

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

RT3 STRAIGHT-BLADE WITH



OWNER'S MANUAL AND INSTALLATION GUIDE

TABLE OF CONTENTS

WARNINGS.....	1
INTRODUCTION.....	2
SNOWPLOW FEATURES.....	3
TIPS ON PLOWING SNOW.....	3
SNOWPLOW MOUNTING PROCEDURE.....	4
SNOWPLOW REMOVAL PROCEDURE.....	4
MAINTENANCE.....	5
PUTTING PLOW INTO STORAGE.....	5
TAKING PLOW OUT OF STORAGE.....	5
SMARTHITCH™ INSTALLATION PROCEDURE.....	6
HYDRAULIC MANIFOLD WIRING DIAGRAM.....	7
HYDRAULIC POWER UNIT FILL PROCEDURE.....	8
RT3 STRAIGHT BLADE WIRING DIAGRAM.....	9
RT3 STRAIGHT BLADE WIRING SCHEMATIC.....	10
HYDRAULIC VALVE ASSEMBLY PARTS LIST.....	11
RT3 STRAIGHT BLADE ASSEMBLY DRAWING.....	12
RT3 STRAIGHT BLADE PARTS LIST.....	13
RECOMMENDED BOLT TORQUE.....	17
TROUBLESHOOTING GUIDE.....	18
RECOMMENDED PUSHBEAM HEIGHT.....	22
WARRANTY.....	23

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PATENTS PENDING

MSC04265-2

PUTS SNOW IN ITS PLACE

WARNING

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



A REVOLUTION AGAINST SNOW

Congratulations on purchasing the finest snowplow made. The BOSS sets the standard for quality, reliability, craftsmanship, and performance. Our products are designed, built, and proven in Michigan's rugged Upper Peninsula, where winter is a way of life. And we back it all up with exceptional customer service and satisfaction. We're not just setting the standard. We're leading the way.

The BOSS SNOWPLOW has been carefully designed and built for years of carefree performance. With its simple attaching system, the BOSS can be attached or removed in seconds. For safety, the BOSS includes cross-over pressure relief to prevent damage by overstress. Where A-Frame and moldboard fatigue are a common problem on conventional plows, the BOSS Snowplow's heavy duty Push Frame, along with its high strength Boxed Section Moldboard (Super-Duty models Only), will stand up to severe plowing conditions.

To keep your BOSS PLOW in top shape, take a few minutes to study this manual. It will show you how to use and service the BOSS, familiarize you with all of its parts, and give you helpful tips on plowing snow.

If you have further questions, your local BOSS PLOW DEALER is the person to talk to. They know your plow well and want your complete satisfaction.

Snowplow Features

Ideal for commercial plowing, this new BOSS snowplow was designed and built with the snow removal professional in mind. Made to outperform the competition, the BOSS has many special features, which establish it as a durable high performance snowplow.

MOLDBOARD

Designed to be rugged and effective, the BOSS moldboard is set to allow for a smooth tripping action while providing superior scraping capability. The blade has just the right amount of curl so snow rolls ahead and to the side easily-allowing your vehicle to use less power, saving fuel and reducing wear on both the truck and snowplow. On the backside of the moldboard (on Super-Duty Models Only) a unique boxed-in design gives the BOSS incredible strength and minimizes blade twisting common to conventional snowplows.

CUTTING EDGE

A high carbon steel cutting edge provides the durability you will need for a long operating life.

PUSH FRAME

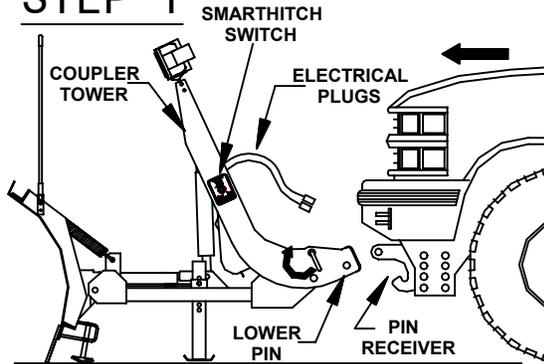
The BOSS's superior tube steel Push Frame is built to take ongoing punishment without bending or totally failing as so often happens with A-Frame designs.

Tips On Plowing Snow

- Know the area you are plowing, hidden obstructions such as curbs, sidewalks, pipes, etc. can cause damage to your plow or vehicle.
- Do not let the snow accumulate; always plow with the storm.
- Always wear your seatbelts when plowing snow.
- Occasionally, the plow blade may be in a position where it cuts off airflow to the radiator. While this is a rare occurrence, it can usually be corrected by raising or lowering the plow slightly.
- Always lower the blade when parking your vehicle. This reduces the load on your vehicle's springs and guards against any potential mishap caused by a falling plow.
- Always remember to plow at a safe speed. The faster you plow the harder you will hit hidden obstructions.
- Do not get body parts between or under the plow and vehicle when servicing or operating the plow.
- When transporting, position plow so as not to block vision or plow headlights.
- Do not change blade positions while traveling.

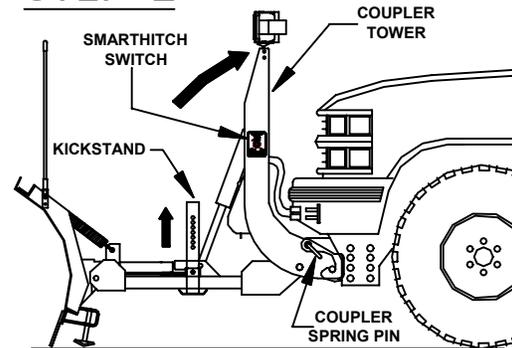
Snowplow Mounting Procedure

STEP 1



- Line up vehicle with the snowplow and drive straight in until the lower pin contacts the push beam pin receiver.
- Remove the electrical plug dust covers. Connect the electrical plugs, turn spring pins $\frac{1}{2}$ turn clockwise, and turn the SmartHitch switch on.

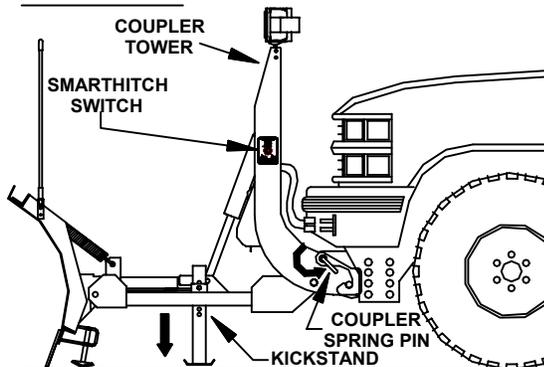
STEP 2



- Press the raise button on the in cab control until the coupler tower is raised and the spring pins snap in.
- Check that both spring pins have fully engaged the coupler. SEE CAUTION INSERT. Move the coupler tower to align spring pins with the pin receiver holes until both pins engage completely.
- Pull the kickstand spring pin outward and raise the kickstand. Release the kickstand spring pin to secure in the raised position. Turn the SmartHitch switch down to the raise plow position.

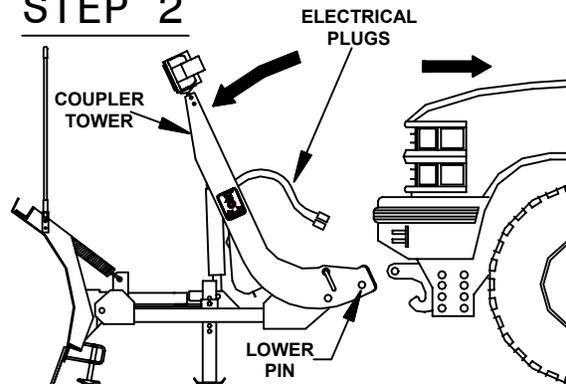
Snowplow Removal Procedure

STEP 1



- Lower the plow. Pull the kickstand spring pin to release and lower the kickstand.
- Turn the SmartHitch switch to the top position, and press the raise button on the in cab control until the coupler moves toward the truck and releases tension on the spring pins.
- Pull the coupler spring pins outward and rotate to the opened position. Turn the SmartHitch switch to the down position.

STEP 2



- Press the raise button on the in cab control until the coupler tower completely lowers to the plow.
- Disconnect the electrical plugs and install the electrical plug dust covers.
- Back vehicle away from the snowplow slowly.

CAUTION:

BOTH COUPLER SPRING PINS MUST BE FULLY ENGAGED. FAILURE TO COMPLETELY ENGAGE SPRING PINS MAY RESULT IN PERSONAL INJURY AND PROPERTY DAMAGE

Maintenance

Your BOSS PLOW is designed for heavy-duty, rugged service with minimal maintenance. To ensure that it gives you the same high performance year after year, use it properly and observe the following maintenance precautions.

Inspect the following on a regular basis:

- All fasteners, pins, retainers, nuts and bolts for tightness. Refer to the Recommended Bolt Torque chart in this manual.
- All hydraulic lines and connections for wear and leakage.
- Hydraulic cylinders for leakage, rods for rust or pitting.
- Cutting edge wear.
- Plow shoe wear.
- Hydraulic oil level. Follow the instructions in this manual to properly check and fill your hydraulic power unit.
- Control Harness and Power/Ground Cable Connectors for corrosion. Apply dielectric grease at least once a month during the plow season.
- Apply grease to coupler spring pins and kickstand spring pin.

Putting the Plow into Storage

1. Drive the snowplow to a storage site. Follow the normal procedure for dismounting from the plow.
2. Disconnect all electrical plugs and coat each connection with dielectric grease (lights, valve assembly, pump, pump solenoid, and battery). Install all dust caps and plugs provided.
3. Touch-up any rust spots or chipped paint.
4. Loosen the return springs.
5. Grease the coupler spring pins, and kickstand spring pin.
6. Push the lift tower forward until the lift cylinder is completely compressed. This will protect the lift cylinders from corrosion.
7. Grease the exposed chrome on the angling cylinders to protect from corrosion.

Taking the Plow out of Storage

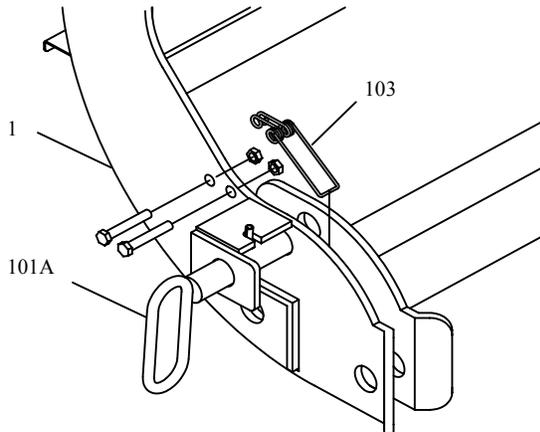
1. Check all fasteners for tightness. Refer to Chart 1 for Recommended Bolt Torque.
2. Check hydraulic hoses for cracks and leaks.
3. Hydraulic oil level. Follow the instructions in this manual to properly check and fill your hydraulic power unit.
4. Tighten springs.
5. Coat each electrical connection with dielectric grease (lights, valve assembly, pump, pump solenoid and battery).
6. Grease the coupler spring pins and kickstand spring pin.

Completely assemble the snowplow as instructed in the RT3 Straight Blade Assembly Manual.

Figure 1. SmartHitch™ Torsion Springs G10097

SmartHitch™ Installation Procedure

1. Install **MSC04227** SmartHitch™ Torsion Springs (103) using **HDW05573** Hex Head



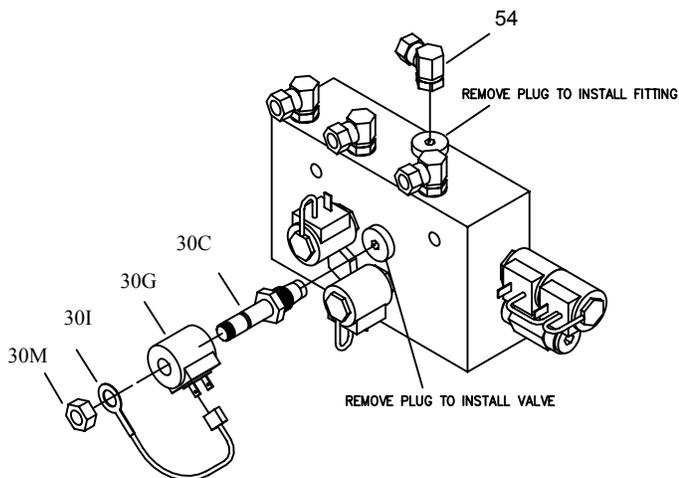
Cap Screw (88) and **HDW01720** Self-Locking Nut (109). Align the top of the spring with the center of the spring pin hole, then tighten. For the 10' Super Duty, use **MSC07673** SmartHitch™ Torsion Springs (103) and **HDW05573** Hex Head Cap Screw (88).

2. Remove the Hydraulic Cover to expose the Hydraulic Valve Manifold.

Figure 2. Valve Installation

G10096

3. Remove the plug and install **HYD07047** SmartHitch™ Attachment Valve (30C).



4. Install **HYD01638** Valve Coil (30G) and Ground Strap (30I) on the stem of the Valve.
5. Install Valve Coil Nut on SmartHitch™ Attachment Valve (30C). Tighten 1/8 turn past finger tight. Equivalent of 5 to 7 ft./lbs. **DO NOT OVER-TIGHTEN.** The valve will be damaged if the coil nut is over-tightened.
6. Remove the plug from the top of the manifold and install **HYD01620** 90° O-Ring Swivel Fitting (54) so that the fitting faces away from the lift cylinder.

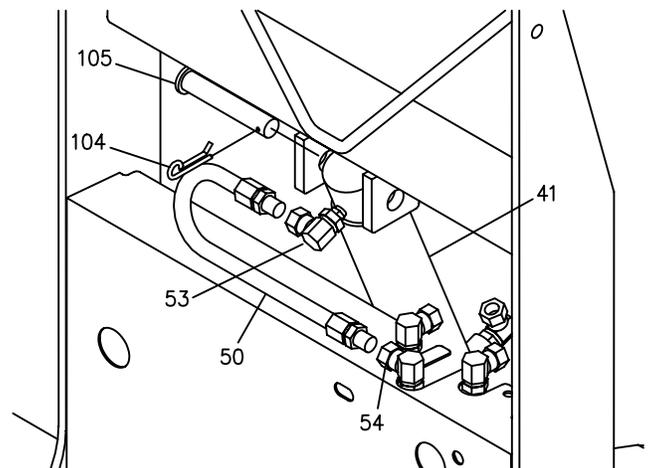


Figure 3. Hose Installation

G10069

7. Remove the breather vent from the top of the Hydraulic Lift Cylinder (41) and install **HYD07046** 90° Fitting (53) so it is horizontal and facing away from the valve manifold. For the 10' Super Duty, use **HYD01620** 90° Fitting (53).
8. Connect one end of **HYD01695** Hose (50) to 90° Fitting (53) and the other end to the 90° Swivel Fitting (54).
9. Insert **MSC04218** SmartHitch Toggle Switch (74A) through the side hole of Coupler (1) and secure with **MSC04238** Switch Boot.
10. Connect **MSC04219** and **MSC04220** SmartHitch™ Jumper Wires to the switch and manifold as illustrated in the Manifold Wiring Diagram.

Hydraulic Manifold Wiring Diagram

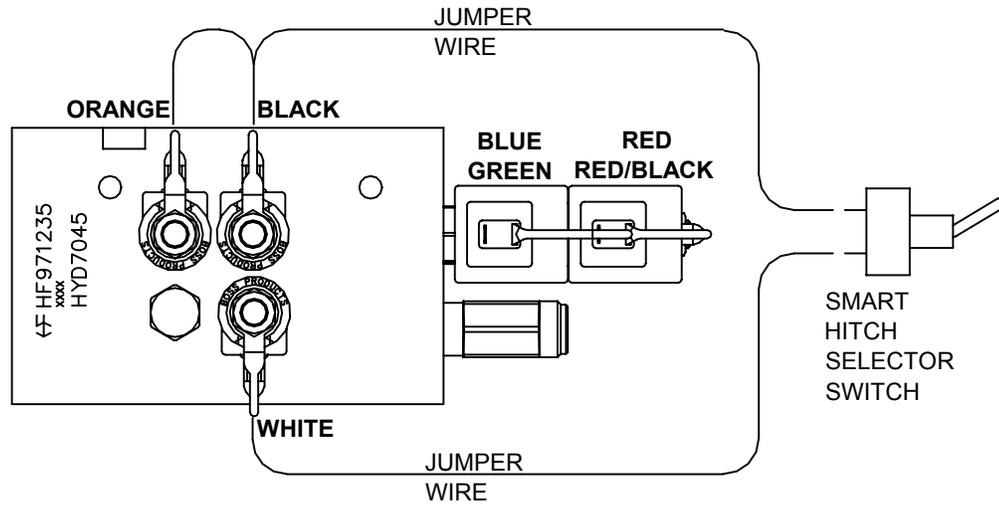


Figure 4. RT3 Straight Blade with SmartHitch™ Manifold

G10042

Wire Color	Wire Function
Green	Blade Left
Red	Blade Right
White	Lift
Orange	Lower
Red/Black	Blade Right
Blue	Blade Left
Black Jumper	SmartHitch™ Jumper

RT3 Straight Blade Wiring Diagram

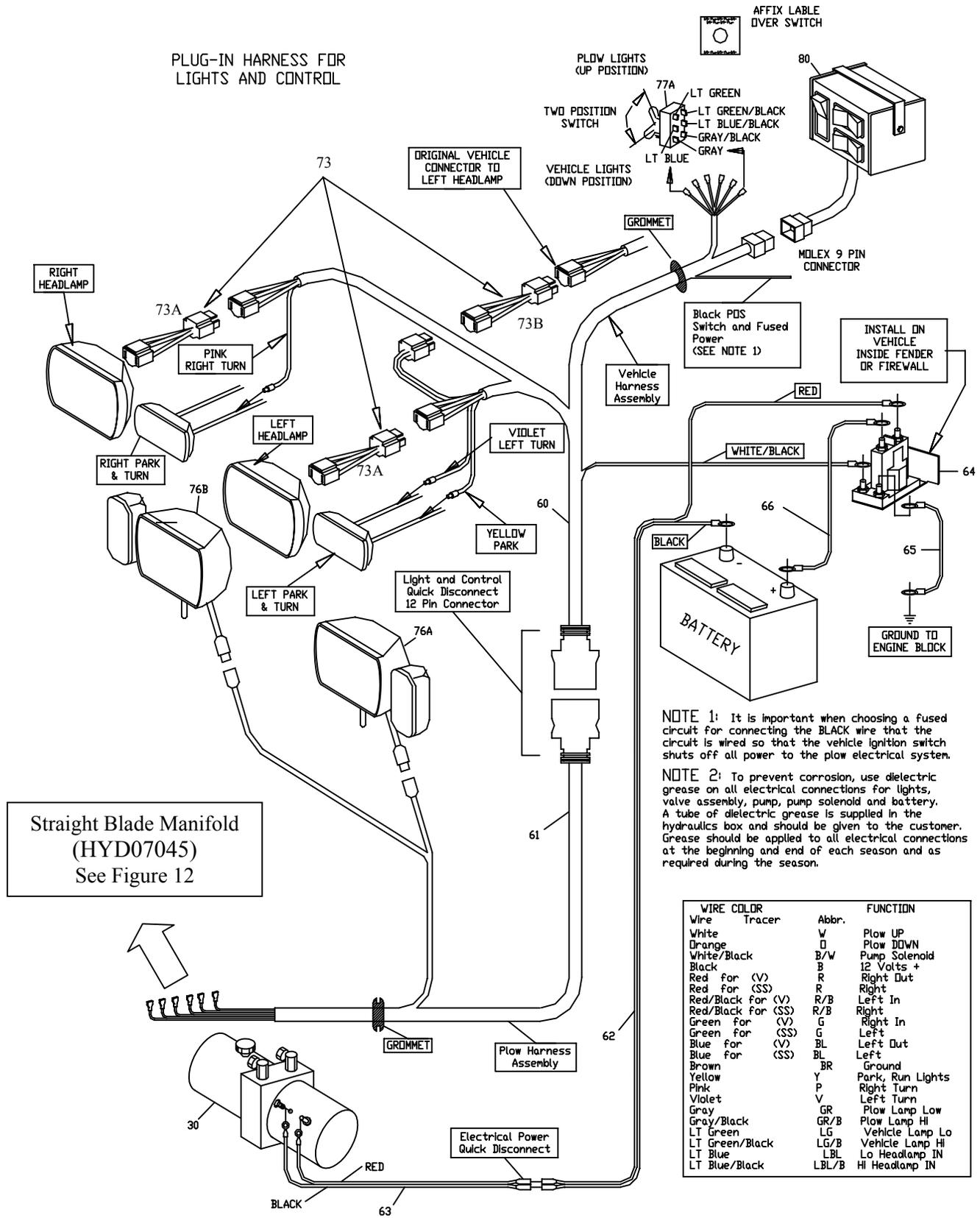


Figure 7. RT3 Wiring Diagram

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Hydraulic Power Unit Fill Procedure

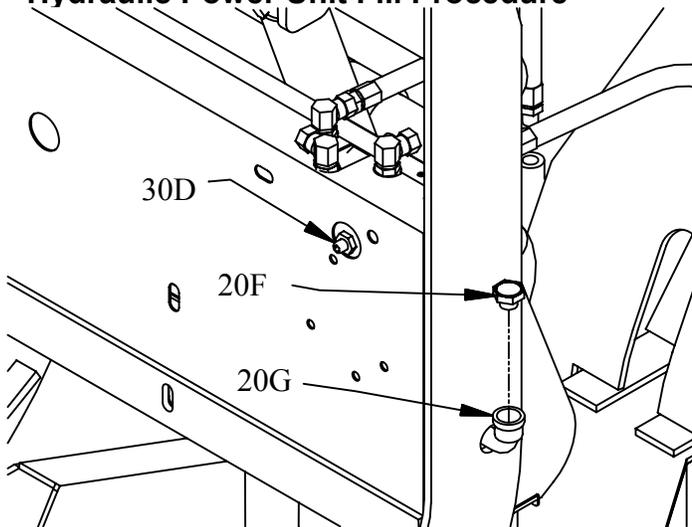


Figure 5. External Fill – Backside View

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).

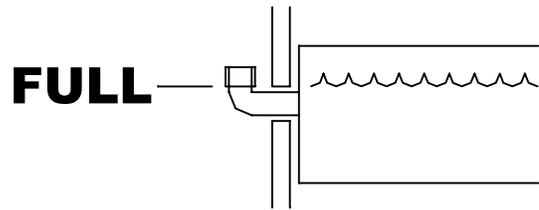


Figure 6. Oil Full Level

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.

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.

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.

RT3 Straight Blade Wiring Schematic

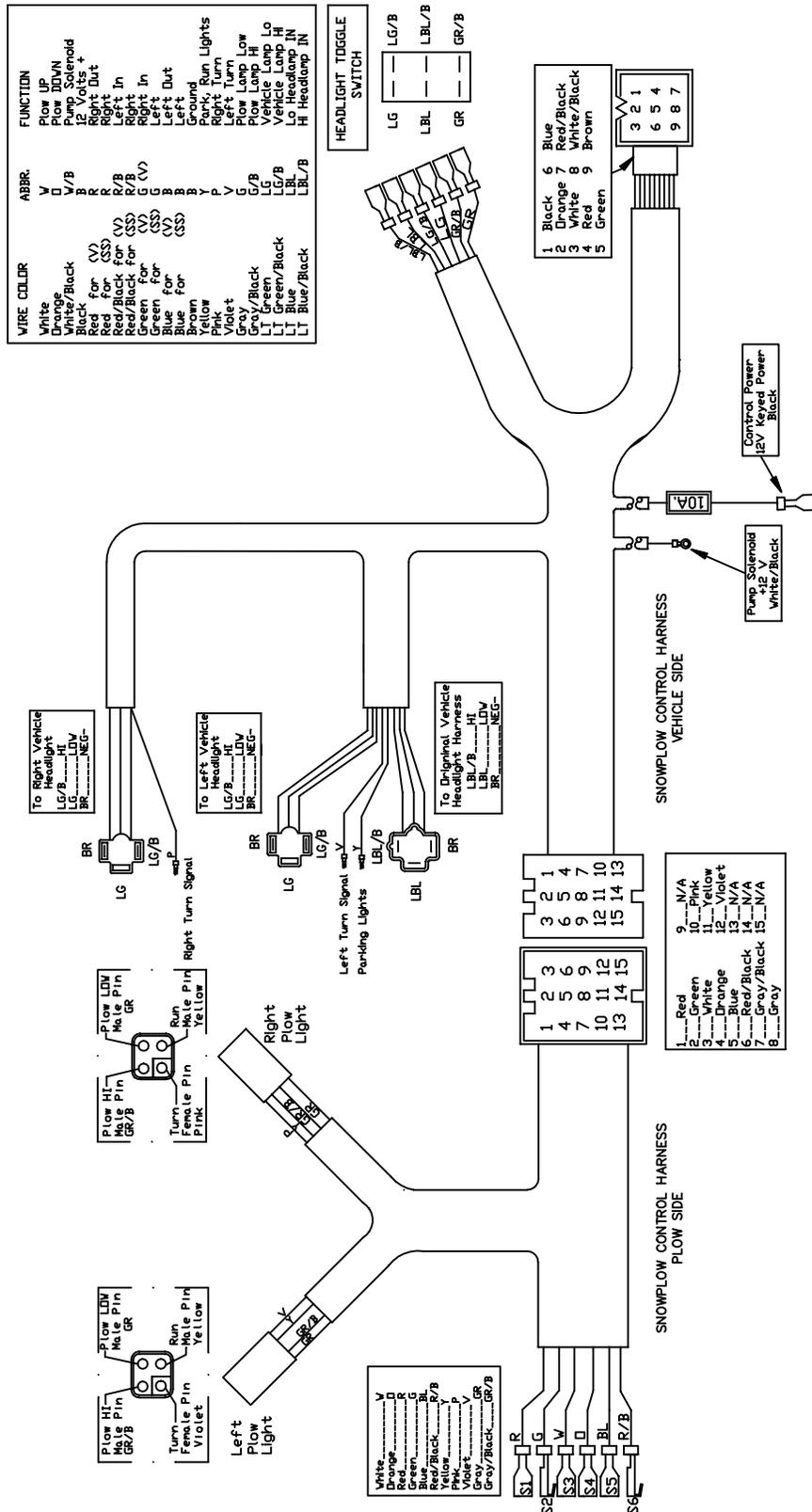


Figure 8. RT3 Wiring Schematic

Hydraulic Valve Assembly Parts List

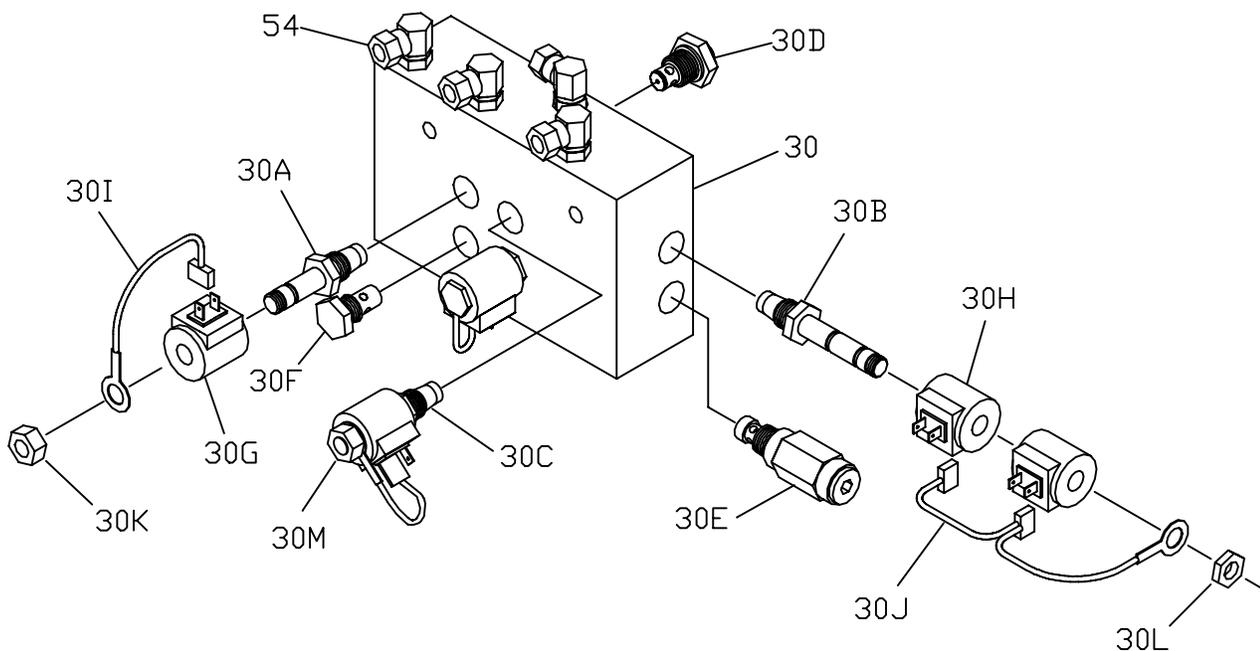


Figure 9. Straight Blade Manifold with SmartHitch™ Parts Diagram

G10072

Ref.	Description	Part Number	Qty
30	Hydraulic Valve Assembly with SmartHitch (Red)	HYD07045	1
	Hydraulic Valve Assembly (Red)	HYD07019	
30A	Hydraulic Valve, Lift/Lower Cartridge	HYD01637	2
30B	Hydraulic Valve, Angle Cartridge (3 Position - 4 Way Spool)	HYD07029	1
30C	Hydraulic Valve, SmartHitch Attach	HYD07047	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
30M	Nut, Coil - used with valve HYD07047		1

RT3 Straight Blade Parts List

Reference Number	Description	Part Number
WELDMENTS		
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
BLADES		
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
CUTTING EDGES		
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
PLOW COMPONENTS		
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

PLOW COMPONENTS (Cont.)

RT3 Straight Blade Parts List

14	Hydraulic Enclosure Cover	CPA04423
	Hydraulic Enclosure Cover (10' Super Duty)	CPA07668
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
HYDRAULIC POWER UNIT		
20	Hydraulic Pump – Power Unit Barnes	HYD01710
	Hydraulic Pump – Power Unit Barnes (10' Super Duty)	HYD07695
	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
	Hydraulic Reservoir, 3 quart (10' Super Duty)	HYD07727
20F	Fill Cap	HYD04810
20G	Street Elbow (Not included with HYD01710)	HYD04809
	Seal Kit, Power Unit	HYD01670
HYDRAULIC VALVE ASSEMBLY		
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	
CYLINDERS & CYLINDER SEAL KITS		
40	Hydraulic Angle Cylinder	HYD07014
	Seal Kit for Hydraulic Angle Cylinder HYD07014	HYD01659
	Hydraulic Angle Cylinder (10' Super Duty)	HYD07610
	Seal Kit for Hydraulic Angle Cylinder HYD07610	HYD07688
41	Hydraulic Lift Cylinder	HYD07013
	Seal Kit for Hydraulic Lift Cylinder HYD07013	HYD07025
	Hydraulic Lift Cylinder (10' Super Duty)	HYD07649
	Seal Kit for Hydraulic Lift Cylinder HYD07649	HYD07686
HOSES & FITTINGS		
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
	Hydraulic Swivel Fitting, 90 Deg. (SmartHitch) (1/4" ORS X 1/4" FPS)	HYD01620
54	Hydraulic Swivel Fitting, 90 Deg. (Manifold) (1/4" ORS X 1/4" FPS)	HYD01620
HOSES & FITTINGS (Cont.)		
55	Hydraulic 90 Deg. Fitting (Angle Cylinder) (3/8" MP X 3/8" FPS)	HYD07018

RT3 Straight Blade Parts List

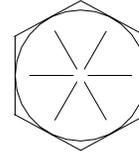
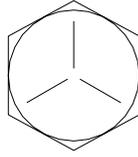
56	Hydraulic Swivel Fitting, 90 Deg. (Lift Cylinder) (1/4" ORS X 1/4" FPS)	HYD01620
ELECTRICAL		
60	Light and Control Harness 116" (Vehicle Side)	MSC03742
61	Light and Control Harness 48" (Plow Side)	MSC03741
62	Power/Ground Cable 60" (Vehicle Side)	HYD01684
63	Power/Ground Cable 36" (Plow Side)	HYD01690
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
91	Hex Head Cap Screw, 3/8" – 16 X 1 1/4" (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
	Eye Bolt, 1/2" X 6" PLT (Poly Standard Duty & Super Duty) (Trip Spring)	HDW01700

RT3 Straight Blade Parts List

PINS, NUTS, CLAMPS, WASHERS, and SPRINGS

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	
	Pivot Pin, Kit (10' Super Duty)	MSC07697
	Includes: (1) Pivot Pin RT3 1 1/2" X 3 5/8"	
	(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	
	Coupler Spring Pin Kit (10' Super Duty)	MSC07699
	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
	Spring, SmartHitch Torsion (10' Super Duty)	MSC07673
104	Hairpin Cotter, #16	HDW05544
105	Clevis Pin, 5/8" X 3-1/2"	HDW05563
	Clevis Pin, 3/4" X 3-3/4" (10' Super Duty)	HDW07682
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
	Nut, Lock 1" – 8 PLT (Push Frame Center Pivot Pin)(10' Super Duty)	HDW07704
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
	Nut, Lock 1" – 8 PLT (Cylinder Mounts) (10' Super Duty)	HDW07704
OPTIONS & ACCESSORIES		
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



Dia. / Pitch	Grade 5 (ft-lbs)	Grade 8 (ft-lbs)
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

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.

Troubleshooting Guide

Glossary of Problems:

1. Pump motor does not run.
2. Pump continues to run with switch in neutral.
3. Plow will not lower.
4. Plow will not raise or raises slowly, motor runs.
5. Blade Angles While Plowing Snow
6. Plow lowers too fast.
7. Blade will not angle, but motor runs.
8. Blade angles too easily while plowing.
9. Oil leaks from cylinders.
10. Battery goes dead with all switches in neutral.
11. Plow lights are dim, will not come on or flicker.
12. Turn signals flash at a rapid rate.
13. High beam indicator light not functioning properly.
14. Blade digs into the ground in the V position.
15. Oil runs out of fill cap of hydraulic pump.
16. Pump chatters when raising the plow or angling blade.

PROBLEM	DIAGNOSTIC CHECK	RESULT
1. Pump motor does not run.	Check power/ground cables and control cables are connected properly.	Connect.
	Check for voltage at pump motor while ignition switch is on and LIFT control button is pushed.	If voltage is present, pump motor has failed or pump has seized. Motor brushes may be replaced, otherwise replace pump/motor assembly.
	Check for power to the solenoid by testing for voltage between both large terminals and ground.	If voltage is not present between one large terminal and ground, the cable between the battery and solenoid is disconnected or broken.
	Check for voltage between the other large terminal of the solenoid and ground while jumping power to the small terminals with the white wire.	If NO voltage is present, solenoid has failed and must be replaced. If voltage is present, wire from small terminal of solenoid to ground may be disconnected or broken.

Troubleshooting Guide

PROBLEM	DIAGNOSTIC CHECK	RESULT
	Test power to the control box by checking voltage between black wire and ground at the white 9-pin connector.	If NO voltage is present, power from fuse box has become disconnected. If voltage is present check wiring and control box switch.
2. Pump continues to run with switch in neutral.	Disconnect control box, ignition ON.	If pump continues to run, solenoid has failed in the closed position. Quickly remove power to the pump by disconnecting the power/ground cables to the plow. Replace solenoid.
		If pump stops running, check wiring of switch box for short between black and white/black wire in control box, or failed switch.
3. Plow will not lower.	Check power/ground cables and control cables are connected properly.	Connect.
	Check flow control valve.	If flow control valve is completely closed, place RAISE/LOWER switch on control box in NEUTRAL, then open the flow control valve.
	Check wiring on valve block for proper connections.	Refer to the wiring diagram in Hydraulics Manual.
	Check for voltage between solenoid valve terminal and ground with ignition switch on and control switch in FLOAT position.	If voltage is present solenoid valve or valve coil has failed. Replace valve.
	Test power to the control box by checking voltage between black wire and ground at the white 9-pin connector.	If NO voltage is present, power from fuse box has become disconnected. If voltage is present, check wiring and switch of control box.
4. Plow will not raise or raises slowly (pump motor runs).	Check hydraulic fluid level.	Hydraulic fluid level should be within $\frac{3}{4}$ " from top of reservoir or visible in street elbow when lowered and in the straight blade position.

Troubleshooting Guide

PROBLEM	DIAGNOSTIC CHECK	RESULT
	Check power/ground cables and control cable are connected properly.	Connect.
	Check wiring on valve block for proper connections.	Refer to the wiring diagram in Owner's manual.
	Load test battery.	Replace battery if weak or defective.
	Check pressure at pressure port of pump.	If pressure is less than 2500 psi (at end of lift). Motor brushes may be defective, pump pressure relief valve may be contaminated, damaged, or set less than 2500 psi, pump may be worn.
	Check LIFT Solenoid Valve	Lift solenoid valve not opening completely. Replace.
		Check wiring and switch box control
5. Blade angles while plowing snow.	Check angle solenoid valve on manifold Check pressure	If solenoid valve is contaminated, clean or replace. If pressure relief valve is contaminated, clean or replace.
6. Plow lowers too fast.	Check flow control valve.	Close flow control valve to desired drop speed.
7. Blade will not angle or angles slowly, motor runs.	Check hydraulic fluid level.	Hydraulic fluid level should be within 3/4" from top of reservoir or visible in street elbow when lowered and in the straight blade position.
	Check that power/ground cables and control cable are connected properly.	Connect.
	Check wiring on valve block for proper connections.	Refer to the wiring diagram in Owner's Manual.
	Load test battery.	Replace battery if weak or defective.

Troubleshooting Guide

PROBLEM	DIAGNOSTIC CHECK	RESULT
	Check Angle solenoid valve.	Angle solenoid valve not opening completely. Replace.
		Check wiring and control box.
8. Blade angles too easily while plowing.	Pressure relief valve pressure set too low.	See an Authorized BOSS Dealer for pressure relief valve adjustment.
9. Oil leaks from cylinders.	Loose packing.	Tighten packing 1/8-turn increments until leak stops.
	Check rod condition.	If rods are pitted or rough, polish with copus cloth or extra fine steel wool.
10. Battery goes dead with all switches in neutral.	Possible short in switches.	Inspect wiring of control box switches, replace switch(es).
	Possible short in wiring harness.	Repair damaged wire.
	Possible short in valve coils.	Replace coils.
11. Plow lights are dim, will not come on or flicker.	Check electrical connections.	Clean and repair any corroded or damaged terminals.
	Check headlight adapter wires.	Verify proper headlight adapters are being used and are correctly installed.
	Check for good ground of plow lights.	Sand paint under headlight mount to bare metal, securely tighten headlight-mounting bolts.
12. Turn signals flash at a rapid rate.	Check flasher.	Replace original vehicle flasher with heavy-duty six-lamp flasher provided.
13. High beam indicator does not function properly.	Check headlight adapters.	Verify proper headlight adapters are being used and are correctly installed.
	Check electrical connections to plow lights/truck lights toggle switch.	Refer to the wiring diagram in Owner's Manual.

Troubleshooting Guide

PROBLEM	DIAGNOSTIC CHECK	RESULT
14. Plow does not clean-up snow from low areas.	UP/DOWN switch not in neutral.	Place switch in DOWN (FLOAT) position.
15. Oil running out of fill cap of hydraulic pump.	Plowing on steeply inclined terrain.	Avoid too steeply sloped areas.
	Pump reservoir over filled.	Reservoir should be filled to ¾" from top or until visible in street elbow.
	Hitting snow banks too hard.	Do not plow recklessly.
16. Pump chatters when raising plow or angling blade.	Hydraulic fluid low.	Add hydraulic fluid. Reservoir should be filled to ¾" from top or until visible in street elbow.

RECOMMENDED PUSHBEAM HEIGHT

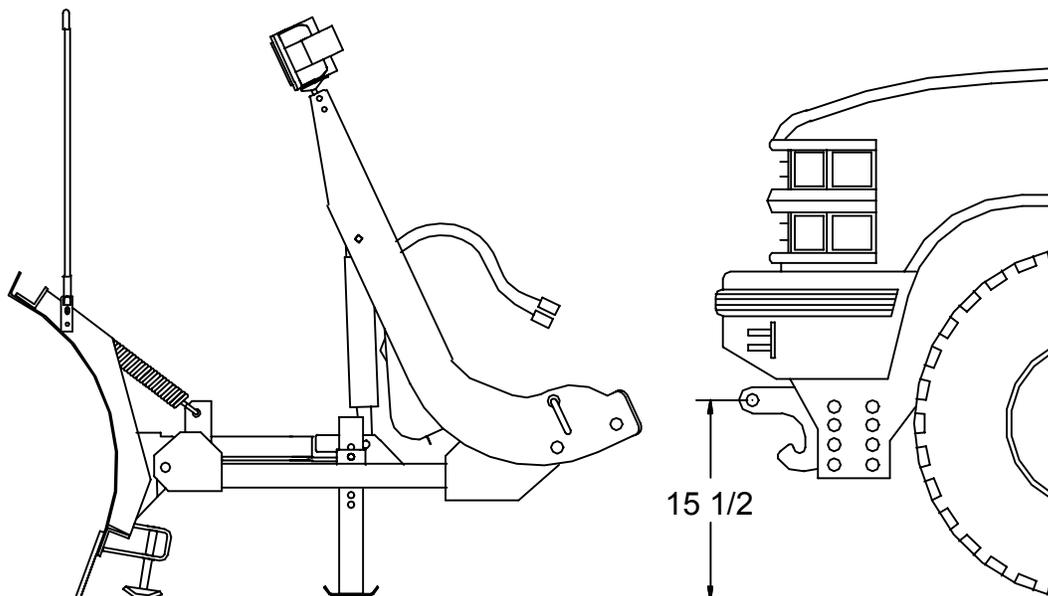


Figure 11. RT3 Recommended Pushbeam Height

G10081

BOSS SNOWPLOW LIMITED CONSUMER WARRANTY

What the warranty covers:

BOSS PRODUCTS warrants to the original retail purchaser of a BOSS snowplow who purchases it for personal, family or household use, that the snowplow will be free from defects in material and workmanship except as set forth below.

Warranty period:

Parts: One year from the date of purchase. All BOSS Poly Blade Assemblies are two years.

Labor: One year from the date of purchase.

What BOSS PRODUCTS will do:

If, within the warranty period, the snowplow is found to be defective, BOSS PRODUCTS will repair or replace, at its sole option, the defective parts at no charge to the original purchaser.

What you must do for warranty service:

To obtain service under this warranty, purchaser must return the defective snowplow to an authorized BOSS PRODUCTS dealer (preferably the one from whom the snowplow was purchased). The purchaser must establish the warranty period by verifying the original purchased date. All transportation costs to and from the dealer will be the responsibility of the purchaser. To locate the authorized BOSS dealer nearest to you, call toll free: (800) 286-4155.

What is not covered:

This limited warranty does not cover the following:

1. Expendable parts such as hoses, plow shoes, cutting edges, pins, nuts, bolts, blade guides, etc.
2. Snowplows or parts repaired or altered by anyone other than an authorized BOSS PRODUCTS dealer.
3. Snowplows or parts which have been subject to misuse or service; negligence, accident; or improper installation, maintenance, care or storage.
4. Snowplows mounted on vehicles other than those listed in the BOSS SNOWPLOW APPLICATION CHART AND SELECTION GUIDE.
5. BOSS PRODUCTS does not assume any liability for motor vehicle damage resulting from the attachment or use of a BOSS PRODUCTS snowplow. Vehicle risk is the sole responsibility of the purchaser.

Warranty limitations:

THIS WARRANTY IS OFFERED IN LIEU OF ANY OTHER EXPRESS WARRANTY.

THE DURATION OF ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY.

BOSS PRODUCT'S LIABILITY IS EXPRESSLY LIMITED TO THE REPAIR OF THE SNOWPLOW, INCLUDING LABOR AND REPLACEMENT OF DEFECTIVE PARTS. BOSS PRODUCTS SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES WHATSOEVER, EVEN IF DAMAGES ARE CAUSED BY BOSS PRODUCT'S NEGLIGENCE OR FAULT.

State laws:

Some states do not allow exclusion of incidental or consequential damages or the limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have the other rights which vary from state to state.

This warranty does not apply if you purchased your snowplow for other than personal, family, or household use. If so, refer to the BOSS Snowplow Commercial Warranty.

BOSS PRODUCTS is a division of

M. J. Electric, Inc.
P.O. Box 686
North U.S. Hwy 2

BOSS SNOWPLOW COMMERCIAL WARRANTY

What this warranty covers:

This warranty covers defects in material and workmanship except as set forth below.

Who is covered:

The original purchaser from an authorized dealer.

For how long:

Parts: One year from the date of purchase. All BOSS Poly Blade Assemblies are two years.

Labor: One year from the date of purchase.

What BOSS PRODUCTS will do:

BOSS PRODUCTS will, at its sole option, repair or replace defective parts at no charge.

What you must do to for warranty service:

To obtain warranty service, you must return the defective snowplow to any authorized BOSS PRODUCTS dealer (preferably the one from whom the snowplow was purchased) within the warranty period. Purchaser must be able to verify the original purchase date. All transportation costs to and from the dealer will be the responsibility of the purchaser. To locate the authorized BOSS dealer nearest to you, call toll free: (800) 286-4155.

What is not covered:

This warranty does not cover:

6. Expendable parts such as hoses, plow shoes, cutting edges, pins, nuts, bolts, blade guides, etc.
7. Snowplows or parts repaired or altered by anyone other than an authorized BOSS PRODUCTS dealer.
8. Snowplows or parts that have been subject to misuse; negligence; accident, or improper installation, maintenance, care or storage.
9. Snowplows mounted on vehicles other than those listed in the BOSS SNOWPLOW APPLICATION CHART AND SELECTION GUIDE.
10. BOSS PRODUCTS does not assume liability for damage to your motor vehicle resulting from the attachment or use of a BOSS PRODUCTS snowplow. Vehicle risk is the sole responsibility of the purchaser.

Limits of Boss Products Liability are:

BOSS PRODUCT'S LIABILITY IS EXPRESSLY LIMITED TO REPAIR OR REPLACEMENT OF DEFECTIVE PARTS. BOSS PRODUCTS SHALL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES WHATSOEVER, EVEN IF DAMAGES ARE CAUSED BY THE NEGLIGENCE OR FAULT OF BOSS PRODUCTS.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This warranty does not apply if you purchased your snowplow for personal, family, or household use. In this case, refer to the BOSS Snowplow Limited Consumer Warranty.

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