Sokoke Assembly, Operating and Maintenance Instructions

Bluestreakequipment MAGNETICS
APPLICATION DRIVEN DESIGN

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Importance of Safety

Accidents can be very costly to human life and property. 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 their family, friends and co-workers to operate in a safe manner. Ensure that everyone who operates or assists in the operation or maintenance of this product read and understand all the elements required to safely operate this piece of equipment. This attachment has moving parts that include additional dangers.

Operator Safety Training Tips

It is the responsibility of the operator using this attachment to be acquainted with the safe operation. In addition to reading this manual, it is important that the operator read the skid steer's operation manual and follow its manufacturer's recommendations!

Before lifting, lowering or tilting the attachment, make sure the area is clear of bystanders or objects.
Machinery parts sometimes have sharp edges. Wear work gloves.
Never use drugs or alcoholic drinks when operating or servicing this piece of equipment.
Always wear the proper personal protection equipment when servicing or operating this piece of equipment. Never service or operate this attachment with bare feet, sandals, or other light footwear.
Always use eye protection during operation.
Speed Kills! Operate this attachment at a safe working speed. When transporting the attachment, keep a safe speed to avoid losing control of the attachment or prime mover.
Keep proper clearance between the attachment and objects (utilities, tree stumps, large rocks, buildings, etc.). Contacting these objects with the attachment or prime mover could cause a loss of control or damage to the attachment or property.
Before each operation of this attachment, check all hardware (bolts, nuts, pins, etc.) for their proper location and tightness.
Stop the engine on the prime mover and set the brake to avoid the attachment rolling forward or backwards while you are exiting the prime mover.

Store this attachment 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.
If working on public roadway, display a Slow Moving Vehicle emblem per your State & Local regulations. Turn your flashers on.

Prime Mover Requirements (skid steer, track loader, etc..)

This attachment must be connected to a Prime Mover with adequate horsepower and weight to provide satisfactory results. The weight of the Sokoke 92 magnetic sweeper in total is 1491 lbs +/- alone, or 1716 lbs +/- with and average weight Mounting Bracket, or 1821 lbs +/- with the Optional Debris Digging Rake accessory.

Track loaders will provide superior traction and stability when operating the debris digging rake, but wheeled loaders may provide better maneuverability on harder surfaces.

There are no auxiliary hydraulics required for this attachment.

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

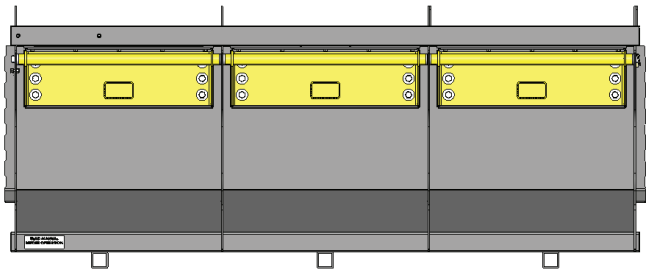
Assembly Instructions

Step #1: Unpacking your shipment

Sokoke as shipped on pallet - remove the shrink wrap and banding

Assembly Instructions

Step #2: What's on the pallet

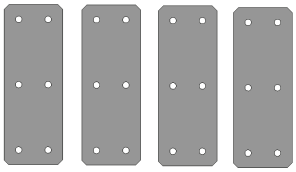


Sokoke sweeper x1

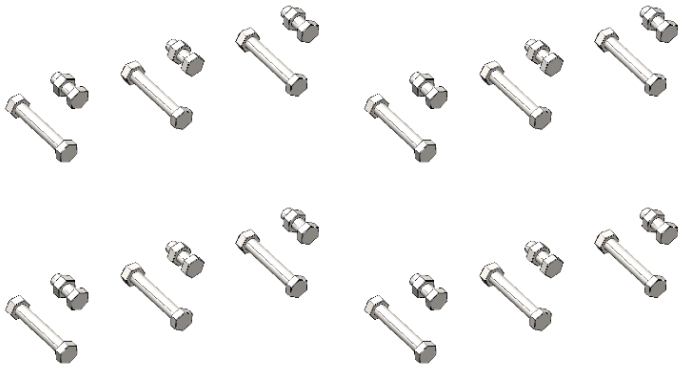
Document holder x 1

¼" - 20" x 1" Flange bolts x 2

¼" Washers x 2



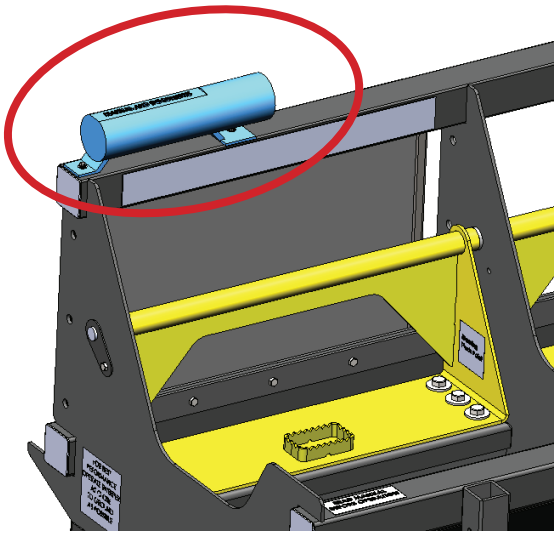
Bracket connector plate x4



Bracket connector plate bolts
0.625" x 2" hex bolts (12pcs)
0.625" x 4" hex bolts (12pcs)
0.625" nyloc nuts (24pcs)

Assembly Instructions

Step #3: Install document holder



Attach the document holder with the provide 2pcs. ¼" flange bolts and washers.

Place this manual inside it when you're not using it.

Assembly Instructions

Step #4: Attaching an accessory bracket to the Sokoke Magnetic Sweeper

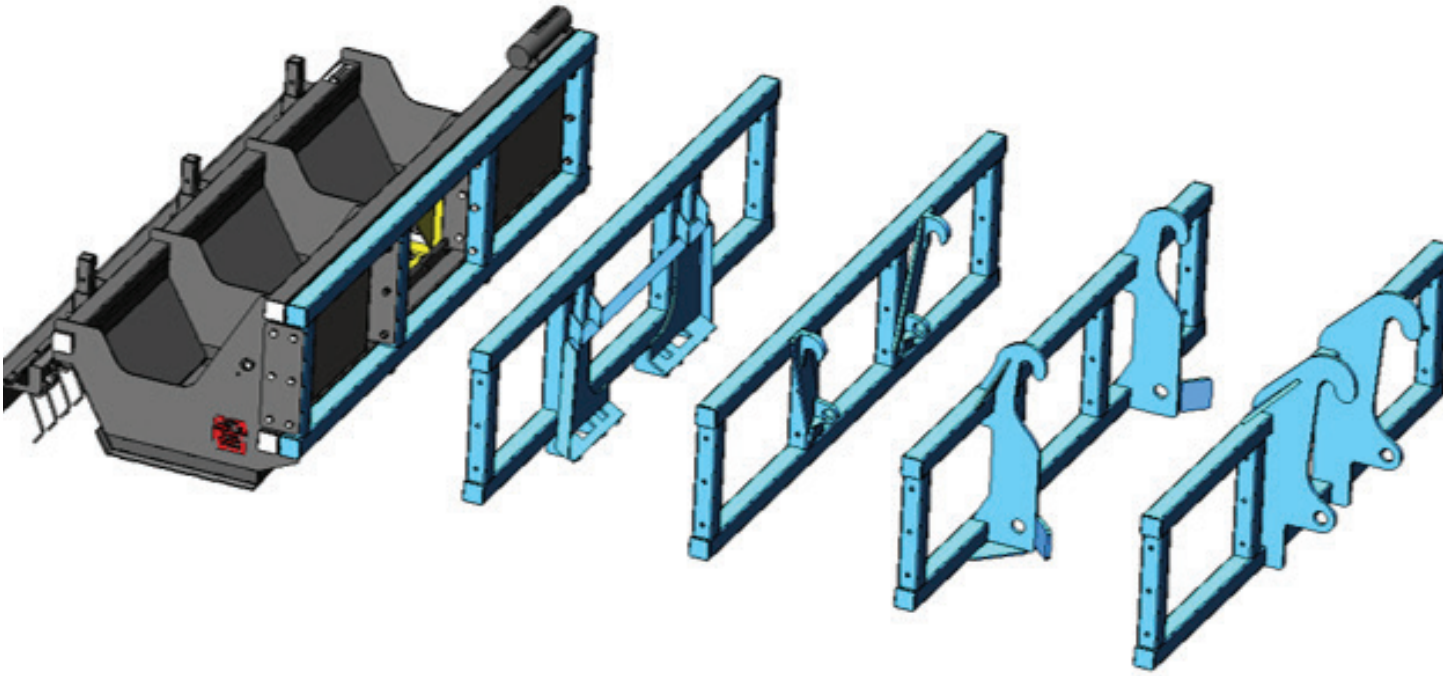


Image of Sokoke with accessory brackets A, B, C, D, and E.

Overview:
The Sokoke Magnetic Sweeper requires a bracket to connect the sweeper to the prime mover it will be used with. This Bracket is a selected accessory and does not come standard with the Sokoke.

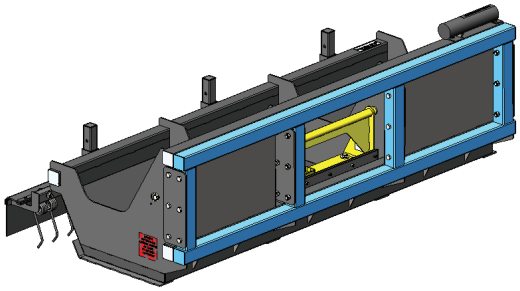
Purchasing one of the accessory brackets is required for two reasons. Firstly, the steel frame of each bracket is identical and forms part of the structure of the Sokoke Magnetic Sweeper. Second, the bracket is removable and allows it to be customized (welded on, if required) outside of the large magnetic field of the Sokoke's magnets.

The above image shows the brackets (A though E) that were available at the time of writing this manual.

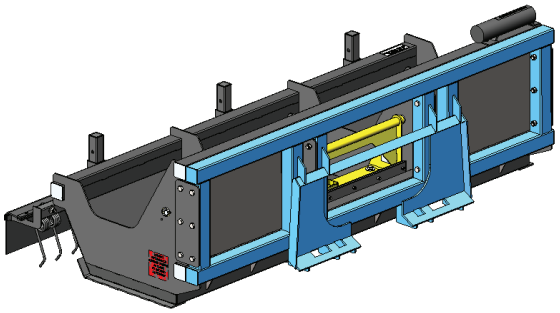
In the above image the Sokoke is shown with Bracket A attached to it. This is a blank bracket that allow the end user to weld on their own custom parts to attach the Sokoke to their equipment. Blank hooks that fit your machine can be made by the end user or purchased from your equipment dealer. More about this at the end of this Manual.

Assembly Instructions

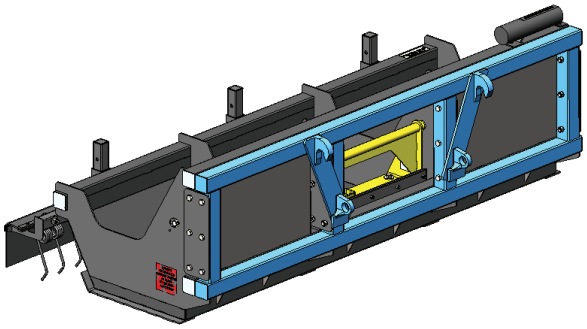
Step #5: Examples of optional accessory brackets attached to the Sokoke Magnetic Sweeper



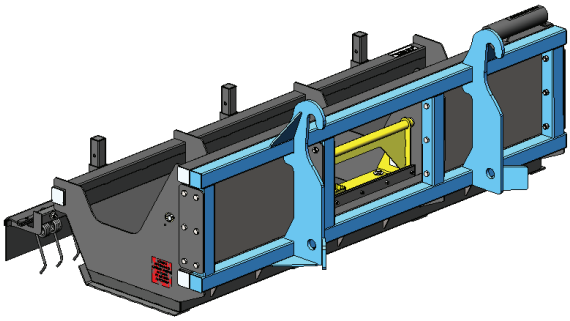
Bracket A - Blank



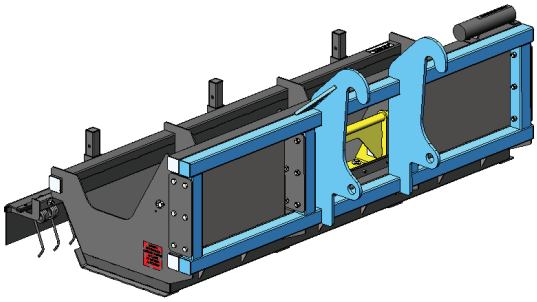
Bracket B - Universal skid steer quick attach



Bracket C - Alo/Quicke/Euro/Global Coupler



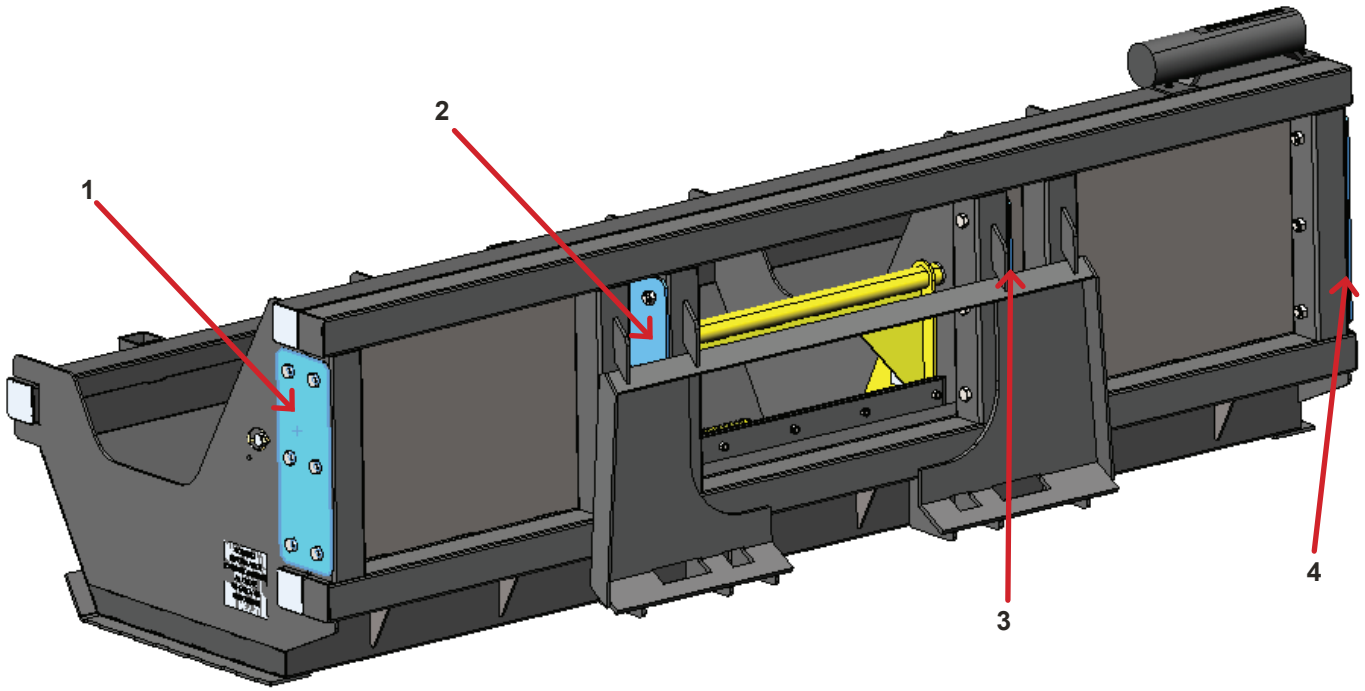
Bracket D - Case/Ford/New Holland FFC Coupler



Bracket E - Caterpillar integrated Toolcarrier (IT) coupler

Assembly Instructions

Step #6: Attach a bracket to the Sokoke Magnetic Sweeper



Bracket B shown installed as example

Attached your Bracket to the Sokoke as shown with 4x Bracket Connector Plates (shown in blue) and use the Bracket Connector Plate Bolts 0.625” x 2” Hex Bolts (12pcs) 0.625” x 4” Hex Bolts (12pcs) 0.625” nyloc nuts (24pcs).

The Connector Plates are to be installed on the outside face of each of the four vertical 3” square tubes on the Bracket you are installing.

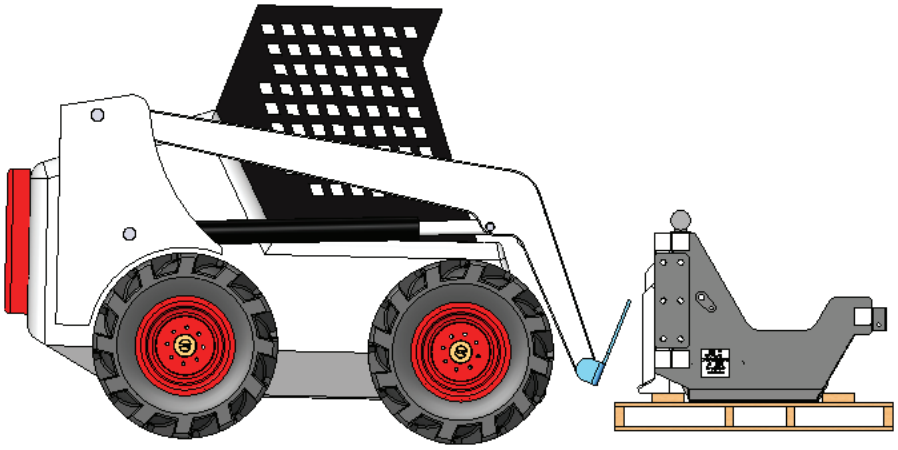
Use the 4” long bolts to connect the Connector Plates to the 3” square tubes on the Bracket, and the 2” long bolts to connect the Connector Plates to the ¼” thick ribs of the Sokoke Chassis.

Note: The Brackets are designed so the connection bolts are a tight fit.

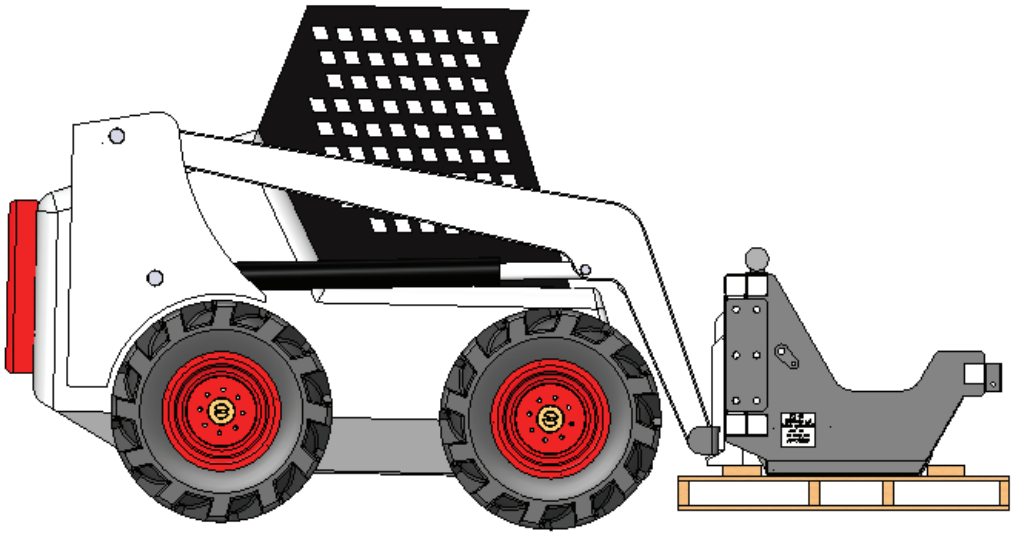
Once all the Connector Plates are in Place you can firmly tighten all fasteners.

Installation Instructions

Step #1: Example of connecting the Sokoke to a skid steer when using universal skid steer quick attach Bracket B.



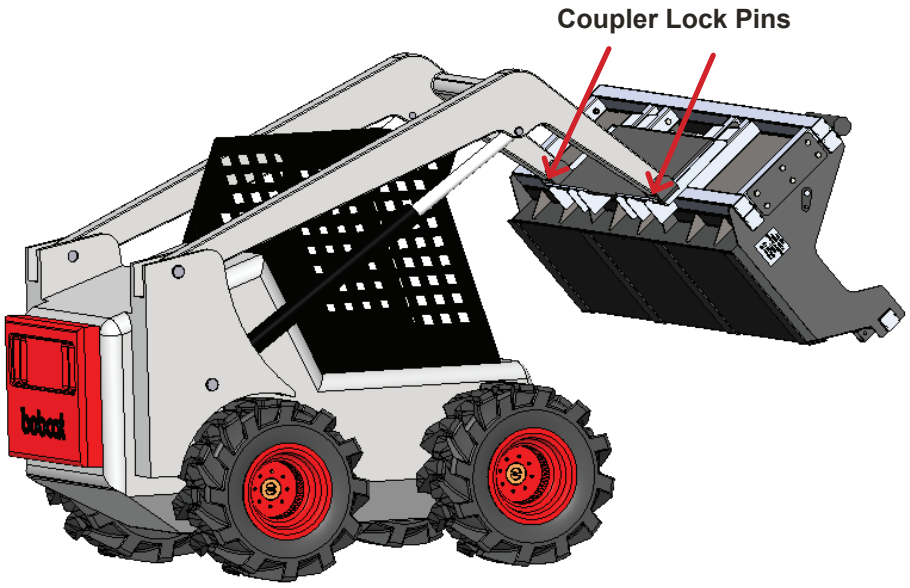
Verify that the coupler plate is free from dirt / debris and metal debris from previous uses. When clear, move the skid steer to proximity of universal skid steer quick attach bracket B. Tilt skid steer coupler forward to align coupling point with the upper part on the universal skid steer quick attach bracket B and raise the coupler slightly.



When the top edge of the coupler is seated in the top part of the universal skid steer quick attach bracket B, 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.

Installation Instructions

Step #2: Verify couple locks engaged.



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 (if applicable).

Check the surrounding area for bystanders and clear them before starting the prime mover and lifting the attachment.

Operating Instructions

Step #1: Operational overview of attachement

Pre-Operation Walk-around Inspection
Before every use, it is important to perform a short inspection and certain maintenance on your Sokoke Magnetic Sweeper.

Check that stone guards are in place (if using accessory Debris Digging Rake)
Look for loose bolts and tighten them if necessary
Check that all decals are in place and can be read. Replace them if necessary
The Sokoke does not require a hydraulic connection.

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

Your prime mover may have a "float" function on the lowering circuit. DO NOT USE THE FLOAT FUNCTION when using the optional Debris Digging Rake accessory.

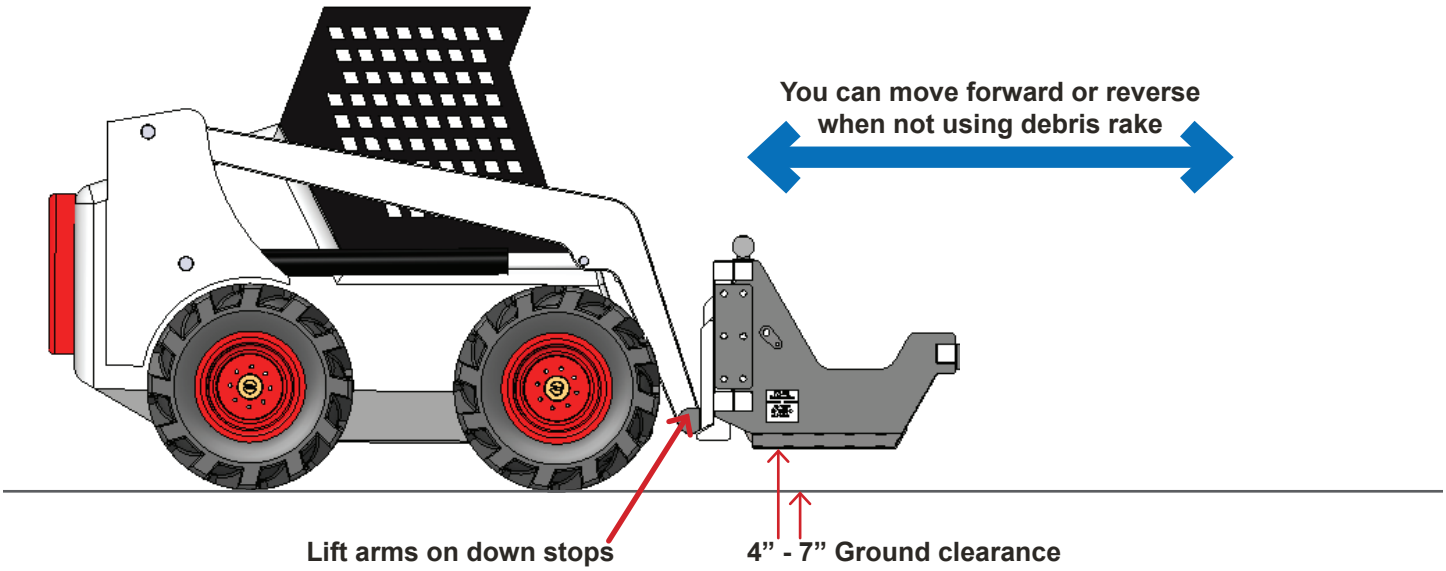
When operating this attachment, set the prime mover throttle at a speed that will produce the required machine operational performance desired to operate the machine and its hydraulic functions. The Sokoke does not have or require and connection to auxiliary hydraulics. Set engine speed as you feel comfortable when operating the equipment. Generally, we have found that engine speed at 25% is more then adequate for travelling with the Sokoke as well as performing lift and clean off functions.

Be carefully to not violently slam the magnets when dumping debris is completed. Rubber damper mats are in place to lessen the hammering effect of the magnets when they swing back into sweeping position. There is no need for hammering and could cause unnecessary damage.

To begin with, learn what the attachment looks like in a level position when you are seated in the prime mover. Knowing what a level attachment looks like will help you with your attachment operation.
The correct ground speed for using this attachment will depend on the material being collected as well as the if the Debris Rake is being operated and at what depth and material types. Although the Sokoke magnet is very strong, slow and low will always produce the best results.

Operating Instructions

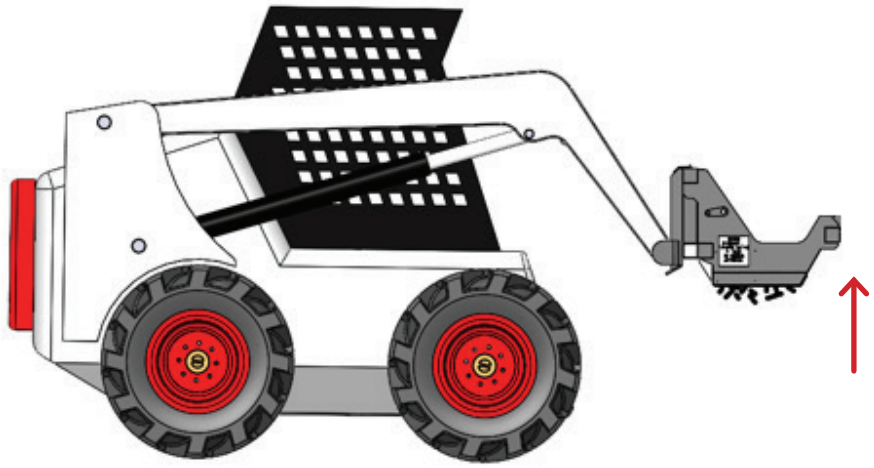
Step #2: Operating the attachment (without optional debris digging rake accessory)



With the machines lift arms on the downward stops, the ground clearance under the sweeper should be 4” to 7” (depending on your skid steer) If it is less, then you may need to lift the sweeper slightly to achieve this. When operating the sweeper should be as low to the ground as possible (for best performance) but not contacting it. The bottom of the sweeper should be level (or close to) when operating. Keep in mind the sweeper will pick up nails from 12.5” high when stationary, so if you are at 3, 4 or even 5” sweeping height you will still have exceptional performance.

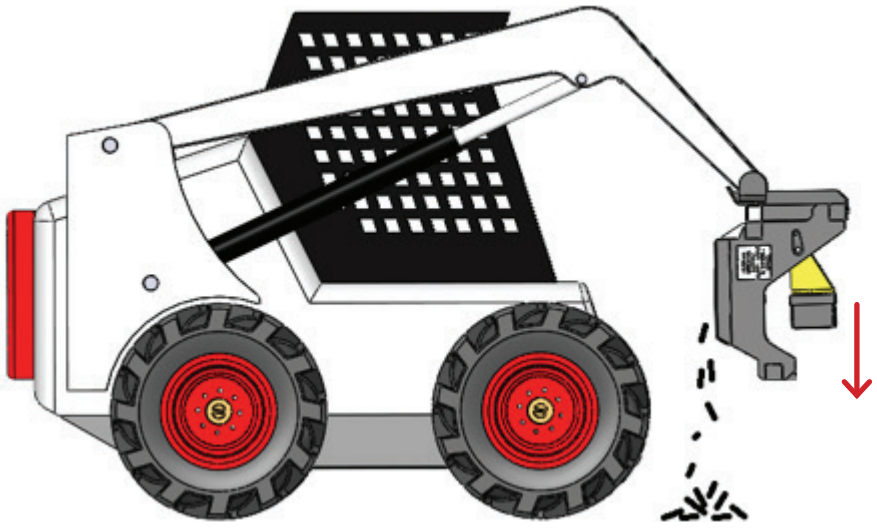
Operating Instructions

Step #3: Release metal debris collected from magnet



Magnet on (horizontal)

Lift the Sokoke using the lift arms at least 48” off the ground, or alternatively you can lift the sweeper even higher if releasing debris into a bin.



Magnet off (vertical)

Once the Sokoke is elevated pivot the magnet forward into the shown vertical position and the collected debris will fall off the bottom.

Once magnet is cleaned off pivot the sweeper back to horizontal, lower the lift arms and continue sweeping.

Although the Sokoke has a very strong magnet, cleaning it off often will provide best performance. Metal Debris attached to the magnet will consume magnet power available from picking up more debris.

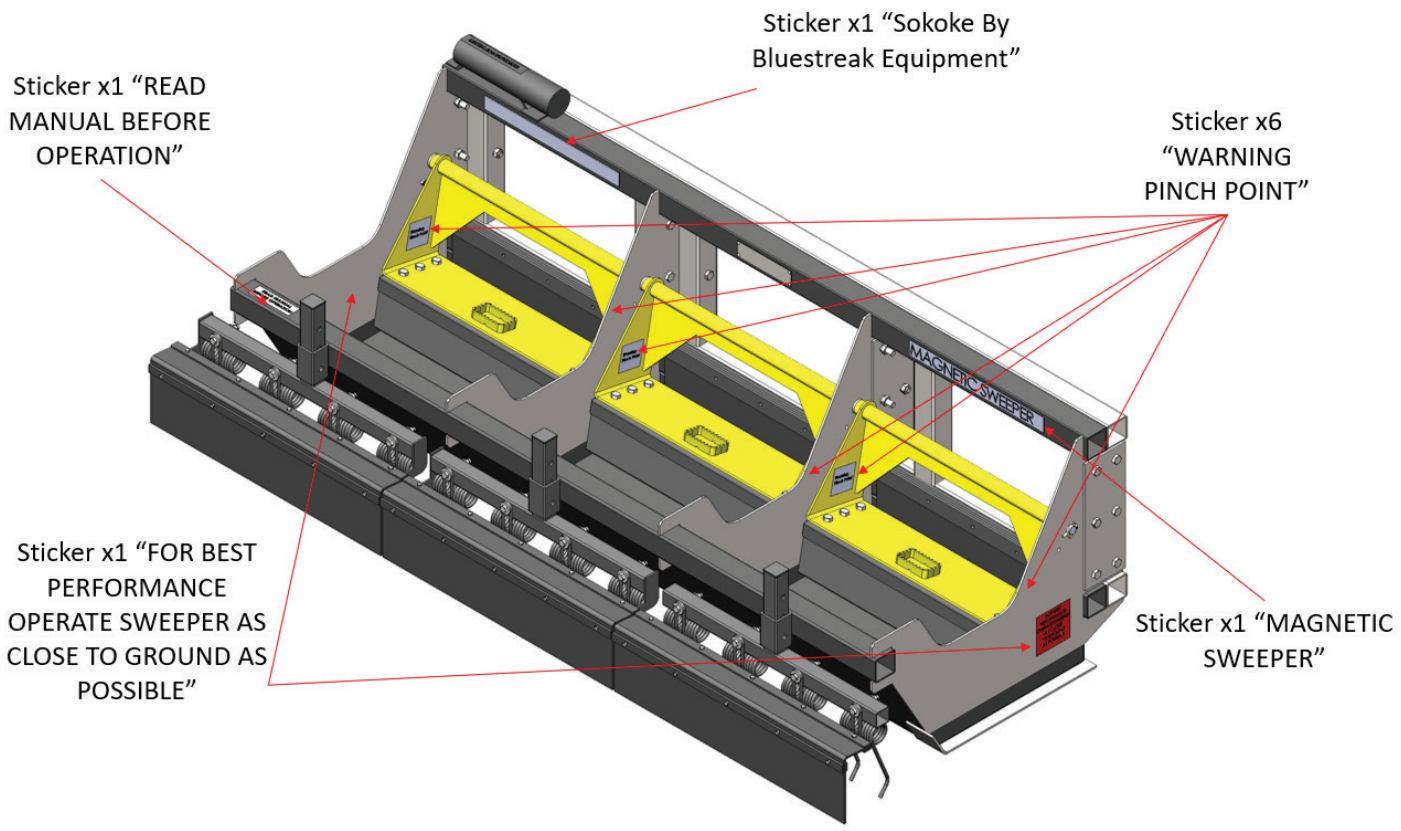
Maintenance Instructions

Step #1

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.

Every Month
Inspect the attachment for any loose or worn parts that may need to be replaced prior to the next season.
Visually inspect the rake teeth and rubber stone guard (if applicable). 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 stickers that have been lost or damaged.
Store your attachment in a shed or cover with a water-proof tarp to protect it from the weather. Store in an area not frequented by children.

Sticker Diagram



Optional Accessory Debris Digging Rake Assembly Instructions

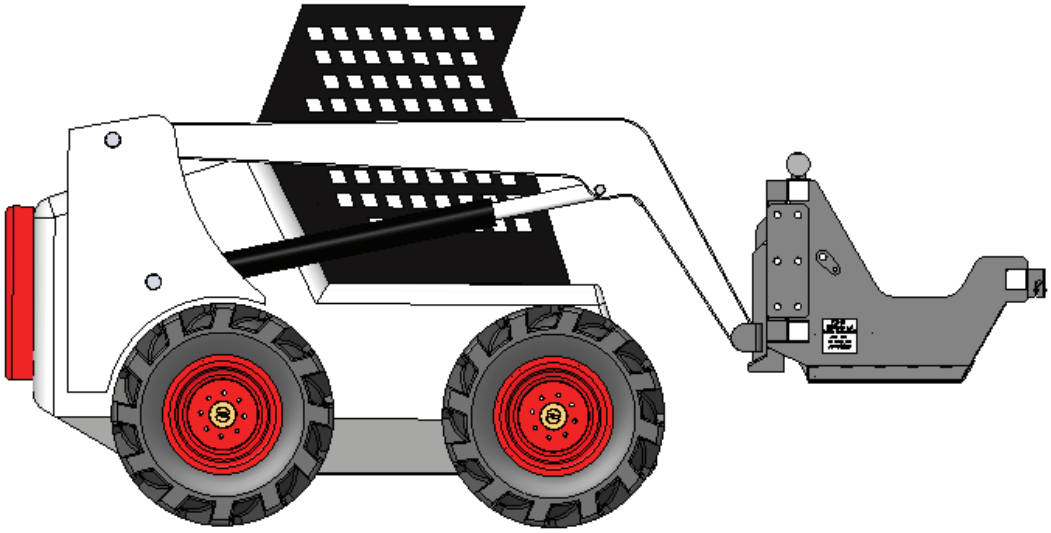
Step #1: Unpacking your shipment

3x Steel frames with rubber stone guards installed

3x Hardware boxes each containing
4x - ½" x 3.5" bolts w/nyloc nut and 2 washers
4x – 0.375" steel debris digging rake springs
1x - ½" bent pin w/clip

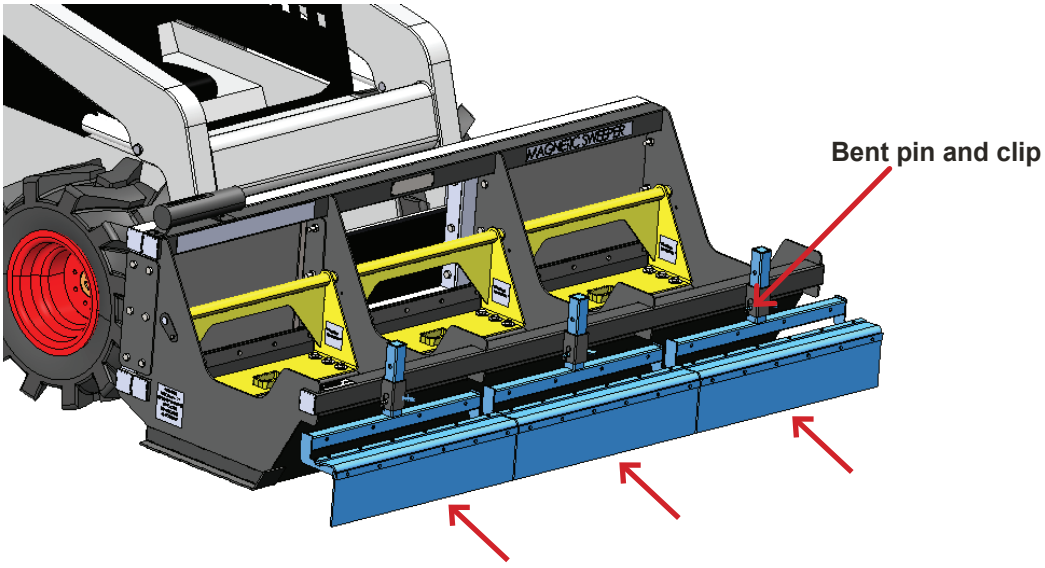
Optional Accessory Debris Digging Rake Assembly Instructions

Step #2: Prepare to install steel frames



Apply the parking brake to the machine and lift the sweeper approx. 16” off the ground for installation of the accessory debris digging rake.

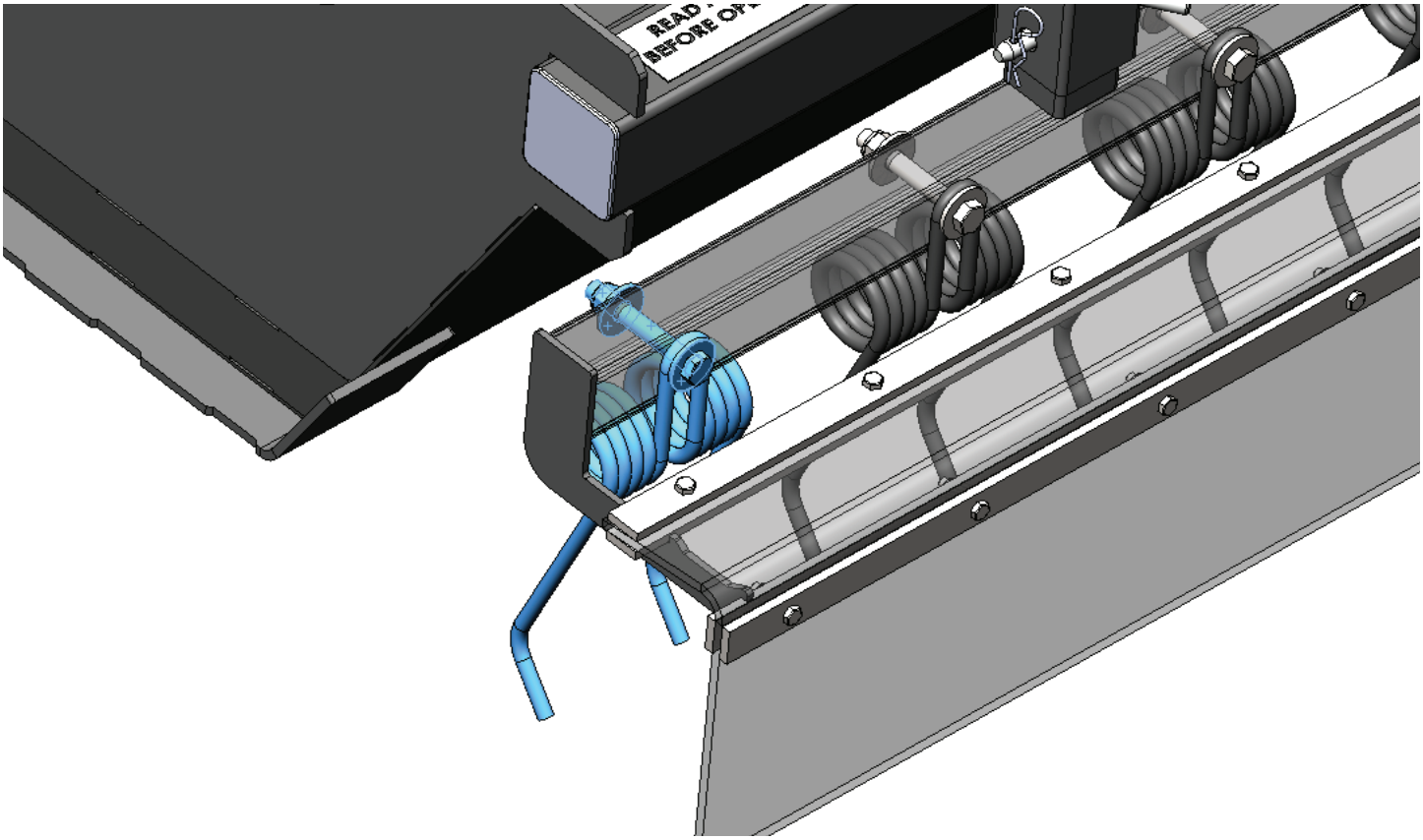
Step #3: Install steel frames



Insert the 3x Debris Digging Rake Adjustment Frames as Shown. Insert 1pc 1/2” bent pin and clip in for each frame.

Optional Accessory Debris Digging Rake Assembly Instructions

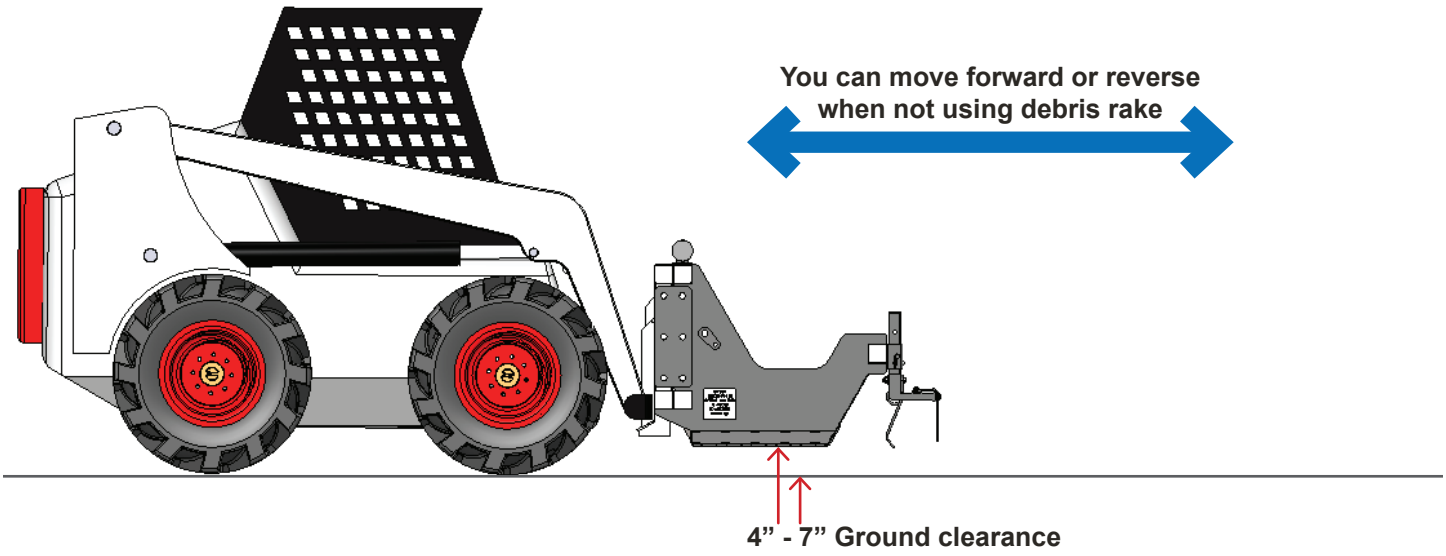
Step #4: Install rake springs



Install all 12 DDR Rake Springs with 1x 1/2” x 3.5” bolt, 2 washers and 1x Nyloc Nut. Tighten Firmly.

Optional Accessory Debris Digging Rake Operating Instructions

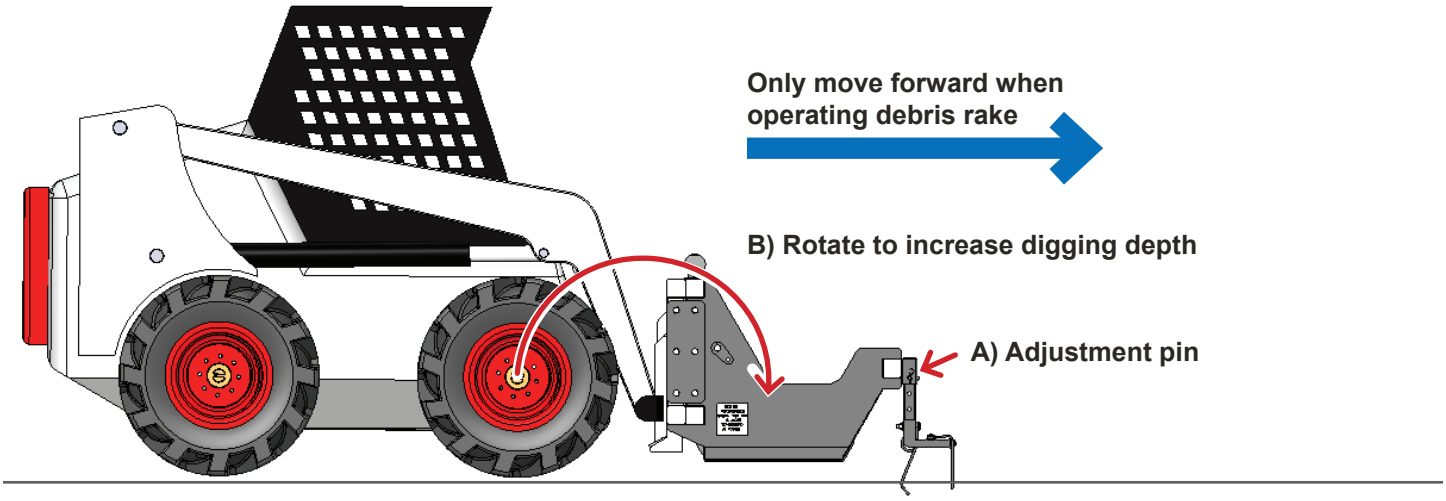
Step #1: Operating the attachement



When operating the sweeper should be as low to the ground as possible (for best performance) but not contacting it. The bottom of the sweeper should be level (or close to) when operating.

Optional Accessory Debris Digging Rake Operating Instructions

Step #2: Operating the attachement

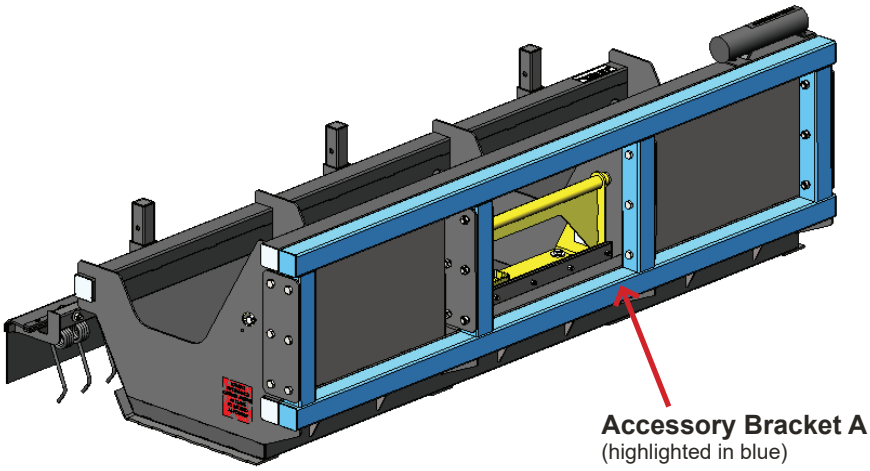


When using the Debris Digging Rake you can control the depth of the rake two ways (A) changing the position of the adjustment pin and (B) rotating the sweeper downward with the Machine. When rotating downwards be careful to not have the magnet dragging on the ground continually. Although the bottom of the Sokoke is stainless steel construction it is not meant for constant ground abrasion.

When you are operating you can generally visually see the rake operating (depending on the machine you are using) and adjust as needed. In very soft material if you may find that setting the rake too low may cause the stone guards to act as a plow accumulating lots of material as the rake teeth easily go deep into the soil. In very hard packed conditions (i.e., a gravel driveway driven on by heavy machinery) you will notice it may take several passes to loosen the material and the rake teeth will not penetrate very deep at first.

Optional Accessory Debris Digging Rake Operating Instructions

Step #2: Operating the attachement



The Accessory Bracket A from Bluestreak is intended for customization when one of the other existing accessory brackets that are available from Bluestreak will not work to connect the Sokoke Magnetic Sweeper to your equipment.

This bracket is attached to the Sokoke Sweeper with 4 steel plates and requires loosing/removal of 24pcs of 5/8” diameter fasteners.

The Bracket A is symmetrical in all aspects. There is no specific top/bottom, left/right, front or back. If it is in the horizontal position shown above, it will connect to the Sokoke Magnetic Sweeper.

This will act a brief guide to help you connect the Sokoke to your prime mover (wheel loader, backhoe, tractor etc.).

This task must be performed by a competent fabricator who is experienced in welding, grinding, fitting, measuring and clearly understands and is confident and capable of performing this task.

It should be noted that this is not an engineering guide or step by step process for your machine. This is simply a few tips we are highlighting based on our experience of making the other brackets we have available for sale.

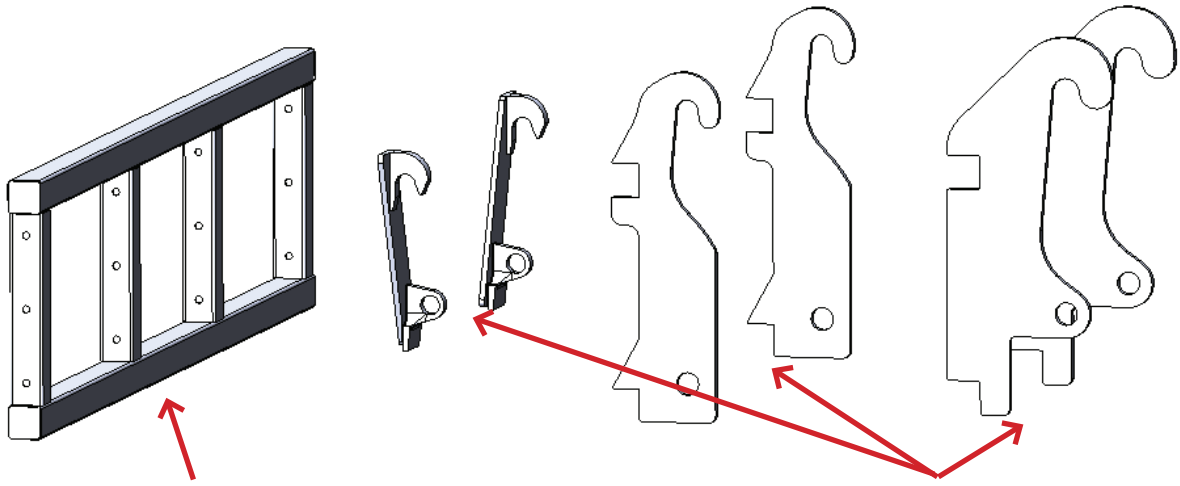
The term “Blank Hooks” is used generally below. The term does not cover or indicate the shape, size, thickness and quantity of parts you will need to make to attach the Sokoke magnetic sweeper to your machine.

There are several ways to complete these task:

Option A
Call your local equipment dealer and ask them for a quote to make the Sokoke Magnetic Sweeper with your Bracket A connect to your equipment. You will likely need to provide them with the Sokoke, Bracket A, and likely an attachment you already have for your machine, or possibly the machine itself in some cases. With this option you are not performing any fabricating.

Option B
Call your dealer and tell them you want to buy some “Blank Hooks” to weld onto a custom attachment so the Sokoke Magnet attachment can be used on your machine. Explain that the new attachment is a Magnet that will operate like a loader bucket on the front of the machine. With this option you will be welding/fabricating.

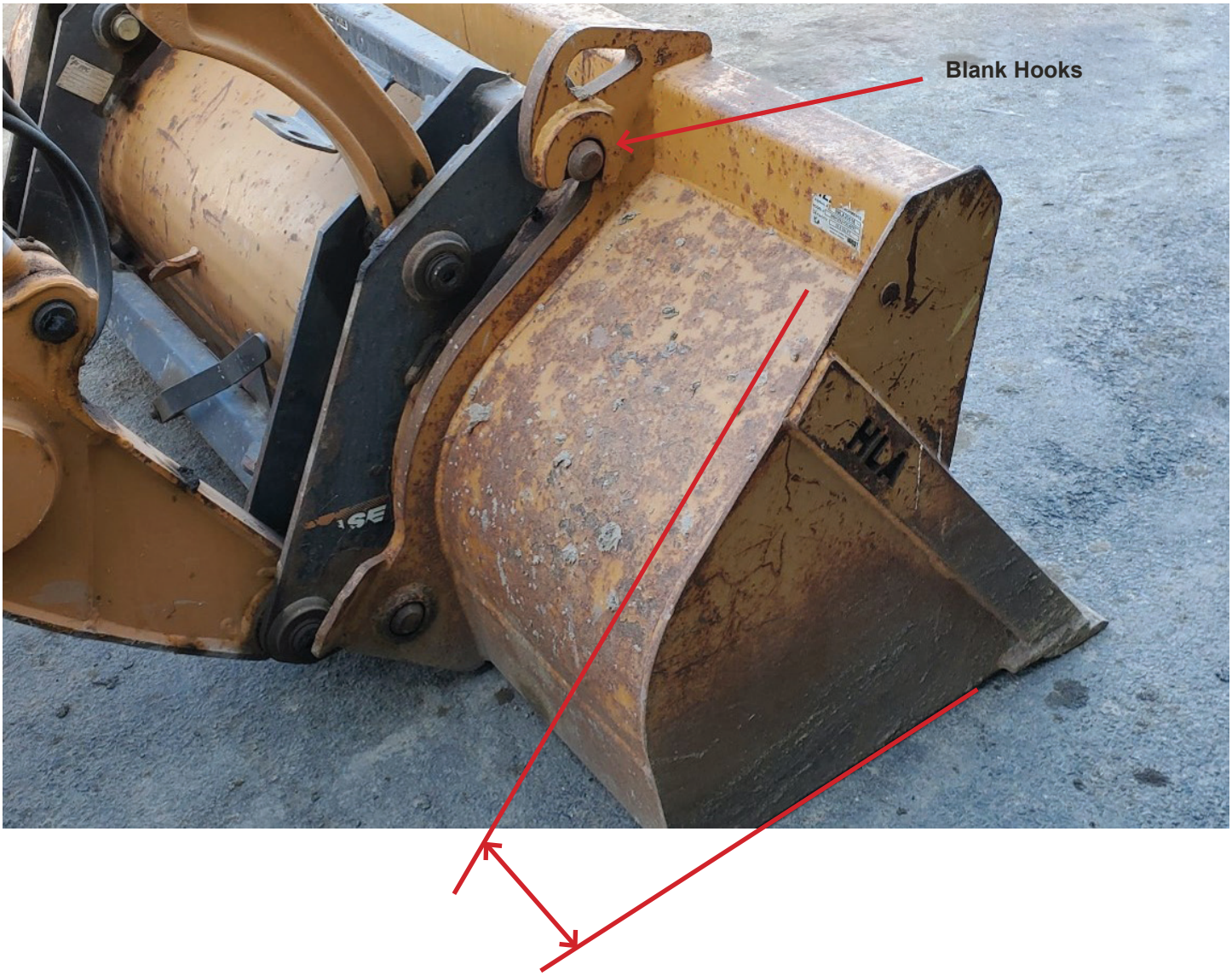
Option C
Make your own “Blank Hooks” and connect them to bracket A. This option requires the most fabricating and work on your part.



A few tips:

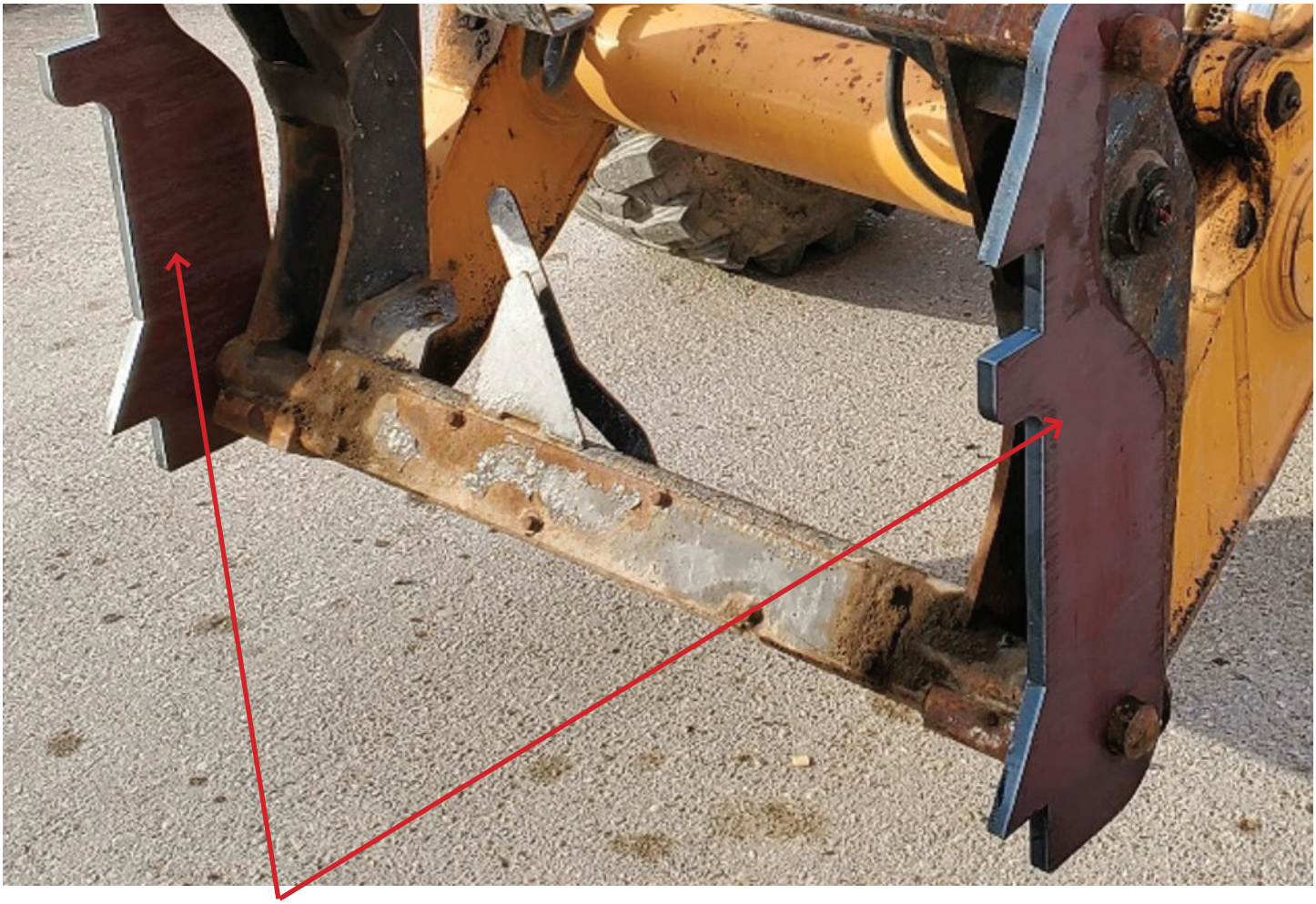
It is best to duplicate as closely as possible the connection design of an existing attachment for the machine you want to use the Sokoke magnet on.

Below you will see a bucket that fits a Case 570MXT backhoe that we designed our bracket D based on.



Note, the back of most buckets are not perpendicular (square) to the bottom of the bucket. This is due to buckets are designed to roll backwards to prevent the material inside them from spilling with driving around.

This lead in, is not required on the Sokoke magnetic sweeper.

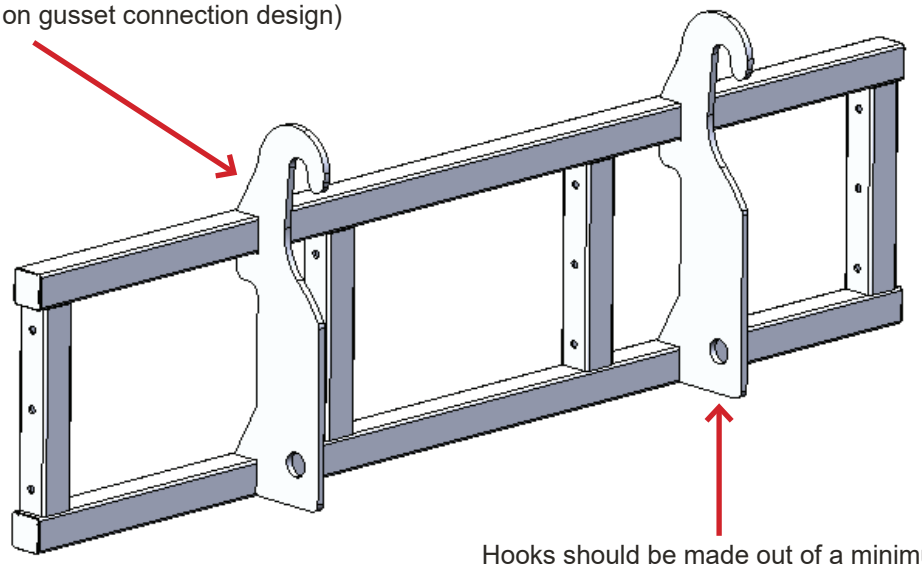


Blank Hooks

Test fit your Blank Hooks and confirming spacing before welding them onto bracket A.

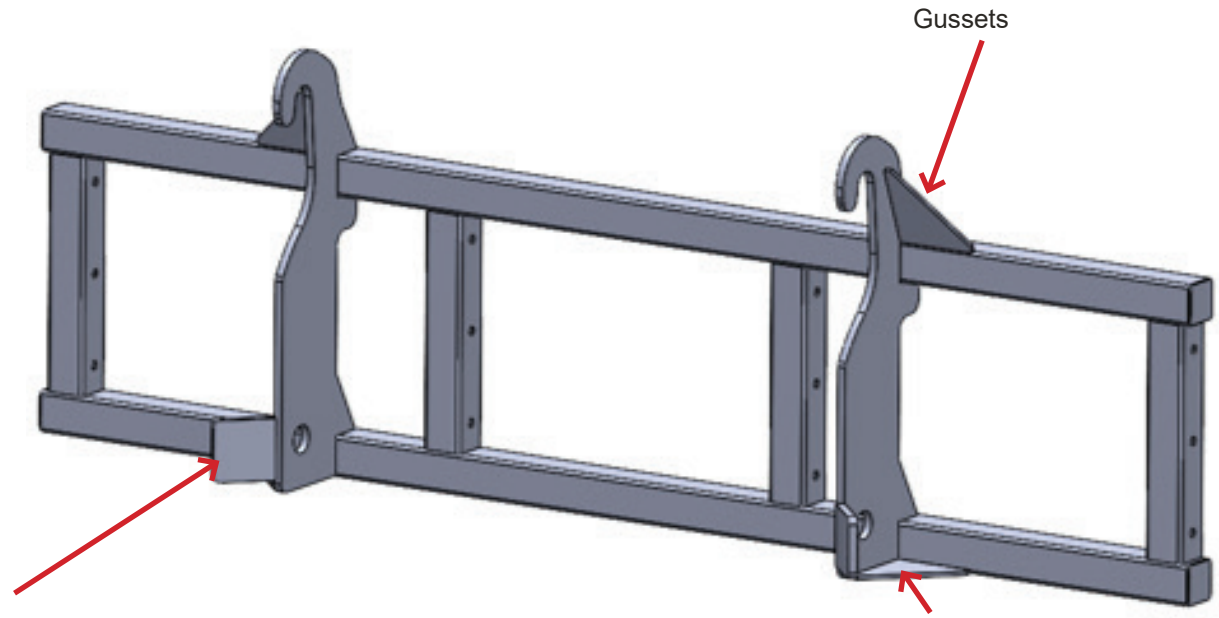
Remove bracket A from the Sokoke Magnetic Sweeper and position the blank hooks with spacing as per your measurements from the other attachment that fits the machine.

Hooks fully welded around tube is best, but not always necessary (depending on gusset connection design)



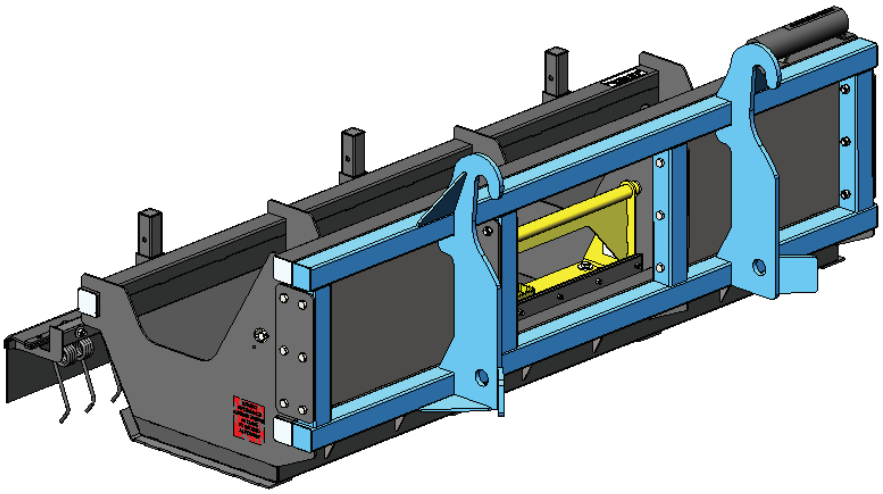
Hooks should be made out of a minimum of 0.625” thick steel.

Test fit the tack welded assembly on your machine.



During the test fit identify where strengthening gussets can be added, what size they are and make sure they will not interfere with the connection to the machine.

Install the completed Bracket on the Sokoke.



Connect the Sokoke to your Machine.