

Heavy Duty Root Grapple

Operation and Maintenance Manual



106075, 106080, 106090

Register your
WARRANTY
within 30 days
of purchase



888-376-7027 | BlueDiamondAttachments.com



BD-092

Introduction: Owner Information

Thank you for your decision to purchase a Blue Diamond® Heavy Duty Root Grapple. To ensure maximum performance of your equipment, it is mandatory that you thoroughly study the Operator's manual and follow the recommendations. Proper operation and maintenance are essential to maximize equipment life and prevent personal injury.

Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and /or laws. Follow all on-product labeling and instructions.

Make sure that all personnel have read this Operator's Manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

Blue Diamond is continually working to improve its products. Blue Diamond reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

Although great care has been taken to ensure the accuracy of this publication, Blue Diamond makes no warranty or guarantee of any kind, written or expressed, implied or otherwise with regard to the information contained within this manual. Blue Diamond assumes no responsibility for any errors that may appear in this manual and shall not be liable under any circumstances for incidental, consequential or punitive damages in connection with, or arising from the use of this manual.

Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Blue Diamond Attachments Dealer for assistance, information, or additional copies of the manual. Contact www.bluediamondattachments.com or call 888-376-7027 for a complete list of dealers in your area.

Serial Number Location:

Please record attachment information in the space provided for future reference.



Model Number: _____

Serial Number: _____

Dealer Name: _____

Dealer Number: _____

Date of Purchase: _____

The serial number plate is located as shown above.

Always use your serial number when requesting information or when ordering parts.

NOTE: The directions left, right, front and rear, as mentioned throughout this manual, are as viewed from the operator's position.

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1. Safety

1.1 General Safety Information



This **SAFETY ALERT SYMBOL** identifies important safety messages on the equipment and in the owner's manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



The signal word **IMPORTANT** identifies procedures which must be followed to avoid damage to the machine.



The signal word **DANGER** on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.



The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



The signal word **CAUTION** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

- This manual contains information about the usage and maintenance required for the equipment. This document must be available for review by the operator before using the attachment to ensure proper safety, maintenance, and usage.
- Read and follow instructions in this manual and the machine's Operators Manual before operating.

Terminology

Prime Mover: The root grapple can be attached to many different pieces of equipment; therefore, the term "prime mover" will be used. A prime mover is any piece of equipment, tractor, or skid steer that provides power to the attachment.



AVOID SERIOUS INJURY OR DEATH
Operators must receive instructions before operating the machine. Untrained operators can cause serious injury or death. For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the equipment. For an operator to be qualified, he or she must have read and understood the instructions of this manual, he or she must make adequate preparation for the proper use of the machine, and he or she must hold a driving license. In case of doubt regarding the use of the machine and/or the interpretation of this manual, the operator must contact either their dealer or Blue Diamond.

1. Safety

1.2 Operating Safety

 **DANGER** 

 **WARNING** 

Failure to follow all safety instructions may result in serious injury or death.

Safety Notices

Before operating or conducting maintenance on this equipment, it is important to wear proper protection. Recommended safety equipment when operating and maintaining this equipment includes earplugs, eye protection, and a hard hat.

NOTE: Additional safety equipment may be required depending on the operating environment and worksite conditions.

Only qualified and trained personnel should operate, maintain, and service this attachment. It is recommended that this equipment be inspected regularly for leaks, cracks, or other conditions that may impair proper usage of the equipment. Verify that all repairs have been completed and inspected prior to using the attachment under load.

It is the responsibility of the user to follow all local, state, and federal safety regulations. Improper use of this equipment may result in personal injury, property damage, and/or damage to the equipment.

Modifications to Equipment

Any modifications made to this equipment may void any warranty and relieve the manufacturer of liability of any resulting injury or damage.

2. Operation

2.1 About the Attachment

About the Root Grapple Attachment

The Root Grapple attachment is intended for use in materials handling. The primary use of the root grapple attachment includes land clearing, landscaping, demolition, construction, and grounds maintenance. Use of this equipment in any other manner is considered to be contrary to the intended use of the attachment.

Root Grapples

The root grapple attachment is vital across multiple industries and is quickly becoming a necessity among all contractors today. This unique root grapple is offered in a variety of sizes for a variety of applications.

With the root grapple, you can perform three jobs in one. In a single pass, the root grapple rakes away debris, keeps it in a manageable pile to move around with ease, and the round bottom bar provides the necessary tool for backfill. The wide tine opening makes for easy loading of logs, brush, rocks, demolition debris, and many other materials into the large bucket area.

It is ideal for separating dirt from rock, lumber, or building materials with ease. Hydraulic cylinders operate independently to adjust for uneven loads. Tines curve upward in order to slide across the land without damaging topsoil or catching utility lines or cables.

The Heavy Duty Root Grapple is intended for skid steers or tractors with a lift capacity of 1800 lbs or less. The Root Grapple is an industrial grapple built for moderate use. It is constructed of 1/2" top-quality steel plate. 1" pivot pins with grease fittings increase the durability. The hydraulic cylinders are 2" bore and 8" stroke. Opened, distance from tine to tine is 32 inches. Depth from inside front to back of the Root Grapple is 28 inches. Available in 60", 66", and 72".

2.2 Attaching the Root Grapple to the Prime Mover

NOTE: Before attaching the root grapple to the prime mover, verify that all hydraulic couplings are compatible.



WARNING



Improper attachment to the prime mover may cause personal injury.



CAUTION



All hydraulic connections must be clean and free of debris before making any connection.

1. Place the root grapple on a level surface.
2. Position and align the prime mover to the rear of the attachment, within proximity of the front of the prime mover.
3. Insert and connect the prime mover into the attachment.
4. Connect the hydraulic lines from the attachment to the prime mover.
5. Close latches (or other locking mechanism) to secure the attachment to the prime mover.
6. Using the prime mover, raise the attachment and move the attachment to ensure hydraulic lines are clear of air and operate properly.



CAUTION



Hydraulics should operate in an even and smooth manner. Hydraulic movement that is not even and smooth may indicate that air is in the hydraulic lines.

7. Lower the attachment to ground level.
8. Inspect that the attachment is mounted properly and securely. If the attachment does not meet this requirement, follow the instructions to remove the root grapple and reattach using the instructions above.

2. Operation

2.3 Removing the Root Grapple from the Prime Mover



WARNING



Improper disconnection may result in personal injury or damage to the attachment and prime mover.



CAUTION



All hydraulic connections must be clean and free of debris before disconnection.

1. Using the prime mover, lower the attachment to the ground.
2. To prevent contamination, remove any dirt and debris from the couplings. Disconnect the hydraulic connection between the attachment and the prime mover.

NOTE: Hydraulic connections must be disconnected before disengaging latches to prevent damage to the prime mover or the attachment.

3. Disengage the prime mover latches (or other locking mechanisms) from the attachment.
4. Move the prime mover from the attachment.

2.4 Equipment Inspection

It is recommended to inspect the equipment for damage and wear before use. Use the following list as a guideline during equipment inspection.

- Check all hardware connection to the prime mover for damage or fatigue such as cracks or other structural flaws.
- Check that all latches or locks are closed.
- Check that all hydraulic fittings are tight and free of leaks.
- Check that all hydraulic lines are free of leaks, holes, or cracks.



WARNING



Do not use hands to check for hydraulic leaks. Keep body parts away from leaking hydraulic lines and couplings that are under pressure.

- Check that the tires on the prime mover are in good condition and have proper load ratings.

NOTE: Replace any damaged hardware, hoses, and fittings before using the equipment.

2. Operation

2.4 Equipment Inspection Cont'd

Usage Guidelines

Before each use do the following:

- Perform daily maintenance as indicated in the Daily Maintenance Schedule.
- Inspect the attachment by performing a walk around.
- Use the root grapple for materials handling only.



Keep all body parts away from the root grapple when in use. The upper tines may open or close unexpectedly causing serious bodily injury or death.

Inspect the root grapple daily before use. It is also recommended to inspect the root grapple after extreme use or damage. Use the following inspection checklist as a guideline.

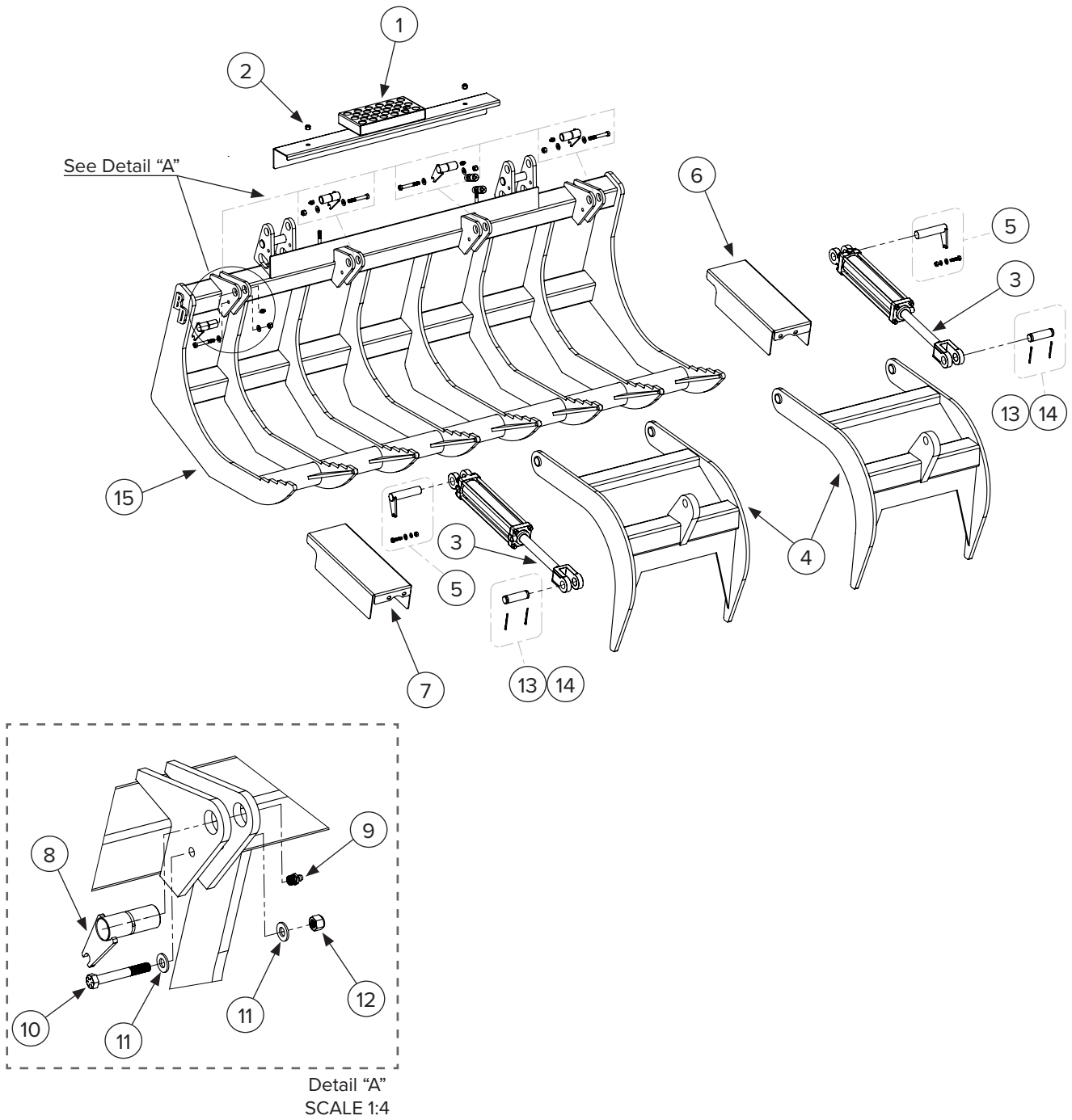
INSPECTION CHECKLIST	
✓	Are all safety notices and warning decals in proper locations and visible?
✓	Are there any visible hydraulic leaks?
✓	Are any cracks visible in the root grapple structure?
✓	Are any tines worn or bent?
✓	Have all grease fittings (zerk fittings) been greased?
✓	Are the bolts holding pins secure and tight?
✓	Has the prime mover been properly inspected for hydraulic leaks and proper tire inflation?
✓	Has the prime mover been properly maintained?

Grease all pivot points every 8 hours of use to prevent excess wear on the pins. The Blue Diamond Heavy Duty Root Grapple has 4 grease points. These grease points circled in the right hand image.



3. Parts

3.1 Main Parts Breakdown



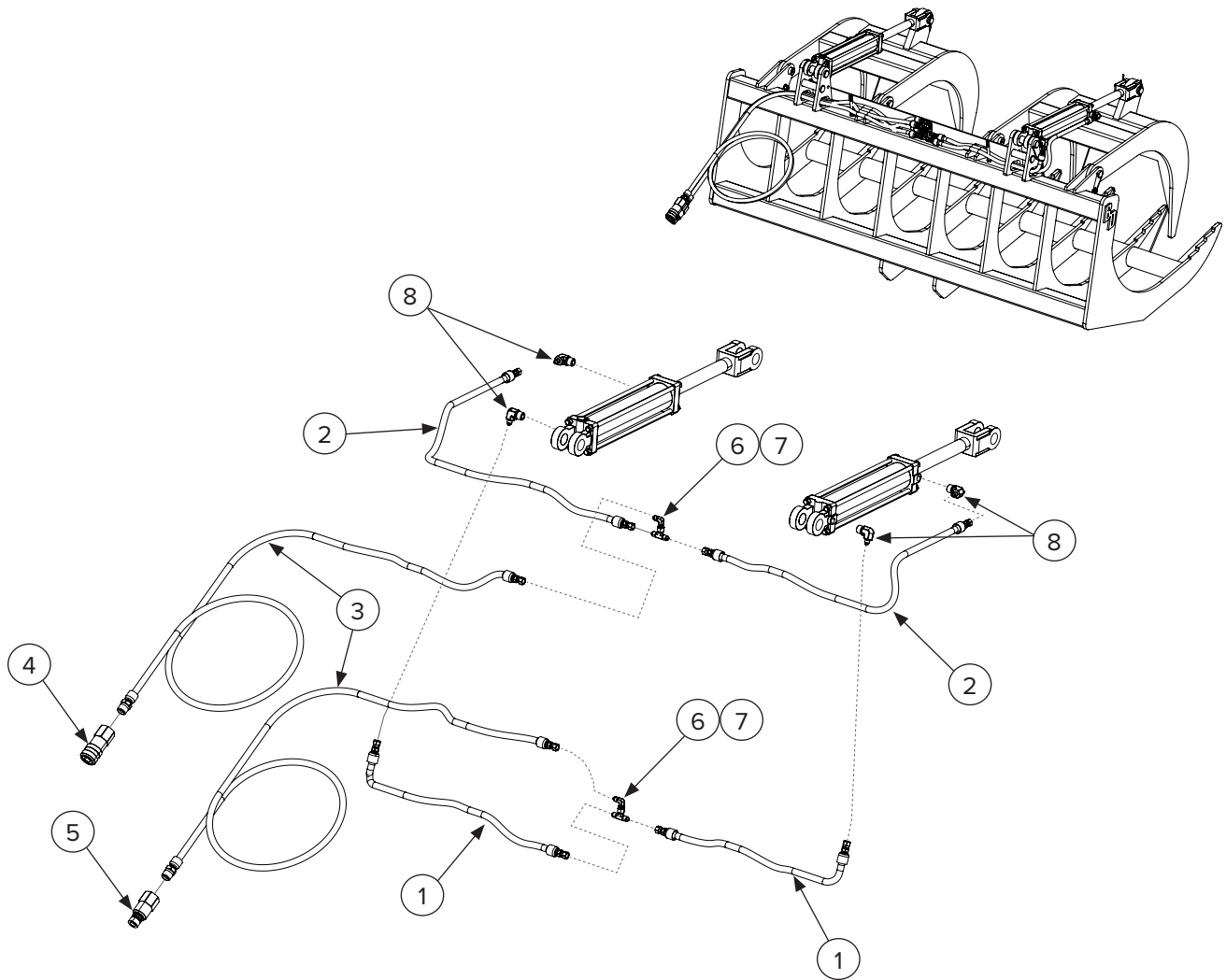
3. Parts

3.1 Detailed Parts List Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	208540	Hose cover	1
2	299625	Locknut - 0.375-16	2
3	206110	Hydraulic cylinder, 2" x 8" 2500PSI	2
4	208500	Top Clamp	2
5	208525	Rear cylinder pivot pin 1 x 4 1/4" with hardware	2
6	208530	Cylinder cover right side, HD	1
7	208535	Cylinder cover left side, HD	1
8	206105	Grapple pivot pin with grease fitting	4
9	299016	1/8" Steel grease fitting	4
10	299446	Hex head bolt, grade 8 3/8-16 x 3-1/4"	4
11	299725	Flat washer - 3/8	8
12	299625	Locknut - 0.375-16	4
13	207133	Cylinder Pin (includes Cotter Pin)	2
14	—	Cotter Pin	4
15	206040	60" Frame weldment for 106075	1
	206041	66" Frame weldment for 106080	
	206042	72" Frame weldment for 106090	

3. Parts

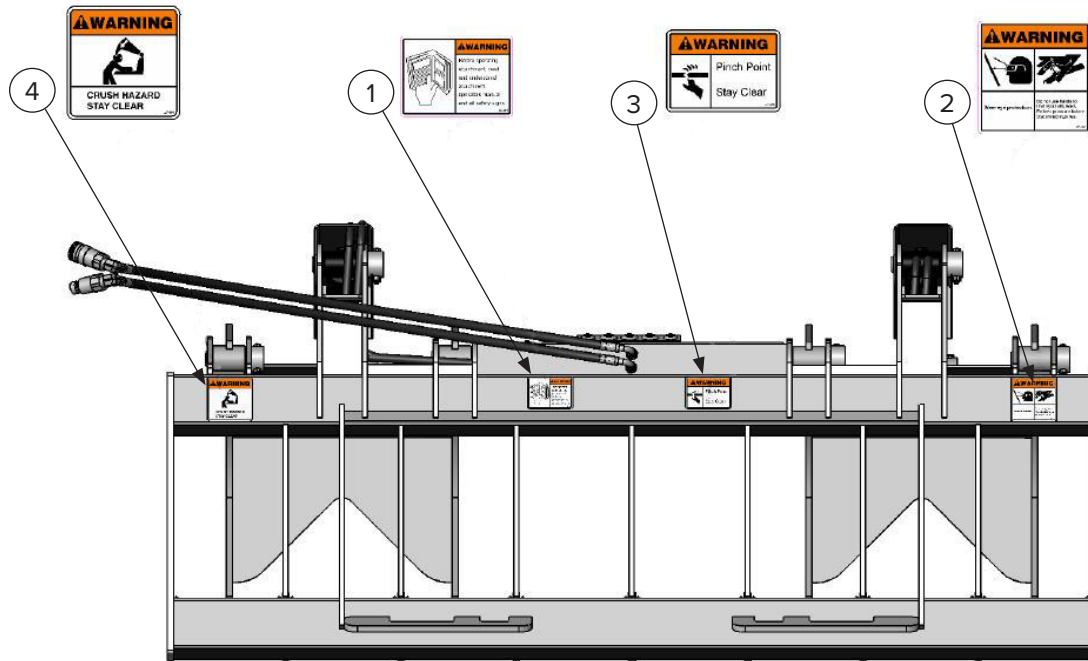
3.2 Hose Kit Parts Breakdown



ITEM	PART NUMBER	DESCRIPTION	QTY
1	224300	Short cylinder hose	2
2	224301	Long cylinder	2
3	224315	Machine side hose set with sleeve	1
4	224005	Female coupler 1/2 FF 1/2 NPT	1
5	224006	Male coupler 1/2 FF 1/2 NPT	1
6	208580	1/4", 37 degree JIC, Union Tee	2
7	295030-M04JIC-F04JIC	1/4" 37 degree, JIC, 90 degree, male to female swivel	2
8	208555	1/4" 90 degree elbow 37 degree JIC to 3/8" NPT	4

3. Parts

3.3 Decal Placement



ITEM	DESCRIPTION	QTY
1	Warning: Before Operating Read Manual	1
2	Warning: Wear Eye Protection; Relieve Hydraulic Pressure	1
3	Warning: Pinch Point Stay Clear	1
4	Warning Crush Hazard Stay Clear	1

Warning Decal 1	Warning Decal 2	Warning Decal 3	Warning Decal 4
<p>READ OWNERS MANUAL BEFORE OPERATING</p>	<p>HIGH PRESSURE FLUID HAZARD</p> <p>TO PREVENT SERIOUS INJURY OR DEATH</p> <ul style="list-style-type: none"> • RELIEVE PRESSURE ON SYSTEM BEFORE DISCONNECTING, ADJUSTING, REPAIRING • WEAR PROPER EYE AND HAND PROTECTION • DO NOT USE HAND TO SEARCH FOR LEAKS 	<p>WARNING</p> <p>Pinch Point Stay Clear</p> <p>LF-03</p>	<p>WARNING</p> <p>CRUSH HAZARD STAY CLEAR</p> <p>13-04</p>



Warranty

MANUFACTURER'S LIMITED WARRANTY

BLUE DIAMOND® ATTACHMENTS, a manufacturer of quality attachments, warrants new BLUE DIAMOND® ATTACHMENTS products and/or attachments at the time of delivery to the original purchaser, to be free from defects in material and workmanship when properly set up and operated in accordance with the recommendations set forth by BLUE DIAMOND® ATTACHMENTS, LLC.

BLUE DIAMOND® ATTACHMENTS liability for any defect with respect to accepted goods shall be limited to repairing the goods at a BLUE DIAMOND® ATTACHMENTS designated location or at an authorized dealer location, or replacing them, as BLUE DIAMOND® ATTACHMENTS shall elect. The above shall be in accordance with BLUE DIAMOND® ATTACHMENTS warranty adjustment policies. BLUE DIAMOND® ATTACHMENTS obligation shall terminate twelve (12) months for the Heavy Duty Root Grapple after the delivery of the goods to original purchaser.

This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the BLUE DIAMOND® ATTACHMENTS factory or authorized BLUE DIAMOND® ATTACHMENTS dealership or in any way so as in BLUE DIAMOND® ATTACHMENTS judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident beyond the company recommended machine rated capacity.

WARRANTY CLAIM

To submit a warranty claim, a claim must be filed with BLUE DIAMOND® ATTACHMENTS before work is performed. The BLUE DIAMOND® PRODUCT SUPPORT TEAM will advise repairs and applicable parts exchanges. Tampering with the failed part may void the warranty. This warranty does not include freight or delivery charges incurred when returning machinery for servicing. Dealer mileage, service calls, and pickup/delivery charges are the customers' responsibility.

EXCLUSIONS OF WARRANTY

Except as otherwise expressly stated herein, BLUE DIAMOND® ATTACHMENTS makes no representation or warranty of any kind, expressed or implied, AND MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO ITS MACHINERY AND/OR ATTACHMENTS ARE FIT FOR ANY PARTICULAR PURPOSE. BLUE DIAMOND® ATTACHMENTS shall not be liable for incidental or consequential damages for any breach or warranty, including but not limited to inconvenience, rental of replacement equipment, loss of profits or other commercial loss. Upon purchase, the buyer assumes all liability for all personal injury and property resulting from the handling, possession, or use of the goods by the buyer.

No agent, employee, or representative of BLUE DIAMOND® ATTACHMENTS has any authority to bind BLUE DIAMOND® ATTACHMENTS to any affirmation, representation, or warranty concerning its machinery and/or attachments except as specifically set forth herein.

This warranty policy supersedes any previous documents.

NOTE: Blue Diamond® Attachments is a trademark of BLUE DIAMOND® ATTACHMENTS



QUALITY | DEPENDABILITY | INTEGRITY

Blue Diamond® Attachments
4512 Anderson Road, Knoxville, TN 37918
888-376-7027