

# EARTH PROBE

## CARE AND OPERATING INSTRUCTIONS

1. To drive, rotate probe clockwise with ratchet wrench while applying moderate down pressure.
2. Drive to desired depth as indicated by 1 ft. interval marks on corners of shaft by applying a smooth, rotational force.
3. To read, support probe shaft with one hand while rotating probe steadily with torque wrench. Read with probe rotating.
4. Do not exceed capacity of torque wrench (1800 in-lbs).
5. Attach extension sections, as needed, being sure that spring locking device snaps into hole in extension section. (Failure to observe this precaution may result in loss of one or more probe sections in the ground.)
6. Use soil classification data chart to interpret probe readings.
7. Before storing, wipe clean and dry. If wrench has been in water or mud, disassemble the ratchet wrench to clean, dry and oil the mechanism.

### SOIL CLASSIFICATION DATA

Class	Common Soil-Type Description	Geological Soil Classification	Probe Values ft-lbs. in.-lbs. (NM)	Typical Blow Count "N" per ASTM-D1586
0	Sound hard rock, unweathered (bedrock)	Granite, Basalt, Massive Limestone	N.A.	N.A.
1	Very dense and/or cemented sands; coarse gravel and cobbles	Caliche, (Nitrate-bearing gravel/rock)	63 - 39 750 - 1600 (85-181)	60-100+
2	Dense fine sands; very hard silts and clays (may be preloaded)	Basal till; boulder clay; caliche; weathered laminated rock	50 - 63 600 - 750 (68-85)	45-60
3	Dense sands and gravel; hard silts and clays	Glacial till; weathered shales, schist, gneiss and siltstone	42 - 50 500 - 600 (56 - 68)	35-50
4	Medium dense sand and gravel; very stiff to hard silts and clays	Glacial till; hardpan; marls	33 - 42 400 - 500 (45 - 56)	24-40
5	Medium dense coarse sands and sandy gravels; stiff to very stiff silts and clays	Saprolites, residual soils	25 - 33 300 - 400 (34 - 45)	14-25
6*	Loose to medium dense fine to coarse sands to stiff clays and silts	Dense hydraulic fill; compacted fill; residual soils	17 - 25 200 - 300 (23 - 34)	7-14
7	Loose fine sands; Alluvium; loess; medium - stiff and varied clays; fill	Flood plain soils; lake clays; adobe; gumbo, fill	8 - 17 100 - 200 (11 - 23)	4-8
8	Peat, organic silts; inundated silts, fly ash very loose sands, very soft to soft clays	Miscellaneous fill, swamp marsh	<8 <100 (0 - 11)	0-5

Class 1 soils are difficult to probe consistently and the ASTM blow count may be of questionable value.

\*In areas only seasonally wet with slow drain as in fairly flat terrain.

### BILL OF MATERIAL (1800 in-lb Capacity)

<b>C309-0032</b>	<b>20' Probe Complete</b>
<b>C309-0033</b>	<b>Extra 5' Extension</b>
<b>E309-0038P</b>	<b>Screw &amp; Shaft Assembly</b>
<b>P309-0039P</b>	<b>Ratchet Wrench</b>
<b>P309-0040P</b>	<b>Torque Wrench</b>
<b>E309-0041P</b>	<b>Carrying Case 20'</b>

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