



SNO-PRO 3000

Assembly and Mounting Instructions

Sno-Pro 3000 Series Phase II Polymer Moldboard Plow

7-1/2' Moldboard PN: 1SP751P • 8' Moldboard PN: 1SP81P

Sno-Pro 3000 Series Phase II Steel Moldboard Plow

7-1/2' Moldboard PN: 1SP751 • 8' Moldboard PN: 1SP81

8-1/2' Moldboard PN: 1SP851 • 9' Moldboard PN: 1SP91



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.

Curtis Plows are simple by design. Our unit utilizes an A-Frame assembly for mounting the Electric/Hydraulic unit. This exclusive Curtis feature eliminates the need for Hydraulic Quick-disconnects and also "Hides-Away" our Power unit. Our A-Frame assembly takes the weight of the Power unit off the Lift Frame assembly and allows for increased airflow to the Radiator. Curtis uses State of the Art techniques for fit and consistency such as an Automated Conveyor System, Robotic Welding, High Definition Plasma 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
- 15/16" Deep 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
- Low Temperature Grease

Content Checklist for 2 Cartons:

Plow Package #1:

- Trip Frame (1TBP22B1)
- Lift Frame Assembly (1TBP38A1)

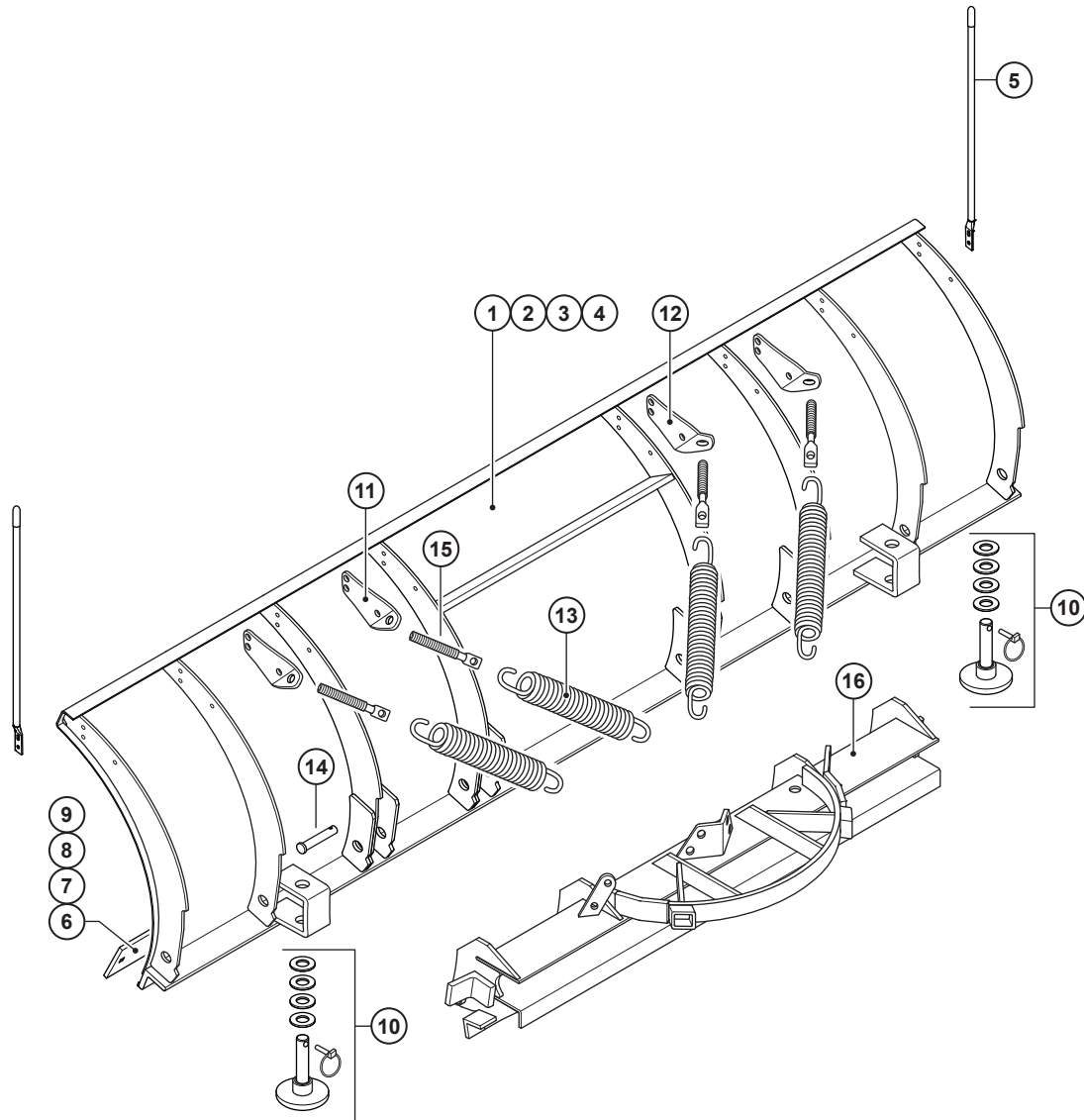
Plow Package #2:

- A-Frame Assembly with Angle Pistons
- Light Kit (set of 2) (1TBP39H)
- Hardware Box #1
- Hardware Box #2
- Truck-Side Harness with Plug Storage Holder
- Blade Markers (set of 2) (1TBP37)

Shipped with Cartons:

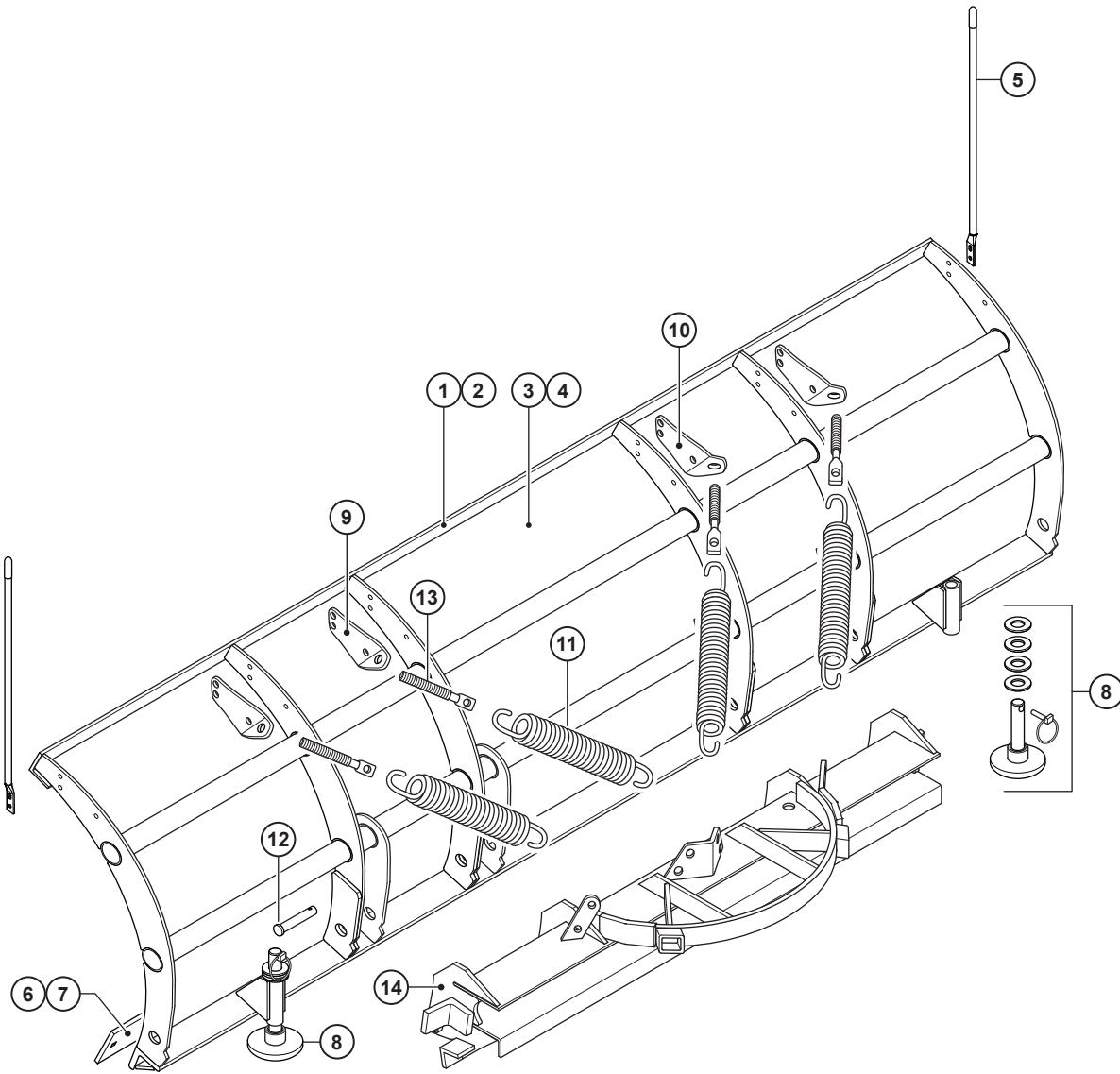
- Moldboard complete with Cutting Edge

Sno-Pro 3000 Illustrated Parts List - Steel Moldboard & Trip Frame



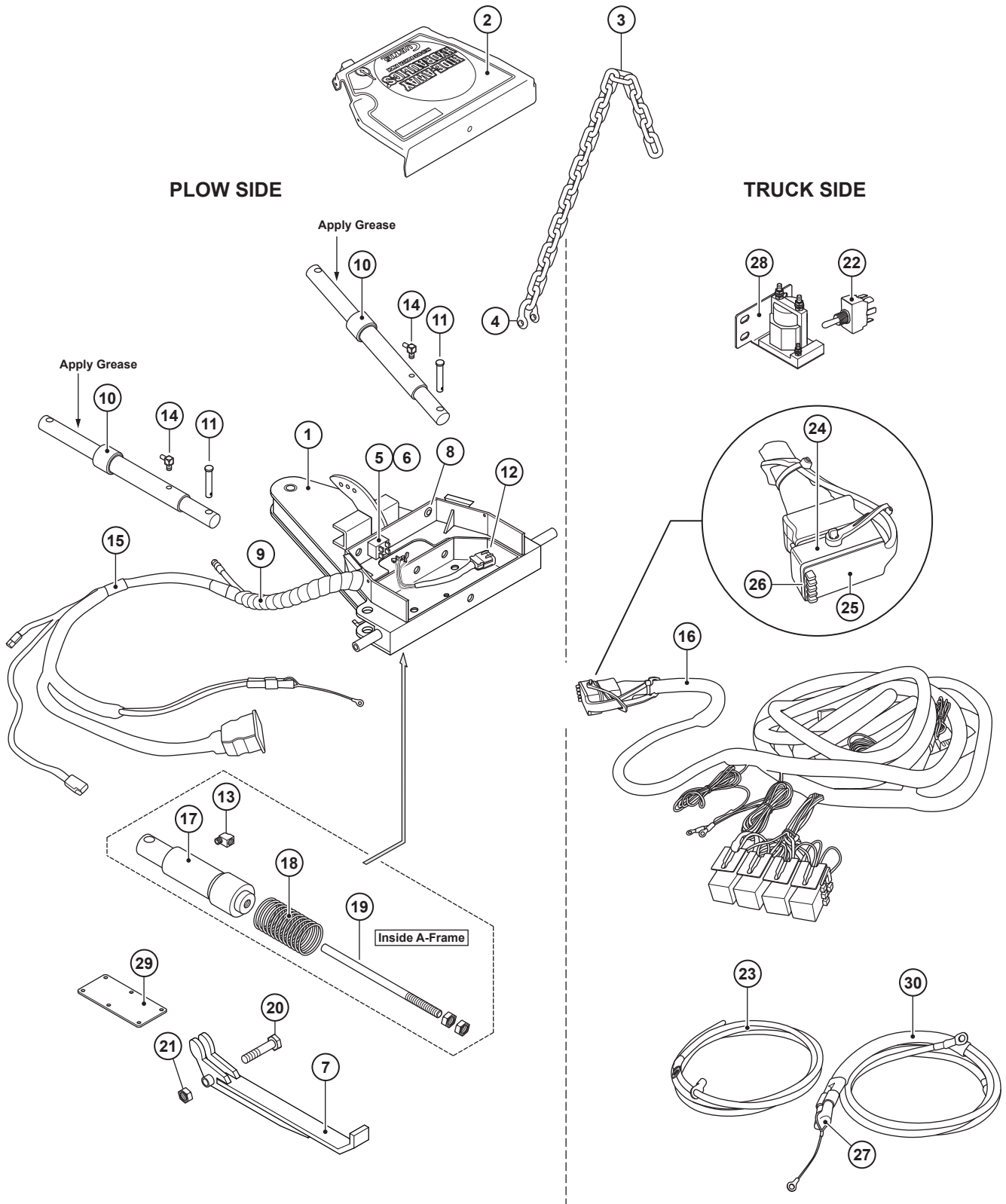
Steel Moldboard/Trip Frame			
Ref #	Item #	Item Description	Qty.
1	1TBP21A1	7-1/2' MOLDBOARD KIT -PHASE II	1
2	1TBP21B1	8' MOLDBOARD KIT - PHASE II	1
3	1TBP21J1	8-1/2' MOLDBOARD KIT -PHASE II	1
4	1TBP21C1	9' MOLDBOARD KIT - PHASE II	1
5	1TBP37	BLADE MARKER KIT (SET OF 2)	1
6	1TBP49A	7-1/2' CUTTING EDGE	1
7	1TBP49B	8' CUTTING EDGE	1
8	1TBP49J	8-1/2' CUTTING EDGE	1
9	1TBP49C	9' CUTTING EDGE	1
10	1TBP50	SKID SHOE (CAST DUCTILE IRON)	2
11	1TBP133L	MOLDBOARD SPRING MOUNT-DRIVER'S SIDE (INCLUDED IN 8SV-TBP133LR-B5 KIT)	2
12	1TBP133R	MOLDBOARD SPRING MOUNT-PASSENGER'S SIDE (INCLUDED IN 8SV-TBP133LR-B5 KIT)	2
13	1TBP33	TRIP SPRING	4
14	1TBP23	1" x 4" CLEVIS PIN	6
15	1TBP34	SPRING EYEBOLT 5/8"-11 x 7	4
16	1TBP22B1	TRIP FRAME ASSEMBLY (TRUCK PLOW) SNO-PRO 3000 PHASE II	1
ORDERABLE AS KITS - NOT SEPARATELY			
11,12	8SV-TBP133LR-B5	MOLDBOARD SPRING MOUNT KIT - (INCLUDES 4 BRACKETS, 2L & 2R)	1

Sno-Pro 3000 Illustrated Parts List - Polyethylene Moldboard & Trip Frame



Polyethylene Moldboard/Trip Frame			
Ref #	Item #	Item Description	Qty.
1	1TBP21A-POLY	7.5' POLYETHYLENE MOLDBOARD	1
2	1TBP21B-POLY	8.0' POLYETHYLENE MOLDBOARD	1
3	1TBP124-90	SKIN FOR POLY PLOW-POLYETHYLENE 90"L x 28-3/8"W x 3/8" THICK	1
4	1TBP124-96	SKIN FOR POLY PLOW-POLYETHYLENE 96"L x 28-3/8"W x 3/8" THICK	1
5	1TBP37	BLADE MARKER KIT (SET OF 2)	1
6	1TBP49A	7-1/2' CUTTING EDGE	1
7	1TBP49B	8' CUTTING EDGE	1
8	1TBP50	SKID SHOE (CAST DUCTILE IRON)	2
9	1TBP133L	MOLDBOARD SPRING MOUNT-DRIVER'S SIDE (INCLUDED IN 8SV-TBP133LR-B5 KIT)	2
10	1TBP133R	MOLDBOARD SPRING MOUNT-PASSENGER'S SIDE (INCLUDED IN 8SV-TBP133LR-B5 KIT)	2
11	1TBP33	TRIP SPRING	4
12	1TBP23	1" x 4" CLEVIS PIN	6
13	1TBP34	SPRING EYEBOLT 5/8"-11 x 7	4
14	1TBP22B1	TRIP FRAME ASSEMBLY (TRUCK PLOW) SNO-PRO 3000 PHASE II	1
ORDERABLE AS KITS - NOT SEPARATELY			
9,10	8SV-TBP133LR-B5	MOLDBOARD SPRING MOUNT KIT (INCLUDES 4 BRACKETS, 2L & 2R)	1

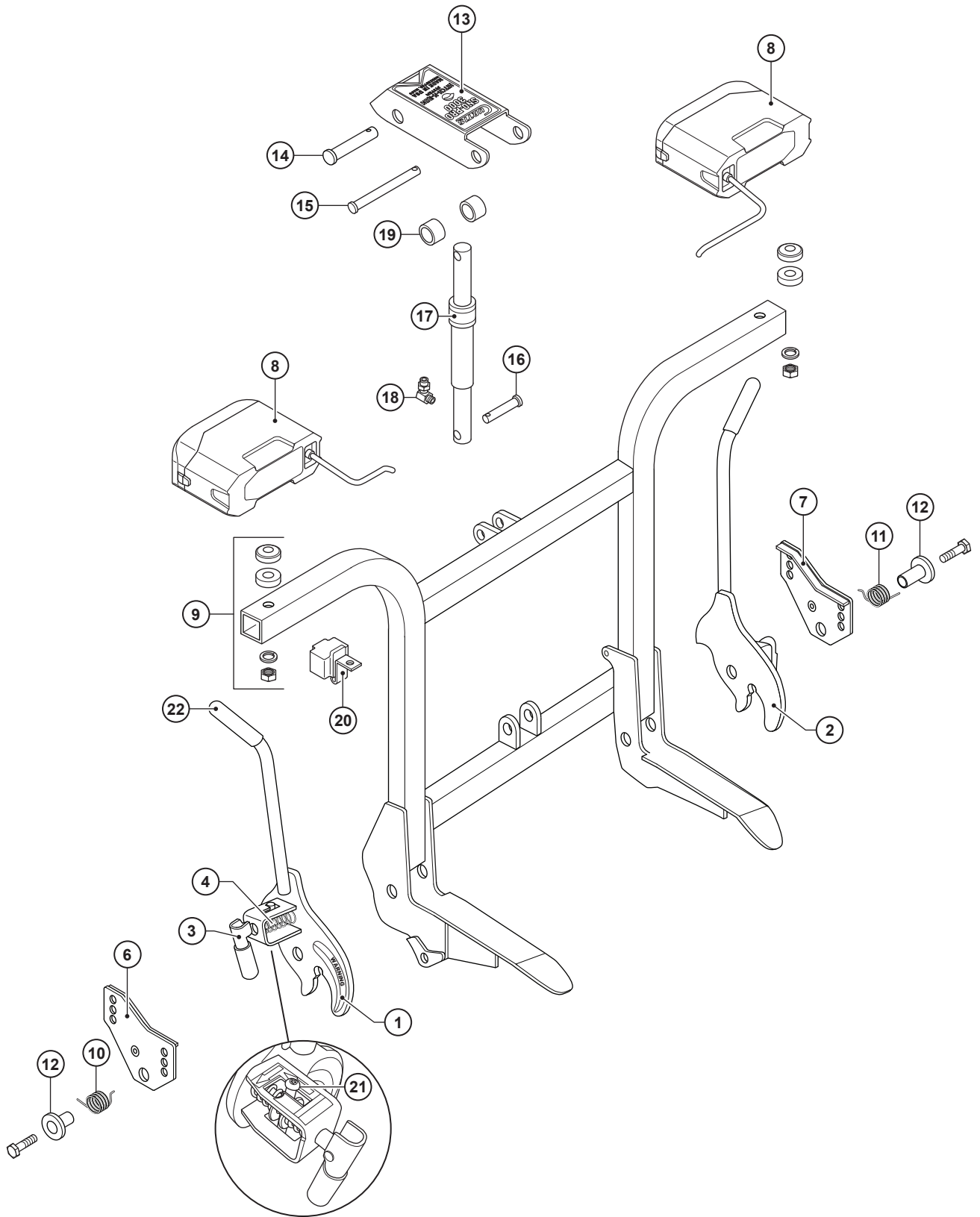
Sno-Pro 3000 Illustrated Parts List - A Frame & Harness



Sno-Pro 3000 Illustrated Parts List - A Frame & Harness

A-Frame/Harness Parts List			
Ref #	Item #	Item Description	Qty.
	1TBP29C	A-FRAME ASSEMBLY COMPLETE	1
1	8SV-NAFW-B5	A-FRAME ASSEMBLY - FRAME ONLY	1
2	1TBP58A	A-FRAME COVER, SnoPro 3000	1
3	1TBP30	5/16" x 24" CHAIN	1
4	1TBP31	5/16" ANCHOR SHACKLE	1
5	1TBP100	A-FRAME JACK SWITCH	1
6	1TBP100A	TOGGLE SWITCH BOOT	1
7	1TBP106	JACK LEG	1
8	1TBP128	A-FRAME HOSE GROMMET	3
9	1TBP129	HARNESS (SPIRAL) WRAP, 16" LENGTH	1
10	1TBP27	10" ANGLE PISTON	2
11	1TBP73	1" x 3" CLEVIS PIN	2
12	1UHJA	JACK ADAPTER 3000 SERIES (HYD JACK ONLY)	1
13	1TBP98F	90 DEG. BRASS BAR STREET ELBOW	1
14	1TBP98G	90 DEGREE ELBOW	2
15	1UHP	UNIVERSAL HARNESS-PLOW SIDE	1
16	1UHT	UNIVERSAL HARNESS-TRUCK SIDE	1
17	1TBP95	3" JACK CYLINDER	1
18	1TBP96	6" JACK SPRING	1
19	1TBP111	JACK SPRING GUIDE ROD	1
20	BUY LOCALLY	5/8"-11 x 4-1/2" GRADE 5 HEX BOLT	1
21	BUY LOCALLY	5/8"-11 NYLON LOCKNUT	1
22	1TBP48A	LIGHT SWITCH FOR TRUCK PLOW	1
23	1TBP62	#4 CABLE 90"	1
24	1TBP136	VEHICLE SIDE CONTROL WEATHER CAP	1
25	1TBP140	LOCK PIN STORAGE HOLDER & LANYARD	1
26	1TBP141	HARNESS LOCK PIN (SET OF 5)	1
27	1TBP54	HI-AMP WEATHER CAP	1
28	1TBP61A	12V MOTOR SOLENOID	1
29	8SV-TBP117-B5	A-FRAME BOTTOM JACK COVER	1
30	1TBP53	HI-AMP BATTERY HARNESS	1

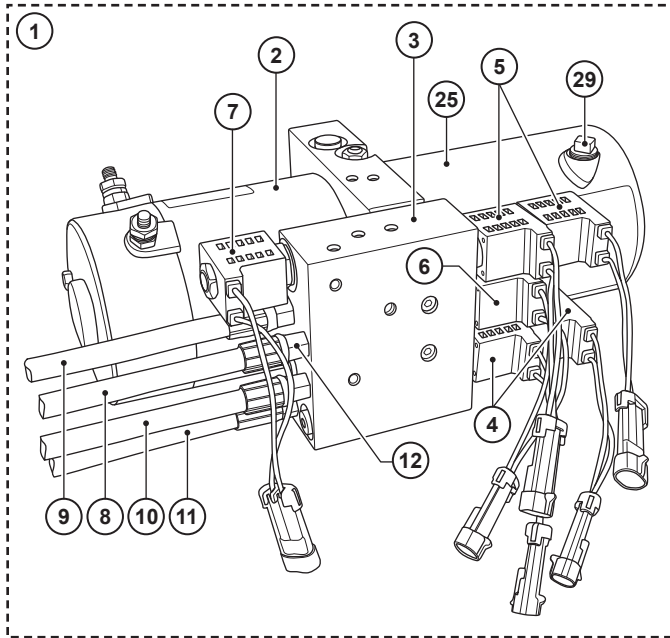
Sno-Pro 3000 Illustrated Parts List - Lift Frame



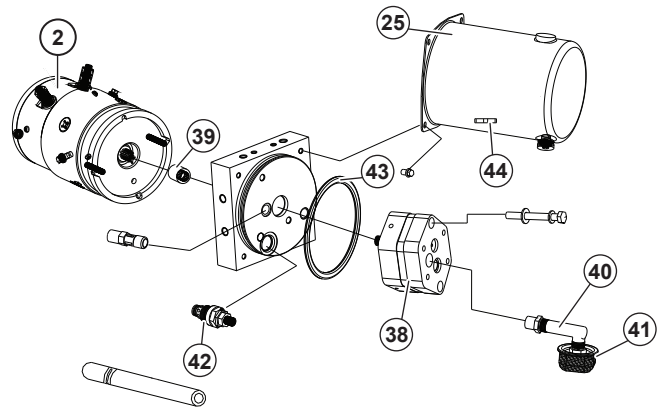
Sno-Pro 3000 Illustrated Parts List - Lift Frame

Lift Frame Parts List			
Ref #	Item #	Item Description	Qty.
	1TBP38A1	SNO PRO LIFT FRAME ASSEMBLY COMPLETE	1
1	8SV-TBP114-B5	DRIVER'S SIDE LATCH HOOK	1
2	8SV-TBP115-B5	PASSENGER'S SIDE LATCH HOOK	1
3	1TBP107	SNAP LOCK HANDLE with VINYL JACKET (INCLUDED IN 9SV-SLH KIT)	2
4	1TBP33B	SNAP LOCK SPRING (INCLUDED IN 9SV-SLH KIT)	2
6	1TBP112A	LIFT FRAME SIDE PLATE, LH SNO-PRO 3000 (INCLUDED IN 8SV-TBP112-B5 KIT)	1
7	1TBP112B	LIFT FRAME SIDE PLATE, RH SNO-PRO 3000 (INCLUDED IN 8SV-TBP112-B5 KIT)	1
8	1TBP39H	PLOW LIGHT KIT, DUAL HALOGEN LAMPS W/SWITCH KIT (2 HEAD LAMPS)	1
9	1TBP161	PLOW LIGHT MOUNTING HARDWARE	1
10	1TBP33A-1	TORSION SPRING, LH SNO-PRO 3000 (INCLUDED IN 9SV-TBP33A KIT)	1
11	1TBP33A-2	TORSION SPRING, RH SNO-PRO 3000 (INCLUDED IN 9SV-TBP33A KIT)	1
12	1TBP113	TORSION SPRING BUSHING (INCLUDED IN 9SV-TBP33A KIT)	2
13	1TBP40	LIFT ARM	1
14	1TBP108	1" x 4-1/2" CLEVIS PIN	1
15	1TBP42	3/4" x 4-1/2" CLEVIS PIN	1
16	1TBP43	3/4" x 2-3/4" CLEVIS PIN	1
17	1TBP44A	7-1/2" LIFT PISTON	1
18	1TBP98H	45 DEGREE ELBOW FOR LIFT PISTON	1
19	1TBP109	1" PISTON SPACER	2
20	1TBP135	PLUG STORAGE HOLDER	1
21	1TBP159	SNAP LOCK CROSS BOLT WITH BUSHING AND NUT	2
22	1TBP97	PLASTIC HANDLE COVER (NOT ORDERABLE)	2
ORDERABLE AS KITS - NOT SEPARATELY			
3,4	9SV-SLH	SNAP LOCK HANDLE KIT (KIT INCLUDES 2 HANDLES with VINYL JACKET & 2 SPRINGS)	1
6,7	8SV-TBP112-B5	LIFT FRAME SIDE PLATE KIT, SNO-PRO 3000, (KIT INCLUDES L&R PLATES)	1
10,11,12	9SV-TBP33A	TORSION SPRING KIT (SIDE PLATE TORSION SPRINGS & BUSHINGS, SET OF 2)	1

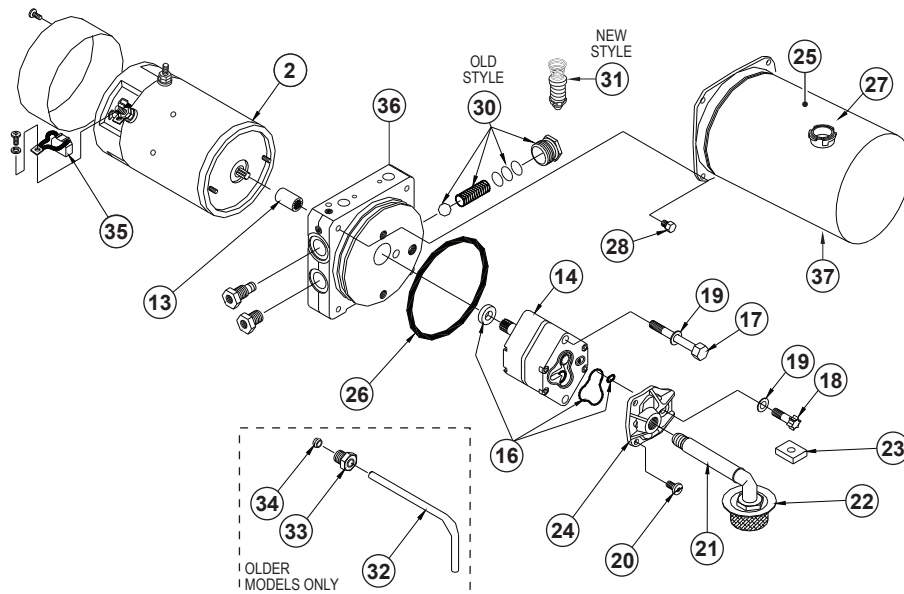
Sno-Pro 3000 Illustrated Parts List - Hydraulics



KTI Hydraulics - Aluminum End Head



SPX Hydraulics



Sno-Pro 3000 Illustrated Parts List - Hydraulics

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	1TBP98A	JACK HOSE - 26-1/2"	1
9	1TBP98B	LIFT HOSE - 37.5"	1
10	1TBP98C	RIGHT ANGLE HOSE - 19"	1
11	1TBP98D	LEFT ANGLE HOSE - 28"	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 Assembly Instructions

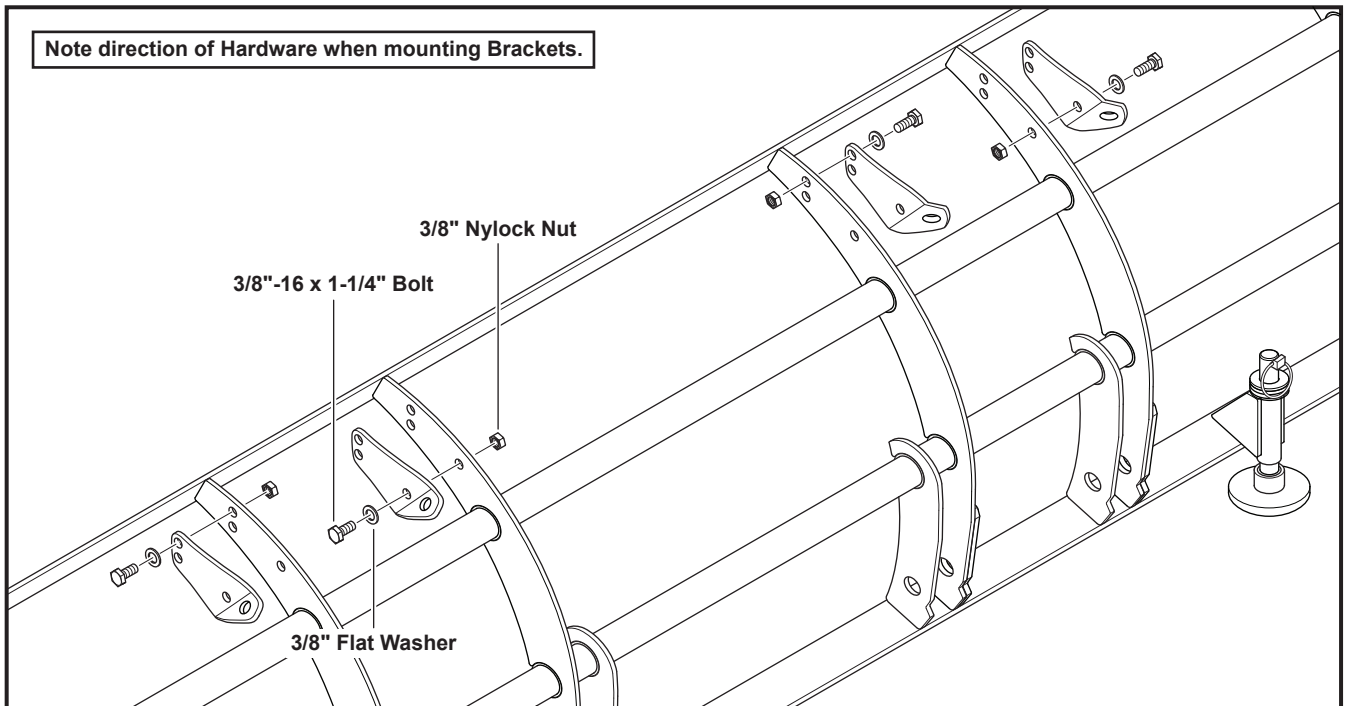
Section 1. Moldboard Assembly

- A.) Lay Moldboard on its face. Place cardboard under the Moldboard top bend to prevent paint damage.
- B.) Locate (4) Moldboard Spring Mount Brackets (2 Left, 2 Right). Brackets must be installed with Spring mounting tab pointing to the outside of the Moldboard, not the center. Install each Bracket as shown using (3) 3/8"-16 x 1-1/4" Gr.8 Bolts, Flat Washers and Nylock Nuts. Torque to 30 ft/lbs.
Refer to Figure 1 below & Figure 6 on page 14.

Section 2. Mount Trip Frame to Moldboard

- A.) Using (4) 1" x 4" Clevis Pins, mount Trip Frame to Moldboard. *Figures 2 & 3 on the next page.*

Figure 1. Mount L & R Trip Spring Brackets to Moldboard



NOTE

All views in this manual show the Polyethelene Moldboard Plow assembly. The assembly and mounting of the Steel Moldboard Plow is identical.

Sno-Pro 3000 Assembly Instructions

Figure 2. Mount Trip Frame to Moldboard

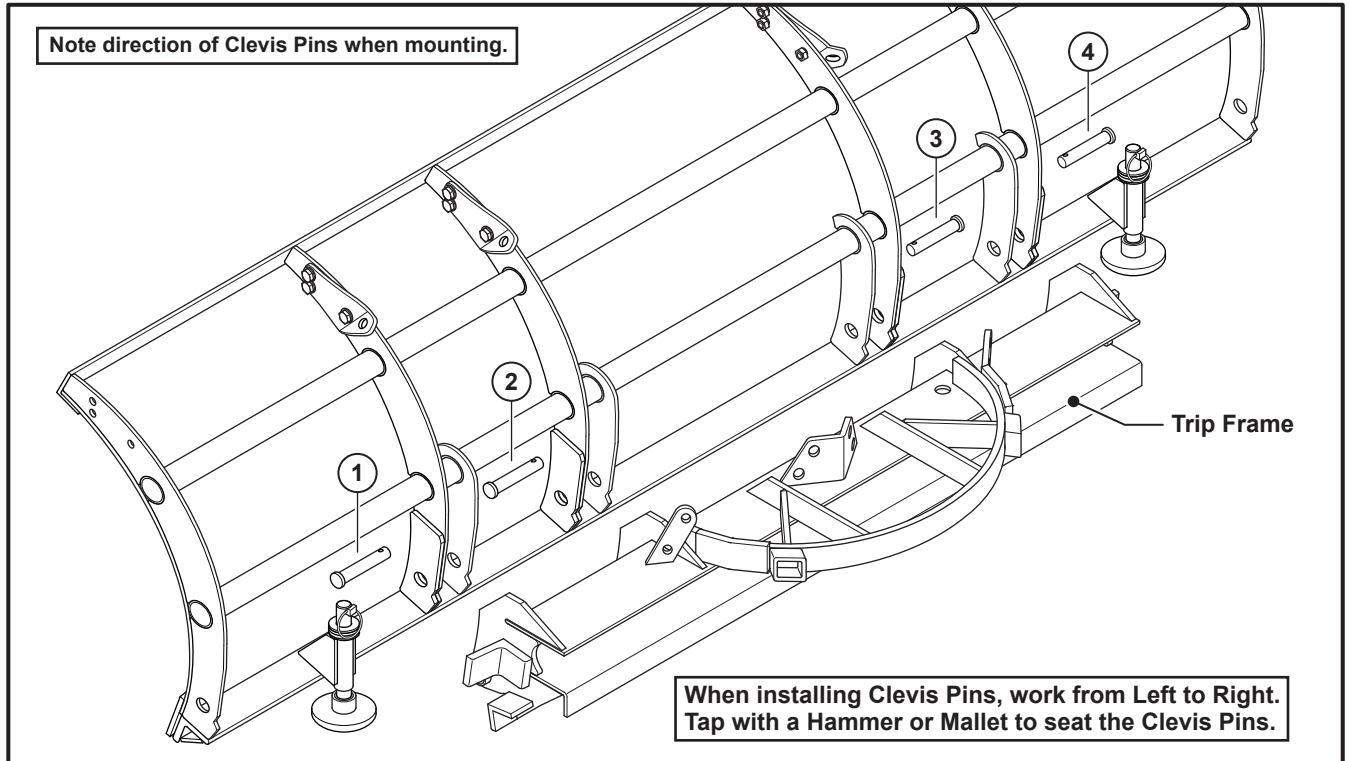
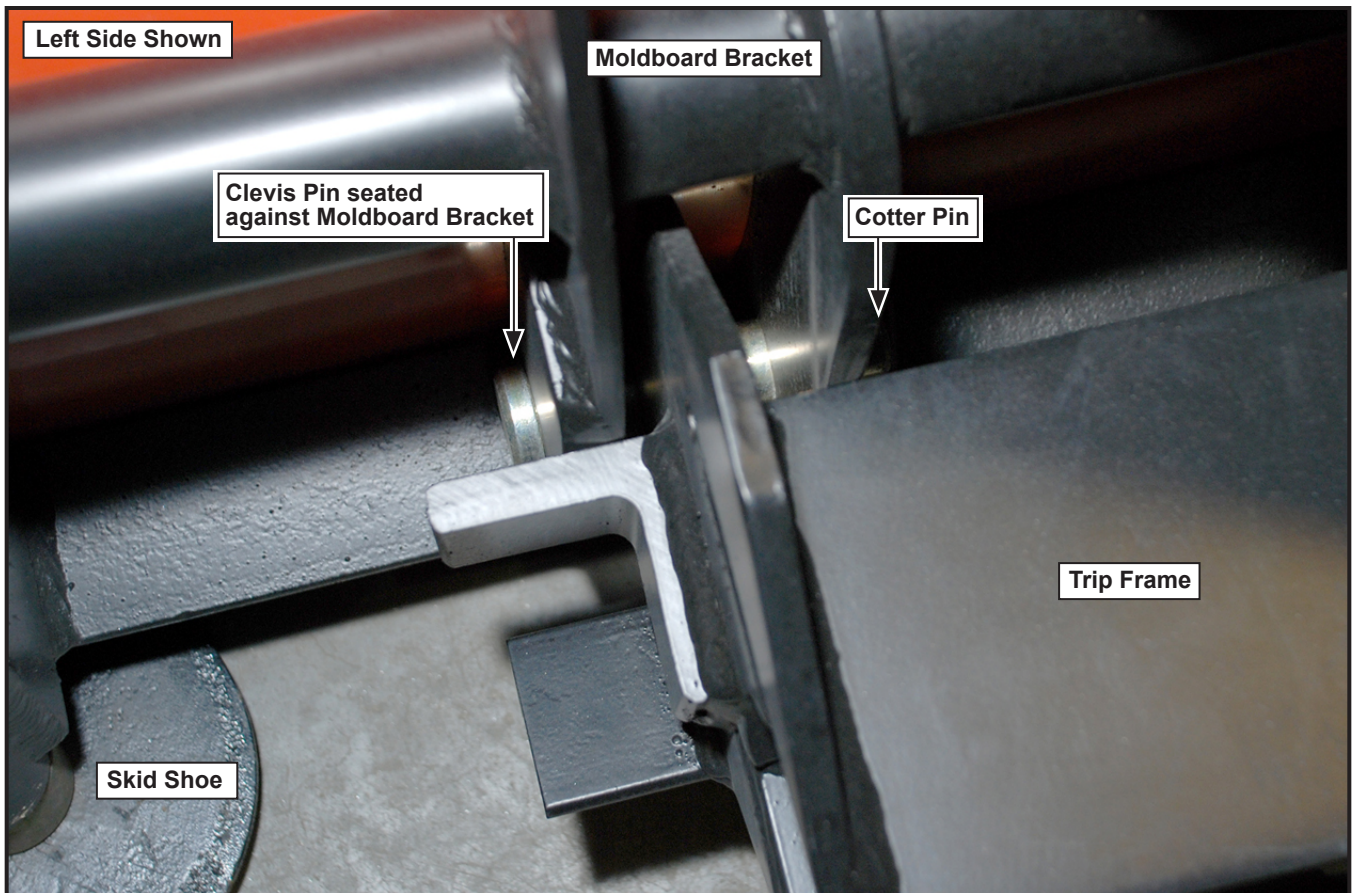
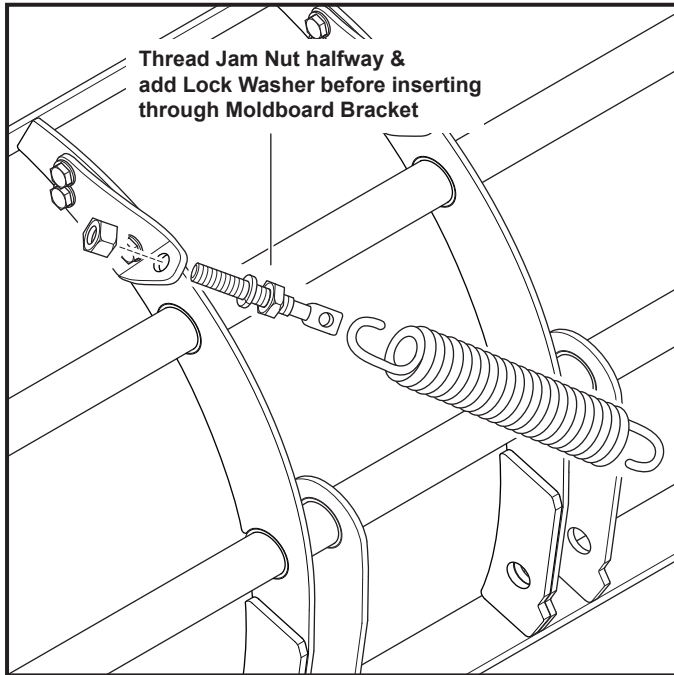


Figure 3. Clevis Pin Reference



Sno-Pro 3000 Assembly Instructions

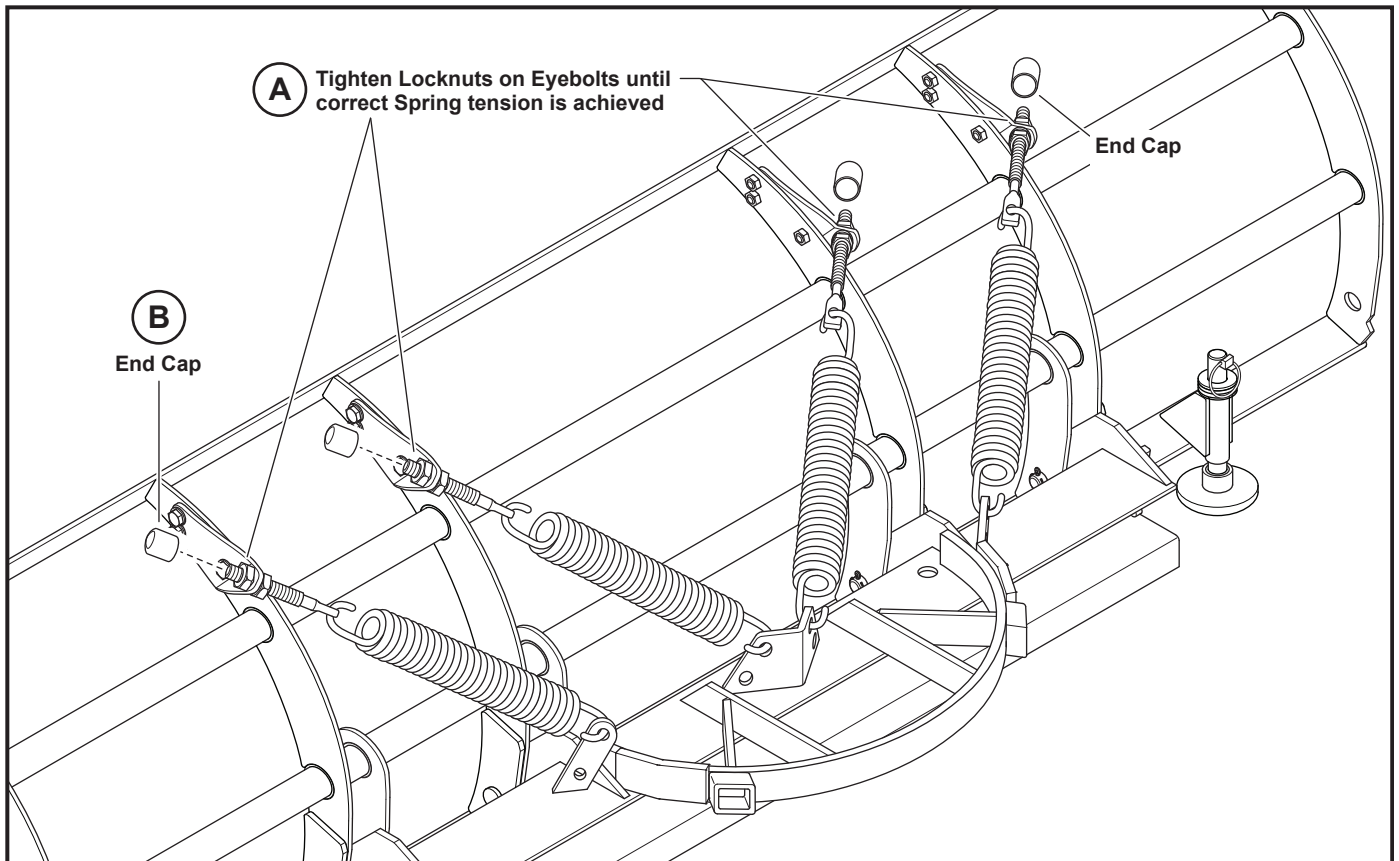
Figure 4. Mount Eyebolts to Trip Spring Mounting Brackets



Section 3. Mount Trip Springs

- A.) Mount (4) Trip Springs (1TBP33) to Trip Frame. See Figure 7 on next page to determine upper or lower mounting hole usage.
- B.) Thread (1) 5/8" Jam Nut half-way onto each Spring Eyebolt.
- C.) Slide (1) 5/8" Lockwasher onto each Spring Eyebolt (1TBP34) and then insert each Eyebolt into the Spring Brackets on Moldboard. *Figure 4.*
- D.) Thread (1) 5/8" Locknut onto each Eyebolt.
- E.) Tighten Locknuts to increase tension on Springs until there is enough space between the coils to slide a piece of paper. *Do not overtighten.*
- F.) Tighten each 5/8" Jam Nut and Lock Washer against each Moldboard Spring Bracket to lock the Eyebolts.
- G.) Press fit End Caps to Eyebolt ends.

Figure 5. Install Trip Springs

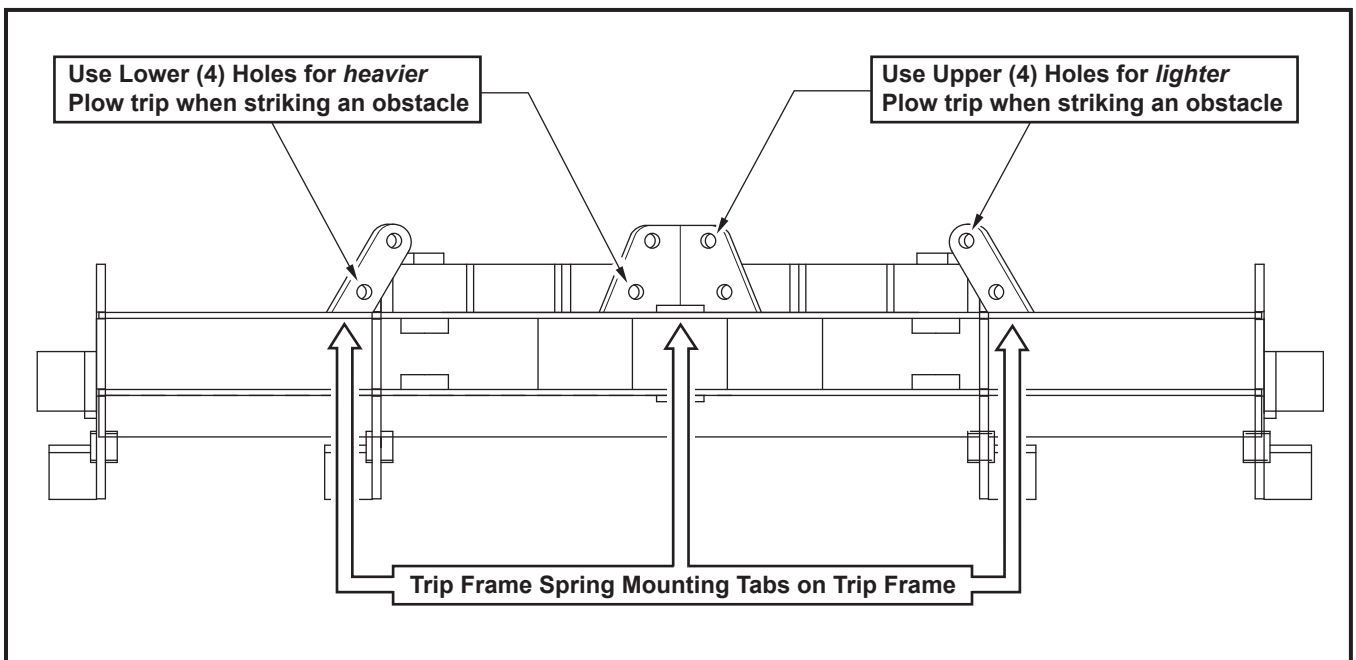


Sno-Pro 3000 Assembly Instructions

Figure 6. Trip Spring Reference View



Figure 7. Trip Frame Hole Selection Reference

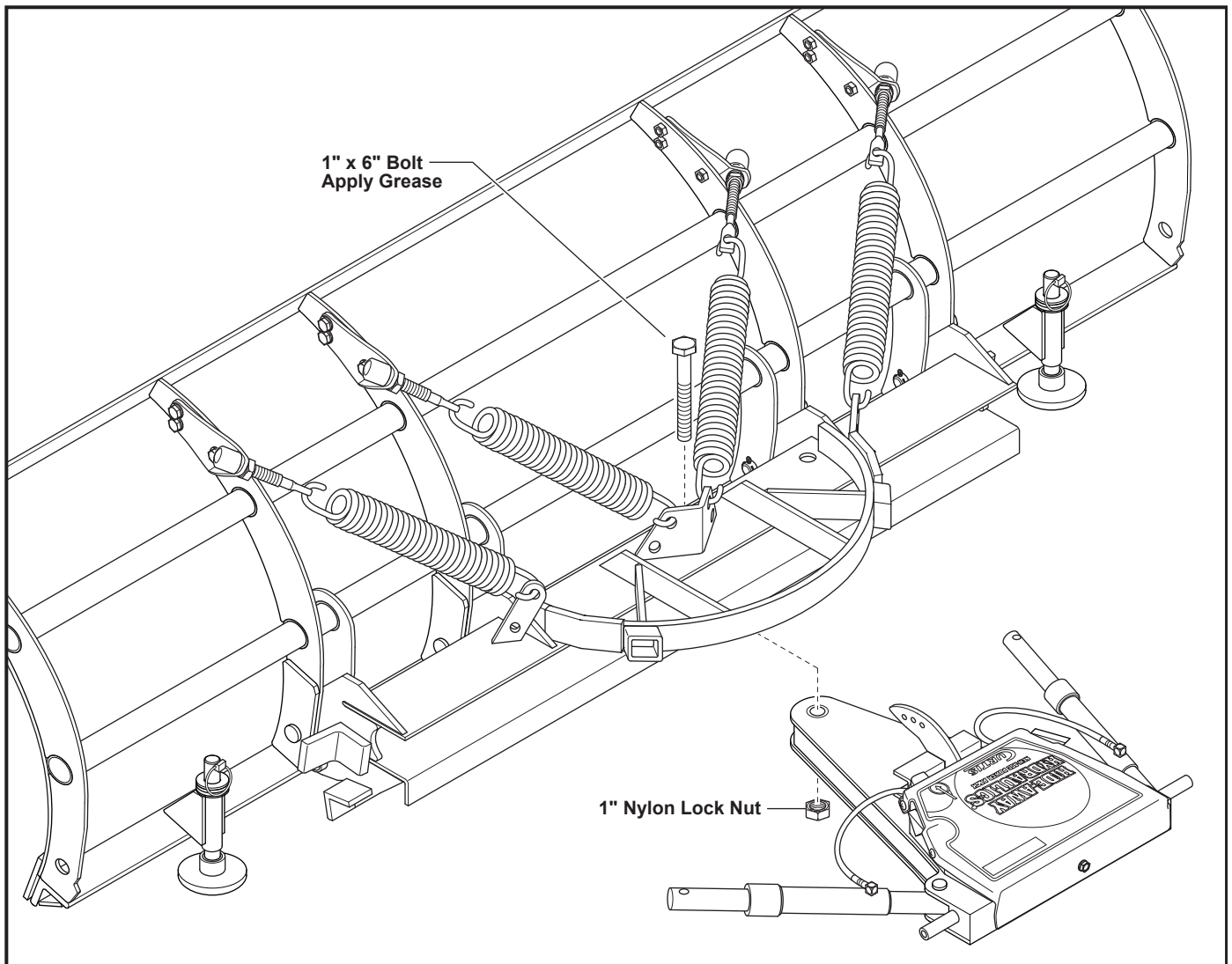


Sno-Pro 3000 Assembly Instructions

Section 4. Mount A-Frame to Trip Frame

- A.) With Moldboard remaining face down, lift A-Frame assembly over the Trip Frame (with assistance, A-Frame is very heavy) and lower it into the center hole of Trip Frame. Install (1) 1" x 6" Center Bolt (1TBP127) through the Trip Frame and A-Frame. Apply grease to the Center Bolt before inserting, then secure Center Bolt with a 1" Nylon Lock Nut. *Do not* over tighten, the A-Frame must pivot freely. *Figure 8.*
- B.) Swing A-Frame to Left or Right and align hole in Angle Cylinder Ram with corresponding hole in Trip Frame. Install (1) 1" x 4" Clevis Pin (1TBP23) through Trip Frame and Angle Cylinder Ram. Secure Clevis Pin with (1) 3/16" x 2" Cotter Pin (1TBP24). Swing A-Frame to opposite side and repeat alignment and pinning procedure. Swing A-Frame back to the center. *Figure 9.*

Figure 8. Mount A-Frame

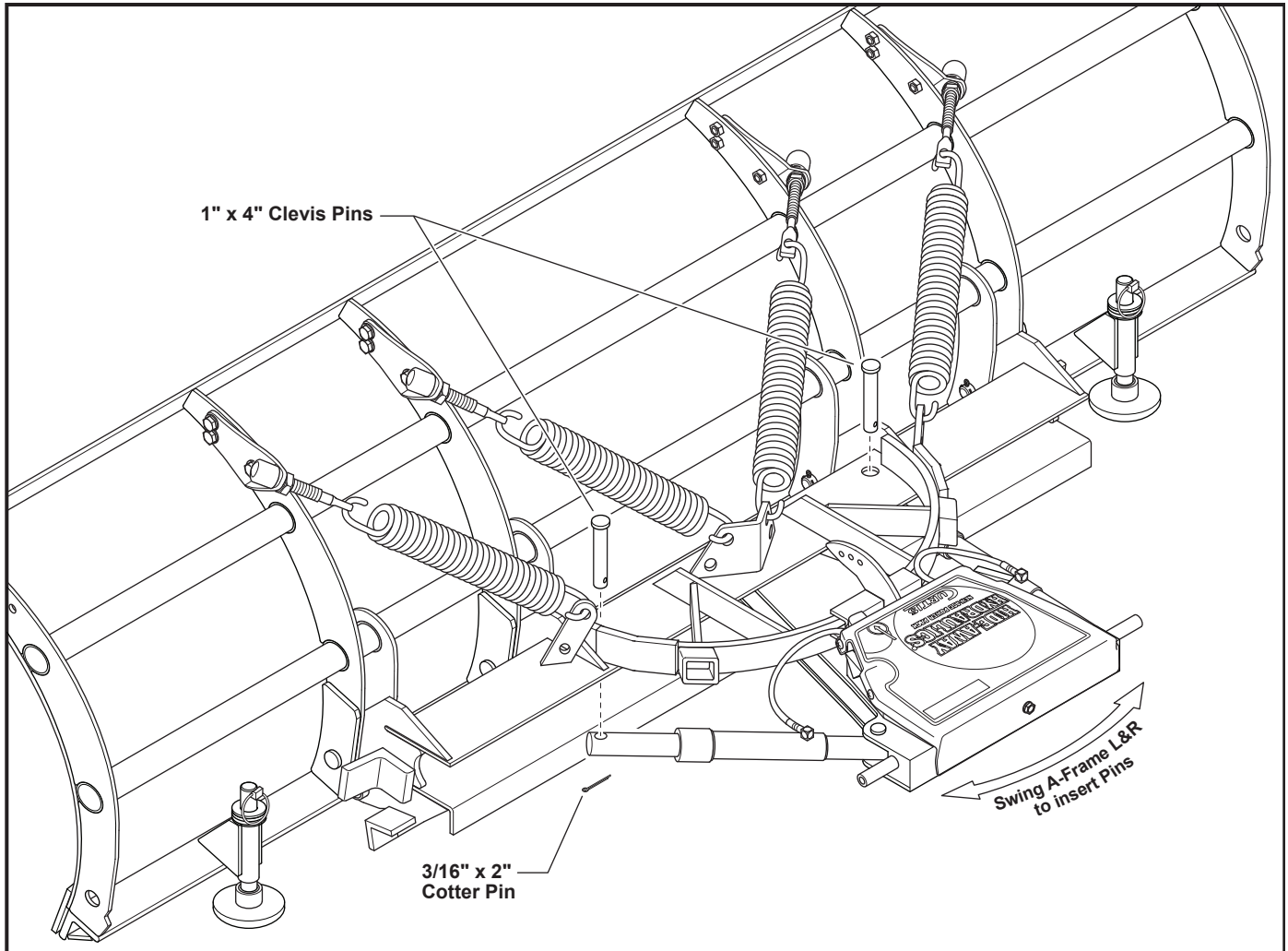


Section 5. Lift Frame Side Plate Install

- A.) Locate both L & R Lift Frame Side Plates (1TBP112A&B) and slide (1) onto each side of the A-Frame Hinge Pin. *Figure 10 on page 17.*
- B.) Slide the L & R Torsion Springs (1TBP33A-1 & 1TBP33A-2) over Hinge Pins with the 90° bent ends inside the hole in the Spring Keeper on the corresponding Side Plate. The straight Spring Legs should be resting on the A-Frame Spring Stop. *Figure 13 on page 19.*

Sno-Pro 3000 Assembly Instructions

Figure 9. Secure Angle Cylinder Rams to Trip Frame



Section 5. Lift Frame Side Plate Install (*continued*)

- C.) Install Torsion Spring Bushings (1TBP113) through the Torsion Springs and over the Hinge Pins. Fasten loosely with (1) 1/2"-13 x 1" Patch Bolt and 1/2" Flat Washer threaded into each Hinge Pin to secure the assemblies. *Do not* tighten Bolts at this time. Repeat procedure on opposite side.
- D.) Using the A-Frame as a lever, grasp the A-Frame near the Side Plates at the top of the assembly and pull back, raising the Moldboard to the vertical position.
- E.) Secure one end link of the Lift Chain to the middle hole in the Chain Bracket on the A-Frame using (1) 5/16" Chain Shackle supplied in Plow Hardware Bag. *Figure 11 on the next page.*



NOTE

The 3 mounting holes are used to fine-tune the attachment and lifting performance of the Plow on a specific vehicle. The middle hole is a good starting point.

- F.) Install (1) Blade Marker at each end of Moldboard using hardware supplied with Blade Markers. *Figure 11 on the next page.*

Sno-Pro 3000 Assembly Instructions

Figure 10. Lift Frame Side Plate Installation

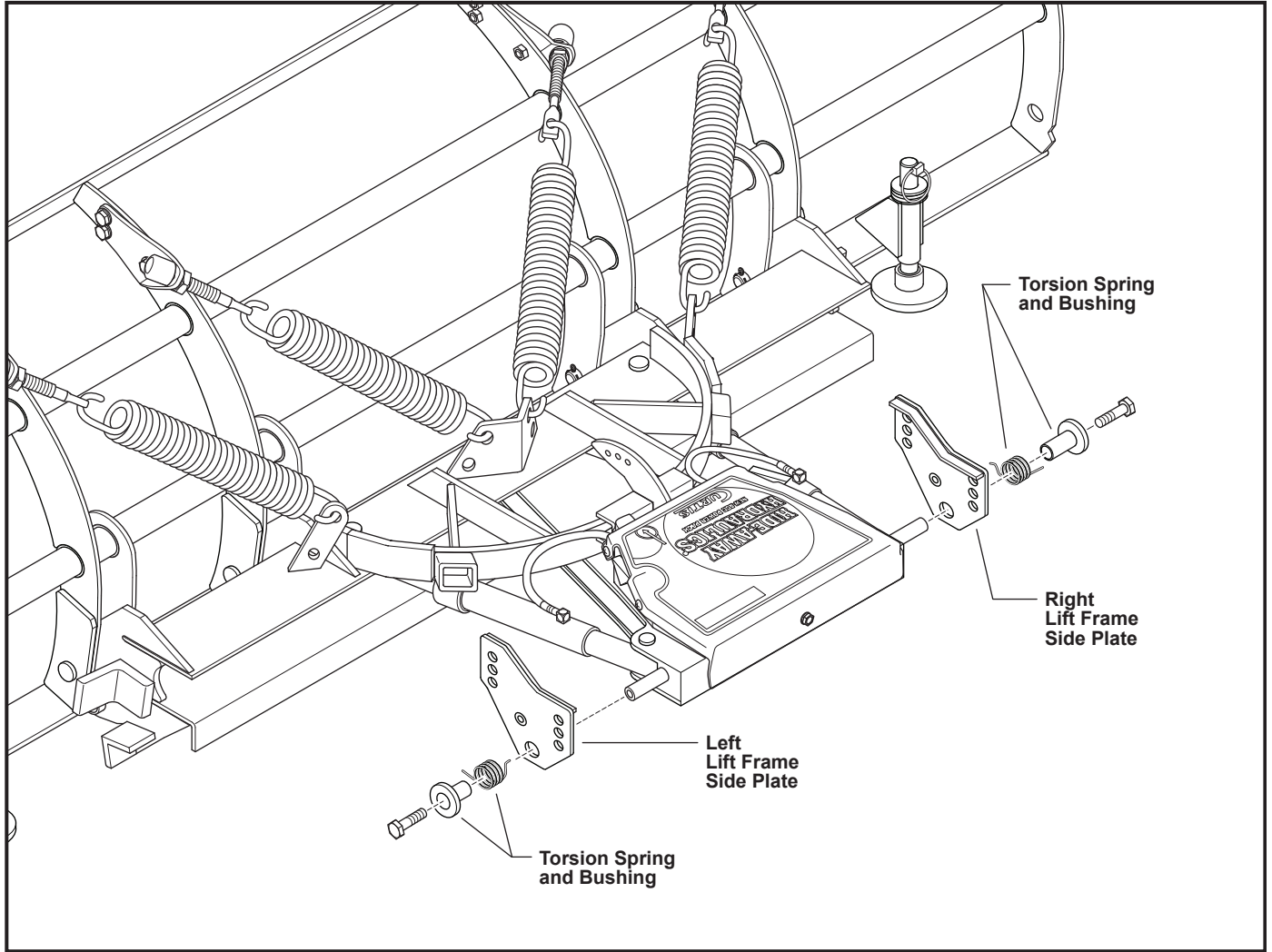
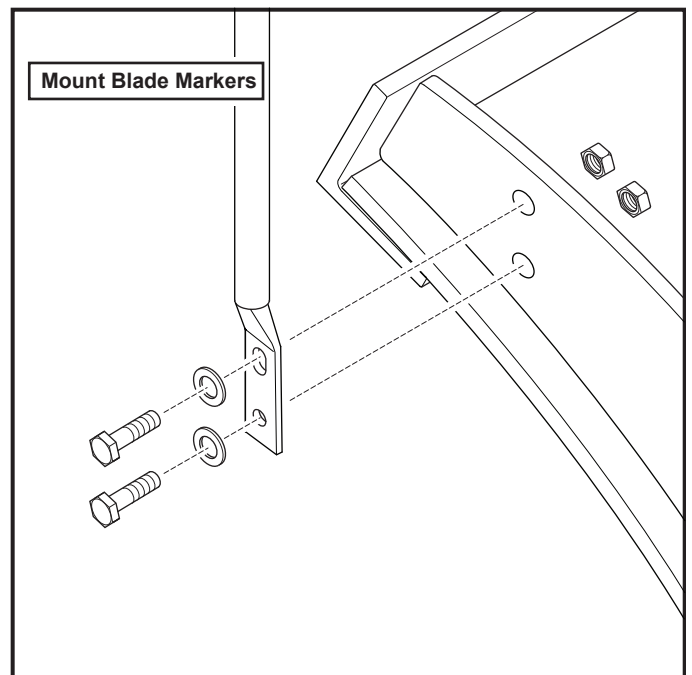
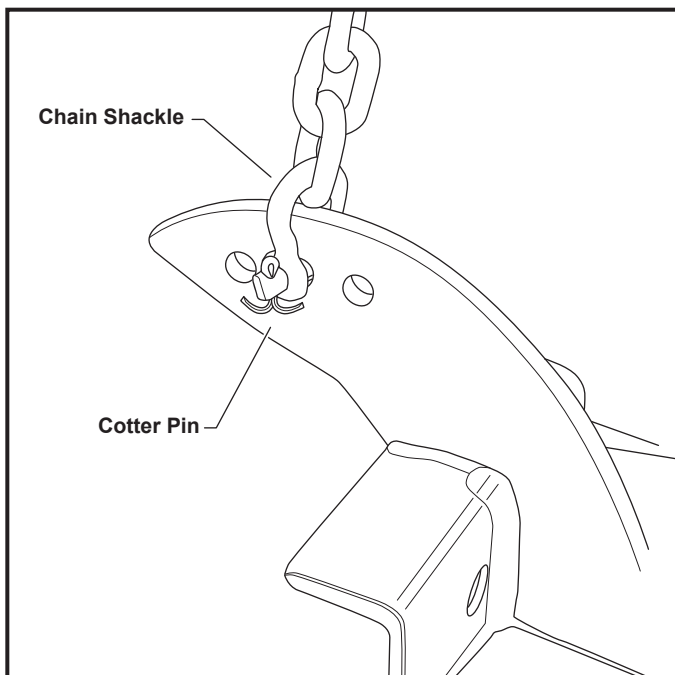


Figure 11. Attach Lift Chain and Mount Blade Markers



Sno-Pro 3000 Assembly Instructions

Section 6. Mount Lift Frame to A-Frame Side Plates

A.) With assistance, position Lift Frame to Side Plates and mount with (4) 5/8"-18 x 1-3/4" Bolts and 5/8"-18 Lock Nuts. To provide proper clearance, 5/8" Bolts must be installed from the inside of Lift Frame with Lock Nuts located on the outside of Lift Frame. This is necessary to provide proper clearance. Tighten 5/8" Gr.8 fasteners mounting the Lift Frame to 225 ft./lbs., then fully tighten the Patch Bolts retaining the Side Plates to 55 ft/lbs. See Figures 12 & 13.



NOTE

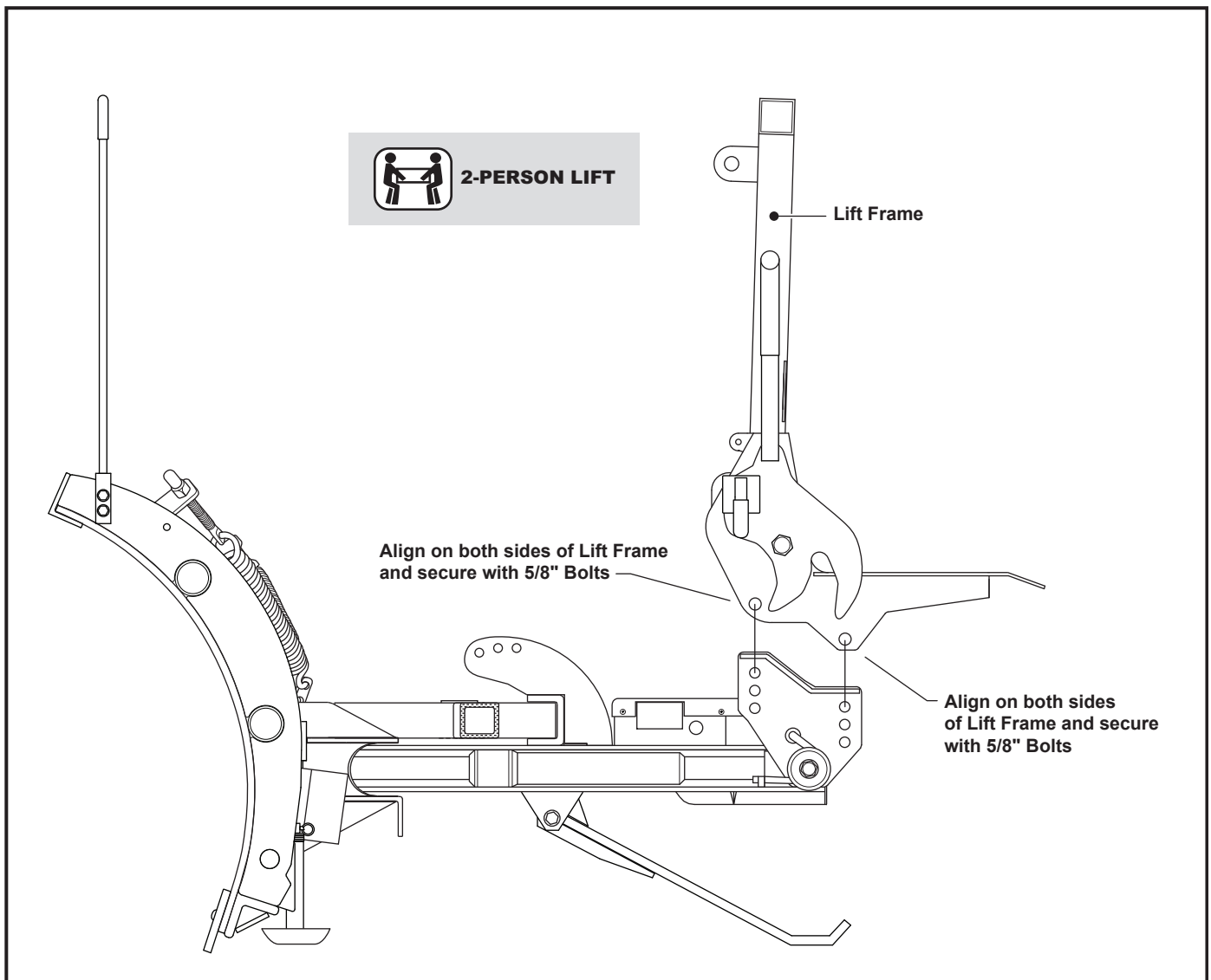
The Side Plates have (3) sets of holes that can be used for mounting the Lift Frame. See Page 24 for information on determining hole locations. Installing the Lift Frame in the incorrect holes will affect the attachment and removal of the Plow to the vehicle.



ADDITIONAL NOTES

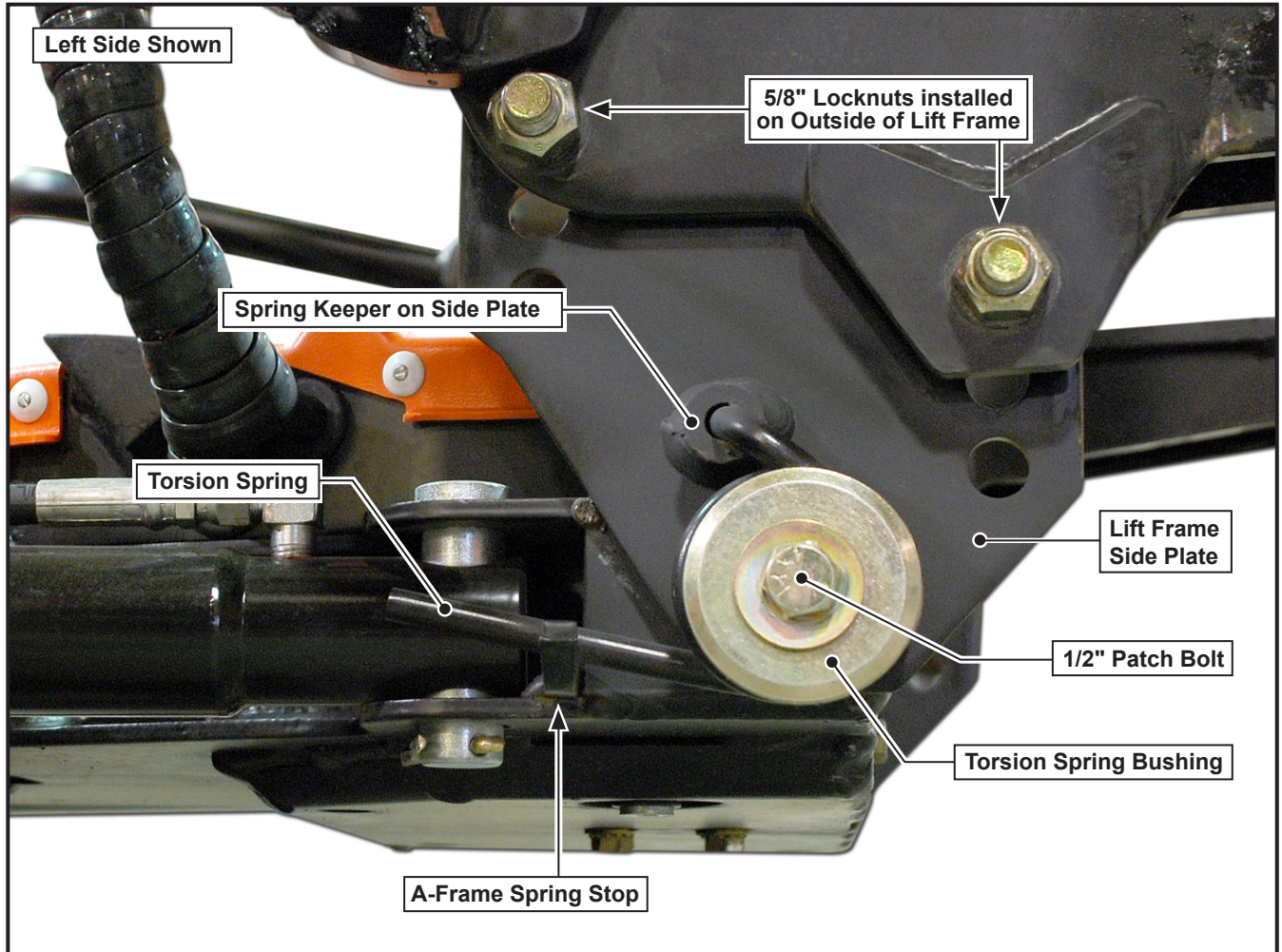
When setting up the Plow for the first time, adjust the Lift Chain so that the Lift Frame Attaching Forks are parallel to the A-Frame. The Lift Arm will need to be installed before this critical step. See Section 7 for Lift Arm installation.

Figure 12. Mount Lift Frame to A-Frame Side Plates



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Figure 13. Lift Frame Mounting Reference View



Section 7. Lift Frame Setup

- A.) Mount Lift Arm (1TBP40) to Upper Mounting Tabs of Lift Frame as shown in Figure 14A. Lift Arm mounts with (1) 3/4" x 4-1/2" Clevis Pin (1TBP42) and is secured with a 2" Cotter Pin.
- B.) Locate Lift Cylinder (1TBP44A) and mount to front of Lift Arm with 1" Piston Spacers (1TBP109). The 1" x 4-1/2" Clevis Pin (1TBP108) will pass through the Piston Spacers and Lift Cylinder and will be secured with a 2" Cotter Pin. *Figure 14A.*

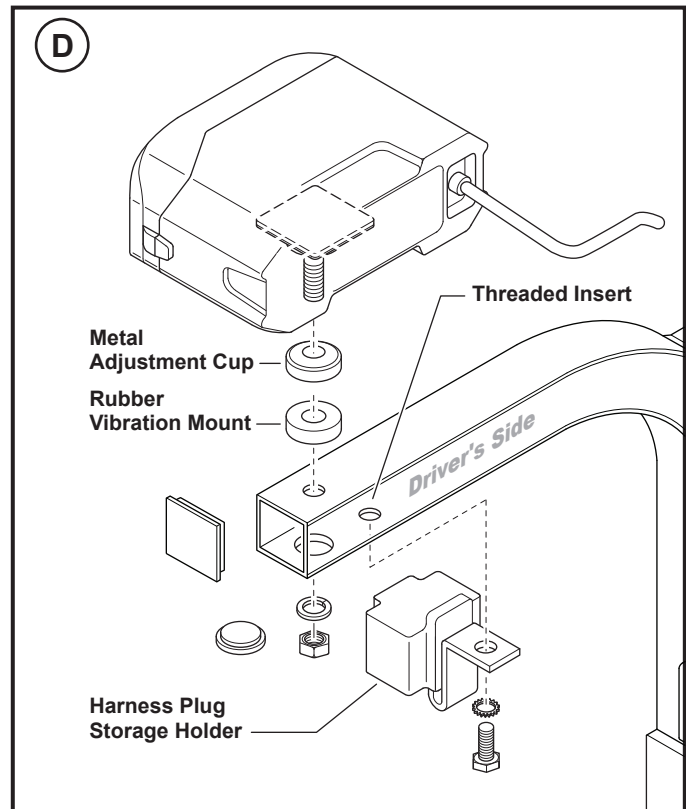
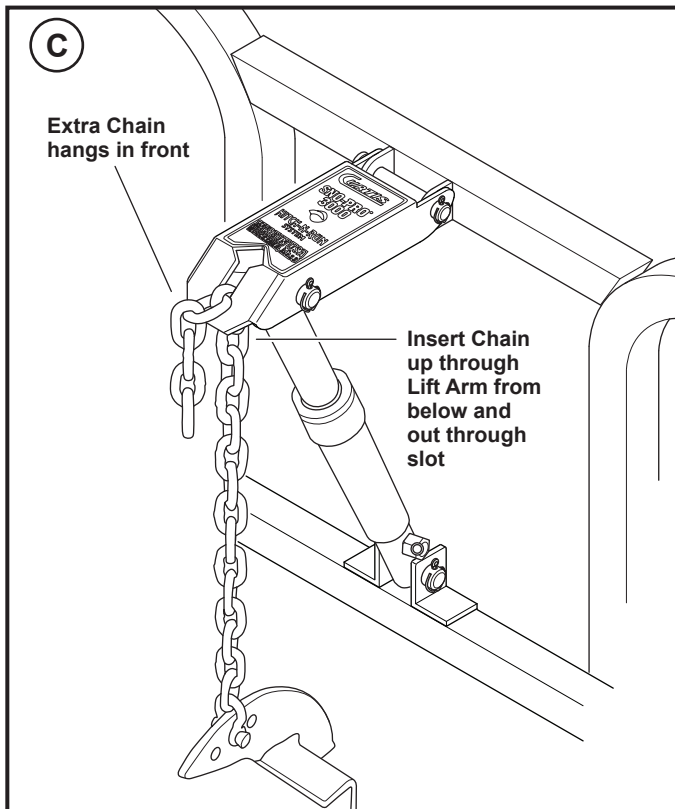
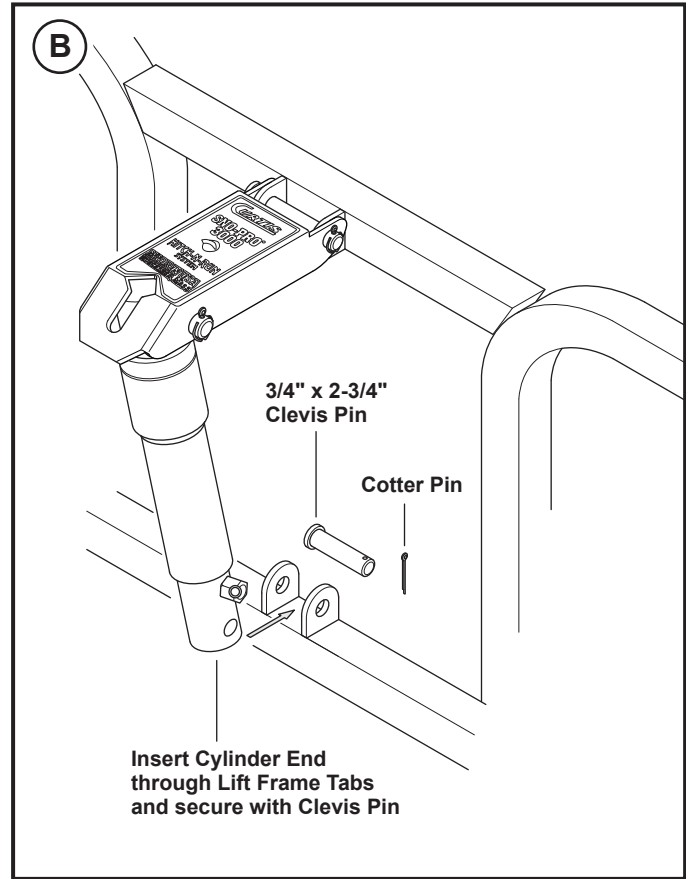
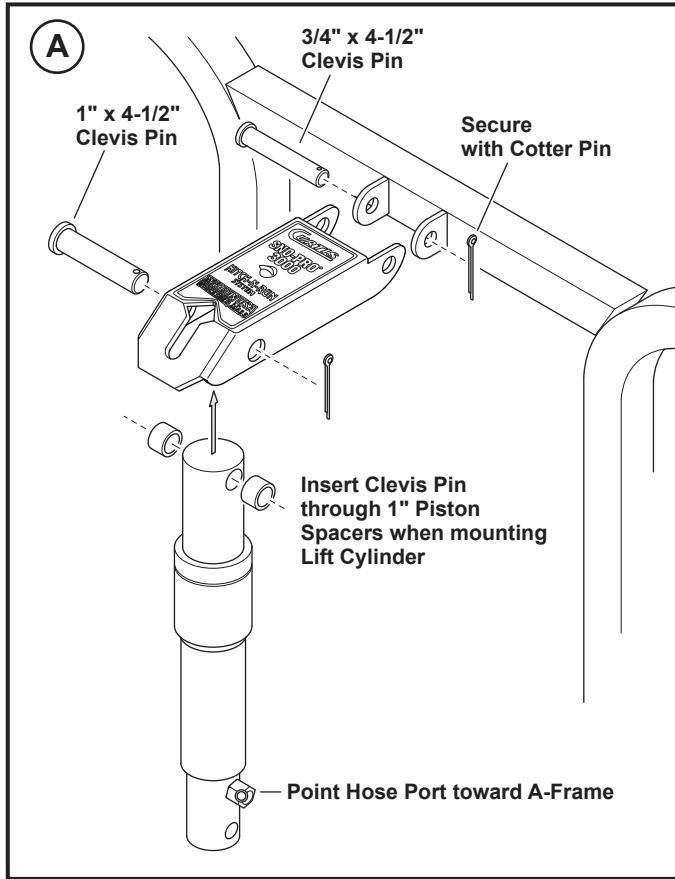


NOTE The Hose Port on the Lift Cylinder must face towards the Driver's Side.

- C.) With top of Lift Cylinder secured, raise the Lift Arm and swing the Lift Cylinder bottom between Lower Mounting Tabs on the Lift Frame and secure with a 3/4" x 2-3/4" Clevis Pin (1TBP43) and a 2" Cotter Pin. *Figure 14B.*
- D.) The Hydraulic Hose should now be connected to the 45° Elbow. Use (2) 9/16" wrenches when tightening Lift Hose to avoid twisting the Hose.
- E.) Insert the loose end of the Lift Chain up through the bottom of the Lift Arm and out through the slot in the front of the Lift Arm. Extra Chain will hang out in front of the Lift Arm. *Figure 14C.*

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Figure 14. Lift Arm Mounting



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Section 7. Lift Frame Setup *(continued)*

F.) The correct Lift Chain setting is critical when attaching or removing the Plow from the vehicle. When setting up the Plow for the first time, adjust the Lift Chain so that the Lift Frame Attaching Forks are parallel to the A-Frame. Once Plow is set up correctly, index the Lift Chain for future reference. *Figure 15.*

IMPORTANT

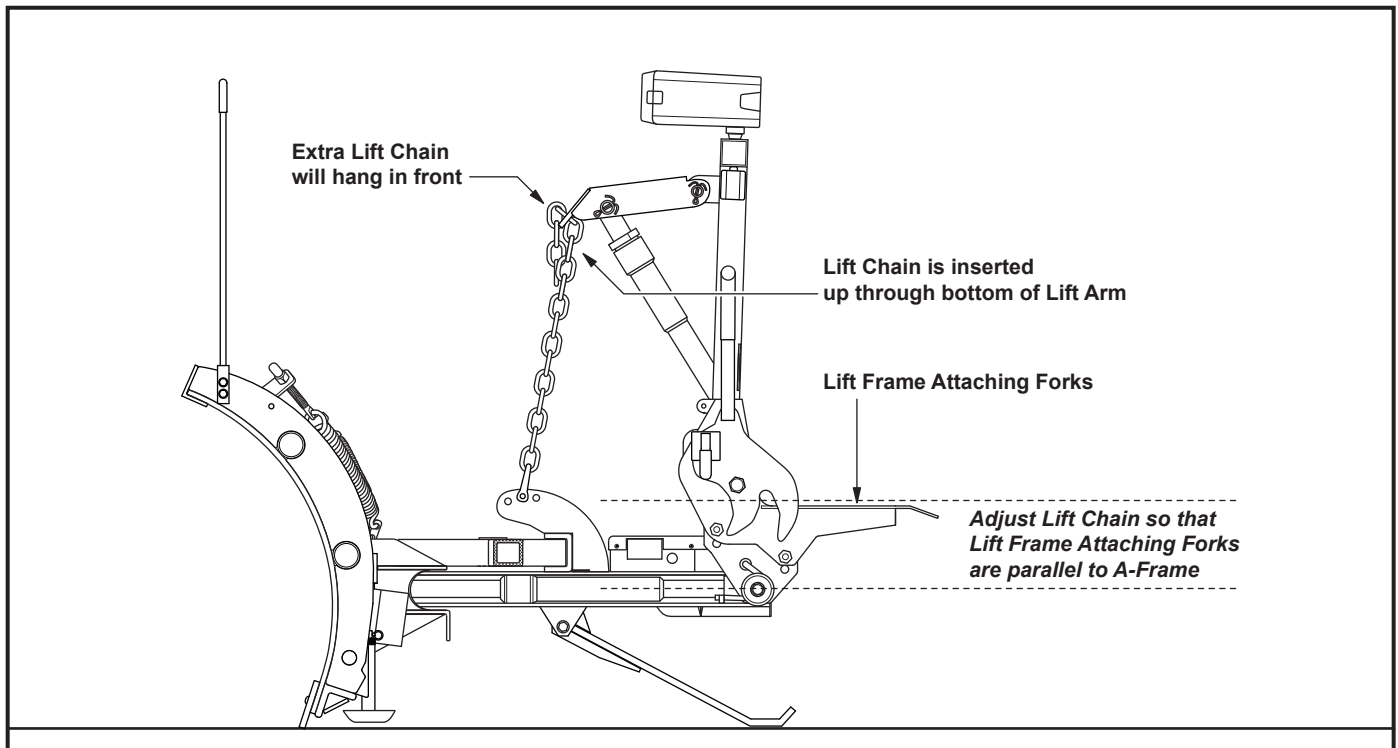
Due to variations from truck to truck, one link adjustments may be necessary to fine tune the individual Plow to a specific vehicle.

G.) Mount Lights to Lift Frame using supplied hardware (1TBP161) and Harness Plug Holder (1TBP135). Refer to *Figure 14D* on previous page.

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 15. Adjust Lift Chain

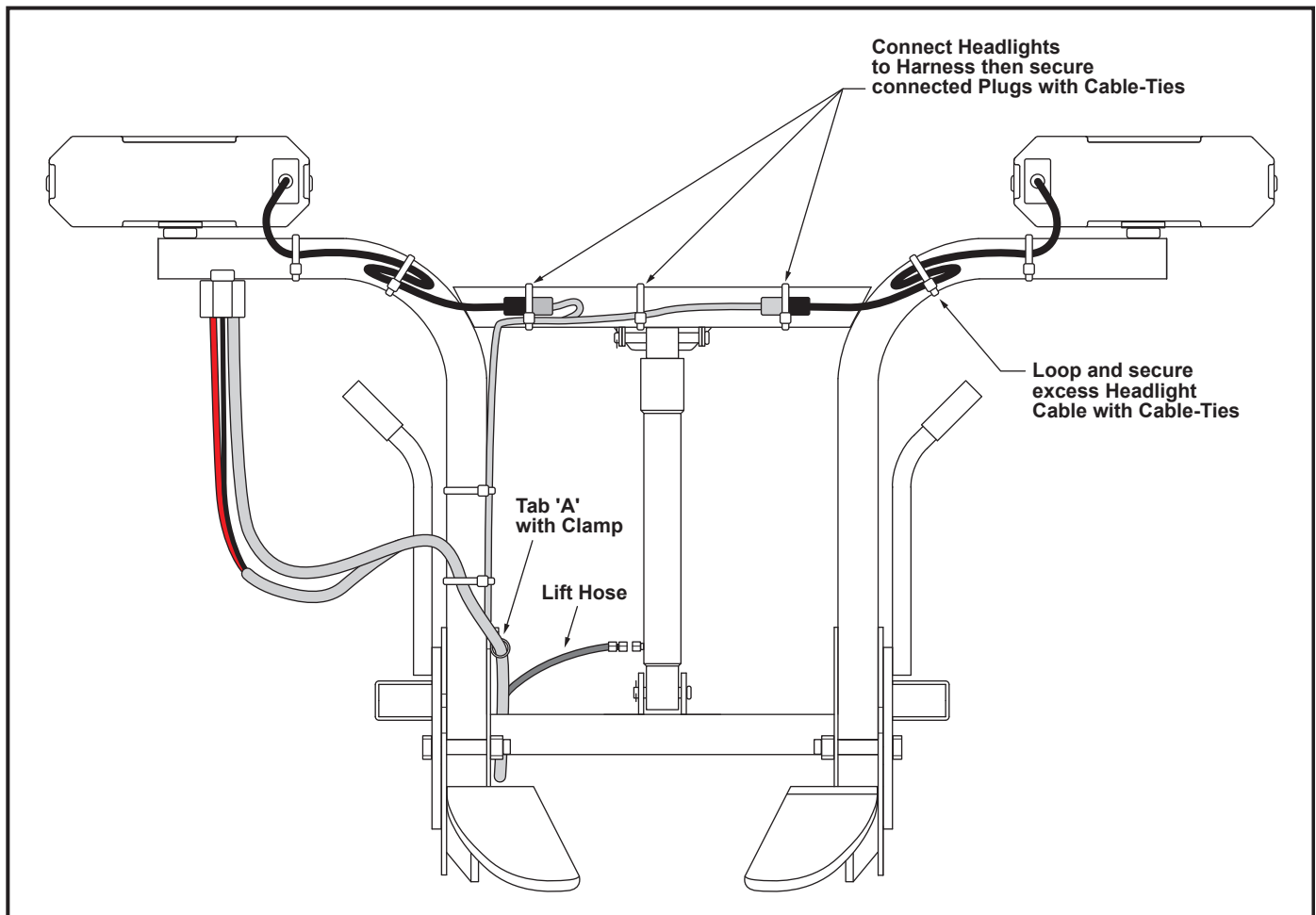


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Section 8. Electrical Harness Steps

- A.) If Harness and Lift Cylinder Hose are not pre-wrapped together with Hose Wrapping, tie together using (3) Wire Ties 4" apart starting at the A-Frame exit.
- B.) Secure the Harness to the Lift Frame using supplied Harness Clip, Bolt, Nuts and Wire Ties.
- C.) Attach Plow Harness to Lift Frame at Tab 'A' using supplied P-Clamp. Route Plow Harness in front of Lift Frame Up Left tube (Driver's side) and secure Harness using supplied Wire Ties. Allow some slack in the Wire Tie when securing the Harness so that Harness can 'flex' properly. See Figures 16 & 17.

Figure 16. Secure Harness to Lift Frame



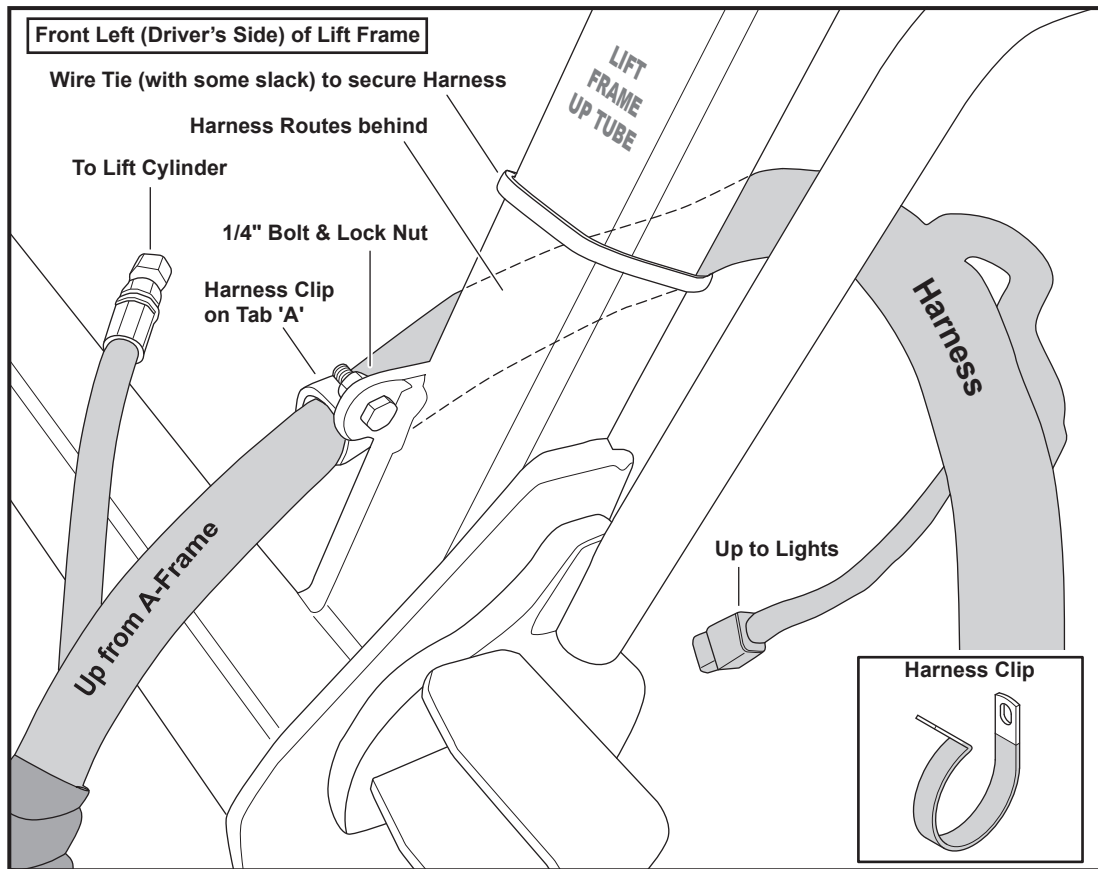
CAUTION

Routing of Harness and location of the Harness Clip & 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.) Plug the Plow Light Connectors into Harness and secure the connected Plugs to the Lift Frame. Excess Cord from Lights can be secured with Tie-Wrap where shown. Figure 16.

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Figure 17. Secure Harness to Lift Frame



CAUTION

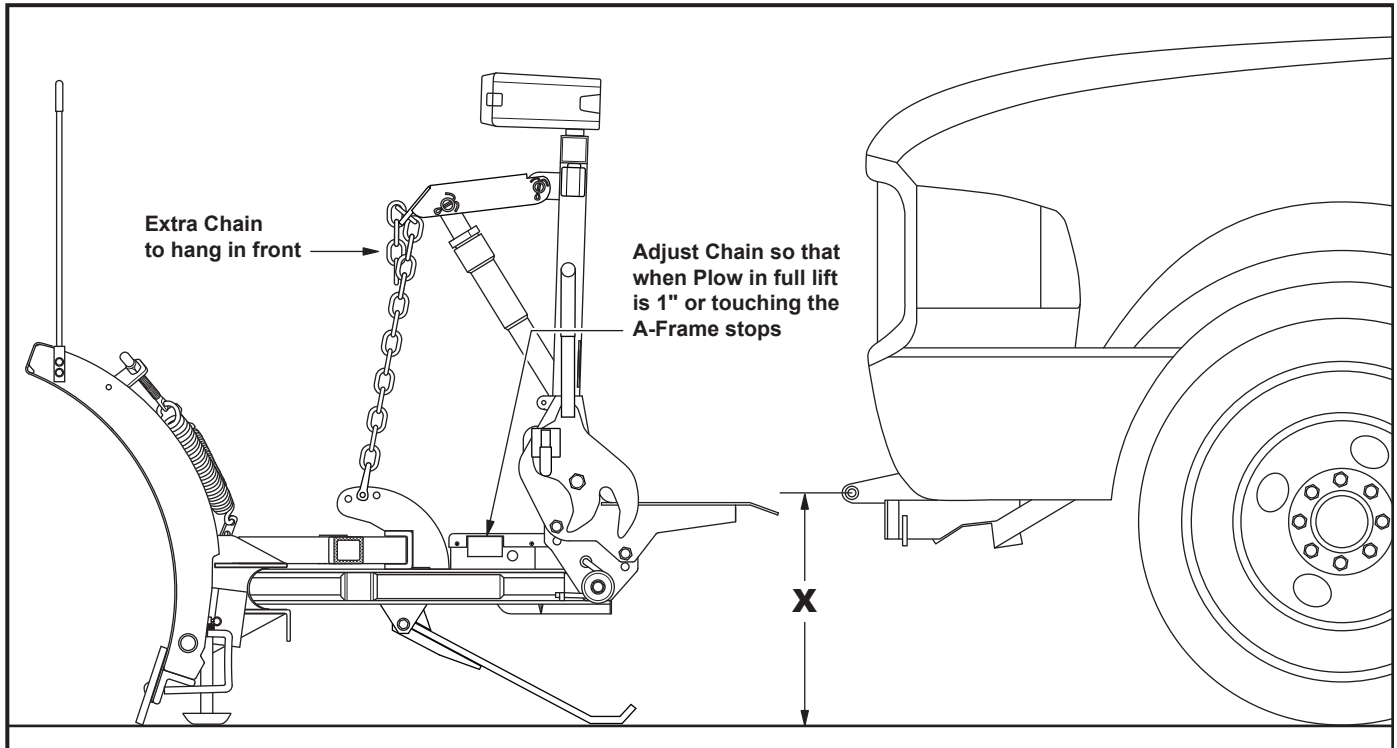
After securing Harness, with Main Plug stored in Plug Storage Holder, it is important to move Driver's Side Latch Hook through its cycle of motion by hand to ensure clearance between Harness and any moving parts. Failure to properly secure Harness could result in severe damage to the Harness.

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Section 9. X Height Procedure

- A.) Install Mount Kit on vehicle referring to Mount Kit installation procedure. Wire vehicle referring to Page 26 for detailed Harness & Control System installation information.
- B.) With vehicle parked on level ground and properly ballasted for snow plow use, measure the distance from the ground up to the centerline of the Latch Bar on the Receiver as shown.
- 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 Side Plates.

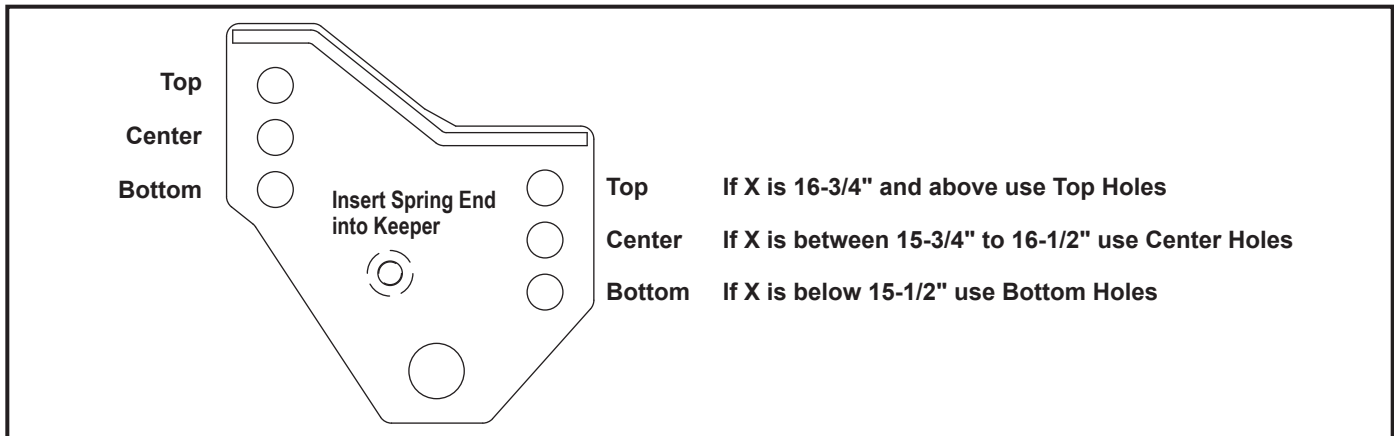
Figure 18. Determine X Height for Correct Side Plate Mounting Holes



NOTE

This is a general guideline to help make the assembly process easier. Due to great variations in suspension, tires, age of the vehicle, etc. it may be necessary to change the Side Plate positions after Plow is attached to the vehicle.

Figure 19. Select Appropriate Side Plate Mounting Holes



Sno-Pro 3000 Assembly Instructions

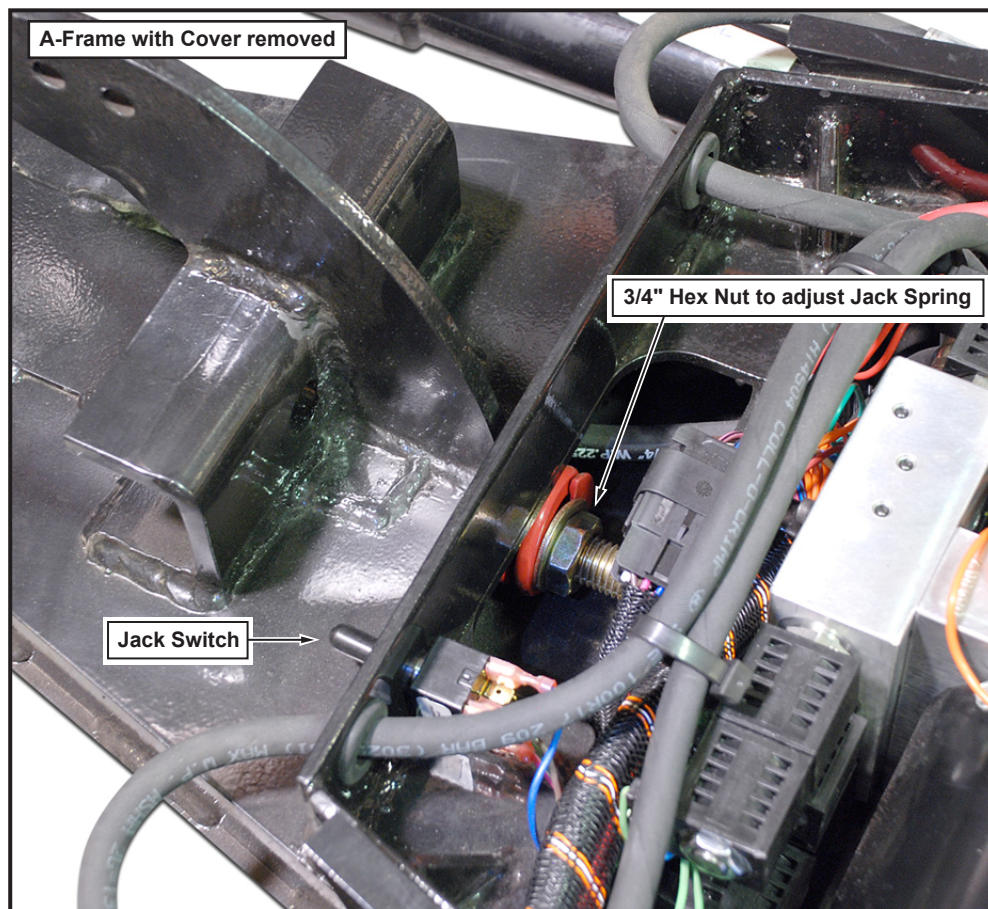
Vehicle to Plow Initial Setup

Once Vehicle Mount Kit and Harness installations are complete, raise the Plow to the same level as the Mount Kit Receiver. To accomplish this, drive truck close to Plow and attach the Harness Plug. Put 'In-Cab' Control System into the 'float' position and raise the Plow using the A-Frame Jack Switch to align the rear of the Lift Frame with the Mount Kit Receiver. If necessary, readjust the Side Plate positions.

Jack Adjustment Procedure

With the Lift Cylinder & Jack fully retracted, top off the Pump Reservoir. It may be necessary to run the Jack for 10 cycles as a break-in period. During the break-in period, check that the Jack retracts fully against the Pan of the A-Frame. If the Jack Leg doesn't fully retract, remove the A-Frame Cover and manually adjust the tension on the Jack Leg Return Spring using a 1-1/8" open end wrench. The Jack Return Spring is located forward of the Pump in the A-Frame Pump cavity. See Figure 20 below. A 3/4" Hex Nut holds the tension on the Spring. If more tension is required, tighten the Hex Nut against the Spring. When adjusting the Spring tension, use full turn increments and test the function of the Jack Leg after each turn of the Hex Nut. *Do not over tighten the Return Spring.*

Figure 20. Jack Spring Adjustment

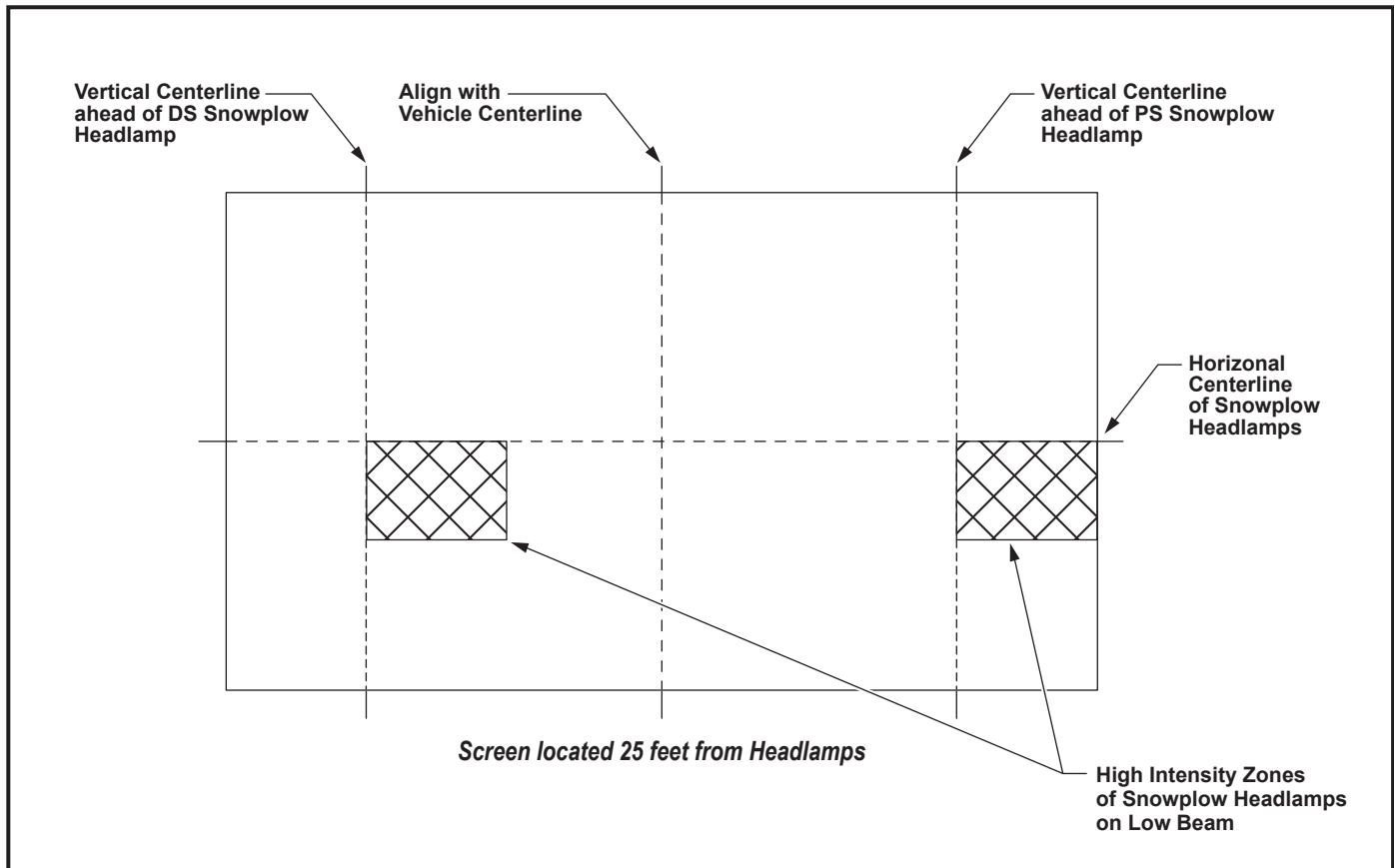


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Section 10. Plow Light Beam Aiming Procedure

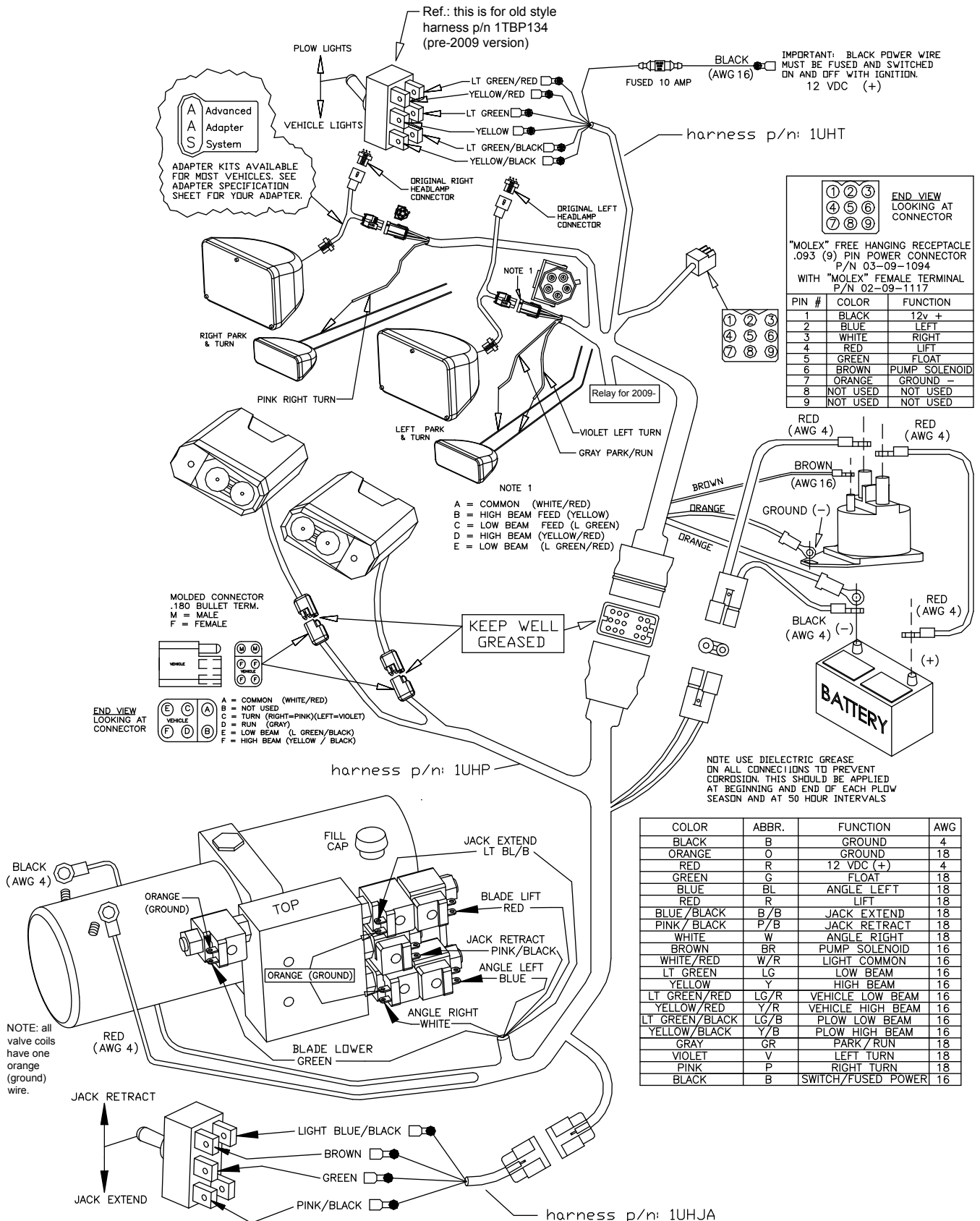
- A.) Vehicle must be on level surface 25 feet in front of matte-white screen, such as a garage door. The screen should be perpendicular to both the ground and vehicle centerline.
- B.) Vehicle should be ballasted for snow plowing with a driver. Snowplow Blade should be in place and in the raised position.
- 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 21. Plow Light Aiming Chart



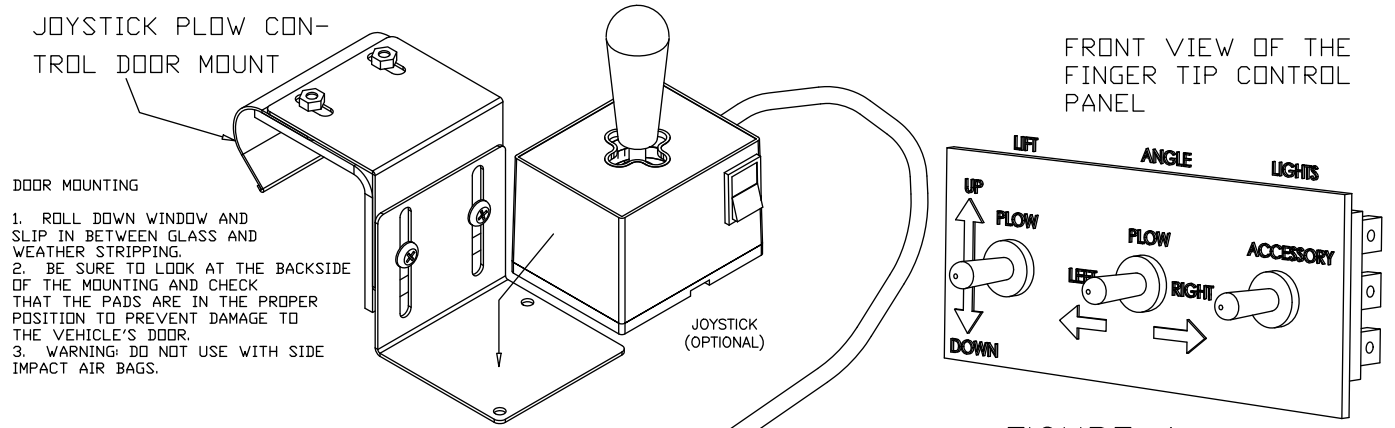
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Figure 22. Sno-Pro 3000 Harness Layout



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Figure 23. Sno-Pro 3000 Control Detail



JOYSTICK PLOW CONTROL DOOR MOUNT

DOOR MOUNTING

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

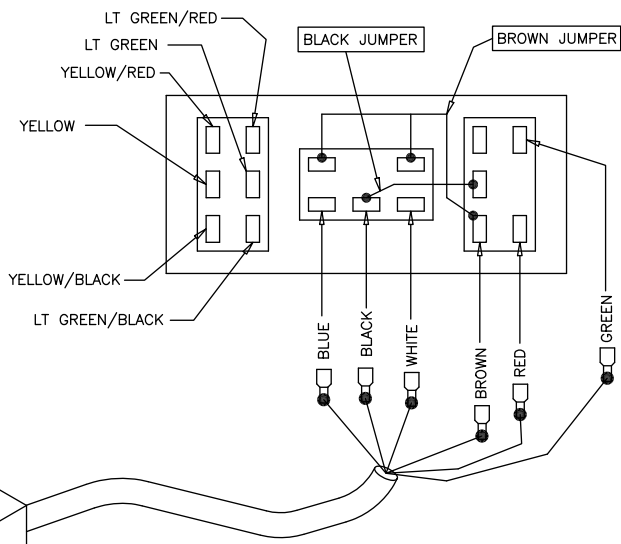
END VIEW
LOOKING AT
CONNECTOR

③	②	①
⑥	⑤	④
⑨	⑧	⑦

"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

REAR VIEW OF THE FINGER TIP CONTROL PANEL



FROM MAIN HARNESS

END VIEW
LOOKING AT
CONNECTOR

①	②	③
④	⑤	⑥
⑦	⑧	⑨

"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

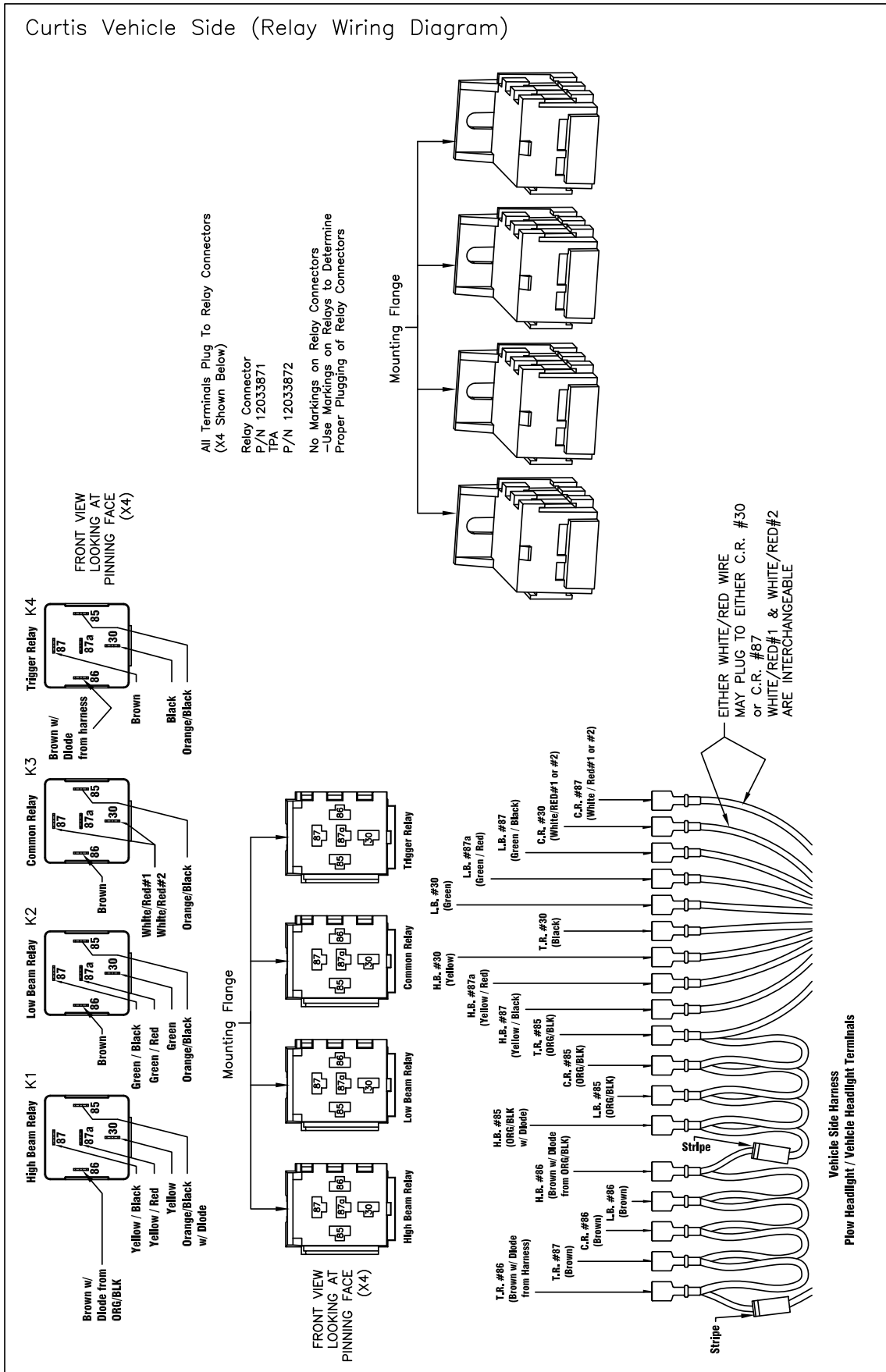
1. VIEWING THE PANEL FROM THE REAR, CONNECT THE WIRES AT THE LOCATIONS INDICATED.
2. FOR THE JUMPER CABLES, USE THE PIGGYBACK SPADE FITTINGS SUPPLIED. THE JUMPER CABLES SHOULD BE THE SAME COLORS AS THE MAIN WIRE THEY ORIGINATE FROM.

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.

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Figure 24. Vehicle Side Harness Relay Connector Connections



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Section 11. Snow Plow Storage and Maintenance

- 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.