



PDX-1000 OPERATORS MANUAL

TABLE OF CONTENTS

INTRODUCTION	3
SAFETY NOTES	4
COMPONENT IDENTIFICATION	6
MOUNTING	7
Attaching to Excavator	7
Attaching to Skid Steer	7
HYDRAULIC CONNECTIONS	8
Hose Routing	8
Flat Face Coupler Connections	8
OPERATION	9
Pre-Operation Checklist	9
First Time Use Guide	10
Post Driver Options & Use	11
Operational Positions	12
TRANSPORTATION & STORAGE	13
Transportation Within The Job Site	13
Storage/Parking	13
MAINTENANCE & LUBRICATION	14
Lubrication	14
Scheduled Maintenance	14
Charging the Drive Cell	15
TROUBLESHOOTING	16

INTRODUCTION

Eterra thanks you for purchasing a new Eterra product. This operating manual has been prepared to enable you to operate your equipment in a safe manner and provide proper care & maintenance.

NOTE:

This operating manual should be used in conjunction with the parent machine's operating instructions.

Instruction books should be regarded as part of the machine. They should always be kept safe with the machine for easy and quick reference.

New or extra copies can be obtained from your Eterra dealer or directly from Eterra.

Eterra continually strives to improve and increase their range of products and therefore reserves the right to alter their specifications at any time without notice or obligation. The company accepts no responsibility for discrepancies which may occur between specifications of their machines and descriptions thereof contained in their publications.

Purpose

This Eterra product is intended to be used with skid steer loaders or excavators in the appropriate weight class. It is intended to be used by operators of all experience levels. To accomplish this feat, a very simple design has been used which is unlike anything else found in the industry.

You must read and understand the theory of operation so that you can operate this attachment safely and so you can maintain the safety of the operators and bystanders.

This product was designed to be sold online and out of the box ready to operate with a minimal amount of assembly.

This Document:

The sole purpose of this manual is to help you train yourself to be a responsible operator and troubleshooter of the operation of the attachment so that you can identify safety issues before anything serious can happen. Failure to follow the directives noted in this document may lead to serious injury or death.

SAFETY NOTES

Protect Yourself

Make sure you wear protective clothing and personal safety items. **DO NOT** wear items of loose clothing, jewelry or other items and tie up any long hair which could entangle in the controls or other parts of the machine.

You May Need

- A Hard Hat
- Safety Goggles
- Hearing Protection
- Foul Weather Clothing
- Reflective Clothing
- Protective Gloves
- Safety Boots

Know Your Equipment

Get to know how to operate all the controls on the machine and the attachments
IF THERE IS SOMETHING IN THE MANUAL WHICH YOU DO NOT UNDERSTAND, CONTACT THE MACHINE AGENT OR MANUFACTURER AND ASK THEM TO EXPLAIN IT TO YOU.

Danger, Warning And Caution

This symbol below has 3 important meanings when used with the following captions.



DANGER: An IMMINENTLY HAZARDOUS situation that WILL result in DEATH or VERY SERIOUS INJURY

WARNING: A POTENTIALLY HAZARDOUS situation that COULD result in DEATH or VERY SERIOUS INJURY

CAUTION: A POTENTIALLY HAZARDOUS situation that MAY result in MINOR INJURY

Protective And Safety Devices

Keep all protective devices in place and securely fastened. Make sure all guards, shields and safety signs are properly installed and are in good condition.

Check The Equipment

Before you operate the equipment, take time to check your machine and ensure that all systems are in good operational order.

- Never operate the equipment with worn, damaged or missing parts. Use only genuine replacement parts.
- Always ensure that the parent machine is secure and stable with its engine switched off and hydraulic lines disconnected before carrying out any maintenance work.
- Check for loose, broken, missing or damaged parts. Ensure all items are in good repair and make sure all safety devices are in place.
- Perform all maintenance procedures outlined for the equipment.
- Always protect hands. Select appropriate gloves when handling the equipment during fitting, removing or adjusting
- Always protect feet with safety boots.

Safety Precautions

WARNING: Hydraulic fluid under pressure can penetrate the skin or eyes and cause serious PERSONAL INJURY, BLINDNESS OR DEATH.
Fluid leaks under pressure may not be visible. Use a piece of wood or thick cardboard to find leaks. DO NOT USE YOUR BARE HANDS.



Wear safety goggles for eye protection.

If any fluid is injected into the skin, it MUST be surgically removed.

SEE A DOCTOR IMMEDIATELY

Make sure all hydraulic lines are correctly installed

Before applying pressure to the hydraulic system be sure all connections are tight and that lines, pipes and hoses are not damaged. Before disconnecting hydraulic lines, be sure to relieve all pressure.

ETERRA recommends you receive dealer or factory instruction before operating the unit.

NEVER operate or assemble the equipment without **fully** understanding the operating instructions of both the equipment unit and the parent machine.

NEVER operate the equipment unless you are in good physical condition and mental health.

NEVER operate the equipment under the influence of any substance (including drugs & alcohol) which might impair vision.

NEVER proceed with works before completing a site risks assessment immediately before commencing work. Nominating the safe work exclusion zone radius for persons and animals as part of identifying risks and implementing controls.

NEVER allow minors to operate the equipment.

ALWAYS survey the work area before commencing operations. Check for potential hazards. E.G. Electricity or communication cables etc.

ALWAYS ensure that the parent machine is secure and stable with it's engine switched off before carrying out any maintenance work.

ALWAYS ensure the hydraulic oil supply to the attachment is disconnected by uncoupling the hydraulic hose connectors before fitting, removing or adjusting the equipment

ALWAYS wear head protection and eye protection when working on the unit.

ALWAYS protect hands. Select appropriate when handling the equipment during fitting, removing or adjusting the unit.

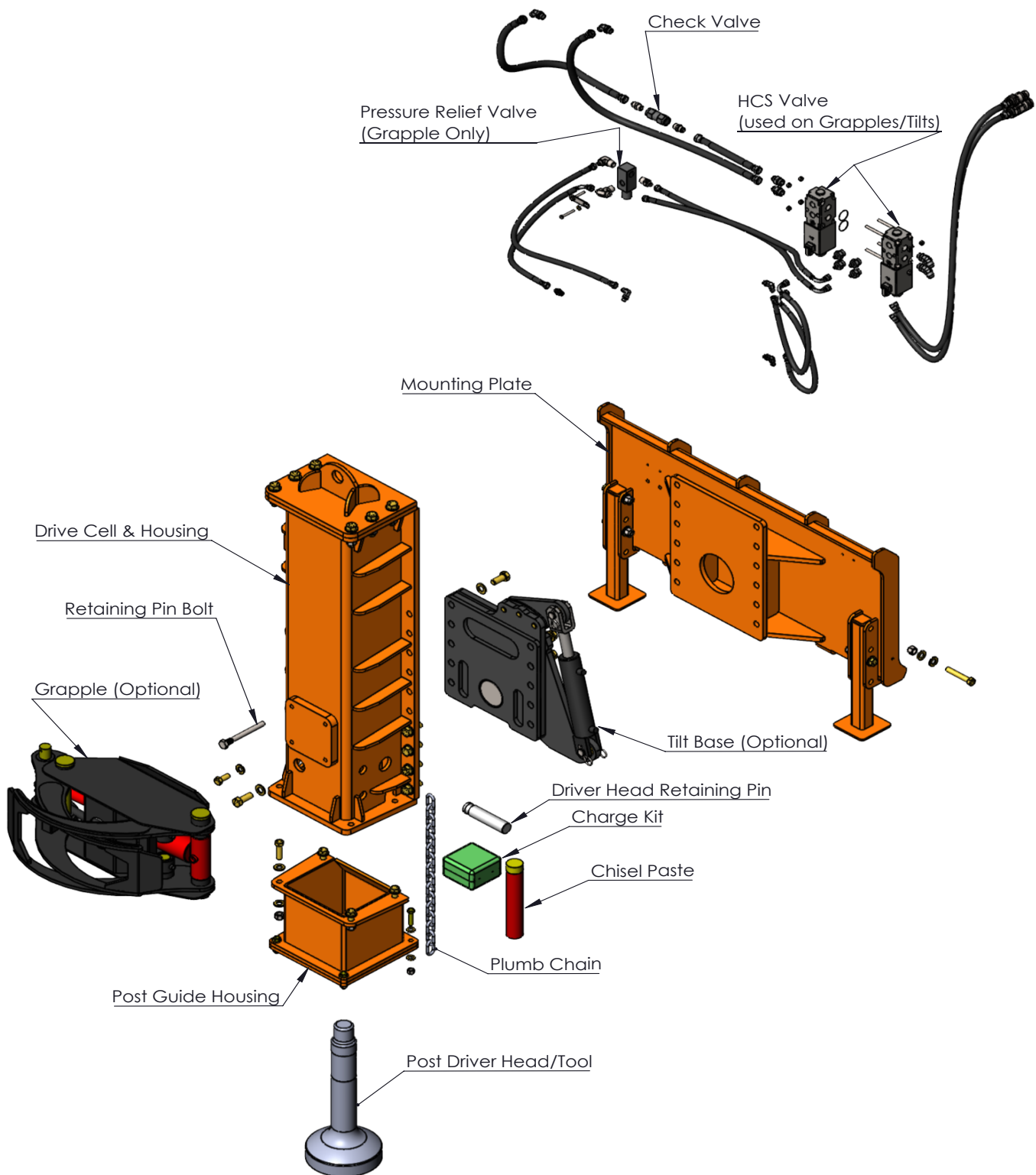
ALWAYS protect feet. Wear approved safety boots.

ALWAYS follow the parent machine instructions regarding noise protection.

STAY ALERT. Should something break, come loose or fail to operate on your equipment, STOP WORK, lower equipment to the ground, shut off the engine and lock out hydraulic supply, inspect the machine and have repairs or adjustments made before resuming operation.

COMPONENT IDENTIFICATION

PDX-1000



MOUNTING

SAFETY FIRST



ALWAYS Always check the weight of the attachment and ensure you have the correct equipment for handling it.



ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**.

Attaching to Excavator

Check that the mounting frame is of the correct model and type to fit the parent machine. Ensure mounting frame and attachment points are clean before fitting. Use suitably rated lifting equipment if required.

If you purchased an Eterra coupler along with your attachment then please ensure that you received the correct coupler. Contact us if your fitment is not correct, or if you have issues hooking up to it.

If you have fabricated your own coupler, please take care in ensuring the fitment is correct before operating the attachment to prevent dangerous work conditions.

Always make sure the excavator coupler is properly fastened to the attachment. Check bolts and re-tighten if necessary.

Attaching to Skid Steer

Check that the skid steer mounting plate fits properly and allows the locking pins to be engaged. You **MUST** engage your locking pins before operation to prevent the attachment from coming off. If your locking pins do not stay locked down they may need to be adjusted or repaired before continuing.

Slowly approach the machine to the coupling plate of the equipment. Hook the top of the machine coupling to the top of the coupling plate. Slowly move the machine forward and at the same time pull the coupling back to fix the bottom of the coupling plate. Stop the machine and remove the ignition key. Lock the coupling between the machine and the equipment by means of the locking device. Check the locking pins to be sure they have fully penetrated the skid steer mount.



HYDRAULIC CONNECTIONS

WARNING:



Hydraulic fluid under pressure can penetrate the skin or eyes and cause serious personal injury, blindness or death. Fluid leaks under pressure may not be visible. Use a piece of card or wood to find leaks. **DO NOT** use your bare hands. Wear safety goggles to protect your eyes. If any fluid is injected into the skin, it **MUST** be surgically removed. Seek immediate medical attention.

Standard Flat Face Couplers required for connection to the parent machine, are included for all attachments. Non-standard couplers are not supplied with the unit. These should be sourced locally and should be compatible with the auxiliary hydraulic Quick Release Couplers on the parent machine. The parent machine auxiliary hydraulic connections are normally located near the end of the loader arms, excavator dipper or truck crane booms.

Hose Routing

It is important that you check and recheck your hose routing each time you connect the attachment to your machine. Each machine is different so you need to make sure that you have routed the hoses away from any potential pinch points. Check that there are no pinch points around the main skid steer pivot. Average hose lengths are shipped at no-charge with each post driver. Try to route the hoses towards the front bottom of the mount and away from the back pinch zone.

It is the customers' responsibility to modify these hose lengths locally as required for your specific machine. Hose lengths can be varied by using or not using a 45 or 90 degree fitting. There is no warranty either expressed or implied with regards to hose damage due to improper routing or length.

Flat Face Coupler Connections



Most manufacturers use the male connector on their machine as the output. This means on the attachment, the female coupler will correspond to the pressure/input line. If you have a Bobcat brand machine, they are the opposite, and they use the female on the machine as the output.

The PDX-1000 operates in one direction only. If your driving power is not working, check the hose routing from your pressure line to the main input manifold on the driver. It is clearly marked "In" and "Out". Your pressure line should be connected to the input of the manifold. Couplers can be alternated on hose ends easily by the operator. Angled fittings either 45 or 90 degree may be used to alter the length and angle of hoses for more optimal sweep of the hoses.

You can connect the flat face couplers to your machine by pushing the male coupler into the female coupler on the machine and the female coupler of the attachment into the male coupler on the machine.



OPERATION

Pre-Operation Checklist

- Eterra Post Drivers are designed to ensure years of trouble free use. A poorly maintained machine is an invitation to expenses and trouble. We recommend that before operation that this checklist be followed to ensure trouble free operation.
- Give the machine a "once-over" for any loose bolts, worn parts, cracked welds, hydraulic leaks, frayed hoses etc. and make necessary repairs. Double check the Post Driver coupler as well as mounts to ensure nothing has come loose as you risk the Post Driver head falling off if not properly inspected.
- Check for excessive wear as well as cracks in the driver head. Replace as needed.
- Be sure that there are no tools lying on or in the machine.
- Check all bolts on a weekly basis.
- Lubricate the main shaft each four hours of continuous use or at the beginning of each use using breaker tool paste. We recommend Schaeffer SynForce® Strike Chisel Paste.
- Check gas pressure as needed when there is a loss in driving power.
- Make sure all hoses are clear of cuts, abrasions, worn spots and pinch points before operating. Check that hoses do not get caught in the pinch areas of your skid steer or excavator boom.
- Check the tire pressure and make sure they are inflated to their recommended pressures. Connect to Skid Steer and check mechanical Skid Steer connection point for wear that could cause the PDX-1000 to fall off. Repair any damage as needed.
- Connect hydraulic lines to skid steer or excavator and if equipped, and electrical connection if required.
- There are several means of electrical connections used for the solenoid controlled tilt option which include the following:
 - * 14 Pin Electrical Control
 - * 8 Pin Electrical Control
 - * 7 Pin Bobcat Control
 - * Standard Switch Control
- Ensure you have the correct adapter above for your machine.
- Each of these electrical connections requires the connection made to the skid steer and the auxiliary hydraulic control to be actuated simultaneously for the tilt to operate.

First Time Use Guide

Run through this first time use guide and the operation of the driver before taking it out to a job site so that you are familiar with the operation and have ensured that everything functions first.

Step One:

After connecting the hydraulics, and going through the pre-operation checklist you will want to start your machine and turn on your auxiliary hydraulics. Lower the driver head down onto an appropriate solid test object or post. Run the post driver up for a few seconds and then stop. Check for leaks at all hose ends and fittings and tighten if needed.

Step Two:

Operate any auxiliary functions such as tilt or grapple in both directions as well. The HCS valve installed on the PDX-1000 will allow you to divert flow from your main lines to the tilting function. Test this function and speed prior to operating the driver on a job site. The HCS valve only diverts the flow. You still have to actuate your pump forward and reverse to make the PDX-1000 tilt left and right, and to open and close the grapple. Check for leaks on these lines and fittings as well and tighten if needed. **For further explanation of how to operate valve functions; see this video:** <https://youtu.be/iYJfUBhyEYs>



Step Three:

After checking for and solving any leaks, begin to familiarize yourself with the operation of the post driver and how it handles different types of posts with your selected driver head. Weak posts, or old posts will shatter, you must use strong solid posts with this driver due to the power of the unit. Do this in an area where you can practice off of the job site.

Step Four:

Once familiar with the operation, you are ready to begin driving posts. Move the driver near the location where the post is to be installed. It is best to pre-mark each location with marking paint. You can also pre-punch the location with the breaker spike. This is very effective in rocky or hard pack areas. It allows you to pre-stand many posts so they can be driven without a helper to start the posts.

Step Five:

With a helper on the ground, have them hold the post in place just long enough for the operator to rest the driver down onto the post to hold it in place between the driver and the ground. Once in place, have the helper clear before operating. Slowly start your auxiliary hydraulics to activate the post driver. Go slow at first so that you can ensure the post is being driven straight and plumb. You should never need to lock your hydraulics in the ON position because the PDX-1000 drives so quickly, you could overshoot the depth required.

The PDX post drivers come with plumb chains that allow the operator to visually check the angle that the post are being driven. It is important to use this as a guide only and use a spotter to indicate if the angle is a miss.



Post Driver Options & Use

1. Domed Driver Head

This option is a dome shaped driver head that can be used without the eyelets if desired. The outside diameter of the head is 8" and it has lip to hold the posts centered while driving. This is ideal for flat or tapered posts in the 4-7" range.

Flat Driver Head & Eyelets

The flat driver head measures 9" in diameter and can be used for flat posts up to 9". Select a post eyelet sized to be just larger than the post you are installing. If one is not supplied, you can modify an existing one or make your own. The eyelet sizes provided are 2.5", 4.5", 6.5", and 8.5".

PDX-1000 - Enclosed Head Model with or without Tilt Option

Select a post eyelet sized to be just an inch larger than the post you are installing. If one is not supplied, you can modify an existing one, make your own or contact your dealer for a custom solution.

PDX-1000 Changing Driver Eyelets

Depending on your post requirement, you may need to change eyelets quite frequently. Varying sizes are supplied for different posts. If you are driving guard rails or custom Theta posts for solar applications, you can use the smaller eyelet and cut any shape you require. Once you have selected an eyelet, you merely unbolt the existing eyelet and bolt on the required one.

PDX-Tilt Option

By using the combination of your machines tilting ability and the optional PDX-Tilt, your driver is capable of handling most post driving situations that your skid steer would be able to access. It is best to have the plumb chain attached when driving post on hilly terrain, as it will give you the best visual feedback for accurate driving. Have a helper hold the post in the desired location and lower the driver over the post. To adjust the angle of the driver, hold one your electrical control buttons down while you operate the pump control forward or reverse to alter the angle. Because the boom travels in line with your machine, if the driver is tilted, it will not follow the plumb line of the post so you will need to be making adjustments as you drive.

Operational Positions

Shown below are different positions of operation.

Post Setting



Post Driving



Post Setting w/Grapple



TRANSPORTATION & STORAGE

Transportation Within The Job Site

Clear the area of all bystanders, especially children. When moving on or near roadways, make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic. Never transport with boom arms extended upward. Boom arms should be in the stowed position in towards the skid steer when transporting. Do not allow riders on any parts of the machine during either field operation or road and highway travel. Attach the post driver to the skid steer using the skid mounting plate. Always use warning flashers (hazards) on the skid steer when transporting unless prohibited by law. Keep adequate clearance off of the ground while moving.

When transporting on a trailer, ensure it is strapped down in the storage/parking position resting fully on the trailer deck.



Storage/Parking

Lower boom all the way down until the feet of the post driver are sitting on the ground. Tilt forward until the post guide housing is resting on the ground as well. Disconnect hoses before unlocking pins and unhooking from the mounting plate. Ensure that it is being stored on firm level ground that the post driver will not sink into. If the ground is uneven or soft you risk tipping over the post driver. Preferably store indoors on a flat concrete surface.



MAINTENANCE & LUBRICATION

Safety at all times



Ensure environmentally safe disposal of waste oil:

Do not pour down drain!



Avoid Fire or Explosion:



Do not smoke near, or expose lubricants to, any possible sources of ignition (e.g. fire, electrical sparks or heat sources.)



All lubricants are toxic and potentially carcinogenic (cancer causing).



Avoid contact with skin and eyes:



Wear suitable protective clothing and gloves.



Always wear eye protection:



In the event of skin contact wash with soap and water.

In the event of eye contact wash with water and seek medical advice.



Do not ingest:

If swallowed seek medical advice immediately.

Lubrication

There is one main grease point on the left side of the driver under the grease arrow emblem. Two shots of Schaeffer SynForce® Strike Chisel Paste for each 4 hours of use is all that is required. Do not use regular grease. The Tilt model will have a grease point below on the rotating tilt base. You can access the grease point through the mounting plate below the cup housing. Use any standard grease for this.

Scheduled Maintenance

Check gas pressure and adjust to 250/17 Bar every 6 months to a year for optimal driving power.

Bolt Torque

This is a high impact tool with a constant vibration to the chassis. It is imperative that you check the attachment bolts on a weekly basis. If you do not, the bolts will loosen and will eventually fail causing the component to fall off the driver.



MAINTENANCE & LUBRICATION

Charging the Drive Cell

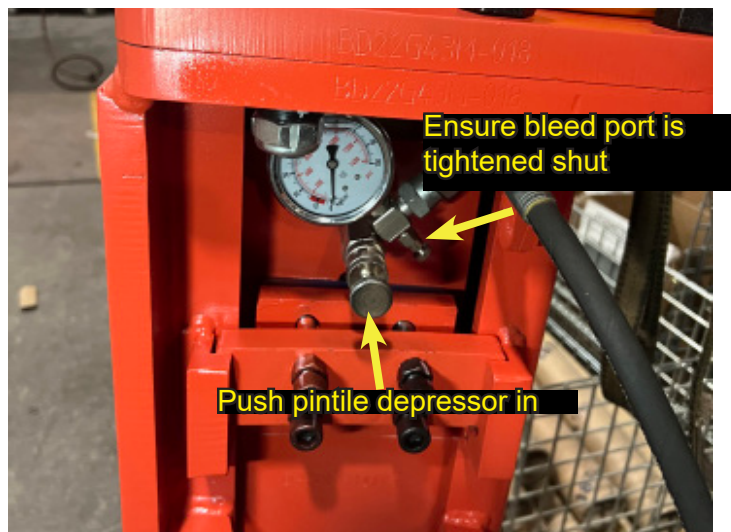
Charging the drive cell is recommended to be done yearly for light users, every 6 months for moderate use, and every 3 months for those that use it day in and day out. It is also the first point of troubleshooting if you are experiencing low power symptoms.

Before beginning, you will need to supply your own tank of nitrogen, and place the driver upright near the tank. Make sure you appropriately attach the charge kit you received with your post driver to the tank of nitrogen.

Next, remove the cap on the charging port with a 3/16" allen wrench. Attach the charging kit to the post driver by threading it into the port. Ensure that the bleed valve is shut on the charge kit, and then push in the pintile depressor to open up the drive cell for charging.

Next, slowly open the valve on your nitrogen tank and fill the post driver until it reaches 17 BAR of pressure, or ~250 psi. Once you do, close the valve again on your nitrogen tank. If you go over, that's okay, just use the bleed port to bleed off pressure until it is back down to the necessary pressure.

Once it is at the needed pressure, and all valves are closed, pull the pintile depressor back out to seal the drive cell again. Remove the charge kit from the drive cell, and replace the cap with your allen wrench.



TROUBLESHOOTING

IF IN DOUBT ASK! - Seek Eterra / parent machine dealer for advice & repair

BE SAFE - only use genuine Eterra / parent machine spare parts.

Low Driver Power		Leaking Nitrogen	
POSSIBLE CAUSE	ACTION	POSSIBLE CAUSE	ACTION
Low Gas Charge	Re-charge nitrogen gas	Stuck charge valve Bad seals	Inspect valve to ensure it seals If seals are bad, replace
Posts Breaking		Leaking Valves on Tilt/Grapple	
POSSIBLE CAUSE	ACTION	POSSIBLE CAUSE	ACTION
Old/rotten posts	Use new, sturdy posts	Bad/blown/torn o-rings	Replace o-rings
Driver Will Not Operate After Use			
POSSIBLE CAUSE	ACTION		
Stuck check valve Pressure applied to return side of driver	Take apart check valve and clean Re-install Hit driver head on a set object manually to "un-stick" the driver		

ETERRA WARRANTY STATEMENT

LIMITED PRODUCT WARRANTY

If you find physical defects in the materials or the workmanship used in making the product described in this document; Eterra will repair, or at its option, replace, the product at no charge to you, provided it is returned (freight prepaid, with proof of your purchase from the original reseller) within 1 year of the date of original purchase. Some Eterra products may have longer, partial, or more specific additional warranties, please contact your dealer for more information.

RMA REPLACEMENT PRODUCT WARRANTY

If you find physical defects in the materials or the workmanship used in the refurbishment of an RMA (Return Merchandise Authorization) product replacement; Eterra will repair, or at our option replace the product at no charge to you for a period of 90-days from the date the RMA was created, or until the end of your original warranty period (whichever is greater).

REFURBISHED PRODUCT WARRANTY

If you find physical defects in the materials or the workmanship used in a product sold as a refurbished unit; Eterra will repair, or at our option replace, the product at no charge to you for a period of 90-days from the original date of purchase.

LEGAL TERMS

Eterra warrants that the equipment delivered by seller will be of the kind and quality described in the order or contract and will be free from defects in workmanship or material. Should any failure to conform with this warranty occur, and the buyer having given written notice to seller within 180 days from the date of purchase, the manufacturer shall correct such nonconformity at its option by either repairing the defective part(s) or making available F.O.B. at sellers locations.

This warranty is in lieu of all warranties of merchantability, fitness for particular purpose or any other warranties, express or implied. Correction and nonconformities in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of seller to buyer, whether based on contract, negligence or otherwise respect to or arising out of such goods.

Neither party shall be liable for special, indirect, or consequential damages. The remedy set forth in this instrument are exclusive, and the liability of seller with respect to any contract or sale of anything done in connection with the same, whether in contract, in tort, under warranty, or otherwise, shall not exceed the price of the goods or part upon which such liability is allegedly based.

All exclusions and limitations of this warranty are made only to the extent permitted by applicable law and shall be of no effect to the extent of conflict with the express requirements of applicable Washington State law.

Notes

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Notes

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



YOUR DEALER IS

Eterra
2316 East Bakerview Rd.
Bellingham,
Washington 98226
USA

Tel: 360-203-7730
sales@eterraattachments.com

www.eterra-usa.com