



SNO-PRO 3000

Assembly and Mounting Instructions

Sno-Pro 3000 Series Trip Edge Steel Moldboard Plow

7-1/2' Moldboard PN: 1TE75 • 8' Moldboard PN: 1TE8

8-1/2' Moldboard PN: 1TE85 • 9' Moldboard PN: 1TE9



Revised February 18th, 2015

Curtis Industries LLC, 111 Higgins St., Worcester, MA 01606 TEL: (508) 853-2200 FAX: (508) 854-3377 For Parts and information visit us at www.CurtisCab.com

Curtis Industries LLC, reserves the right to change product design or specifications without notice or liability.

Curtis Snow Plows are protected by the following U.S. Patent Numbers: 6,145,222 and 6,209,231 Licensed under U.S. Patent Number 5,568,694 & Canadian Patent Number 2,137,853.

Other patents pending.

You are about to install the World's Fastest Attachment Snowplow System!

Curtis Trip-Edge Snowplows offer all of the features of a classic Trip-edge with the superior Hitch-N-Run Attachment System. The heavy duty A-Frame incorporates a Hydraulic Piston to control the Jack Stand Release while a carefully engineered lift system automatically retracts the Jack when the Plow is raised. Curtis uses State of the Art techniques for fit and consistency such as an Automated Conveyor System, Robotic Welding, Laser Cutting and Hydraulic Press Brakes.

We feel these techniques are very important for overall quality and serviceability.

To help our customers understand the loads being imposed on their vehicles as well as the importance of ballast in some applications, we also incorporate computer modeled weight distributions. Some vehicles may require "Helper Springs", "Air Shocks" or similar devices to compensate for the added weight of the Plow equipment.

This information is available upon request. ***From all of us at Curtis, Thank you for choosing our products!***

IMPORTANT: Before you Start...

- ▶ Install any additional required equipment first, such as Snow tires, Helper Springs, Lights, etc.
- ▶ Read and understand this manual before beginning Plow assembly.
- ▶ Check Carton contents prior to beginning Plow assembly.
- ▶ Work in an organized area large enough to pull vehicle up to Plow for final attachment.
- ▶ Have your tools ready prior to assembly, it will speed up the assembly time.



CAUTION

1. Always disconnect vehicle battery when working with vehicle-side wiring.
 2. Plow assembly requires handling of many heavy parts. Be sure to handle with care. Use proper tooling, equipment and assistance where indicated.
-

Required Tools

- 1/2" Drive Ratchet
- 3/8" Drive Ratchet
- 7/16" Socket & Wrench
- 3/4" Socket & Wrench
- 5/8" Wrench
- 9/16" Socket
- 9/16" Wrench (2)
- 1/2" Socket & Wrench
- Pliers or Vice-Grips
- Wire Cutters
- Hammer or Mallet
- 10" or 12" Adjustable Wrench
- 1-1/8" Open End Wrench (2)
- Low Temperature Grease
- 11/16" Socket & Wrench
- 15/16" Deep Socket & Wrench
- Tape Measure

Content Checklist for 2 Cartons:

Trip Edge Moldboard Box #1:

- Trip Angle
- Cutting Edge
- Trip Spring Assemblies
- Skid Shoes

Component Box #2:

- Lift Frame Assembly
- A-Frame Assembly with Jack Leg
- Plow Light Kit
- Vehicle Side Wiring Kit
- Hydraulic Pump Cover
- Blade Markers (Set of 2)
- Owner's / Installation Manual
- Hydraulic Box (includes)
 - 1 Electric / Hydraulic Power Unit & Manifold
 - 3 Hydraulic Hoses (Lift, Left, Right)
 - 1 Plow Side Harness
- Hardware Box (includes)
 - 3 Angle Pistons - 10"
 - 1 Trip Edge Lift Arm
 - 1 Motor Solenoid
 - 2 Upper Spring Guides
 - 2 Lower Spring Guides
 - 2 Compression Springs - 2" x 7"
 - 1 Hose Keeper Spring
 - 1 Center Pivot Pin

PLOW OPERATION WARNINGS



DANGER

NEVER transport Plow with Snap Lock Handles in Horizontal (extended) position. Plow separation may occur causing serious injury or death.



WARNING

ALWAYS verify Plow is mounted securely. NEVER transport Plow without fully engaging Latch Hooks, Snap Lock Hitches and Locking Pins. Improper mounting may result in Plow separation from vehicle.



WARNING

ALWAYS verify full engagement of Latch Hooks, Snap Lock Hitches and Locking Pins by independently using both Driver's Side and Passenger's Side Assist Levers.



WARNING

ALWAYS regularly inspect and maintain all components of the Snowplow.



WARNING

ALWAYS travel at reduced speeds when Blade is attached.

DO NOT exceed 45 mph when transporting Plow.
DO NOT operate Plow when transporting.



WARNING

ALWAYS familiarize yourself with the area to be plowed.

DO NOT exceed 10 mph when plowing snow.
DO NOT exceed 5 mph if obstructions could be encountered while plowing.



WARNING

ALWAYS lower Plow Blade to ground when vehicle is parked.



WARNING

DO NOT position any part of your body under the Plow Blade.



WARNING

DO NOT use any part of your body when dislodging an obstruction from the Plow Assembly.



WARNING

DO NOT service Plow in tripped condition. Dangerous release of stored energy may result.



WARNING

DO NOT disable, remove or relocate any components related to the Air Bag System of the vehicle.



WARNING

DO NOT leave children unattended in vehicle as they may accidentally activate the Plow.



WARNING

ALL vehicles must be equipped with Snow Plow Preparation Package.

Definitions of Hazard Levels



DANGER

Immediate Hazards which will result in severe personal injury or death.



WARNING

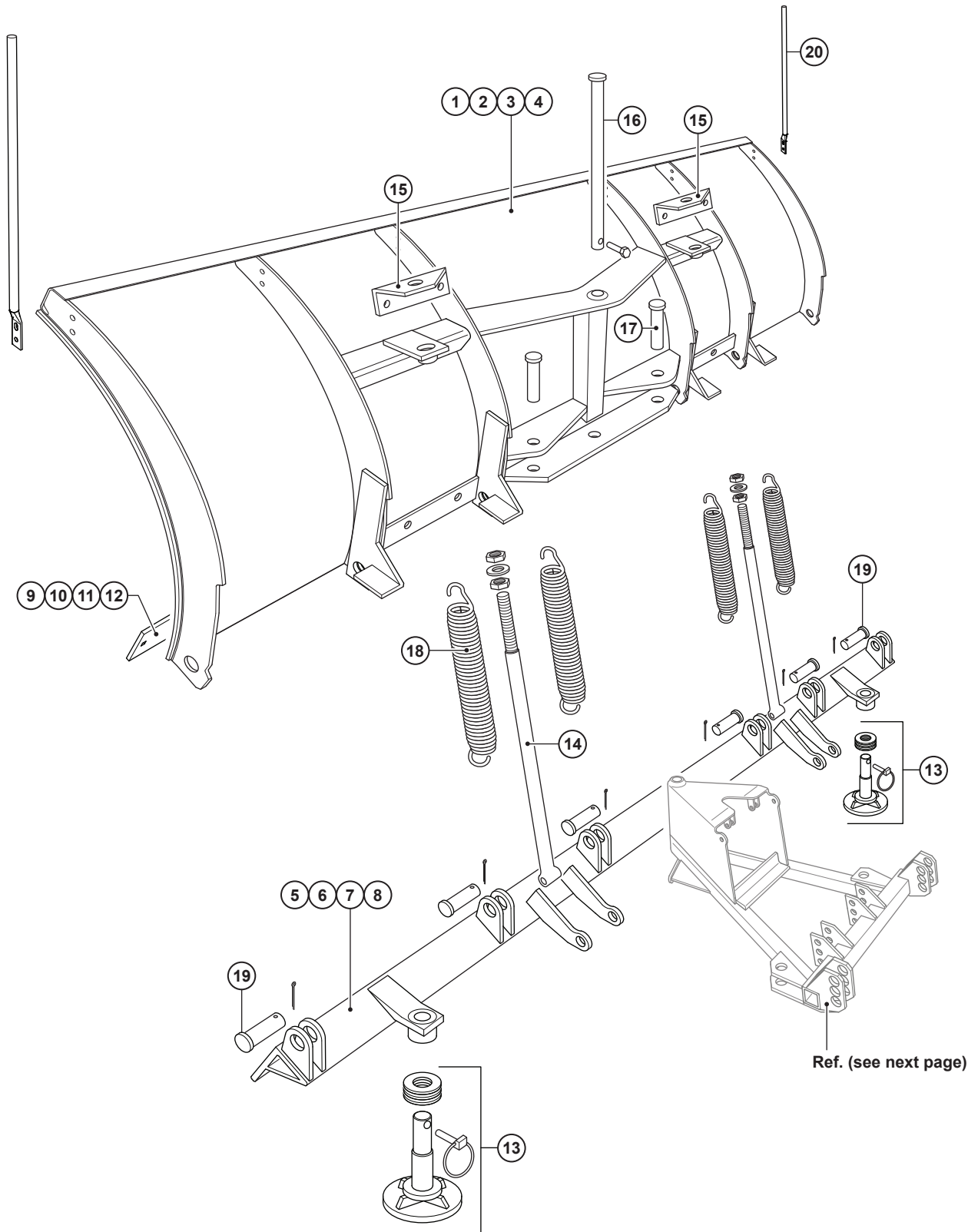
Hazard or unsafe practices which could result in severe personal injury or death.



CAUTION

Could result in damage to the equipment.

Sno-Pro 3000 Trip Edge Illustrated Parts List - Moldboard

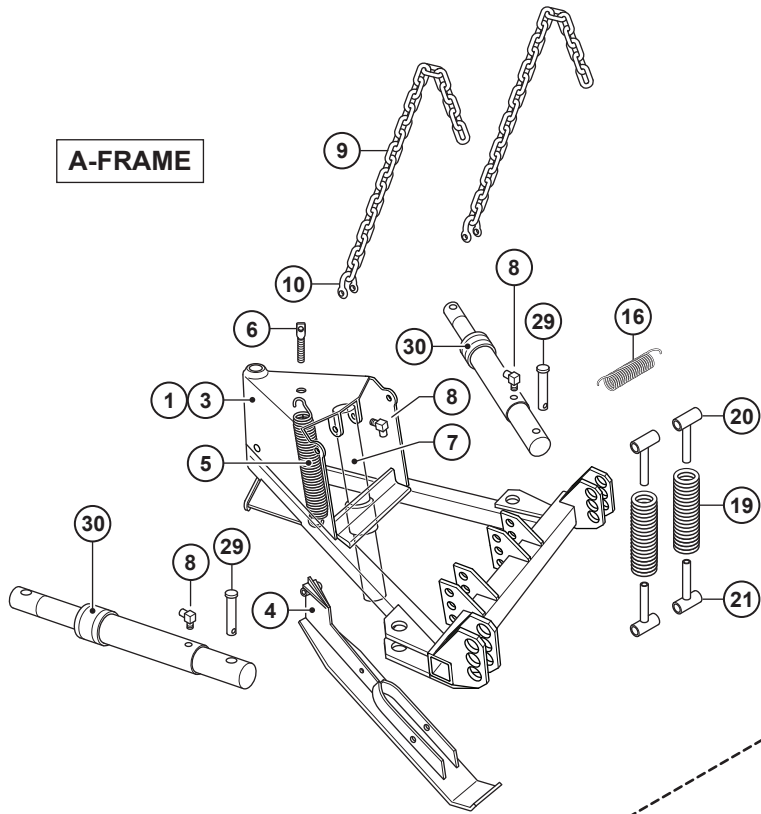


Sno-Pro 3000 Trip Edge Illustrated Parts List - Moldboard Parts List

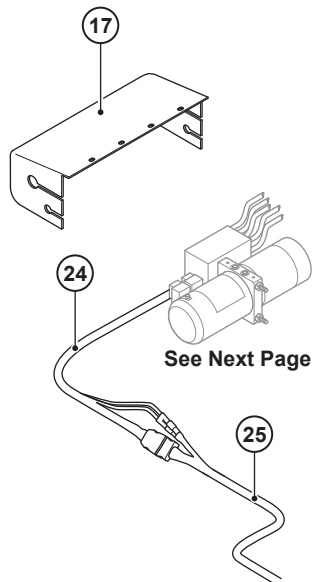
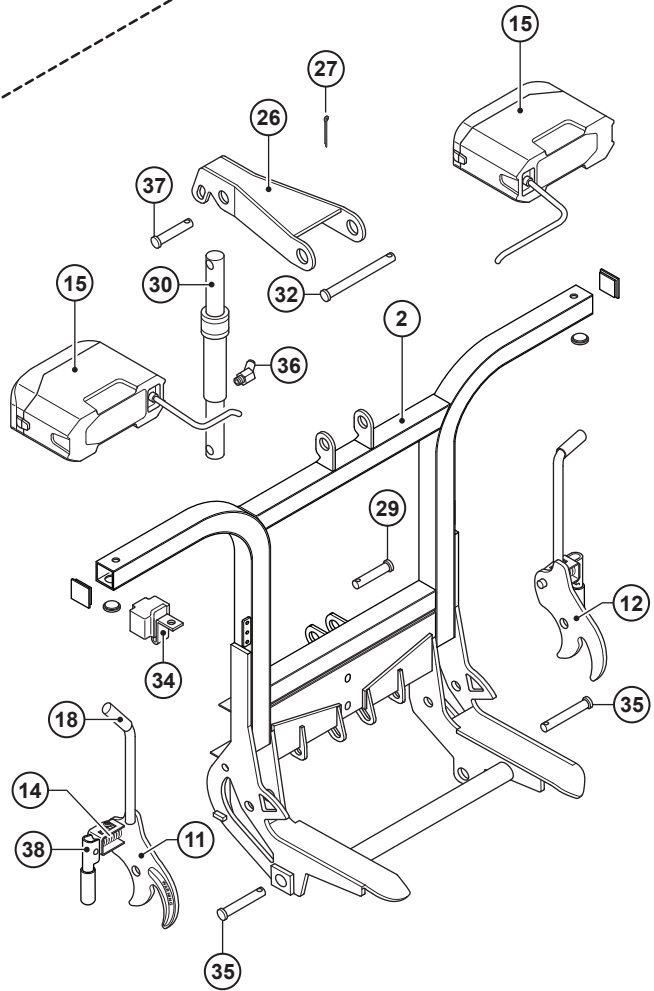
Moldboards & Trip Edge			
Ref #	Item #	Item Description	Qty.
1	1TBP21TA	7-1/2' MOLDBOARD - TRIP EDGE	1
2	1TBP21TB	8' MOLDBOARD - TRIP EDGE	1
3	1TBP21TJ	8-1/2' MOLDBOARD - TRIP EDGE	1
4	1TBP21TC	9' MOLDBOARD - TRIP EDGE	1
5	1TBP149A	7-1/2' LOWER TRIP EDGE	1
6	1TBP149B	8' LOWER TRIP EDGE	1
7	1TBP149C	9' LOWER TRIP EDGE	1
8	1TBP149J	8-1/2' LOWER TRIP EDGE	1
9	1TBP49A	7-1/2' CUTTING EDGE	1
10	1TBP49B	8' CUTTING EDGE	1
11	1TBP49J	8-1/2' CUTTING EDGE	1
12	1TBP49C	9' CUTTING EDGE	1
13	1TBP50T	SKID SHOE - TRIP EDGE ONLY	1
14	1TBP142	SPRING ADJUSTMENT ROD - TRIP EDGE - ZINC PLATED	2
15	1TBP143	SPRING ADJUSTMENT ROD TOP ANGLE - TRIP EDGE	2
16	1TBP144	1-3/16" x 15-1/8" CENTER PIVOT PIN - TRIP EDGE	1
17	1TBP145	1" x 3-1/2" CLEVIS PIN	2
18	1TBP33	TRIP SPRING	4
19	1VP14	1" x 2-1/2" CLEVIS PIN	6
20	1TBP37	BLADE MARKER KIT - SET OF 2	1
ORDERABLE AS KITS - NOT SEPARATELY			
14	8SV-TBP142	SPRING ADJUSTMENT ROD - TRIP EDGE - ZINC PLATED - SET OF 2	1
15	8SV-TBP143	SPRING ADJUSTMENT ROD TOP ANGLE - TRIP EDGE - SET OF 2	1

Sno-Pro 3000 Trip Edge Illustrated Parts List - A-Frame and Lift Frame

A-FRAME



LIFT FRAME



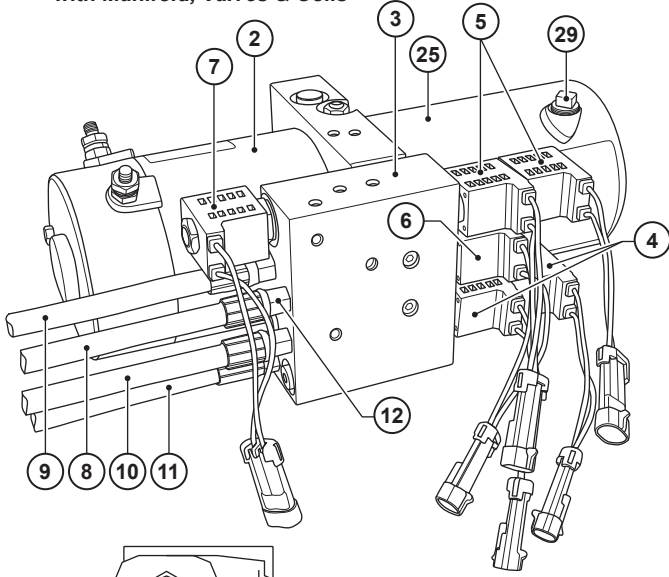
See Next Page

Sno-Pro 3000 Trip Edge Illustrated Parts List - A-Frame and Lift Frame Parts List

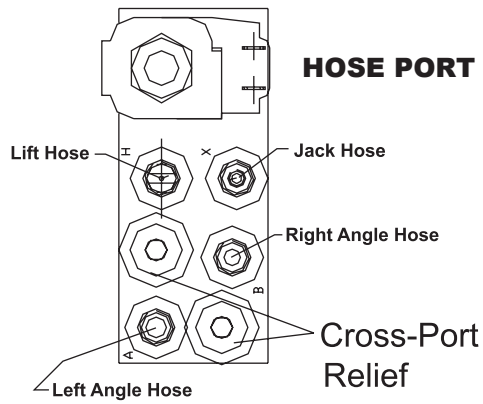
A-Frame and Lift Frame			
Ref #	Item #	Item Description	Qty.
1	1TBP29T	A-FRAME ONLY - TRIP EDGE	1
3	8SV-TEAF-B5	A-FRAME-SHELL ONLY (BLACK)	1
4	1TBP106T	JACK LEG - TRIP EDGE	1
5	KAF25-039SP	PLOW TRIP SPRING FOR UTILITY VEHICLE SNOWPLOW	1
6	V4208-22	3/8-16 x 2-1/2" EYE BOLT FOR UTILITY VEHICLE SNOWPLOW	1
7	1TBP104	1" x 6" HYDRAULIC SA CYLINDER TRIP EDGE	1
8	1TBP98G	90 DEGREE ELBOW	3
9	1TBP30	5/16" x 24" CHAIN	2
10	1TBP31	5/16" ANCHOR SHACKLE	4
2	1TBP38T	LIFT FRAME - TRIP EDGE	1
11	1TBP114	DRIVER'S SIDE LATCH HOOK	1
12	1TBP115	PASSENGER'S SIDE LATCH HOOK	1
38	1TBP107	SNAP LOCK HANDLE with VINYL JACKET	2
14	1TBP33B	SNAP LOCK SPRING	2
18	1TBP97	PLASTIC HANDLE COVER, 1.00 -4" WITH PRINTING FOR SNO-PRO 3000	1
15	1TBP39H	PLOW LIGHT KIT, DUAL HALOGEN LAMPS W/SWITCH KIT	1
17	1TBP58B	HYDRAULIC COVER - TRIP EDGE ORANGE POLYETHYLENE	1
19	1TBP149	2" x 7" COMPRESSION SPRING TRIP EDGE	2
20	1TBP152	UPPER SPRING GUIDE - TRIP EDGE	2
21	1TBP153	LOWER SPRING GUIDE - TRIP EDGE	2
NS	1TBP12J	LAMP HARNESS 12" JUMPER	2
NS	1UHJA	JACK ADAPTER 3000 SERIES (HYDRAULIC JACK ONLY)	1
24	1UHP	UNIVERSAL HARNESS-PLOW SIDE	1
25	1UHT	UNIVERSAL HARNESS-TRUCK SIDE	1
26	1TBP40V	LIFT ARM - V-PLOW & TRIP EDGE	1
27	1TBP24	3/16" x 2" COTTER PIN	7
NS	1TBP61A	12V MOTOR SOLENOID	1
NS	1TEP/S-HWK	HARDWARE BAG - TRIP EDGE POLY/STEEL HDWR KIT 4 SHACKLE	1
29	1TBP73	1" x 3" CLEVIS PIN	3
30	1TBP27	10" ANGLE PISTON - 1-1/2" x 10" STROKE SINGLE ACT HYD CYL	3
16	1TBP158	HOSE EXTENSION SPRING	1
32	1TBP92	1" x 6" CLEVIS PIN	1
34	1TBP101	PLUG MOUNT BRACKET FOR THE TWO PIECE HARNESS	2
35	1TBP145	1" x 3-1/2" CLEVIS PIN	2
36	1TBP98H	45 DEGREE ELBOW FOR LIFT PISTON	1
37	1VP14	1" x 2-1/2" CLEVIS PIN	1
ORDERABLE AS KITS - NOT SEPARATELY			
11	8SV-TBP114-B5	DRIVER'S SIDE LATCH HOOK - (BLACK)	1
12	8SV-TBP115-B5	PASSENGER'S SIDE LATCH HOOK - (BLACK)	1
38	9SV-SLH	SNAP LOCK HANDLE KIT (2 HANDLES with VINYL JACKET & 2 SPRINGS)	1
NS	1TBP39B	LIGHT KIT (SET OF 2) OLD STYLE	1

Sno-Pro 3000 Trip Edge Illustrated Parts List - Hydraulics

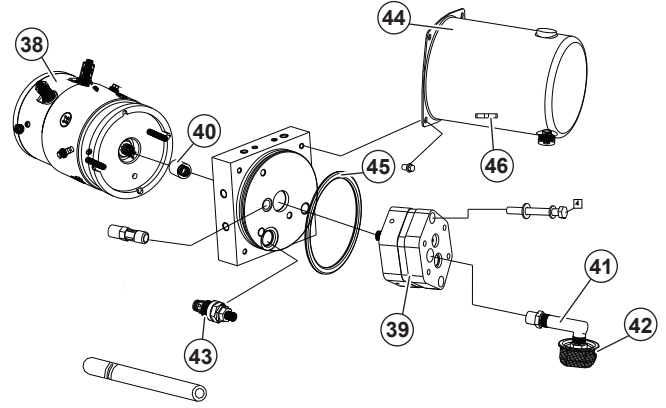
1 Sno-Pro Hydraulic Power Unit Complete with Manifold, Valves & Coils



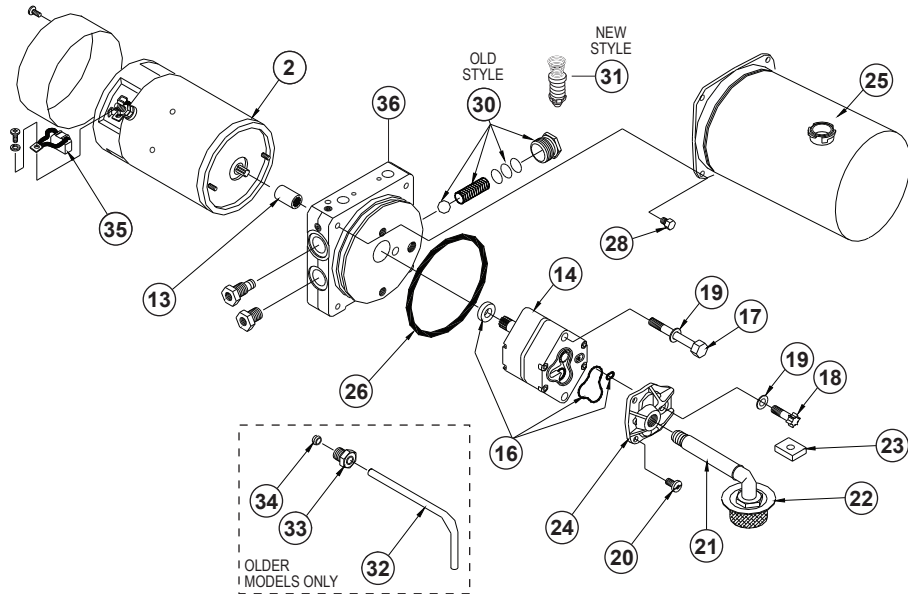
HOSE PORT LAYOUT



KTI Hydraulics - Aluminum End Head - Black Motor



SPX Hydraulics - Aluminum End Head - Gold Motor



Sno-Pro 3000 Trip Edge Illustrated Parts List - Hydraulics Parts List

Hydraulics Parts List			
Ref #	Item #	Item Description	Qty.
1	1TBP59APC	HYDRAULIC POWER UNIT COMPLETE W/MANIFOLD, VALVES & COILS	1
2	1TBM8	DC MOTOR 12V - DUAL POST	1
	1TBP59AP1	HYDRAULIC PUMP ASSEMBLY WITHOUT VALVES & COILS, SNO PRO	1
3	1TBP59AP2	MANIFOLD BLOCK ASSEMBLY WITH VALVES & COILS, SNO PRO	1
4	1TBM201	3P3W TANDEM CENTER ANGLE VALVE W/10 VOLT COIL KIT	1
5	1TBM202	3P3W OPEN CENTER LIFT/JACK VALVE W/10 VOLT COIL KIT	1
6	1TBM203	2P2W NC ZERO LEAK JACK RETRACT VALVE W/10 VOLT COIL KIT	1
7	1TBM204	2P2W NC ZERO LEAK FLOAT VALVE W/12 VOLT COIL KIT	1
8	1TBP98TE	JACK HOSE - 28" HYDRAULIC HOSE TRIP EDGE	1
9	1TBP98C	LIFT HOSE - 19.0" (PORT H) TRIP EDGE	1
10	1TBP98J	LEFT ANGLE HOSE - 45.0" (PORT B) TRIP EDGE	1
11	1TBP98I	RIGHT ANGLE HOSE - 35.0" (PORT A) TRIP EDGE	1
12	1TBP98E	BLOCK ADAPTER FOR JACK HOSE	1
SPX Hydraulics			
13	1TBM12	PUMP TO MOTOR COUPLING SPX	1
14	1TBM13	PUMP ASSEMBLY - SPX	1
16	1TBM14	PUMP O-RING KIT (NOT ORDERABLE SEPARATELY)	1
17	1TBM16	PUMP MOUNTING BOLT (NOT ORDERABLE SEPARATELY)	2
18	1TBM17	BOLT - SUCTION COVER 5/16" (INCLUDED IN 9SV-FLT FILTER KIT)	1
19	1TBM15	WASHER FLAT (INCLUDED IN 9SV-FLT FILTER KIT)	1
20	1TBM18	SCREW TAPTITE M6 x 12mm (INCLUDED IN 9SV-FLT FILTER KIT)	1
21	1TBM19	PLUMBING ASSEMBLY INLET (INCLUDED IN 9SV-FLT FILTER KIT)	1
22	1TBM20	FILTER (INCLUDED IN 9SV-FLT FILTER KIT)	1
23	1TBM21	COLLECTOR MAGNET (INCLUDED IN 9SV-FLT FILTER KIT)	1
24	1TBM29	SUCTION COVER (INCLUDED IN 9SV-FLT FILTER KIT)	1
25	1TBM23A	RESERVOIR - SNO-PRO 3000 W/ MTNG SCREWS (INCLUDED IN 9SV-RES KIT)	1
26	1TBM11	SPX RESERVOIR O-RING (INCLUDED IN 9SV-RES KIT)	1
27	1TBP63B	RESERVOIR CAP - INTERNAL (3/8" BRONZE) (INCLUDED IN 9SV-RES KIT)	1
28	1TBM22	RESERVOIR SCREW (Set of 4) (INCLUDED IN 9SV-RES KIT)	1
29	1TBP63A	RESERVOIR CAP - SNO-PRO 3000 EXTERNAL	1
30	1TBM25	FIXED RELIEF VALVE ASSEMBLY - (SPX OLD STYLE - USE 1TBM25A)	1
31	1TBM25A	FIXED RELIEF VALVE - CARTRIDGE STYLE - (SPX NEW STYLE)	1
32	1TBM26	RETURN TUBE	1
33	1TBM27	COMPRESSION NUT (NOT ORDERABLE SEPARATELY)	1
34	1TBM28	COMPRESSION SLEEVE (NOT ORDERABLE SEPARATELY)	1
35	1TBM30	MOTOR BRUSH KIT (NOT ORDERABLE SEPARATELY)	1
36	1TBM31	END HEAD (NOT ORDERABLE SEPARATELY)	1
37	1TBM32	RESERVOIR DRAIN PLUG	1
KTI Hydraulics			
38	1TBM13A	PUMP ASSEMBLY - KTI	1
39	1TBM12A	MOTOR TO PUMP COUPLING KTI	1
40	1TBM24	3/8" NPT FEMALE TO FEMALE PLASTIC STREET ELBOW	1
41	1TBM20	FILTER	1
42	1TBM37	FIXED RELIEF VALVE - CARTRIDGE STYLE - KTI	1
43	1TBM11A	KTI RESERVOIR O-RING	1
44	1TBM21	COLLECTOR MAGNET	1
ORDERABLE AS KITS - NOT SEPARATELY			
18 → 24	9SV-FLT	HYDRAULIC PUMP FILTER KIT	1
25 → 28	9SV-RES	HYDRAULIC POWER UNIT RESERVOIR KIT	1

Sno-Pro 3000 Trip Edge Assembly Instructions

Section 1 • Step 1. Moldboard Assembly

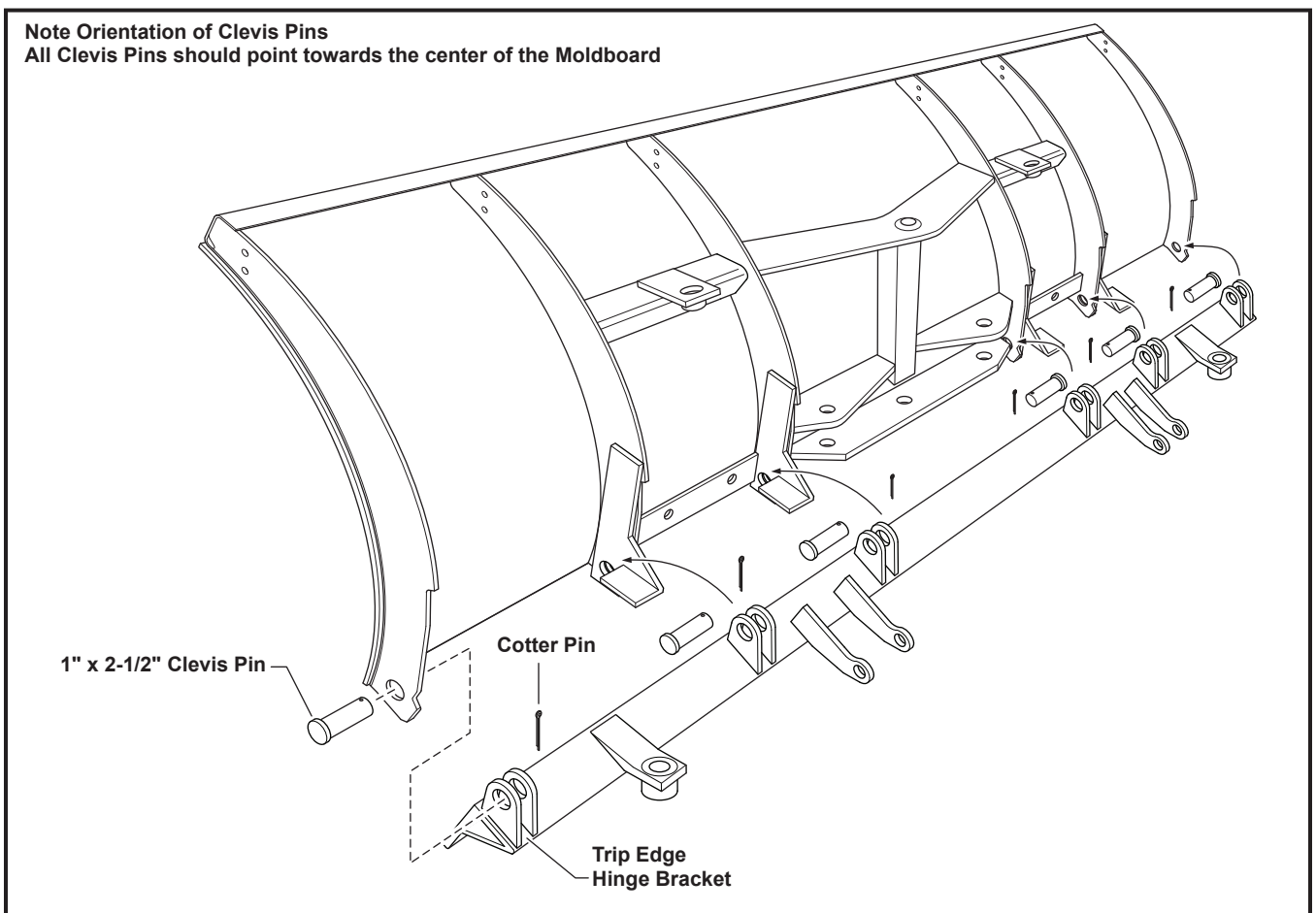


NOTE

Assembly instructions in Steps 1-3 are Factory Assembled components. These instructions are provided for future reference which may be necessary to perform service or repairs.

- A. Lay Moldboard on its face. Place cardboard under the Moldboard top bend to prevent paint damage. It will be necessary to lift the bottom edge of the Moldboard up to ease assembly. Support the bottom edge with 2 blocks of wood.
- B. Locate six 1" x 2-1/2" (1VP14) Clevis Pins and six 3/16" x 2" Cotter Pins. Align the Trip Edge Hinge Brackets with the Pivot holes located at the bottom of the Moldboard Ribs. Starting at the Driver's Side, install (1) Clevis Pin through each Hinge Bracket and Moldboard Rib. Secure each Clevis Pin with a Cotter Pin.

Figure 1. Mount Trip Edge to Moldboard

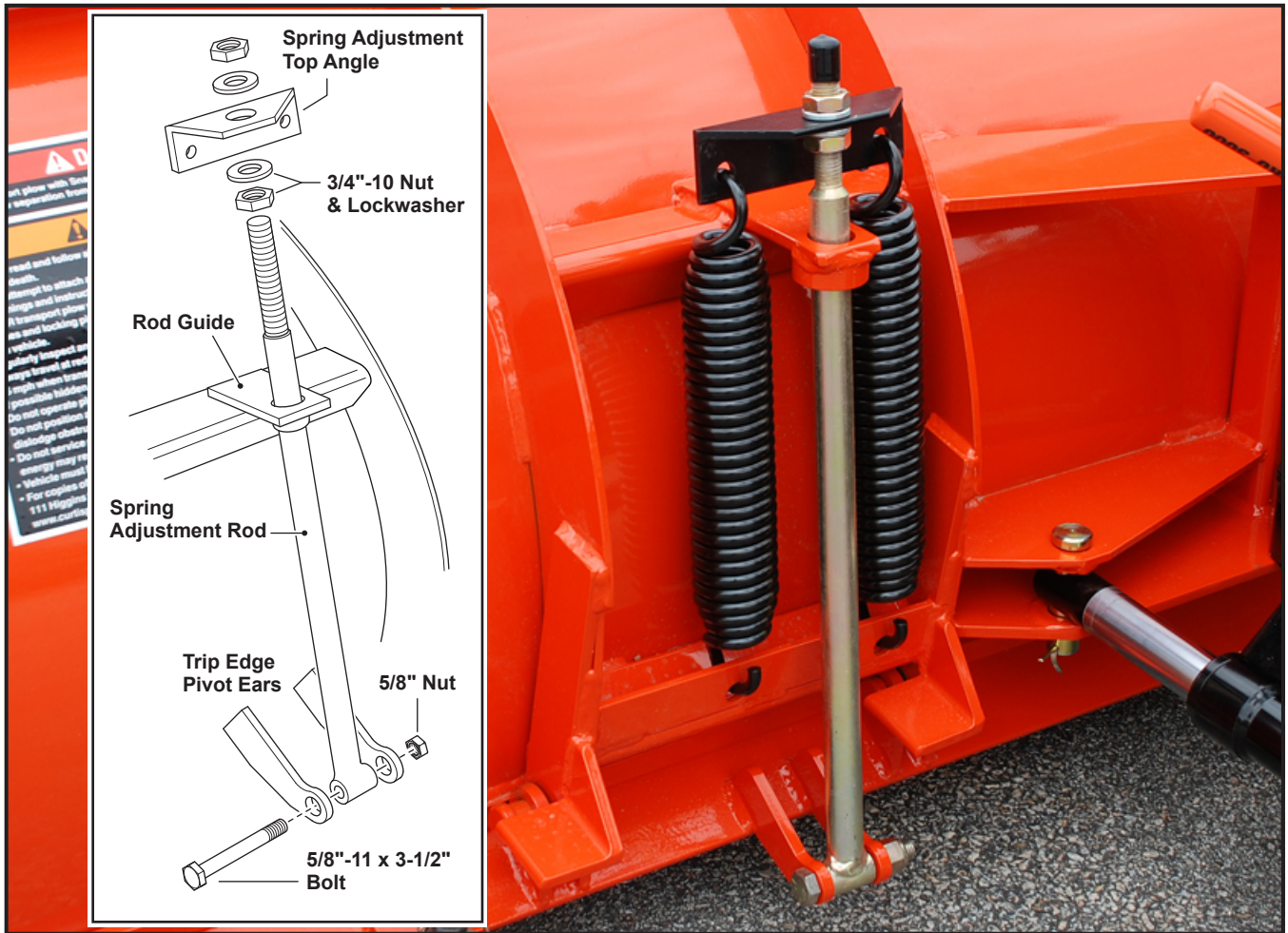


Step 2. Trip Spring Installation

- A. Once the Trip Edge is secured, hook the bottom end of the 2 Trip Springs (1TBP33) to the Lower Spring Mounts located at the bottom of the Moldboard. Hook the top end of the Trip Springs to the Top Adjustment Angle (1TBP143). Orient the Top Angle as shown in Figure 2.
- B. Slide one Spring Adjustment Rod (1TBP142) through the Rod Guide welded to the back of the Moldboard. Thread one 3/4"-10 Nut and Lock Washer onto the Spring Adjustment Rod. It is necessary to thread the nut to the end of the threads. Slide the Spring Adjustment Rod through the center hole of the Top Angle. Loosely thread one 3/4"-10 Nut and Lock Washer onto the top of the Spring Adjustment Rod. Refer to Figure 2.

Sno-Pro 3000 Trip Edge Assembly Instructions

Figure 2. Mount Trip Frame to Moldboard



- C. Orient the Lower Tube end of Spring Adjustment Rod between the Pivot Ears on the back of the Trip Edge. Secure the Spring Adjustment Rod with 5/8"-11 x 3-1/2" Bolt and Nylock Nut.
- D. Tighten the lower 3/4"-10 Nut up to the Spring Adjustment Top Angle to remove any slack from the Trip Spring. Once tension is applied to the Trip Springs, tighten the top 3/4"-10 Nut down to the Spring Adjustment Top Angle. Repeat assembly sequence on opposite side.

Step 3. Skid Shoe Installation

- A. Install each Skid Shoe (1TBP50T) by passing the shaft through the bottom of the Skid Shoe Holder that is welded to the Trip Edge. Install the supplied Washers on the Skid Shoe Shaft above the Skid Shoe Holder. Fasten the Skid Shoe with the provided Pin. Refer to Figure 3.

IMPORTANT

Do not install standard Skid Shoes on a Trip Edge Plow.

The extended Shaft length of a standard Skid Show will cause damage to the Plow when tripped. Use Curtis PN 1TBP50T Skid Shoes only.

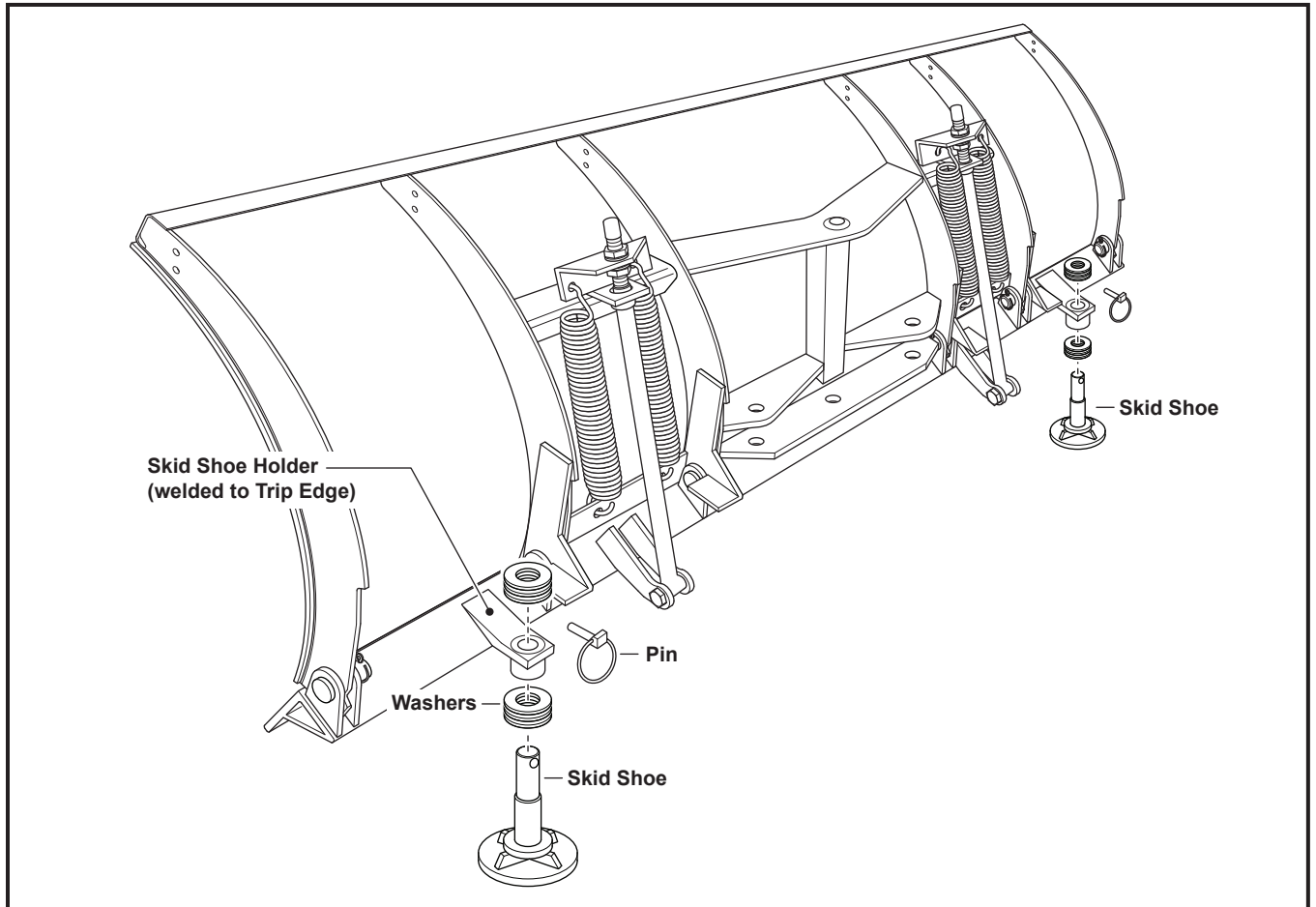


NOTE

The number of Washers used above and below the Skid Show Holder will determine the height of the Cutting Edge from the ground surface. This adjustability is useful when plowing road surfaces made of loose material such as gravel and dirt.

Sno-Pro 3000 Trip Edge Assembly Instructions

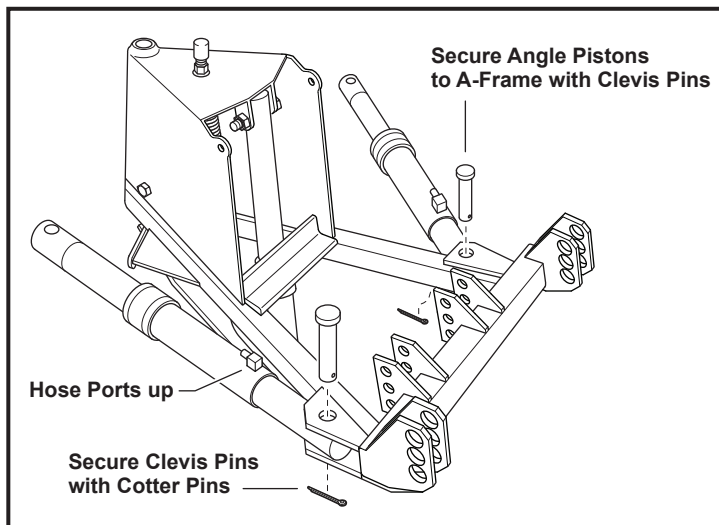
Figure 3. Install Skid Shoes



Step 4. A-Frame Installation

- A. Locate the partially pre-assembled A-Frame Assembly and two 1-1/2" x 10" Angle Cylinders (1TBP27). The two Angle Cylinders will be mounted to the A-Frame Cylinder mounts located on each side of the rear of the A-Frame. Mount the barrel end of each Angle Cylinder to the A-Frame with the Hose Port facing up. Secure each Angle Cylinder with one 1" x 3" Clevis Pin (1TBP73) and Cotter Pin.

Figure 4. Secure Angle Cylinders to A-Frame



- B. Remove the Shipping Plug from each Hose Port on each Angle Cylinder. Install the N.P.T. end of one 90 degree Elbow (1TBP98G) in each Hose Port. Tighten the fitting so the J.I.C. end points toward the Moldboard.

IMPORTANT

Do not use Teflon Tape on the Hydraulic Fittings as it may contaminate the Hydraulic System causing a malfunction. Use a high quality paste type thread sealant on all N.P.T. fittings.

Sno-Pro 3000 Trip Edge Assembly Instructions

Step 5. Mount A-Frame to Moldboard

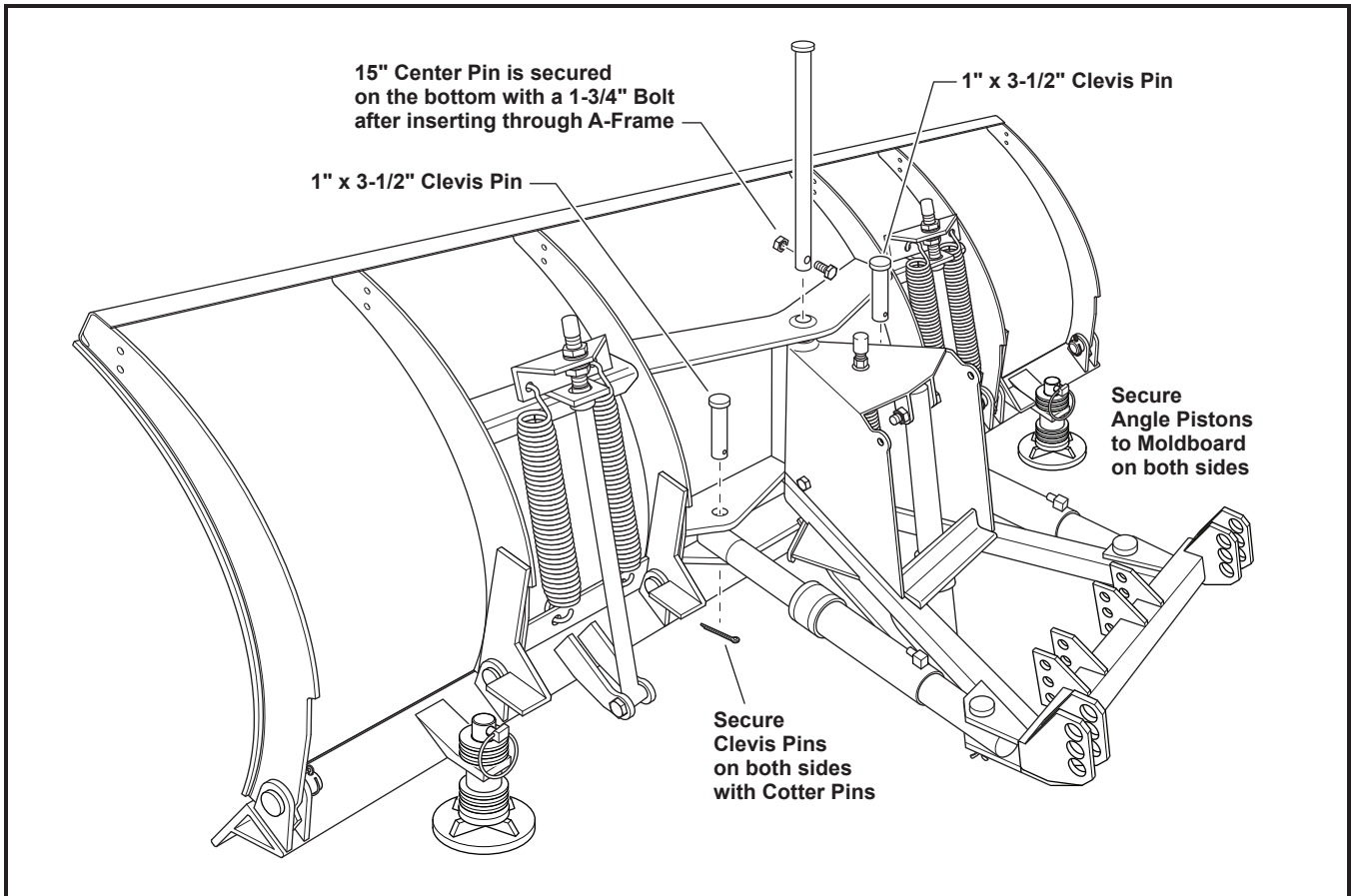
A. With Moldboard still positioned face-down, lift the A-Frame over the center section of Moldboard.



NOTE The A-Frame is a two person lift. Seek assistance when mounting.

Align the A-Frame Pivot Tube with the Upper and Lower Pivot Bushings on the Moldboard. Install the 13/16" x 15" Center Pin (1TBP144) through the Moldboard and A-Frame. Secure the Center Pin by installing one 1/4"-20 x 1-3/4" Bolt and Nylock Nut through the hole located at bottom of Center Pin.

Figure 5. Mount A-Frame to Moldboard



B. Angle the A-Frame fully to one side and align the Angle Cylinder end with the mounting holes on the back of the Moldboard. Secure the piston using one 1" x 3-1/2" (1TBP145) Clevis Pin and Cotter Pin. Swing the A-Frame to the opposite side and repeat the steps so that both Angle Cylinders are now secured to the Moldboard.



NOTE It may be necessary to extend the Angle Cylinder Piston Rod 1-2" to make the connection to the Moldboard. To do this, insert a long pin or ratchet handle through the Piston Rod and work the Piston Rod side-to-side while pushing downward.

C. Return the A-Frame to the center position after the Angle Cylinders are secured to Moldboard.

D. Using the A-Frame as a lever, grasp the A-Frame by the back cross-strut and pull back, raising the Moldboard to a vertical position.

Sno-Pro 3000 Trip Edge Assembly Instructions

Step 6. Lift Frame Mounting

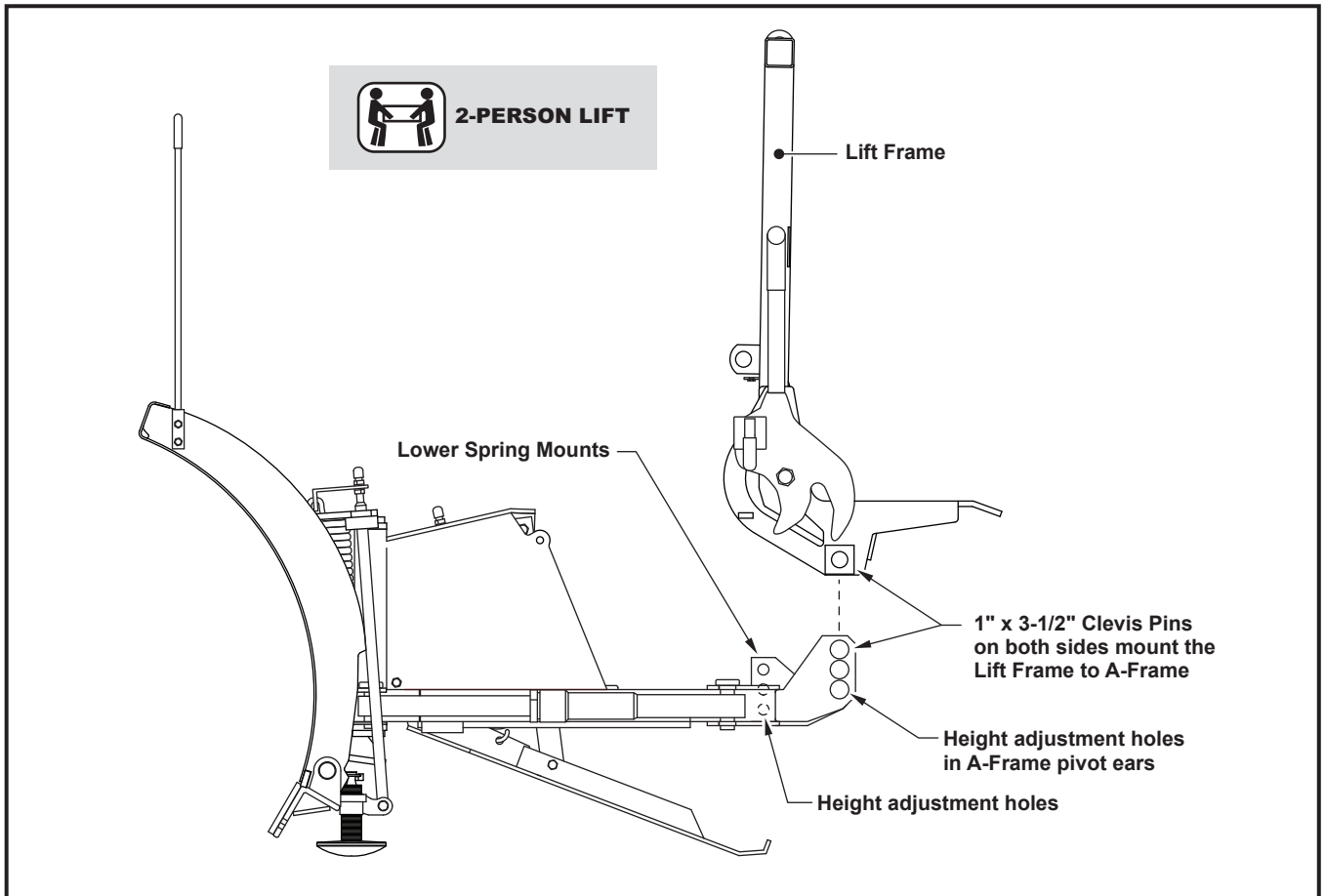
- A. If the Snow Pow is not going to be mounted on a vehicle and is going into stock, the middle set of mounting holes is a good place to start.

IMPORTANT

Determine the appropriate attachment height for the vehicle the Snowplow is to be installed on. For information on attachment heights see Page 22.

- B. Use a block to level the A-Frame. This will provide a secure base for the following Steps.

Figure 6. Mount Lift Frame to A-Frame



- C. With assistance, lower the Lift Frame (1TBP38T) over the rear A-Frame Pivot Ears. Align the Lift Frame mounting holes with the appropriate height adjustment holes in the Pivot Ears. Install one 1" x 3-1/2" Clevis Pin (1TBP145) and Cotter Pin in each side of the A-Frame/Lift Frame. Refer to Figure 6.

- D. Assemble Spring Guides by sliding one Blue Lift Frame Spring (1TBP149) over the Receiver Tube on the Lower Spring Guide (1TBP153). Insert the Rod of the Upper Spring Guide (1TBP152) into the Receiver Tube on the Lower Spring Guide. Refer to Figures 7, 8 and 9 for these Steps.

- E. Align the Mounting Bushing on the Lower Spring Guide with appropriate hole in the Spring Mounting Tabs located on the A-Frame Rear Cross-Tube. Install one 5/8"-11 x 3-1/2" Bolt and Lock Nut to secure. Repeat sequence on opposite side.



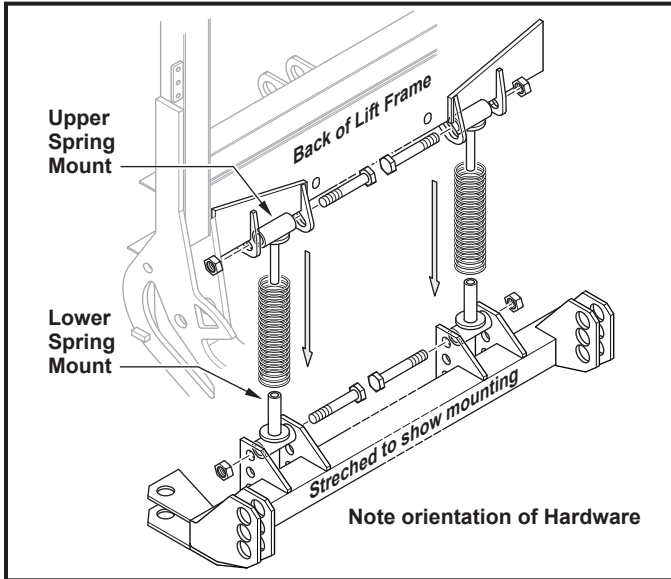
NOTE Install all four Mounting Bolts pointing towards the ends of the Moldboard.

Sno-Pro 3000 Trip Edge Assembly Instructions

Step 6. Lift Frame Mounting *continued*

- F. Rotate the Lift Frame upwards and align the Mounting Bushing on the Upper Spring Guide with the Mounting Tabs located under the Lift Frame Lower Cross-Tube. Install one 5/8"-11 x 3-1/2" Bolt and Lock Washer to secure.

Figure 7. Spring Guide Install View



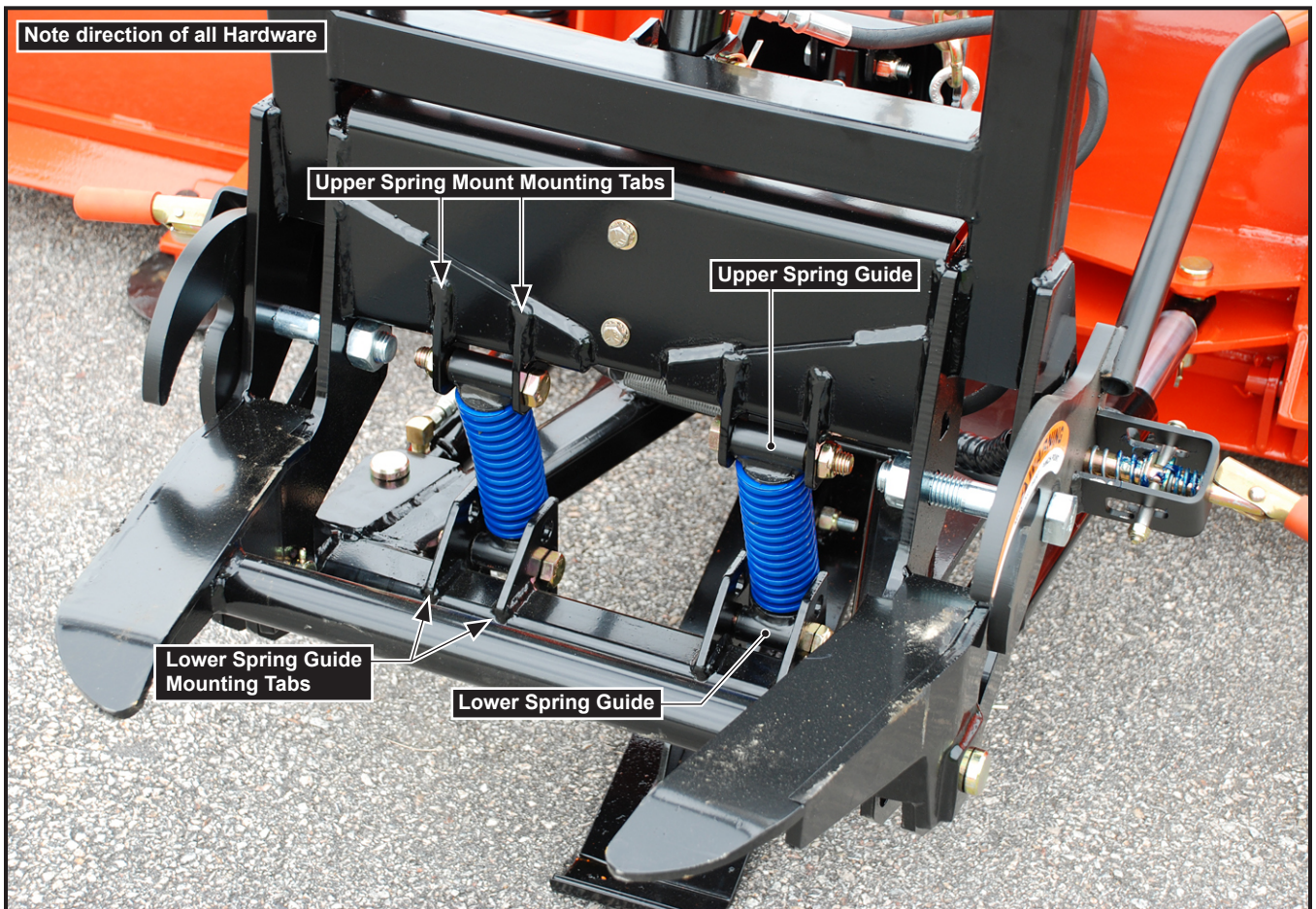
IMPORTANT

The Mounting Holes for the Lower Spring Guide should directly correspond to the Height Adjustment Holes used to attach the Lift Frame to the A-Frame.

IMPORTANT

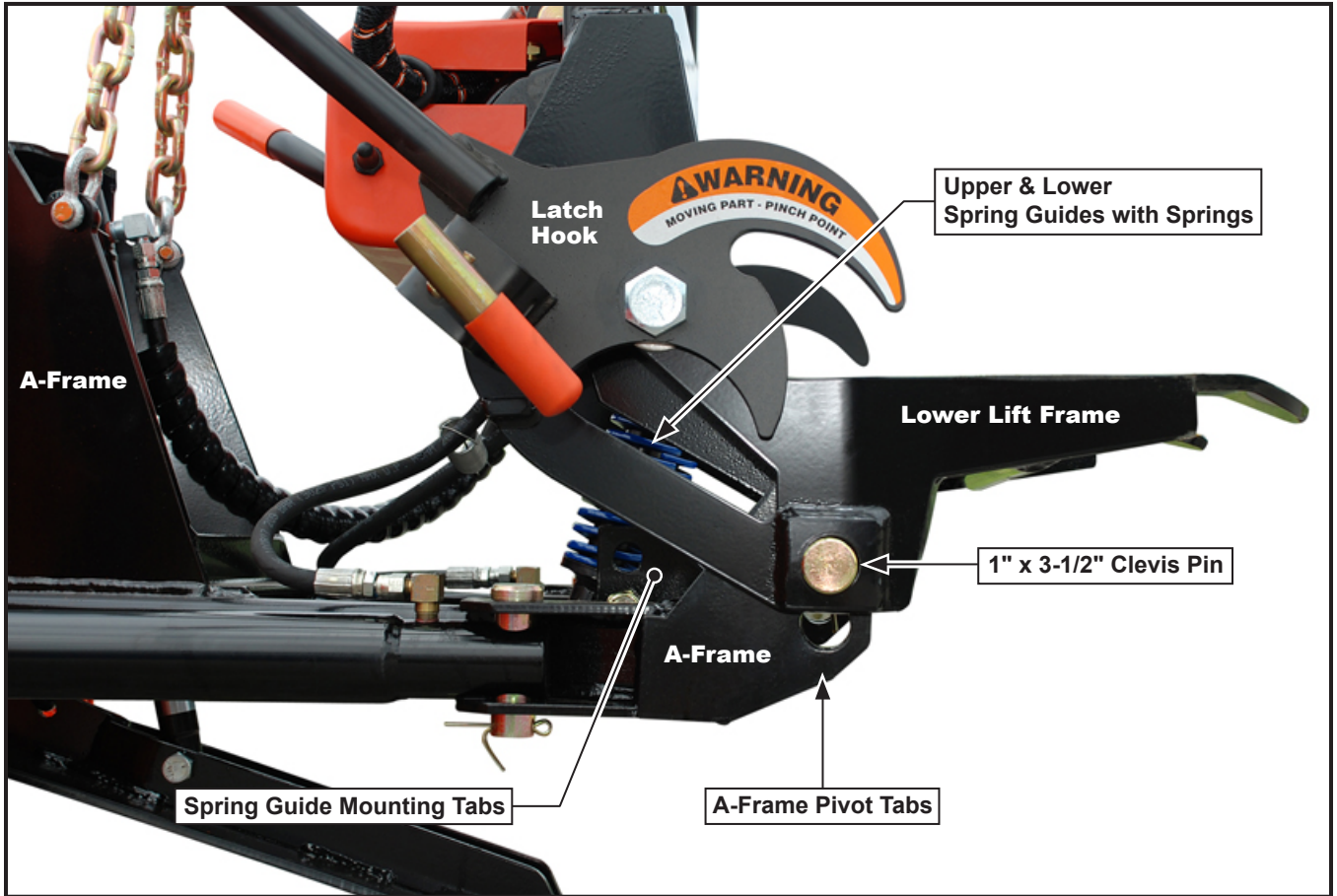
After 2 hours of use, all bolted assemblies on the entire Plow should be rechecked for proper torque specifications and tightened as needed.

Figure 8. Spring Guide Reference View



Sno-Pro 3000 Trip Edge Assembly Instructions

Figure 9. A-Frame/Lift Frame Side Reference View

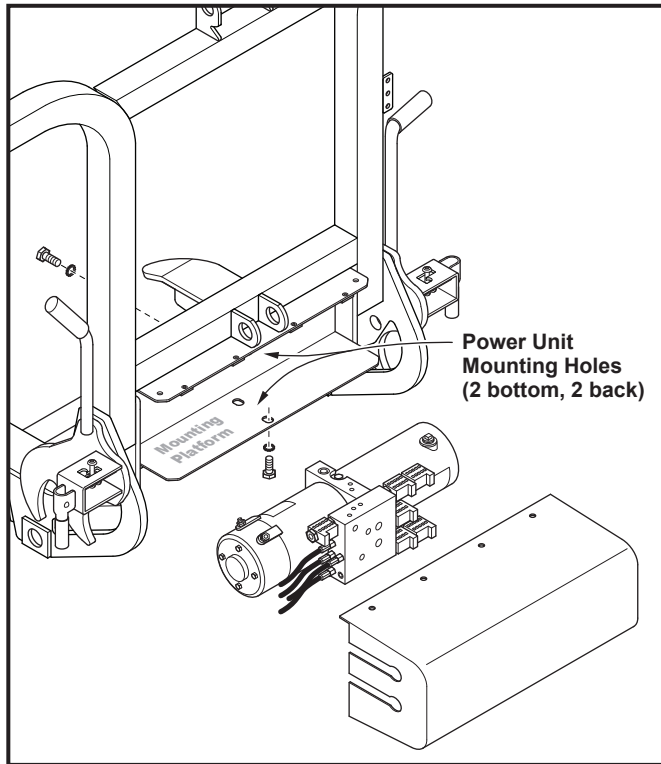


Sno-Pro 3000 Trip Edge Assembly Instructions

Step 7. Mount Hydraulic/Electrical Power Unit to Lift Frame

- A. Remove the Electric/Hydraulic Power Unit (1TBP159APC) from the shipping carton. Unbundle the Harness and Hoses. Rest the Power Unit on the Mounting Platform located on the front of the Lift Frame.

Figure 10. Mount Electrical/Hydraulic Power Unit



- B. Orient the Unit as shown in Figure 10. The Hydraulic Manifold Block should be facing the Moldboard. Align the two bottom and two rear mounting holes on the Power Unit with the mounting holes on the mounting platform.
- C. Install one External Star Washer over each of the four 3/8"-24 x 3/4" Bolts. Apply two drops of medium strength thread locker to the Bolts.
- D. Install two Bolts with Washers into the Bottom and Rear Mounting holes and torque each Bolt to 45 ft./lbs.
- E. Route the Lift Hose (19"-1TBP98C) and the Right Side Angle Hose (35"-1TBP98I) towards the Passenger's Side of the Plow. Route the Left Side Angle Hose (45"-1TBP98J) and the Electrical Harness towards the Driver's side of the Plow.
- F. The remaining parts will be mounted on the Lift Frame before all Hydraulic Hose connections are made.

Step 8. Mount Lift Arm to Lift Frame

- A. Locate Lift Arm (1TBP40V) and align Rear Mounting Holes with the Upright Tabs located on the Upper Lift Frame Cross-Tube. Secure the Lift Arm using one 1" x 6" Clevis Pin (1TBP92) and Cotter Pin.
- B. Align barrel end Mounting Hole of one 1-1/2" x 10" Lift Cylinder (1TBP27) with the forward facing Mounting Tabs located on the front of the Lift Frame just above the Electrical/Hydraulic Power Unit installed in Step 7. Secure the Lift Cylinder with one 1" x 3" Clevis Pin (1TBP73) and Cotter Pin.

IMPORTANT:
Before you Start...

When installing Lift Cylinder, orient the Hose Port towards the Passenger's Side of the Lift Frame.

- C. Align the Top mounting hole of the Lift Cylinder with the remaining 1" hole of the Lift Arm and secure the Lift Cylinder to the Lift Arm with one 1" x 2-1/2" Clevis Pin (1VP14) and Cotter Pin.
- D. Install the N.P.T. end of the 45 degree Elbow (1TBP98H) into the Hose Port in the Lift Cylinder. Tighten the Elbow so the J.I.C. end of the Elbow points toward the front of the Plow.

IMPORTANT

Do not use Teflon Tape on the Hydraulic Fittings as it may contaminate the Hydraulic System causing a malfunction. Use a high quality paste type thread sealant on all N.P.T. fittings.

Sno-Pro 3000 Trip Edge Assembly Instructions

Figure 11. Lift Arm and Cylinder Mounting

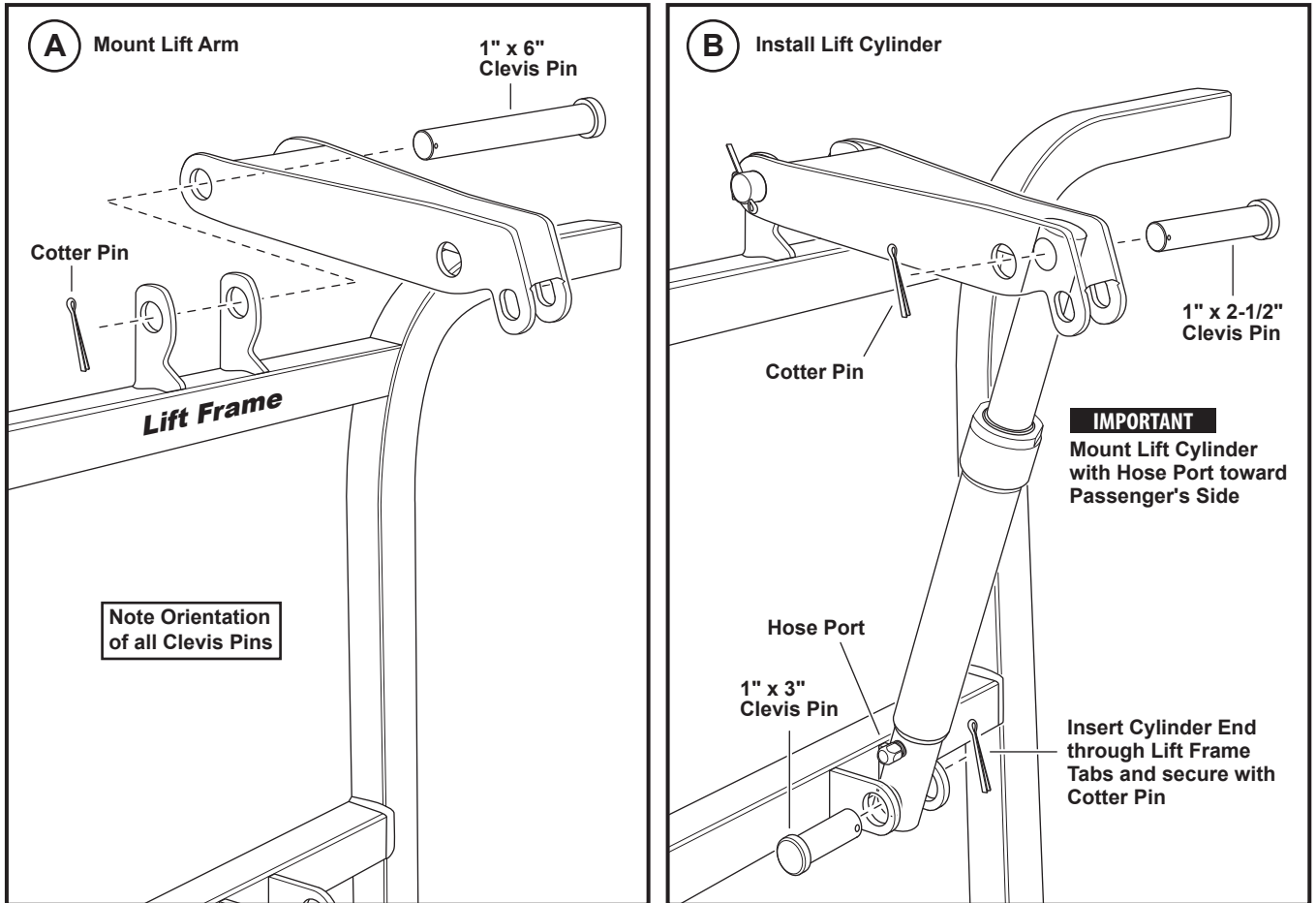
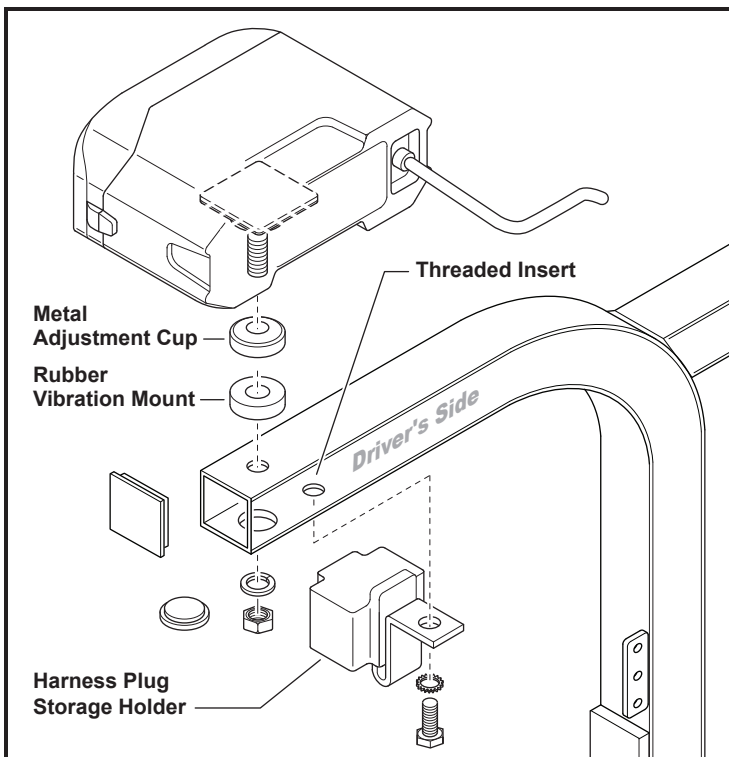


Figure 12. Light Mounting



Step 9. Mount Plow Lights to Lift Frame

- A. Mount Lights (1TBP39H) to the ends of the Lift Frame Light Bars.
- B. Locate Harness Plug Storage Holder (1TBP101) in the shipping cartons. The Mounting Bracket will be secured to the Lift Frame with one 1/2"-13 x 1" Bolt and Star Washer. The factory installed threaded insert is indicated in Figure 12. The Mounting Bracket should be facing the front of the Plow.

IMPORTANT

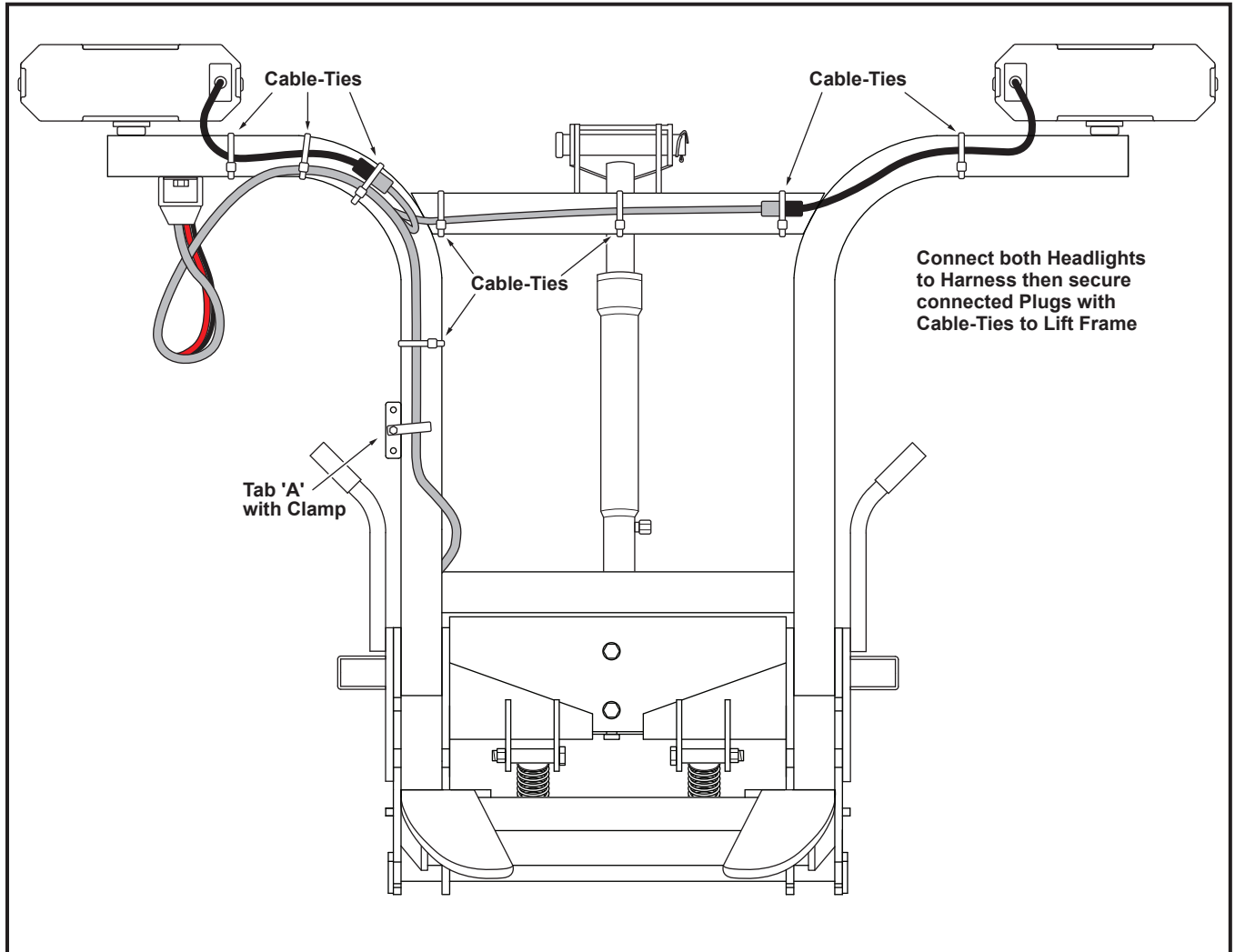
Plow Light Beams must be aimed once the Plow is installed on a vehicle. See Page 24 for detailed information.

Sno-Pro 3000 Trip Edge Assembly Instructions

Step 10. Harness Routing

- A. The Harness will be secured to the Lift Frame using supplied Harness Clamp, Bolts, Nuts and Wire Ties.
- B. Route Plow Harness in front of Lift Frame, then up the inside of the Left tube (Driver's side). Secure Harness to Tab 'A' using supplied P-Clamp. Tab 'A' has 3 mounting holes to allow proper Harness reach for different height trucks. Choose the appropriate mounting hole position that will be used to attach the Harness to the Lift Frame. This hole location directly corresponds to the height adjustment holes used in Step 6. Secure the Harness to Tab 'A' with a 1-1/4" P-Clamp and 1/4-20" x 3/4" Bolt and Locknut.
- C. Plug the Plow Light Connectors into Harness and Wire-Tie the connected Plugs to the Lift Frame.

Figure 13. Secure Harness to Lift Frame



Routing of Harness and location of each Harness Clip and Wire Tie is very important so that it will 'flex' properly when the Plow is lowered or raised. Failure to correctly route and secure Harness may result in severe damage.

- D. Secure the remainder of Harness with supplied Wire-Ties in locations shown in Figure 13.



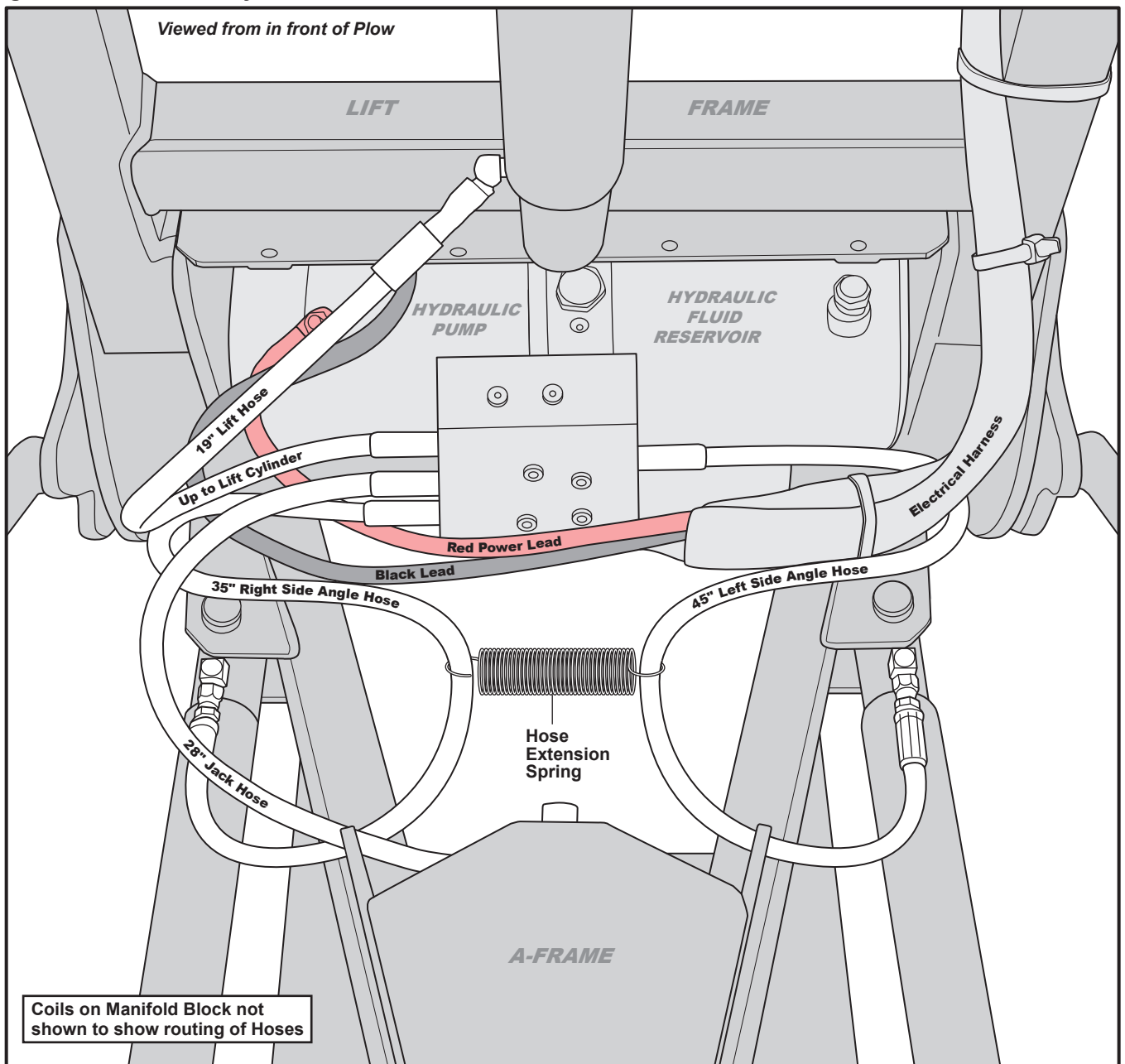
After securing Harness, with Main Plug stored in Plug Storage Holder, it is important to move the Driver's Side Latch Hook through its cycle of motion by hand to ensure clearance between Harness and any moving parts. Failure to properly secure Harness could result in severe damage to the Harness.

Sno-Pro 3000 Trip Edge Assembly Instructions

Step 11. Route and Connect Hydraulic Hoses

- A. Secure Lift Hose (1TBP98C:19") to the 45 degree Elbow previously installed on the Lift Cylinder.
- B. Secure Right Side Angle Cylinder Hose (1TBP98I:35") to the 90 Degree Elbow installed on Driver's Side Angle Cylinder.
- C. Secure Left Side Angle Cylinder Hose (1TBP98J:45") to 90 Degree Angle Cylinder on Passenger's Side Angle Cylinder.
- D. Install one P-Clamp over each Angle Hose. P-Clamp mounting holes are located at each end of the Pump mounting platform. Attach each P-Clamp to the underside of the Pump Mounting platform and secure with one 1/4-20" x 3/4" Bolt and Nylock Nut.
- E. Secure Jack Hose (1TBP98TE:28") to the 90 Degree Fitting located on the Jack Cylinder.
The Hose must be routed under the Angle Iron that is welded across the A-Frame Tubes.

Figure 14. Connect All Hydraulic Hoses



Sno-Pro 3000 Trip Edge Assembly Instructions

Step 11. Route and Connect Hydraulic Hoses (*continued*)

- F. Once Hoses are securely attached, remove the Filler/Breather Cap from the Reservoir. Fill the Reservoir with Curtis Hi-Performance Snowplow Oil (P/N: 1TBP123). Fill the Reservoir within 1/2" of the bottom of the filler neck. Re-install Filler/Breather Cap.



NOTE

Once the Plow has been fully operated through all functions, the fluid level in the Reservoir will be reduced and will require additional fluid.

- G. Slide the Plastic Pump Cover (1TBP58B) over the Electrical/Hydraulic Power Unit. While positioning the Cover, align the Hoses and Harness with the slots in the side of the Cover.

Align the Lift Hose with the Upper slot on the Passenger's side of the Cover.
Align the Right Angle Hose with the Lower Slot in the Passenger's side of the Cover.
Align the Left Angle Hose with the Lower slot in the Driver's side of the Cover.
Align the Electrical Harness with the Upper slot of the Driver's side of the Cover.

- H. Each Hose and Harness has a pre-installed Rubber Grommet. When inserting the Hoses and Harness into the Cover slots, slide the Grommets into the slot as well. This will prevent chafing of the Hoses and Harness. Install Hose Extension Spring (1TBP158) as shown in Figure 14.

- I. Align the mounting holes located on the top of Pump Cover with the four weld nuts located on the top surface of the Pump Mounting platform. Secure the Pump Cover using four 1/4"-20 x 5/8" Bolts and Flat Washers.

Step 12. Lift Chains

- A. Attach the two Lift Chains (1TBP30) to the Lift Arm using an Anchor Shackle (1TBP31) on both ends of each Chain. Select the appropriate link in the Lift Chains to hold the Lift Frame perpendicular to the floor.

Figure 15. Lift Chains Installed



Sno-Pro 3000 Trip Edge Assembly Instructions

Section 2. Plow Setup • Step 1. X Height Procedure

- A. Install Mount Kit on vehicle referring to Mount Kit installation procedure. Wire vehicle referring to Pages 25 through 27 for detailed Harness & Control System installation information.
- B. With vehicle parked on level ground, properly ballasted for snow plow use and no load in vehicle other than driver, measure the distance from the ground up to the centerline of the Latch Bar on the Receiver as shown. Assistance will be needed for this step.
- C. Once 'X' dimension is measured, use the Application Chart below to determine which hole locations to use when attaching the Lift Frame to the A-Frame.

Figure 16. Determine X Height

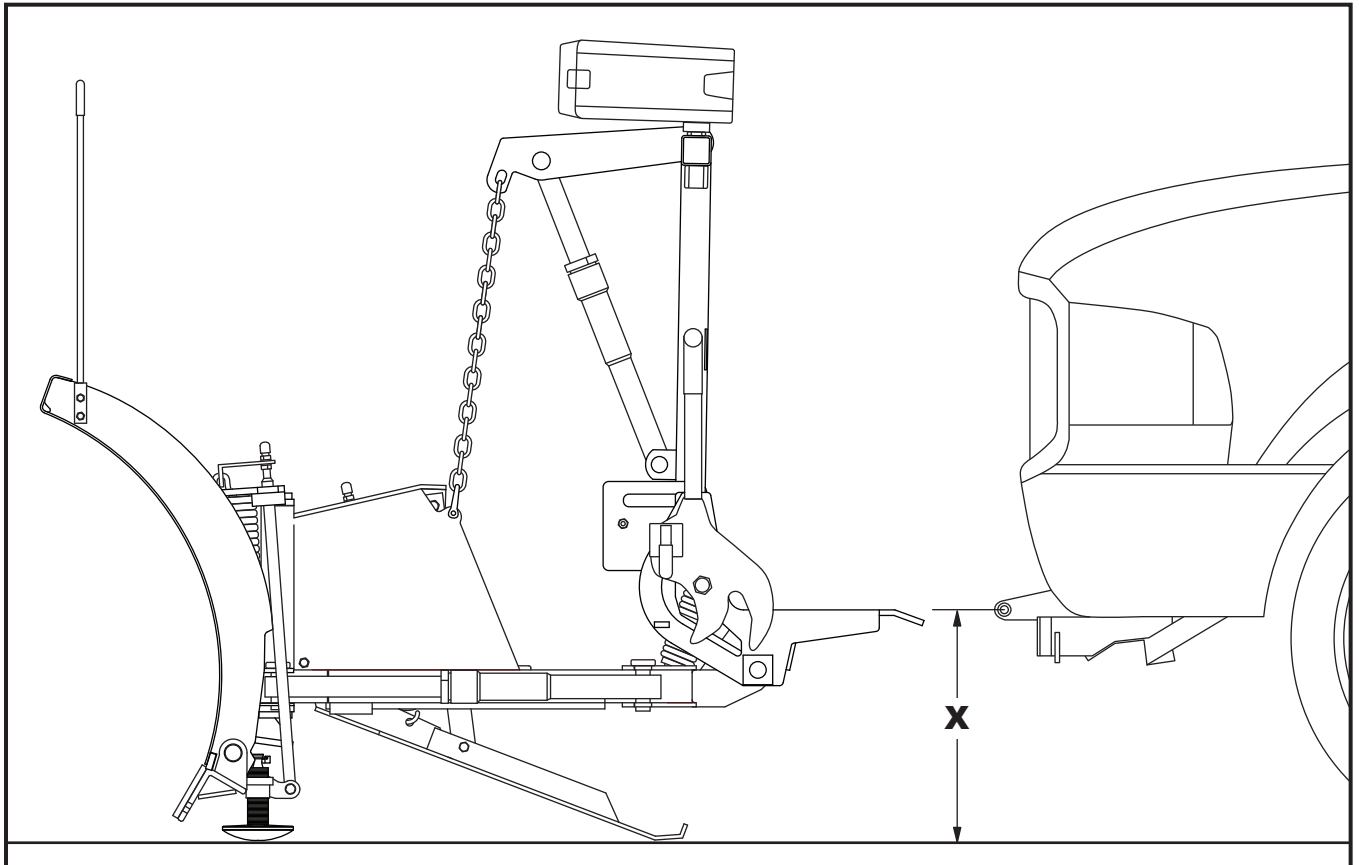
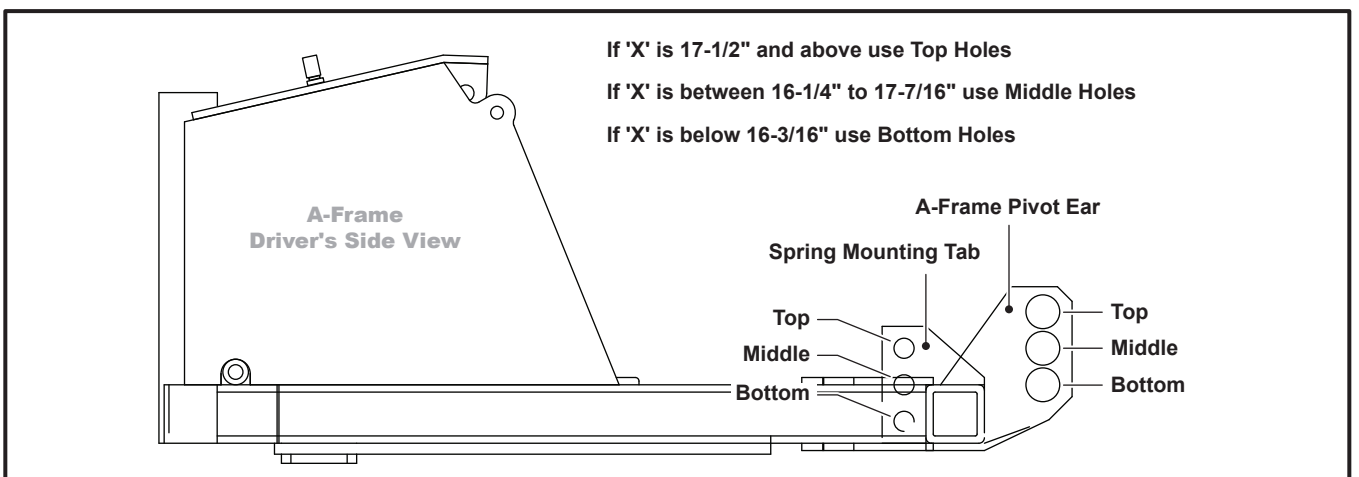


Figure 17. Determine X Height for A-Frame Mounting Holes



Sno-Pro 3000 Trip Edge Assembly Instructions

Step 2. Initial Vehicle Attachment Setup



WARNING

Failure to properly perform the Snowplow setup procedure may result in compromised attachment and Plow lift performance.

- A. Once Plow is fully assembled and the Hydraulic Reservoir is filled with Fluid, align the vehicle with the Plow.
- B. Before adjusting the attachment height, ensure that the Driver's Side Latch Hook is in the upright position and the Snap Lock Pin is in the locked (detented) position.
- C. Adjust the attachment height of the Plow by pulling up on the Jack Leg Release Lever located at the front of the A-Frame. While holding the lever up, pull up on the Driver's Side Latch Hook Assist Lever, this will raise the attachment height.



NOTE

For proper adjustment, the top plane of the Lift Attachment Forks should be at approximately the same height as the inside of the vehicle Mount Kit Receiver Top Plate.

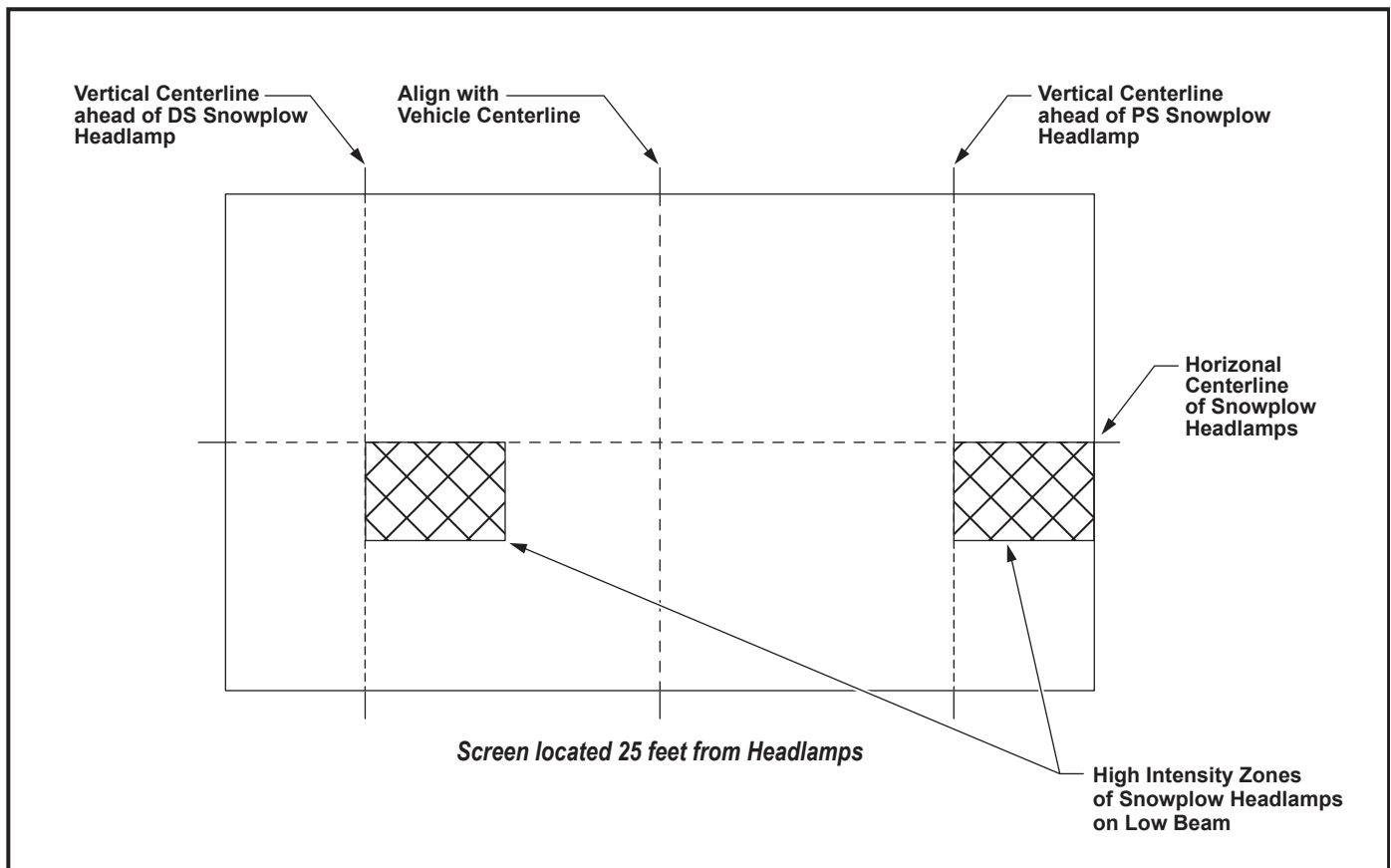
- D. Release Snap Lock Pins by pulling upwards on the Snap Lock Handle. Rotate both Latch Hooks forward to the down position. Put the Snap Lock Pins in the loaded position by pushing the Snap Lock Handle down towards the Latch Hook.
- E. Drive truck forward into Plow to engage Latch Hooks and Snap Lock Hitches. Stop vehicle. Once Latch Hooks are behind Latch Bar, verify full engagement of Latch Hooks and Snap Lock Hitches by independently manually rotating each Assist Lever to its full upright position.
- F. Push in and turn both Snap Lock Handles counter-clockwise to position Locking Pin in locked (detented) position.
- G. After the first attachment, plug in electrical connectors and fully raise the Plow. Angle the Plow fully from side to side. Lower Plow and repeat 2-3 more times. Check and refill the Hydraulic Fluid Reservoir with SnowPlow Oil with Lift Piston retracted and reinstall Breather Cap.
- H. Lower the Plow completely. Unplug both Plow Side Harness Plugs.
- I. Lower the Jack Leg by pulling up on the Jack Leg Release Handle. The Jack Leg will automatically extend to the ground. Return the Jack Leg Release Handle to the neutral position and Jack Leg will be held in place for removal.
- J. Adjust Lift Chains to hold the top plane of the Lift Frame Attachment Forks parallel to the ground. This will ensure the proper adjustment for reattachment.
- K. Push in and turn both Snap Lock Handles clockwise to the unlocked (non-detented) position.
- L. Install Weather Caps onto both Truck-Side Harness Plugs.
- M. Pull both Snap Lock Handles up to horizontal (extended) position for Unloaded Position.
- N. Back truck away from Plow assembly.

Sno-Pro 3000 Trip Edge Assembly Instructions

Step 3. Plow Light Beam Aiming Procedure

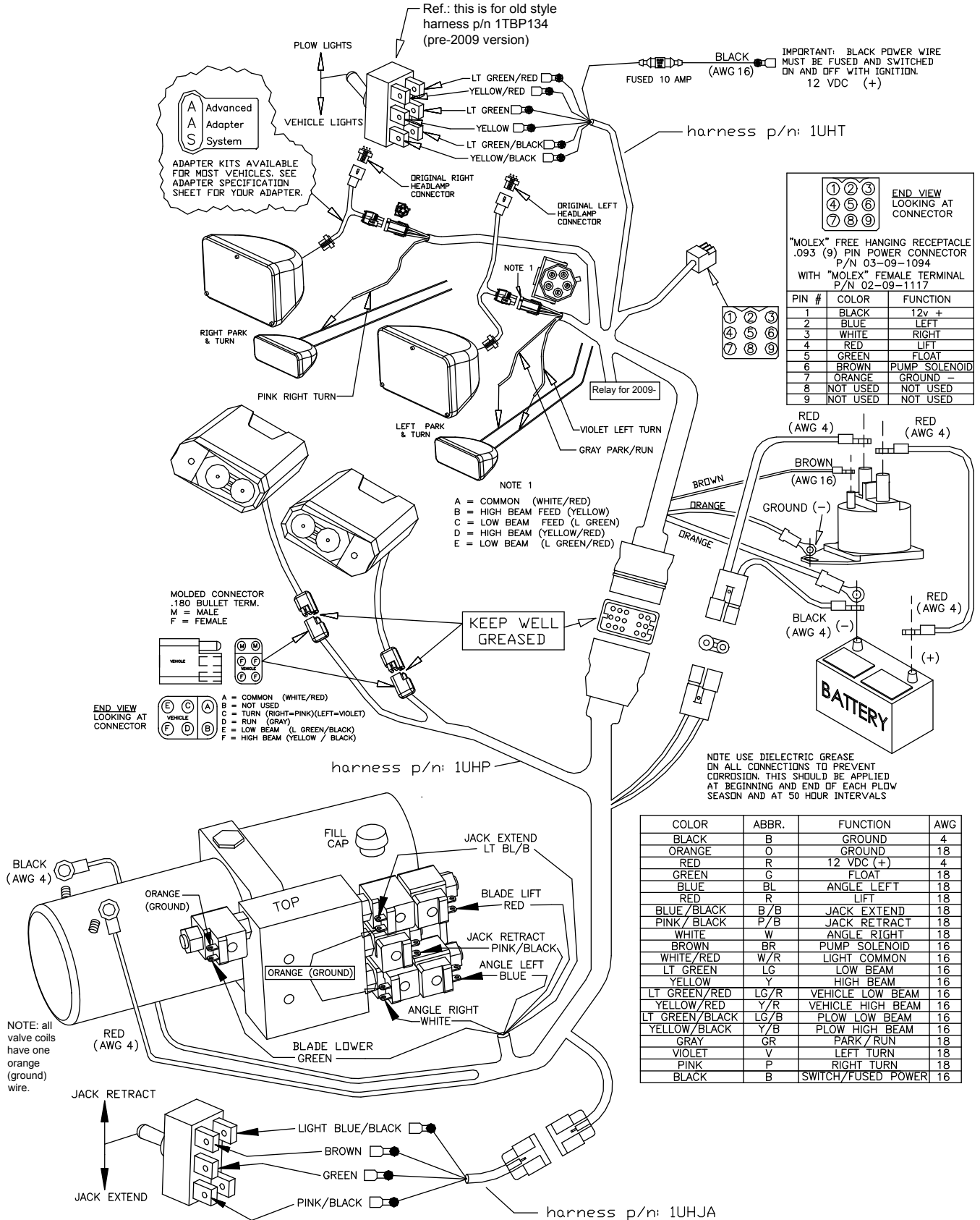
- A. Vehicle must be on level surface 25 feet in front of matte-white screen, such as a garage door. The screen should be perpendicular to both the ground and vehicle centerline.
- B. Vehicle should be ballasted for snow plowing with a driver. Snowplow Blade should be in place and in the raised position.
- C. This list shows points listed by the Society of Automotive Engineers (SAE) pertinent to headlamp aiming in specification #SAE J599d.
 1. Remove ice or mud from under fenders.
 2. See that no tire is noticeably deflated.
 3. Check Springs for sag or broken leaves.
 4. Check functioning of any 'Level-Ride' control.
 5. Check Plow Light Lens and aiming system for loose or broken parts.
 6. Check Bulbs for burnouts and proper beam switching.
 7. Stabilize suspension by rocking vehicle sideways.
- D. Mark or tape the vertical centerline of the Plow Lights and the centerline of the vehicle on the screen. Mark or tape the horizontal centerline (distance up from the floor) of the Plow Lights on the screen.
- E. The correct visual aim for Type 2 Plow Lights (see number on face of sealed beam) is with the top edge of the high intensity zone of the lower beam below the horizontal centerline and the left edge of the high intensity zone on the vertical centerline (see diagram below).

Figure 18. Plow Light Aiming Chart



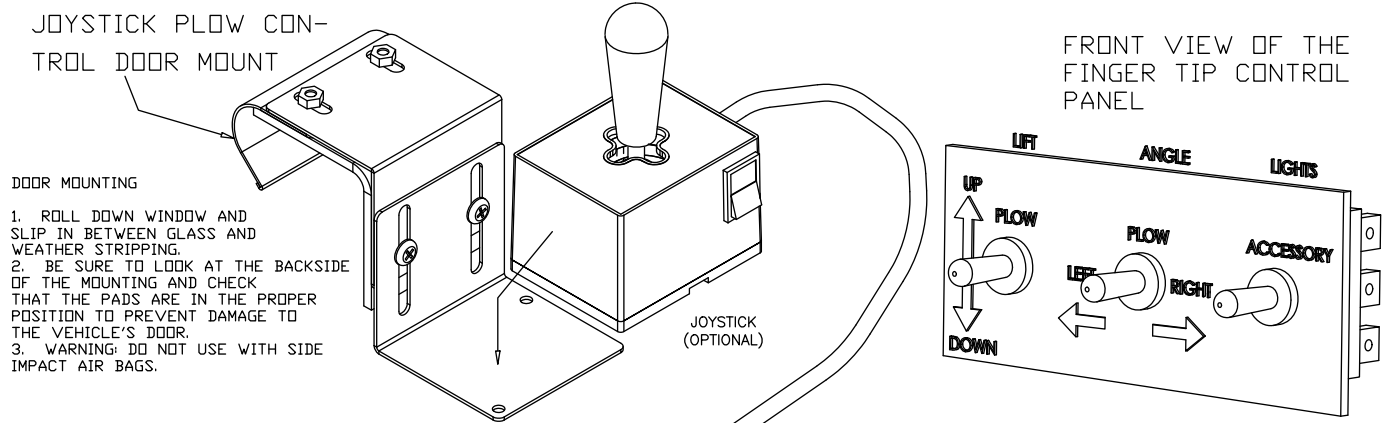
Sno-Pro 3000 Trip Edge Assembly Instructions

Figure 19. Sno-Pro 3000 Harness Layout



Sno-Pro 3000 Trip Edge Assembly Instructions

Figure 20. Sno-Pro 3000 Control Detail



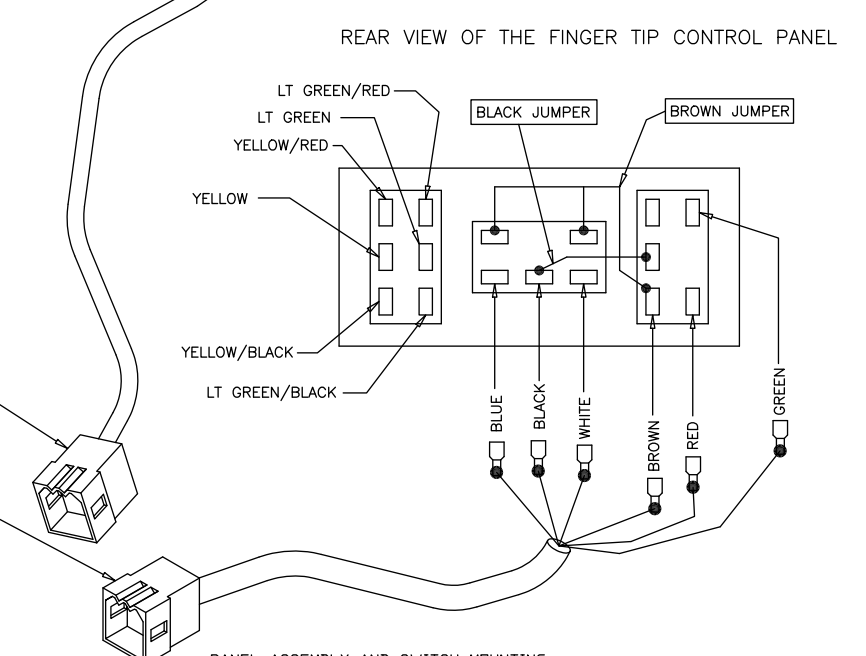
1. ROLL DOWN WINDOW AND SLIP IN BETWEEN GLASS AND WEATHER STRIPPING.
2. BE SURE TO LOOK AT THE BACKSIDE OF THE MOUNTING AND CHECK THAT THE PADS ARE IN THE PROPER POSITION TO PREVENT DAMAGE TO THE VEHICLE'S DOOR.
3. WARNING: DO NOT USE WITH SIDE IMPACT AIR BAGS.

FIGURE 1

END VIEW
LOOKING AT
CONNECTOR

"MOLEX" FREE HANGING PLUG
.093 (9) PIN POWER CONNECTOR
P/N 03-09-2092
WITH "MOLEX" MALE TERMINAL
P/N 02-09-2116

PIN #	COLOR	FUNCTION
1	BLACK	12v +
2	BLUE	LEFT
3	WHITE	RIGHT
4	RED	LIFT
5	GREEN	FLOAT
6	BROWN	PUMP SOLENOID
7	ORANGE	GROUND -
8	NA	NA
9	NA	NA



FROM MAIN HARNESS

END VIEW
LOOKING AT
CONNECTOR

"MOLEX" FREE HANGING RECEPTACLE
.093 (9) PIN POWER CONNECTOR
P/N 03-09-1094
WITH "MOLEX" FEMALE TERMINAL
P/N 02-09-1117

PIN #	COLOR	FUNCTION
1	BLACK	12v +
2	BLUE	LEFT
3	WHITE	RIGHT
4	RED	LIFT
5	GREEN	FLOAT
6	BROWN	PUMP SOLENOID
7	ORANGE	GROUND -
8	NA	NA
9	NA	NA

PANEL ASSEMBLY AND SWITCH MOUNTING

1. REMOVE ALL OF THE COMPONENTS FOR THE SWITCH PANEL.
2. APPLY THE LABEL TO THE FRONT OF THE PANEL ORIENTED AS SHOWN IN FIGURE 1 ABOVE.
3. MOUNT THE YELLOW SWITCH IN THE UP/DOWN POSITION. MOUNT IT SO THE MOMENTARY CONTACT POSITION IS UP.
4. MOUNT THE BLACK SWITCH HORIZONTALLY. REFERENCE THE REAR VIEW TO GET PROPER LEFT/RIGHT ORIENTATION.
5. MOUNT THE LIGHT SWITCH IN THE ACCESSORY POSITION.

WIRING THE PANEL

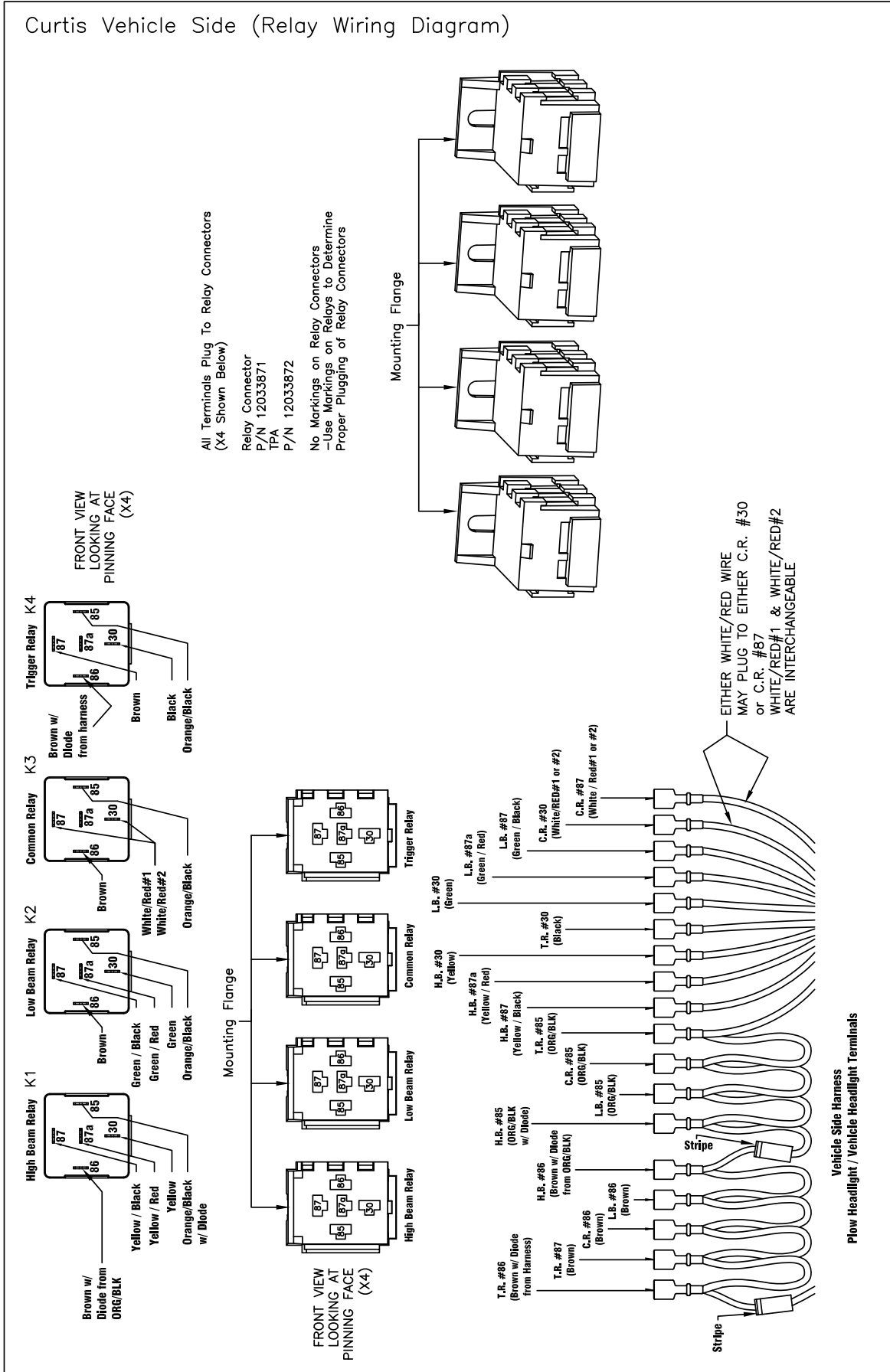
1. VIEWING THE PANEL FROM THE REAR, CONNECT THE WIRES AT THE LOCATIONS INDICATED.
2. FOR THE JUMPER CABLES, USE THE PIGGYBACK SPADE FITTINGS SUPPLIED. THE JUMPER CABLES SHOULD BE THE SAME COLORS AS THE MAIN WIRE THEY ORIGINATE FROM.

PANEL MOUNTING

1. WE RECOMMEND A LOCATION CLOSE TO THE CENTER OF THE DASH UNDER THE ASH TRAY. MOUNT AWAY FROM ANY LOCATION DIRECTLY FORWARD OF THE DRIVER OR PASSENGER SO THERE IS NO POSSIBILITY OF HITTING IT IN CASE OF AN ACCIDENT. BE SURE TO LOOK AT THE BACKSIDE OF ANY LOCATION THAT MAY BE USED. CHECK FOR WIRING, AIR BAGS, OR ANY OTHER SUCH INTERFERENCE.

Sno-Pro 3000 Trip Edge Assembly Instructions

Figure 21. Vehicle Side Harness Relay Connector Connections



Sno-Pro 3000 Trip Edge Assembly Instructions

Section 3. Snow Plow Storage

A.) When Plow is disconnected, coat all exposed chrome rods on both Angle Ram Cylinders and Lift Cylinder with Light Grease. The Grease will keep exterior surfaces free from rust and corrosion.

IMPORTANT

After 2 hours of use, all bolted assemblies on the entire Plow should be rechecked for proper torque specifications and tightened as needed.

B.) Whenever Moldboard is disconnected, coat the exposed chrome rods of both Angle Ram Cylinders with Light Grease to protect them from rust and corrosion.

C.) Coat all Pivot Pins and other wear points with Chassis Lubricant.

D.) Unplug all electrical connections. Coat all connections with a dielectric compound to prevent corrosion and plug into their corresponding weather plugs. Unplug the Plow Lights and use a dielectric compound at Light connections to prevent corrosion.