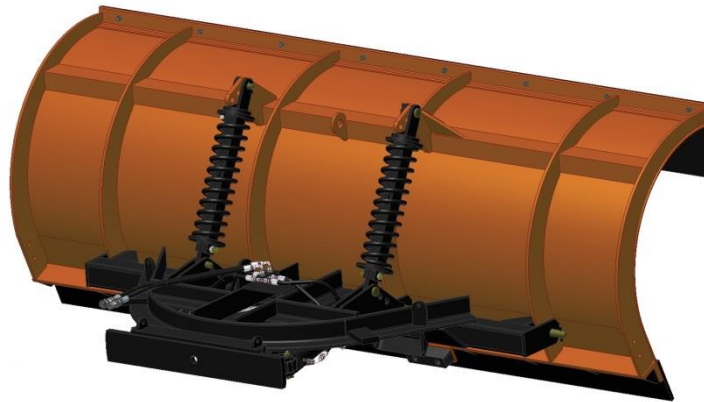




22956 Highway 61 Morley, MO 63767 Phone: (573) 262-3545 Fax: (573) 262-3369

# Owners Manual

VIKING-CIVES MW SERIES POWER REVERSING PLOWS



Unit Serial Number: \_\_\_\_\_



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**\*\*\* LIMITED WARRANTY \*\*\***

**Viking - Cives Midwest, Inc.** warrants products of its manufacture against defects in workmanship and material for a period of one year from date of shipment to customer; and in consequence of this warranty, any component part or parts of such products proving defective within the above specified time will be repaired or replaced F.O.B. factory, providing such parts are returned, transportation prepaid, to the factory and found defective by **Viking - Cives Midwest, Inc.** This warranty will not apply to any product which shall have been repaired or altered outside of the **Viking - Cives Midwest, Inc.** factory in any way so as, in **Viking - Cives Midwest, Inc.** sole judgment, to affect its stability or reliability, nor which has been subjected to misuse, negligence or accident.

The obligations of **Viking - Cives Midwest, Inc.** under this limited warranty are limited to the replacement of defective parts as set forth above; such obligations are exclusive and in lieu of all other remedies, warranties, guarantees or liabilities, express or implied, with respect to each product delivered hereunder, arising by law or otherwise (including without limitation any obligation or liability of **Viking - Cives Midwest, Inc.**, arising from negligence or with respect to fitness for a particular purpose, merchantability, loss or use, revenue or profit, or any incidental, indirect, special or consequential damages or injuries; and all other remedies, warranties, guarantees, or liabilities are hereby expressly excluded and disclaimed. This limited warranty shall not be extended, altered, or varied except by a written instrument signed by **Viking - Cives Midwest, Inc.**

**Viking - Cives Midwest, Inc.** assumes no responsibility for engines, electrical equipment, or any other equipment and accessories not manufactured by **Viking - Cives Midwest, Inc.**

## ORDERING PARTS

Delays and errors can be eliminated when ordering instructions are followed correctly.

1. Place orders direct with Viking - Cives Midwest, Inc. / nearest dealer.
2. State Company name, address, and postal zip code.
3. Give the exact model and serial number of the equipment/unit (stamped on the unit identification plate.)
4. Furnish part number, description and quantities required. *Note: An alpha designation in the Item ID column indicates a sub-component for that parent item. When placing parts orders reference the parent item to receive a complete assembly. Individual items can be ordered separately if required by ordering the alpha designated item number.*
5. Print or type order clearly. **Note: A purchase order is required for the warranty parts.**
6. Give specific shipping instructions.

**VIKING - CIVES MIDWEST, INC.** – 22956 Hwy 61 Morley, MO 63767  
(573) 262-3545 Phone; (573) 262-3369 Fax



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### **WARRANTY REQUEST PROCEDURE**

All repairs considered for warranty that are performed outside of Viking - Cives Midwest, Inc.; require prior written authorization from Viking - Cives Midwest, Inc. Failure to obtain written warranty authorization prior to repairs may result in the rejection of the warranty claim. To obtain warranty consideration one must provide Viking - Cives Midwest, Inc. with all required unit information including date of manufacture and serial numbers. In most cases this information is easily obtained from the "Shipped Unit Tag" (located in most cases inside the driver's side door) and/or individual unit serial tag.

#### **(A) To obtain Parts Warranty Consideration:**

- (1) Contact Viking - Cives Midwest, Inc. customer service to obtain a Return Goods Authorization (RGA) number. Any product arriving at Viking - Cives Midwest, Inc. without a RGA number will be rejected and returned to the sender at his or her own expense.
- (2) Goods are to be shipped prepaid to Viking - Cives Midwest, Inc. 22956 Highway 61 Morley, MO 63767. **All items should be clearly marked with the appropriate RGA number.**
- (3) When a replacement item is shipped to replace a defective part for warranty consideration the following additional steps will occur:
  - a) A Purchase order must be received for the replacement parts.
  - b) An invoice will be generated for the value of the replacement item(s).
  - c) The defective part(s) must be returned (prepaid) to Viking - Cives Midwest, Inc.
  - d) Upon receiving the defective part(s) Viking - Cives Midwest, Inc. will issue and process a Discrepant Material Report (DMR). Once the evaluation of the DMR report is complete and the parts are deemed warranty, a credit will be issued against the outstanding invoice. **If the part(s) are deemed Non-warranty the invoice will remain outstanding to be paid to Viking - Cives Midwest, Inc.** Any part(s) to be returned to the customer will be at his or her own expense.

#### **(B) To obtain Labor Parts Repair Warranty Consideration:**

In the event that repairs are required outside of Viking - Cives Midwest, Inc. facility that may be considered for warranty the following steps must occur. **Notification of Viking - Cives Midwest, Inc. customer service must take place prior to the start of any repairs.**

- (1) Contact Viking - Cives Midwest, Inc. customer service to obtain a Warranty Claim Form (WCF) and warranty authorization number.
- (2) Fill out all required WCF information and fax or mail the completed form to Viking - Cives Midwest, Inc., attention Customer Service Department.
- (3) Once the WCF report has been reviewed warranty authorization will be granted or denied. **NOTE: Viking - Cives Midwest, Inc. warranty labor rates will apply unless specifically determined otherwise.** Any part(s) involved in a WCF request must follow the Parts Warranty Consideration procedures.

#### **For Customer Service and/or Parts requests please contact:**

Service Department – DeWayne Stroder (573) 262-3545; (573) 262-3369 fax



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PERIODIC MAINTENANCE INSPECTION  
DAILY INSPECTION AND LUBRICATION

Daily inspection along with periodic preventive maintenance will reduce the chance of any major repairs and down time during equipment use.

1. Check the fluid level in the hydraulic oil reservoir. If the sight indicated low oil level, add the appropriate amount of the specified hydraulic fluid. **Cold Weather Operation:** All equipment is designed to operate with hydraulic oil minimally warm. During cold weather conditions, it is recommended that the truck be run at idle with the pump engaged and circulating the oil through the system before operating equipment.
2. Check all components for loose and/or missing fasteners, if required tighten and/or replace.
3. Visually inspect all battery terminals and electrical connections, wires, switches, etc. for signs of corrosion, wear, loose and/or broken connections, etc. At the beginning of each shift review all lighting accessories to ensure proper working conditions, immediately replace any broken or non-functioning bulbs and/or lenses.
4. Visually inspect all hydraulic connections and hoses for cracks and/or leaks. Rupturing hoses may produce a high-pressure stream of hot hydraulic oil.
5. Check all cables and chains for excessive wear or damage.
6. Visually inspect plow units. Check cutting edges. If cutting edge has excessive wear remove and rotate, or if required, replace. **CAUTION:** Do not allow cutting edge to wear down to mounting angle. Any wear to the mounting angle may affect the operation and safety of the equipment. Replacement is costly.
7. At the beginning of each shift visually inspect all caution and warning decals. All decals should be complete and legible. If decals are not legible, clean them. If cleaning the decals does not make them legible, install new decals.



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GENERAL OPERATING INSTRUCTIONS

1. The operator should familiarize himself with all equipment prior to operation. The in-cab controls are placed at a comfortable reach of the operator, with an allowable amount of adjustment. If necessary, the controls can be adjusted for either driver or passenger use.
2. See cab control layout. All levers are clearly marked as to the equipment/function they control.
3. To raise the plow or wing, pull back on the appropriate control level, to lower the plow or wing, push the control level forward. **NOTE:** The in cab controls are proportional to the hydraulic valve, therefore the further the control lever is moved the faster the plow or wing will raise or lower.
4. Before putting any equipment into use, check for any worn, damaged or loose components, if necessary repair or replace. Listen for any unusual sounds, if necessary repair and/or replace worn or damaged parts.
5. Before operating any equipment be sure to read and fully understand all caution and safety warnings. Familiarize yourself and others with all caution/warning labels and their locations. Make sure all labels are complete and legible. Replace any labels that have become unreadable and/or missing. Replacement labels can be purchased directly from Viking-Cives Midwest, Inc.

#### REGISTRATION OF EQUIPMENT AND WARRANTY INFORMATION

Before using equipment check for damage. Report any damage to equipment at once to Viking-Cives Midwest, Inc. The warranty period becomes effective upon date of delivery of equipment unless other arrangements have been made with a Viking-Cives Midwest, Inc. distributor or Viking-Cives Midwest, Inc. The information required to register the equipment may be found on the serial number tag secured to the equipment.

#### A WORD ABOUT SAFETY

The equipment described in this manual is normally being operated in winter conditions with bad weather and snow & ice conditions. Due to these adverse operating conditions it is important that you the operator use good safety practices at all times to protect yourself, co-workers, and others when using the equipment.

It is not practical or possible to warn you about all the hazards associated with the operation and maintenance of this equipment. You use your own good judgment supplemented with the information found on the safety decals, instructions in this manual, your employer's safety programs, safety codes, local, state/provincial, and federal laws, rules and regulations.

When operating/performing maintenance on this equipment, trouble-shooting equipment operations and loading or unloading the sanders/spreaders with material observe and obey all safety decals on the equipment and warnings listed in the manual. Failure to do this could result in serious injury or death to you or others.

Remember at all times that as the operator you are responsible for the safe operation of this equipment and responsible for the safety of others. Good safety practices not only protect you but also protect the people around you.



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# VIKING GIVES

## MIDWEST

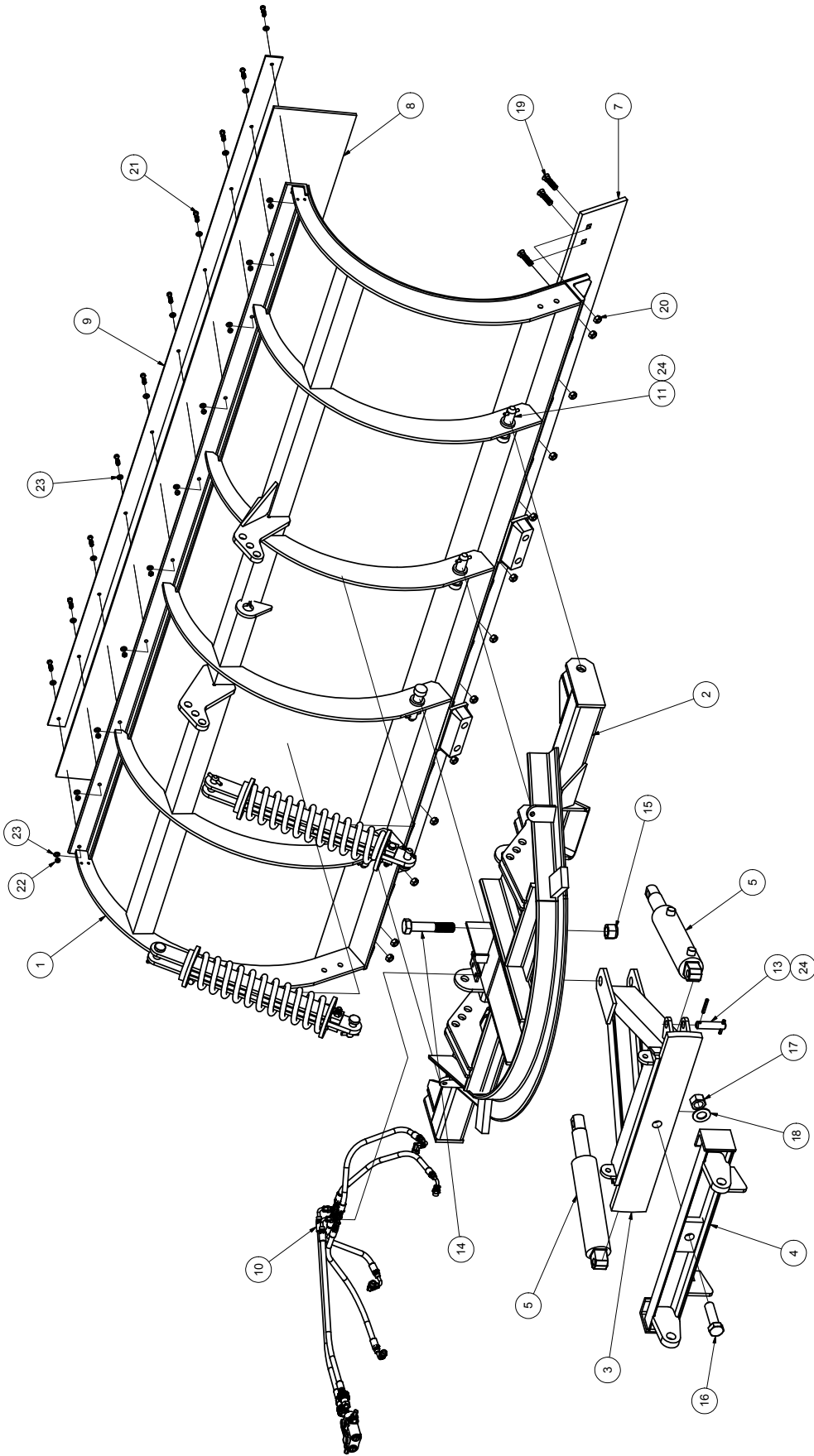
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### ASSEMBLED MW PLOW, PUSH FRAME AND SWIVEL



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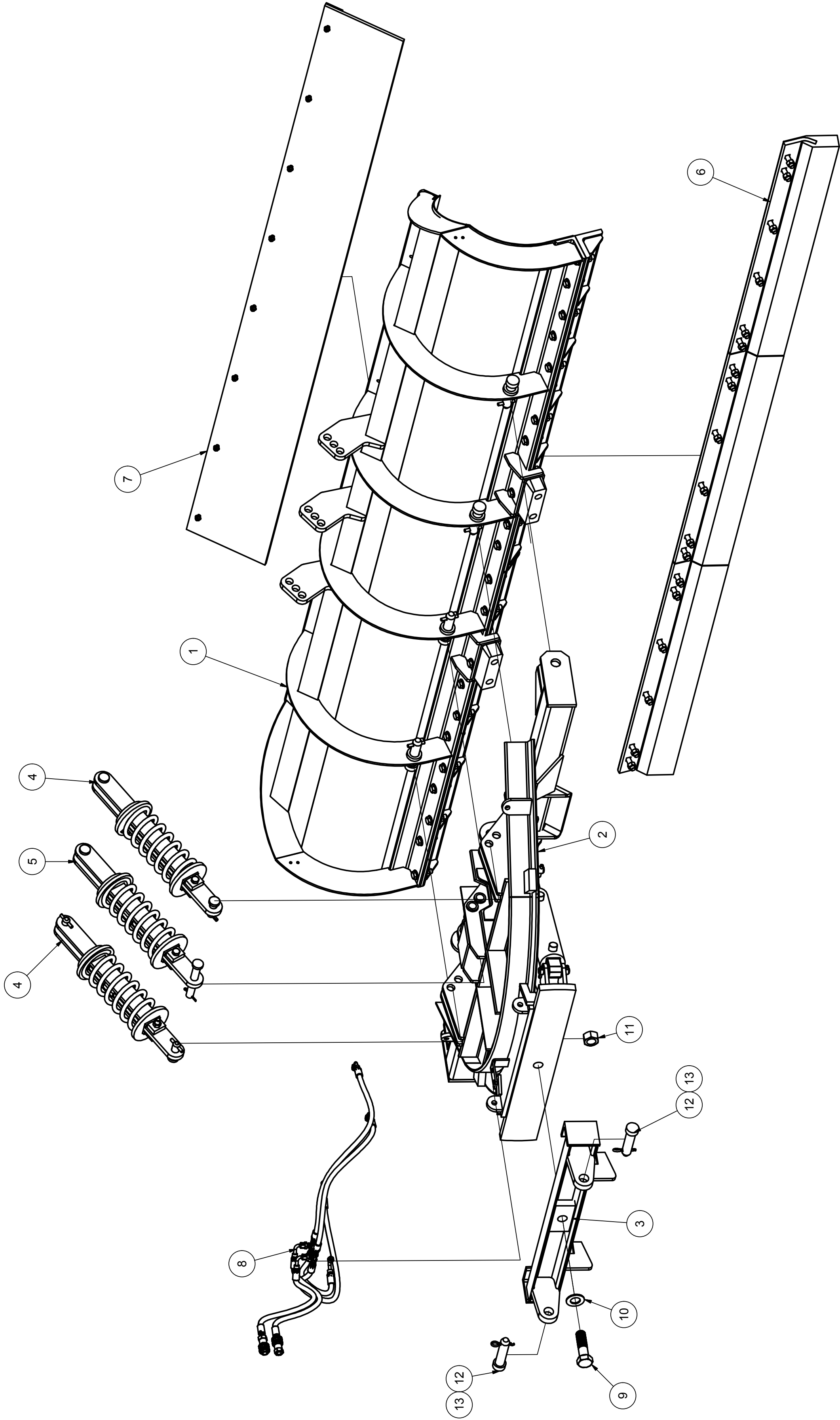
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ASSEMBLED MW PLOW, PUSH FRAME AND SWIVEL

ITEM	DESCRIPTION	QTY
1	MW MOLDBOARD WELDMENT	1
2	MW PUSH FRAME WELDMENT	1
3	MW A-FRAME WELDMENT	1
4	MW SWIVEL WELDMENT	1
5	MW REVERSING CYLINDER	2
6	MW COMPRESSION SPRING ASSEMBLY	2
7	BLADE OR CUTTING EDGE	1
8	MW RUBBER DEFLECTOR	1
9	MW RUBBER DEFLECTOR RETAINING STRIP	1
10	MW HOSE KIT	1
11	PUSH FRAME TO MOLDBOARD CONNECTING PIN	4
12	COMPRESSION SPRING CONNECTING PIN	4
13	REVERSING CYLINDER CONNECTING PIN	4
14	A-FRAME TO PUSH FRAME CONNECTING BOLT	1
15	A-FRAME TO PUSH FRAME CONNECTING NUT	1
16	SWIVEL TO A-FRAME CONNECTING BOLT	1
17	SWIVEL TO A-FRAME CONNECTING NUT	1
18	SWIVEL TO A-FRAME CONNECTING WASHER	1
19	PLOW BOLT	13
20	CUTTING EDGE CONNECTING NUT	13
21	RUBBER DEFLECTOR RETAINING STRIP BOLT	10
22	RUBBER DEFLECTOR RETAINING STRIP NUT	10
23	RUBBER DEFLECTOR RETAINING STRIP WASHER	20
24	ROLL PIN	16

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**ASSEMBLED MW LW PLOW, PUSH FRAME, AND SWIVEL**



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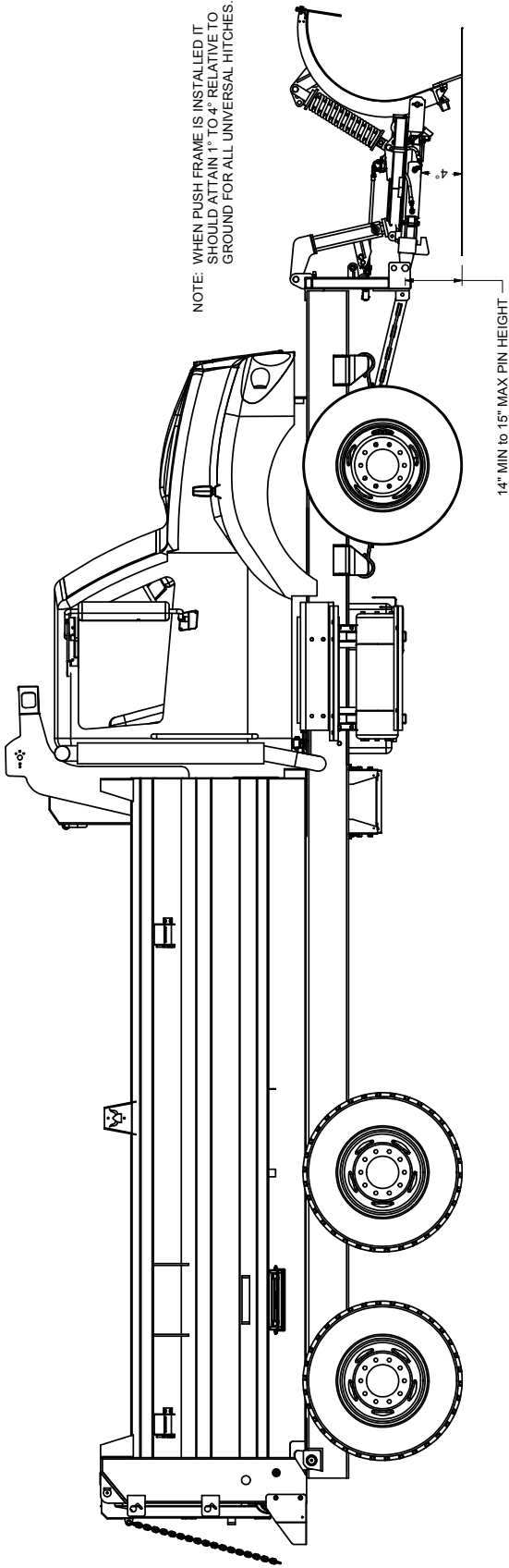
## ASSEMBLED MW LW PLOW, PUSH FRAME, AND SWIVEL

ITEM	DESCRIPTION	QTY
1	MW LW MOLDBOARD ASSEMBLY	1
2	LW MW PUSHFRAME WELDMENT	1
3	MW SWIVEL WELDMENT	1
4	LW MW COMP SPRING ASSEMBLY	2
5	LW MID COMP SPRING ASSEMBLY *	1
6	BLADE OR CUTTING EDGE **	1
7	MW RUBBER DEFLECTOR ASSEMBLY	1
8	MW PLOW HOSE KIT	1
9	SWIVEL TO PUSHFRAME CONNECTING BOLT	1
10	SWIVEL TO PUSHFRAME CONNECTING WASHER	1
11	SWIVEL TO PUSHFRAME CONNECTING NUT	1
12	SWIVEL TO HITCH PIN	2
13	SWIVEL TO HITCH CLINCH PIN	2

\*12' & 14' PLOWS ONLY

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\*\*KUEPER GK5 BLADES SHOWN



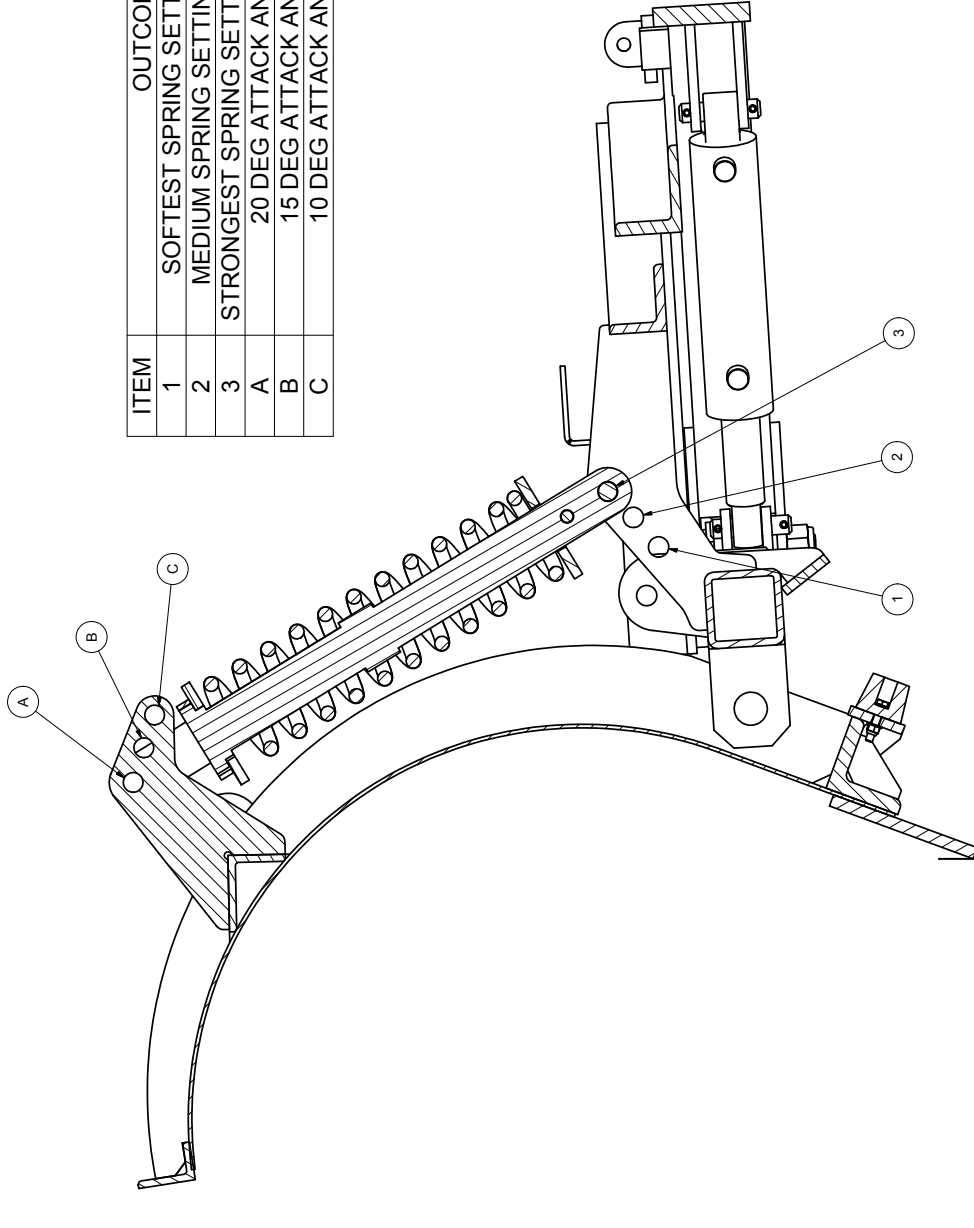
NOTE: WHEN PUSH FRAME IS INSTALLED IT SHOULD ATTAIN 1" TO 4" RELATIVE TO GROUND FOR ALL UNIVERSAL HITCHES.

**VIKING-CIVES MIDWEST UNIVERSAL HITCHES  
-GENERAL MOUNTING PROCEDURE-**

- STEP 1:** CENTER OPTIONAL BUMPER ANGLE (PART #200122027) ONTO EXISTING FRAME OR FRAME EXTENSIONS. NEXT ADD TWO PLATES LARGE ENOUGH TO ACCEPT THREE 5/8" BOLTS TO ACT AS SMALL CHEEK PLATES TO BE WELDED TO BUMPER ANGLE AND DRILL THROUGH SIDE OF FRAME RAIL. BOLT ANGLE AND CHEEK PLATES TO FRAME.
- STEP 2:** CENTER THE UNIVERSAL HITCH BETWEEN FRAME RAILS WITH AN APPROXIMATE PUSH HEIGHT CENTER OF 14" TO 15" FROM GROUND LEVEL; WELD HITCH TO BUMPER ANGLE.
- STEP 3:** LOCATE THE REAR CLIP ANGLE BRACKETS FROM OPTIONAL BRACE ARM KIT (PART # S7030) IN A SUITABLE LOCATION ON THE TRUCK FRAME BEHIND SPRING SHACKLE. NEXT, MARK AND GRILL FOUR(4) 11/16" DIAMETER HOLES IN EACH ANGLE CLIP. TRANSFER ANY EXISTING HOLES FROM TRUCK FRAME TO CLIPS WHERE POSSIBLE. BOLT IN PLACE WITH FOUR (4) 5/8" DIAMETER BOLTS. [NOTE: THE ANGLE CLIPS MUST BE SET ACCORDING TO THE FRAME AND SPRING WIDTHS, ALLOWING CLEARANCE FOR THE TRUST ARM BRACES, PRIOR TO FINAL WELDING.]
- STEP 4:** LOCATE CONNECTING LUGS ON THE BACK OF HITCH IN LINE WITH REAR ANGLE CLIPS AND THEN WELD IN PLACE.
- STEP 5:** MEASURE AND CUT BRACE ARM BARS FROM KIT (S7030) TO LENGTH. NEXT, MARK AND DRILL 13/16" DIAMETER HOLE IN BRACE BAR TO MATCH THE HOLES IN ANGLE CLIPS. BOLT IN PLACE WITH 3/4" DIAMETER BOLTS

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**MW MOLDBOARD SPRING SETUP SHEET**



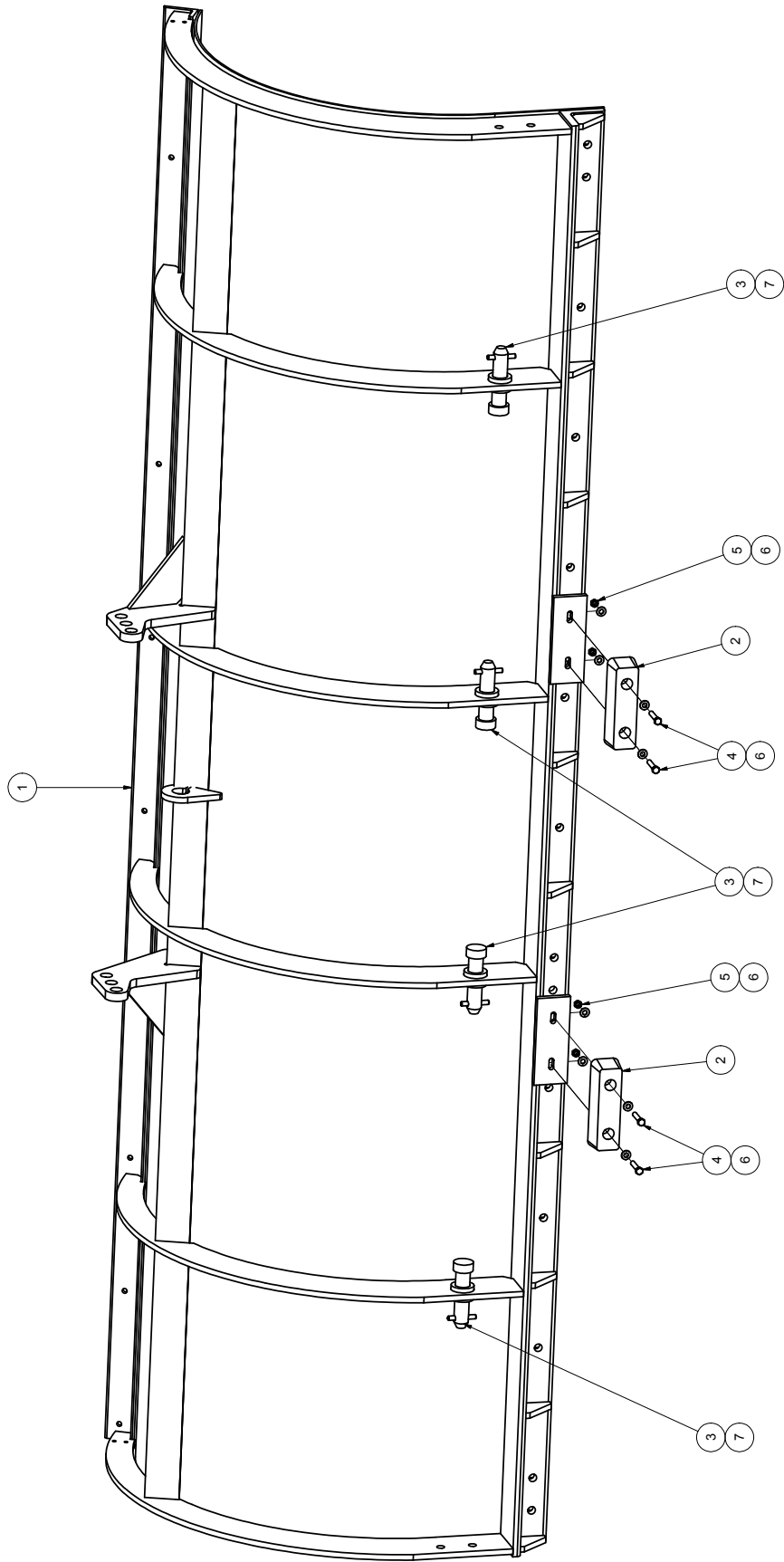
ITEM	OUTCOME
1	SOFTEST SPRING SETTING (TRIPS EASY)
2	MEDIUM SPRING SETTING (TRIPS MEDIUM)
3	STRONGEST SPRING SETTING (TRIPS HARDEST)
A	20 DEG ATTACK ANGLE AT REST
B	15 DEG ATTACK ANGLE AT REST
C	10 DEG ATTACK ANGLE AT REST

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### MW COMPRESSION ARM MOLDBOARD ASSEMBLY



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MW COMPRESSION ARM MOLDBOARD ASSEMBLY

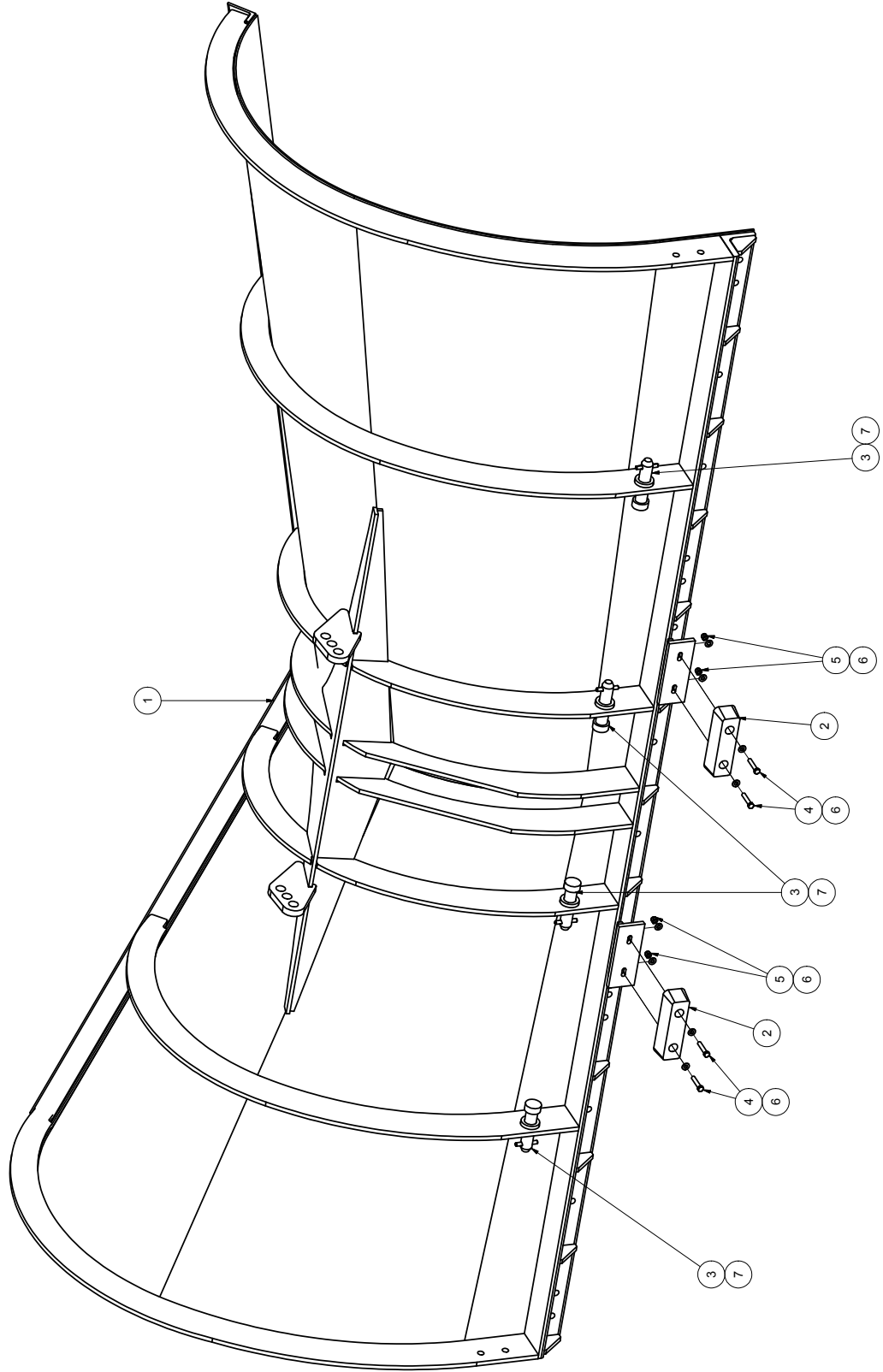
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	201101400		MOLDBOARD WELD'T MW36R10	1
1	21103022		MOLDBOARD WELD'T MW36R11	1
1	21103050		MOLDBOARD WELD'T MW36R12	1
1	21103084		MOLDBOARD WELD'T MW 36R14	1
1	201101457		MOLDBOARD WELD'T MW41R10	1
1	201101619		MOLDBOARD WELD'T MW41R11	1
1	201101623		MOLDBOARD WELD'T MW41R12	1
1	21103092		MOLDBOARD WELD'T MW48R10	1
1	21103093		MOLDBOARD WELD'T MW48R11	1
1	21103033		MOLDBOARD WELD'T MW48R12	1
1	21103032		MOLDBOARD WELD'T MW48R14	1
2	280572C		RUBBER BUMPER MC21685T11	2
3	20P010		PIN 1 1/4 X 4 3/8 UH	4
4	HW40A-0616		BOLT HEX 3/8 X 2 UNC ZINC	4
5	HW30E-06		NUT HEX TOPLOCK 3/8 UNC ZINC	4
6	HW14A-06		FLATWASHER SAE 3/8 ZINC	8
7	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	4

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### MW COMPRESSION ARM EXPRESSWAY MOLDBOARD ASSEMBLY



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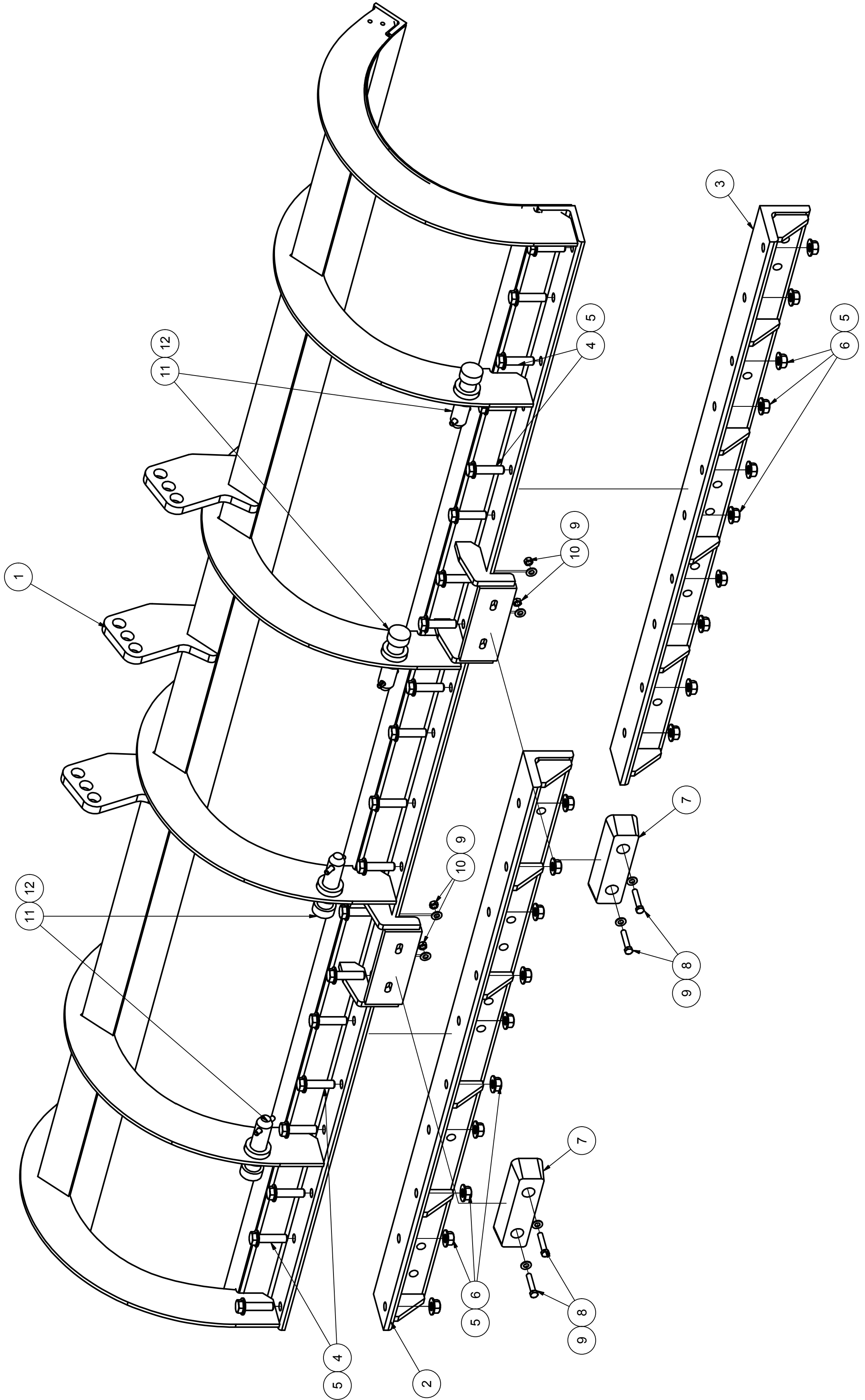
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MW COMPRESSION ARM EXPRESSWAY MOLDBOARD ASSEMBLY

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	01101820		MOLDBOARD WELD'T MW41R12-EX	1
1	01101835		MOLDBOARD WELD'T MW 41R11-EX	1
1	01101840		MOLDBOARD WELD'T MW 41R10-EX	1
2	280572C		RUBBER BUMPER MC21685T11	2
3	20P010		PIN 1 1/4 X 4 3/8 UH	4
4	HW40A-0616		BOLT HEX 3/8 X 2 UNC ZINC	4
5	HW30E-06	81086C	NUT HEX ELASTIC 3/8 UNC ZINC	4
6	HW14A-06		FLATWASHER SAE 3/8 ZINC	8
7	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	4

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MW LW COMPRESSION ARM MOLDBOARD ASSEMBLY



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## MW LW COMPRESSION ARM MOLDBOARD ASSEMBLY

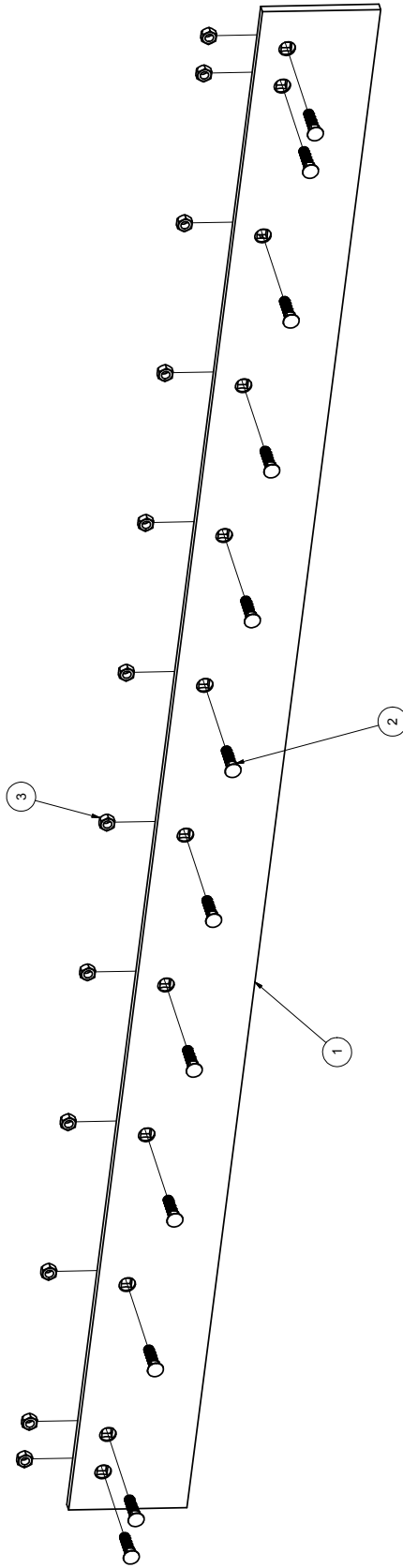
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	21103120		MW30R10 LW RBA MLDBRD WELD'T	1
1	21103117		MW30R12 LW RBA MLDBRD WELD'T	1
1	21103121		MW30R14 LW RBA MLDBRD WELD'T	1
2	21103100		MW 10' DRVS SD REMOVABLE BASE ANGLE	1
2	21103102		MW 12' DRVS SD REMOVABLE BASE ANGLE	1
2	21103087		MW 14' DRVS SD REMOVABLE BASE ANGLE	1
3	21103099		MW 10' PASS SD REMOVABLE BASE ANGLE	1
3	21103101		MW 12' PASS SD REMOVABLE BASE ANGLE	1
3	21103088		MW 14' PASS SD REMOVABLE BASE ANGLE	1
4	HW40A-1020	81075E	BOLT HEX 5/8 X 2 1/2 UNC ZINC	20
5	HW14A-10	81070A	FLATWASHER SAE 5/8 ZINC	40
6	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	20
7	280572C		RUBBER BUMPER MC21685T11	2
8	HW40A-0616		BOLT HEX 3/8 X 2 UNC ZINC	4
9	HW14A-06		FLATWASHER SAE 3/8 ZINC	8
10	HW30E-06		NUT HEX 3/8 UNC TOPLOCK ZINC	4
11	20P010		PIN 1 1/4 X 4 3/8 UH	4
12	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	4

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## CUTTING EDGE AND MOUNTING HARDWARE



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## CUTTING EDGE AND MOUNTING HARDWARE

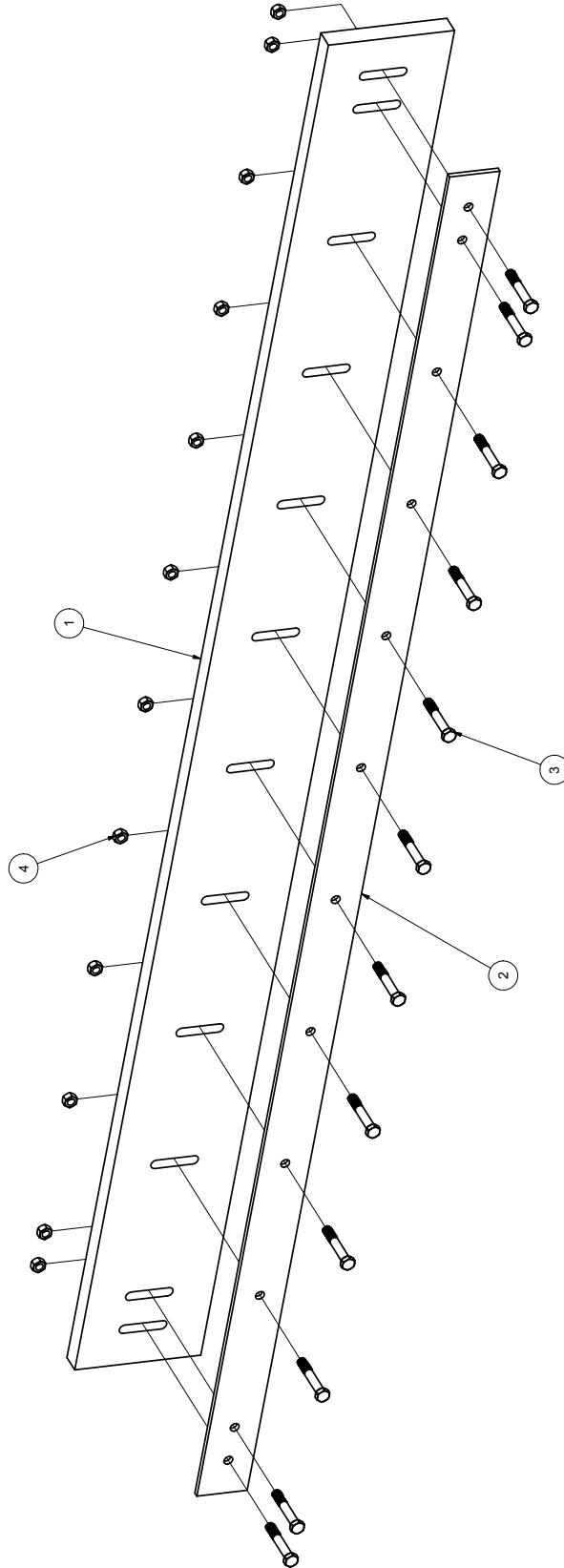
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	280020D		BLADE 5/8 X 8 X 120 (2" TOP PUNCH)	1
1	280055		BLADE 5/8 X 8 X 132 (2" TOP PUNCH)	1
1	280008B		BLADE 5/8 X 8 X 144 (2" TOP PUNCH)	1
1	25000030		BLADE 5/8 X 8 X 168 (2" TOP PUNCH)	1
1	280005E	*	BLADE 3/4 X 6 X 120 (2" TOP PUNCH)	1
1	280028B	*	BLADE 3/4 X 6 X 132 (2" TOP PUNCH)	1
1	280014B	*	BLADE 3/4 X 6 X 144 (2" TOP PUNCH)	1
1	280003A	*	BLADE CARBIDE 3/4 X 8 X 36 TP	1
1	280004A	*	BLADE CARBIDE 3/4 X 8 X 48 TP	1
1	280060	*	BLADE CARBIDE MATRIX 7/8 X 5 X 36 TP	1
1	280061	*	BLADE CARBIDE MATRIX 7/8 X 5 X 48 TP	1
			HARDWARE FOR 10 FT MW PLOW	
2	HW42B-1020	81074C	BOLT PLOW 5/8 X 2 1/2 UNC ZINC	12
3	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	12
			HARDWARE FOR 11 FT MW PLOW	
2	HW42B-1020	81074C	BOLT PLOW 5/8 X 2 1/2 UNC ZINC	13
3	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	13
			HARDWARE FOR 12 FT MW PLOW	
2	HW42B-1020	81074C	BOLT PLOW 5/8 X 2 1/2 UNC ZINC	14
3	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	14
			HARDWARE FOR 14 FT MW PLOW	
2	HW42B-1020	81074C	BOLT PLOW 5/8 X 2 1/2 UNC ZINC	16
3	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	16

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## RUBBER CUTTING EDGE AND MOUNTING HARDWARE



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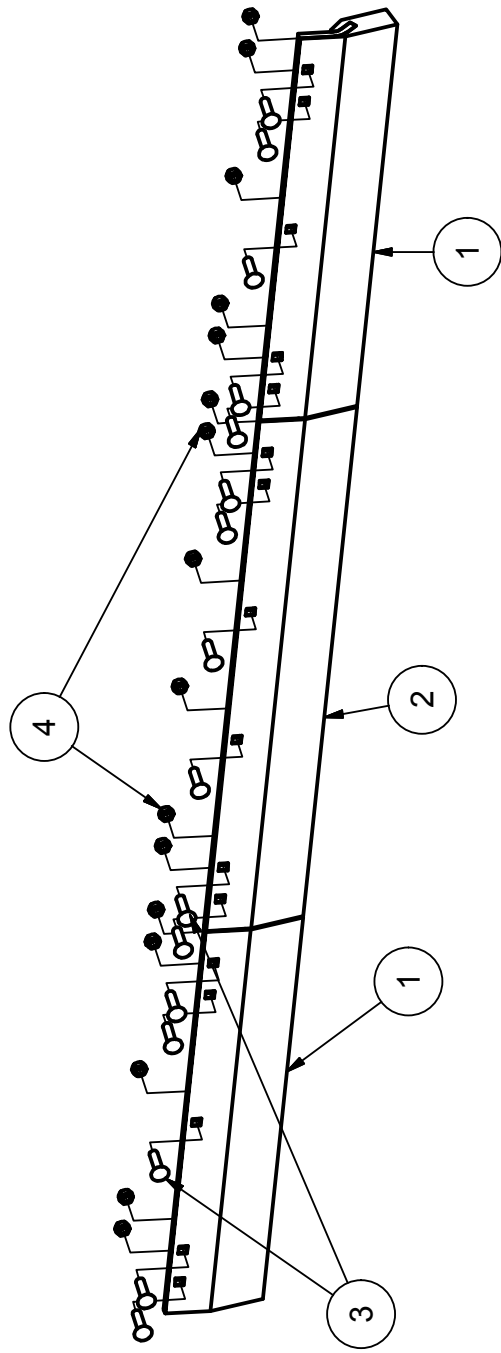
**RUBBER CUTTING EDGE AND MOUNTING HARDWARE**

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	280071A		RUBBER BLADE 1 1/2 X 10 X 120 1/2	1
1	280071L		RUBBER BLADE 1 1/2 X 12 X 120 1/2	1
1	280071		RUBBER BLADE 1 1/2 X 10 X 132 1/2	1
1	280071B		RUBBER BLADE 1 1/2 X 10 X 144 1/2	1
2	21105069		MW 10' PLOW RUBBER CUTTING EDGE PLATE	1
2	21105103		MW 11' PLOW RUBBER CUTTING EDGE PLATE	1
2	21105105		MW 12' PLOW RUBBER CUTTING EDGE PLATE	1
			HARDWARE FOR 10 FT MW PLOW	
3	HW40A-1032		BOLT HEX 5/8 X 4 UNC ZINC	12
4	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	12
			HARDWARE FOR 11 FT MW PLOW	
3	HW40A-1032		BOLT HEX 5/8 X 4 UNC ZINC	13
4	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	13
			HARDWARE FOR 12 FT MW PLOW	
3	HW40A-1032		BOLT HEX 5/8 X 4 UNC ZINC	14
4	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	14
			HARDWARE FOR 14 FT MW PLOW	
3	HW40A-1032		BOLT HEX 5/8 X 4 UNC ZINC	16
4	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	16

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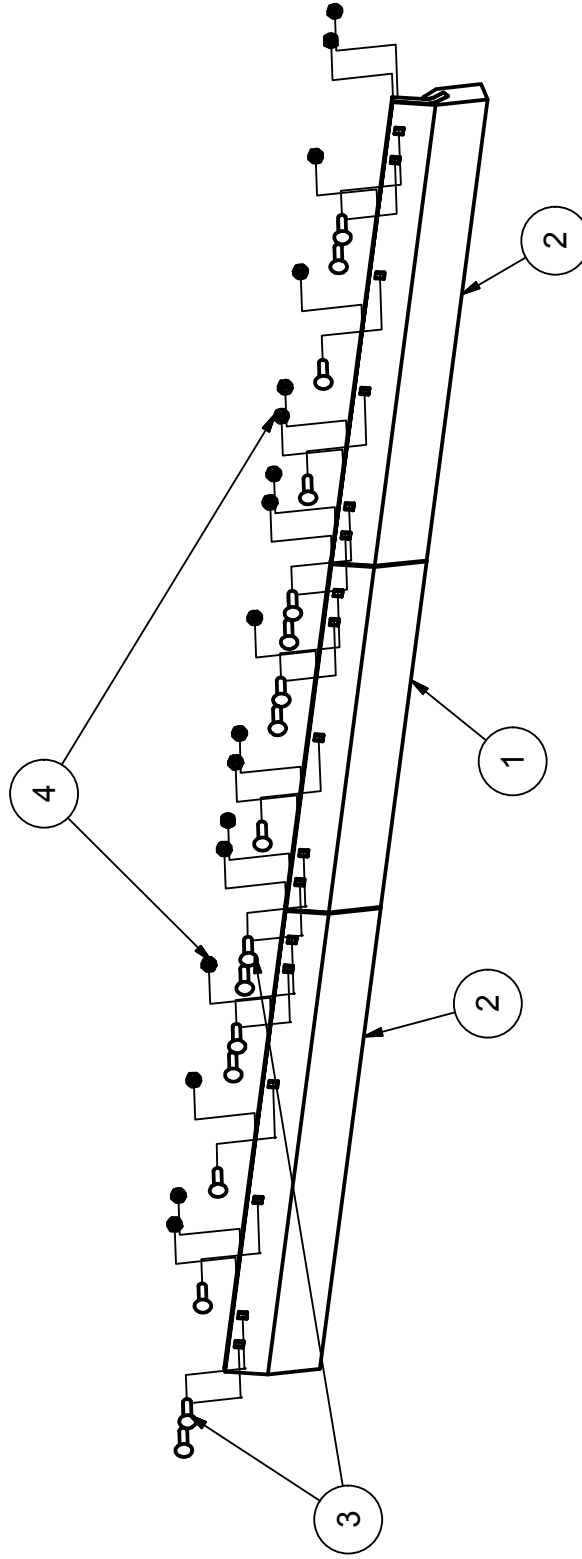
## KUEPER BLADE OPTIONS AND HARDWARE

### KUEPER BLADE ASSEMBLY FOR 10' PLOW



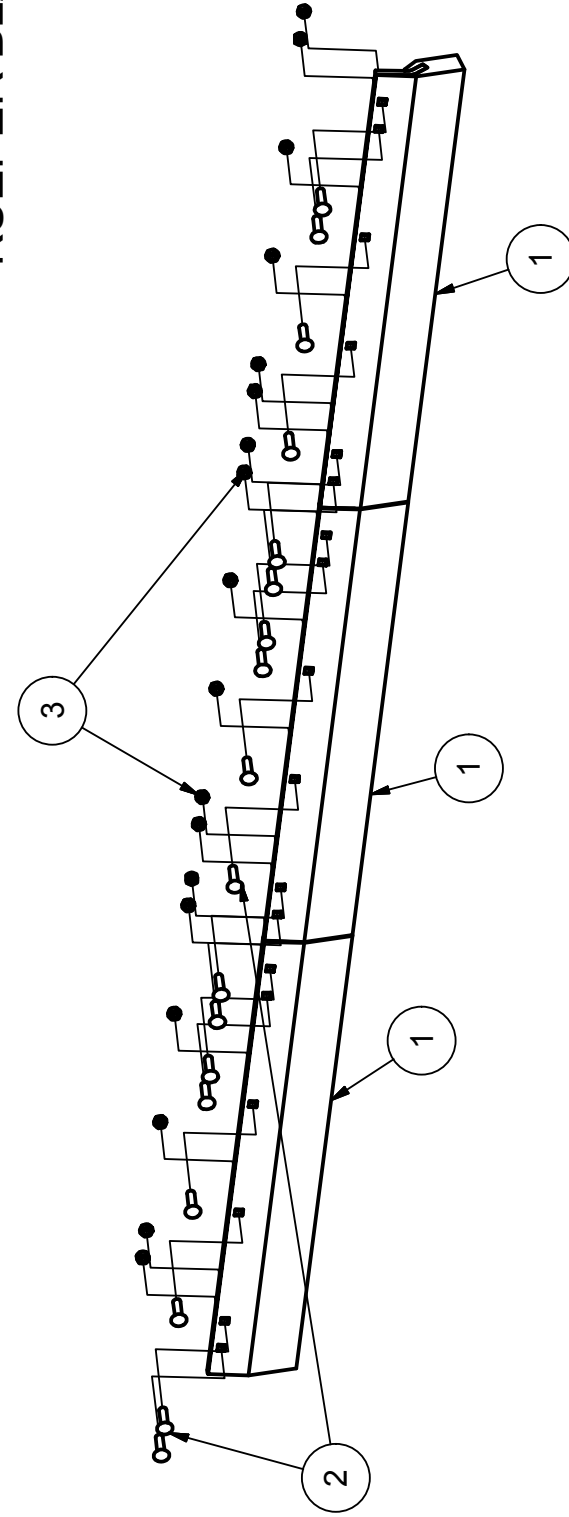
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	280072		KUEPER 3' GK5 RUBBER CUTTING EDGE	2
2	280073		KUEPER 4' GK5 RUBBER CUTTING EDGE	1
3	HW42C-1020	81105A	BOLT CARRIAGE 5/8 X 2 1/2 UNC ZINC GR8	16
4	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	16

### KUEPER BLADE ASSEMBLY FOR 11' PLOW



ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	280072		KUEPER 3' GK5 RUBBER CUTTING EDGE	1
2	280073		KUEPER 4' GK5 RUBBER CUTTING EDGE	2
3	HW42C-1020	81105A	BOLT CARRIAGE 5/8 X 2 1/2 UNC ZINC GR8	17
4	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	17

### KUEPER BLADE ASSEMBLY FOR 12' PLOW



ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	280073		KUEPER 4' GK5 RUBBER CUTTING EDGE	3
2	HW42C-1020	81105A	BOLT CARRIAGE 5/8 X 2 1/2 UNC ZINC GR8	18
3	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	18

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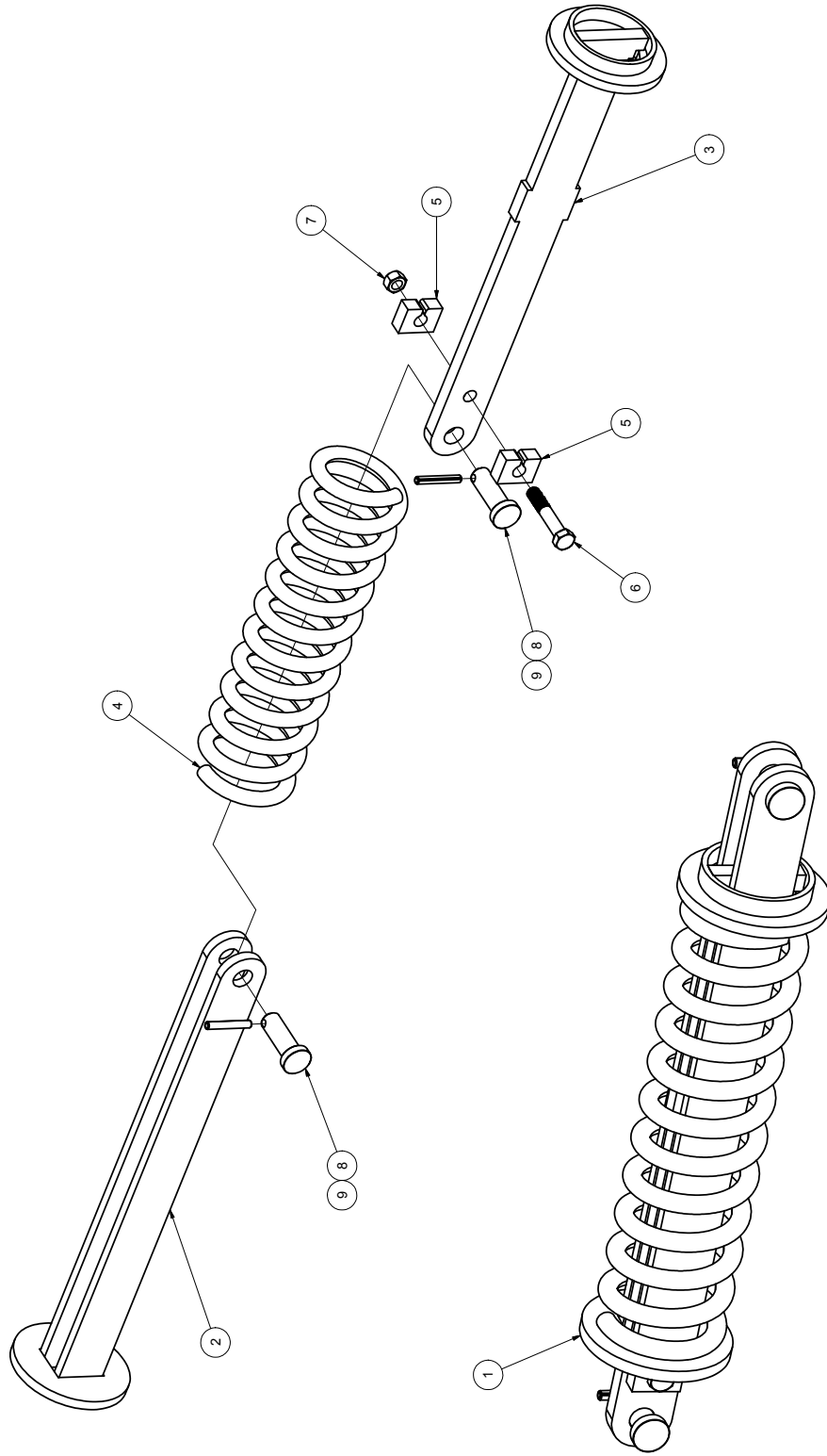
**NOTES**

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### MW COMPRESSION SPRING ARM ASSEMBLY



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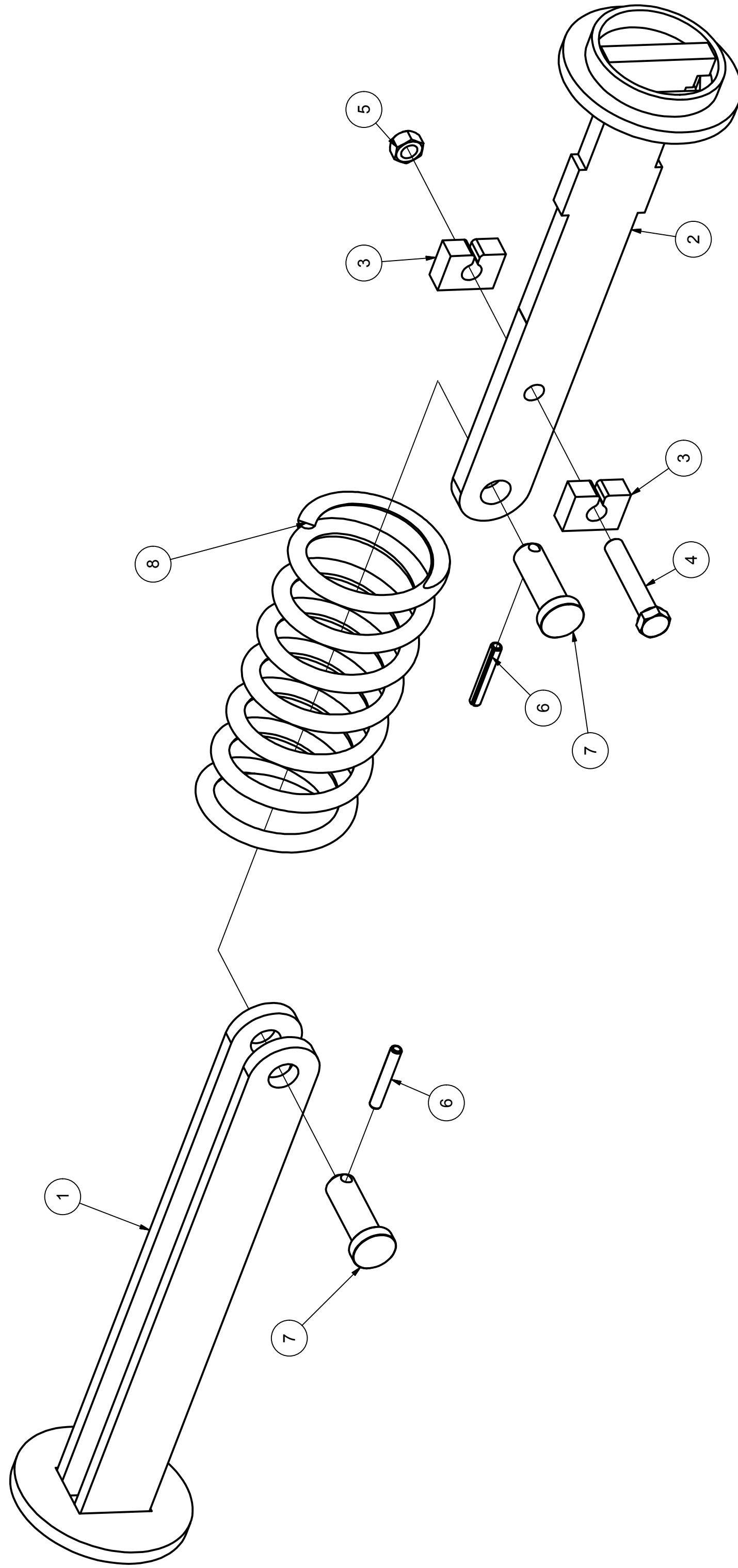
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**MW COMPRESSION SPRING ARM ASSEMBLY**

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	21401614		MW COMPRESSION SPRING ASSEMBLY	1
1	01101924		MW COMPRESSION TRIP ARM ASSY - EXPRESSWAY	1
2	21101610		OUTER ARM WELD'T TYPE 23	1
2	01101923		OUTER ARM WELDMENT - EXPRESSWAY	1
3	21101609		INNER ARM WELD'T TYPE 23	1
4	2580025		SPRING COMP 5.250 X 0.750 X 23.250	1
5	20401480		LUG RS 0.68B 0.75X1.00Y 1.50W2.00H 0.75T	2
6	HW40A-1028		BOLT HEX 5/8 X 3 1/2 UNC ZINC	1
7	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	1
8	20P148A		PIN 1 X 3	2
9	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	2

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## LW MW30R COMPRESSION SPRING ASSEMBLY



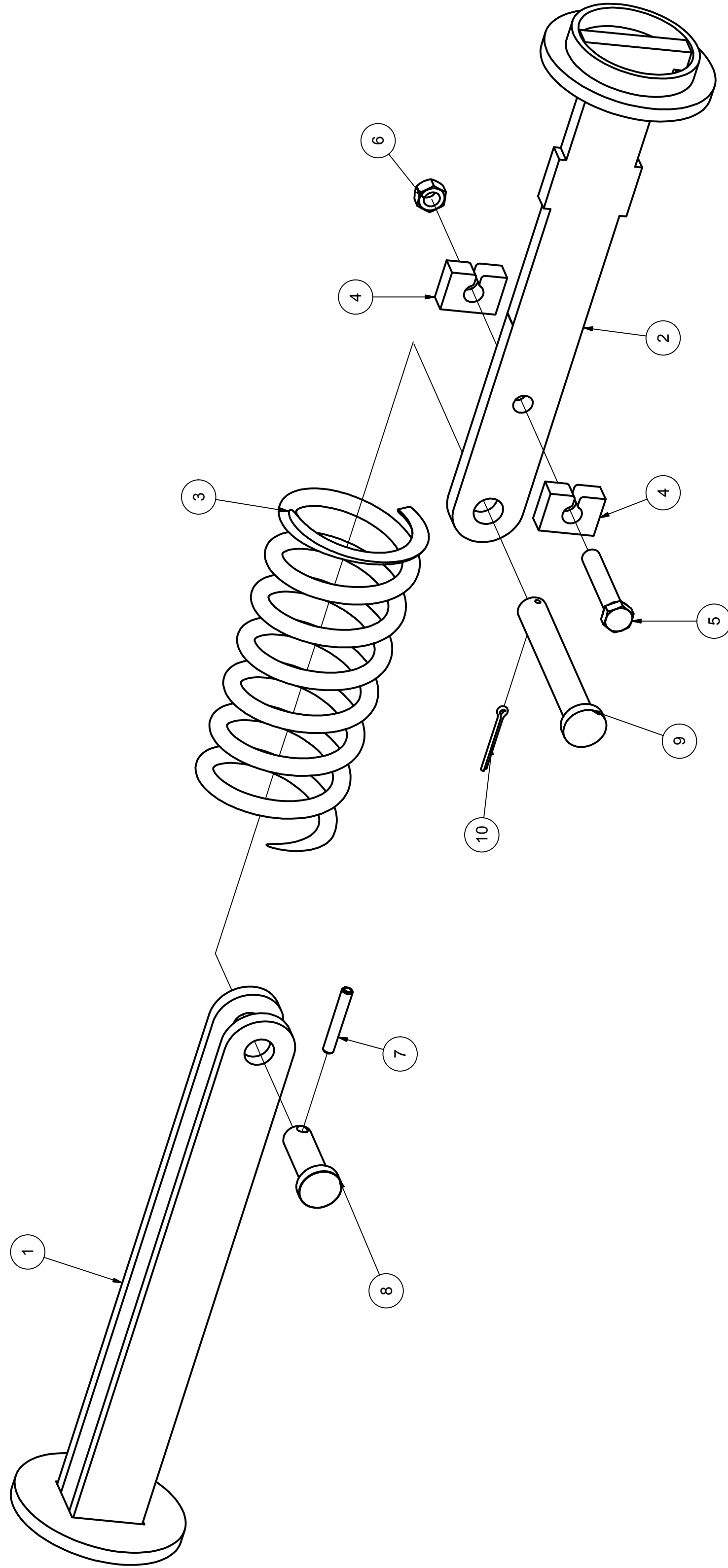


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## LW MW30R COMPRESSION SPRING ASSEMBLY

ITEM	DRAWING NO.	ALT. ITEM N	DESCRIPTION	QTY
1	21103119		LW 30R OUTER ARM WELD'T	1
2	21103118		LW 30R INNER ARM WELD'T	1
3	20401480		LUG RS 0.68B 0.75X1.00Y 1.50W2.00H 0.75T	2
4	HW40A-1028		BOLT HEX 5/8 X 3 1/2 UNC ZINC	1
5	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	1
6	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	2
7	20P148A		PIN 1 X 3	2
8	2580038		LW SPRING COMP 5.171 X 3.983 X 14.5	1

## LW MW30R MIDDLE COMPRESSION SPRING ASSEMBLY



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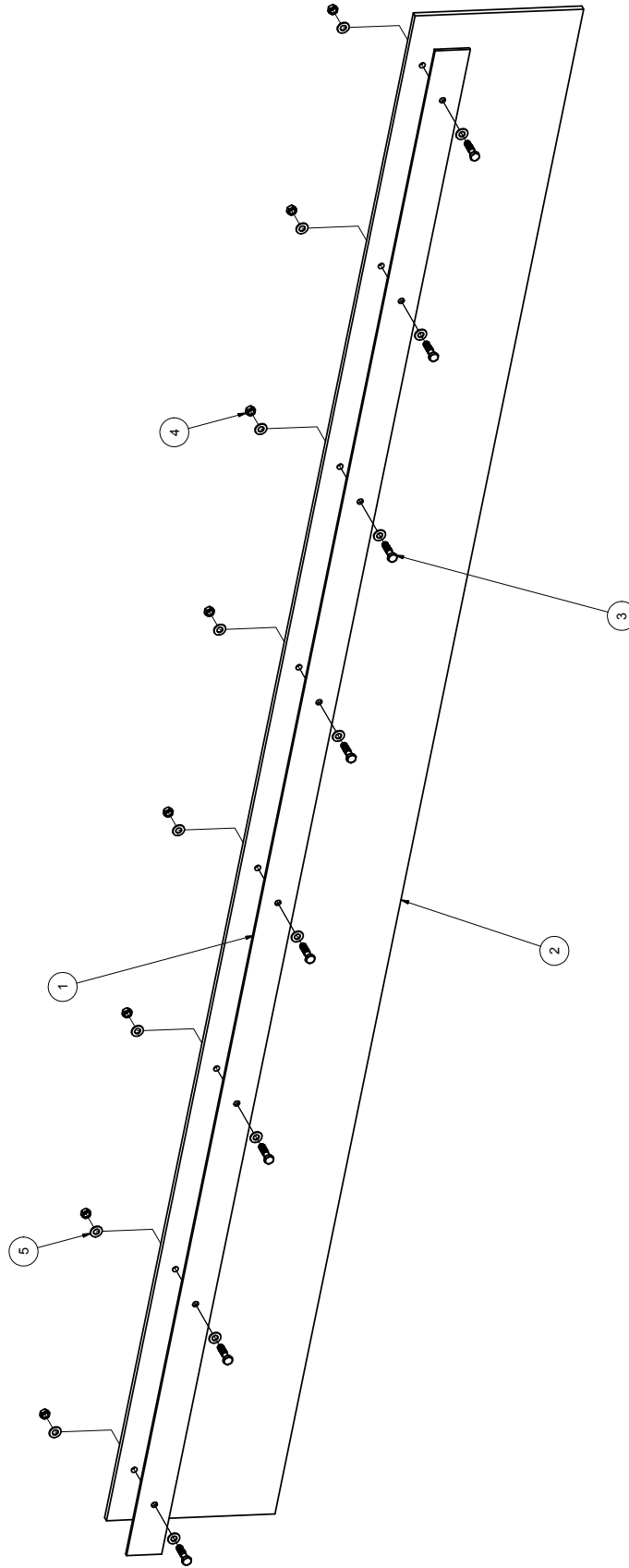
LW MW30R MIDDLE COMPRESSION SPRING ASSEMBLY

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	21103119		LW 30R OUTER ARM WELD'T	1
2	21103118		LW 30R INNER ARM WELD'T	1
3	2580038		LW SPRING COMP 5.171 X 3.983 X 14.5	1
4	20401480		LUG RS 0.68B 0.75X1.00Y 1.50W2.00H 0.75T	2
5	HW40A-1028		BOLT HEX 5/8 X 3 1/2 UNC ZINC	1
6	HW30E-10		NUT HEX 5/8 UNC TOPLOCK ZINC	1
7	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	1
8	20P148A		PIN 1 X 3	1
9	20900025		PIN 1.000 DIA X 6.625 BODY	1
10	HW13A-0632	80518	COTTER PIN 3/16 X 2 ZINC	1



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## RUBBER DEFLECTOR RETAINING STRIP AND MOUNTING HARDWARE



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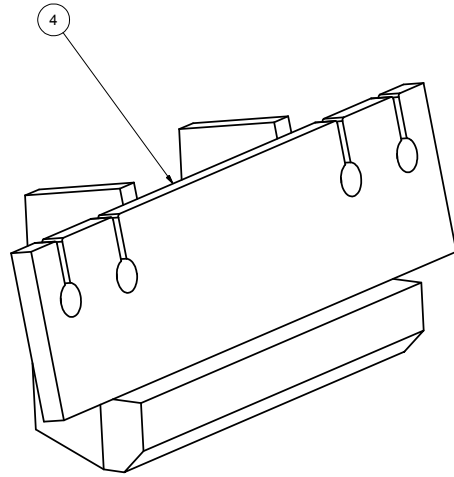
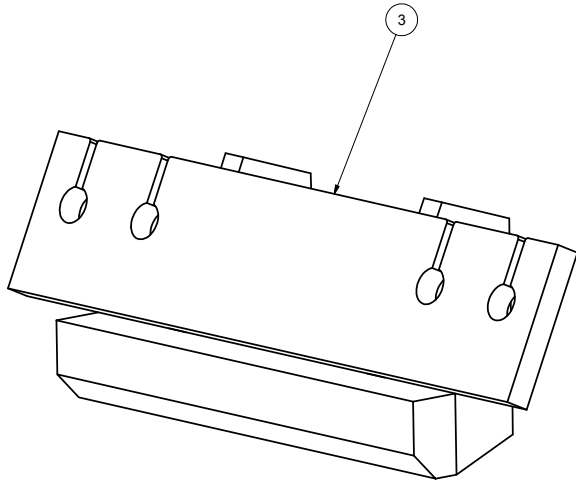
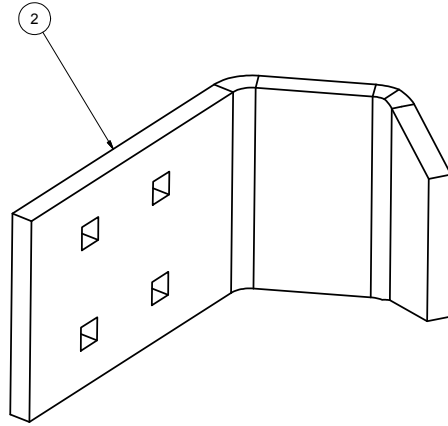
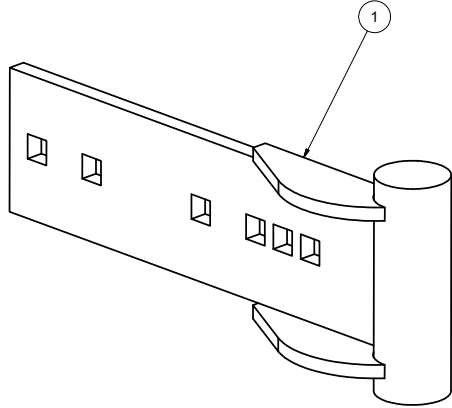
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**RUBBER DEFLECTOR RETAINING STRIP AND MOUNTING HARDWARE**

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	21105028		RETAINER STRIP MW 10'	1
1	21105027		RETAINER STRIP MW 11'	1
1	21105026		RETAINER STRIP MW 12'	1
1	21105089		RETAINER STRIP MW 14'	1
2	280573C		MW 12' RUBBER DEFLECTOR	1
2	280573E		MW 14' RUBBER DEFLECTOR	1
3	HW40A-0612	81091	BOLT HEX 3/8 X 1 1/2 UNC ZINC	8
4	HW30E-06		NUT HEX TOPLOCK 3/8 UNC ZINC	8
5	HW14A-06		FLATWASHER SAE 3/8 ZINC	16

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### OPTIONAL MOLDBOARD ACCESSORIES



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This Owner's Manual File is Contained Within OPTIONAL MOLDBOARD ACCE



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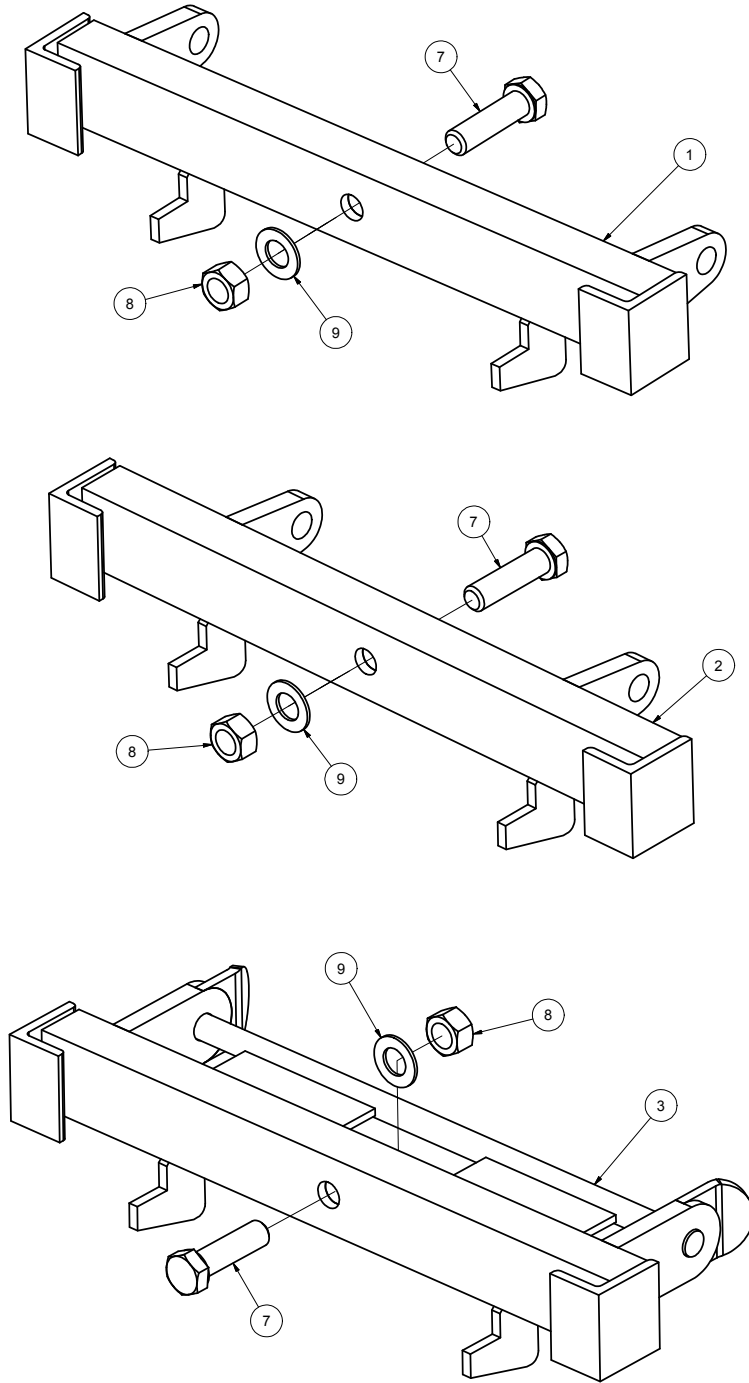
## OPTIONAL MOLDBOARD ACCESSORIES

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	2001795-92		CURB SHOE WELDMENT 8" & 12" HOLE CENTERS	1
2	2001795-93		WRAP AROUND CURB SHOE	1
3	211103056		SHOE 25 DEG WELDMENT 8" & 12" HOLE CENTERS	1
4	211103046		SHOE 10 DEG WELDMENT 8" & 12" HOLE CENTERS	1

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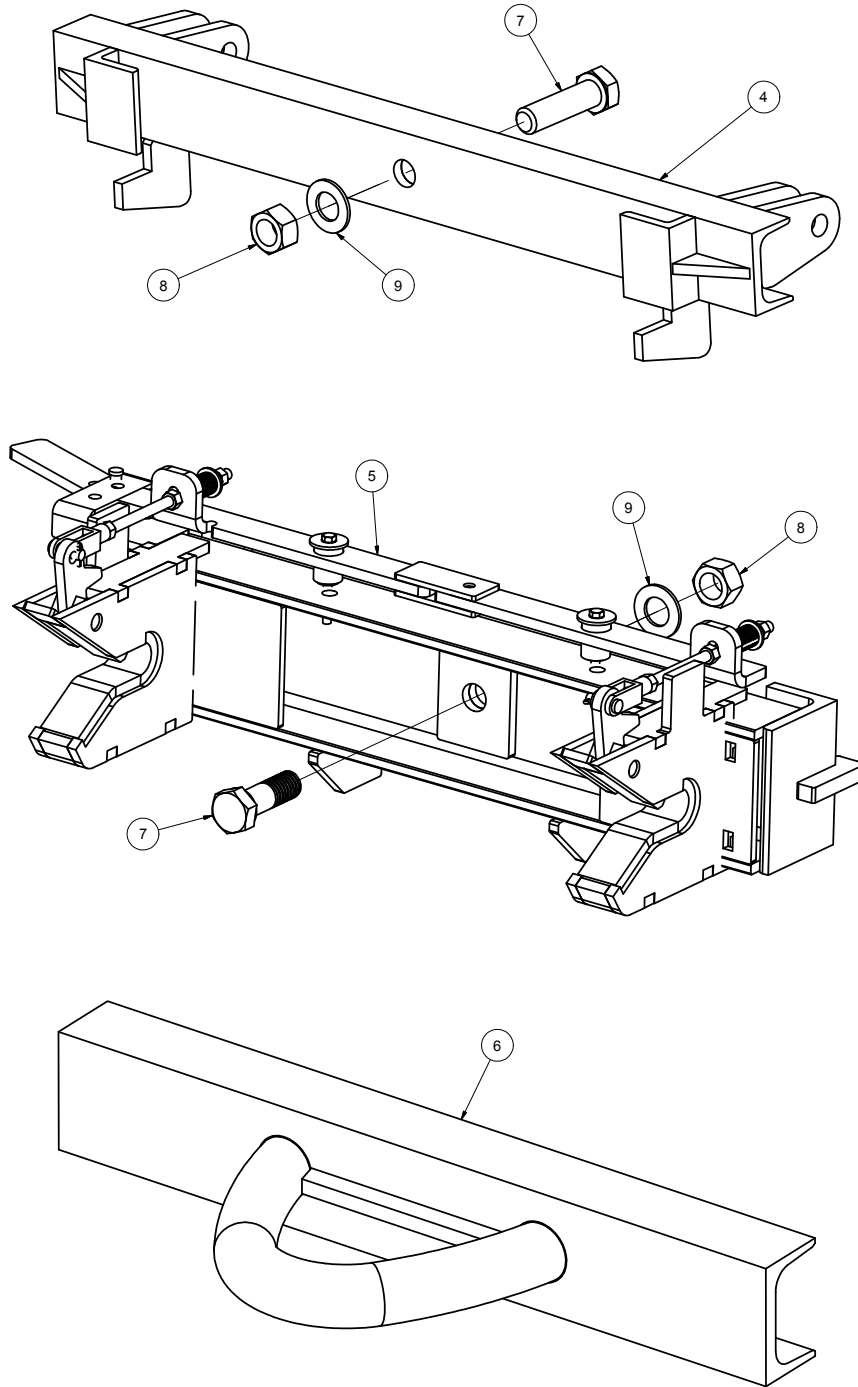
**MW SWIVELS FOR MW PLOWS**



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**MW SWIVELS FOR MW PLOWS**



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## MW SWIVELS FOR MW PLOWS

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	202600097		MW 30 1/2 SWIVEL WELDMENT	1
2	202600143		MW 21 SWIVEL WELDMENT	1
3	20303039		MW FLINK STYLE SWIVEL WELDMENT	1
4	20303017		MW MoDOT SWIVEL WELDMENT	1
5	2002505		MW UQH SWIVEL WELDMENT	1
6	21103025		PIN AND LOOP HOOK WELDMENT	1
7	HW40A-2036	81023F	BOLT HEX 1 1/4 X 4 1/2 UNC ZINC	1
8	HW30E-20		NUT HEX TOPLOCK 1 1/4 UNC ZINC	1
9	HW16A-20	81015A	FLATWASHER SAE 1 1/4 ZINC	1

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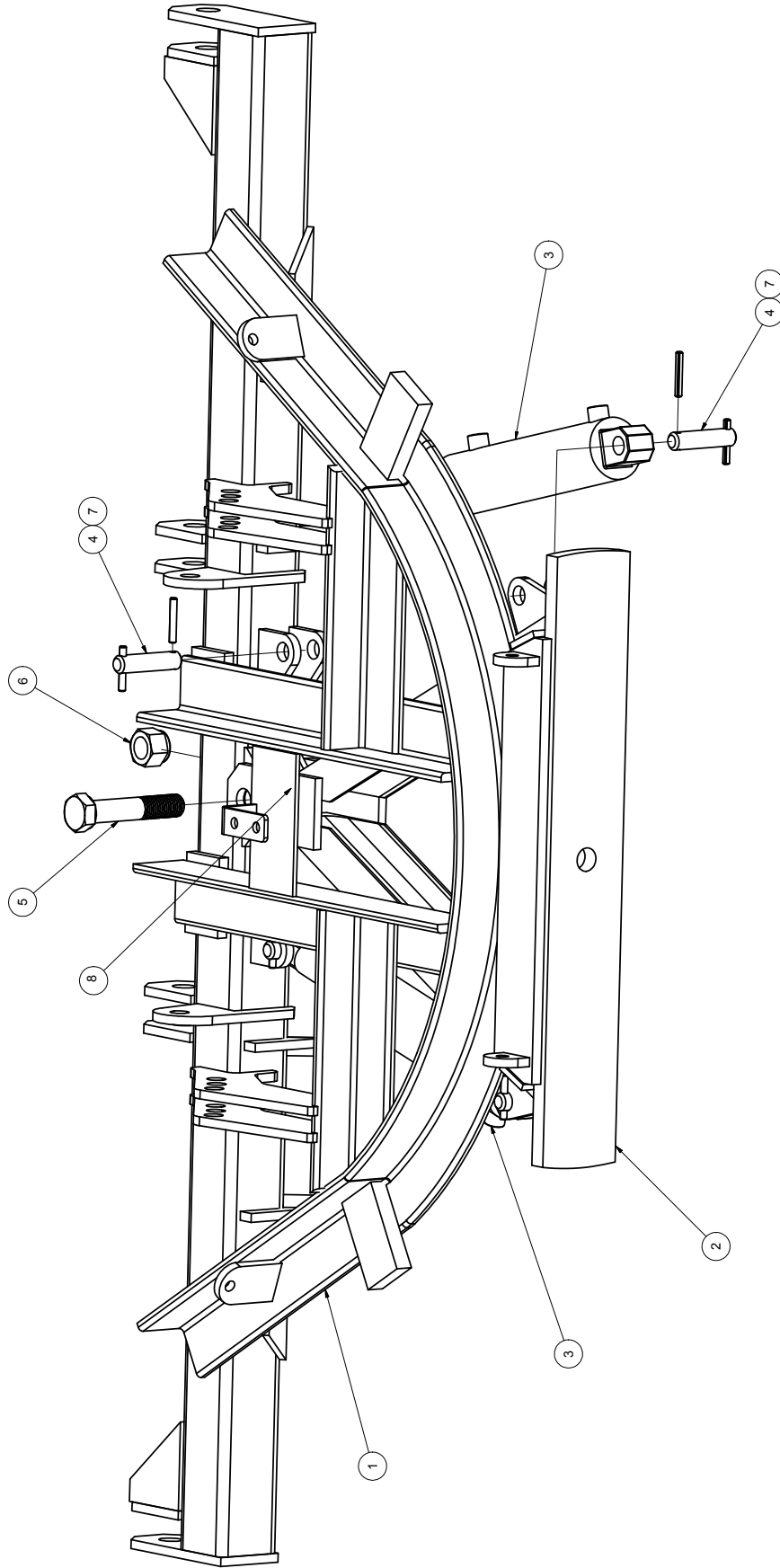
**NOTES**

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### MW REVERSIBLE PUSH FRAME ASSEMBLY



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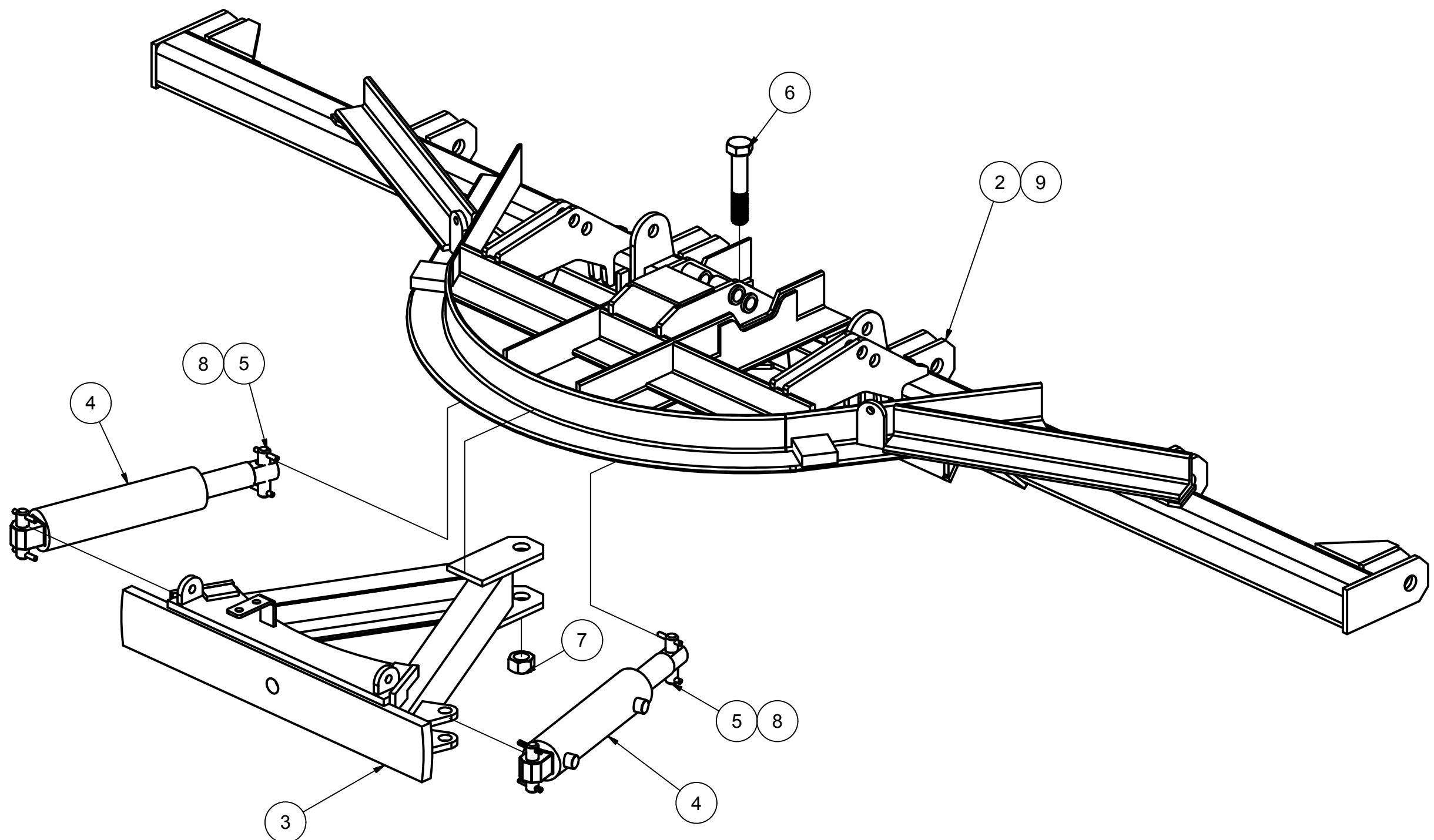
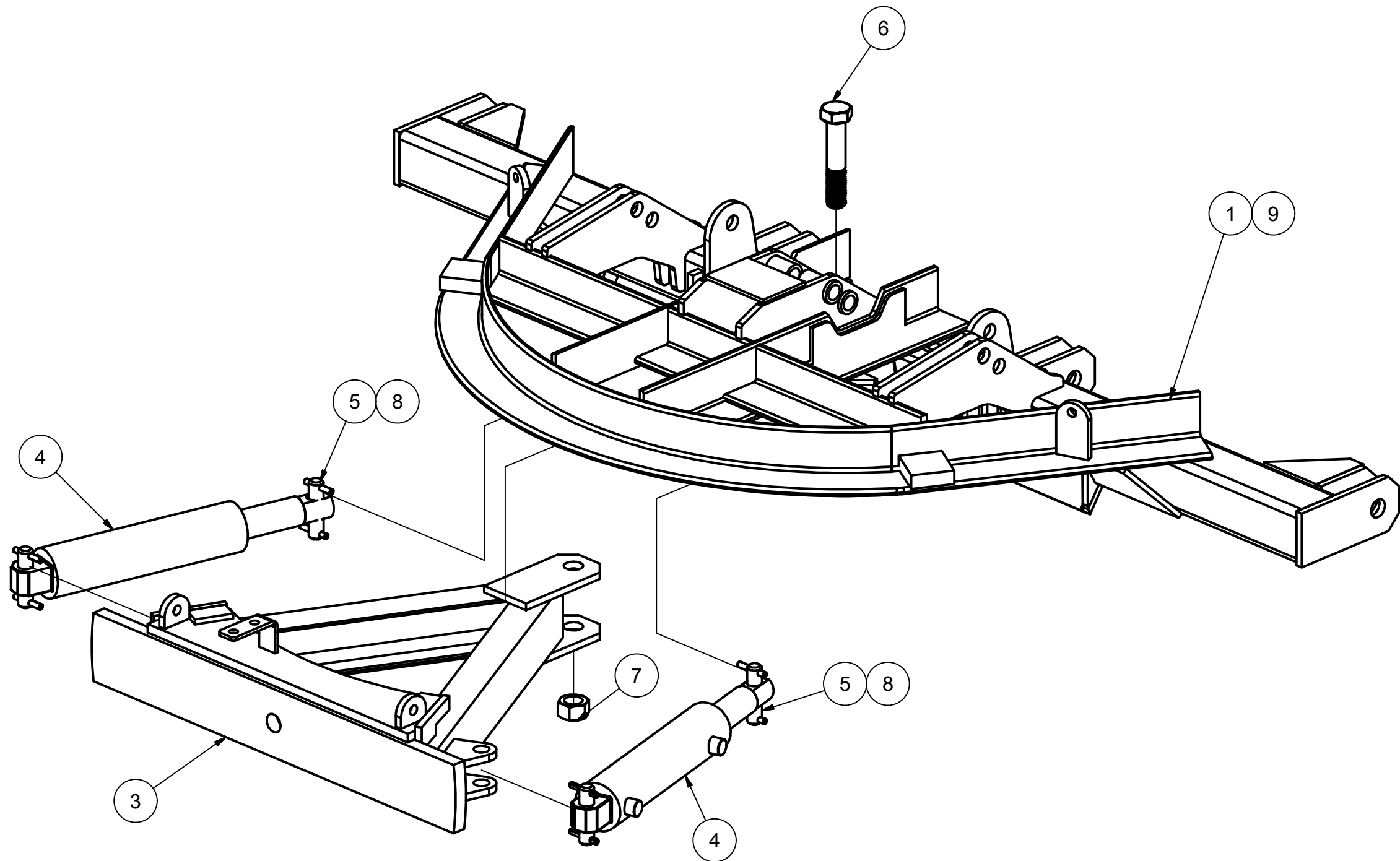
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### MW REVERSIBLE PUSH FRAME ASSEMBLY

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	21101608		MW REV PUSH FRAME WELDMENT	1
1	21101611		MW REV PF WELDMENT W/SCREW ADJUSTABLE BRACKETS	1
1	21103085		MW REV EXTENDED PUSHFRAME WELDMENT	1
1	201101722		MW REV EXTENDED PF WELDMENT W/SCREW ADJUSTABLE BRACKETS	1
2	21101381		PIVOT FRAME WELD'T - REGULAR	1
3	280153		MW REV CYLINDER 3 X 9 1/4	2
4	20P049		PIN REV CYLINDER MW PUSH FRAME	4
5	HW40A-2052	81023C	BOLT HEX 1 1/4 X 6 1/2 UNC ZINC	1
6	HW30E-20	80999D	NUT HEX TOPLOCK 1 1/4 UNC ZINC	1
7	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	8
8	HW29A-02	80577	GREASE FITTING 1/8 NPT STR	1

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LW PUSHFRAMES FOR LW MW PLOWS



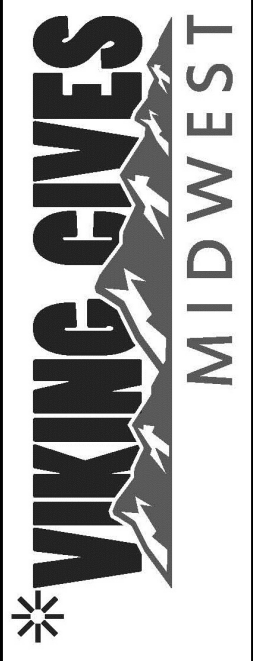
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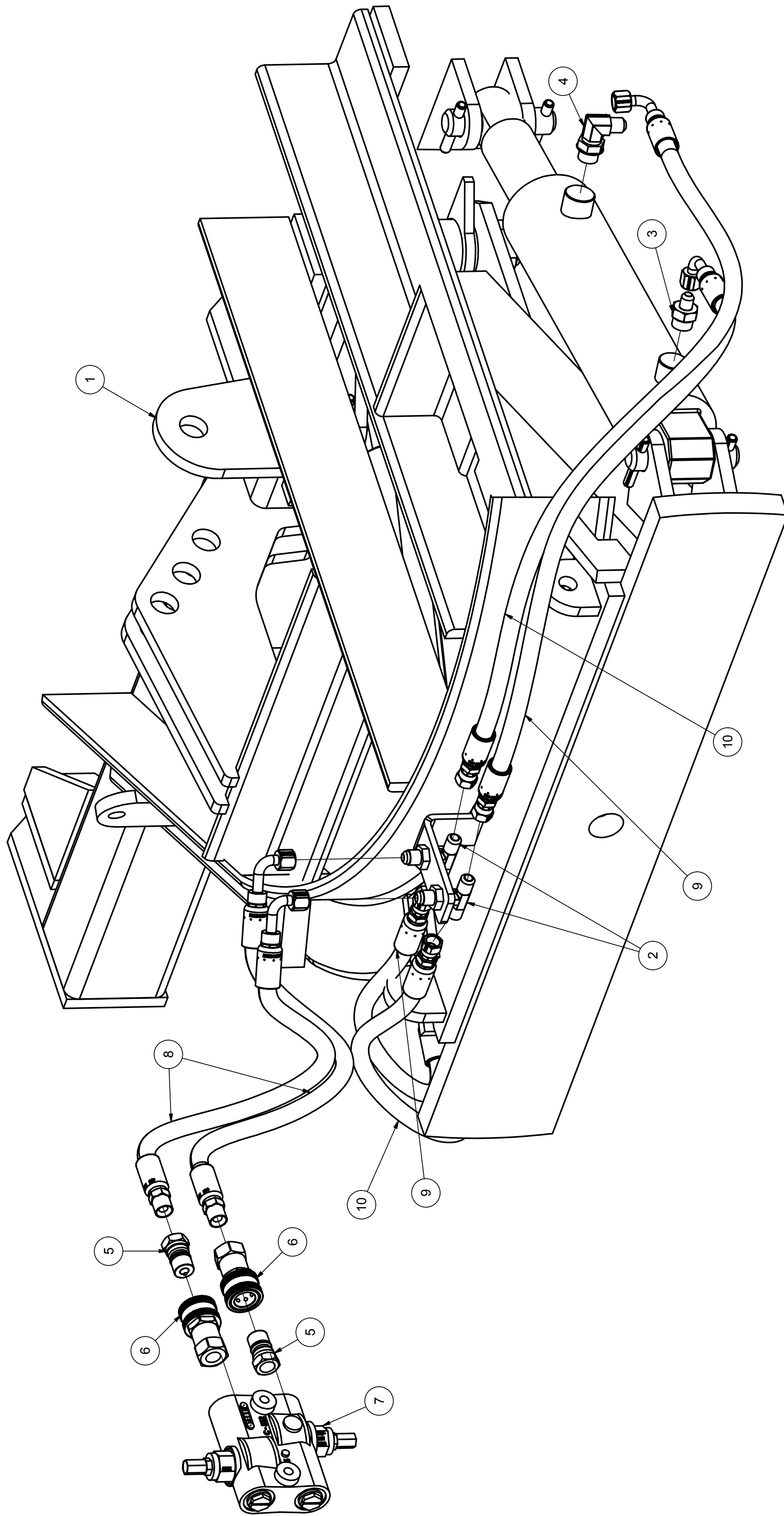
## LW PUSHFRAMES FOR LW MW PLOWS

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QTY
1	21103123		MW LW REV PUSH FRAME WELDMENT	1
2	21103124		MW LW EXTENDED REV PUSH FRAME WELD'T	1
3	21101381		PIVOT FRAME WELD'T - REGULAR	1
4	280153		MW REV CYLINDER 3 X 9 1/4	2
5	20P049		PIN REV CYLINDER MW PUSH FRAME	4
6	HW40A-2052	81023C	BOLT HEX 1 1/4 X 6 1/2 UNC ZINC	1
7	HW30E-20		NUT HEX TOPLOCK 1 1/4 UNC ZINC	1
8	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	8
9	HW29A-02	80577	GREASE FITTING 1/8 NPT STR	1

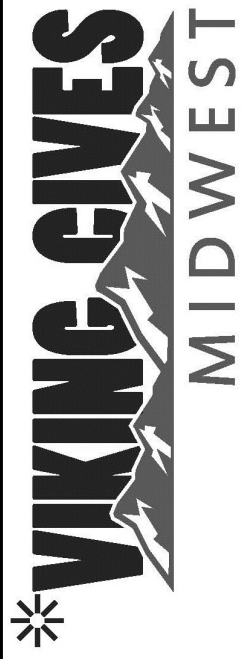


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### MW PUSH FRAME HOSE KIT ASSEMBLY



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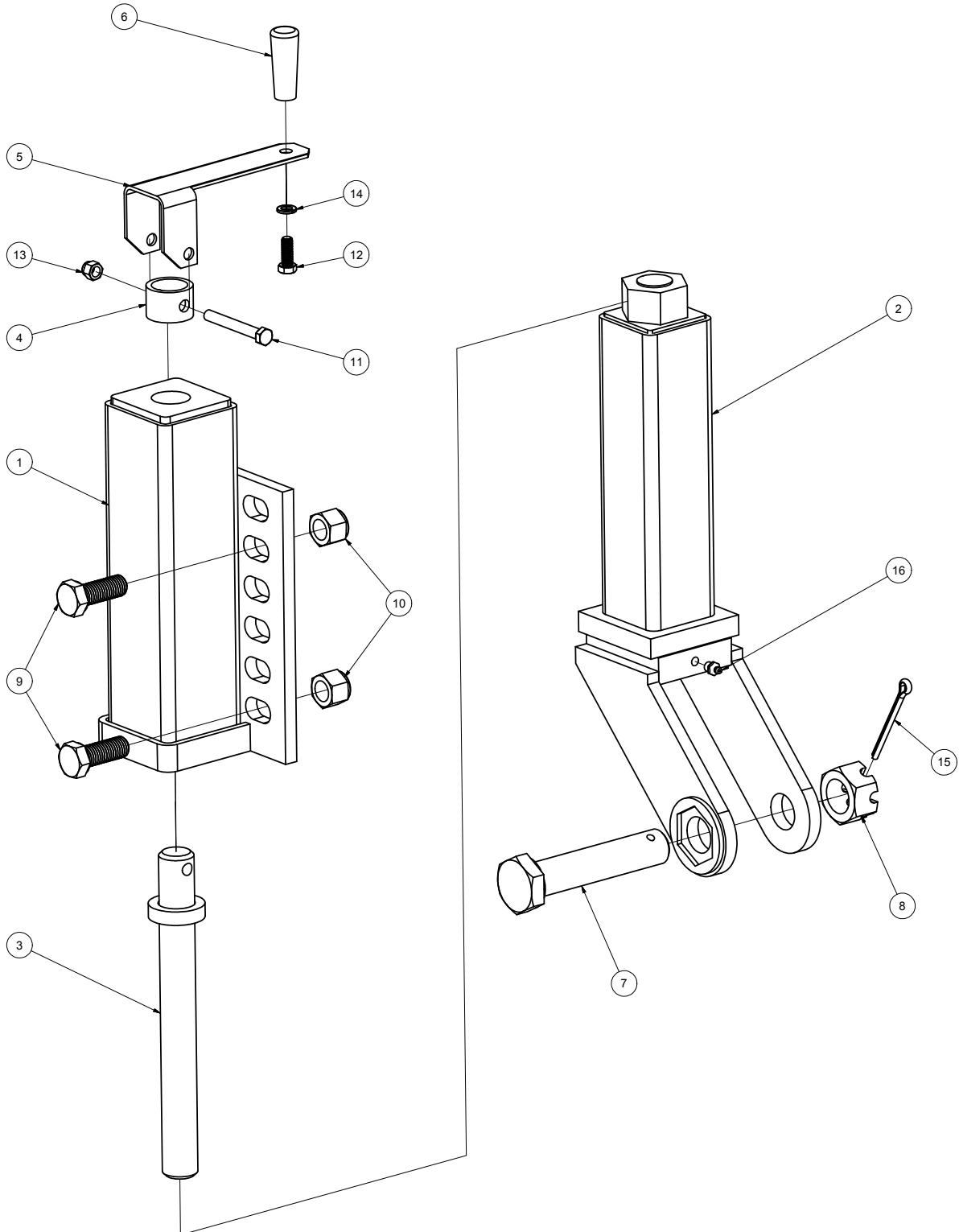
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## MW PUSH FRAME HOSE KIT ASSEMBLY

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	201101607		MW PUSHFRAME ASS'Y (2006)	1
2	441402703 6-6-6		STEEL BULKHEAD TEE 3/8 OD TUBE	2
3	441406400-6-8		6MJ-8MB O RING CONN	2
4	441406801-6-8		6MJ90-8MB	2
5	1002-06		3/8" MALE AEROQUIP COUPLER	2
6	1003-06		3/8" FEMALE AEROQUIP COUPLER	2
7	44253022		CUSHION VALVE	1
8	H14506U-106-666-18IN		JHF 18" HOSE ASSEMBLY	2
9	H14506U-106-666-30IN		JHF 30" HOSE ASSEMBLY	2
10	H14506U-106-666-42IN		JHF 42" HOSE ASSEMBLY	2

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**MW SCREW ADJUSTABLE SWIVEL BASE ASSEMBLY**



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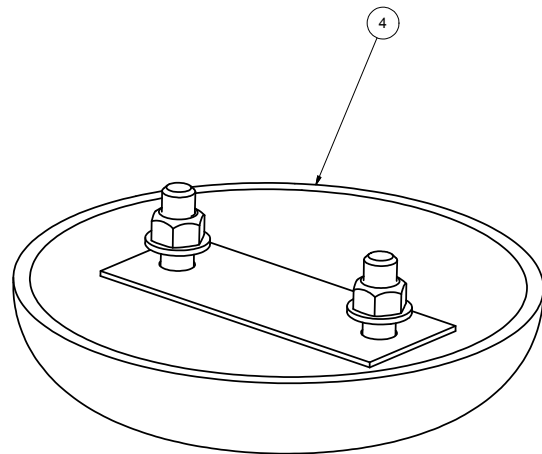
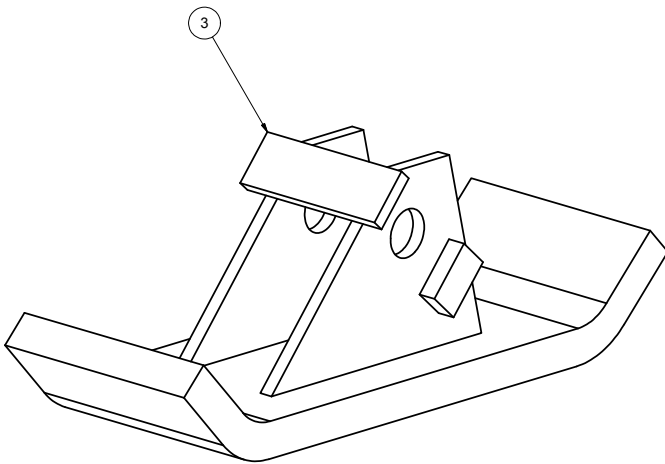
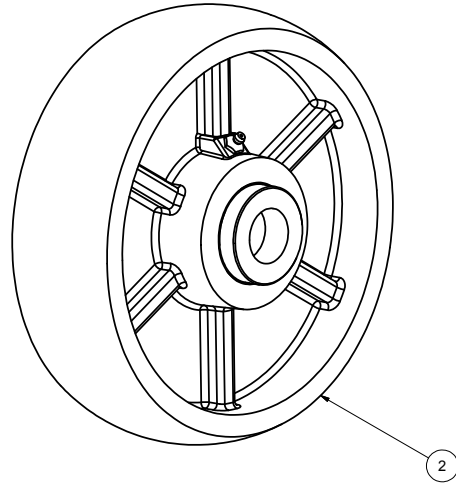
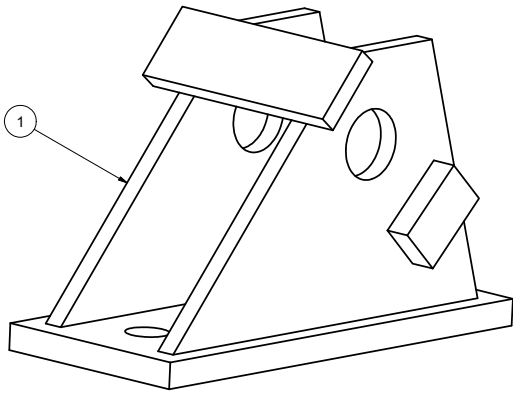
MW SCREW ADJUSTABLE SWIVEL BASE ASSEMBLY

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	201101384		OUTER TUBE WELD'T	1
2	01101399		INNER TUBE WELD'T ADJ CASTER	1
3	201101321		ADJUSTING BOLT WELD'T 1 1/4 ACME THREAD	1
4	201101324		STOP COLLAR	1
5	201101305		HANDLE ONE PIECE	1
6	0620005		HAND KNOB	1
7	200401578		DRILLED BOLT HEX 1 1/2 X 6 UNF ZINC	1
8	HW31C - 20		1 1/4 CASTLE NUT UNF ZINC	1
9	HW40A-1216	81064E	BOLT HEX 3/4 X 2 UNC ZINC	4
10	HW30E-12		NUT HEX TOPLOCK 3/4" UNC ZINC	4
11	HW40A-0624		BOLT HEX 3/8 X 3 UNC ZINC	1
12	HW40A-0608		BOLT HEX 3/8 X 1 UNC ZINC	1
13	HW30E-06	81086C	NUT HEX ELASTIC 3/8 UNC ZINC	1
14	3SK3587		LOCKWASHER SPLIT 3/8" ZINC	1
15	HW13A-0848	80508A	COTTER PIN 1/4 X 3 ZINC	1
16	HW29A-02	80577	GREASE FITTING 1/8 NPT STR	1

EQUIPMENT MAY NOT BE EXACTLY AS SHOWN. SOME COMPONENTS MAY BE OPTIONAL.  
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SCREW ADJUSTABLE SWIVEL BASE OPTIONAL RUNNING HARDWARE



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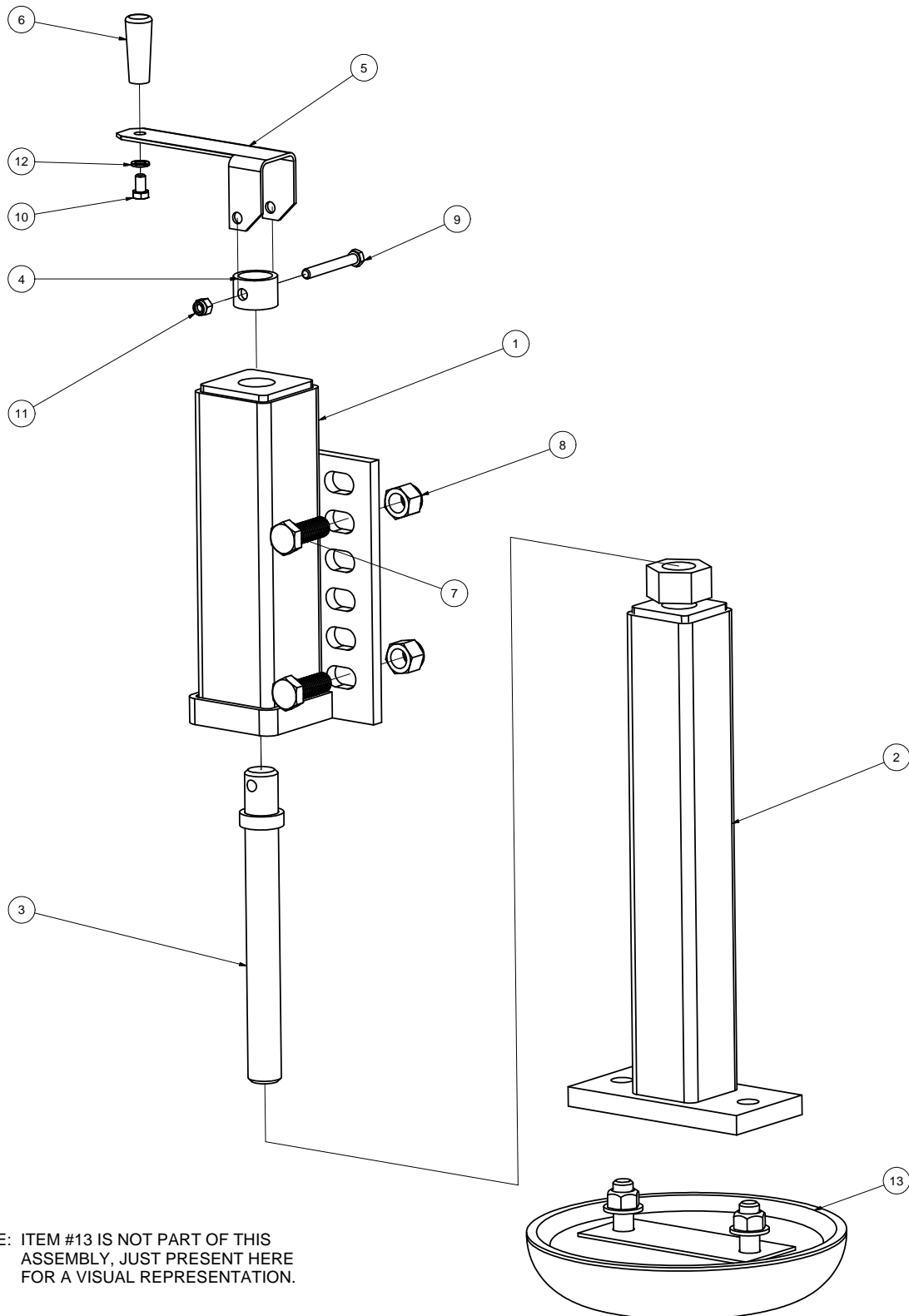
SCREW ADJUSTABLE SWIVEL BASE OPTIONAL RUNNING HARDWARE

ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	211103190		SHOE BRK'T MUSHROOM SHOE VCL STYLE	1
1	21103095		SHOE BRK'T MUSHROOM SHOE - 1" MTG HOLE	1
2	218012		WHEEL CASTER 10" WITH BEARING CUP	1
3	201101329		SHOE RUNNER - 1 MOUNTING HOLE	1
3	201101329A		SHOE RUNNER - 1 1/4 MOUNTING HOLE	1
3	201101329A-C		SHOE RUNNER CARBIDE - 1 1/4 MOUNTING HOLE	1
4	280109A		SHOE 12" DIA MUSHROOM ALLOY W/HARDWARE	1
4	280110A		SHOE 12" DIA MUSHROOM NIHARD W/HARDWARE	1

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**STATIONARY SCREW ADJUSTABLE ASSEMBLY**



NOTE: ITEM #13 IS NOT PART OF THIS ASSEMBLY, JUST PRESENT HERE FOR A VISUAL REPRESENTATION.

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## STATIONARY SCREW ADJUSTABLE ASSEMBLY

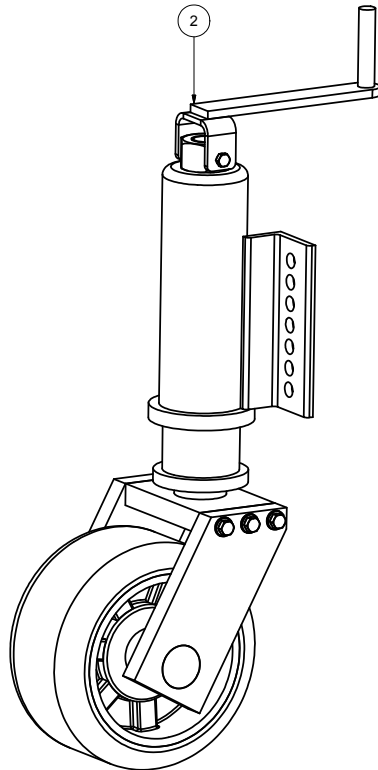
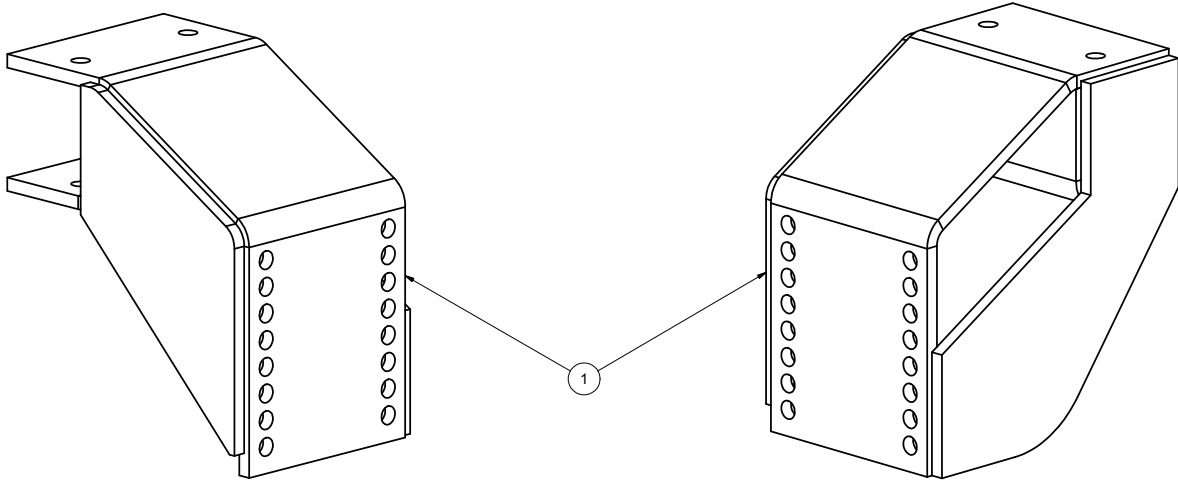
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	201101384		OUTER TUBE WELD'T	1
2	21103016		MUSHROOM SHOE TUBE WELDMENT INNER	1
3	201101321		ADJUSTING BOLT WELD'T 1 1/4 ACME THREAD	1
4	201101324		STOP COLLAR	1
5	201101305		HANDLE ONE PIECE	1
6	20620005		HANDLE KNOB	1
7	HW40A-1216	81064E	BOLT HEX 3/4 X 2 UNC ZINC	4
8	HW30E-12		NUT HEX TOPLOCK 3/4" UNC ZINC	4
9	HW40A-0624		BOLT HEX 3/8 X 3 UNC ZINC	1
10	HW40A-0605		BOLT HEX 3/8 X 5/8 UNC ZINC	1
11	HW30E-06	81086C	NUT HEX ELASTIC 3/8 UNC ZINC	1
12	3SK3587		LOCKWASHER SPLIT 3/8" ZINC	1

NOTE: ITEM #13 IS NOT PART OF THIS ASSEMBLY, JUST PRESENT HERE FOR A VISUAL REPRESENTATION.

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### OPTIONAL SNOW WHEEL PARTS



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## OPTIONAL SNOW WHEEL PARTS

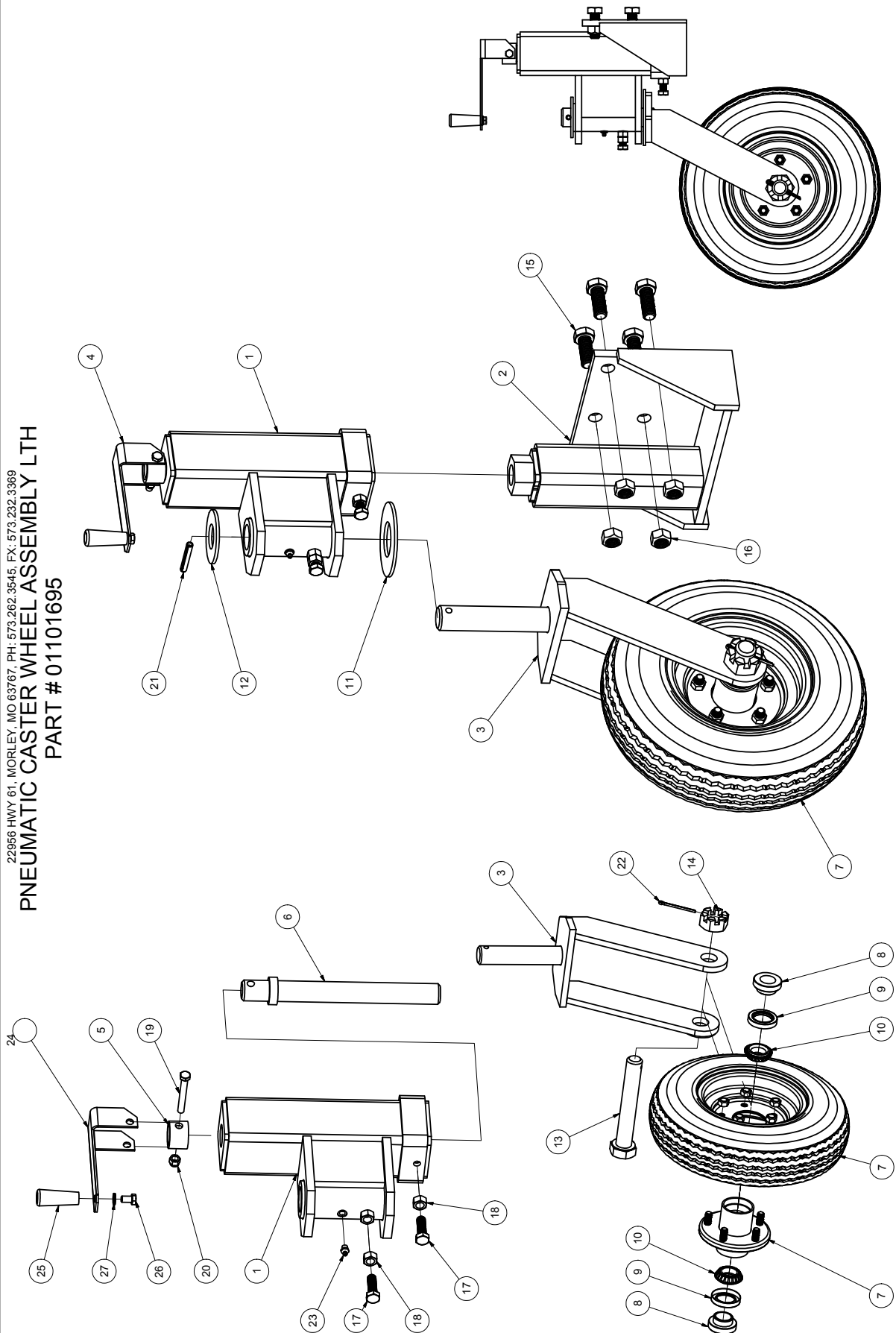
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	2SW6520		SNOW WHEEL BRACKET WELDMENT	1
2	6509		SWIVEL SNOW WHEEL ASSEMBLY	1

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**PNEUMATIC CASTER WHEEL ASSEMBLY LTH**  
**PART # 01101695**



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PNEUMATIC CASTER WHEEL ASSEMBLY LTH  
PART # 01101695

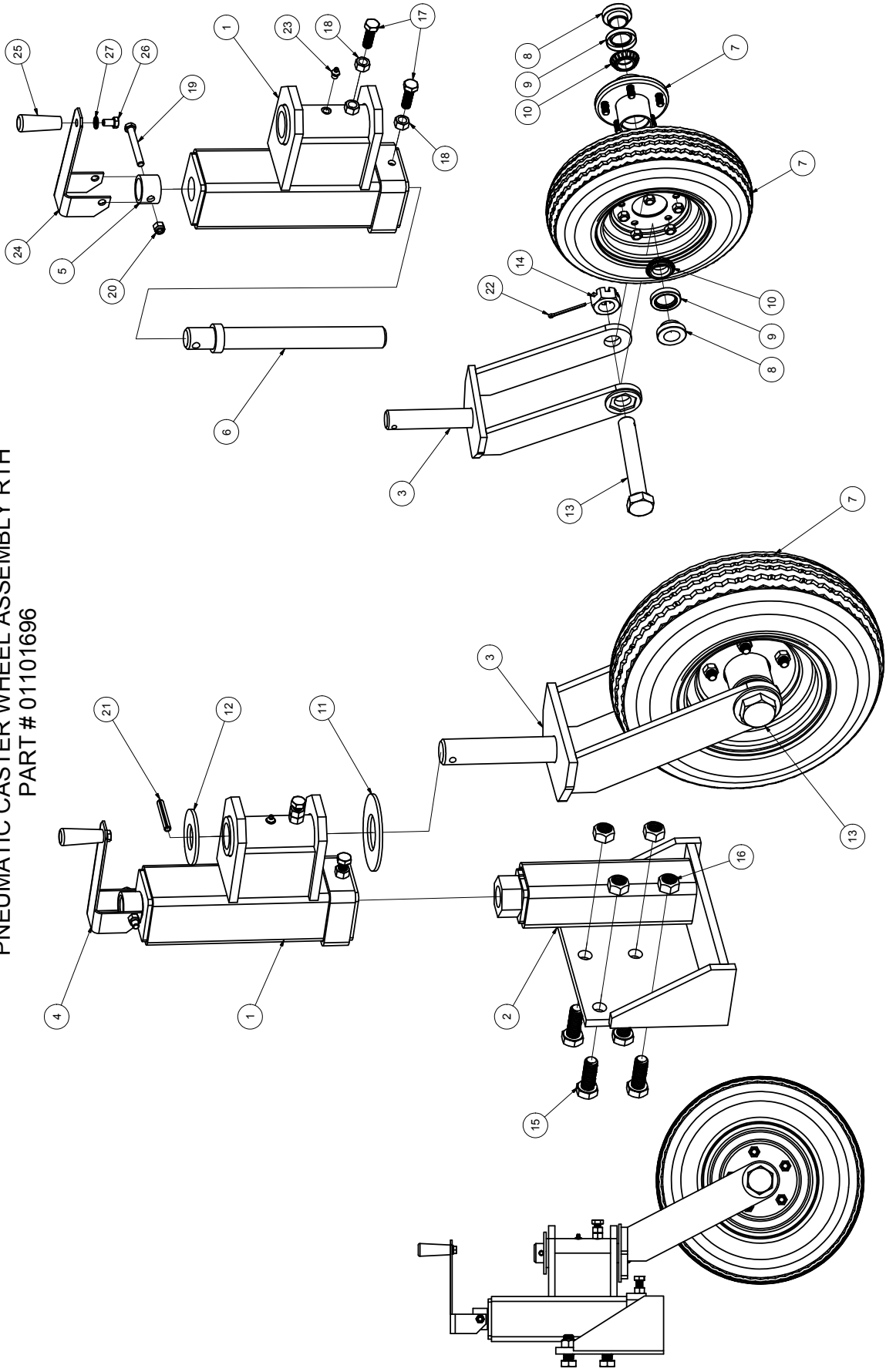
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	01101543		OUTER TUBE WELD'T, PNEUMATIC CASTOR	1
2	01101532		4 BOLT PNEUMATIC WHEEL MTG BRK'T LTH	1
3	01101325		WHEEL FORK WELDMNT	1
4	01101441		HANDLE ASSEMBLY	1
5	201101324		STOP COLLAR	1
6	201101321		ADJUSTING BOLT WELD'T 1 1/4 ACME THREAD	1
7	2DM408C-51		WHEEL & HUB ASSEMBLY	1
8	21118000		PNEUMATIC WHEEL BEARING SPACER	2
9	GS-4		BEARING SEAL CUP 1 1/4" (2 5/16" O.D.)	2
10	280593		PNEUMATIC WHEEL BEARING	2
11	HW14A-32		FLATWASHER SAE 2 ZINC	1
12	HW16A-24		FLATWASHER SAE 1 1/2 ZINC	1
13	200900067	81016A	BOLT HEX 1 1/4 X 8 UNC ZINC	1
14	HW30C-20	81006	NUT HEX SLOTTED 1 1/4 UNC ZINC	1
15	HW40A-1216	81064E	BOLT HEX 3/4 X 2 UNC ZINC	4
16	HW30E-12		NUT HEX 3/4 UNC TOPLOCK ZINC	4
17	HW40A-0812		BOLT HEX 1/2" X 1 1/2" UNC ZINC	2
18	HW30A-08		NUT HEX 1/2 UNC ZINC	2
19	HW40A-0624		BOLT HEX 3/8 X 3 UNC ZINC	1
20	HW30E-06	81086C	NUT HEX ELASTIC 3/8 UNC ZINC	1
21	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	1
22	HW13A-0846	80508A	COTTER PIN 1/4 X 2 1/2 ZINC	1
23	HW29A-02	80577	GREASE FITTING 1/8 NPT STR	1
			COMPONENTS OF HANDLE ASSEMBLY ITEM #4	
24	201101305		HANDLE FORMED ONE PIECE	1
25	0620005		HANDLE KNOB	1
26	HW40A-0605		BOLT HEX 3/8 X 5/8 UNC ZINC	1
27	HW14C-06		LOCKWASHER SPLIT 3/8 ZINC	1

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**PNEUMATIC CASTER WHEEL ASSEMBLY RTH  
PART # 01101696**



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**PNEUMATIC CASTER WHEEL ASSEMBLY RTH  
PART # 01101696**

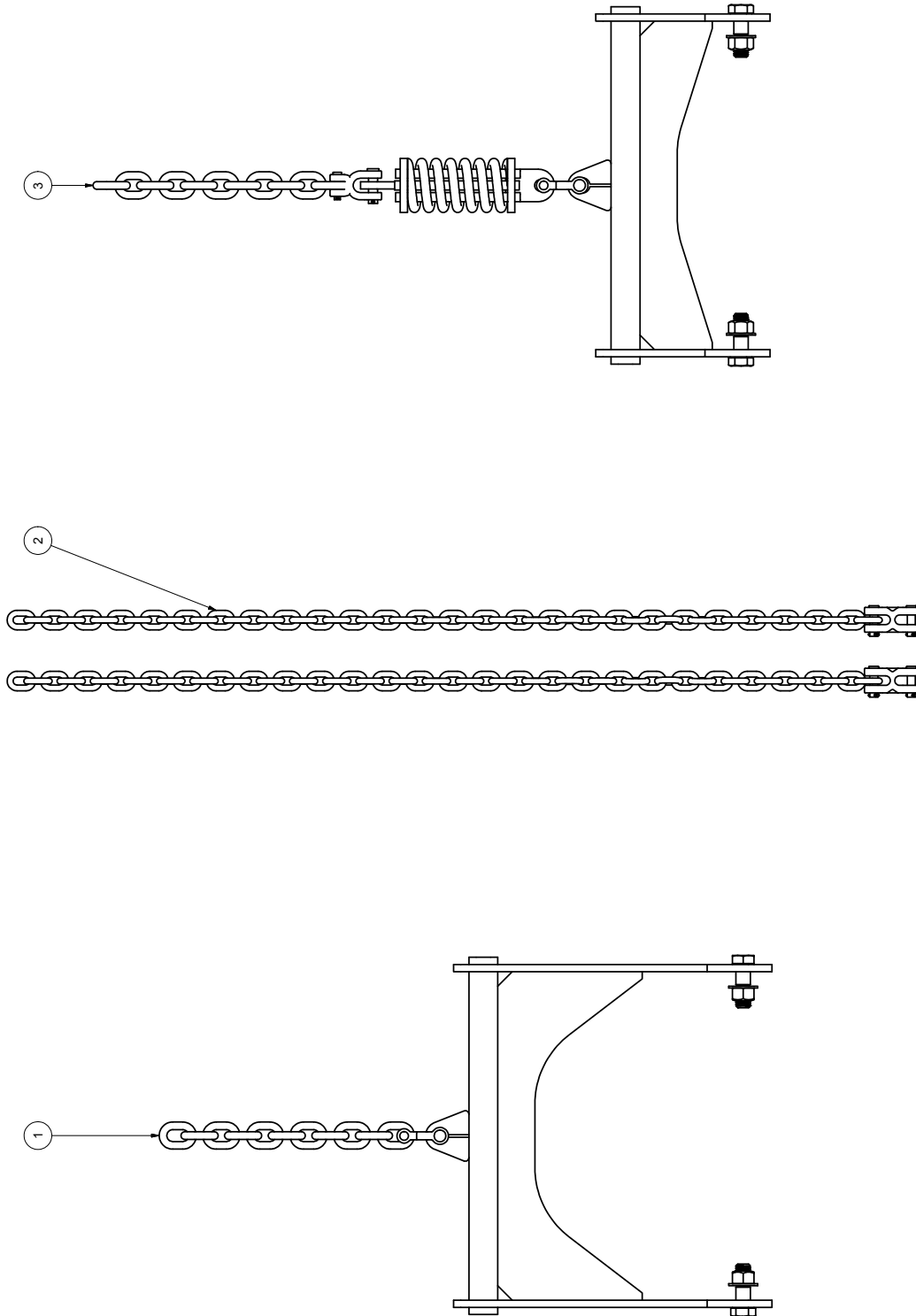
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	01101543		OUTER TUBE WELD'T, PNEUMATIC CASTOR	1
2	01101649		4 BOLT PNEUMATIC WHEEL MTG BRK'T RTH	1
3	01101325		WHEEL FORK WELDMENT	1
4	01101441		HANDLE ASSEMBLY	1
5	201101324		STOP COLLAR	1
6	201101321		ADJUSTING BOLT WELD'T 1 1/4 ACME THREAD	1
7	2DM408C-51		WHEEL & HUB ASSEMBLY	1
8	21118000		PNEUMATIC WHEEL BEARING SPACER	2
9	GS-4		BEARING SEAL CUP 1 1/4" (2 5/16" O.D.)	2
10	280593		PNEUMATIC WHEEL BEARING	2
11	HW14A-32		FLATWASHER SAE 2 ZINC	1
12	HW16A-24		FLATWASHER SAE 1 1/2 ZINC	1
13	200900067	81016A	BOLT HEX 1 1/4 X 8 UNC ZINC	1
14	HW30C-20	81006	NUT HEX SLOTTED 1 1/4 UNC ZINC	1
15	HW40A-1216	81064E	BOLT HEX 3/4 X 2 UNC ZINC	4
16	HW30E-12		NUT HEX 3/4 UNC TOPLOCK ZINC	4
17	HW40A-0812		BOLT HEX 1/2" X 1 1/2" UNC ZINC	2
18	HW30A-08		NUT HEX 1/2 UNC ZINC	2
19	HW40A-0624		BOLT HEX 3/8 X 3 UNC ZINC	1
20	HW30E-06	81086C	NUT HEX ELASTIC 3/8 UNC ZINC	1
21	HW13C-1240		ROLL PIN 3/8 X 2 1/2 ZINC	1
22	HW13A-0846	80508A	COTTER PIN 1/4 X 2 1/2 ZINC	1
23	HW29A-02	80577	GREASE FITTING 1/8 NPT STR	1
			COMPONENTS OF HANDLE ASSEMBLY ITEM #4	
24	201101305		HANDLE FORMED ONE PIECE	1
25	0620005		HANDLE KNOB	1
26	HW40A-0605		BOLT HEX 3/8 X 5/8 UNC ZINC	1
27	HW14C-06		LOCKWASHER SPLIT 3/8 ZINC	1

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### MW PLOW LIFTING DEVICES



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**MW PLOW LIFTING DEVICES**

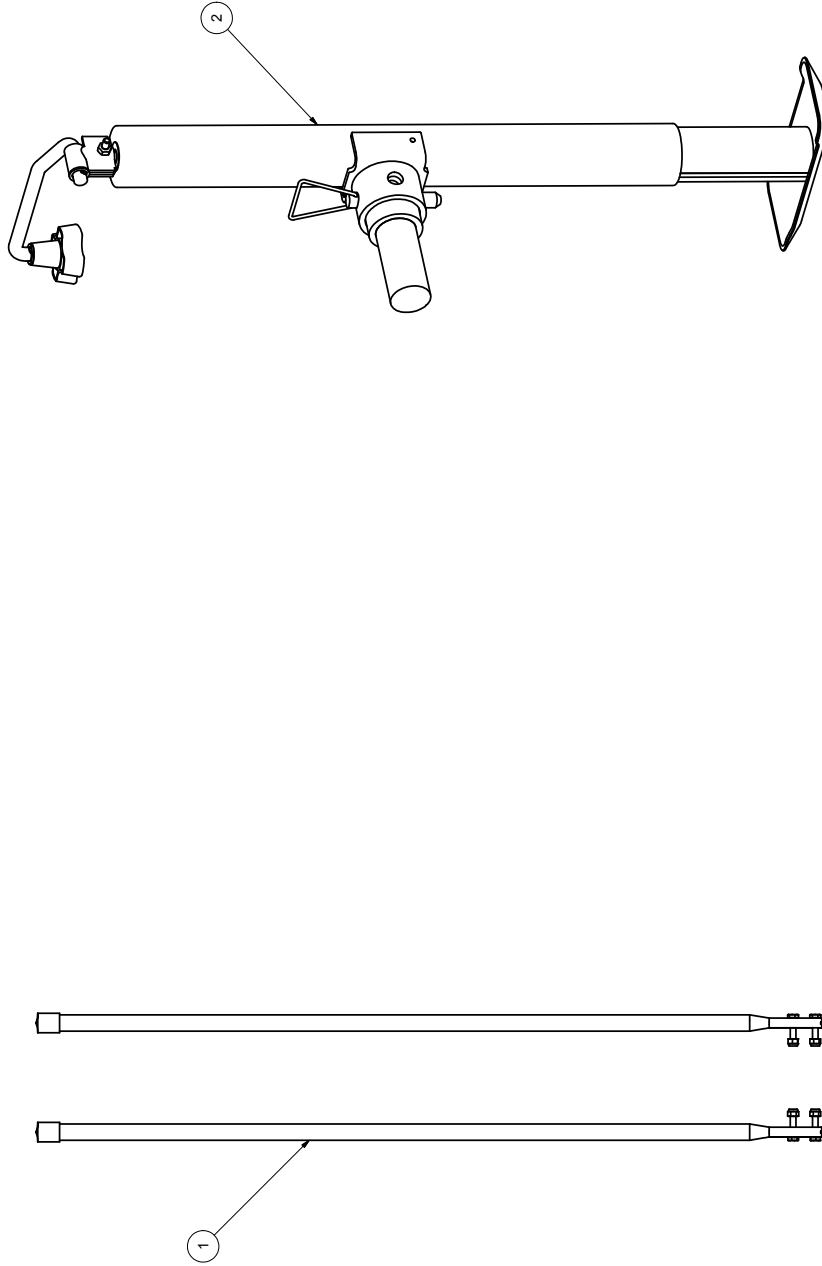
ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT
1	21101131		MW SINGLE CHAIN LEVEL LIFT BAR ASSEMBLY	1
2	21101132		MW TWO CHAIN LIFT ASSEMBLY	1
3	21101125		MW SINGLE CHAIN SHOCK SPRING LEVEL LIFT ASSEMBLY	1

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### MW PLOW OPTIONS



ITEM	DRAWING NO.	ALT. ITEM NO.	DESCRIPTION	QT.
1	3SK7030		36" PLOW MARKER ASSEMBLY	1
2	21101133		BULL DOG JACK ASSEMBLY	1

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