

SYNTHOTECH

LOCATE - SURVEY - DETECT
CONSTRUCT - MAINTAIN - MANAGE

info@synthotech.co.uk

www.synthotech.co.uk

www.synthotechwater.co.uk

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Who is Synthotech?

Synthotech is an innovative engineering company that manufactures and supplies the world's best branded equipment to the grey, black, and potable water, gas, electric, communication, construction, and civils industries. Focused on **locating**, **surveying**, **detecting**, **constructing**, **maintaining**, and **managing** underground infrastructure and utilities.

WE INNOVATE

Synthotech are the experts to find the solutions. We are a leader in the research and development of pipe renovation technology for Gas Distribution and Transmission, Potable Water, Drainage and Sewage Networks, and Telecom networks both in the UK and around the world.

Synthotech is an Award-Winning Innovation company that has developed world firsts in robotics, vision, and pipe systems that are used globally.

WE ENGINEER

Synthotech is a British based Engineering Company, designing and developing new products and processes from our headquarters in Harrogate, North Yorkshire. A local company with global support, *Synthotech* has a multi-disciplined engineering team, that doesn't just think outside of the box, they 'think inside the pipe'[™]. This allows for innovative elegant solutions to be engineered to the highest standards by *Synthotech's* precision engineering team.

WE DELIVER

Synthotech consistently delivers high quality products and services, working tirelessly with customer to ensure that new ways of working become 'business as usual'. This is underpinned by SynthoCARE, an exceptional product support service that not only provides workplace support, but also provides loan equipment to ensure customers remain operational 24 hours a day, 365 days a year.



HIRE

Synthotech hire a wide range of cable avoidance tools, cameras, safety and survey equipment.

SERVICE AND REPAIRS

Synthotech provide a fully auditable Service and Repair process for cable location equipment and survey camera systems. Manufacturer approved for C-Scope, IPEK, SynthoCam and Vivax full certified and warrantied repairs, service and calibration can be carried out.

TRAINING

Synthotech offers comprehensive training on Cable avoidance Tools and Precision Locators from Radiodetection, Vivax-Metrotech and C. Scope. Our trainers have years of experience with the use and applications of location products, having originally worked on their development. We recognise the broad range of ground worker competences, concentrating on the most important issues relating to safe excavation, protecting both operators and buried assets. Our courses are manufacturer approved. Courses are available as a half day or full day session for up to 10 or 20 people per session at the customers location and at an agreed time, or individuals may wish to sign up to one of our regular half day courses held at our offices in North Yorkshire.

TECHNICAL SUPPORT

No two excavations or inspection sites are the same, so understanding how specialist equipment can be used in a variety of different ways to locate and trace buried utilities, without compromising the safety of the workforce is important. Synthotech staff have years of experience in applying a range of techniques and accessories to locate, trace and avoid buried assets in complex environments.

We are proud to work with and represent the following brands.



This catalogue has been put together with our full product range of standard items. This doesn't mean that we don't have specials available, but they are not standard items. As an innovation business, we supply all sort of solutions to our customers and are happy to modify them to meet our customer requirements.

We have colour coded our catalogue as follows:

- Pipe Location Products
- Pipe Surveying Products
- Pipe Leak Detection Products
- Pipe Construction Products
- Pipe Maintenance Products
- Network Management Products

The industry products are coded.

-  Potable Water
-  Gas Industry Products
-  Dirty and Grey Water Industry Products
-  Electricity Industry Products
-  Telecom Industry Products



Pipe & Cable Location Products

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Underground Locators



Underground Locators are used to identify underground plant, pipes, and cable from above ground.

Underground Locators are avoidance tools used for simple surveys before excavation or piling. Synthotech recommend C-Scope, Radiodetection and Vivax depending on your individual requirements.

The latest underground locators or cable avoidance tools are packed with technology options. They have dual frequency working at 33 and 131kHz for maximum exposure of underground plant.



Cable avoidance tools have Power, Radio and Generator modes for identify varying types of plant underfoot. The systems use the latest technology to be energy efficient and even have swing alerts to ensure that the systems are used correctly.

Options available include depth location, data logging, Bluetooth connectivity and GPS location to provide confirmation that a site has been surveyed before a spade has even broken ground.



The latest generation of cable avoidance tools can even self-calibrate, allowing self-certification or third-party calibration if required. It has never been easier and safer to dig after using one of these cable avoidance tools.



Underground Locators

	C-Scope					Radiodetection						Vivax	
	CXL4	CXL4-D	CXL4-DBG	DXL4-D	DXL4-DBG	C.A.T4	C.A.T4+	eC.A.T4	eC.A.T4+	gC.A.T4	gC.A.T4+	vScan	vScanM
Power Mode	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
Radio Mode	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
Gen /Transmitter Mode	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
- 33+131kHz	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
- 131kHz	-	-	-	-	-	û	û	û	û	û	û	ü	ü
- 33kHz	-	-	-	-	-	û	û	û	û	û	û	ü	ü
- 8kHz	-	-	-	-	-	û	û	û	û	û	û	û	û
- 512Hz	-	-	-	-	-	û	û	û	û	û	û	ü	ü
- 640Hz	-	-	-	-	-	û	û	û	û	û	û	ü	ü
<i>All Scan/Avoidance Mode</i>	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	û	û
Depth Measurement	-	-	-	ü	ü	û	ü	û	ü	û	ü	ü	ü
Signal Current Measurement	-	-	-	-	-	û	û	û	û	û	û	ü	ü
Overload Protection	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
Strike Alert	ü	ü	ü	ü	ü	○	○	○	○	ü	ü	ü	ü
Peak Hold	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
Swing Warning	ü	ü	ü	ü	ü	û	û	ü	ü	ü	ü	ü	ü
Daily Self-Test/Cal Safe	ü	ü	ü	ü	ü	û	û	ü	ü	ü	ü	ü	ü
Product Cert / eCert	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
Data Logging / Data Acquisition	-	ü	ü	ü	ü	û	û	ü	ü	ü	ü	○	○
Memory (GB`s)	-	2	2	2	2	û	û	4	4	4	4	4	4
Data Transfer via USB	-	ü	ü	ü	ü	û	û	û	û	û	û	ü	ü
Bluetooth™ Data Transfer	-	-	ü	-	ü	û	û	û	û	ü	ü	○	○
Ext Survey GPS via Bluetooth™	-	-	ü	-	ü	û	û	û	û	û	û	○	○
In-Built GPS position logging	-	-	ü	-	ü	û	û	û	û	ü	ü	○	○
High Res Backlit LCD	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü
No Periodic Calibration1	ü	ü	ü	ü	ü	û	û	û	û	û	û	û	û
Service Due Indicator	û	û	û	û	û	û	û	ü	ü	ü	ü	û	û
Warranty (Mths)	36					12						12	
Batteries	8 x AA (LR6)					2 x D (LR20)						6 x AA	
IP Rating	65					54						54	
Network Rail Approved	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	û	û
Small ø locate frequency	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü	û	û
Metal Detector	û	û	û	û	û	û	û	û	û	û	û	û	ü

Key ü - Standard, ○ - Option, û - Not Available



Precision Locators

Precision Locators are used to map underground plant, pipes and cable from above ground. Precision Locators are survey tools used for involved and complex surveys. Synthotech recommends C-Scope, Radiodetection and Vivax depending on your individual requirements for the type of jobs being surveyed.



Precision locators are high performance multi-frequency location tools that not only work at 33 and 131kHz, but also on a range of frequencies from 8Hz up to 200kHz, allowing the tracing of high impedance utilities as well as high frequency assets.

The dashboard available on the systems allows visual directional confirmation brought together by multiple antennas to provide the most accurate location available.



Precision Locators can have omni directional capability to make location even easier.



Depth measurement, data logging and in-built GPS means that all the information from below ground can be stored in the cloud for traceability.

Modern precision locators make it easier to get accurate below ground location.



Product Specification		
Locator Features	MXL4-D	MXL4-DBG
Power Mode	✓	✓
Radio Mode	✓	✓
Generator / Transmitter Mode	✓	✓
-33 + 131kHz	✓	✓
-131kHz	✓	✓
-33kHz	✓	✓
-8Hz	✓	✓
-512Hz	✓	✓
-640Hz	✓	✓
AllScan Mode	✓	✓
Accurate Depth Indication	✓	✓
Signal Current Measurement	✓	✓
Overload Protection	✓	✓
AlarmZone™	✓	✓
Peak Hold	✓	✓
Dynamic Swing Sensor	✓	✓
Automatic Daily Self-Test	✓	✓
Product Validation Certificate	✓	✓
Data Logging	✓	✓
Data Logging Rate – once per second	✓	✓
2GB Memory	✓	✓
Data Transfer via	USB	USB & Bluetooth™
In-Built GPS position logging	-	✓
High-Res Backlit LCD	✓	✓
No periodic calibration*	✓	✓
3 Year Warranty**	✓	✓
IP65	✓	✓
Batteries	8x AA (LR6) Alkaline or NiMH Rechargeable	
Weight	2.65kgs	
Size	720mm x 280mm x 65mm	

Product Specification			
Locator Features	RD8200	RD8200G	
Locate Frequencies	21	21	
Passive Modes	5	5	
Sonde Frequencies	4	4	
Built in GPS	✘	✓	
Power Filters™ (Power Cable discrimination)	✓	✓	
User Activity data logging	✘	✓	
Survey measurements	✓	✓	
CALSafe™	◆	◆	
4kHz	4k+CD	4k+CD	
Current Direction™ (find target amongst multiple cables)	✓	✓	
Fault Find	✓	✓	
Depth in Power	✓	✓	
Passive avoidance	✓	✓	
iLOC™ (Rx control of transmitter)	✓	✓	
Dual Bluetooth connectivity	✓	✓	
Lithium-Ion Battery	○	○	
3-Year Warranty available	✓	✓	

Product Specification	
vLoc3-Pro	
Construction	High impact ABS injection moulded housing
Weight	2.1kg
Dimensions	321mm x 124mm x 676mm
Display	Transmissive 480 x 272 Pixel, 16-bit Colour, High Visibility 4.3" / 10cm LCD
Batteries	
Batteries Alkaline	6 x AA
Batteries Rechargeable	Rechargeable custom Lithium-ion batteries with 100-240V AC mains charger
Battery Life	Lithium-ion – typically 27 hrs intermittent use at 21°C Alkaline – typically 12 hrs intermittent use at 21°C
Operating frequencies	Configurable frequencies 98Hz to 200kHz, Power 50Hz and 60 Hz, Radio 10kHz – 22.7kHz bandwidth
Operating Modes	Classic Locate (Bar graph), Transverse Graph Mode, Plan View (Omni Directional) Vector Locate (Lateral Position & Depth), Sonde Locate
Data logging and transfer	50million records – Records include depth, current, frequency, mode, gain setting, signal strength, GPS coordinate, date and time (if Bluetooth active). Download from the receiver using the free Mylocator3 desktop app, save as xlx, txt, shp and kml files.
Environmental	IP65 and NEMA4



Signal Generators / Transmitters

Signal generators or transmitters are the tool required to induce a signal into a tracing wire, a cable or a pipe to aid its location and survey.

Vivax vScan Transmitter



Standard signal generators produce 33kHz to 131kHz.

Advanced transmitters have the capability to supply a range of frequencies From low frequency for use in metal pipes to high frequency for use in plastic pipes and cables.

Radiodetection Genny4



Whatever the requirements for a signal generator, from its multi-frequency ability to its power output, Synthotech has the range available.



Radiodetection TX-5, TX-10 and TX-10B



Vivax Loc3 Transmitter TX5, TX10 and TX25



CScope SGA4, SGV4 and MXT4 Transmitters



Signal Generators / Transmitters

Product Comparison Unit Features	Radiodetection Genny4	CScope		Vivax vScan / vScanM
		SGA4	SGV4	
Power	1 Watt	1 Watt	1 Watt	1 Watt
Output Levels	2	2	4	2
Generator Frequencies:				
33 to131kHz(Direct and Wraparound)	✓	✓	✓	✓
-33kHz (Induction Mode)	✓			✓
Pulsed / Continuous Output Signal	✓	✓	✓	✓
Signal Connection Modes				
-Direct Connection	✓	✓	✓	✓
-Wraparound	✓	✓	✓	✓
-Induction	✓	✓	✓	✓
Warranty	1 Year	3 Year	3 Year	2 Year
Environmental Rating	IP54	IP65	IP65	IP54
In-built accessory tray****	✓	✓	✓	*
Batteries	4 x D (LR20) Alkaline or NiMH Rechargeable			
Weight	2.75kgs	3.4kgs		1.5kgs
Size	275x170x200mm	360x180x230mm		460x90x65mm
Automatic Daily Self-Test	-	-	✓	-
Data Logging	-	-	✓	-
Data Transfer via USB	-	-	✓	-
High-Res Backlit LCD	-	-	✓	-

Transmitter	Radiodetection			Vivax Loc-3			Cscope MXT4
	Tx-5B	Tx-10	Tx-10B	5-Watt	10-Watt	25-Watt	
Max. Output Power	5W	10W	10W	5W	10W	25W	1W
Weight	3.9kg	3.9kg	3.9kg	3.9kg	4.4kg	3.2kg	3.4kg
Batteries							
Alkaline	8 x D Cell			8 x D Cell	12 x D Cell *1		4 x D Cell
Rechargeable	Custom Lithium-ion battery pack			Li-ion battery tray with charger			NiMH
Battery Life							
1 Watt Alkaline	n/a	n/a	n/a	25hrs	25hrs	n/a	40hrs
1 Watt	n/a	n/a	n/a	50hrs	50hrs	n/a	unknown
5 Watt Alkaline	4hrs	n/a	n/a	6hrs	6hrs	n/a	n/a
5 Watt	7hrs - 8hrs	n/a	n/a	10hrs	10hrs	n/a	n/a
10 Watt Alkaline	n/a	4hrs	4hrs	n/a	4hrs	4hrs	n/a
10Watt	n/a	7 - 8hrs	7 - 8hrs	n/a	6hrs	6hrs	n/a
25Watt	n/a	n/a	n/a	n/a	n/a	4hrs	n/a
Dimensions	350x220x220mm			332x182x185mm			360x180x230
Environmental	IP65			IP54 and NEMA4			IP65
Signal Connection Modes & Frequencies							
Induction	256Hz to 65kHz			98Hz to 200kHz		n/a	8Hz to 131kHz
Direct Connection	256Hz to 65kHz			98Hz to 200kHz		32Hz to 9.82kHz	8Hz to 131kHz
Clamp	163Hz to 200kHz			8kHz to 131kHz		8Hz to 9.82kHz	8Hz to 131kHz
Power Levels	4			2	3	2	4
Pulsed/Continuous	ü	ü	ü	ü	ü	ü	ü



Sondes

Sondes are self-contained transmitters used to pinpoint a location out of a pipe or some ducting. They are generally attached to push rods to allow maximum push distance for location.

Sondes are generally available in 512 / 640Hz for use in cast iron and metallic pipes, 8kHz and 33kHz for non-metallic pipes at depth.

Ability to receive a signal will always vary with soil conditions, but there are a range of sondes that can be used from the standard 2m down to 15m in depth. Not all pipes are straight, so Synthotech are able to supply flexible sondes for negotiating bends.



Product Specification					
CScope Sondes	CScope General Purpose		Metal Pipe Sonde		Duct Sonde
Frequency	33kHz	8kHz	512Hz	640Hz	33kHz
Depth Range Up to	7m	7m	5m	5m	4.5m
Dimensions	39mm Ø x 121mm				24mm Ø x 200mm
End Fitting	M10 Stud				Whitworth 16 TPI Female
End Fitting	None	None	None	None	None
Battery Type	1xAA (LR6) Alkaline				1 x AAA (LR03) Alkaline
Battery Life Up to	15 Hours	15 Hours	25 Hours	25 Hours	20 Hours
IP Rating	68				
Approvals	EN301 489 EN300 330		EN301489 EN300330 EN 5060086350791		n/a
Colour	Orange	Green	Red	Red	Yellow

Product Specification					
Radiodetection Sondes	Standard Sonde			Sewer Sonde	Super Sonde
Frequency	33kHz	8kHz	512Hz	33kHz	33kHz
Continuous Signal	✓	✓	✓	✓	✓
Pulsed Signal	✗	✗	✗	✓	✓
Depth Range Up to	5m	5m	5m	8m	15m
Dimensions	39Øx105mm			64Øx105mm	64Øx318mm
End Fitting	M10 Stud			M10 Stud	M10 Stud
End Fitting	None			None	None
Battery Type	1xAA (LR6) Alkaline			1 x PP3	1 x PP3
Battery Life Up to	8 Hours			15 Hours	5 Hours
IP Rating	2Bar - 20m of water			0.2Bar-2m of water	0.2Bar-2m of water

Product Specification					
Radiodetection Sondes	S6 Microsonde	S9 Minisonde	S13 Super Small Sonde	S18 Small Sonde	BendiSonde
Frequency	33kHz	33kHz	33kHz	33kHz	512Hz
Continuous Signal	✓	✓	✓	✓	✓
Pulsed Signal	✗	✗	✗	✗	✗
Depth Range Up to	2m	4m	2m	4m	6m
Dimensions	6.4Øx84mm	9Øx138mm	12.7Øx70mm	18Øx82mm	23Øx475mm
End Fitting	M5 Female	M6 Female	M10 Stud	M10 Stud	M10 Female
End Fitting	None		Option M10	Option M10	None
Battery Type	CR425	CR535	2xV393	2xCR1/3n or 1xD1/3N	1x AA
Battery Life Up to	8 Hours				15 Hours
IP Rating	n/a	n/a	2Bar - 20m of water		



Tracing Wires

Tracing Wires are thin flexible wires or fibre glass cables that can be used for tracing both the line of the pipe along the wire and the tip of the wire to pinpoint the end. Used with a signal generator, these systems allow long distances to be easily traced.



A line trace is carried out by connecting the signal generator to the tracing wire and putting the earth stake at 90 degrees to the line.

To trace the tip of the tracing wire, both the connections from the signal generator are connected to the tracing wire.



Synthotech provides pipe tracers from 4.5mm to 9mm in diameter over lengths up to 200meters. Whatever is required, whether it is flexible for bend negotiation, to integrated slip rings for tracing during insertion, we have a solution available.



The Synthotech range of DuctRods. These are a tough, compact, semi flexible duct rod system manufactured from composite fibreglass rods with polypropylene sheath, there are brass end fittings with smooth profile bullet tips and an integrated brake. Available in five different diameters, 4.5mm, 6mm, 9mm, 11mm and 14mm.



4.5mm DuctRod



6mm DuctRod



9mm DuctRod



9mm / 11mm DuctRod



14mm DuctRod

DuctRods are used for both pushing and pulling within pipes and ducts for both pinpoint location when connected to a Sonde as well as used for cabling over long distances.

Key Features

- Fast easy Cable Installation or pin-point location
- Lightweight for easy transportations
- Strong robust fibreglass rod
- Robust Zinc Plated steel frames
- Cost effective
- Range of adaptors available.



Underpressure Tracing Systems

Synthotech are experts in live access methodologies into potable and pressurised water pipes as well as live gas pipes.

Using tracing wires is fine when there is an open end of a pipe and it's not under live conditions. Synthotech can provide tracing wires that are able to be inserted into live Water and Gas pipes using the Stargland™ System. The Stargland™ System is a live access tool for access into pipes of varying diameters and pressures for both live distribution gas and potable water.

The Synthotech range of live access tracer wires have been manufactured using WRAS traceable material or material tested to BS6920. This allows the products to be used inside potable water pipes.



Live access water tracer

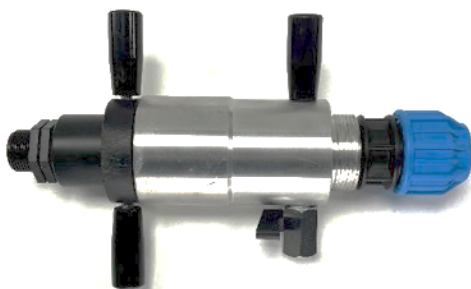
The Live access water pipe tracer has been manufactured so that all wetted parts are either WRAS material, traceable to WRAS material or meet BS6920. The 4.5mm diameter x 80meters fibreglass rod has a specially manufactured outer coating that uses a WRAS material. This combined with the special water gland allows safe operation in pipes up to 10bar water

Live Access Water Tracer WRAS material 50m p/n 201000

Live Access Water Tracer 50m p/n 201001

Stargland™ Live Access Water Insertion Gland

The Stargland™ system allows live access into potable and pressurised water pipes. The simple patented access system can be connected onto any Philmac type connector for life access into a pipe after the squeeze off has been removed.



Stargland™ Live Access Gas Insertion System

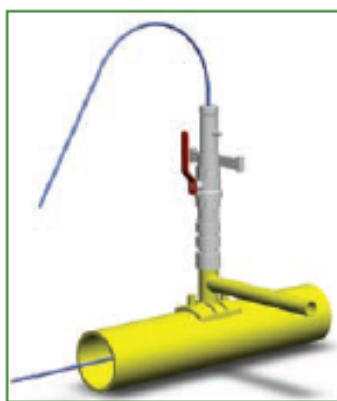
The Stargland™ system is a versatile safe and efficient 'live access tool' that enables tracing of polyethylene (PE) gas pipework systems. Tracing of PE pipes is achieved by inserting a tracing wire and sonde through the 'live access tool'. The tracer wire and sonde is energised by use of a signal generator and located by an underground locator (cable avoidance tool). The 'live access tool' has been specifically designed using our unique Stargland™ gas seal technology.

Live access into:

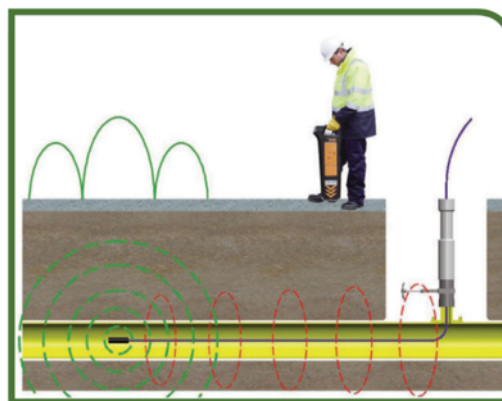
- Emergency Control valves
- House Entry Tees
- End on into PE service pipes
- 16, 20, 25 and 32mm service entry
- Access into 40mm PE and above from a 32mm Top Tee
- Access into 63mm PE and above from a 63mm Top Tee
- For use in Low Pressure (75mbar) and Medium Pressure UK (2Bar) and medium Pressure (5.5Bar) networks.

Significantly reduces excavation, reinstatement, and associated activities. Enables PE gas pipe systems to be accurately identified, while reducing operational costs.

Used by all UK gas networks, and multiple gas networks around the world.



Top tee access



Acoustic Non-metallic Pipe Location

The SebaKMT Pipe Pecker RSP3 is a simple device for acoustically locating non-metallic pipes.



The Pipe Pecker simply connects to a pipe via a chain. The system then sends an acoustic pulse (knock) down the pipe at different frequencies depending upon the distance required. The noise from the pipe can be detected above ground by using a ground microphone. The system works particularly well on non-metallic potable water pipes such as asbestos cement, PE and PVC.

Distance is dependent upon the depth of the pipe type of soil and pipe material. The Pipe Pecker can also be used on metallic pipes. Particularly useful on pipes with Tyton sleeves and where there is significant electrical interference.

Pulse rate	3 pulses 2 pulses for a weak battery
Range 1	40/min
Range 2	60/min
Range 3	80/min
Range 4	120/min
Intensity	25 – 50 – 100 %
Power-on	green LED signal
Pulse	red LED signal
Battery check	flashing green signal + pulse rate change
Rechargeable battery	NiCd 12 V 2.8 Ah
Operating cycle	≥ 16 h
Charging cycle	2 h
Operating temperature	- 10 °C ... + 50 °C
Chain length	580 mm
Dimensions IG 3	190 x 95 x 65 mm
Weight IG 3	2.6 kg
Dimensions RSP 3	250 x 115 x 160 mm
Weight RSP 3	2.1 kg

Advantages

- Location of non-metallic pipes
- Useable for different pipe diameters
- Independent of electrical interference
- Robust housing for field use
- Long operation time and integrated rechargeable Batteries
- Variable hammer-frequencies for



Acoustic Non-metallic Pipe Location

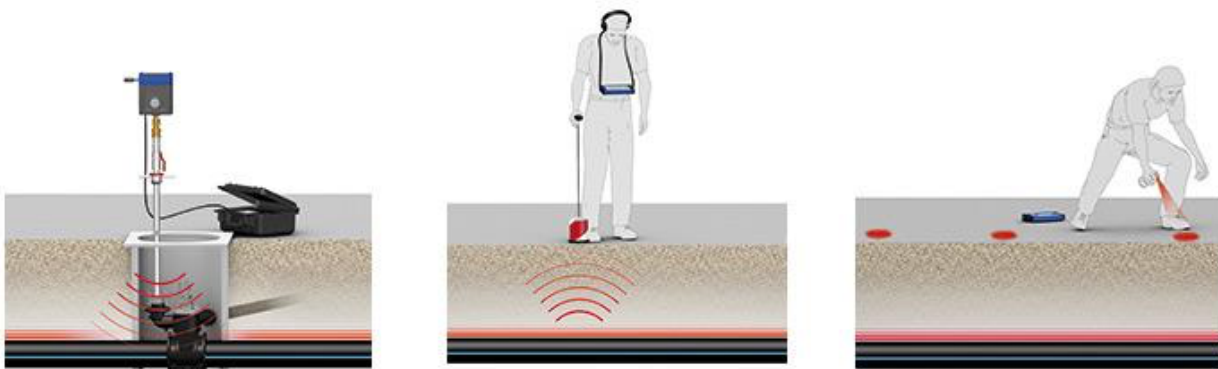
The FAST PWG-II is a special location tool for all water pipes irrelevant of whether they are metal, plastic, or another material.

The PWG-II injects an acoustic pulse wave into the pipe, which makes up to 600meters of pipework detectable. The system is simply connected onto the pipe from the meter, valve, hydrant, or top tee. The battery powered unit is switched on and the acoustic waves are injected into the pipe. Using any ground microphone such as the FAST Aqua M-Series, the noise from the pipe can be located, and the subsequent line of the pipe traced.



Features

- Easily locates non-metallic potable water pipes
- Operates at pressures as low as 2 Bar
- Compatible with any ground microphone
- Simple to use
- Cost effective pipe location
- Up to 600meters location



GPR - Ground Probing Radar

The eSAFE+ range of Ground Probing Radar systems is probably the easiest and simplest units in the world to use.



Due to its easy user interface and simple design the eSAFE+ doesn't require extensive background knowledge or training in Ground Probing Radar technologies. The eSAFE+ system is perfect as a pre-excavation avoidance tool to prevent unwanted cable and pipe strikes.

The eSAFE+ system can achieve accurate pipe and cable location down to depths of 1.5 meters dependent upon ground conditions.

The eSAFE+ system has been designed for locating metallic and non-metallic assets with the ground, both metallic and non-conductive pipes and cables.

The eSAFE+ is light and easy to manoeuvre on site, so multiple grids can be surveyed allowing the tool to operate at 90 degrees to the asset, providing the best opportunity and thus likelihood for accurate location.

eSAFE+ has depth measurement as well as a 4 level Chronos masking Off Road Max option.

The eSAFE+ system uses a simple Red / Amber / Green day light visible visual display system to highlight a High likelihood of a feature, Cautionary likelihood of a feature or a Low likelihood of a feature.

The eSAFE+ uses a rechargeable battery system that will last for between 3 and 5 hours depending upon ambient temperature.



eSAFE+ part number 202000



Metal detectors are used to locate lost metal objects such as a manhole covers, and stopcock covers or to locate lost metal assets that are just below the ground surface whether it is soil, grass paving or tarmac.



C.Scope CS1MX - Ultimate simplicity for a basic metal detector.



C.Scope CS440XD - lightweight performance metal detector with variable determination



C.Scope CS880 - a powerhouse in the metal cover locator world



Radiodetection RD312 0 - the workhorse of the metal cover locator world



Viking WASP is one of the original cost effective simple to use metal cover locators.



Viking WASP II is the pinpointing version of the original WASP

Manufacturer	C.Scope	C.Scope	C.Scope	Radiodetection	Viking	Viking
Model	CS1MX	CS440XD	880	RD312	WASP	WASP II
Non-Motion	✗	✓	✓	n/a	✓	✓
Motion	✓	✗	✗	n/a	✗	✗
All Metal				n/a	✗	✓
Tuning Controls	✓	✓	✓	n/a	✓	✗
Pinpoint	✗	✗	✗	n/a	✗	✓
Built in Loud Speaker	✓	✓	✓	✓	✓	✓
Headphone Socket	✓	✓	✓	✓	✓	✓
Telescopic Shaft	✓	✓	✓	✓	✓	✓
Search Diameter Head	20cm	20cm	20cm	25cm	20cm	24cm
Battery Life	30 hours	30 hours	100 hours	30 hours	20 Hours	15 to 20 Hours
Weight	1.153Kg	1.153Kg	n/a	1Kg	1.1Kg	1.4Kg
Dismantled Length	n/a	n/a	107cm	79cm	74cm	74cm
Fully extended Length	n/a	n/a	140cm	n/a	134cm	134cm
Stopcock	n/a	n/a	25cm	20cm	n/a	n/a
Valve Cover	n/a	n/a	50cm	41cm	n/a	n/a
Manhole Cover	n/a	n/a	90cm	76cm	n/a	n/a



Magnetometers

Magnetometers can locate deeply buried ferrous objects such as manholes, septic tanks, valve boxes, line identification markers, survey and boundary marker pegs, and cast-iron gas and water pipes and joints up to 5 meters deep.



Product Specification	RD Schonstedt	MBW	CScope
Type	GA-92XTd	M10 <i>d</i>	M-SCAN
Weight	1.1Kg	Approx. 1.1kg	1.3Kg (with Batteries)
Dimensions Open	660mm	660mm	1090mm Sensor Tube length 730mm
Dimensions Closed	390mm	390mm	n/a
Construction	Polycarbonate / ABS / IP54	Polycarbonate / ABS	Case - Heavy duty high impact ABS (IP65), Sensor tube construction - Epoxy sandwich coated aluminium (IP66), Tip protector construction - Heavy duty thermoplastic elastomer
Detection Range	Up to 4.88m	Up to 4.88m	5m (dependent onsite conditions)
Volume	3 Levels; Min, Max and Mute	3 Levels; Min, Max and Mute	8 Volume levels, including mute. Frequency (pitch) varies with signal amplitude. In-built loudspeaker plus 3.5mm jack socket for standard headphones.
Batteries	24 hours intermittent use	1 x Lithium 9 Volt battery	Eight 1.5v cells, type AA, LR6 or equivalent. Alkaline cells recommended. Compatible with NiMH rechargeable batteries 100 hours battery life typical intermittent use. 4 Segment visual bar Battery Indicator



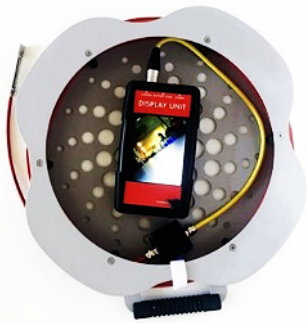
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Pipe Survey - Service Pipes

When surveying a pipe, remote eyes over a long distance is important. Balancing rigidity to push a maximum distance, with flexibility to negotiate bends, and robust to survive the knocks of everyday life, a good in-pipe CCTV system is invaluable for use.

Synthotech can offer a range of systems to meet all pipe requirements.



Outlook C10 is a small camera with a 9.5mm diameter camera on a 6mm by 20meter push rod camera for small diameter service pipes, ducts, drains and wall cavities.

The C10 comes with a 5.6" daylight visible screen with a 5-hour battery as standard.



The Outlook C20 is an entry level looksee camera system. A 24mm camera on an 80m x 4.5mm fibreglass rod. Perfect for 40mm to 100mm diameter pipes.

The C20 come with a 5.6" daylight visible screen with a 5-hour battery as standard.



The Vivax vCamMX-2 all-in-one mini-inspection system. With either 17mm or 26mm cameras on 30 to 45meter pushrod. The system has multi-frequency sondes, video recording, and 8" screen and a 7-hour battery.



The Outlook C30 is an entry level looksee camera system. A 24mm camera on an 80m x 6mm fibreglass rod. Perfect for telecom ducts from the house to the street.

Both the C30 come with a 5.6" daylight visible screen with a 5-hour battery as standard with the option to upgrade to a recording 8" screen.



The Outlook C50 is a basic survey system. With either a 24mm, 34mm or 46mm camera on 60 or 120 meter lengths of fibreglass rod. The system comes with an 8" daylight visible screen and a 4-hour battery. The line can be traced with a 33kHz signal genny. The C50 with a 24mm camera is perfect for use with 100mm telecom ducts. Recordable and non-recordable control screens are available.



The Vivax vCam6-HD is a full survey system. With either 34mm or 46mm diameter self-levelling cameras on either 60, 90 or 120meter pushrods. The system has multi-frequency sondes video recording, and a 9.7" screen and a 4-hour battery.



Pipe Survey - Crawlers



X5-HMA Crawler

The Easy-Sight X5-HMA is a robust and reliable small crawler for use in harsh environments.

Designed for use in pipe diameters from 150mm to 300mm (up to 600mm with an extender arm).



X5-HT Crawler

The Easy-Sight X5-HT is a robust and reliable medium sized crawler for use in harsh environments.

Designed for use in pipe diameters from 300mm to 1000mm with an extendable arm.



The X5-HMA and X5-HT use a provides unparalleled in-pipe vision using high definition 2.1-megapixel cameras. Axial Pan and Tilt or Pan Tilt and Zoom.



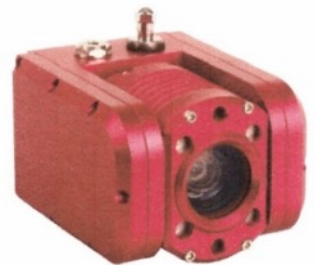
150m or 300m Motorised Umbilical



Axial 50m Camera



Optional Pan and Tilt



Optional Pan Tilt & Zoom Camera

Both the X5-HMA and the X5-HMT operate with either 150 or 300meter automated cable drums. The operating system is via a laptop or tablet with optional joystick. Both systems are fully integrated with the optional iTouch Once Control and Reporting Box.



Control Tablet / Laptop

Optional iTouch One Control and Reporting



The Easy-Sight X5-HS is a robust and reliable medium sized crawler for use in pipe diameters up to 3 meters.

Designed for use in pipe diameters from 300mm to 3000mm. The X5-HS provides unparalleled in-pipe vision using high definition 2.1-megapixel cameras. Incredibly simple to use via a touch screen system either via a tablet / laptop or via the iTouch One inspection and reporting solution. The H5-HS has a motorised cable drum of up to 300meters



X5-HS Crawler

The Easy-Sight X5-HW series is our long-distance crawlers for pipes from 500mm to 4000mm diameter from 1km to 2km`s.

Designed for use in pipe diameters from 500mm to 1500mm. The X5-HW1 has a 1000-meter (1km) umbilical, which from a single access point can provide up to 2km`s of survey from both directions.



1000m Motorised Umbilical



X5-HW1 Crawler

The X5-HW2 has a 2000-meter (2km) cable and has a vision capability of a 4m diameter pipe.



Control Tablet



2000m Motorised Umbilical



X5-HW2 Crawler



Pipe Survey – Directional Float System

The Easy-Sight X5-HR4 is an innovative directional steerable float system for storm drains and culverts.

H5-HR4 Float System



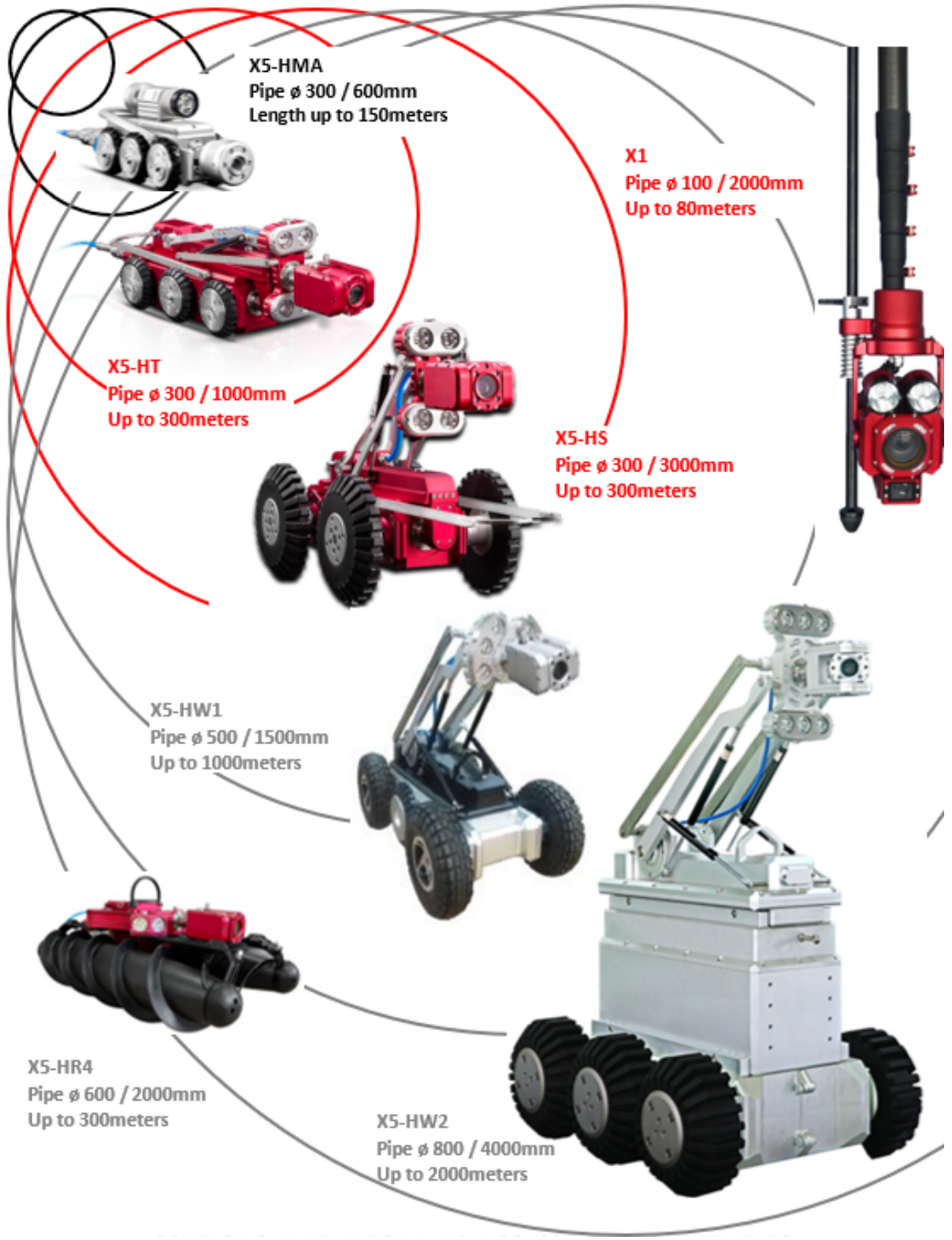
Suitable for pipe diameters above 600mm with a cable length of over 320meters the HR4 is a versatile system. The Archimedes screw can drive the float system forward as well as steer it away from obstacles. The system has a maximum speed of 0.5meter per second downstream and 0.2meter per second upstream.

The X5-HR4 has an optional Sonar Probe. For an underwater survey.



Control Tablet





Pole Camera

The Easy-Sight Pole Camera is a robust and reliable pole camera for inspection of below ground chambers without entry.

The system comes with a standard 4.8meter extendable pole on quick release fittings, and 2.1mega pixel camera with auxiliary and standard lighting for large diameter pipes, and a laser measurement capable of measuring the distance of an item up to 80meters away.



The Easy-Sight Pole Camera is a truly remarkable camera with a 60° pan and a simple rotate via the pole. The system outputs via Wi-Fi to a touch screen control pad that comes with a chest harness so it can be a simple one-person operation.

The system has onscreen distance, laser measurement and is capable of onscreen text that can be recorded to its 128Mb storage card. The whole system uses rechargeable batteries supplied with the kit.

The system can be extended up to 25meters if required.

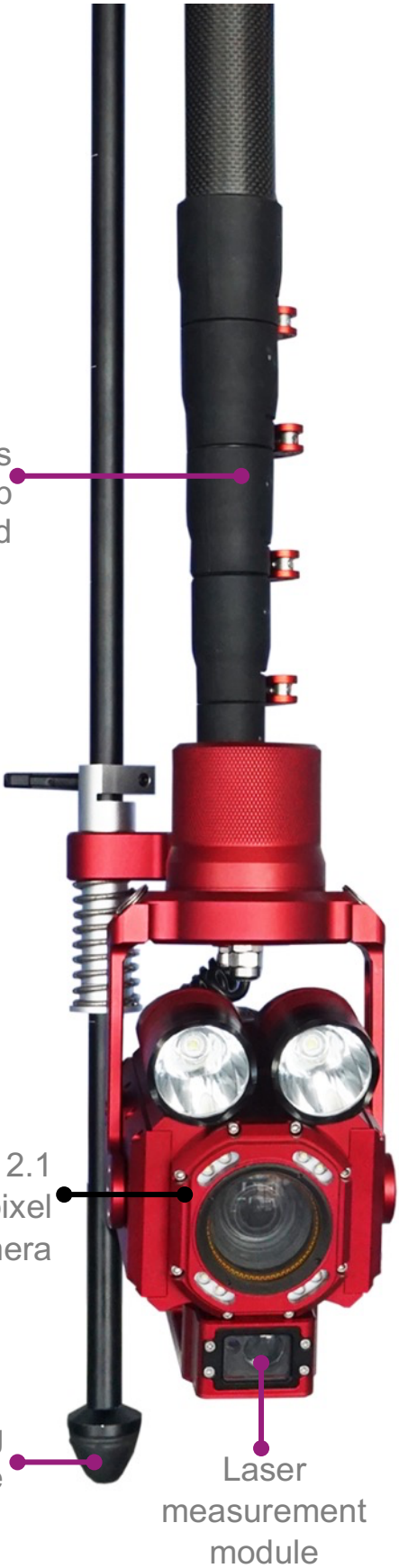


Technical Data X1 Pole Camera	
Pipe Range	100mm to 2000mm
Voltage	DC 25.2v
Current	1.2A
View Angle	60° view from horizon 35° up and 25° down
Camera Resolution	2.1 Megapixels / 1920 x 1020P
Zoom	30 times Optical
Laser Measurement Range	0.2 meter to 80 meters
Leaser Measurement	+ / 1mm
Package Dimensions	1362 x 406 x 172mm
Lighting	6 x 10w LED's
IP Rating	68
Camera Weight	2Kg



Extendable poles
4.8m standard up
to 25m if required

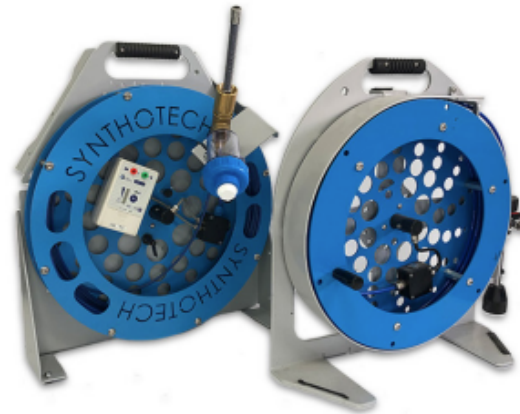
Touch screen
control
system



Live Access Potable Water Service CCTV

The ServiceCAM H2O Lte and Pro have been developed from the world's leading supplier of Live Access Gas Systems to provide service in-pipe vision and leak detection.

The ServiceCam H₂O system has been developed from the world's leading supplier of Live Access Gas and Water CCTV Systems. After 6 years of supplying under pressure ServiceCams into the live gas distribution market operating at pressures up to 6 barg, Synthotech is now able to offer its ServicCamH2O.



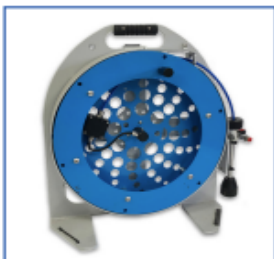
There are two variants of the ServiceCam H2O, the PRO and the LTE version:

ServiceCam H2O PRO is a 14mm diameter camera on the end of 50m of 6mm diameter rigid fibreglass rod. The CCTV head has an in-built FAST PipeMic™ that allows the system to not only see inside the pipe, but to locate leaks as well. The ServiceCam H2O PRO has been designed for end on insertion in service pipes from 25mm in diameter, insertion vertically through a standpipe from an Elster (hockey stick type) meterbox, and vertically into small diameter mains from a saddle fitting or through bore hydrant.

The ServiceCam H2O LTE is a 14mm diameter camera on the end of 20meters of 6mm diameter flexible nylon rod. The CCTV head has an in-built sonde for point location as well as line location and provides clear in-pipe vision for multiple short radius bends. The ServiceCam H2O LTE has been designed for insertion end on from 25mm diameter PE pipe (or similar copper, lead, steel) or vertically through several meter boxes using the Synthotech Live Launch tube for standpipes.

- 14mm diameter camera
- 20m to 50m push rod capability
- Choice of 5.4" or 8" screen or a full recording 8" screen (12" option available)
- 8" recording screen includes text overlay and wifi
- WRAS approved material and chlorination tank included
- 10bar operational use

- **Faster** - Speeds up pipe problem investigations and reduce time for customers to be off water
- **Cheaper** - Reduces maintenance costs
- **Safer** - Can be used with several safe under pressure access systems for insertion into live water pipes
- **Leak Location** - Able to show leak vortexes, weeping leaks and provide audio confirmation through ServiceCAM H2O Pro in-built FAST Pipemic
- **Easier** - This system comes with full training and support



Live Access Potable Water Mains CCTV

The SynthoCam H2Omic has been developed from the world's leading supplier of Live Access Gas Systems to provide leak detection inside a pipe.

Synthotech is the manufacturer of the SynthoCam H2O range of under pressure potable systems vision systems. The system has been designed for live access into potable water pipes through full bore hydrants or under pressure drillings from a vertical insertion system.



The SynthoCam H₂O Mic system is made with existing **WRAS approved** materials and parts, allowing us to confirm that all wetted parts are WRAS approved.

The system uses an integrated hydrophone that relays the sound of a leak back to blue-tooth speakers and or headphones.

- **Faster** - Speeds up pipe problem investigations and reduces time for customers to be off water.
- **Cheaper** - Reduces maintenance costs.
- **Safer** - Uses a pressure balanced insertion tube for safe access and egress with the water main, hydrant and or drilling system.
- **Further** - Pushes up to 100m providing a survey up to 200 metres from a single excavation.
- **Easier** - This system comes with full training and support.



- Interchangeable High resolution 30mm camera for diameters from 4" / 90mm to 10" / 250mm.
- 12mm Ø basalt filled Ultralife push rod reduces breakages.
- Choice of display with up to 5 hour battery life and a selection of data storage systems options.
- Interchangeable Camera Head Spring.
- WRAS approved and Chlorination tank included.
- Quick release screen display stand.
- 10bar operational use.
- Optional GPS tracker available.



Live Access Gas Service CCTV

SynthoCAM™ has a wide range of Service pipe CCTV systems, for pipe diameters from ½” metallic or 16mm Polyethylene (PE) that operate at pressures up to 4 bar.

ServiceCAM™ PE&M is a live access CCTV system for surveying PE and metallic Service pipes up to 40mm / 2” diameter. This system operates at pressures of up to 2bar and gains access to the live service pipes through valves, Emergency Control Valves (ECV), House Entry Tees, Horizontal Insertion and wrap around clamps. The PE&M system is on a simple wrap on reel. The system is 20 meters long.



ServiceCAM™ Pro is a live access CCTV system for surveying PE and metallic Service pipes up to 40mm / 2” diameter. This system operates at pressures of up to 4bar and gains access to the live service pipes through valves, Emergency Control Valves (ECV), House Entry Tees, Horizontal Insertion and wrap around clamps. The Pro system is on a wind on reel with on-screen meterage. The system is 20meters long.



ServiceCAM™ Pro Plus is a live access CCTV system for surveying PE and metallic Service pipes up to 40mm / 2” diameter. This system operates at pressures of up to 4bar and gains access to the live service pipes through valves, Emergency Control Valves (ECV), House Entry Tees, Horizontal Insertion and wrap around clamps. The Pro system is on a push on reel with on-screen meterage. This system is 80meters in length and for slow bends only.



SynthoCAM™ S195™ is a 19.5mm diameter camera system on a 4.5mm insertion coiler for use on 2” metallic services through a 2” full circumferential clamp and access valve and into 55mm to 63mm PE pipe through 32mm and / or 63mm Top Tees. The S195 can be used with *SynthoCAM-3™* and *SynthoCAM-4™* systems.



Live Access Gas Metallic Main CCTV

SynthoCAM™ is a modular camera system that can be integrated for use with Metallic, PE and PVC mains. A range of screens, insertion coils, cameras, and access systems means it is the most comprehensive system available.

SynthoCAM S3 Contractor system is an entry level survey system. It comes with a 120meter yellow rod and a 34mm self-levelling (S340) camera, a fixed angled insertion head and a 12" non-recording screen (Mini-SCU). The system can be upgraded with additional insertion systems, cameras, and screens as required.



SynthoCAM™-S4 is the latest version of the award winning modular *SynthoCAM™* system.

The system has been designed to meet the strenuous requirements of operational live access networks. With near HD quality camera, the latest in ultrabright LED's and designed to ATEX2 standards with less operational parts making them even more robust and quicker and cheaper to maintain. The systems have been upgraded to have IP68 connections and the display screens come with a battery pack as standard with the latest in hard-drive recording.



Live Access Gas Polyethylene (PE) Main

SynthoCAM™-S4-PE is our PE mains system. Designed for live access into PE pipes through 32mm and 63mm High Flow top Tees. Access through *Synthotech's* patented Pressure Balance Tube, means easy **SAFE** access in and out of medium pressure pipes. All PE systems come with line tracing capability.



S195 on a 4.5mm insertion coiler for insertion in 55mm to 63mm diameter mains using either a 32mm or 63mm Top Tee.



4.5mm Coiler

S240 on a 4.5mm insertion coiler for insertion in 63mm to 180mm diameter mains using a 63mm Top Tee.



6mm Coiler

S300 on a 6mm insertion coiler for insertion in 90mm to 315mm diameter mains using a 63mm Top Tee



S300

S300 on a 7.4mm insertion coiler for insertion from 90mm using a 63mm Top Tee.



63mm TT Access



SLPG-010524-0.1

Live Access Gas Polyethylene (PE) Main

New for 2023 is *SynthoCAM™-S4-PE* for larger diameter mains using the *SynthoCAM™ Titan* and a Purge Saddle.

Compatible with WASK, ALH and Pipetech drilling bases, the *SynthoCAM™* Large Diameter PE system gives full circumferential vision in large diameter PE mains.

The system uses *Synthotech's* patented Pressure Balance Tube, which means easy **SAFE** access in and out of medium pressure pipes. All PE systems come with line tracing capability.



Compatible with the 9mm and 15mm diameter *SynthoCAM™ Titan* push rods.

Designed for use in 125mm and above using the 9mm push rod.

Designed for use in 355mm and above using the 15mm push rod.



Designed for use up to 2Bar in the UK.

Can be used up to 7Bar dependent upon access fittings.

Can be used with the *SynthoCAM™* 50mm camera as well as the *SynthoCAM™ Titan* Pan and Tilt.



SynthoCAM™ Titan gives full circumferential vision in larger diameter mains



Live Access Gas PVC Main CCTV



SynthoCAM™ PVC has been designed to work with the WAVIN BG access fitting on PVC pipework. Designed for use up to 2bar gas, the system has three access tubes for use in pipes from 50mm to 255mm using the WAVIN BG access fitting. Utilising the standard *SynthoCAM™* 4.5mm and 6mm diameter insertion coils the systems can push up to 70meters in a single direction from an access fitting. Vision is provided by the 24mm, 30mm and 34mm self-levelling cameras.



Power Supplies

SynthoCAM™ systems can be powered by 110volt to 240volt mains supply, 12volt systems, battery packs and solar panels. Silent and remote working made simple. Ask for which solution will work best for you to meet your energy requirements.



Live Access Pan and Tilt CCTV

SynthoCam™ Titan™ (S500) is *Synthotech's* latest Pan and Tilt Camera system. The camera is a non-glass domed unit which has been designed for insertion in 8" to 24" live gas mains through a 2" BSP drilling.

The camera has been designed for use at 2bar through an existing 2" BSP drilling. The camera rotates back on itself during insertion to protect the lens. The camera can Pan 360° and Tilt with a visible 270°. The camera is made from lightweight but robust aluminium, with a fully enclosed polycarbonate case which maximises the super bright white LED lights that optimise vision in the pipe.

The *SynthoCam™ Titan™* can be used with a 9mm Cobra for 8" to 12" metallic diameter mains, and with a 15mm Cobra for use on 12" to 24" metallic diameter mains. It can be used in larger diameter mains, but this will reduce the insertion distance.

The *SynthoCam™ Titan™* is unique and specifically designed to be launched through a 2" BSP hole that eliminates the requirement of non-routine operations.

The *SynthoCam™ Titan™* is compatible with ALH System-1 base unit for use on metallic and PE pipe and with the ALH Bonded Saddle for large diameter surveys using the patented Push To Angle insertion. It is also compatible with the WASK base using the Rotate to Angle patented insertion on Metallic pipe and on PE pipes over 200mm diameter through a PE purge saddle. The *SynthoCam™ Titan™* can be inserted up to 70metres in either direction.

The *SynthoCam™ Titan™* is compatible with our vertical insertion pressure balanced tube for use in large diameter PE from 180mm through a purge saddle and a WASK or ALH Base.



Live Access Gas Mains Crawlers

SynthoTRAX™ is a unique robotic crawler designed to be inserted vertically through a 161.5mm diameter hole into large diameter gas mains, approved for use up to 2 bar operating pressure.

SynthoTRAX™ will survey up to 400meters from a single excavation (200m in either direction) and survey PE mains up to 630mm diameter and metallic mains up to 48" diameter.

SynthoTRAX™ is compatible with an ALH System 3 valve, and all AVK/Donkin (or similar) large diameter valves.

SynthoTRAX™ is compatible with full encirclement clamps for vertical insertion into mains less than 24" diameter. NB. Minimum diameter for vertical launch is 14".

SynthoTRAX™ is compatible with ALH Systems' Bond and Bolt system for keyhole access.

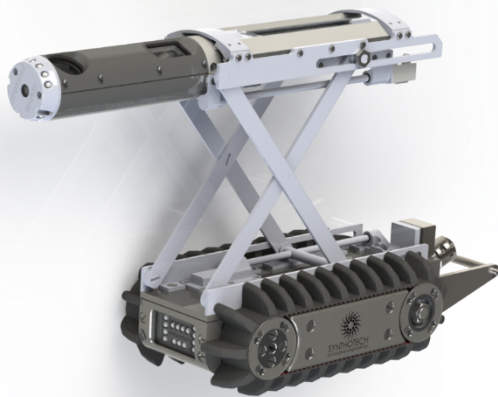
The **SynthoTRAX™** system is a modular platform which has been adapted for many uses. **SynthoTRAX™1.5** is used for vision surveys, the small diameter **STASS™** leakage reduction system and the **SynthoTRAX™ Profiler™** for scanning the profile of butt fusion joints on the inside of PE pipe. **SynthoTrax™2.0** is slightly bigger with a distance of up to 500meters from a single excavation. **SynthoTRAX™2.0** is the platform for the main **STASS™** leakage reduction system and the latest version **LeakVISION™** for large diameter gas leakage visualisation.



SynthoTRAX™



STASS™



Profiler™



LeakVISION™

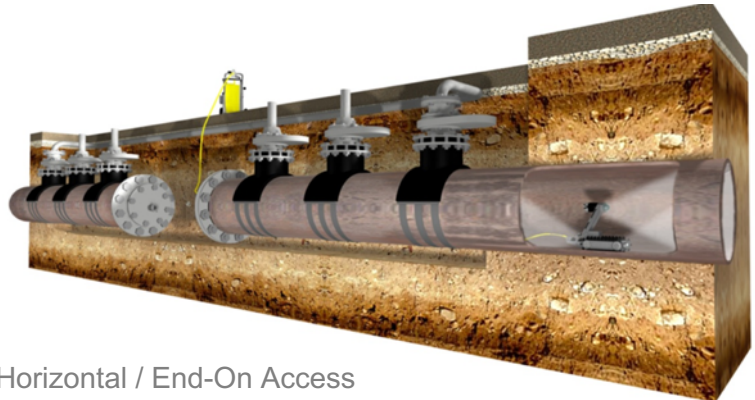


Live Access Gas Mains Crawlers

SynthoTRAX™ has been designed to meet the strenuous requirements of large diameter surveying. As such the **SynthoTRAX™** system has been designed with access as a primary driver.



Vertical Access

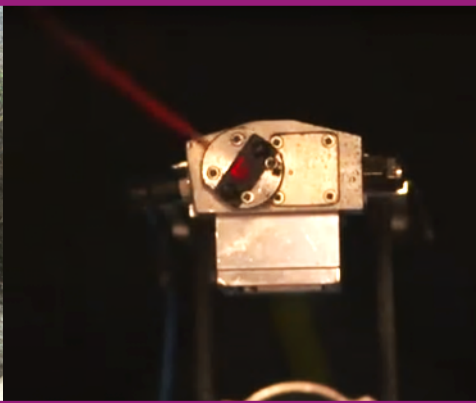


Horizontal / End-On Access

SynthoTRAX™ has been designed to work with ALH System Bond and Bolt, thus negating the requirement for large diameter excavation, and simply working on the crown of the pipe.



Bond & Bolt Access

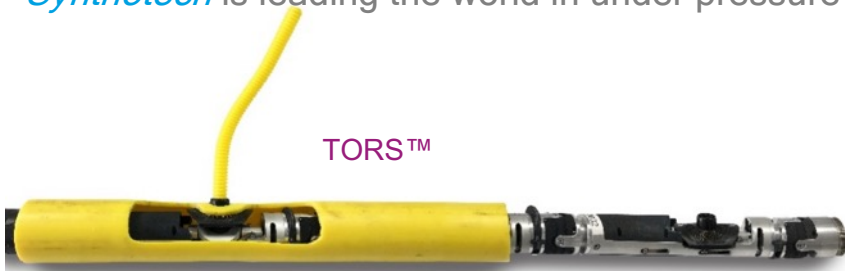


STASS™

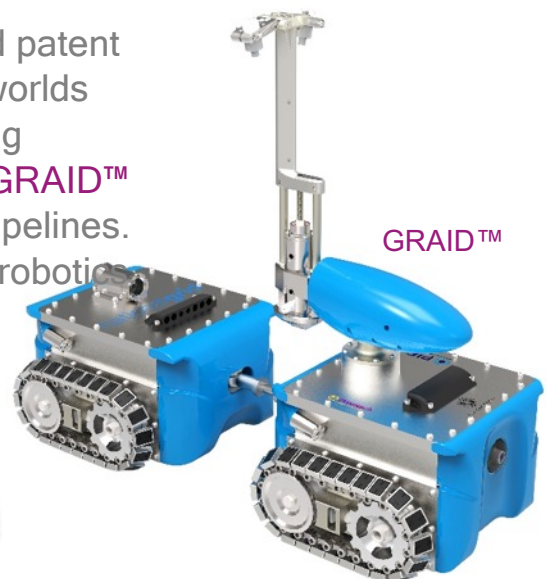


SynthoTRAX™

Synthotech is the developer and manufacturer and patent holder of numerous world's firsts in robotics. Two world's firsts are the **TORS™** system for remotely connecting services to mains without excavation. Another is **GRAID™** the world's first 100bar gas robot for un-pig-able pipelines. **Synthotech** is leading the world in under pressure robotics.



TORS™



GRAID™

Measuring Wheels

The RotoSure is the UK's leading supplier of precision measuring wheels and road measurement tools

	Econo 1000		RD100		Classique		
	401080	401081	401082	401083	401084	401085	401086
	Std	Del	Std	Del	Std	Del	Clas
Folds in Half	✓	✓	✓	✓	✓	✓	✓
Push Button Release Clip	✓	✓	✓	✓	✓	✓	✓
Push Button Zero Reset	✓	✓	✓	✓	✓	✓	✓
Kick Down-Side Stand	✓	✓	✓	✓	✓	✓	✓
Debris Removing Scraper	✓	✓	✓	✓	✓	✓	✓
Follows Fine Edges	✓	✓	✓	✓	✓	✓	✓
Runs in Straight Line	✓	✓	✓	✓	✓	✓	✓
Balanced In Line Movement	✓	✓	✓	✓	✓	✓	✓
Better Traction	✓	✓	✓	✓	✓	✓	✓
Wheel Runs on Sealed Roller	✓	✓	✓	✓	✓	✓	✓
Robust Wheel	* * *	* * *	✓	✓	✓	✓	✓
Heavy Duty Oval Shaft	* * *	* * *	✓	✓	✓	✓	✓
Built in Carry Handle	* * *	* * *	✓	✓	✓	✓	✓
Wrist Strap	* * *	* * *	✓	✓	✓	✓	✓
Carry Bag Included	* * *	* * *	* * *	* * *	✓	✓	✓
Trigger Brake in Handle	* * *	✓	* * *	✓	* * *	✓	✓
Reset in Handle	* * *	* * *	* * *	* * *	* * *	* * *	✓
Weight	1.8kg		2.1kg		2.36kg		
Hard Surface	████████		★★★★★				
Paving	□□□□		★★★★★				
Uneven	~~~~~		★★★★				
Grass and Carpet			★★★				
Soft Sand			★★				

RotoSure
Econo 1000



RotoSure Classique
Professional



RotoSure
RD1000 Deluxe



Site Survey Pipe Lasers

Professional line marker for all your survey requirements

ProSolve™ Temporary Linemarker Paint 750ml Aerosol

ProSolve™ Temporary Line Marker paint. 7 colour variations stay vivid and bright for approx. 4-6 weeks (depending on application and weather conditions). Water-based, easy to remove. Available in white, green, orange, black, red, blue and yellow.

ProSolve™ Semi-Permanent Linemarker Paint 750ml Aerosol

A great quality line marking paint. With 46.7% paint solids. Hardwearing and touch dry in minutes. Available in white, green, orange, black, red, blue and yellow.



	Temporary Linemarker	Semi-Permanent Linemarker
White	401050	401057
Green	401051	401058
Orange	401052	401059
Black	401053	401060
Red	401054	401061
Blue	401055	401062
Yellow	401056	401063



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In-Pipe Acoustic Leak Detection

The PipeMic[®] systems from FAST are the original range of In-Pipe Leak Detection Tools for pressurised live water pipes.

The PipeMic[®] range of systems allow water leaks to be detected from inside a pipe. The PipeMic[®] range supply accuracy as a matter of course, by simply locating the leak from inside the pipe. The line of the pipe and the tip can then be traced to accurately locate the leak and to ensure that only wet holes are excavated. The success of PipeMic[®] is driven by the numerous ways that it can be inserted into both service pipes and mains. The leak is identified both visually on a light bar system as well as acoustically through either speakers or headphones.



There are four versions in the PipeMic[®] range. Each provides a slightly different capability for both services and mains.

	WRAS*1	Length M					Pipe Size Plastic mm					Pipe Size Metallic mm				Frame Size mm				
		50	80	100	150	300	20	25-40	50	63-150	150-225	>225	1"	2"-3"	4"-6"	>6"	400	485	750	1000
PipeMic [®] Flex	✓	✓	✗	✗	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✗	✓	✗	✗	✗
PipeMic [®] M	✗	✓	○	○	✗	✗	✗	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	○	✗	✗
PipeMic [®] MW	✓	✓	○	○	✗	✗	✗	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	○	✗	✗
PipeMic [®] XL	✗	✗	✗	✗	✓	✗	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✓	✗
PipeMic [®] XXL	✗	✗	✗	✗	✓	✗	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✗	✓

Key ✓ Standard ○ Optional ✗ Not Available

*1- Manufactured using WRAS / BS6920 materials for all wetted parts. Not WRAS certified.

PipeMic [®] System	
Part Number	Description
300100	PipeMic [®] Flex 50m – 4.5mm ultra flexible rod – WRAS material
300101	PipeMic [®] M 50m – 4.5mm semi-rigid rod
300102	PipeMic [®] M 50m – 4.5mm semi-rigid rod – WRAS material
300103	PipeMic [®] M 80m – 4.5mm semi-rigid rod
300104	PipeMic [®] M 80m – 4.5mm semi-rigid rod – WRAS material
300105	PipeMic [®] M 100m – 4.5mm semi-rigid rod
300106	PipeMic [®] M 100m – 4.5mm semi-rigid rod – WRAS material
300107	PipeMic [®] XL 150m – 9mm semi-rigid rod
300108	PipeMic [®] XXL 300m – 9mm semi-rigid rod

Each PipeMic[®] system comes with as standard,

- Inbuilt, Acoustic Sensor, Sonde and a mechanical length counter.
- External Bluetooth Speaker, External Chlorination Tank, Banana Connection Leads (2 x 50cm 4mm connections)



The FAST PipeMic[®] Flex-V2 from Synthotech is the latest In-Pipe Leak Detection tool for pressurised live water pipes.

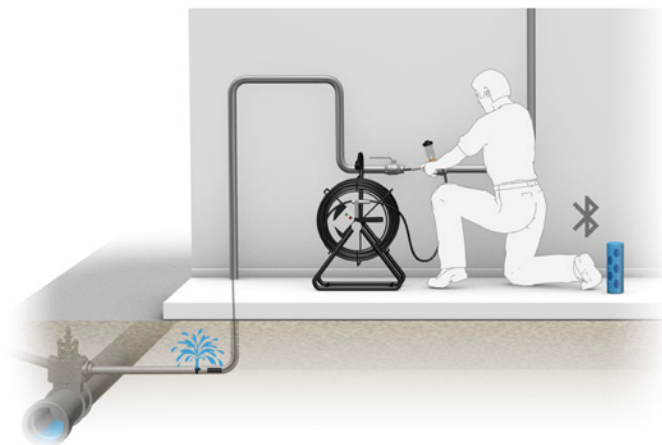
The PipeMic[®] Flex-V2 is an in-pipe acoustic leak detection system. The innovative flexible tip houses an acoustic sensor that can detect leaks from within the pipe. When a leak has been located the line of the pipe can be detected by line tracing the PipeMic[®], and then accurately pinpointing the tip by tip tracing the acoustic sensor. The PipeMic[®] Flex-V2 is a fast accurate methodology of tracing service pipes from 20mm diameter.



The PipeMic[®] Flex-V2 uses a unique ultra-flexible 4.5mm diameter rod combined with an flexible Synthotech tip which allows it to negotiate up to 3 x 90° short radius bends in 25mm pipe. The ultra-flexible rod has the fine balance between flexibility and rigidity to be able to push long distances. The 12mm diameter brass ball on the end helps to guide it

Features

- High sensitivity
- Can be used down to pressures as low as 1bar
- Uses standard CAT and Genny equipment for tracing
- Bluetooth the sound to either speakers or headphones.
- 10bar aqualock WRAS seal
- Chlorination tank and wiper seal
- Works from standard 9v battery
- Multiple access opportunities



The PipeMic[®] Flex-V2 uses a simple Bluetooth connection to either an external speaker or a set of headphones. The unit also contains a light bar to visually show the acoustic noise register all operated by a 9v battery.

The PipeMic[®] Flex-V2 is WRAS material compliant for the UK market.



PipeMic M-100m

The FAST PipeMic[®] M-100m from Synthotech is the original In-Pipe Leak Detection tool for pressurised live water pipes, updated to 100meters and WRAS material compliant.

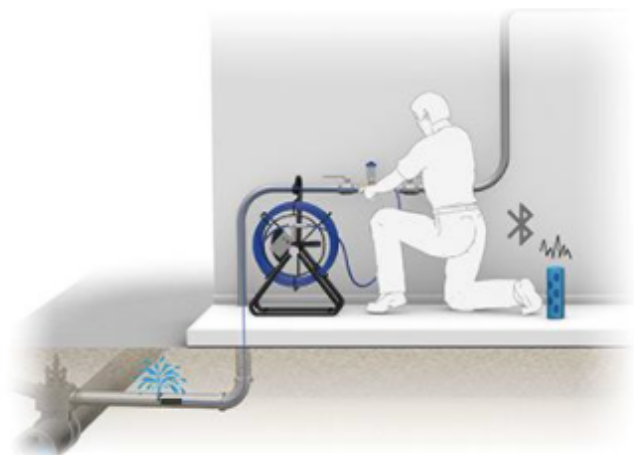
The PipeMic[®] M-100m is an in-pipe acoustic leak detection system. The innovative tip houses an acoustic sensor that can detect leaks from within the pipe. When a leak has been located the line of the pipe can be detected by line tracing the PipeMic[®], and then accurately pinpointing the tip by tip tracing the acoustic sensor. The PipeMic[®] M-100m is a fast accurate methodology of tracing service pipes for 25mm diameter.



Features

- High sensitivity
- Can be used down to pressures as low as 1bar
- Uses standard CAT and Genny equipment for tracing
- Bluetooth the sound to either speakers or headphones.
- 10bar aqualock WRAS seal
- Chlorination tank and wiper seal
- Works from standard 9v battery
- Multiple access opportunities

The PipeMic[®] M-100m uses a robust 4.5mm diameter rod which allows it to negotiate slow (long) radius bends in 25mm pipe. The rod has a rigidity that allows it to be used in smaller diameter mains up to 100mm in diameter.



The PipeMic[®] uses a simple Bluetooth connection to either an external speaker or a set of headphones. The unit also contains a light bar to visually show the acoustic noise register all operated by a 9v battery.

The PipeMic[®] M-100m is WRAS material compliant version for the UK market.



The PipeMic[®] XL and XXL from FAST are the original In-Pipe Leak Detection tool for pressurised live water mains.

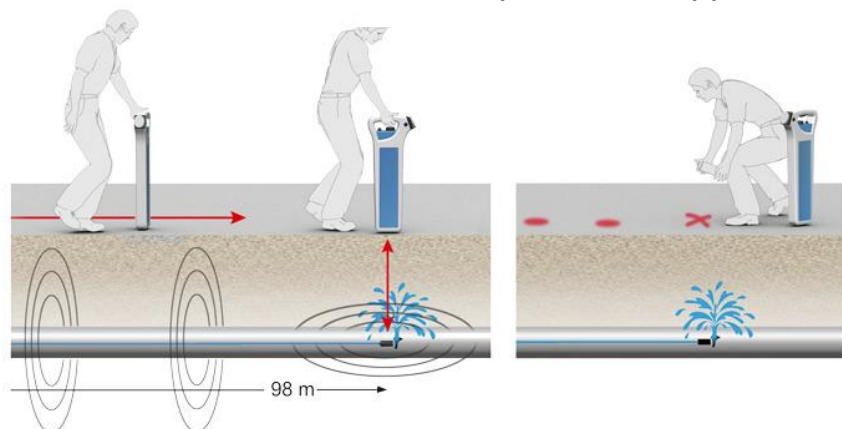
The PipeMic[®] XL and XXL are in-pipe acoustic leak detection systems. The innovative tip houses an acoustic sensor that can detect leaks from within the pipe. When a leak has been located the line of the pipe can be detected by line tracing the PipeMic[®], and then accurately pinpointing the tip by tip tracing the acoustic sensor. The PipeMic[®] Flex is a fast accurate methodology of tracing mains pipes over a longer distance.



Features

- High sensitivity
- Can be used down to pressures as low as 1bar
- Uses standard CAT and Genny equipment for tracing
- Bluetooth the sound to either speakers or headphones.
- 10bar aqualock seal
- Chlorination tank and wiper seal
- Works from standard 9v battery
- XL - 150m and XXL - 300m
- Multiple access opportunities

The PipeMic[®] uses a simple Bluetooth connection to either an external speaker or a set of headphones. The unit also contains a light bar to visually show the acoustic noise register all operated by a 9v battery.



The PipeMic[®] XL and XXL are currently not WRAS compliant but can be used under the Drinking Water Inspectorate Small Surface Area Products (regulation 31 (4) (b))

The PipeMic[®] XL/XXL use a robust 9mm diameter rod which allows it to push long distances in live water pipes. The XL has 150meters x 9mm diameter rod and the XXL has 300meters x 9mm diameter rod.



PipeMic Access Systems

Accessing Live Water Pipes has never been easier with the HMG range of Live Access Systems.

The PipeMic® range of in-pipe leak detection systems are so easy to use due to the wide range of access fittings available to get into live water service and mains.

PipeMic® Flex



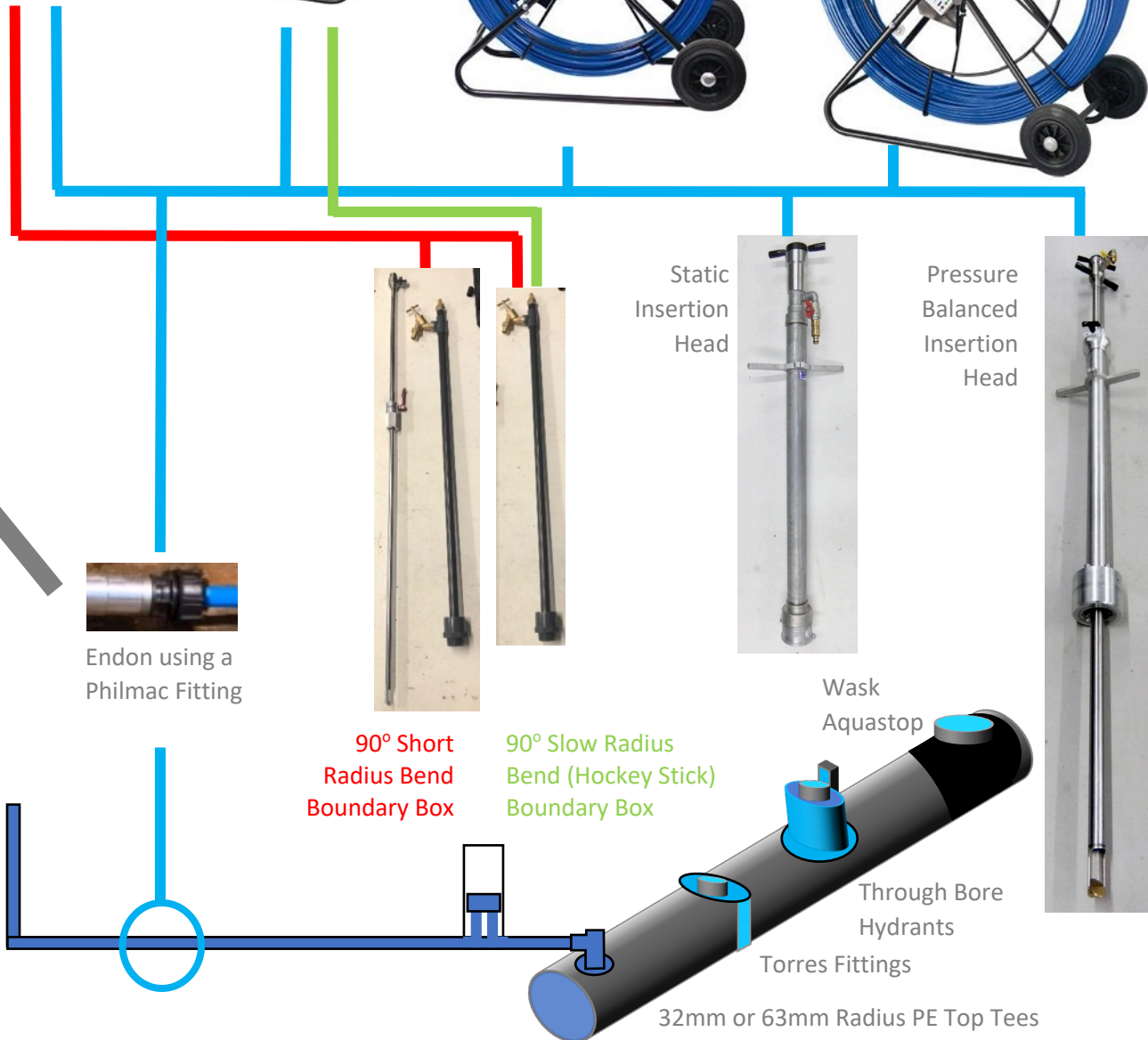
PipeMic® M



PipeMic® XL



PipeMic® XXL



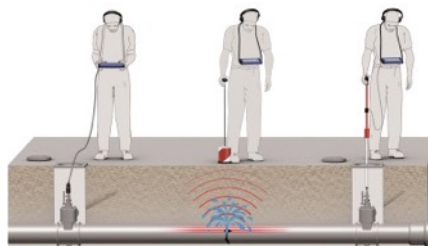
The Aqua M Series of Acoustic, Gas and combination kits are at the cutting edge of above ground water leak detection.

The range of acoustic, gas and combination kits makes the FAST M series of water leak detection equipment the most comprehensive in the world. From the compact M60 systems with internal acoustic sensors for use inside and out, to compact but powerful external acoustic M100 system, or large LCD display M200 versions to the amazingly powerful acoustic and gas M300 system

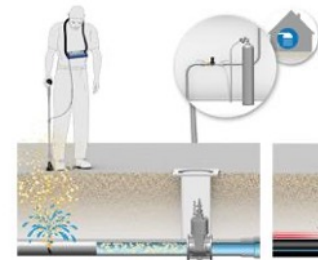


Aqua M300

Acoustic

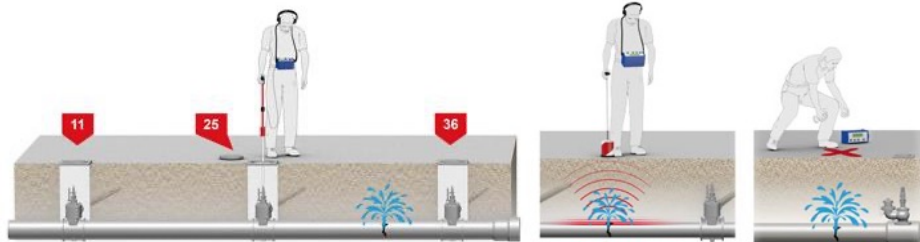


Gas



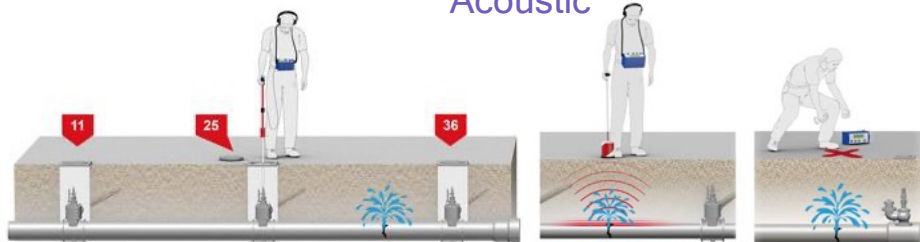
Aqua M200

Acoustic



Aqua M100

Acoustic



Aqua M60

Acoustic



All FAST M-series acoustic systems can be used with the PWGII for pipe



Aqua M60

The Aqua M60 from FAST is a simple compact acoustic leak detection system for water pipes.

The Aqua M60 has an internal acoustic sensor which allows it to be used on internal pipework which is ideal for use inside houses and in confined spaces. The internal sensor will work on both plastic and metal pipes.

The Aqua M60 can also be connected to an external accelerometer. This can be used for connection into deep excavations / manholes, or for connection onto valves.

The accelerometer can also be combined with a tripod to use it as ground microphone to allow accurate pin-pointing of the leak. Extension rods can also be connected to allow a fixed rod connection onto pipes, valves and assets.

The Aqua M60 uses Bluetooth headphones (speakers optional) to provide a tangle free operation. Combined with an easy single hand operation, the Aqua M60 is a simple to use tool. The compact robust design has a highly sensitive piezo-ceramic sensor and a low noise quality amplifier to ensure that leaks can be detected.



Aqua M100 / M200

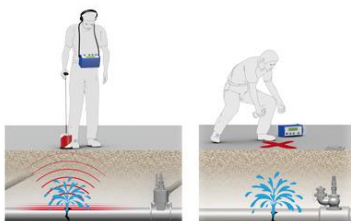
The Aqua M100 from FAST is a compact and the Aqua M200 is a robust large screen geophone for zone location and pin-pointing water leakage detection.

These units are above ground leak detection solutions that provides a detailed professional methodology of zone location and pin-pointing water leaks. They operate quickly and reliably to identify and locate water leaks. With numerous extensions that can be connected to locate leaks from valve to valve / chamber to chamber to pin-pointing location above ground.

They can also be connected to an external accelerometer. The accelerometer can also be combined with a tripod. Other accessories include a test rod with extensions for point contact a universal accelerometer with switch and a windproof ground microphone.

They use various measurement modes: Min / Mean / GTX / PWG. It uses professional sound quality due to 6 pre-set filters and has allow-noise quality amplifier. The system has an internal rechargeable

battery and comes with a charger, headphones, and a transport case. The Aqua M100 is a compact unit. The Aqua M200 has a large easy to read LCD display screen.



Battery and comes with a charger, headphones, and a transport case. The Aqua M100 is a compact unit. The Aqua M200 has a large easy to read LCD display screen.

The battery and comes with a charger, headphones, and a transport case. The Aqua M100 is a compact unit. The Aqua M200 has a large easy to read LCD display screen.

The Aqua M300 systems from FAST are combination kits that can be used for accurately locating leaks using a ground microphone and or hydrogen gas leak detection. Designed for pinpointing leaks on live water pipes quickly and efficiently.

The Aqua M300 is an above ground leak detection solution that provides a simple and fast methodology of pin-pointing water leaks.

Acoustic - The Aqua M300 has a range of very sensitive microphones that can be filtered through the Aqua M300 control unit. The filters can help to remove any unwanted background noise such as road vibrations.

Gas - The Aqua M300 has a range of Hydrogen. The Aqua M300 has three main methods of gaining the acoustic signal from the pipe.

Test rod and extension can be used to connect onto the asset, pipe, valve or hydrant. A universal accelerometer connected to the asset, pipe, valve or hydrant will increase the noise what attached to the network.

A ground microphone can then be used to isolate the leak noise between valves or hydrants. Taking regular readings, the largest readings can be identified, and the leak pinpointed.



The Aqua M300 can also be used to detect Hydrogen Leak Detection gas that has been injected into the pipe for survey. Using either the H2 Bell probe or the H2 Hand probe, regular readings can be taken, the largest readings can be identified, and the leak pinpointed.



Seba HL-50-BT

The SebaKMT HL50-BT is a simple compact acoustic leak detection system for water pipes

The system has an ergonomic grip shape that makes it a single hand operation. With only two operation buttons, the HL50-BT can be used simply by a thumb.

The HL50-BT has an integrated sensor and Bluetooth wireless headphones. This allows point location on internal leaks, as well as connection to additional sensors for use externally. The HL50-BT offers optimum mobility.



Features

- Easy to operate with only two buttons
- Frequency filter for different field applications
- Rechargeable batteries
- Can be extended with additional sensors

The HL50-BT comes with an extension set for use with a probe or magnet. But it can be extended for external use with three optional external microphones, a Universal microphone and tripod, a Piezo microphone, or a ground microphone.

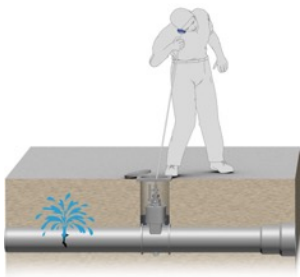


The HL50-BT has a large LCD display screen that shows measured sound level simultaneously in numerical for and as a bar graph. In addition, the frequency filter is displayed. When a measurement has been completed, the previous measured sound level is indicated on the bar graph.



The HMII is a mechanical listening device for pre-locating a water leak.

The FAST HMII is a robust listening stick manufactured from Steel and Aluminium. A silicone cover on the earpiece means that it is comfortable and easy listening stick to use.



The FAST HMII has an aluminium resonance chamber, stainless steel membrane and a silicon rubber cover. These are connected onto magnetizable stainless steel rods with a tip. The detachable version connects using an M5 screw connection.

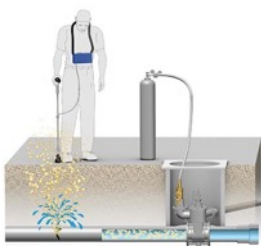


Product Specification	Part Number
HMII Listening Stick 6mm Ø x 1.5m – One piece	300251
HMII Listening Stick 6mm Ø x 2.0m – Once piece	300252
HMII Listening Stick 8mm Ø x 1.5m – One piece	300253
HMII Listening Stick 8mm Ø x 2.0m – One piece	300254
HMII Listening Stick 8mm Ø x 1.4m – Three piece	300255

GasCheck

The FAST GasCheck is a dedicated Gas Leakage System for potable water pipes using Hydrogen tracer gas.

The GasCheck is a simple gas detection unit used to locate Hydrogen tracer gas in Nitrogen. The biggest advantage of gas leak detection is it isn't affected by background noises or the sound of the actual leak.



Hydrogen is a very seeking light weight gas which will rise vertically out of a pipe at the point of a leak. Ground conditions will affect the time of response but is ultimately very accurate, particularly with very small leaks. The GasCheck sensors are very sensitive, giving a rapid response time.

Hydrogen tracer gas (Nitrogen with less than 5.5% Hydrogen gas) can be injected into water pipes with or without the water inside. Injection of the gas into pipes can be from the end of a pipe, valve, top tee, or hydrant.



By using the 'Bubble Creator' to inject the gas into the pipe system significantly reduces the amount of gas required.



Seba HL7000

The SebaKMT HL7000 is a simple compact wireless acoustic and gas leak detection system for water pipes

The HL7000 is a state-of-the-art combination system that is versatile but simple to use. The ergonomically designed system not only looks the business but does the business. In its base format it uses a wind proof ground microphone. However, three additional sensors can be attached, A Feeler rod sensor a Piezoelectric microphone or a Tracer Gas sensor. Versatility in one simple package

Features

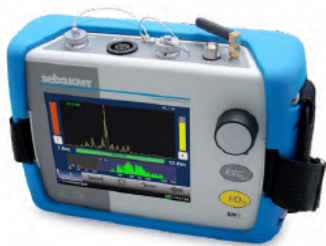
- Wireless Bluetooth operation
- Intuitive operation with clear touch colour display screen
- Rechargeable lithium-ion batteries
- Integrated GPS receiver
- Environmental / extraneous noise reduction
- Frequency analysis
- Optional - Connection of a tracer gas sensor



The Correlux C3 is suitable for both immediate (online) as well as night (offline) measurement.

If the measuring point is easily accessible and is not in a danger area, then online measurement comes into effect. Power transmitters are deployed in this case (transmitter and microphone). These transmit the live signal directly to the correlator and you receive the result immediately. However, if the measuring point is in an area which is difficult to access or if there is lots of interference, then you have the option to conduct an offline measurement using the power transmitters or up to 8 multi-sensors. The multi-sensors are programmed accordingly with the correlator and then deployed. Following the measurement, the power transmitters and multi-sensors are collected and the data can be read and evaluated by the correlator.

Features



- Easy to use with a colour touch screen display
- Online and Offline Correlation
- Long operating time and inductive sensor charging
- Pinpointing with multi-sensors or ground microphone
- Perfect for plastic pipes and trunk mains
- Multi-correlation without pipe parameter input

How does it work?

When there is a water leak from a pressurised pipe, the water leaving the pipe makes a noise. This noise is recorded, amplified and sent wirelessly to the correlator by two sensors (piezo microphones, hydrophone) which have been attached to the pipe via valves or hydrants. The Seba C3 compares both signals (correlation) and calculates the exact distance to the leakage on the basis of the time delay of the signals, the sensor spacing and the sound velocity of the pipe.



Correlux C-3



Correlux C-300



Correlux C-30

Online or Offline?

Online measurement is ultimately 'in real time'. There and then. Offline is referred to recorded readings over a period such as at night. Online use the Power Transmitters A/B. These can be added to for Offline by using multi sensors.



The Sebalog N3 automatic leak location - correlating a network



Time is the decisive factor when it comes to detecting and locating leaks. Modern monitoring systems, such as the Sebalog N-3 sound Logger network, are therefore designed to identify existing leaks and to detect new leaks in the shortest possible time. They ensure sustainable low losses in the network.

Always up to date

The Sebalog N-3 network provides you with the latest measured data on a day-to-day basis. Automatic data transmission saves you the time-consuming task of patrolling each Logger. It also offers a wide range of analyses, such as the ESA value or the history function, so that you can track the condition of the network over a long period. This means critical sections of the network are easy to identify and there won't be any nasty surprises.

The next step - network correlation

When the Loggers detect a leak, you can query the automatically recorded noise data from the affected measuring points. Depending on the configuration of the network, noise data are available for transmission either on the same day or the day after. You can listen to the recorded noises in order to tell whether the alarm message from the logger was caused by genuine leak noise or from disturbing ambient noise. But that's not all, you can correlate the noise data from several Loggers to pinpoint where the noise is coming from. Automatic daily synchronisation of the entire Logger network ensures that the correlations are highly accurate.



Efficient data transmission

The operating costs for data transmission for automated systems must not be ignored. That's why the Sebalog N-3 network offers you the option of transferring measured data from up to 50 noise loggers in a single data transmission. This means SebaKMT leads the field when it comes to the efficient transfer of measured data from loggers.



Sebalog D-3, The most universal Data Logger

Thanks to its compact and robust design and the totally waterproof housing, the Sebalog D-3 data logger is very hard-wearing. It reliably informs you of the flow rate status from the pressure and flow measurements in your supply network on up to 4 channels.

It sends the latest data automatically on a day-to-day basis via 2G or 3G to your control centre or can be received, edited and displayed within the SebaCloud or the new POSEYEDON cloud platform

Always up to date with the online measurement and alarm function.

Great emphasis was placed on user-friendliness with the Sebalog D-3. It supports online measurements on all channels which enables you as the user to access any saved measurement data and up-to-date readings at any time from the convenience of your smartphone.

Feel secure!

The Sebalog D-3 alarm feature can inform you immediately if there is a significant change in the pressure level or flow rate, because the current measuring data of the Sebalog D-3 are directly available online after an alarm. You have a reliable overview of your data - no matter where you are - to know exactly where the source of the noise is located.



Sebalog D-3	
Protection class	IP68
Temperature range	-20° C bis +60° C
State control	LED
Weight	900 g
Dimensions	185 mm x 115 mm
Power supply	
Internal lithium battery	Up to 5 years (standard configuration)
External battery	Optional
External Power supply via VK 76	12 V 1.5 A
Input (max. 4)	
Digital	4, frequency/pulse
Analogue	2, 0 ... 5 V / 0 ... 20 mA
Relays input	2
Relays output	2
Collection of data	
Internal pressure sensors	0 -16 bar (standard), 25 bar, 35 bar
Recording interval	1 sec - 24 h
Memory	Up to 1.7 Mio. measurements
External memory	SebaCloud
Alarm messages	SMS, e-mail
Communication	
SebaCloud 7 FTP server	SebaDataView-3 / SCADA / GIS
Communication	GSM / GPRS / 3G / UMTS



Multi-Gas and Dual Gas Monitors

Bestseller

4 GASES



MSA Safety

Altair 4XR Gas Detector

The Altair 4XR monitors and alerts to combustible (LEL) gases as well as O₂, CO, AND H₂S gases. Bump test with half the gas and half the time of the industry average.

The portable gas detector that clips to your clothes or belt is ideal for a working in numerous industries due to the XCell Sensors that sense gas twice as fast as the industry average, ensuring workers are alerted to risks faster and able to stay safer on the job.

Size:	110mm x 76 mm x 35 mm
Warranty:	4 years
Durability:	MIL-STD-810G drop protection Certified IP68 rating
Temperature:	-40 °C to +60 °C
Humidity:	5 % – 95 % intermittent
Typical battery life:	Rechargeable Li-polymer battery 24 Hour run time < 4 hour charge time
Data Logging:	> 50 hours (adjustable) > 500 event logs

2 GASES



MSA Safety

Altair 2X

The MSA Altair 2X is a single gas detector available for either sulphur dioxide (SO₂), carbon monoxide (CO) or hydrogen sulphide (H₂S) detection.

The Altair 2x features a stand-alone bump test, so there's no need for bottled gas to test meaning it can be bump tested anytime, anywhere.

Great for a range of industry applications including fire service, general industry, oil and gas and utilities as can be easily carried.

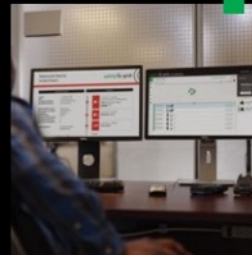
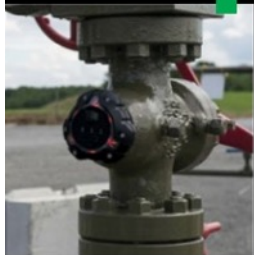
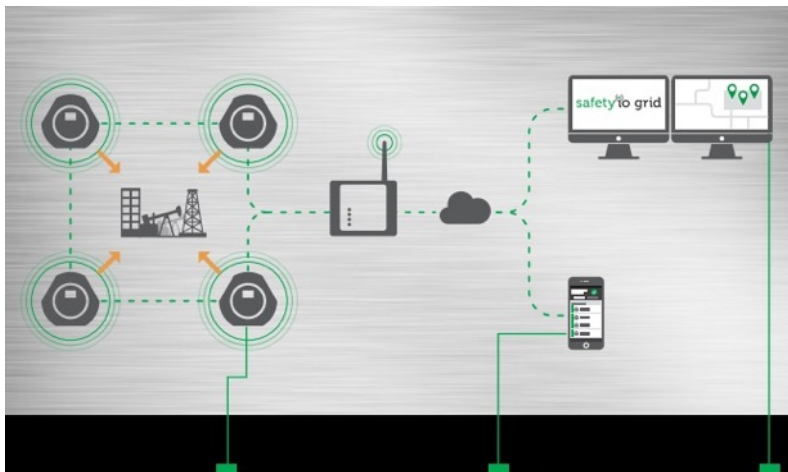
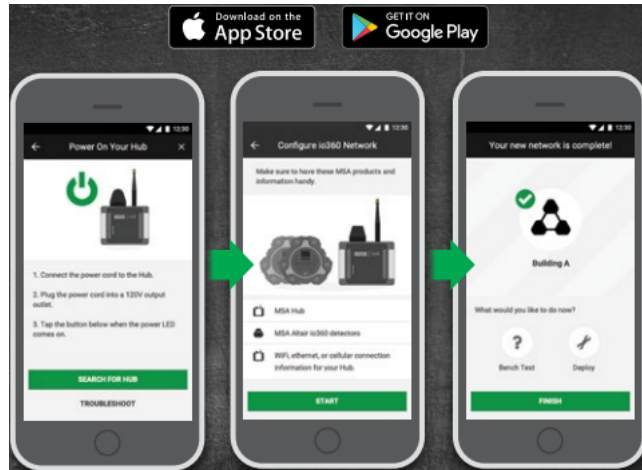
- Easy to use even when wearing gloves making this ideal for on site to enhance worker safety.
- Full traceability available thanks to monitoring records that can be downloaded when used with Galaxy GX2 and Link Pro software.
- 10 second backlit screen
- 150+ hours of periodic data



Gas Detection Equipment

Altair io360 Gas Detector

The simple usability of a Smart Home Product. The Rugged, reliable performance you expect from MSA. A simple to use area monitoring network system that comes pre-configured and ready to go out of the box requiring less time for training and setup.



Gas detection and local alarms for high-risk areas. Just turn on your ALTAIR io360 Gas Detectors and deploy where needed.

The MSA HUB allows up to 16 ALTAIR io360 Gas Detectors to form a network you manage locally via the Safety io Grid mobile app.

Connecting your gas detection network to Safety io Grid gives you the power to remotely manage and monitor your fleet of detectors, capture data, and take action to create safer sites.

Specifications

ALTAIR io360 Gas Detector Specification

WARRANTY	4 years Oxygen Sensor: 2 years Low-energy Combustible: 1 year		
DURABILITY	Drop Test: 3 m Ingress Protection: IP68		
TEMPERATURE	Normal Operating: -20° to 55° C Extending Operating: -40° to 55° C Storage: 0 to 35° C		
HUMIDITY	Intermittent: 5%–95% Non-condensing: 15%–90%		
POWER	Batteries: 3 replaceable lithium thionyl chloride batteries Runtime: nominally 50-60 days 4-gas, 80-85 days without combustible sensor		
PHYSICAL	Weight: 0.7 kg Dimensions: 132 x 142 x 69 mm		
ALARMS	Audible: 90 dB @ 0.3 m Visual: RGB LED		
DATA LOGGING	Periodic, Event, Instrument, Calibration logs stored on detector (at least 2 months) and sent to Safety io Grid.		
RANGE	Up to 300 m line of site HUB to detector 2 mesh hops to extend range.		
RADIO	868 MHz (region dependent), Bluetooth, RFID		
SENSORS	Gas	Range	Resolution
	LEL	0-100%	1%
	O ₂	0-30%	0.1%
	CO	0-1999 ppm	1 ppm
	H ₂ S	0-200 ppm	1 ppm

MSA HUB Specifications

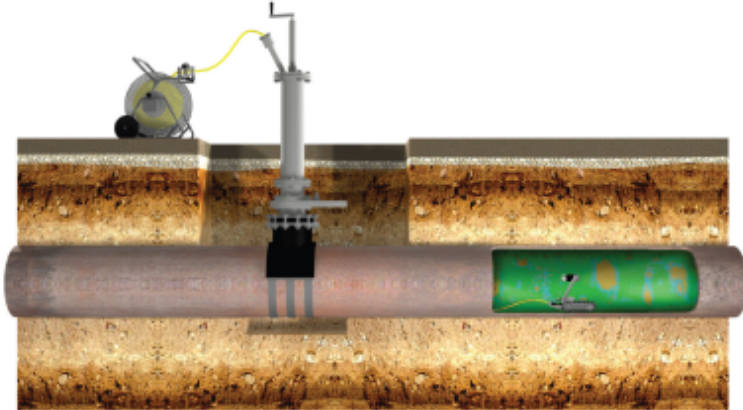
WARRANTY	4 years		
DURABILITY	Ingress protection IP67		
TEMPERATURE RANGE	-20° to +60° C for hazardous locations		
HUMIDITY	10 to 90% relative humidity, non-condensing		
POWER	Nominal: 24 V DC line power Range: 6 V to 32 V		
PHYSICAL	Weight: 1.4 kg Dimensions: 190mm x 195mm x 99mm		
RADIO	868 MHz, Bluetooth, 2.4 GHz Wi-Fi (a,b,g,n)		
ETHERNET	10/100 mbit		



LeakVISION® and GRAID™

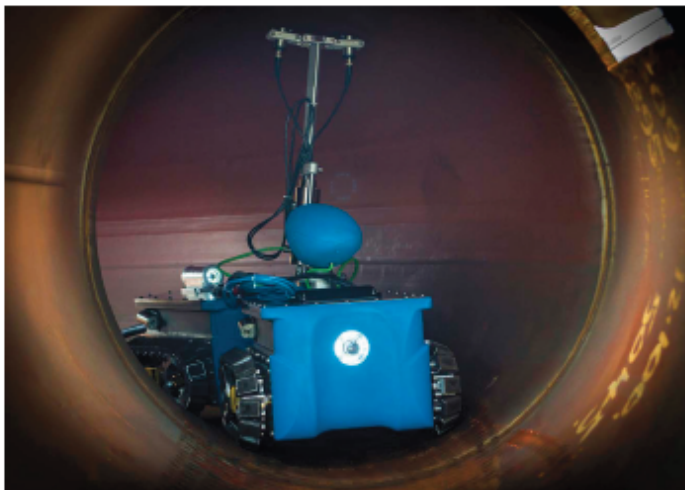
LeakVISION is a patented in-pipe leakage detection sensor, mounted to a robot base or push-rod camera system. This innovative system is used for the inspection of in-pipe features to indicate the presence of leakage from pipeline features, such as joints, connections and defects.

The system was developed during a collaborative project alongside Northern Gas Networks and Synovate, whilst also working with the EIC and a consortium of innovators, including ROSEN, The Technology Partnership (TTP) and the University of Leeds.



The **LeakVISION** solution can increase productivity by locating underground leakage both reactively and pro-actively. The complex underground gas network creates a challenging environment to find the exact location of underground leakage.

LeakVISION's technology makes use of thermography to analyse and highlight leakage by directly scanning the pipeline and pinpointing the area. This provides improved decision making and very precise targeted remediation, reducing the impact to the environment and road users by preventing and minimising excavation.



LeakVISION aims to address the challenge of the traditional method of “above ground bar holing”. This technique can often produce inaccurate results, causing unnecessary excavation and reinstatement works to be carried out. The application of the technique can also be physically demanding and can cause unwanted strains or injury to operatives performing the work.



GRAID (Gas Robotic Agile Inspection Device) was developed with National Grid Transmission and three UK SME's (Synthotech Ltd, Premtech Ltd and Pipeline Integrity Engineers Ltd). It is designed to analyse the condition of high pressure gas transmission pipelines. It is able to navigate the complex geometries of these pipelines and withstand pressures of up to 100Barg in order to allow it to take measurements and provide a visual assessment of these critical assets.



Pipe Construction Products

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Electrofusion Construction



Calder Nomad II EF Welder

- Portable Battery Powered
- Fitting size 16 to 63mm Ø
- Either 4.0mm or 4.7mm terminals
- Robust `Pelican` Plastic CASE
- Supplied with two batteries and charger unit
- Capable of welding 28 x 32mm fittings on 2

Calder Griffon™ EF Welder

- Barcode Scanning and manual time entry
- Automatic coupling recognition Fusamatic / Plasson
- Fitting size range 16-200mm Ø
- 4m output lead with standard 4.0mm terminal
- Data recording of 2,000 welds
- CalderSafe® Weld Data Analyser
- Simple symbolic display
- Terminal adaptors supplied
- Optional Control Point Blue Box Data Technology
- Optional CalderSafe® Mobile Weld Analyser
- Optional Dual sized output terminals



Calder Pegasus™ EF Welder

- Barcode Scanning and manual time entry
- Automatic coupling recognition Fusamatic / Plasson
- Fitting size range 16-630mm Ø
- 4m output lead with Standard 4.0mm terminal
- Data recording of 2,000 welds
- CalderSafe® Weld Data Analyser
- Simple symbolic display
- Terminal adaptors supplied.
- Optional Control Point Blue Box Data Technology
- Optional Double Insulation
- Optional CalderSafe® Mobile Weld Analyser
- Optional Dual sized output terminals



- Harris Pipe Scrapers 1 ½"
- Harris Pipe Scrapers 2 ½"
- Spare Blades 1 ½"
- Spare Blades 2"



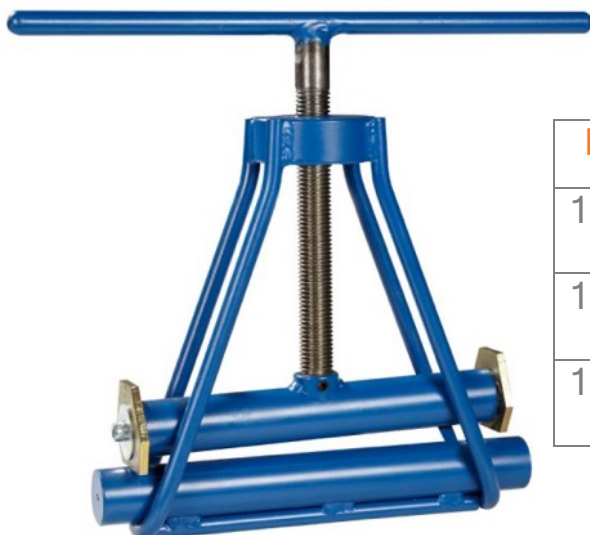
The Synthotech range of Heavy-Duty Squeeze Tools (HDST) are heavy duty robust tools for flow control. With compact designs featuring robust double loop construction and rotating buffer / limit stops to prevent damage to the pipe.



P/No.	Description
100100	16, 20, 25, 32mm Ø HDST
100111	75mm x 33 Squeeze Off Tape



P/No.	Description
100101	(20-32), 40, 50, 63mm Ø SDR11 HDST
100102	20, 25, 32, 40, 50, 63mm Ø SDR11 HDST
100103	20, 25, 32, 40, 50, 63mm Ø SDR17 HDST
100104	20, 25, 32, 40, 50, 63mm Ø SDR11/17 HDST
100105	20, 25, 32, 40, 50, 63mm Ø SDR11/17/26 HDST
100106	20, 25, 32, 40, 50, 63mm Ø SDR11 HDST with bottom bar chain
100107	20, 25, 32, 40, 50, 63mm Ø SDR11 HDST with bottom bar chain



P/No.	Description
100108	63, 90, 110mm Ø SDR11 + 110, 125mm SDR17.6 HDST
100109	63, 75, 90, 110mm, 125mm Ø SDR21 HDST
100110	63, 75, 90, 110, 125mm Ø SDR17.6 HDST



Re-round Tools

The Synthotech range of Re-round tools are simple to use, lightweight tools for removing ovality from polyethylene pipes.



Nutcracker Re-rounding Clamp 16-32mm



Nutcracker Re-rounding Clamp from 20 to 55mm

P/No.	Description
100121	Re-rounding Clamp 16 - 32mm Ø
100122	Re-rounding Clamp 20mm Ø
100123	Re-rounding Clamp 25mm Ø
100124	Re-rounding Clamp 32mm Ø
100125	Re-rounding Clamp 40mm Ø
100126	Re-rounding Clamp 50mm Ø
100127	Re-rounding Clamp 55mm Ø



Hinged Re-rounding Clamp 63 or 75mm



Hinged Re-rounding Clamp from 90 to 180mm

P/No.	Description
100128	Hinged Collar Re-rounding Clamp 63mm Ø
100129	Hinged Collar Re-rounding Clamp 75mm Ø
100130	Re-rounding Hinged Clamp 90mm Ø
100131	Re-rounding Hinged Clamp 110mm Ø
100132	Re-rounding Hinged Clamp 125mm Ø
100133	Re-rounding Hinged Clamp 140mm Ø
100134	Re-rounding Hinged Clamp 160mm Ø
100135	Re-rounding Hinged Clamp 180mm Ø



The Synthotech range of heavy-duty Pressure Test Ends are used as a quick, simple and reliable method of providing a pressure testing facility in a plastic pipe without the need for additional fusion or mechanical fittings. Available from 16mm to 500mm, SDR11 and 17.6.

Pipe Size	SDR11	SDR 17.6
40mm	501434	501453
50mm	501435	501454
55mm	501436	501455
63mm	501437	501456
75mm	501438	501457
90mm	501439	501458
110mm	501440	501459
125mm	501441	501460
140mm	501442	501461
160mm	501443	501462
180mm	501444	501463
200mm	501445	501464
225mm	501446	501465
250mm	501447	501466
280mm	501448	501467
315mm	501449	501468
355mm	501450	501469
400mm	501451	501470
500mm	501452	501471



Cable Laying Equipment

The Synthotech range cable laying tools make site work easier and faster.

Foam Pigs c/w Rope

Foam Pigs c/w Rope have been specially designed to make the installation of draw ropes and tapes into cable ducts and pipes much simpler and quicker. Once installed, the draw rope, or tape can be used to pull in cable or winch wire. We also offer a Foam Pig c/w Metal Eyes.



Polypropylene Blue Rope

Strong durable blue polypropylene rope for cable installation into ducts and pipes. Sizes available 6, 8, 10 and 12mm. Available in coils from 30m and reels from 50m up to 220m.



Cable Laying Equipment



Cable Rollers

A range of both lightweight and heavy-duty cable rollers for diameters from 76mm to 125mm.

Straight Line Cable Rollers, Straight Line Bridge Rollers and Corner Rollers available.

Steel Bellmouths

Steel Bellmouths are designed to guide a cable into a duct without damage to the cable or duct. They are made in separable hinged halves. We offer two versions with and without an additional roller.



Insertion Trumpets

Cost effective simple product that prevents expensive damage to PE pipes and cables from the "cut" edge of the existing pipe or duct during insertion. They can also be used to provide permanent protection. Available from 3/4" up to 18". Manufactured from Polyethylene, PVC or Fibreglass depending on size.

Towing Socks

A simple device for pulling cables and pipes into ducts and host pipes. Manufactured using high tensile wire that is galvanised. Reusable. From 4mm to 180mm. Single and twin loop heads available.



Rope Blowing Tees

Designed for the installation of draw ropes into cable ducts. Fits into the outlet of an expanding pipe stopper, either 1/2" or 1" version available. The draw rope is fed through the rope blowing tee and then braced in the end of the pipe or duct. When pressurised, the rope will be drawn in.

Rope Blowing Tee - requires a mechanical pipe stopper to hold it in place.

High Pressure Rope Blowing Tee - Designed for use at pressures up to 10Bar. The system has an in-built pressure relief valve to prevent over pressurisation.



The Synthotech range of DuctRods. These are a tough, compact, semi flexible duct rod system manufactured from composite fibreglass rods with polypropylene sheath, there are brass end fittings with smooth profile bullet tips and an integrated brake. Available in five different diameters, 4.5mm, 6mm, 9mm, 11mm and 14mm.



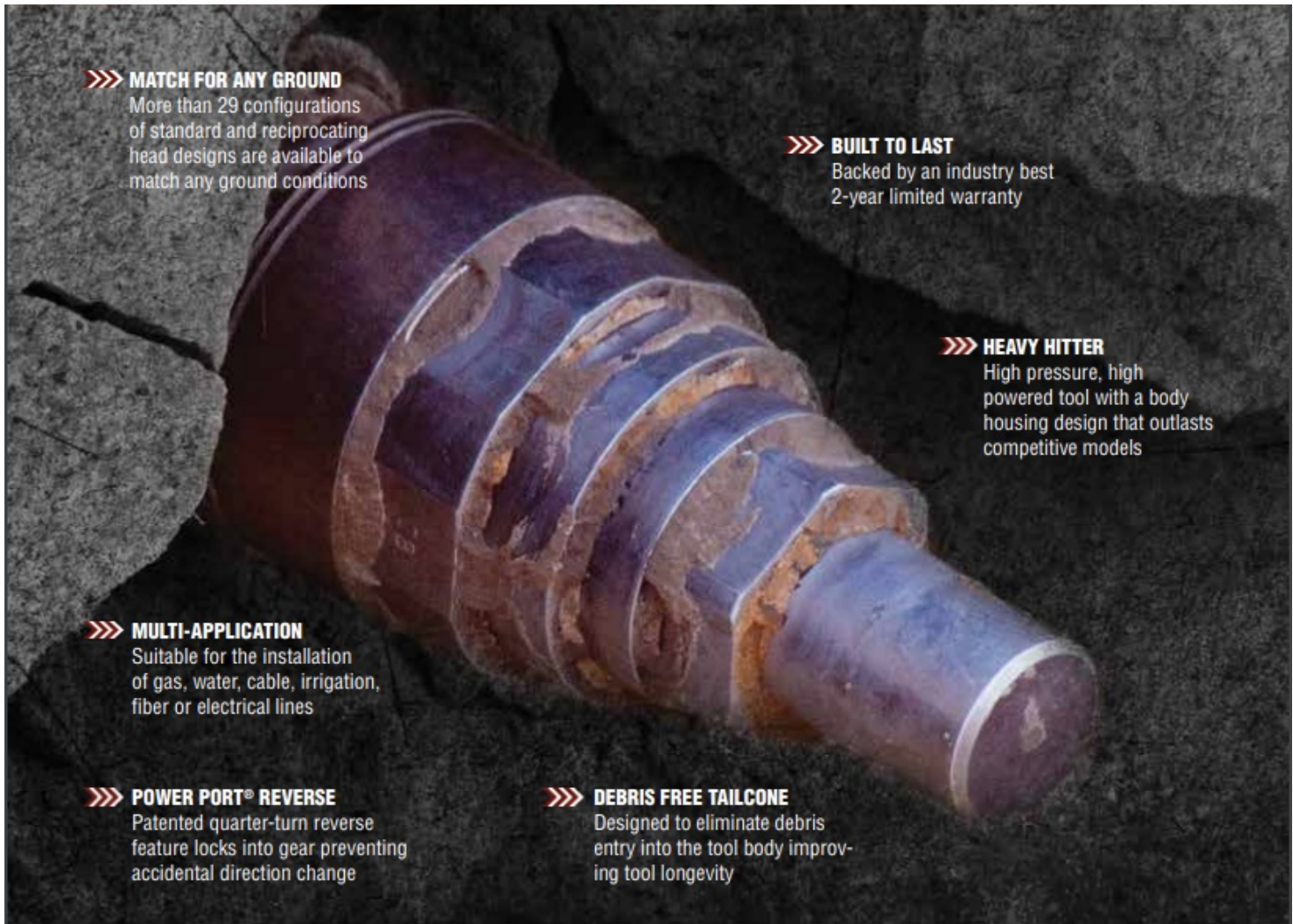
DuctRods are used for both pushing and pulling within pipes and ducts for both pinpoint location when connected to a Sonde as well as used for cabling over long distances.

Features

- Fast easy Cable Installation or pin-point location
- Lightweight for easy transportations
- Strong robust fiberglass rod
- Robust Zinc Plated steel frames
- Cost effective
- Range of adaptors available.



Hammerhead Moles



»»» **MATCH FOR ANY GROUND**
More than 29 configurations of standard and reciprocating head designs are available to match any ground conditions

»»» **BUILT TO LAST**
Backed by an industry best 2-year limited warranty

»»» **HEAVY HITTER**
High pressure, high powered tool with a body housing design that outlasts competitive models

»»» **MULTI-APPLICATION**
Suitable for the installation of gas, water, cable, irrigation, fiber or electrical lines

»»» **POWER PORT® REVERSE**
Patented quarter-turn reverse feature locks into gear preventing accidental direction change

»»» **DEBRIS FREE TAILCONE**
Designed to eliminate debris entry into the tool body improving tool longevity



CHOOSE THE ORIGINAL MOLE THAT STARTED A REVOLUTION IN TRENCHLESS INSTALLATION.

SERVICEABLE DURABILITY. The original clamped rear anvil design provides 200% more clamp load and is the most secure and proven assemble available. HammerHead Moles also feature composite wear rings to decrease abrasion, providing a sustained level of performance.

PATENTED POWER PORT® REVERSE. The patented quarter-turn reverse feature pneumatically locks the tool in to forward or reverse, preventing accidental direction change during the bore.

TWO YEAR WARRANTY. HammerHead Mole piercing tools are backed by a two-year limited warranty compared to 90-days with the leading competitor. Plus, our piercings tools are supported by an international distributor network ensuring you have access to the parts and service you need to maintain productivity throughout the life of the tool.

WIDEST RANGE OF TOOLS TO SUIT YOUR GROUND CONDITIONS. HammerHead Mole tool models from 2 1/2" to 5 1/8" (50 mm – 130 mm) available from your authorized HammerHead dealer give you access to more than 29 standard, Active Head® or Catamount designs.

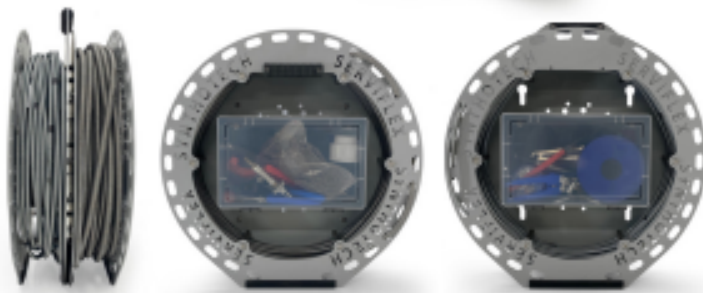
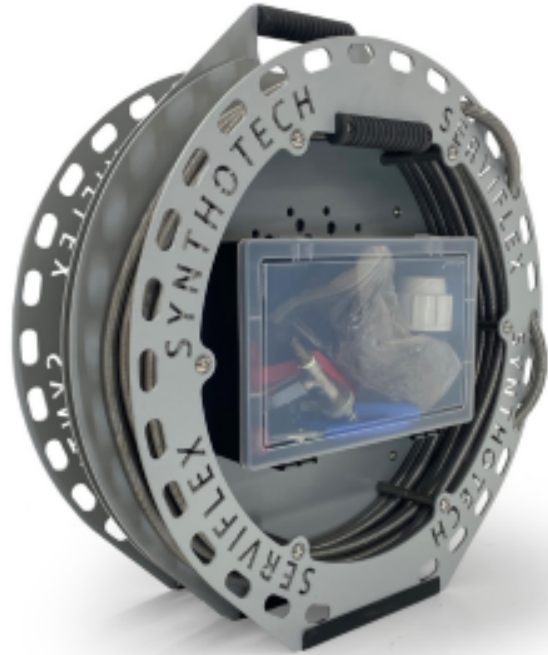


ServiFlex® Flexible Gas Service Pipe Installation



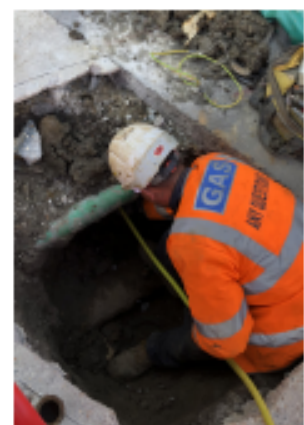
System for relining service pipes with ServiFlex®

- Quickly and easily reline 1" metallic services with ServiFlex®.
- Insertion length of up to 12 meters (network dependant).
- Can navigate up to 2 short radius bends.
- Significantly reduce excavations.
- Reduces customer face-to-face working.



- CHEAPER - Saves money by eliminating re-runs.
- QUICKER - Takes half the time.
- SIMPLER - Stream lined process reduces the risk of mistakes.
- SAFER - Less complicated kit and fewer excavations leads to a reduction in risk.
- EASIER - Full training and after-sales support.

- Compatible with the Synthotech's ServiceCAM asset inspection
- Developed with new Radius PE garden fitting.
- Can also be used with existing garden fitting and serviflex pipe.





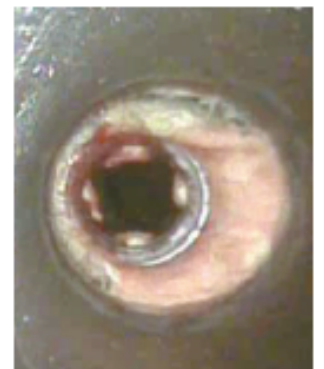
This project is a significant development of the existing Sealback I system, with the aim of delivering an improved method of replacing short lengths of metallic main in specific locations of engineering difficulty (short lengths of main that connect onto a parent main in a major road junction) in a safe, efficient and practical manner.

The system is for low pressure mains, with minimum insertion distance of at least 20m of replacement pipe with a stretch target of 27m, up to 8" metallic 'child' main leading on to any size parent main.



The primary anticipated benefits of this project will be that Sealback II will allow mains located in areas of engineering difficulty to be replaced via live transfer, leading to a reduction in operational expenditure and risk.

Also reduced environmental impact by minimising associated works including the requirement for landfill of excavated spoil.



Pipe Maintenance Products

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Telecom Maintenance

The TX916 Loop-a-Line is used for efficient telephone installation and maintenance repair.

Synthotech are the exclusive UK distributor for Teletech PTY. TX916, the new improved Loop-a-Line for efficient telephone installation and repair. The TX916 is ideal for new service installations and repairs. Cable faults will be found faster, and service restored more quickly with the TX916 in the technician's tool kit.

Using the Probe, identify the pair and control the line termination at the oscillator for:

- Open Circuit
- Short Circuit
- Connect Service
- 600 Ω quiet line
- Pair short circuit detection

For quiet line, the termination is 900 Ω in regions where this is the standard network termination.



5 Ways To Better Service Provision

1. Press TONE to identify the cable pair
2. Press OPEN to disconnect the line for Foreign Battery and Insulation Resistance testing
3. Press SHORT to loop the line for loop resistance, Resistance balance and Resistive fault location tests
4. Press CONNECT to restore the service
5. Press 600 Ω Ohm for a quiet line

Benefits Of TX916 Loop A Line

One technician can work unassisted by using the probe to remotely control an oscillator

Eliminates multiple journeys along the cable path

Six mode selectable switching

Battery level indicator

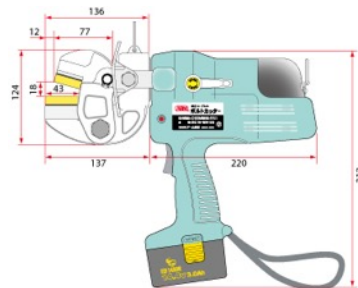
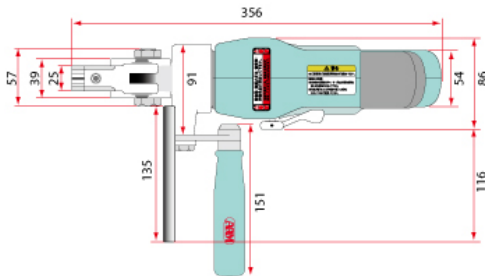


The ARM Sangyo is a powerful cordless bolt cutter used for emergency and planned work by maintenance and security teams.

Synthotech are the exclusive UK distributor for ARM Sangyo.



The BC16 (501200) has a cutting capacity of 16mm diameter for Rebars or 13mm diameter for hard steels. Used in multiple industries including construction, security, rescue, sea containers, transport and with hoist chains,



The BC16 outputs 11 ton`s of force from such a small package. Weighing only 7.1kgs supplied in a carry case with the battery charger.

Cutting time: 5 Seconds

Cutting times per fully charged battery: 16mm diameter rebars = 210 times
13mm diameter rebars = 305 times

Each BC16 set (501200) comes with;

- Bolt Cutter (501201) and blades
- Spare blade set (501202)
- Hand protector (501203) and shoulder strap (501204)
- Li-ion battery (501205) and charger (501206)
- Carry case (501207)

Spares



Spare blades



Hand protector



Battery charger



Spare Battery Li-ion



Carry case



Water Pumps

A range of helpful drainers and gully clearing tools



Venturi Jet Drainer

This is a rugged, simple, and lightweight air operated pump that requires no priming and can move approx. 15,000 litres of water per hour. The tool is cost effective, designed to enable one on every van.

Unlike conventional pumping machines, the Venturi Jet Drainer will not clog or seize up when faced with small stones, mud, or sludge etc., and when used with a single compressor, it can pump up to 4.5 meters high.

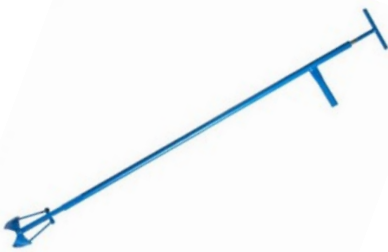
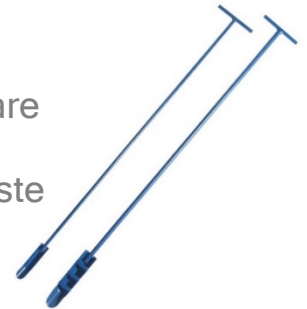
Hog Light Duty Draining Pump

The Hog Light Duty Draining Pump is a lightweight, 4 ft long hand operated water pump which is virtually unaffected by dirt, mud, or grit. Its easy to use, with a low friction piston rod and oversized handle to enable comfortable pumping.



Drain and Gully Cleaning Scoop & Tongs

The Drain and Gully Cleaning Scoop and Tongs are solid metal manufactured tools designed for the effective, safe, and hygienic removal of soiled waste from gullies, boundary traps, pits and shafts.



Drain and Gully Cleaning Grab

The Drain and Gully Cleaning Grab is a solid metal manufactured tool featuring a spherical grabbing bowl, designed for the effective, safe, and hygienic removal of soiled waste from gullies, boundary traps, pits, and shafts.

Litter Picker

The Litter Picker is a lightweight easy to use tool designed for the effective and safe removal of paper sand solid objects from gullies, boundary traps, pits, and shafts.



A range of pipe scrappers, cleaners, pull throughs duct brushes and foam Pigs



Pipe Scrapers

These are designed to remove hard deposits and nodules. This type of cleaner (also known as Christmas Tree Scrapers) are made up of several spring steel scrapers mounted on a high tensile steel central shaft. The scrapers remove deposits as they are winched through the pipe. The central shaft is fitted with a towing eye at each end to allow the scraper to be pulled back if necessary. Available for all pipe sizes from 2" (50mm) to 48" (1,200mm)

Wire Brush Pigs

Wire Brush Pigs consist of two circular wire brushes mounted onto a high tensile steel central shaft with a towing eye at each end. They are designed to be pulled through a metal pipe to remove loose deposits and dust prior to insertion of PE pipe. They can also be used after the Pipe Scraper to remove the deposits loosened by the scrapers.

Available for all common pipe sizes up to 12" (300mm) with larger sizes available upon request. Wire brushed are also available to mount on the front of a towing head to allow the metal pipe to be cleaned as a new PE pipe is installed.



Pull Throughs



Pull Throughs (also known as Squeegees and Plungers) are used to remove fine particles and fluids from pipes. They consist of two thick rubber discs mounted on a high tensile steel central shaft with a towing eye at each end. For applications where the pipeline contains tight bends a 'flexible' Pull Through can be supplied. This model has a chain

linking the two discs rather than a ridged central shaft. They are suitable for use with all pipe materials and are available in the size range of 2" (50mm) to 48" (1,200mm)

Duct Brushes

Duct Brushes are used to remove dirt and other loose debris from inside electrical or communication ducts. They are supplied either with an eye at both ends for pulling ducts or with an M12 fitting for pushing through ducts using a Cobra (Flexible Fibreglass Rod). Available to suit ducts from 2" (50mm) to 16" (400mm)



Foam Pigs

Foam Pigs are used to remove dust or fluids from all pipe materials. They are generally pushed through a pipe using air or water pressure, although they can be supplied with a facility to allow them to be pulled through a pipe. Available from 10mm through to 1,200mm.



Proving Pigs

Used to 'prove' the internal bore of a pipe or duct prior to installation of a liner or cable. There are two versions, the Steel Dumbbell Style and the Solid Nylon Style. The diameter is normally 10% less than the internal diameter of the pipe.



Expanding Stoppers / Drain Plugs

Expanding Stopper / Drain Plugs

The expanding pipe stoppers are made of a rubber tyre ring, which is fitted between two plates. A moveable wing nut compresses the tyre, causing it to expand in the pipe which seals off the flow. Pipe stoppers are available from 2" (50mm) to 24" (600mm) manufactured from either aluminium, steel or nylon. They all have a central hollow shaft with a sealing screwed cap, ½" to 2" BSP. Larger sizes are available upon request.



Imperial	Nylon	Steel	Aluminium
1 ½"	501400		
2"	501401	501410	
2 ½"	501402	501411	
3"	501403	501412	
3 ½"	501404	501413	
4"	501405	501414	
4 ½"	501406	501415	
5"	501407	501416	
5 ½"	501408	501417	
6"	501409	501418	
7"		501419	
8"		501420	
9"		501421	
10"		501422	
11"		501423	
12"			501428
13"		501424	
14"			501429
15"			501430
16"			501431
17"		501425	
18"			501432
19"			
20"			501433
22"		501426	
24"		501427	



GOLF Under Pressure Saddle

Threaded coupling branch tees for under pressure branching to be installed on steel, asbestos cement and ductile iron pipes for pressure up to 16 bar in water. These are also used with excellent results on polyethylene and PVC-O pipe networks.

- Universal branching saddles
- Versions: dry and under pressure tapping
- Outlet with a female coupling of 1", 1-1/4, 1-1/2 and 2"
- For cast iron, asbestos cement, PE pipe, etc.
- Shutting off connections using a spatula
- Body in ductile cast iron and epoxy coated
- Outer Cover with a second leak-tight chamber
- With lower strap in weld-free stainless steel
- Leak-tightness with universal gross joint



GIGA Tees Under Pressure Connections

For large diameter service connections and by-pass diversions. These are installed on cast iron and asbestos cement pipes for up to nominal maximum pressure of 16 Bar water pressure.

Protection of the pipe: a fundamental advantage of Torre saddles is that they do not damage the pipe if excessive torque is applied. The special thickness of the gasket and the design of the straps absorb any excesses during assembly. Especially **important in installations on asbestos cement pipes.**

- Outlets in 65mm, 80mm and 100mm
- 100mm to 355mm Pipe OD's
- 16 Bar Rated
- Low stack Height
- Reusable Slide Plate Valve



- One Bolt removed for Slide Plate access
- Place Tee as required and avoid other utilities
- WRAS approved components
- Also available to suit Ferrous and PVC mains



Manhole Keys

The CoverUp Key is the ultimate for breaking sealed covers without breaking your back.



Basic Starter Kit

CoverUp Key Bar
32mm Flat Tip



Basic Drainage Kit

CoverUp Key Bar
32mm Flat Tip
22mm Flat Tip
12J Hook Tip
Cleaning Tip



Basic Electricity Kit

CoverUp Key Bar
22mm Flat Tip
10J Hook Tip
20mm Oval Tip
Cleaning Tip



Basic Telecom Kit

CoverUp Bar
32mm Flat Tip
22mm Flat Tip
10J Hook Tip
20mm Oval Tip



Fresh Water Set

CoverUp Key Bar
32mm Flat Tip
22mm Flat Tip
10J Hook Tip
Cleaning Tip
Fire Hydrant Valve Key



Gas Network Set

CoverUp Key Bar
32mm Flat Tip
22mm Flat Tip
12J Hook Tip
Cleaning Tip
Fire Hydrant Valve Key



CoverUp Key

Traditional techniques of releasing stubborn manhole and utility covers have been shown to have health and safety implications.

The CoverUp Key provides a one-man solution to allow stuck manholes to be released without chiselling or hammering. It's **patented slide hammer** exerts a momentary upward force capable of releasing stuck, jammed, and rusted chamber covers quickly and efficiently.

ManUp Key

Reduce Risk of Injury

Reduce the risk of Back Injuries when it comes lifting manhole lids.

Saves Weight

Weighs significantly less (Up to 50%) against a full range of manhole and utility covers.

Saves Time

Saves an estimated 145 hours a year on dealing with stubborn manholes

Costs Less

The use of CoverUp Key replaces many traditional tools and prevents broken manhole covers. Estimated cost of broken manhole including labour, fuel and parts of about £1,850.



The QP-K50 and QP-K65 Lighting towers are high power mobile outdoor LED floodlighting solutions specifically designed for Construction, Industrial and Utility applications.

They are easy to store, transport and set up able to replace larger and more complicated trailer light systems.

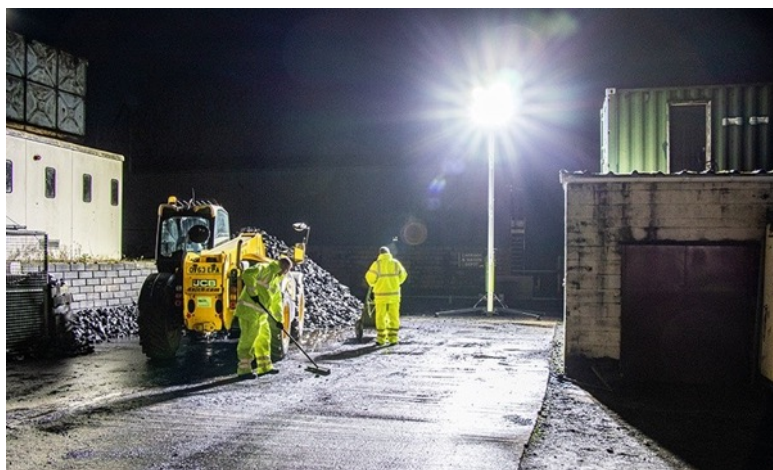
The systems provide instant flicker free high-powered LED lighting with either 110v or 230v mains or generator power input with a maximum 245,000 lumens (200w to 240w option LED Lights) per 6-light head using only 1440W of electricity.

Individual light heads can be positioned to give 180 to 360 lighting.

The robust and ruggedised structure incorporates a unique parallel mast design. The centre of gravity is very low with the weight perfectly balanced over the wheels for easy and safe handling even on difficult terrain.

The systems include an inbuilt mast safety system and operator RCBO electrical isolation switch.

The systems can be easily and quickly deployed by a single person operation. They are highly mobile and easy to manoeuvre over any terrain.



M-CEX - Meter Control Exchange



The Meter Control Exchange system is a simple way of replacing valves on live gas pipes

- Adaptors allow use on a range of pipe sizes and Emergency Control Valve types including 90° semi-concealed meter valves.
- Can be used on both Metallic and PE up to 75mbarg.
- For use on all ECVs from ½" to 2", 19mm to 32mm Copper and 16mm to 32mm PE.
- There are a variety of stoppers both rigid, flexible, hard (black) and softer (blue) making access in confined space easier.
- One person operation.



- Significantly reduces the duration that the customer is off gas.
- Designed for use in restricted areas making it easy and quick to use.
- Avoid the need for planned maintenance operations to isolate pipework systems, particularly in multi-occupancy or high rise buildings.

- Contains adaptors for BSP and BS 746 threads.
- Stargland™ technology ensures controlled gas operation.
- Designed to pass through varying valve types and geometries.
- Able to pass around long or short radius bends.



CaPEX - Cap and Plug Exchange



Exchange of Caps and Plugs to Emergency Control Valves
(and vice versa) under live gas conditions.

- Can be used to replace a wide range of cap and plug types including hexagonal, webbed and cylindrical.
- Choice of adaptors allow for use on a range of pipe sizes and Emergency Control Valve (ECV) types including 90° semi-concealed meter valves.
- For use on on ½", ¾" & 1" metallic pipes.
- There are two methods : CaPEX™ Tool can be used for live gas exchanges of up to 75mbarg. CaPEX™ Bag system can be used for pressures up to 50mbarg.
- Single person operation specifically designed for restricted locations.



- Safe, effective method of removing various types of caps and plugs.
- Prevents multiple occupancy buildings being cut off gas, and the associated costs of purge and relights.
- No need to isolate riser systems.
- Prevents riser re-testing.
- Fully tested and approved system.

- Attachments available for use on copper risers and lateral systems.
- Can be used on pipe systems with bends.
- Fully integrated with M-CEX™ kit for controlled ECV fitment.
- Can also be used to determine if a gas pipe is 'live' or 'dead'.
- Full training packages and operational support available from our Technical Support Team.



I-Seal - Screwed Joint Repair



Repair of leaking threaded joints on riser systems without interruption to gas supply. Newly approved by National Grid.

I-Seal™

- For use on 3/4" to 6" diameter metallic pipework
- Works on standard threaded joints
- Injection of anaerobic sealant into the leaking threaded joint through a delivery system comprising of an I-Seal™ clip and non-return valve
- Approved under National Grid as a semi-permanent repair
- One person operation



- Approved for use on pressures up to 75mbarg
- Carried out under 'live' gas conditions so no disruption to customers
- Kit comes complete with the full range of clip sizes
- Hand drill and high-pressure hand pump included for precision work



- An effective repair tool following inspections of mid and high level risers
- Prevents multiple occupancy buildings being cut off gas, and potential associated costs of replacement of entire riser systems
- Savings of £1,000's per job, varying on number of floors of building
- Improved customer satisfaction



Repair of leaking joints on service pipework



Seals leaking thread joints



Prevents need for riser replacement



No gas disruption for customers



An encapsulation device for working on live gas pipelines

WHAT IS THE SERVIBAG RANGE?

The ServiBAG Range has been developed following the work that Synthotech and Northern Gas Networks completed during Project Zero. These pioneering new systems mean that a gas supply is not interrupted whilst alterations to pipework are carried out. Through the new encapsulation device, a gas engineer is able to carry out a range of procedures including adding a bypass, service transfer or replacing an ECV. These systems minimise contact with the customer making them ideal for complying with current COVID-19 restrictions while also providing ongoing benefits of keeping our customers 'cooking on gas'.

Equipment is supplied in kit format which can be built by Gas Workshop operatives. Most of the parts can be reused; the parts that are consumable are inexpensive, reducing operational costs.



The ServiBAG M-CEX system allows an Emergency Control Valve to be replaced without the need to cut off supply to a house. This is the original product developed during Project Zero.

UPDATES:

- Successful field trials have taken place.
- Currently reviewing and optimising the production processes.
- Initial Gas Meter box is complete and is being implemented with Northern Gas Networks.



ServiBAG Bypass is a process for adding a bypass tee to an external meter location without interruption to the customer's supply. This is achieved with a ServiBAG that is fitted around the meter pipework. The kit comes with fittings compatible with a range of PE and metallic service pipes/connections as well as a range of external meter installation layouts.

UPDATES:

- Successful demo at Synthotech and focus group with Northern Gas Networks.
- Currently rolling out field trials.
- Semi Concealed development to follow.





SERVIBAG TRANSFER

A live gas system for adding a tee on to a PE service in a garden excavation

ServiBAG Transfer is a process for adding a transfer tee onto an existing PE Service pipe in a garden excavation. With ServiBAG Transfer this can be done under live gas conditions without interruption to the customer's gas supply by using a consumable enclosure that is fitted around the service pipework.

Upon installation of the tee, the domestic gas supply is fed through a temporary secondary supply whilst the primary service pipe is reworked. This enables a newly laid PE service pipe to be transferred from an old metallic to a new PE main.

Supply pressure is monitored at the meter outlet throughout the process to ensure that there is no interruption throughout the operation.



- **SAFER** - Allows for compliance of COVID-19 social distancing measures.
- **CHEAPER** - No need to disconnect customers from their gas supply, therefore no need for purge and relight teams. Comes in kit form with inexpensive consumable parts.

- High quality encapsulation bag holds gas up to 75mbar pressure.
- Easy to assemble kit with high percentage of usable parts and inexpensive consumable parts.
- The kit comes with fittings compatible with a range of PE service pipes.



WExTECH™ – Water Extraction Technology

Water Extraction Technology, WExTech™, by Synthotech, is a range of systems designed to locate water in live gas pipes, remove the water, and recycle the gas back into the network. There is a WExTech™ system for every type/size of pipe:

WExTech™ Services

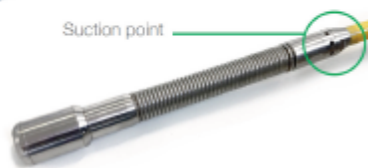
Designed for removing both pools of water and water droplets from PE and metallic services. For use in live gas 17.5mm - 32mm PE and for 3/4" - 2" metallic pipe. **ServiceCAM™** locates the water, then uses either the rechargeable battery powered pump or the hand pump to remove the water. The gas is then pumped back into the service.



WExTech Services 2.0



WExTech M-V1



Suction point

WExTech™ Mains Tier One

For use in 90mm - 250mm PE and 4"-10" metallic and can survey 50m in each direction. Compatible with the **SynthoCAM 3 /SynthoCAM 4** cameras, the water is located then the integrated pump can remove it whilst recycling the gas back into the main. This system is designed to fit between the racking on a standard van and can be split into two parts which can be carried with a two man lift.



WExTech M-LTE

WExTech™ Mains LTE

This lightweight version of the **WExTech M-V1** does not have an integrated pump system, but can be attached to a bowser unit or similar to pump out the water; significantly reducing investment.

WExTech™ Mains Tier Two

The Tier Two System is based on the Tier One System, however designed for 12" (300mm) to 18" (450mm) mains.

SynthoTRAX™ WExTech™ Mains Tier Three

For Tier Three pipe, a robotic **SynthoTRAX™** unit is connected to the **WExTech™** units to remove water from up to 400m from a single excavation point.





ServiBoost®

Low power booster for short term poor pressure remediation allowing proactive planning for service replacements.



ServiBoost™ is the first of its kind pressure uplift device designed to address the issues of poor pressure in domestic gas services. Temporary installation of the battery-operated device can provide one weeks pressure uplift to services and avoid untimely consumer interruptions. Key benefits for the network are removing the costs and inconvenience associated with immediate service relay.

- Installation on UK gas services with 3/4" ECV (main tap)
- Temporary solution to poor pressure amid planning for convenient & cost effective investigation and/or repair
- Pressure uplift from 17 to 21.5mbar (10mbar cut-off) at 3 SCMh
- 1 week battery life at full charge (subject to duty cycle)

● Weight:	Approx. 2kg
● External Dimensions:	Approx. 230 x 85 x 70mm
● Battery Weight:	Approx. 1.5kg
● External Dimensions:	Approx. 230 x 140 x 95mm
● Power Supply:	12Vdc, 22AH Li-Po battery
● Installation Pressure:	Max. 75mbar
● Operating Pressure:	17-21.5mbar
● Low pressure cut-off:	10mbar
● Operating Temperature:	-10°C to 40°C
● Storage Temperature:	-20°C to 60°C
● Ingress Protection:	IP68



Operational on live gas up to 75mbar



Temporary poor pressure solution



Pressure uplift from 17 to 21.5mbar



1 week battery life

Network Management

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Wastewater Management

Synthotech are the sole UK distributor for iJinus, the innovative global leaders in Intelligent Networks for both the Natural Water and Wastewater Networks.

The basis of the wastewater network management is a series of modular data loggers that can be connected to various sensors to supply network information on a retrospective or live basis. The sensors and data loggers are a mixture of fixed location hardwired equipment, relocatable wireless equipment, or temporary area measurement.



The iJinus Intelligent Network System can be used along the whole wastewater network to identify various network operational information;

- Rainfall measurement
- Level measurement / Water height
- Pressure readings
- Overflow detectors
- Flow velocity measurement (both low and high velocity available)
- Valve / Pump Operation / Non-return valve operation
- Hydrogen Sulphide Gas
- Water quality sensors
 - pH / Redox / Temperature
 - Conductivity / Salinity / Temperature
 - Induction Conductivity / Salinity / Temperature
 - Redox potential / Temperature
 - Dissolved Oxygen / Temperature
 - Turbidity NTU-SS / Temperature

The information from the sensors can be remotely collected by radio connection, collected at a central hub, or sent via wireless mobile telecommunications transmitted via 3G or 4G for remote monitoring. The system is supported by a series of network software platforms to make it simple and easy to use.



- Avelour is the simple wireless configuration software
- IJITRACK is a simple software platform to view and analyse the sensor data
- WIJI software is a simple app that can be used to access real-time notifications and alerts.



Rainfall measurement

Simple way to remotely monitor rainfall in fixed or temporary locations.



Level measurement / Water height

The system has a range of level measurement loggers depending upon the environment. There is an acoustic imaging level sensor (LNU06) specifically designed for the harshest of environments. There is an ultrasonic level sensor (CNU06) for hardwired environments and there is the pressure type level sensor (CNR / CNRT / VLI)



Temperature reading

The CNRT is a wireless pressure sensor that can measure both the level of the wastewater and its temperature.



Overflow detectors

The system has overflow sensors that can detect when there is waste discharge from a network. They use the patented CapAir® Technology which means it keeps working when the network becomes clogged. Both wireless (LSC) and wired (DSC) versions available.



Flow velocity measurement (both low and high velocity available)

The acoustic imaging sensor (LNU06) can also be used to measure the wastewater flow. The Doppler (VB-V) velocity sensor is perfect for measuring very low velocities, while the VLI sensor uses the digital doppler to measure standard velocities with a pressure sensor for height measurement.



Valve / Pump Operation / Non-return valve operation

The clamp on ammeters can be used to identify on/off contact for remote valves and autonomous pumps. There is also a two-axis inclinometer for a wide range of application, in particular for monitoring valve operation.



Hydrogen Sulphide Gas

A sensor that measures the Presence of H₂S gas in a range of 0 to 2000 ppm with a resolution of 1ppm



Water quality sensors

This sensor is a physico-chemical data logger that can be used to monitor several water qualities.

- pH / Redox / Temperature*
- Conductivity / Salinity / Temperature*
- Induction Conductivity / Salinity / Tem,*
- Redox potential / Temperature*
- Dissolved Oxygen / Temperature*
- Turbidity NTU-SS / Temperature*



Wireless level sensor LNU06

The wireless LNU06 is an acoustic imaging level sensor, which is ideally suited to measuring water levels in harsh environments.

It facilitates network monitoring in accordance with regulations through continuous diagnostics, and it can also be used to monitor the levels of CSOs / SSOs and the overflows of the pumping stations as and when required. It is a useful ally in preventing wastewater from being discharged into the natural environment and in monitoring the state of decay of the network.



Advantages

Fully autonomous: long-life battery, data logger and built-in modem

Versatile: height measurements, can be coupled with a physico-chemical sensor or can be used to control samplers by indicating the volume to be taken for sampling based on the measured flows

Easy to install and use: safe programming by radio without actually having to touch the sensor

Reliable: accurate level measurements

Compact all-in-one: sensor/data logger/communications

Easy to maintain: not directly in contact with water

Where should It be Installed?

- Drainage pipe
- Venturi flume
- CSO / SSO
- Overflow of pumping stations
- Wastewater treatment plant

Flow and pressure data logger with built-in pressure sensor LOG BLUE LP

The LOG BLUE LP is a multifunction data logger for all sectorisation applications. With its internal pressure sensor, it can be used to quickly set up pressure measurement at fire hydrants, without affecting the smooth running of the drinking water network, and can be connected to a second pressure sensor. It can also be connected to electromagnetic flowmeters to measure flow rates and be used for fast metering.

The pressure sensor is built into a data logger LOG BLUE, which logs and transmits data from sensors and equipment by radio or cellular network.



Advantages

Complete sectorisation at a single monitoring point: pressure, metering, flowmetering, control of a stabiliser or control valve

Quick and easy to install: built-in pressure sensor, compact data logger

Battery-powered

Quick to connect

Wireless communication and remote data transmission

Upgradeable with communication networks

Easy to maintain

Where should It be Installed?

- Fire hydrants
- Pipe saddles
- Connection to electromagnetic flowmeter via MODBUS
- Connection to the transmitter head of water meters

LOG BLUE autonomous flow and pressure data logger

The LOG BLUE is a multifunction data logger for all sectorisation applications. It can be used to connect a sensor to monitor pressure in the drinking water network.

It can also be connected to electromagnetic flowmeters to measure flow rates and be used for fast metering.

LOG BLUE logs and transmits data from sensors and equipment by radio or cellular network.



Advantages

Complete sectorisation at a single monitoring point: pressure, metering, flowmetering, control of a stabiliser or control valve

Easy to install: compact size

Battery-powered

Wireless communication and remote data transmission

Upgradeable with communication networks

Easy to maintain

Where should It be Installed?

- Connection with pressure sensor
- Connection to electromagnetic flowmeter via MODBUS
- Connection to the meter transmitter head

DRULO III pressure and temperature data logger

DRULO III measures the pressure and temperature of the water network.

With its built-in data logger, it stores up to 1.8 million measured values.

This monitoring function, which is made easier by the device's rapid installation and simplified data reading and analysis, contributes to network diagnostics, helps optimise operating costs and gives the operator the ability to respond quickly if an anomaly is detected.



Advantages

LCD screen for on-site pressure and temperature display

Configure, collect and read data using an Android tablet or smartphone via Bluetooth (Application can be downloaded free of charge from the Play Store)

Pressure value displayed in real time

Files can be exported by e-mail in Excel and/or PDF format, then viewed and formatted on the PC in the form of tables or graphs

Inductive charging using the dedicated base (no connector)

Recording capacity of 1.8 million data records

Measuring interval can be adjusted from 1s to 24H

High-precision measurement for pressure tests (millibar)

Long-life lithium battery (1 charge = 2.5 million points recorded)

Portable device and fast to fit: 1/2 and pressurised connections (0-20 bar, 30 bar on request)

Where should It be Installed?

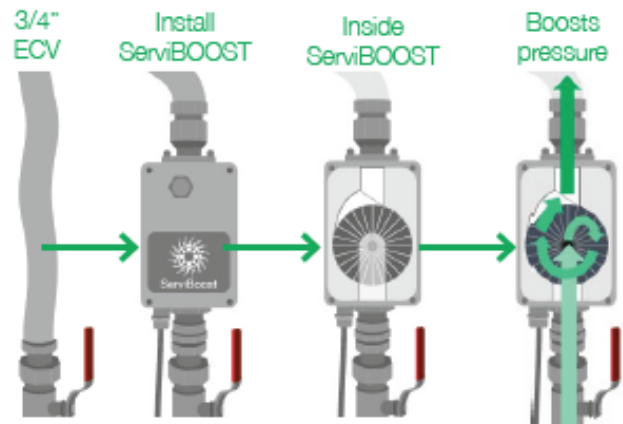
- Valves
- Hydrants and fire hydrants
- Consumer meters
- Stop valves

The ServiBOOST unit is designed to increase the gas pressure to domestic properties whilst the Gas Networks programme in the necessary remedial work to permanently resolve a low pressure problem.

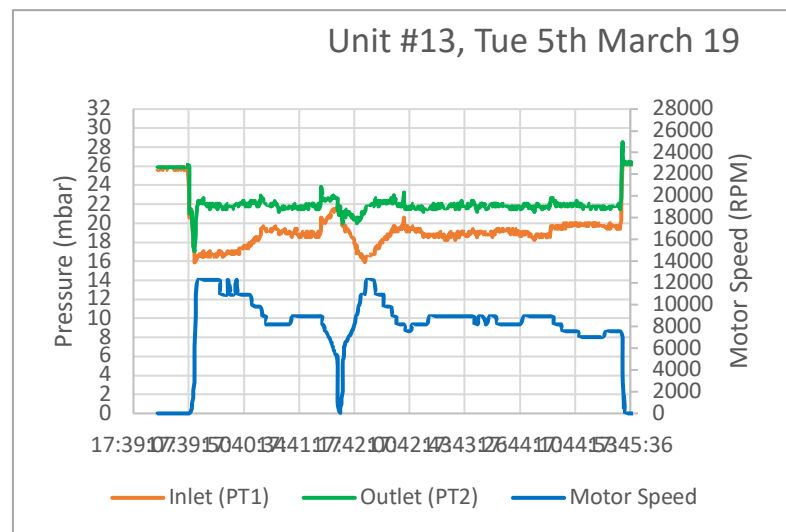
The automated device provides a pressure uplift to 21.5mbar at a flow rate up to 3scmh (6scmh possible). When the pressure uplift device is not operating the maximum allowable pressure drop across the device is 1mbar.



Specification	
Installation Pressure	Max. 75mbar
ECV Size	3/4"
Operating Pressure	17-21.5mbar
Low Pressure cut-off	10mbar
Ingress Protection	IP54
Voltage	12V
	12.6V (max open-circuit voltage)
Current	0.5A (accelerating)
	0.34A (running – typical)
	0.01A (standby)



ServiBOOST™ Data gives a run-down of the input and output pressure on a gas service every second throughout the day. The system can be accessed via the internal SD Card or by drive by, downloading the full data of gas usage, supply, and pressure variation against the time of day.



iTouch Reporting Systems

iTouch Systems in Partnership with Synthotech have taken their award-winning CCTV inspection software that is WRc Approved for the drainage industry and developed it for use with its SynthoCAM™ H2O and SynthoCAM™ CH4 systems. This means an in-depth specification for reporting on Live gas surveys and Live Water surveys.



ONE PERSON OPERATION

Whether mounted on a Push Rod, located in the back of a vehicle or on top of a Crawler, the flexible design of the iTouch One allows for true single person operation.



WRC & SYNTHOTECH CODED REPORTS

The system guides you through producing a full WRc or Synthotech coded inspection report, pointing out missing or inaccurate data as you go.



FEATURE RICH DRAWING

The built in feature rich drawing package allows you to produce desktop quality drawing, or mark up existing site plans, directly from site.



ONSITE REPORTING

Inspect, record, report, all in one go. The system allows the entire inspection report to be completed from the side of the manhole or excavation.



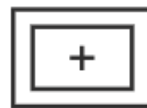
ALL DAY BATTERY

The built in battery makes setting up, packing down & moving from manhole or excavation to the next one nice and easy.



RUGGES & WEATHER PROOF

The rugged & weatherproof design, with a true daylight readable screen, ensures that the weather never gets in the way.



LARGE 15" TOUCH SCREEN

Its simple to use intuitive touchscreen interface, means that you can concentrate on the job at hand & enter all the data collected quickly and efficiently.



ULTRA-FAST CONNECTION

With the strongest ever connection to the iTouch Live network, the system remains connected in more areas & delivers your work up to 4x as fast.



SYNTHOTECH

Synthotech Limited
Registered Address & Main Office
Milner Court
Hornbeam Square South
Hornbeam Park
Harrogate
HG2 8NB
United Kingdom

T: +44 (0) 1423 816060

E: info@synthotech.co.uk

W: synthotech.co.uk, synthotechwater.co.uk

Part of the HMG family of businesses