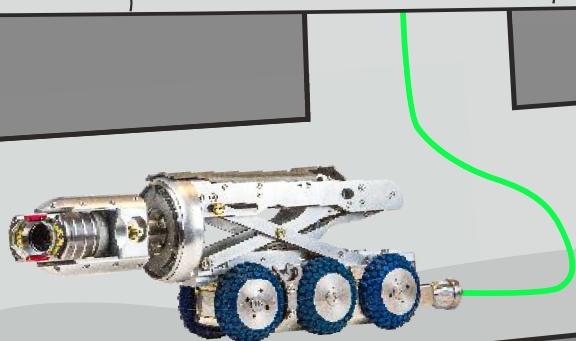
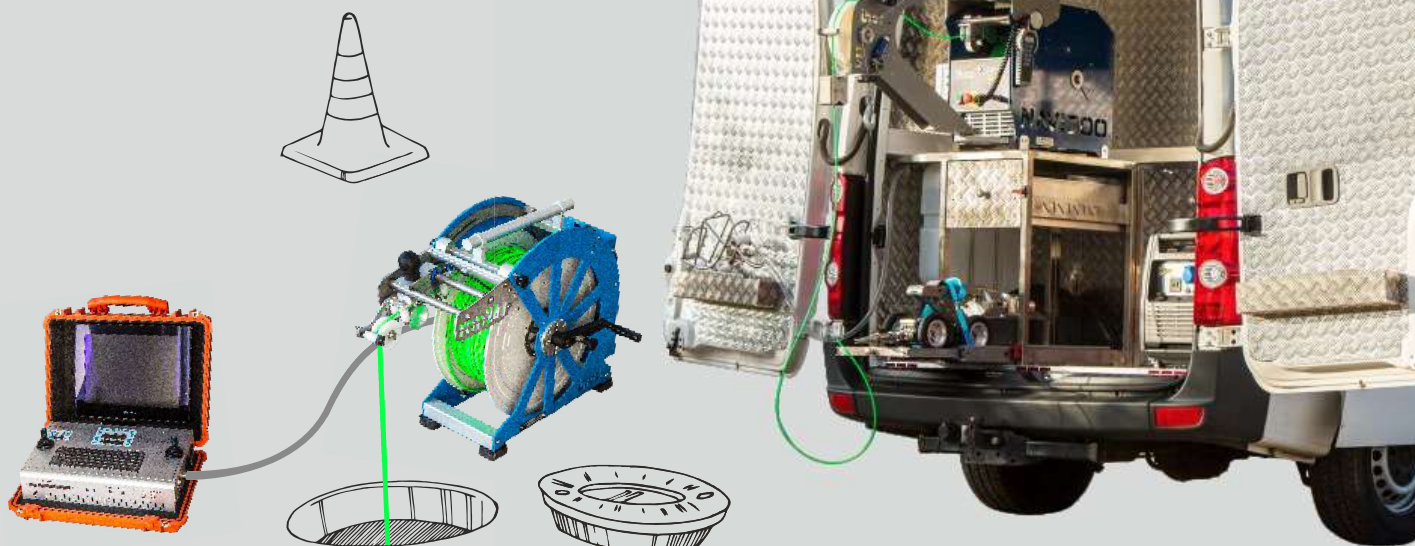




SEWERAGE TECHNOLOGY

2022



**CAMERA
SYSTEMS**



www.ibos.cz



SEWERAGE TECHNOLOGY

Catalogue

CAMERA SYSTEMS



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Agency for Czech Republic and Slovak Republic:



Introduction

Sewerage is the infrastructure that conveys sewage or surface runoff (stormwater, meltwater, rainwater) using sewers. It encompasses components such as receiving drains, manholes, pumping stations, storm overflows and screening chambers of the combined sewer or sanitary sewer. Sewerage ends at the entry to a sewage treatment plant or at the point of discharge into the environment (source: Wikipedia).

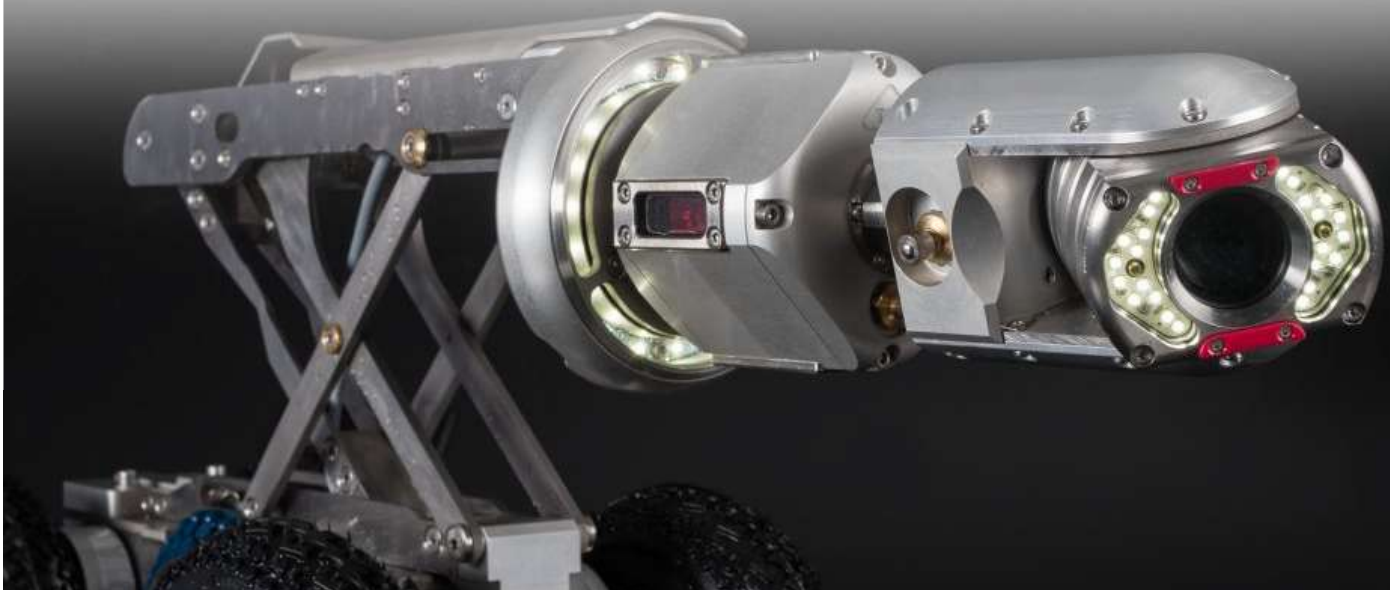
So the brief definition. We are IBOS and produce the technology, which look after the functionality of this network. In order it will be passed through and sealed, where it should be and work exactly according to customer´s requirements. Our products monitor condition of the network, clean it, repair and take care of it´s good condition. They carry out the work, which is not visible on the surface, but which significantly contributes to daily comfort of all of us.

Traditional resources as well the modern technology help us to perform the work. Team of talented and motivated staff, who know, that only finding the new ways and modern solutions will keep us among the best. We will be glad, if you become our partner.

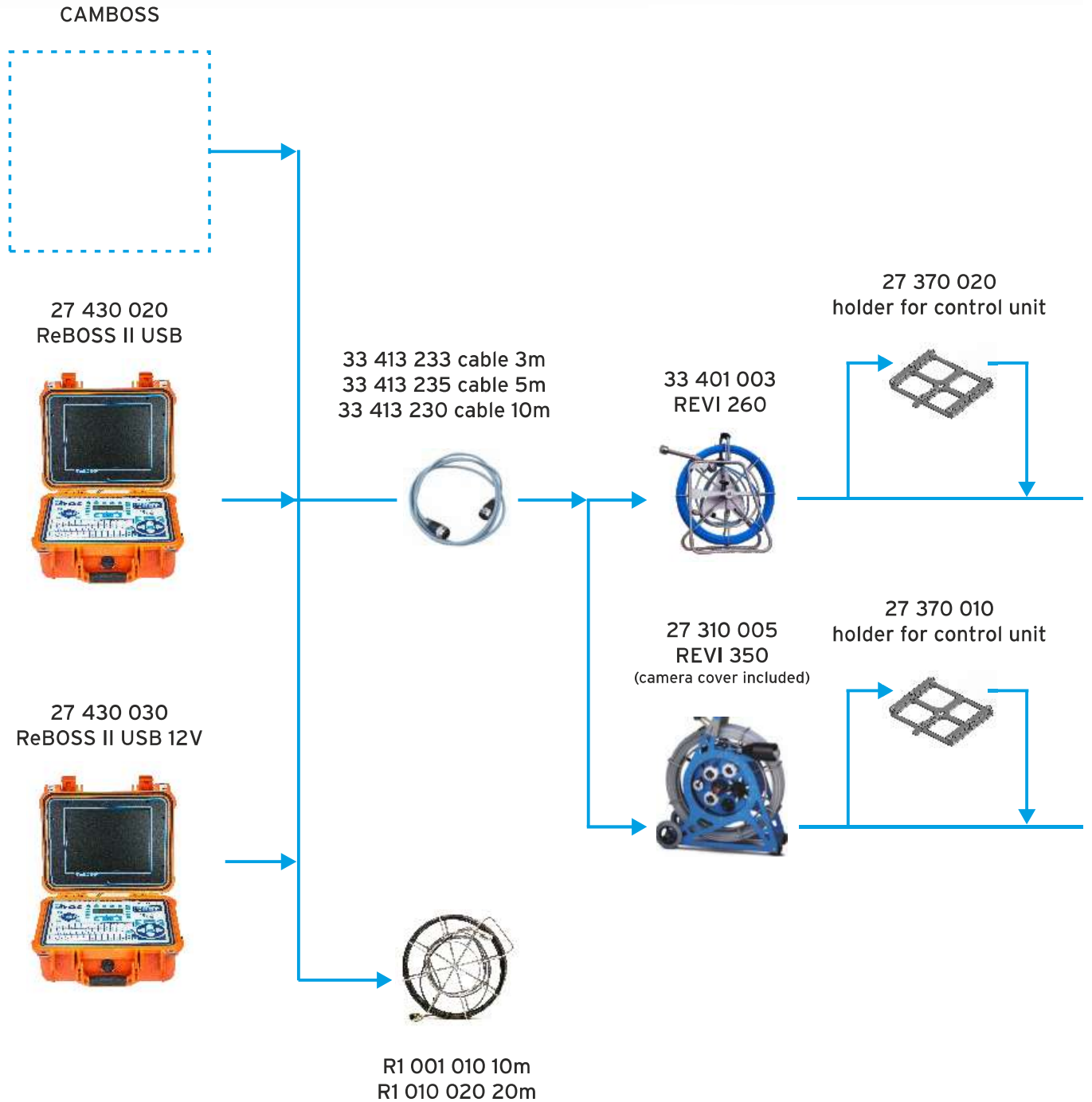
The most modern equipment for pipe monitoring from the producer IBOS a. s. represents an effective instrument for investigation of pipe condition and prevention of emergency situations. On the basis of the monitoring result you can effectively plan the investment into the renovation of pipe system.

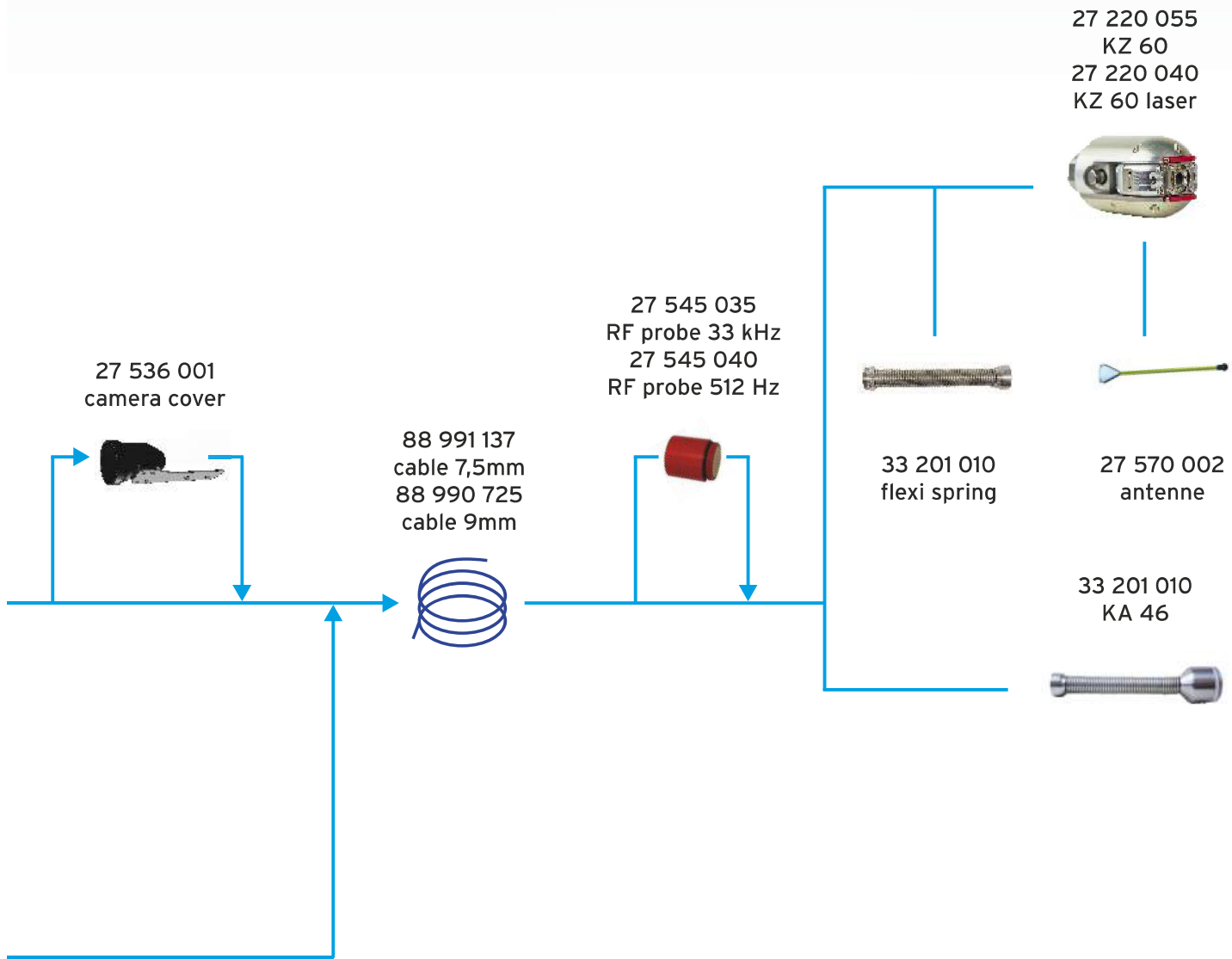
You can choose from the variety of equipment for monitoring. From push camera REVI 260, which is designed for house pipes, up to the highly-developed system CamBoss IV, which you can use as a mobile version or as a built-into the car.

Self-propelled system has compared to portable systems more functions. The equipment can lift the camera head and turn it into different angles. You can measure falls, with help of the lasers find out the pipe ovality, cracks and deformations of pipes. Signal from the camera is transferred via cable to monitor in the vehicle, where it is evaluated by operators.



Overview of REVI camera series compatibility - push-rod system





REVI 90

REVI 90 Camera designed for small pipe inspection DN40 - 50 mm.



TECHNICAL SPECIFICATION

CONTROL UNIT - different options

CamBoss control unit

15" LCD industrial colour display, inputs DVI and CVB-S, integrated PC, display of actual video Picture with possibility of switch to PC mode, optional SW DigiCAN (display of date, time, measuring of unwinded cable length, inclination, swing, rotation, pressure, etc.) and creating of documentation to damaged spots

CamBoss PC Battery

Mobile battery control unit with touchscreen 12,1". With help of DigiCan SW - display of diverse data in the picture (date, time, measuring of unwinded cable length, inclination, swing, rotation, pressure, etc.) and creating of documentation to damaged spots.

ReBoss USB / ReBoss USB 12V

Battery control unit designed for REVI 90/REVI 260/REVI 350/REVI 450 and camera heads KA46/KZ60. 10"LCD 800x600 industrial colour screen, control panel, keyboard. Power 230V AC or 12V DC (according to chosen variant).

CAMERA HOUSING

diameter 20 mm, length 28mm + 100 mm spring behind the camera head

CAMERA RESOLUTION

600 TVL/min. lighting 0,5 LUX, standard PAL, recording speed 50 images /second

PUSH ROD

9 mm in length 10 - 20 m according to customer´s wish. 8x LED lights in camera head

ACCESSORIES

Camera in offer without centering part



REVI 260

Portable colour camera designed for monitoring of house drainage including connections in range DN 50 to DN 300. The camera system can be used with axial camera head KA46 and/or rotary camera head KZ60. The camera head is manually inserted into the pipe with help of special reinforced cable with diameter 7,5 mm or 9 mm. The system is controlled by control unit with or without PC.



TECHNICAL SPECIFICATION

CONTROL UNIT - different options

CamBoss control unit

15" LCD industrial colour display, inputs DVI and CVB-S, integrated PC, display of actual video Picture with possibility of switch to PC mode, optional SW DigiCAN (display of date, time, measuring of unwinded cable length, inclination, swing, rotation, pressure, etc.) and creating of documentation to damaged spots

CamBoss PC Battery

Mobile battery control unit with touchscreen 12,1". With help of DigiCan SW - display of diverse data in the picture (date, time, measuring of unwinded cable length, inclination, swing, rotation, pressure, etc.) and creating of documentation to damaged spots.

ReBoss USB / ReBoss USB 12V

Battery control unit designed for REVI 90/REVI 260/REVI 350/REVI 450 and camera heads KA46/KZ60. 10" LCD 800x600 industrial colour screen, control panel, keyboard. Power 230V AC or 12V DC (according to chosen variant).

CABLE DRUM

Material - stainless steel, capacity - 100 m (push rod 7,5 mm), 80 m (push rod 9 mm), sensor of unwinded cable length, axial brake, weight - ca. 7 kg (without push-rod) and ca. 11 kg with 50 m push-rod

CAMERA HEAD KA46 OR KZ60

Axial camera head KA46

Axial, self-levelling, colour CCD camera, resolution 470 TVL, light sensitivity 1 lux, lights 6x LED, diagonal visual angle ca. 68°, waterproof to 1 bar, material - stainless steel housing

Rotary camera head KZ60

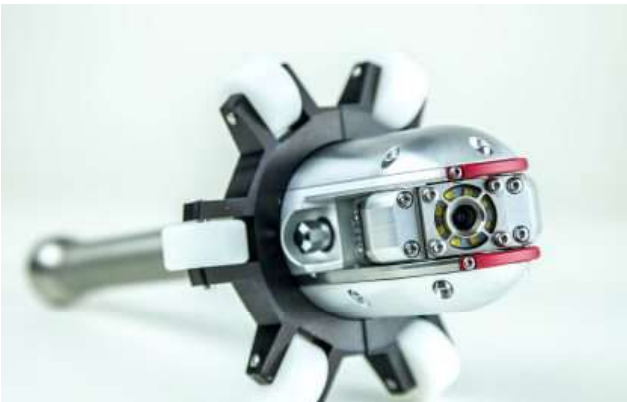
Colour CCD camera, resolution 307.200 pix, light sensitivity 0,3 lux by F1,2, range angle 50°, 8x LED, swing 2x125°, rotation 360° (infinity), waterproof up to 1 bar, built-in pressure sensor for monitoring of tightness

PUSH ROD

Diameter 7,5 mm or 9 mm, standard lengths 50, 60, 80 m

ACCESSORIES

Probe 33 kHz or 512 Hz for location determining up to depth 3 m, centring, and other



REVI 350

Push-rod camera system designed for monitoring of pipes DN 50 - 300 mm. The system can be used with axial camera head KA46 or rotary camera head KZ60 (also compatible with camera system REVI 260). The reel is equipped with wheels for easy handling. The capacity of the reel is up to 120 m - depending on the cable diameter (7,5 or 9 mm). On the top part it is possible to equip the reel with holder for fastening the control unit ReBoss, from the side there are the transport holders for centring parts.

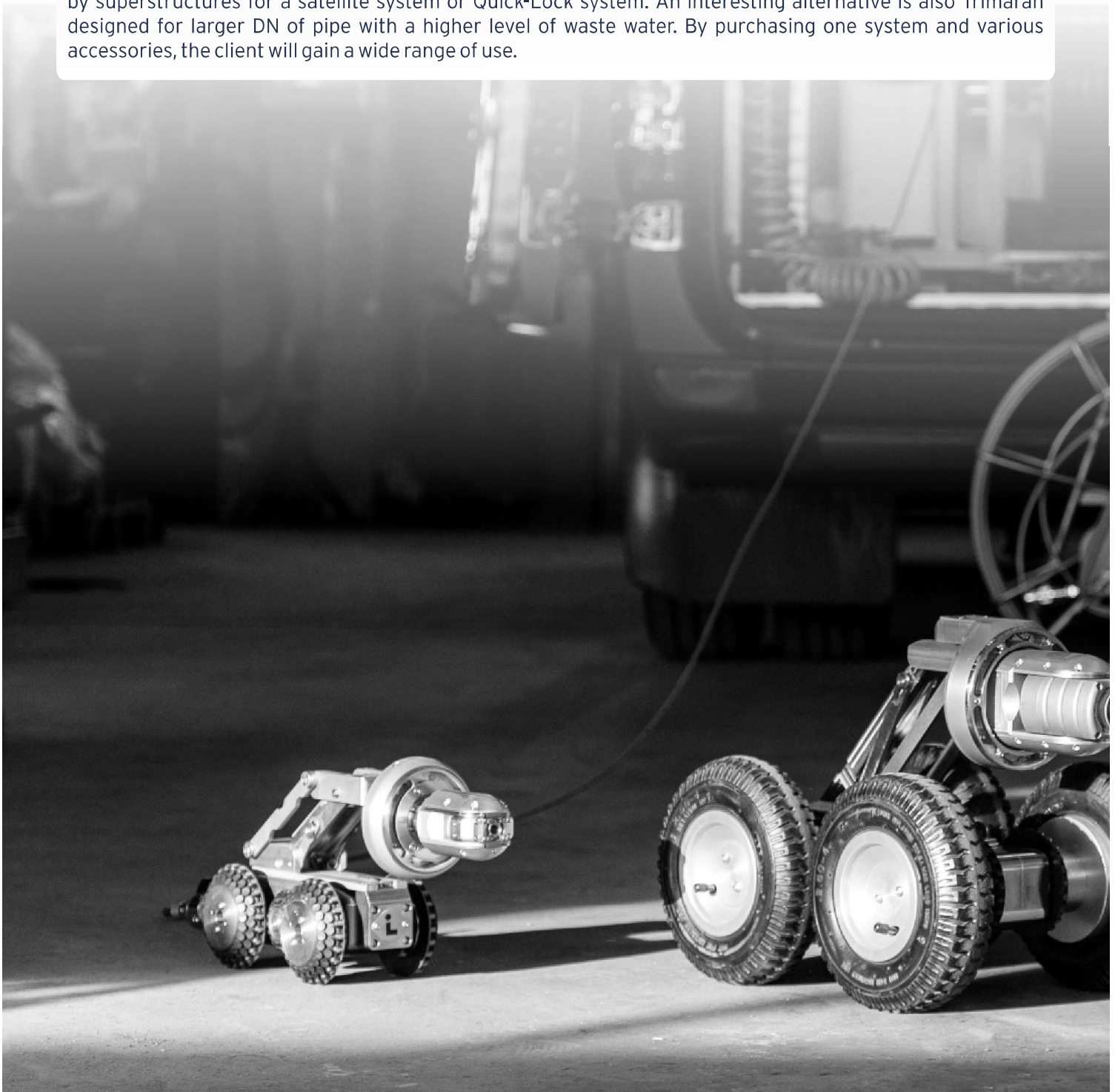


TECHNICAL SPECIFICATION	
CONTROL UNIT - different options	
Same options as by push rod camera REVI 260	
CABLE DRUM	
Material - stainless steel, aluminium, capacity - 100 m (push rod 9 mm), sensor for measuring of unwinded cable length, axial brake, weight - ca. 17 kg (without push rod and centring)	
CAMERA HEAD - different options	
Axial camera head KA46	Axial, self-levelling, colour CCD camera, resolution 470 TVL, light sensitivity 1 lux, lights 6x LED, diagonal visual angle ca. 68°, waterproof to 1 bar, material - stainless steel housing
Rotary camera head KZ60	Colour CCD camera, resolution 307.200 pix, light sensitivity 0,3 lux by F1,2, range angle 50°, 8x LED, swing 2x125°, rotation 360° (infinity), waterproof up to 1 bar, built-in pressure sensor for monitoring of tightness
PUSH ROD	
Diameter 7,5 mm or 9 mm	
CAPACITY	
7,5mm push-rod/120m or 9mm push-rod/100m	
ACCESSORIES	
Probe 33 kHz or 512 Hz for location determining up to depth 3m, centring, antenna for inspection of connections (camera head Kz60), and other	



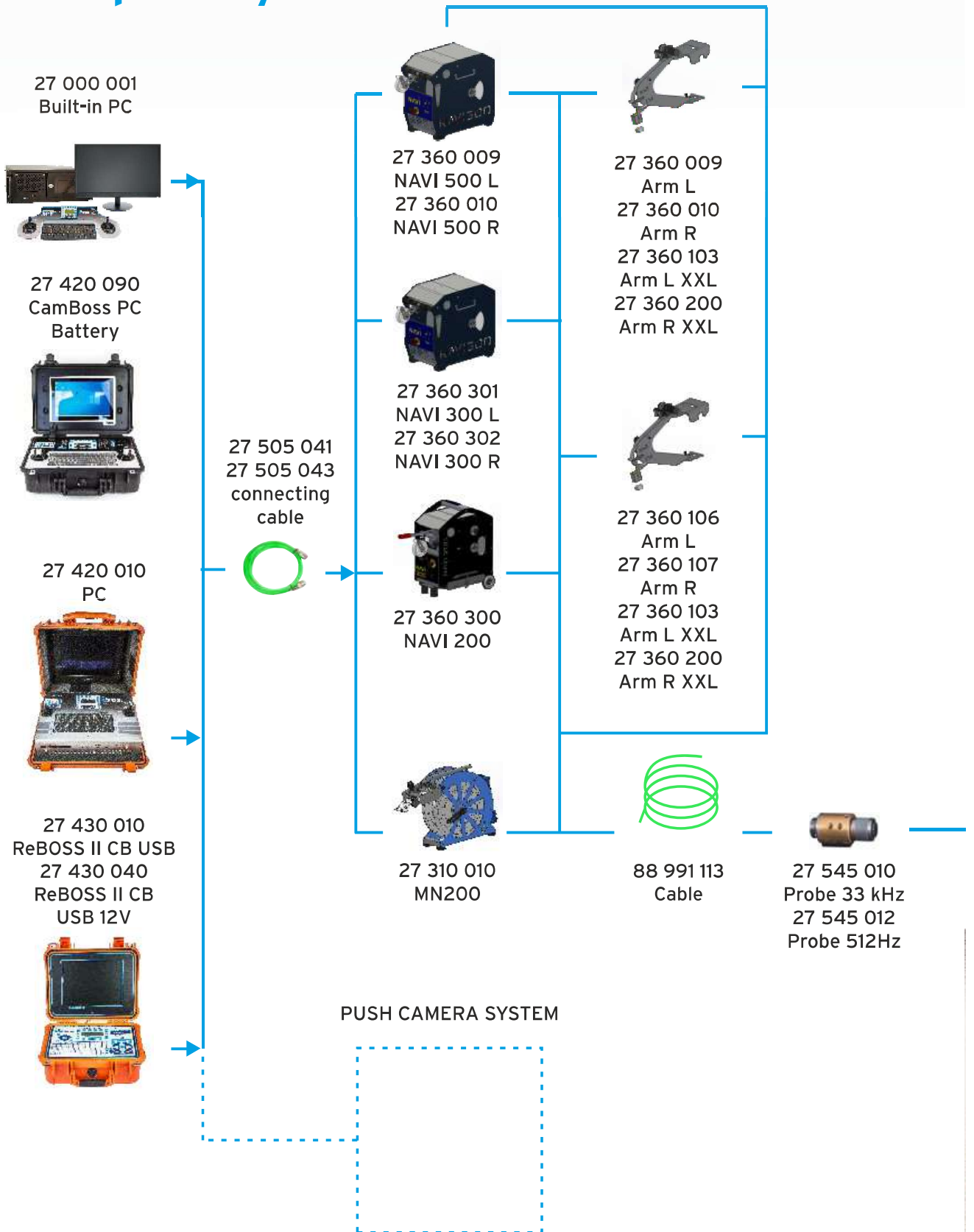
CAMBOSS SYSTEM

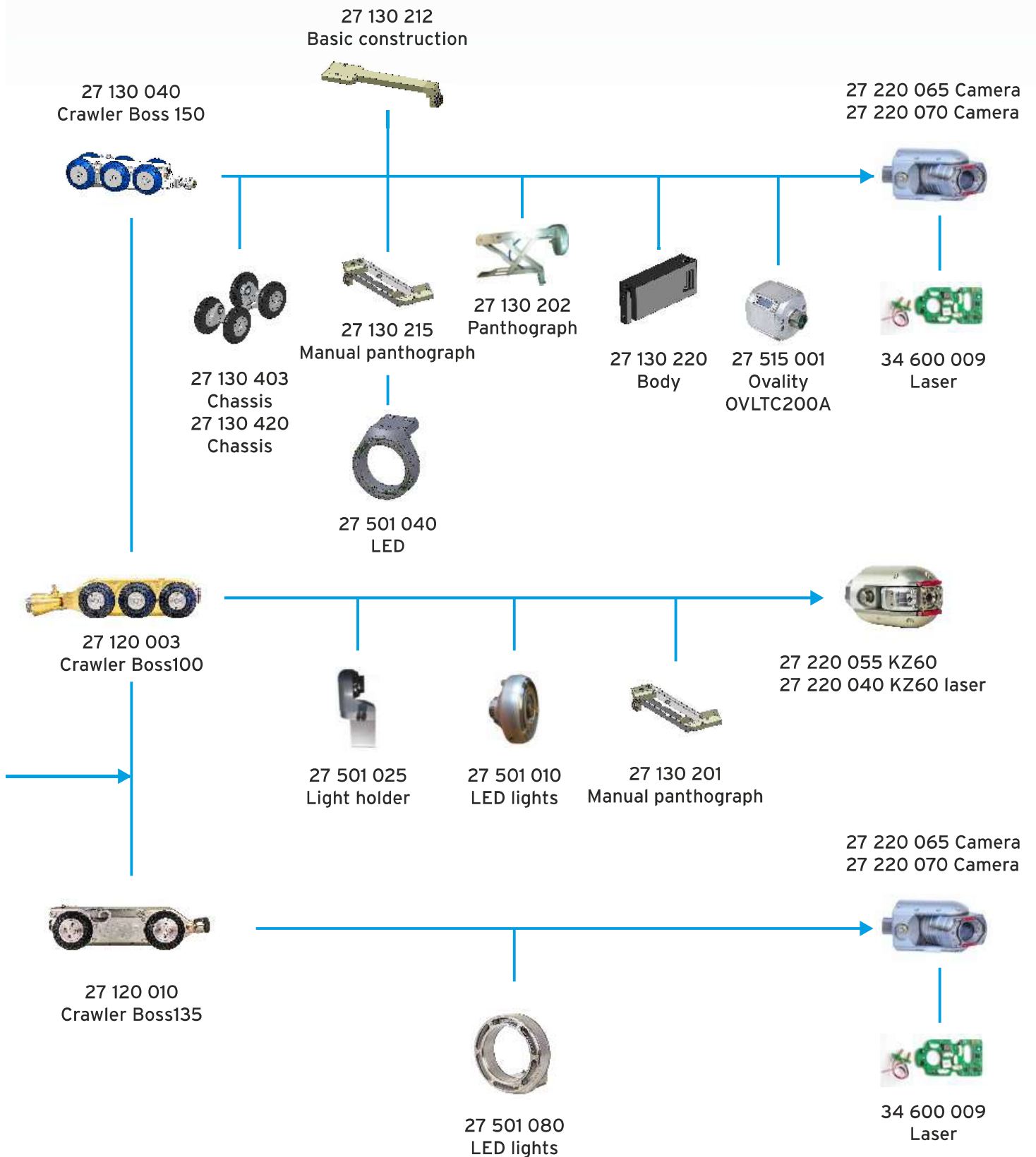
Camboss camera system represents the top solution for sewerage networks inspection. By combining the individual components, it allows to achieve optimal performance and efficiency in performing various tasks. It can be used as a portable system or built into van. The possibilities of its use are further expanded for example by superstructures for a satellite system or Quick-Lock system. An interesting alternative is also Trimaran designed for larger DN of pipe with a higher level of waste water. By purchasing one system and various accessories, the client will gain a wide range of use.





Overview of CAMBOSS camera series compatibility





CAMBOSS 100

The camera system CamBoss 100 is determined for pipe monitoring of diameters DN 100 - 300 mm. The camera crawler is equipped with two engines, which enable it's simple turning and fluent drive in the pipe. Thanks to pan and tilt camera head KZ60 it is possible to monitor the pipe in detail. Camera CamBoss 100 has the same control unit as the higher model line CamBoss 150_IV. It is so possible simply substitute the cameras according to monitoring needs and pipe diameter.

TECHNICAL SPECIFICATION
CONTROL UNIT - different options
the same types as the higher model line CamBoss 150_IV.
CABLE DRUM - different options
The same types as the higher model line CamBoss 150_IV., max. cable length 200 m (by cable drums with higher cable capacity is max. crawler run out 200 m)
SOFTWARE - various modules
the same types and module as the higher model line CamBoss 150_IV.
CAMERA HEAD KZ60
Colour CCD camera, resolution 307.200 pix, light sensitivity 0,3 lux by F1,2, range angle 50°, 8 x LED, swing 2 x 125°, rotation 360° (infinity), waterproof up to 1 bar, built-in pressure sensor for monitoring of tightness.
CAMERA CRAWLER BOSS 100
Drive 6x6, 2 engines 20W, 1 set of basic wheels, hook for lowering into the shaft, water-resistant up to 1 bar, material - brass
ACCESSORIES
Wheels for diverse diameters, LED light, light holder, probe 33 kHz or 512 Hz, auxiliary arm for cable reel, hand control (cable drum NAVI300 and NAVI500), guiding pulley for the pipe edge, radiocontrol



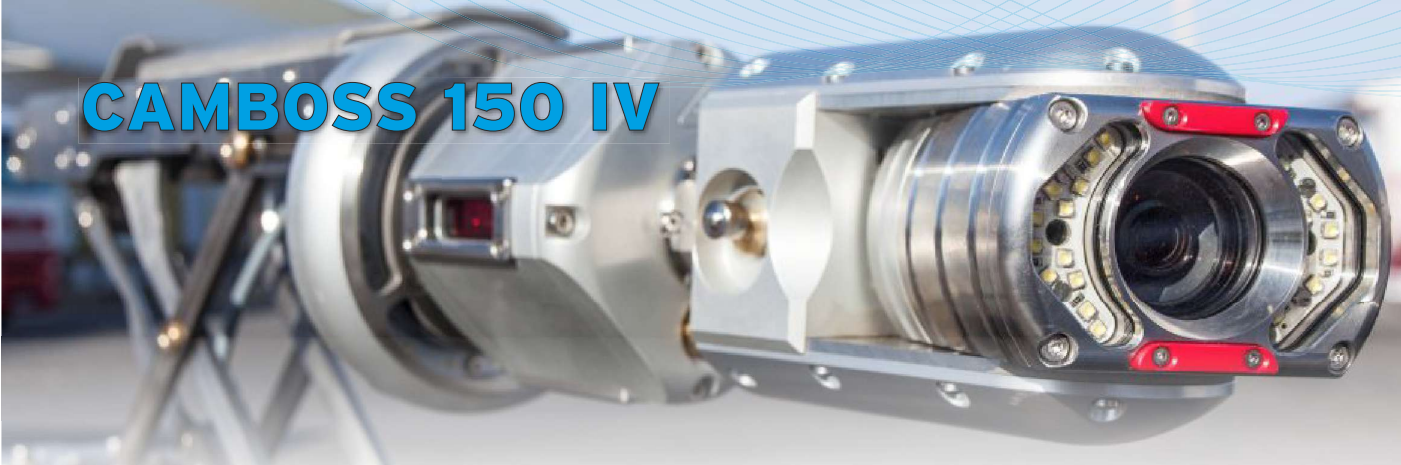
CAMBOSS 135

Crawler camera system CamBoss 135 is designed for pipe inspection DN 150-800. CamBoss 135 camera is characterized primarily by simplicity and user friendliness. It is especially suitable for simpler inspection work, where crawler turning or remote arm / pantograph height adjustment is not necessary. Camera crawler is compatible with control unit, cable drum and camera head of higher series CamBoss 150_IV. Thanks to compatibility, cost savings can be achieved.

TECHNICAL SPECIFICATION
CONTROL UNIT - different options the same types as the higher model line CamBoss 150_IV.
CABLE DRUM - different options The same types as the higher model line CamBoss 150_IV., max. cable length 200 m (by cable drums with higher cable capacity is max. crawler run out 200 m)
SOFTWARE - various modules the same types and module as the higher model line CamBoss 150_IV.
CAMERA HEAD KZ95CB High-resolution colour camera PAL 720x576TVL CVBS, light sensitivity 0,15 lux / F1,5, remote focusing, view angle 50°, 2 x 120° panning, 360° rotation (unlimited). 24x high power LED, 650 lm, 5,5W. 10x optical zoom + 12x digital zoom.
CAMERA CRAWLER BOSS 135 Crawler with drive 4x4, with 75W engine. Material - brass. Designed for DN150 up to ca. DN800, incl. 1 wheel set (4x100 mm). Waterproof up to 1 bar. With connector for addition lights, manual arm/pantograph and hook for lowering into shaft. Designed for camera head KZ95CB. Weight ca. 13 kg.
ACCESSORIES Additional light - LED 18 W, wheels for various diameters and surfaces, lasers for camera head KZ95 for cracks / hollows and joints measurement with help of DigiCan SW.



CAMBOSS 150 IV



The highest version of series CamBoss - CamBoss150_IV is available as portable or firmly integrated in a vehicle. The camera crawler has two motors with high performance 100 W, which enables easy turning and controlling. Thanks to the rear camera with sensitivity 0,025 lux is the way out from the pipe easy. High-lift pantograph, on which the camera head is mounted, enables lifting the camera up to the pipeline axis, which together with the LED auxiliary lights allows to make the pipe monitoring quickly and in high-quality. The auxiliary chassis is determined for bigger diameters. The CamBoss reel can be supplied with the cable length from 200 to 500 m. The control unit (eventually built in) is controlled via PC, which contains software including DigiCAN software.

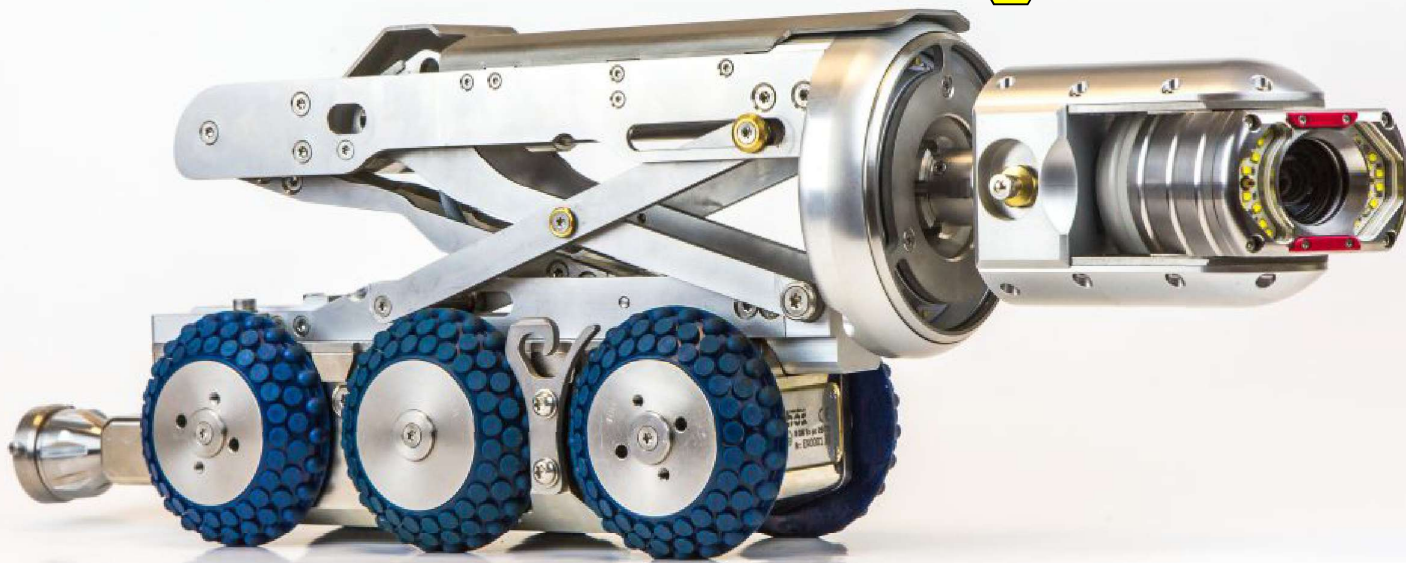
TECHNICAL SPECIFICATION	
CONTROL UNIT - different options	
CamBoss control unit	15" LCD industrial colour display, inputs DVI and CVB-S, integrated PC, display of actual video Picture with possibility of switch to PC mode, optional SW DigiCAN (display of date, time, measuring of unwinded cable length, inclination, swing, rotation, pressure, etc.) and creating of documentation to damaged spots
Camboss PC Battery	Mobile battery control unit with touchscreen 12,1". With help of DigiCan SW - display of diverse data in the picture (date, time, measuring of unwinded cable length, inclination, swing, rotation, pressure, etc.) and creating of documentation to damaged spots.
ReBoss CB USB / ReBoss CB USB 12V	Battery control unit designed for crawlers BOSS 100, BOSS 150, (or only Boss135), pantograph GNTR 200E, camera head KZ95CB and NAVI 200, NAVI 300, NAVI 500 cable drums. Cooperates with REVI 90, REVI 260, REVI 350, REVI 450 and camera heads KA46, KZ60, KZ95CB. 10"LCD 800x600 industrial colour screen, control panel, keyboard. Power 230V AC or 12V DC (according to chosen variant).
Built-in CamBoss	22" industrial colour display, inputs DVI and CVB-S, display of actual video Picture with possibility of switch to PC mode, optional SW DigiCAN (display of date, time, measuring of unwinded cable length, inclination, swing, rotation, pressure, etc.) and creating of documentation to damaged spots
It is possible to extend the controlling by adapter for controlling of electro-robot	
SOFTWARE - VARIOUS MODULES	
Basic (video recording and report creating according to EN13508-2), photo protocol, ovality, laser (measuring of cracks), measuring of level height and sediment, gradient, measuring of diameter and ovality, interactive protocol, continuous ovality, ISYBAU XML, set of all programmes PRO	
CABLE DRUM - different options	
MN200	Manually cable drum, special lightweight cable with length up to 200 m (according to wish). Cable drum equipped with guiding pulley. Construction resistant against water splash. Weight 23 kg (without cable), 37 kg (200 m cable)

NAVI200	Automatic motorized reel, guide pulley for reducing the strain on the cable, sensor for measuring the length of unwinded cable, resistant against water splash, capacity max. 200 m cable. The reel includes the remote control hand control, which enables the controlling of crawler and camera
NAVI300	Automatic motorized reel, guide pulley for reducing the strain on the cable, sensor for measuring the length of unwinded cable, resistant against water splash, capacity max. 300 m cable
NAVI500	Automatic motorized reel, guide pulley for reducing the strain on the cable, sensor for measuring the length of unwinded cable, resistant against water splash, capacity max. 500 m cable
OPTION: NAVI300/500 cable remote controller Handcontrol	
CAMERA HEAD KZ95	
High-resolution colour camera PAL 720x576TVL CVBS, light sensitivity 0,15 lux / F1,5, remote focusing, view angle 50°, 2 x 120° panning, 360° rotation (unlimited). 24x high power LED, 650 lm, 5,5W. 10x optical zoom + 12x digital zoom.	
CAMERA CRAWLER BOSS 150	
Drive 6 x 6, 2 engines 100 W, automatically balancing to prevent overturning, 1 set basic wheels, water-resistant up to 1 bar	
ACCESORIES	
Lasers for camera head for measuring cracks, holes and connections in pipe, ovality module for continuous measuring of pipe ovality, electric pantograph with LED lights 17,5W/2274 lm, manually elevating arm, auxiliary chassis (DN 400 - 1000 mm), probe 33 kHz or 512Hz, wheels for various diameters, upper guiding for ovoid pipe profiles and other.	

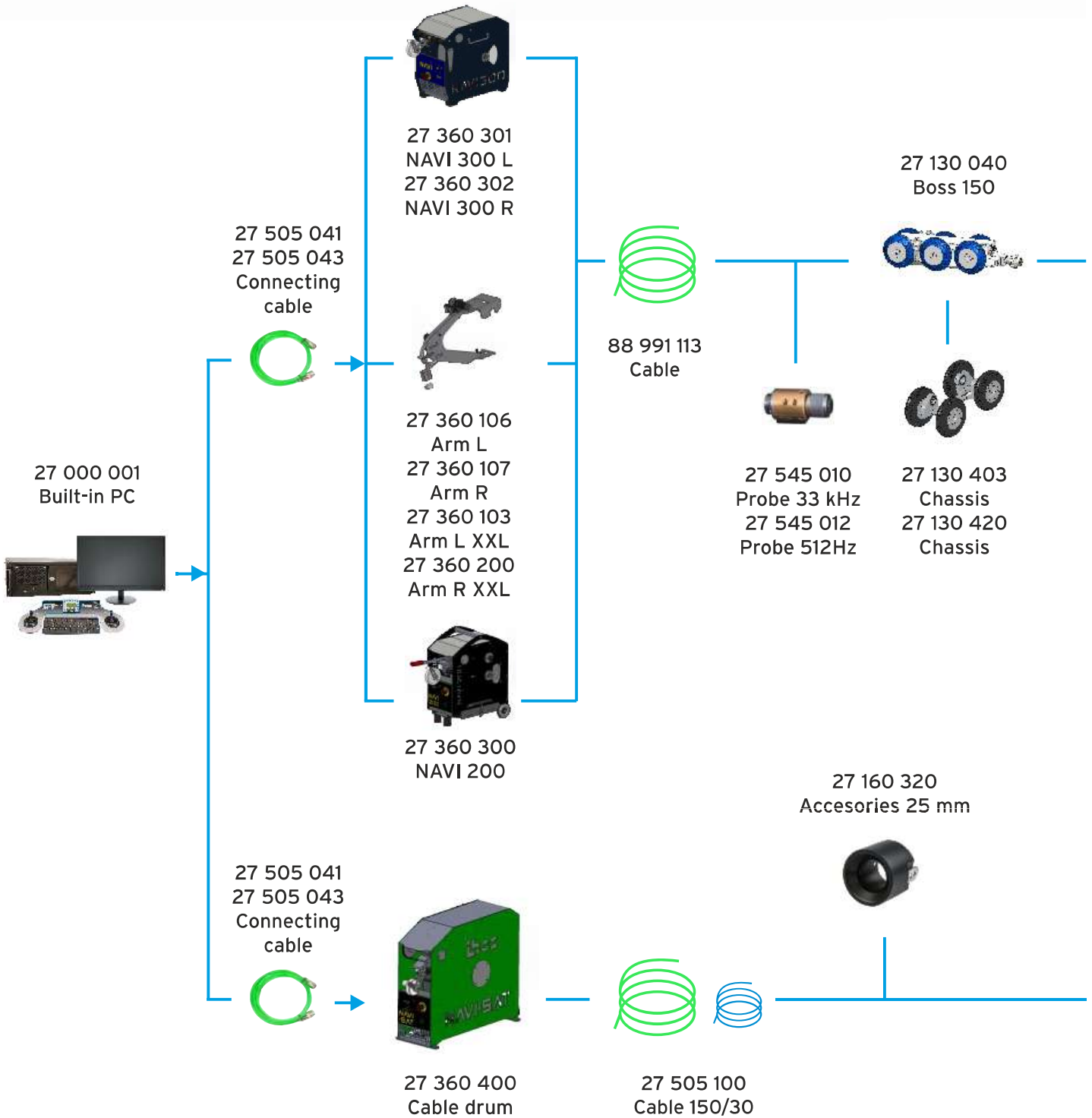
CamBoss 150 system also in ATEX version designed for explosive environments:



II 3G Ex pz IIB T5



Overview of CAMBOSS satellite extension



27 160 350
Extension chassis



27 160 300
Attachment DN1000



27 220 065 Camera
27 220 070 Camera



27 565 013
Basic camera



27 160 310
Attachment DN600



27 565 014
Camera holder KZ95



34 600 009
Laser

27 220 055
KZ 60
27 220 040
KZ 60 laser



27 570 002
Antenne

CamBoss with satellite extension

Satellite extension of the crawler Boss 150 (6 x 6) for pipe inspection in DN 150 - 1000. View camera is component of the satellite extension, inspection of pipe connections is enabled.



TECHNIC SPECIFICATION

CAMERA HEAD KZ60

Resolution 307.200 pix, Swing 2 x 125°, rotation 360° (infinity), 8x extra luminous LED, water-proof up to 1 bar

CONTROLLING

Two 3-axes joystics

SATELLITE CABLE DRUM

Flexible cable reinforced with kevlar + push-rod cable

OPCE

JetCam - combination of satellite camera and high-pressure cleaning machine for pipe cleaning (built-in into for example MB Sprinter 5t)

This system is designed only for the built-into the vans.