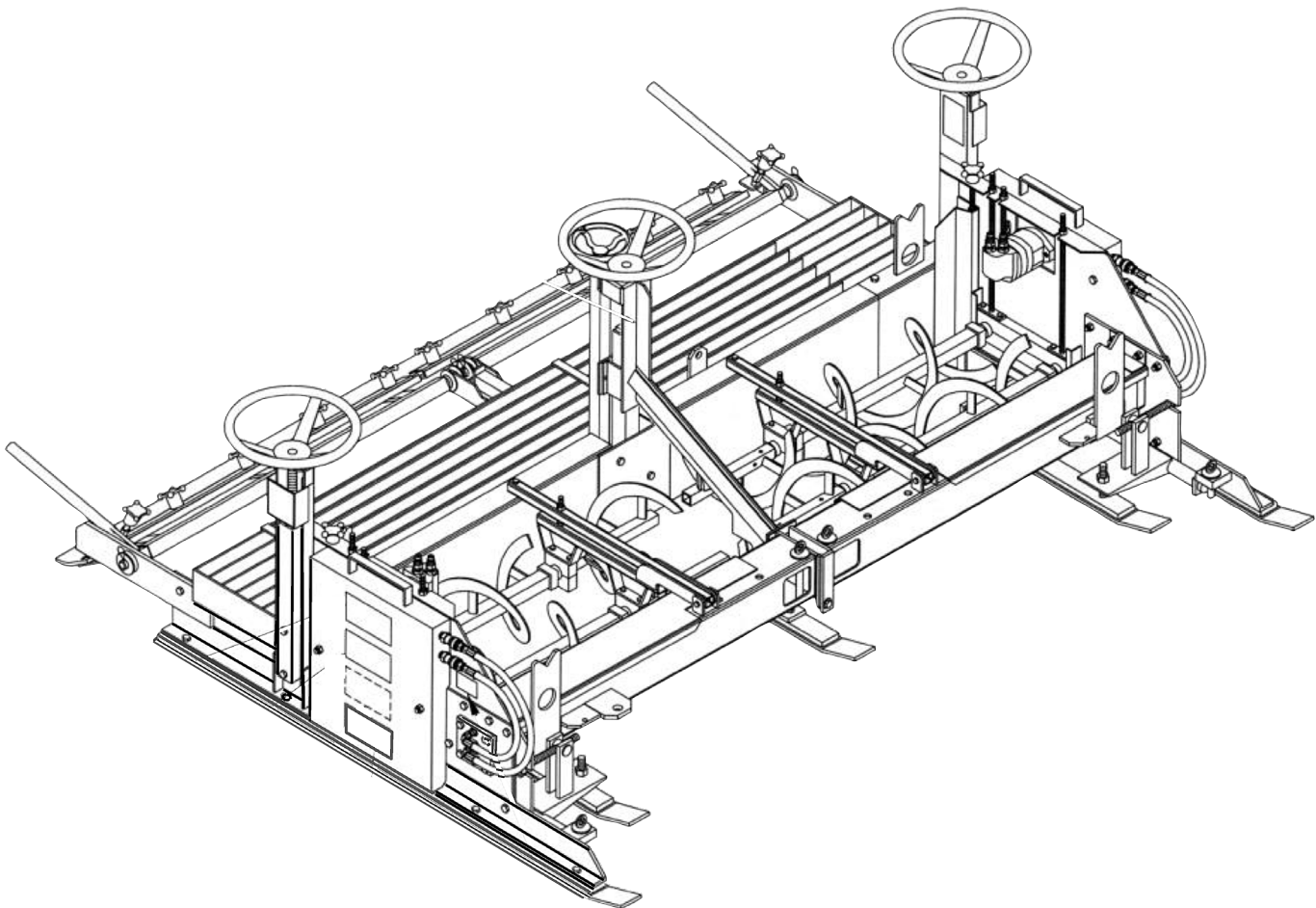




MO-MSB-24

MicroSurfacing Box

Operation Manual



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SECTION 1 INTRODUCTION & DESCRIPTION

Your new **Hydraulic Spreader Box** is a ruggedly designed application tool that is pulled at the rear of the micro-surface machine to govern the width and to control the distribution of micro-surface or quick-set slurry seal.

The mix enters the center of the spreader box from the RSII pugmill chute and is quickly and evenly disbursed by the auger shafts within the spreader box to provide a uniform distribution of the material. Since the box is hinged at the center runner, conformity with the crown profile of the roadway is maintained with three points of adjustment.

The material mix is struck-off at the desired application rate as the box is pulled steadily forward and spread optimally by the adjustable rear screed. A light, downward pressure is applied by the secondary strike-off rubber as it is drawn over the applied surface.

This process tends to stand the aggregate stones on edge, exposing the sharp edges of the aggregate and enhancing the traction properties of the surface treatment. Cleaning of the secondary strike-off rubber is optimized because the mechanical design allows it to be easily tilted upward and forward .

Other features of the **Hydraulic Spreader Box** include large hand wheels, mounted high and accessible to adjust the rear main screed. Replaceable, abrasion resistant runners, two 6- Ft. runners which are mounted outboard, and one 2- Ft. Two adjustable and removable 2-Ft. inboard runner's are mounted just inside of the outboard runners to allow butt joint capabilities of a fresh pull.

The dual, 10-in spiral auger shaft configurations on each side of the spreader box are chain driven and powered by hydraulic motors. Distribution of the material mix can therefore be selected by setting the rotational direction of the of the augers. The two-part shaft bearings are easily replaceable and made of durable UHMW polyethylene. Auger shafts are normally spaced as close to the roadway surface as possible to achieve maximum distribution of the material when the material level within the box is at a minimum. Auger height is adjustable at two intervals for each auger shaft.

The spreader box width is expandable in increments of 6" or 12" for total of six feet additional width, accommodating varying road proportions. Hydraulic cylinders assist in the addition or removal of the 6" or 12" rear screed components and auger sections that determine the overall width. See *SECTION 3, Spreader Box Expansion* for more information.

The front **RH** end housing is the location of the serial number plate of the spreader box. Use this number and the model to reference your spreader box when placing a call to the factory.

The identification plate will appear as shown.

The intent of this manual is to introduce the operation and adjustment procedures needed to correctly maintain and safely operate your **Hydraulic Spreader Box**.



Safety is often a direct result of good instruction and well planned procedure. Therefore, we emphasize the need to study *ALL* machine documentation: Parts Manuals, Operators Manuals, etc. **BEFORE ACTUAL MACHINE OPERATION**. Furthermore, the manuals are intended to follow the machine and to pass with the ownership of the machine.



SECTION 1 INTRODUCTION & DESCRIPTION



Located on the top of the RIGHT JOYSTICK is the rocker switch which controls the Auger Override that allows the operator to instantly change the direction of the Slurry Box or MicroSurfacing Box Augers are turning



The Auger Flow or Speed control is located here and the ON / OFF switch for the Auger controls is located here.

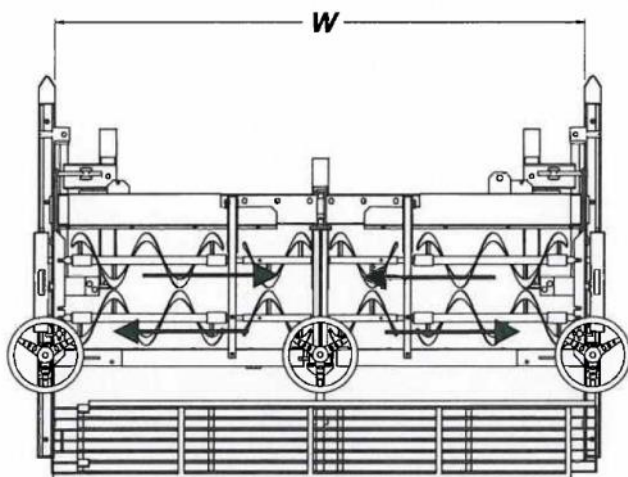


To get the highest performance and life from the MSB Spreader Box, it is critical to exercise preventative maintenance in addition to the daily box cleaning. Daily cleaning must remove excess material, usually performed at the end of the day before the material becomes too difficult to remove. A clean, well maintained box will make it possible to observe the ongoing condition of parts that are subjected to high degrees of wear, provide the best paving appearance and promote the most reliable service. The best surface appearance will result from making a continuous pull, therefore be sure to replace any worn components and make proper adjustments prior to performing spreader operations with the spreader box. The following information will provide adjustment and maintenance procedures for the MSB Spreader Box.

1. Machinery components are operated hydraulically developing high torques, dynamic forces, and high speed. Always use extreme caution when working on and around the equipment.
2. Never place any body part near rotating augers or drive components. Always use hydraulic disconnects to disable the spreader box while cleaning or performing maintenance.

ADJUSTING BOX WIDTH

The MSB Spreader Box is statically capable of width changes in increments of 6" and 12" for a total of six feet additional width. Review the Project Specifications to determine the best width to initially set the spreader box width to. Paving width, W , is the measured distance between the inside vertical faces of the outboard runners or skids.



The MSB requires hydraulic power from the RoadSaver to power the auger drives and to hydraulically assist box width changes.

The hydraulic circuit that powers the auger motors is disconnected from the drive motors and connected to the hydraulic cylinders that are housed within the spreader box, utilizing hydraulic power to assist in expansion of the box.

CAUTION

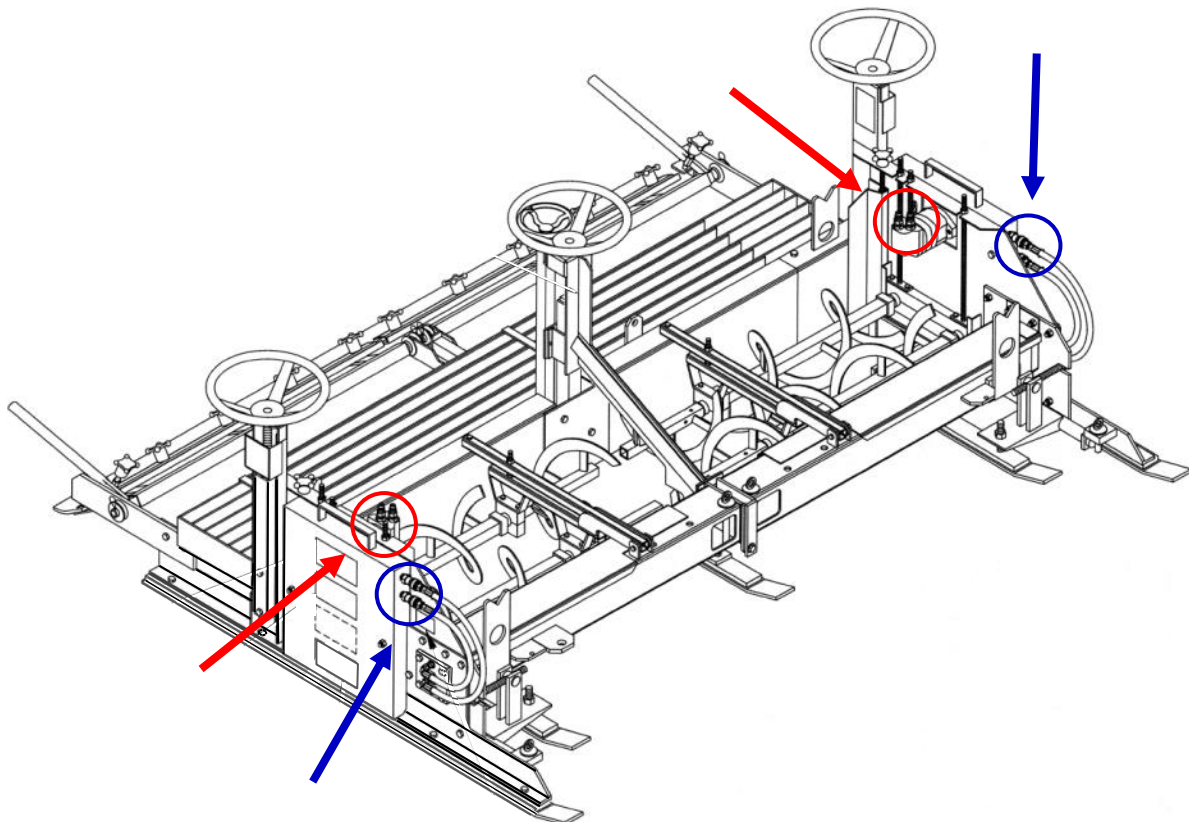
Make sure the machine is in the OFF condition (hydraulic drive engine turned off) before moving the hydraulic quick disconnects to the extension/retraction cylinders.



SECTION 2 ADJUSTING BOX WIDTH

Disconnect the hydraulic hoses from each of the drive motors and couple to the hydraulic cylinder hoses. The cylinder hoses are coupled to hose end protectors that are mounted to the chain covers on each section. Pay particular attention to the orientation of the hydraulic hoses as they are disconnected from the motors so the hydraulic connections can be reconnected correctly when box width changes have been completed.

Disconnect hydraulic lines from the hydraulic motors (Red Circle) and connect to the cylinders (Blue Circle) on each of the sections.



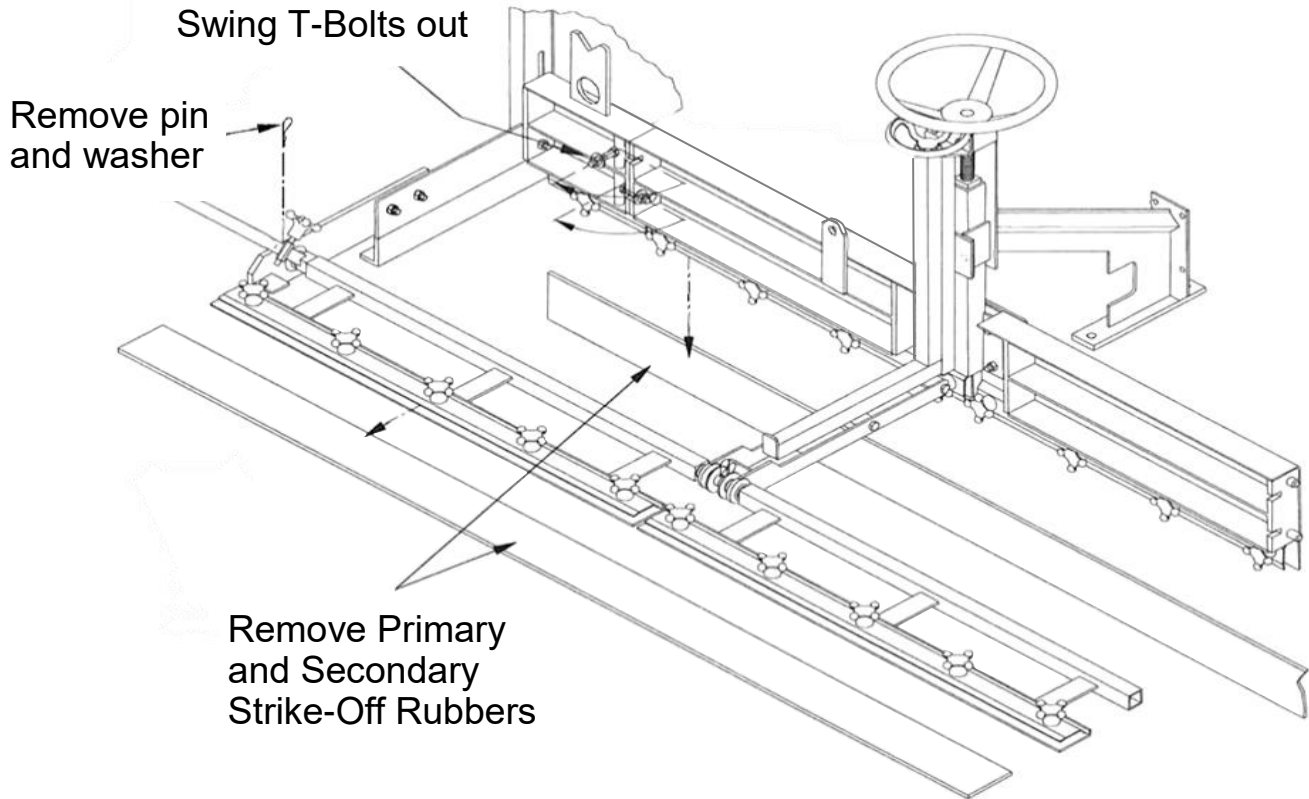
Cylinder hose connections -
coupled to hose end protectors
on chain guard covers.

*Auger sections have either Right-hand flights or Left-hand flights. Auger sections are identified by holding the section with the driven side pointing down, Right-hand flights descend (drop) in a Clockwise direction and Left-hand flights descend (drop) in a Counter Clockwise direction. **The Augers are marked on the shaft by the drive sprocket.***



SECTION 2 ADJUSTING BOX WIDTH

Remove the catwalk from the MSB Spreader Box. Loosen the clamp bar knobs on the primary and secondary screeds to remove the strike-off rubbers. Loosen the T-bolt nuts at the section of the joint that is going to be expanded and swing clear of slots. Remove the secondary screed retainer pins and flat washers at the housing end. The locator - stop pin in the front tube of the target section will have to be pulled in order to expand or collapse the box.



Use the RoadSaver's auger control circuit (now connected to operate the expansion cylinders) to hydraulically assist expansion of the MSB Spreader Box. Start by fully closing the auger speed flow control valves. Engage the auger control (forward or reverse) in the direction needed to supply hydraulic power to the cylinder, expanding the spreader box. Increase the auger speed control slowly to begin expanding the box and then adjust to regulate the speed of operation.

NEVER ATTEMPT TO EXPAND THE BOX WHILE IT IS SUPPORTED BY THE SPREADER BOX STANDS AS EQUIPMENT DAMAGE WILL RESULT.

Expand the spreader box 3" to 4" (76 to 101mm) wider than the length of extension pieces to be added. If inserting two 12" (305mm) sections, the opening would need to be 27" to 28" (659-711mm). Return the auger control to neutral.

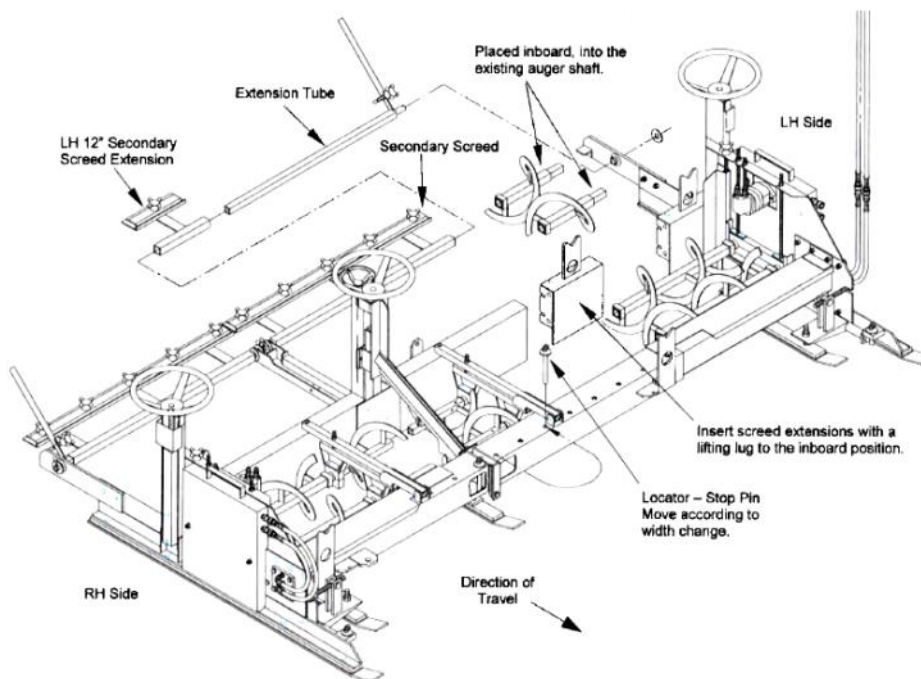


SECTION 2 ADJUSTING BOX WIDTH

Slide the extension tube out of the secondary screed. Move the locator - stop pin one hole out for every 6" (152mm) of extension desired. Clean and lubricate mating parts of the screeds, auger shafts and extension tubing. Place screed extensions end to end using the alignment pins and T-bolt fasteners to hold the screed sections together.

Place the auger shaft extensions onto the existing auger shafts, between the inboard bearings and the outboard auger shafts. Slide the secondary screed extension onto the extension tube and secure with 4 bolts, nuts and washers. Reinsert the extension tube into the secondary screed frame tube.

*Auger sections have either Right-hand flights or Left-hand flights. Auger sections are identified by holding the section with the driven side pointing down, Right-hand flights descend (drop) in a Clockwise direction and Left-hand flights descend (drop) in a Counter Clockwise direction. **The Augers are marked on the shaft by the drive sprocket.***



Use the RoadSaver's auger control circuit once again, but this time to hydraulically close or collapse the spreader box. Make sure the auger speed controls is set to 0 before engaging auger control, regulate the speed of operation with the controls as the box closes. Be observant and proceed cautiously to avoid binding or misalignments of the auger shafts or primary and secondary screed extensions. It is possible to damage the side housing and other parts of the spreader box by forcing the box back together. Close the box until the male frame tube comes in contact with the locator pin.

ENSURE AUGER SPEED CONTROL IS SET TO 0 AND BOX AUGER CONTROL IS IN THE OFF POSITION.

Swing T-bolts back into the slots and tighten, which will clamp the rear screed tightly together. Disconnect the hydraulic hoses from the hydraulic cylinders and reconnect to the drive motors. Reconnect the hydraulic cylinder hoses to the hose end protectors on the chain guards. Replace the primary and secondary screed strike-off rubbers and the catwalk. Width adjustment is now complete.

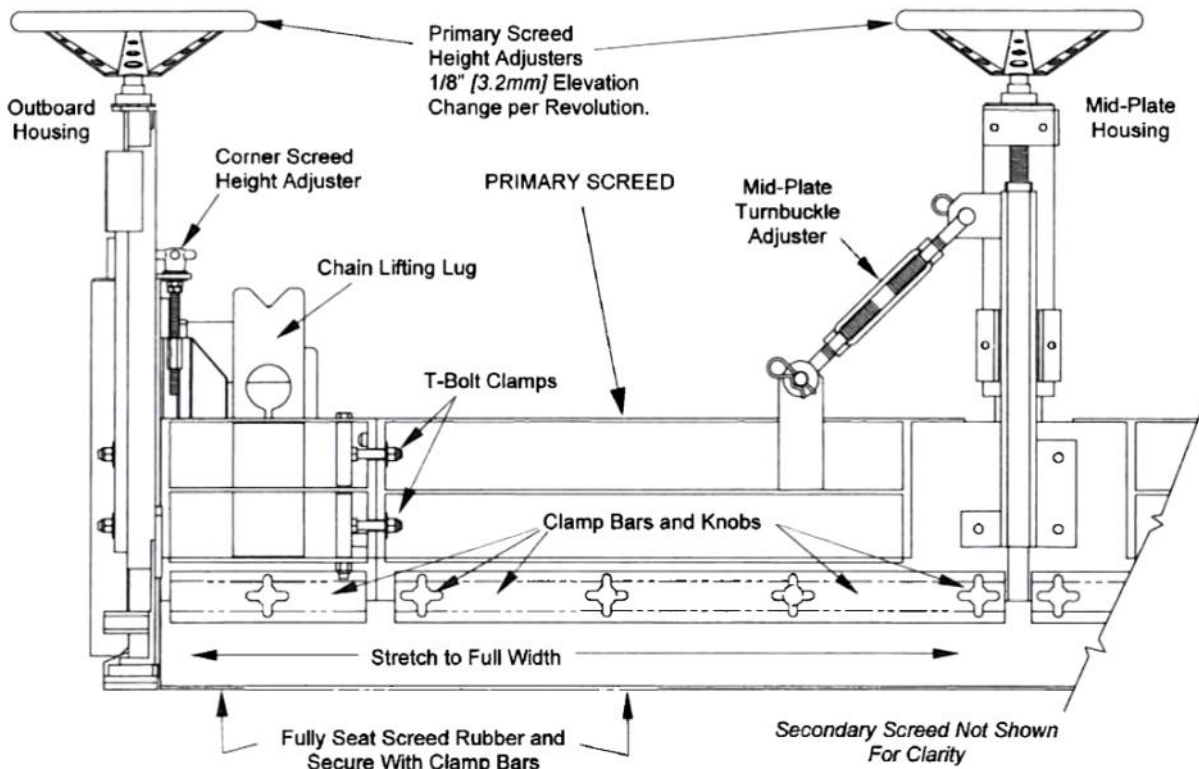


SECTION 3 Rubber Strike-off Installation

Rubber skirt board strips are mounted directly to the primary and secondary screeds of the MSB Spreader Box and held in position with clamping bars. The screed and the strike-off rubber work together to apply a downward force to the mix material as it is metered from the spreader box. The skirt board material can be made from neoprene rubber, urethane rubber or other flexible strip material but urethane rubber is generally selected because of its durability and ease of cleaning.



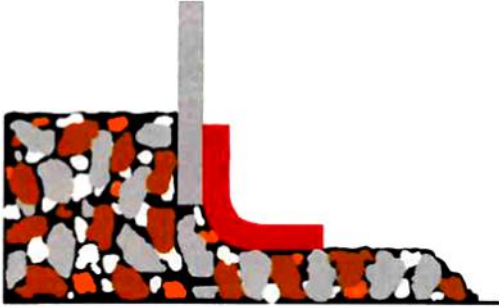
A strip size of 3/8"x6" (9.5mm x 152mm) urethane rubber (65A durometer) cut to the appropriate length is recommended for both the primary and secondary screeds. The screeds will accept skirt board thicknesses of 1/4" to 1/2" (6.4mm to 13mm) and widths of up to 8" (203mm). The strip size needed is dependent upon many factors such as mix properties, road surface condition, etc. and the best suited configuration is determined through actual experience.

Adjust the rotation of the mid-plate turnbuckle to ensure the primary screed is straight. Cut the length of the primary skirt board 2" to 3" (50.8mm x 76.2mm) shorter than the width "W" measured between the inside vertical faces of the outboard runners. Insert the skirt board at one end of the primary screed, fully seating against the clamp bar stud and tighten the knob on the clamp bar at this end to secure the strip. Work the strip under the clamp bars across the length of the screed and stretch to the full width of the primary screed, fastening at the other end with the clamp bar. Fully insert the strike-off rubber against the remaining studs and tighten clamp bar knobs, working from the midpoint of the screed to the outer clamp bars. Cut the secondary skirt board length to the width of the secondary and attach to the secondary in the same fashion as the primary.



SECTION 4 Box Height and Strike-Off Adjustments

For normal paving operations, a 3/8"x6" (9.5mm x 127mm) urethane strike-off rubber is used. With the correct downward force, the 6" (127mm) strike-off height allows the urethane material to naturally curve against and force the Microsurfacing mix to be spread against the road surface at the height of the largest aggregate stones. The correct amount of downward pressure can easily be determined by actual experience when conducting an initial test run.

 <p><i>Inadequate downward force on screed rubber resulting with metering fluctuations, causing surface irregularities and varying thicknesses of coverage.</i></p>	 <p><i>Downward force <u>too</u> excessive. Larger stones of the gradation are prevented from passing under the strikeoff, resulting with an unusable finished surface layer.</i></p>
 <p>Ideal downward force. Thickness of applied surface is 1 to 1.5 times the thickness of the largest stone size in the gradation. Uniform finish and stable integrity of the applied surface.</p>	<p><i>"It is important to achieve the proper downward force on the primary screed rubber. If the downward pressure is too light, fluctuations will occur as the mix is metered out of the spreader box. Excessive pressure on the screed rubber will prevent the larger stones of the gradation from passing under the strikeoff, resulting with a surface layer that is unusable."</i></p>

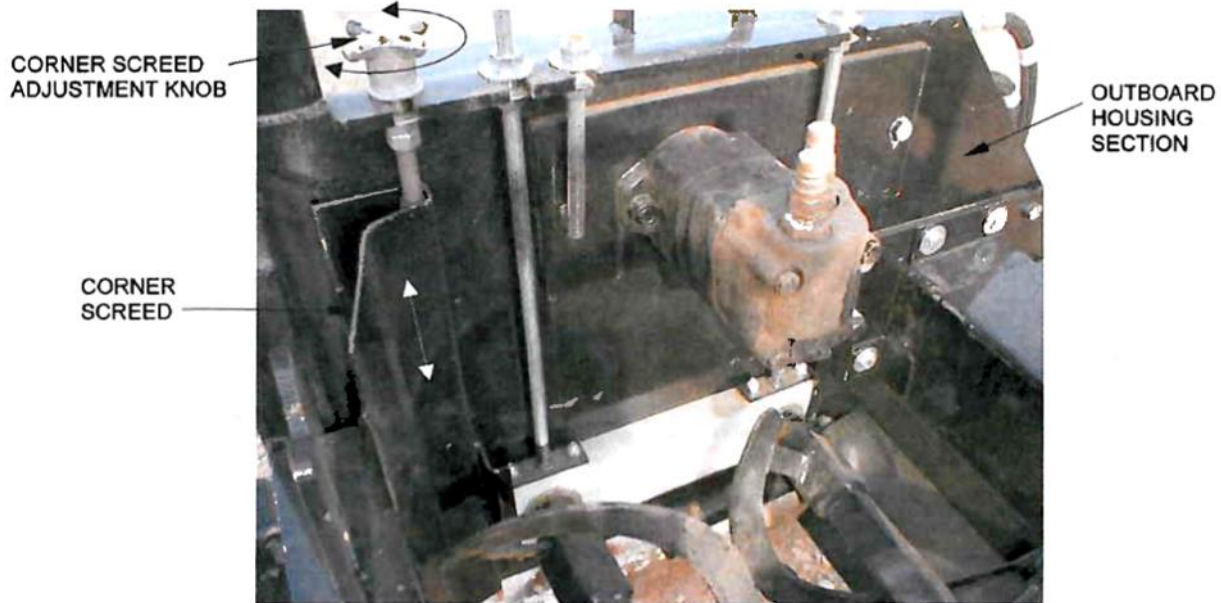
A steel flat bar or shorter, stiff urethane strike-off is recommended for minor rut filling operations and scratch courses. Be extra cautious not to snag utility or drain fixtures on the road surface when using a steel strike-off. Low lying areas will be filled while the majority of the application will scrape along the road surface

Primary screed height is adjustable at three positions - at each of the outboard housing sections and at the center mid-plate housing. The height adjusters move the primary screed vertically when the adjuster is rotated. A clockwise rotation will raise the position of the screed, decreasing the downward force applied to material mix at the skirt board rubber and increasing the application rate. One revolution of the screed adjuster results in 1/8" (3.2mm) in vertical movement.



SECTION 4 Box Height and Strike-Off Adjustments

Corner screeds are mounted to the outboard housing sections and used in conjunction with the primary screed to dress the edge of the newly applied material. The vertical position of the corner screed is controlled by the adjustment knob on each outboard housing section. When corner screeds are not required or not in use, adjust to provide sufficient clearance above the road surface to avoid unnecessary wear.



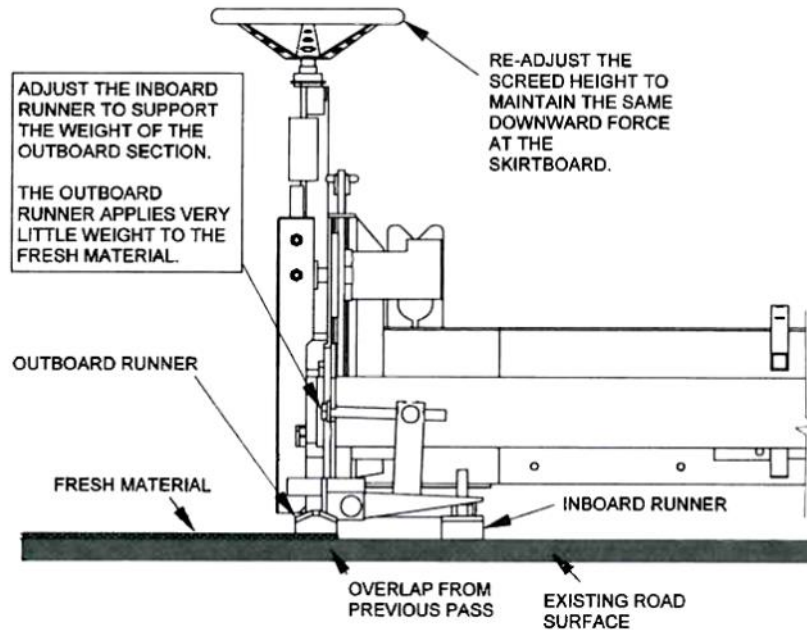
The purpose of the inboard runner is to provide support for the outer box section when it is necessary to create a longitudinal butt joint or lap joint alongside a fresh pass that hasn't had time to cure. The outboard runner is raised just above the fresh material and kept off the mat to avoid marring of the surface or plowing into the fresh mat. The inboard runner should be adjusted so the outboard runner is just lightly touching the fresh pass. This will ensure that the matching pass is set to the correct height at the joint.



The inboard runners are removable and it is recommended that they be removed on jobsites that do not require their usage. The spreader box is much easier to clean if the inboard runners are not installed. Remove the keeper pin, slide the runner assembly forward and drop the rear pin out of the housing. Slide to the back and drop the runner assembly out of the spreader box.

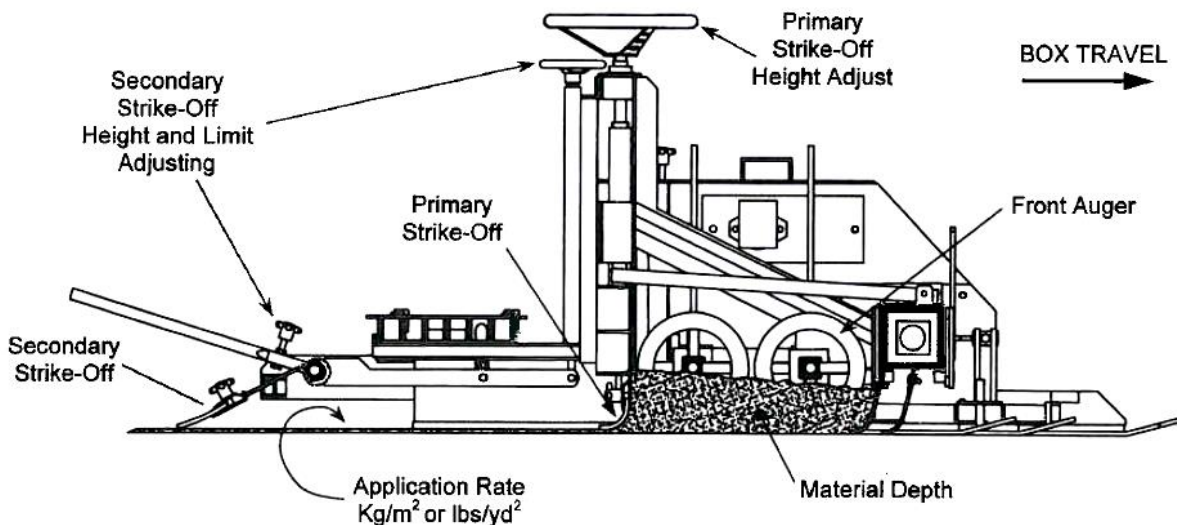


SECTION 5 Auger Operation



It is advantageous to carry a minimal amount of Microsurfacing material within the spreader box to reduce the time the mix is contained within the box. The material mixing time is limited before the mix breaks, therefore decreasing the amount of time that the material is contained within the box increases the length of time available for performing any hand work required. Also, a minimal amount of material in the spreader box reduces excess waste at the end of the pull or run.

A full box of material will place more pressure at the skirt board rubber, forcing the application rate to increase and deposit more material onto the road surface. The reverse is true if the material level is allowed to become too low. The application rate will decrease resulting with less material deposited onto the road surface and may result in sparse coverage. Always maintain a consistent, acceptable material level while paving to apply a uniform finish course to the road surface.



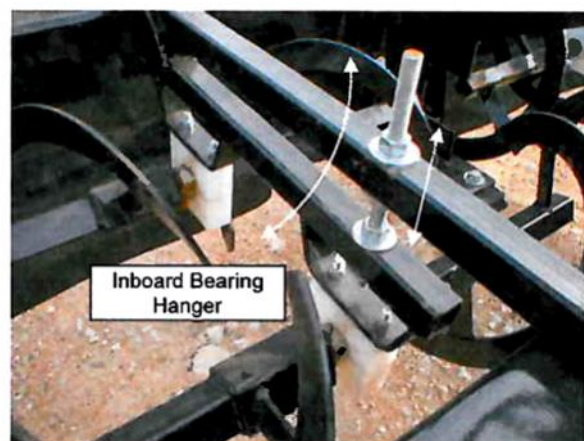
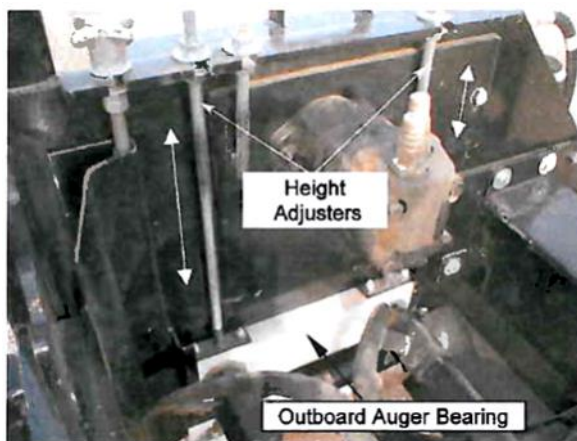
SECTION 5 Auger Operation

Auger height, speed and rotational direction are important considerations when operating the MSB) as all work together with the RoadSaver's production rate to control the material distribution within the spreader box. Hydraulic controls for direction and speed are operated from the RoadSaver's control station, therefore become familiar with all controls related to operation of the spreader box augers by referring to the Road-Saver's operation manual.

The preferred material flow direction is shown in Fig 1 . Box Width & Material Flow on page 5-1. Rear auger rotation should be selected to convey the mix material outward from the middle of the spreader box along the primary screed, returning any extra material inward along the front augers. The actual spreader application may require adjustments to the direction of material flow to manage material depth such as working on a transverse slope.

Adjust the auger speed to maintain an even material depth along the primary strike-off, being careful not to over speed the augers. If the auger speed is set too high, mix material will attempt to pack into the ends of the spreader box and an uneven spreader application may result. Additionally, material splash or spray becomes excessive with aggressive auger speed, needless waste occurs along with additional cleanup time. Always operate the augers at the minimum speed required to evenly distribute the mix material across the width of the primary strike-off.

Outboard auger height is regulated at the shaft ends by setting the bearing height within the end housings and by adjusting the inboard bearing hangers. Adjusting the outboard bearing height will require adjustment of the motor drive chain. The hydraulic motor mount rotates away from the augers to increase the tension of the drive chain and swings toward the augers to loosen the drive chain.

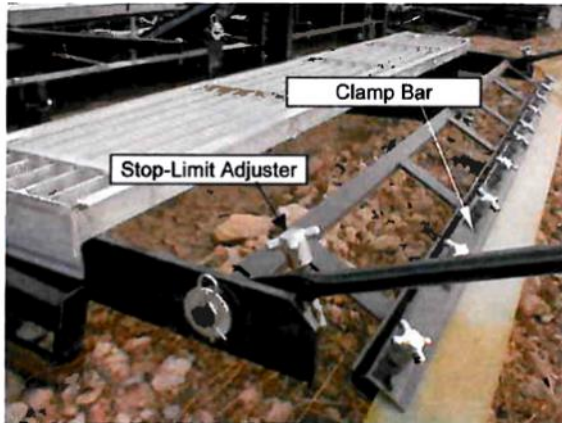


Auger clearance from the road surface should be set at approximately .393 inch (1 cm) as a starting point. If chevron shaped shadows are appearing in the final mat, the augers need to be raised. The augers need to be set as close to the pavement as possible, but not so close these shadows appear, or permit the auger to repeatedly hit high spots in the road while paving. On road surfaces that are equipped with fixtures, adjust the minimum height to avoid contact between the augers and the road surface fixture.

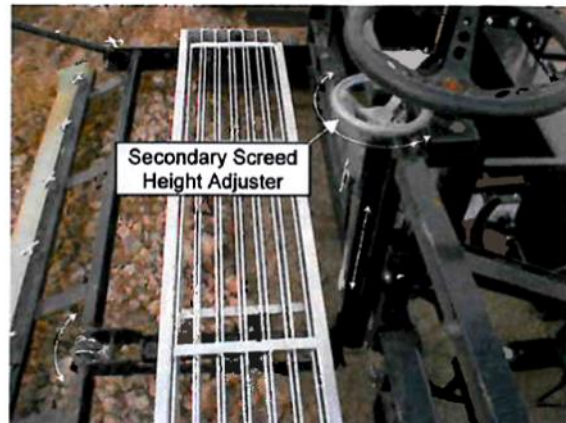


SECTION 6 Secondary Screed Operation

The purpose of the secondary screed is to provide a finish texture onto the fresh mat and to eliminate minor surface defects that may occur while paving. The secondary strike-off is constructed to allow width changes in increments of 6 inches (15.25 cm) or 12 inches (30.5 cm) as dictated by the primary screed (See Section 2, Adjusting Box Width). The secondary strike-off rubber is held in position by clamping bars and uses a one piece length of strike-off rubber. The strike-off rubber can be made of neoprene rubber, urethane rubber or other flexible strip material but urethane rubber is generally selected because of its durability and ease of cleaning.



Secondary – In the application position.



Secondary Screed Adjustments.



Secondary – Retracted or Cleaning Position.

The Secondary Screed is designed to float on top of the material mat with light pressure. It can be quickly retracted by raising the lift handles and flipping it over onto the catwalk. This is particularly useful when oversize aggregate is caught under the screed rubber and requires removal to avoid marring the fresh mat.

It is also useful when cleaning the material side of the screed rubber. Flipping to the retracted position provides easy access to perform cleaning and inspection tasks.

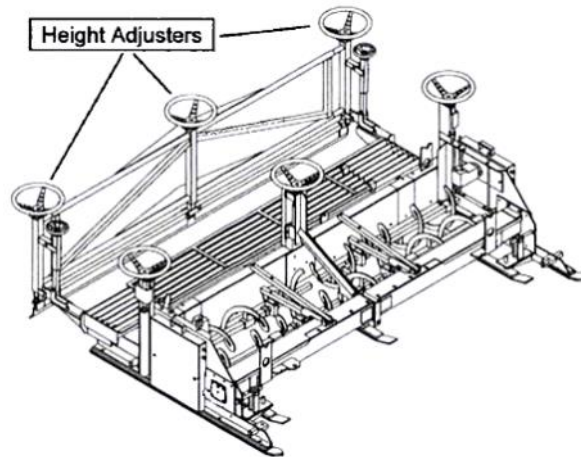
The secondary screed will perform best when it is adjusted to allow the screed rubber to just contact the fresh mat with a light downward pressure. Downward force is adjusted with the height adjuster and stop-limit adjusters. The light pressure will provide for minor surface enhancement and assist to stand the aggregate stone on edge, thereby improving the frictional properties of the finished mat.

Too much downward pressure will result in pushing and shoving of the fresh mix and is indicated by a roll of material larger than 1/2" (13mm) in diameter formed at the front of the strike-off rubber. A slight roll of material is desirable to smooth minor surface defects and generally should not be any larger than 1 to 1.5 times the diameter of the largest aggregate stone.



Secondary Screed - Adjustable Pitch Secondary

The MSB spreader box has an optional secondary screed that allows the screed to strike the material off at varying angles or pitch. The APS secondary is height adjustable at three convenient locations. The angle is adjustable from two outboard positions. Similar to the standard secondary screed, the strike-off rubber is held in position with clamp bars and tightened by hand knobs. The complete assembly tilts forward to re-lease unwanted oversized aggregate caught under the screed rubber.



Additionally, the secondary screed can be removed and a burlap drag can be affixed to perform as a secondary screed. Or, the strike-off rubber only can be removed and the burlap drag clamped into the strike-off rubber clamp holder. A burlap drag is often used with conventional slurries and is not recommended for Microsurfacing or quick-set slurry systems.



Spreader Box Connection to RoadSaver

Hydraulic hose connections provide a flexible hydraulic power supply from the RoadSaver to the auger motors and hydraulic cylinders used to extend and retract the box. When making the connection, wipe the hydraulic coupling's mating surfaces off with a clean cloth to prevent dirt and grit from entering the RoadSaver's hydraulic system. Inspect and replace worn O-rings and quad rings to keep fittings from leaking oil onto the road surface. Inspect pull and lift chains daily as the spreader box is commissioned to the RoadSaver.

CAUTION Never attempt to perform maintenance or repair to the spreader box unless the hydraulic supply is disconnected or hydraulic quick disconnects are in the closed or off position. It is recommended that the RoadSaver engine be turned off for maximum safety of all personnel.

Cleaning and Lubrication

The spreader box operates in an extremely harsh environment and frequent monitoring of components will be required, particularly high wear items. The runners are in contact with the road surface and subjected to abrasive wear anytime the box is in use. The augers are in constant contact with the mix materials during operation and will wear over time because of the abrasiveness of the mix. Support bearings for the augers, stub shafts and screed rubbers will also wear with use. Having replacement items on hand will ensure that down time due to component wear will be minimal. The MSB spreader box is capable of width changes and must be kept clean for it to work properly. To change the width of the box it is necessary to remove or add sections to the box. This process is substantially aided by keeping the spreader box free of excess material and cleaning the box after every use. When adding screed sections, be sure to clean and lubricate mating pieces as this will ensure that the screed is straight and true.

CAUTION Do not apply direct heat to the UHMW auger shaft bearings as direct heat will destroy the UHMW plastic bearings. Direct heat will also damage the urethane strike-off assembly.

Provide frequent lubrication for the height adjuster screws of the primary screed. Swing bolts should swing freely without binding and may also require lubrication. Lubricate all clamp bar studs to allow smooth operation of the clamp bar hand knobs. Grease the mating surfaces of the outboard housing and the outboard screed section. The auger shaft drive chains will require periodic lubrication.



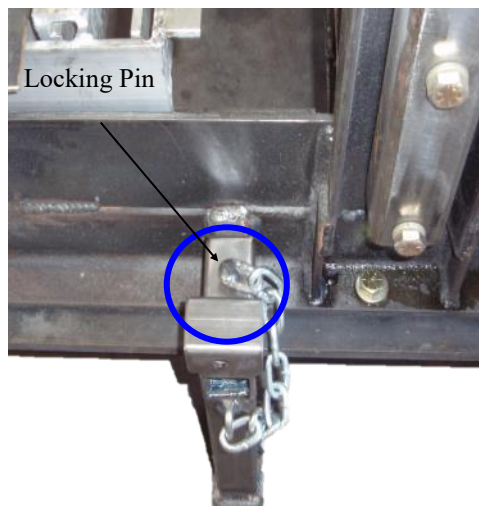
SECTION 8 Spreader Box Stands

Spreader Box Stands

The MSB Spreader Box is equipped with retractable jackstands that are easily deployed by removing the locking pin, remove and reposition the jack stand. Replace the locking pin. When using the jackstands, always place the box on a hard stable surface such as pavement or on packed ground. The jackstands are intended to be used temporarily when cleaning or performing maintenance to the box. For safety, set the box runners on the ground whenever possible. To store the spreader box in an elevated position place appropriate blocking under the runners and don't rely on the box stands for prolonged storage.

The box is designed to pivot at the middle of the box to conform to the crown profile of the road surface, thereby making it difficult to insert the screed rubber into the track tube whenever the box is elevated by the jackstands.

To maintain straightness and alignment of the rear screed when the box is elevated on the jackstands, attach the turnbuckle to the mid-plate housing section and the LH box sections while the box is resting on the ground then lift and support the box with jackstands. This will prevent the box from sagging while supported by the jackstands, thereby allowing the screed rubber to be easily installed to the screed.

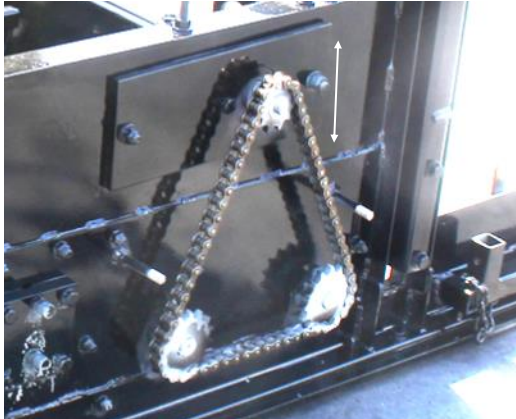


ENTRAPMENT/CRUSHING HAZARD: Never attempt repair or place any body part directly under any spreader box while it is suspended above the ground by the lift chains, lift mechanisms or during transportation preparation. BE SURE to use the appropriate jackstand originally equipped with your spreader box for maximum personal safety. If the appropriate stand is unavailable, utilize firm foundation such as timber on level hard ground.



Drive Chain Adjustment

A single motor on each outboard section provides power to drive the spreader box augers for that section. The hydraulic motor mount is designed to pivot and is equipped with a positioning adjustment screw to apply tension to the drive chain. The adjuster is equipped with a locking nut to maintain the tension setting. NOTE: Adjusting the auger height will require loosening of the drive chain assembly to prevent the chain from binding. Inspect the drive sprockets and chain wear periodically and replace components as required.



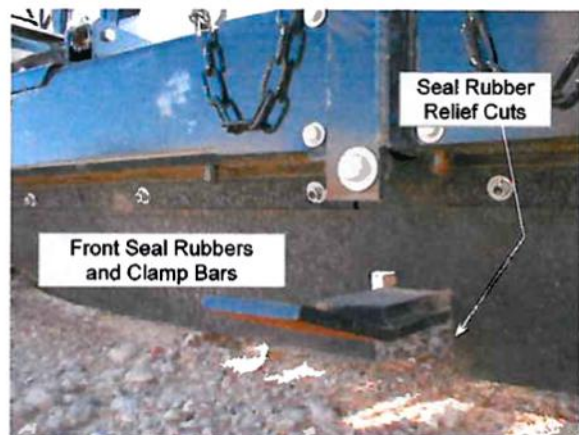
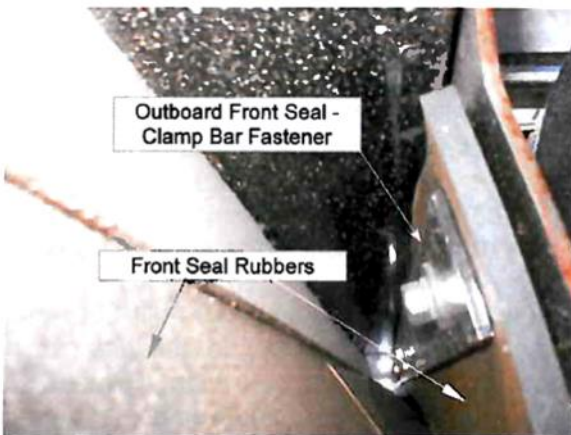
Chain Cover removed



Drive Chain Tension adjustment

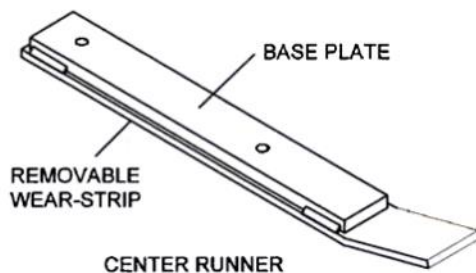
Front Seal Replacement

The front seals of the MSB spreader box are held in place by clamp bars and nuts fastened to studding on the individual sections and seal holders. The front seals are manufactured of 1/4"x8" (6.4mm x 203mm) wide neoprene rubber with relief cuts to allow the seals to border the vertical faces of the inboard and center runners. To replace the seals, remove the old ones by unbolting. Install the outboard (rear-ward) seals first because the clamp bar is hidden behind the inboard seal. Then install the inboard or front most seals.

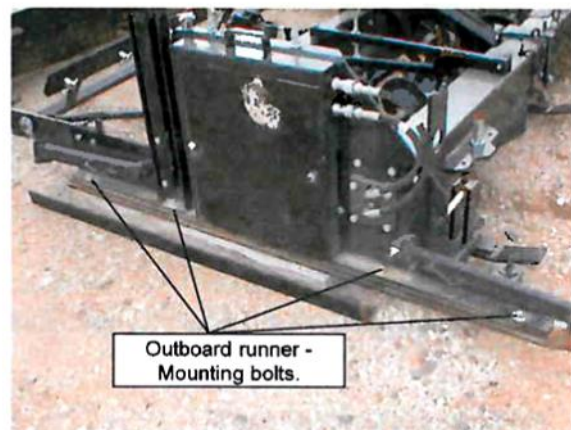


Runner Replacement

The runners or skids on the MSB spreader box are designed to be replaced quickly and easily by unbolting the worn runner and exchanging with a new one. The runner is made up of two component bodies welded together. The upper portion is constructed of mild steel with holes tapped into it to allow the runner to be bolted to the housing sections of the spreader box. The lower portion is made of an abrasive resistant material. A worn runner can be repaired by removing the abrasive resistant wear strip and welding a new wear strip onto the mild steel portion (as long as the base plate material is not damaged). Both runners and wear strips are available from the parts department and are normally stocked.



1. Remove runner from spreader box.
2. Remove worn wear strip at welds.
3. Clean up base plate and prepare for new wear strip.
4. Attach new wear strip with sufficient welding.



Bearing Replacement



The MSB spreader box shaft bearings are made of UHMW polyethylene plastic and feature a two-part split design to make replacements simple without having to remove the auger shafts. The picture at the left shows a typical inboard bearing. The bolts hold the bearing together around the shaft and fasten it to the bearing hangers of the spreader box.

The outboard bearings are also split but require the drive shaft stubs to be removed because of the guide channels that the bearing is aligned within. Always inspect the stub shafts and replace as necessary when servicing the bearings.



SECTION 10 General Observations

General Observations

The auger shafts are subjected to continual wear and will require periodic replacement. The ribbon fliting will diminish and subsequently the ability to move material within the spreader box. At this time the auger shaft can be completely replaced or the shaft life can be extended by replacing the ribbon fliting. Also, inspect the drive end of the auger (re-enforced tube end). If the drive end does not couple to the stub shafts adequately, slippage will occur and finally failure of the auger shaft. The driver stub shaft may also require replacement.

Perform inspection of the lift and pull chains every time the spreader box is put to work. The chains should not show any indication of stretching or contain any broken links. If a chain or chain component becomes damaged, replace it with equally rated components. The chain and chain components originally equipped with the speeder box are Grade 43 rated for 3900 Lbs (1769kg) load capacity.

Ensure that all hook clevis pins are safety pinned to avoid an unexpected release of the load. The MSB spreader box has lifting loops designed to maintain positive engagement with the lifting chain. When correctly configured, the chains can be relaxed and the hooks will remain engaged as illustrated in the picture below.



Lift Chain & Lift Loop Configuration

The parts manual is a great reference to the assembly and breakdown of the MSB spreader box. Whenever ordering parts, utilize this resource and ask for the part as called out in the parts manual. This will eliminate confusion from the task and ensure that the part ordered is the part needed. Auger components are difficult to describe via the telephone and if the auger component is ordered by part number this will provide our parts department with the right information to ensure the parts that are shipped are what is required to repair the MSB spreader box.



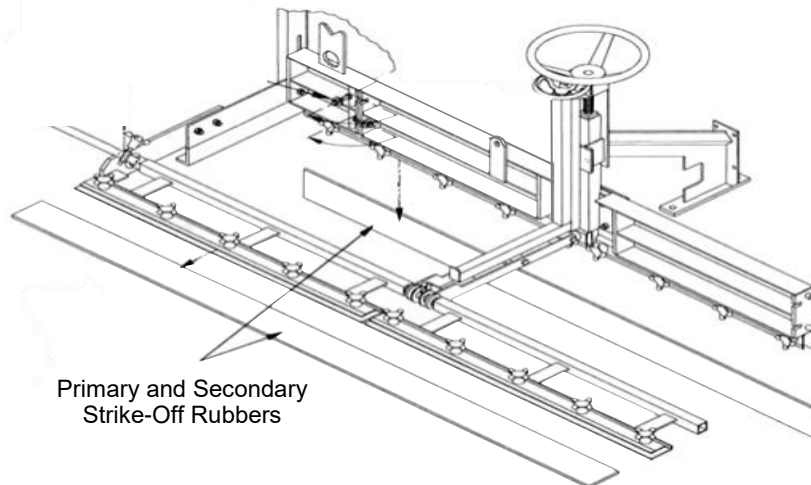
SECTION 11 SELECTING BOX RUBBER

Selecting the proper strike-off rubber requires knowledge of the texture of the surface the material will be placed on and the type or size of the material being placed. In general terms there are two types of rubber: Black Neoprene and Red Urethane. Neoprene is softer, less expensive material but wears faster, Urethane is a stiffer, longer lasting material. Below are two examples of material type and thickness and where they would likely be used.

1. Type I placed on a smooth surface = 1/4" Urethane or 3/8" Neoprene.
2. Type III placed over large chip seal = 1/2" Urethane.

The variance in rubber stiffness directly affects the desired mat thickness. Urethane is common for it has much longer wear life over Neoprene.

Front of box rubber requires 4 separate pieces of rubber due to the adjustability of the Microsurfacing box. The primary strike-off and secondary strike-off are each single length rubbers.



QTY	SIZE	LOCATION	MATERIAL	PART NUMBER
4	1/4" x 8" x 48"	Front	Black Neoprene	110000808
2	1/4" x 6" x 180"	Strike-off	Red Urethane	110002635
2	3/8" x 6" x 180"	Strike-off	Black Neoprene	110003198
2	3/8" x 6" x 180"	Strike-off (Std upgrade)	Red Urethane	110002478
2	1/2" x 6" x 180"	Strike-off (Std)	Black Neoprene	110003197
2	1/2" x 6" x 180"	Strike-off	Red Urethane	110004327
1	3/16" x 5" x 180"	Primary Strike-off (for scratch course)	Steel	110004328
1	3/8" x 6" x 600"	Bulk Strike-off	Red Urethane	110002908
1	1/2" x 6" x 600"	Bulk Strike-off	Black Neoprene	110002909



SUPPLEMENTAL LITERATURE

**IF APPLICABLE, REFER TO FOLLOWING DOCUMENT(S)
FOR SUPPLEMENTAL INFORMATION**

.....MSB PARTS MANUAL

.....ROADSAVER OPERATIONS MANUAL



