

HYDRAULIC PLOW LIFT CONTROL KIT



POLARIS®

P/N 2879220

Application

For use with the "Glacier Pro" Plow System (PN 2879103) on the below listed models:
2009 and newer full size Ranger 500, 700, and 800 models
2013 and newer Ranger 900 models

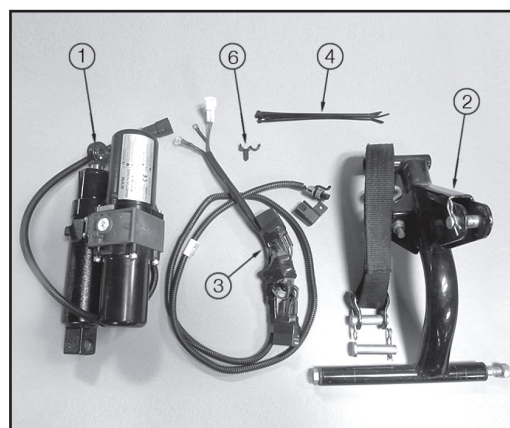
Before you begin, read these instructions twice and check to be sure all parts and tools are accounted for. Please retain these installation instructions for future reference and parts ordering information.

IMPORTANT: The following instructions contain details required to install the contents of this kit and it should be used as a supplement to the plow system installation instructions. The plow control (PN 2879227) is required for this kit and it is recommended that the plow control be installed in the vehicle prior to installing the lift kit. Please read the following instructions carefully prior to installation because some applications may require additional hardware.

This Kit Includes:

Hydraulic Plow Lift Control Kit (PN 2879220) Parts List:

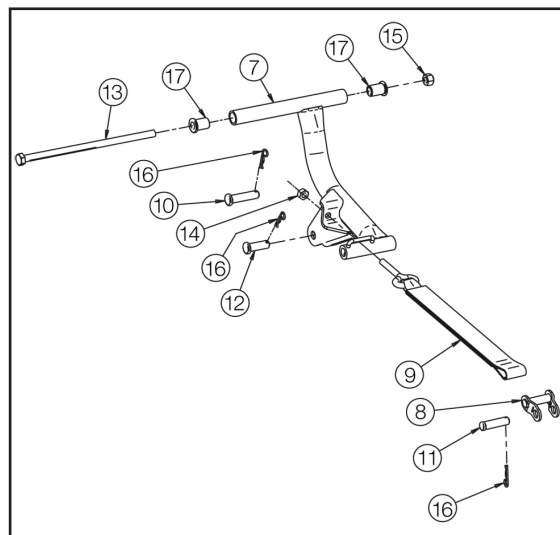
<u>Ref#</u>	<u>Qty</u>	<u>Part Description</u>	<u>Part Number</u>
1.....	1	Plow Lift Cylinder	2879221
2.....	1	Lift Arm Kit	2879222
3.....	1	Plow Control Harness	2412369
4.....	5	Panduit Strap	7080492
5.....	1	Rivet	7621472
6.....	1	Routing Clip	7670102
	1	Instructions	9924149



This Kit Includes:

Lift Arm Kit (PN 2879222) Parts List:

<u>Ref#</u>	<u>Qty</u>	<u>Part Description</u>
7.....	1	Lift Arm
8.....	1	Strap Link
9.....	1	Strap
10.....	1	Cylinder Pin (Long)
11.....	1	Strap Link Pin
12.....	1	Lift Arm Pin (Short)
13.....	1	M12-1.75 Hex Bolt
14.....	1	M10-1.5 Nylock Nut
15.....	1	M12-1.75 Nylock Nut
16.....	3	"R" Pin
17.....	2	Bushing



Tools Required:

Torx Drive Set

Metric Socket Set

Rivet Tool

Side Cutter

APPROXIMATE ASSEMBLY TIME (R&R): 30 minutes

IMPORTANT: For your safety, and to ensure a satisfactory installation, perform all installation steps correctly in the sequence as shown on the attached instructions.

“GLACIER PRO” HYDRAULIC PLOW LIFT CONTROL KIT

KIT PN 2879220

IMPORTANT: Read and understand the following operating instructions to avoid severe personal injuries or death. Compliance with these safety measures will also ensure that your snow plow will give you many years of good use. Re-torque all bolts and nuts after first 1/2 hour of use.

- Do not exceed 5 mph with blade installed.
- Operate with extreme caution on slopes, grades, and rough terrain.
- Keep away from blade and moving parts during operation.
- When plowing snow or dirt into a pile start backing up before raising the blade.
- Do not ram the blade into the pile. ****Slow down before hitting pile.****
- Beware of possible hidden objects under snow.
- Read blade Owner's Manual, ATV Operator's Manual and safety decals before operating.
- Always wear appropriate protective clothing as recommended in atv operator's manual.
- Do not allow riders on blade or ATV.
- Keep bystanders away from blade and ATV while moving.
- Before adjusting blade angle: Stop ATV engine, set and lock brakes, raise and lock blade in up position. Do not attempt to raise blade by hand.
- Before adjusting blade height: Lower blade to the down position.
- When blade is not in use, stop ATV engine, set and lock brakes and lower blade to down position.
- Polaris recommends to remove the blade and the plow frame before trail riding.

OPERATION

The hydraulic plow lift kit raises, lowers and allows floatation of the plow without using a winch.

Push on “LIFT” button to raise the plow and “LOWER” to lower the plow. A relief valve limits the force to the maximum load the vehicle can handle. If the snow weight exceeds vehicle capacity, the cylinder bypass valve will not allow the plow to raise.



ASSEMBLY INSTRUCTIONS FOR RANGER 900 MODELS

(FOR RANGER FULL SIZE 500, 700, AND 800 MODELS, SEE PAGE 7)

WIRING KIT ASSEMBLY INSTRUCTIONS:

1. Open the passenger side seat, remove the storage compartment and disconnect the battery prior to starting this installation.
2. Remove the center hood section from the machine and determine if the unit has 6 gage power and ground cables going to the accessory block. If the unit does not already have power and ground cables going to the accessory block the P/N 2879388 wire kit should be installed at this time. Do not connect the wires to the battery until installation of the lift kit is complete.
3. Use a T-40 Torx bit to remove the plastic grille insert from the bumper at this time retaining hardware for reuse. Take note that the fairlead will also need to be removed if a winch was previously installed on the unit.
4. Remove the protective cap from the P/N 2412369 control harness (#3) and secure it to the right hand side of the P/N 5257055 grille with the P/N 7621472 rivet (#5) as shown in *figure 1*. The P/N 5257055 grille can be found in the P/N 2879106 mount kit.

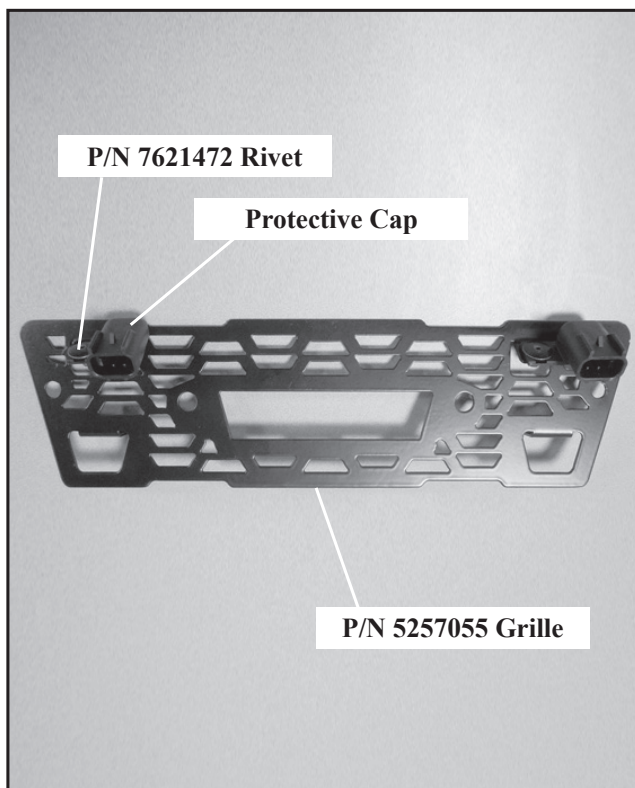


Figure 1

5. Follow the below instructions for proper wire routing:
 - a. Route the plug of the P/N 2412369 control harness (#3) through the right hand routing hole found under the center hood of the unit as shown in *figure 2*.

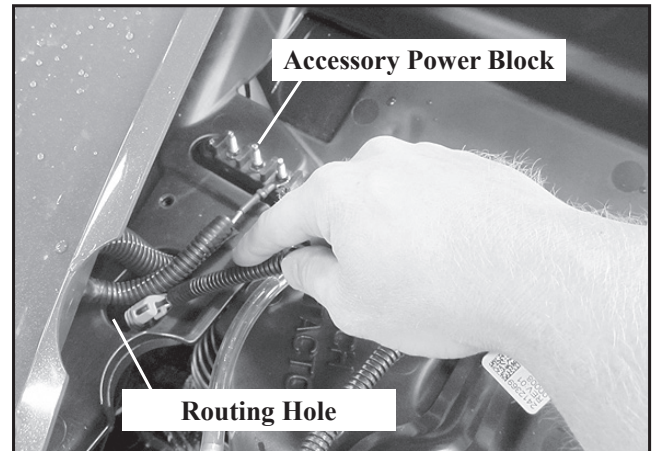


Figure 2

- b. From under the right hand fender route the cable along the top of the main frame tube passing the plug through the routing hole provided on the lower left hand side of the radiator shroud as shown in *figure 3*.

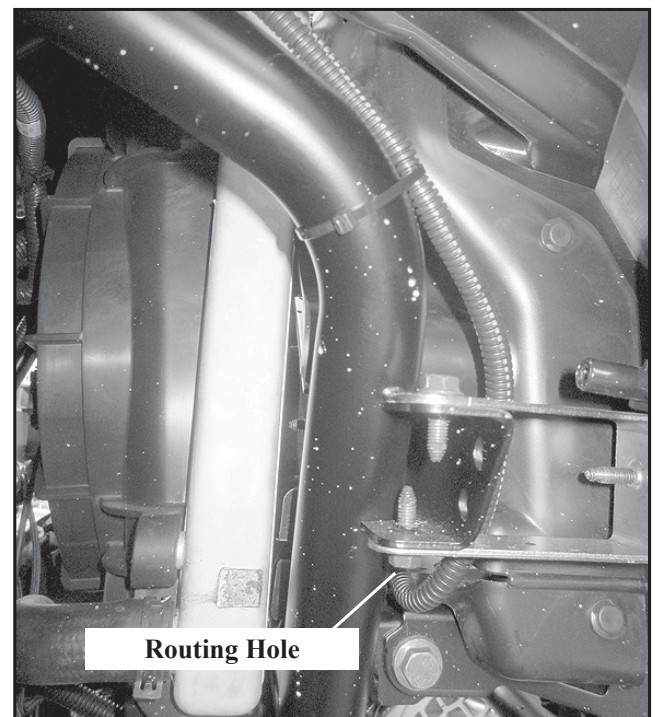


Figure 3

- c. From the front of the unit the harness plug should be routed through the right hand bumper opening and pass through the right hand side of the P/N 5257055 grille insert. The locating clip on the P/N 2412369 control harness (#3) should be secured into the locating tab on the grille as shown in *figure 4*.



Figure 4

- d. Install the new grille insert at this time using the hardware that was removed in **step 3**. If a winch fairlead was removed it should also be reinstalled at this time.
- e. Attach the red power and black ground leads of the P/N 2412369 control harness (#3) to the corresponding leads on the accessory block at this time. The accessory block is located under the hood on the RH side as shown in *figure 5*.

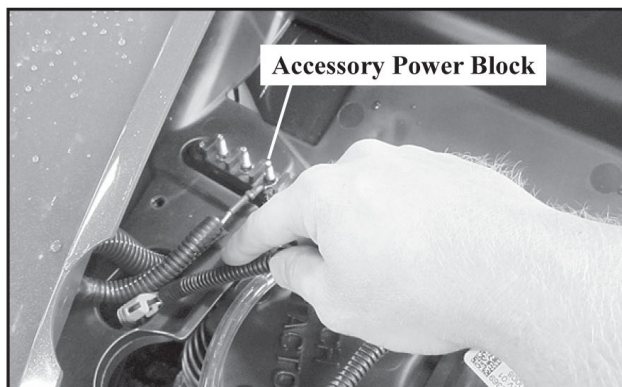


Figure 5

- f. The white plug on the plow harness should be attached to the plow control harness that was previously installed in the unit.
- g. Use one of the panduit straps (#4) provided in this kit to secure the plow control harness to the main frame near the front bend as shown in *figure 6*.

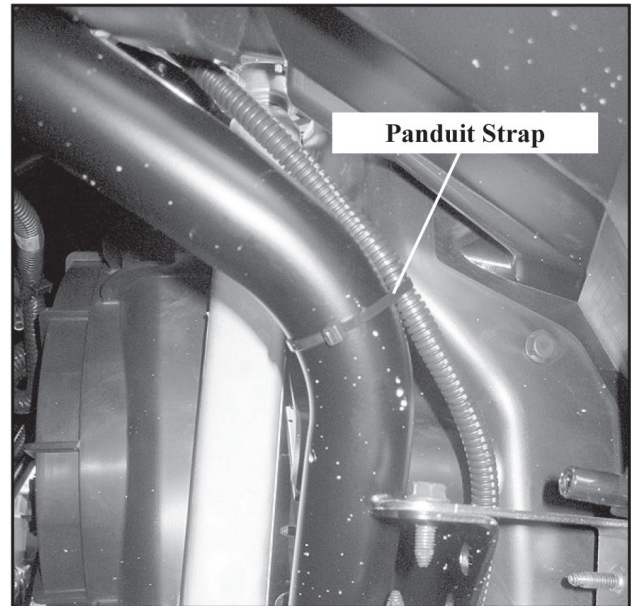


Figure 6

- h. Check to make sure all connections are secure and use the remaining P/N 7080492 panduit straps (#4) to secure the harness as necessary. Take care to position the relays and circuit breaker in an area where they will not be damaged during operation.
6. Install the P/N 7670102 routing clip (#6) to the harness of the P/N 2879221 lift cylinder (#1) 10" from the end of the plug as shown in *figure 7*.

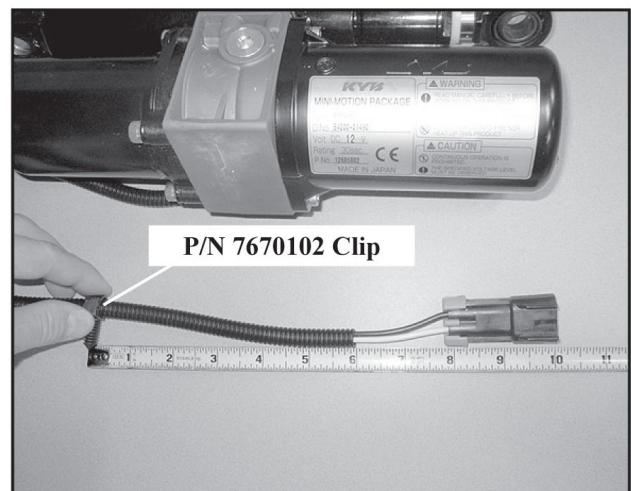


Figure 7

LIFT ARM ASSEMBLY INSTRUCTIONS:

NOTE: Installation of the following items is easier if the plow system is installed on the vehicle.

1. Insert the (2) bushings (#17) in the lift arm tube (#7).

Position the lift arm (#7) in the center of the raising handle and insert the M12-1.75 hex bolt (#13) from the side.

Tight the M12-1.75 nylock nut (#15) until it touches the plate.

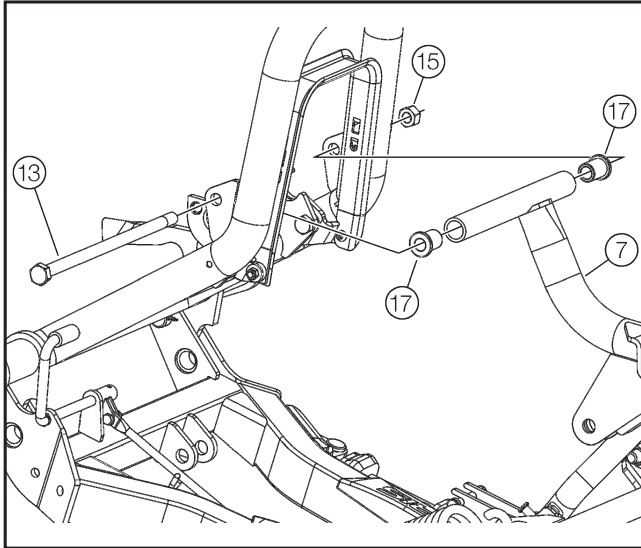


Figure 8

2. Position the bottom end of the cylinder between the two retaining plates of the plow frame and insert the cylinder pin (long) (#10) from the side.

Insert the "R" pin (#16).

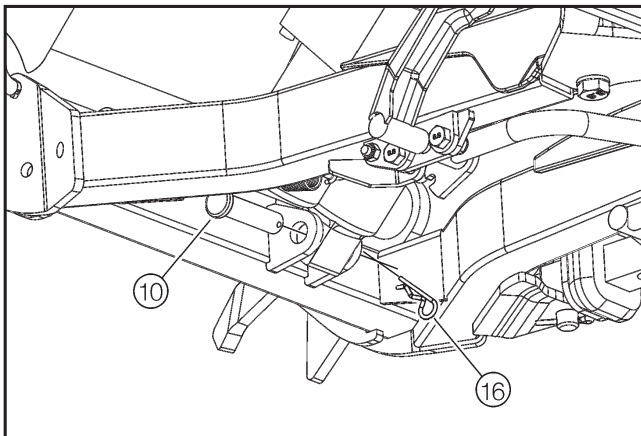


Figure 9

3. Insert the lift arm pin (short) (#12) in the ball joint end of the cylinder from the side.

Lock it in place with the "R" pin (#16).

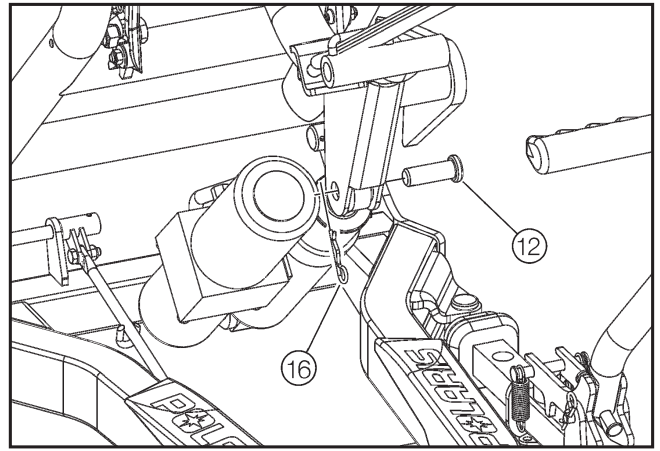


Figure 10

4. Position the strap link (#8) on the frame and insert the strap link pin (#11) in the frame.

Lock it in place with the "R" pin (#16).

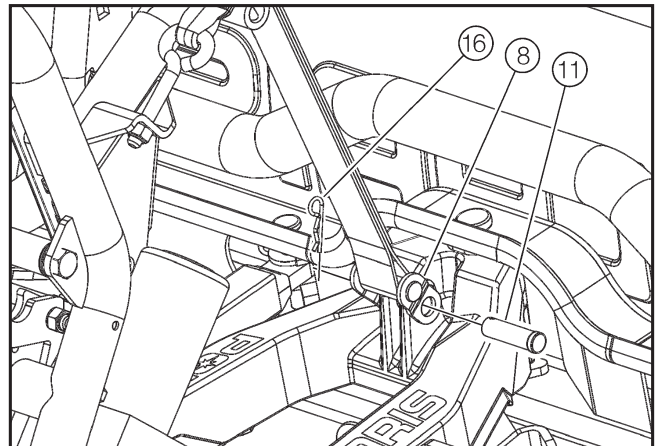


Figure 11

5. Route the power wires between the motor and the lift cylinder as shown in figure 12.

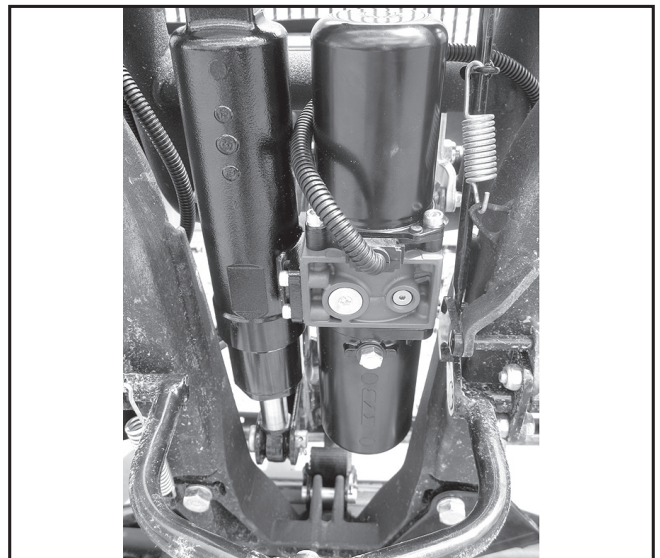


Figure 12

6. The clip that was installed in **step 6** (*in Wiring Kit Assembly Section*) should now be pushed into the 1/4" hole on the right hand side of the mid frame as shown in *figure 13*.

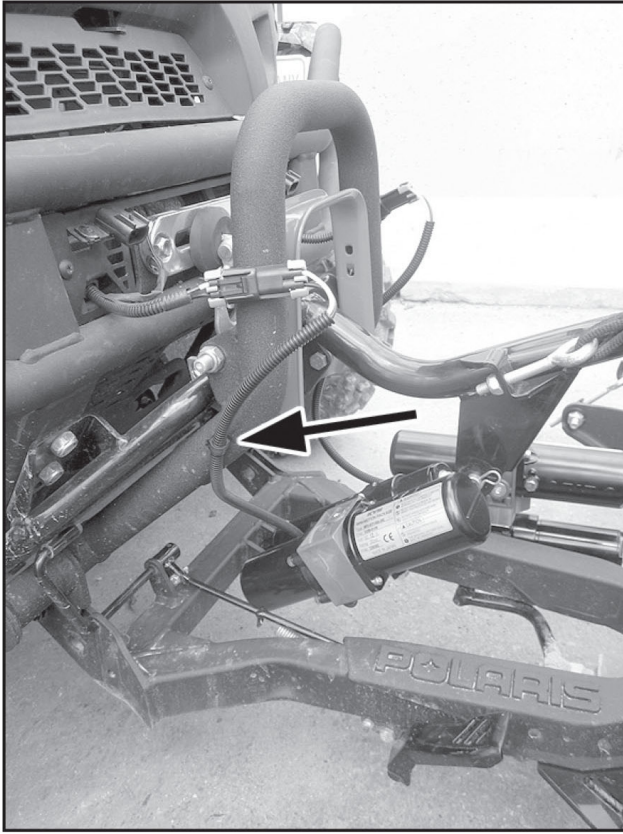


Figure 13

7. Reconnect the battery and reinstall the storage compartment and hood that were removed in **steps 1 and 2** (*in Wiring Kit Assembly Section*) at this time.
8. Attach the plow system to the unit and connect the lift cylinder wire to the plow control wire.
9. Check operation to make sure the lift system works properly. Check all wire routings to make certain wires are free to move during plow installation and removal.
10. When plow system is removed from the unit the plow control wires should be connected to the cap installed on the grille in **step 4** (*in Wiring Kit Assembly Section*) to prevent moisture and debris from entering the plug as shown in *figure 14*.

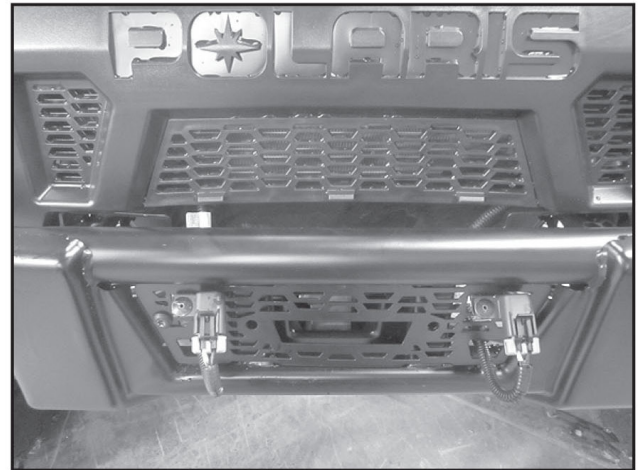


Figure 14

ASSEMBLY INSTRUCTIONS FOR RANGER FULL SIZE 500, 700, AND 800 MODELS

(FOR RANGER 900 MODELS, SEE PAGE 3)

WIRING KIT ASSEMBLY INSTRUCTIONS:

1. Open center hood panel and disconnect the battery prior to starting this installation.
2. Use a T-27 Torx bit to remove the stock grille insert from the bumper at this time retaining hardware for reuse.
3. Remove the protective cap from the P/N 2412369 control harness (#3) and secure it to the right hand side of the P/N 5257056 grille with the P/N 7621472 rivet (#5). The P/N 5257056 grille can be found in the P/N 2879105 mount kit. If the unit has a winch the insert will need to be removed from the grille by clipping the tabs as shown in *figure 15*.

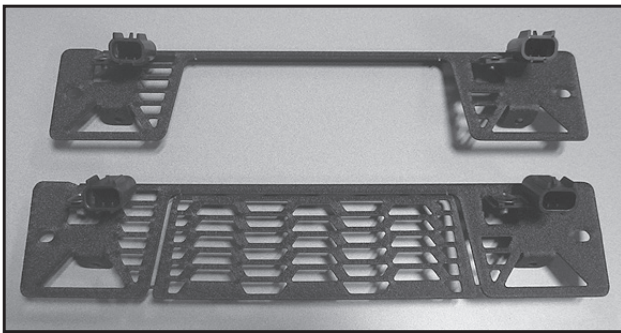


Figure 15

4. Follow the below instructions for proper wire routing:
 - a. Route the plug of the P/N 2412369 control harness (#3) through the gap between the hood liner and the front bumper fascia on the right hand side as indicated in *figure 16*.

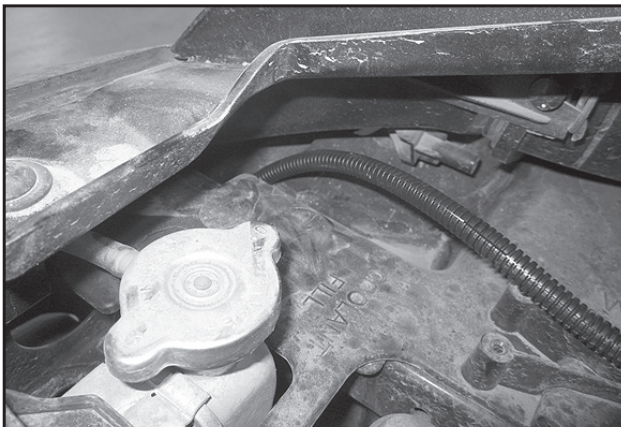


Figure 16

- b. From under the right hand fender route the cable to the inside of the bumper to where the grille insert was removed as shown in *figure 17*.



Figure 17

- c. From the front of the unit the harness plug should be routed through the right hand side of the bumper opening and pass through the right hand side of the P/N 5257056 grille insert. The locating clip on the P/N 2412369 control harness (#3) should be secured into the locating tab on the grille as shown in *figure 18*.

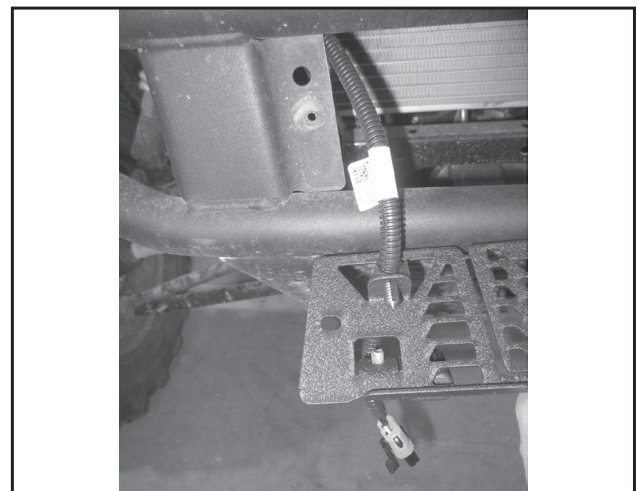


Figure 18

- d. Install the new grille insert at this time using the hardware that was removed in **step 2**.
 - e. Attach the red power and black ground leads of the P/N 2412369 control harness (#3) to the corresponding leads on the accessory block at this time. The accessory power block can be found secured to the dash support just left of the battery.
 - f. The white plug on the plow harness should be attached to the plow control harness that was previously installed in the unit.
 - g. Pull excess wire to the top side of the hood liner and secure cables as necessary with the provided P/N 7080492 panduit straps (#4). Take care to position the relays and circuit breaker in an area where they will not be damaged during operation.
5. Install the P/N 7670102 routing clip (#6) to the harness of the P/N 2879221 lift cylinder 10" from the end of the plug as shown in *figure 19*.

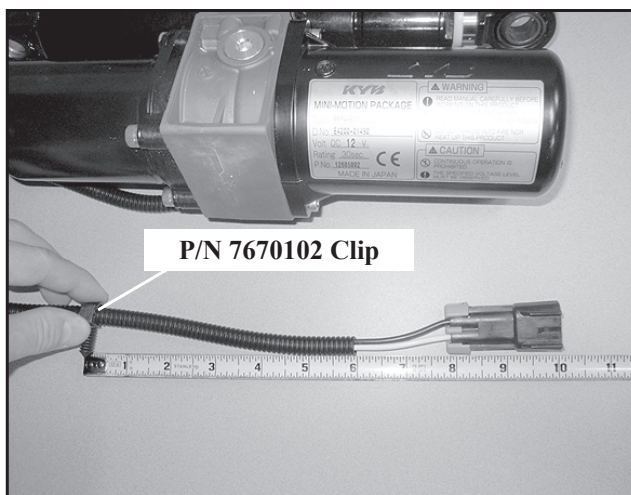


Figure 19

LIFT ARM ASSEMBLY INSTRUCTIONS:

NOTE: Installation of the following items is easier if the plow system is installed on the vehicle.

1. Insert the (2) bushings (#17) in the lift arm tube (#7).
Position the lift arm (#7) in the center of the raising handle and insert the M12-1.75 hex bolt (#13) from the side.
Tight the M12-1.75 nylock nut (#15) until it touches the plate.

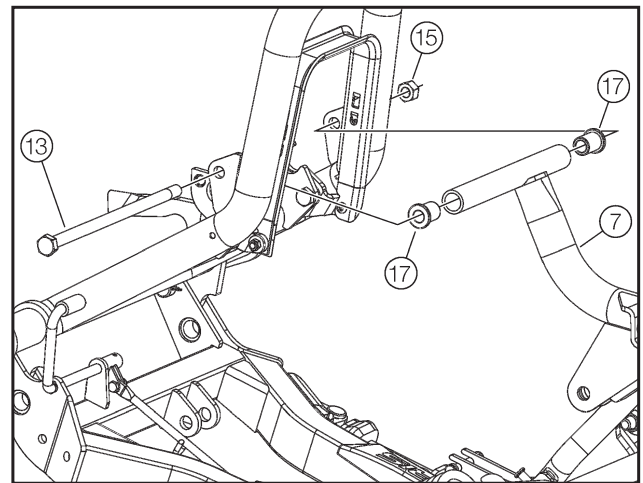


Figure 20

2. Position the bottom end of the cylinder between the two retaining plates of the plow frame and insert the cylinder pin (long) (#10) from the side.

Insert the "R" pin (#16).

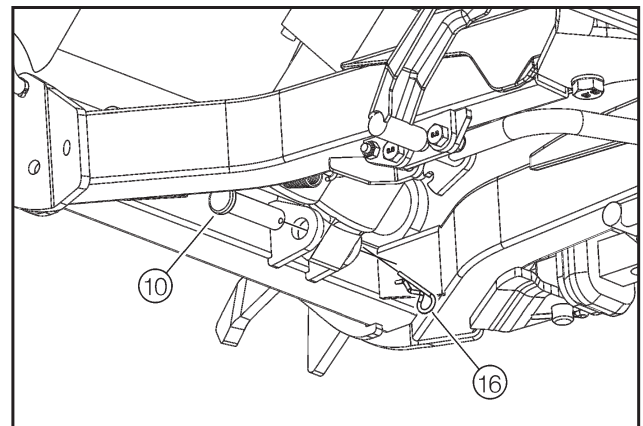


Figure 21

3. Insert the lift arm pin (short) (#12) in the ball joint end of the cylinder from the side.

Lock it in place with the "R" pin (#16).

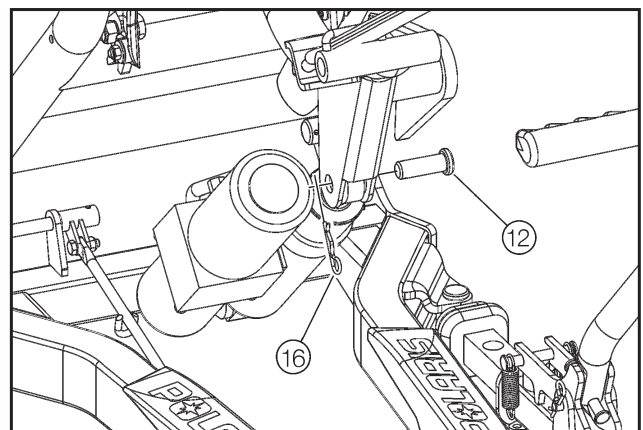


Figure 22

4. Position the strap link (#8) on the frame and insert the strap link pin (#11) in the frame.

Lock it in place with the "R" pin (#16).

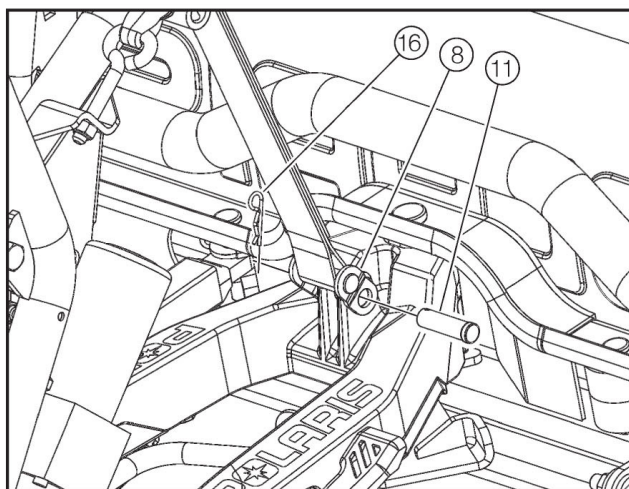


Figure 23

5. Route the power wires between the motor and the lift cylinder as shown in figure 24.

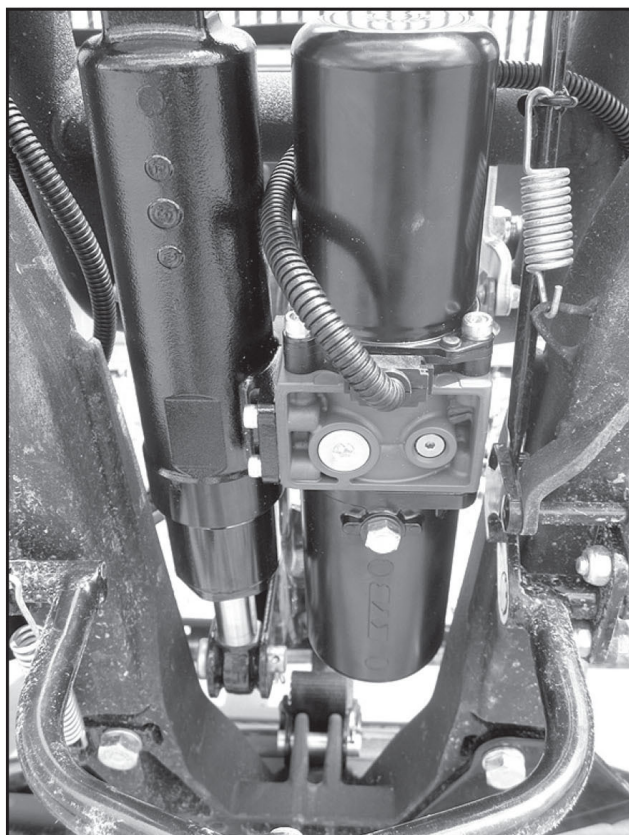


Figure 24

6. The clip that was installed in **step 5** (in *Wiring Kit Assembly Section*) should now be pushed into the 1/4" hole on the right hand side of the mid frame as shown in figure 25.

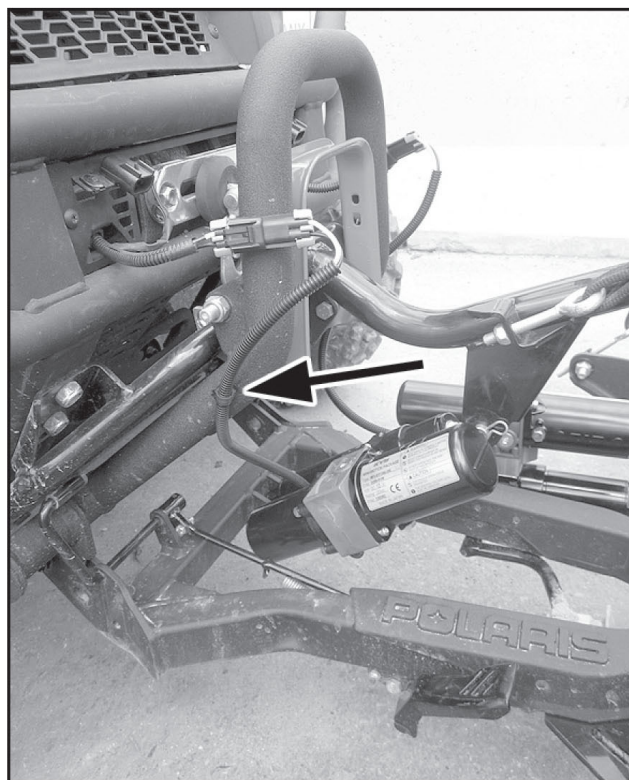


Figure 25

7. Reconnect the battery at this time.
8. Attach the plow system to the unit and connect the lift cylinder wire to the plow control wire.
9. Check operation to make sure the lift system works properly. Check all wire routings to make certain wires are free to move during plow installation and removal.
10. When plow system is removed from the unit the plow control wires should be connected to the cap installed on the grille in **step 3** (in *Wiring Kit Assembly Section*) to prevent moisture and debris from entering the plug as shown in figure 26.

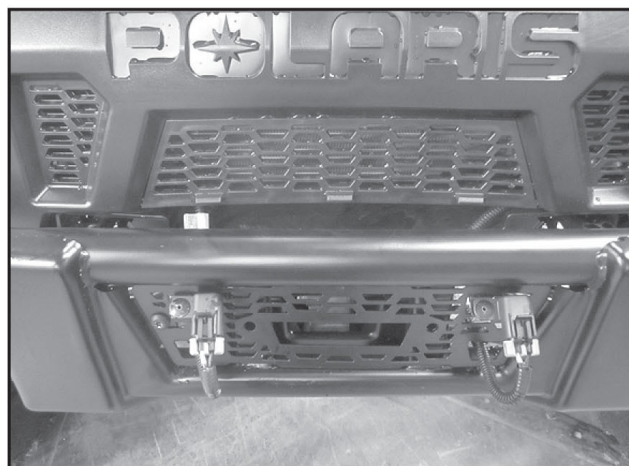


Figure 26

PUSHFRAME INSTALLATION AND REMOVAL

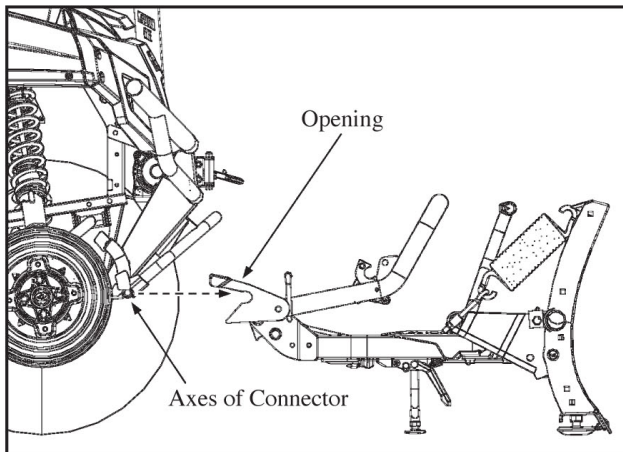
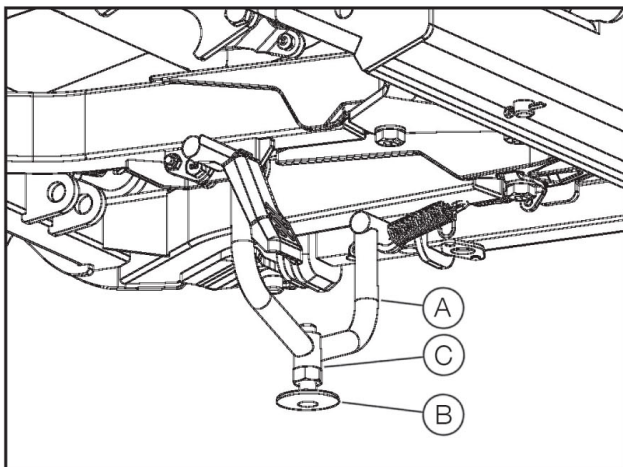
If you have purchased a hydraulic lifting system, refer to installation manual supplied with the hydraulic lift system.

NOTE: The first installation requires you to adjust the height of the kickstand (#A) of ground clearance of your vehicle. It may be necessary to repeat the exercise if you add accessories to your vehicle that affect the ground clearance.

NOTE: If the vehicle is too low, you may need to adjust the vehicle height by changing the adjustment of the front suspension. Refer to vehicle manual for the adjustment method.

HEIGHT ADJUSTMENT OF THE KICKSTAND:

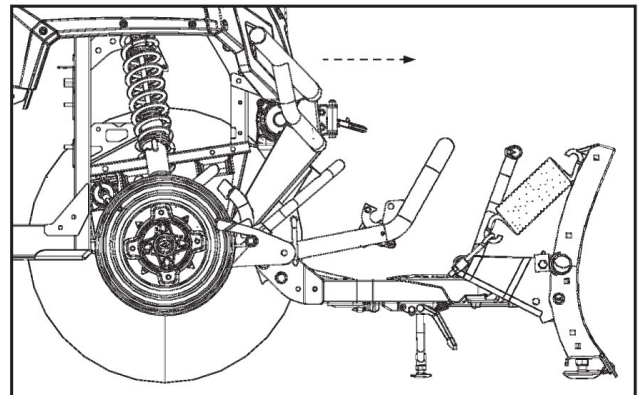
The kickstand (#A) must maintain the pushframe raised so that the opening of the lower attachment plates is of equal height with the axes of connector of the vehicle. Tighten or loosen the kickstand shoe (#B) and tighten the nut (#C) when the height is adjusted.



PUSHFRAME INSTALLATION:

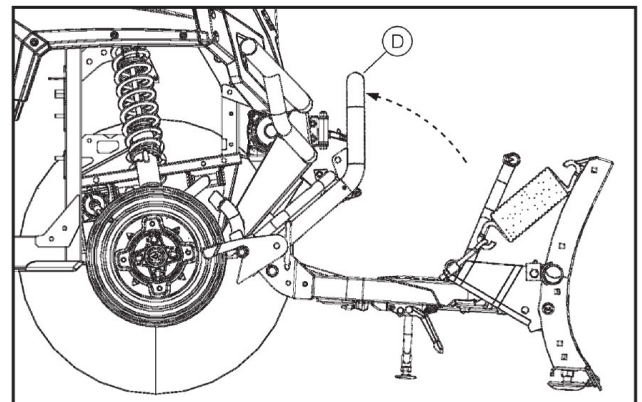
1. Move the vehicle towards the pushframe assembly. Make sure to align the vehicle with the pushframe.
2. Make sure the vehicle is fully engaged in the attachment plates on both sides.

NOTE: The cylinder must be fully retracted.



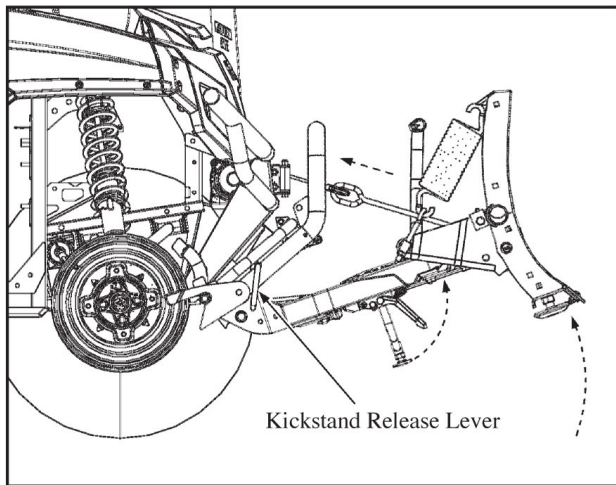
3. Raise the hook up (#D) by pulling up towards the vehicle until the opening of the hook and close to the attachment superior tube.

If the hook does not engage completely, check that the axes of the mounting plate are well positioned in the bottom opening perhaps accumulation of snow or ice could block the movement of moving parts.



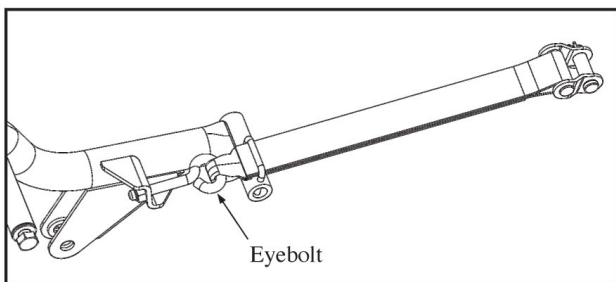
4. Once the pushframe is attached to the vehicle, the kickstand should be slightly raised. The kickstand shoe should not touch the ground. If it touches the ground, the kickstand shoe is not adjusted to the proper height. Repeat steps of adjusting the height of the kickstand.

5. Plug the electrical connector of the plow system to the connector located in front of the vehicle.
6. Raise the cylinder until the kickstand release lever engages and the kickstand is lifted automatically. The blade should be about halfway up when the release of the kickstand.



LIFT HEIGHT ADJUSTMENT:

The eyebolt adjustment end of the strap is used to get the maximum lift height possible with the system when the cylinder is fully extracted.



To adjust height, activate the actuator until it's fully out. Once it's up, try to lift the plow higher by lifting the plow itself. If the plow can be raised further, that means the adjustment is not tight enough. In this case, lower the plow on the ground with the strap loose, then tight the eyebolt one turn at a time.

Repeat the above steps until the plow reaches maximum travel.

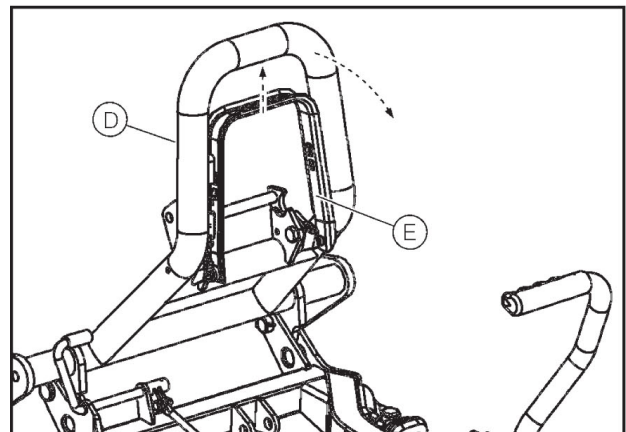
Once the full height is reached, lower the cylinder completely, unlock the system from the vehicle and reattach it. If system fails to attach completely, it may be necessary to readjust the strap slightly.

The strap may stretch over time. It might be necessary to readjust the eyebolt after the first hours of use.

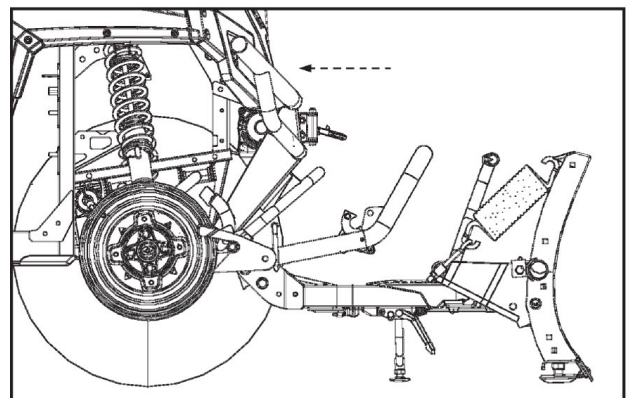
You are now ready to use the system.

PUSHFRAME REMOVE:

1. Lower the pushframe using the hydraulic system until the blade touches the ground. Make sure that the cylinder is fully retracted.
2. Lower the kickstand until the locking mechanism engages. At that time, the kickstand shoe should not touch the ground. If it touches the ground, the height of the kickstand must be adjusted.
3. Unplug the actuator connector.
4. Pull the release handle (#E) and lower the mid-frame (#D) completely. At that time the system is disengaged from the vehicle.



5. Slowly back the vehicle in a straight line until it is no longer in contact with the pushframe.



MAINTENANCE:

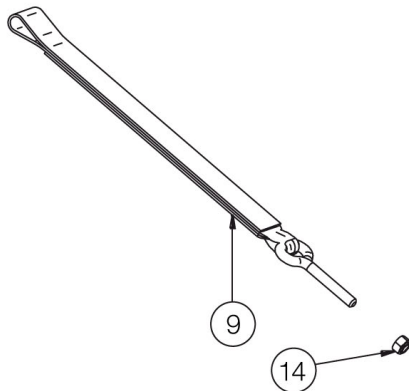
The strap must be inspected annually. If the strap is damaged or shows signs of wear, it must be replaced.

ATTENTION: Using a worn or damaged strap may cause the plow to fall on the ground unexpectedly and may stop the vehicle. To avoid injury, it is very important to replace the strap if it is damaged.

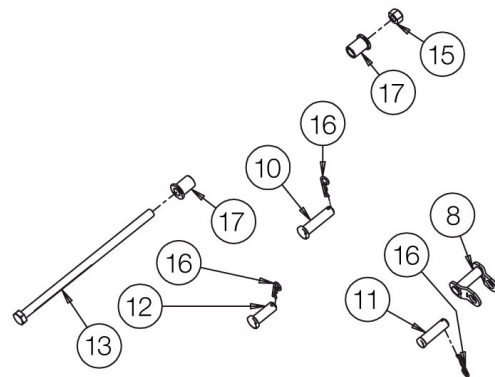
SPARE KITS

REF.	PART DESCRIPTION	Strap Kit P/N 2204963	Hardware Kit P/N 2204891	Lift Arm Kit P/N 2204979	Plow Lift Cylinder Kit P/N 2879221
1.	Plow Lift Cylinder				1x
7.	Lift Arm			1x	
8.	Strap Link		1x		
9.	Strap	1x		1x	
10.	Cylinder Pin (Long)		1x		
11.	Strap Link Pin		1x		
12.	Lift Arm Pin (Short)		1x		
13.	M12-1.75 Hex Bolt		1x		
14.	M10-1.5 Nylock Nut	1x			
15.	M12-1.75 Nylock Nut		1x		
16.	"R" Pin		3x		
17.	Bushing		2x		

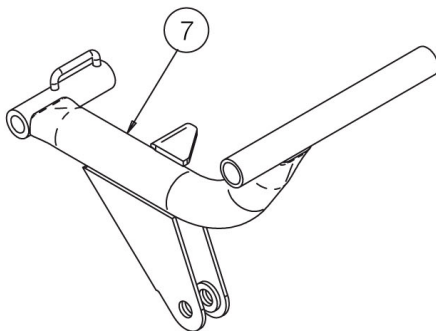
Strap Kit (P/N 2204963)



Hardware Kit (P/N 2204891)



Lift Arm Kit (P/N 2204979)



Plow Lift Cylinder Kit (P/N 2879221)

