

3M

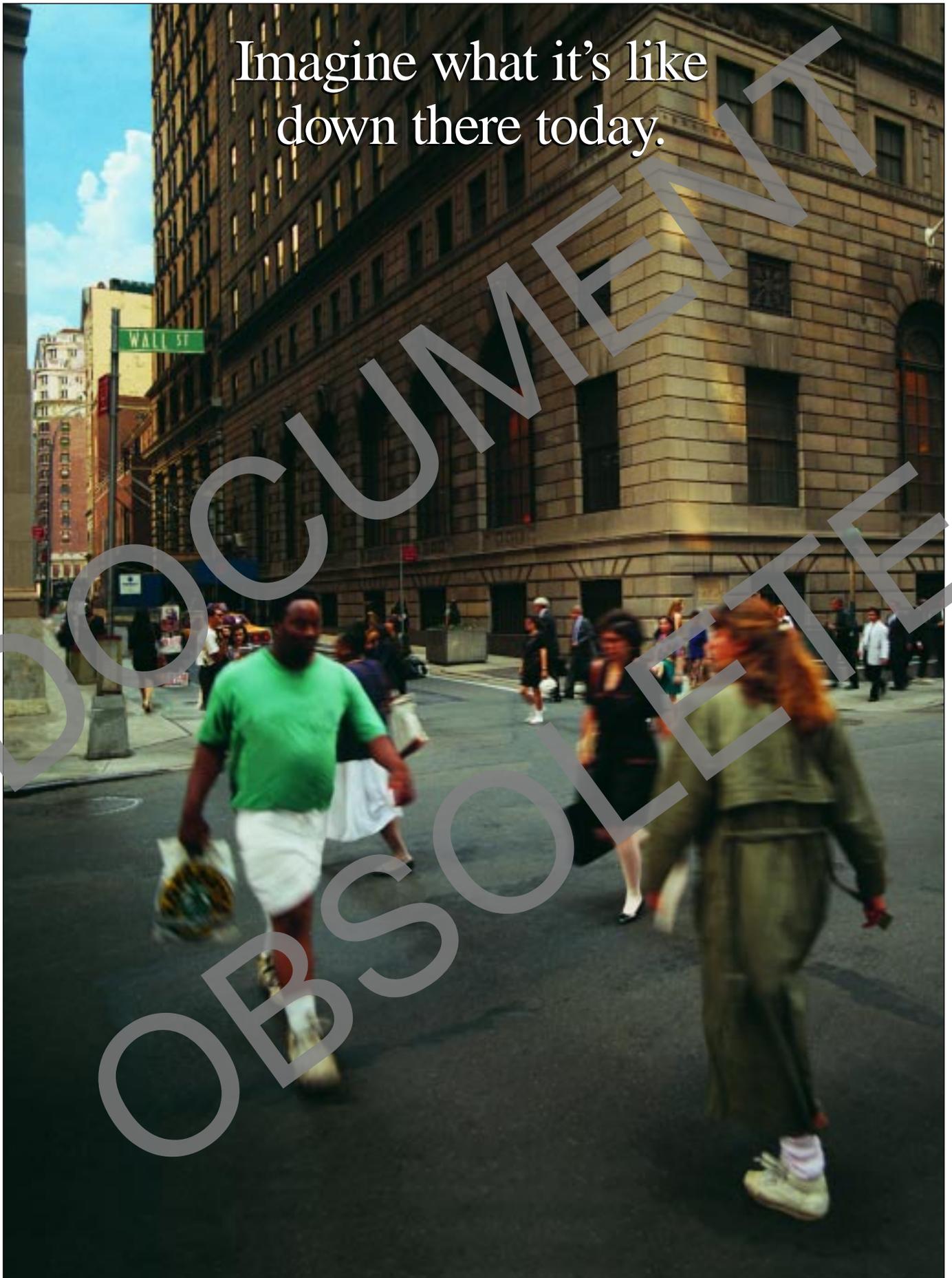
Locating and Marking Products



This was Wall Street,
1921...



Imagine what it's like
down there today.



Spotting the target with Dynatel™ Cable/Fault Locators.

The opening photos in this brochure show the corner of Wall Street and Williams Street in New York City in 1921 and as it appears today. Clearly it has become even more difficult to locate and identify underground utility lines.

The right tool for the job

You can always choose the right tool for the job from the full line of 3M™ Dynatel Cable/Fault Locators.

Depending on the model you choose, Dynatel cable locators find the exact path and estimated depth of power conductors, CATV and telephone cables, metallic and non-metallic pipes with tracer wire, as well as provide toning of aerial cable. Dynatel cable and fault locators also identify and measure points of cable damage where there is metallic contact to earth via a conductor or cable shield.

Built-in features for enhanced accuracy

From basic to full features, Dynatel locators have several built-in features that allow you to perform cable locating with utmost accuracy. You can choose up to four different modes (peak, null, differential or special peak) depending on which is most effective under your field conditions. Receivers incorporate an “expander” function to make peaks and nulls more pronounced by enhancing the amplitude difference between two conductors carrying the same tone.

Easy to learn and simple to use

Dynatel locators require little training and are simple to use. Digital LCD readouts and push-button operation make the units easy to interpret for precise locates. A bar graph on the receiver indicates received signal and proximity to the cable, and a “memory” feature on some receivers stores operator setup from previous use. With the push of a button, depth to the cable or pipe is displayed, ensuring efficient locating and accurate excavation.

Backed by a name you can trust

When you invest in a quality 3M locator, you also get the best warranty in the business and a service center dedicated to diagnosing and repairing 3M products. Our service center provides calibration, repair, upgrades and modifications for safety, performance and reliability.

Even beyond the initial warranty period, standard turnaround time is five days or less. If you're in a hurry, we can fix it in a day and ship via Federal Express, RPS or United Parcel Service.

By attaching the Dynatel 2206 Marker Locating Accessory to the Dynatel Cable/Fault Locator, the operator can simultaneously trace a cable path while finding buried EMS Markers along the way. A rotary switch lets you select the desired utility.



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LCD provides visual indications about mode of operation, depth, frequency and battery status. The bar graph shows proximity to a position directly over buried conductor.



5

Fault locators include an earth contact frame that is color-coded to correspond with indications from the receiver. These indications simplify the locating procedure by directing the operator to the fault.



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The Active Duct Probe (ADP) is an active mini-transmitter (sonde) which allows the user to trace the path of conduit, gas, wastewater and water pipelines. The ADP can be attached to a push-rod or pull-tape for insertion into buried non-metallic pipe.



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Features for Dynatel™ Cable/Fault Locators

Features	2210 2210E	2250 2250E	2250 - CNTR	2273 2273E
Transmitter				
Two operator-selectable frequencies	•			
Four operator-selectable frequencies		•	•	•
Simultaneous signals		•	•	•
Built-in ohmmeter		•	•	•
Indicates presence of foreign and hazardous voltage		•	•	•
Built-in continuity test	•	•	•	•
Three tone application methods (direct connect, coupler, inductive)	•	•	•	•
Auto load matching	•	•	•	•
High and normal output level	•	•	•	•
Sheath fault-finding capability				•
Fault-locate and cable-locate tones applied simultaneously				•
Receiver				
Peak mode	•	•	•	•
Null mode		•	•	•
Differential mode		•	•	•
Push button digital depth readout	•	•	•	•
Cable/pair identification	(2210E)	•	•	•
Measures signal current in cable	•	•	•	•
Direct readout of active duct probe depth	(2210E)	•	•	•
Visual and audible cable locates	•	•	•	•
Wet section testing	(2210E)	•	•	•
Digital fault strength indicator				•
Graphic display	•	•	•	•
Ground level antenna	•	•	•	•
Expander amplifier	•	•	•	•
50/60 Hz power cable locate mode	•	•	•	•
Compatible with 2205/2206 Marker Locating Accessory	•	•	•	•

Marking your spot with the 3M™ Electronic Marker System.

The main element of the 3M Electronic Marker System (EMS) is a durable, passive marker that can be buried over key facilities during construction or used to mark existing facilities during maintenance. After installation, EMS saves both time and money by eliminating the search for “lost” facilities.

With EMS, you can find power, gas, water, wastewater, CATV and telephone utilities in the heaviest of traffic. Unlike surface markers such as stakes, flags or paint, an EMS marker is not affected by overgrown vegetation or vandalism, and can't be worn away by weather.

Two types of locators are available for locating markers: the 3M™ EMS Marker Locator or the 3M™ Dynatel™ Cable/Fault Locator with the Dynatel 2205/2206 Marker Locating Accessory for simultaneous cable and marker locating.

Find it fast

It takes just minutes to learn to use EMS, and finding buried markers is just as easy. The locator transmits an RF signal to the buried marker. The marker reflects the signal back to the locator, and the location is indicated with both a visual meter reading and an audible tone.

Markers that last

With our Full-Range, Mini, Ball, and Near-Surface Markers, there is a marker to meet every need. A four-inch disc marker is also available for marking handholds. It easily attaches to lids or covers over flush-mounted facilities.

Markers are passive antennas with no internal power source to run down. Their water-resistant, polyethylene shells are impervious to minerals, chemicals and the temperature extremes normally found underground.

The safe choice

There is no guesswork with the electronic marker system. 3M locators operate even in the presence of metal conduit or pipe, metallic conductors, fences, AC power lines and electronic markers of other utilities. All EMS markers are color-coded to APWA standards for visual reference and each utility has its own specific frequency. EMS signals provide positive identification of each utility, thus reducing the risk of accidentally locating and excavating other buried facilities.



Near-Surface Marker Ideal for marking underground and street-access facilities up to two feet in depth. Its 3/4-inch long cylindrical size and shape allows for easy installation in asphalt, concrete or rock without extensive digging or drilling.



Ball Marker Engineered for narrow trench applications up to five feet in depth, the 4-inch diameter ball marker has a unique, patented self-leveling feature that ensures an accurate, horizontal position regardless of how it is placed in the ground. (Contains a mixture of Propylene Glycol and water which is approved for use in pharmaceuticals, cosmetics and as a food additive. The mixture is readily biodegradable and will not harm humans, wildlife or the environment.)



Mini-Marker Designed for marking applications at depths up to six feet, marker spokes in the 8/4-inch diameter mini-marker help stabilize it in the correct position after placement.



Full-Range Marker The full-range marker is suited for deep applications up to eight feet. Its 15-inch diameter makes it ideal for use as a digging shield over sensitive underground facilities.

Specifications for 3M™ Electronic Marker System

	Telephone	CATV	Power	Water	Wastewater	Gas
Near-Surface Marker Product Number Color	1432 Orange	N/A	1433 Red	1434 Blue	1435 Green	1436 Yellow
Ball Marker Product Number Color	1401-XR Orange	1407-XR Black/Orange	1402-XR Red	1403-XR Blue	1404-XR Green	1405-XR Yellow
Disk Marker	1411-XR Orange	N/A	1412-XR Red	1413-XR Blue	1414-XR	1415-XR Yellow
Mini-Marker Product Number Color	1255 Orange	N/A	1256 Red	1257 Blue	1258 Green	1259 Yellow
Full-Range Marker Product Number Color	1250 Orange	N/A	1251 Red	1252 Blue	1253 Green	1254 Yellow
Marker Locator Product Number	1264/2205-TEL 2206	N/A	1263/2205-PWR 2206	1266/2205-WTR 2206	1265/2205-WWTR 2206	1267/2205-GAS 2206

	Net weight	Shipping weight	Range (dependent on marker type)	Standard Packaging
Near-Surface Marker	0.055 lbs. (0.025 kg)	3.75 lbs. (1.71 kg)	2 ft. (0.6 m) from locator probe	50/cs.
Disk Marker	1.4 oz. (39.7 g)	5 lbs. (2.3 kg)	5 ft. (1.5 m) from locator probe	50/cs.
Ball Marker	0.7587 lbs. (0.35 kg)	25.0 lbs. (11.4 kg)	5 ft. (1.5 m) from locator probe	30/cs.
Mini-Marker	0.31 lbs. (0.142 kg)	17.0 lbs. (7.7 kg)	6 ft. (1.8 m) from locator probe	50/cs.
Full-Range Marker	1.75 lbs. (0.8 kg)	30.9 lbs. (14.0 kg)	8 ft. (2.4 m) from locator probe	25/cs.
Marker Locator 1264/1263/1265/ 1266/1267 2205/2206	5.5 lbs. (2.5 kg)	12.0 lbs. (5.4 kg)	N/A	1/cs.
	2.3 lbs. (1.1 kg)	4.0 lbs. (1.8 kg)	N/A	1/cs.

Applications

Telephone	CATV	Power	Water	Wastewater	Gas
<ul style="list-style-type: none"> • Cable paths • Buried splices • Buried service drops • Load coils • Conduit stubs • Fiber optic facilities • Branch splices 	<ul style="list-style-type: none"> • Cable paths • Fiber optic facilities • Buried service drops • Road crossings • Buried splices 	<ul style="list-style-type: none"> • Cable paths • Service drops • Conduit stubs • Buried splices • Road crossings • Branch splices • Buried transformers 	<ul style="list-style-type: none"> • Pipeline paths • Service stubs • Clean-outs • Road crossings 	<ul style="list-style-type: none"> • Pipeline paths • Service stubs • PVC pipeline • Buried valves • Road crossings • Tees 	<ul style="list-style-type: none"> • Pipeline paths • Main stubs • Service stubs • Tees • Road crossings • Valve boxes • Meter boxes

DOCUMENT SOLETTTE

Important Notice

WARRANTY AND REMEDY. This product will conform to 3M published specifications and be free from defects in materials and workmanship for a period of one year from the date of purchase. In addition, 3M provides the following Conditional Lifetime Warranty for its Electronic Marker Products: When installed in accordance with 3M's installation instructions, 3M warrants 3M™ Electronic markers for the lifetime of the product, to be free from defects in material and manufacture, provided the Electronic Markers are located with 3M™ Dynatel™ Test and Measurement Instruments or other brand locators as may be designated by 3M in writing.

This warranty does not extend to Electronic Markers that have been subjected to misuse or improper applications or that have been repaired or altered by others. 3M MAKES NO OTHER WARRANTY INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If the Marker is found to be defective within the stated warranty period, your exclusive remedy shall be, at 3M's option, to repair or replace the Marker or refund the purchase price. 3M will not be liable for any special, incidental, or consequential damages arising from use of this 3M product, regardless of the legal theory asserted.



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