

Description and Specifications

1. General

1.1 This manual covers the description, use, care and maintenance of the Dynatel 2220L Cable and Pipe Locator. This unit is a portable instrument that locates the path of buried cables and pipes. It locates buried and interior run CATV cables, as well as primary and secondary power distribution cables. Pipe locating is limited to metallic pipe, both coated and uncoated. However, it locates PVC pipe buried with tracer wire. Four different tone frequencies are available from a separate Transmitter to accommodate varying factors such as distance, conductor type, or soil conditions. When using the Transmitter to apply tone to an underground cable, the unit provides a direct digital readout of estimated depth to the buried service. The hand-held Receiver is also able to detect 60 Hz power frequencies and re-radiated low frequency radio waves.

2. Description

2.1 The 2220L Cable and Pipe Locator and accessories are shown below. Refer to the list of standard and optional accessories in Table 1.

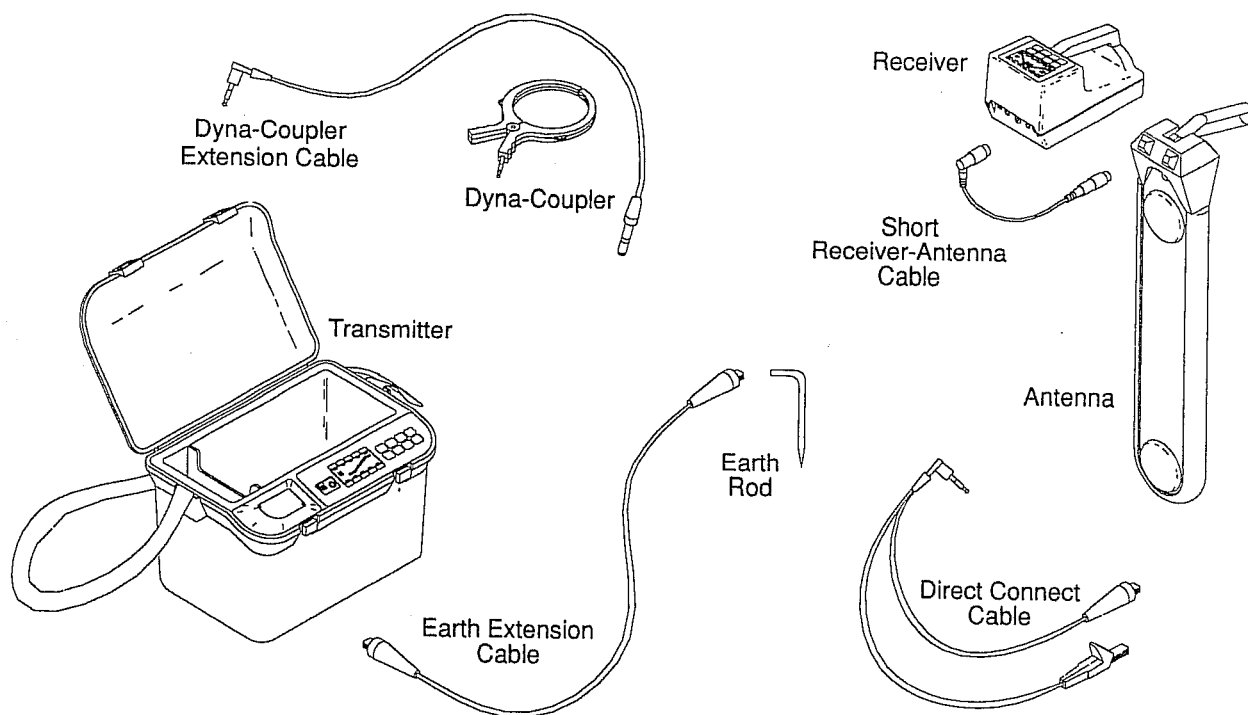


Fig. 1-1 Dynatel™ Cable and Pipe Locator

3. Specifications

Transmitter Specifications

Modes of operation	Single: trace or tone Multiple: two trace frequencies									
Signal application method	External: using direct connect cable, or Dyna-Coupler Internal: using internal induction coil									
Signal level control	Automatic signal level control selectable between normal or high									
Trace frequency	One of four preprogrammed user-selectable frequencies									
Tone frequency	Preprogrammed to 577.5 Hz									
Output signal characteristics	Frequency: 577 Hz 7 kHz 33 kHz 200 kHz Voltage: Trace mode 0 to 25 Vrms Current: <table border="0" style="margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: center;">Trace</th> <th style="text-align: center;">Tone</th> </tr> </thead> <tbody> <tr> <td>NORM.*</td> <td>10 mA (max)</td> <td>3 mA (max)</td> </tr> <tr> <td>HIGH.**</td> <td>100 mA (max)</td> <td>25 mA (max)</td> </tr> </tbody> </table> <p style="margin-left: 40px;">* Limited to 0.5 watts out. ** Limited to 2 watts out for frequencies < 45 kHz, or to 1 watt for frequencies ≥ 45 kHz. Output level is displayed as a relative measure</p>		Trace	Tone	NORM.*	10 mA (max)	3 mA (max)	HIGH.**	100 mA (max)	25 mA (max)
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NORM.*	10 mA (max)	3 mA (max)								
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Volts function	0 to 250V average AC & DC voltage on the line. Display resolution 12.5V Maximum error: for 120 VAC RMS ... (-2.7 ± 4.5)V for 48 VDC (4.1 ± 3.9)V									
Ohms function	0 to 10 Megohms, logarithmic indication with each decade linearly divided into 4 segments									
Battery	Six Ni-Cd or Alkaline D cells Typical battery life: Ni-Cd 30 hours between charges Alkaline 110 hours									
Charger	11 to 15 VDC input at 450 mA. 15-hour charge cycle from fully discharged.									
Temperature	Operating -4° F (-20° C) to 122° F (50° C) Storage -4° F (-20° C) to 122° F (50° C)									

Description and Specifications
Section 1

Receiver Specifications

Trace Frequencies	<table border="0"> <tr> <td style="text-align: center;"><u>Active</u></td> <td style="text-align: center;"><u>Passive</u></td> </tr> <tr> <td>577 Hz</td> <td>540 Hz (✓)</td> </tr> <tr> <td>7 kHz</td> <td>22 kHz (LF)</td> </tr> <tr> <td>33 kHz</td> <td></td> </tr> <tr> <td>200 kHz</td> <td></td> </tr> </table>	<u>Active</u>	<u>Passive</u>	577 Hz	540 Hz (✓)	7 kHz	22 kHz (LF)	33 kHz		200 kHz	
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577 Hz	540 Hz (✓)										
7 kHz	22 kHz (LF)										
33 kHz											
200 kHz											
Sensitivity, Coupler/Probe jack	<p>Maximum open circuit input voltage from 50 ohm source to obtain audio signal plus noise to noise ratio of 6 dB:</p> <table border="0"> <tr> <td>6–25 kHz</td> <td>0.3 μV</td> </tr> <tr> <td>25–200 kHz</td> <td>0.5 μV</td> </tr> </table>	6–25 kHz	0.3 μV	25–200 kHz	0.5 μV						
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Depth	<p>inches option:</p> <table border="0"> <tr> <td>Range</td> <td>0 to 100 inches</td> </tr> <tr> <td>Accuracy</td> <td>± 10% of reading for 2 to 60 inches or ± 1 inch, whichever is greater. ± 15% of reading for 60 to 100 inches</td> </tr> </table>	Range	0 to 100 inches	Accuracy	± 10% of reading for 2 to 60 inches or ± 1 inch, whichever is greater. ± 15% of reading for 60 to 100 inches						
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Battery	<p>Five Ni-Cd or Alkaline C cells Typical battery life:</p> <table border="0"> <tr> <td>Ni-Cd</td> <td>20 hours between charges</td> </tr> <tr> <td>Alkaline</td> <td>50 hours</td> </tr> </table>	Ni-Cd	20 hours between charges	Alkaline	50 hours						
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Charger	<p>11 to 15 VDC input at 450 mA. 15-hour charge cycle from fully discharged.</p>										
Audio	<p>Internal speaker or external headphones.</p>										
Temperature	<table border="0"> <tr> <td>Operating</td> <td>–4° F (–20° C) to 122° F (50° C)</td> </tr> <tr> <td>Storage</td> <td>–4° F (–20° C) to 122° F (50° C)</td> </tr> </table>	Operating	–4° F (–20° C) to 122° F (50° C)	Storage	–4° F (–20° C) to 122° F (50° C)						
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