

3-POINT HITCH

ALL AMERICAN DISC

OPERATOR'S MANUAL



DIAMONDMOWERS.COM



PRODUCT INFORMATION

Record the model and serial number of your unit here. When calling for warranty, service or parts, you may be asked to provide this information, in order to ensure fast, accurate service.

MODEL: All American Disc

SERIAL NUMBER: _____

Any failure to read, understand and follow the instructions found in this operator's manual could lead to serious injury. Operators who choose to operate this equipment without following instructions, or who choose to operate this equipment in a manner inconsistent with the recommendations set forth in this manual, do so at their own risk and assume the risk of injury. Diamond Mowers will not be liable for an owner or operator's loss, damage, or injury due to the misuse of the equipment, failure to understand the inherent risks, or inability to properly operate the equipment.

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— **WELCOME!** —

Thank you for choosing Diamond Mowers, and welcome to your All American Disc. Before you begin operating, we encourage you to look through this manual to review the proper maintenance and operating techniques that will keep you, and your equipment, safe – while ensuring you the most productive road grader in the market.

We have nothing but respect and admiration for you. Our job at Diamond is to provide you with the toughest, most reliable and safest equipment that will allow you to do your job better. That also means being there when you need us.

CONTACT US:

Parts: 888.960.0361 | parts@diamondmowers.com

Warranty / Service: 888.960.0364 | warranty@diamondmowers.com

Main Office: 800.658.5561 | 605.977.3300

Website: www.diamondmowers.com | **Email:** info@diamondmowers.com

Your time is important to us.

We guarantee that Genuine Diamond Parts will ship within 72-hours of the order being placed or the parts and shipping are free.

Your satisfaction is guaranteed.

If you are not completely satisfied with your new Diamond in the first 30-days, we will buy it back. No questions asked.

Thanks again for choosing Diamond.

If at any time your needs are not being met by our team, please feel free to call me direct.

A handwritten signature in black ink, appearing to read 'Tim Kubista', with a stylized flourish at the end.

Tim Kubista
VP Sales & Marketing
651.955.6665

PRODUCT REGISTRATION

OWNER REGISTRATION

In your welcome packet you should have received a warranty registration form. Complete and return this form to our main office. It's a self-mailer, so no postage is required.

If you'd rather complete this info online, go to:

<http://info.diamondmowers.com/register-my-product>

Returning your registration information to Diamond will help us process any warranty claims quickly and efficiently – so you can get back to work, fast.

TRANSFERRED OWNERSHIP

If you have acquired this All American Disc from a previous owner, we encourage you to register your equipment online. By registering your Diamond Mowers unit, you'll stay informed on product advancements, offers and service alerts.

Register by going to: <http://info.diamondmowers.com/register-my-product>

We honor our equipment's warranty from the date it was put into service, no matter who's in charge of running it.

For any questions, contact our Warranty / Service team at:

888.960.0364 or 605.977.3300

warranty@diamondmowers.com



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INTENDED USE

This attachment is designed to be used for the grading of gravel road shoulder applications.

This includes:

- Removing berms along the roadside edge.
- Reclaim gravel lost during grading.
- Removing clumps of rooted material along the transition of road to ditch.
- Contouring asphalt shoulders.

This attachment should only be used in an area free of obstructions and bystanders. Any use on non-vegetative material, or in an area that is not clear of persons and property, is strictly prohibited. Any use outside of the aforementioned application is considered contrary to its intended use. Any damage that may occur as a result of misuse will void warranty as stated in Diamond Mowers' warranty policy.

NOTICE

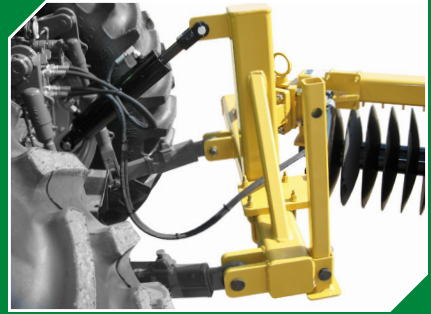
Do not operate this unit without first reading the safety precautions and operating instructions in this manual.

TAKE A LOOK AROUND



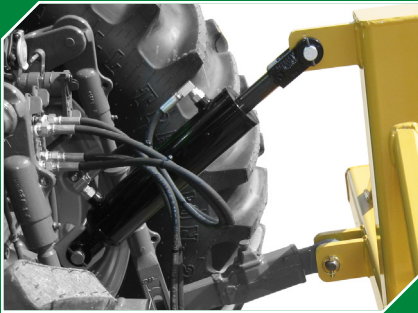
DISC HOUSING

The disc housing contains (14) 22" (559mm) hardened steel convex discs, for long life with superior performance.



HITCH FRAME

The unit includes an easy to mount hitch frame, compatible with all category II 3-Point hitches.



PITCH CYLINDER

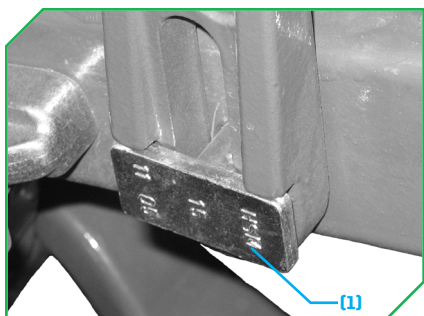
Standard equipment is a hydraulic cylinder that controls the pitch of the disc housing, allowing the operator to control the angle and depth of the cutting discs for optimum performance.



SWING CYLINDER (OPTIONAL)

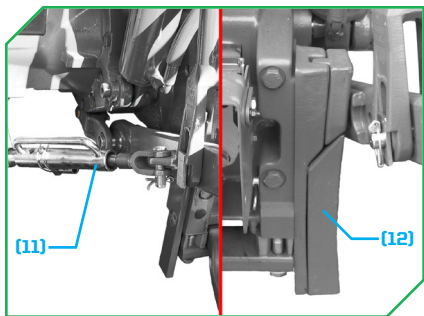
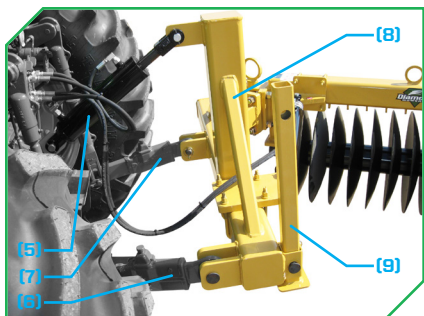
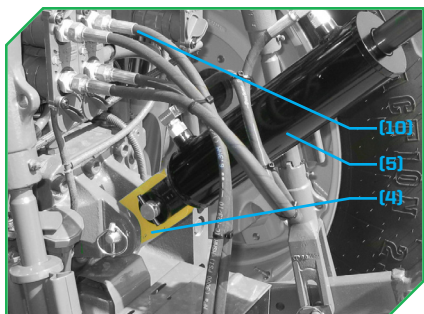
An optional swing cylinder is available; allowing the operator to swing the disc housing in for storage and transport, or out for cutting operations.

GETTING STARTED

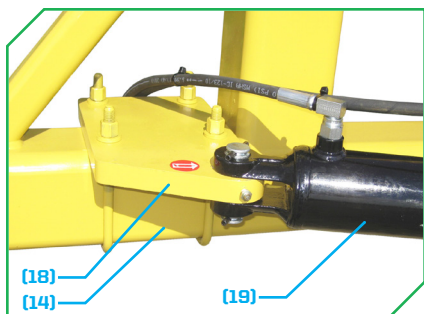
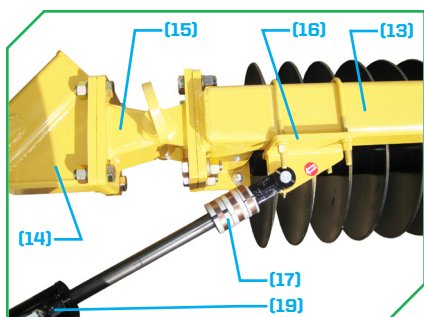


MOUNTING THE DISCS

Reference the tractor's operator manual for information on adjusting the draft links⁽¹⁾ and anti-sway bars/spacers⁽²⁾⁽³⁾ (if present) on the tractor's 3-Point hitch. This unit requires a Category II hitch.



- Adjust the 3-Point hitch draft links⁽¹⁾ to the fixed (non-floating) position.
 - **NOTE:** Draft links vary in appearance for various tractor models (if present).
- Replace the factory 3-Point upper hitch link with the cylinder link⁽⁴⁾.
- Mount the pitch cylinder⁽⁵⁾ to the cylinder link⁽⁴⁾ with its hardware.
 - **NOTE:** Reference the parts pages for additional clarification.
- Connect draft beams "A"⁽⁶⁾ and "B"⁽⁷⁾ and the pitch cylinder⁽⁵⁾ to the hitch frame⁽⁸⁾ with the QD pins and lynch pins.
- Raise the stand⁽⁹⁾ and secure it in place with its pin and lynch pin.
 - **NOTE:** lower the stand when removing the All American Disc from the tractor.
- Connect the hydraulic hoses⁽¹⁰⁾ to the tractor's auxiliary remotes.
- Adjust the 3-Point hitch anti-sway bars/spacers⁽¹¹⁾⁽¹²⁾ to minimize horizontal sway of the discs.
 - **NOTE:** Anti-sway bars/spacers vary in appearance for various tractor models (if present).



MOUNTING THE SWING CYLINDER

The swing cylinder is **OPTIONAL**, and may not be present. Reference the parts pages in this manual for additional clarification.

- Unbolt the disc housing ⁽¹³⁾ from the hitch frame ⁽¹⁴⁾.
- Mount the swivel assembly ⁽¹⁵⁾ between the disc housing ⁽¹³⁾ and hitch frame ⁽¹⁴⁾.
- Mount the base anchor ⁽¹⁸⁾ to the hitch frame ⁽¹⁴⁾.
- Mount the base end of the swing cylinder ⁽¹⁹⁾ to the base anchor ⁽¹⁸⁾.
- Swing the disc housing ⁽¹³⁾ until the swivel assembly ⁽¹⁵⁾ is straight.
- Mount the rod anchor ⁽¹⁶⁾ to the disc housing ⁽¹³⁾.
 - **DO NOT** tighten the hardware securing the rod anchor ⁽¹⁶⁾ to the disc housing ⁽¹³⁾ at this time.
- Connect the rod end of the swing cylinder ⁽¹⁹⁾ to the rod anchor ⁽¹⁶⁾.
- Extend the swing cylinder ⁽¹⁹⁾ rod to full extension.
 - Keep the disc housing ⁽¹³⁾ in its straight orientation, and allow the rod anchor ⁽¹⁶⁾ to slide down the length of the disc housing ⁽¹³⁾ as needed for the swing cylinder ⁽¹⁹⁾ rod to be at full extension.
- Secure the rod anchor ⁽¹⁶⁾ to the disc housing ⁽¹³⁾. Place the spacers ⁽¹⁷⁾ onto the swing cylinder ⁽¹⁹⁾ shaft.

OPERATING THE ALL AMERICAN DISC

Before you operate, note that the primary responsibility for safety on this equipment falls to the operator. Only trained individuals who have read and understood this manual should operate this unit.

If any portion of this manual is not understood, contact:
Diamond Mowers' Service/Warranty at 888.960.0364 or 605.977.3300.

SAFETY TIPS

Be sure to read all warnings carefully. They are included for your safety, and for the safety of others working with you.

NOTICE

Indicates a property damage hazard *ONLY*, no *PERSONAL* injury.

CAUTION

Indicates where *MINOR* injury *COULD* result if instructions are not followed.

WARNING

Indicates where *SERIOUS* injury or death *COULD* result if instructions are not followed.

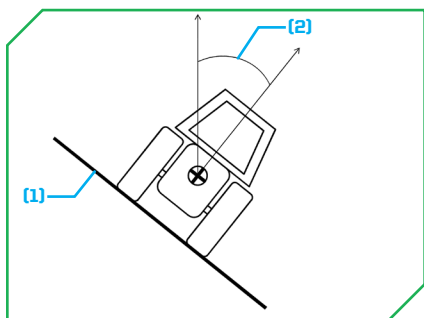
DANGER

Indicates where *SERIOUS* injury or death *WILL* result if instructions are not followed.

- Always wear personal protective equipment (safety glasses, goggles, etc.), when operating.
- Operate only from the operator's station.
- Clear the work area of obstructions and safety hazards.
- Bystanders must keep a distance of 300ft/100m from the unit when operating.
- Discs are always sharp and can cause injury, even when not in motion.
- **DO NOT** use extremities to dislodge debris from the cutting discs.

CONTINUED ON NEXT PAGE

- Hydraulic fluid is hot and will heat any exposed steel, hoses, motor, or spindle in its proximity.
- Make certain hoses are out of the way and will not snag on vegetation and debris.
- Be certain to come to a complete stop and all motion is ceased before exiting the cab.



- **EXTREME CAUTION** should be used when operating on slopes (1) greater than 25° (2). It is the operator's responsibility to properly counter-balance the vehicle and machine to prevent rollover.



STOWED POSITION

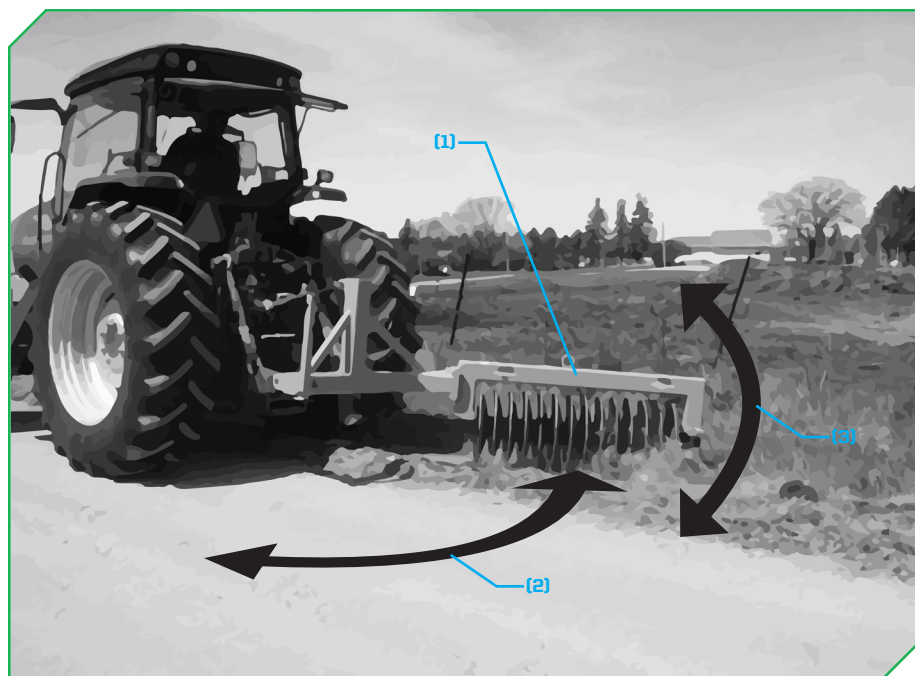
When transporting Diamond's All American Disc between operations, make sure to protect it from collisions and accidental damages by placing it in the stowed position. Failure to place the head in its stowed position could result in structural damage.

WARNING

Contact with the cutting discs while the All American Disc is in operation can result in serious injury or death.

OPERATING THE ALL AMERICAN DISC

DISCING



Use to reclaim road shoulder material.

- Start the tractor and raise the engine RPM's to operating speed.
- Extend the optional swing cylinder (if present) until the disc housing⁽¹⁾ is at full extension⁽²⁾.
- Use the pitch cylinder to adjust the pitch⁽³⁾ of the cutting discs.
 - The pitch of the cutting discs should allow the rearmost disc to enter the soil before the lead disc when the discs are lowered into the soil.
 - **DO NOT** exceed a maximum of 15° difference in height between the rearmost and lead cutting disc.
- Lower the cutting discs into the ground, but do not exceed 1" (25mm) cut depth.
 - **DO NOT** cut sod with the lead blade! This indicates either there is not enough pitch or the cutting depth is too deep, and will result in peeling large clumps of sod; this is undesirable. Cutting is accomplished with the other blades.
 - Adjust your pitch as needed to prevent cutting with the lead disc.

CONTINUED ON NEXT PAGE

-
- Begin discing the road shoulder at a steady pace (10MPH/16KMH) maximum for gravel roads, less for hard surfaced roads.
 - Keeping the speed even and constant will allow the cutting discs to feather the material evenly.
 - It is recommended to allow the material to dry for a minimum of two to three days, longer if there is precipitation, before discing. Dry material grades easier than wet material.
 - A roller will help on hard surfaced road shoulders. It is suggested to disc, roll, grade, and then do a final roll for best results on hard surfaced road shoulders.
 - Always grade after the first pass of the discs.
DO NOT make multiple passes of the cutting discs and then attempt to grade; there will be too much material to grade effectively.

NOTICE

Lowering the cutting discs too deep into the soil can damage the road shoulder, and can cause damage to the cutting discs, housing, and hitch frame.

For more tips, visit us online at www.DiamondMowers.com

MAINTENANCE

Regular maintenance will make certain your unit stays productive and retains a long operating life. The following chart represents the minimum intervals recommended for inspection and maintenance.

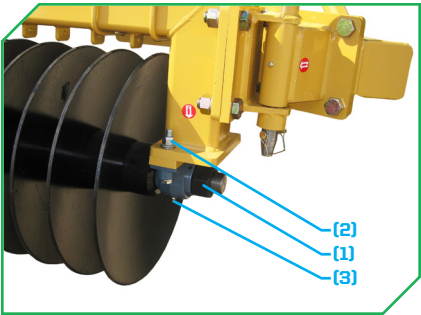
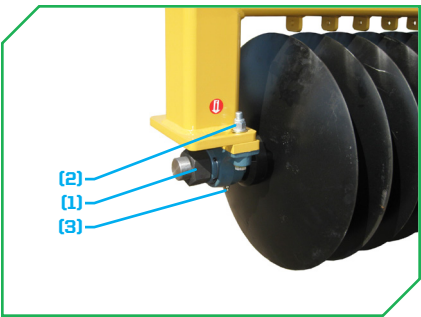
MAINTENANCE INTERVALS

PROCEDURE	10 HOURS/DAILY
BEARINGS	Inspect/Grease
HITCH FRAME	Inspect
SWING CYLINDER (OPTIONAL)	Grease
SWIVEL	Grease

When replacing parts, use *Genuine Diamond Parts. Guaranteed to ship within 72-hours of your order being placed, or the parts and shipping are free.*

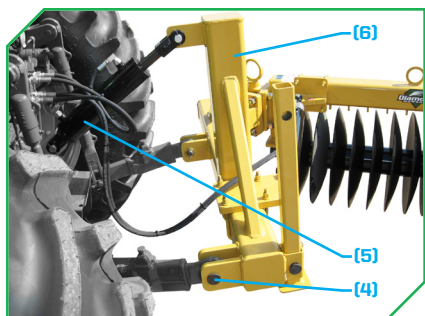
Call: 888-960-0361 or 605.977.3300 | **Email:** parts@diamondmowers.com

Order online: www.diamondmowers.com



BEARINGS

- Inspect the hex nuts (1) on the disc axle for loosening every 10 hours or daily.
 - If hex nuts (1) are loose, torque them with an impact wrench to 1500ft-lbs (2034Nm), or until the discs are “ringing” from the impact wrench.
- Inspect the mounting hardware (2) for the axle bearings for loosening every 10 hours or daily.
 - If mounting hardware (2) are loose, torque them to 240ft-lbs (325Nm).
- Grease the zerks (3) on the axle bearings until grease comes out around the bearing axle bosses every 10 hours or daily.
 - Use #2 lithium based grease.

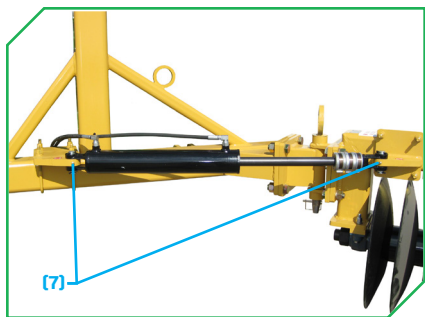


HITCH FRAME

- Inspect the hitch frame ⁽⁶⁾ every 10 hours or daily before using the implement.

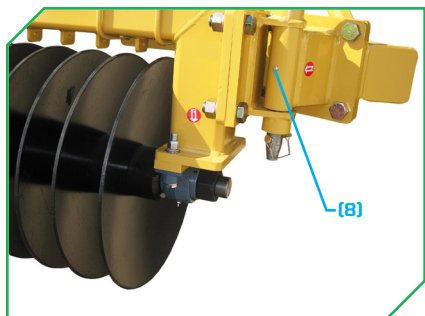
Check the following:

- Quick disconnect pins ⁽⁴⁾ and their lynch pins.
- Pitch cylinder ⁽⁵⁾, hardware, and connections are in good repair.
- Hitch frame ⁽⁶⁾ is in good repair.
 - No stress cracks.
 - No bent frame or components.
 - No loosened hardware.



SWING CYLINDER

- **OPTIONAL** feature.
- Grease the zerks ⁽⁷⁾ every 10 hours or daily on the swing cylinder anchors until grease comes out around the swing cylinder/anchor connections.
 - Use #2 lithium based grease.



SWIVEL

- Grease the zerk ⁽⁸⁾ every 10 hours or daily on the swivel until grease comes out around the swivel bosses.
 - Use #2 lithium based grease.

MAINTENANCE

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TROUBLESHOOTING

PROBLEM	POTENTIAL CAUSE	SOLUTION
Disc Will Not Lift	Hydraulic cylinder lift lines are not connected	Connect the hydraulic cylinder lift lines as instructed in this operator's manual.
	Hydraulic cylinder or hose leaks	Tighten hose connections. Repair leaky cylinders and hoses.
	Hydraulic cylinder faulty	Repair or replace faulty cylinder.
	Tractor 3-Point hitch not working	Reference tractor operator manual for troubleshooting the 3-Point hitch system.
PROBLEM	POTENTIAL CAUSE	SOLUTION
Excessive Vibration	Tractor 3-Point hitch lower draft beam float links set to float (if equipped)	Place the tractor's 3-Point hitch lower draft beam float links to their fixed position.
	Loose hardware	Torque all hardware to the recommended torque specifications for that hardware.
	Cutting blades are employed too deep, or at the wrong pitch	Verify the cutting blades are being employed as recommended in the operator's manual.
	Cutting assembly is damaged or unbalanced	Replace damaged blades. Remove any debris (wire, etc.) entangling the cutting assembly.

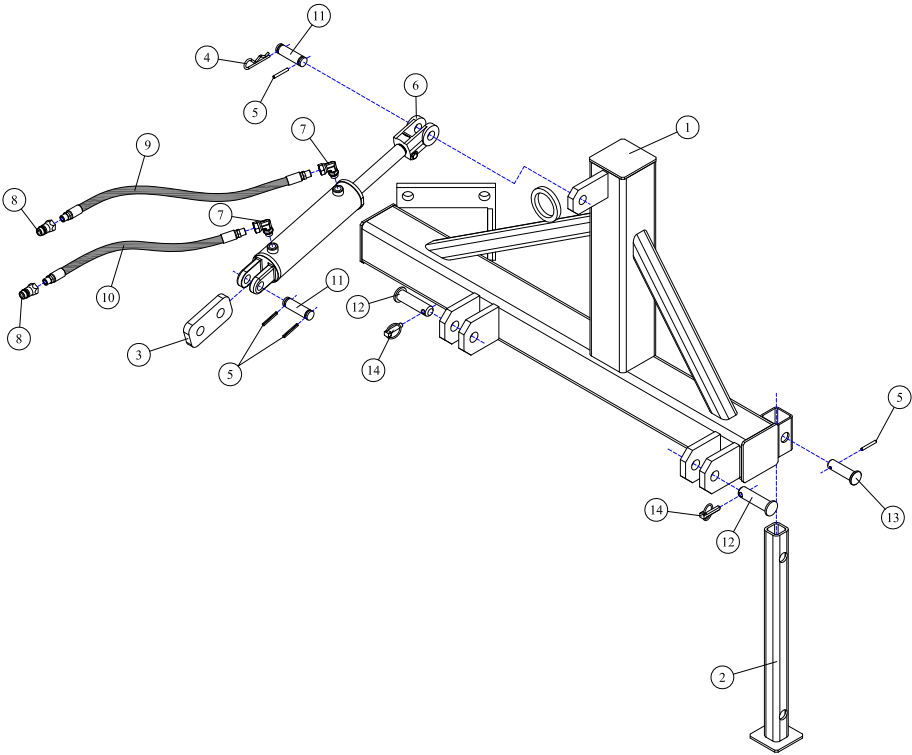
For any questions, contact our Warranty / Service team at
888.960.0364 or 605.977.3300

TROUBLESHOOTING

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PARTS BOOK

HITCH FRAME, CATEGORY II 3-POINT
All American Disc

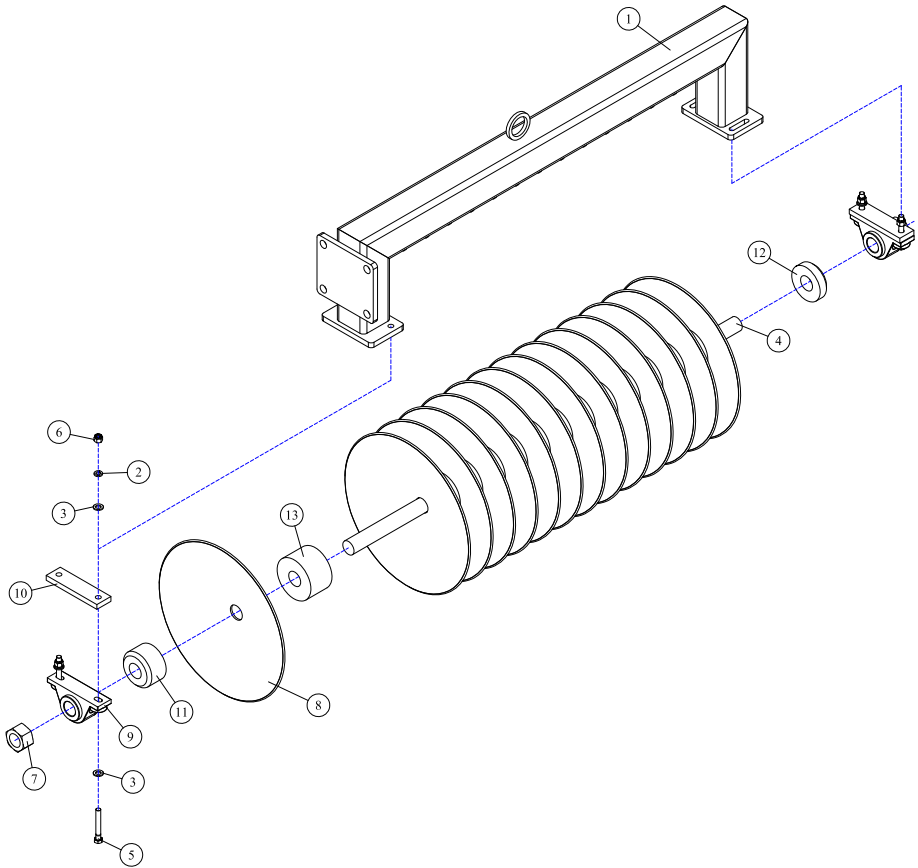


REF#	PARTS DESCRIPTION	REQ	PART #
1	3-POINT FRAME	1	1014
2	3-POINT STAND	1	1020
3	CENTER LINK BRACKET	1	1028
4	3/16 R-CLIP	1	11-2001
5	ROLLPIN	4	11-2005
6	3 X 10 WELDED CYLINDER	1	14-0001
7	1/2ADJ-OR X 1/2FPX-90DEG	2	21-1119

REF#	PARTS DESCRIPTION	REQ	PART #
8	1/2 MALE QUICK COUPLER	2	21-2119
9	HOSE 1/2 X 36 (1/2MP X 1/2MP)	1	21-2702
10	HOSE 1/2 X 24 (1/2MP X 1/2MP)	1	21-2706
11	CLEVIS PIN	2	27-0004
12	3-POINT PIN	2	27-0016
13	STAND PIN	1	27-0019
14	LYNCH PIN	2	27-1005

DISC HOUSING, GANG DISC ASSEMBLY

All American Disc

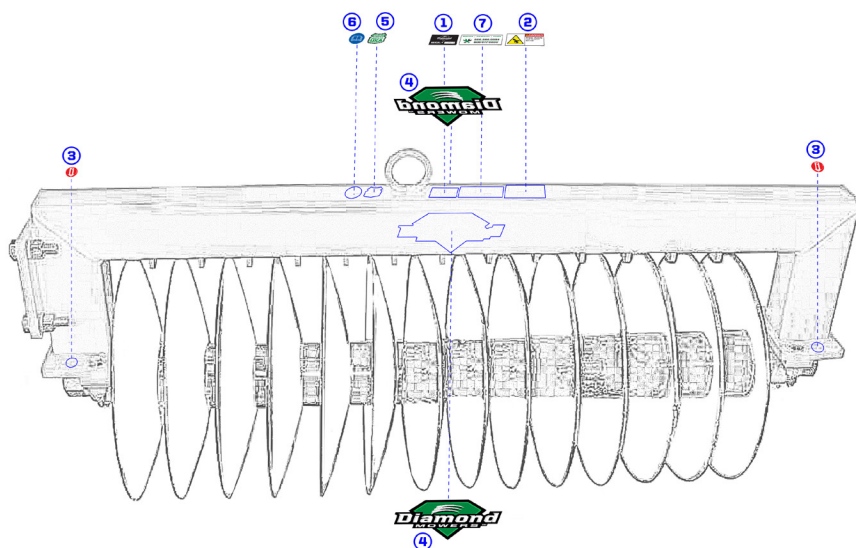


REF#	PARTS DESCRIPTION	REQ	PART #
1	MAIN FRAME	1	1002
2	5/8 LOCK WASHER GR 5	4	11-0004
3	5/8 SAE FLAT WASHER GR 8	8	11-0012
4	SHAFT	1	1101
5	5/8 X 4-1/2 NC HEX CAPSCREW	4	11-0695
6	5/8 NC NYLOCK NUT	4	11-1025
7	2 NF H.S. HEX NUT	2	11-1141

REF#	PARTS DESCRIPTION	REQ	PART #
8	22" HEAVY DUTY DISK	14	1150H
9	PILLOW BLOCK	2	1175
10	BEARING SPACER	2	1180
11	FRONT SPACER-CONVEX	1	1201
12	REAR SPACER-CONCAVE	1	1202
13	SPACER	13	1203

DECAL IDENTIFICATION

All American Disc

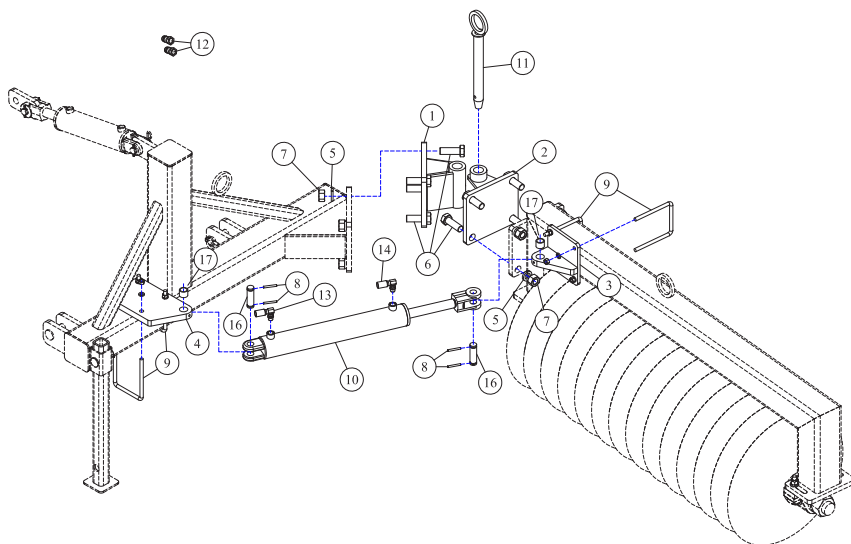


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- ① **SERIAL NUMBER LABEL** - (not included in kit) - QTY 1
- ② **PART #15-0001** - Sharp Objects Danger - QTY 1
- ③ **PART #15-0005** - Grease Here - QTY 2
- ④ **PART #15-0050** - Diamond Logo 7" - QTY 2
- ⑤ **PART #15-0055** - Made In USA - QTY 1
- ⑥ **PART #15-0058** - Read Manual - QTY 1
- ⑦ **PART #15-1016** - Warranty - QTY 1

SWING CYLINDER (OPTIONAL), CATEGORY II 3-POINT

All American Disc

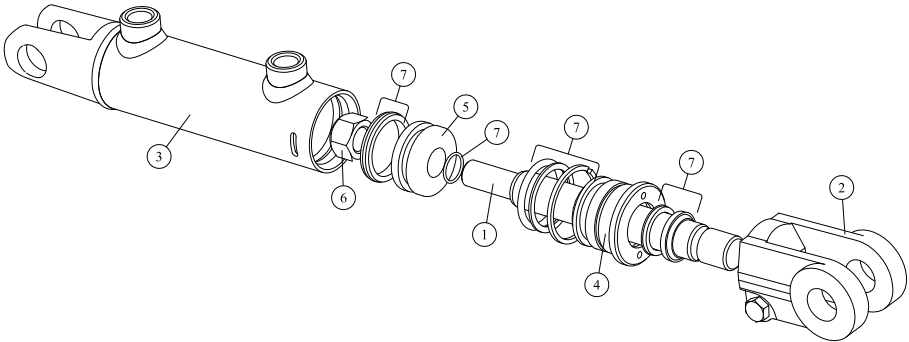


REF #	PARTS DESCRIPTION	REQ	PART #
1	INNER SWIVEL BRACKET	1	1016
2	SWIVEL BRACKET T-FRAME END	1	1039
3	MAIN FRAME CYLINDER BRKT	1	1040
4	T-FRAME CYLINDER BRKT	1	1041
5	1" LOCK WASHER GR 8	8	11-0046
6	1 X 3 H.S. NC HEX CAP	8	11-0556
7	1" H.S. NC HEX NUT	8	11-1035
8	1/4" ROLL PIN	4	11-2005
9	U-BOLT 1/2-20 UNF X 5-1/8 X 6-3/4	4	11-2033

REF #	PARTS DESCRIPTION	REQ	PART #
10	3 X 18 WELDED CYLINDER	1	14-0002
11	SWIVEL PIN	1	1539
12	1/2" MALE QUICK COUPLER	2	21-2119
13	HOSE 1/4 X 56 (1/2MORB-90 X 1/2MP)	1	21-2223
14	HOSE 1/4 X 75 (1/2MORB-90 X 1/2MP)	1	21-2429
15	GREASE ZERK 1/8" STRAIGHT	2	23-0003
16	CLEVIS PIN 1 X 3-1/2	2	27-0004
17	BUSHING 1-1/4 X 1 X 1	2	34-0005

CYLINDER ASSEMBLY 14-0001

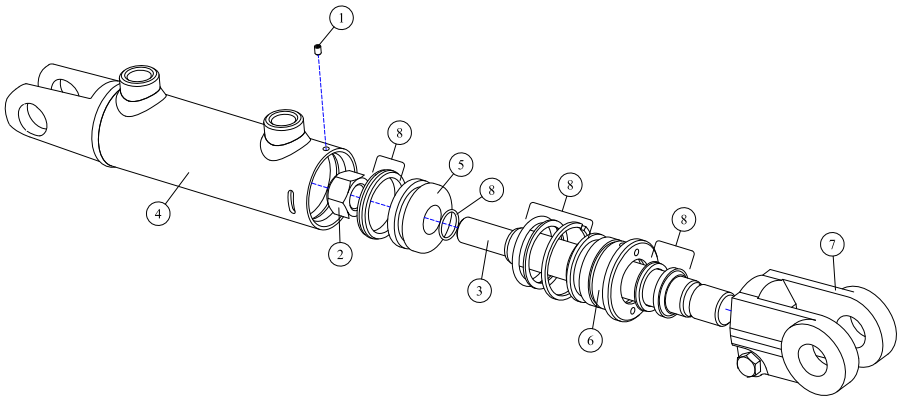
All American Disc (Pitch Cylinder)



REF#	PARTS DESCRIPTION	REQ	PART #
1	PISTON ROD	1	14-1130
2	CLEVIS ASSEMBLY	1	14-1160
3	BUTT & TUBE ASSEMBLY	1	14-1140
4	GLAND	1	14-1155
5	PISTON	1	14-1150
6	LOCKNUT	1	14-1120
7	SEAL KIT	1	33-0038

CYLINDER ASSEMBLY 14-0002

All American Disc (Swing Cylinder Option)



REF#	PARTS DESCRIPTION	REQ	PART #
1	1/4-20 UNC-3/8 SETSCREW	1	11-2014
2	LOCKNUT	1	14-1120
3	PISTON ROD	1	14-1132
4	BUTT & TUBE ASSEMBLY	1	14-1142
5	PISTON	1	14-1150
6	GLAND	1	14-1155
7	CLEVIS ASSEMBLY	1	14-1160
8	SEAL KIT	1	33-0038

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