



Safety, Maintenance, and Operating Instructions for the EarthBuster Deep Soil Decompactor

To be read and understood BEFORE using the EarthBuster.

SAFETY

- Always abide by industry safety standards and safety best practices when using or transporting the EarthBuster. This includes, but is not limited to OSHA, DOT, or any other regulatory standards, as well as other items emphasized in the list below. Just because a practice is not specifically listed here, does not mean it is a safe practice.
- Underground utilities must be located in the EarthBuster work area before work is commenced. Probing into underground utilities with an EarthBuster can be deadly, injurious, costly, and disruptive to others. Be responsible and dial 811. "Call before you dig!"
- The operator and any assistants present in the work area must wear protective clothing, safety glasses, and ear protection while operating the EarthBuster.
- No one other than a trained technician or assistant should be allowed into the working area while the EarthBuster is in operation.
- Never attach an EarthBuster to an air compressor that supplies more than 150 psi of air pressure.
- Never apply over 80 psi of air pressure to EarthBuster's pneumatic hammer. Using lower pressures to operate the pneumatic hammer will increase the life of the EarthBuster. EarthBuster's pressure control is factory pre-set to 80 psi.

- Do not expel compressed air into the top few inches of gravel or rocky soil, as the extreme pressure may launch gravel with deadly or injurious force.
- If the EarthBuster's probe ports should become plugged or clogged with soil or gravel, release the air pressure in the EarthBuster tank before clearing the probe ports. Always wear ear, eye, and hand protection when clearing the probe ports.
- When disconnecting the air hose, always turn off the compressor AND release the air pressure from EarthBuster's tank.
- During use, always be aware of the position of the air hose to be sure that it is moving freely, is not stretched too tightly, is not being pulled across obstacles such as tree trunks or fence posts, and is kept out of the tractor's path.

MAINTENANCE

The EarthBuster device has an elegant design that requires little maintenance. Even so, however, the following maintenance routines are crucial to keeping your EarthBuster in good and safe working order.

- **Pneumatic Lubrication.** Before each use, and before long storage periods, it is necessary to provide lubrication and corrosion protection to the interior of the EarthBuster's air tank. Both are achieved by adding two ounces of lightweight, non-detergent oil (such as pneumatic oil) into the end of the air hose nearest the EarthBuster. Once the oil is poured into the hose, connect the hose, start the compressor, and you are ready to begin work. If preparing for storage, after oiling, you should release a few puffs of air from the system by using the air release controller (as if you were fracturing soil), in order to disperse the oil through the device.
- **Zerk Lubrication.** Grease the two zerks at the pivot points of the air hammer after every 50 hours of operation.
- **Tank Draining.** As with all compressed air systems, water will condense and gather in the bottom of pressurized air tanks. The EarthBuster is equipped with a pressure release valve at the bottom of its tank. This valve should be opened at the end of use, and left open so that gravity can drain all moisture from the tank between uses. Close the valve only when preparing to use the EarthBuster again.
- **Cleaning.** Avoid letting dust, dirt, and grime build up on your EarthBuster as it may tend to clog up the various fittings, as well as to corrode your EarthBuster's powdercoated finish. The EarthBuster may be safely cleaned with a garden hose or a pressure washer. When pressure washing, be careful not to exert the washer's full force on the more fragile parts, such as pressure gauges, electrical connections, and decals.

MOUNTING AND SETUP

When mounting the EarthBuster to the tractor and preparing it for use, follow the following steps in order. All directions of “left” and “right” assume that you are standing in front of the EarthBuster (so that you can read the “EarthBuster” label).

1. **Flat Ground.** Be sure that the EarthBuster device is set on level ground or on a trailer that is itself on level ground. (Otherwise, it can be difficult to attach its quick attach plate to your tractor’s quick attach system.)
2. **Hoses & Cables Clear.** Be sure that none of the EarthBuster’s hoses or cables are in the way of the quick attach system on the rear.
3. **Mount to Tractor.** Approach the EarthBuster your tractor and attach to it. Be sure both locks on your quick attach system are fully engaged.
4. **Attaching Probe.** Open the chuck lever on the air hammer. Remove the EarthBuster probe from its cradle on front of the EarthBuster frame and insert it into the air hammer chuck. Be sure to close the chuck level completely.
5. **Attaching Probe Hose.** Attach the probe’s air hose to the appropriate port on the right side of the EarthBuster.
6. **Closing Air Tank Valve.** Be sure the EarthBuster’s air tank valve is in the closed position. The valve is on the bottom side of the air tank, near its right end.
7. **Lubricating.** Add pneumatic oil into the hose coming from your compressor unit, as per the directions in the “Maintenance” section above.
8. **Attaching Compressor Hose.** Attach the compressor hose to the EarthBuster’s Chicago Style fitting on the left end of the air tank. Be sure to insert a safety pin.
9. **Attaching Electrical Connector.** Attach the EarthBuster’s electrical connector to the tractor.
10. **Starting Compressor.** Attach the other end of the hose to your compressor, using the safety pin, and start the compressor.
11. **Starting Tractor.** Start the tractor, and you are now ready to use the EarthBuster.

BREAKDOWN AND DISMOUNTING

Follow these instructions in order when it’s time to break down the EarthBuster after a job. All directions of “left” and “right” assume that you are standing in front of the EarthBuster (so that you can read the “EarthBuster” label).

1. **Lowering to Ground.** Lower the EarthBuster to the ground while slowly and safely driving backward. This allows the probe to swing outward

- (forward) instead of pressing into the ground point first. **DO NOT DISCONNECT ANY AIR HOSES AT THIS TIME!**
2. **Stop Tractor.** Turn off the tractor's ignition and set parking brake.
 3. **Stop Compressor.** Turn off the compressor. Safely open the compressor's pressure release valve until all pressure is released. Detach air hose from the compressor.
 4. **Release EarthBuster Pressure.** Open the pressure release valve underneath the EarthBuster's air tank. Allow any remaining pressure to blow off before moving to the next step.
 5. **Disconnect Compressor Hose.** Be sure that the compressor is turned off and depressurized, then detach the compressor hose from the fitting at the left end of EarthBuster's air tank.
 6. **Disconnect Probe Hose.** Detach the probe hose from the fitting at the right end of the EarthBuster's air tank.
 7. **Remove Probe.** Open the lever on the air hammer's chuck. Remove the probe and lay it in its cradle below the air tank, or if you prefer, place it safely elsewhere, such as in your trailer.
 8. **Detaching Electrical Connector.** Remove the EarthBuster's electrical cord from the tractor's jack and lay the cord safely across the EarthBuster, so that it won't be in the way of the quick attach system when you detach the EarthBuster from the tractor.
 9. **Detach from Tractor.** If the EarthBuster is to be left where it is, detach it from the tractor. Otherwise, start the tractor and move it to the trailer or other site where it is to be placed, then detach it from the tractor.

OPERATION

Many of the skills needed to operate the EarthBuster are the same skills needed to operate whichever model of tractor/skid-steer/track-loader that is being used. With just a little practice, the operator will master the EarthBuster. The following tips cover the basic use of the EarthBuster.

- **Probe Bending.** As with any other metal tool, the less your probe flexes during use, the longer it will last. It is impossible to press or drive the probe straight down into the ground, however, while keeping the tractor completely stationary. This is because the tractor's boom does not follow a straight line as it lowers, but a gentle arc. As you lower or raise the boom, you will have to adjust for this arc by rolling the tractor forward and backward accordingly. A skilled operator will rarely flex the probe more than 4 inches away from its natural straightness.
- **Probe Insertion.** In soft soils, the weight of the tractor and EarthBuster is sufficient to press the probe down into the soil without use of the air

- hammer. When probing in harder soils, it may be necessary to use the air hammer some or all of the time during insertion. You may insert the probe as deep as the job calls for, but stop inserting once the probe head has touched the ground.
- **Pneumatic Fracturing.** You may release air from the probe in any amount and at any time during probing. *Take caution not to release air in the top few inches, however, as the extreme pressure may turn small clods, rocks, and gravel into dangerous projectiles.* As you release air into the ground of softer soils, you may see the surface rise somewhat and then settle again. The radius of this effect may be up to 10 feet or more in soft soils. By way of contrast, in extremely hard soils, the effective loosening radius of the EarthBuster may be only a few inches from the probe, and most of the air blast may escape through the probe hole itself.
 - **Fracturing Methods.** After deciding your desired fracture depth, you may release air into the probe hole as many times and at as many depths as you see fit. Each job and application is different. As a guideline, however, keep in mind that a job in softer soil, fracturing from 0 to 6 feet in depth is generally achieved well by releasing air at depths of 2, 4, and 6 feet on the way down, and then again at 4 and 2 feet on the way back up.
 - **Probe Extraction.** After inserting the probe, extracting is generally routine and uneventful. In rare situations, however, the probe may become stuck. This generally happens when two conditions are met at the same time: 1) The tractor in use is particularly small/lightweight, and 2) The soil is extremely compacted and very dry. It may be useful to operate the air hammer to relieve the friction. It may also be useful to introduce water into the hole, as this tends to have a lubricating and loosening effect on the soil.
 - **Choosing Fracture Site Spacing.** How far apart the probe holes should be is a matter of your desired outcome for a particular job, and the soil conditions. In looser soils where general decompaction is the goal (septic rejuvenation, hardpan remediation, puddling remediation), it may well suffice to insert the probe at spaces of up to 3 or 4 feet apart. In extremely hard soils, you may find a spacing of 1 to 2 feet to be required in order to achieve the results you want.
 - **Air Port Clogging.** If the probe's air ports are clogging with soil or gravel frequently during use, release air more often during the fracturing process.
 - **Lowering EarthBuster To The Ground.** When lowering the EarthBuster to the ground, you will need to drive slowly backward. This allows the probe to swing outward (forward) instead of pressing into the ground point first.

For customer assistance, call EarthBuster's customer service department at (406) 215-1588.

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