Identifier:	Revision:	Effective Date:
ET-E40/E60/E70	**2.0**	**3/29/18**

Document Catalog Number:
ECS Backhoes

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A Product By:

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User Manual

For information and customer support – speak with your dealer or visit our website www.eterra-usa.com

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About This Manual

This document is divided into the following chapters:

- Chapter 1, “Introduction” – Use this to familiarize your self with the features and safety requirements when using this product.
- Chapter 2, “Operation” - Learn how to operate this backhoe efficiently and safely.
- Chapter 3, “Maintenance and Troubleshooting Guidelines”, explains how to work the backhoe in the safest manner possible.
- Chapter 4, “Warranty” – See what you are covered for and how long. We offer one of the most extensive and hassle free warranties in the business. We know that you depend on this product to make a living and it shows with how easy it is to get replacement parts and technical advice.

Who Should Use It

This guide is intended for users of different degrees of knowledge and experience with equipment.

- Users: This manual provides all of the safety information you will need to operate this backhoe without incident.
- Technicians: All service information and parts diagrams are furnished so that you can inspect and repair your backhoe yourself or with the help of a qualified service technician.

1.1. Purpose

This Eterra backhoe is intended to be used with skid steer loaders or mini skid steer loaders 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 backhoe 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 the 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 Eterra backhoe 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.

1.2. Scope

Please read and understand all safety directives prior to operation and follow the initial start-up procedure before ever powering up the backhoe. It is extremely important that the backhoe is checked and re-checked prior to each operation and that it is thoroughly cleaned & greased after each use to minimize damage caused by seized parts.

1.3. Safety Marking

Safety Alert Symbols are used throughout this manual and on decals on your Backhoe. When you see symbols become alert to safety information and adhere to it to prevent injury or death.

SIGNAL WORDS - There are signal words that are used in conjunction with the safety alert symbol; these signal words have been selected using the following guidelines:

DANGER – An immediate and specific hazard WILL result in severe personal injury or death if the proper precautions are not taken.

WARNING – A specific hazard or unsafe practice that could result in severe personal injury or death if proper precautions are not taken.

CAUTION – Unsafe practices which could result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

You, as the owner of an Eterra backhoe, you are responsible for its safe operation and maintenance. You need to make sure anyone working with, maintaining or working around the backhoe is familiar with the operation and maintenance of the unit. Be alert, know all safety information in this manual and adhere to safety practices at all times.

Remember a safe operator is the key to avoiding most accidents. Most accidents can be avoided by – THINKING SAFETY AND WORKING SAFELY.

1.4. General Safety

- Read, study and understand your Operator's Manual.
- Understand all safety symbols before operating or maintaining the BACKHOE.
- After maintaining or adjusting, make sure all tools and foreign objects are removed.
- Stop Skid Steer, set park brake and remove the key from ignition. Make sure all moving parts have been stopped before dismounting your Skid Steer for any reason.
- Make sure all guards and shields are properly installed and secure.
- NEVER leave the Backhoe lifted off the ground and stand under it for any reason.

1.5. Operational Safety

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting or unplugging.
2. Do not allow riders on the Skid Steer during field operation or transport.
3. Install and secure all guards and shields before starting and operating.
4. Never wear ill-fitting, baggy or frayed clothing when working around or on any of the drive system components.
5. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
6. Never operate the machine inside a closed building.
7. Stop Skid Steer engine, place hydraulic controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
8. NEVER EVER Climb out of your machine with the boom raised. Serious injury or death can occur.
9. Ensure that all Skid Steer controls are in neutral before starting.
10. Clear the area of all bystanders, especially children, before starting.
11. Be careful when working around or maintaining a high-pressure hydraulic system. Wear proper eye and hand protection when searching for a high-pressure leak. Use a piece of wood or cardboard as a backstop when searching for a pinhole leak in a hose or line.
12. Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.
13. Take care when working on steep ground, particularly when turning, and especially with mounted backhoes.
14. Stay away from overhead obstructions and power lines during set-up and operation. Electrocution can occur without direct contact.
15. Review all safety instructions annually.

1.6. Maintenance & Transport Safety

1. *Review the Operator's Manual and all related Maintenance, Operating and SAFETY information annually with all personnel who will be working with, maintaining or operating the Backhoe.*
2. *Stop Skid Steer engine, place hydraulic controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.*
3. *Be careful when working around or maintaining high-pressure hydraulic systems. Wear proper eye and hand protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop when searching for a pinhole leak in a hose or steel line.*
4. *Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.*
5. *Seek immediate medical attention if a high-pressure concentrated stream of hydraulic fluid pierces the skin, as a toxic reaction and infection could develop.*
6. *Keep hands, feet, clothing and hair away from all moving and/or rotating parts.*
7. *Never wear ill-fitting, baggy or frayed clothing when working around or on any of the drive system components.*
8. *Wear protective gloves when changing or performing maintenance on the boom.*
9. *Clear the area of all bystanders, especially children, when carrying out any maintenance or making adjustments on the systems components.*
10. *Lower boom to the ground before servicing, adjusting or repairing the machine.*
11. Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when operating the Backhoe in the field or on the road.

Transport Safety

12. 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.
13. Do not allow riders on any parts of the machine during either field operation or road and highway travel.
14. Attach the backhoe to the Skid Steer using the skid mounting plate. Always use warning flashers (hazard) on the Skid Steer when transporting unless prohibited by law.
15. Always position backhoe in transport mode to narrow backhoe up as much as possible. Be aware, the backhoe is 4 - 7 + feet long when in transport mode.

Storage Safety

1. *Store unit in an area away from human activity.*
2. *Do not permit children to play around the stored unit.*
3. *Make sure boom is either lowered to the ground or secured with the bar stay rod in the up position.*
4. *Move the hydraulic cylinder to its closed position to avoid corrosion on nickel-plated rod end.*

Safety Decals

1. *Be sure to keep safety decals clean and legible.*
2. *Safety decals that are missing or illegible should be replaced immediately.*
3. *Safety decals are available at your Skid Steer Solutions dealer parts department.*

Think SAFETY! Work SAFELY!

2. Operation

2.1. Introduction

Congratulations on choosing an Eterra Skid Steer or Mini Skid Steer ECS Backhoe. This backhoe has been designed to be a cost effective way to performing small-scale backhoe operations.

Read this Operator's Manual over carefully before operating or maintenance is performed on the backhoe boom.

Become knowledgeable in Safety, Operation, Maintenance and Trouble Shooting information. This information is provided to ensure safe, trouble free operation and maintenance of the E60.

You, as the owner of a Skid Steer Solutions backhoe are responsible for its safe operation and maintenance. You need to make sure anyone working with, maintaining or working around the backhoe is familiar with the operation and maintenance of the unit. Be alert, know all safety information in this manual and adhere to safety practices at all times.

Remember a safe operator is the key to avoiding most accidents. Most accidents can be avoided by – ***THINKING SAFETY AND WORKING SAFELY.***

The ECS Backhoe is designed to be an economical solution to compact equipment operators. The larger commercially available backhoes prevalent in the marketplace today are not required for small earth moving projects, and with the right tool, a skid steer is perfect for this type of work. If maintained properly, it will provide the user with many years of service. Our customers originally suggested many features present in the ECS Backhoe. We encourage further suggestions to better serve you, the customer. The Owner's Manual is designed to help you be a safe and knowledgeable operator of this backhoe. With proper maintenance your ECS Backhoe will provide many years of trouble free service. For sake of discussion in this manual, machine orientation will be as follows-right hand, left hand, and forward designations are those related to the operator when in operating position.

2.2. Machine Operation

The ECS Backhoe is a hydraulically operated backhoe consisting of a backhoe boom mounted on a forward skid steer mounted frame. The backhoe bucket is powered by connecting directly into the Skid Steer hydraulic auxiliary system. The Skid Steer hydraulics provides the oil flow necessary to operate the hydraulic cylinder that controls the bucket curl and ripping force. The minimum hydraulic system requirements should be 10 GPM at 900PSI. High flow is not necessary and only makes the backhoe operate too quickly to accurately place the bucket in the digging position. Be sure to maintain proper system filtration.

2.3. User Controls

The ECS Backhoe is designed to take advantage of the existing controls already furnished on your skid steer and redirect their control to create the backhoe function as follows:

- Lift Arms – By raising and lowering your lift arms, you control the digging depth of the backhoe.
- Tilt Cylinder – By altering the tilt cylinder angle, you control the forward and rearward sweep of the digging bucket.
- Auxiliary Hydraulic Circuit – By operating this control from your control stick, you are able to alter the digging angle of the bucket as well as rip and tear with the bucket.
- Skid Steer Action – By moving your machine from side to side, you are able to dump your bucket out of the digging direction.

By combining these functions in a coordinated manner, extraordinary results will occur. In a very short time you will be digging trenches quickly or cleaning out ditches so well, people will think you hired a much larger machine for the task. This device was designed by the inventor in 1998 and is still used today regularly today to maintain his personal property.

The Options are endless with an Eterra ECS Backhoe Attachment – *Pictured: E70-HX with Grapple Attachment Accessory.*

3. SAFETY & OPERATION

This Safety Alert symbol means BE ALERT! ATTENTION! YOUR SAFETY IS INVOLVED!

This Safety Alert symbol is used throughout this Manual and on decals on your backhoe. When you see this symbol become alert to safety information and adhere to it to prevent injury or death.

SIGNAL WORDS

There are signal words that are used in conjunction with the safety alert symbol; these signal words have been selected using the following guidelines:

DANGER – An immediate and specific hazard WILL result in severe personal injury or death if the proper precautions are not taken.

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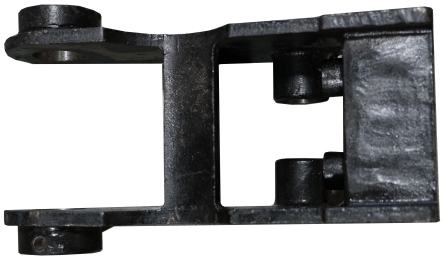
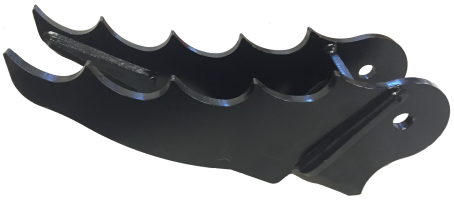
CAUTION – Unsafe practices which could result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

3.1. Theory of Operation

The ECS Backhoe attachments (E40/E60/E70) were designed as an economical substitute to the larger commercially available backhoes prevalent in the marketplace today with a cost effective solution for businesses and skid steer operators who already own a Skid Steer. If maintained properly, it will provide the user with many years of service. Many features present in the E40/E60/E70 were suggestions by our customers. We encourage further suggestions from all new customers as we listen and want to better serve you, the customer. The Owner's Manual is designed to help you be a safe and knowledgeable operator of this backhoe attachment. With proper maintenance your ECS backhoe attachment will provide many years of trouble free service. For sake of discussion in this manual, machine orientation will be as follows-right hand, left hand, and forward designations are those related to the operator when in operating position.

3.2. Main Components

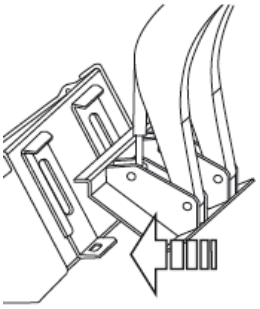
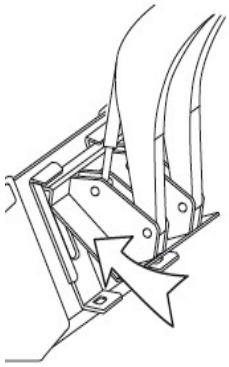
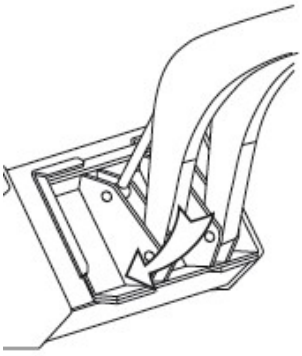




3.3. Pre-Operation Checklist

- Eterra backhoes are designed to ensure years of trouble free use. A poorly maintained backhoe is an invitation to expenses and trouble. We recommend that before operation that this checklist be followed to ensure trouble free operation.
- Give the backhoe a “once-over” for any loose bolts, worn parts, cracked welds, hydraulic leaks, frayed hoses etc. and make necessary repairs. Double check the backhoe coupler as well as mounts to insure nothing has come loose as you risk the backhoe falling off if not properly inspected.
- Check for excessive wear as well as cracks in any welded surfaces. Repair as needed of contact the factory for specific instructions.
- Be sure that there are no tools lying on or in the backhoe.
- Lubricate the main shaft each four hours of continuous use or at the beginning of each use. 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 the skid steer and check the mechanical skid steer connection point for wear that could cause backhoe to fall off. Repair any damage as needed.

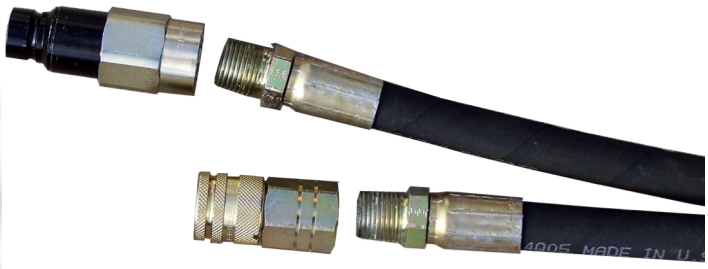
3.4. SSL & CTL Loader Connection

1: Slowly position your skid steer loader towards the rear of the backhoe.	
	2: Slowly insert the top edge of your quick attach into the top rail of the backhoe from underneath.
3: As the top of the quick attach aligns into the backhoe, slowly roll your quick attach back towards the machine until the entire quick attach locks into the mount. Using either your power attach or manual levers, lock the backhoe in place and connect your hydraulic hoses and electrical if required by your backhoe.	

- Connect hydraulic lines to skid steer and if equipped, electrical solenoid wire connection if required.

3.5. Hydraulic Connections

Depending on your order, your backhoe may or may not have come with hydraulic quick couplers. The hose ends are furnished with fittings that will screw either directly into the back of the hydraulic couplers or a 90 degree fitting depending on your specific machine requirements. You should check the best hose routing for your machine prior to use and adjust accordingly. If you were shipped 90-degree fittings and they are not required, you can remove them and the hoses will screw in directly to the couplers allowing the hose routing to come straight out of your connections on your machines. In some cases this is useful, but always extend your quick attach prior to use and check for hose length and areas that the hoses could snag or be cut by the quick attach. Swapping the connectors on the coupler end of the backhoe can change operational direction. The operator can alternate couplers on hose ends easily.

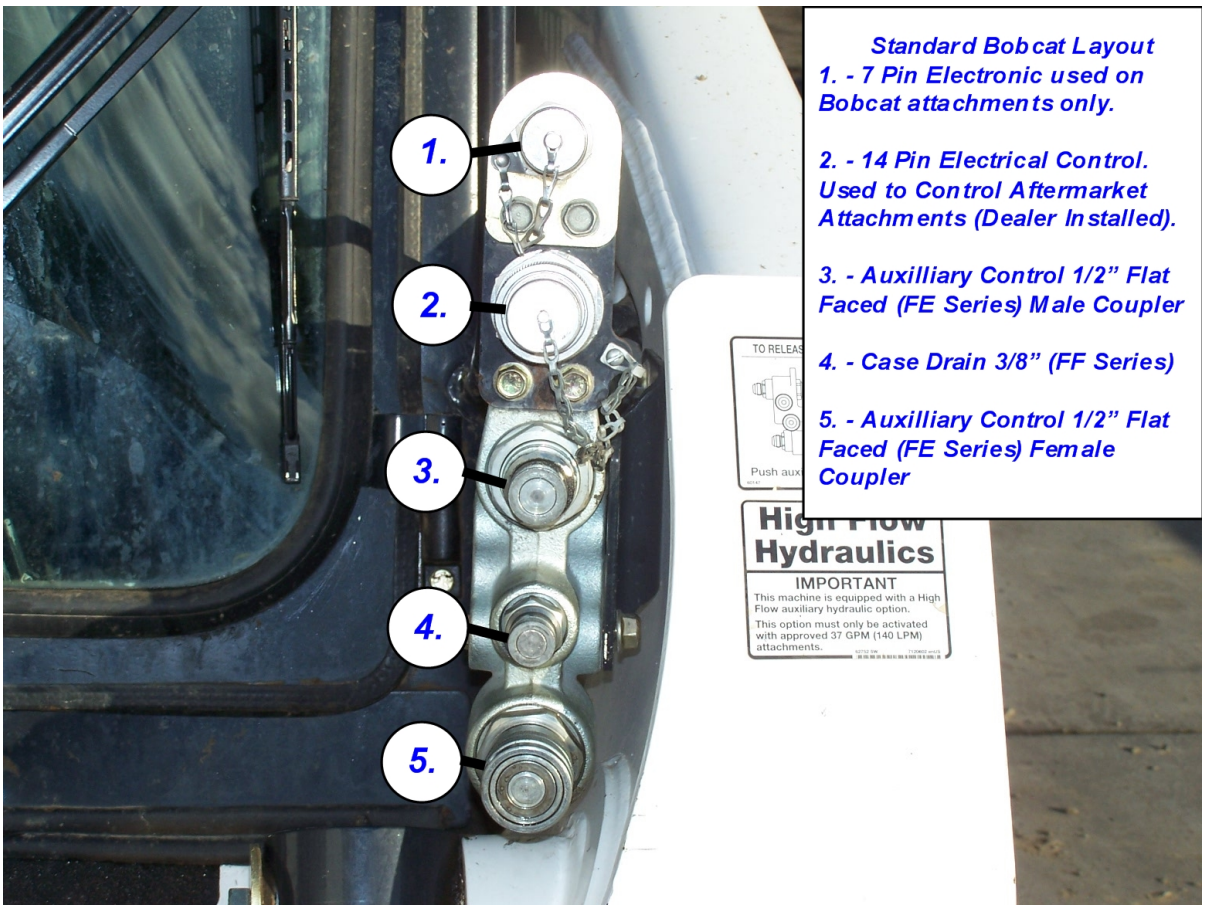


Once the couplers are installed, you may connect them to your machine by pushing the male coupler into the female coupler on the machine and the female coupler of the backhoe into the male coupler on the machine.

If you experience a lot of pressure when connecting, you may have to relieve some of it by loosening the fitting behind the coupler to bleed off some of the pressure. Next time you disconnect, you will want to even the pressure in the backhoe by not closing the bucket all of the way or opening all of the way. Motorized backhoes will even the pressure on their own.

If you unscrew the threaded end out of the coupler, you will need to use pipe dope or12 Teflon tape when reconnecting to ensure there are no leaks.

Once the couplers are installed, you may connect them to your machine by pushing the male coupler into the female coupler on the skid steer and the female coupler of the attachment into the male coupler on the skid steer. This backhoe ships dry so the first time you connect the couplers it will be easy because there is no ***backpressure.***



Standard Bobcat Layout

1. - 7 Pin Electronic used on Bobcat attachments only.

2. - 14 Pin Electrical Control. Used to Control Aftermarket Attachments (Dealer Installed).

3. - Auxilliary Control 1/2" Flat Faced (FE Series) Male Coupler

4. - Case Drain 3/8" (FF Series)

5. - Auxilliary Control 1/2" Flat Faced (FE Series) Female Coupler

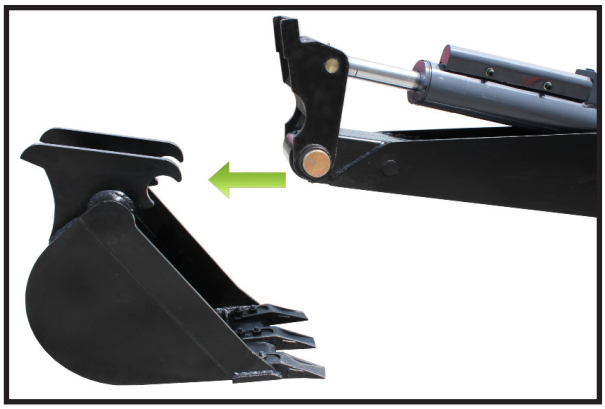
Hose Routing

- It is important that you check and recheck your hose routing each time you connect the backhoe 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 is no pinch point around the main skid steer pivot. Average hose lengths are shipped at no-charge with each Backhoe. 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.

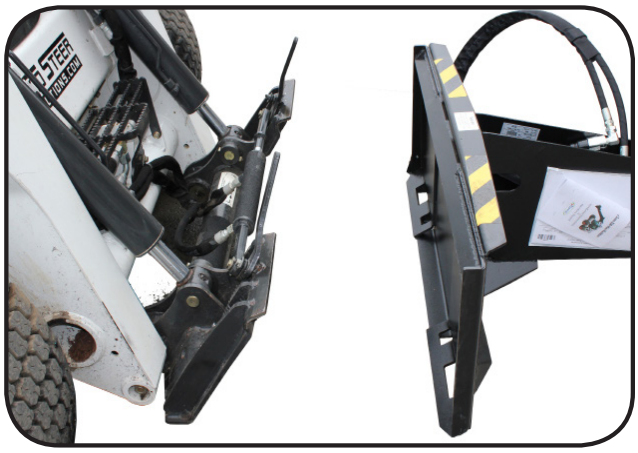
3.6. BACKHOE Operation - Initial

- After you have connected your hoses to your machine, you will want to start it and turn on your auxiliary hydraulics. Run the backhoe up for just a few seconds and turn off the machine. Check for leaks at all hose fittings. Tighten as needed and test again.
- Run the machine and familiarize your self with the backhoe and how it handles different types of conditions and terrain.
- If your backhoe is equipped with a hydraulic solenoid for secondary functions (only on E70 models), you will have to attach the wiring harness and connect it each time you use the backhoe. The diverter valve installed on the backhoe will allow you to divert flow from your main lines to the secondary function. Test this function and speed prior to operating the backhoe on a job site. If the action is too quick, contact your dealer for an in line reducer to slow the secondary action. The diverter valve only diverts the flow. You still have to actuate your pump forward and reverse to make the secondary function perform as required.
- Do not wear loose fitting clothing or jewelry. Hearing and eye protection are highly recommended even if you are inside an enclosed cab. Wear heavy gloves whenever you are handling posts.
- Before leaving the skid steer, make sure that the hydraulic power has been turned off and the backhoe has come to a complete stop. THINK before you walk anywhere near the front of the backhoe if any covers have been removed or damaged.
- If there is any kind of excess vibration, stop using the backhoe at once until this has been remedied. Replace damaged parts immediately.
- To prevent tipping or control losses, reduce your speed when making turns or transitioning onto or off of slopes and do not carry the backhoe more than 1 foot off of the ground during transport.
- Backhoes can be extremely dangerous due to excessive weight. Always carry material in the lowest possible position so that you minimize your tipping potential.
- Never allow children to be near or operate this equipment.


TEMP
FUEL
To operate Auxilliary
Control Push Cab
Control Variable
Flow Button First



3.7. The First Dig



1. *The Eterra E-Series Backhoe attachment is designed for use with a Skid Steer of 25 HP or more, while the E40 is designed for all Mini Skid Steer machines. It is protected from over stress with a unique pressure bypass valve. It will be evident that the valve is working if you close the bucket and you hear a squealing sound. This is the sound of fluid bypassing the cylinder and returning. It is nothing to be alarmed about and means your protection circuit is active. This circuit protects your backhoe, bucket and skid steer loader arms from damage should you exert too much force on the system. This type of force can usually only occur if you are pulling on stationary objects such as a stump or embedded rock. Remember, this system is meant for digging but can be carefully used for other purposes.*
   - ***Trenches*** *– Lift your boom arms up high. Using the tilt action of your tilt cylinder, draw the bucket towards you while adjusting the slope of the bucket with your auxiliary control. The bucket will quickly fill with material. You can then sweep the boom out and away from you while simultaneously turning your skid steer to one side. This will allow you to dump the material out and away from you with minimal fall back into the trench. For long trenches, it is advisable to set a string line and use ground marking paint. This will help you maintain the direction of the trench.*
   - ***Hole Digging*** *– Same procedure as trenching only you may want to use your reverse to move the material out and away from your digging area.*
   - ***Ditching*** *– Follow the trenching directions, except you can use the reverse of your machine to drop the material behind where you are digging. You can then come back later and pick up the material with a larger bucket to dispose of the material more efficiently.*
   - ***Footings*** *– Premark the line of the footing with a string line and marking paint. Drive to the farthest end of the footing. Place your bucket down with a minor cutting angle and drive in reverse. The bucket will shave the material quickly and cleanly. Drive backwards and remove the material to an area clear of your construction. This is a little tedious, but for small jobs it works great and is inexpensive compared to the alternatives.*

4. Maintenance & Trouble Shooting

4.1. Scheduled Maintenance Table

1. *Before performing any maintenance review the operators manual for all safety information.*
2. *Never operate this machine inside a closed building.*
3. *Keep hands, feet and loose clothing away from all moving parts.*
4. *Ensure that all Skid Steer controls are in neutral before starting.*
5. *Seek medical attention if you contact high-pressure hydraulic fluid, which pierces the skin as infection can occur.*
6. *Seek medical attention if hydraulic oil enters your eyes.*
7. *Never place your self between pinch points when working on the E60.*
8. *Be Safe! Work Safe! Think Safe!*

4.2. Backhoe Grease Points

Use SAE multi-purpose lithium based grease for all grease fittings.

1. *Use only hand pump grease guns.*
2. *Clean all grease fittings before greasing to prevent dirt from entering the bearings.*
3. *Replace broken or missing fittings immediately.*
4. *If a fitting will not take grease, remove fitting and clean. Replace fitting and grease. If fitting still will not take grease, replace with a new fitting.*
5. *There are three main fittings on the backhoe. One fitting is located on the each end of the hydraulic cylinder. The main pin has a grease fitting located on the end of the tube. It takes a lot of grease. Grease adequately until you see grease start to flow out of the sides of the pin. This insures that you have purged dirt out of the pivot points and that you have an adequate amount of grease in the pivot point.*
6. *Grease main all pins each day you use it. This is a good time to grease your skid steer as well. Two shots a day for all attachments and your skid steer keeps the parts guy away.*
7. *At the end of the season place 1 pump of grease at each location. Operate the backhoe to ensure grease is evenly placed.*
8. *HCS Equipped Backhoes Only – Inspect the HCS attachments and grease points. Grease at the same frequency as the backhoe and your skid steer.*

4.3. Adjustments

PINS

Always check your main pins for wear or damage. If they are very loose, then they are wearing. Some slack is fine, but excessive slop is not. Your pins could break while in use. The main pin has a retaining bolt that keeps it from turning in the collar set. If for any reason, the pin should seize (Lack of Grease?), the bolt will shear off. You must stop using the backhoe immediately and remove the pin. Clean it thoroughly, removes any burrs, replace and re-grease. If this pin shows a lot of wear, it should be replaced.

HOSES

Always check for worn or damaged hoses and replace as necessary. Do not try to repair hoses with duct tape. These hoses are under high pressure and will blow away any attempt you make at a repair. Hoses are a non-warranty item. If you break them, rip them or wear them out, it is up to you to replace them.

PAINT

All of the ECS backhoes are powder coated. You can touch up damaged area with a spray bomb. This is the most efficient method for individuals to keep their backhoes looking new.

HYDRAULIC COUPLERS

Always push them together when not in use. This keeps them clean and free from external damage. It also helps to equalize the pressure in the hoses so that you can couple the hoses to your machine easier.

BUCKET WEDGE BLOCK

Check wedge block prior to each use and tighten retaining bolts as required.

Oil Leaks – Wipe down suspected area with a clean rag. Put a clean paper towel down under the suspected area and inspect for lose fittings or faulty O-rings.

5. Buckets & Couplers

BUCKET REMOVAL AND REPLACEMENT

STANDARD BUCKETS

A standard bucket consists of a bucket with 2 pins. To remove this style of bucket, raise your backhoe so it is just slightly off of the ground. Remove the pine retaining bolts with a ½" flat wrench or wrench and socket. Using a piece of wood rod, drive the top pin out first and then the lower pin. Two large flat washers will fall out when the main pin is driven all of the way out. These are used as side bushings and must be cleaned and replaced when the new bucket is installed.

Line the new bucket up with the boom and slied the main pin partially in. Add one side bushing and push the pin through the boom until it starts to protrude out the other side of the boom. Add the second bushing between the boom and side ear of the bucket and push the pin the rest of the way through. Turn the pin until the hole drilled in the pin lines up with the retaining collar hole. Replace the 5/16" retaining bolts and fasten the nuts securely. Grease the main pin and top pin thoroughly.

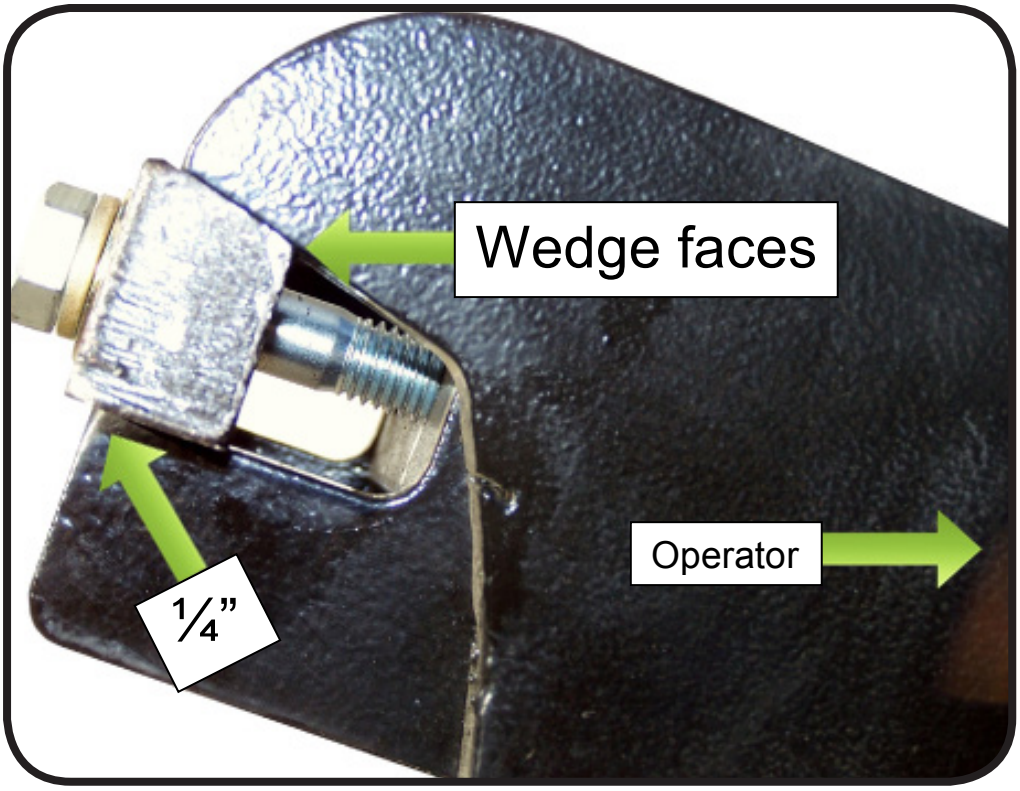
ECS BUCKETS

ECS buckets use a special Quick Exchange Coupler that allows the operator to run larger attachments on the backhoe boom and still change them quickly and easily.

5.1. Photo Example of Bucket Connect– VIDEO Online

IMPORTANT:

The wedge block should be installed so that the narrow part of the wedge is facing down and back towards the operator. Tighten the retaining bolts until the no more than ¼" of the block is showing above the bucket ears. The wedge block retaining blocks can be adjusted with a ¾" socket or combination wrench.



IMPORTANT:

Inspect wedge block retaining bolts prior to each use and tighten retaining bolts as required. When the buckets are new, expect that you will have to adjust the block a few times until it seats properly and the paint has worn off. Replace excessively worn blocks or retaining bolts with new

5.2. Other Operational Tips

THUMB OPERATION – OPTIONAL

The thumb option is very useful in providing a gripping tool that utilizes the bucket cylinder power to squeeze items for lifting and moving. The ECS Backhoe thumb is fixed and does not move. The bucket closes against the thumb to provide incredible gripping power. The ECS Backhoe thumb and bucket have been tested to carry over 1000 lbs. Extreme caution must be exercised when operating the bucket with the thumb that you do not lift material heavier that your machine tip rating or you could flip your machine. Also be alert when carrying logs. We recommend that you do not carry logs longer than 8 feet or you could catch the end of the log that will cause a lot of leverage on the thumb and bucket and could damage the thumb.

1. HCS OPERATION – E70 Models

HCS is an optional hydraulic control valve that is used to add additional control for hydraulically powered attachments in addition to the control of the boom. The HCS valve is designed to split your main hydraulic line into two controllable supply lines. It does this with a 12 volt controlled solenoid plunger that diverts the flow when the switch is depressed.

Switching – Generic Kit

The standard generic switch kit supplied consists of a remote switch that can be stick mounted. The switch only allows the flow to be diverted. With the switch depressed, you still have to turn the flow on and off in either forward or reverse flow.

Switching – Bobcat, John Deere, New Holland – Other 14 Pin Equipped Machines.

For machines equipped with 14 Pin kits, a 14-pin pigtail is supplied. Installation is minimal with the operator only having to plug the connector into the skid steer at the same time as the hydraulic lines. This will allow you to control the primary and secondary function from each stick of your machine.

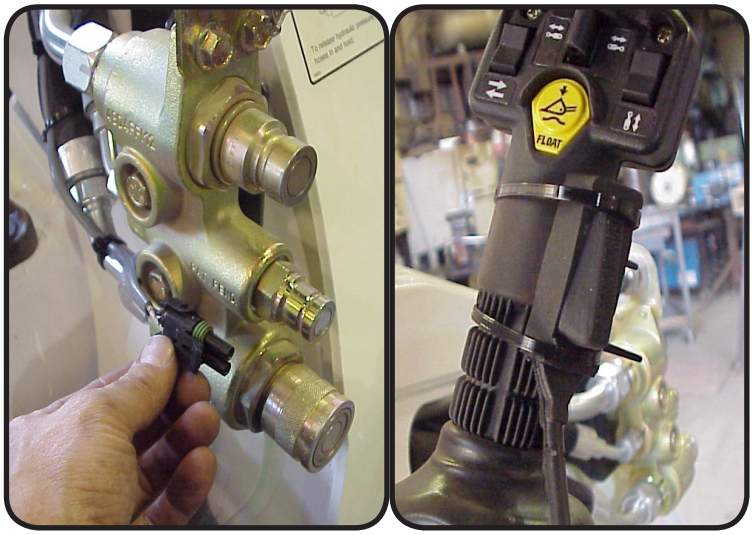
Switching – ASV & Caterpillar – Other 8 Pin Equipped Machines.

For machines equipped with 8 Pin kits, an 8-pin pigtail is supplied. Installation is minimal with the operator only having to plug the connector into the skid steer at the same time as the hydraulic lines. This will allow you to control the primary and secondary function from each stick of your machine.

3.3.5 ELECTRICAL CONNECTIONS – HCS Version Only

Begin with the wire that has the plug matching the wire plug that comes from the ECS BACKHOE. Start at the couplers and follow the hydraulic lines into the engine compartment, to an area close to the source of power (battery). You might have more wire than you need, so coil up extra and tie out of the way. Tie switch to lever and feed wire into engine compartment connecting to a 12-volt power source. Red Positive +, Black Negative -. (Note, if you feed wire through rubber grommets around control levers make sure wire is not pinched when using your levers.) Plug Switch wire into wire that was left near your power source. Test rotation action. If you have any problems check all connections.

IMPORTANT: If you have a Caterpillar or ASV with an 8 pin electrical harness installed, a plug and play 8 Pin option is available where you do not need to wire the generic kit. If you have a Bobcat, John Deere or New Holland with a factory installed 14 Pin k it, plug and play is also available. Contact Skid Steer Solutions for more information.



Remote Master HCS Control Kit

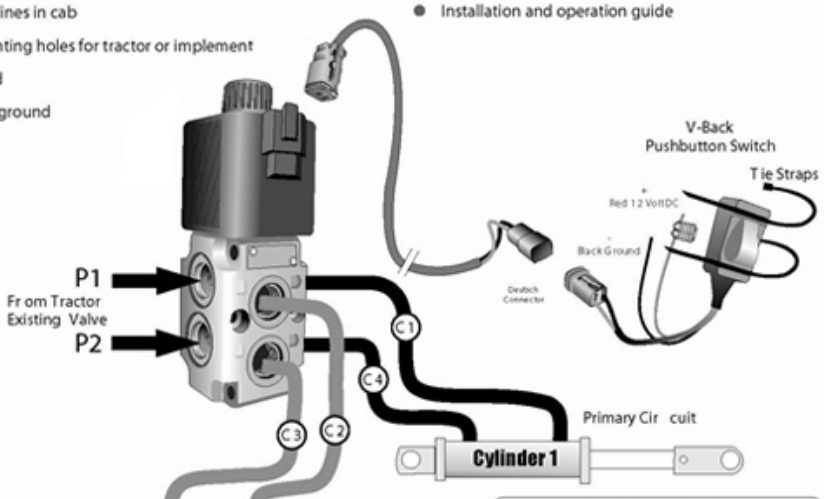
HYDRAULIC MULTIPLIER

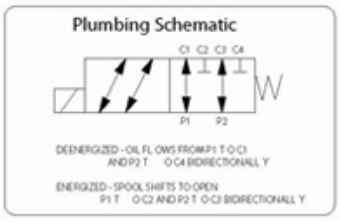
Features

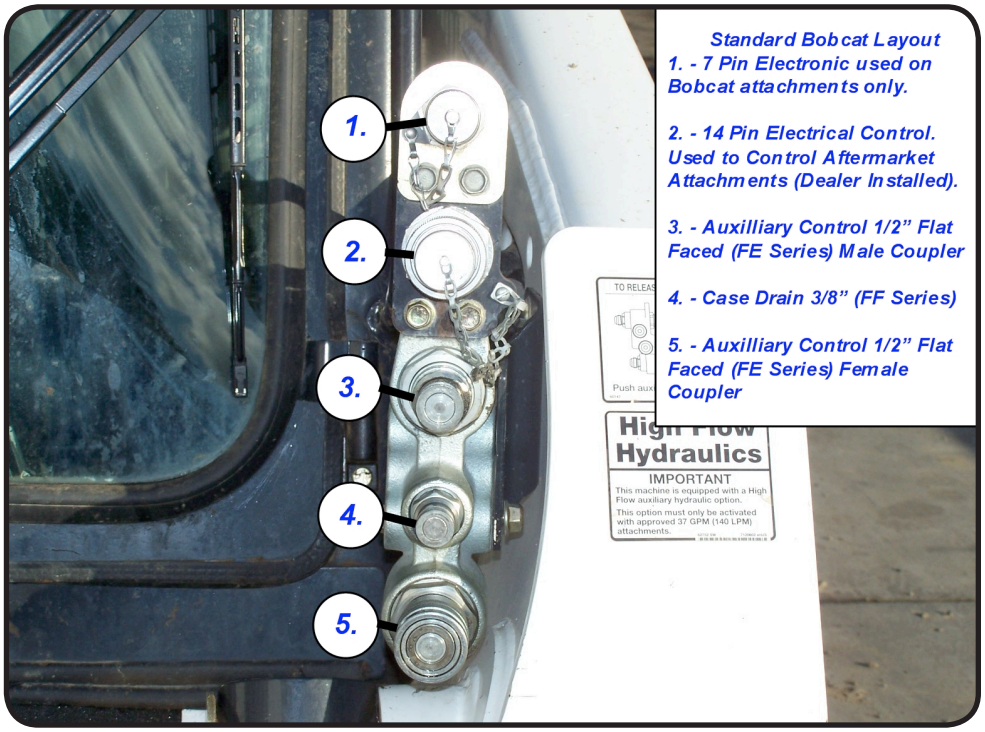
- 0 to 30 gpm flow rating
- Operate 2 functions from one remote
- Stackable for third circuit
- Use with Single or Double acting cylinders
- Universal with Open, Closed, or PFC systems
- Compact size and high flow w/-10 ORB ports
- No hydraulic lines in cab
- Integral mounting holes for tractor or implement
- 4350 psi rated
- 12v negative ground

Standard Kit

- Two circuit selector control valve
- Universal V -Back switch w/12' Power harness and fuse
- 22' power valve harness
- Quick easy mounting
- Installation and operation guide







Standard Bobcat Layout

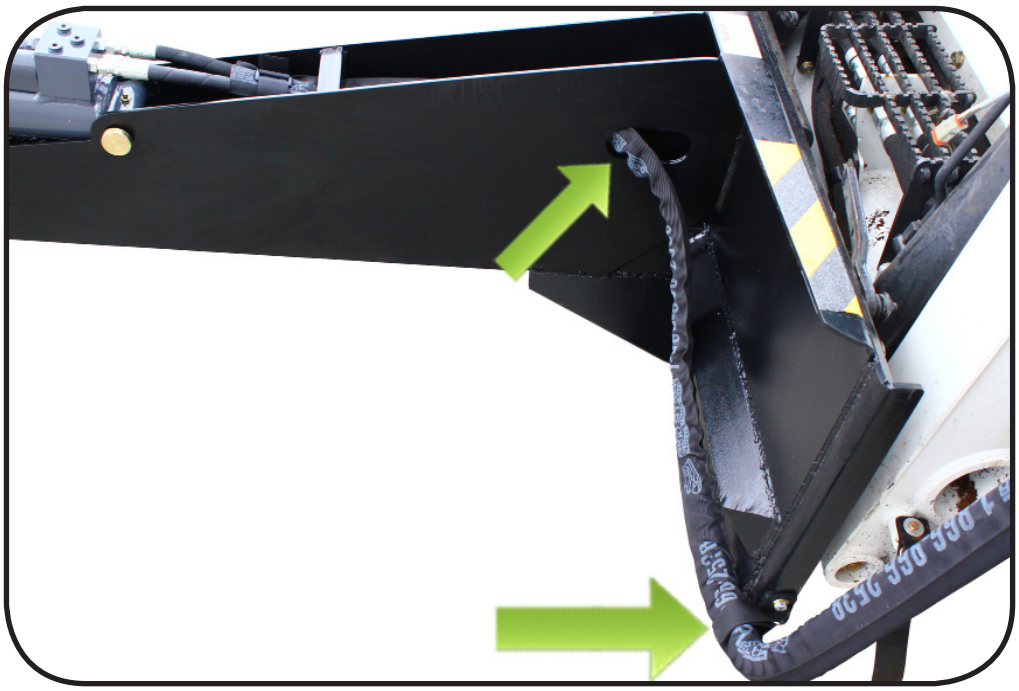
1. - 7 Pin Electronic used on Bobcat attachments only.

2. - 14 Pin Electrical Control. Used to Control Aftermarket Attachments (Dealer Installed).

3. - Auxilliary Control 1/2" Flat Faced (FE Series) Male Coupler

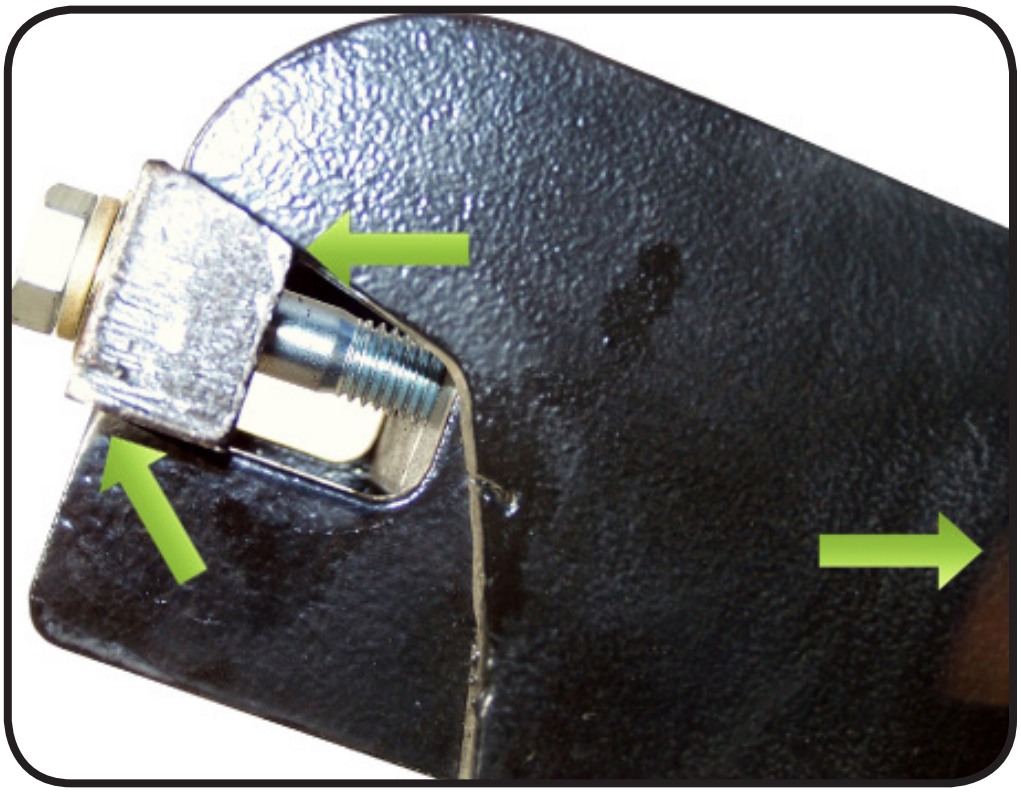
4. - Case Drain 3/8" (FF Series)

5. - Auxilliary Control 1/2" Flat Faced (FE Series) Female Coupler



IMPORTANT:

The wedge block should be installed so that the narrow part of the wedge is facing down and back towards the operator. Tighten the retaining bolts until the no more than ¼" of the block is showing above the bucket ears. The wedge block retaining blocks can be adjusted with a ¾" socket or combination wrench.



IMPORTANT:

Inspect wedge block retaining bolts prior to each use and tighten retaining bolts as required. When the buckets are new, expect that you will have to adjust the block a few times until it seats properly and the paint has worn off. Replace excessively worn blocks or retaining bolts with new.

PICTURED BUCKETS: 8” – 12” – 16” – 22” – 32”
OTHER OPTIONS:
GRAPPLE, RIPPER & 5 FOOT EXTENSION BOOM

6. Warranty

Eterra, LLC and Skid Steer Solutions, Inc.'s Limited Product Warranty

If you find physical defects in the materials or the workmanship used in making the product described in this document, Skid Steer Solutions, Inc. will repair, or at its option, replace, the product at no charge to you, provided you return it (freight prepaid, with proof of your purchase from the original reseller) during the 1 Year period after the date of your original purchase of the product.

Eterra, LLC and Skid Steer Solutions, Inc.'s RMA Replacement Product Warranty

If you find physical defects in the materials or the workmanship used in the refurbishment of an RMA product replacement, we 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).

Eterra, LLC and Skid Steer Solutions, Inc.'s Refurbished Product Warranty

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

SKID STEER SOLUTIONS 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 SHIPPING, SELLER SHALL CORRECT SUCH NONCONFORMITY AT ITS OPTION BY EITHER REPAIRING THE DEFECTIVE PART OR PARTS OR MAKING AVAILABLE F.O.B. AT SELLERS LOCATION A REPAIR OR REPLACEMENT PART.

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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 in conflict with the express requirements of applicable law.

3.3 PRE-OPERATION CHECKLIST

The Eterra ECS BACKHOE is simply 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.

1. Carefully study and understand your owner's manual.
2. Give the machine a "once-over" for any loose bolts, worn parts, cracked welds, hydraulic leaks, frayed hoses etc. and make necessary repairs.
3. Be sure that there are no tools lying on or in the machine.
4. Lubricate the machine as per the maintenance section.
5. Make sure all hoses are clear of cuts, abrasions, worn spots and pinch points before operating.
6. Check the tire pressure and make sure they are inflated to their recommended pressures. (see side of tire)
7. Connect to skid steer.