

sureclean

CCTV PIPE AND DRAIN SURVEYS

CCTV pipe and drain surveys



Sureclean's CCTV survey service fully complements the company's existing suite of services. Sureclean provides highest specification, quality equipment that is extremely versatile, robust and effective, and which is safe to operate in a range of potentially hazardous field applications.



The clear and accurate imagery provided through a survey ensures that the condition of pipework and drains can be assessed, and appropriate action determined, based on the 'actual' status of the system at that point in time. This has obvious efficiency benefits to clients as decisions are made based on current, 'best possible' information.

Advanced Technology Available

The latest generation CCTV equipment ensures clients, both onshore and offshore, are provided with the most advanced available technology for inspection and maintenance work. Sureclean has an integrated range of explosion proof (Ex) cameras, light heads, tractors, control units and other specialist accessories designed to operate across a diverse range of pipework, from less than 25mm (1") diameter through to 600mm (24") and above. The mini explosion proof camera system can be used in pipework of 1" internal diameter. It is extremely flexible and it enables the operator to inspect small and awkward

pipework configurations in potentially hazardous environments, such as offshore installations and petrochemical plants.

The advanced cameras incorporate many features including; full colour, pan and tilt, 360° image rotation, auto up-righting, auto iris, remote focus and inclination measurement to ensure that the survey report provides meaningful information that is straightforward to interpret. In addition the equipment includes a selection of cable drums complete with Ex cables to facilitate inspection runs of up to 300m from a given point of entry when used in conjunction with the integrated tractor unit.

Accurate Reporting

Through CCTV surveying Sureclean provides clients with accurate condition reports of pipes and drains and based on these findings the most appropriate course of action can be identified. Typically this will involve cleaning of the system using one, or more, of Sureclean's various water jetting techniques.

sureclean

CCTV PIPE AND DRAIN SURVEYS

Technical Specification

P374 Intrinsically Safe Mini Camera System is extremely portable, fully self-contained and can be set up to survey in minutes



Intrinsically Safe P374 Mini Camera System

Ideally suited for surveys in potentially explosive environments. The unit provides a self-contained video inspection system including colour camera, rod, coiler, power supply and video monitor. When connected to either mains power or to a 12v supply the unit can be fully operational with minimal preparation.

The P374 is a solid state, high resolution colour camera which is intrinsically safe and certified for gas group IIC and temperature class T6 for Zone 0 Hazardous environments (EEx ia IIC T6). It is fully immersible and can travel down pipes up to 60m in length with diameters of 25mm to 100mm (1" to 4"). Centralising brushes are fitted to the camera to maintain picture clarity during surveys. Images are displayed on a high resolution 150mm (6") colour LCD with composite video output/input to connect with video recorder or external monitor. The system is fully water resistant to IP55, allowing for total washdown of all components for cleaning. The coiler is constructed from durable cast aluminium and all parts are designed for low maintenance. An integral electronic meterage counter provides an on-screen display in 0.1m increments.

Dimensions

Width	300mm	Height	915mm
Depth	590mm	Weight	20kg

Power requirements

100-240v AC	12v DC	30w max
47-63 Hz		

Other features

Camera sealed to IP68; waterproof to 11bar (160psi)
Coiler and Monitor sealed to IP55

Transportation Box

The complete mini camera system is shipped in a custom-built, robust, packing case of the following dimensions:

Width	1000mm	Height	950mm
Depth	600mm	Weight	50kg(Gross)

Explosion Proof P415 MK2 Flexiprobe System

This is a transportable closed-circuit television (CCTV) pipeline inspection system, in which all the underground components are certified to 'EEx D Group IIB T3' compliant for operations in potentially explosive atmospheres.

In this system the camera is encased within the lighthouse, and is attached to 150m of explosion proof connecting rod. The rod has a radio sonde at the camera end and is hand fed into the area to be surveyed. The video footage is relayed to the integrated control unit and if required to an external monitor and video recorder. The sonde transmits a radio frequency which can be detected using the RD400SL Locator.

The system comprises 7 main parts:

1. P320 System Control Centre
2. P415 Colour camera assembly
3. P118 Large coiler to store rod
4. Explosion proof connecting rod (150m)
5. Lighthouse (range of options available)
6. 14" TV monitor
7. Video recorder

P320 System Control Centre

The System Control Unit is compatible with, and provides power source to, all Pearpoint colour cameras, tractors and lighthouses. The unit includes a 250mm (10") display screen and integral computer with video overlay and context-sensitive helptext to facilitate ease of setup. The control unit allows on-screen annotation for recording inspection details. On commencing inspection operations, the penetration depth is relayed from the rod coiler and is displayed in increments of 0.1m.



A locator can be used by the operator to track the camera unit to a depth of 5 metres

A wide range of cameras, tractors and lighthouses can be controlled from the P320 Universal Controller providing the best possible images whatever the conditions



Dimensions

Width	550mm	Height	375mm
Depth	335mm	Weight	22kg

Power requirements

110/220/240v AC	600w max
50/60 Hz	

P415 MK2 Colour Camera Assembly

Encased within a 300 series stainless steel assembly, this precision made, high resolution colour camera is suitable for applications in pipework from 100mm to 600mm (4" to 24"). This diverse range of pipework diameters can be accommodated using a selection of easily interchangeable skids attached to the lighthouses. The camera is attached to the control rod using a patented connector assembly which decouples it from any twisting motion that the rod may induce.

Dimensions

Full diameter length	111mm		
Diameter	44mm	Weight	850g

Other features

Sealed to IP68; waterproof to 11bar (160psi) remotely controlled focus, image rotation and auto up-righting facility.

P118 Large Rod Coiler

The self-standing coiler unit has an aluminium tube frame body with cast aluminium drum both covered with moulded yellow HDPE. The coiler ensures accurate payout and retraction whilst providing storage for 167m (500') of connecting rod.

Dimensions

Width	470mm	Height	991mm
Diameter	940mm	Weight	37kg
			(with 167m rod)

Connecting Rod

The explosion proof rod installed on the coiler is very flexible and can be pushed around right-angled bends in 50mm (2") diameter pipes.



Every Sureclean camera system is shipped, completely self-contained, within a robust custom-built transport case



Left - The P420 Explosion Proof Tractor System has 300 metres of cable on a drum assembly which incorporates a counter arm to accurately record cable payout

Far left - The build options for the tractor unit ensure suitability for applications from 150mm-600mm internal diameter



Lightheads

P417 - A medium-powered lighthouse using two 5w quartz iodine lamps to give a rating of 10w for use in 100mm to 200mm (4" to 8") diameter pipes. Ingress protection is to IP68.
P418 - A larger lighthouse containing two 20w sealed beam quartz iodine lamps for use in 150mm to 600mm (6" to 24") diameter pipes.

TV Monitor

A Sony Trinitron PVM-14N5A monitor provides the option of an additional viewing point as the survey is carried out.

Dimensions

Width	346mm	Height	414mm
Depth	340mm	Weight	15kg

Power requirements

100-240v AC 80w
 50/60 Hz

Time Lapse Video Recorder

A Mitsubishi HS-1024E is available to keep a permanent record of survey images, using a standard VHS tape. The recorder has the capability of recording a 24 hour survey on an E180 tape.

Dimensions

Width	425mm	Height	95mm
Depth	314mm	Weight	4.2kg

Power requirements

100-230v AC 18w

Transportation Box

The complete Flexiprobe system is shipped in a custom-built, robust, packing case of the following dimensions:

Width	1250mm	Height	1200mm
Depth	1100mm	Weight	300kg (Gross)

P420 Explosion Proof Tractor System

The heart of this system is a powerful, variable speed, four or six wheel shaft drive tractor unit capable of transporting various combinations of cameras and lightheads.

The tractor is remotely controlled and will tow 300m of explosion proof cable under most conditions while relaying full colour CCTV pictures to the control centre and optionally to a monitor and video recorder.



The body of the tractor is machined from solid naval brass to give a high weight-to-volume ratio. Side covers are manufactured from brass plate and all other fittings are made from stainless steel.

The variable speed motor uses electronic torque control to ensure that the speed remains constant irrespective of the load. The motor is coupled to the wheels through driven axles by a heavy-duty steel spur gear drive train and planetary reduction gears.

The P420 Tractor is certified explosion proof EEx D Group IIB T3 for use in pipelines where group IIB, temperature class T3 gases may be encountered.

The minimum internal diameter in which the equipment can operate is 150mm (6"), with the maximum being 600mm (24") depending on the amount of light available from a particular lighthouse.

P420 Explosion Proof Tractor

Dimensions

Length	391mm	Height	99mm
Width	120mm	Weight	13.2kg

Speeds

Variable Forward/Reverse Drive
 Electronic Speed/Torque control
 Four and Six wheel drive

Other features

Sealed to IP68; waterproof to 11bar (160psi) certified to EEx D Group IIB T3

P320 System Control Centre

The System Control Unit is compatible with, and provides power source to, all Pearpoint colour cameras, tractors and lightheads. The unit includes a 250mm (10") display screen and integral computer with video overlay and context-sensitive helptext to facilitate ease of setup. The control unit allows on-screen annotation for recording inspection details. On commencing inspection operations, the penetration depth is relayed from a pickup on a counter arm attached to the rod drum and is displayed in increments of 0.1m.

Dimensions

Width	550mm	Height	375mm
Depth	335mm	Weight	22kg

Power requirements

110/220/240v AC 600w max
 50/60 Hz

P494 EEx Pan/Tilt Colour Camera

The explosion proof P494 camera can be used in conjunction with the P420 tractor and features pan/rotate operation giving 360° inspection, auto up-righting and auto-focus, complete with 2 x 4.5w integral lamps and a range of additional powerful lightheads. This provides the user with the flexibility to survey areas which would normally present severe difficulties e.g. lateral inspections, large pipe inspections, pipe-to-pipe seal inspections. An optional larger camera head offers zoom capability in addition to standard features, however it is only suitable for the inspection of pipes greater than 200mm (8").

Technical Specification



The Flexiprobe Camera System offers an extremely compact video inspection solution suitable for a wide range of municipal and industrial applications

The RD400SL Locator is simple to operate and can be used to detect underground cables and pipes



The camera is constructed from stainless steel and anodised aluminium and all sealing faces are fitted with O-rings or spring energised seals.

	Body	Small Head	Large Head (optional)
Diameter	70mm	76mm	114mm
Weight	3.05kg	1.55kg	3.35kg
Voltage	N/A	25-50V	25-50V
Power cons	N/A	250mA	400mA

Other features

Sealed to IP68; waterproof to 11bar (160psi)

420/05 Lighthouse

The explosion proof P420/05 lighthouse is a 40w side/forward view lamp which is attached to the P420 tractor unit for use with the P494 camera. Recommended for use in pipeline sizes 150mm to 300mm diameter.

Dimensions

Width 112mm Height 109mm
Depth 122mm Weight 1.9kg
Power consumption 40w

Other features

Sealed to IP68; waterproof to 11bar (160psi)

420/06 Lighthouse

The explosion proof P420/06 lighthouse is a 110w front-view/40w side-view lamp which is attached to the P420 tractor unit for use with the P494 camera. Recommended for use in pipeline sizes 200mm to 600mm diameter.

Dimensions

Width 112mm Height 109mm
Depth 122mm Weight 1.9kg
Power consumption 110w

Other features

Sealed to IP68; waterproof to 11bar (160psi)

420/04 Lighthouse

The explosion proof P420/04 lighthouse is a 24W side/forward-view lamp which is attached to the P420 tractor unit for use with the P415 MK2 camera. Recommended for use in pipeline sizes 150mm to 300mm diameter.

Dimensions

Width 89mm Height 84mm
Depth 122mm Weight 2.0kg
Power consumption 24w

Other features

Sealed to IP68; waterproof to 11bar (160psi)



P117 Manual Drum Assembly

An aluminium tube frame body with cast aluminium drum to carry 300m of cable. The polyurethane sheathed cable is Cenelec and FM approved and attaches to the tractor unit with a custom-made explosion proof connector.

Dimensions

Width 998mm Height 889mm
Depth 483mm Weight 80kg
(with 300m cable)

Transportation Box

The complete tractor system is shipped in a custom-built, robust, packing case of the following dimensions

Width 1250mm Height 1600mm
Depth 1100mm Weight 500kg (Gross)

RD400SL Locator

The locator unit can be used to detect buried cables, pipes and also undertake underground tracking of the radio sonde which is attached to the camera.

Dimensions	600mm x 29mm x 14mm
Weight	2.1kgs
Frequency of operation	8.192kHz or 32.768kHz
Sensitivity	100µA or 30µA
Locating depth	Between 2m and 5m
Operating Temperature	-24°C to +36°C

Sureclean Limited

10 River Drive
Teaninich Industrial Estate
Alness, Ross-shire IV17 0PG
Tel: 01349 884480 Fax: 01349 883612
E-mail:
sales.enquiries@sureclean.co.uk
Web: www.sureclean.co.uk