SnowDogg by Buyers
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snowdoggplows.com

SnowDogg® MUT Series

OWNER'S MANUAL

16992210 Rev A

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⚠ WARNING

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

⚠ WARNING

Make sure plow is properly attached before moving vehicle.

⚠ WARNING

Do not move plow while servicing or place body parts between or under plow parts while moving plow.

⚠ WARNING

DO NOT change blade position when traveling.

⚠ WARNING

DO NOT exceed 40 mph when transporting plow.

⚠ WARNING

Do not exceed 10 mph when plowing.

⚠ WARNING

Always lower blade when vehicle is not in use.

⚠ WARNING

Read this manual carefully before operating this snowplow.

⚠ CAUTION

Vehicle application recommendations are based on the following:

- The vehicle with the snowplow installed must comply with the vehicle manufacturer's stated gross vehicle and axle weight ratings (found on the driver-side door corner post of the vehicle) and the front and rear weight distribution ratio. In some cases, rear ballast may be required to comply with these requirements.
- In some cases there may be additional limitations and requirements.
- Available capacity decreases as the vehicle is loaded with cargo or other truck equipment, or snowplow accessories are installed.
- If there is uncertainty as to whether available capacity exists, the actual vehicle as configured must be weighed.

WELCOME!

Congratulations on your purchase of a SnowDogg plow! The SnowDogg plow by Buyers Products is a heavy-duty, professional grade plow built for your toughest plowing applications. By using this manual for maintenance and safety instructions, you can be sure to optimize the life of your plow.

Your dealer can provide expert assistance and service and is the first line of support. They have first hand knowledge of your plow and the conditions in your area.

Be sure to register your plow after purchase at www.snowdoggplows.com. The required information is shown on the Registration Data Sheet. Registration is required to activate your two year warranty.

REGISTRATION DATA SHEET

Owner's Information

Name: _____

Company: _____

Address: _____

Phone: _____

Fax: _____

E-mail: _____

Purchased From: _____

Purchase Date: _____

Plow Model: _____

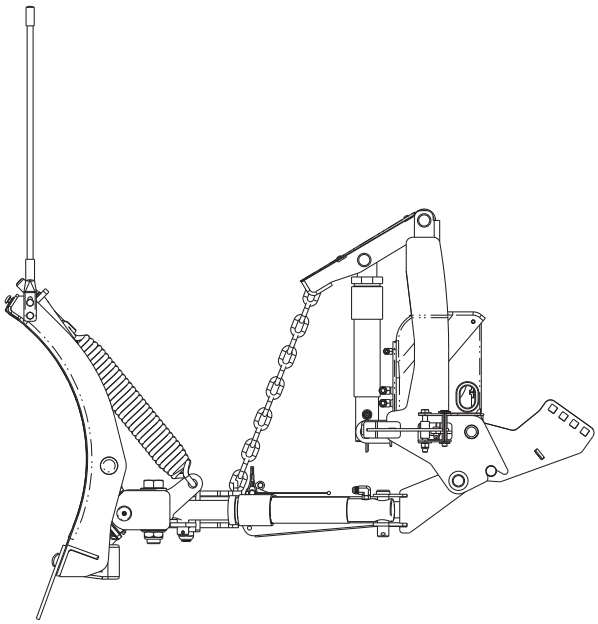
Plow Serial#: _____

HPU Serial #: _____

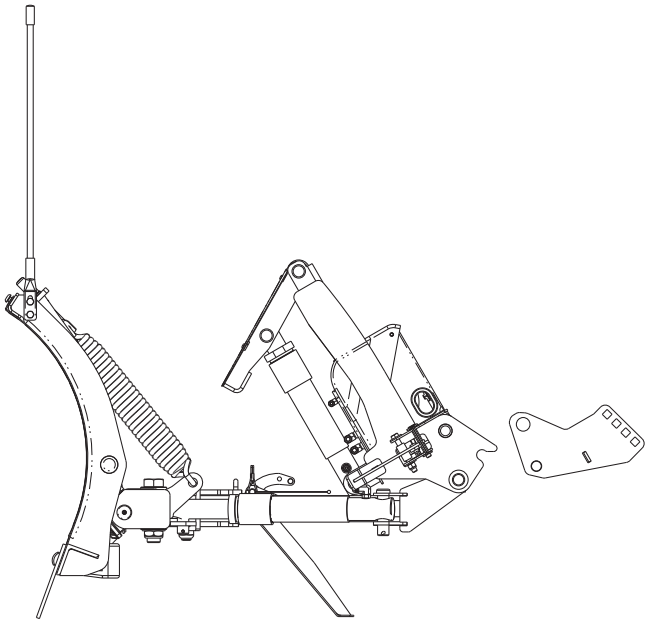
Truck Model: _____

Truck Year: _____

Register your plow at www.snowdoggplows.com to activate your two year warranty.



MOUNTED PLOW



DISMOUNTED PLOW

MOUNT/DISMOUNT INSTRUCTIONS

Snowplow Mounting (fig. above)

1. Check that the pins are fully retracted. The foot pedal should be pushed towards the truck and will lock in the retracted position.

2. Drive in to the plow so that the cross bar on the mount engages with the receiver notch on the plow.

3. Pull the foot pedals away from the truck to release the pins.

4. Push up on the lift frame to engage the pins. To verify the lift frame is fully connected, check to see that the gold pins are visible from each side. Insert the lock pin through the foot pedal and pedal linkage.

5. Connect the hydraulic control connectors.

Snowplow Dismount (fig. above)

1. Put the plow in float by holding the down button for 1 second.

2. Press down on the chain lift to retract the lift cylinder. The chain must have slack for ease of plow removal.

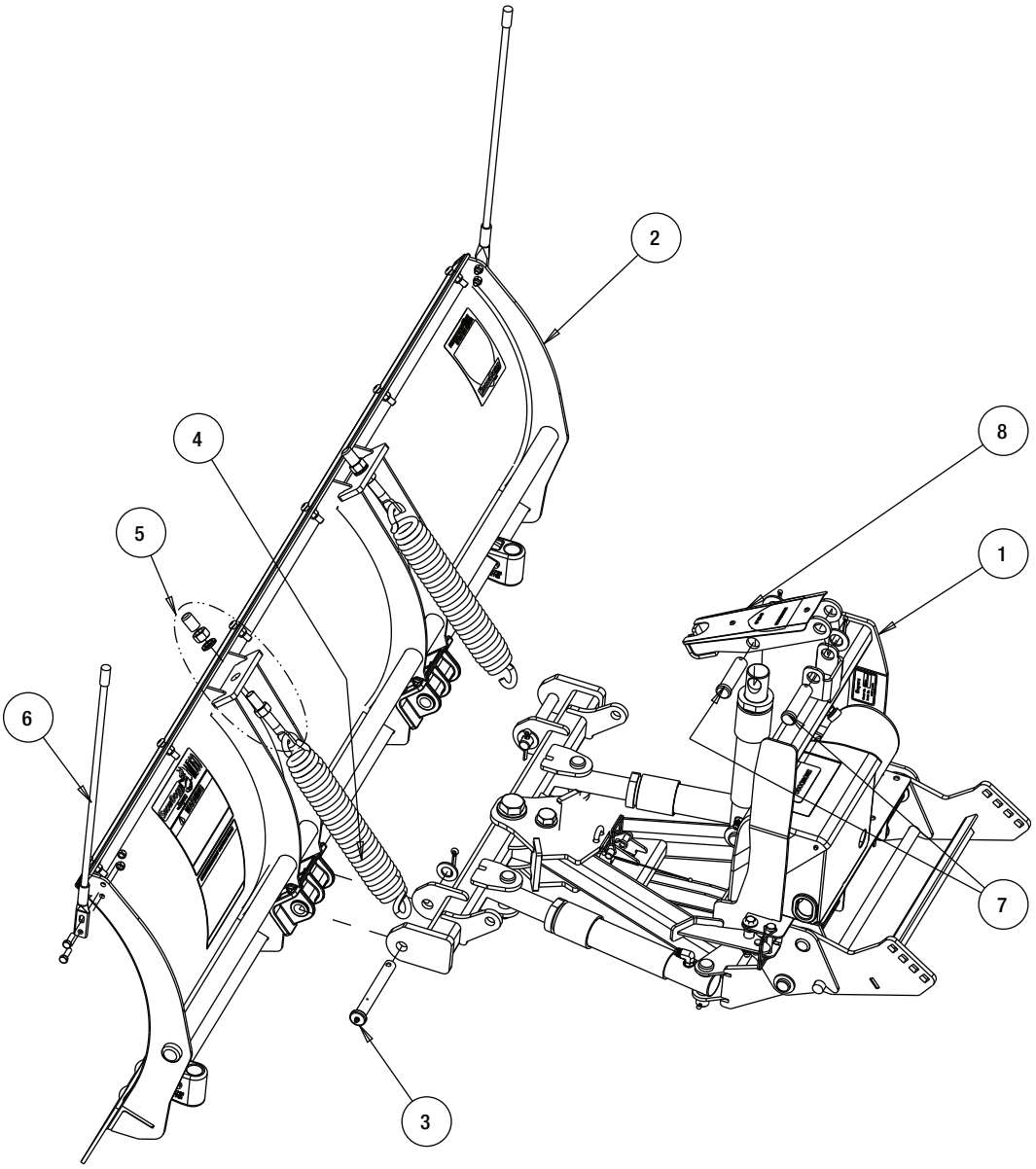
3. Push on the foot pedals and the lift frame towards the vehicle simultaneously. The pins will retract and the lift frame will rotate forward to rest on A-frame.

6. Disconnect the hydraulic connectors

7. Back away from the snowplow

INSTALLATION

SnowDogg snowplows are shipped almost completely assembled to minimize the amount of time from box to plowing. The illustrations are representative only and may differ from your hardware.
Please see the parts diagrams for specific part numbers.



ITEM	QTY.	PART NO.	DESCRIPTION
1	1	**16018100**	LIFT FRAME ASSEMBLY
2	1	**16020404**	MD60 MOLDBOARD
	1	**16020410**	MD68 MOLDBOARD
3	1	**16101110A**	TRIP PIN HARDWARE KIT
4	2	**16101200**	TRIP SPRING
5	1	**16101220**	TRIP SPRING HARDWARE KIT
6	1	**16122100**	BLADE GUIDE KIT
7	2	**16102142**	CLEVIS PIN KIT
8	1	**16112400**	CHAIN LIFT

SNOWPLOW ASSEMBLY

1. Attach the chain lift to the upper lift frame and lift cylinder using two 7/8"x3.25" clevis pins and cotter pins.
2. Attach the moldboard (2) to the lift frame using the trip pin hardware kit (3) as shown. Check that the moldboard rotates freely around the trip pins.
3. Install the two trip springs (4) using the trip spring hardware kit (5) as shown. Tension the springs until the coils are approximately .030 apart. A playing card serves as an adequate measuring device. It is important that all springs be at the same tension.
4. Grease all greasable fittings (trip pins and king bolt).

VEHICLE SPECIFIC MOUNT INSTALLATION

1. Mount the undercarriage as shown in the undercarriage installation instructions. As with the plow, all the fasteners should be checked on a regular basis.

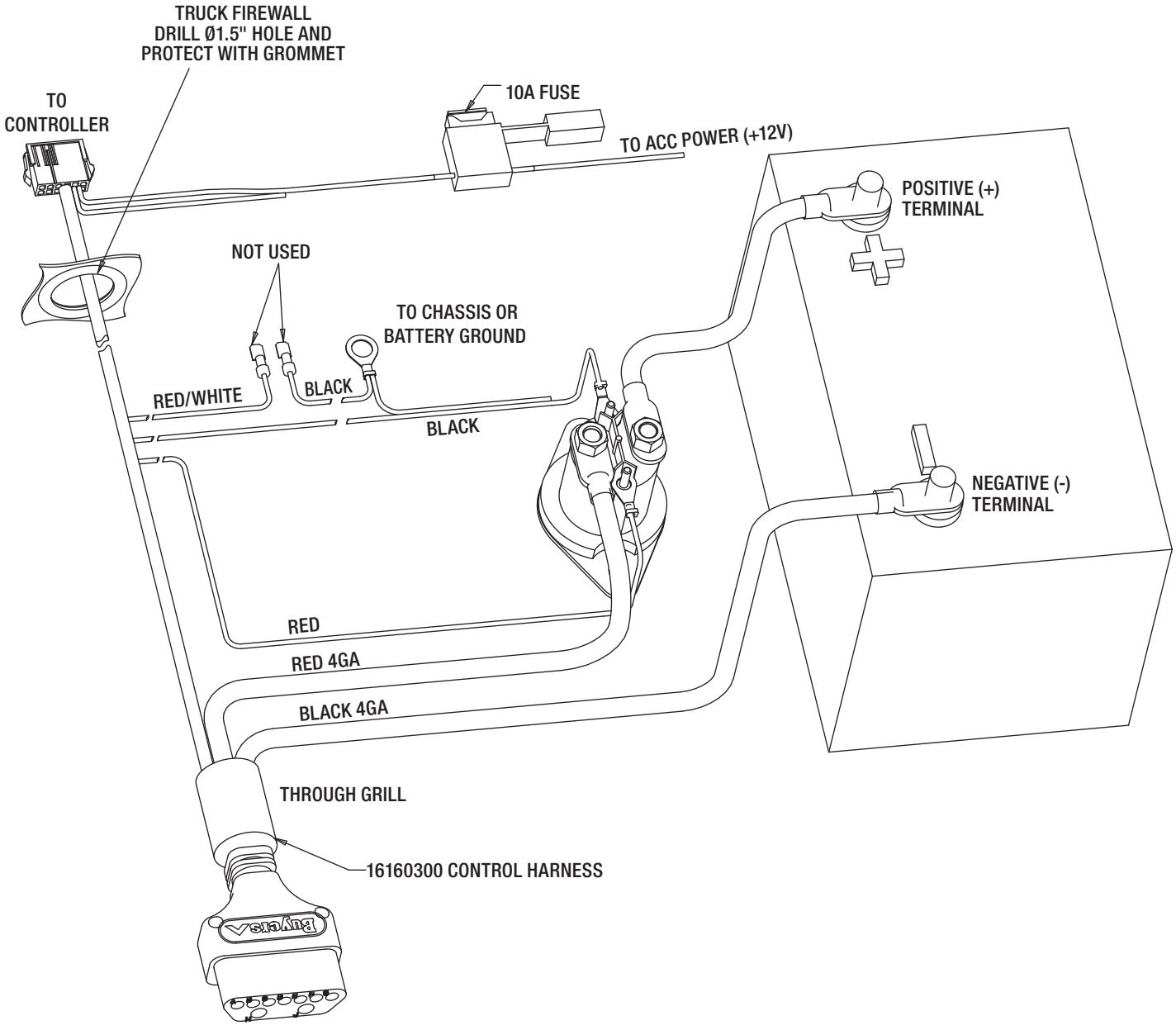
⚠ CAUTION

For safety reasons, the blade drops very slowly on the plow as shipped. To adjust the drop speed of the blade use a flat blade screwdriver and turn the lowering speed adjustment on the front of the hydraulic power unit counter clockwise. Turn it clockwise to slow the blade drop speed. Do this only while the blade is dropped, and tighten the jam nut after adjusting.

HARNESS INSTALLATION

The plow side control harness has been preinstalled. The truck side control harness is routed through the grill, by the battery, and through the firewall to the controller. It is preferable when possible to keep the plow connector on the drivers side to make mount/dismount easier and faster.
1. Route the CONTROL HARNESS through the truck grill, by the battery, and through the firewall. Some trucks will require drilling a ø1.50" hole through the firewall, while some will have holes provided (usually plugged). Check your truck Owner's Manual for details. If the hole is drilled it is critical that a grommet be used to prevent damage to the wire harness.
2. Mount the MOTOR RELAY in a convenient and secure location on the battery side of the vehicle using the included self tapping screws.
3. The small RED WIRE from the CONTROL HARNESS is connected to a small terminal of the MOTOR RELAY.
4. The small BLACK WIRE from the CONTROL HARNESS has two leads – one is connected to the other small terminal of the MOTOR RELAY. The other is connected directly to vehicle/chassis ground.
5. The large (4 gage) BLACK WIRE on the CONTROL HARNESS must be connected directly to the NEGATIVE (-) battery terminal. A BATTERY TERMINAL ADAPTER may be required.
6. The large (4 gage) RED WIRE on the CONTROL HARNESS is connected to one of the large terminals on the MOTOR RELAY.
7. The shorter red BATTERY CABLE is used to connect the other large terminal of the MOTOR RELAY with the POSITIVE (+) terminal on the battery. A BATTERY TERMINAL ADAPTER may be required.
8. The CONTROLLER CONNECTOR is routed through the firewall. Wait to complete RELAY HARNESS installation before further steps.
9. Connect the handheld controller and locate in a convenient location for the operator using the included mounting bracket or Velcro.
10. Male spade connectors on the BLACK and RED/WHITE wires are not used in this application and should be taped/covered.

Control Harness Diagram



Your plow is now ready for operation. The hydraulic system has been filled at the factory and should be fully operational. It is possible that agitation due to the shipping has introduced some air into the oil. When operating the plow for the first time some oil may exit the vent (by the coils). This should stop once the plow is cycled and operational. Check all plow and light functions. If something is not working correctly, reread the installation directions to make sure a step was not missed and check the schematics.

STORAGE

1. Before disconnecting the plow from your vehicle, fully compress the lift cylinder
2. Disconnect the plow from your vehicle
3. Coat all electrical connection points with dielectric grease
4. Repair/touch up any chipped paint or rusted areas
5. Apply a coat of oil or grease to all exposed chrome (on angle and lift cylinders)
6. Grease all grease fittings on trip pins and king pin

REMOVAL FROM STORAGE

1. Check all fasteners and hydraulic fittings for tightness.
2. Replace any cracked hydraulic hoses
3. Coat all electrical connection points with dielectric grease
4. Connect plow to vehicle

MAINTENANCE

The SnowDogg line of plows has been simply designed for reliable service. In order to ensure the reliability of your plow, observe the following maintenance items and regularly inspect:

- Fasteners and retaining devices for proper installation and tightness.
- Hydraulic cylinders for damage, pitting or leakage
- Hydraulic hoses for wear, damage or leakage. Replace any damaged hose.
- All electrical connections for corrosion – apply dielectric grease as required
- Cutting edge wear
- Plow shoe wear
- Greasable fittings (2x trip pins and king pin)

HYDRAULIC SYSTEM

- All SnowDogg plows use SnowDogg brand Low-Temperature Hydraulic Fluid (P/N 16150010) available from SnowDogg dealers.
- The reservoir should be filled through to top port until oil reaches the top port.
- Recheck and tighten all fittings and valves every season or as necessary. Vibration due to normal use can cause fittings to loosen.
- Loctite or Teflon tape should not be used on any fittings or hoses. The only plugs where pipe sealant may be used are the reservoir plugs.
- The reservoir should be drained and refilled every season to ensure that the oil remains free of water and contanimants. If contaminants are known to be present, it is recommended that the reservoir be removed and cleaned.

With proper maintenance and care your SnowDogg plow will provide years of trouble free service!

Figure A - Lift Frame Diagram

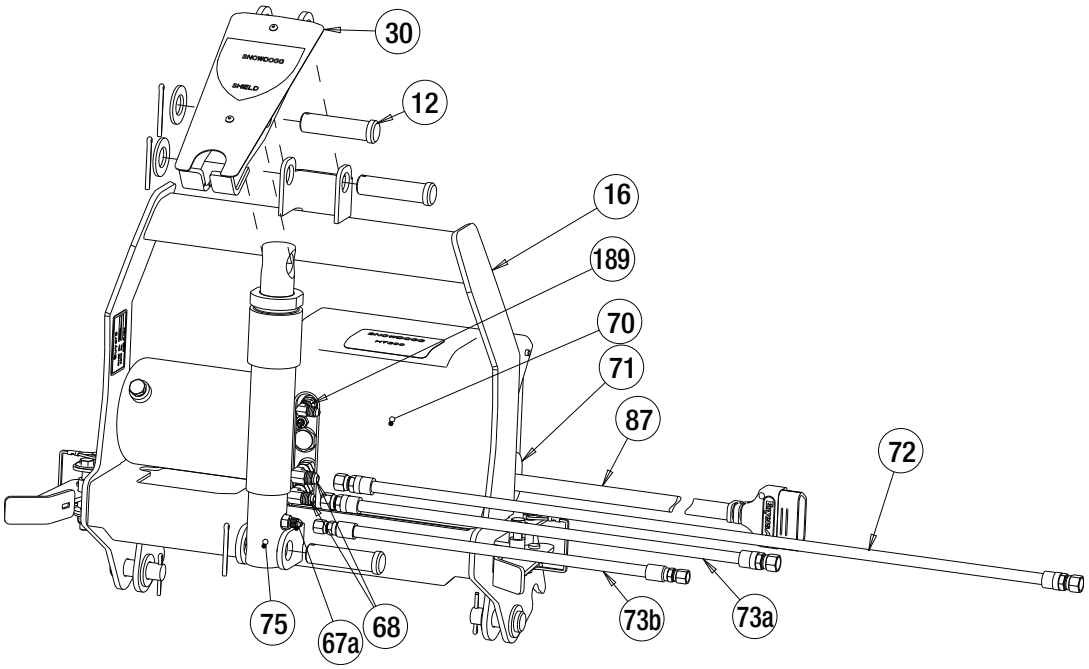


Figure B - Linkage Detail Diagram

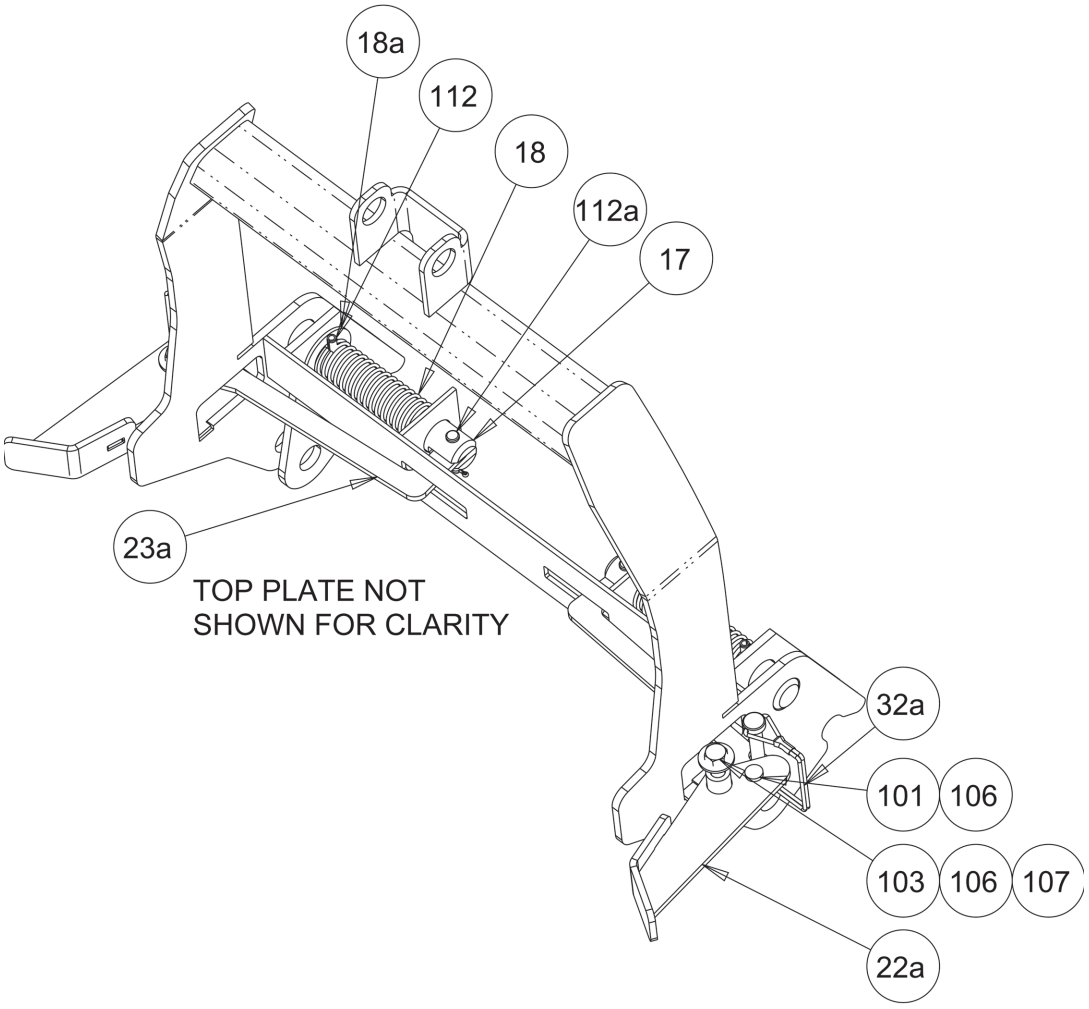


Figure C - Moldboard Diagram

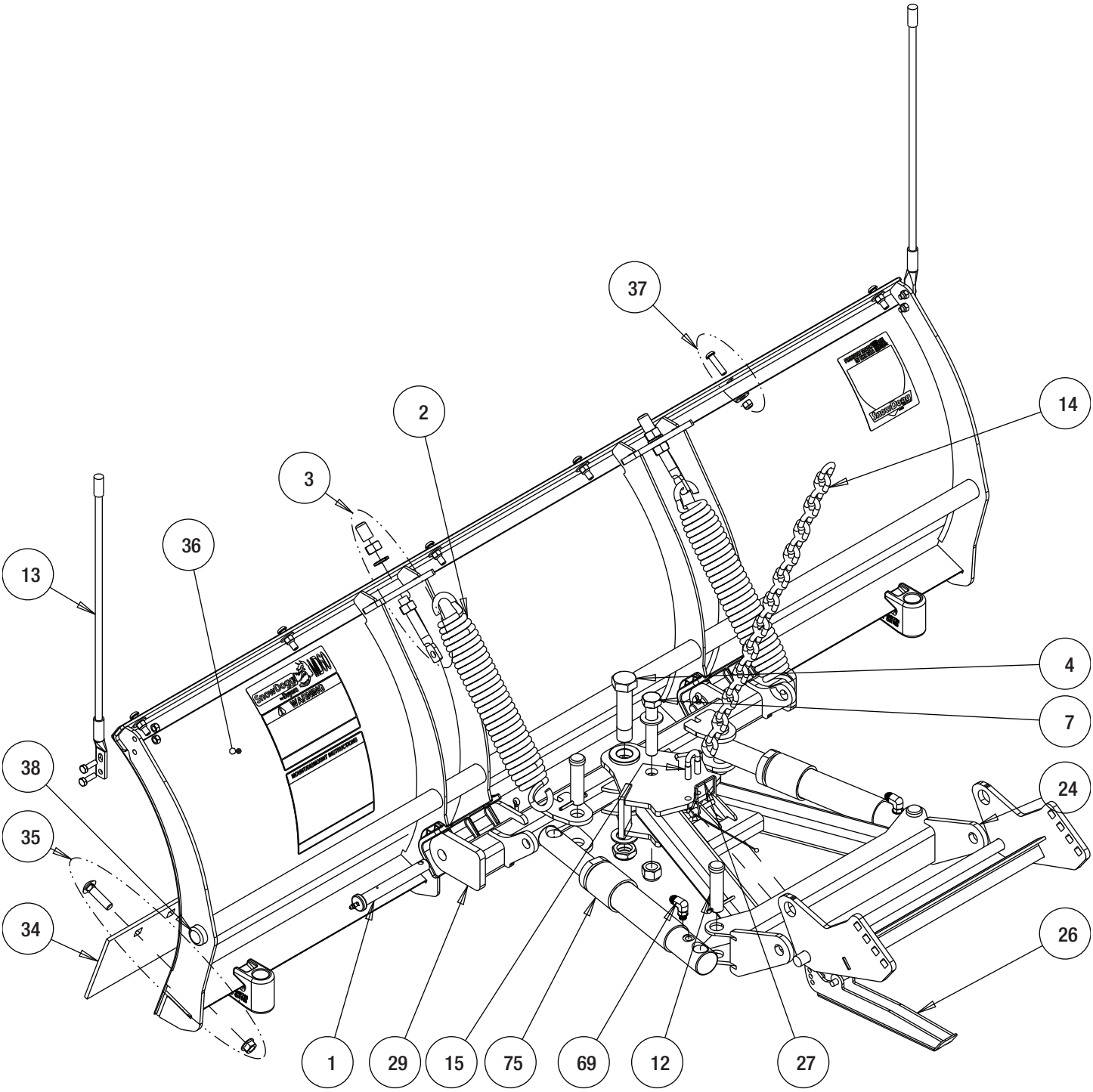
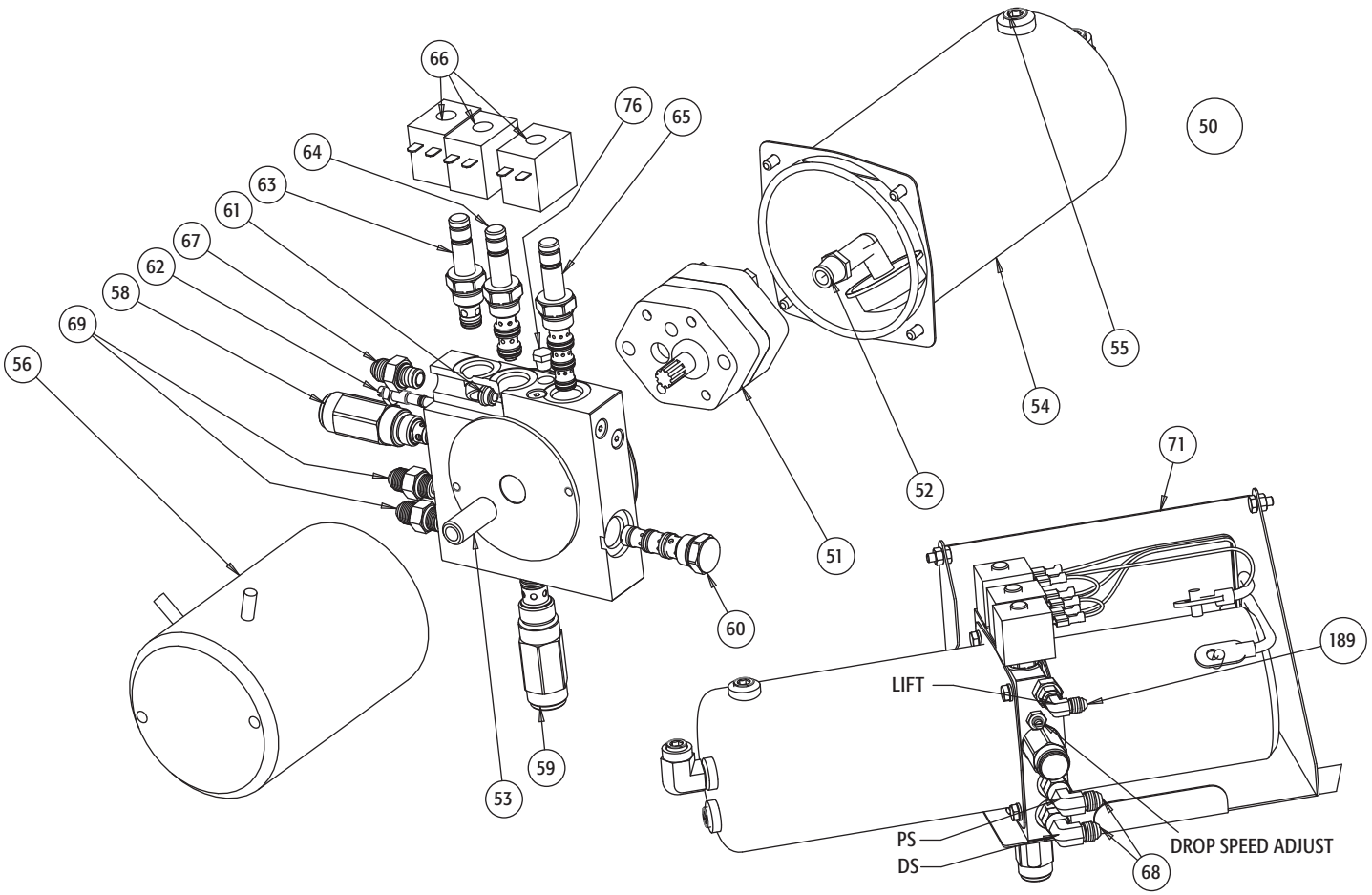
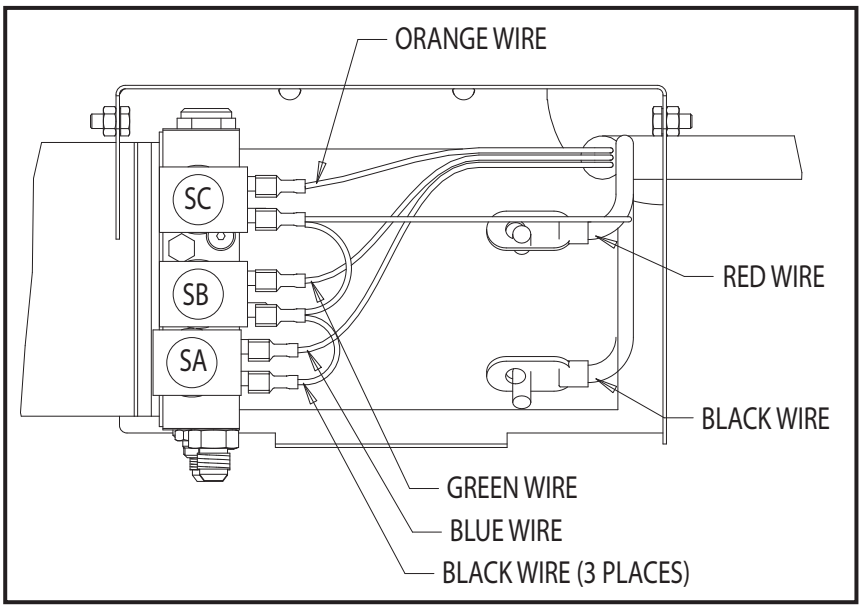


Figure D - Hydraulic Power Unit Diagram



Hydraulic Power Unit Wiring



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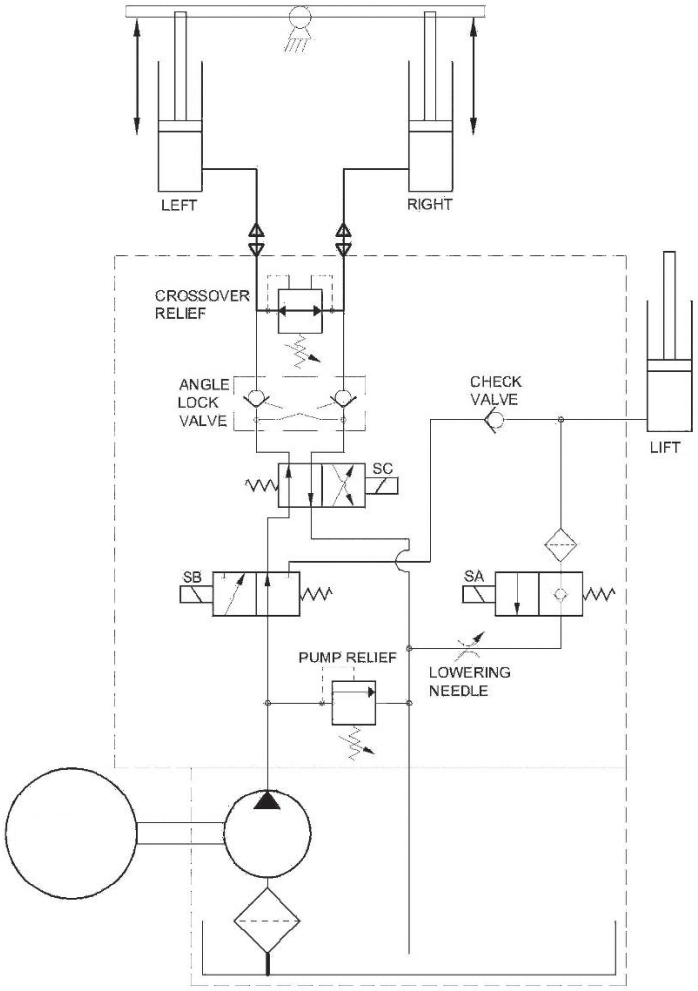
Parts List

REF	PN	Qty	DESC
1	16101110A	1	Trip Pin Kit (x2)
2	16101200	2	Trip Spring
3	16101220	1	Spring Mount Eye Bolt Kit (x2)
4	16101150	1	Bolt, Pivot w/grease fitting
4	16101152	1	Nut, Jam, 1-14
4	16101515	1	Grease Fitting, Press In
4	16102104	1	Washer, 1in
7	16101160	1	Screw, Hex Head, 3/4-10 x 4.00, GR5
7	16101162	1	Nut, Jam, 3/4-10
7	16101164	1	Washer, 3/4
12	16102142	7	Clevis Pin Kit, 7/8 x 3-1/4
13	16122100	1	Blade Guide Kit
14	16103000	1	Chain, 5/16 Grade 43, 24 Links
15	16103020	1	U-bolt Kit
16	16110140	1	Lift Frame Assembly, VUT/MUT
16	16112140	1	Lift Frame Weldment, VUT/MUT
17	16111151	2	Lock Pin Kit, MD
17	16112102	2	Lock Pin
18	16112104	2	Mount Spring
18a	16102104	2	Washer, 1in
22a	16111113	2	Foot Pedal
23a	16111111	2	Pedal Linkage
24	16112220	1	A-Frame
26	16112230	1	Stand
27	16111128	1	Snapper Pin W/Lanyard
29	16112310	1	Sector
30	16112400	1	Chain Lift Assy
32a	16111124	2	Snapper Pin, 2-1/2in
34	16120116	1	Cutting Edge Hdw Kit, MD68/MUT/VUT
34	16120705	1	Cutting Edge, 80in, Rubber
34	16120506	1	Cutting Edge, 72 x 1/4
35	16120114	1	Cutting Edge Hdw Kit, 5/8-11, 14 pcs
36	16121410	1	Skin, MD68, SST
36	16121406	1	Skin, MD60, SST
37	16120110	1	Moldboard Skin Hardware Kit
38	16120122	2	Cap, Crosstube
50	16151000	1	HPU, Straight Blade
51	16151100	1	Gear Pump
51	16159116	1	Shaft Seal
52	16151102	1	Inlet Strainer w/Elbow
53	16151106	1	Coupler Spline
54	16151110	1	Reservoir Kit
54	16151114	1	Reservoir Fastener Kit (4 Cap Screws; 8 Flat Washers)
54	16159114	1	Reservoir Seal Kit
55	16151112	2	Plug, 3/8 NPT
56	16151200	1	Motor, 2HP
58	16151302	1	Main Relief Valve
59	16151304	1	Crossover Relief Valve, 2800PSI
60	16151306	1	Angle Lock Valve
61	16151308	1	Lift Check Valve
61	16900010		Lift Check Removal Tool
62	16151310	1	Lowering Speed Valve
63	16151312	1	Solenoid Valve, 2-way, Normally Closed
63	16159102	1	Seal Kit, 16151312/16151330
63	16159103	1	Screen, 16151312
64	16151314	1	Solenoid Valve, 3-way, Selector
64	16159104	1	Seal Kit, 16151314
65	16151316	1	Solenoid Valve, 4 Way, Reversing
65	16159106	1	Seal Kit, 16151316
66	16151318	3	Coil, 8 size, Dual Spade
67	16151320	1	Connector, -4 BSPP/JICM
67a	16151325	1	Connector, -4 SAEM/JICM
68	16151322	4	Elbow, -6 JICM/JIC Swivel
69	16151324	2	Connector, -6 JICM/SAEM
69a	16151329	2	Elbow, -6SAEM to -4JIC
70	16152100	1	HPU Cover
71	16152128	1	Cable Grommet
71	16152110	1	Tray
72	16153100	1	Hose, 1/4 x 18, -4 JIC
73a	16153192	1	Hose, 1/4 x 22, -6 JIC
73b	16153190	1	Hose, 1/4 x 36, -6 JIC
75	16154214	1	Cylinder Gland Nut, 1-1/2in V Pack
75	16154220	1	Cylinder, 1-1/2 x 6 Polypak
75	16154216	2	Cylinder Gland Nut, 1-1/2in Polypak
75	16154220	2	Cylinder, 1-1/2 x 6 Polypak
76	16151326	1	Vent
85	16160300	1	Truckside Control Harness
85	16160310	1	Repair End, 16160300
85	16160604	1	Mini Firewall Adapter, Straight Only
87	16160400	1	Plowside Control Harness
87	16160402	1	Large Spring Cage Kit (2)
87	16160404	6	Small Spring Cage
87	16160512	1	Grill Connector Cap
88	16160410	1	Motor Relay
89	16160500	1	Battery Cable
98	16160600	1	Plow Controller
98	16160610		Controller Extension Harness, 36in
98	16160620	1	Controller Mount Kit
98	16160630	1	Keypad, Rubber
98	16160640	1	Circuit Board, 16160600
98	16160650	1	Coil Cable, Controller
101	16101001	2	Screw, Hex Head 3/8-16 x 1.00 SST
103	16101003	2	Screw, Hex Head 3/8 - 16 x 2.50
106	16101006	4	Nut, Nylock, 3/8-16 SST
107	16101007	6	Washer, 3/8 SST
112	16111118	2	Roll Pin, 1/4 x 2
112a	16111126	2	Clevis Pin Kit, 1/4 x 1-1/2
189	16151321	1	Elbow, -4 JICM/JIC Swivel
ACC	16150010		Hydraulic Fluid, Low Temp, 1 CASE (12 QTS)
OPT	16121350	2	Shoe Assembly



LOGIC TABLE

	MOTOR	SA	SB	SC
LIFT	1	-	1	-
LOWER	-	1	-	-
FLOAT	-	1	-	-
LEFT	1	-	-	-
RIGHT	1	-	-	1

CONTROLLER FUNCTION

After hitting POWER, the SnowDogg logo should be lit and the controller status light (upper right corner) should be solid GREEN. If the status light is blinking, see troubleshooting.

Lift Button

Plow lifts until lift cylinder is at end of stroke and fluid is diverted over the main relief valve at 1900PSI.

Right Button

Plow right side moves towards the truck. At the end of stroke, fluid is diverted over the main relief valve at 1900 PSI.

Left Button

Plow left side moves towards the truck. At end of stroke, fluid is diverted over the main relief valve at 1900 PSI.

Lower Button

Plow drops until the blade hits the ground or until the cylinder is fully retracted.

Float (hold Lower Button for >.5 seconds)

Float light is lit and plow drops until the blade hits the ground or until the cylinder is fully retracted – and the drop valve remains energized allowing the blade to follow the ground (depending on how the chain is set).

NOTE

Full schematics and pin out information can be found online at www.snowdoggplows.com under Tech Support in the 16992910 service manual.

TROUBLESHOOTING

SYMPTOM/DIAGNOSTIC	*RESULT*	*FIX*
CONTROLLER BLINKING		
Plow working normally?		Clean and check all connectors
1 blink	No Motor	Check MOTOR RELAY and wires
2 blinks	Will not Drop	Check BLUE WIRE/ SA COIL
3 blinks	Will not Lift	Check GREEN WIRE / SB COIL
4 blinks	Will not go Right	Check ORANGE WIRE / SC COIL
PUMP MOTOR NOT RUNNING WHEN UP, LEFT OR RIGHT PRESSED		
Check voltage at MOTOR terminals with UP, LEFT, or RIGHT buttons pressed	If voltage present - MOTOR is bad	Replace MOTOR
Check cable continuity between MOTOR RELAY and MOTOR	If no continuity, check cable, connections, and replace if necessary	Replace/repair cable or connections
Check control signal to MOTOR RELAY (small wires to motor relay) with UP, LEFT, or RIGHT buttons pressed	If voltage present and no click is heard when buttons are pressed, MOTOR RELAY is bad	Replace MOTOR RELAY
Check ground continuity between between control ground at MOTOR RELAY and battery ground	If no continuity, check cable, connections, and replace if necessary	Replace/repair cable or connections
PLOW WON'T MOVE AT ALL, MOVES "JERKILY", VERY SLOWLY, OR CHATTERS		
Check fluid level in reservoir	Fluid should be visible from fill cap - reservoir should be ~3/4 full	Add fluid
Air in fluid	Bleed air from system	Slightly loosen fittings to angle cylinders and angle the plow. Tighten fittings while fluid is escaping. Do this over an absorbent mat, or hold a rag over fitting to absorb excess fluid.
PLOW WON'T DROP		
Check voltage at SA VALVE coil	If no voltage present, check cable and connections	Replace/repair cable or connections
		Confirm BLUE wire at SA VALVE
Check DROP SPEED control valve	DROP SPEED valve should be several turns from fully closed	Open DROP SPEED valve
Check SA VALVE for contamination	Poppet must move freely, and seat area must be clear of any debris	Remove SA VALVE and check free movement of poppet, clean any chips/debris from poppet seat
		Replace SA VALVE
Check LIFT LOCK valve for contamination	Poppet must move freely, and seat area must be clear of any debris	Remove LIFT LOCK valve and check free movement of poppet, clean any chips/debris from poppet seat
		Replace LIFT LOCK valve
Lift Cylinder packing is too tight or damaged		Loosen lift cylinder packing nut 1/4 turn or repack cylinder
PLOW WON'T LIFT OR WON'T ANGLE IN EITHER DIRECTION		
Check voltage at SB VALVE coil	If no voltage present, check cable and connections	Replace/repair cable or connections
		Confirm GREEN wire at SB VALVE
Check SB VALVE for contamination	Spool must move freely, and seat area must be clear of any debris	Remove SB VALVE and check free movement of spool, clean any chips/debris from valve
		Replace SB VALVE

TROUBLESHOOTING, continued

SYMPTOM/DIAGNOSTIC	*RESULT*	*FIX*
PLOW WON'T ANGLE IN ONE DIRECTION		
Check voltage at SC VALVE coil	If no voltage present, check cable and connections	Replace/repair cable or connections
		Confirm ORANGE wire at SC VALVE
Check SC VALVE for contamination	Spool must move freely, and seat area must be clear of any debris	Remove SC VALVE and check free movement of spool, clean any chips/debris from valve
		Replace SC VALVE
PLOW DRIFTS WHILE PLOWING SNOW		
Air in Fluid	Bleed air from system	Slightly loosen fittings to angle cylinders and angle the plow. Tighten fittings while fluid is escaping. Do this over an absorbent mat, or hold a rag over fitting to absorb excess fluid.
Check ANGLE LOCK valve for contamination	Poppet must move freely, and seat and piston area must be clear of any debris	Remove ANGLE LOCK valve and clean
		Replace ANGLE LOCK valve
Check CROSS RELIEF valve for contamination	Poppet must move freely, and seat must be clear of any debris	Remove CROSS RELIEF valve and clean
		Replace CROSS RELIEF valve
OIL IS LEAKING FROM CYLINDERS		
	Packing is loose	Tighten until leak stops
	Rods are pitted	Polish rods with fine steel wool
		Replace cylinder
OIL SPRAYS OUT OF VENT PORT IN POWER UNIT		
Air in Fluid	Bleed air from system	Slightly loosen fittings to angle cylinders and angle the plow. Tighten fittings while fluid is escaping. Do this over an absorbent mat, or hold a rag over fitting to absorb excess fluid.
Check fluid level	Fluid should be visible in elbow fitting at end of reservoir.	Remove fluid if necessary - in most cases the problem will subside as entrapped air dissipates.

PLOWING TIPS

- Know the area you are plowing. Be aware of all hidden obstacles (pipes, drains, berms, etc.)
- Plow with the storm, do not let snow accumulate
- Always lower the plow blade when parking to minimize the risk of the plow dropping and to reduce the load on the truck suspension.
- When transporting the plow – monitor coolant temperature. If the truck is running hot, adjust the plow position to allow additional airflow to the radiator.
- Plowing at high speeds increases the potential for damage to your plow AND your truck

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Limited Warranty

COVERAGE

Buyers Products Company warrants to the original purchaser of a Buyers Products SnowDogg® brand snowplow that they will be free from defects in materials and workmanship for a period of two (2) years after the date of original purchase. Buyers Products warrants accessories, service parts, and components purchased separately to be free of defects in materials and workmanship for a period of one (1) year after date of original purchase. These warranties are exclusive and in lieu of all other express and, except to the extent prohibited by applicable law, all implied warranties, including but not limited to the implied warranties or merchantability and fitness for a particular purpose, are limited in duration to the duration of this warranty.
Buyers Product's Liability is expressly limited to repair or replacement of defective parts. Buyers Products shall not be liable for consequential, incidental or contingent damages whatsoever, even if damages are caused by the negligence or fault of Buyers Products. This warranty gives you specific legal rights. Additional purchaser's rights may vary from state to state.

WHAT IS NOT COVERED

The warranty does not apply to:
…parts not furnished by Buyers Products or damage resulting from same.
…parts modified without authorization or damage resulting from same.
…expendable parts (cutting edges, fluids, etc.).
…damage resulting from failure to install, maintain or operate the product per the owner's manual, installation instructions, or application guides.
…damage to vehicle and/or frame of vehicle resulting from plow attachment.

WARRANTY PROCEDURE

If any part is proven to be defective within that warranty period, Buyers Products will, at its sole discretion, repair or replace said part at its expense FOB Cleveland, OH. Labor will be credited to authorized dealers as determined by published rate charts.
Buyers Products obligation shall be limited to such repair or replacement and shall be further contingent on Buyers Products receiving written notice of the alleged defect and proof of original purchase within ten (10) days of its discovery as well as the return of the allegedly defective part to Buyers Products. To obtain service, the purchaser must return the defective snowplow to an authorized SnowDogg Dealer with proof of purchase and applicable maintenance records. All transportation costs to and from the dealer will be the responsibility of the purchaser. SnowDogg dealers may be located on-line at www.snowdoggplows.com.

Buyers Products
9049 Tyler Blvd.
Mentor, OH 44060

Contact Your Dealer for Service and Technical Support