



Medium Duty Gen II Parts & Service Manual

Unit Serial Number: _____

Record the MODEL and SERIAL NUMBER of equipment for parts ordering information.

PURCHASED FROM: _____

DATE: _____

MODEL: _____

SERIAL NUMBER: _____



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE NO.</u>
Warranty Policy	3
Ordering Parts	3
Warranty Request Procedure	4
Introduction / Periodic maintenance Inspection / Daily Inspection & Lubrication	5
Registration of Equipment & warranty Information / A Word About Safety	6
Moldboard / Push Frame Assembly Instructions	7
Cushion Valves with Central Hydraulic Systems	8
Drawing of Cushion Valve	10
Parts Break Down of Cushion Valve	11
Maintenance Procedure (Tightening Packing Nuts on Snowplow Cylinders)	12
Torque Arm Removal	13
Drawing of Medium Duty Assembly	14
Parts Break Down of Medium Duty Assembly	15
Drawing of 10' Poly Moldboard Assembly	16
Parts break down of 10' Poly Moldboard Assembly	17
Drawing of 10' Steel Moldboard Assembly	18
Parts Break Down of 10' Steel Moldboard Assembly	19
Drawing of 36R 10' Poly Moldboard Assembly	20
Parts Break Down of 36R 10' Poly Moldboard Assembly	21
Drawing of Blade / Hinge Assembly	22
Parts Break Down of Blade / Hinge Assembly	23
Drawing of Rubber Deflector & Skid Shoes	24
Parts Break Down of Rubber Deflector & Skid Shoes	25
Drawing of MD Push Frame Assembly	26
Parts Break Down of MD Push Frame Assembly	27
Drawing of Universal Tilt Hitch	28
Parts Break Down of Universal Tilt Hitch	29
General Operating Instructions	30
Electrical	31-35
Warranty	37



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

WARRANTY POLICY

Wheeler Steel and Truck Equipment, Inc. warrants products of its manufacture against defects in workmanship and material for a period of one year, from the date of shipment to the customer. 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 Wheeler Steel and Truck Equipment, Inc.

This warranty will not apply to any product which has been repaired or altered outside of Wheeler Steel and Truck Equipment, Inc. factory in any way, so as in Wheeler Steel and Truck Equipment, Inc.'s judgement, to affect its stability or reliability, nor which has been subject to misuse or accident.

The obligations of Wheeler Steel and Truck Equipment, Inc. under this warranty are limited to the replacement of defective parts. Such obligations are exclusive and in lieu of all other remedies, warranties, guarantees of liabilities, expressed or implied, with respect to each product delivered, hereunder, arising by law or otherwise (including without limitation any obligation or liability by Wheeler Steel and Truck Equipment, Inc. arising from negligence or with respect to fitness, merchantability, loss of use, revenue, or profit, or consequential damages or injuries).

This limited warranty shall not be extended, altered, or varied except by a written instrument signed by Wheeler Steel and Truck Equipment, Inc.

Wheeler Steel and Truck Equipment, Inc. assumes no responsibility for engines, electrical equipment or any other equipment and accessories not manufactured by Wheeler Steel and Truck Equipment, Inc. beyond the warranty of the manufacturer of such equipment of accessories.

All warranty work done on Wheeler Steel and Truck Equipment, Inc. equipment must have prior authorization from Wheeler Steel and Truck Equipment, Inc., along with a **"Return Goods Authorization"** number. All labor and parts issued by user for Wheeler Steel & Truck Equipment, Inc warranty without an authorization number and a signed authorization warranty form will be at the users own cost.

ORDERING PARTS

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

1. Place orders direct with Wheeler Steel and Truck Equipment, 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.
6. Give specific shipping instructions.

WHEELER STEEL & TRUCK EQUIPMENT, INC – 22956 Hwy 61 Morley, MO 63767; (573) 262-3545, (573) 262-3369 Fax



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

WARRANTY REQUEST PROCEDURE

All repairs considered for warranty that is performed outside of Wheeler Steel and Truck Equipment, Inc., require prior written authorization from Wheeler Steel and Truck Equipment, 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 all required Wheeler Steel and Truck Equipment, Inc. with unit information including date of manufacture and serial numbers.** In most cases this information is easily obtained from the “Shipped Unit Tag” and/or individual unit serial tag.

(A) To obtain Parts Warranty Consideration:

- (1) Contact Wheeler Steel and Truck Equipment, Inc. A customer service to obtain a Return Goods Authorization (RGA) number. Any product arriving at Wheeler Steel and Truck Equipment, 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 Wheeler Steel and Truck Equipment, 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) An invoice will be generated for the value of the replacement item(s).
 - b) The defective part(s) must be returned (prepaid) to Wheeler Steel and Truck Equipment, Inc.
 - c) Upon receiving the defective part(s) Wheeler Steel and Truck Equipment, 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 Wheeler Steel and Truck Equipment, 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 Wheeler Steel and Truck Equipment, Inc. facility that may be considered for warranty the following steps must occur. **Notification of Wheeler Steel and Truck Equipment, Inc. customer service must take place prior to the start of any repairs.**

- (1) Contact Wheeler Steel and Truck Equipment, 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 Wheeler Steel and Truck Equipment, Inc., attention Customer Service Department.
- (3) Once the WCF report has been reviewed warranty authorization will be granted or denied. **NOTE: Wheeler Steel and Truck Equipment, 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 – Daniel Wheeler
Ph. (573) 262-3545; Fax (573) 262-3369



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

INTRODUCTION

This instruction/parts manual has operation and maintenance information for the Viking-Cives / Sno-King Equipment. It has been prepared to familiarize you with the design features of the unit, and to instruct you in its proper operation and maintenance.

Read this manual carefully before you operate and/or service your Sno-King Equipment. Remember that you're working with heavy equipment that can injure you or someone else. You can help lessen the chance of injury by following the procedures in this manual, carefully.

DANGER: If incorrectly used, this equipment can cause severe injury. Your chance of injury can be greatly reduced by following all caution/warning decal notifications. All decals must be kept clean and complete. Replace any decals that are unreadable. Decals may be purchased directly from Viking-Cives Group and/or the nearest authorized dealer. All Operator/Service people should review this manual carefully and become familiar with its contents. **If anyone else beside you operates or services this equipment, make sure they read this manual and are instructed to follow the safety procedures related to this equipment.**

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 indicates 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. Grease all required components:
 - All pump drive shaft nipples.
 - All front harness pivot points.
3. Check all components for loose and/or missing fasteners, if required tighten and/or replace.
4. 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.
5. Visually inspect all hydraulic connections and hoses for cracks and/or leaks.
6. Visually inspect plow units. Check cutting edges and wear shoes. If cutting edge has excessive wear remove and rotate or if required replace. **CAUTION:** Do not allow cutting edge to wear down to urethane hinge. 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.



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

REGISTRATION OF EQUIPMENT AND WARRANTY INFORMATION

Report any damage to equipment at once to Viking Cives, USA. You should also register your equipment with Wheeler Steel & Truck Equipment, Inc, by filing out a warranty certificate and registration card and returning them to Viking Cives, USA. The warranty period becomes effective upon date of delivery of equipment unless other arrangements have been made with a Wheeler Steel & Truck Equipment, Inc Distributor or Wheeler Steel & Truck Equipment, Inc. The information required to register the equipment may be found on the serial number tag secured to the equipment.



Patent # 6,536,141

Model NO. 1034DT / SERIAL NO. _____

22956 Hwy 61 Morley, MO 63767

Phone (573) 262-3545 / Fax (572) 262-3369

A WORD ABOUT SAFETY:

The equipment described in this manual is normally being operated in adverse winter conditions with bad weather, snow and ice. Due to these adverse operating conditions it is important that you the operator use good safety practices at all time 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 should always 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 & 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.



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

SNO-KING MOLDBOARD / PUSHFRAME
ASSEMBLY INSTRUCTIONS

1. Position the moldboard assembly face down on a flat surface.
2. Remove the factory installed 1" and $\frac{3}{4}$ " fasteners from the left and right torque arm assemblies.
3. Utilizing adequate lifting equipment and proper safety procedures, position the torque tube and a-frame assembly into the rear moldboard cavity and attach with the 1" X $2\frac{1}{2}$ " fine thread bolts and flat washers, (a coating of premium grade anti-seize thread compound is recommended) but do not completely tighten at this time.
4. Rotate the torque tube and a-frame assembly towards the moldboard and attach, but do not completely tighten at this time, the torque arms to the center moldboard rib adjusting holes with the $\frac{3}{4}$ " X $2\frac{1}{2}$ " bolts and nuts while positioning the flat washers on the moldboard side of the ribs.
5. Apply thread sealant onto the 90-degree pipe fittings and install into the moldboard reversing cylinders.
6. Attach the correct reversing cylinder hose assemblies as indicated in the parts and service manual for your hydraulic application. A cushion valve is required on all central hydraulic systems. (Please note memo on the following page)
7. Connect each end of the lift chain assembly to the a-frame lifting lugs with the $\frac{3}{8}$ " clevis midlinks provided.
8. Once the completed plow assembly has been properly installed on the truck it will be necessary to adjust the moldboard to an angle of attack of 22-25 degrees and adequately tighten both the torque tube and torque arm fasteners at that time.



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

SNO-KING CUSHION VALVES
WITH CENTRAL HYDRAULIC SYSTEMS

A cushion valve is ***always*** required in the reverse circuit of a Sno-King snowplow! When you purchase a package which includes an electric / hydraulic power unit, a relief valve is an integral part of the power unit reverse valve.

When you purchase a Sno-King medium duty package less hydraulics (SK0110, SK0210, SK0310) **no cushion valve is included in the package** – we consider them to be a part of the hydraulic package. A cushion valve for reverse cylinder protection must be included in your hydraulic package or certain cylinder failure will result. We recommend a cushion valve with a relief setting between 2,000 to 2,500 psi (maximum working pressure of the reverse cylinder is 2,500 psi).

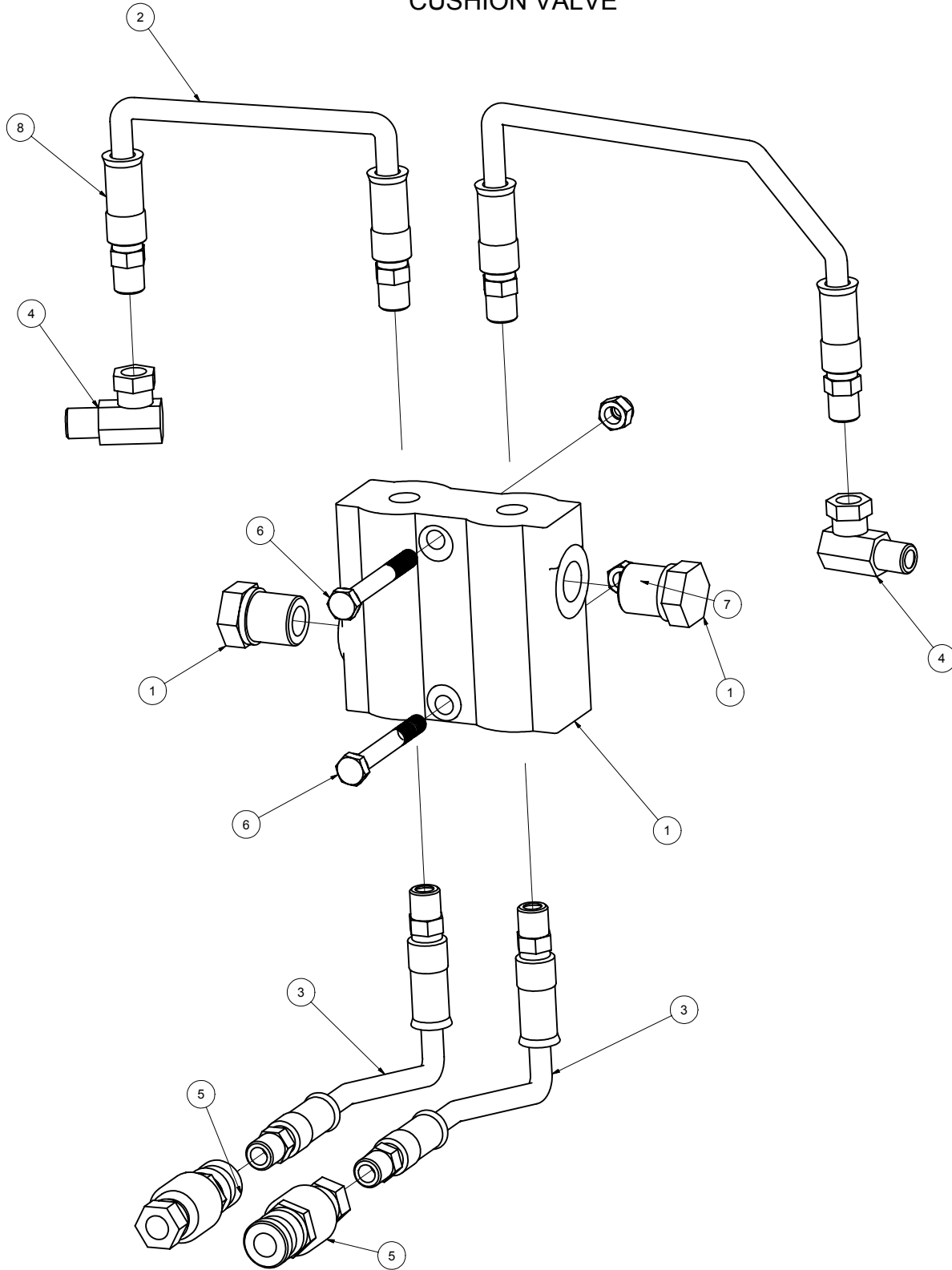
The majority of our Dealers have opted to supply their own cushion valves. Sno-King will make an optional cushion valve available to those of you that wish to purchase them from us.



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

NOTES:

CUSHION VALVE





22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

CUSHION VAVLE

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Optional</u>
1	2180244	Cushion Valve	1	
2	3SK4100	3/8" x 24" Hose Assembly	2	
3	3SK4110	3/8" x 48" Hose Assembly	2	
4	3SK4130	3/8" 90 Degree Swivel Adaptor	2	
5	3SK4190	3/8" Quick Coupler	2	
6	3SK3495	Bolt Hex 5/16" x 2 1/2" unc zinc	2	
7	3SK3496	Nut hex top lock 5/16" unc zinc	2	
8	3SK4190	3/8 Quick disconnect	8	



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

MAINTENANCE PROCEDURE:
TIGHTENING PACKING NUTS ON SNOWPLOW CYLINDERS

Adjusting packing nuts are used on snowplow cylinders to hold the cylinder together as well as providing pressure against the chevron style rod packing. The v-shaped packing flare out and seal tightly against the rod surface as the nut is tightened.

Often times, it is necessary to adjust the packing nut in the field if oil starts to leak from the cylinder. This occurs because the seals tend to wear in after 100 cycles and need to have more pressure applied to them.

The proper adjustment procedure for the packing nut is listed below:

1. Loosen the packing nut.
2. Tighten the packing nut by hand until it is snug against the packing.
3. Use a nut wrench to tighten the nut $\frac{3}{4}$ turn.

This simple procedure should produce a torque value on the nut of 50 foot-pounds and should provide a dry rod when cycled.



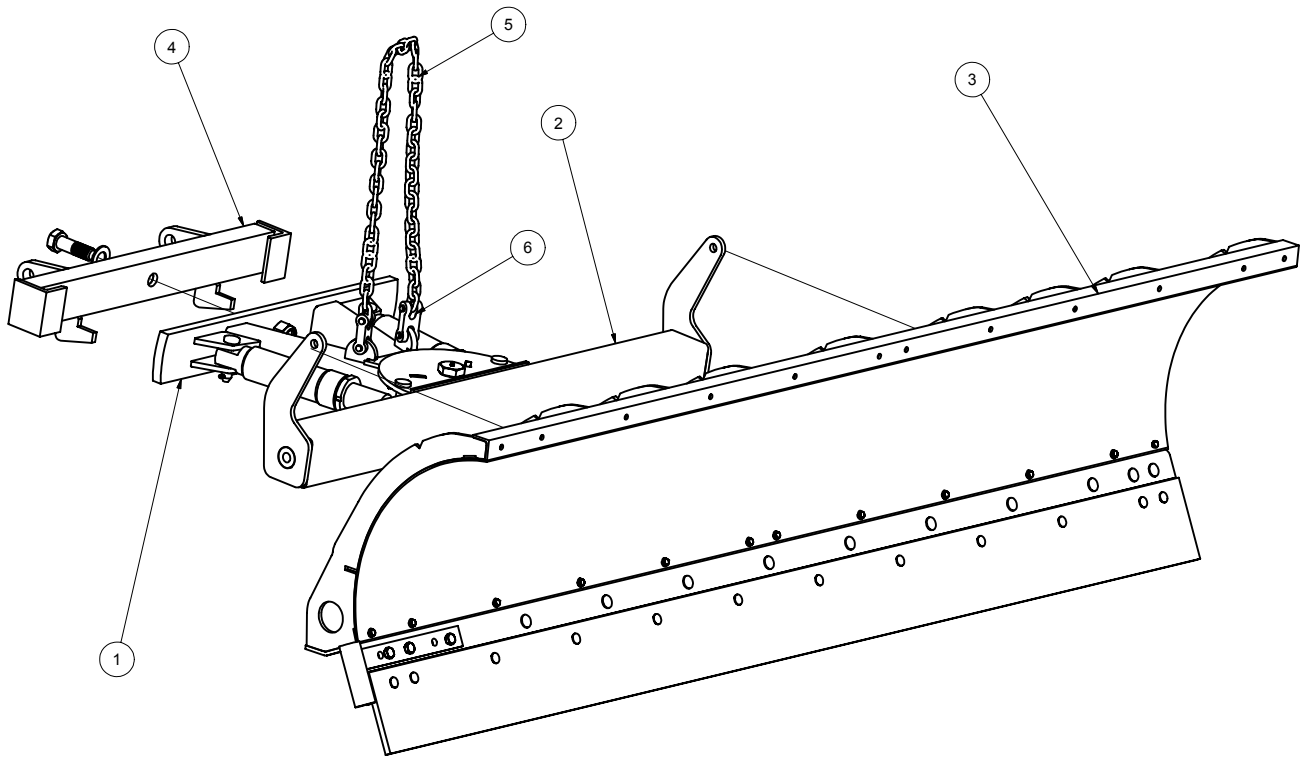
22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

TORQUE ARM REMOVAL

NEVER USE HEAT TO AID IN THE REMOVAL OF TORQUE
ARMS – THE URETHANE WILL MELT AND BE RUINED.

- Proper torque arm removal is accomplished by installing a 1” NF size bolt into the threaded hole in the center of the torque arm shaft. The bolt should have a loop welded to it to allow attachment of cable to “pull” the torque arm from the torque tube. A straight – in line pull is required. To install the arms, adequately lubricate the inside of the torque tube, the outside of the torque arms, and press the arms into the torque tube while protecting the threads. Do not pound on the steel arm portion of the torque arm – this will bend the arm and damage the part.
- Please contact the Service Department at (573) 262-3545 if you have any questions.

MEDIUM DUTY ASSEMBLY



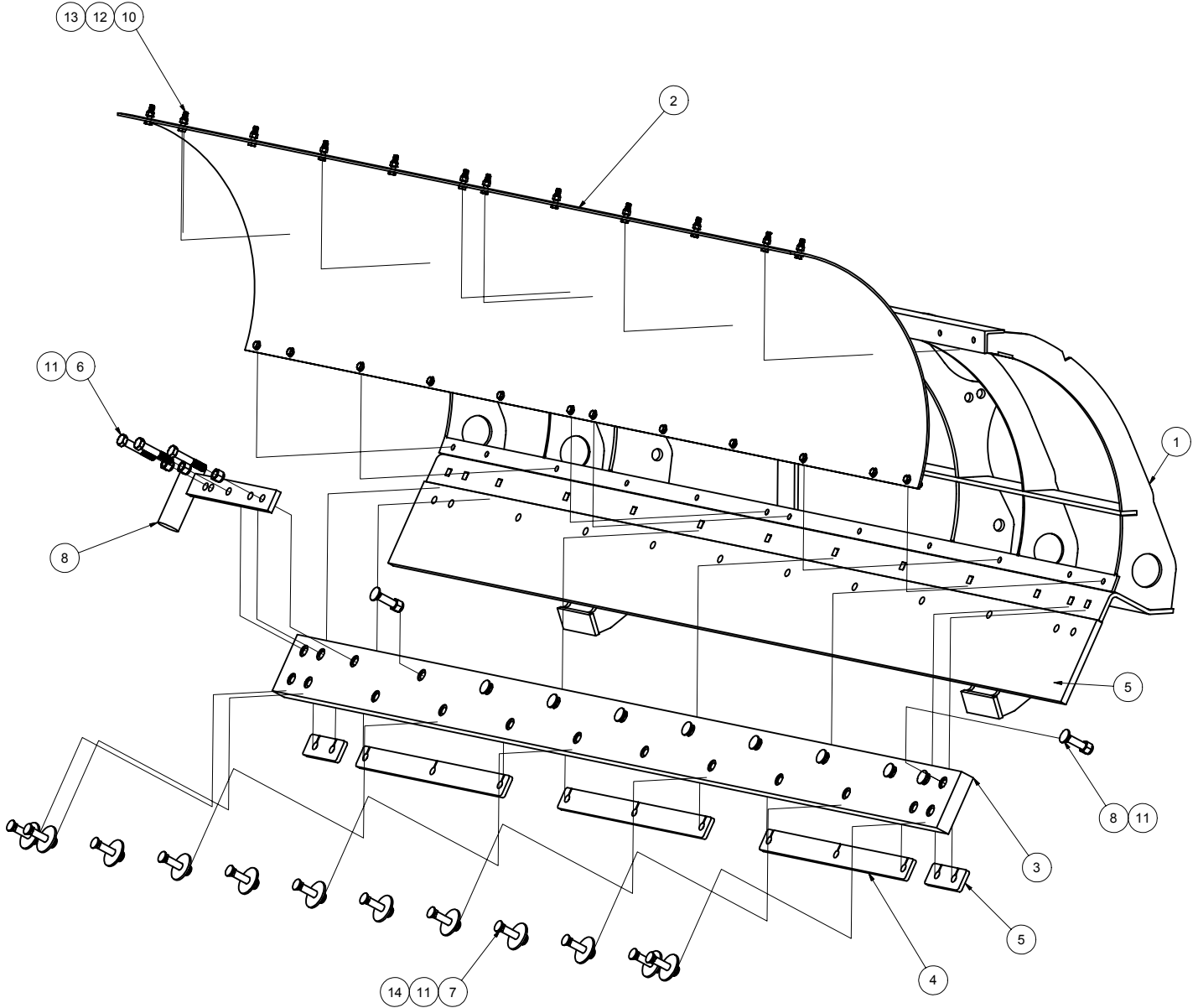


22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

MEDIUM DUTY ASSEMBLY PARTS

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Optional</u>
1	3SK2171-3	MD Push Frame	1	
2	3SK2131	MD Torque Tube weldment	1	
3	3SK2125	10' Moldboard Assembly	1	
4	202600143	21" Swivel	1	
5	3SK3492	60" Sno-King Chain	1	
6	3SK3488	½" midlink	2	

10' POLY MOLDBOARD ASSEMBLY



NOTES: ITEM 13 IS NOT SHOWN
ON THE DRAWING

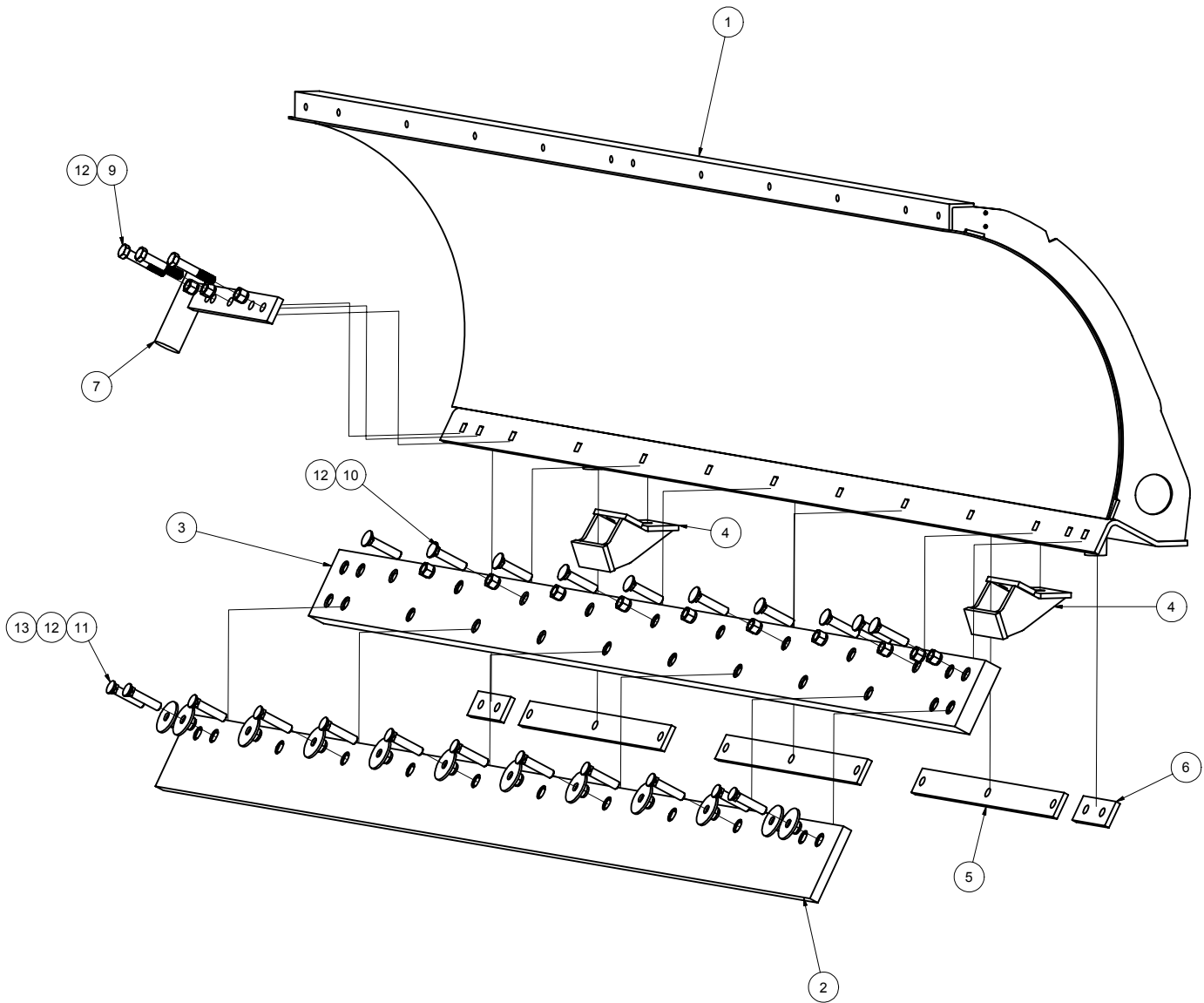


22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

10' POLY MOLDBOARD ASSEMBLY PARTS

<u>Item</u>	<u>Part No.</u>	<u>Alt. Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	3SK2125		10' Poly moldboard	1
2	3SK7076		10' Poly sheet	1
3	3SK7071		120" Adiprene trip hinge	1
4	3SK7166		Plate washer 26"	3
5	3SK7167		Plate washer 6"	2
6	3SK3722		Bolt hex 5/8 x 3 1/2 unc zinc	3
7	2N81074		5/8" x 3" plow bolt	12
8	3SK3720		5/8" x 3" grade 5 carriage bolt	10
9	3SK3698	81072	Bolt hex 5/8 x 1 1/2 unc zinc	6
10	3SK3585	81091	Bolt hex 3/8 x 1 1/2 unc zinc	24
11	3SK3781		Nut hex toplock 5/8" unc zinc	31
12	3SK3591	81086C	Nut hex toplock 3/8 unc zinc	24
13	3SK3595		Flatwasher sae 3/8 zinc	24
14	3SK3768		5/8" x 2 1/2" O.D. washer	12
15	3SK7121		Blade 3/4 x 6 x 120	1

10' STEEL MOLDBOARD ASSEMBLY



NOTES: ITEM NUMBER 13 IS NOT SHOWN ON DRAWING

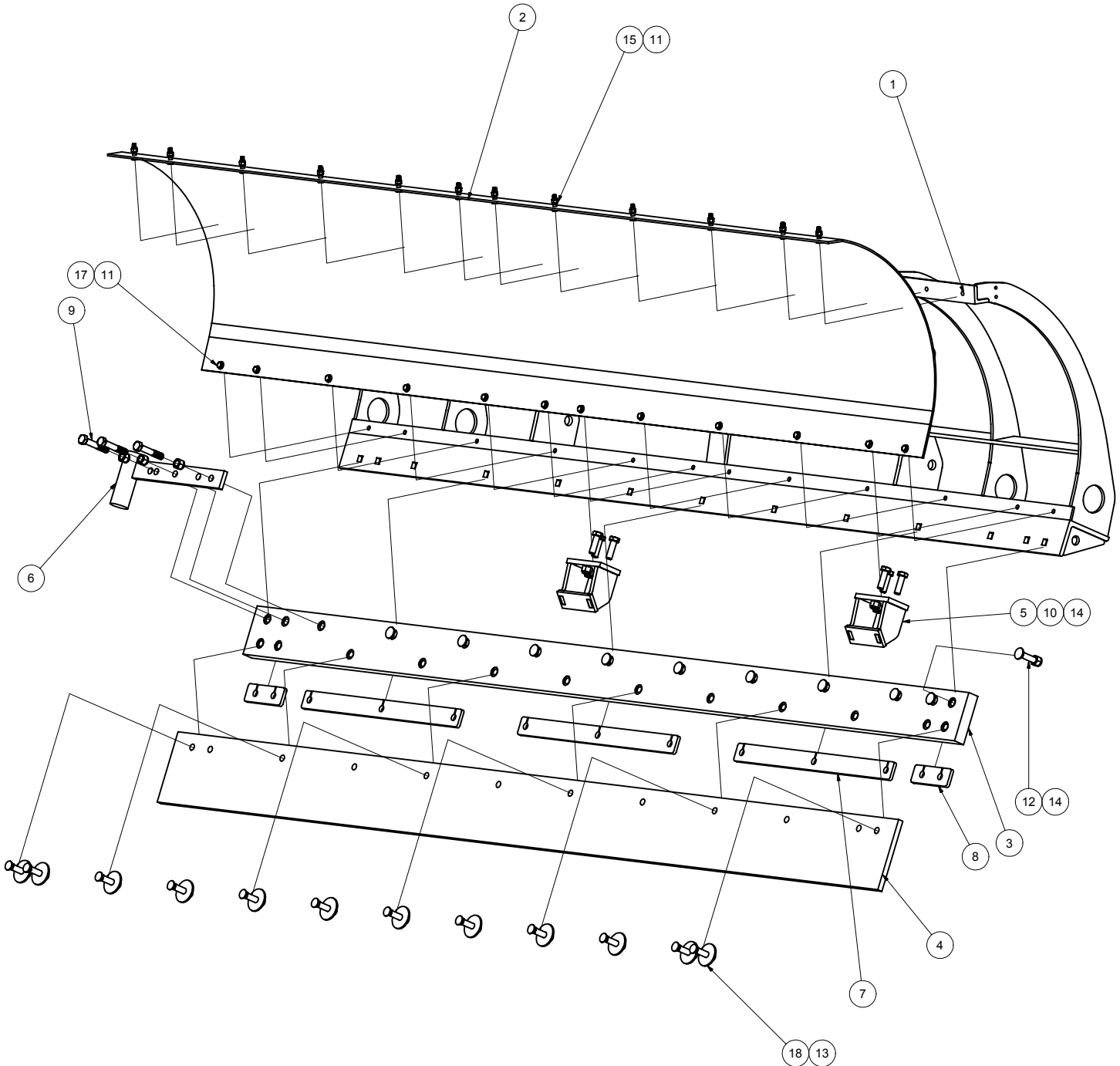


22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

10' STEEL MD MOLDBOARD ASSEMBLY LIST

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	3SK2121	10' Steel moldboard	1
2	3SK7121	Cutting edge 3/4" x 6" x 120"	1
3	3SK7071	120" Adiprene trip hinge	1
4	3SK2280	Hinge stop weldment	2
5	3SK7166	Plate washer 26" upper (must always be reinstalled when replacing the blade)	3
6	3SK7167	Plate washer 6" upper	2
7	3SK2286	Curb Shoe 10' and 11'	1
8	3SK3722	Bolt hex 5/8" x 3 1/2" unc zinc	3
9	2N81074	5/8" x 3" Plow Bolt	10
10	3SK3720	5/8" x 3" Grade 5 carriage bolt	12
11	3SK3781	Nut hex toplock 5/8" unc zinc	31
12	3SK3768	5/8" x 2 1/2" Round lower washer (must always be reinstalled when replacing blade)	12

36R 10' POLY MOLDBOARD ASSEMBLY



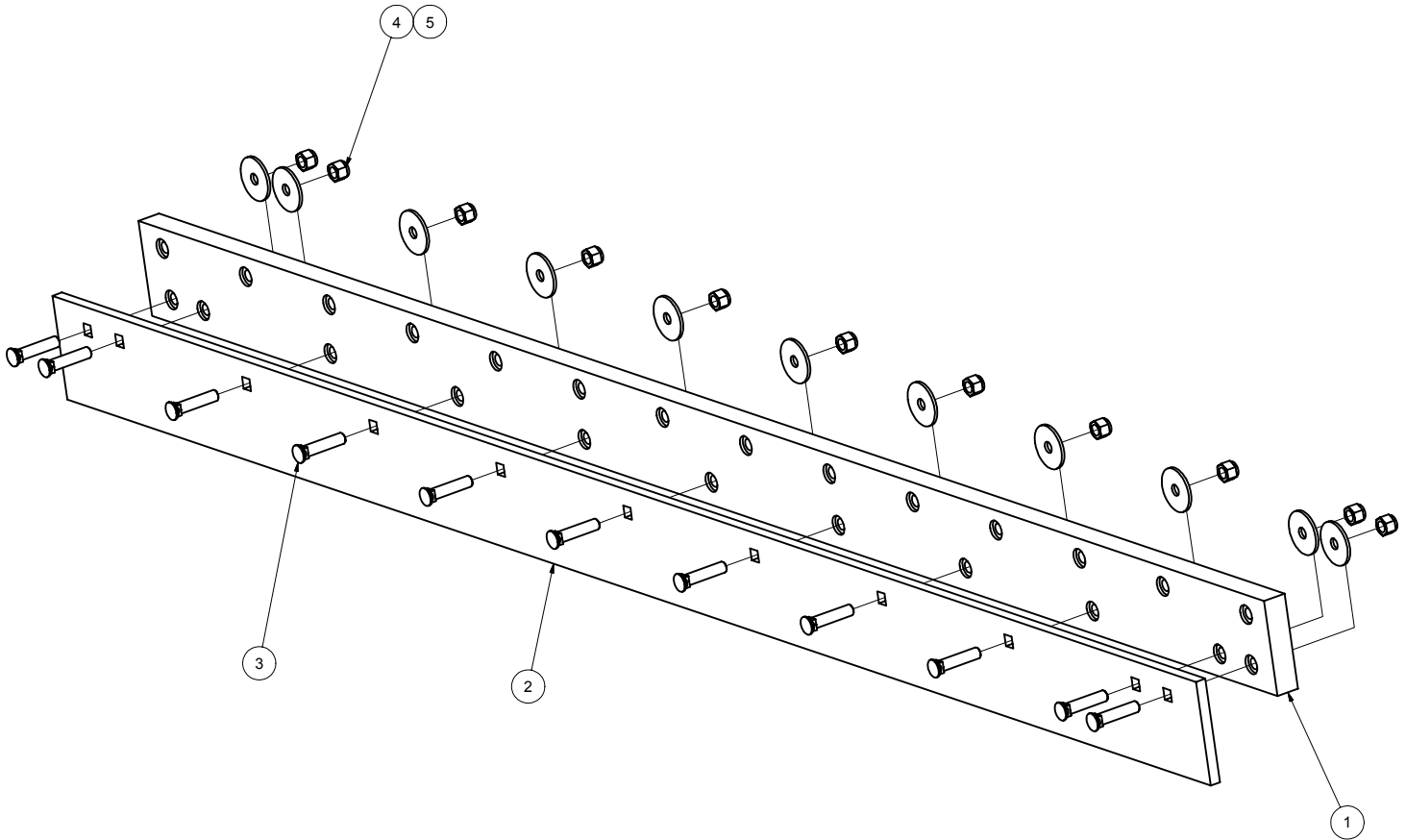


22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

36R 10' POLY MOLDBOARD ASSEMBLY PARTS

<u>Item</u>	<u>Part No.</u>	<u>Alt Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	3SK2013		Sno-King MD moldboard frame weldment	1
2	3SK7068		36R 10 ft poly	1
3	3SK7071		10' Sno-King Adiprene Hinge	1
4	3SK7121		Blade 3/4 x 6 x 120	1
5	3SK2282		Hinge stop weldment	2
6	3SK2286		Curb shoe 10' & 11'	1
7	3SK7166		Plate washer 26"	3
8	3SK7167		Plate washer 6"	2
9	3SK3722		Bolt hex 5/8 x 3 1/2 unc zinc	3
10	3SK3700	81073D	Bolt hex 5/8 x 2 unc zinc	6
11	3SK3585	81091	Bolt hex 3/8 x 1 1/2 unc zinc	24
12	2N81074		5/8 x 3 plow bolt	10
13	SK3720		5/8 x 3 Grade 5 carriage bolt	12
14	SK3781		Nut hex toplock 5/8" unc zinc	31
15	3SK3591	81086C	Nut hex toplock 3/8" unc zinc	24
16	3SK3595		Flatwasher sae 3/8 zinc	24
17	SK3768		5/8 x 2 1/2 round lower washer	12

BLADE/HINGE ASSEMBLY INSTRUCTIONS



NOTES: DON'T USE CUTTING TORCH TO REMOVE BOLTS WHEN CHANGING CUTTING EDGE. IT WILL RUIN ADIPRENE HINGE.

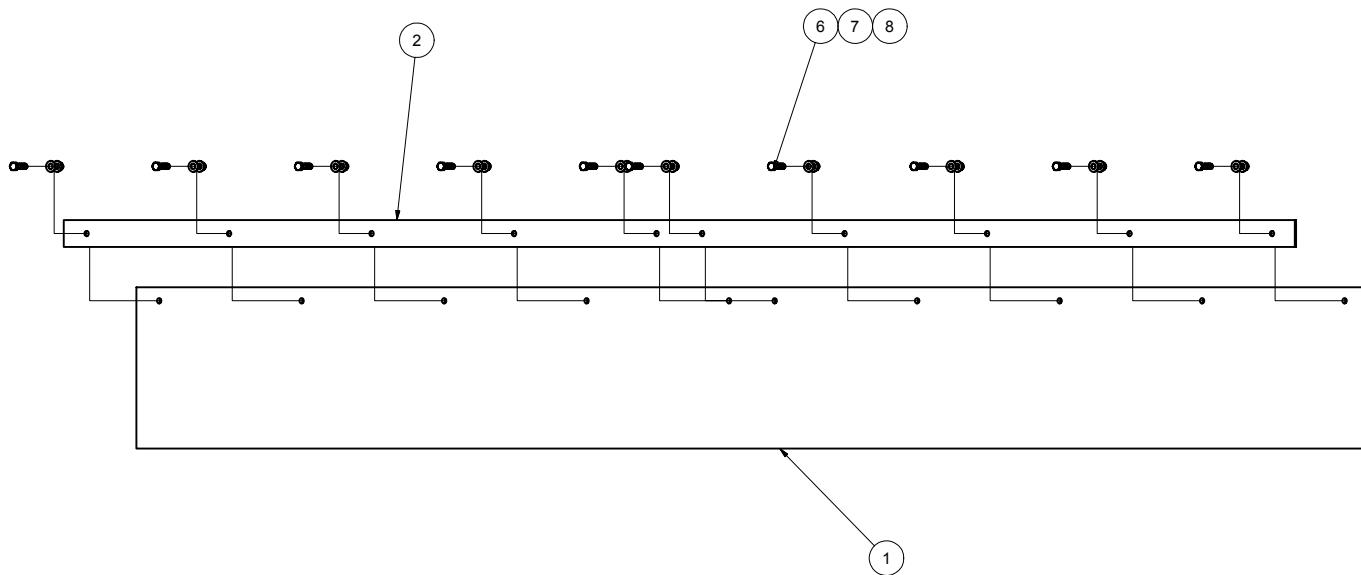
NOTES: ALWAYS USE NEVER SEIZE ON ALL BOLTS WHEN REINSTALLING REPLACEMENT BLADES



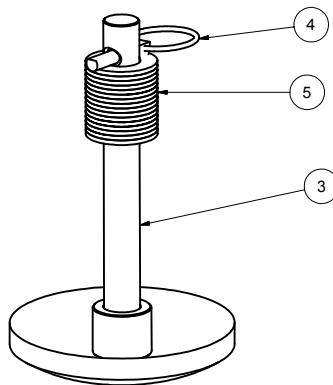
22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

BLADE / HINGE ASSEMBLY PARTS

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Optional</u>
1	3SK7071	Adiprene trip hinge	1	
2	3SK7126	Cutting edge std highway punching	1	
3	3SK3725	5/8" grade 5 carriage bolt	12	
4	3SK3781	Nut hex top lock 5/8" unc zinc	12	
5	3SK3768	5/8" x 2 1/2" O.D. washer	12	



NOTES: ALL ITEMS ARE OPTIONAL
FOR 10' MOLDBOARDS



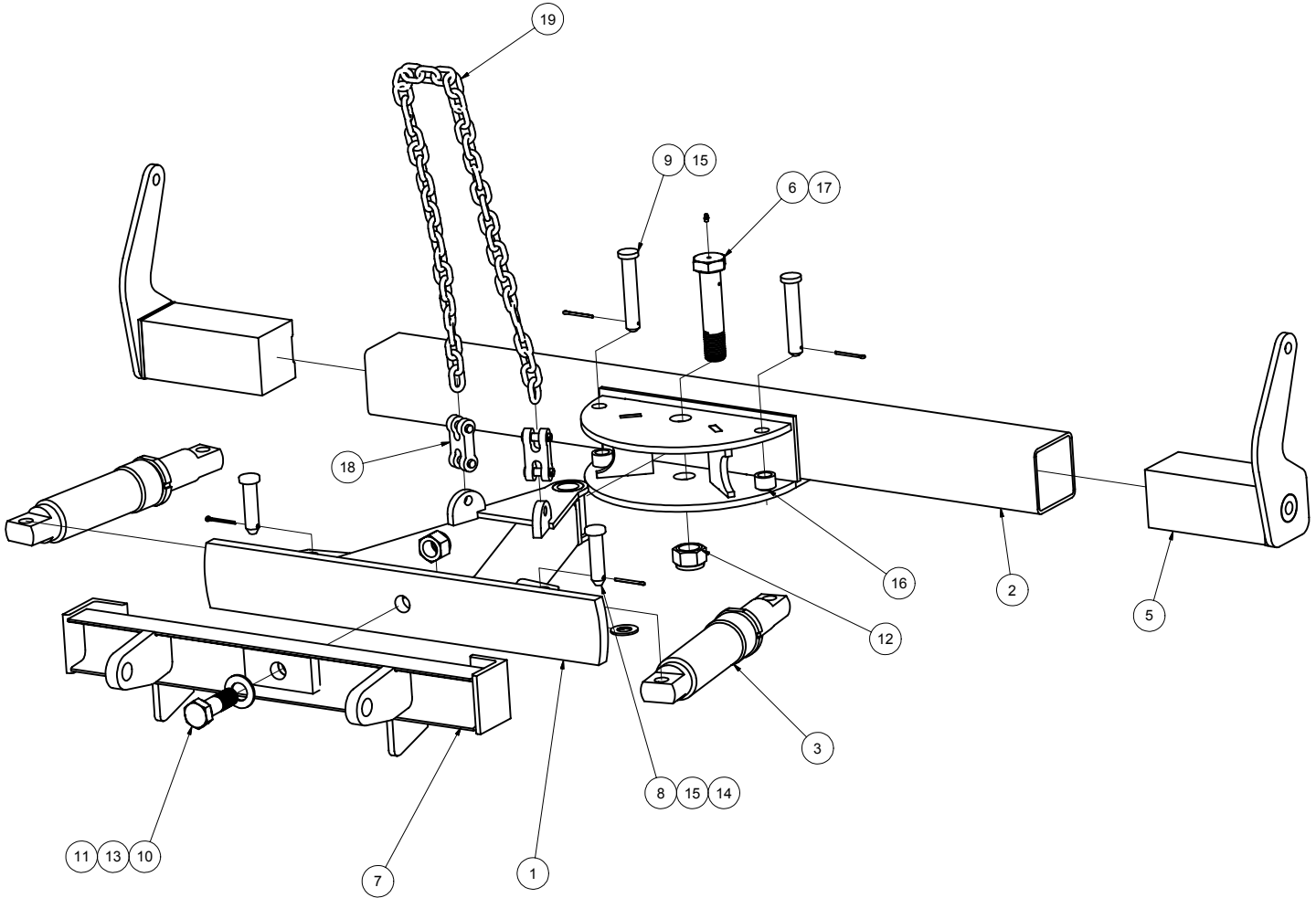


22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

RUBBER DEFLECTOR & SKID SHOES

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Optional</u>
1	3SK7140	10' Rubber deflector	1	*
2	3SK7156	10' Retainer strip	1	*
3	3SK2280	Skid shoe	2	*
4	3SK2280	Hitch pin 3/16"	2	*
5	3SK2280	Flat washer SAE 3/8" zinc	32	*
6	3SK3585	Bolt hex 3/8 x 1 1/2 unc zinc	10	*
7	3SK3595	Flatwasher sae 3/8 zinc	20	*
8	3SK3591	Nut hex toplock 3/8 unc zinc	10	*

MD PUSH FRAME ASSEMBLY



NOTES: ITEM # 7 CAN BE PART NUMBER
202600143 OR 202600097 MAKE SURE TO
SPECIFY WHICH ONE YOU NEED

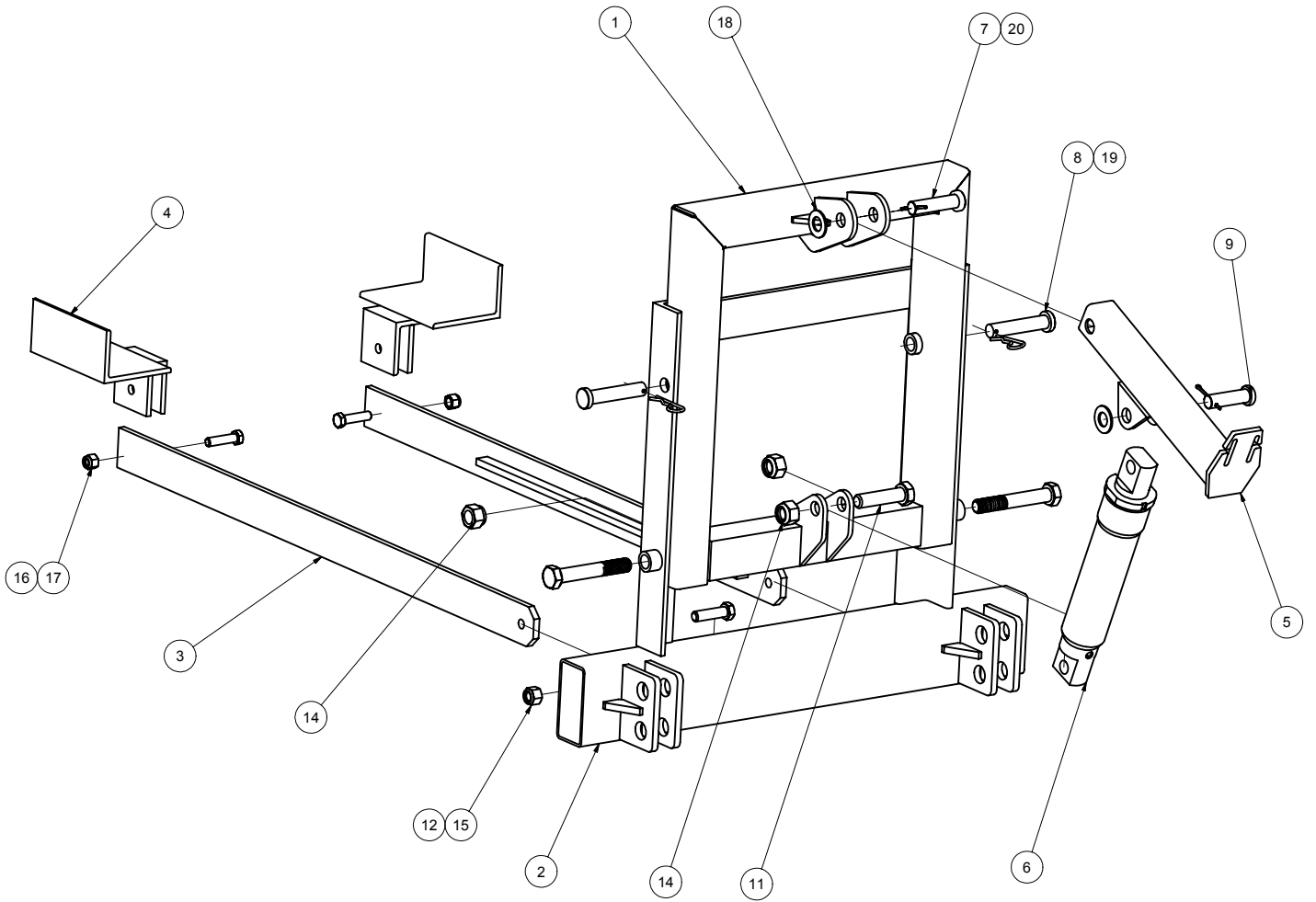


22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

MD PUSH FRAME ASSEMBLY / PART NUMBER: 3SK4

<u>Item</u>	<u>Part No.</u>	<u>Alt Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Optional</u>
1	3SK2171-3		MD push frame	1	
2	3SK2131		MD torque tube weldment	1	
3	3SK4028		Cylinder 2 1/2" x 8" SA	2	
4	3SK2155-L		Tripping torque arm	1	
5	3SK2155-R		Tripping torque arm	1	
6	281027	81023C	Bolt hex 1 1/2 x 7 unc zinc	1	
7	202600143		MW 21" center swivel	1	
8	20900004		Pin 1.000 dia x 3.406	2	
9	3SK3421		Pin 1" x 5 1/2"	2	
10	415569	81023F	Bolt hex 1 1/4" x 4" unc zinc	1	
11	281007B		Nut hex toplock 1 1/4 unc zinc	1	
12	237286		Nut hex toplock 1 1/2" unc zinc	1	
13	281015A	81015A	Flatwasher SAE 1 1/4" zinc	1	
14	281013A	81013A	Flatwasher SAE 1" zinc	2	
15	3SK3450	80508A	Cotter pin 1/4 x 2 1/2 zinc	4	
16	20129002		Bushing 1.500N 1.000M 0.906S	2	
17	260106	80577D/80579	Grease fitting 1/4 28 STR	1	
18	3SK3488		1/2" midlink	2	
19	3SK3492		60" Sno-King chain	1	

SNO-KING MD UNIVERSAL TILT HITCH (SK0563)





22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

UNIVERSAL MD TILT HITCH SK0563 PARTS

<u>Item</u>	<u>Part No.</u>	<u>Alt. Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	20303020		MD Sno-King upper tilt section	1
2	20303022		MD Universal lower tilt section	1
3	20103010		Brace arm weldment Sno-King tilt hitch	2
4	20103009		Brace arm rear clip weldment Sno-King	2
5	SK2221		Lift arm MD Sno-King	1
6	3SK4029		Cylinder 2 ½ x 10 SA	1
7	3SK3410		Pin 1" x 4"	1
8	3SK3420		Pin 1" x 5"	2
9	3SK3400		Pin 1" x 3 ½"	1
10	415476		Bolt hex 1 x 6 ½ unc zinc	2
11	281022	81022	Bolt hex 1 x 4 unc zinc	1
12	415364	81065F	Bolt hex ¾ x 2 ¾ unc zinc	2
14	237278		Nut hex toplock 1" unc zinc	3
15	3SK3811		Nut hex toplock ¾" unc zinc	2
16	3SK3710	81075E	Bolt hex 5/8 x 2 ½ unc zinc	2
17	SK3781		Nut hex toplock 5/8" unc zinc	2
18	281013A	81013A	Flatwasher sae 1" zinc	2
19	3SK3460	80536	Cotter hairpin 3/16" x 3 ¾" zinc	2
20	280518		Cotter pin 3/16" x 2 ½" zinc	2



22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

GENERAL OPERATING INSTRUCTIONS

BEFORE SNOW-PLOWING:

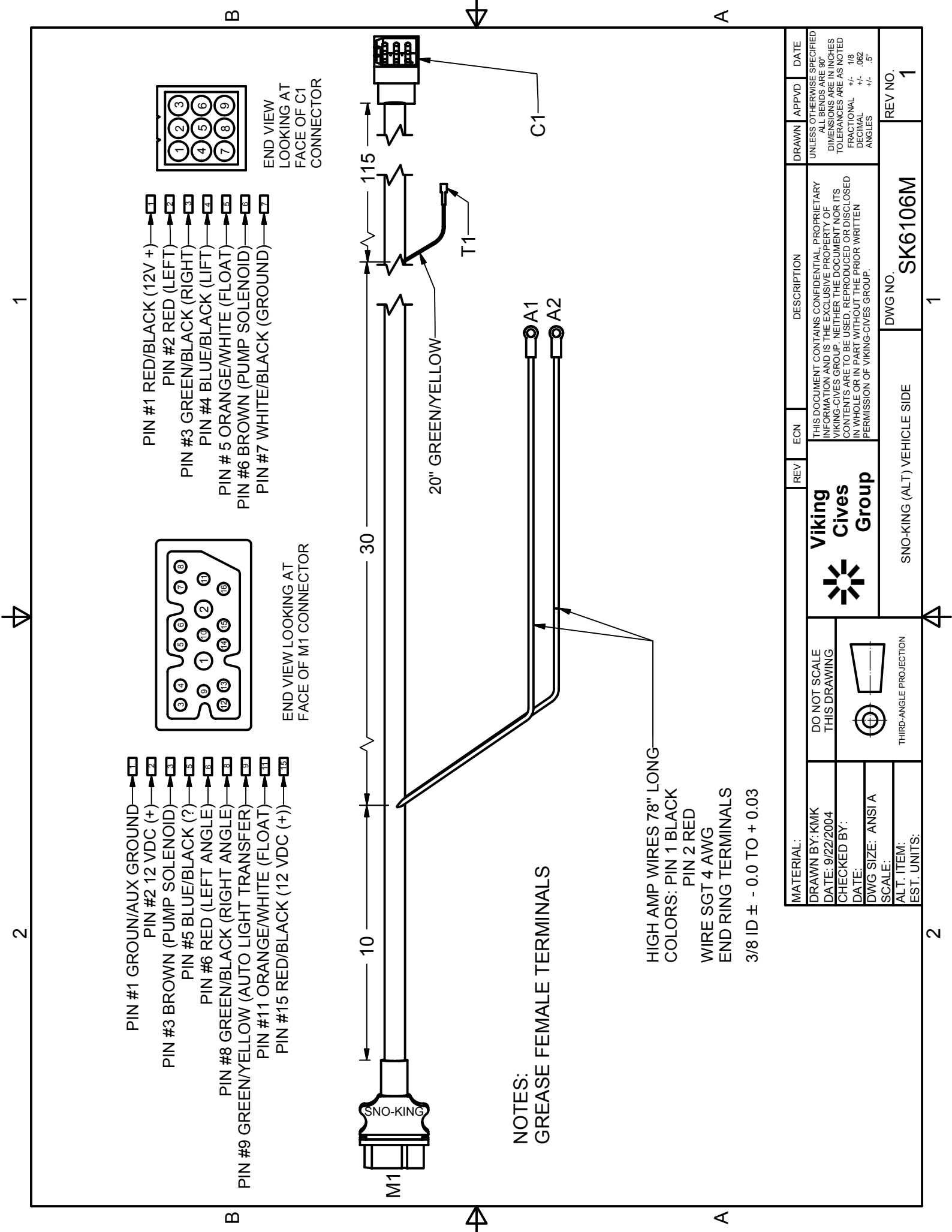
1. Check the pump fluid level with the lift cylinder ram completely down. Keep the fluid level $\frac{1}{2}$ " below the filler neck.
2. Check all electrical connections for tightness. Remove any corrosion. Make sure the unit is grounded securely.
3. Carry the emergency repair kit and four quarts of *Dextron III ATF* fluid for commercial operations.
4. Tighten all bolts on the plow and truck hitch. Inspect for leaks and worn cutting edge. Replace if needed.
5. With the cylinder ram completely down, adjust both chains to the tightest position, keeping all the links straight.

DURING SNOW-PLOWING:

1. Adjust the skid shoes to the upper most position on pavement or frozen earth surfaces.
2. Lower the skid shoes to support the cutting edge $\frac{1}{4}$ " above the surface to prevent digging in to thawed earth and "pea stone" surfaces.
3. If any hydraulic leaks occur, stop plowing immediately. Raise the plow with a jack or level. This will enable the vehicle to be driven for repair with the snowplow raised.
4. Inspect the entire snowplow system hourly during plowing.
5. Replace the cutting edge before it wears into the polymer. Remove the cutting edge bolts with proper tools. DO NOT burn-off the bolts, as this will destroy the polymer. All plate washers must be reinstalled with blade.

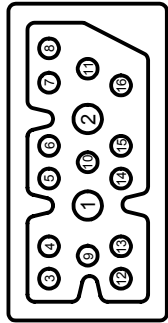
AFTER SNOW-PLOWING:

1. Check all hoses and fittings for leaks.
2. Lubricate the cylinder rams and pins with multi-purpose grease.

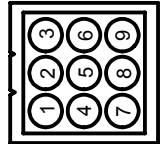


- PIN #1 GROUND/AUX GROUND
- PIN #2 12 VDC (+)
- PIN #3 BROWN (PUMP SOLENOID)
- PIN #5 BLUE/BLACK (?)
- PIN #6 RED (LEFT ANGLE)
- PIN #8 GREEN/BLACK (RIGHT ANGLE)
- PIN #9 GREEN/YELLOW (AUTO LIGHT TRANSFER)
- PIN #11 ORANGE/WHITE (FLOAT)
- PIN #15 RED/BLACK (12 VDC (+))

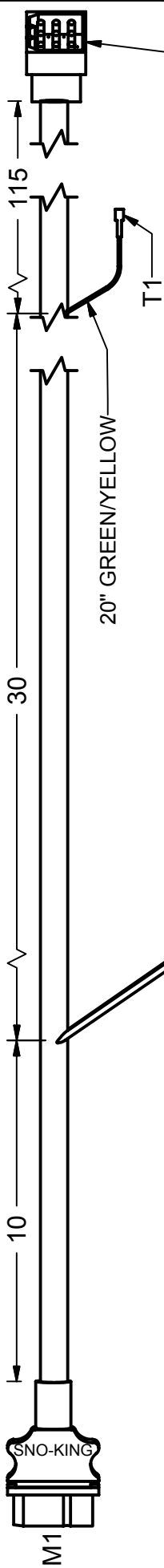
- PIN #1 RED/BLACK (12V +)
- PIN #2 RED (LEFT)
- PIN #3 GREEN/BLACK (RIGHT)
- PIN #4 BLUE/BLACK (LEFT)
- PIN #5 ORANGE/WHITE (FLOAT)
- PIN #6 BROWN (PUMP SOLENOID)
- PIN #7 WHITE/BLACK (GROUND)



END VIEW LOOKING AT FACE OF M1 CONNECTOR



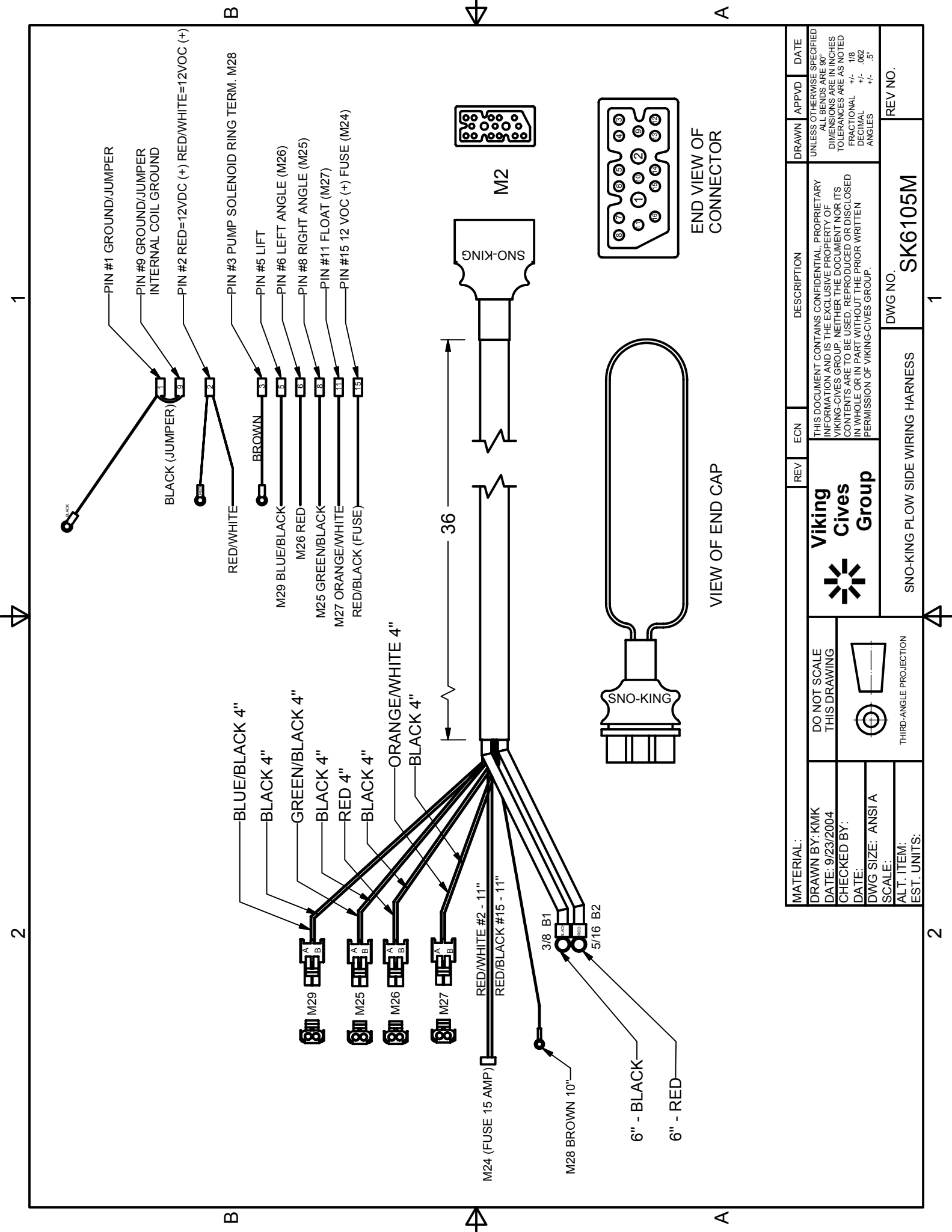
END VIEW LOOKING AT FACE OF C1 CONNECTOR



NOTES:
GREASE FEMALE TERMINALS

HIGH AMP WIRES 78" LONG
COLORS: PIN 1 BLACK
PIN 2 RED
WIRE SGT 4 AWG
END RING TERMINALS
3/8 ID ± - 0.0 TO + 0.03


MATERIAL:	REV	ECN	DESCRIPTION	DRAWN	APPVD	DATE
DRAWN BY: KMK DATE: 9/22/2004 CHECKED BY: DATE: DWG SIZE: ANSI A SCALE: ALT. ITEM: EST. UNITS:			Viking Cives Group <small>THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION AND IS THE EXCLUSIVE PROPERTY OF VIKING-CIVES GROUP. NEITHER THE DOCUMENT NOR ITS CONTENTS ARE TO BE USED, REPRODUCED OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE PRIOR WRITTEN PERMISSION OF VIKING-CIVES GROUP.</small>			
SNO-KING (ALT) VEHICLE SIDE			DWG NO. SK6106M	REV NO. 1		



1

2

2

MATERIAL:	REV	ECN	DESCRIPTION	DRAWN	APPVD	DATE
DO NOT SCALE THIS DRAWING			 THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION AND IS THE EXCLUSIVE PROPERTY OF VIKING-CIVES GROUP. NEITHER THE DOCUMENT NOR ITS CONTENTS ARE TO BE USED, REPRODUCED OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE PRIOR WRITTEN PERMISSION OF VIKING-CIVES GROUP.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE AS NOTED FRACTIONAL .18 DECIMAL .062 ANGLES +/- .5°		
THIRD-ANGLE PROJECTION						
DRAWN BY: KMK DATE: 9/23/2004						
CHECKED BY:						
DATE:						
DWG SIZE: ANSI A						
SCALE:						
ALT. ITEM:						
EST. UNITS:						
SNO-KING FLOW SIDE WIRING HARNESS			DWG NO.	REV NO.		
				SK6105M		

1

2

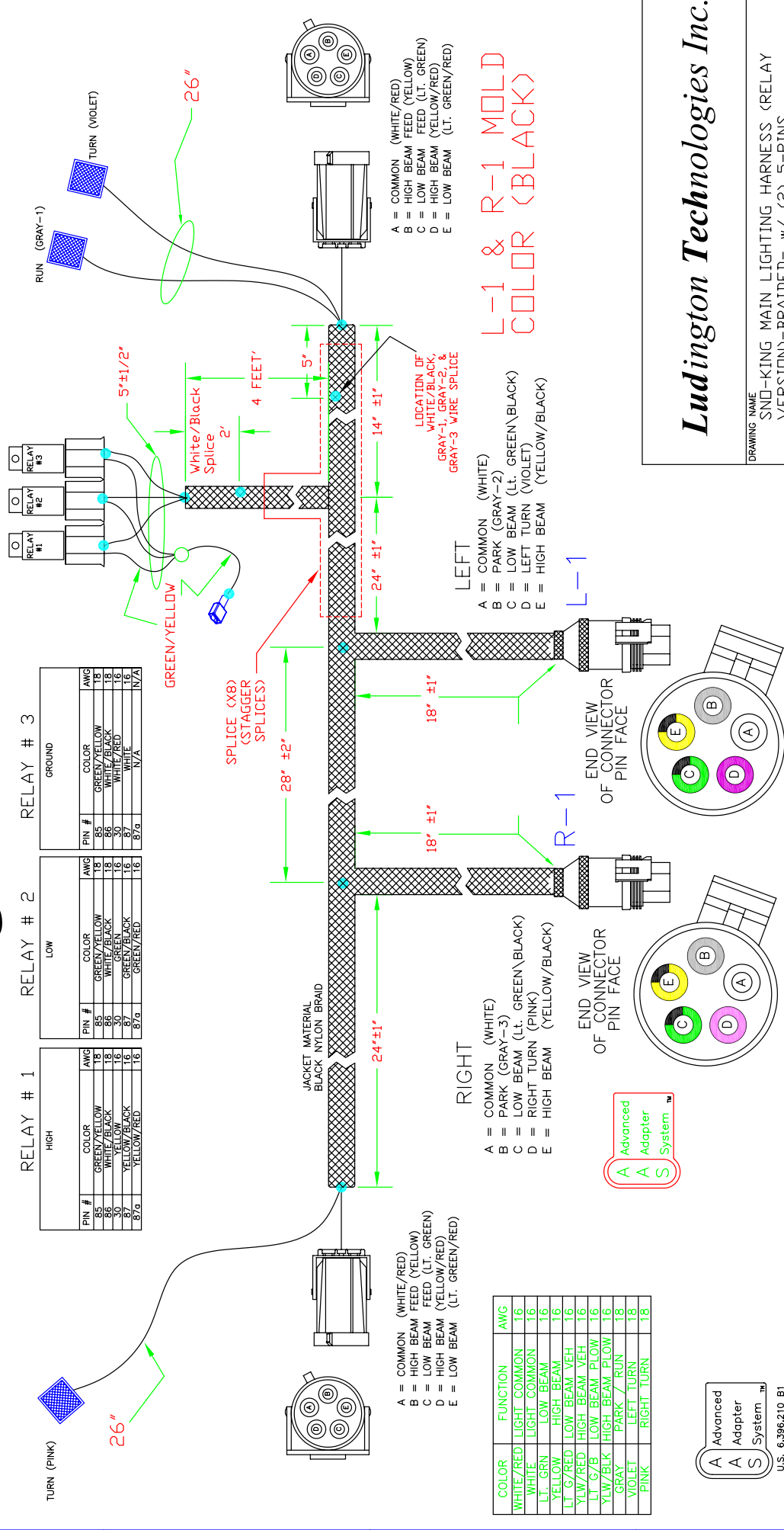
2

DRAWING NO.
90-8553-00

Sno-King

REV.	ZONE	DESCRIPTION	E.C.N. #	BY	DATE
A	-	INITIAL RELEASE	-	SRL	11/22/02

1 2 3 4 5

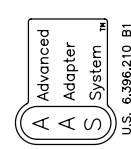


- A = COMMON (WHITE/RED)
- B = HIGH BEAM FEED (YELLOW)
- C = LOW BEAM FEED (LT. GREEN)
- D = HIGH BEAM (YELLOW/RED)
- E = LOW BEAM (LT. GREEN/RED)

COLOR	FUNCTION	AWG
WHITE/RED	LIGHT COMMON	16
WHITE	LIGHT COMMON	16
LT. GRN	LOW BEAM	16
YELLOW	HIGH BEAM	16
LT. GRN	LOW BEAM VEH	16
LT. GRN/RED	HIGH BEAM VEH	16
LT. GRN/RED	LOW BEAM PLOW	16
LT. GRN/BLK	HIGH BEAM PLOW	16
GRAY	PARK / RUN	18
VIOLET	LEFT TURN	18
PINK	RIGHT TURN	18

- A = COMMON (WHITE)
- B = PARK (GRAY-2)
- C = LOW BEAM (LT. GREEN\BLACK)
- D = LEFT TURN (VIOLET)
- E = HIGH BEAM (YELLOW\BLACK)

- A = COMMON (WHITE/RED)
- B = HIGH BEAM FEED (YELLOW)
- C = LOW BEAM FEED (LT. GREEN)
- D = HIGH BEAM (YELLOW/RED)
- E = LOW BEAM (LT. GREEN/RED)



U.S. 6,396,210 B1
U.S. 6,504,306 B2
U.S. & INT'L PATS. PENDING

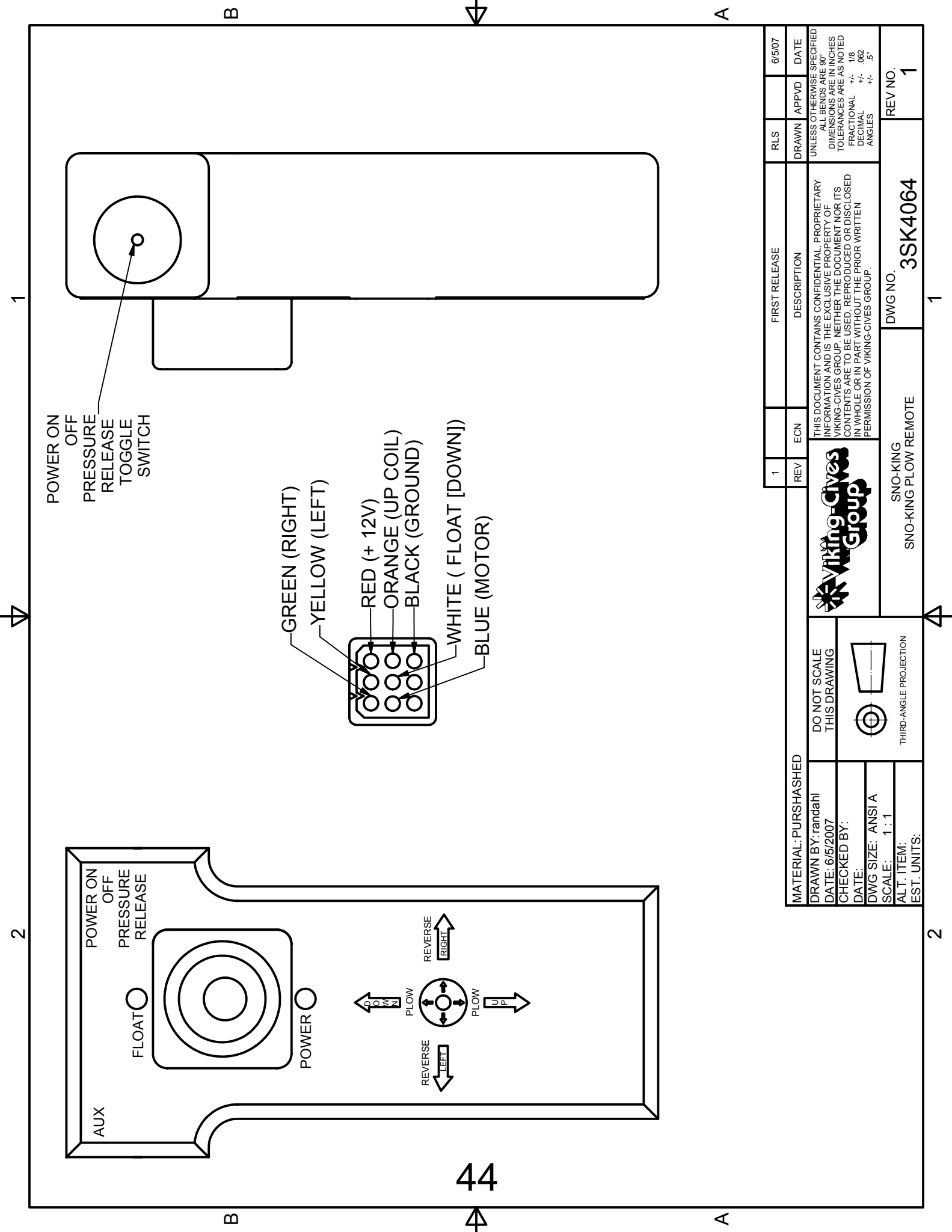
Ludington Technologies Inc.

DRAWING NAME	SNO-KING MAIN LIGHTING HARNESS (RELAY VERSION)-BRAIDED- w/ (2) 5-PINS
DRAWN BY	SRL
DATE	11/22/02
CHECKED BY	
SIZE	B
SCALE	NTS
DRAWING NO.	90-8553-00
SHEET	1 of 1
REV.	A

DO NOT SCALE DRAWING.

THIS PRINT IS THE PROPERTY OF LUDINGTON AND SHALL NOT BE REPRODUCED, COPIED NOR DISCLOSED TO OTHERS. PRINT TO BE RETURNED UPON REQUEST.

TOLERANCES ARE:
FRACTIONS ± 1/2
DECIMALS .005
ANGLES ± 0.30°
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.



MATERIAL: PURSHASHED		DO NOT SCALE THIS DRAWING	THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION AND IS THE EXCLUSIVE PROPERTY OF VIKING-CIVES GROUP. NEITHER THE DOCUMENT NOR ITS CONTENTS ARE TO BE USED, REPRODUCED OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE PRIOR WRITTEN PERMISSION OF VIKING-CIVES GROUP.	REV	ECN	FIRST RELEASE	DESCRIPTION	RLS	APPVD	DATE		
1										6/5/07		
DRAWN BY: randahl		 THIRD-ANGLE PROJECTION		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE AS NOTED FRACTIONAL $\pm .18$ DECIMAL $\pm .062$ ANGLES $\pm .5^\circ$								
DATE: 6/5/2007				DWG NO. 3SK4064 REV NO. 1								
CHECKED BY:				SNO-KING SNO-KING PLOW REMOTE								
DATE:												
DWG SIZE: ANSI A												
SCALE: 1 : 1												
ALT. ITEM:												
EST. UNITS:												

SOLENOID C IS CONNECTED TO PLUG M29 (BLUE/BLACK & BLACK WIRES)

RED (+) B2 CABLE IS CONNECTED TO THIS TERMINAL

PUMP SOLENOID CONNECTS HERE (BROWN WIRE)

SOLENOID A IS CONNECTED TO PLUG M25 (GREEN/BLACK & BLACK WIRES)

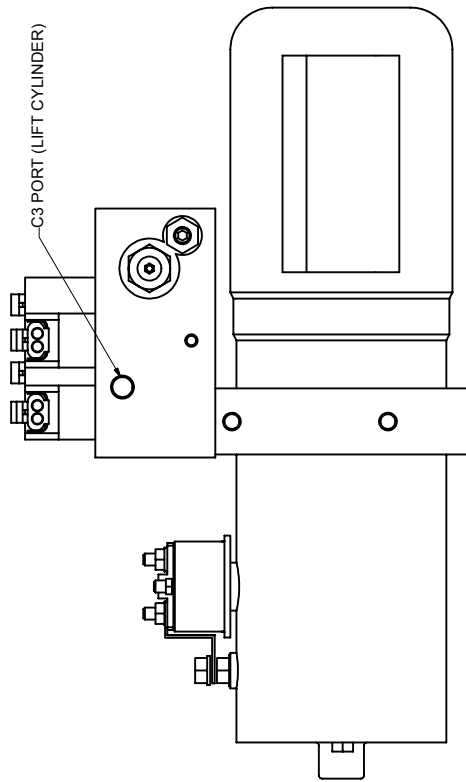
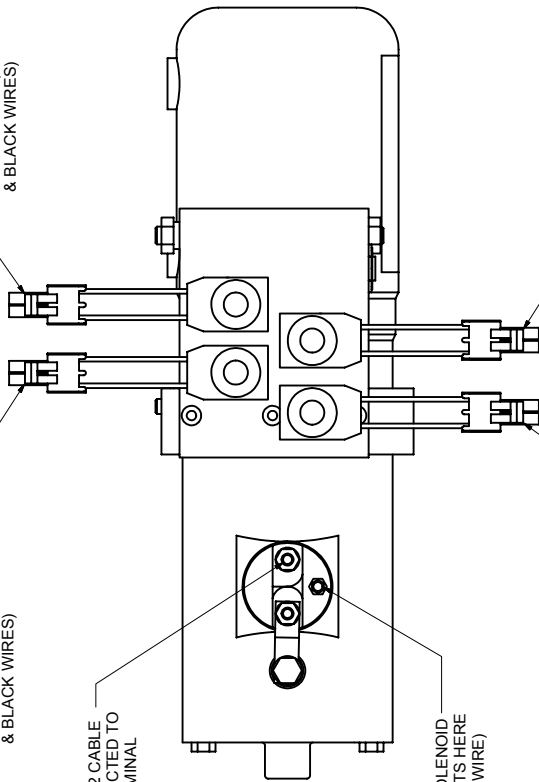
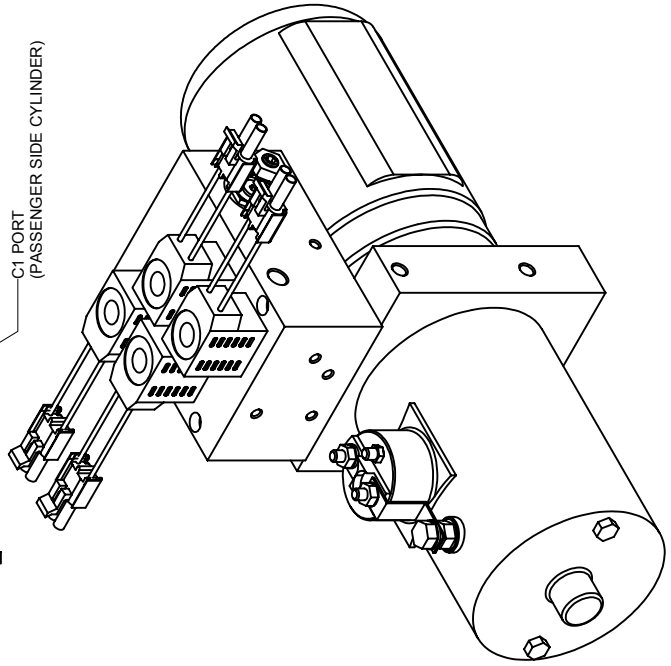
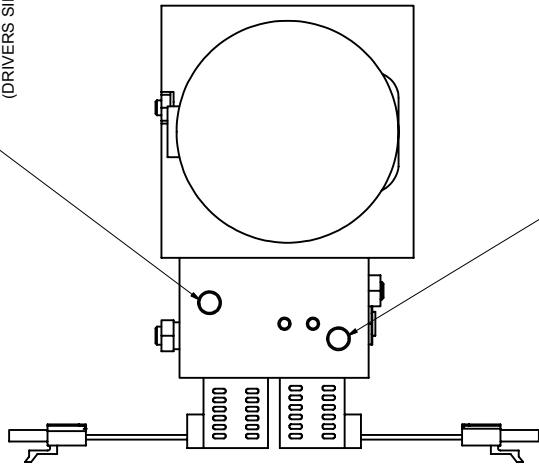
SOLENOID B IS CONNECTED TO PLUG M27 (ORANGE/WHITE & BLACK WIRES)

SOLENOID D IS CONNECTED TO PLUG M26 (RED & BLACK WIRES)

C2 PORT (DRIVERS SIDE CYLINDER)

C1 PORT (PASSENGER SIDE CYLINDER)

C3 PORT (LIFT CYLINDER)



MATERIAL:		DRAWN BY: KKK		REV: 1		ECON		DESCRIPTION		DRAWN / APPROV / DATE	
DO NOT SCALE THIS DRAWING		CHECKED BY: KKK		Viking Cives Group		THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION AND IS THE PROPERTY OF VIKING CRANE GROUP. NEITHER THE DOCUMENT NOR ITS CONTENTS ARE TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF VIKING CRANE GROUP.		UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. FRACTIONS ARE PLACED OVER DECIMALS. DIMENSIONS ARE PLACED TO UNLESS OTHERWISE SPECIFIED.		1	
DATE: 01/01/2014		DWG NO: 3SK4056M		DWG NO: 3SK4056M		DWG NO: 3SK4056M		DWG NO: 3SK4056M		REV NO: 1	
DWG SIZE: ANSI C		1/8"=1" SCALE PRODUCTION		MONARCH PUMP ASSEMBLY		DWG NO: 3SK4056M		DWG NO: 3SK4056M		REV NO: 1	
ALT. ITEM:		EST. UNITS:		1		1		1		1	



A Viking-Cives Group Company

22956 Highway 61 Morley, MO 63767 Phone (573) 262-3545 Fax (573) 262-3540

NOTES:

SNO-KING

DIVISION OF VIKING-CIVES GROUP
22956 Highway 61, P.O. Box 295
MORLEY, MO 63767
TELEPHONE 573/262-3545

***** LIMITED WARRANTY*****

SNO-KING 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 **SNO-KING**. This warranty will not apply to any product which shall have been repaired or altered outside of the **SNO-KING** factory in any way so as, in **SNO-KING** sole judgement, to affect its stability or reliability, nor which has been subjected to misuse, negligence or accident.

The obligations of **SNO-KING** 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 **SNO-KING**, 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, even if **SNO-KING** has been advised of the possibility of such 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 **SNO-KING**.

SNO-KING assumes no responsibility for engines, electrical equipment, or any other equipment and accessories not manufactured by **SNO-KING**.