

# Operating Instructions

## **Aardvark Series**



 **Bluestreak**equipment  
The world's best magnetic cleaning equipment

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# Table of Contents

<b>1</b>	<i>Setting up the sweeper prior to use</i>	<i>1</i>
<b>2</b>	<i>Picking up debris with the sweeper</i>	<i>2</i>
<b>3.</b>	<i>Cleaning off the sweeper</i>	<i>3</i>
<b>4.</b>	<i>Routine Battery Charging</i>	<i>3</i>
<b>5.</b>	<i>Greasing Wheel bearings</i>	<i>4</i>
<b>6.</b>	<i>Greasing the top link</i>	<i>4</i>
<b>7.</b>	<i>Checking for and removing debris from the housing area</i>	<i>5</i>
<b>8</b>	<i>Synthetic winch line or UHMW wear bar replacement</i>	<i>6</i>
<b>9</b>	<i>Travelling on the road with your Aardvark magnetic sweeper</i>	<i>7</i>



# 1. Setting up the sweeper prior to use

It's important to setup the sweeper properly prior to using it to ensure it is setup to be most effective.

a) Sweeping height adjustment – when the sweeper is sitting unhooked from a tow vehicle and sitting on the jack stand adjust the sweeping height.

The sweeping height should be set such that the sweeper is not hitting the ground all the time. For most applications the sweeping height (distance from the bottom of the sweeper to the ground) is best set at around 2 inches. If the ground is bumpier and rougher the height should be increased. The Aardvark was designed for off road use and can withstand hitting bumps and lumps of soil and dirt but having the unit continuously hit the ground in this way has the effect of possibly wiping debris off the bottom of the sweeper. Therefore the best sweeping height is one where the sweeper is kept as close to a 2" to 3" sweeping height while at the same time minimizing the amount the sweeper hits the ground.

The sweeping height should be measured when the trailer is sitting level on the jack stand.

b) Optional Debris Digging Rake (DDR) setup – if you have a DDR installed, now lower the DDR so that it touches the ground.

c) Hitch Height adjustment – back up the tow vehicle to the unit and see where the ball hitch on the tow vehicle sits in relation to the hitch on the Aardvark magnetic sweeper. Adjust the height on the Aardvark hitch to match the approximate height of the ball on the tow vehicle.

You are now ready to hook up the Aardvark to the tow vehicle.

Use the trailer jack to jack up the sweeper to get the tow vehicle ball underneath it. Then back the tow vehicle ball underneath it and lower the hitch onto the ball using the trailer jack. If the tow vehicle ball height lowers significantly under the weight of the trailer causing the trailer not to be level and also causing the DDR to dig in too much you may have to adjust the hitch height to a lower level.

When the Aardvark sweeper is connected to the tow vehicle it should be sitting level at the desired sweeping height and the DDR, if connected, should be digging into the ground about ½ to 1 inch.



## 2. Picking up debris with the sweeper

It's important to have the sweeper setup and adjusted properly to optimize pickup performance of the sweeper therefore see the preceding section.

Once the sweeper is setup properly, it shouldn't have to be setup again unless circumstances change.

To begin sweeping ensure the magnet inside the housing is in the down position. This can be seen by looking at the blue tipped aluminum rod on the drivers side of the sweeper. It should be in the bottom position so that it is horizontal and lined up with the sticker at the bottom that says "stop here" as in **picture 1**.

You are now ready to begin sweeping.



PICTURE #1

The performance of the sweeper is directly related to it's speed and it's sweeping height. The faster you go or the higher you have the sweeping height, the performance of the magnet in picking up debris decreases.

The maximum operating speed of the Aardvark is 15mph and for increased effectiveness we recommend slower speeds.

## 3. Cleaning off the sweeper

To clean the collected debris off the bottom of the sweeper we recommend backing it up to where you would like to drop the debris or alternatively put a piece of cardboard under the trailer to drop the debris onto.

Then using the winch controller press the "UP" arrow button (**as in picture 2**) to raise the magnet inside the housing. This will move the magnet from a horizontal to a vertical position off the bottom/back of the sweeper and allow the debris to drop to the ground.

As you press the "UP" arrow button on the winch control, be careful to watch the blue tipped round aluminum rod indicating the position of the magnet inside the housing, and be sure to stop at the upper "stop here" label. If you pass this mark the

**Aardvark Series**



magnet will hit a stopper inside and you will hear the winch sound change as it hits this stopper. Doing this can damage the winch over time therefore be careful not to raise the sweeper beyond it's upper "stop here" position.

All of the debris should now be dropped to the ground.

Get in the tow vehicle and drive the Aardvark magnetic sweeper forward about 5 feet leaving the debris on the ground.

Get out of the tow vehicle and using the winch control press the "DOWN" arrow button to lower the magnet inside the housing to the lower "stop here" position. You can tell when the magnet is at it's bottom most position because the blue tipped round aluminum rod will line up with the lower "stop here" label and you will be able to hear the sound of the winch change as the magnet reaches the bottom. It's impossible to lower the magnet too much, however you also don't want to unwind an excessive amount of synthetic winch rope inside the housing. Therefore lower the magnet to the lower stop position and wait for the winch sound to change, when it does stop lowering the magnet. This ensures the magnet is in it's lowest position.

You are now ready to begin sweeping again.



PICTURE #2

## 4. Routine Battery Charging

The Aardvark magnetic sweeper has no motor to automatically charge the battery, so you have to charge the battery via a battery charger. Here is information on the battery charger we use. We recommend charging the battery in the Aardvark at the end of each day or when you have cycled the clean off mechanism the "Number of Cycles" as indicated in Table 1 below, whichever comes first.

Battery Capacity (Ah)	Allowable DOD (%)	Number of Cycles
105.00	25.00%	176.27
95.00	25.00%	159.48
85.00	25.00%	142.69
75.00	25.00%	125.90
65.00	25.00%	109.12
55.00	25.00%	92.33
45.00	25.00%	75.54
35.00	25.00%	58.76

(Table 1)

**Features:**

- MotoMaster 10/2A Automatic Battery Charger has a time tested transformer based design which delivers a constant rate of charge
- 10A fast charge and 2A slow charge rates
- Automatically shuts off when charging is complete
- Suitable for all 12V conventional, deep cycle and AGM batteries
- 6'(1.8m) power cord and output cables for up to 12'(3.7m) fo reach



## 5. Greasing Wheel Bearings

Simply remove the plastic cap (as in picture 4) and use a grease gun on the nipple to fill the bearing with grease.



PICTURE #4

## 6. Greasing the top link

The gold colored top link (as in picture 5) allows you to adjust the sweeping height of the Aardvark easily. To keep the screw type adjustment working easily, apply a limited amount of grease to the screw mechanism as needed.



PICTURE #5

**Aardvark Series**

## 7. Checking for and removing debris from the housing area

The Aardvark magnet is almost completely sealed due to the black metal lid and the bottom aluminum pan therefore it is extremely difficult for debris to get into the housing area and directly on the magnet itself.

Therefore we always recommend that the Aardvark lid and fiberglass end caps be left on the sweeper and only be removed for periodic maintenance.

However, if the end caps or lid are removed even briefly, it is possible for leaves etc to make their way into the housing area. There is also a small gap (less than 1/8") on each end of the sweeper where the bottom pan meets the steel side of the sweeper.

Therefore we advise checking the interior housing area of the Aardvark sweeper seasonally to see if the inside of the housing is free of debris. This is done by removing the fiberglass end caps.

**WARNING:** DO NOT PUT THE MAGNET IN THE UP POSITION AND PUT ANY BODY PART IE HANDS OR LIMBS INSIDE THE MAGNET HOUSING. THERE IS AN EXTREME PINCHING HAZARD POSSIBLE SHOULD THE MAGNET EVER FALL.

When the fiberglass end caps have been removed use the winch control to move the magnet into the UP or cleaning off position. You will then be clearly able to see the bottom aluminum pan and if there is any debris present.

Do not put any limbs including your hands and arms into the housing area as an extreme pinching hazard exists.

Use a long handled broom or air gun to bring debris to the ends of the sweeper and then vacuum out any debris at the ends.

When debris has been removed lower the magnet into the down or sweeping position and check the magnet again for any metal particles stuck to the magnet. Remove them as necessary.

Replace the fiberglass end caps when finished.





## 8. Synthetic winch line or UHMW wear bar replacement

The Amsteel Blue synthetic winch line (**as in picture 6**) used on the winch inside the sweeper is rated for 5400 lbs. The magnet inside the housing has an approximate weight of 500 lbs.

Because the winch line is well within its limit of use and is protected from the various weather elements including rain and sun it should last a considerable length of time.

However, when the winch line does break or need replacing we recommend getting a replacement line of the same length from Bluestreak.

Do not replace the synthetic winch line with a steel cable. Steel cables are not capable of the constant winching in and out and will break much faster.

The white UHMW (ultra high molecular weight) wear bar (**as in picture 7**) on the underside front leading edge is made of the same material that motorcycle chain wear guards are made of and will therefore take a lot of scrapping and scuffing.

It is doubtful that you should ever need to replace this over the life of your sweeper. If you see excessive wear on this part, it's likely that the sweeping height of the sweeper is set too low.



PICTURE #8



PICTURE #7

 **Aardvark Series**





## 9. Travelling on the road with your Aardvark magnetic sweeper

The wheels on the Aardvark have highway rated hubs and spindles. However the tires are foam filled. Once tires are foam filled they can only be used in low speed applications. This is due to the extra weight added to the tire from foam filling and the heat build up possible in foam filled tires.

Foam filled tires can still carry the same amount of weight the tire is rated for but foam filling a tire changes it from a high speed tire to a low speed tire. Therefore, restrict your speed accordingly. You should not travel at highway speeds.

Before towing your sweeper on the road move the sweeping height to it's maximum height position. If a DDR is connected, move the DDR to the maximum height position also. The objective is to ensure as much ground clearance as possible to prevent your sweeper from hitting the road when going over bumps or into driveways etc.

Remove the orange safety flags.

Use the safety chains provided to ensure there is a secondary connection to your tow vehicle should the sweeper ever come loose from the ball hitch.



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