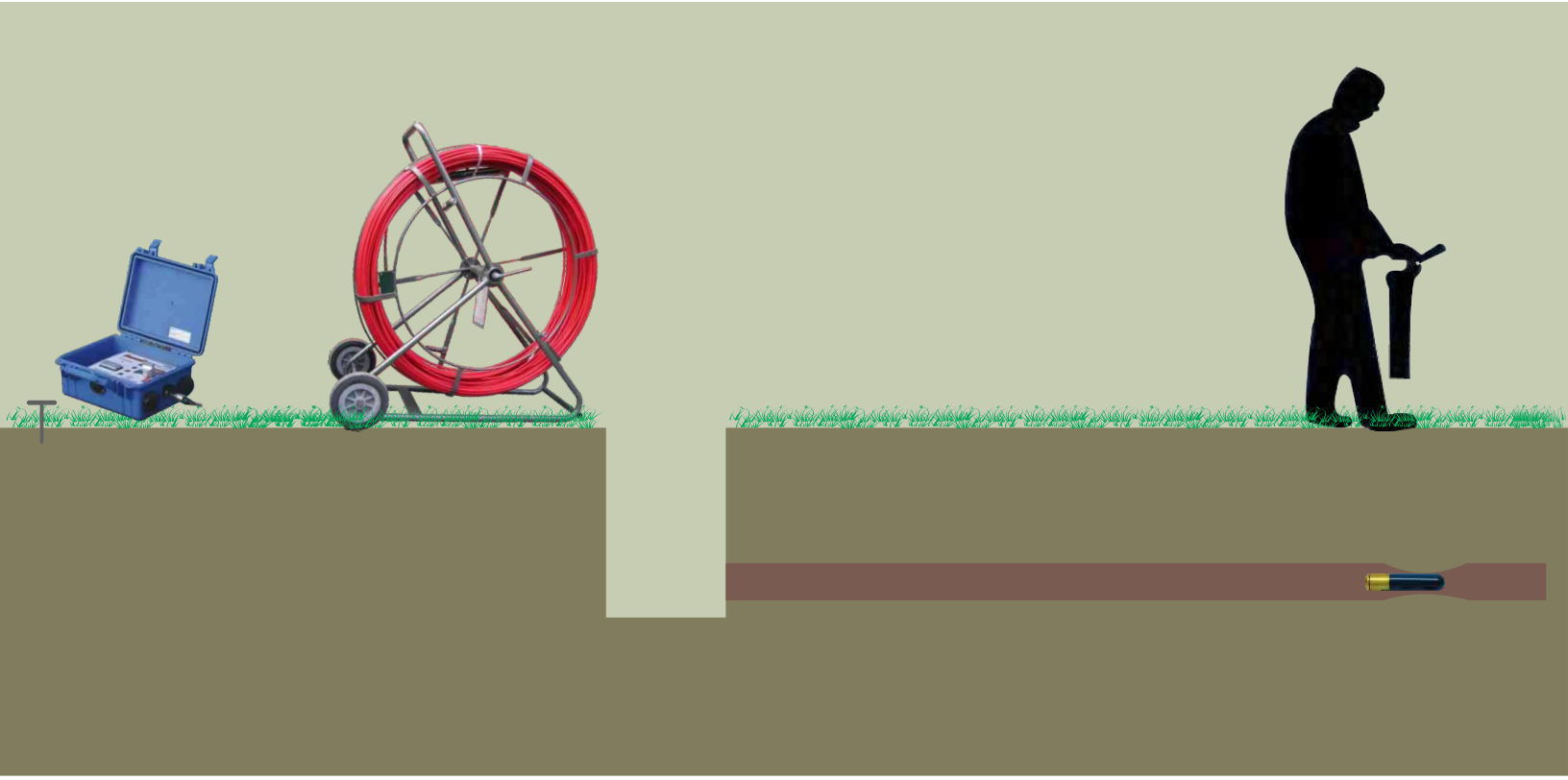
STANLAY™

ADVANCED BURIED PLB PIPE DUCT ROUTE TRACING SYSTEM FOR TELECOM PROJECT & MAINTENANCE APPLICATIONS

2014 - 15



TO LOCATE ROUTE OF NON METALLIC HDPE CONDUITS

LOCATE BLOCKAGES IN EXISTING TELECOM DUCTS

DEPTH MEASUREMENT OF EXISTING OR NEW LAID DUCTS

SYSTEM GUIDE

System Guide 1

Locate & Trace Underground Non Metallic Hdpe Pipes & Blockages In Existing Laid Ducts

Miniaturized Sonde Transmitters

Line Excitor

Proprietary traceable Duct rodder in 200m or 300m length

Digital Receiver

The SONDE operating at 512Hz is attached to the CTRAK Traceable Duct rodder unit & is pushed inside the non metallic HDPE Conduit or any other line until it stops due to blockage in HDPE pipe or because of entry into next manhole. The CTRAK contains a 1 sq mm tracer which is energized by the Line excitor at 8/16/32 or 64kHz. The digital receiver is then set to receive frequencies at 8/16/32 or 64kHz to trace direction and route of line in the Line Tracing Mode. Once the trace is completed until the line trace starts to fade, the receiver setting is changed to the Sonde Tracing Mode to receive 512Hz frequency transmitted by the SONDE or any other customized frequency which can then be used to pin point exact point of blockage in HDPE conduit or manhole location.

Visual illustration (CTRAK)

Underground Locating of pipes/ducts using PipeTraker Traceable Duct Rodder

Step 1 :
Attach sonde to front of the rod. Insert rod into manhole and push into metallic or non metallic pipe/duct which is to be route traced

Step 2 :
The terminal block of the CTRAK provides the connection to the inbuilt copper trace wire of the duct rodder

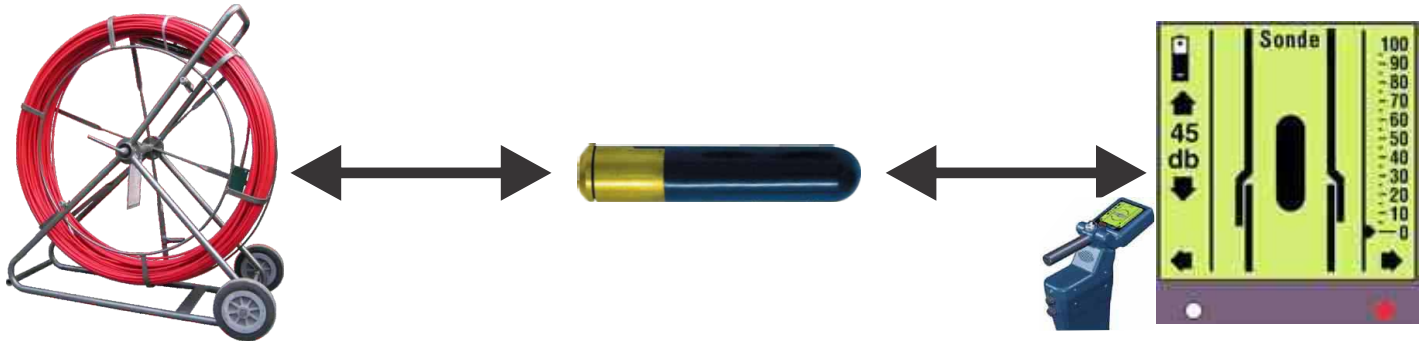
Step 3 :
Energise the traceable duct rodder with any frequency such as 8/16/33/64/65/133 KHz etc using any signal excitor/ transmitter

Step 4 :
Trace route & depth of buried duct in line tracing mode and blockage points of underground conduit in sonde mode using digital receiver.

1. Route Tracing Of Non Metallic Ducts Using CTRAK traceable rodder

The line excitor as shown above is connected in conductive locate mode using a jaw clamp to the traceable rodder at 8/16/32 or 64KHz Hi Or Lo frequency which is route traced using the Line Tracing mode of the digital Receiver. The traceable rodder also pushes the Sonde to the point of the duct blockage. Following the signal will provide the duct route ; the signal will fade in line locating model which will denote that you have reached the end of the rodder Ie the rod has entered a manhole or the rod has stopped due to a blockage.

2. Locate Blockage in Buried Duct and Depth of Duct in MT or HDD installations



At this point, switch to Sonde mode by choosing the frequency of the Sonde in the Receiver. Follow procedure to locate Sonde and the corresponding location of blockage as shown .

3. Detect energised cables before digging

The Digital Receiver is set to 50 Hz for locating highly energized underground power cables. A three step procedure guides the user to locate peak energized power signals received from power cables . Assists in avoiding cutting into any power cables before digs

DIGITAL RECEIVER

The Non metallic duct & cable locating system contains a LF2200 Digital receiver that is the Heart of the system. It provides the ability for:

1. Line route tracing of metal tracer wires, Electric cables, telecom cables and metal pipes at 4 industry frequencies of 8KHz, 16KHz, 32KHz and 64KHz.
2. SONDE tracing for location of blocked and collapsed underground non metallic HDPE pipes at 512 Hz or 16Hz & 8KHz.
3. Locate & Avoid energized underground Power cables.

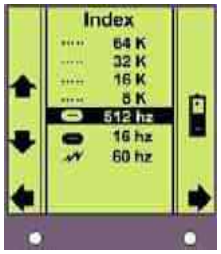
The LF is an advanced digital receiver equipment which contains **built in software** to guide the operator through step by step process for the above **telecom applications.**

The LF incorporates a number of features for ease of operation, safety and accuracy including :

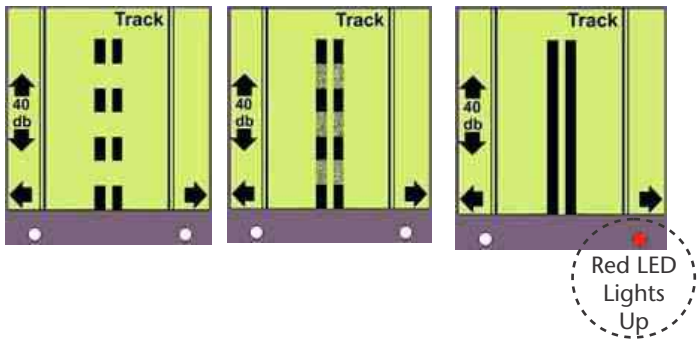
- A graphical display with a rocker mouse switch that guides you through the locate steps.
- A vibrating handle and an LED light act as a first response to inform you of a locate.
- Automatic gain compensating systems which are also displayed on the user interactive screen ensure that you can differentiate between the utility or Sonde being located and background interference signals.
- In all cases, the LF2200 provides the depth of the Line trace, Sonde or Power cable with extreme accuracy.
- The LF is the only equipment of its kind, which has sniffable frequencies, which allows, the LF2200 the most sensitive and most interference-resistant receiver yet, to also facilitate easy updates and be future-proof. Most innovative is the new "sniffing" feature, which allows the LF2200 to detect and lock on to the frequency of any sonde or line exciter from 16 Hz to 100 KHz, making it the most versatile locator in the industry. Furthermore, 8 KHz locating is added as a preset, which makes interference from power lines a thing of the past

Usage illustration:

Step 1 :
Choose mode of operation i.e line tracing, sonde tracing, power line tracing & corresponding frequency of operation per user option.



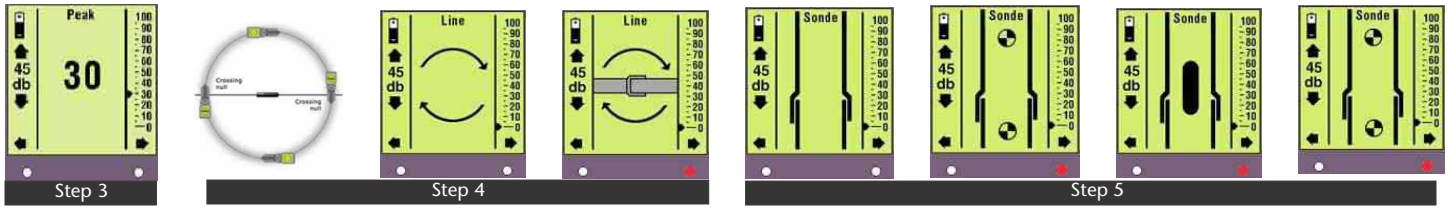
Step 2 :
Line tracing mode - the operator simply has to come in parallel line with the inserted traceable rodder or buried armored OFC being traced. The LF will provided 3 ways of guiding the operator - the line on the screen become solid as shown as the operator aligns, a red LED light up on the screen & the handle of the LF goes into a constant vibration mode.



Step 3 :
In case of sonde locating mode for detecting blockages in buried pipe, the first step is to detect & confirm proximity to sonde inserted inside buried duct. the signal will keep on rising higher and will first reduce (due to AGC) and then stabilise to within +/-5 digits to localise presence of the sonde and indicate that the operator is standing over or very close to the Sonde inside the buried duct. (Refer step 3 visual.)

Step 4 : As the buried duct may be buried at an angle to the horizontal, the operator first needs to form a circle of appox 5 to 10 feet radius around the point at which sonde was localised. By walking around the circle, the direction finding mode allow the operator to know the exact orientation of the sonde and therefore the buried duct. (Refer step 4 visual.)

Step 5 : The operator then walks along the direction of the sonde identified from one edge of the circle established. The operation first sees a null i.e two white and black circles indicating that he is about to be over the sonde. Walking a couple o steps further will provide a sonde image as shown indicating that he has established exact location of the sonde. Walking another couple of steps further provides the nulls again confirming that the operator has passed the sonde.



DIGITAL RECEIVER

Description :

The 2200 provides powerful line tracing capabilities. Locates any 512 Hz sonde in non-metallic lines. Traces underground metallic tracer wire and lines at 4 industry standard frequencies. Either type of locating is enhanced by handle vibration feedback at key locating points.Uses 6 off-the-shelf AA alkaline batteries. Clear LCD screens (with automatic backlight compensation) guide you through the steps critical to locating both sondes and lines with accurate position as well as precise depth.

Specifications :

Frequency	Sondes at 16 Hz & 512 Hz & 8kHz & 2 “sniffable” frequencies,
Line trace	8, 16, 32 & 64 kHz
Output LCD screen	Index, Peak locate, Line, Sonde, Track, Power, Sniff,Depth
Automatic depth detection	25 feet /7.6 meters ; accurate upto 5% of depth
Controls	4-way thumb switch: Power on/off, Gain, Screen select
Speaker output	Variable rate click; headphone jack. Sound can be muted.
Power source	6 AA Alkaline
Battery life	30-40 hours (depends on backlight usage)
Operating temperature	-20 to +130° F / -29 to +54° C
Weight	2.7 kg
Size	81 cm x 20 cm x 11 cm
Locate Accuracy	5% of Depth, depending on depth
Depth Accuracy	5% of Depth with undistorted signal, with no
Adjacent Signals	Upto 14ft/4.3m
Depth Range	Line -up to 3 m at 5% depth accuracy
	Up to 25 ft / 7.6 m at 10% depth accuracy
	Sonde - up to 15 ft (with FV-10)
	Sonde - up to 60 ft / 18.3 m (with FV-40)

Item Code : ST-LF 2200

SONDE TRANSMITTER

FV- Series Miniature Sonde Transmitter

Description :

These miniature SONDE transmitters are ideal for locating in non-metallic HDPE lines. They are water-resistant and will work with the LF2200 receiver at 512 Hz. Provided with an M12 threaded female adaptor to enable unit to screwed onto M12 male rod end of a CTRAK non metallic composite fiberglass duct rodder. The SONDE body is based on jacket construction with locking end caps for allowing unit to undergo heavy abuse inside a pipe.

Specifications :

Frequency	512 Hz
Tone type	Continuous
Power source	AAA 1.5V Battery
Battery life	8 hours((for continuous uninterrupted use)
Size	19 mm x 89mm
Range (cast iron)	Up to 10 ft
Range (non-metallic)	Up to 15 ft
End Adaptor	Female M12

Item Code : ST- FV10 * ST-FV20 to be used for depths up to 30ft

BUZZ BOX

Required for conductive & Inductive metallic tracing of utilities & Tracer Wires

Description :

The BuzzBox line exciter provides the ability to inject/transmit a signal into buried metallic utilities including (tracer wire, metal pipe, sewer line, armored OFC cable, underground utility, electric cable) so you can trace the line with your LF2200 receiver. Works with the LF2200 receiver for quick, accurate line and utility locating. The Buzzbox transmits industry standard frequencies of 8KHz, 16KHz, 32Khz and 64Khz. In addition, the Buzzbox is a very important component in the location & depth of underground non metallic buried pipes. When connected to a tracer copper wire either attached to the CTRAK traceable Maxi Duct rodder with an "integrated copper wire", provides the LF2200 receiver, the ability to very quickly and precisely locate and trace the route & depth of underground non metallic pipes .

Specifications :

Operating Modes	Conductive & Inductive
Frequencies	8KHz, 16KHz, 32KHz and 64KHz
Power	3watts maximum, Lo and Hi power for
	each frequency, uses 6 "C" alkaline
	batteries, battery life appox 10 hours
	continuous
Control	Rotary switch ; Off plus 8
	frequency/power selections
Indicators	Low battery LED, Ground quality
	current meter
Operating Temperature	0 – 50 deg C
Dimensions	240mmx190mmx110mm

Item Code : ST-BB

PIPE TRAKING TRACEABLE MAXI DUCT RODDER (CTRAK)

For Route Tracing Of Buried Non Metallic Ducts

Description

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. Ideal for maintenance of outside plant buried telecom optical fiber duct networks.

The CTRAK is based on a sturdy composite rod of 9mm dia with a built in 1mm copper wire that is rigid yet flexible enough to guide into non metallic HDPE ducts/plastic pipes and metal pipes up to lengths of 300 meters.

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 any Digital Pipe & cable locating receiver to trace the route of the buried pipe. Attach miniatured sondes to front top of rodder to allow localization of duct blockages (when used with digital receiver).

Features

- Compact & easy to transport in a pickup jeep or small transport vehicles.
- Enables very rapid route tracing of buried pipes.
- Provided with an M12 male threaded rod end on the front tip to allow a sonde to be attached for locating blockages in buried pipe.

Specification

Length Options	150m(492'), 200m(650'), or 300m(984')
Dimension	33"x20"x37" Maxi Frame "B" Type for 120~200m
	43"x20"x44" Super Maxi Frame "A" Type for 300 m frame
Rod Dia	9.0mm (Nominal)
Size of Copper Wire	1mm Dia

Item Code : ST-CTRAK 200 for 200m & ST-CTRAK 300 For 300m

Usage Illustration

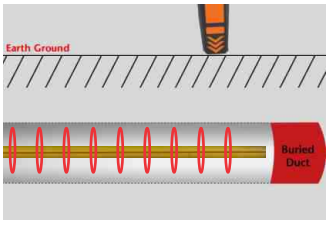
Note - A professional pipe & cable locator comprising locating receiver & signal generator will be required to use the CTRAK traceable rodder.

STEP 1 :
Insert rod into manhole and push into buried non metallic pipe/duct which is to be route traced.

Step 2 :
The terminal box of the CTRAK provides the connection to the inbuilt copper trace wire of the duct rodder.

Step 3 :
Apply signal from direct connection lead of the transmitter with any suitable frequency such as 16/33/64 /65/133 KHz etc to the terminal & connect the second lead from transmitter to the earth stake to energize the full length of the traceable duct rodder.

Step 4 :
Trace route & depth of buried pipe with precision using any digital or analog receiver.



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