



AIRSPADE®

Innovation
in the air.

Pneumatic
Soil Excavation

airspade.com



Table of Contents

AirSpade 2000 Series	3
AirSpade 3000 Series	8
AirSpade 4000 Series	10
AirVac Series	13
Accessories	15
Parts	19
FAQs	26



Always wear eye and ear protection when operating air tools and related equipment.

2000 Series

Today, thousands of AirSpades are used in arboriculture, utility, construction, and industrial applications worldwide. AirSpade is the tool of choice due to its fast, easy and non-destructive method of excavation.

TYPICAL APPLICATIONS



Arboriculture & Horticulture



Utility & Construction



Trench Rescue



De-mining



Environmental Remediation





Features

- Ergonomic, pistol-grip style handle with soft rubber grip
- Comfortable, dead-man trigger
- Air pressure gauge
- Lightweight, fiberglass barrel with adjustable dirt shield
- Extra-hardened, stainless steel supersonic nozzle
- Inlet: 3/4" NPT (Male)
- Chicago-style connector

AirSpade 2000

Utilizing the power of compressed air, AirSpade 2000 uncovers underground objects, utility lines, or even sensitive tree roots without harm. Featuring the high performance, patented supersonic nozzle, AirSpade 2000 digs faster and more efficiently than competitive tools. Rugged, lightweight construction. Dead-man trigger ensures safe operation. Non-conductive, fiberglass barrel provides degree of protection from buried electrical lines.

Part No.	Model/Description	Minimum Compressor Size
HT140	AirSpade 2000 25 cfm with 4 ft barrel	25
HT144	AirSpade 2000 60 cfm with 2 ft barrel	60
HT134	AirSpade 2000 60 cfm with 4 ft barrel	60
HT139	AirSpade 2000 105 cfm with 4 ft barrel	125
HT116	AirSpade 2000 150 cfm with 3 ft barrel	175
HT130	AirSpade 2000 150 cfm with 4 ft barrel	175
HT138	AirSpade 2000 225 cfm with 4 ft barrel	250

See website for full specifications



Arbor/Landscape Kit

Kit includes the most popular components and accessories utilized by arborists and landscapers. Features the powerful AirSpade 2000 air-excavation tool equipped with patented supersonic nozzle for superior digging performance. Ideal for sensitive arboreal work including vertical mulching, bare rooting, radial trenching, and soil aeration. Rugged, lightweight construction. Dead-man trigger ensures safe operation. Non-conductive, fiberglass barrel provides degree of protection from buried electrical lines.

Part No.	Model/Description	Minimum Compressor Size
HT142	Arbor/Landscape Kit with 105 cfm nozzle	125
HT107	Arbor/Landscape Kit with 150 cfm nozzle	175
HT109	Arbor/Landscape Kit with 225 cfm nozzle	250

See website for full specifications

Features

- AirSpade 2000 handle with Chicago style connector
- 4 ft barrel with adjustable dirt shield
- 45° angled adaptor
- 105, 150, 225 cfm supersonic nozzle
- 1"ID x 10' lightweight air hose with Chicago style connectors
- Heavy-duty locking storage case



Shrub Gun

The HT144 Shrub Gun is changing the way arborists, landscapers and gardeners care for trees, shrubs and flower beds. Operating on a compressor that's compact enough to fit on the back of a pick-up truck, the two-foot barrel allows for controlled excavation and soil aeration.

Part No.	Model/Description	Minimum Compressor Size
HT144	AirSpade 2000 60 cfm with 2 ft barrel	60

See website for full specifications

Features

- Features high performance, supersonic 60 cfm nozzle
- Lightweight, fiberglass barrel with adjustable dirt shield
- Ergonomic, pistol-grip style handle with soft, rubber grip
- Comfortable, dead-man trigger ensures safe operation
- Short barrel simplifies close-in work
- Inlet: 3/4" NPT (Male)
- Chicago-style connector

Construction Kit



Trench Rescue Kit



Trench Rescue Kit/Construction Kit

Kit includes the most popular components and accessories utilized by utility and construction crews. Features the powerful AirSpade 2000 air-excitation tool equipped with patented supersonic nozzle for superior digging performance. Ideal for sensitive excavation work including utility locating and repair, key-holing, potholing, roadwork and trench rescue. Rugged, lightweight construction. Dead-man trigger ensures safe operation. Non-conductive, fiberglass barrel provides degree of protection from buried electrical lines.

Part No.	Model/Description	Minimum Compressor Size
HT114	Construction Kit with 105 cfm nozzle	125
HT106	Construction Kit with 150 cfm nozzle	175
HT102	Construction Kit with 225 cfm nozzle	250
HT108	Trench Rescue Kit includes 60 and 150 cfm nozzle	60/175

See website for full specifications

Features

- AirSpade 2000 handle with Chicago style connectors
- 4' barrel with dirt shield
- 3' extension and coupler (Construction Kit only)
- 45° angled adapter
- 60, 105, 150 or 225 cfm supersonic nozzle
- 1" ID x 10' lightweight air hose with Chicago style connectors
- Heavy duty locking storage case



3000 Series

AirSpade 3000 is the strongest, compressed air-powered, excavation tool available on the market today. Delivering 330 cfm at 90 psi, the AirSpade 3000 provides unprecedented performance in heavy-duty arboriculture, utility, and construction applications.

TYPICAL APPLICATIONS



Arboriculture & Horticulture



Utility & Construction



Tree Relocation



Heavy-duty Excavation



AirSpade 3000

AirSpade 3000 is the most powerful air excavation tool available on the market today. Featuring the patented supersonic nozzle, the rugged, heavy-duty AirSpade 3000 is the tool of choice to move maximum dirt in the minimum amount of time. Dead man trigger ensures safe operation. Non-conductive, fiberglass extension provides degree of protection from buried electrical lines.

Part No.	Model/Description	Minimum Compressor Size
LT3000	AirSpade 3000 330 cfm with 5ft barrel	375

See website for full specifications

Features

- In-line style handle with soft rubber grip
- Dead-man trigger
- Non-conductive 5ft fiberglass barrel
- Adjustable dirt shield
- Extra-hardened, stainless steel 330 cfm supersonic nozzle
- Inlet: 1 1/4" NPT (Male)
- 1" Air-King 4-Lug Connector



4000 Series

Working around underground gas and electric lines demands the safest equipment. Constructed from high-pressure, insulated inner air hose surrounded by non-conductive, fiberglass outer barrel, a Utility AirSpade with a 4' barrel is rated up to 300kV.

TYPICAL APPLICATIONS



Electric Power Lines



Gas Pipes



Water & Sewer Lines



Telecommunication Lines
& Fiber Optics



⚠ INNER AIR HOSE rated to 75kV per ft. for 5 minutes per SAE 100R7
OUTER FIBERGLASS TUBE rated to 100kV per ft. for 5 minutes per ASTM F711



Utility AirSpade 4000

Setting a new standard for air excavation tools, the Utility AirSpade 4000 Series harnesses the power of compressed air to safely uncover underground utility lines without harm. AirSpade's high-performance, patented supersonic nozzle generates a laser-like jet that moves at twice the speed of sound for faster, more effective digging. With non-sparking nickle aluminum bronze nozzle and components, electrically insulated 4 ft barrel rated to 300kV, and a lightweight, ergonomic handle, the Utility AirSpade 4000 maximizes jobsite safety while minimizing operator fatigue. Aluminum handle features full size grip opening to accommodate linesman's gloves. Dead-man trigger ensures safe operation and trigger guard prevents accidental activation. Retractable stabilizer bar provides superior operator control. Integral pressure gauge ensures optimal digging performance.

Part No.	Model/Description	Minimum Compressor Size
ASU4105G4	Utility AirSpade 4000 105 cfm with 4 ft Barrel	125
ASU4150G4	Utility AirSpade 4000 150 cfm with 4 ft Barrel	175

See website for full specifications

Features

- Integral air-pressure gauge
- Insulated, 4' fiberglass barrel rated up to 300kV
- Non-sparking brass barrel sleeves and threaded connectors
- Non-sparking, nickle aluminum bronze supersonic nozzle; 105 & 150 cfm available
- Inlet: 3/4" FNPT
- Chicago-style swivel connector



Utility AirSpade 4000 Kit

Kit includes the most popular components and accessories utilized by utility workers. Features the powerful Utility AirSpade 4000 air-excavation tool equipped with patented, nickle aluminum bronze non-sparking supersonic nozzle for superior digging performance. Rugged, lightweight ergonomic handle with retractable stabilizer bar features dead-man trigger for comfortable, safe operation. Insulated, 4' fiber-glass barrel, rated up to 300kV, provides protection from buried electrical lines. Heavy-duty locking storage case.

Part No.	Model/Description	Minimum Compressor Size
ASU4105KT	Utility AirSpade 4000 Kit with 105 cfm nozzle	125
ASU4150KT	Utility AirSpade 4000 Kit with 150 cfm nozzle	175

See website for full specifications

Features

- Utility AirSpade handle assembly with Chicago-style, swivel connector
- 4' insulated barrel with dirt shield
- 3' insulated extension and non-sparking brass coupler
- 45 degree non-sparking brass angled adapter
- 105 or 150 cfm non-sparking nickle aluminum bronze nozzle
- 1" ID x 10' lightweight air hose with Chicago-style connectors
- Heavy-duty, locking storage case

AirVac Series

Powered by compressed air, AirVac utilizes the Venturi Principle to create a powerful vacuum inside the tank which in turn induces a high transport velocity within the vacuum hose. The high transport velocity carries soil and/or debris from the ground up into the tank quickly and effectively.

TYPICAL APPLICATIONS

- Utility potholing
- Manhole and valve clean-out
- Utility pole soil excavation
- Meter box cleaning
- Uncovering splice locations
- Surface drain inlet clean-out
- Contaminated soil removal
- Demolition debris cleanup
- Sludge and mud removal





AirVac

Powered by compressed air, AirVac effectively sucks up soils including dirt, sand, gravel, small rocks, and muck. High thru-put venturi vacuums up to 2 cubic ft/min of material with no motors or moving parts to wear out. With tank capacity of 11.5 cubic ft (86 gallons), AirVac is the portable alternative to large, expensive vacuum trucks. Dual handles and heavy-duty 13" tires provide superior maneuverability. Includes 15 ft vacuum hose and 5 ft vacuum wand.

Part No.	Model/Description	Minimum Compressor Size
AVU15025	AirVac 150 cfm 2.5" Vacuum Unit	175
AVU22530	AirVac 225 cfm 3.0" Vacuum Unit	250
AVU33040	AirVac 330 cfm 4.0" Vacuum Unit	375

See website for full specifications

Features

- Durable, heavy-gauge, all steel construction
- 10" x 20" dump door
- Vacuum and air line pressure gauges
- Vacuum relief safety valve
- Removable injector/exhaust silencer
- Washable polyester filter; 99.99% efficient @ 1.0 micron
- 4"OD vacuum inlet
- 1"ID air hose inlet; Chicago style connector

Accessories

We offer a full-line of accessories that will extend the functionality of your selected AirSpade products.

- Extensions • Hoses • Cases • Angled Adapters





2000 Series Extensions

Heavy-duty extensions for AirSpade 2000 air-excitation tools. Provides extended reach capability for hard-to-reach locations. Includes coupler. Compatible with AirSpade 2000 components and accessories.

Part #	Size
HT122	2ft
HT121	3ft
HT154	4ft
HT120	5ft



3000 Series Extensions

Heavy-duty, 3' fiberglass extension for AirSpade 3000 air-excitation tool. Non-conductive design provides degree of protection from buried electrical lines. Compatible with AirSpade 3000 components and accessories.

Part #	Size
LT17	5ft



4000 Series Insulated Extensions

Constructed from high-pressure rated, insulated inner air hose surrounded by non-conductive, rigid fiberglass outer tube. Inner air hose rated to 75kV per ft for 5 minutes per SAE 100R7. Outer fiberglass tube rated to 100kV per ft for 5 minutes per ASTM F711.

Part #	Size
ASU4002EX	2ft
ASU4003EX	3ft
ASU4004EX	4ft
ASU4005EX	5ft



Storage Case

Rugged, watertight, locking storage case. Designed to hold the AirSpade 2000 or 4000 and components. **HT132**



Face Shield

Impact resistant face shield with headgear provides full-face protection when working with air-excavation tools. Meets ANSI Z87+ standards when worn with safety glasses or goggles. Adjusts for comfortable fit, on head sizes 6 1/2 to 8. **HT136**



Auxiliary Handle

Provides convenient two-handed operation for AirSpade 2000 and 4000 and extensions. Swivels and clamps in any desired position. **HT180**



2000 Series 45 Degree Angled Adapter

Redirects the AirSpade supersonic nozzle air-jet by 45 degrees. Especially useful in tight locations such as deep excavations or potholes. Swivels with 360 degrees of freedom and locks into desired position. Compatible with all AirSpade 2000 components and accessories. **HT119**



4000 Series 45 Degree Angled Adapter

Redirects the AirSpade supersonic nozzle air-jet by 45 degrees. Especially useful in tight locations such as deep excavations or potholes. Swivels with 360 degrees of freedom and locks into desired position. Compatible with all AirSpade 4000 components and accessories. **ASU4045AA**



Lightweight Air Hose

Superior alternative to standard-weight air hose. Ultra lightweight design reduces worker fatigue. Stores flat. High-visibility safety yellow. Pre-mounted connectors. Ideal for both AirSpade 2000 and 4000. 1" ID

Part

HT57
HT111
HT112

Size

1" ID x 10'
1" ID x 25'
1" ID x 50'



Standard Air Hose

Tough, heavy-duty rubber, abrasion and ozone resistant, general service air hose. Type "A" construction. Red. Pre-mounted connectors. 1" ID

Part

HT113

Size

1" ID x 50'



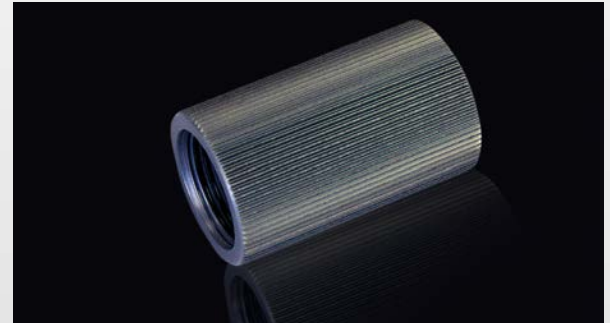
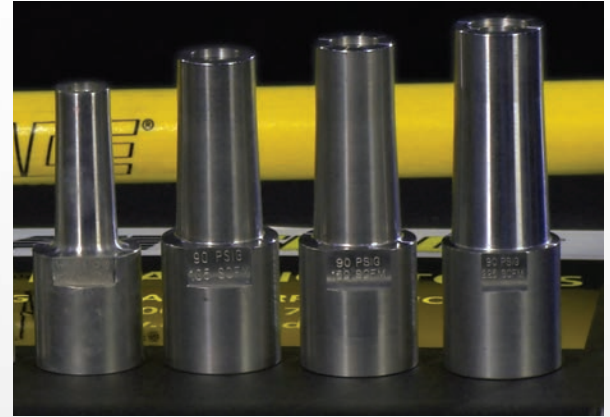
Safety Cable

Provides positive attachment of air hose to AirSpade in case of inadvertent disconnect. Spring loaded loop makes for easy installation. **500A04**

Parts

We offer a full-line of replacement parts that will keep the AirSpade products you have selected in tip-top shape.

- Nozzles • Handles • Barrels • Repair Kits





2000 Series Supersonic Nozzles

Patented design turns compressed air into high speed, laser like jet moving at Mach 2. Mounts on standard AirSpade 2000 barrel. Compressed air requirements: 25 - 225 cfm @ 90 psi.

Part #	Nozzle
HT126	25 cfm
HT125	60 cfm
HT156	105 cfm
HT123	150 cfm
HT127	225 cfm



2000 Series Barrels

Heavy-duty fiberglass barrels for AirSpade 2000 air-excitation tools. Adjustable dirt shield protects operator from flying debris. Non-conductive design provides degree of protection from buried electrical lines.

Part #	Size
HT148	2ft
HT131	3ft
HT118	4ft



Adjustable Dirt Shield

Adjustable dirt shield protects operator from flying debris. Sliding collet locks dirt shield into desired position. Fits AirSpade 2000 and 4000 barrels and extensions. **HT133**



2000 Series Coupler

Provides secure connection between AirSpade 2000 barrels and extensions. **HT155**



2000 Series Handle Assembly

Handle assembly for AirSpade 2000. Comfortable, ergonomic design provides superior grip. Rugged, lightweight aluminum/steel construction. Dead-man trigger ensures safe operation. **HT117**



2000 Series Air Fitting

Chicago "Air King" style coupler provides a quick and safe method to connect air hose to air tools. Claws insure positive connection. Safety clips (not included) provide added measure of safety. 3/4" NPT inlet. **HT220**



2000 Series Handle Repair Kit

Provides all of the parts necessary to maintain and/or repair the AirSpade 2000 handle.

HT150 For AirSpades purchased before March 2011.

HT150-1 For AirSpades purchased after March 2011.



AirSpade 2000 Valve Seal 3 Pack

Provides replacement valve seals for AirSpade 2000 and 4000 series handles. **HT66**



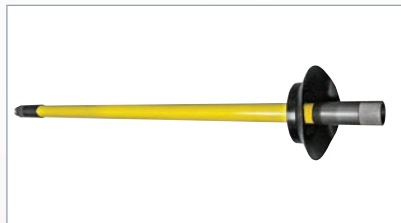
3000 Series Supersonic Nozzle

Patented design turns compressed air into high speed, laser like jet moving at Mach 2. Mounts on standard AirSpade 3000 barrel. Compressed air requirements: 330 cfm @ 90 psi. **LT24**



3000 Series Air Fitting

Chicago "Air King" style coupler provides a quick and safe method to connect air hose to air tools. Claws insure positive connection. Safety clips (not included) provide added measure of safety. 1-1/4" NPT inlet. **LT23**



3000 Series Barrels

Heavy-duty, 5' fiberglass barrel for AirSpade 3000 air-excitation tool. Adjustable dirt shield protects operator from flying debris. Non-conductive design provides degree of protection from buried electrical lines. **LT25**



3000 Series Handle Assembly

Handle assembly for AirSpade 3000. Inline handle provides superior grip. Rugged, aluminum/steel construction. Dead-man trigger ensures safe operation. **LT03**



4000 Series Supersonic Nozzle

Supersonic nozzles deliver superior performance. Patented design turns compressed air into high speed, laser-like jet moving at Mach 2. Non-sparking nickle aluminum bronze construction. Compressed air requirements: 105/150 cfm @ 90 psi.

ASU4105NZ, ASU4150NZ



4000 Series Handle Repair Kit

Provides all of the parts necessary to maintain and/or repair the Utility AirSpade 4000 handle.

ASU4000HR



4000 Series Barrels

Heavy-duty 4' barrel with adjustable dirt shield. High-pressure rated, insulated inner air hose surrounded by non-conductive, fiberglass outer tube. Inner air hose rated to 75kV per ft. for 5 minutes per SAE 100R7. Outer fiberglass tube rated to 100kV per ft. for 5 minutes per ASTM F711. Non-sparking, brass hardware. **ASU4004BD**



4000 Series Coupler

Non-sparking brass coupler provides secure connection between AirSpade 4000 barrels and extensions. Compatible with all AirSpade 4000 components and accessories. **ASU4000CP**



4000 Series Handle Assembly

Rugged, lightweight aluminum body and ergonomic grip minimizes fatigue. Full size grip opening accommodates linesman's gloves. Dead-man trigger ensures safe operation. Trigger guard prevents accidental activation. Retractable stabilizer bar provides superior operator control. **ASU4000HA**



4000 Series Air Fitting

Chicago "Air King" style swivel coupler provides a quick and safe method to connect air hose to air tools. Free-turning joint swivels 360° to prevent hose kinking. Claws insure positive connection. Safety clips (not included) provide added measure of safety. 3/4" NPT inlet. **34SAKM05**



AirVac Vacuum Hose

Rugged, flexible vacuum hose provides the ideal combination of light weight, flexibility, and durability. Transparent construction allows for visual confirmation of material flow. Secure with standard hose clamps (not included).

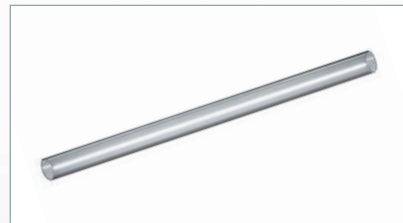
Part #	Size
AVH2515	2.5" ID x 15'
AVH3015	3" ID x 15'
AVH4015	4" ID x 15'



AirVac Vacuum Hose Couplers

Attach 2.5"ID or 3"ID vacuum hose to the AirVac 4"OD vacuum inlet via these heavy-duty, vacuum hose couplers. Secure vacuum hose to coupler with standard hose clamps (not included).

Part #	Size
AVC2540	2.5" to 4" ID
AVC3040	3" to 4" ID



AirVac Vacuum Wands

Rigid, clear plastic, 5' vacuum wand. Length can be trimmed for custom applications. Attaches to vacuum hose via standard hose clamps (not included).

Part #	Size
AVW2505	2.5" ID x 5'
AVW3005	3" ID x 5'
AVW4005	4" ID x 5'



AirVac Hose Clamp

Steel hose clamp. For making secure connections between vacuum hose and attachments.

Part #

AVHC25
AVHC30
AVHC40

Model

For 2.5" Hose
For 3" Hose
For 4" Hose



AirVac Replacement Filter

Replacement filter for all AirVac models. Easy-to-install. Filter mounts under top lid. **AVF7000**

FAQs

GENERAL

How can I purchase AirSpade products?

AirSpade products can be purchased direct or through our distributors. Contact our Customer Service Department, via email at info@guardaircorp.com, or via fax at (413) 594-4884. A list of AirSpade distributors can be found on the Where To Buy section of the AirSpade website airspade.com. You can also buy direct at airspade.com.

How do I obtain current product pricing and availability?

Product pricing and availability can be obtained by contacting the AirSpade Customer Service Department or on our airspade.com website.

How can I obtain current AirSpade product literature?

Product literature can be viewed or downloaded via the Product Literature section of the airspade.com website.

TECHNICAL

What is the difference between Pressure, Flow, and Thrust?

Pressure is the measure of potential energy stored within compressed air. Pressure is measured in pounds per square inch (psi). In general, most tow-behind compressors deliver pressures between 80 and 120 psi. The electrical equivalent of pressure is voltage.



Flow is the volume of compressed air traveling through an air line during a given period of time. Flow is measured in cubic feet per minute (cfm). In general, higher flow requires an increased capacity (larger horsepower) air compressor. In general, increasing the amount of flow may require a larger capacity (larger diameter) air line. The electrical equivalent of flow is amperage.

Thrust is the effective force produced by an air nozzle and is generated from the combination of air pressure and air flow. Thrust is measured in pounds (lbs) and the higher the thrust, the more excavation force available. The electrical equivalent of thrust is wattage.

How does AirSpade work?

The patented supersonic nozzle in the AirSpade turns compressed air into a high-speed, laser-like jet moving at twice the speed of sound; Mach 2. All of the energy and momentum of this air moving at approximately 1,200 mph is focused on the soil, dislodging it in a fraction of a second. Soil is an unconsolidated assemblage of solid particles that may or may not contain organic matter. The voids between the particles are occupied by air and/or water. The aggregate nature of soil aids the ability of the compressed air to fracture it; while stronger materials and ones that are not porous like metal or plastic pipes, cables, or even tree roots remain unaffected.

What size air compressor do I need to properly run my AirSpade?

Tow-behind air compressors typically have model numbers that nominally describe their air capacity measured in cubic feet per minute (cfm) at a pressure of 100 pounds per square inch (psi). For example, a “185 compressor” delivers 185 cfm at 100 psi. AirSpade nozzles are designed to optimally operate at 90 psi and are designated by the volume of air delivered at 90 psi. Six nozzle sizes are available to cover the size range of most tow-behind compressors.

Recommended Compressor Size

Nozzle Size (scfm)	Minimum Compressor Size (scfm @ 100 psig)
25	25
60	60
105	125
150	175
225	250
330	355

Will adjusting my compressor to deliver a higher pressure make the AirSpade work better?

No. AirSpade nozzles are designed to operate optimally at 90 psi. Supplying higher pressure to a supersonic nozzle that has been optimized for 90 psi actually defocuses the air-jet, thus degrading performance while dramatically increasing air consumption.

What size air hose do I need for my AirSpade?

Compressed air flowing through a hose experiences a pressure loss from constrictions and friction proportional to the length of the hose. Air volume, operating pressure, hose ID and smoothness also determine the loss. For more information on air hose pressure loss visit our website. Generally speaking, air hose of at least 1" ID is recommended for most AirSpade applications. The AirSpade 3000 requires a minimum air hose ID of 1.25". To ensure satisfactory digging performance, air hose can always be sized larger than required, but not smaller.

		Pressure Loss (psig)				
		Air Flow/Nozzle Size (scfm)				
Hose ID		25	60	105	150	225
3/4"		0.3	1.6	5.6	12.3	25.0
1"		0.1	0.4	1.3	2.8	5.5
1 1/4"		0.0	0.1	0.4	0.8	2.0

What about connectors and fittings?

Be sure that fittings and/or connectors do not restrict the air flow in any manner. Use fittings that are rated the same size, or larger, for a given air line size. We recommend the use of Chicago style "Air King" fittings, used in conjunction with safety pins.

In what types of soils does AirSpade work?

Because of its unique, focused air-jet, the AirSpade is effective in virtually all soils and even hard clays. In general, the AirSpade will not cut through rock. However, shale may be broken apart by the AirSpade if the jet is directed between the laminations of the rock. Similarly, the AirSpade will not dislodge hard, frozen soil that tends to behave like pavement or concrete.

Can I use the AirSpade for digging in clay?

Tests show the AirSpade to be effective in compacted soils with unconfined compressive strengths well above the values listed for hard clay.

What is the best way to dig with the AirSpade?

The AirSpade effectively digs up to several inches deep in medium to stiff soil. Unless the soil is highly compacted, dwelling on the same spot is unnecessary and tends to increase spray. Ideally, the AirSpade should be moved over the soil surface at a rate of about 1' to 2' per second. When several inches of soil have been loosened, the soil should be removed to expose a fresh working face for the air jet. Watering the work area ahead of time can sometimes be helpful. Water reduces soil strength thus making digging easier. Water also reduces airborne dust if the soil is extremely dry. Combining the use of the AirSpade with a low-pressure water source (garden hose) can aid the excavation of highly compacted or sun-baked soils.

What size AirSpade nozzle should I use?

This depends on soil classification and the desired rate of soil excavation. Typical soil excavation rates can be expected for various AirSpade nozzle sizes.

Soil Excavation Rates

Nozzle Size (scfm)	Soil Excavation Rates (cubic ft/ min)
25	0.4 to 0.9
60	0.7 to 1.1
105	0.9 to 1.5
150	1.2 to 1.8
225	1.7 to 2.3
330	2.4 to 3.0

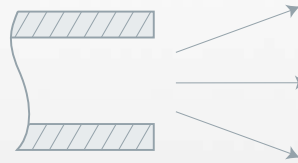
What are the advantage of digging with AirSpade as opposed to high-pressure water?

- Dangerous, high-pressure water jet can easily cut through clothes or work boots.
- High-pressure water can inadvertently cut through a plastic electric or gas line and/or harm pipe coatings.
- Liquid introduced into the excavation site increases the volume and weight of soils slated for disposal.
- Resulting muddy conditions promote poor footing around job site.
- Mud and splashing water is messy to contain, and often results in wet worker clothing.
- Mud generated from water-excavated, contaminated soil can become a much larger disposal problem.
- Mud, when dumped onto a given area and dried, does not blend-in and thus secondary operations may be required.
- Water has a tendency to accidentally undermine areas adjacent to the excavation.
- Water is heavy, bulky and poses transportation and storage issues.

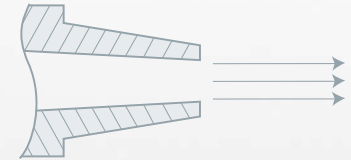


Patented Supersonic Nozzle

AirSpade's patented supersonic nozzle turns compressed air into a high-speed, laser-like jet moving at twice the speed of sound – Mach 2. All of the energy and momentum of air moving at approximately 1,200 mph is focused into the soil – dislodging it in a fraction of a second.



Unfocused air flow from improperly designed nozzle.



Focused air flow from AirSpade supersonic nozzle.

Air exiting from an improperly designed nozzle diffuses outward rapidly to 3 to 4 times the area versus the focused air-jet from the patented AirSpade supersonic nozzle. With AirSpade, the result is faster, safer, more efficient soil excavation.

NOTES:

- 1. SPACING, WIDTH AND DEPTH OF RADIAL TRENCHING TO BE DETERMINED BY L.A. AND/OR CERTIFIED ARBORIST BASED ON INITIAL SITE INVESTIGATION. PRESCRIBED TRENCHING AND SOIL AUGMENTATION SHOULD BE BASED ON INDIVIDUAL SITE CONDITIONS AND TREE HEALTH CARE NEEDS. ACTUAL TRENCHING MAY BE ADJUSTED SLIGHTLY BASED ON FIELD CONDITIONS. TRENCHING SHALL OCCUR BETWEEN ROOTS AND AVOID FOLLOWING PRIMARY LEADERS.
- 2. ALL WORK TO BE DONE UNDER SUPERVISION OF A LICENSED AND APPROVED CONTRACTOR. EMPLOYEES MUST BE TRAINED AND EXPERIENCED IN RADIAL TRENCHING.
- 3. PROTECT TREE AND TREE ROOTS THROUGHOUT CONSTRUCTION. AVOID OR MINIMIZE ONLY WITHIN THE CRITICAL ROOT ZONE. DOCUMENT AND ASSESS ALL DAMAGES TO TREES BY COMMENCEMENT AND THROUGH COMPLETION OF WORK. CHANGES TO BE BASED ON THIS ADDRESS. SEE SPECIFICATIONS.
- 4. USE OF AIR SPADE FOR MIXTURES IS NOT RECOMMENDED. SEE AIR SPADE USER MANUAL FOR PROPER USE AND SAFETY INFORMATION.
- 5. ARBORIST TO EVALUATE THE OVERALL HEALTH OF TREES AND TO MAKE A REPORT AND RECOMMENDATIONS FOR ADDITIONAL TREE CARE BEFORE, DURING, AND AFTER THE COMPLETION OF WORK.
- 6. CALL 911 OR CONTACT THE APPROPRIATE LOCAL AGENCIES TO LOCATE UTILITY LINES PRIOR TO ANY CONSTRUCTION.
- 7. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. ALSO SEE MANUFACTURER'S GUIDE FOR PROPER SAFETY AND OPERATION.

Download your FREE Technical Applications Guide

Learn the ins and outs of utilizing an AirSpade for a variety of arbor applications.

Visit airspade.com/guide



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3

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