weight	0.70 kg

Objects tracked	Max. Depth
Surveying pins	Up to 25 cm
Gate actuators	Up to 100 cm
Gate covers	Up to 120 cm
manhole cover	Up to 200 cm
Boundary marker (magnet)	Up to 100 cm

The **VM880-B** is a slide rod detector and allows an easy and reliable detection of gate valves, slide rods, well linings, and other iron or steel components, including magnetic markers. It detects only ferromagnetic items (iron and steel), but no non-magnetic objects like aluminum beverage cans, crown caps etc. The VM880-B is easy to operate and easy to adjust by means of the display, it works both in zero and in peak modes.

- Suitable only for locating of ferromagnetic objects
- Warning signal when close to live power cables

Item number	Specification	Version	Weight
2 004 452	VM880-B metal detector including Case	Complete kit	0.70 kg



Fog and smoke simulator

Type **FOG-Smoker 2F**



Specification - FOG-Smoker 2F	
Nominal voltage	230 V, 50 Hz
Evaporator capacity	1.2 kW
Fan turbine power	1.2 kW
Air output	Approx 50 litres/second
Fluid amount in the unit	5 litres
Hose port	Storz C-coupling
Protection type	IP44
Dimensions (LxWxH)	560 x 295 x 350 mm
Weight	18.2 kg

The **FOG-Smoker 2F** is a compact but powerful unit with integrated fan. This unit is especially suited for professional inspection of tubes, sewers, and tanks to locate leaks and wrong connections. The compact device has proven its usability in tracking for cavities, underminings in dams and dike constructions.

Complete kit: 1x fog unit type FOG Smoker, 1x telescopic rod max. 6 m long, 1x 7.5 m flexible, spiral PVC hose DN50 with C-coupling, 5 litres original fog liquid.

Item number	Specification	Version	Weight
2 004 301	FOG-Smoker 2F	Complete kit	28.7 kg
2 004 302	Rugged transport case provided for the FOG-smoker	-	6.80 kg
2 004 309	Fogging fluid Slow-Fog	5 litres vessel	5.00 kg
2 004 315	Telescopic rod	6m long	1.80 kg
2 004 312	Spiral PVC hose with coupling	7.5m long	3.70 kg
2 004 313	Extension hose with 2 C couplings	7.5m long	3.70 kg
2 004 314	Extension hose with 2 C couplings	15m long	7.00 kg
2 004 307	Cable remote control for steering	10m long	1.70 kg



Fog and smoke simulator

Type **MEGA Smoker**



Specification - MEGA-Smoker	
Nominal voltage	400 V, 50 Hz
Evaporator capacity	6.0 kW
Fan turbine power	2x 1.2 kW
Air output	100 litres/s
Fluid amount in the unit	10 litres
Hose port	Storz A-coupling
Protection type	IP44
Dimensions (LxWxH)	930 x 530 x 460 mm
Weight	56.0 kg

The **MEGA-Smoker** was developed for special trainings of fire brigades, e.g. professional fire simulation in disaster trainings in tunnels, industrial installations, storage halls, or for forest fire simulation. This powerful fog unit with integrated fan enables fire protection professionals to model smoke development and smoke distribution generated in buildings in case of a fire.

Complete kit includes: 1x fog unit type MEGA-Smoker, 1x 10 m flexible, spiral PVC hose DN100 with Storz A-coupling, 2x 5 litres original fog fluid Slow-Fog

Item number	Specification	Version	Weight
2 004 351	Fog unit Mega-Smoker	Complete kit	66.0 kg
2 004 309	Fogging fluid Slow-Fog	5 litres vessel	5.00 kg
2 004 352	Replacement hose Mega Smoker	10m long	10.0 kg
2 004 307	Cable remote control for steering	10m long	1.70 kg

Colour cartridges heat chamber For FOG-Smoker 2F



The **colour cartridges heat chamber add-on** is attached directly to the FOG Smoker 2F and the fog spiral hose. It allows to produce black fog for simulated fires needed in fire brigade trainings (e. g. burning tires) and red (e. g. burning chemicals).

i Our smoke cartridges burn for about 4 minutes (1 PU = 5 pieces) and shall not be used in water and sewer tubes.

Item number	Specification	Version	Weight
2 004 355	Heat chamber add-on	For FOG smoker	2.60 kg
2 004 356	Smoke cartridges - black colour	1 PU = 5 pieces	0.38 kg
2 004 359	Smoke cartridges - red colour	1 PU = 5 pieces	0.38 kg

Drain tracing dye



The **drain tracing dye** is used to dye liquids. Whatever the application is - water seeping, leaky sewer lines, leaky flat roofs, wet basements or route of sewer lines – it is often vital to know the source, the destination, and the flowing characteristics (e. g. of water).

i Table of Contents: 200 g dyeing concentrate – 200 g of powder dye 15,000 - 20,000 litres of water free of chemicals. The product is harmless to human and animals, e.g. to aquatic organisms and is used acc. to the EC directives in drinking water systems, agriculture, and communities.

Item number	Specification	Version	Weight
2 004 320	Drain tracing dye concentrate	Red colour	0.24 kg
2 004 321	Drain tracing dye concentrate	Blue colour	0.24 kg
2 004 322	Drain tracing dye concentrate	Yellow colour	0.24 kg
2 004 324	Drain tracing dye concentrate	Lila colour	0.24 kg
2 004 325	Drain tracing dye concentrate	Orange colour	0.24 kg
2 004 323	Drain tracing dye concentrate	Fluorescent green	0.24 kg



Van manufacturing

... the right van for any purpose!

Van manufacturing

Experience and innovation

Experience cannot be replaced by anything. We have manufactured special and TV inspection vans for more than 20 years now, clients include sewer specialists and communities. We provide vans for all purposes worldwide and benefit from the perfect combination of experience and innovation everyday.

Each of our vans is tailored and manufactured to the requirements and applications of our clients. This way, very special platforms are equipped based upon decades of experience in fitting, a dedication for technology and know-how gleaned from daily practice.

We design and deliver a tailored solution in Ehle quality, fit for your requirements of application and with absolute reliability, based on a large assortment of van platforms, HP jetting units, power supplies or **MiniCam** camera systems.

Further, we deliver combinations of different van setups from the same source. Whatever you need

- camera, sewer pressure test, or jetting vans or their combinations, we professionally design, combine, and ensure efficiency in use – with the minimum weight possible.

Ehle-HD van setups:

- ① *TV inspection trucks*
- ② *TV well inspection vans*
- ③ *Sewer pressure test vans*
- ④ *Jetting vans*
- ⑤ *Combined vans*
- ⑥ *Special vans*



TV/SAT inspection system 1

- Automatic cable drum including 500 m cable
- Satellite system for inspections of inlets

Storage room 2

Heavy load pull-outs for carriages and accessories

3 AIR inspection equipment

- Measuring equipment for air overpressure and vacuum tests
- Compressors
- Pressurized air control by means of a special panel of connectors

4 Filler coiler

- Electrically operated coiler with 50 m vacuum and pressure hoses

InRoKa-AIR Test vans

The InRoKa-AIR inspection vans are real all-rounders. The combination makes the difference – including TV inspection system, special multilift, HP flusher units and many more.

We provide vans with bespoke setups according to our clients' requirements and conditions of operation. Whatever you need - be it a small and nimble van for the town and underground parking space, or a universal platform for wide application ranges - we deliver your tailored setup with ample space for accessories or combinations of these.

Select from the various concepts of power packs and compressors. Whatever you need, we deliver: combinations of TV inspection systems with leak inspection kits, push systems, carriages, manhole inspection or HP flushing installations. We manufacture the testing systems on our premises and deliver all the accessories needed.

Our ideas and manufacturing capabilities ensure high quality. We consider experience and preferences of our clients and design and deliver solutions tailored for your requirements in the field which are absolutely reliable. You need not adapt



» AIR inspection equipment with pressurized air supply «

to your new van, but the van is adapted to your daily needs instead.

AIR inspection equipment

All AIR test systems are designed and manufactured according to your specifications. You specify the filling and compressor systems, the measuring equipment for air overpressure, vacuum, and water tests, the desired ports and pressurized air controls with bespoke panels – any variation is possible.



» Back room with combined setup - TV inspection equipment «

Camera equipment

Hit the street and take everything you ever need along. We respond to this preference of many clients with our wide choice of fitting variants. The AIR test van with additional TV inspection system makes the van a real all-rounder. Our Indukom sleeve test system makes it easy to perform camera inspections of sleeves. The camera carriage positions the camera probe in the test area exactly to the spot. This way, you can see and inspect the sleeve live.



InRoKa AIR-compact
Small van model

The use in town and underground parking spaces in particular makes low height and size, and high maneuverability a must. Our compact designs meet all your requirements.

The AIR-compact is our smallest set-up and fits into any minivan. It provides also space for a TV inspection system, e.g. a push system, a carriage system with automatic cable drum or an extra storage room for multiple test and inspection units and accessories.



InRoKa AIR-standard
Van box model

The InRoKa AIR standard model based upon a van (3.5 to 7 metric tons) is the platform for the daily use as a pressure tester. We equip vans with our proven Ehle setup modules, or we tailor the setup directly for the client according to his daily challenges, as you can see in the picture. The picture shows a setup with an additional Multi-Lift and a special protective cover against weather influence with crane and trolley. This van setup is perfect for the handling of heavy loads and field operations in a larger service area, where you have to take everything with you.



InRoKa AIR-comfort
Van box-body model

The InRoKa-AIR-comfort is our design with maximum space and allows a multitude of setup variants. A wide choice of applications requires enough storage room for inspection and filling equipment or an additional camera system to provide the operator with optimum working conditions. The setup concept of our open van with passage between operator room and back area makes it possible to fulfil all these requirements. The room provided hosts all your test and inspection units and individual combinations.



Operator room

Our operator room designs provide optimum working conditions for the inspector, ample space and enough room for equipment and accessories. We focused on ergonomics and high usability. Select what you need from our wide choice of Ehle modules – simple shelves, drawers for office work, a seat bench or a locker.

If you have special requirements and needs, we plan your bespoke solution as you specify them.



Air supply

We offer not only bespoke AIR inspection vans but also tailored pressurized air and pneumatic systems. We install screw or piston compressors inside or below the platform, a side channel compressor to generate overpressure or vacuum for the tests and various drums with filling and measuring hoses of a max. diameter of 1" – everything is possible.

As a full-service provider, we equip your van with all accessories needed, e.g. shut-off and testing systems, rehabilitation units, and many more. Select what you need from our wide choice of accessories and products.



Power supply

Our set-ups offered are really unlimited. You may decide among different designs, e.g. with an extendable fuel oil power pack, a Dynawatt power supply with extra generator inside the engine compartment or you may have the generator and screw compressor installed below the platform. This provides the storage room needed in the van for inspection and filling equipment.

Working bench 1

The van includes a working bench of stainless steel, 4.5 m long, which can be extended by 1.5 m. The laminate and foil dispensers support quick and efficient work. The many practical shelves and boxes help you to keep organized.

HP flushing system 2

HP system with auxiliary drive and an output of 70 litres / 140 bar. HP coiler with 120 m 1/2" HP hose and cross leadscrew.

Water tank 3

Water tank of plastics / PE or stainless steel with a capacity of 700 - 2,000 litres.

5 Lateral entry

The lateral entry enables easy access and supports the ventilation of the van cabin. A roof ventilator was installed in addition.

4 Generator installed below the platform

A generator was installed below the platform as an additional power supply. The installation below the van platform provides more space in the cabin and reduces the noise level.



Body set up Rehabilitation

The InRoKa-KD rehabilitation vans are tailored to the requirements and needs of our clients. A setup based upon the 5t MB Sprinter platform with additional HP system is the ideal van to clean drainage problems of premises and buildings.

Our body vans with short and inliner equipment will prove their value with the first use in practice. TV and flushing equipment may be added as an option. All vans are designed in close cooperation with you and delivered exactly according to your specifications and requirements.

The high quality and the many tailored details will make your work on site easier and faster. The time efficiency and safe handling make it the perfect work machine, tailored to your special needs and fit for a long and trouble free service.

A robot system for milling and rehabilitation operations may also be installed with ease. Questions? Please contact our consultants to discuss the specification of your bespoke van.



Hydraulic high pressure jetting system with auxiliary drive

The hydraulically driven DrainJet 70/140 may be used to clear pipes with a maximum diameter of 400 mm, depending on the power available. Benefit is the compact and lightweight construction. This is a basic requirement for a meaningful TV inspection and the preparation of professional rehabilitation - without the use of an additional TV inspection and flushing van.

Special body setup of rehabilitation van

The quality stainless steel setup will meet all your requirements, in particular in terms of space, storage room, and quality – this design with a working bench 4.5 m long can be extended to 6 m. The laminate roll dispenser, the storage for synthetic resins and tools, and many other installations, like TV inspection, high pressure or rehabilitation systems, are meticulously planned and tailored to your needs in every detail.

Trailer setups Rehabilitation

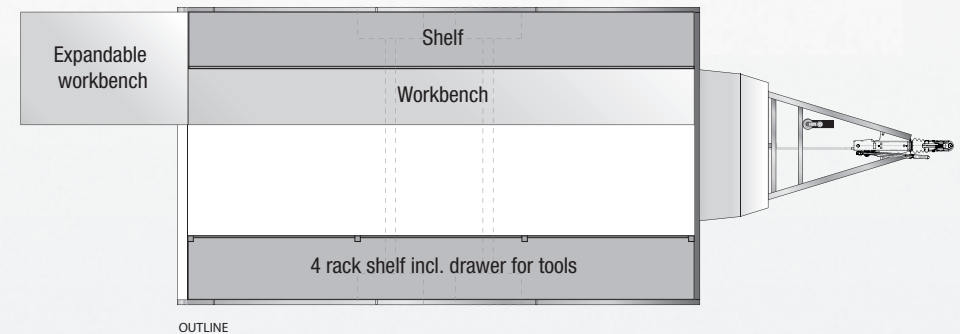
Beside our rehabilitation vans, we also offer tailored rehabilitation trailers – each rehabilitation team will receive its optimum working environment.

These heat insulated trailers have a special protective cover against weather influence, a fused power distributor, excellent working illumination and power sockets optimized according to your practical needs.

If requested, we deliver your rehabilitation trailer also as independent machine with its own power supply. In addition, the trailers can be complemented with a compressor, a HP flushing system, or a milling robot.

We pay particular attention to the ergonomic setup to facilitate the daily work with the equipment. Since organization is half the battle, our rehabilitation trailers provide plenty of organized storage room and storage boxes for tools, packers, and supplies – stored for safe transport.

All vans and/or trailers are fitted in our own premises by trained and skilled workers. This enables us to customize all requirements the professional way. Individual planning, ergonomic design, quality and comprehensive service go without saying.





Expandable workbench

Similar to its bigger counterpart, the body setup, the trailer as an extensible (foldable) work bench of stainless steel. This way, a level working bench of any length can be achieved.

The laminate and foil roll dispensers inside the trailer make work easier and faster. Bespoke setups and the working areas fitted with tools and material make the working place complete and ensure a fast and professional application.



HP jetting system

The small high pressure water jetting system **InRoKa Mini 40-100** was developed by our own. This very compact system, with 40 litres and 100 bar output and integrated water tank, is designed especially for cleaning and preparation of building drainage before a rehabilitation is started.

It goes without saying, we also have larger systems for installation on a trailer to offer.



Power supply

Whatever you need - external power supply, power supply from a tractor, the independent version with generator at the drawbar or installed inside the trailer – we deliver your power supply as you need it and specify it.

We provide the power and pressurized air supplies according to your requirements, purpose of application, and dimensions specified. This way you are able to integrate your existing rehabilitation system, milling robot, or heating water system in a new setup.

Our services - Your benefits at a glance



EHLE-HOTLINE

Place your order or inquire our technical consultants. Use our hotline:

☎ **+49 (0) 34 292.65 420**

We are available between 7 a.m. and 5 p.m., Monday to Friday. Or simply contact us by email to: service@ehle-hd.com – we will call you right back!



Technical consultancy

Standards are high for professional sewer inspection, cleaning and rehabilitation. So you may have high expectations on a competent product consultancy. We offer in-depth technical consultancy.

If you have questions relating to the application field, the correct choice of a product for a task planned or to special solutions – do not hesitate to contact our trained technical consultants with all your questions and challenges.



Shipment as required

We make sure that you have the right products available at your site, at the right place and at the right time, to ensure that you can start working without delay.

Standard delivery: We guarantee that all goods ordered before 12:00 noon will be dispatched from the warehouse the same working day.

Express delivery: It goes without saying that we also offer express delivery. If you place your order before 2 p.m., you will receive the goods within the next working day if your site is located in Germany. Please do not hesitate to inquire about our prices and as for further information.

Delivery on site: If requested, we deliver directly to your construction site. We charge an additional flat fee for this service.



14 days trial guaranteed

Our products meet the highest requirements. We are fully confident in our services. However, see for yourself – without any risk. If the goods or products do not meet your expectations, simply return them to us within 14 days of receipt of our invoice.



Certified service provider and authorized dealer

All **MiniCam** sewer inspection hardware meets the highest quality standards. However, if there is an issue - no problem! We are a certified service provider and authorized dealer. Our skilled technicians repair interruptions quickly and reliably.

Innovations that enable you. We design solutions.





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