

MINI GRAPPLE RAKE

Operation and Maintenance Manual



*Register your
WARRANTY
within 30 days
of purchase*



888-376-7027 | BlueDiamondAttachments.com

Blue Diamond® Attachments

Owner Information

Thank you for your decision to purchase a Blue Diamond Mini Grapple Rake. 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 on right side, just forward of the attachment mounting plate.

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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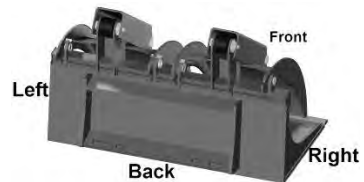
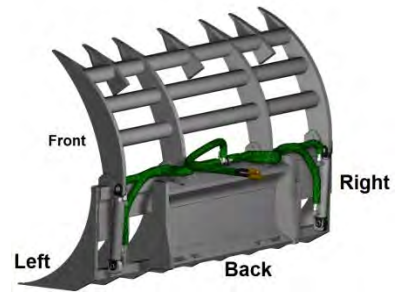
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Orientation





Serial Number Plate is Located on Top of Mounting Plate


Importance of Safety


Accidents can be very costly to human life and property. As the operator is the #1 safety device on all types of vehicles or equipment, it is important that the operator read, learn and know all safety recommendations for this product. The user is responsible to his


 Stop the engine on the skid steer and set the brake to avoid the implement rolling forward or backwards while you are exiting the prime mover.

 Store this implement in an area not frequented by children.

 Allow no riders on this attachment. Keep all bystanders clear of attachment during operation.

 Always replace worn, torn or missing safety decals before operating.

 Never operate the attachment when bystanders are within 10 feet (3 m) of the work area.


 Operate only during daylight or well-lit artificial light.

Skid Steer Requirements

Your grapple attachment must be connected to a skid steer with adequate horsepower and weight to provide satisfactory results. Tracked loaders will provide superior traction in ground engaging applications and wheeled loaders may provide the best option for above ground material handling applications.


The attachment plate on your grapple attachment will connect to the couplers on most major brand skid steer loaders. Do not modify the attachment plate on this attachment to fit older styles of attachment couplers on older machines. Contact your skid steer loader dealer to supply an updated coupler on an older skid steer to fit this attachment.

Your skid steer must also be equipped with an auxiliary circuit that is available on the loader arms and is controlled by a switch, pedal or handle inside the skid steer loader cab.

 CAUTION *Make sure your skid steer is in good working condition. Follow the operating instructions found in the manual that accompanied your skid steer. Failure to do so could result in Minor or Serious Injury.*


Unpacking Your Shipment

Your attachment arrives from the factory banded to a wooden pallet, and requires no final assembly before use.

 CAUTION *Careless removal of the shipping bands that secure the implement to the pallet could result in Minor or Serious Injury. Clear the area of all bystanders and stand to the side when cutting the bands with a pair of sheet metal shears.*

Using Your Implement

Connecting Attachment to Skid Steer

 DANGER *Never enter the area underneath the coupler or any part of the attachment when it is in the raised position to avoid an accident that will result in Death or Serious Injury.*

Verify that the hydraulic hoses are clear from the front of the attaching plate on the attachment and that the mounting plate is free from dirt and debris. When clear, move the skid

steer to proximity of attachment plate. Tilt skid steer coupler forward to align coupling point with the upper part on the attachment plate and raise the coupler slightly.



Connecting Coupler to Attachment

When the top edge of the coupler is seated in the top part of the coupler plate, roll the skid steer tilt function back until the attaching plate is flat against the skid steer coupler. Lock down the coupler levers. **Note:** If your skid steer is equipped with a hydraulically operated coupler, activate the coupler lock at this time.

○

PLEASE NOTE:

Attachment and Machine-side Couplings must be

FREE OF DEBRIS

BEFORE INSTALLING.

Failure to comply will void warranty.

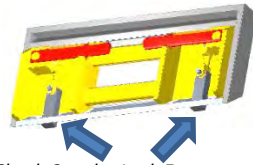
NOTICE *Wipe off any dirt or dust from the male or female hydraulic flat-face couplers with a clean rag before attaching hoses, to keep contaminants from entering the hydraulic system.*

Connect the attachment hydraulic hoses to the auxiliary supply couplers located on your skid steer loader lift arm.

Check the surrounding area for bystanders and clear them before starting the skid steer or attachment.

Before operating the attachment, always visually inspect and verify that the coupler lock pins are fully engaged

through the latch slots on the attachment plate.



Check Coupler Lock Engagement

Pre-Operation Walk-around Inspection

Before every use, it is important to perform a short inspection and certain maintenance on your grapple attachment.

	Item
✓	Check that all shields and guards are in place.
✓	Look for loose bolts and tighten them if necessary.
✓	Check that all safety decals are in place and can be read. Replace them if necessary.
✓	Take care of our environment. Repair any hydraulic leaks.

Grapple Attachment Controls

Your grapple attachment is designed to run off the skid steer loader auxiliary hydraulic system, with the additional grapple open & close function activated by a control switch, pedal or handle in the operator's cab. Consult your skid steer operator's manual for precise instructions on how to activate, reverse and neutralize the auxiliary circuit.

Height and tilt functions of the attachment are operated with the control handles or pedals in the cab. Consult your skid steers operator's manual for precise instructions regarding these functions.

Your skid steer may have a "float" function on the lowering circuit. When placed in the float position, the attachment will follow the contour of the ground being worked. This is especially helpful when back-dragging a new cut. See your skid steer's Operator's Manual for instructions about how to use the float on your skid steer.

If during your initial startup you realize the grapple function operates in the opposite direction that you prefer, you can change positions of the quick disconnect couplers on the attachment hoses to remedy your problem.

Before Using the Grapple the First Time

⚠ WARNING *Moving the attachment with bystanders in the area could result in Death or Serious Injury. Before moving the attachment or machine, always make sure the area is clear of bystanders.*

NOTICE *If this is your initial startup with this attachment on this machine, check the skid steer's hydraulic oil level and add oil, if necessary, before and after doing steps 1 & 2 below.*

After starting skid steer, lift the attachment 10" (254mm) off the ground surface:

1. With the skid steer engine RPMs just above idle, slowly engage the auxiliary hydraulic flow to the

grapple arm until the grapple arm(s) are fully open. Reverse the direction of the grapple arms until the grapple arm(s) are fully closed. Repeat this two more times to purge any air from the system.

2. Lower the attachment to the ground and shut off the skid steer's engine and exit the operator's compartment.
3. Check the skid steers hydraulic oil level, and add oil if necessary.
4. Inspect the grapple attachment's hydraulic plumbing for any noticeable leaks. Correct these leaks before continuing.

Getting Familiar with the Attachment

⚠ DANGER *Never operate the grapple arms when bystanders are within 10' (3 m) of your work area.*

⚠ CAUTION *Be cautious when operating on un-level ground surfaces. A machine roll over could result in Minor or Serious Injury. Always wear your seat belt when operating this type of machinery.*

Before starting the engine with this grapple attachment connected to the skid steer, make sure you are knowledgeable and comfortable with the operation of the auxiliary hydraulic control as outlined in the previous sections of this manual and that in the skid steer loader Owner's Manual.

When operating the grapple attachment, set the skid steer throttle at a speed that will produce the required flow, to the attachment and the other loader functions. If the skid steer is equipped with a foot throttle, use it to control engine speed and power being delivered to the

attachment. Refer to your skid steer manual or call your local skid steer dealer for additional help, if necessary.

To begin with, learn what the attachment looks like in a level position when you are seated in the skid steer. Knowing what a level implement looks like will help you with your attachment operation. The correct ground speed for using this attachment will depend on the application and conditions and usually can be monitored by sound and feel and depends on the material density. If the skid steer engine is bogging down because of taking too big of a “bite” with the attachment, it will be necessary to raise or decrease the load a little until the machine’s power can overcome the material load on the attachment.

Before Starting

⚠ WARNING *Before digging into any surface, always contact the “Diggers Hotline” to identify underground utilities to avoid an accident that could result in Death or Serious Injury to the operator or fellow workers.*

⚠ WARNING *Exposure to crystalline silica dust along with other hazardous dusts may cause serious or fatal respiratory disease. It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause a high level of dust.*

Inspect the area to be worked and make sure it is free of any utilities, rocks, fence posts, or any other objects that you do not want to move.

Determine a safe and efficient duty cycle pattern before the start of the job.

Grapple Attachment Tips

⚠ CAUTION *Never operate this attachment when bystanders are in proximity of the work area that could result in Minor or Serious Injury by contact with the machine, attachment or flying debris.*

1. Always inspect the work area before starting the job. Locate and mark any utilities, steel posts, rocks or any other objects that could be damaged or would damage the blade during operation. Never assume the work area is safe and never skip the inspection part before start of operation.
2. Operate at a safe slow-paced speed that will allow you to watch the area ahead and behind the attachment & loader. Since about half of your duty cycle may be in reverse, look behind you and/or utilize your mirrors when backing up. Verify that your backup alarm is working properly to warn others when you are in reverse, but never think that the alarm replaces your responsibility to visually check what’s behind you .
3. Attachment control is the most important element to getting a good, steady cut. Overloading the attachment will only result in spinning the tracks or tires and will make unwanted ruts. Overloading the attachment will also necessitate raising the implement to off load some of the resistance occurring by the material. When you raise the attachment, you will create an unlevelled surface that will

increase as the front of the prime mover drives over the rise of the ground surface.

4. If you lift too heavy a load with your attachment, you may raise the rear of your skid steer, and further reduce your tractive power available to move the load.
5. Before beginning your forward motion with the attachment, stop the skid steer and make any final adjustments to the attachment in terms of height & tilt.
6. Center your load on the attachment. Estimate the load center and pick it accordingly. If the load feels unbalanced when you lift it, reposition your grab and retry the lift. An unbalanced load could upset your skid steer.



Center load on attachment

7. *After loading your attachment and clamping the arms over the load, roll the attachment back and retighten the clamp arm pressure. When rolling back the attachment, the load will settle and require some additional clamping pressure to secure the load.*

⚠️ WARNING *When lifting a load of brush or trees, make sure all ends are not tangled with standing trees that could cause the center of gravity to be compromised, resulting in a rollover that could cause Death or Serious Injury.*

8. *The grapple clamp should not be used for pushing or pulling down trees or any type of structure. Its*

purpose is to clamp the load so it can be moved to a different spot on the job site.

9. *To save some service work and down time, always pay attention that tree branches or roots do not poke through past the attachment arms and damage any hydraulic parts or even enter the cab area.*
10. *Be careful that a branch or root doesn't "whip" back at the skid steer. Wear safety glasses to prevent dirt getting in your eyes.*

⚠️ WARNING *Use extreme caution when working around low hanging electrical lines. Do not raise the attachment in an area where there are low electrical lines to prevent an accident that could result in Death or Serious Injury.*

11. Keep your distance from any type of utility, whether underground or in the air.
12. Always clean the quick-disconnect couplers before connecting them to the skid steer. Utilize plastic or metal caps to protect the ends when not being used. Tuck the quick disconnect hoses somewhere in the attachment where they will be out of the dirt and will not be driven over.

Maintaining your Attachment

Before Every Use

Check that all fasteners (nuts, bolts, pins, keepers) are in their right place and are tight.

Inspect and replace any worn, torn or missing safety decals.

Investigate the location of any oil leaks and repair.

Lubricate all pivot joints with #2 lithium grease.

Every Week

Check the condition of the cutting edge and/or tooth points. Order parts if the cutting edge or points are becoming worn and replace as soon as possible.

After Every Season

Inspect the implement for any loose or worn parts that may need to be replaced prior to the next season.

Visually inspect the cutting edge. Replace, if necessary.

Clean, sand & repaint any area that looks worn or scratched to prevent further rusting. Use an equipment-paint found at your local hardware store or building center.

Replace any warning decals that have been lost or damaged.

Store your implement in a shed or cover with a water-proof tarp to protect it from the weather. Store in an area not frequented by children.

Cutting Edge Removal & Replacement

⚠ WARNING *To avoid an accident that could result in Death or Serious Injury, never find yourself in a position where any body part is located under an unsupported blade or frame when servicing this attachment.*

⚠ WARNING *Hazardous dust can be generated if painted surfaces are heated or welded and could result in death or Serious Injury. Remove*

paint before welding and always make repairs in a well-ventilated area and wear an approved respirator.

⚠ CAUTION *Cutting edges can be very heavy and could cause Minor or Serious Injury if mishandled. Always wear protective gloves and footwear.*




1. Weld-on cutting edge replacement is not a task for most machinery operators and should be referred to a welding shop that possesses the proper equipment, knowledge and experience.
2. Replacement cutting edges are available from your CID dealer.

Hydraulic System

⚠ WARNING *A small stream of oil from a pinhole leak could penetrate your skin if contacted. To avoid an accident that could result in Death or Serious Injury, never use your hand or other body parts in an attempt to locate a hydraulic leak.*

NOTICE *Always release the hydraulic system pressure from the hydraulic circuits prior to removing the attachment or any hydraulic system service work.*

Hardware Torque

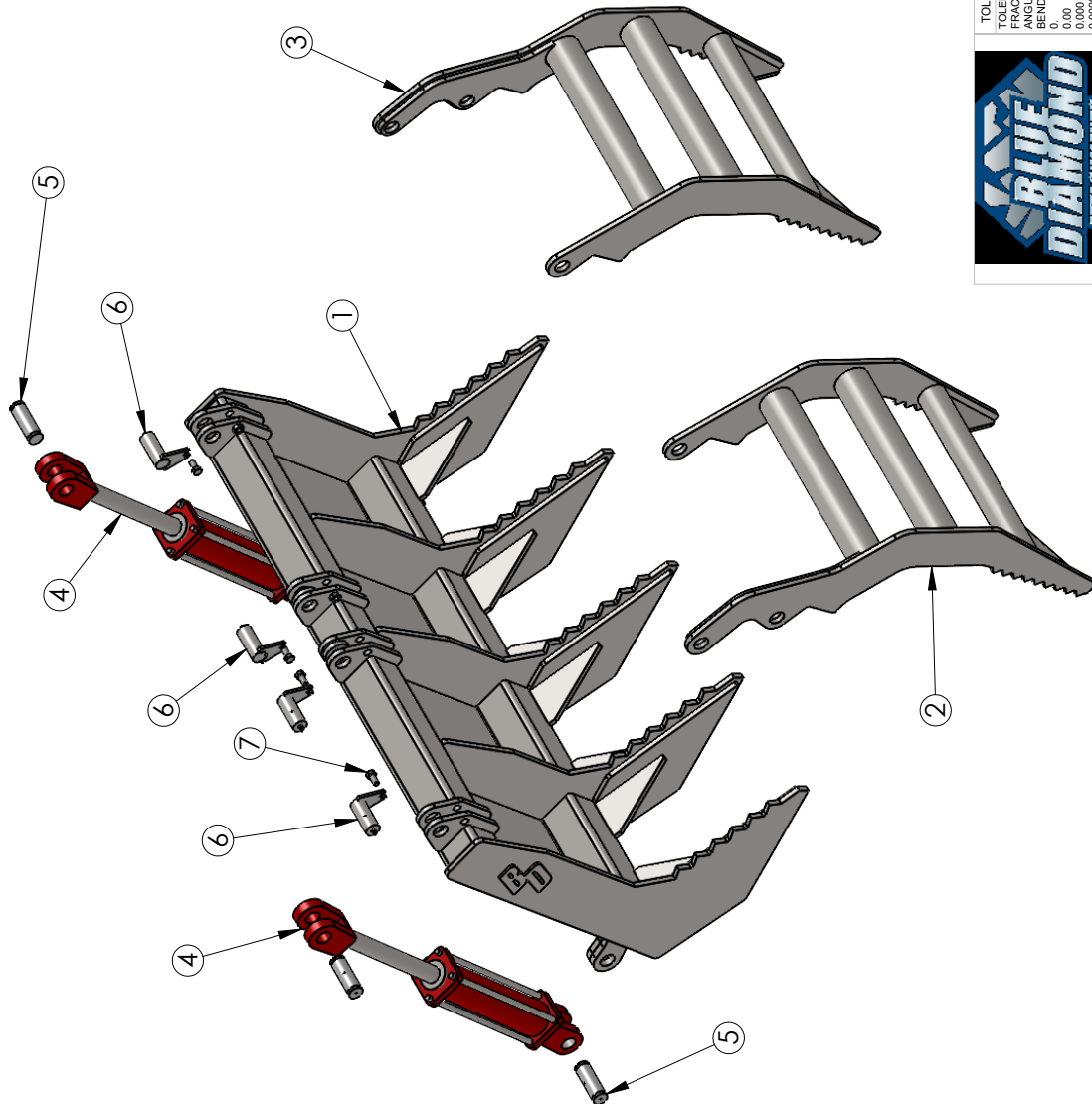
	Grade 2 lb-ft 	Grade 5 lb-ft 	Grade 8 lb-ft 
¼"	66*	8	12
5/16"	10	17	20
3/8"	20	30	45
½"	45	75	110

¾"	160	260	380
7/8"	190	400	600
1"	-	580	900

* = inch pounds

Higher torques require the use of a torque multiplier.
All values are "dry" torques.

ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	Mini Grapple Rake Frame	207105	1
2	Right Side Top Tine	207305	1
3	Left Side Top Tine	207306	1
4	2" x 8" Ag Cylinder	207132	2
5	Ag Cylinder Pin	207133	4
6	Pin and Tab Assembly	207134	4
7	3/8" x 16 Bolt	299423	4

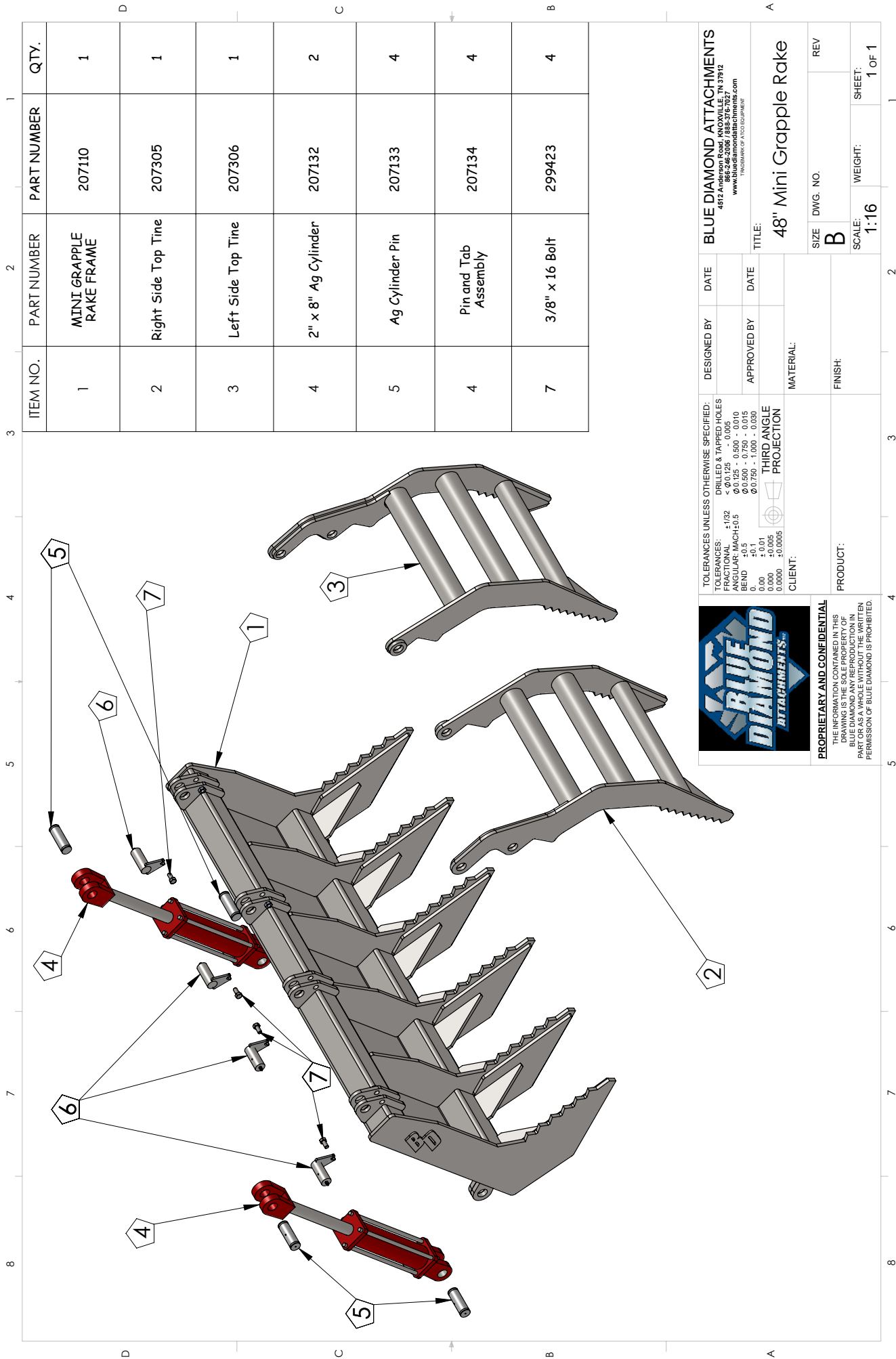


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TOLERANCES UNLESS OTHERWISE SPECIFIED:
 TOLEANCES: ±.032
 DRILLED & TAPPED HOLES
 FRACTIONAL: ±.00125 - 0.005
 ANGULAR: MACH±0.5
 BEND: ±0.1
 0.000 ±0.005
 0.0000 ±0.0005
 CLIENT:

DESIGNED BY: DATE: MATERIAL:
 APPROVED BY: DATE: FINISH:

BLUE DIAMOND ATTACHMENTS
 4812 Anderson Road, Box 1142, TN, 37912
 www.bluediamondattachments.com
 TITLE: Mini Grapple Rake
 SCALE: 1:24
 WEIGHT: 1 of 1
 SHEET: 1 of 1



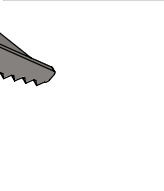
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1	MINI GRAPPLE RAKE FRAME	207110	1
2	Right Side Top Tine	207305	1
3	Left Side Top Tine	207306	1
4	2" x 8" Ag Cylinder	207132	2
5	Ag Cylinder Pin	207133	4
6	Pin and Tab Assembly	207134	4
7	3/8" x 16 Bolt	299423	4

BLUE DIAMOND ATTACHMENTS
 4812 American Blvd., TN 37912
 866-246-2006 / 888-376-7072
www.bluediamondattachments.com
TRADEMARK OF ATTACHMENT

DESIGNED BY: _____ DATE: _____
 APPROVED BY: _____ DATE: _____
 MATERIAL: _____
 FINISH: _____

TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL: +1/32 -0.005
 ϕ 0.125 - 0.800 - 0.010
 ANGULAR: MACH±0.5
 BEND ±0.5
 0.00 ±0.01
 0.000 ±0.0005
 0.0000 ±0.00005

DRILLED & TAPPED HOLES
 ϕ 0.125 - 0.800 - 0.010
 ϕ 0.500 - 0.750 - 0.015
 ϕ 0.750 - 1.000 - 0.030
 THIRD ANGLE
 PROJECTION
 CLIENT: _____



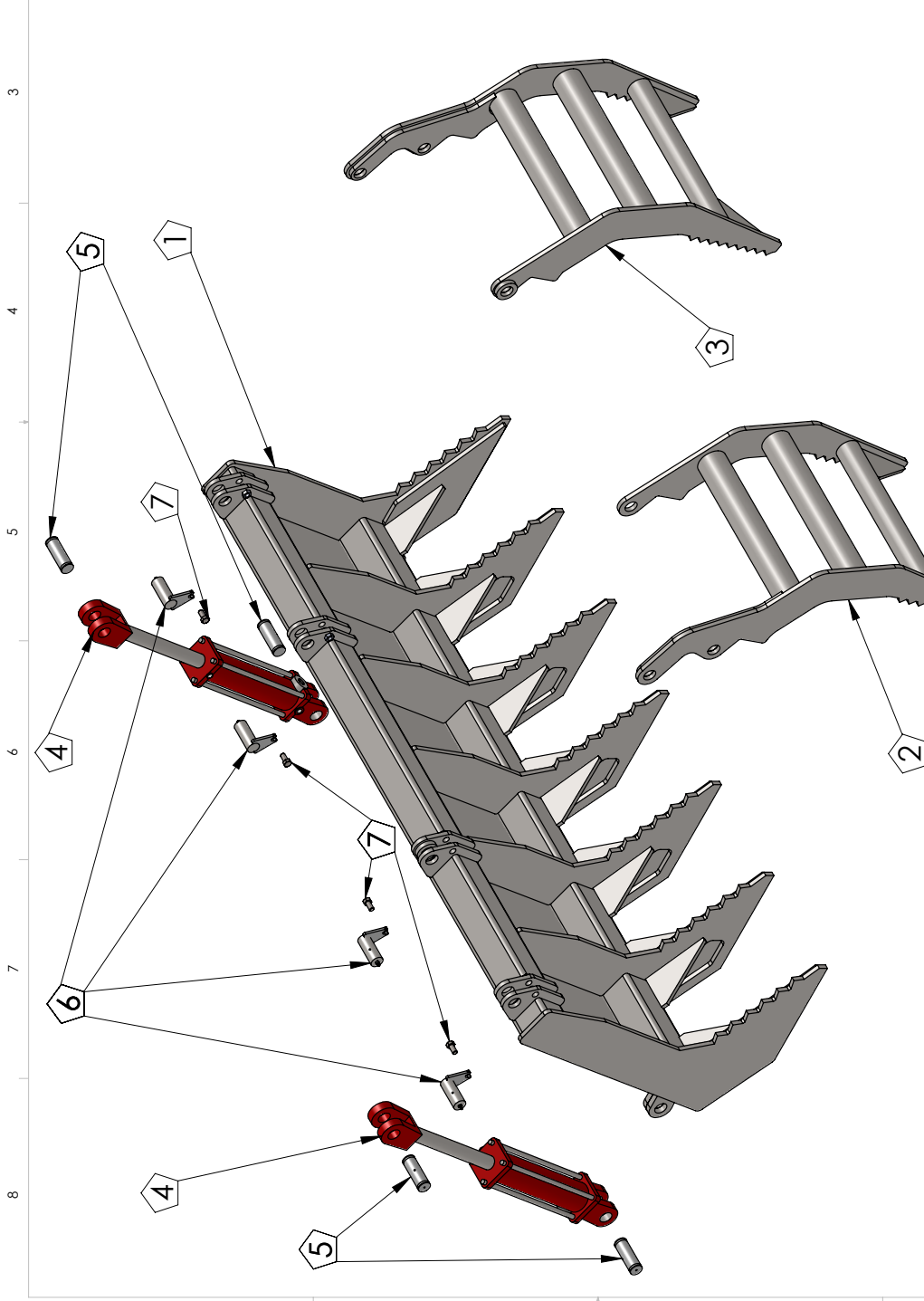
SIZE DWG. NO. _____ REV _____
 SCALE: 1:16 WEIGHT: _____ SHEET: 1 of 1

PRODUCT: _____

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DATE: _____

ITEM NO.	PART NUMBER	PART NUMBER	QTY.
1	MINI GRAPPLE RAKE FRAME	207120	1
2	Right Side Top Tine	207305	1
3	Left Side Top Tine	207306	1
4	2" x 8" Ag Cylinder	207132	2
5	Ag Cylinder Pin	207133	4
6	Pin and Tab Assembly	207134	4
7	3/8" x 16 Bolt	299423	4



BLUE DIAMOND ATTACHMENTS
 4812 Avon Blvd. #30111 • Avon, MA 01901
 986-246-2067 / 988-276-7072
 www.bluediamondattachments.com
 TRADEMARK OF ACD COMPANY

DESIGNED BY: _____ DATE: _____
 APPROVED BY: _____ DATE: _____

TITLE: **60" Mini Grapple Rake**

SIZE: _____ DWG. NO. _____ REV. _____
 SCALE: **1:24** WEIGHT: _____ SHEET: **1 OF 1**

TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONAL: ±1/32
 DECIMAL: ±0.125 - 0.005
 ANGULAR: MACH±0.5
 BEND ±0.5
 HOLE ±0.01
 THIRD ANGLE PROJECTION

DRILLED & TAPPED HOLES
 $\phi 0.125 - 0.500 - 0.010$
 $\phi 0.500 - 0.750 - 0.015</math>
 $\phi 0.750 - 1.000 - 0.030</math>$$

CLIENT: _____

PRODUCT: _____

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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 mini grapple rake 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 return authorization from BLUE DIAMOND ATTACHMENTS must be obtained. The failed part may then be returned. 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, LLC.



QUALITY | DEPENDABILITY | INTEGRITY

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