

SOIL PICK



SOLUTIONS THAT LAST



MBW, INC.

Since 1967, MBW has been manufacturing one of the industry's most interesting lines of construction equipment. What makes the MBW line interesting? MBW is not a copyist – we do not simply duplicate designs developed by others. MBW begins each new engineering project with the assumption that significant progress can be made in terms of productivity, maintenance, longer life,

SOIL PICK

The Soil Pick is a selective excavator. Selective in the sense that it fractures, pulverizes and displaces porous and semi-porous soils, yet leaves non-porous objects unaffected. The Soil Pick excavates soil without risk of damaging buried utilities.

The Soil Pick employs converging/diverging nozzle technology to accelerate compressed air to supersonic speed (to 1500 mph). The high velocity air stream travels approximately 4 inches from the distal end of the Soil Pick – “the cutting edge” – before decompressing to atmospheric pressure with sufficient violence to pulverize and displace soil.

What separates the MBW Soil Pick from other excavation tools employing converging/diverging nozzle technology?

Safety. MBW holds US and international patents on the combination of dielectric and non-sparking characteristics embodied in the Soil Pick.

Non-conductive, non-sparking tools are of obvious benefit to those working in environments that may be gas enriched and/or are in close proximity to live electric lines.

Also for reasons of safety, MBW standardizes the Soil Pick's cutting edge at approximately 4 inches*. A 4" cutting edge is long enough to facilitate rapid excavation, yet short enough to minimize the potential for personal injury caused by misdirection of the cutting edge. Very importantly,

enhanced user safety, or lower long-term cost of ownership. Often, MBW's R&D efforts result in entirely fresh approaches to industry problems. A number of our

“fresh approaches” solve problems in municipal and utility applications.



soil aeration beyond the target utility is minimized, thus simplifying and facilitating effective backfilling and compaction of the excavation.

The 4 inch cutting edge also provides better control of the air stream while working in the immediate area of a gas leak.

The Soil Pick's non-sparking, brass nozzle weighs 4.2 ounces. It is important that the nozzle does not detach from the barrel to become a high velocity projectile. For this reason, the nozzle is threaded into the Soil Pick's barrel and cemented in place. Some manufacturers promote easily exchanged nozzles. MBW's view is that safety comes first.



The Soil Pick requires no periodic maintenance. A pressure gauge on the handle assembly advises the operator if the tool is working at acceptable pressure. The Soil Pick weighs 6.5 lbs., has zero hand/arm vibration and can be used for extended periods without fatigue.

* NOTE: Nozzle capacity (cfm, air stream velocity and cutting edge) is dependent on interior nozzle profile. Contact MBW for nozzle options.



HANDLE VIBRATION TEST

Product type – MBW Soil Pick SP125

Manufacturer of testing apparatus – Castle

Accelerometer was affixed to the rear of the handle on the Soil Pick and all three axes were tested.

Accelerometer position:

X axis = 0.0M/S²

Y axis = 0.0M/S²

Z axis = 0.0M/S²

Hand/arm vibration = 0.0M/S²



Radial Trenching is a fast growing technique used by the Arboreal industry. Used to safely remove and replace compacted soil that literally suffocates tree roots, the Soil Pick has become a standard in the Arboreal market. Decompact today or Decompose tomorrow.

SPECIFICATIONS	SP80	SP125	SP160
Weight	6.5 lbs (3 kg)	6.5 lbs (3 kg)	6.5 lbs (3 kg)
Length	52 in (132 cm)	52 in (132 cm)	52 in (132 cm)
Barrel Diameter	1.25 in (3 cm)	1.25 in (3 cm)	1.25 in (3 cm)
Airstream Velocity	1475 mph (2375 km/h)	1475 mph (2375 km/h)	1475 mph (2375 km/h)
Effective Cutting Depth*	4 in (10 cm)	4 in (10 cm)	8 in (20 cm)
Air Volume	80 cfm (2265 L/min)	125 cfm (3540 L/min)	160 cfm (4531 L/min)
Pressure at Tool Inlet	100 psi (6.9 bar)	100 psi (6.9 bar)	100 psi (6.9 bar)
Claw Type Quick Connector (optional 3/4" Dual Lock Connector is available)	3/4 in	3/4 in	3/4 in
Optional Accessories			
<i>Extension Tubes</i>	42 in (107 cm) 21 in (53 cm)	42 in (107 cm) 21 in (53 cm)	42 in (107 cm) 21 in (53 cm)
<i>Cart Assembly for crack cleaning</i>	7.5 in (19 cm)	7.5 in (19 cm)	7.5 in (19 cm)
<i>Nozzle</i>	45°	45°	45°

* Dependent on soil type
() Metric Measurements.
Specifications subject to change without notice.

Non-Conducting Barrel
independently tested to 100,000 Volts

Large Deflector
protects operator from scatter of dirt and debris

Non-Sparking Nozzle
allows safe use around leaking gas lines

Polymer Trigger
reduces operator fatigue

Unlike the Competition,
the Soil Pick maintains a cool temperature

Pressure Gauges
ensure maximum performance



SOIL COMPACTION SUPERVISOR – ELIMINATES GUESS WORK IN SOIL COMPACTION

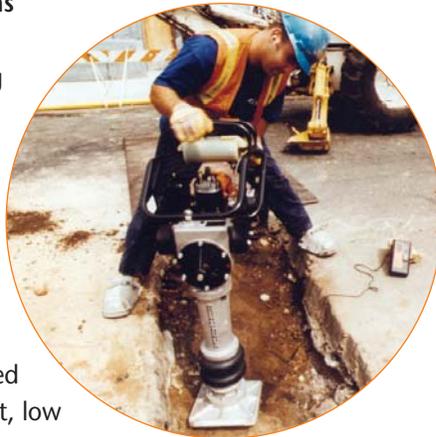
Knowing when optimal compaction results have been achieved has always involved guesswork. Often, operators don't have a clue. QC technologies like



nuclear densitometers can measure soil density, but the process is time consuming, complex, costly, often results in rework, and is routinely avoided wherever possible. Poor performance in soil compaction is an every day occurrence on countless construction projects.

The **Soil Compaction Supervisor (SCS)** solves the problem. The SCS monitors growth in pressure wave amplitude as soil becomes progressively stiffer and denser during the compaction process. This real time, seismic approach to quality control **forces crews to bring each lift of soil to the apex of the stiffness curve for conditions of compaction.**

Independent testing confirms that SCS results correlate with Standard Proctor Density numbers that exceed typical specification. The SCS is easily operated by field crews, is fast, low cost, and because it determines when optimal stiffness and corresponding density has been achieved, the guesswork is taken out of the compaction process. The SCS documents



performance on each lift and provides data relative to protocol conformance – important in that protocol violation is the chief cause of compaction failure.

- **More than a QC instrument. Manages the soil reinstatement process and improves protocol conformance.**
- Employs disposable piezoelectric sensors. Each sensor reads multiple lifts to vertical distances of 3 to 4 feet depending on soil conditions.
- Highly accurate. Brings each lift to apex of stiffness (force/deflection) curve for conditions of compaction. Standard Proctor Density correlations exceed typical density specifications in most soils. Full depth results, not just an average and not just a surface reading. Ideal for use in small excavations, not affected by buried utilities or proximity to trench walls.
- Strips away need for the compactor operator to speculate on compaction adequacy. The SCS makes the call and documents whether or not the operator followed instructions.
- Little training required. No licensing. Non-nuclear. No lab work or calibration problems.
- Highly repeatable, consistent compaction results. Eliminates under and over-compaction.
- Stand alone QC for most applications. Also used to ensure favorable end result testing via sand cone or nuclear densitometer.
- Documents number of lifts/excavation and time of compaction/lift.



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