



FACILITIES &
MAINTENANCE

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Selecting Aeration Equipment for Ground Services Crews

BY JOSHUA MURPHY

Spring is a beautiful time to visit a university campus. Warmth and sunshine are returning, and signs of new life and growth are everywhere. This energy revitalizes both the facility and the whole student body. However, it is more than Mother Nature alone that makes this happen.

Without the work and know-how of dedicated ground services crews, spring on campus would be far less magical.

One vital task for these crews is soil core aeration in both the spring and fall. Aeration allows more air, water, and nutrients to penetrate into the ground and is an essential element in maintaining healthy soil and promoting turf growth on both sports fields and the commons.

Today, crews have many different options for completing this task. Understanding these options can ensure that the work is completed efficiently and effectively.

The following is an overview of the two

main types of aerators and their pros and cons.

Drum Aerators – A Tried and True Technology

Drum aerators have been a staple in lawn care for many years. They can be either mechanically driven or towable, typically featuring a fixed-hole pattern of 4 to 6 holes per square foot. Walk-behind drum aerators operate in a set pattern, requiring the operator to push them back and forth across the lawn and turn 180 degrees at the end of each row. To avoid damaging the turf it's important for the operator to disengage the tines from the ground before turning.

Most drum aerators come with a mechanical release to lift the tines from the

ground; however, some designs can make this task difficult and time-consuming. As a result, operators often find themselves lifting and spinning the unit for each turn. Since these aerators rely on their weight to drive the tines into the soil, lifting them requires significant physical effort. If the turning process isn't done correctly, it can also lead to costly damage to the turf or injury to the operator.

Certain models feature freestanding wheels on the outside, which aid in maneuvering during turns, but they can still be somewhat challenging to operate. Wider split-drive systems offer improved turning capabilities but come at a higher cost.

A towable drum unit can cover more ground for larger properties, and some models include wings that can be flipped up to achieve variable working widths.

Regardless of whether you use a walk-behind or towable drum unit, one significant factor affects the depth, quality, and consistency of the aeration: the moisture level in the soil.

Dry, compacted soil is difficult to penetrate deeply, making it challenging to access the root system, reduce thatch, open the soil for additional nutrients, or prepare a seedbed for overseeding.

In summary, drum aerators represent the traditional technology in the industry and are cost-effective. They handle rolling terrain well, but they can pose challenges related to operator ergonomics and hole quality in dry conditions.

Cam/Reciprocating Aerators – The Next Chapter in Aeration Technology

Cam-driven reciprocating aerators represent a newer technology that originated in golf course maintenance. They offer several advantages over traditional drum aerators such as inground turning, but there are also some challenges to consider. For instance, non-hydro drive units may operate at slower speeds than drum units and are better suited
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for flat terrain. However, one of their key benefits is that the cam drive allows for better core quality and quantity, even in drier soil, since it does not rely on weight. This often means that operators have less downtime waiting for optimal soil conditions and can achieve better overall results from aeration.

Cam-driven reciprocating aerators that feature hydro-drive systems have further improved speed compared to non-hydro-drive units. They also offer the option of adding a chariot or sulky, which allows the operator to ride behind the unit, making it easier to work on larger properties. Additionally, these units

can better handle hilly terrains and, in some cases, allow for reverse aeration.

Another advantage of reciprocating aerators is their variable aeration density (VAD). These machines can create 2 to 10 times more holes than fixed drum models in a single pass, generating 8 to 48 holes per square foot. This feature enables them to increase density for overseeding or perform patch repair for bare spots found in heavily trafficked areas such as “cow paths” over quads in one pass simply by slowing down. This capability eliminates the need for double or triple aeration with traditional fixed-pattern aerators, which can produce as few as 4 holes per square foot.

Overall, reciprocating aerators are easier to maneuver, feature in-ground turning that reduces operator fatigue, and generate more holes with significantly fewer tines than traditional units, making them both efficient and easy to maintain.

As with any equipment purchase, visiting a local outdoor power equipment dealer can provide valuable insights into the various options available, helping you find the best fit for your crew and campus.

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