



**CYCLONE 48"**  
**OPERATORS MANUAL**

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## **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 excavators or skid steer loaders equipped with a Raptor Boom Arm system 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 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, jewellery 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 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 IMMEDIATELY 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.
- Never rely on the machine hydraulics to hold the mower in place. Bleed through/hydraulic failure can be very dangerous while servicing equipment, it is up to you to take the proper safety precautions for your machine setup. Failure to do so could result in serious injury or death.
- 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 the operator.

**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.

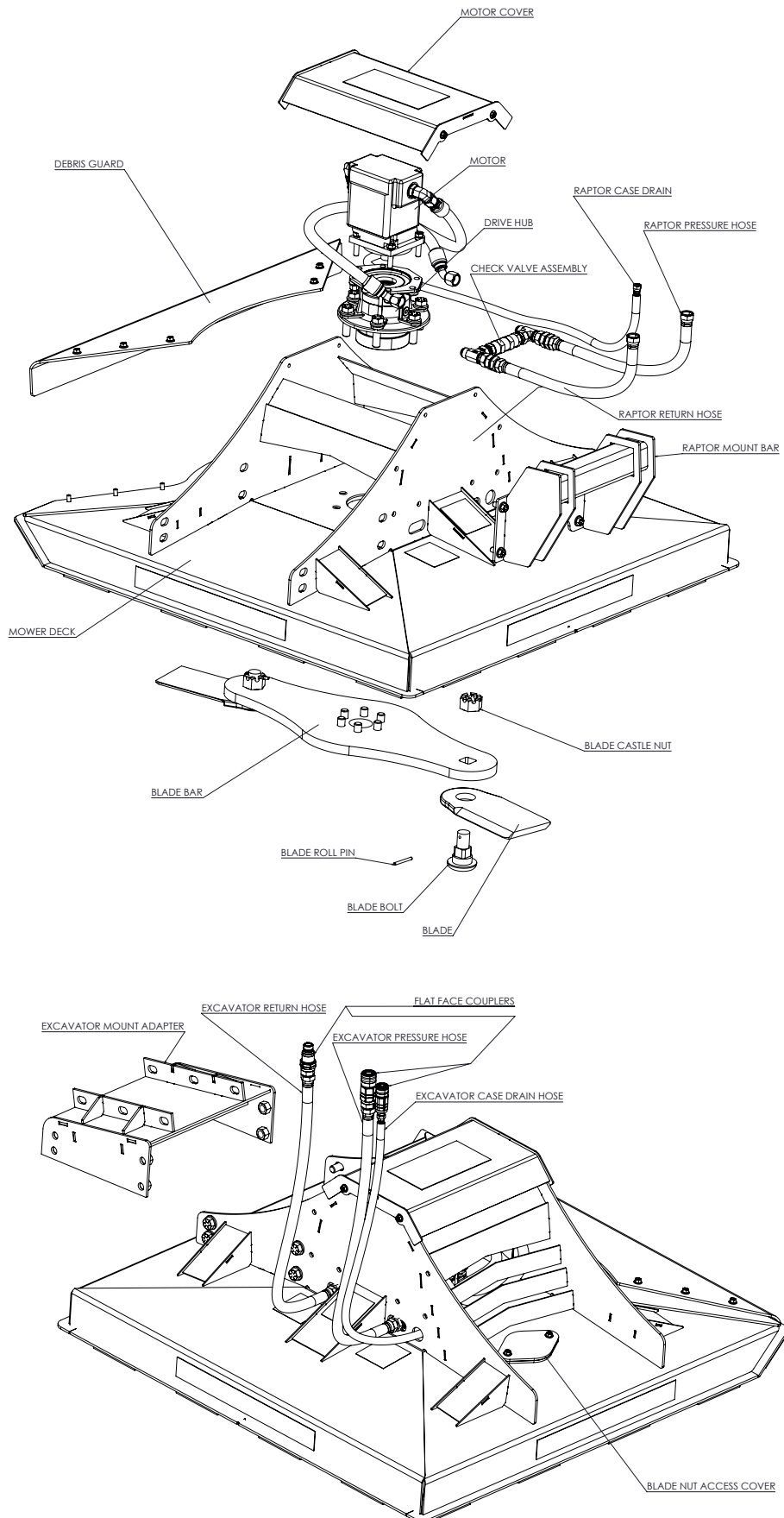
**ALWAYS** protect feet. Wear approved safety boots.

**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

## CYCLONE 48"



## 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 excavator mount 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 mower to prevent dangerous work conditions.

Always make sure the excavator coupler is properly fastened with all four mounting bolts to the mower. Check bolts and re-tighten if necessary.

### Attaching to Skid Steer

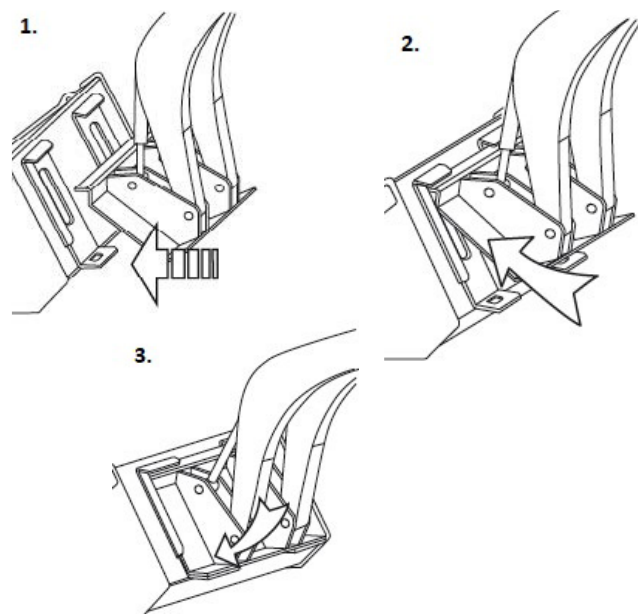
Check that the skid steer mounting plate fits properly and allows the locking pins to be engaged. You **MUST** engage your locking pins before operation to prevent the mower from coming off. If your locking pins do not stay locked down they may need to be adjusted or repaired before continuing.

1. Slowly position your skid steer loader towards the rear of the mounting plate.

2. Slowly insert the top edge of your quick attach into the top rail of the hookup from underneath.

3. As the top of the quick attach aligns into the mounting plate, slowly roll your quick attach back towards the machine until the entire quick attach locks into the mount.

4. Using either your power attach or manual levers, lock the mounting plate in place and check for proper pin engagement.



## 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 cardboard 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

You should check the best hose routing for your machine prior to use and adjust accordingly. Damage to hydraulic hoses due to improper length or routing is not covered under warranty.

### Excavator One-Way Flow/Breaker Circuit

#### For Cyclone mowers on excavators:



You must run the mower on a one-way flow circuit/breaker circuit. On some machines this requires physically turning a valve on your excavator hydraulics, on others it is done electronically. This allows the return flow to go directly back to the hydraulic tank and bypass the valve block.

This is a very important setting that reduces the back pressure on the hydraulic motor. High back pressure will damage and cause the hydraulic motor seal to fail pre-maturely. This failure is not covered under warranty.

### Flat Face Coupler Connections

Attach all lines supplied from the mower by pushing the flat face couplers on the lines to the ones on your machine. If connection is difficult, you may need to release pressure from the couplers on your machine side. See your machine user manual for how to do this. For Cyclones on excavators running 26+GPM flow, a case drain is required to be hooked up as well, and will have a third line coming from the mower for the case drain. If your machine is not equipped with one, you will have to add it.

When the flat face couplers are attached, spin the collar away from the ball detent in order to “lock” the coupler in place. This will prevent a line from accidentally getting pulled off by brush/debris. If a line becomes detached during operation, you will damage the hydraulic motor, so take care to ensure your hydraulic connections are secure before operating.

The mowers operate in only one direction. If pressure/flow is applied to the opposite direction, then the mower will not operate. If your mower does not spin when flow/pressure is applied to it, then the connections may be backwards. Simply swap the Male and Female couplers on the hose ends, and try again.

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.



## OPERATION

### Pre-Operation Checklist

- 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 Cyclone Mower pins and mounts to ensure nothing has come loose as you risk the mower head falling off if not properly inspected.
- Check for excessive blade & bolt wear as well as cracks in the rear of the blades. Replace as needed. Generally when the blades are worn out, so are the bolts so you should be replacing as a set. If you only replace the blades, the bolts may fail and allow the blades to fly away uncontrollably. This is not a situation you want to find yourself in and you should do everything to make sure this will never happen.
- If you feel any kind of vibration from the mower head, it is likely one of the mower blades has been damaged or broken. Stop using the mower immediately and do not use until the blade has been changed.
- 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 machine boom.
- Connect to machine and check mechanical machine connection point for wear that could cause the Cyclone to fall off. Repair any damage as needed.
- Check that your mower is properly connected to your machine by lightly pushing the nose down into the ground to see if it will become dislodged. If there is any excessive movement in the connection point – **STOP!** Try to figure out why it is not mating properly and contact ETERRA or your dealer prior to operation. You do not want the mower to fall off while in use so you must establish a positive connection to your machine.



**• It is imperative that your machine be equipped with penetration proof protection. Debris can fly out and injure or kill you if you do not have proper guards in place on your machine. Make sure your machine is setup accordingly before operation.**

- The Cyclone has a debris guard provided. This guard is provided to allow escaping material to be deflected downward while absorbing a lot of the potential energy. The debris guard is not a stop all solution but it definitely helps. If you remove the guard, a lot more material will be projected forward out of the mower making it very dangerous. Do not operate without the debris guard in place unless you are in an area completely clear of obstacles and anything that could be hit by flying debris.
- 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 length hoses are provided with each unit, but it is the customers responsibility to modify these if needed for their machine.

## First Time Use Guide

### Step One:

Connect the mower to your carrier. Connect hoses and check that the hoses run easily up to your connection points and are not kinked or pinched in any way. Double check that the hydraulic lines are installed properly and that your auxiliary connectors click into position. Check that your mower is properly connected to your machine by lightly pushing the nose down into the ground to see if it will become dislodged. If there is any excessive movement in the connection point – STOP! Try to figure out why it is not mating properly and/or contact us 24/7 prior to operation. You do not want the mower to fall off while in use so you must establish a positive connection to your carrier.

### Step Two:

When operating on an excavator you must run the mower on a one-way flow circuit/breaker circuit. On some machines this requires physically turning a valve on your excavator hydraulics, on others it is done electronically. This allows the return flow to go directly back to the hydraulic tank and bypass the valve block.

This is a very important setting that reduces the back pressure on the hydraulic motor. High back pressure will damage and cause the hydraulic motor seal to fail pre-maturely. This failure is not covered under warranty.

### Step Three:

Start your carrier, press the auxiliary switch and activate your trigger switch to lock the flow on. Once your mower starts up, let it spin up for a short period of time, and then stop the flow to the mower and wait for it to spin down to a stopped position. Exit your cab and inspect the hoses and couplers for any leaks. Tighten and adjust as needed.

### Step Four:

Enter your cab, start your machine, turn on auxiliary flow and start the mower. Perform a few test cuts in light material so that you feel confident with what the mower is capable of cutting and the direction the material will exit the mower. Slowly progress towards larger material appropriate for your work area. As you cut even larger material be aware that even though the material is being thrown mostly away from you, things can bounce back and hit your machine or other things around you. **Never operate with bystanders in the area. Death or serious injury can occur.**

### Step Five:

If you are in an appropriate work area, and feel comfortable with the operation of the mower, you can remove the guard to progress towards cutting large material. Work slowly into new material until you get an idea of how it will cut. Debris can come flying off at any angle. If the mower bogs down make sure to pause and let it spin back up before re-engaging the material. If the mower will not cut something do not force it or else you will risk causing damage to the mower blades, carrier, or even deck.

## General Use Tips/Info

- When you are cutting, you can cut a tree and push it out of the way with the housing. You can then come back, tilt the blades slightly forward and use the mower like a stump grinder to cut the stump down into the ground. Be cautious when doing this however as if you are too aggressive you can bend or damage the blades.
- When cutting in areas with rocks, if you sustain a hard impact, you should stop the mower and inspect the blades for damage.
- Never cut within 100 yards of human or animal activity or anything that you do not want damaged.
- This is a dangerous piece of equipment. You must treat it that way. Always keep the blades no more than 4 feet from the ground up front and never lift the deck up so that the blades are on the same plane as the operator. When cutting grass and small brush, lift the deck up to a 20-degree angle so that the most material can enter the mower without being forced down. It will be cut on the entry and on the exit of the mower housing.
- For larger brush and small trees, carefully bring the deck up to a 30-degree angle and cut and push at the same time.
- Once a tree is down, you need to contend with the branches and the tree. The most effective way to deal with this is to drive over the tree and lower the mower onto material. If you do not get all of it the first time, you can make additional passes until the tree is turned to mulch.
- On hilly or uneven terrain you must carry the mower with the front rolled up slightly and cautiously watch your speed. You can easily tip forward and drive the mower into the ground.
- When you are done mowing and you have turned off the hydraulics, wait inside your cab until the blades come to a complete stop. You can easily forget the blades are turning once you are out of the cab and serious injury can occur.
- Never let anyone come around the mower when it is spinning down after use. This is your responsibility to insure your safety and those of you around you.

## Operational Positions

Shown below are different positions of operation for the cyclone, and when they are used.



Standard Mowing Position



Low Bank Mowing Position



High Brush Mowing Position



Tree Top Mowing Position



Blade Service Position - Do not mow

## TRANSPORTATION & STORAGE

### Transportation Within The Job Site

The Cyclone should be rotated to directly in front of the operator and the mower head rotated so the blades are facing down, and the mower turned off.

This position will give you the most compact footprint for travelling or for accessing narrow areas.

Many machines have a small amount of bleed through which will allow the mower arm to drop when stored for longer periods.



## Storage

The best position for storage is for the attachment to be in the parked position with the blades facing down.

Be aware of your hydraulics on your specific machine, as bleed through can and will occur on most hydraulic systems. Make sure it is resting under its own weight and nothing is suspended or held up by hydraulic pressure.

The best storage position to avoid this is to remove the attachment from the machine, however this is not practical for day to day use, so it is up to you to understand your machine and its hydraulic system to avoid any bleed through becoming an issue for storage.



Parked/Storage Position

# 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 use a suitable barrier cream in case of skin contact.



**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

Lubrication of the Cyclone consists only of the drive hub/bearing housing that connects the hydraulic motor to the blade bar/carrier. This oil must be changed out after the first 50 hours of operation under load, and then every 1000 hours of operation after that. See the gear oil chart below to select the appropriate gear oil for your use. The hub has been filled with an all-purpose gear oil for initial break in.

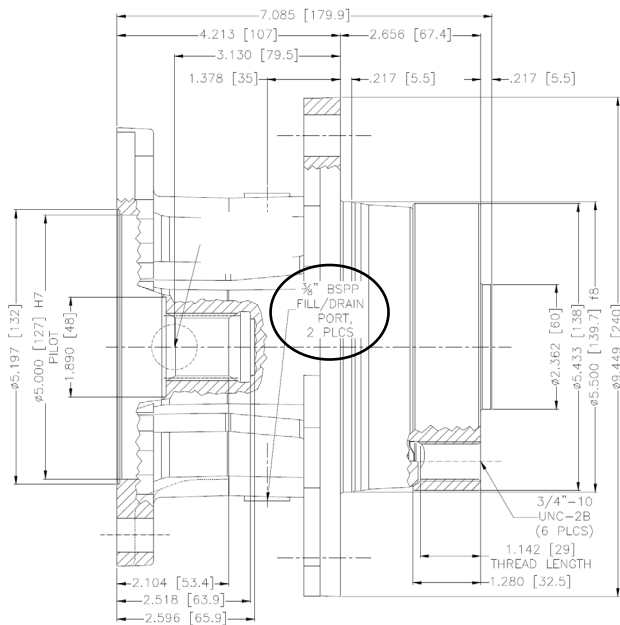
To drain, make sure the cyclone is hooked up to your machine and rotate it into the blade service position where the drain/fill port is pointed at the ground. Get a suitable container to catch the oil and remove the drain/fill plug.

Rotate the mower back to the horizontal position and use the same drain/fill port to fill with your required oil until it is level with the drain fill port.

Ambient Temp.	-20°C - +5°C	+5°C - +40°C	+40°C - +65°C	+65°C - +70°C
VISCOSITY	*E/50°C	7.3	10.8 - 12.5	15 - 18
	ISO VG	100	150	220
AGIP	BLASA 100	BLASA 150	BLASA 220	BLASA 320
BP	ENEROL GR-HP 100	ENEROL GR-HP 150	ENEROL GR-HP 220	ENEROL GR-HP 320
CASTROL	ALPHA SP 100	ALPHA SP 150	ALPHA SP 220	ALPHA SP 320
CHEVRON	NL GEAR COMPUND 100	NL GEAR COMPUND 150	NL GEAR COMPUND 220	NL GEAR COMPUND 320
ELF	SPARTAN EP 100	SPARTAN EP 150	SPARTAN EP 220	SPARTAN EP 320
ESSO	REDUCTELF SP 100	REDUCTELF SP 150	REDUCTELF SP 220	REDUCTELF SP 320
FINA	GIRAN 100	GIRAN 150	GIRAN 220	GIRAN 320
IP	MELLANA 100	MELLANA 150	MELLANA 220	MELLANA 320
MOBIL	-	MOBILGEAR 629	MOBILGEAR 630	MOBILGEAR 632
SHELL	OMALA EP 100	OMALA EP 150	OMALA EP 220	OMALA EP 320
TOTAL	CARTER EP 100	CARTER EP 150	CARTER EP 220	CARTER EP 320

## Lubrication (cont.)

Photo References below for drive hub oil changes.



Drain/fill port diagram. Drain in this orientation with mower in place in vertical orientation (similar to blade service position)

Drain/fill port plug. Fill with mower placed flat and level on ground (parked position)



Access drain/fill plug from top of mower, under the motor cover. (Remove motor cover)

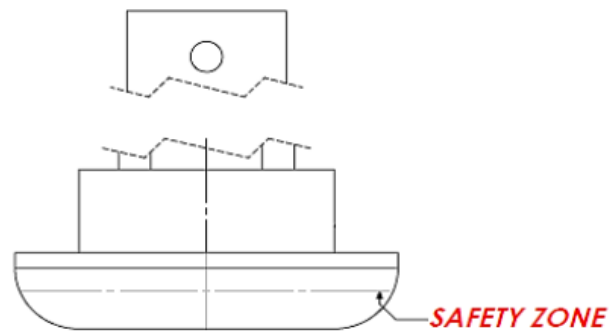
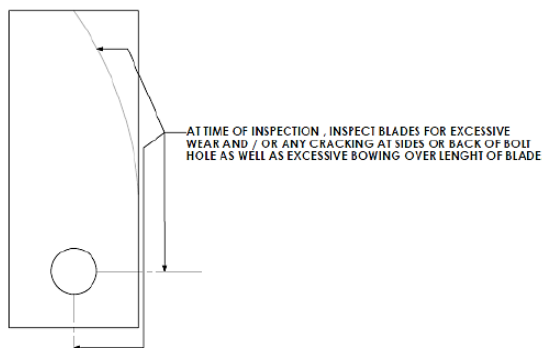


## Maintenance

### Blade Inspection

If your mower is shaking, then the most likely cause is the blades. Inspect for excessive wear and/or cracks and bends on the blades. You should change both blades and bolts together if either one is damaged. Do not allow excessive wear of the blade bolt head either. Wear past 50% of the bolt head thickness means that the bolts should be replaced.

If you choose to sharpen the blades, they should be removed to do so using the instructions below. When sharpening blades, make sure that you accurately weigh the blades after sharpening. Both blades should weigh within 0.15 lbs of each other. A greater difference in weight than this will cause an imbalance on the blade bar and excessive vibration of the mower. Do not operate under these conditions.



### Blade Replacement

Blade replacement should always be done with new hardware. Eterra recommends new blade bolts, nuts, roll pins, and washers with every blade replacement. The blades and hardware may be rotated once to utilize the opposite side of the blade before replacement as long as the mower remains balanced.

To replace the blades, simply park the mower in its applicable service position. Take precautions to block/support the machine's arm or mower in place as needed to prevent movement from bleed through in the machine's hydraulics. **NEVER** rely on the machine hydraulics to hold the mower in place. Bleed through/hydraulic failure can be very dangerous while servicing equipment, it is up to you to take the proper safety precautions for your machine setup. Failure to do so could result in serious injury or death.

Take a small punch and hammer and drive out the roll pin from the castle nut. With the roll pin removed, open up the blade service cover, and use an impact gun to remove the castle nut. The bolt head is captured so you will not need a wrench on the opposite side, but you may need to keep it from sliding out as you loosen the nut. With the nut removed, remove the bolt while holding onto the blades.

Replace the blades and re-attach with a new bolt, new castle nut, and new roll pin. Tighten the new castle nut down until it is snug, and continue to tighten with an impact gun until the next slot aligns with the roll pin hole. When the slot is aligned, drive the roll pin in with a hammer until it sits evenly between both sides of the castle nut. Repeat for each blade. After securing the blades, make sure that they swing freely 360 degrees around the bolt head. If the blades are getting caught anywhere, STOP and evaluate why they are getting stuck. Fix this before continuing onto operation, or else a stuck blade will create an unbalanced mower. Never operate a mower with balance/vibration issues.

## Maintenance Table

<b>Task</b>	<b>Before Each Use</b>	<b>Weekly</b>	<b>Monthly</b>	<b>Yearly</b>
Inspect mower head fittings and attachment hardware. Tighten as needed.		X		
Inspect & tighten hydraulic fittings/hoses.			X	
Check & fill skid steer loader/excavator hydraulic fluid level.	X			
Check condition of cutter blades and hardware. Replace as needed.	X	X	X	
Inspect and replace any worn, torn, or missing safety decals.	X			
Clean attachment			X	
Inspect for damage to mower deck, cracked welds, or other damage from impacts. (If impacts do occur, carry this check out immediately before continuing operation)			X	X
Change oil in drive hub (*First change after 50 hours of use, then every 1000 hrs/Yearly, whichever is sooner)				X

Be sure to log maintenance checks and findings in the notes section at the end of the user manual.

## TROUBLESHOOTING

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

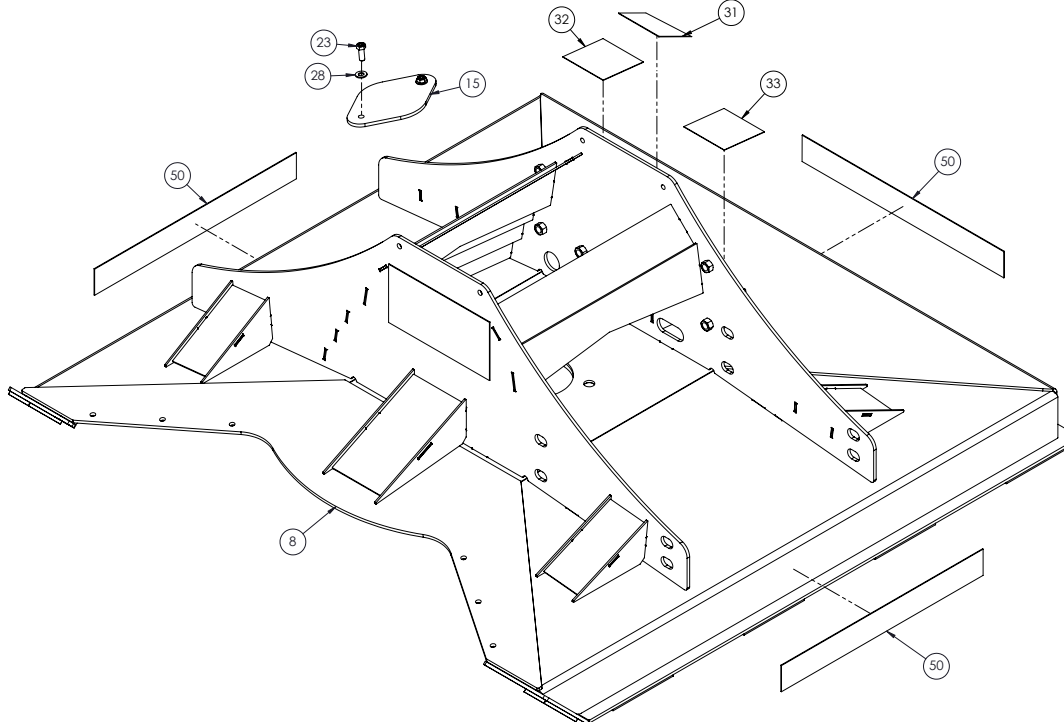
**BE SAFE** - only use genuine Eterra / parent machine spare parts.

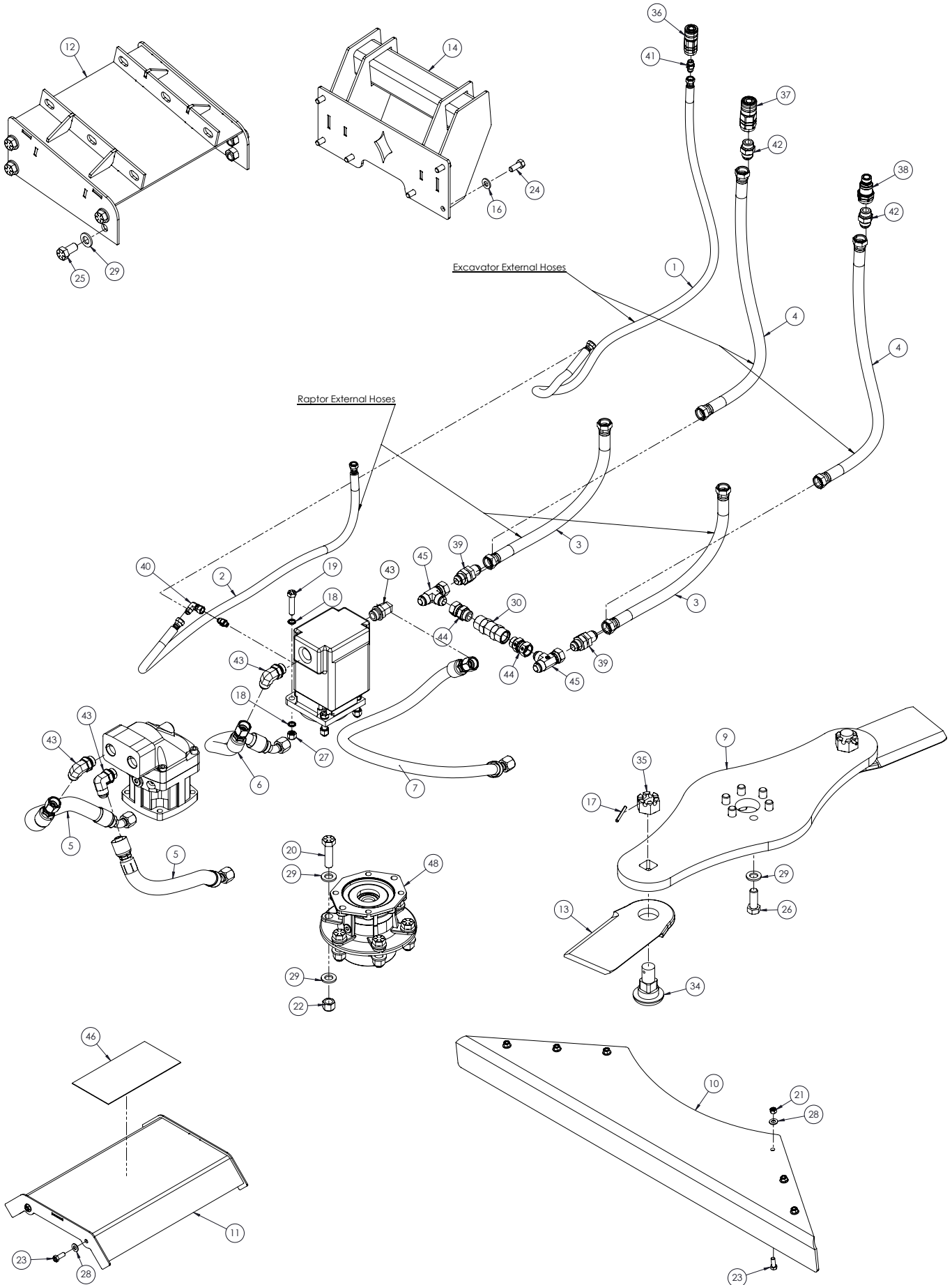
<b>Poor or Uneven Cutting</b>		<b>Vibration of Mower</b>	
<b>POSSIBLE CAUSE</b>	<b>ACTION</b>	<b>POSSIBLE CAUSE</b>	<b>ACTION</b>
Dull Blades	Sharpen blades, rotate blades to new edge, or replace blades	Damaged or bent blade	Replace blades
<b>Leaking from hoses/fittings</b>		<b>Oil leaking from drive hub output</b>	
<b>POSSIBLE CAUSE</b>	<b>ACTION</b>	<b>POSSIBLE CAUSE</b>	<b>ACTION</b>
Loose fittings Torn O-Ring	Tighten Fittings Inspect and replace fittings/o-rings as needed.	Drive hub seal failure by debris.	Replace drive hub output shaft seal and clear debris that caused issue. (typically fence wire)
<b>Oil leaking from drive hub output</b>			
<b>POSSIBLE CAUSE</b>	<b>ACTION</b>		
Motor output seal failure pressurized gearbox	Replace mower output shaft seal, drive hub output seal, and replace drive hub oil.		

# PARTS DIAGRAMS

## Cyclone 48" Mower Parts Diagram

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0606-0608-06-108	3/8" Hose - 108" Long - #6 FJIC Straight x #8 FJIC Straight	1
2	0606-0608-06-72	3/8" Hose - 72" Long - #6 FJIC Straight x #8 FJIC Straight	1
3	0606-1212-12-36	3/4" Hose - 36" Long - #12 FJIC Straight Both Ends	2
4	0606-1212-12-90	3/4" Hose - 90" Long - #12 FJIC Straight Both Ends	2
5	0637-1212-12-18	3/4" Hose - 18" Long - #12 FJIC Straight x #12 FJIC 45Deg	2
6	0637-1212-12-24	3/4" Hose - 24" Long - #12 FJIC Straight x #12 FJIC 45Deg	1
7	0637-1212-12-44	3/4" Hose - 44" Long - #12 FJIC Straight x #12 FJIC 45Deg	1
8	18C248-P001-63	Cyclone V2 Main Housing - Powdercoated Orange	1
9	18C248-P003	Part - V2 - Cyclone 48" - Blade Bar	1
10	18C248-P004-61	Cyclone 48" V2 - Side Guard - FORMED	1
11	18C248-P006-61	Cyclone V2 Motor Cover	1
12	18C248-P008-61	Cyclone V2 Excavator Mount	1
13	18C248-P010	Cyclone 48 V2 - Cutter Blade	2
14	18C248-P011	Cyclone V2 Raptor Bar Mount	1
15	18T000-P005-61	Blade Access Cover Plate	1
16	90126A033	1/2" SAE Flat Washer - Yellow Zinc Coated	6
17	90692A751	1/4" x 2.50" Roll Pin/Spring Pin	2
18	91074A133	1/2" Nord-Lock Washer - Standard OD	8
19	91257A721	1/2"-13 X 2.25 Hex Bolt Grade 8 Yellow Zinc Finish	4
20	91257A844	3/4"-10 x 2.75" Hex Bolt Grade 8 Yellow Zinc Finish	18
21	92501A505	3/8"-16 Top-Lock Distorted-Thread Locknut	6
22	92501A535	3/4"-10 Top-Lock Distorted-Thread Locknut	18
23	92620A624	3/8"-16 x 1.00" Hex Bolt Grade 8 Yellow Zinc Finish	12
24	92620A714	1/2"-13 x 1.25" Hex Bolt Grade 8 Yellow Zinc Finish	6
25	92620A839	3/4"-10 x 1.5" Hex Bolt Grade 8 Yellow Zinc Finish	8
26	92620A843	3/4"-10x 2.00" Hex Bolt Grade 8 Yellow Zinc Finish	6
27	95615A210	1/2"-13 Top-Lock Distorted-Thread Locknut	4
28	98023A031	3/8" SAE Flat Washer - Yellow Zinc	18
29	98023A036	3/4" SAE Flat Washer - Yellow Zinc Coated	26
30	98V304-P001-01	Check Valve 3/4" SAE Threads - VU34 SAE 5 PSI	1
31	Attention Breaker Circuit	ATTENTION - Turn on hydraulic Breaker Circuit/One Way Circuit. Mower must be run on a one way flow setting. Failure to do this will cause motor seal failure	1
32	Danger Keep Back 100	DANGER - KEEP BACK 100 YARDS, FLYING OBJECTS CAN INJURE OR KILL	1
33	Danger Rotary Blades	DANGER - ROTARY BLADES IN USE KEEP HANDS AND FEET CLEAR DEATH OR SERIOUS INJURY CAN OCCUR	1
34	ET-18Z000-P001-04	Large Rotary Blade Bolt - Typhoon 60, 72, Cyclone 60 - Black Oxide	2
35	ET-18Z000-P003-10	Large Rotary Blade Castle Nut - Typhoon 60, 72, Cyclone 60	2
36	ET-FFF-6-6-SAE	Female Flat Face Coupler 3/8" Body -6 Female ORB Threads	1
37	ET-FFF-8-12-SAE	Female Flat Face Coupler 1/2" Body -12 Female ORB Threads	1
38	ET-FFM-8-12-SAE	Male Flat Face Coupler 1/2" Body -12 Female ORB Threads	1
39	2700-LN-12-12	-12 Male JIC to -12 Male JIC Bulkhead Fitting	2
40	ET-FIT-0306-0606-90	-6 Female JIC to -6 Male JIC 90 Degree Fitting	1
41	6400-06-06-O	-6 MORB to -6 M.JIC Straight Fitting	1
42	6400-12-12-O	-12 Male ORB to -12 Male JIC Straight Fitting	2
43	ET-FIT-0503-1212-90	-12 Male ORB to -12 Male JIC 90 Degree Fitting	4
44	ET-FIT-0506-1212-00	-12 Male ORB to -12 Female JIC Swivel Straight Fitting	2
45	ET-FIT-0603-1212-RT	-12 Female JIC Swivel to -12 Male JIC Run Tee	2
46	ETERRA-cyclone-11	Eterra Cyclone Decal Sticker	2
47	F10-090-AU-SV-U-000-0000-PT	PARKER 90cc Piston Brush Cutter Motor C-MOUNT	1
48	P70 LO SS1-0-C14. PART.step	P70 SAI HUB	1
49	PC-M257	M257 Hydraulic Motor - P/N based on size	1
50	keep back small 20x2.25	KEEP BACK 100 YARDS WARNING STICKER	3
*	PC-M257-S	Permco - Part - Complete Seal Kit for M257 Series Motors - Includes standard 150psi lip seal	
*	PC-249-01536	Permco - Part - Lip Seal Only for M257 Series Motors - Severe Duty 500psi	
*	ET-18Z000-K900-10	Eterra - Kit - Heavy Duty Rotary Blade Bolt Kit - Used on Typhoon 60", 72", Cyclone 48" V2 Only, Cyclone 60" - Includes 1x Bolt, Castle Nut, Roll Pin	





# **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 re-seller) 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

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YOUR DEALER IS

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