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# Parts & Service Manual for MS3500 Scraper Reversible & Fixed



Monroe Snow & Ice Control  
1051 W. 7th Street • Monroe, WI 53566  
USA: 877-834-9049 • Fax: 608-329-8488  
[www.monroetruck.com](http://www.monroetruck.com)

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# Table of Contents

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General Information	2
How to Order Parts	2
Return Policy	2
Safety Instructions	3
Maintenance Instructions	4
Assembly/Installation Instructions	7
Replacement Parts	15
Warranty	61

## General Information

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- Use only Monroe Truck Equipment O.E.M. replacement parts. Failure to do so will void the warranty.
- Location descriptions are noted in direction of travel (i.e. front, rear, left and right).
- Delivery of replacement parts is subject to our sales delivery terms.
- Replacement parts listed in this manual reflect the most common items for this product. If you do not find the part you require, please call your distributor.
- Monroe Truck Equipment reserves the right to make revisions or alterations to the parts manual at any time.

## How to Order Parts

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To order or inquire about replacement parts, please contact the distributor or store that the product was purchased through. To speed the information flow, please have the following information available:

- Model Number
- Serial Number
- Part Number and/or Description of the Part
- Quantity Needed

For further information about Monroe Truck Equipment replacement parts, please call 877-834-9049.

## Return Policy

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Merchandise returned to Monroe Truck Equipment must have a Warranty Service Request (WSR) form filled out completely and signed by authorized personnel.

To get your WSR form for whole goods, call Snow & Ice Sales at 800-880-0109.

To get your WSR form for replacement parts, call Snow & Ice Warranty>Returns at 608-329-8544.

All returned items are subject to a 15% restocking fee and ***must be sent freight pre-paid.***

# Safety Instructions

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- Read all safety, installation and maintenance instructions completely before operating this equipment.
- Keep all personnel clear of moving parts while equipment is being operated.
- Lower the scraper blade to full down position, apply emergency brake and stop engine before leaving the vehicle to inspect scraper.
- Do not operate truck in reverse with the scraper blade in down position.
- Do not operate a scraper in need of maintenance! Repair immediately!
- While operating this equipment, use common sense, use caution, be alert and be safety-conscious.
- When installing a scraper, be sure to use a hoist with a proper load rating.


## Scraper Weights:

MS3510	2,050 lbs.
MS3511	2,100 lbs.
MS3512	2,150 lbs.

- ***Before installation of this scraper, or before performing maintenance to the scraper, be sure to set the parking brake, chock the rear wheels and remove the key from the ignition switch.***

## Cylinder Operating Safety Procedures

- Down pressure relief is required on all Monroe Underbody Scrapers. A 500 PSI relief can be incorporated into the truck hydraulic system or a down pressure relief valve can be purchased with the underbody scraper. The relief valve must be installed to prevent premature failure of the actuating cylinders and/or the underbody scraper.
- System pressure should not exceed 1,850 PSI for the power reverse cylinder(s) or 1,850 PSI for the upside of the curl cylinders. High pressure systems require additional relief valves (not furnished). ***Exceeding these pressures may cause damage to the cylinder, cause possible injury, and will void the warranty.***



### ! DANGER

**AVOID HIGH-PRESSURE FLUIDS**

Escaping fluid under pressure can penetrate the skin causing serious injury.

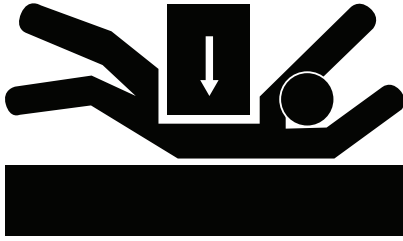
Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

# Maintenance Instructions

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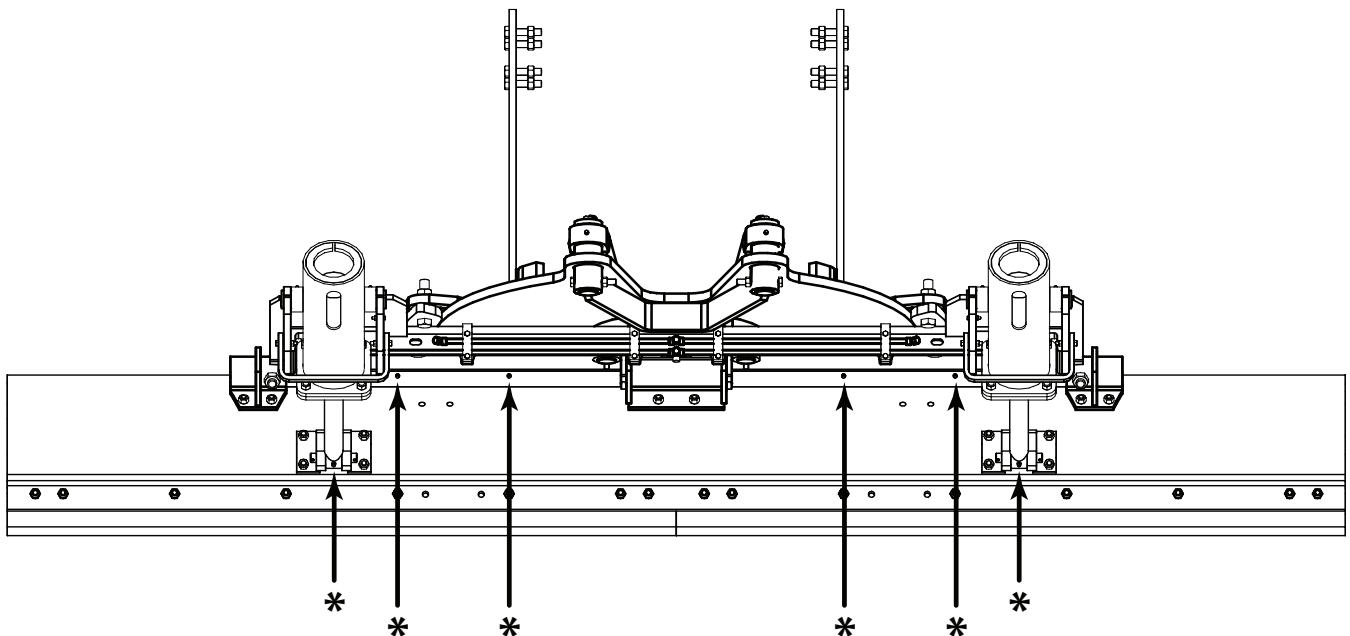
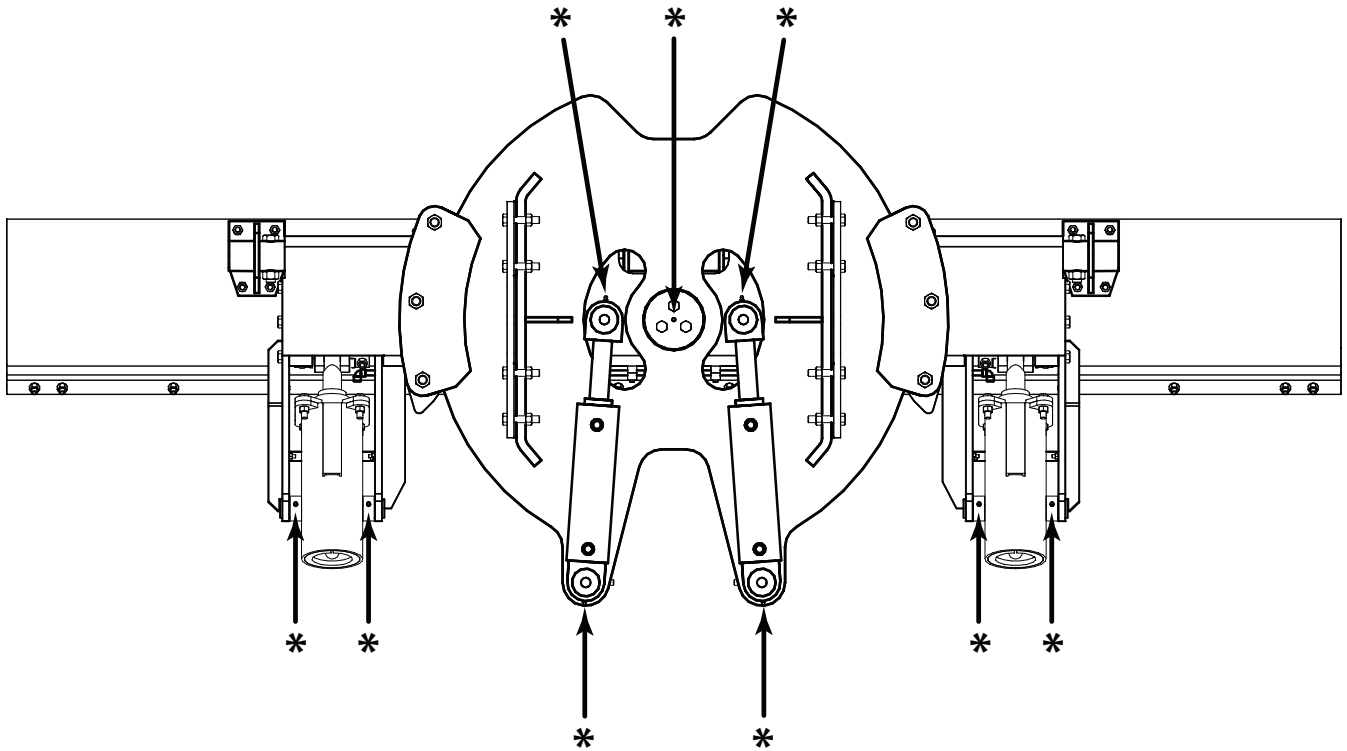
**WARNING:** Before working under the vehicle or around the scraper, lower the moldboard to the ground, shut off the truck engine and remove the keys from the ignition. Prevent accidental startup and operation of the scraper to avoid personal injury.

## ***In Season:***

- Re-torque all fasteners after the first 8 hours of use.
- Check for loose, damaged and missing fasteners before each use.
- Inspect and re-torque all fasteners at the beginning of each plowing season.
- Lubricate grease fittings every 10 hours during normal use and more often during heavy use. See page 5 for grease fitting locations.
- Tighten all hydraulic fittings after the first 8 hours of use.
- Inspect hydraulic fittings for leaks every week and tighten as required. If a hydraulic fitting continues to leak after being tightened, replace the fitting as soon as possible.
- Check the cutting edge for wear after each use. Replace the cutting edge when it wears to within  $\frac{1}{2}$ " of the moldboard.
- Check the operation of the scraper before each use:
  - Verify that the moldboard has full up and down travel.
  - Verify that the hydraulic down pressure for the moldboard relieves at 400-500 PSI. The down pressure on the moldboard must not be able to unload the front or rear axle to an unsafe degree.
  - Verify that the moldboard rotates freely from stop to stop. Check for broken stops that could allow the moldboard to over-travel and make contact with tire.
  - If the hydraulic valves are operated by cables, verify that the lever(s) and cables operate smoothly and easily and that the lever(s) snap back to center when released.
- Inspect the hydraulic hoses and any electrical wiring for wear or damage every month. Check hoses and wiring attached to moving components closely.
- At the end of each storm event, pressure-wash the underside of the chassis and the horizontal surfaces of the scraper. Removing salt and other chemicals regularly will prolong the life of all components.
- Due to the harsh operating conditions of an underbody scraper, regular inspection and maintenance is critical to safe operation and durability of the scraper. The owner or end user of the scraper must create and enforce the use of an inspection and maintenance schedule.

# Maintenance Instructions (Continued)

## Grease Fitting Locations



# Maintenance Instructions *(Continued)*

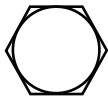

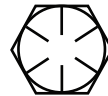
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## Off Season:

- If the scraper will not be used during the summer, the moldboard can be removed and stored.
- Before disconnecting the hydraulic hoses, raise the moldboard and chain it in the up position. If the moldboard drops unexpectedly, it can cause severe injury to feet and hands.
- When quick-disconnects are separated, cover and cap the ends to prevent the entry of contaminants into the hydraulic system and possible impact damage to the ends.
- The exposed areas on hydraulic cylinder rams should be covered with grease during the storage period. Remove the grease before returning the scraper to service.
- If possible, store the scraper indoors to reduce rusting and UV damage to the hoses.
- Inspect the moldboard and the mounting components on the truck. Make any required repairs immediately so that the scraper is ready to be reinstalled and used at the start of the next winter season.
- When reinstalling the scraper, replace any damaged fasteners and follow the fastener torquing guidelines for in-season use.
- If the scraper is used for shoulder work during the summer season, continue to follow the inspection and maintenance guidelines given for the in-season period.

## Torque Chart

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<b>SIZE</b>	 <b>GRADE 2</b>	 <b>GRADE 5</b>	 <b>GRADE 8</b>
1/4-20	50 IN-LBS	75 IN-LBS	9 FT-LBS
3/8-16	15 FT-LBS	23 FT-LBS	35 FT-LBS
1/2-13	35 FT-LBS	55 FT-LBS	80 FT-LBS
5/8-11	75 FT-LBS	110 FT-LBS	170 FT-LBS
3/4-10	130 FT-LBS	200 FT-LBS	280 FT-LBS
1-8	190 FT-LBS	480 FT-LBS	680 FT-LBS
1 1/4-7	380 FT-LBS	840 FT-LBS	1,360 FT-LBS



# Assembly Instructions - MS3500 Reversible

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**Numbered steps below are referenced on assembly diagram on following page.**

1. Attach the cutting edge to the moldboard using  $\frac{5}{8}$ " x  $2\frac{1}{2}$ " dome head bolts,  $\frac{5}{8}$ " lock washers and  $\frac{5}{8}$ " nuts. Hardware quantity will vary depending on moldboard length. Refer to chart below.

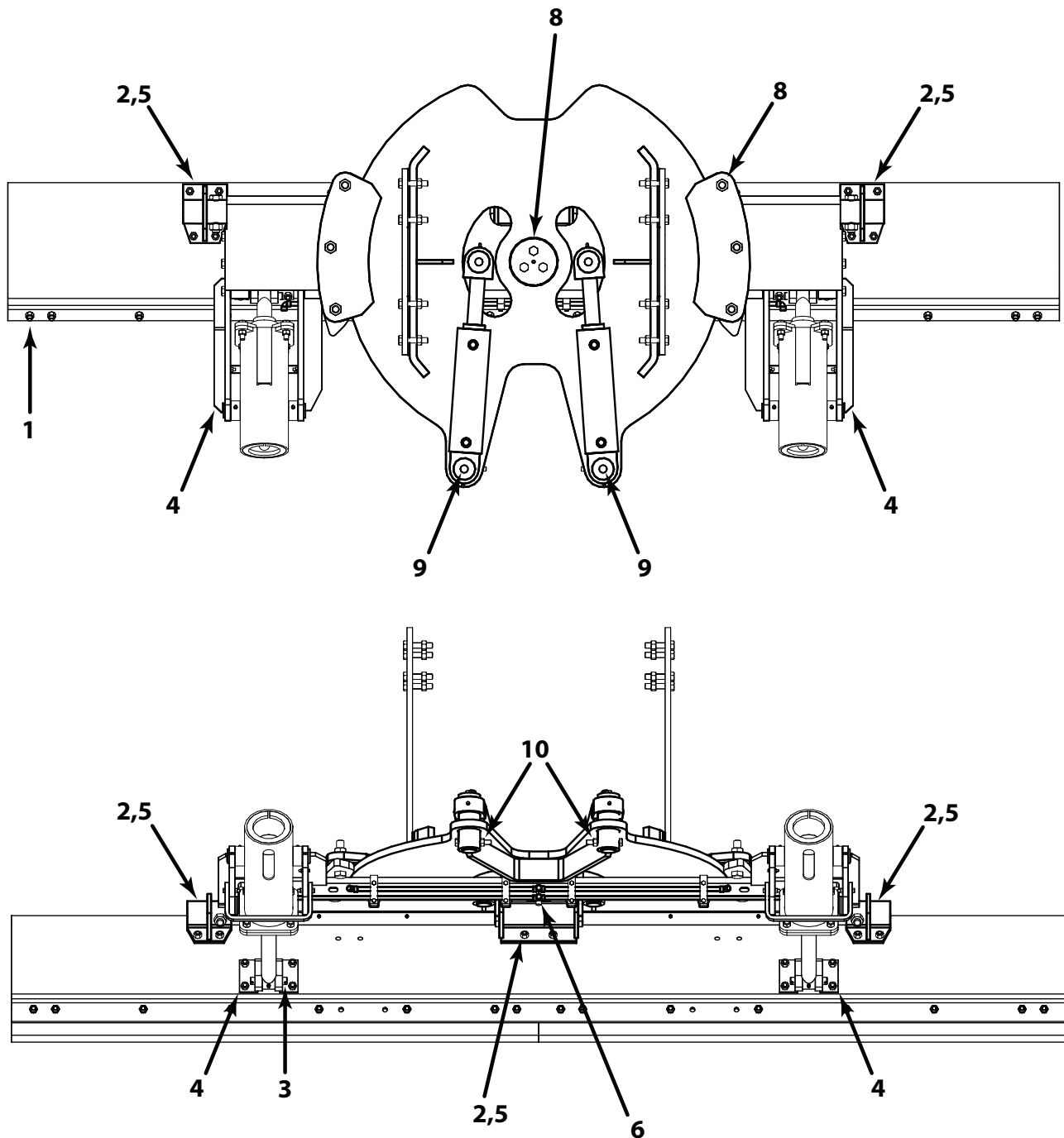
MS3510	14 pcs. each
MS3511	15 pcs. each
MS3512	16 pcs. each

2. Insert the hinge shaft through the hangerboard weldment and center hinge. Fasten the right and left hinges to the shaft with (2) 1" x  $4\frac{1}{2}$ " bolts and (2) 1" top lock nuts.
3. Attach the (2) cylinder hinge weldments to the cylinder rod ends with (2) 1" x 4.25" pins and (2) cotter pins. Extend the cylinder rods.
4. Connect the canister assemblies and the canister arm weldments to the hangerboard with (6)  $\frac{3}{4}$ " x  $2\frac{1}{2}$ " bolts and (6)  $\frac{3}{4}$ " top lock nuts. Fasten the (2) canister arm supports with (4)  $\frac{3}{8}$ " x 2" bolts and (4)  $\frac{3}{8}$ " top lock nuts. Be sure the grease fittings on the canister assemblies are facing up.
5. Attach the three hinges to the moldboard using (13)  $\frac{5}{8}$ " x  $2\frac{1}{2}$ " flat socket head bolts and (13)  $\frac{5}{8}$ " top lock nuts.
6. Attach the hydraulic cross pipes to the assembly with the (4) black UHMW clamps. Include (2)  $\frac{3}{8}$ " female hydraulic tee fittings, (2) 45° pipe fittings, (2) 90° pipe fittings and (2) 22" hydraulic hoses (all included). Fasten cross pipes with (8)  $\frac{5}{16}$ " x  $2\frac{1}{2}$ " bolts and (8)  $\frac{5}{16}$ " top lock nuts.
7. Plumb the hoses to the cylinders. The 22" hoses connect to the bottom pipe and the 34" hoses, which are already in the canister assembly, connect to the top pipe. Tie down the 34" hoses to the canister arms with (2)  $\frac{1}{4}$ " x  $1\frac{1}{4}$ " bolts and (2)  $\frac{1}{4}$ " top lock nuts and (2) cushioned metal clamps. NOTE— All the plumbing connections require pipe thread sealant. (Not shown in diagram)
8. Fasten down the circle weldment with the center pin, bolt down blocks and spacers. The center pin has (3)  $\frac{3}{4}$ " threaded holes in it and is fastened with (3)  $\frac{3}{4}$ " x 4" full thread bolts and (3)  $\frac{3}{4}$ " top lock nuts. The bolts should be inserted from underneath the hangerboard with the nuts on top. Fasten the bolt down blocks with (4) 1" x  $4\frac{1}{2}$ " bolts on the "corners" of the blocks, (2) 1" x 5" bolts in the center and (6) 1" top lock nuts. These bolts should also be inserted from underneath the hangerboard. The blocks and shims go in order from the hangerboard outward to the thin steel shims, the  $\frac{3}{8}$ " thick black plastic shims then the 1" thick bolt down block.  
NOTE— Check for proper pivoting of the circle weldment after this step.

**Continued on next page.**

## Assembly Instructions - MS3500 Reversible *(Continued)*

9. Attach the reversing cylinders with (4) cylinder mounting pins, which have a cross-bored hole at one end and a tapped hole at the other. The pins are fastened at the top with (4) pin retainers and (4)  $\frac{5}{8}$ " x  $1\frac{1}{2}$ " bolts and (4)  $\frac{5}{8}$ " lock washers.
10. The pins fasten to the hangerboard assembly with (2)  $\frac{5}{8}$ " x 5" bolts and (2)  $\frac{5}{8}$ " top lock nuts. The pins fasten to the circle weldment with (2)  $\frac{5}{8}$ " x  $4\frac{1}{2}$ " bolts and (2)  $\frac{5}{8}$ " top lock nuts. Coat the pins with anti-seize lubricant prior to assembly.
11. The hanger brackets can be attached now or after placement on the truck frame with (4)  $\frac{3}{4}$ " x  $3\frac{1}{2}$ " bolts and (4)  $\frac{3}{4}$ " top lock nuts per side.



# Installation Instructions - MS3500 Reversible

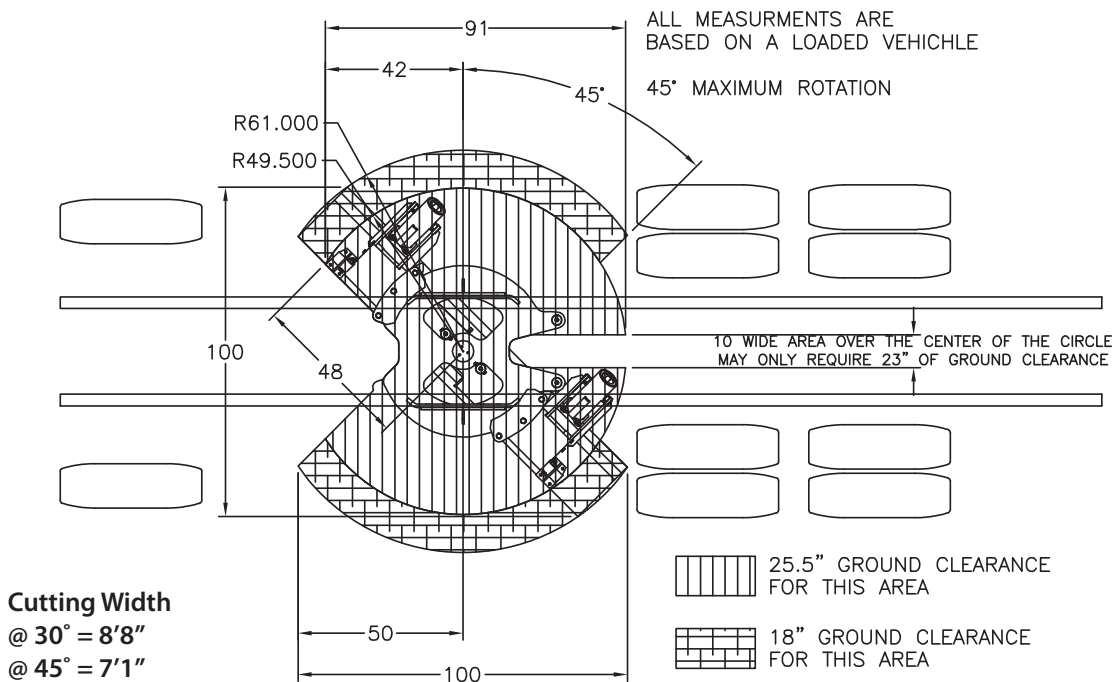
*These mounting instructions are intended as a guide to aid you in the installation of your equipment. All dimensions noted in the instructions are approximate and may vary due to: make and model of chassis, tire size, type of suspension, spring deflection, customer preference and interference caused by immovable attachments such as a transfer case. Ideally, the scraper should be mounted to get full usage of the cutting edge without wearing into the moldboard. Monroe Truck Equipment assumes no responsibility for improper installation, unless installed at a Monroe Truck Equipment location. Mounting location should be discussed by the end-user and the installer prior to installation in order to achieve the best possible installation.*



This safety symbol is a reminder to follow all safety messages and precautions involved when installing or operating this equipment. It means to be **CAREFUL, ALERT** and **SAFETY CONSCIOUS!**

1. Clear the truck frame for mounting space necessary for scraper. Refer to diagrams below for clearance dimensions.

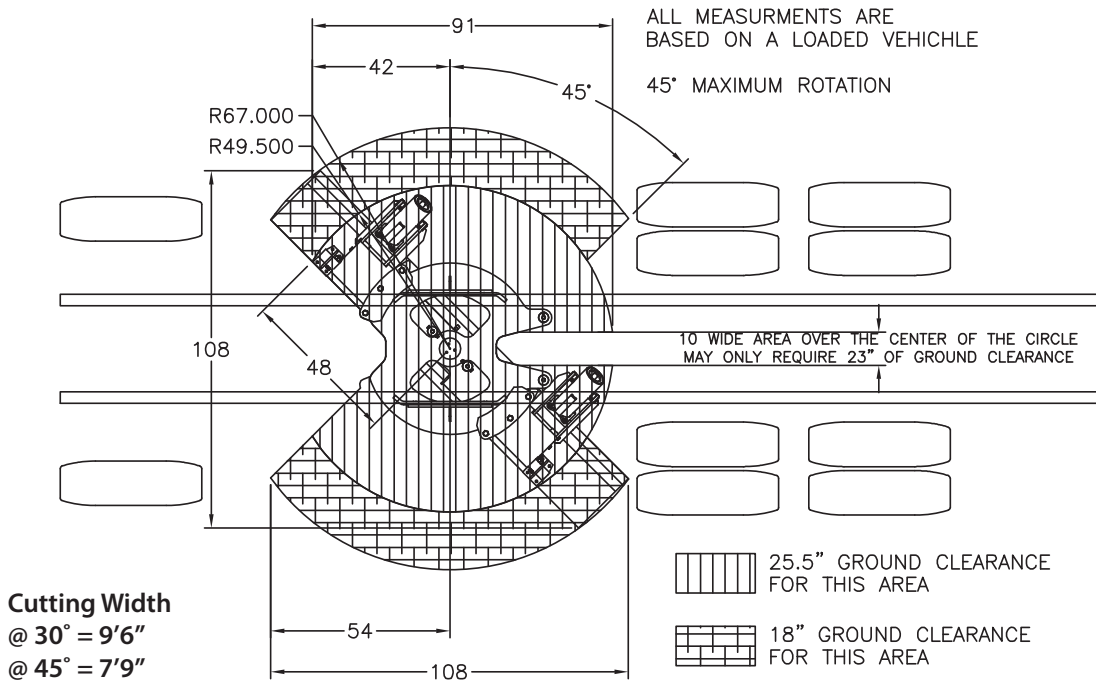
## MS3510 - 10' Scraper



Distance required from rear of hanger bracket to rear tire = 37"

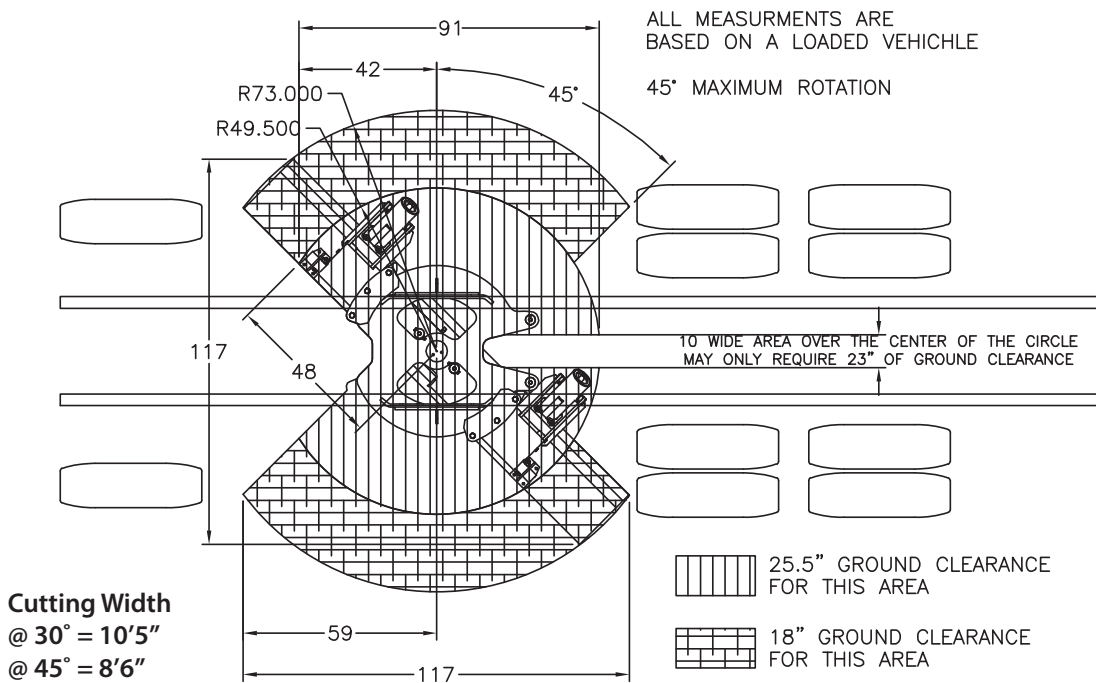
# Installation Instructions - MS3500 Reversible *(Continued)*

## MS3511 - 11' Scrapper



Distance required from rear of hanger bracket to rear tire = 46"

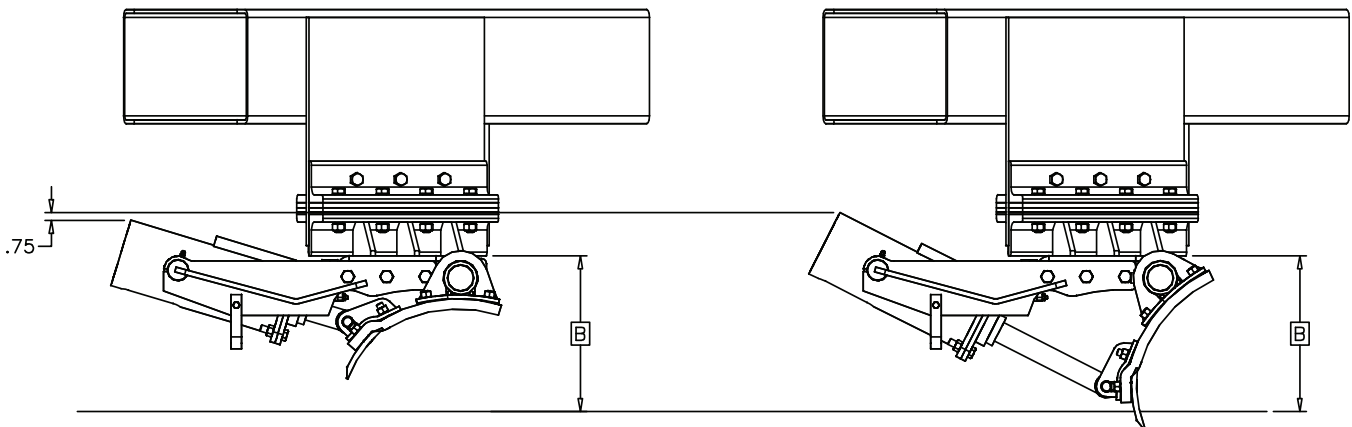
## MS3512 - 12' Scrapper



Distance required from rear of hanger bracket to rear tire = 48"

# Installation Instructions - MS3500 Reversible *(Continued)*

- Slide the assembled moldboard under the truck and raise it into position. The distance from the top of the hangerboard assembly to the ground should be approximately 17" or 20" depending on the height of the moldboard. Be sure to square it off the truck frame, not the ground, as some truck frames are not parallel to the ground.



Note: Canister will swing up as moldboard is activated.

Moldboard Height	B
15"	15"
20"	20"



**Stay clear of area beneath moldboard until it is safely and securely supported. Use Caution!**

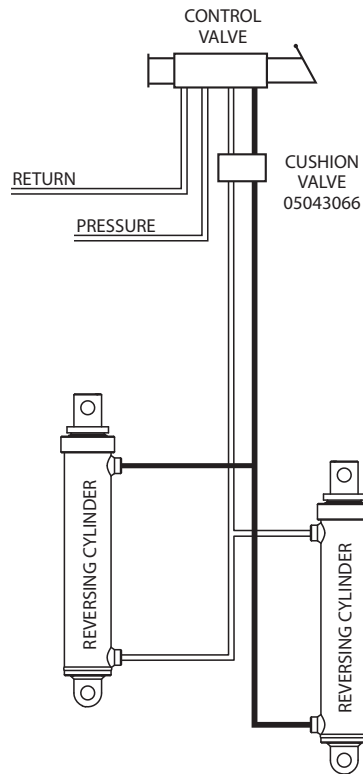
- Locate the hanger brackets on the frame in the proper position for the length of the moldboard.
- Check all measurements to make sure scraper is located correctly.  
NOTE: Be sure to square hanger brackets off the frame and not off the ground.
- Drill (6)  $\frac{25}{32}$ " diameter holes on each side of the truck frame and bolt the hanger brackets in place with (12)  $\frac{3}{4}$ " bolts & nuts and (24) hardened washers.  
NOTE: Always use Grade 8 bolts & nuts when fastening to a truck frame.
- It is very important that the hangerboard/moldboard assembly pivots freely through its entire arc. If everything is mounted level and square, this is easily achieved. If there is a slight problem, a small amount of adjustment in most bolt holes is available.



**Stay clear of area beneath moldboard until it is safely and securely supported. Use Caution!**

## Installation Instructions - MS3500 Reversible *(Continued)*

- After everything is installed and adjusted so that the hangerboard/moldboard assembly pivot correctly, plumb the unit according to the diagram shown below. The proper valve for the actuating cylinders is a 3-position, 4-way valve.



NOTE: All connections require pipe thread sealant.

***Down pressure relief is required on all Monroe Underbody Scrapers. A 500 PSI relief can be incorporated into the truck hydraulic system or a down pressure relief valve can be purchased with the underbody scraper. The relief valve must be installed to prevent premature failure of the actuating cylinders and/or the underbody scraper.***

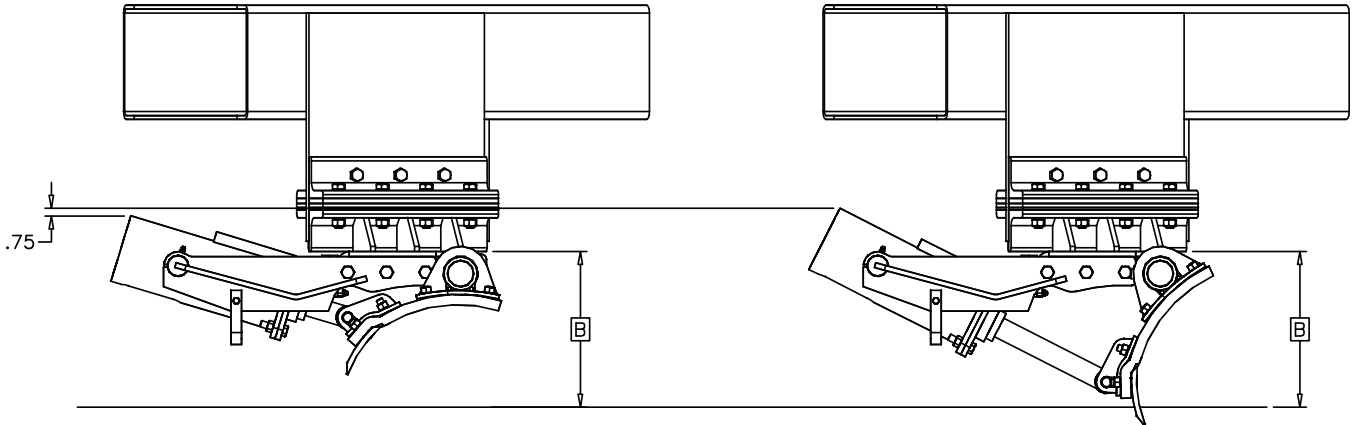
- Apply grease to all the fittings as shown in the maintenance instructions. Cycle all cylinders several times and check for proper function. Operate all the functions on the scraper & check for oil leaks.



**Stay clear of area beneath and near hangerboard/moldboard assembly while performing these operating tests. Use Caution! Hydraulic oil under pressure can be injected into skin. Test for oil leaks with a piece of cardboard.**

# Installation Instructions - MS3500 Fixed Angle

1. Determine the desired right or left fixed discharge angle.
2. Slide the assembled moldboard under the truck and raise it into position. The distance from the top of the hangerboard assembly to the ground should be approximately 15" or 20" depending on the height of the moldboard. Be sure to center and square it off the truck frame, not the ground, as some truck frames are not parallel to the ground.



Note: Canister will swing up as moldboard is activated.

Moldboard Height	B
15"	17"
20"	20"



**Stay clear of area beneath moldboard until it is safely and securely supported. Use Caution!**

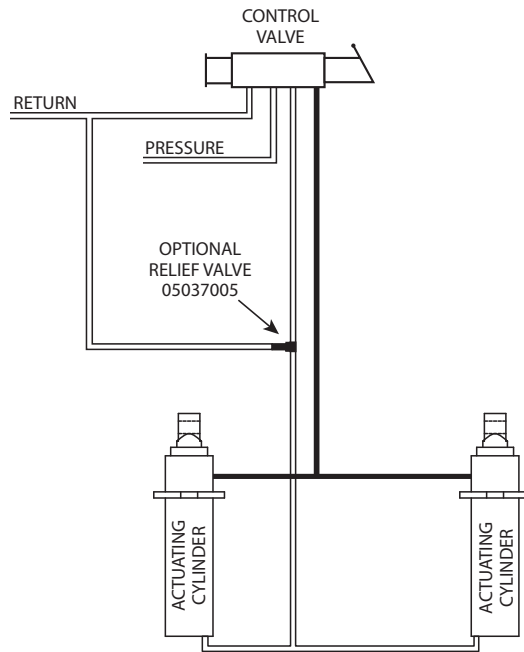
3. Locate the hanger brackets on the frame in the proper position for the length of the moldboard and the proper discharge angle.
4. Check all measurements to make sure scraper is located correctly.  
NOTE: Be sure to square hanger brackets off the frame and not off the ground.
5. Drill (6)  $\frac{25}{32}$ " diameter holes on each side of the truck frame and bolt the hanger brackets in place with (12)  $\frac{3}{4}$ " bolts & nuts and (24) hardened washers.  
NOTE: Always use Grade 8 bolts & nuts when fastening to a truck frame.
6. Everything should be mounted level and square. If there is a slight problem, a small amount of adjustment in most bolt holes is available.



**Stay clear of area beneath moldboard until it is safely and securely supported. Use Caution!**

## Installation Instructions - MS3500 Fixed Angle *(Continued)*

- After everything is installed, plumb the unit according to the diagram shown below. The proper valve for the actuating cylinders is a 3-position, 4-way valve.



NOTE: All connections require pipe thread sealant.

***Down pressure relief is required on all Monroe Underbody Scrapers. A 500 PSI relief can be incorporated into the truck hydraulic system or a down pressure relief valve can be purchased with the underbody scraper. The relief valve must be installed to prevent premature failure of the actuating cylinders and/or the underbody scraper.***

- Apply grease to all the fittings as shown in the maintenance instructions. Cycle all cylinders several times and check for proper function. Operate all the functions on the scraper & check for oil leaks.



**Stay clear of area beneath and near hangerboard/moldboard assembly while performing these operating tests. Use Caution! Hydraulic oil under pressure can be injected into skin. Test for oil leaks with a piece of cardboard.**



# 8' Scrapers

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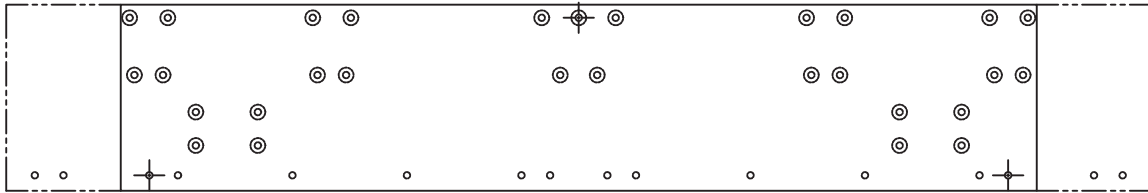
## 00016845 SCRAPER, MS3508, 1 X 20, MS, .75PL

Item	Qty	Part Number	Description
1	1	00075989	Hangerboard/Moldboard Assembly, MS3508, 1 x 20 See page 16
2	2	05002875	Cylinder, 4 x 12, DA, Nitride See page 49
3	2	00060870	Hanger Bracket See page 21
4	1	00031269	Mounting Box, 1 x 20 See page 21
5	1	00031249-A	Circle Weldment, 1 x 52, Double Ear See page 22

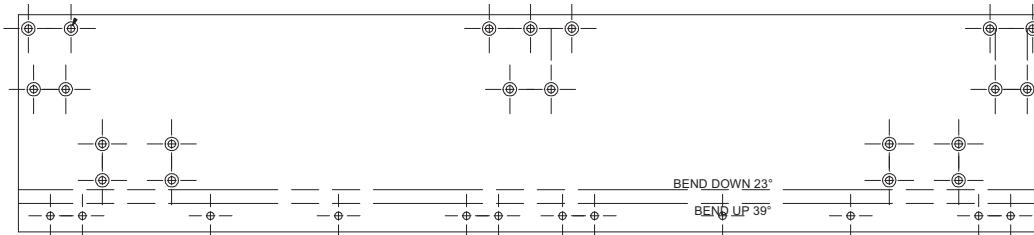
**00075989 HANGERBOARD MOLDBOARD ASSEMBLY, MS3508, 1 X 20**

<b>Item</b>	<b>Qty</b>	<b>Part Number</b>	<b>Description</b>
1	1	00161839	Moldboard, 1 x 20 x 8' See page 17
2	1	00012725	Hangerboard Kit, MS3500, 1 x 20 See page 18
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 19
4	1	00071031	Cutting Edge Kit, .5 x 6 x 8', DBC See page 20

**00075990 MOLDBOARD, 1 X 20 X 8'**  
**THIS MOLDBOARD IS MADE FROM A 10' MOLDBOARD 05032044**

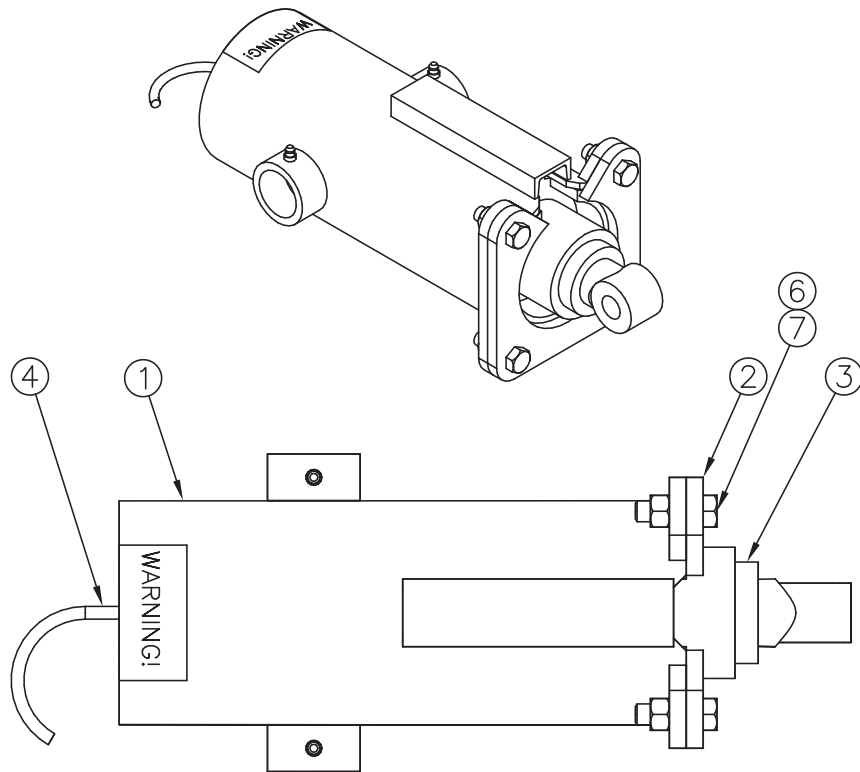


**00161839 MOLDBOARD, 1 X 20 X 8'**



## 00012725 HANGERBOARD KIT, MS3500, 1 X 20

Item	Qty	Part Number	Description
1	1	00041886	Hangerboard Weldment, MS3500
2	1	00031251	Hinge Weldment, Center
3	1	00060033	Hinge Weldment, End, RH
4	1	00027041	Hinge Weldment, End, LH
5	1	00031238	Arm Weldment, Outer Canister, RH
6	1	00031239	Arm Weldment, Outer Canister, LH
7	2	00060860	Canister Arm Support
8	2	00060042	Hinge Weldment, Curl
9	2	00031245	Shim, UHMW, Hold Down
10	2	00031246	Retainer, Circle
11	2	00037305	Spacer, Retainer, Circle
12	2	05037073	Hose Assembly, .375 ID, 22" OAL, 2-WR
13	2	05037074	Fitting, 90° Swivel, .375 FNPT
14	2	05037075	Fitting, 45° Swivel, .375 FNPT
15	4	05050008	Clamp, 2-Piece, UHMW, 1 x 1.5 x 4, Hyd
16	2	05050086	Pipe, Hyd Cross, .375 x 32, XH
17	2	05050087	Pipe, Hyd Cross, .375 x 23.5, XH
18	2	05038092	Fitting, Plug, .375 NPT, Black Pipe
19	2	05037158	Tee Adapter, .375 Female, All 3
20	2	05022001	Pin, 1 x 4.266, GL
21	2	05022006	Pin, .25 x 2, Cotter
22	1	05051011	Pin, Center
23	2	05050417	Clamp, .75, Cushioned, SST, #12
24	2	05010594	Bolt, .25-20 x 1.25, G8, HHCS, Zinc
25	8	05010624	Bolt, .313-18 x 2.5, G8, HHCS, Zinc
26	4	05010647	Bolt, .375-16 x 2, G8, HHCS, Zinc
27	21	05014702	Bolt, .625-11 x 2.25, FSHCS
28	6	05010765	Bolt, .75-10 x 2.25, G8, HHCS, Zinc
29	3	05016960	Bolt, .75-10 x 3.5, G8, HHCS, Zinc
30	4	05010818	Bolt, 1-8 x 4, G8, HHCS, Zinc
31	2	05010819	Bolt, 1-8 x 4.5, G8, HHCS, Zinc
32	2	05010820	Bolt, 1-8 x 5, G8, HHCS, Zinc
33	2	05020899	Nut, .25-20, Top Lock, Zinc
34	8	05020909	Nut, .313-18, GC, Top Lock, C&W
35	4	05020898	Nut, .375-16, GC, Top Lock, C&W
36	21	05020837	Nut, .625-11, GC, Top Lock, C&W
37	9	05020849	Nut, .75-10, GC, Top Lock, C&W
38	8	05020834	Nut, 1-8, GC, Top Lock, C&W
39	4	05021305	Washer, .25, Flat, Zinc
40	16	05021306	Washer, .313, Flat, Zinc
41	8	05021307	Washer, .375, Flat, Zinc
42	21	05021311	Washer, .625, Flat, Zinc
43	18	05021312	Washer, .75, Flat, Zinc
44	12	05021314	Washer, 1, Flat, Zinc



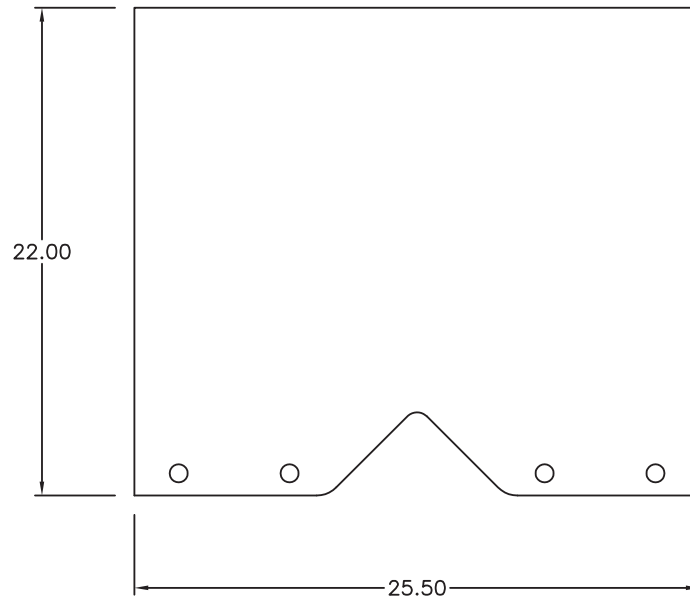
**00041850 CANISTER ASSEMBLY, 3.5 X 10, NITRIDE**

Item	Qty	Part Number	Description
1	1	00022514	Canister Weldment
2	1	00022512	Flange Weldment, Canister
3	1	05002821	Cylinder, 3.5 x 10, DA, Nitride See page 47
4	1	05030506	Hose Assembly, .375 ID, 36" OAL, 2-Wire
5	1	05035065	Spring, Compression, 5.75 OD x 18.5 OAL, 586 PSI
6	4	05010739	Bolt, .625-11 x 2, G8, HHCS, Zinc
7	4	05020837	Nut, .625-11, GC, Top Lock, C&W
8	1	05052547	Decal, Warning Springs Under Tension

**00071031 CUTTING EDGE KIT, 8', .625 X 6, DBC**

<b>Item</b>	<b>Qty</b>	<b>Part Number</b>	<b>Description</b>
1	1	05031146	Cutting Edge, .625 X 6 X 8', DBC
2	10	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
3	10	05020270	Nut, .625-11, G8, Hex, Zinc
4	10	05021383	Washer, .625, Lock, Heavy, Zinc

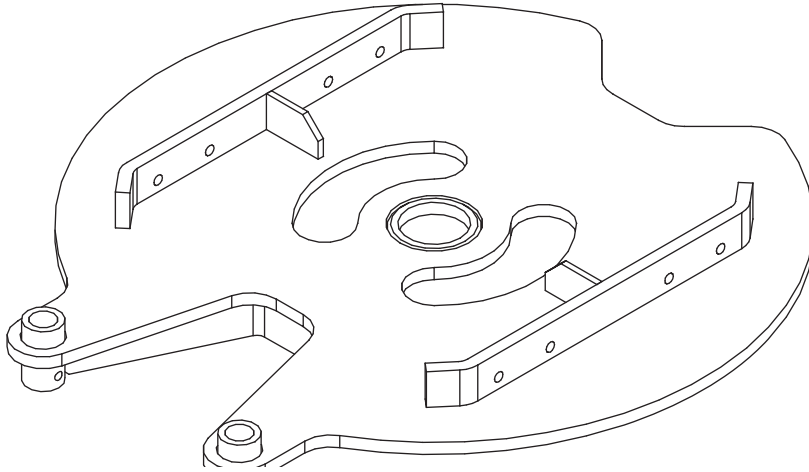
## 00060870 HANGER BRACKET, STANDARD



## 00031269 MOUNTING BOX, MS3500, 1 X 20

Item	Qty	Part Number	Description
1	4	00131692	Pin, Reversing Cylinder, 2" Dia.
2	4	00031243	Retainer, Reversing Cylinder
3	4	00060258	Shim, Hanger
4	1	05050491	Parts & Service Manual, MS3500 Scraper
5	1	05043066	Valve, Cushion, .875-14 ORB, 30 GPM
6	1	N/A	N/A
7	4	05010737	Bolt, .625-11 x 1.5, G8, HHCS, Zinc
8	2	05010748	Bolt, .625-11 x 4.5, G8, HHCS, Zinc
9	2	05017014	Bolt, .625-11 x 4.5, SHCS
10	16	05010768	Bolt, .75-10 x 3, G8, HHCS, Zinc
11	4	05020837	Nut, .625-11, GC, Top Lock, C&W
12	16	05020849	Nut, .75-10, GC, Top Lock, C&W
13	4	05021383	Washer, .625, Lock, Heavy, Zinc
14	32	05021018	Washer, .75, Flat, Mil-Carb, SAE
15	1	00053218	Decal Kit See page 25

**00031249-A CIRCLE WELDMENT, 1 X 52, DOUBLE EAR, MS**  
**00031249-B CIRCLE WELDMENT, 1 X 52 DOUBLE EAR, AR**





# 10' Scrapers

## 00073726 MS3510 SCRAPER, 20" MOLDBOARD

Item	Qty	Part Number	Description
1	1	00069277	Hangerboard/Moldboard Assembly, MS3510, 1 x 20 See page 16
2	2	05002841	Cylinder, 4 x 12, DA, Nitride See page 38
3	2	00060870	Hanger Bracket See page 24
4	1	00031269	Mounting Box, 1 x 20 See page 24
5	1	00031249	Circle Weldment, 1 x 52, Double Ear See page 25

## MS3510 SCRAPER, 15" MOLDBOARD

Item	Qty	Part Number	Description
1	1	00066298	Hangerboard/Moldboard Assembly, MS3510, 1 x 15 See page 16
2	2	05002841	Cylinder, 4 x 12, DA, Nitride See page 38
3	2	00060870	Hanger Bracket See page 24
4	1	00031269	Mounting Box, 1 x 20 See page 24
5	1	00031249	Circle Weldment, 1 x 52, Double Ear See page 25

## 00127985 MS3510 SCRAPER, FIXED ANGLE, 15" MOLDBOARD

Item	Qty	Part Number	Description
1	1	00146582	Hangerboard/Moldboard Assembly, MS3510, 1 x 15, FA See page 16
2	1	00145538	Bracket Kit, Hanger, Fixed Angle See page 26

## 00156446 SCRAPER, MS3510-FX, 1 X 20, .5 X 6 DBC HD, .75PL W/1' RH BLT-ON EXT

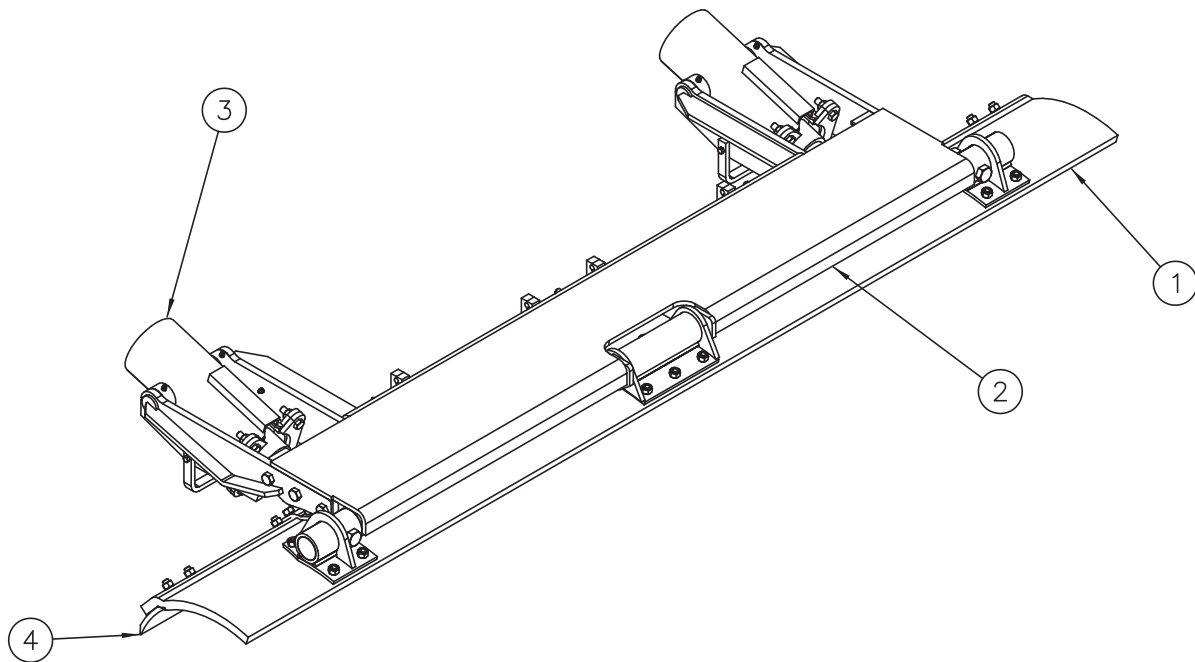
Item	Qty	Part Number	Description
1	1	00156159	Hangerboard Moldboard Assembly, MS3510, 1 x 20 See Page ???
2	1	00145538	Bracket Kit, Hanger, Fixed Angle See page 26

### 00069277 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3510, 1 X 20

Item	Qty	Part Number	Description
1	1	05032000	Moldboard, 1 x 20 x 10' See page 26
2	1	00012725	Hangerboard Kit, MS3500, 1 x 20 See page 19
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041822	Cutting Edge Kit, .5 x 6 x 10', DBC See page 23

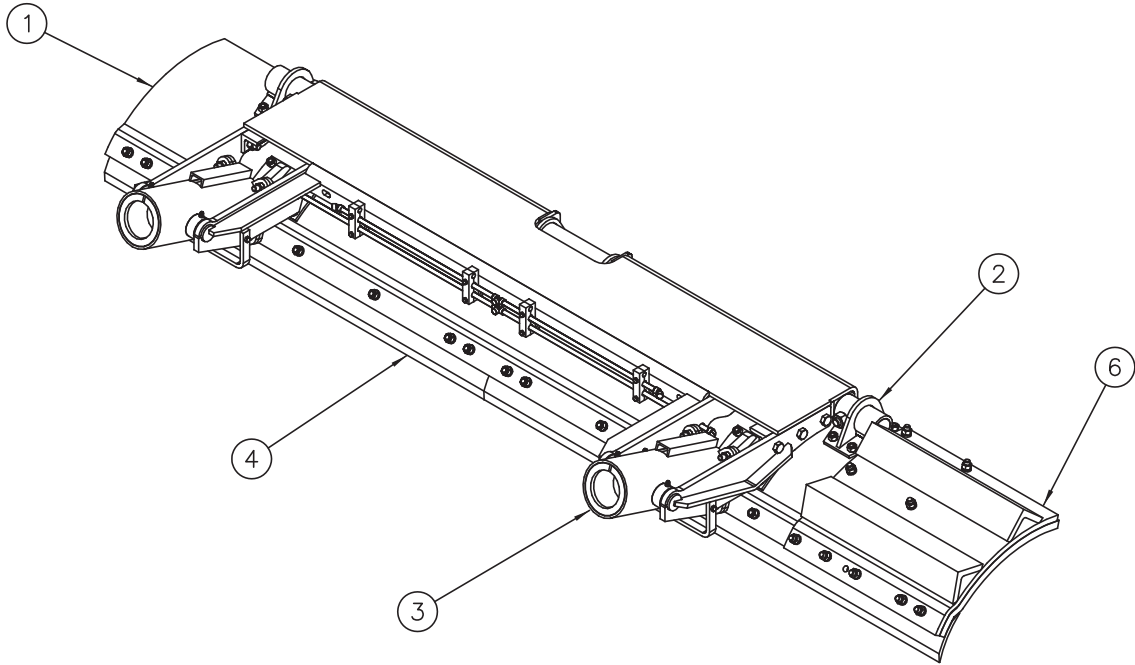
### 00066298 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3510, 1 X 15

Item	Qty	Part Number	Description
1	1	00081815	Moldboard, 1 x 15 x 10' See page 26
2	1	00045865	Hangerboard Kit, MS3500, 1 x 15 See page 20
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041822	Cutting Edge Kit, .5 x 6 x 10', DBC See page 23



### 00146582 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3510, 1 X 15, FA

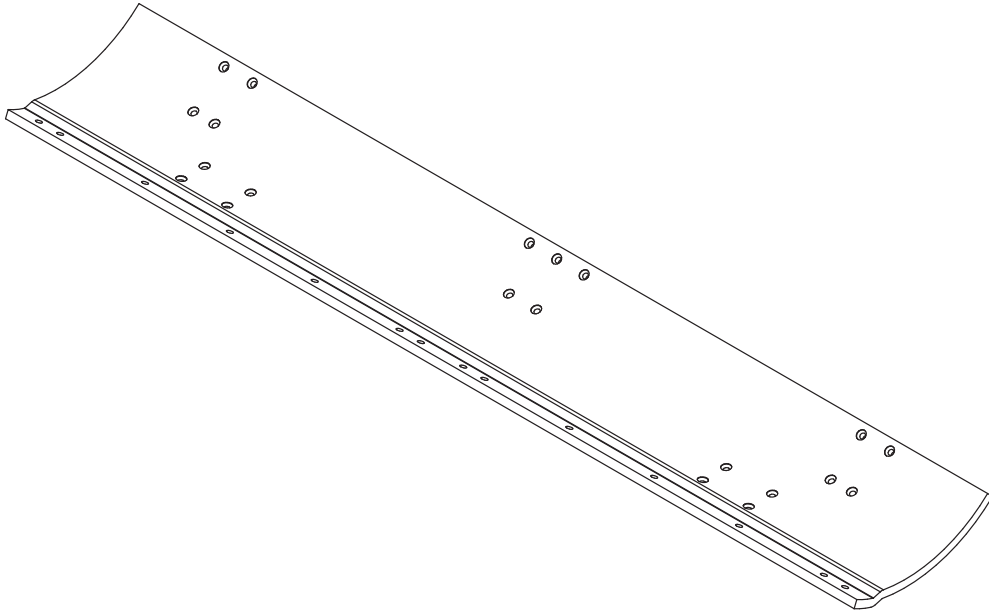
Item	Qty	Part Number	Description
1	1	00081815	Moldboard, MS3510, 1 x 15 x 10' See page 26
2	1	00145539	Hangerboard Kit, MS3500, 1 x 15, Fixed Angle See page 21
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041822	Cutting Edge Kit, .5 x 6 x 10', DBC See page 23



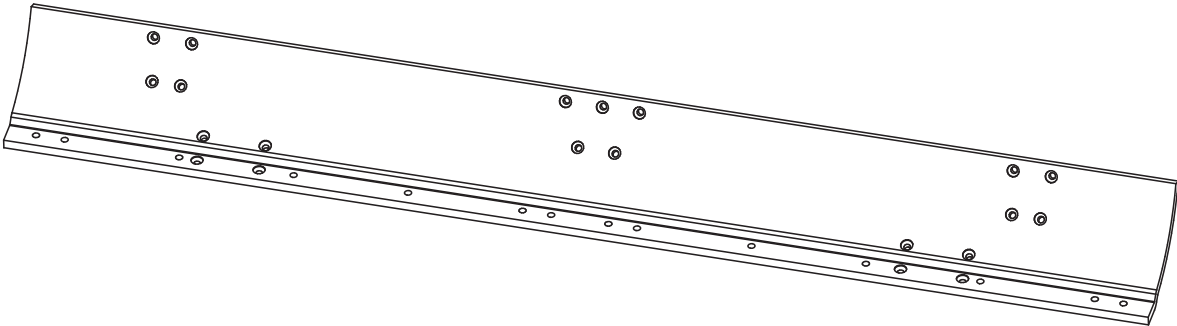
**00156159 HANGERBOARD MOLDBOARD ASSEMBLY, MS3510, 10 X 20 3.5 X 10, .5 X 6DBC, FA, 1' EXTENSION**

Item	Qty	Part Number	Description
1	1	05032044	Moldboard Scraper, MS3510, 1 x 20, A572-50
2	1	00147837	Hangerboard Kit, MS3500, 1 x 20, Fixed See Page 30
3	2	00041850	Canister Assembly, Scraper, 3.5 x 10 See Page 23
4	1	00041823	Cutting Edge Kit, 11', .5 x 6, DBC See Page 29
5	1	05050095	Tag, Serial Number
6	1	00050727	Extension Kit, Scraper Moldboard, 1 x 20 See Page 34

**05032000 MOLDBOARD, 1 X 20 X 10'**



**00081815 MOLDBOARD, 1 X 15 X 10'**



## 00012725 HANGERBOARD KIT, MS3500, 1 X 20

Item	Qty	Part Number	Description
1	1	00041886	Hangerboard Weldment, MS3500
2	1	00031251	Hinge Weldment, Center
3	1	00060033	Hinge Weldment, End, RH
4	1	00027041	Hinge Weldment, End, LH
5	1	00031238	Arm Weldment, Outer Canister, RH
6	1	00031239	Arm Weldment, Outer Canister, LH
7	2	00060860	Canister Arm Support
8	2	00060042	Hinge Weldment, Curl
9	2	00031245	Shim, UHMW, Hold Down
10	2	00031246	Retainer, Circle
11	2	00037305	Spacer, Retainer, Circle
12	2	05037073	Hose Assembly, .375 ID, 22" OAL, 2-WR
13	2	05037074	Fitting, 90° Swivel, .375 FNPT
14	2	05037075	Fitting, 45° Swivel, .375 FNPT
15	4	05050008	Clamp, 2-Piece, UHMW, 1 x 1.5 x 4, Hyd
16	2	05050086	Pipe, Hyd Cross, .375 x 32, XH
17	2	05050087	Pipe, Hyd Cross, .375 x 23.5, XH
18	2	05038092	Fitting, Plug, .375 NPT, Black Pipe
19	2	05037158	Tee Adapter, .375 Female, All 3
20	2	05022001	Pin, 1 x 4.266, GL
21	2	05022006	Pin, .25 x 2, Cotter
22	1	05051011	Pin, Center
23	2	05050417	Clamp, .75, Cushioned, SST, #12
24	2	05010594	Bolt, .25-20 x 1.25, G8, HHCS, Zinc
25	8	05010624	Bolt, .313-18 x 2.5, G8, HHCS, Zinc
26	4	05010647	Bolt, .375-16 x 2, G8, HHCS, Zinc
27	21	05014702	Bolt, .625-11 x 2.25, FSHCS
28	6	05010765	Bolt, .75-10 x 2.25, G8, HHCS, Zinc
29	3	05016960	Bolt, .75-10 x 3.5, G8, HHCS, Zinc
30	4	05010818	Bolt, 1-8 x 4, G8, HHCS, Zinc
31	2	05010819	Bolt, 1-8 x 4.5, G8, HHCS, Zinc
32	2	05010820	Bolt, 1-8 x 5, G8, HHCS, Zinc
33	2	05020899	Nut, .25-20, Top Lock, Zinc
34	8	05020909	Nut, .313-18, GC, Top Lock, C&W
35	4	05020898	Nut, .375-16, GC, Top Lock, C&W
36	21	05020837	Nut, .625-11, GC, Top Lock, C&W
37	9	05020849	Nut, .75-10, GC, Top Lock, C&W
38	8	05020834	Nut, 1-8, GC, Top Lock, C&W
39	4	05021305	Washer, .25, Flat, Zinc
40	16	05021306	Washer, .313, Flat, Zinc
41	8	05021307	Washer, .375, Flat, Zinc
42	21	05021311	Washer, .625, Flat, Zinc
43	18	05021312	Washer, .75, Flat, Zinc
44	12	05021314	Washer, 1, Flat, Zinc

## 00045865 HANGERBOARD KIT, MS3500, 1 X 15

Item	Qty	Part Number	Description
1	1	00041886	Hangerboard Weldment, MS3500
2	1	00031251	Hinge Weldment, Center
3	1	00060033	Hinge Weldment, End, RH
4	1	00027041	Hinge Weldment, End, LH
5	1	00041882	Arm Weldment, Outer Canister, RH
6	1	00041883	Arm Weldment, Outer Canister, LH
7	2	00060860	Canister Arm Support
8	2	00024243	Hinge Weldment, Curl, 15" Moldboard
9	2	00031245	Shim, UHMW, Hold Down
10	2	00031246	Retainer, Circle
11	2	00037305	Spacer, Retainer, Circle
12	2	05037073	Hose Assembly, .375 ID, 22" OAL, 2-WR
13	2	05037074	Fitting, 90° Swivel, .375 FNPT
14	2	05037075	Fitting, 45° Swivel, .375 FNPT
15	4	05050008	Clamp, 2-Piece, UHMW, 1 x 1.5 x 4, Hyd
16	2	05050086	Pipe, Hyd Cross, .375 x 32, XH
17	2	05050087	Pipe, Hyd Cross, .375 x 23.5, XH
18	2	05038092	Fitting, Plug, .375 NPT, Black Pipe
19	2	05037158	Tee Adapter, .375 Female, All 3
20	2	05022001	Pin, 1 x 4.266, GL
21	2	05022006	Pin, .25 x 2, Cotter
22	1	05051011	Pin, Center
23	2	05050417	Clamp, .75, Cushioned, SST, #12
24	2	05010594	Bolt, .25-20 x 1.25, G8, HHCS, Zinc
25	8	05010624	Bolt, .313-18 x 2.5, G8, HHCS, Zinc
26	4	05010647	Bolt, .375-16 x 2, G8, HHCS, Zinc
27	19	05014702	Bolt, .625-11 x 2.25, FSHCS
28	2	05014553	Bolt, .625-11 x 3, G8, DH, Plain
29	6	05010765	Bolt, .75-10 x 2.25, G8, HHCS, Zinc
30	3	05016960	Bolt, .75-10 x 3.5, G8, HHCS, Zinc
31	4	05010818	Bolt, 1-8 x 4, G8, HHCS, Zinc
32	2	05010819	Bolt, 1-8 x 4.5, G8, HHCS, Zinc
33	2	05010820	Bolt, 1-8 x 5, G8, HHCS, Zinc
34	2	05020899	Nut, .25-20, Top Lock, Zinc
35	8	05020909	Nut, .313-18, GC, Top Lock, C&W
36	4	05020898	Nut, .375-16, GC, Top Lock, C&W
37	21	05020837	Nut, .625-11, GC, Top Lock, C&W
38	9	05020849	Nut, .75-10, GC, Top Lock, C&W
39	8	05020834	Nut, 1-8, GC, Top Lock, C&W
40	4	05021305	Washer, .25, Flat, Zinc
41	16	05021306	Washer, .313, Flat, Zinc
42	8	05021307	Washer, .375, Flat, Zinc
43	21	05021311	Washer, .625, Flat, Zinc
44	18	05021312	Washer, .75, Flat, Zinc
45	12	05021314	Washer, 1, Flat, Zinc

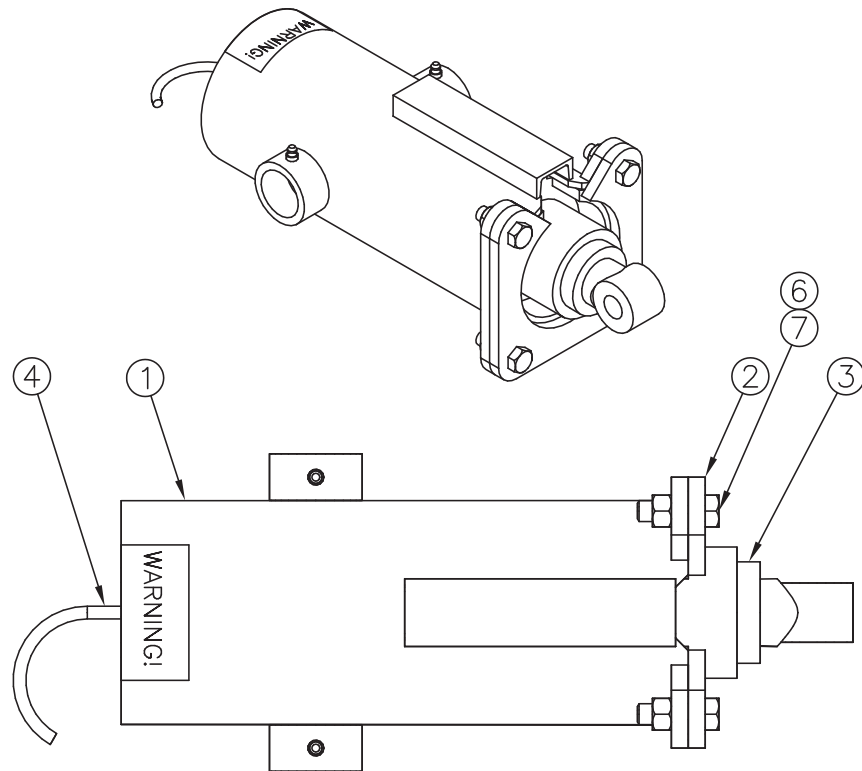
## 00145539 HANGERBOARD KIT, MS3500, 1 X 15, FIXED ANGLE

Item	Qty	Part Number	Description
1	1	00147858	Hangerboard Weldment, MS3500, 1 x 15/20, Less Spacer
2	1	00031251	Hinge Weldment, Center
3	1	00060033	Hinge Weldment, End, RH
4	1	00027041	Hinge Weldment, End, LH
5	1	00041882	Arm Weldment, Outer, RH, Canister
6	1	00041883	Arm Weldment, Outer, LH, Canister
7	2	00060860	Support, Canister Arm
8	2	00024243	Hinge Weldment, Curl, 15" Moldboard
9	2	05037073	Hose Assembly, .375 ID x 22" OAL, 2-Wire
10	2	05037074	Fitting, 90° Swivel, .375 FNPT
11	2	05037075	Fitting, 45° Swivel, .375 FNPT
12	4	05050008	Clamp, 2- Piece, UHMW, 1 x 1.5 x 4, Hyd
13	2	05050086	Pipe, Hyd Cross, .375 x 32, XH
14	2	05050087	Pipe, Hyd Cross, .375 x 23.5, XH
15	2	05038092	Fitting, Plug, .375 NPT, Black Pipe
16	2	05037158	Tee Adapter, .375 Female, All 3
17	2	05022001	Pin, 1 Dia x 4.266 GL
18	2	05022006	Pin, .25 x 2, Cotter
19	2	05050417	Clamp, .75, Cushioned, SST, #12
20	2	05010594	Bolt, .25-20 x 1.25, G8, HHCS, Zinc
21	8	05010624	Bolt, .313-18 x 2.5, G8, HHCS, Zinc
22	4	05010647	Bolt, .375-16 x 2, G8, HHCS, Zinc
23	19	05014702	Bolt, .625-11 x 2.25, FSHCS
24	2	05014553	Bolt, .625-11 x 3, Dome Head, Plain
25	6	05010765	Bolt, .75-10 x 2.25, G8, HHCS, Zinc
26	2	05010819	Bolt, 1-8 x 4.5, G8, HHCS, Zinc
27	2	05020899	Nut, .25-20, Top Lock, Zinc
28	8	05020909	Nut, .313-18, GC, Top Lock, C&W
29	4	05020898	Nut, .375-16, GC, Top Lock, C&W
30	21	05020837	Nut, .625-11, GC, Top Lock, C&W
31	6	05020849	Nut, .75-10, GC, Top Lock, C&W
32	2	05020834	Nut, 1-8, GC, Top Lock, C&W
33	4	05021305	Washer, .25, Flat, Zinc
34	16	05021306	Washer, .313, Flat, Zinc
35	8	05021307	Washer, .375, Flat, Zinc
36	21	05021311	Washer, .625, Flat, Zinc
37	15	05021312	Washer, .75, Flat, Zinc

**00147837 HANGERBOARD KIT, MS3500, 1X20, FIXED**

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	00147858	HGRBD WLDMT,MS3500,1x15/20
2	1	00031251	HINGE WLDMT,CENTER
3	1	00060033	HINGE WLDMT,END,RH
4	1	00027041	HINGE WLDMT,END,LH
5	1	00041882	ARM WLDMT,OUTER,RH,CANISTER
6	1	00041883	ARM WLDMT,OUTER,LH,CANISTER
7	2	00060860	SUPPORT,CANISTER ARM,SCPR
8	2	00060042	HINGE WLDMT,CURL,SCPR
9	2	05037073	HOSE ASSY,.375 ID,22.0 OAL,2-WR
10	2	05037074	FITTING,90DEG SWIVEL,.375FNPT
11	2	05037075	FITTING,45DEG SWIVEL,.375FNPT
12	4	05050008	CLAMP,2-PC,UHMW,1x1.5x4,HYD
13	2	05050086	PIPE,HYD CROSS,.3755x32.0,XH
14	2	05050087	PIPE,HYD CROSS,.375x23.5,XH
15	2	05038092	FITTING,PLUG,.375NPT,BLK PIPE
16	2	05037158	TEE ADAPTER,.375FEMALE,ALL 3
17	2	05022239	PIN 1.000 DIA x 4.266 GL
18	2	05022006	PIN .250 x 2.000 COTTER
19	2	05050417	CLAMP,.75",CUSHIONED SST,#12
20	2	05010594	BOLT .250-20 x 1.25 G8 HHCS ZC
21	8	05010624	BOLT .313-18 x 2.50 G8 HHCS ZC
22	4	05010647	BOLT .375-16 x 2.00 G8 HHCS ZC
23	19	05014702	BOLT .625-11 x 2.25 FSHCS
24	2	05014553	BOLT .625-11 x 3.00 DH PLN
25	6	05010765	BOLT .750-10 x 2.25 G8 HHCS ZC
26	2	05010819	BOLT 1.00-8 x 4.50 G8 HHCS ZC
27	2	05020899	NUT .250-20 GC TOPLOCK C&W
28	8	05020909	NUT .313-18 GC TOPLOCK C&W
29	4	05020898	NUT .375-16 GC TOPLOCK C&W
30	21	05020837	NUT .625-11 GC TOPLOCK C&W
31	6	05020849	NUT .750-10 GC TOPLOCK C&W
32	2	05020834	NUT 1.00-8 GC TOPLOCK C&W
33	4	05021305	WASHER .250 FLAT ZC
34	16	05021306	WASHER .313 FLAT ZC
35	8	05021307	WASHER .375 FLAT ZC
36	21	05021311	WASHER .625 FLAT ZC
37	15	05021312	WASHER .750 FLAT ZC
38	2	05050003	GREASE ZERK,.125 NPT STR





### 00041850 CANISTER ASSEMBLY, 3.5 X 10, NITRIDE

Item	Qty	Part Number	Description
1	1	00022514	Canister Weldment
2	1	00022512	Flange Weldment, Canister
3	1	05002821	Cylinder, 3.5 x 10, DA, Nitride See page 47
4	1	05030506	Hose Assembly, .375 ID, 36" OAL, 2-Wire
5	1	05035065	Spring, Compression, 5.75 OD x 18.5 OAL, 586 PSI
6	4	05010739	Bolt, .625-11 x 2, G8, HHCS, Zinc
7	4	05020837	Nut, .625-11, GC, Top Lock, C&W
8	1	05052547	Decal, Warning Springs Under Tension

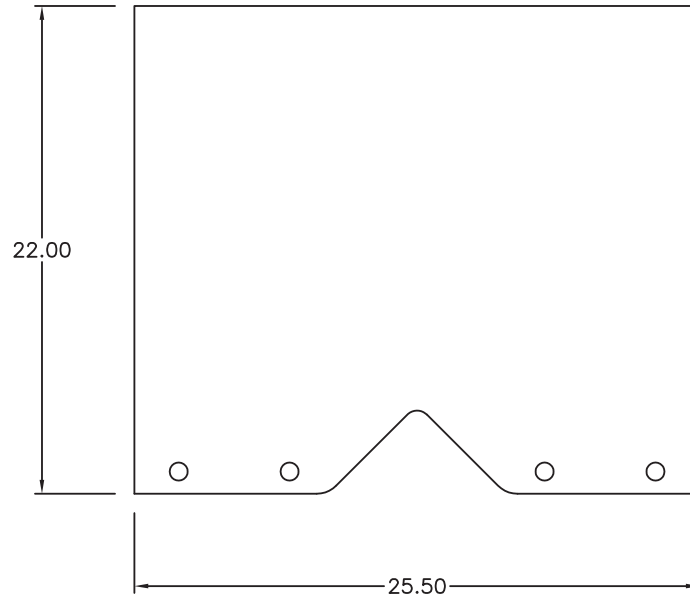
**00041822 CUTTING EDGE KIT, .5 X 6 X 10', DBC**

<b>Item</b>	<b>Qty</b>	<b>Part Number</b>	<b>Description</b>
1	2	05031113	Cutting Edge, .5 x 6 x 5', DBC, 1084
2	14	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
3	14	05020270	Nut, .625-11, G8, Hex, Zinc
4	14	05021383	Washer, .625, Lock, Heavy, Zinc

**00041823 CUTTING EDGE KIT, 11', .5 X 6, DBC**

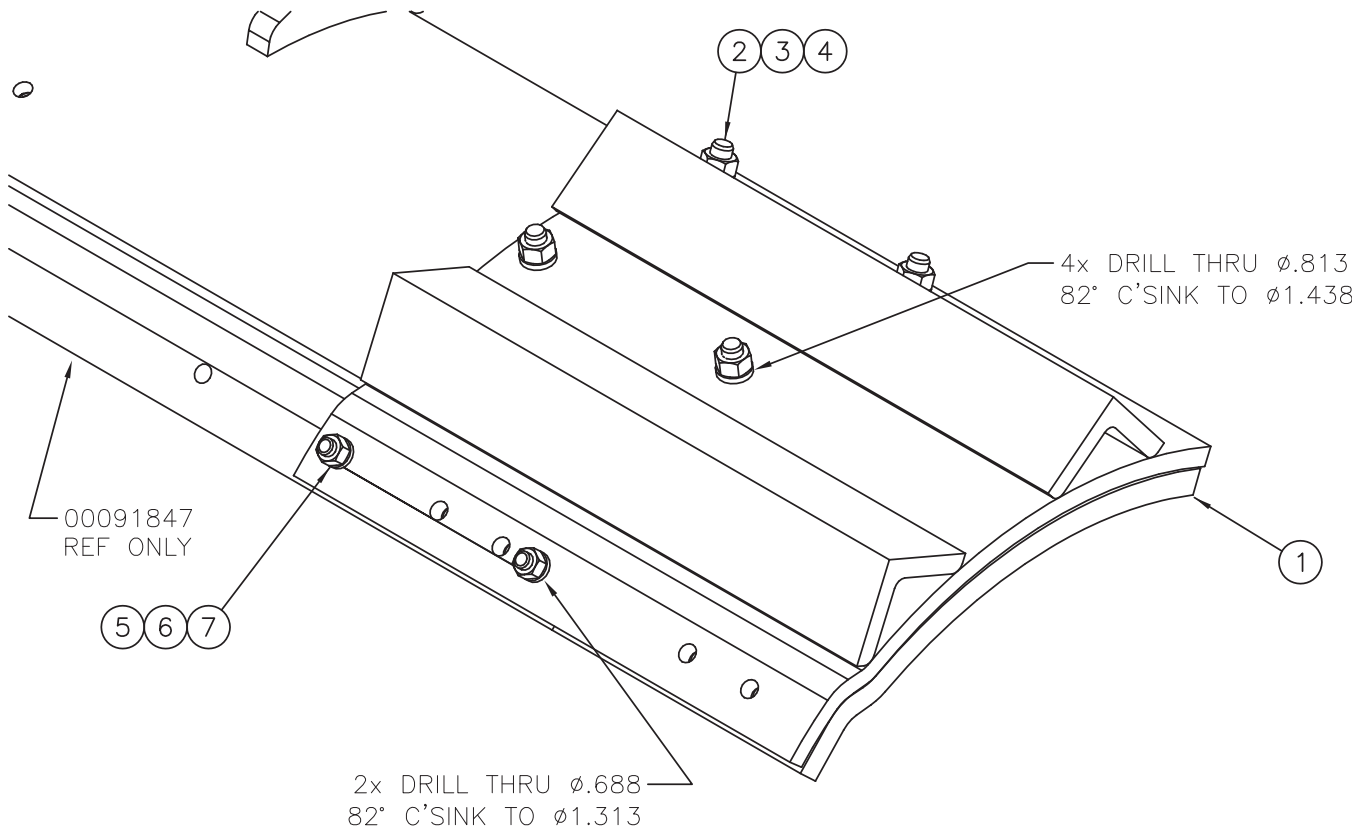
<b>Item</b>	<b>Qty</b>	<b>Part Number</b>	<b>Description</b>
1	1	05031113	Cutting Edge, .5 x 6 x 5', DBC, 1084
2	1	05031114	Cutting Edge, .5 x 6 x 6', DBC, 1084
3	15	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
4	15	05020270	Nut, .625-11, G8, Hex, Zinc
5	15	05021383	Washer, .625, Lock, Heavy, Zinc

## 00060870 HANGER BRACKET, STANDARD



## 00031269 MOUNTING BOX, MS3500, 1 X 20

Item	Qty	Part Number	Description
1	4	00131692	Pin, Reversing Cylinder, 2" Dia.
2	4	00031243	Retainer, Reversing Cylinder
3	4	00060258	Shim, Hanger
4	1	05050491	Parts & Service Manual, MS3500 Scraper
5	1	05043066	Valve, Cushion, .875-14 ORB, 30 GPM
6	1	N/A	N/A
7	4	05010737	Bolt, .625-11 x 1.5, G8, HHCS, Zinc
8	2	05010748	Bolt, .625-11 x 4.5, G8, HHCS, Zinc
9	2	05017014	Bolt, .625-11 x 4.5, SHCS
10	16	05010768	Bolt, .75-10 x 3, G8, HHCS, Zinc
11	4	05020837	Nut, .625-11, GC, Top Lock, C&W
12	16	05020849	Nut, .75-10, GC, Top Lock, C&W
13	4	05021383	Washer, .625, Lock, Heavy, Zinc
14	32	05021018	Washer, .75, Flat, Mil-Carb, SAE
15	1	00053218	Decal Kit See page 25




### 00050727 EXTENSION KIT, SCRAPER, MOLDBOARD, 1 X 20

Item	Qty.	Part Number	Description
1	1	00124513	Extension Weldment
2	4	05014710	Bolt, .75-10 x 2.50 FSHCS
3	4	05021384	Washer, .750 Lock Heavy, Zinc
4	4	05020271	Nut, .750-10, G8, Hex, Zinc
5	2	05014703	Bolt, .625-11 x 2.50, FSHCS
6	2	05021383	Washer, .625 Lock, Heavy Zinc
7	2	05020270	Nut, .625-11, G8, Hex, Zinc

## 00053218 DECAL KIT


Item	Qty	Part Number	Description
1	1	05052547	Decal, Warning Springs Under Tension
2	1	05052311	Decal, Quality Check
3	1	05052628	Deal, Warning, Tighten Fastener



**⚠ WARNING**

**Springs under tension!**  
If spring releases while performing maintenance, serious injury or death could result. Use caution when working in area.

IF DEFACED - ORDER PART NO. 05052547



**QUALITY CHECK**

**Inspected by:**

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05052311

**⚠ WARNING**

**Possible serious injury and equipment damage from loosening of equipment fasteners.**

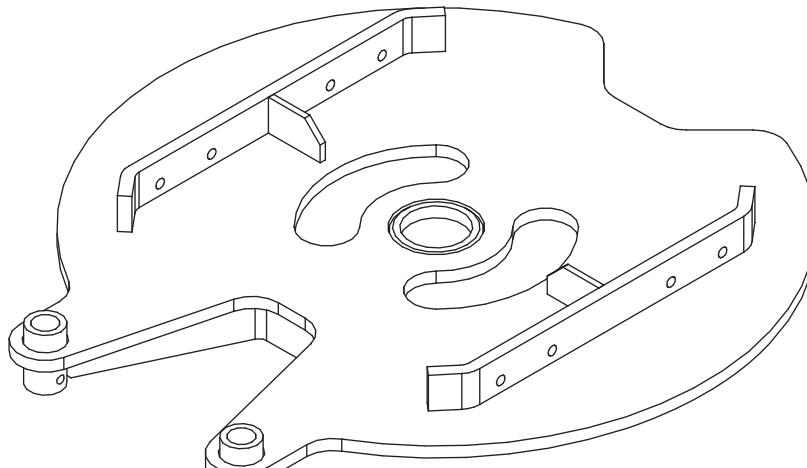
Fasteners on snow and ice removal equipment may loosen due to vibration and repetitive movements.

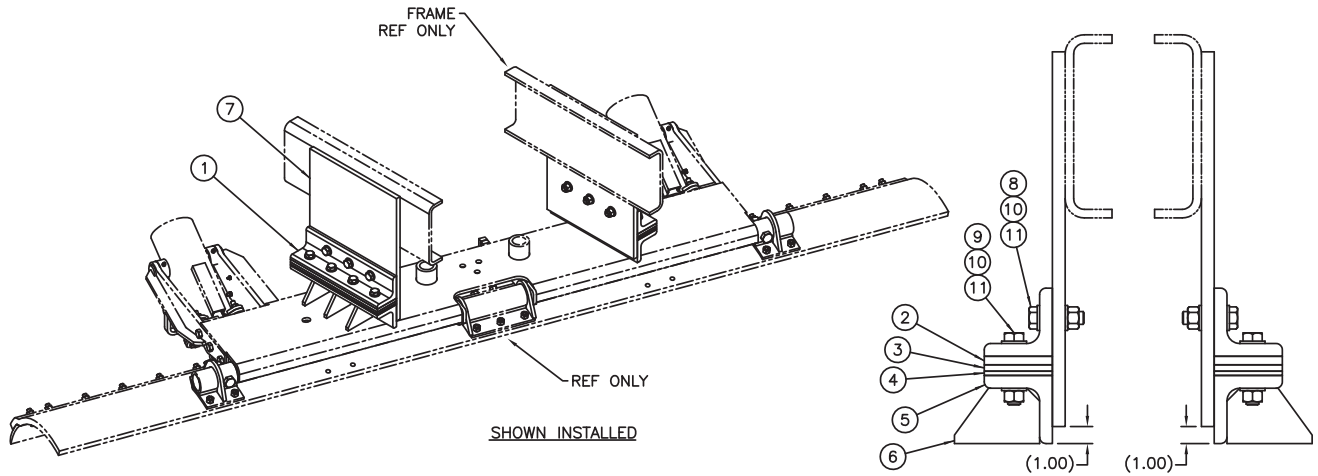
Retighten all equipment mounting fasteners after the first 8 hours of use, then check tightness weekly after that. Use a torque wrench when specific torque values are given in the installation manual.

If fasteners need to be replaced, be certain to use the correct size, grade and type to prevent failure.

05052628

**00031249-A CIRCLE WELDMENT, 1 X 52, DOUBLE EAR, MS**  
**00031249-B CIRCLE WELDMENT, 1 X 52 DOUBLE EAR, AR**





### 00145538 BRACKET KIT, HANGER, FIXED ANGLE

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	00145531	SIDE PL,ANGLE,SCRAPER,MS3500
2	2	00145532	SHIM,.500,SCRAPER,MS3500
3	2	00145533	SHIM,.375,SCRAPER,MS3500
4	2	00145534	SHIM,.250,SCRAPER,MS3500
5	2	00145535	ANCHOR,ANGLE,SCRAPER,MS3500
6	6	00145536	GUSSET 5.000 x 3.250 x .500
7	2	00145537	PLATE,MS,.750x18.000x22.000
8	6	05010768	BOLT .750-10 x 3.00 G8 HHCS ZC
9	8	05010772	BOLT .750-10 x 4.00 G8 HHCS ZC
10	28	05021018	WASHER .750 FLAT MIL-CARB SAE
11	14	05020987	NUT .750-16 TOPLOCK C&W
12	1	05050491	MANUAL,SCPR,MS3500

# 11' Scrapers

## 00073734 MS3511 SCRAPER, 20" MOLDBOARD

Item	Qty	Part Number	Description
1	1	00069278	Hangerboard/Moldboard Assembly, MS3511, 1 x 20 See page 28
2	2	05002841	Cylinder, 4 x 12, DA, Nitride See page 38
3	2	00060870	Hanger Bracket See page 24
4	1	00031269	Mounting Box, 1 x 20 See page 24
5	1	00031249	Circle Weldment, 1 x 52, Double Ear See page 25

## 00012762 MS3511 SCRAPER, 15" MOLDBOARD

Item	Qty	Part Number	Description
1	1	00057914	Hangerboard/Moldboard Assembly, MS3511, 1 x 15 See page 28
2	2	05002841	Cylinder, 4 x 12, DA, Nitride See page 38
3	2	00060870	Hanger Bracket See page 24
4	1	00031269	Mounting Box, 1 x 20 See page 24
5	1	00031249	Circle Weldment, 1 x 52, Double Ear See page 25

## 00135382 MS3511 SCRAPER, FIXED ANGLE, 15" MOLDBOARD

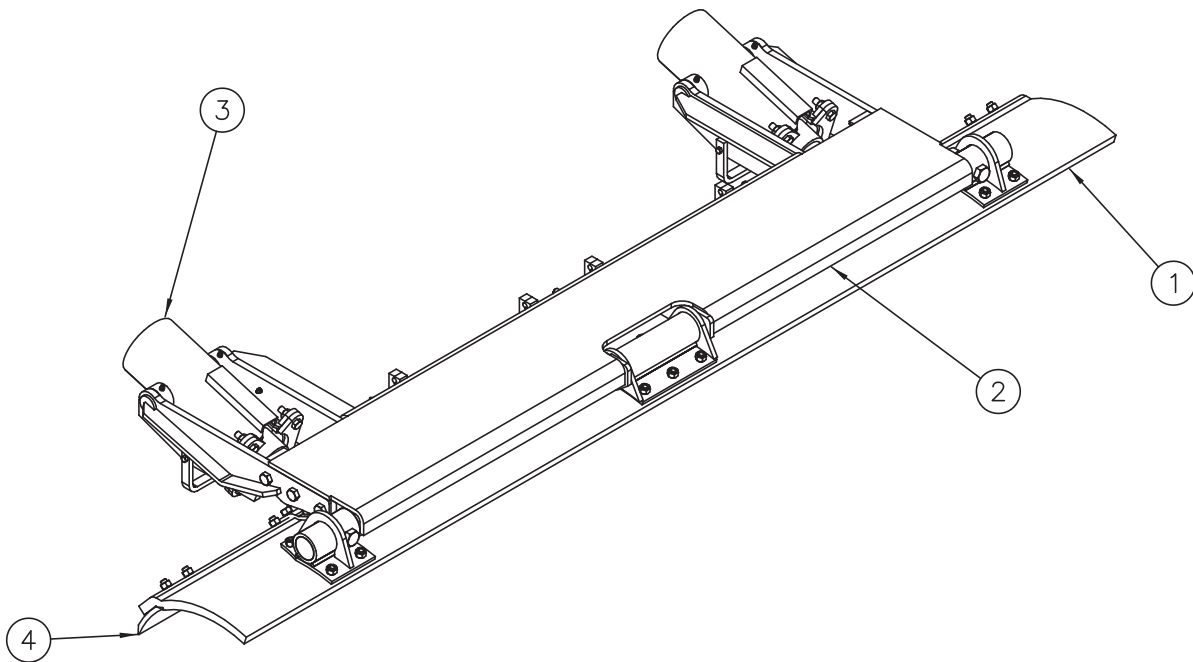
Item	Qty	Part Number	Description
1	1	00145540	Hangerboard/Moldboard Assembly, MS3511, 1 x 15, FA See page 28
2	1	00145538	Bracket Kit, Hanger, Fixed Angle See page 26

### 00069278 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3511, 1 X 20

Item	Qty	Part Number	Description
1	1	05032001	Moldboard, 1 x 20 x 11' See page 29
2	1	00012725	Hangerboard Kit, MS3500, 1 x 20 See page 19
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041823	Cutting Edge Kit, .5 x 6 x 11', DBC See page 29

### 00057914 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3511, 1 X 15

Item	Qty	Part Number	Description
1	1	00105038	Moldboard, 1 x 15 x 11' See page 29
2	1	00045865	Hangerboard Kit, MS3500, 1 x 15 See page 20
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041823	Cutting Edge Kit, .5 x 6 x 11', DBC See page 29

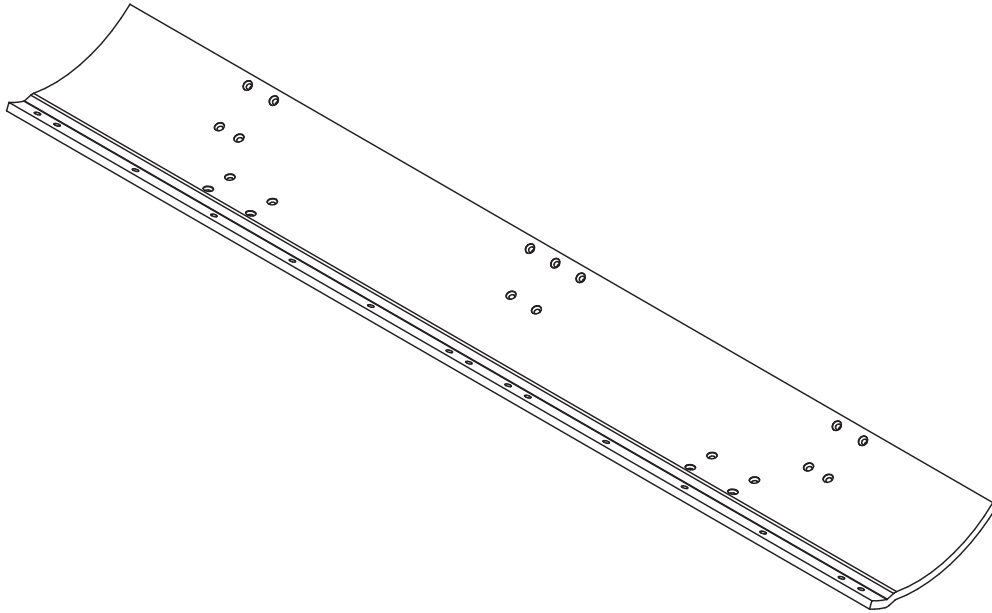


### 00145540 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3511, 1 X 15, FA

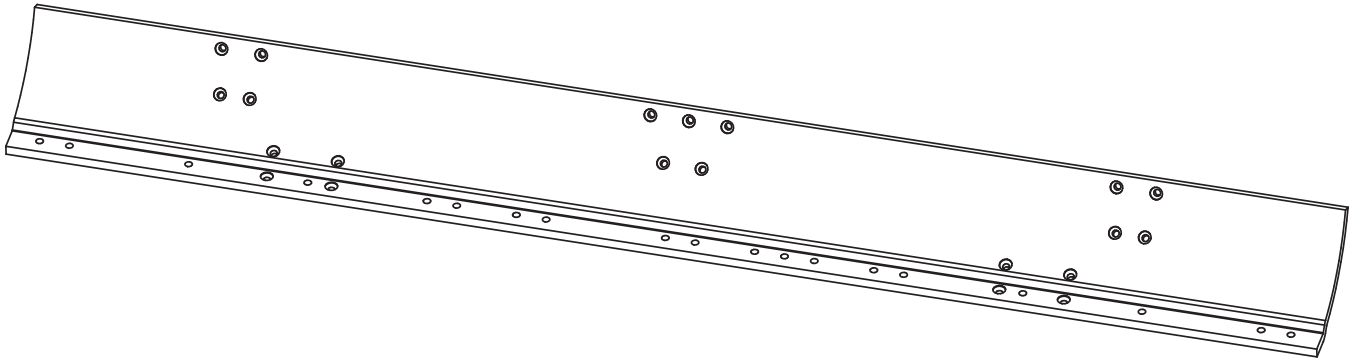
Item	Qty	Part Number	Description
1	1	00105038	Moldboard, MS3511, 1 x 15 x 11' See page 29
2	1	00145539	Hangerboard Kit, MS3500, 1 x 15, Fixed Angle See page 21
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041823	Cutting Edge Kit, .5 x 6 x 11', DBC See page 29



**05032001 MOLDBOARD, 1 X 20 X 11'**



**00105038 MOLDBOARD, MS3511, 1 X 15 X 11'**



**00041823 CUTTING EDGE KIT, .5 X 6 X 11', DBC**

Item	Qty	Part Number	Description
1	1	05031113	Cutting Edge, .5 x 6 x 5', DBC, 1084
2	1	05031114	Cutting Edge, .5 x 6 x 6', DBC, 1084
3	15	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
4	15	05020270	Nut, .625-11, G8, Hex, Zinc
5	15	05021383	Washer, .625, Lock, Heavy, Zinc



# 12' Scrapers

## 00073742 MS3512 SCRAPER, 20" MOLDBOARD

Item	Qty	Part Number	Description
1	1	00069279	Hangerboard/Moldboard Assembly, MS3512, 1 x 20 See page 32
2	2	05002841	Cylinder, 4 x 12, DA, Nitride See page 38
3	2	00060870	Hanger Bracket See page 24
4	1	00031269	Mounting Box, 1 x 20 See page 24
5	1	00031249	Circle Weldment, 1 x 52, Double Ear See page 25

## 00073753 MS3512 SCRAPER, 15" MOLDBOARD

Item	Qty	Part Number	Description
1	1	00073773	Hangerboard/Moldboard Assembly, MS3512, 1 x 15 See page 32
2	2	05002841	Cylinder, 4 x 12, DA, Nitride See page 38
3	2	00060870	Hanger Bracket See page 24
4	1	00031269	Mounting Box, 1 x 20 See page 24
5	1	00031249	Circle Weldment, 1 x 52, Double Ear See page 25

## 00147870 MS3512 SCRAPER, FIXED ANGLE, 15" MOLDBOARD

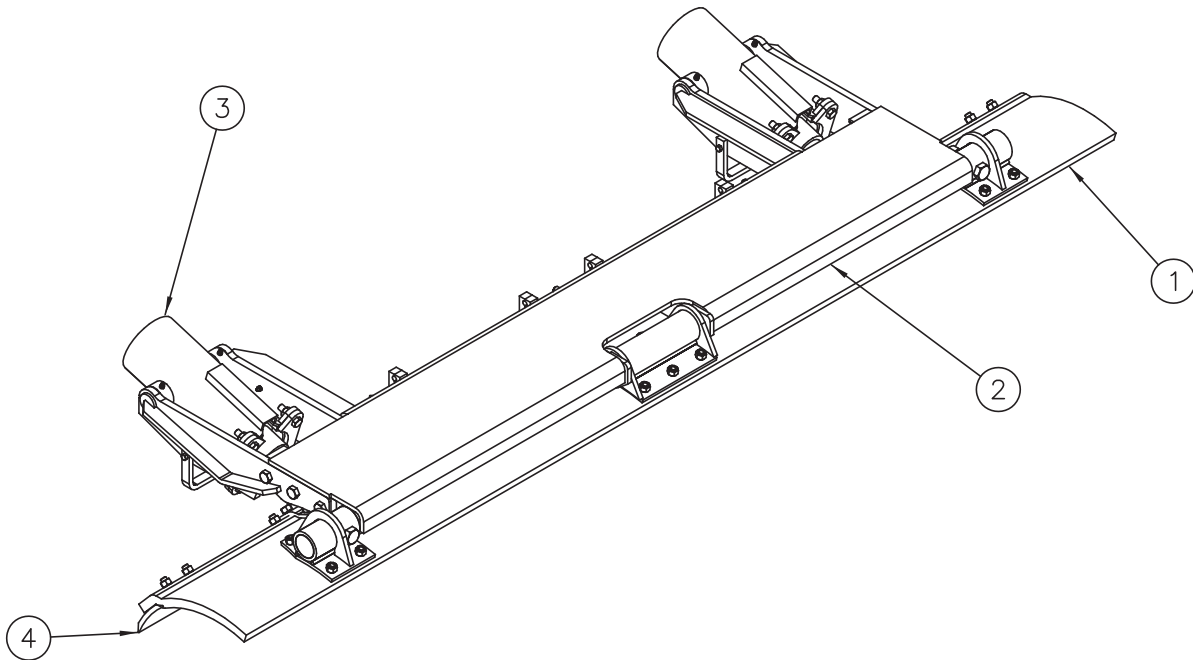
Item	Qty	Part Number	Description
1	1	00109454	Hangerboard/Moldboard Assembly, MS3512, 1 x 15, FA See page 32
2	1	00145538	Bracket Kit, Hanger, Fixed Angle See page 26

**00069279 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3512, 1 X 20**

Item	Qty	Part Number	Description
1	1	05032042	Moldboard, 1 x 20 x 12' See page ???
2	1	00012725	Hangerboard Kit, MS3500, 1 x 20 See page 19
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041824	Cutting Edge Kit, .5 x 6 x 12', DBC See page 33

**00073773 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3512, 1 X 15**

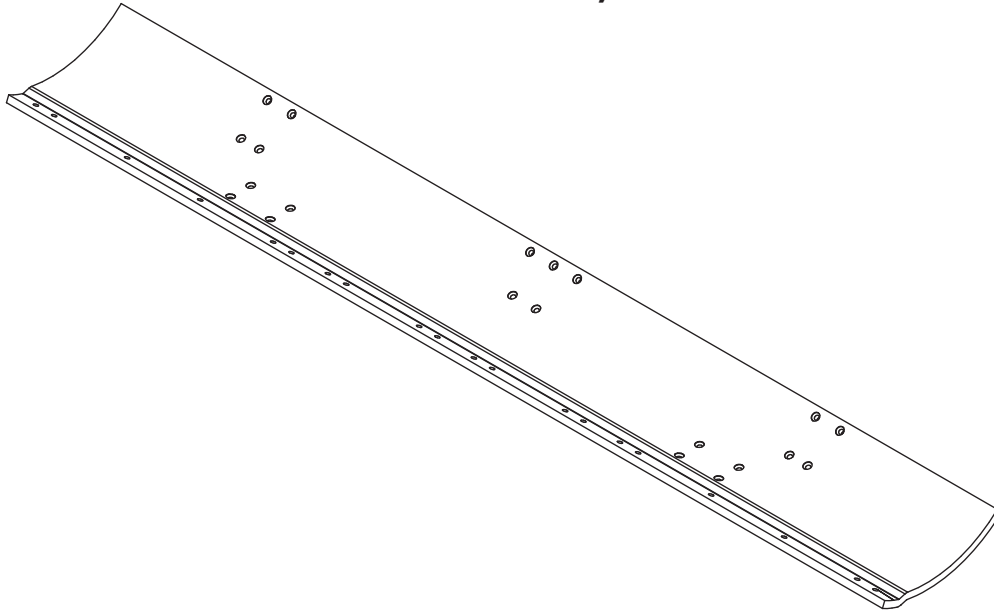
Item	Qty	Part Number	Description
1	1	00018082	Moldboard, 1 x 15 x 12' See page 33
2	1	00045865	Hangerboard Kit, MS3500, 1 x 15 See page 20
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041824	Cutting Edge Kit, .5 x 6 x 12', DBC See page 33



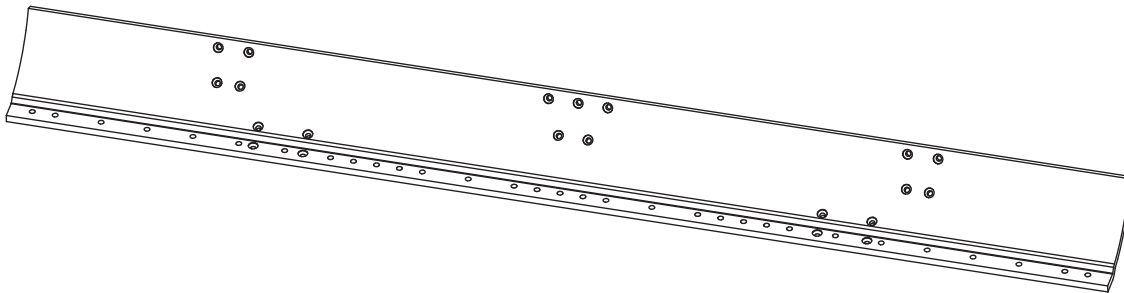
**00109454 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3512, 1 X 15, FA**  
**00159215 HANGERBOARD/MOLDBOARD ASSEMBLY, MS3512, 1 X 20 FA**

Item	Qty	Part Number	Description
1	1	00018082	Moldboard, MS3512, 1 x 15 x 12' See page 33
		05032042	Moldboard, MS3512, 1 x 20 x 12' See page ???
2	1	00109455	Hangerboard Kit, MS3500, 1 x 15, Fixed Angle See page 34
		00147837	Hangerboard Kit, MS3500, 1 x 20, Fixed Angle See page ???
3	2	00041850	Canister Assembly, 3.5 x 10, Nitride See page 23
4	1	00041824	Cutting Edge Kit, .5 x 6 x 12', DBC See page 33

**05032042 MOLDBOARD, 1 X 20 X 12'**



**00018082 MOLDBOARD, 1 X 15 X 12'**



**00041824 CUTTING EDGE KIT, .5 X 6 X 12', DBC**

Item	Qty	Part Number	Description
1	2	05031114	Cutting Edge, .5 x 6 x 6', DBC, 1084
2	16	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
3	16	05020270	Nut, .625-11, G8, Hex, Zinc
4	16	05021383	Washer, .625, Lock, Heavy, Zinc

**00109455 HANGERBOARD KIT, MS3500, 1 X 15/20, FIXED ANGLE****00147837 HANGERBOARD KIT, MS3500, 1 X 15/20, FIXED ANGLE**

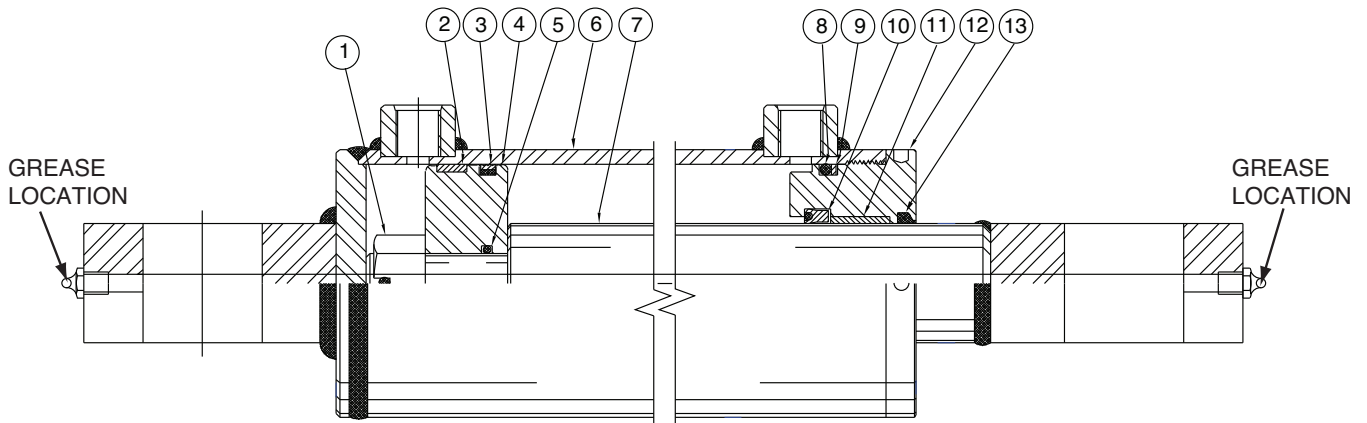
Item	Qty	Part Number	Description
1	1	00109456 00147858	Hangerboard Weldment, MS3500, 1 x 15/20, Fixed Angle Hangerboard Weldment, MS3500, 1 x 15/20
2	1	00031251	Hinge Weldment, Center
3	1	00060033	Hinge Weldment, End, RH
4	1	00027041	Hinge Weldment, End, LH
5	1	00041882	Arm Weldment, Outer Canister, RH
6	1	00041883	Arm Weldment, Outer Canister, LH
7	2	00060860	Canister Arm Support
8	2	00024243	Hinge Weldment, Curl, 15" Moldboard
9	2	00031245	Shim, UHMW, Hold Down
10	2	00031246	Retainer, Circle
11	2	00037305	Spacer, Retainer, Circle
12	2	05037073	Hose Assembly, .375 ID, 22" OAL, 2-WR
13	2	05037074	Fitting, 90° Swivel, .375 FNPT
14	2	05037075	Fitting, 45° Swivel, .375 FNPT
15	4	05050008	Clamp, 2-Piece, UHMW, 1 x 1.5 x 4, Hyd
16	2	05050086	Pipe, Hyd Cross, .375 x 32, XH
17	2	05050087	Pipe, Hyd Cross, .375 x 23.5, XH
18	2	05038092	Fitting, Plug, .375 NPT, Black Pipe
19	2	05037158	Tee Adapter, .375 Female, All 3
20	2	05022001	Pin, 1 x 4.266, GL
21	2	05022006	Pin, .25 x 2, Cotter
22	1	05051011	Pin, Center
23	2	05050417	Clamp, .75, Cushioned, SST, #12
24	2	05010594	Bolt, .25-20 x 1.25, G8, HHCS, Zinc
25	8	05010624	Bolt, .313-18 x 2.5, G8, HHCS, Zinc
26	4	05010647	Bolt, .375-16 x 2, G8, HHCS, Zinc
27	19	05014702	Bolt, .625-11 x 2.25, FSHCS
28	2	05014553	Bolt, .625-11 x 3, G8, DH, Plain
29	6	05010765	Bolt, .75-10 x 2.25, G8, HHCS, Zinc
30	3	05016960	Bolt, .75-10 x 3.5, G8, HHCS, Zinc
31	4	05010818	Bolt, 1-8 x 4, G8, HHCS, Zinc
32	2	05010819	Bolt, 1-8 x 4.5, G8, HHCS, Zinc
33	2	05010820	Bolt, 1-8 x 5, G8, HHCS, Zinc
34	2	05020899	Nut, .25-20, Top Lock, Zinc
35	8	05020909	Nut, .313-18, GC, Top Lock, C&W
36	4	05020898	Nut, .375-16, GC, Top Lock, C&W
37	21	05020837	Nut, .625-11, GC, Top Lock, C&W
38	9	05020849	Nut, .75-10, GC, Top Lock, C&W
39	8	05020834	Nut, 1-8, GC, Top Lock, C&W
40	4	05021305	Washer, .25, Flat, Zinc
41	16	05021306	Washer, .313, Flat, Zinc
42	8	05021307	Washer, .375, Flat, Zinc
43	21	05021311	Washer, .625, Flat, Zinc
44	18	05021312	Washer, .75, Flat, Zinc
45	12	05021314	Washer, 1, Flat, Zinc

# Cylinders

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**05002841 CYLINDER, 4 X 12, DA, NITRIDE ROD**

ITEM	QTY.	PART NUMBER	DESCRIPTION
1	1	05002854	SLOTTED NUT
2	1	-----	WEAR RING
3	1	-----	SEAL
4	1	05002856	PISTON
5	1	05002520	O-RING
6	1	-----	JACKET ASSEMBLY
7	1	05002937	PISTON ROD, NITRIDED
8	1	-----	O-RING
9	1	-----	BACKUP WASHER
10	1	05002525	POLY PAK
11	1	05003061	BRONZE LINER
12	1	05002930	HEADSTOCK
13	1	05002527	ROD WIPER
	1	05002855	SEAL KIT

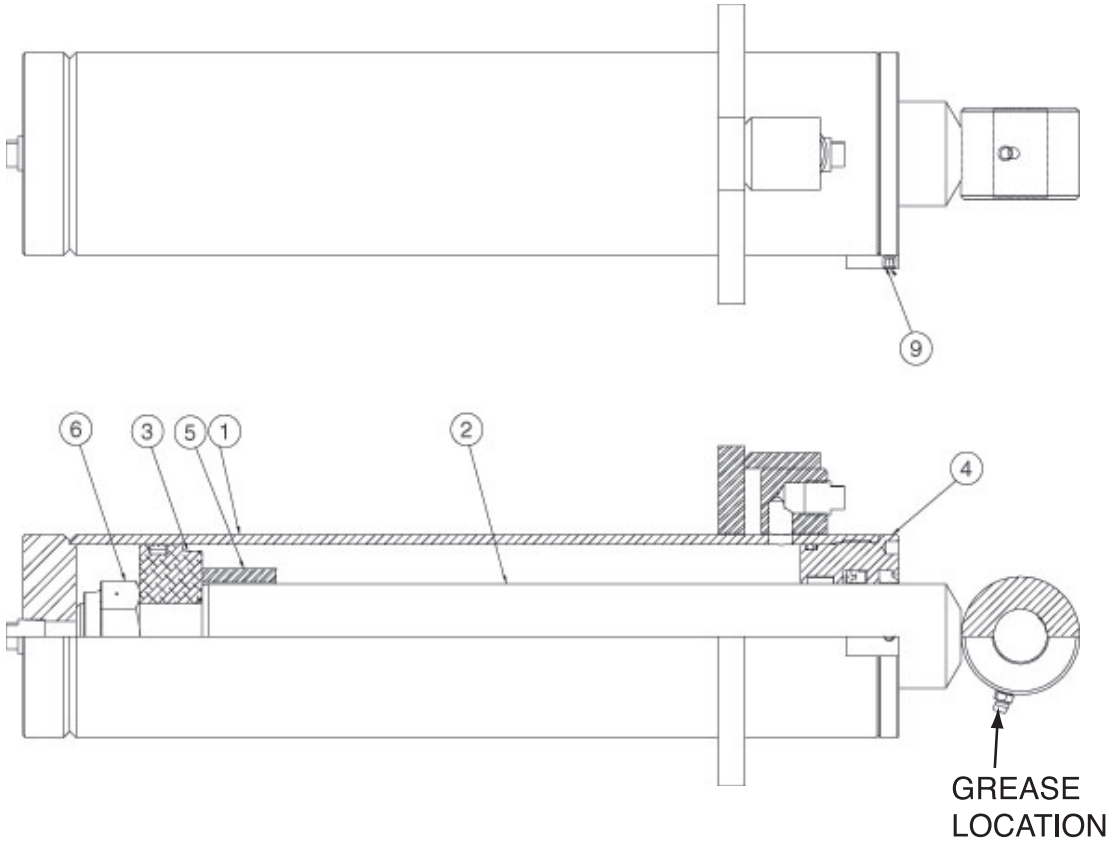


- Included in the 05002855 Seal Kit  
 Wear Ring 4" x 3.75" x .5" x .125"  
 PSP A Seal 3.625" x 4"  
 O-Ring 1" x 1.25"  
 O-Ring 3.625" x 4"  
 Backup 3.625" x 4"  
 "B" 2" x 2.5"  
 Wiper Ring 2"



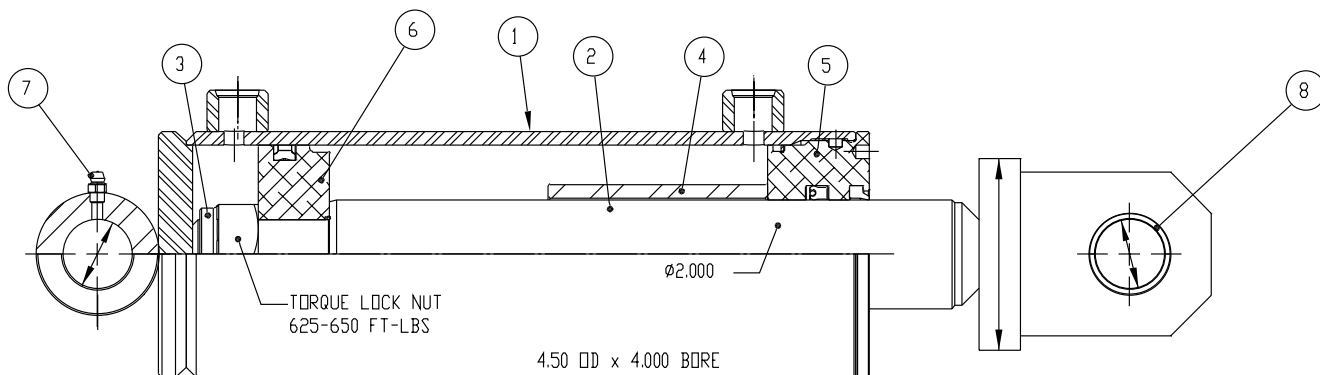
**05002821 CYLINDER, 3.5 X 10, DA, NITRIDE**

ITEM	QTY.	PART NUMBER	DESCRIPTION
1	1	05002081	CASE WELDMENT
2	1	05002083	ROD WELDMENT
3	1	-----	PISTON
4	1	-----	HEAD
5	1	-----	SPACER
6	1	-----	LOCK NUT
9	1	-----	SET SCREW
10	1	-----	GREASE ZERK
11	2	-----	PLASTIC PLUG
12	1	05002906	SEAL PACKING KIT



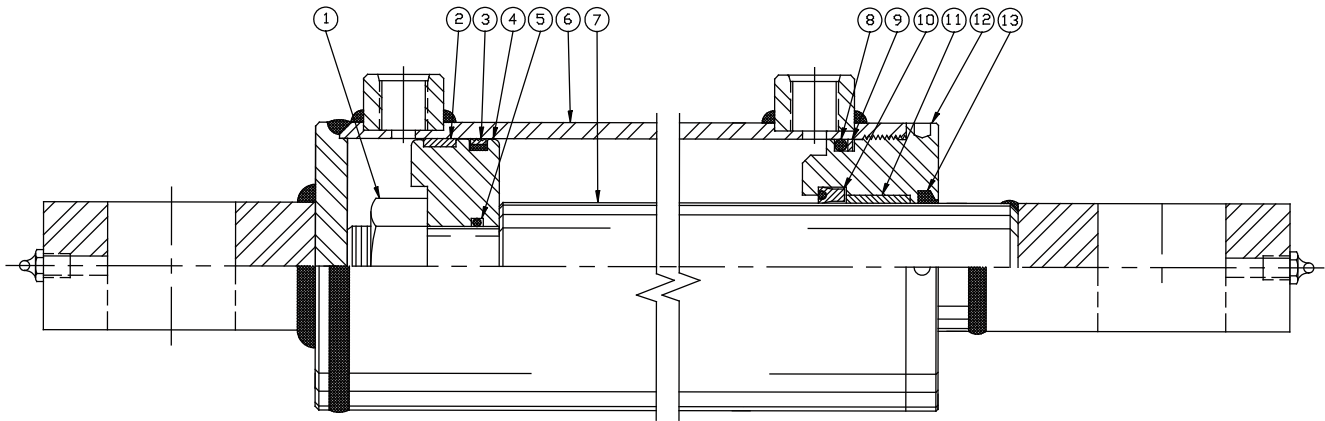
**05002791 CYLINDER, 4X4, DA, NIT, SCRAPER, OSCILLATING**

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	05002976	CASE WELDMENT
2	1	05002789	ROD WELDMENT
3	1	05000022	LOCK NUT
4	1	05002977	SPACER 4"
5	1	05002702	HEAD
6	1	05002625	PISTON GLAND
7	1	05002557	GREASE ZERK
8	2	05002790	HARDENED BUSHING
11	1	05002703	SEAL KIT

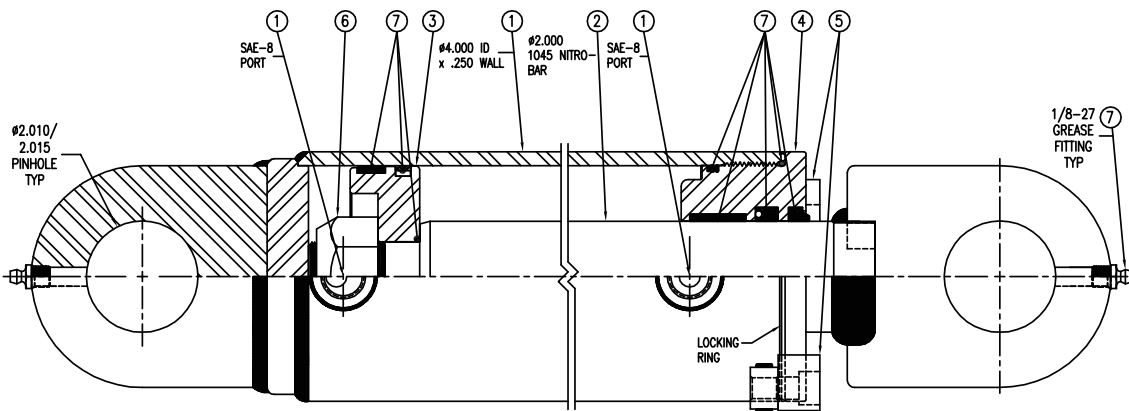


## 05002875 CYLINDER, 4X12, DA, SOCATRI, REVERSE, SCRAPER

Vendor #33285	ITEM	QTY	PART #	DESCRIPTION
	1	1	---	CASTLE NUT
	2	1	05002955	WEAR RING
	3	1	05002956	PSP SEAL
	4	1	05002856	PISTON (STEEL)
	5	1	05002957	O-RING
	6	1	---	JACKET ASSEMBLY
	7	1	---	PISTON ROD
	8	1	05002958	O-RING
	9	1	05002959	BACKUP WASHER
	10	1	05002525	POLY PAK, TYPE B
	11	1	---	BRONZE LINER
	12	1	05002930	HEADSTOCK
	13	1	05002527	ROD WIPER
			05002855	SEAL KIT (Includes items 2,3,5,8,9,10 & 13)



Vendor #73115	ITEM	QTY	PART #	DESCRIPTION
	1	1	---	BODY SUB ASSEMBLY
	2	1	---	ROD ASSEMBLY
	3	1	05003364	PISTON
	4	1	05003240	GLAND
	5	1	05003365	GLAND LOCK
	6	1	---	HARDWARE KIT
	7	1	05003265	SEAL KIT, 4.0 BORE, 2.0 ROD





# Options

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# Optional Moldboards

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## 20" HIGH MOLDBOARDS FOR SCRAPERS WITH OPTIONAL CARBIDE CUTTING EDGE

Part Number	Description
00081800	Moldboard, 1 x 20 x 10', Carbide Cutting Edge, 3-4-3
00039628	Moldboard, 1 x 20 x 11', Carbide Cutting Edge
00039630	Moldboard, 1 x 20 x 12', Carbide Cutting Edge

# Optional Cutting Edges - .75 x 6, DBC

## 00041825 CUTTING EDGE KIT, .75 X 6 X 10', DBC

Item	Qty	Part Number	Description
1	2	05031046	Cutting Edge, .75 x 6 x 5', DBC
2	14	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
3	14	05020270	Nut, .625-11, G8, Hex, Zinc
4	14	05021383	Washer, .625, Lock, Heavy, Zinc

## 00041826 CUTTING EDGE KIT, .75 X 6 X 11', DBC

Item	Qty	Part Number	Description
1	1	05031046	Cutting Edge, .75 x 6 x 5', DBC
2	1	05031047	Cutting Edge, .75 x 6 x 6', DBC
3	15	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
4	15	05020270	Nut, .625-11, G8, Hex, Zinc
5	15	05021383	Washer, .625, Lock, Heavy, Zinc

## 00041827 CUTTING EDGE KIT, .75 X 6 X 12', DBC

Item	Qty	Part Number	Description
1	2	05031047	Cutting Edge, .75 x 6 x 6', DBC
2	16	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
3	16	05020270	Nut, .625-11, G8, Hex, Zinc
4	16	05021383	Washer, .625, Lock, Heavy, Zinc

# Optional Cutting Edges - .875 X 5, Carbide

## 00139046 CUTTING EDGE KIT, .875 X 5 X 10', CARBIDE, SB

Item	Qty	Part Number	Description
1	2	05031107	Cutting Edge, .875 x 5 x 3', Carbide
2	1	05031007	Cutting Edge, .875 x 5 x 4', Carbide
3	16	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
4	16	05020270	Nut, .625-11, G8, Hex, Zinc
5	16	05021383	Washer, .625, Lock, Heavy, Zinc

## 00086252 CUTTING EDGE KIT, .875 X 5 X 11', CARBIDE, SB

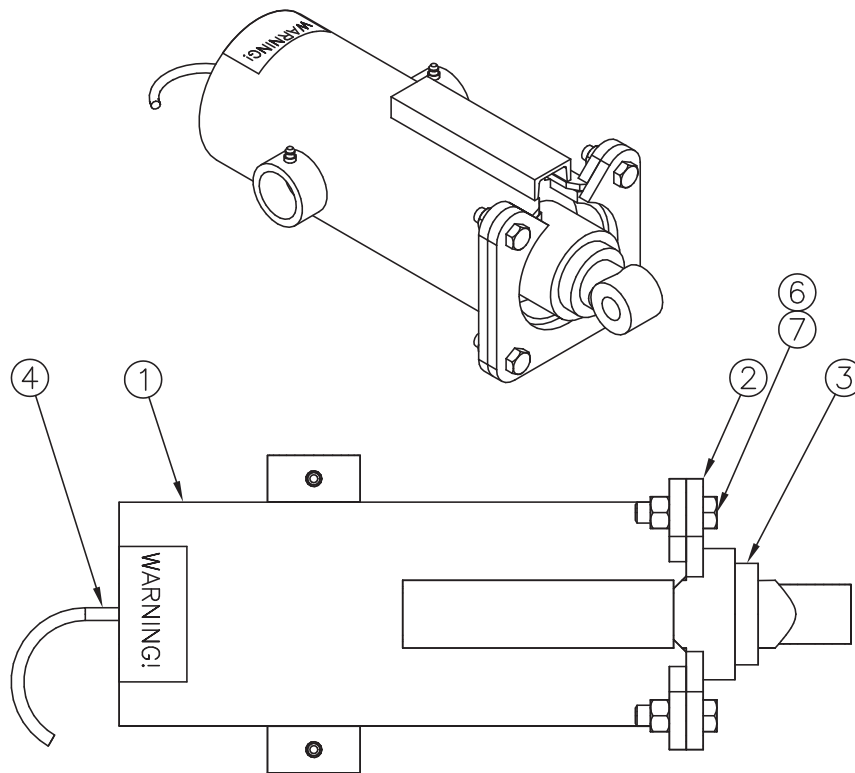
Item	Qty	Part Number	Description
1	1	05031107	Cutting Edge, .875 x 5 x 3', Carbide
2	2	05031007	Cutting Edge, .875 x 5 x 4', Carbide
3	17	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
4	17	05020270	Nut, .625-11, G8, Hex, Zinc
5	17	05021383	Washer, .625, Lock, Heavy, Zinc

## 00039629 CUTTING EDGE KIT, .875 X 5 X 12', CARBIDE, SB

Item	Qty	Part Number	Description
1	3	05031007	Cutting Edge, .875 x 5 x 4', Carbide
2	18	05014551	Bolt, .625-11 x 2.5, G8, DH, Plain
3	18	05020270	Nut, .625-11, G8, Hex, Zinc
4	18	05021383	Washer, .625, Lock, Heavy, Zinc



# Optional HD Canister Assembly



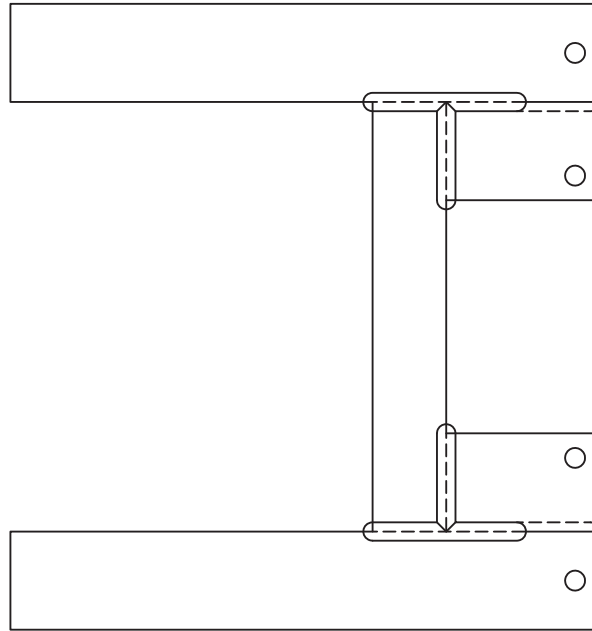
## 0019740 CANISTER ASSEMBLY, 3.5 X 10, NITRIDE, HD SPRING

Item	Qty	Part Number	Description
1	1	00022514	Canister Weldment
2	1	00022512	Flange Weldment, Canister
3	1	05002821	Cylinder, 3.5 x 10, DA, Nitride See page 47
4	1	05030506	Hose Assembly, .375 ID, 36" OAL, 2-Wire
5	1	05035001	Spring, Compression, 5.75 OD x 18.5 OAL, 732 PSI
6	4	05010739	Bolt, .625-11 x 2, G8, HHCS, Zinc
7	4	05020837	Nut, .625-11, GC, Top Lock, C&W
8	1	05052547	Decal, Warning Springs Under Tension

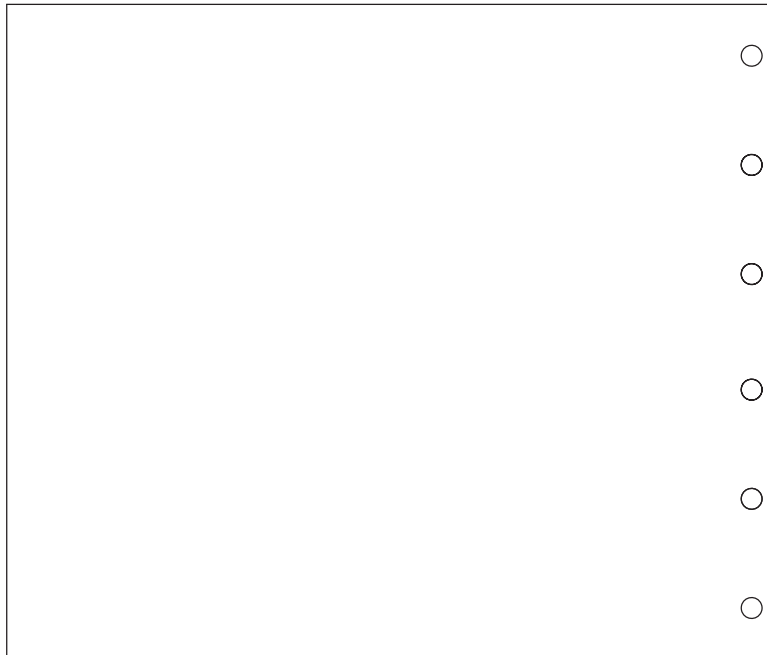
# Optional Hanger Brackets

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**00060260 HANGER WELDMENT, 1 X 4 X 24**



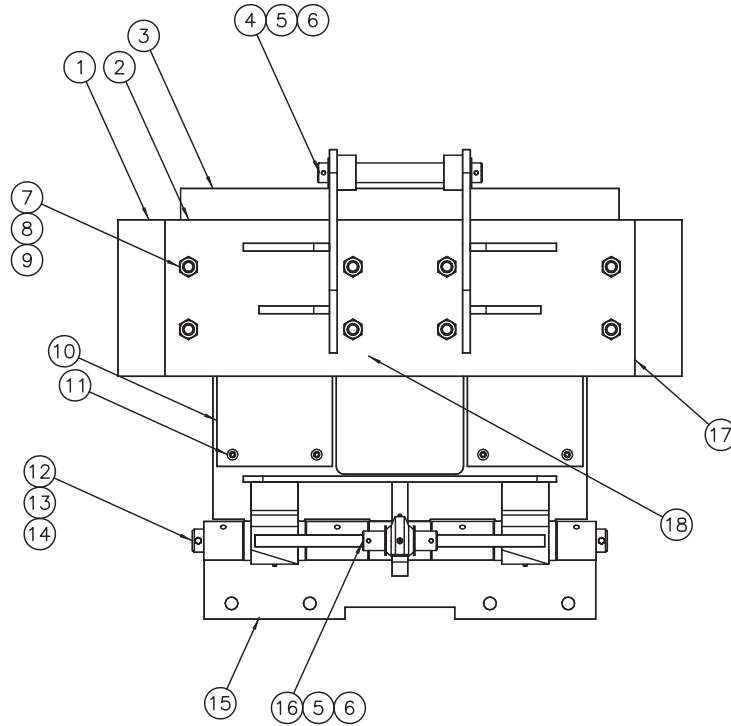
**00081887 HANGER PLATE, .75 X 30 X 25.5**



# Optional Hanger Brackets (Continued)

## 00056424 HANGER KIT, OSCILLATING

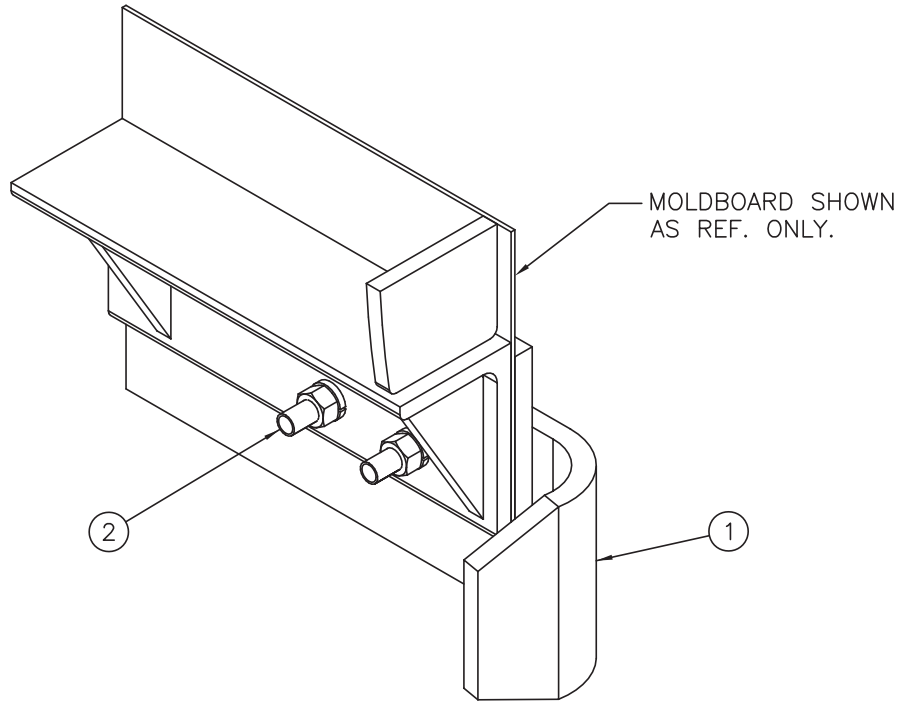
Item	Qty	Part Number	Description
1	2	00011465	Hanger Assembly, Oscillating See page 45
2	2	05002791	Cylinder, 4 x 4, DA, Nitride See page 39



## 00011465 HANGER ASSEMBLY, OSCILLATING

Item	Qty	Part Number	Description
1	1	00011233	Hanger Weldment, Oscillating, Inner
2	1	00011228	Hanger Bracket Weldment, Outer
3	1	00011213	Side Plate Assembly, Oscillating
4	1	00022507	Pin, 1.25 x 10.5
5	4	05022007	Pin, .25 x 2.5, Cotter, Zinc
6	4	05021191	Bushing, Machine, 1.88 x 1.25 x 14 Gauge, Zinc
7	8	05010772	Bolt, .75-10 x 4, G8 HHCS, Zinc
8	8	05020271	Nut, .75-10, G8, Hex, Zinc
9	8	05021384	Washer, .75, Lock, Heavy, Zinc
10	4	00011221	Insert, Oscillating Hanger Bracket
11	24	05017027	Screw, .313-18 x .5, FSHC
12	1	00011220	Pin, 1.5 Dia x 26.5
13	2	05010597	Bolt, .25-20 x 2, G8, HHCS, Zinc
14	2	05020899	Nut, .25-20, Top Lock, Zinc
15	1	00011223	Mounting Bar Assembly, Oscillating
16	1	00022506	Pin, 1.25 x 4.75
17	2	00125223	Shim, Spacer, 3 x 10
18	2	00125224	Shim, Spacer, 2 x 10

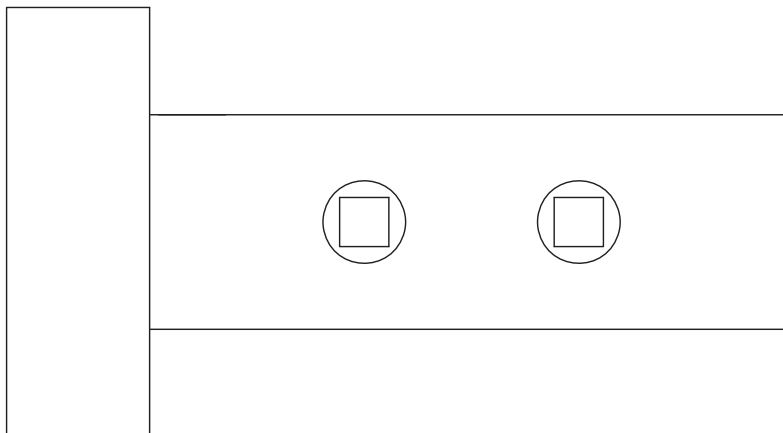
# Optional Equipment



## 00039621 CURB GUARD KIT, WRAP AROUND, .625 X 6

Item	Qty	Part Number	Description
1	1	05050000	Guard, Curb, .625 x 6
2	2	05014555	Bolt, .625-11 x 3.5, Dome Head, Plain

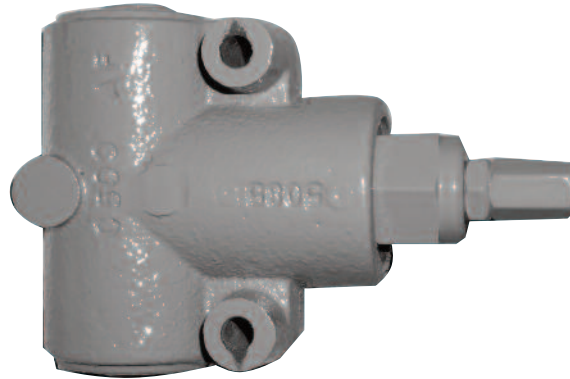
## 01100100 CURB GUARD WELDMENT, 2 X 6, ROUND



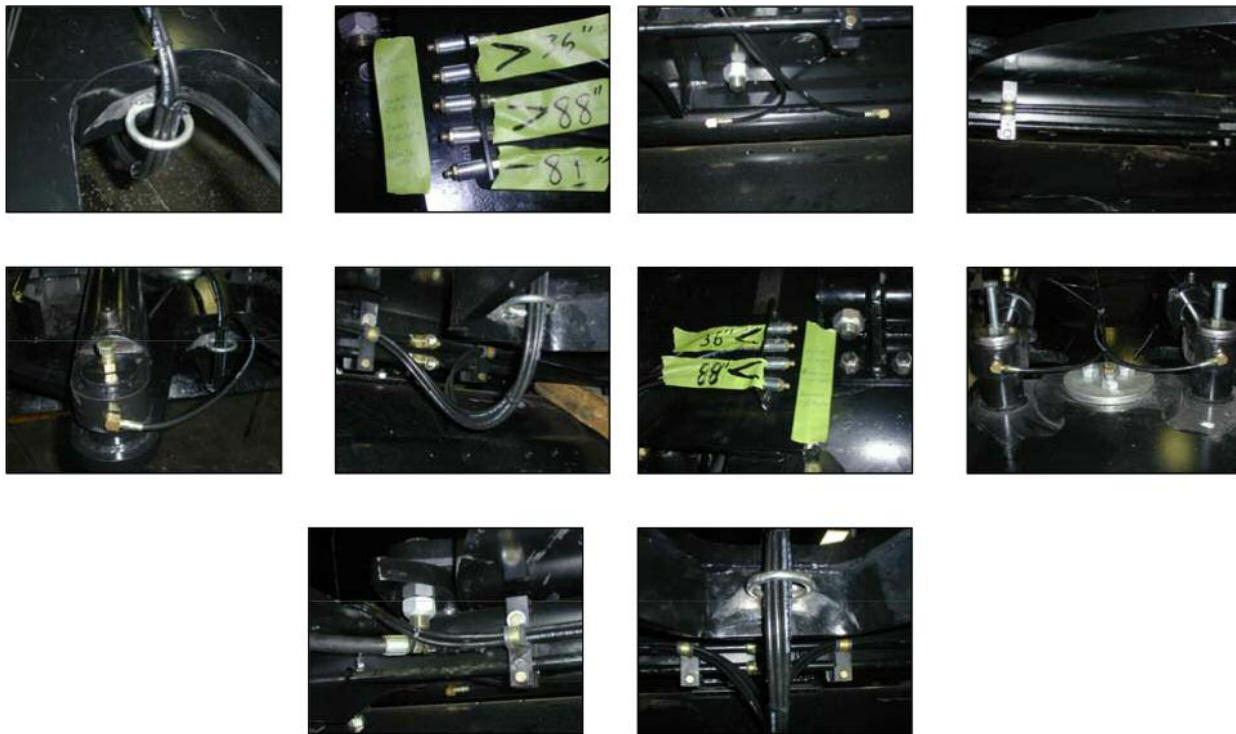
## Optional Equipment

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### 05037005 RELIEF VALVE, ADJUSTABLE (IN-LINE RELIEF SET AT 500 PSI)



*Down pressure relief is required on all Monroe Underbody Scrapers. A 500 psi relief can be incorporated into the truck hydraulic system or a down pressure relief valve can be purchased with the underbody scraper. The relief valve must be installed to prevent premature failure of the actuating cylinders and/or the underbody scraper.*



00086228 GREASE LINE KIT, SCRP, MS3500 5-BANK			
Item	Qty.	Part Number	Description
1	4	00059368	HOSE ASSY,36,GREASE LINE,SCPR
2	4	00129655	HOSE ASSY,88,GREASE LINE,SCPR
3	1	00086230	HOSE ASSY,81,GREASE LINE,SCPR
4	4	05051786	CLAMP,.625",CUSHIONED METAL
5	4	05021306	WASHER .313 FLAT ZC
6	20	05050686	CABLE TIE,HD,8Lx.18W,BLACK,50#
7	9	05038319	FITTING,90DEG,BRASS,.125"MNPTx.125"FNPT
8	9	05037660	FITTING,COUPLING,.125"FNPT
9	9	05050003	GREASE FITTING .125 NPT STR
10	1	05050730	RING,WELD,.375"WIRE DIA X 2"OD
11	1	05052919	DECAL,4.75"X1.50",GREASE EXT,SCPR
12	2	00086227	BRACKET,GREASE LINE,5 BANK

# Snow & Ice Control Product Warranty

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1051 W. 7<sup>th</sup> Street • Monroe, WI 53566  
800-880-0109 • 608-329-8105 • FAX 608-328-8390  
E-mail: snowandicecontrol@monroetruck.com • Website: www.monroetruck.com

## MONROE TRUCK EQUIPMENT, INC. WARRANTY SNOW & ICE CONTROL PRODUCTS

**Monroe Truck Equipment, Inc.** warrants to the original purchaser, that if any part of the product proves to be defective in workmanship or material with **ONE YEAR** of the original installation, and is returned to us with 30 days of the discovered defect, we will (at our option) repair or replace the defective part. This warranty does not apply to damage resulting from misuse, neglect, accident, improper installation, normal wear items or lack of maintenance. This warranty is exclusive and supersedes all other warranties, whether expressed or implied. **Monroe Truck Equipment, Inc.** neither assumes, nor authorizes anyone to assume for it, any other obligation or liability in connection with this warranty and will not be liable for consequential damages.

All engines, pumps, motors, cylinders and valves are warranted by their manufacturer and not by **Monroe Truck Equipment, Inc.** The manufacturer's warranty will apply to these parts. Electrical and hydraulic components are not to be disassembled without the express written permission of **Monroe Truck Equipment, Inc.** Use of replacement parts other than original equipment voids this warranty.

All defective parts returned must be accompanied by the model number, serial number, date installed, date of defect, description of defect, and the name of the distributor from whom it was purchased. All warranty claims must have prior written approval from **Monroe Truck Equipment, Inc.**

**Please return the warranty registration card that accompanies this manual to confirm receipt of this parts catalog and acknowledge the information contained within. Failure to return the attached card may result in a voided warranty.**



Reversible & One-way Snowplows • Airport Snowplow • Heavy Duty Patrol Wing  
Heavy Duty Benching Wing • Monroe Underbody Scraper • Heavy Duty V-box Spreader  
Under Tailgate Spreader • Pickup V-box Spreader • Replacement Tailgate Spreader  
Anti-Icing/De-icing & Vegetation Sprayer • Construction Attachments



# Uninstalled Parts & Equipment Warranty

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**1051 West 7<sup>th</sup> Street  
Monroe, WI 53566  
608-328-8127 ~ Fax: 608-328-4278**

## **Warranty Policy Uninstalled Parts and Equipment Provided by Monroe Truck Equipment**

Monroe Truck Equipment will provide the following limited warranty for a period of one year to the original purchaser of all uninstalled goods provided by Monroe Truck Equipment:

**LIMITED WARRANTY:** All goods provided by Monroe Truck Equipment (MTE) will be free from defects in material and workmanship for a period of one year from the date of purchase by the original purchaser. This limited warranty shall be the sole and exclusive remedy for any such product found to be defective. This limited warranty supercedes all previous warranties and is exclusive and in lieu of all other warranties, whether expressed or implied.

This limited warranty applies only to parts or accessories manufactured by MTE and/or provided by same. Except with respect to title, this limited warranty does not pertain to parts or accessories not manufactured and/or provided by MTE, regardless of whether such parts or accessories were selected and/or recommended by MTE. MTE will, as a service to the buyer, pass on any warranties received from the original manufacturer of MTE provided parts and/or accessories.

MTE will not under any circumstances be liable for any incidental or consequential damages whether in tort, contract, or otherwise, for any bodily injury, death, property damage, loss of use, or loss of income resulting from or in any way arising out of any goods provided by MTE, or their sale, use, or manufacture.

Any warranty claim deemed to be arising from the result of misuse, abuse, neglect, accident, improper installation, lack of maintenance, act of war (whether declared or otherwise), or act of God will be denied. Any repair or modification by the buyer or any third party, without the prior written consent of MTE, will void any possible warranty compensation. Any damage deemed to be the result of abnormal operation will not be compensated by this warranty.

Normal or special maintenance items such as fuels, fluids, tires, belts, hoses, filters, air cleaners, light bulbs, and any other items subject to normal wear and tear that are supplied in connection with goods provided by MTE are not allowed under this warranty.

All engines, pumps, cylinders, valves, and motors are warranted by their manufacturer and not by Monroe Truck Equipment. The manufacturer's warranty will apply to these parts. Electrical and hydraulic components are not to be disassembled without the express written consent of MTE. Any disassembly of MTE provided components without prior authorization will void the applicable warranty.

Monroe Truck Equipment shall be the sole and final determining authority as it applies to the administration of this warranty policy. Purchaser acknowledges receipt of Monroe Truck Equipment Warranty Policy and agrees to be bound by same.



**GLOBAL SOLUTIONS**  
ARMORED VEHICLES ~ SPORT TRUCK CONVERSIONS  
MUNICIPAL SNOW & ICE CONTROL ~ FIRE APPARATUS  
PICKUP TRUCK ACCESSORIES ~ TRUCK EQUIPMENT/MODIFICATIONS





# Uninstalled Parts & Equipment Warranty

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**1051 West 7<sup>th</sup> Street  
Monroe, WI 53566  
608-328-8127 ~ Fax: 608-328-4278**

Any and all warranty claims must be forwarded to MTE within 10 days of defect discovery. A copy of the original Monroe Truck Equipment invoice as well as the manufacturer's model number, serial number, and date of installation must accompany all correspondence regarding said claims. MTE will, at their option, choose whether to repair or replace the defective part unless otherwise specified by the original manufacturer of said part.

## **Procedures for Warranty Claims Notification**

For submission of any warranty claim please contact Monroe Truck Equipment – Warranty Department at 800-356-8134

The following documentation will be needed when you call for initial warranty authorization:

1. A copy of the original MTE invoice.
2. Make, Model, and VIN or Serial Number of the equipment involved.
3. Part number and serial number of the part in question.
4. A complete description of the problem.

The following must accompany any claim submitted to Monroe Truck Equipment:

1. Documented photographs of any physical damage.
2. Inspection notes by MTE personnel or MTE authorized 3<sup>rd</sup> party.
3. Authorization number issued by Monroe Truck Equipment – Warranty Department.

**Defective parts must be returned to Monroe Truck Equipment (freight prepaid) within 30 days of issuance of Authorization Number.**

**Monroe Truck Equipment reserves the right to void any warranty for failure to comply with Monroe Truck Equipment Warranty Policy.**

**This policy is effective October 11, 2012**



