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LOCATE. AVOID. TRACE. MEASURE DEPTH. MAP. BURIED PIPES & CABLES CABLE & PIPE AVOIDANCE PRIOR EXCAVATION CABLE ROUTE TRACING

Quality in Construction. Delivered.

2014 - 15



NEW C.SCOPE DXL2/CXL2 DIGITAL CABLE AVOIDANCE TOOLS AND SGV2 SIGNAL GENERATORS

The new DXL2 and CXL2 Cable Avoidance Tools and SGV2 Signal Generator from C.Scope have been designed to set a new benchmark in excavating safety as well as still delivering all the advantages and familiar operating practices associated with the original C.Scope product range. The new products are **loaded with new features** which **enable operators to find more buried metallic utilities** by delivering improved levels of performance and helping to reduce the effects of human error.

The XL2 Cable Avoidance Tools are driven by **Powerful Digital Signal Processor Technology**. Advanced software programming enables the new products to provide Outstanding Detection Performance even when locating in the most difficult areas.

The XL2 Cable Avoidance Tools deliver "Improved Signal Detection Sensitivity" and Automatic Noise Rejection so that they are now capable of detecting the smallest of signals, even in areas of high service density and electrical noise.

The **addition** of the new **simultaneous 33+131kHz Combined frequency** will assist in the **detection of smaller buried cables** such as telecoms, sheathed fibre optics and street lighting spurs.

Human error can be a contributory factor associated with cable strikes. To address this issue, intelligent features such as an **Automatic Daily Self Test function** and a **Dynamic Swing Sensor** help ensure that the best working practices are adhered to and are being applied on-site.

The optional **Data Logging** equipment options can also provide an invaluable insight into working practices and help to identify key training requirements.

Using the SGV2 Signal Generator with the DXL2 maximize the full performance capabilities of the new Cable Avoidance Tools. The Class leading One Watt 4 Level Adjustable Power Output delivered by the SGV2 makes it possible to apply a detectable signal onto Deeper and Harder to Detect Pipes and Cables for Complex Locate Tasks.

The "CSCOPE Cable Avoidance tools" already considered a standard worldwide as the equipment to detect buried utilities prior any form of excavation - With its new Xl2 range provides a significant step forward for construction project executives in the quest to reduce the day-to-day risk of cable strikes.



STANLAY

C.SCOPE DXL2 / CXL2 OVERVIEW

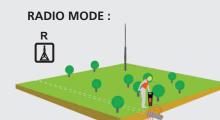
- Power Mode.
- Radio Mode.
- Generator Mode.
- Simultaneous 33+131kHz Signal detection improves utility detection.
- All Scan Mode.
- Accurate Depth Indication (DXL2 only)
- Automatic Noise Rejection.
- **Dynamic Swing Sensor.**
- Automatic Daily Self Test. •
- High Resolution Liquid Crystal Display.
- No Periodic Calibration required.
- Optional Data Logging of all Locator activity.
- Optional Bluetooth[™] for high accuracy GPS.

C.SCOPE SGV2 OVERVIEW

- One Watt adjustable Power Output.
- New 33+131kHz simultaneous Signal Output.
- Pulsed or Continuous Output Signal.
- **Three Signal Application Techniques.**
- - Direct Connection.
 - Wraparound.
 - Induction.
- High Resolution Liquid Crystal Display (SGV2 only)
- Accessory Tray.

POWER MODE :

No Periodic Calibration required.



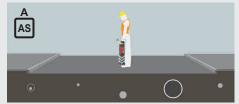
Detect & trace buried energized metallic power cables Locate a wide range of buried metallic using the locating receiver alone in Power mode. utilities/conductors, whether or not they are carrying

GENERATOR/TRANSMITTER MODE:

mode of the SGV2 Signal Generator.:

current, using the locating receiver alone in Radio mode.

ALL SCAN MODE :



Innovative All Scan mode uniquely listens for all frequencies ranging from the lowest of the 50Hz Power signals right up to and including 33kHz. This all in-one mode detects unusual frequency signals present on pipes and cables often overlooked in the conventional Power, Radio or Transmitter Mode. All Scan Mode can often speed up the locating process with just one sweep of the site.

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Conductive Locating

Trace the route of specific services such as Armored Telecom Cables, Power Cables and Metallic Pipes by connecting the

SGV2 Signal Generator to the metallic cable or pipe utility and trace the signal using the locating receiver operating in the 'Generator/Transmitter' mode. In this mode the operator can also measure depth of the utility. There are two methods by which the signal of the signal generator / transmitter can be applied to buried services as illustrated below i.e a. Conductive Locating By Direct Connection or Using a Wraparound Induction Signal Clamp OR by using Inductive locating

> Inject the signal to a service using alligator clamps for conductive line tracing by direct connection



capability to locate buried services

Optional Extended Capability : Inductive Signal Clamp



Connect the signal to a service using Signal Clamp for conductive line tracing, where a direct connection to the service is not possible.

4 OPERATING MODES DXL2 LIVE DEPTH MEASUREMENT AUTOMATIC NOISE REJECTION



C.SCOPE DXL2 / CXL2 **CABLE AVOIDANCE TOOLS**

- Mode Selection Switch
- Power Mode. •
- Radio Mode.
- Generator Mode.
- All Scan Mode.

SIMULTANEOUS 33 + 131 kHz **DUAL FREQUENCY**





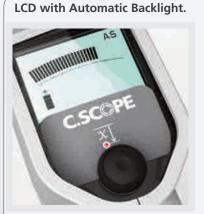




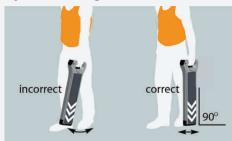
Detachable Loudspeaker





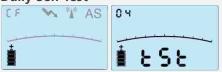


Dynamic Swing Sensor.



The Locator should always be held at 90°. If you are excessively swinging the Locator, it's dynamic swing sensor will alert you with a tone sound.

Daily	Self	Test	
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The 'Self Test' is performed the first time the locator is switched on each day and takes approximately 4 seconds. The self test checks the two internal aerials and all the operating modes mentioned to ensure that YOU know that your equipment is fit for Usage.

Overload Indication



The locating receiver will give you an overload indication signifying presence of very shallow utilities or excessive signals in depth mode and daily self test mode.

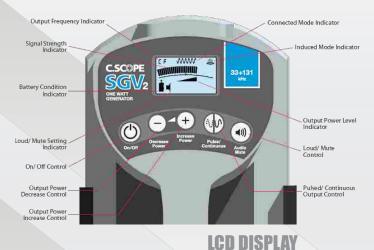
Built In Dual Battery Pack



Battery Compartment Contains the USB Socket allowing the user to print out a system validation certificate when required.

STANLAY

C.SCOPE SGV2 ONE WATT SIGNAL GENERATOR



Control Panel:

- On / Off
- Output Power Adjustment
- Pulsed / Continuous
- Loud / Mute

Loudspeaker.

ConnectionSocket.

4 POWER LEVELS

- LCD clear digital display indicating:
- Functions selected
- Power level
- Battery condition
- Connection quality

IP65 WATER & DUST PROOF IMPACT RESISTANT

DUAL SIGNAL MODE : PULSE & CONTINUOUS FOR SURETY IN ROUTE TRACING

Impact Resistant Twin Wall Construction

Detachable Accessory Tray containing:

- Direct Connection Leads
- Earth Stake
- Connection Magnets
- 10m Auxiliary Earth Lead
- Instruction Manual
- Designed with space to also carry a Signal Clamp or other accessories.



C.SCOPE DXL2 & CXL2

FOUR DETECTION MODES :

The DXL2 and CXL2 have four detection modes to select from. Each mode provides specific advantages.

POWER mode identifies buried electricity cables by detecting the main frequency signal travelling along the cable itself, when current is being drawn.

RADIO mode detects re-radiated 'radio' type signals that are often present on metal pipes and cables.

GENERATOR mode is used to detect the 33+131kHz signal applied to a metallic pipe or cable by a SGV2 Signal Generator. The combination of the high frequency 131kHz signal with the 33kHz signal enables small diameter cables to be located more easily. The Generator mode is also used for detecting the signal from a C.Scope Sonde or Stanlay traceable duct rodder when tracing in non metallic pipes such as sewers, drains or telecom cable ducts.

ALL SCAN mode detects ALL frequencies of signal from the lowest of the Power signals right up to and including 33kHz. This mode can detect unusual signals appearing in the frequency gaps between conventional Power, Radio and Generator modes and is invaluable as a 'final check' before excavation work begins.

DEPTH MEASUREMENT (Available in DXL2 only) When used with an SGV2 Signal Generator, the depth of buried pipes, cables and Sondes can be indicated at the push of a button.

DYNAMIC SWING SENSOR :

The CXL2 and DXL2 will **sound a single tone** to alert the operator that the Cable Avoidance Tool is being **swung excessively** when in use to avoid erroneous detection.

AUTOMATIC DAILY SELF TEST (ADST) :

The DXL2 and CXL2 have **comprehensive self test circuitry**. **ADST** fully examines the Cable Avoidance Tool, including the receiving aerials **every day when it is first switched** on. This gives the operator confidence that the equipment is working to its optimum before it is used. The **test result is recorded** and can be printed out as a **System Validation Certificate** when required by connecting the locating receiver via USB to the computer.

DATA LOGGING OPTIONS (Optional)

The DXL2 and CXL2 are available with or without Data Logging. The Data Logging versions will automatically record how and when the Cable Avoidance Tool is being used. Over 12months of data (in normal use) can be stored before being overwritten. A full audit trail is kept of all locating activity so that it is possible to see when the Cable Avoidance Tool passed Self Tests, which modes have been used, when, and for how long.

DATA LOG TRANSFER VIA USB :

Data from the Data Logging versions of the CXL2 and DXL2 **can be transferred** at any time **to a PC for analysis** via the data connection socket in the battery compartment.

DATA LOG TRANSFER VIA BLUETOOTH™:

The Data Logging DXL2 and CXL2 have additional optional models which provide the added feature of **Bluetooth™**. C.Scope's free to download **RELAY App**, uses the **Bluetooth™** connection to **wirelessly transfer data logs** from the Cable Avoidance Tool to **smartphones and tablets** and then email them to a PC for analysis. This provides a very practical method of instantly transferring data from the Locator while still on-site.



C.SCOPE DXL2 and CXL2

LCD CLEAR DIGITAL DISPLAY :

The DXL2 and CXL2 have a large, clear and easy-to-read **backlit LCD mounted** behind a tough protective polycarbonate lens. The display indicates **detection mode**, **signal peak level**, depth **(DXL2 only)**, signal strength and battery condition. It also displays the Automatic Daily Self Test results.

FINGERTIP CONTROLS:

The DXL2 and CXL2's ergonomic controls offer easy singlehanded sensitivity adjustments and mode selection.

DETACHABLE LOUDSPEAKER:

The Loudspeaker can be easily detached for use in noisy work environments.

DATA CONNECTION :

The DXL2 and CXL2 feature a data connection socket for transferring data to a PC using the C.Scope XL2 Edition PC Toolkit.

ROBUST & DURABLE CONSTRUCTION :

The DXL2 and CXL2's **twin wall construction** is robust and durable. It also provides **IP65 standard protection** against dust and water ingress.

Calibration :

The **DXL2** and **CXL2** do not require periodic re calibration, helping to **significantly reduce running costs** and downtime.

SYSTEM VALIDATION CERTIFICATION :

The C.Scope XL2 Edition PC Toolkit allows owners to print a System Validation Certificate by connecting the Cable Avoidance Tool to a PC via USB. The results are generated from the ADST results that are stored on the Cable Avoidance Tool.

SERVICE :

A complete 'covers off' service and maintenance package is available for those customers who require it from Stanlay Authorised Service Centres.

GPS MAPPING VIA BLUETOOTH™:

The DXL2 and CXL2 with Datalogging and Bluetooth[™] can also be **connected live to accurate GPS survey/ mapping equipment** allowing the accurate depth (z) of an underground pipe or cable to be linked to the x and y coordinates. This application enables 'single pass' mapping surveys.

DATA LOG ANALYSIS :

C.Scope's FREE to download XL2 Edition PC Toolkit allows manipulation of the stored data-logs into charts and graphs that illustrate all aspects of the Cable Avoidance Tools use. The data can be utilised to show if the Cable Avoidance Tool has been used correctly, to assess actual operator behaviour and to identify any potential training requirements.

C.SCOPE SGV2 FEATURES :

C.Scope SGV2 Signal Generators are vital pieces of equipment used with C.Scope DXL2 Cable AvoidanceTools that significantly improve operator safety and enable better location of pipes and cables even in challenging environments. The NEW 33kHz+131kHz "CF" Combined signal further increases the number of buried services that can be energised and detected.

SIGNAL APPLICATION TECHNIQUES :

The SGV2 offers three alternative ways to apply a Signal Generator signal:

DIRECT CONNECTION :

Direct Connection allows specific pipes or cables to be individually traced, identified and their depths measured. The use of Signal Clamps, Signal Injectors and Direct Connection leads make this mode the most effective method for pinpointing pipes and cables.

SIGNAL CLAMP (OPTIONAL) :

If it is difficult or inconvenient to use Direct Connection, then the signal clamp wrap around technique can be utilised to successfully energise an armored optical fiber cable, street lighting cable etc.

INDUCTION :

Induction allows the Signal Generator to induce a detectable and t r a c e a b l e signal to previously unknown, undetected or inaccessible underground metal pipes or cables without any direct connection. This is also referred to as a Blind Search and significantly increases capabiluty to locate or trace buried services.

POWER:

The SGV2 has a **One Watt Power Output** to provide **long distance tracing**. SGV2 has a **four position power level adjustment**. So that the user can control **how much power to use and when**.

LOUDSPEAKER:

The SGV2 has a clear audible signal output to indicate when it is in operation. There is also the facility to mute the audio if required.

PULSED OR CONTINUOUS SIGNAL OUTPUT :

The SGV2 offer the choice of a Pulsed or Continuous signal output enabling operators to switch to the Pulsed Mode in high interference situations and keep on tracing. **LCD CLEAR DIGITAL DISPLAY** :

The SGV2 has a large, clear and easy-to-read backlit LCD mounted behind a tough protective polycarbonate lens. The display indicates clear information about the functions selected, the power level being used and battery condition.

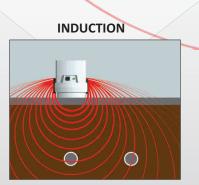
ACCESSORY TRAY :

The SGV2 Signal Generator has a large detachable accessory tray as its base. It can house not only the standard accessories (Direct Connection Leads, Earth Stake, Connection Magnets, 10m Auxiliary Earth Lead) and the Instruction Manual but also many of the optional extras such as Signal Clamps, Sondes and Signal Injectors.

ROBUST & DURABLE CONSTRUCTION :

The SGV2's twin wall construction is robust and durable. It also provides IP65 standard protection against dust and water ingress. CALIBRATION : The SGV2 does not require periodic re-calibration, helping to significantly reduce running costs and downtime. SERVICE : A complete 'covers off' service and maintenance package is available for those customers who require it from Stanlay.

DIRECT CONNECTION



SIGNAL CLAMP

TM

ANIA



STANLAY

DXL2/CXL2 TECHNICAL SPECIFICATION :

CABLE AVOIDANCE TOOL FEATURES	CXL2	CXL2-DL	CXL2-DLB	DXL2	DXL2-DL	DXL2-DLB
Power Mode		•	•	•	•	•
Radio Mode		•	•	•	•	•
Generator Mode (33+131kHz)	•	•	•	•	•	•
All Scan Mode	•	•	•	•	•	•
Depth Measurement				•	•	•
Automatic Noise Rejection	•	٠	•	•	•	٠
Dynamic Swing Sensor		٠	•	•	•	٠
No Periodic Calibration*	•	٠	•	•	•	٠
Automatic Daily Self Test	•	٠	•	•	•	٠
Data Logging		٠	٠		•	٠
Data Transfer via USB		•	•		•	•
Data Transfer via Bluetooth™			•			٠
GPS via Bluetooth™			•			٠
Display (LCD)		٠	•	•	•	٠
Three Year Warranty		٠	•	•	•	٠
Batteries**	8 X AA (LR6))	8 X AA (LR6)				
IP65 Environmental Rating	•	•	•	•	•	•

* **No Periodic Calibration.** The DXL2 / CXL2 do not require periodic calibration. If you have any questions regarding service and maintenance, contact C.Scope or your nearest C.Scope Authorised Service Centre.

**** Batteries.** The DXL2 / CXL2 use 8 x AA LR6 Alkaline or NiMH rechargeable batteries sealed in a secure, fitted battery compartment. The battery pack will typically provide approximately 40 hours of service depending on use. The battery compartment also houses a spare battery holder.

CABLE AVOIDANCE TOOL PERFORMANCE	FREQUENCY	SENSITIVITY @1m depth	DETECTION DEPTH (max)
Power	50-400Hz	5mA	3m
Radio	10kHz-30kHz	25μΑ	2m
Generator	33+131kHz	5μΑ	5m
All Scan	50Hz-33kHz	100μΑ	3m
Sonde			9.9m (Max)

SGV2 TECHNICAL SPECIFICATION :

SIGNAL GENERATOR FEATURES	SGV2				
Max Power Output	One Watt				
No. of Adjustable Power Output Levels	4				
Generator Frequencies 33+131kHz	•				
Pulsed / Continuous Output Signal	•				
Signal Connection Modes	•				
- Direct Connection	•				
- Wraparound	•				
- Induction	•				
Display (LCD)	•				
Accessory Tray*	•				
No Periodic Calibration**	•				
Three Year Warranty	•				
Batteries***	4 x D (LR20)				
IP 65 Environmental Rating	•				

- * Accessory Tray includes Direct Connection Lead, Auxiliary 10m Earth Lead, Connection Magnets, Earth Stake and Instruction Manual.
- ** No Periodic Calibration. The SGV2 do not require periodic calibration. If you have any questions regarding service and maintenance, contact Stanlay.
- *****Batteries.** The **SGV2** use 4 x D LR20 Alkaline or NiMH rechargeable batteries housed in a secure battery compartment.

ACCESSORIES :

An extensive range of accessories to suit all pipe and cable locating requirements.

SIGNAL CLAMP :

Operators can apply the SGV2 signal effectively to any cable by using the 4" Signal Clamp. It is an extremely practical way to allow individual cables to be traced even when amongst other cables.

SIGNAL INJECTOR :

The SGV2 signal can be applied to an electrical cable, quickly and safely, by using a standard wall socket as the point of connection with the C.Scope Signal Injector.

CTRAK-TRACEABLE MAXI DUCT RODDER :

The CTRAK is a maxi traceable rodder for tracing route of buried/underground non metallic telecom HDPE ducts or plastic pipes of 36 mm dia or higher.

The base of the frame contains a terminal box that provides a connection to the inbuilt copper tracer wire of the duct rod. After inserting the traceable rod into the duct which is to be route traced, apply signal from the direct connection lead of a transmitter to the terminal and connect the other lead of the transmitter to an earth stake, which then excites the full length of the rodder to enable trace the buried pipe. Use locating receiver to trace the route of the buried pipe.

MTRAK - TRACEABLE MIDI DUCT RODDER :

The MTRAK is a midi traceable rodder for tracing route of buried/underground smaller diameter metallic & non metallic pipes (eg. - 20mm dia pipes or higher) such as Buried Telecom & Plumbing Pipes based on a 5.5mm composite fiberglass rod with 3x0.5mm tracer copper wires. The MTRAK contains a sonde built into the tip of the rodder operating at 33kHz which is energized when injected with a signal from the transmitter.

GENERAL PURPOSE SONDE :

The use of Sonde allows the route of non-metallic pipes such as sewers, drains and large plastic gas and water mains to be traced. Ideal for finding the position of blockages in pipes . Various sonde options are available : from oscillating sondes to electronic miniature sondes. Ask for more details to receive options.

DUCT SONDE :

The C.Scope Duct Sonde is built and shaped specifically for use in cable ducts that are already filled with cables.

USER MANUAL:

Multi Language Quick User Guide is available in English, Hindi, Tamil & Telugu. Also, Video & animated tutorials are available.





Signal Clamp



Signal Injector



CTRAK- Traceable Maxi Duct Rodder



MTRAK- Traceable Midi Duct Rodder



General Purpose Sonde



Duct Sonde



Engineering Products & Solutions

Buried Pipe & Cable Locators



Cable Installation



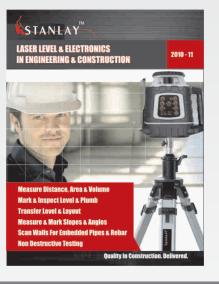
Electronic Instrumentation



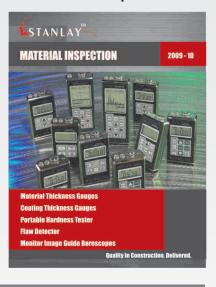
Transportation Engineering



Laser Levels



Material Inspection



NDT



Ground Penetrating Radars



RFID Electronic Markers





DXL² SGV₂. CXL² PIPE & CABLE LOCATION EQUIPMENT HIGHER PERFORMANCE GREATER SAFETY

Dealer Information

STANLAY

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