

A DIVISION OF M.J. ELECTRIC  
P.O. BOX 788 IRON MOUNTAIN, MI, 49801-0788

## RT3 STRAIGHT-BLADE

# SNOWPLOW ASSEMBLY INSTALLATION PROCEDURE

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PATENTS PENDING

STB03226-2

### **WARNING**

Many newer trucks are equipped with air bags. DO NOT under any circumstances disable or remove or

***PUTS SNOW IN ITS PLACE***

## **Snowplow Assembly Procedure**

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relocate any sensors or other components related to the operation of the air bags.

### **WARNING**

Always follow the vehicle manufacturers recommendations relating to snowplow installation. For recommended vehicle models refer to the Boss Snowplow Application Chart and Selection Guide.

### **WARNING**

Vehicles equipped with air bags are designed such that the air bags will be activated in a frontal collision equivalent to hitting a solid barrier (such as a wall) at approximately 14 mph or more, or, roughly speaking, a frontal perpendicular collision with a parked car or truck of similar size at approximately 28 mph or more. Careless or high speed driving while plowing snow, which results in vehicle decelerations equivalent to or greater than the air bag deployment threshold described above, would deploy the air bag.

### **WARNING**

Make sure plow is properly attached before moving vehicle.

### **WARNING**

When transporting, Position plow so as not to block vision or plow headlights.

### **WARNING**

DO NOT change blade position when traveling.

### **WARNING**

DO NOT exceed 40 mph when transporting plow.

### **WARNING**

Do not exceed 14 mph when plowing.

### **WARNING**

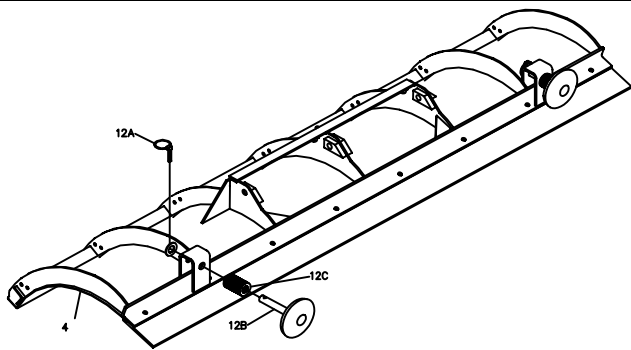
Always lower blade when vehicle is not in use.

### **WARNING**

Read this manual carefully before operating this snowplow.

## Snowplow Assembly Procedure

**NOTE:** This manual is used for the assembly of all BOSS Straight Blade Plows. Part Numbers and Illustrations may vary. Part numbers for all Boss Straight Blade plows are listed on the parts diagram in this manual.

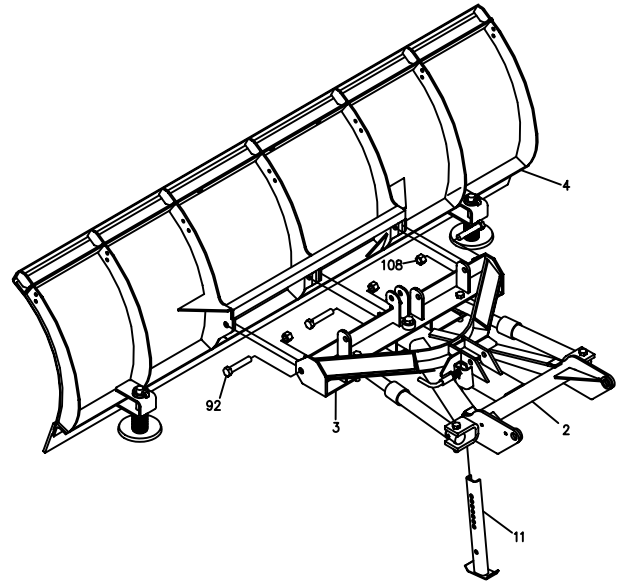


**Figure 1.** Shoe Assembly

G10059

- 1) Place Plow Blade (4) on the ground face down.
- 2) Install **MSC01501** Outer Plow Shoe Assembly (12). Mount Plow Shoes (12B) on Blade Assembly (4) using eighteen 1" Flat Washers (12C) on the bottom of shoe and eleven 1" Flat Washers (12C) on top of the shoe. Secure with 7/16" Quick Pins (12).

**Note:** Adjustment of Plow Shoe (12B) may be necessary after mounting the plow on to the vehicle.



**Figure 2.** Push Frame Attachment

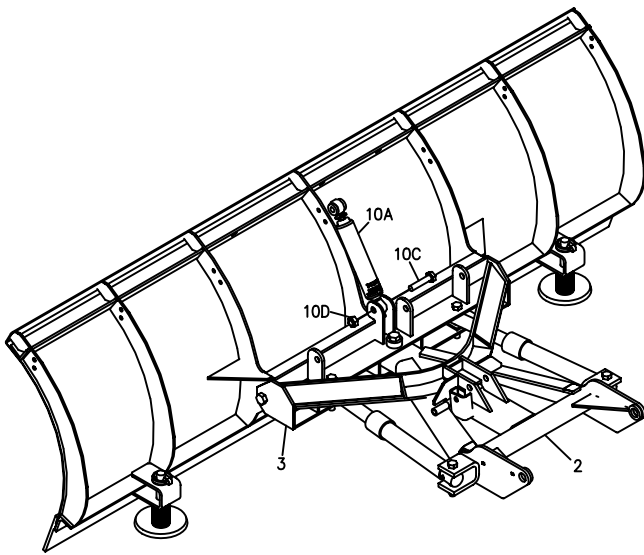
G10060

- 3) Attach **STB03203** Push Frame Attachment Bar (3) to Plow Blade (4) using three **HDW03046** 3/4"-10 x 4" Hex Head Cap Screws (92) and three **HDW01716** 3/4"-10 Self-Locking Nuts (108).

**Note:** The 10'0 Straight Blade is attached to the Push Frame Attachment Bar with four bolts.

- 4) Pull the Kickstand Spring Pin (102B) outward then insert **STB03220** Kickstand Leg (11) through the kickstand mount bracket. Release Kickstand Spring Pin (102B) to lock Kickstand Leg (11) in place.

## Snowplow Assembly Procedure



**Figure 3.** Shock Mount Attachment G10061

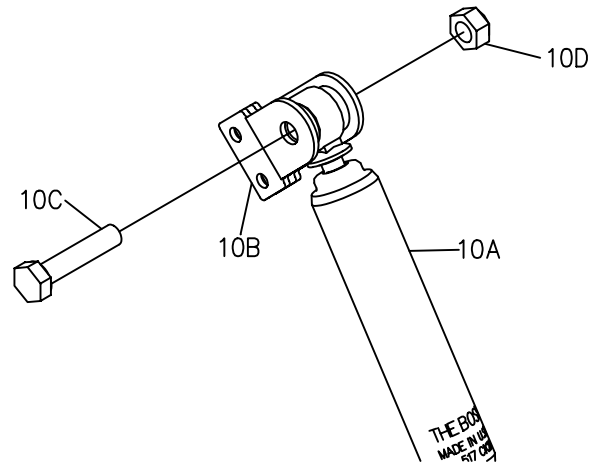
**Note:** Shock Absorber Option Kit (10) is standard on all Super-Duty Straight Blade Plows. It is optional for all other straight blade plows.

**Note:** The 10'0 Super Duty Straight Blade has two Shock Absorbers.

- 5) Mount **MSC01517** Shock Absorber (10A) on Push Frame Attachment Bar (3). Insert the base end of Shock Absorber (10A) between the mounting tabs on Push Frame Attachment Bar (3).

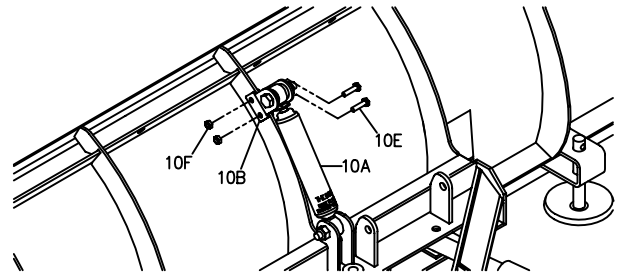
**Note:** The base end of Shock Absorber (10A) is the end that has THE BOSS logo and part number engraved.

- 6) Insert **HDW05608** 5/8"-11 x 3" Hex Head Cap Screw (10C) through the mounting tabs and the base end of Shock Absorber (10A). The head of Hex Head Cap Screw (4) must be on the right side of the mount as illustrated in Figure 3. Install **HDW01709** 5/8"-11 Oval Top Lock Nut (10D) on 5/8"-11 x 3" Hex Head Cap Screw (10C) and leave finger tight.



**Figure 4.** Shock Mounts to Shock Absorber G10062

- 7) Install **STB03014** Blade Shock Mounts (10B) to the rod end of Shock Absorber (10A) using 5/8"-11 x 3" Hex Head Cap Screw (10C) and 5/8"-11 Oval Top Lock Nut (10D). Leave the mount finger tight.



**Figure 5.** Shock Mounts to Plow Blade. G10063

- 8) Align the small holes in Blade Shock Mounts (10B) with the holes in the center rib of the snowplow as shown in Figure 5. You must have one Blade Shock Mount (10B) on each side of the center rib. Attach with two **HDW01719** 3/8"-16 x 1 1/2" Hex Head Cap Screws (10E) and two **HDW01720** 3/8"-16 Nylon Lock Nuts (10F). Leave the hardware finger tight.

## Snowplow Assembly Procedure

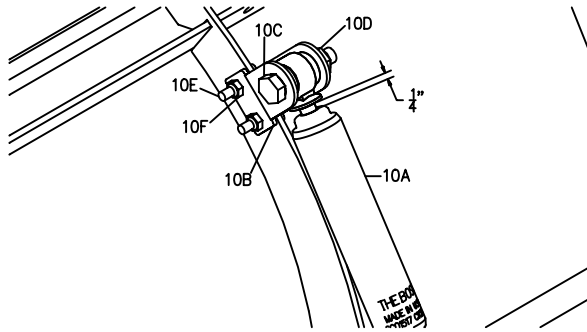


Figure 6. Tightening the Hardware

G10000

- 9) Before tightening the hardware, it is advised that you extend Shock Absorber (10A) to reveal approximately 1/4" of the rod. This will prevent Shock Absorber (10A) from bottoming out when the blade swings back after tripping. Keeping the shock extended, fully tighten Hex Head Cap Screws (10E) and Nylon Lock Nuts (10F).
- 10) Tighten both 5/8"-11 x 3" Hex Head Cap Screws (10C) and both 5/8"-11 Oval Top Lock Nuts (10D) while holding Shock Absorber (10A) in place. Do not over-tighten these bolts as it may cause damage to Shock Absorber (10A). 5/8"-11 x 3" Hex Head Cap Screws (10C) should have no more than 1/2" of thread showing beyond the nut after you have tightened them.

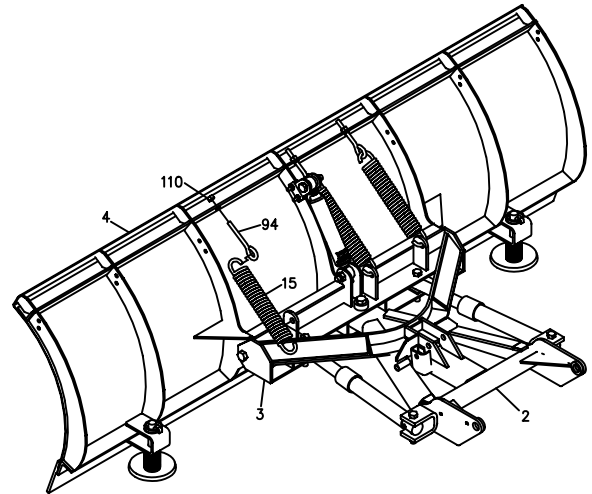


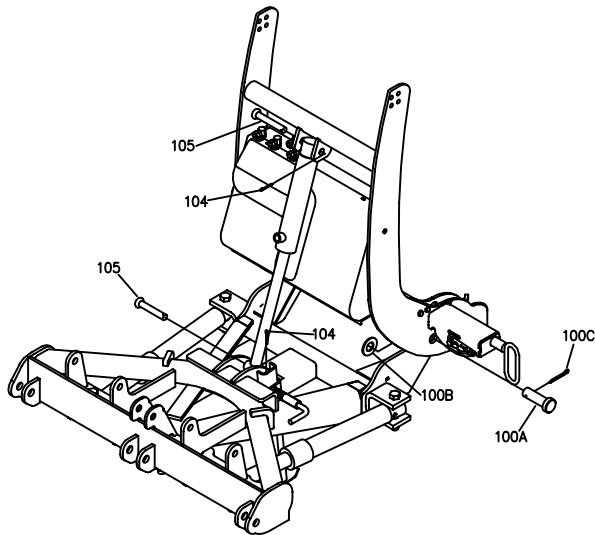
Figure 7. Trip Spring Assembly

G10065

- 11) Insert **MSC01509** Trip Spring (15) through the holes provided on Push Frame Attachment Bar (3).
- 12) Attach **HDW01700** Eye Bolt (94) around the loose end of Trip Spring (15).
- 13) Insert the threaded end of Eye Bolt (94) through the hole in the spring mounting brackets on the back of Blade Assembly (4). Secure Eye Bolts (94) using **HDW01709** Self Locking Nuts (110). Tighten Self-Locking Nuts (110) until the coils of Trip Springs (15) are approximately 1/32" apart.

**NOTE:** The Standard Duty Steel Snowplow uses three trip Springs and 5/8" Eye Bolts. Standard Duty Poly Snowplow uses three trip springs and 1/2" Eye Bolts. Super Duty Snowplows use four Trip Springs and 1/2" Eye Bolts. 10'0 Super Duty Straight Blade uses six trip springs and 1/2" Eye Bolts. All Hardware differences are noted in the Straight Blade Parts List.

## Snowplow Assembly Procedure



**Figure 8.** Lift Cylinder Installation

G10127

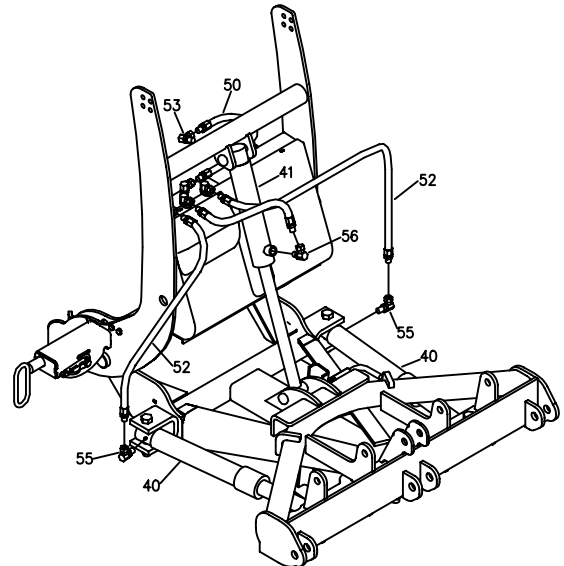
- 14) Position the rod end of HYD07013 Lift Cylinder (41) between the cylinder mounts of Push Frame Assembly (2). Insert **HDW05563** 5/8" x 3 1/2" Clevis Pin (105) through the cylinder mounts and secure with **HDW05544** #16 Hairpin Cotter (104).

**NOTE:** 10'0 Super Duty plows use **HDW07682** 3/4" x 3 3/4" Clevis Pin (105).

- 15) Align the pivot holes of Coupler Assembly (1) with the pivot holes of Push Frame Assembly (2).
- 16) Insert 1" x 2 1/2" Pivot Pins (100A) through Coupler Assembly (1) and Push Frame Assembly (2). Place a 1" Flat Washer (100B) on 1" x 2 1/2" Pivot Pin (100A) then insert 3/16" x 2 1/2" Cotter Pin (100C) through 1" x 2 1/2" Pivot Pin (100A). Spread the ends of 3/16" x 2 1/2" Cotter Pin (100C).

**NOTE:** 10'0 Super Duty plows use 1 1/2" x 3 5/8" Pivot Pin (100A), 5/16"-18 x 2" Hex Head Cap Screw (100B), and 5/16"-18 Nylon Lock Nut (100C).

- 17) Rotate Lift Cylinder (41) up to the cylinder mounts located on Coupler Tower Assembly (1). Insert 5/8" x 3 1/2" Clevis Pin (105) through the cylinder mounts and secure with #16 Hair Pin Cotter (104).



**Figure 9.** Hydraulic Connections

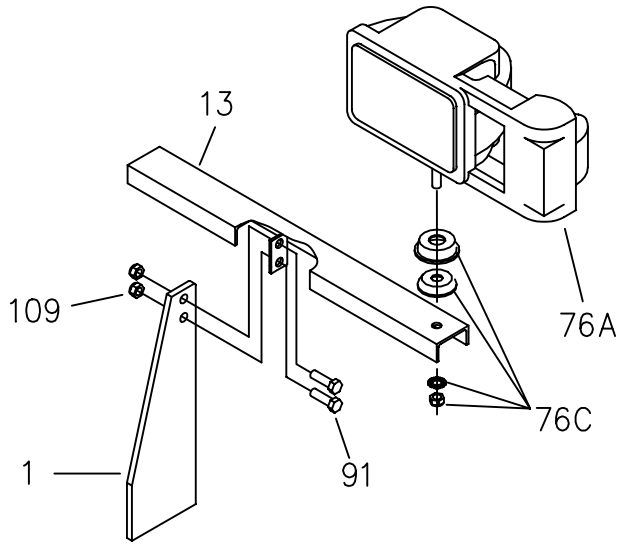
G10128

- 18) Install **HYD01620** 90° Swivel (56) fitting into the lower port of Lift Cylinder (41).
  - 19) Install **HYD01695** 1/4" x 15 1/2" Hydraulic Hose (50) between the middle fitting on the hydraulic shelf and the 90° Swivel (56) installed in the previous step.
  - 20) Apply Thread Compound (do not use Teflon tape) to **HYD07018** 90° Fitting (55). Do not get thread compound on the inside of the fitting. Install 90° Fitting (55) into Angle Cylinders (40).
- NOTE:** 10'0 Super Duty plows do not use a 90° fitting at Angle Cylinder (40). Thread Compound is not required at this connection.
- 21) Apply Thread Compound (do not use Teflon tape) only to the 3/8"NPT end of **HYD07042** 3/8" X 42" Hydraulic Hose (52). Install 3/8" X 42" Hydraulic Hose (52) between the outside fittings on the hydraulic shelf and 90° Fitting (55) that is on Angle Cylinder (40). Figure 9 shows the proper connections.

**NOTE:** 10'0 Super Duty plows use **HYD07575** 3/8" x 40" Hydraulic Hose (52), which has a 3/8" O-Ring fitting. Do not use Thread Compound on this fitting.

**NOTE:** If your plow is going to be equipped with the SmartHitch™ option, follow the instructions that are located in **MSC04265** RT3 Straight Blade with SmartHitch™ Owner's Manual and Installation Guide.

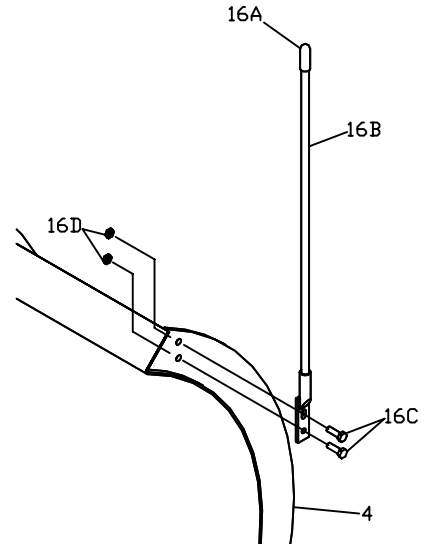
## Snowplow Assembly Procedure



**Figure 10.** Light Bar Assembly.

G10070

- 22)** Attach Light Bar (13) to the top of Coupler Assembly (1) using two **HDW01771** 3/8"-16 x 1 1/4" Hex Head Cap Screws (91) and **HDW01720** 3/8"-16 Hex Head Self Locking Nuts (109).
- 23)** Bolt Driver's Side Headlight (76A) on to Light Bar (13) using Mounting Hardware (76C) as shown in Figure 12. Repeat for Passenger's Side Headlight (76B).



**Figure 11.** Assembly of Blade Guides.

G10071

- 24)** Attach Blade Guides (16B) to Blade Assembly (4) using **HDW01713** 5/16" x 1" Hex Head Cap Screws (16C) and **HDW01714** 5/16" Self Locking Nuts (16D).

## ***RT3 Straight Blade Wiring Procedure***

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**Note:** All Instructions below are illustrated in Figure 13.

1. Disconnect the left and right headlight connector plugs from the left and right vehicle headlights.
2. Connect both Sealed Beam Connectors (73A) from the Headlight Adapter Kit (73) into the vehicle headlights. Connect the opposite ends of Sealed Beam Connectors (73A) to Wiring Harness (60).
3. Connect the 3 prong male plug on Wiring Harness (60) into Harness (73B) of the Headlight Adapter Kit (73).
4. Connect the 3 prong male plug on Harness (73B) into the Left Original Vehicle Connector.

**Note:** The Left Original Vehicle Connector is the connector that was disconnected from the left-hand vehicle headlight in Step 1.

5. Tape and secure the Right Original Vehicle Connector, which was removed from the right hand vehicle headlight. This connector is not used.
6. Referring to the wiring diagram, complete the wiring connections of the turn signals and parking lights to the vehicle electrical system using splice connectors. Identify all circuits with a test lamp.
7. Drill a 1-1/4" diameter hole in the firewall at the most convenient location and pull Wiring Harness (60) through the firewall from the engine compartment into the cab. Install the split rubber grommet in the hole cut into the firewall.
8. Connect the 6 female tab connectors to Toggle Switch (77A) as shown in Figure 13.
9. Select a suitable location in the dash to mount the toggle switch. Do not locate the switch in an area that may be hazardous to the occupant in the event of a crash. Drill a 1/2" diameter hole through the dashboard of the truck. Apply the switch identification label to the dash by removing the protective packing from the label and pressing the label over the switch hole. Make sure the switch is positioned with respect to the label so that the snowplow lamps are on when the toggle switch is in the upper position. Remove the knurled nut from the toggle switch. Insert the switch through the drilled hole and re-install the knurled nut and tighten securely.
10. Connect the BLACK wire in Wiring Harness (60) to an ignition switched circuit. When the vehicle ignition switch shuts off all power to the plow electrical system should also be shut off.
11. Mount the plow control in a location that is comfortable for the operator to reach, and where the operator will not contact the control in the event of a crash.
12. Connect the WHITE/BLACK wire in Wiring Harness (60) to the small terminal on Pump Solenoid (64).
13. Connect one end of Solenoid Ground Cable (65) to Pump Solenoid (64). Connect the opposite end of Solenoid Ground Cable (65) to a ground source on the vehicle. This is illustrated in Figure 13.
14. Attach the RED end of Power/Ground Cable (62) to Pump Solenoid (64).
15. Attach the BLACK end of Power/Ground Cable (62) to the negative battery terminal as shown in Figure 13.
16. Connect Battery Cable (66) from Pump Solenoid (64) to the positive battery terminal as shown in Figure 13.
17. Mount the Control Harness and the Power/Ground Cable to the lower area of the bumper using the mounting brackets provided. All wiring should be neatly secured to avoid any hot or moving parts.
18. Attach the snowplow to the vehicle. Check the AUXILLIARY PLOW LIGHTS for proper operation:



## RT3 Straight Blade Wiring Procedure

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- A. With the vehicle headlight switch in the ON position and the toggle switch in the lower position, only the vehicle headlights should be illuminated. With the toggle switch in the upper position, only the snowplow lights should be illuminated.
- B. The foot dimmer switch or hand dimmer switch should select high and low beams on both the vehicle and plow headlights.
- C. Turn signal lights should be on in the same sequence and at the same time as the vehicle turn signal lights.
- D. Parking lights should be on at the same time as the vehicle parking lights. If any light does not operate correctly, re-check the wiring against the wiring diagram and make any necessary corrections in the wiring hookup.

## RT3 Straight Blade Manifold Wiring Diagram

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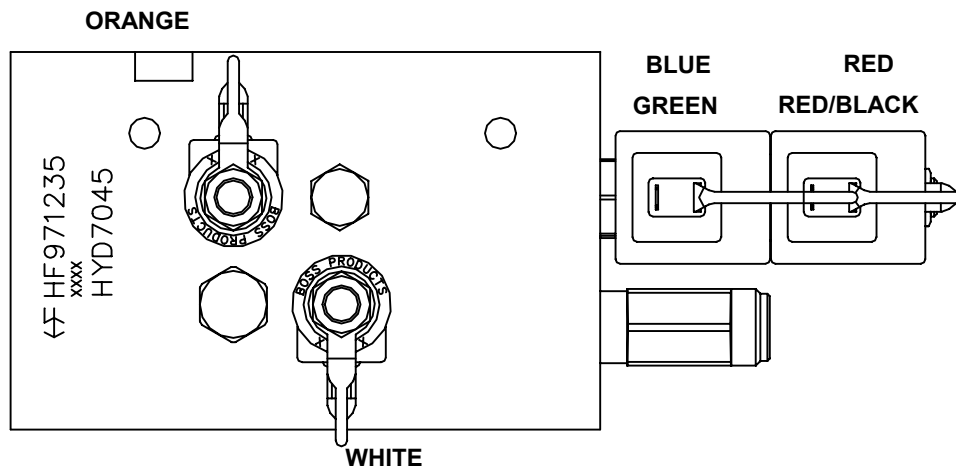


Figure 12. RT3 Straight Blade Manifold

G10042

# RT3 Straight Blade Wiring Procedure

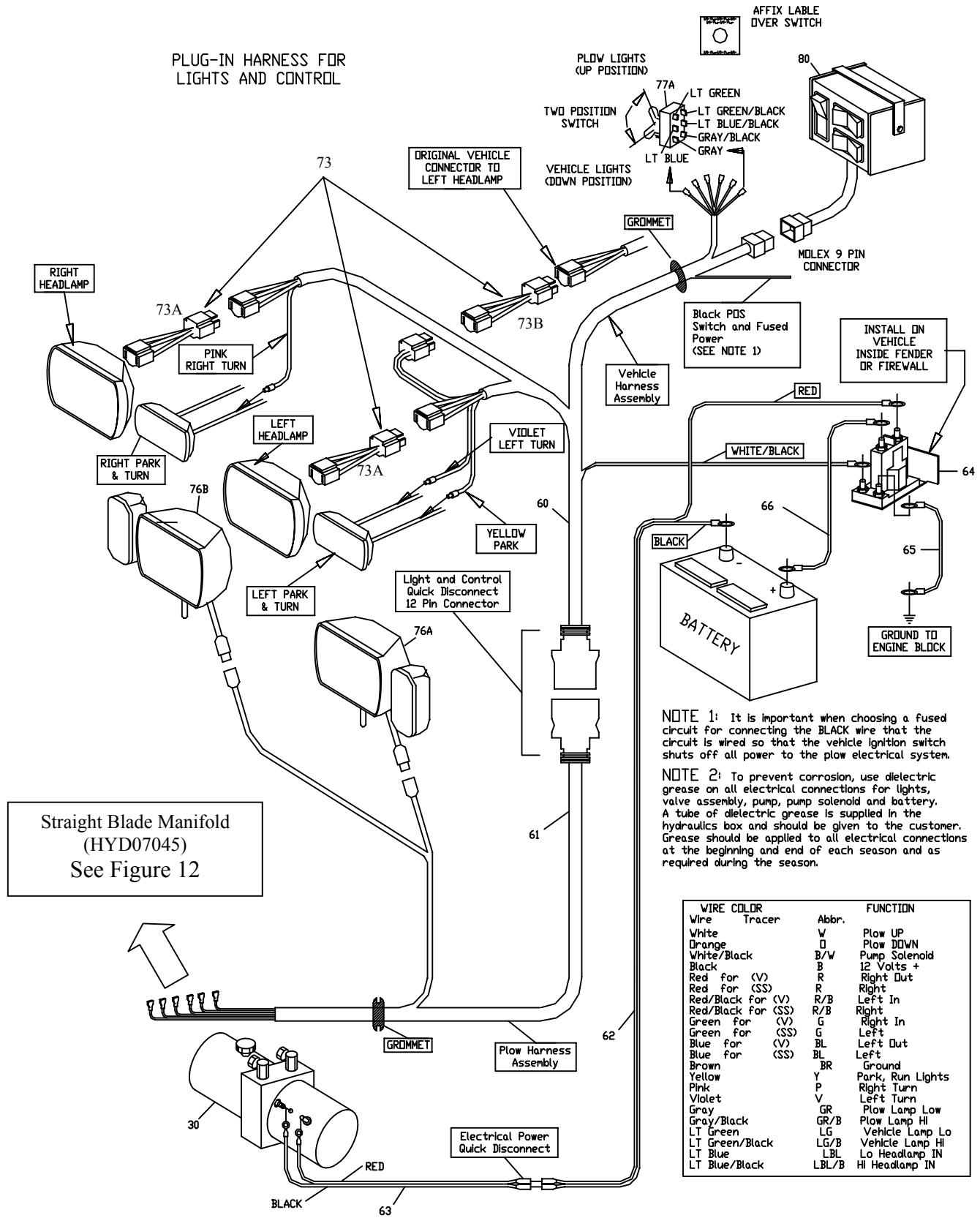
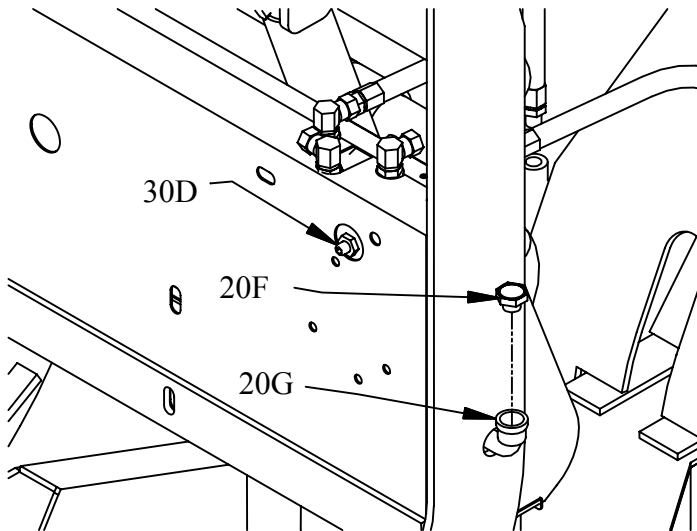


Figure 13. RT3 Wiring Diagram

G10002

## RT3 Straight Blade Wiring Procedure



**Figure 14.** External Fill – Backside View G10043

**Note:** Step 1 of the following fill procedure is intended for a new plow with an empty hydraulic system.

**Initial Plow Position:** Start with the plow un-attached from the vehicle and the lift cylinder completely collapsed. The light tower will be tilted forwarded.

1. Remove **HYD04810** Fill Cap (20F) from **HYD04809** Street Elbow (20G) and fill with Boss High Performance Hydraulic Fluid. Continue to fill Street Elbow (20G) until no more fluid will be accepted. (Approx. 2 quarts.)

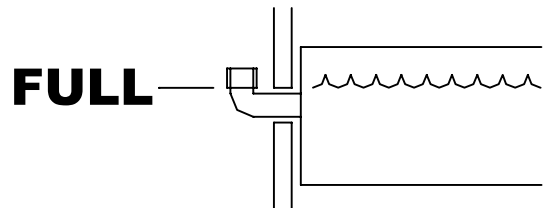
2. Attach the plow to the vehicle.

**Note:** If your plow is equipped with SmartHitch™ you must hydraulically power the light tower up. Do not manually push the tower up. Failure to hydraulically power the light tower up will create an air pocket in the hydraulic system. Oil will spill out of your internal filler cap.

3. Raise the plow.
4. With the plow in the raised position, angle the blade to the right.
5. With the plow in the raised position, angle the blade to the left.

6. Lower the plow to the ground.

**Note:** If your plow will not lower, Flow Control Valve (30D) is completely closed. Refer to Step 8 to adjust Flow Control Valve (30D).



**Figure 15.** Oil Full Level

G00000

**Plow Position to Check Oil:** The plow should be attached to the truck, setting flat on the ground, in the straight blade position.

7. With the plow in the straight blade position and lowered to the ground, check the fluid level. Fluid should be visible in the external fill port. If fluid is not visible, fill until visible. Your reservoir should now be properly filled.

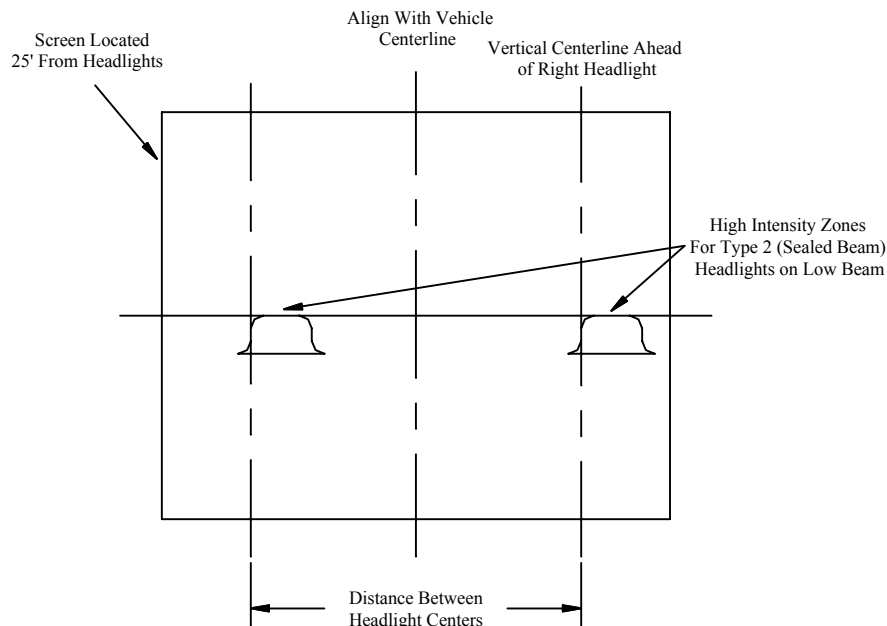
**Note:** If your plow is equipped with SmartHitch™ you must hydraulically power the light tower down. Do not manually pull the tower down. Failure to hydraulically power the light tower down will create an air pocket in the hydraulic system. Oil will spill out of your internal filler cap.

8. Adjust Flow Control Valve (30D) to obtain the speed desired for lowering the plow by loosening the jam nut, then adjusting the set screw. Counter-clockwise adjustment will increase the speed the plow descends. Retighten the jam nut when the desired speed is obtained.

**WARNING:** When adjusting Flow Control Valve (30D) make sure all appendages are clear of the plow blade and observers are standing a safe distance away from the plow blade. The plow may drop if your controller is in the FLOAT position. Make sure your controller is in the OFF position before attempting to adjust the plow. Failure to follow this warning could result in bodily harm.

## Snowplow Headlight Alignment Procedure

1. Place the vehicle on a level surface 25 feet in front of a matte-white screen, such as a garage door. The screen should be perpendicular to both the ground and the vehicle.
2. The vehicle should be equipped for normal operation. The snowplow blade should be in place and in the raised position. Below are some points listed by the Society of Automotive engineers (SAE) pertinent to headlight aiming in specification #SAEJ5991D:  
Preparation for Headlight Aim or Inspection.  
Before checking beam aim, the inspector shall:
  1. Remove ice or mud from under fenders.
  2. See that no tire is noticeably deflated.
  3. Check vehicle springs for sag or broken leaves.
  4. See that there is no load in the vehicle other than the driver.
  5. Check functioning of any "level-ride" controls.
  6. Clean lenses and aiming pads.
  7. Check for bulb burnout, broken mechanical aiming pads, and proper beam switching.
  8. Stabilize suspension by rocking vehicle sideways.
3. Mark (or tape) the vehicle centerline of the headlights and the vehicle itself on the screen. Mark the horizontal centerline of the headlights on the screen (distance from ground to headlight centers).
4. The correct visual aim for Type 2 headlights 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.



NOTE: Installer of these snowplow lights must certify that installation conforms to applicable Federal Motor Vehicle Safety Standards.

# RT3 Wiring Schematic

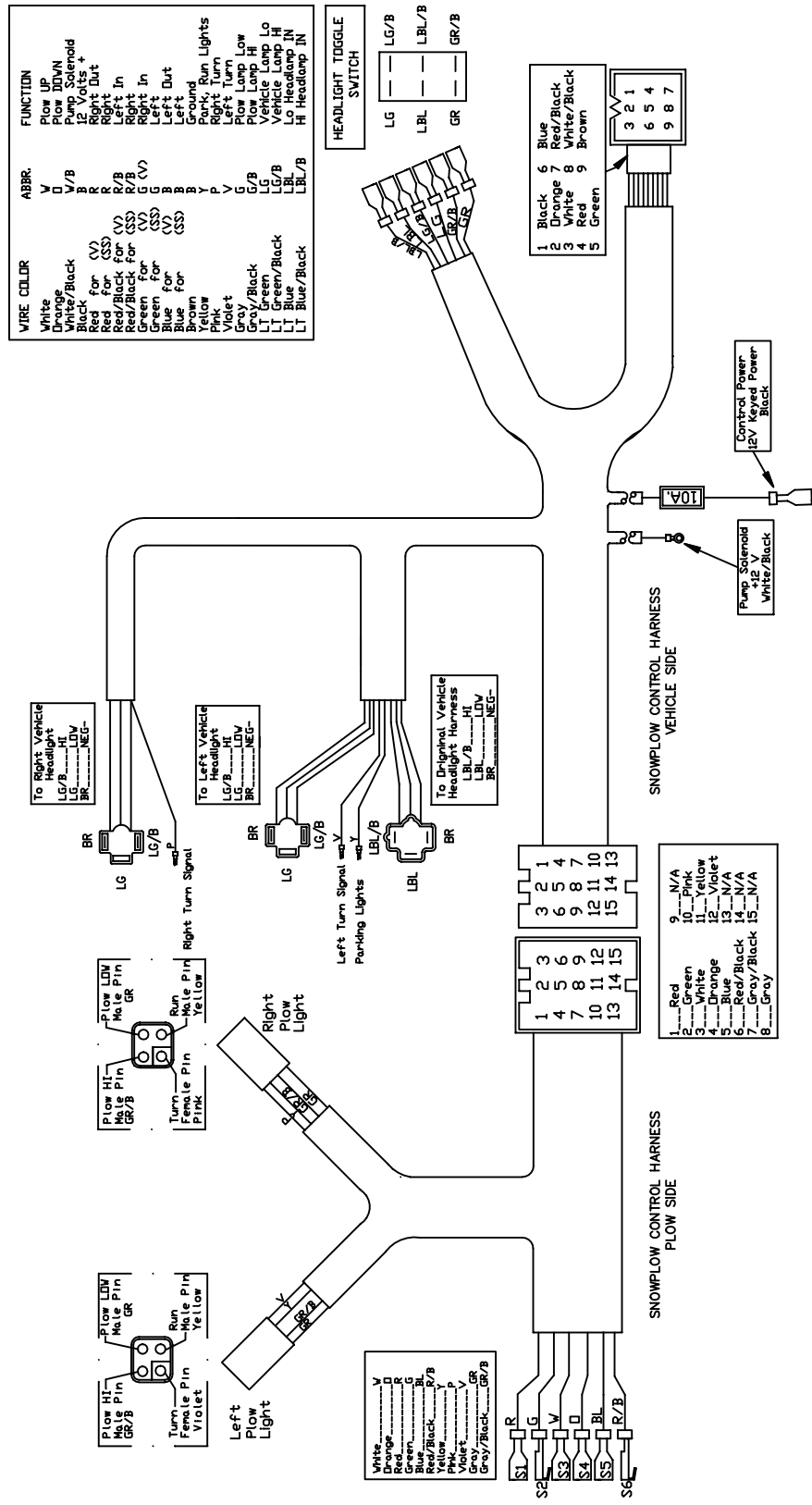
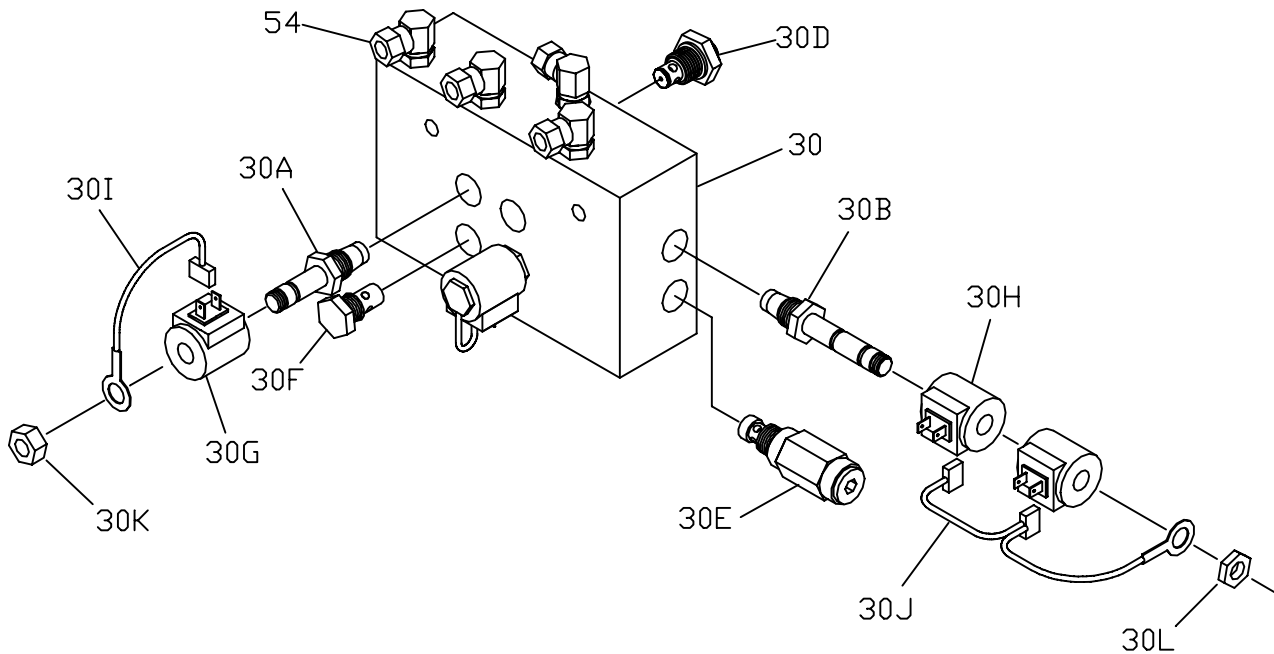


Figure 16. RT3 Wiring Schematic.

## Hydraulic Valve Assembly Parts List



**Figure 17.** Straight Blade Manifold Parts Diagram

G10072

Ref.	Description	Part Number	Qty
30	Hydraulic Valve Assembly with SmartHitch (Red)	HYD07045	1
30A	Hydraulic Valve, Lift/Lower Cartridge	HYD01637	2
30B	Hydraulic Valve, Angle Cartridge (3 Position - 4 Way Spool)	HYD07029	1
30D	Hydraulic Valve, Flow Control Cartridge	HYD07048	1
30E	Relief Valve, Hydraulic Crossover (4000 PSI)	HYD07027	1
30F	Check Valve	HYD01640	1
30G	Coil, Hydraulic Valve - used with valve HYD01637	HYD01638	3
30H	Coil, Hydraulic Valve - used with valve HYD07029	HYD07030	2
30I	Ground Strap, Hydraulic Valve - used with valve HYD01637	HYD01647	3
30J	Ground Strap, Hydraulic Valve Dual - used with valve HYD07029	HYD07032	1
30K	Nut, Coil - used with valve HYD01637		2
30L	Nut, Coil - used with valve HYD07029		1

# RT3 Straight Blade Assembly Drawing

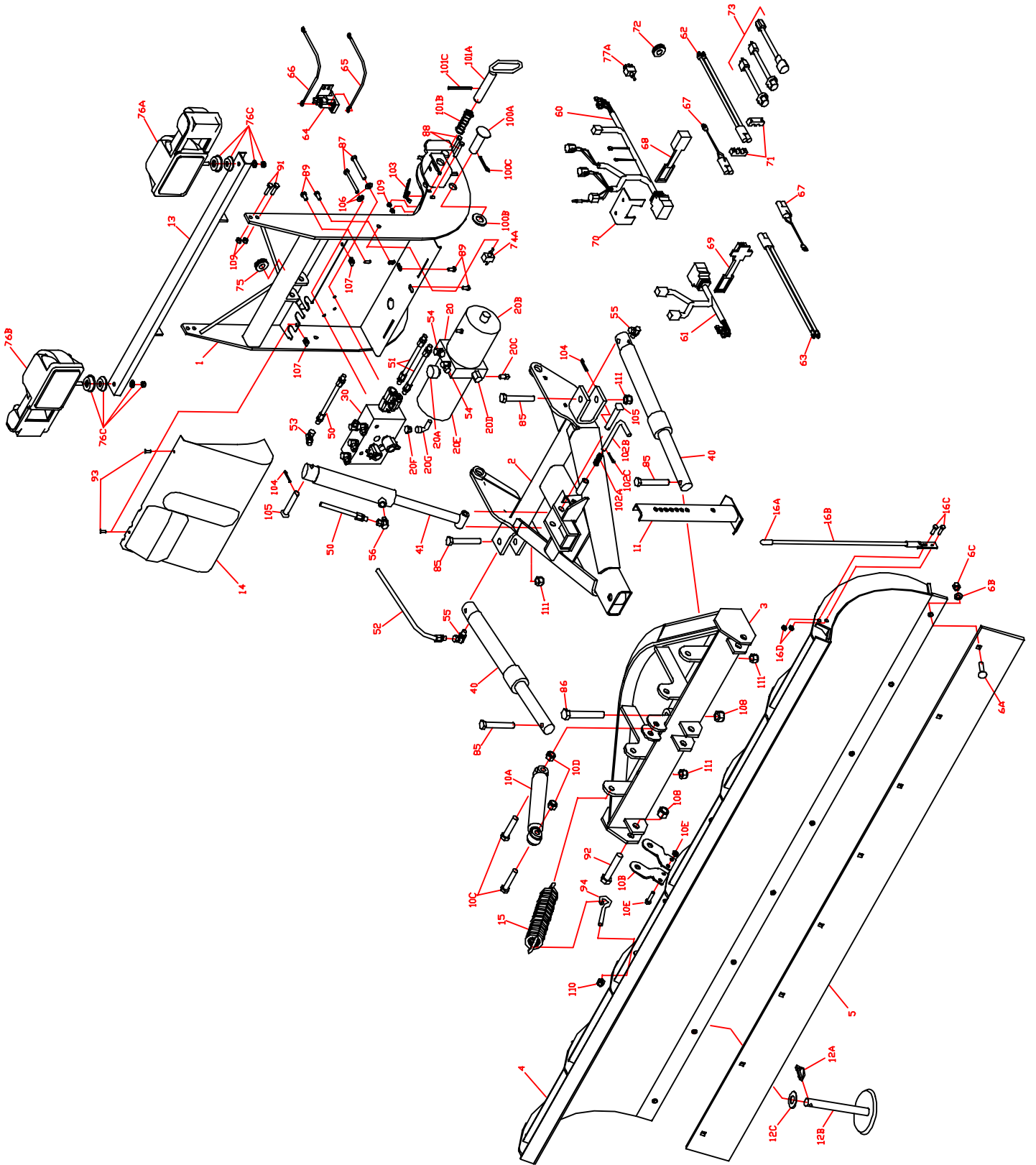


Figure 18. RT3 Straight Blade Assembly Drawing

G10073

## RT3 Straight Blade Parts List

Reference Number	Description	Part Number
<b>WELDMENTS</b>		
1	Coupler Assembly Coupler Assembly (10' Super Duty)	CPA04437 CPA07698
2	Pushframe Assembly Pushframe Assembly (10' Super Duty)	STB03230 TFR07554
3	Pushframe Attachment Bar (Standard Duty) Pushframe Attachment Bar (Super Duty) Pushframe Attachment Bar (10' Super Duty)	STB03203 STB03231 STB07547
<b>BLADES</b>		
4	Blade (7'6" Standard Duty) Blade (7'6" Super Duty) Blade (8'0" Super Duty) Blade (8'6" Super Duty) Blade (9'0" Super Duty) Poly Blade (7'6" Standard Duty) Poly Blade Replacement Skin (7'6" Standard Duty) Poly Blade (8'0" Super Duty) Poly Blade Replacement Skin (8'0" Super Duty) Poly Blade (9'0" Super Duty) Blade (10' Super Duty)	STB03165 STB03166 STB03167 STB03168 STB03236 STB03262 STB03261 STB03266 STB03271 STB03236 STB07534
<b>CUTTING EDGES</b>		
5	Cutting Edge (7'6" Standard Duty) Cutting Edge (7'6" Super Duty) Cutting Edge (8'0" Super Duty) Cutting Edge (8'6" Super Duty) Cutting Edge (9'0" Super Duty) Cutting Edge (10' Super Duty)(5/8" holes)	STB03071 STB03002 STB03003 STB03072 STB03242 STB07537
6	Carriage Bolt Set	BAX00034
6A	Includes: (10) Carriage Bolts 1/2" – 13 X 2" Grade 8 F/THD	
6B	(10) Washers, 1/2" Hardened	
6C	(10) Nuts, 1/2" Oval Top Lock	
	Carriage Bolt Set (10' Super Duty) Includes: (12) Carriage Bolts 5/8" – 11 X 2" Grade 5 ZN (12) Washers, 5/8" Hardened (12) Nuts, 5/8" Oval Top Lock	BAX00096
<b>PLOW COMPONENTS</b>		
10	Shock Absorber Kit (Standard on all Super Duty Plows)	STB04816
10A	Shock Absorber	MSC01517
10B	Shock Absorber Mounting Brackets	STB03014
10C	Hex Head Cap Screw, 5/8" – 11 X 3"	HDW05608
10D	Nut, Oval Top Lock 5/8" – 11	HDW01709
10E	Hex Head Cap Screw, 3/8" – 16 X 1-1/2"	HDW01719
10F	Nut, Oval Top Lock 3/8" – 16 X 1-1/2	HDW01720
11	Kickstand Leg	STB03220
12	Plow Shoe Assembly, Steel (Outer Shoe)	MSC01501
12A	Includes: (1) Quick Pin, 7/16"	
12B	(1) Plow Shoe, (1" Shaft)	
12C	(20) Washers, 1" PLT	
13	Light Bar Assembly Light Bar Assembly (10' Super Duty)	LBA04439 LBA07665
<b>PLOW COMPONENTS (Cont.)</b>		
14	Hydraulic Enclosure Cover	CPA04423



## RT3 Straight Blade Parts List

	<b>Hydraulic Enclosure Cover (10' Super Duty)</b>	<b>CPA07668</b>
15	Spring, Trip	MSC01509
16	Blade Guide Set	BAX00005
16A	Includes: (2) Blade Guide Tip	MSC01562
16B	(2) Blade Guides	
16C	(4) Hex Head Bolt, 5/16" X 1"	HDW01713
16D	(4) Self Locking Nut, 5/16"	HDW01714
	<b>HYDRAULIC POWER UNIT</b>	
20	Hydraulic Pump – Power Unit Barnes	HYD01710
	<b>Hydraulic Pump – Power Unit Barnes (10' Super Duty)</b>	<b>HYD07695</b>
	Includes the Following Commonly Ordered Parts	
20A	Hydraulic Pump Filler Cap	HYD01636
20B	Hydraulic Pump Motor – Barnes	MSC01563
20C	Hydraulic Reservoir Drain Plug	HYD01712
20D	Relief Valve	HYD01693
20E	Hydraulic Reservoir, 2 quart	HYD01731
	<b>Hydraulic Reservoir, 3 quart (10' Super Duty)</b>	<b>HYD07727</b>
20F	Fill Cap	HYD04810
20G	Street Elbow (Not included with HYD01710)	HYD04809
	Seal Kit, Power Unit	HYD01670
	<b>HYDRAULIC VALVE ASSEMBLY</b>	
30	Hydraulic Valve Assembly with SmartHitch (Red)	HYD07045
	Includes the Following Commonly Ordered Parts	
30A	Hydraulic Valve, Lift/Lower Cartridge	HYD01637
30B	Hydraulic Valve, Angle Cartridge (3 Position 4 Way Spool)	HYD07029
30C	Hydraulic Valve, SmartHitch Attach	HYD07047
30D	Hydraulic Valve, Flow Control Cartridge	HYD07048
30E	Relief Valve, Hydraulic Crossover (4000 PSI)	HYD07027
30F	Check Valve	HYD01640
30G	Coil, Hydraulic Valve used with valve HYD01637	HYD01638
30H	Coil, Hydraulic Valve used with valve HYD07029	HYD07030
30I	Ground Strap, Hydraulic Valve used with valve HYD01637	HYD01647
30J	Ground Strap, Hydraulic Valve Dual used with valve HYD07029	HYD07032
30K	Nut, Coil used with valve HYD01637	
30L	Nut, Coil used with valve HYD07029	
30M	Nut, Coil used with valve HYD07047	
	<b>CYLINDERS &amp; CYLINDER SEAL KITS</b>	
40	Hydraulic Angle Cylinder	HYD07014
	Seal Kit for Hydraulic Angle Cylinder HYD07014	HYD01659
	<b>Hydraulic Angle Cylinder (10' Super Duty)</b>	<b>HYD07610</b>
	Seal Kit for Hydraulic Angle Cylinder HYD07610	<b>HYD07688</b>
41	Hydraulic Lift Cylinder	HYD07013
	Seal Kit for Hydraulic Lift Cylinder HYD07013	HYD07025
	<b>Hydraulic Lift Cylinder (10' Super Duty)</b>	<b>HYD07649</b>
	Seal Kit for Hydraulic Lift Cylinder HYD07649	<b>HYD07686</b>
	<b>HOSES &amp; FITTINGS</b>	
50	Hydraulic Hose (Lift & SmartHitch) 1/4" X 15-1/2", (1/4" MNPT X 1/4" MNPT)	HYD01695
51	Hydraulic Hose (Power Unit to Manifold) 1/4" X 15", (1/4" ORB X 1/4" MNPT)	HYD07020
52	Hydraulic Hose (Angle) 3/8" X 42", (1/4" MNPT X 3/8" MNPT)	HYD07042
	Hydraulic Hose (Angle) 3/8" x 40" (1/4" MNPT x 3/8" M-ORING) (10' Super Duty)	HYD07575
53	Hydraulic 90 Deg. Fitting (SmartHitch) (1/8" MNPT X 1/4" FNPT)	HYD07046
	<b>Hydraulic Swivel Fitting, 90 Deg. (SmartHitch) (1/4" ORS X 1/4" FPS)</b>	<b>HYD01620</b>
54	Hydraulic Swivel Fitting, 90 Deg. (Manifold) (1/4" ORS X 1/4" FPS)	HYD01620
	<b>HOSES &amp; FITTINGS (Cont.)</b>	
55	Hydraulic 90 Deg. Fitting (Angle Cylinder) (3/8" MP X 3/8" FPS)	HYD07018
56	Hydraulic Swivel Fitting, 90 Deg. (Lift Cylinder) (1/4" ORS X 1/4" FPS)	HYD01620

## RT3 Straight Blade Parts List

### ELECTRICAL

60	Light and Control Harness 116" (Vehicle Side)	MSC03742
61	Light and Control Harness 48" (Plow Side)	MSC03741
62	Power/Ground Cable 60" (Vehicle Side)	HYD01684
63	Power/Ground Cable 36" (Plow Side)	HYD01690
64	Solenoid, Hydraulic Pump	HYD01633
65	Ground Cable, Hydraulic Pump Solenoid	MSC01595
66	Battery cable, 66"	MSC01515
67	Power/Ground Cable Dust Cap/Plug (Vehicle & Plow)	MSC03721
68	Weather Cap for Light & Control Harness (Vehicle Side)	MSC03743
69	Weather Cap for Light & Control Harness (Plow Side)	MSC03744
70	Control Harness Mounting Bracket	MSC03813
71	Power Ground Cable Mounting Bracket	MSC03491
72	Rubber Split Grommet, 1-1/8"	MSC03761
73	Headlight Adapter Kit	
74	SmartHitch Toggle Switch Kit (Includes Switch and Jumpers)	MSC04252
74A	Includes: (1) Switch, SmartHitch Toggle	MSC04218
	(1) Wiring Harness, SmartHitch (2 Connectors)	MSC04219
	(1) Wiring Harness, SmartHitch (3 Connectors)	MSC04220
	(1) Switch Boot, SmartHitch	MSC04238
75	Rubber Grommet for light and control harness in coupler tower	MSC03456
76	Auxiliary Headlight Set, Low Profile Plastic with Hardware	MSC03747
76A	Includes: (1) Auxiliary Headlight, Left, Low Profile Plastic	MSC04233
76B	(1) Auxiliary Headlight, Right, Low Profile Plastic	MSC04234
76C	(2) Headlight Mounting Hardware	HDW05590
	Other Commonly Ordered Headlight Parts	
	(1) Turn Signal Cover, Low Profile Plastic	MSC04255
	(1) Headlight Bezel	MSC04541
	(1) Headlight Bulb	MSC04289
77	Light Switch Connector Pack	MSC04053
77A	Includes: (1) Switch, Aux Light Toggle	MSC03740
	(3) Scotch Lock, 16GA with Female Socket	MSC04529
	(1) Flasher, Heavy Duty Vehicle	MSC04530

### CONTROLLERS

80	Switch Box Control, Straight Blade	STB03124
80A	Includes: Rocker Switch – Lift	HYD01622
80B	Rocker Switch – Angle	HYD01623
81	Joystick Control, Straight Blade	STB03191
81A	Includes: Switch (Joystick, On/Off)	MSC04086
82	SmartTouch, Hand Held Control, Straight Blade	STB03298

### BOLTS

85	Hex Head Cap Screw, 5/8" – 11 X 4" GR5 ZN (Angle Cylinder Mount)	HDW01706
	Hex Head Cap Screw, 1" 8 X 4" GR8 ZN (Rear Ang. Cylinder Mount)(10' Super)	HDW07703
	Hex Head Cap Screw, 1" 8 X 5-1/2" GR8 ZN (Front Ang. Cylinder Mount)(10' Super)	HDW07723
86	Hex Head Cap Screw, 3/4" – 10 X 51/2" NC GR5 (Center Pivot Pin)	HDW03036
	Hex Head Cap Screw, 1" – 8 X 7", ZN (Center Pivot Pin)	HDW07735
87	Hex Head Cap Screw, 3/8" – 16 X 3-1/4" (Manifold to Coupler)	HDW05573
88	Hex Head Cap Screw, 3/8" – 16 X 2-1/4" GR5 PLT (SmartHitch Torsion Spring)	HDW05521
	Hex Head Cap Screw, 3/8" – 16 X 3-1/4" GR5 PLT (Torsion Spring)(10' Super Duty)	HDW05573
89	Hex Head Cap Screw, 3/8" – 16 X 3/4" Washer HD Spinlock GR5 ZN (Pump To Coupler)	HDW05602

### BOLTS (Cont.)

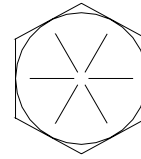
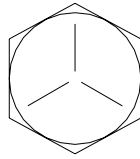
91	Hex Head Cap Screw, 3/8" – 16 X 11/4" (Light Bar Assembly)	HDW01771
92	Hex Head Cap Screw, 3/4" – 10 X 4" NC GR5 PLT (Blade to Quad)	HDW03046
93	Thumb Screw, 10 – 24 X 1/2"	HDW05574
94	Eye Bolt, 5/8" X 3-1/2" (Steel Standard Duty) (Trip Spring)	STB03117

## RT3 Straight Blade Parts List

	Eye Bolt, 1/2" X 6" PLT (Poly Standard Duty & Super Duty) (Trip Spring)	HDW01700
	<b>PINS, NUTS, CLAMPS, WASHERS, and SPRINGS</b>	
100	Pivot Pin, Kit	MSC04251
100A	Includes: (1) Pivot Pin RT3 1" X 2 1/2"	
100B	(1) Washer, 1" PLT	
100C	(1) Cotter Pin, 3/16 X 2 1/2 PLT	
	<b>Pivot Pin, Kit (10' Super Duty)</b>	<b>MSC07697</b>
	Includes: (1) Pivot Pin RT3 1 1/2" X 35/8"	
	(1) Hex Head Cap Screw 5/16"18 x 2" GR5 ZN	
	(1) Nut, 5/16"18 NY/INS Lock ZN	
101	Coupler Spring Pin Kit	MSC03808
101A	Includes: (1) Coupler Spring Pin	
101B	(1) Coupler Spring Pin Spring	
101C	(1) Rolled Pin	
	<b>Coupler Spring Pin Kit (10' Super Duty)</b>	<b>MSC07699</b>
	Includes: (1) Coupler Spring Pin	
	(1) Coupler Spring Pin Spring	
	(1) Rolled Pin	
102	Kickstand Spring Pin Kit	MSC03807
102A	Includes: (1) Kickstand Spring Pin Spring, 0.85" O.D. X 2.25" SS	
102B	(1) Kickstand Spring Pin	
102C	(1) Cotter Pin, 1/8" X 1 1/2" PLT	
103	Spring, SmartHitch Torsion	MSC04227
	<b>Spring, SmartHitch Torsion (10' Super Duty)</b>	<b>MSC07673</b>
104	Hairpin Cotter, #16	HDW05544
105	Clevis Pin, 5/8" X 3-1/2"	HDW05563
	<b>Clevis Pin, 3/4" X 3-3/4" (10' Super Duty)</b>	<b>HDW07682</b>
106	Washer, 3/8" USS Flat PLT (Manifold to Coupler Bolts)	HDW01733
107	Nut, Cage 1024 PLT Black	HDW05546
108	Nut, Lock 3/4" – 10 GR5 PLT (Push Frame Center Pivot Pin) (Quad to Blade)	HDW01716
	<b>Nut, Lock 1" – 8 PLT (Push Frame Center Pivot Pin)(10' Super Duty)</b>	<b>HDW07704</b>
109	Nut, Self Locking 3/8" – 16 (Light Bar) (SmartHitch Torsion Spring)	HDW01720
110	Nut, Lock 1/2" NC Ny/Ins ZN (Trip Springs)	HDW01748
	Nut, Oval Top Lock 5/8" – 11 ZN (Trip Springs) (Steel Standard Duty)	HDW01709
111	Nut, Oval Top Lock 5/8" – 11 ZN (Cylinder Mounts)	HDW01709
	<b>Nut, Lock 1" – 8 PLT (Cylinder Mounts) (10' Super Duty)</b>	<b>HDW07704</b>
	<b>OPTIONS &amp; ACCESSORIES</b>	
115	Snow Deflector (all models)	MSC01565
116	Boss High Performance Hydraulic Fluid – Case (12 per)	HYD01704
117	Red TouchUp Spray Paint (12oz.)	MSC04098
118	Dielectric Grease (2 oz.)	MSC03423
119	Snow Deflector (Poly Snow Deflector for Straight Blades Only)	MSC04557

## Recommended Bolt Torque

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<b>Dia. / Pitch</b>	<b>Grade 5 (ft-lbs)</b>	<b>Grade 8 (ft-lbs)</b>
1 / 4" – 20	6	9
5 / 16" – 18	14	19
3 / 8" – 16	23	33
7 / 16" – 14	38	53
1 / 2" – 13	56	80
9 / 16" – 12	82	116
5 / 8" – 11	113	159
3 / 4" – 10	201	283

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**Chart 1.** Recommended Bolt Torque

\* The torque values listed above are based on dry, coated bolts, variables such as oil, or other lubrications may be appreciably alter these values and must be taken in to consideration.

**NOTE:** IT IS IMPORTANT THAT ALL FASTENERS BE PROPERLY TORQUED TO ASSURE A SAFE OPERATING PLOW.