



# **DIAGNOSTIC TROUBLESHOOTING GUIDE**

## **Introduction**

The Curtis Snowplow family of products are built and tested for lasting performance. All snowplows are fully tested for electrical, hydraulic and lighting malfunctions prior to shipping. Any malfunction is corrected immediately at our facility to ensure that our customers receive a quality product that will last for years to come. As with any piece of equipment, rough service and harsh environments can lead to poor performance, necessitating repairs.

When diagnosing snowplow malfunctions, it is important to methodically separate and test the different systems that are utilized on the Curtis Sno-Pro series snowplows. The approach detailed below will greatly reduce diagnostic time and take the guess work out of troubleshooting. What this means is lower associated labor, fewer unnecessary parts and more satisfied customers.

The following pages contain the hydraulic circuit as well as the electrical system. Each diagram shows a specific function, and what actually happens when a function is activated. The information will be useful in helping to understand what to look for when troubleshooting a snowplow malfunction. Each page, both electrical and hydraulic, has a "What Happens" heading at the top of the page. This will offer a step by step sequence of what takes place internally in the snowplow system once the controller is activated.

This will act as a guide to what to look for as a possible cause of a malfunction.

# TABLE OF CONTENTS

## Reference Section

Hydraulic Manifold Symbols	Page 1
Electrical System Symbols	Page 2
Sno-Pro 3000/Home-Pro Hydraulic Manifold Circuit	Page 3
Sno-Pro 2000/Trip Edge/Mach 1 Hydraulic Manifold Circuit	Page 4
Sno-Pro V-Plow W/SA Cylinders Hydraulic Manifold Circuit	Page 5
Electrical Plug Pin-Outs	Page 6
Electrical Plug Pin-Outs Continued	Page 7
Hydraulic Manifold Parts Breakdown	Page 8
Electric/Hydraulic Power Unit Parts Breakdown	Page 9
Notice & Warnings	Page 10
Diagnostic Method	Page 11-13

## Function Guide Section: Sno-Pro 3000/Home-Pro

Angle Left Electrical	Page 14
Angle Left Hydraulic	Page 15
Angle Right Electrical	Page 16
Angle Right Hydraulic	Page 17
Plow Lift Electrical	Page 18
Plow Lift Hydraulic	Page 19
Plow Float Electrical	Page 20
Plow Float Hydraulic	Page 21
Jack Extend Electrical	Page 22
Jack Extend Hydraulic	Page 23
Jack Retract Electrical	Page 24
Jack Retract Hydraulic	Page 25
2010 Sno-Pro 3000 Elec/Hyd Overview	Page 26

## Function Guide Section: Sno-Pro 2000/Trip-Edge/Commercial

Angle Left Electrical	Page 27
Angle Left Hydraulic	Page 28
Angle Right Electrical	Page 29
Angle Right Hydraulic	Page 30
Plow Lift Electrical	Page 31
Plow Lift Hydraulic	Page 32
Plow Float Electrical	Page 33
Plow Float Hydraulic	Page 34

## Sno-Pro V-Plow with Single Acting Cylinders

Angle Left Electrical	Page 35
Angle Left Hydraulic	Page 36
Angle Right Electrical	Page 37
Angle Right Hydraulic	Page 38
Left Wing Extend Electrical	Page 39
Left Wing Extend Hydraulic	Page 40
Right Wing Extend Electrical	Page 41
Right Wing Extend Hydraulic	Page 42
Left Wing Retract Electrical	Page 43
Left Wing Retract Hydraulic	Page 44
Right Wing Retract Electrical	Page 45
Right Wing Retract Hydraulic	Page 46
Plow Lift Electrical	Page 47
Plow Lift Hydraulic	Page 48
Plow Float Electrical	Page 49
Plow Float Hydraulic	Page 50

## Sno-Pro Poly Trip-Edge V-Plow

2010 Poly Trip-Edge V-Plow Elec/Hyd Overview	Page 51
Vehicle Side Schematic	Page 52
Plow Side Schematic	Page 53
Vehicle Side Harness Schematic	Page 54
Plow Side Harness Schematic	Page 55
Plow Side Straight Blade Adapter	Page 56
Plow Side V-Blade Blade Adapter	Page 57
Vehicle Side Relay Connector Plugging	Page 58

## Troubleshooting Index

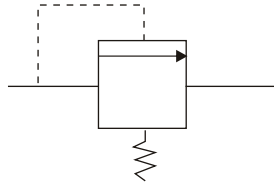
Troubleshooting Index by Problem	Pages 59-72
Curtis Warranty Forms	Page 73 - 74



# CURTIS SNOWPLOWS: MANIFOLD SYMBOLS

**Cross-Over Relief Valve**

Usage: Angle Circuits



**Flow Restrictor**

Usage: Lift & Jack Circuit



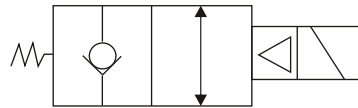
**Check Valve**

Usage: Lift Circuit



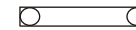
**2/2 Way Solenoid Valve**

Usage: 1TBM2 Plow Float  
1TBM2a Jack Retract



**Filter Screen**

Usage: All Circuits

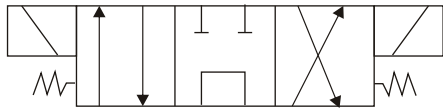


**P**

Pressure Supply  
From Power Unit

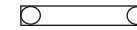
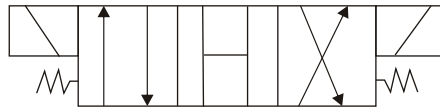
**3/4 Way Solenoid Valve**

W/Tandem Center  
Usage: 1TBM1 Angle Valve



**3/4 Way Solenoid Valve**

W/Open Center  
Usage: 1TBM7  
Plow Lift/Jack Extend Valve

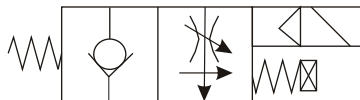


**T**

Fluid Return to  
Reservoir

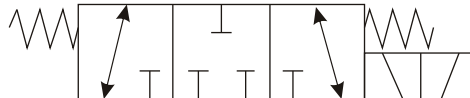
**2/2 Way Solenoid Valve**

W/Adjustable Rate  
Usage: 1TBM2V V-Plow Float



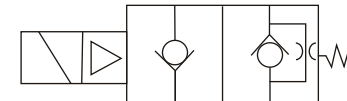
**3/4 Way Solenoid Valve**

Usage: 1TBM1V  
V-Plow Wing Extend/Retract Valve



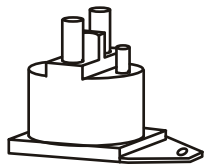
**2/2 Way Solenoid Valve**

Usage: 1TBM3  
Trip Edge Lift Valve

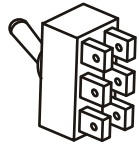


# SNO-PRO / HOME-PRO: ELECTRICAL SYMBOLS & DIAGRAMS

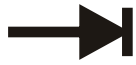
Chassis Ground



Pump Motor Solenoid  
Curtis Part #: 1TBP61A



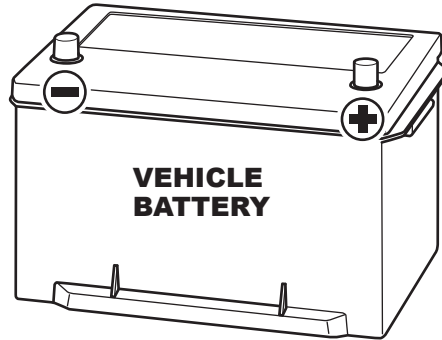
Plow Light Switch  
Curtis Part #: 1TBP48A



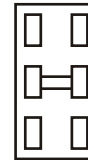
Diode



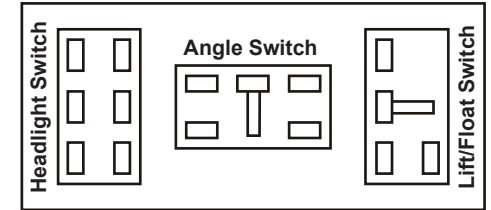
15a Fuse



Jack Switch  
Curtis Part #: 1TBP100

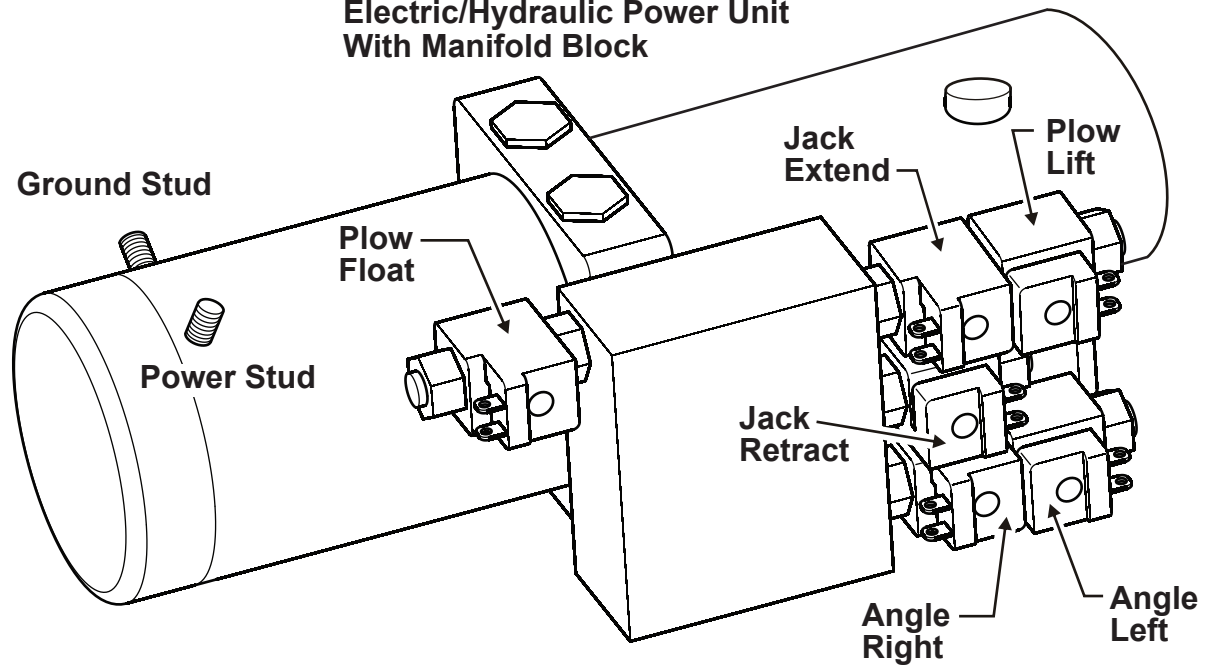


Switch Panel Control Kit  
Curtis Part #: 1TBP60A

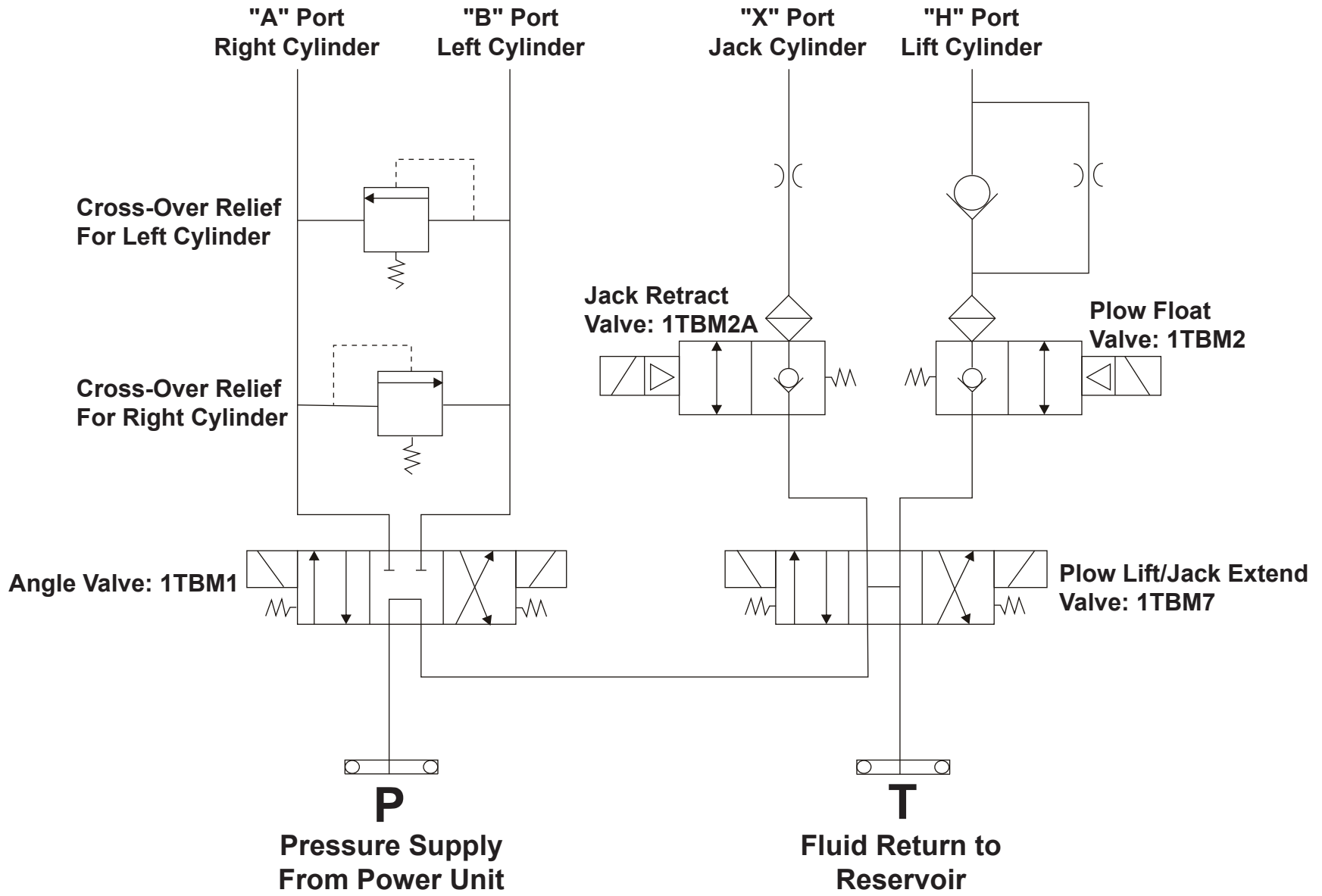


Note: Lift/Float Switch, Angle Switch & A-Frame Jack Switch all have bridged center terminals conducting power to both poles of the switch.

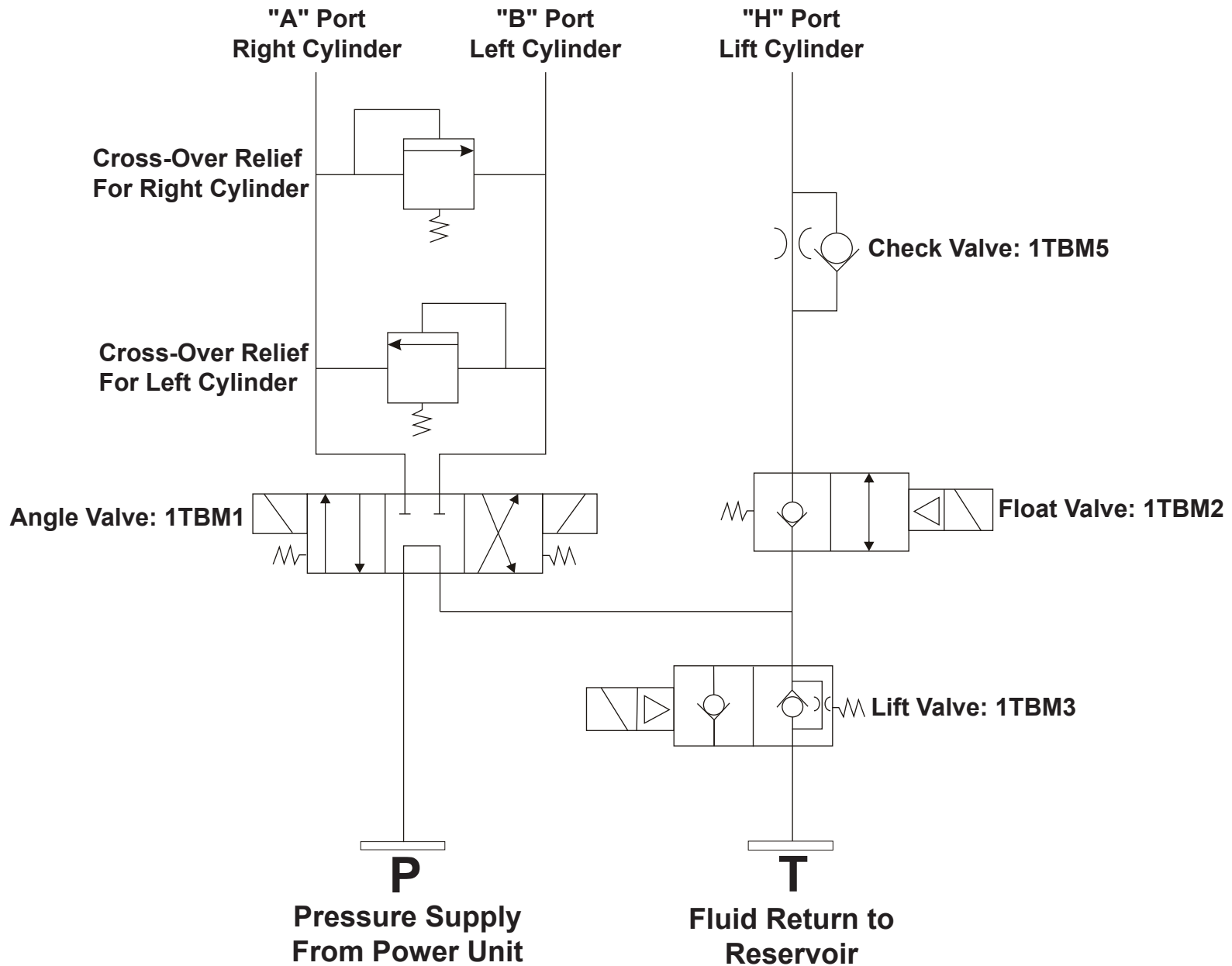
Electric/Hydraulic Power Unit  
With Manifold Block



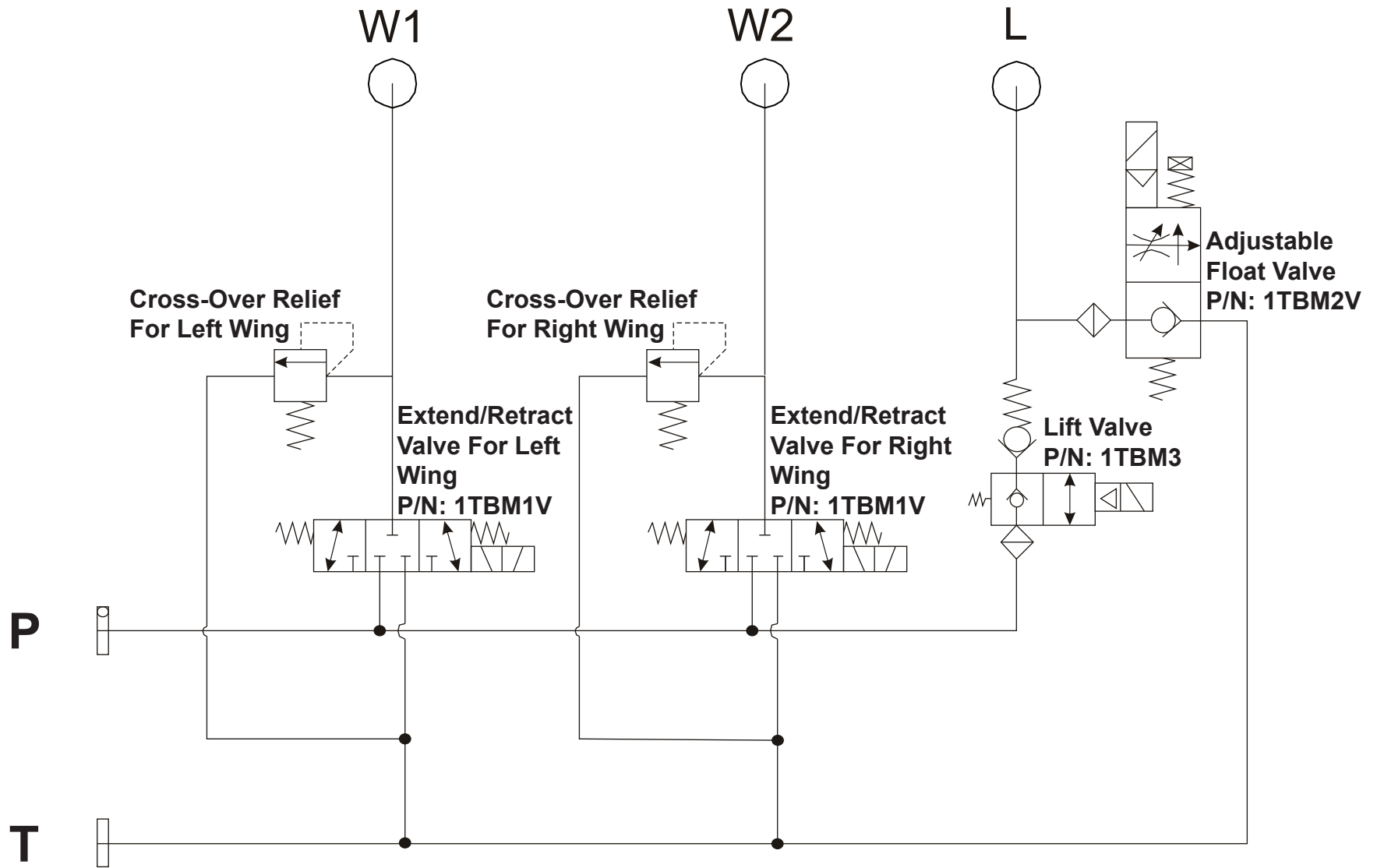
# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD.JACK: MANIFOLD CIRCUIT - HYDRAULIC



# SNO-PRO TRIP EDGE w/GAS SPRING JACK & SNO-PRO 2000 MANIFOLD CIRCUIT - HYDRAULIC



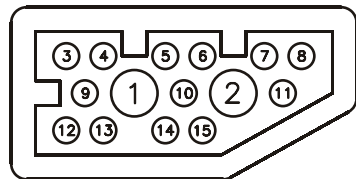
# SNO-PRO/V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: MANIFOLD CIRCUIT - HYDRAULIC



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: ELECTRICAL PLUG PIN-OUTS

## Single Plug Harness Vehicle Side Harness

CURTIS PLUG (90-2010-00)			
(LG/B = LT GREEN / BLACK) (Y/B = YELLOW / BLACK)			
PIN #	COLOR	FUNCTION	AWG
1	BLACK	GROUND	4
(1)	ORANGE	GROUND	18
2	RED	12 VDC (+)	4
3	GREEN	FLOAT	18
4	RED	LIFT	18
5	BLUE	LEFT SOLENOID	18
6	WHITE	RIGHT SOLENOID	18
7	BROWN	PUMP SOLENOID	16
8	WHITE/RED	LIGHT COMMON	16
9	LG/B	LOW BEAM	16
10	Y/B	HIGH BEAM	16
11	GRAY	PARK / RUN	18
12	VIOLET	LEFT TURN	18
13	PINK	RIGHT TURN	18
14	NA	NA	NA

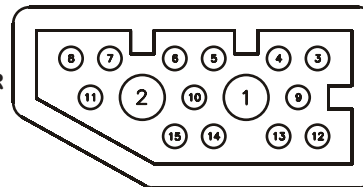


END VIEW  
LOOKING AT  
CONNECTOR

## Single Plug Harness Plow Side Harness

CURTIS PLUG (90-2011-00)			
(LG/B = LT GREEN / BLACK) (Y/B = YELLOW / BLACK)			
PIN #	COLOR	FUNCTION	AWG
1	BLACK	GROUND	4
(1)	ORANGE	GROUND	16
2	RED	12 VDC (+)	4
3	GREEN	FLOAT	18
4	RED	LIFT	18
5	BLUE	LEFT SOLENOID	18
6	WHITE	RIGHT SOLENOID	18
7	BROWN	PUMP SOLENOID	16
8	WHITE/RED	LIGHT COMMON	16
9	LG/B	LOW BEAM	16
10	Y/B	HIGH BEAM	16
11	GRAY	PARK / RUN	18
12	VIOLET	LEFT TURN	18
13	PINK	RIGHT TURN	18
14	NA	NA	NA
15	NA	NA	NA

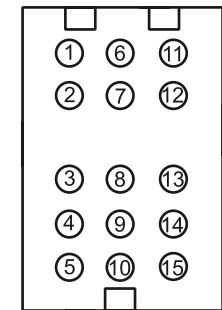
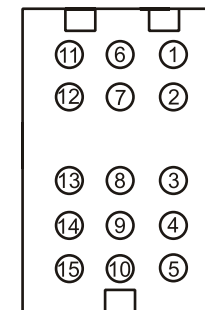
END VIEW  
LOOKING AT  
CONNECTOR



## Double Plug Harness Control Plug

PIN #	COLOR	FUNCTION	AWG
1	ORANGE	GROUND	16
2	GREEN	FLOAT	18
3	RED	LIFT	18
4	BLUE	LEFT SOLENOID	18
5	NONE		
6	WHITE	RIGHT SOLENOID	18
7	BROWN	PUMP SOLENOID	16
8	WHITE/RED	LIGHT COMMON	16
9	GRN/BLK	LOW BEAM	16
10	NONE		
11	YEL/BLK	HIGH BEAM	16
12	GRAY	PARK / RUN	16
13	VIOLET	LEFT TURN	18
14	PINK	RIGHT TURN	18
15	NONE		

## Plow Side Vehicle Side





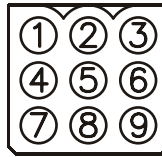
# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: ELECTRICAL CONNECTIONS

## In-Cab Control Plug

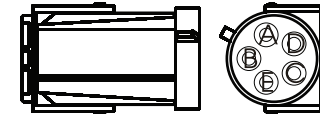
"MOLEX" FREE HANGING RECEPTACLE  
.093 (9) PIN POWER CONNECTOR  
P/N 03-09-1094  
WITH "MOLEX" FEMALE TERMINAL  
P/N 02-09-1117

PIN #	COLOR	FUNCTION
1	BLACK	12v +
2	BLUE	LEFT
3	WHITE	RIGHT
4	RED	LIFT
5	GREEN	FLOAT
6	BROWN	PUMP SOLENOID
7	ORANGE	GROUND -
8	NA	NA
9	NA	NA

END VIEW  
LOOKING AT  
CONNECTOR

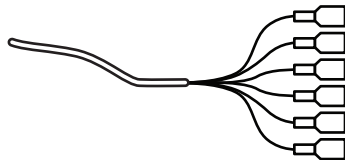


## Vehicle Side Harness Headlight Adapter Connectors



A= WHT/RED	COMMON
B= YEL	HIGH BEAM FEED
C= LT GRN	LOW BEAM FEED
D= YEL/RED	HIGH BEAM
E= GRN/RED	LOW BEAM

## In-Cab Headlight Switch Connections

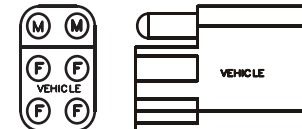


COLOR	FUNCTION
GREEN	LOW BEAM FEED
YELLOW	HIGH BEAM FEED
GREEN/BLACK	LOW BEAM PLOW
YELLOW/BLACK	HIGH BEAM PLOW
GREEN/RED	LOW BEAM VEHICLE
YELLOW/RED	HIGH BEAM VEHICLE

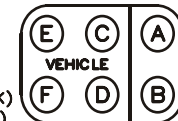
## Plow Side Harness Headlight Connector

.180 BULLET TERM.  
M = MALE  
F = FEMALE

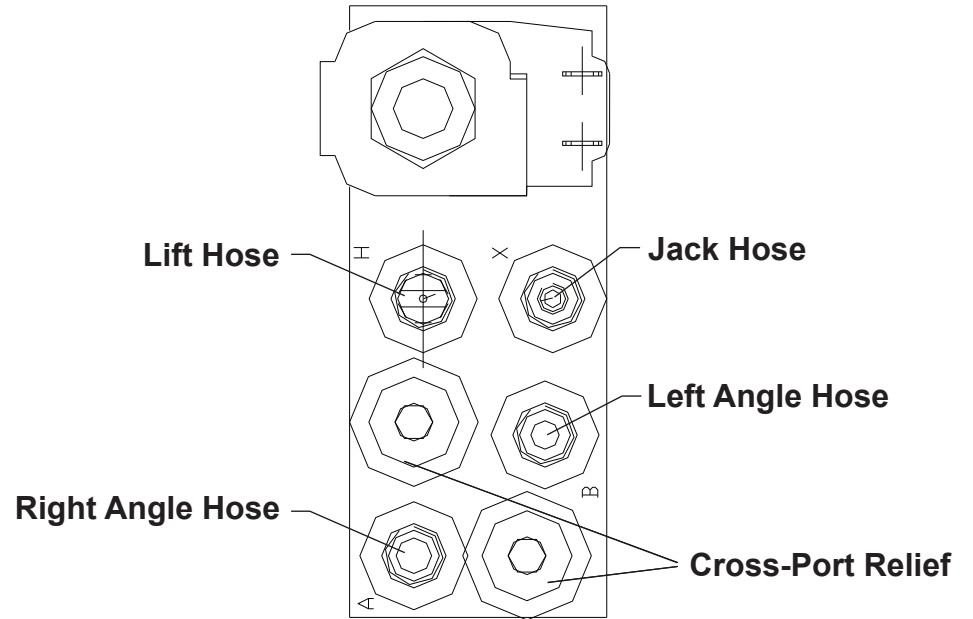
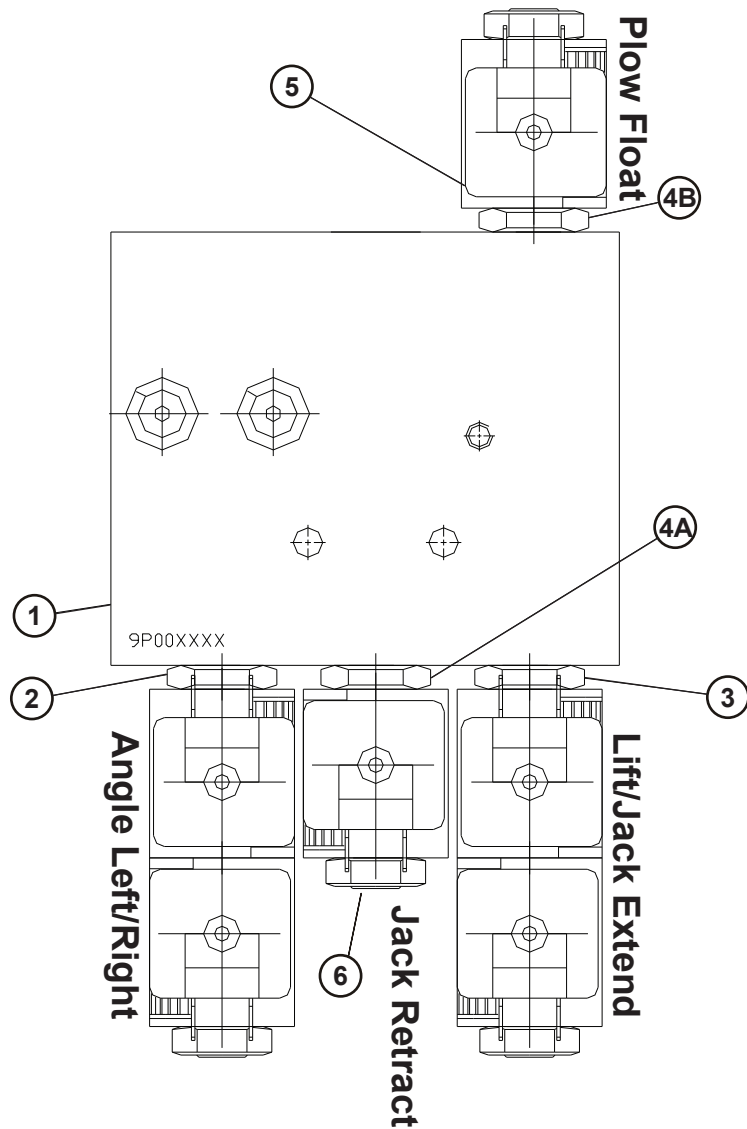
END VIEW  
LOOKING AT  
CONNECTOR



A = COMMON (WHITE/RED)  
B = NOT USED  
C = TURN (PINK) OR (VOLET)  
D = RUN (GRAY)  
E = LOW BEAM (L. GREEN/BLACK)  
F = HIGH BEAM (YELLOW/BLACK)

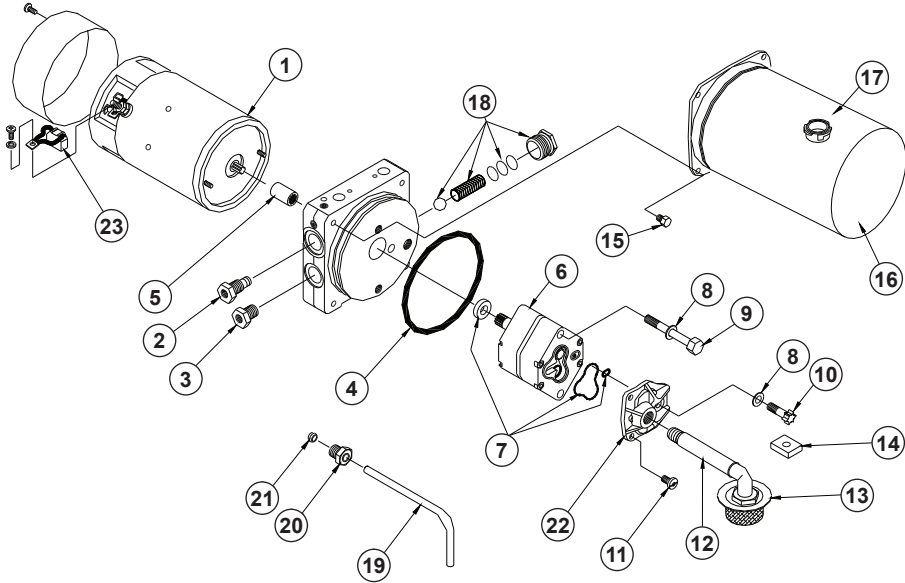


# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: HYDRAULIC MANIFOLD



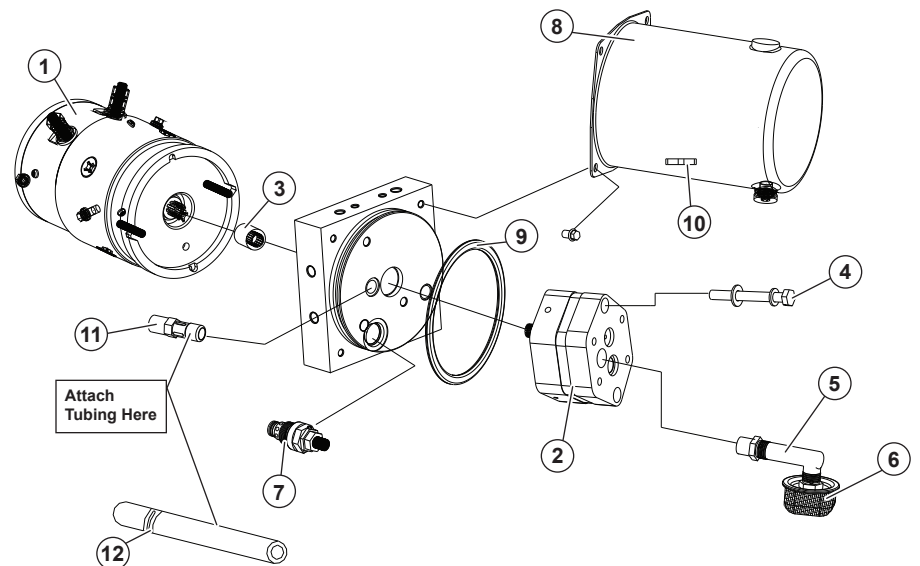
Schem. Ref #	Item Part #	Recommend Dealer Stock	Description	Qty/ Unit
1	1TBP59AP2		Manifold Block Complete With Valves & Coils	1
2	1TBM1	*	3/4 WAY SOLENOID VALVE (ANGLE LEFT/RIGHT)	1
3	1TBM7	*	2/2 WAY SOLENOID VALVE (PLOW LIFT)	1
4	1TBM2	*	2/2 WAY SOLENOID VALVE (PLOW FLOAT)	1
5	1TBM4	*	12 VDC COIL	6
6	1TBM2A	*	2/2 WAY SOLENOID VALVE (JACK RETRACT)	1

# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: HYDRAULIC POWER UNIT



Schem. Ref #	Item Part #	Recommend Dealer Stock	Description	Qty/ Unit
Sno-Pro Hydraulic Power Unit Parts Breakdown				
N/S	1TBP59AP1		ELEC/HYD POWER UNIT W/O MANIFOLD	1
1	1TBM8	*	DC MOTOR 12V	1
2	1TBM9		VALVE PLUG	1
3	1TBM10		VALVE PLUMBING PLUG	1
4	1TBM11	*	RESERVOIR O-RING	1
5	1TBM12		COUPLING	1
6	1TBM13		PUMP ASSEMBLY	1
7	1TBM14		PUMP O-RING KIT	1
8	1TBM15		WASHER FLAT	1
9	1TBM16		PUMP MOUNTING BOLT	2
10	1TBM17		BOLT - SUCTION COVER 5/16"	1
11	1TBM18		SCREW TAPTITE M6 X 12mm	1
12	1TBM19		PLUMBING ASSEMBLY INLET	1
13	1TBM20	*	FILTER	1
14	1TBM21	*	COLLECTOR MAGNET	1
15	1TBM22		RESERVOIR SCREW	4
16	1TBM23V	*	RESERVOIR	1
17	1TBP63A	*	EXTERNAL RESERVOIR BREATHER CAP	1
N/S	1TBP63B	*	INTERNAL RESERVOIR BREATHER CAP	1
18	1TBM25		FIXED RELIEF VALVE ASSEMBLY	1
19	1TBM26		RETURN TUBE	1
20	1TBM27		COMPRESSION NUT	1
21	1TBM28		COMPRESSION SLEEVE	1
22	1TBM29		SUCTION COVER	1

Schem. Ref #	Item Part #	Recommend Dealer Stock	Description	Qty/ Unit
KTI Hydraulic Power Unit Parts Breakdown				
N/S	1TBP59AP1V		ELEC/HYD POWER UNIT W/O MANIFOLD	1
1	1TBM8A	*	DC MOTOR 12V	1
2	1TBM13A		Gear Pump	1
3	1TBM12A		Motor to Pump Coupling	1
4	1TBM35		5/16" x 3" Pump Mounting Bolts	2
5	1TBM36		3/8" NPT Plastic Elbow	1
6	1TBM20	*	3/8" NPT Inlet Strainer	1
7	1TBM37	*	Cartridge Relief Valve	1
8	1TBM23A	*	Steel Reservoir	1
9	1TBM11A	*	Reservoir O-Ring	1
10	1TBM21	*	Collector Magnet	1
11	1TBM38		1/4" NPT Adapter	1
12	1TBM39		1/2" ID Clear Plastic Tubing	1



# **SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD.JACK TROUBLESHOOTING GUIDE**

## **⚠ NOTICE**

**⚠** Know your own abilities and mechanical skills. Some procedures in the following Troubleshooting Guide require a considerable mechanical aptitude. Use discretion and refer to an Authorized Curtis Dealer when needed.

The following Guide has been developed to provide a step-by-step approach to Troubleshooting operational problems with your Sno-Pro/Home-Pro 3000 Snow Plow.

**Many functional problems may be solved by first following this General Checklist.**

- Remove the Filler Cap on the Pump and verify the Reservoir is full of oil.
- Check for external leaking and tighten any loose Hoses, Fittings, or Plugs. Damaged Hoses must be replaced immediately.
- Check the condition of the Fuse, replace if necessary.
- Check the Harness Plug Connector at the front of the vehicle and verify a good connection.
- Check the Wire Connectors at the Switch Panel Control or Joystick Control and verify the Wire Leads are secure.
- Check the Battery and Solenoid connections under the hood of the vehicle and verify a good connection and ground.
- Remove the A-Frame Cover and verify a good ground connection.

If functional problems persist after following the General Checklist, locate the description of the problem you are experiencing in the Troubleshooting Guide Glossary and follow the course of action detailed under the specific problem.

### **Suggested Test Equipment:**

An Analog 8-Range Multimeter, which can measure DC voltage up to 20 Volts, is preferred for any of the tests described in z Guide.

Most tests can be performed using a 12vdc-Test Light and/or Continuity Tester.

A 3000-PSI Oil Filled Pressure Gauge will be needed for some of the Hydraulic test procedures.

# **DIAGNOSTIC METHOD - FIND THE PROBLEM....FAST!**

## **System #1: Vehicle Electrical System:**

---

**Related Components:**      **Vehicle Side Wiring Harness**  
   **Battery Lead #4 Gauge**  
   **Motor Solenoid**  
   **In-Cab Control**  
   **Headlight Switch**  
   **Headlight Adapter**

The starting point for this method is the Vehicle Side Electrical System. The chart below details all of the Plug Pinouts for the Vehicle Side Harness.

The very first step in this process is to verify a PROPER INSTALLATION i.e. In-Cab Control plugged in and turned on, all wires connected correctly, good ground connections, etc...

### **Testing Plow Functions:**

Using the diagram below and a test light, activate each function and test the corresponding pin in the Harness Plug for power. For Lift, Left Angle & Right Angle functions, the Pin for each function AND the Pin for the Pump Solenoid should be powered at the same time. Activating the Pump Solenoid will also power the 12vdc Hi-Amp Pin (#2). When testing the float function, only that Pin will be powered. For testing Headlight and Directional functions, it will be necessary to turn each function on inside the cab. If all Pins test correctly, the Vehicle Harness System has been eliminated as the cause of the malfunction. If one or more Pins do not test correctly, determine which device is connected at the other end of the Harness.

For function problems, test the In-Cab Controls. To do this, attach the test light alligator clip to ground and insert the probe of the test light into the colored wire on the in-cab control that corresponds with the function that is being tested. Activate the function and test for power. Through the process of elimination, the In-Cab Control will be determined faulty or in good working order.

## **DIAGNOSTIC METHOD - FIND THE PROBLEM....FAST!**

If all functions test correctly but no power is being sent to the 12vdc Hi-Amp (Pin #2), test the Brown Wire at the Pump Solenoid. To do this, activate each function (Lift, Left, Right) and test the Brown Wire connection at the Solenoid with the Test Light. If no power is present, the Harness may be faulty.

If power is present but the Solenoid is not operating, double check the Battery Cable connections as well as the mounting surface. The Pump Solenoid grounds through the Mounting Bracket and must have a rust-free, metallic surface to mount to. If the above has been checked, the Solenoid is faulty. If the Solenoid is transferring voltage from one terminal to the other when activated, the Solenoid is working properly and there may be an internal malfunction in the Harness.

**Testing Plow Light System:** For lighting problems, test the Plow Light Switch first. Turn the vehicle headlights on. Locate the Plow Headlight Switch and test each wire for power depending on the position of the Switch. If the Switch toggles between vehicle and plow lights properly, disconnect the Headlight Adapters one side at a time and test the Gray Packard Connectors for power. See the diagram below for details. If all of the functions test properly, the Vehicle Harness is in proper working order. Otherwise, there is an internal malfunction in the Harness.

If, after performing the above test procedures, the Vehicle Harness is working properly, remove the A-Frame Cover from the Plow and plug the Plow Harness into the Vehicle Harness. It is not necessary to re-attach the Plow to the vehicle as this reduces the work area. It may be necessary, however, to remove the Harness P-Clamp from the Lift Frame Upright and remove the Wire Ties holding the Headlight pigtails. This will increase the Harness length.

### **System #2: Plow Electrical System:**

---

**Related Components:** Plow Side Wiring Harness  
12vdc Valve Coils  
Plow Lights  
12vdc Pump Motor

The next step in the testing procedure is to determine if the Plow Side Harness is working properly.

**Testing Plow Functions:**

**WARNING: DISCONNECT THE POSITIVE BATTERY CABLE FROM THE BATTERY SIDE OF THE PUMP MOTOR SOLENOID BEFORE TESTING THE PLOW SIDE HARNESS. IF THIS IS NOT DONE, THE PLOW MAY MOVE ERRATICALLY DURING THIS TEST. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.**

## **DIAGNOSTIC METHOD - FIND THE PROBLEM....FAST!**

**Testing Plow Functions:** Disconnect the Packard Connector for the function to be tested. The Table below indicates the Color Code for each function. Connect the alligator clip of the test light to a ground source (the stud on the back of the Pump Assembly). Insert the test probe into the colored side of the Packard Connector (the Orange Wire side is used for a ground connection) and activate the function. Remember, Lift, Left Angle & Right Angle functions also activate the Pump Motor (Brown Wire) simultaneously. If the Packard Controller is receiving power when the function is activated, the Plow Side Harness is working properly.

**Testing Plow Light System:** For Headlight testing on the Plow, disconnect the Plow Light pigtail from the Harness and, using the Table below, test for Light functions, i.e. Hi-Beam, Lo-Beam, Common, Parking Lights and Directional Lights. If the functions are receiving voltage, the Plow Harness is working properly and there may be a malfunction within the Plow Headlight Assembly. If the functions are not receiving voltage, there may be an internal malfunction in the Plow Side Harness.

**Testing 12vdc Valve Coils:** Leave the Battery side of the Pump Motor Solenoid disconnected from the Battery. Remove the 12vdc Coil from the Valve for the function to be tested. Insert the probe of the test light through the hole in the Coil. Activate the function using the In-Cab Control. A magnetic draw from the Coil should pull the test probe when energized. If no draw is present, the Coil may be faulty. If the 12vdc Valve Coils are working properly, the function problem is most likely a Hydraulic problem.

### **System #3: Snowplow Hydraulic System:**

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#### **Related Components: Electric/Hydraulic Power Unit Hydraulic Manifold**

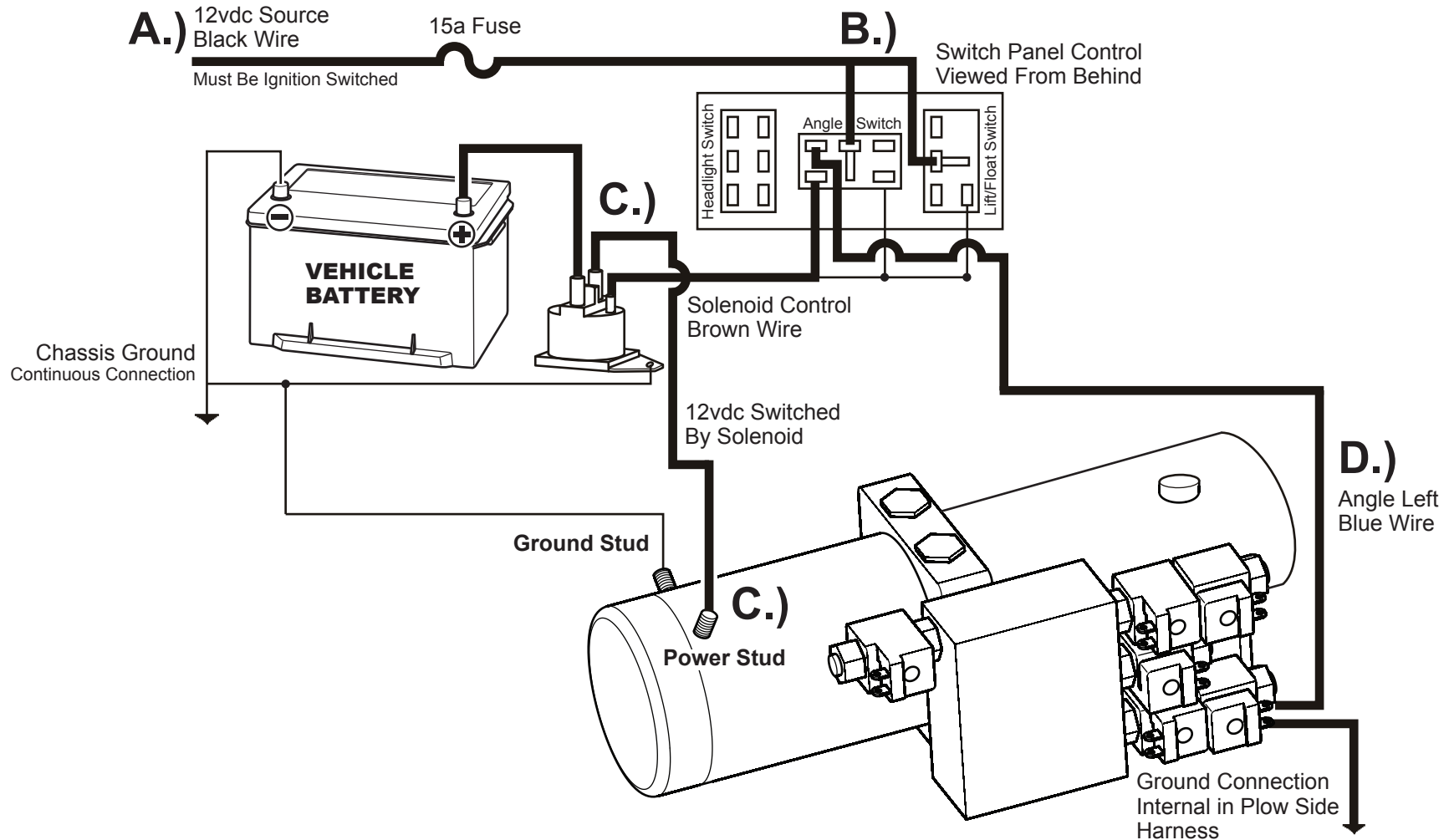
After it has been determined that both the Vehicle Side and Plow Side Harnesses are in proper working order, the next step will be to troubleshoot the Hydraulic System, with particular attention to the Manifold.

The main function of the Hydraulic Manifold is to direct fluid to the appropriate Cylinder to perform a task. For Example: When the In-Cab Control is moved to the 'Plow Lift' function, the Pump Motor spins the Pump developing pressure. This pressure enters the Manifold. The Manifold's internal plumbing is configured in such a way that if no Valve is opened, the fluid will return to the Reservoir on the Electric/Hydraulic Power Unit. Activating the 'Plow Lift' function not only engages the Pump, but also shifts the 'Plow Lift/Jack Extend' Valve to the 'Plow Lift' position. The pressurized fluid will follow the path of least resistance, in this case, the opened 'Plow Lift' passageway. The fluid then exits the Manifold through the 'Lift' Hose attached to the 'H' Port on the Manifold and the 7-1/2" Lift Cylinder at the other end. Pressurized fluid extends the Lift Cylinder raising the Plow. Read through the following pages for detailed Hydraulic and Electrical Circuit information.

# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: ANGLE LEFT FUNCTION - ELECTRICAL

What Happens:

- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Angle Left' position energizes the Blue 'Angle Left' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The Blue 'Angle Left' Wire sends 12vdc power to the Angle Left Valve Coil.
- E.) See next page for Hydraulic Flow Chart.

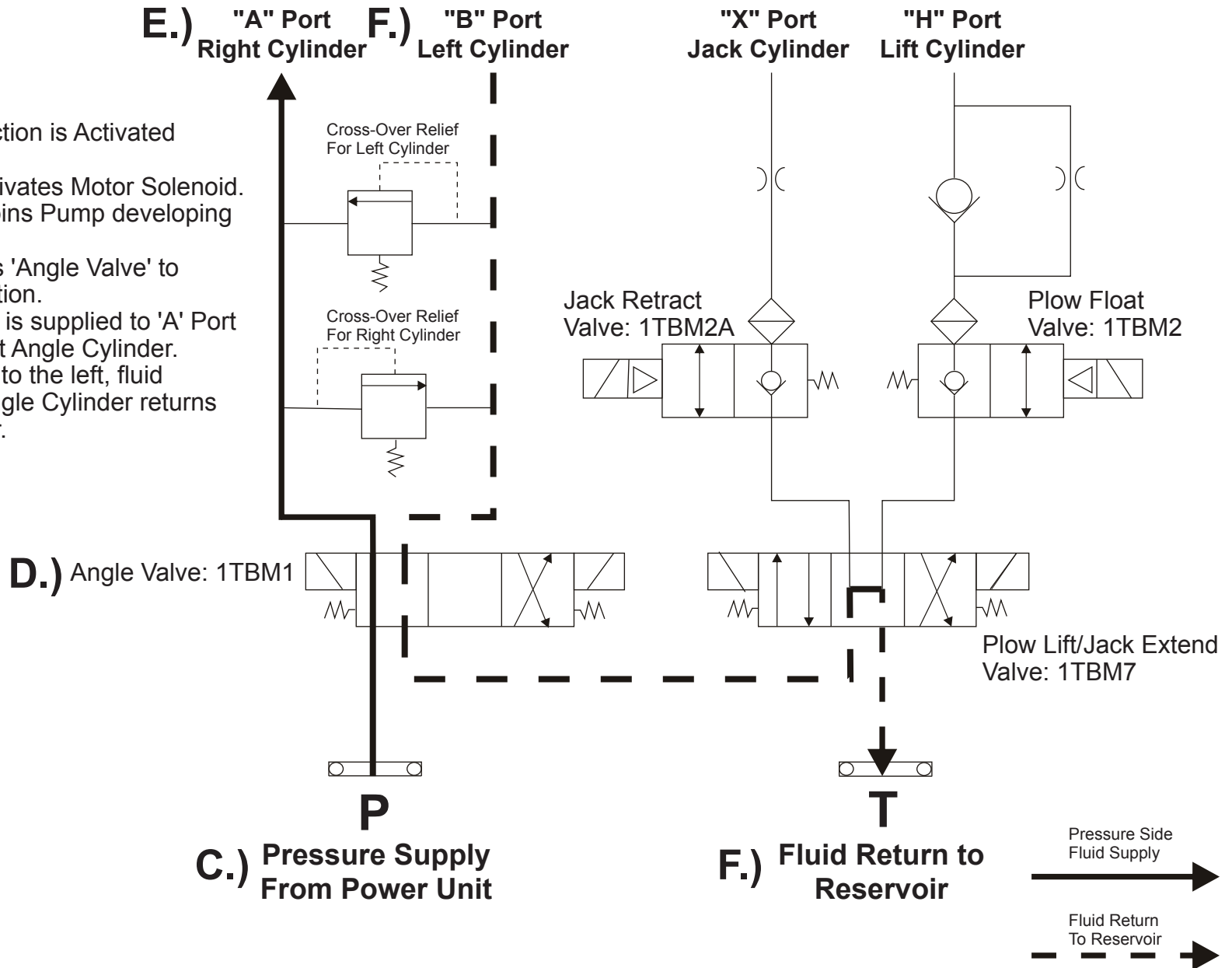




# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: ANGLE LEFT FUNCTION - HYDRAULIC

What Happens:

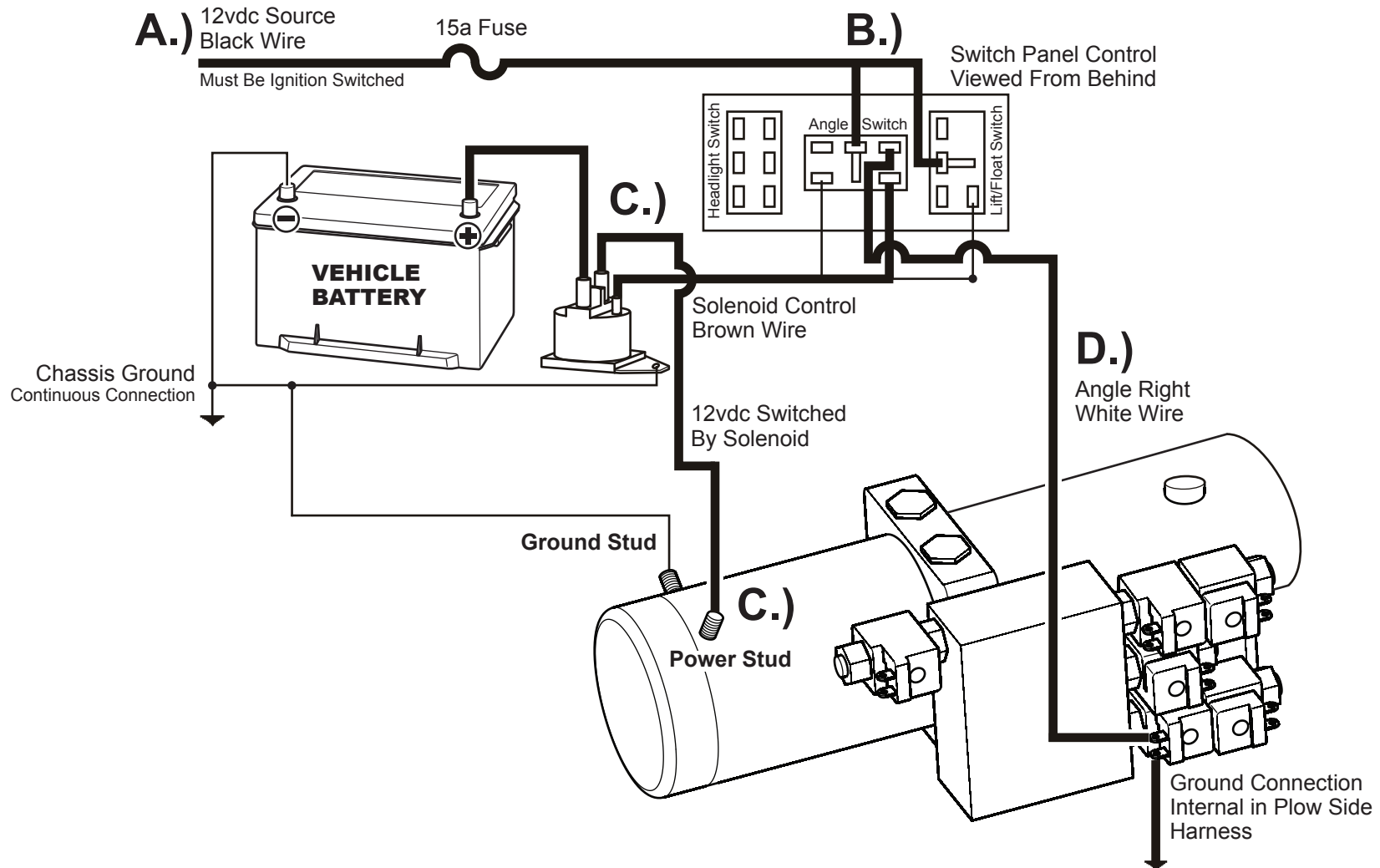
- A.) Left Angle Function is Activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) Blue Wire shifts 'Angle Valve' to Angle Left position.
- E.) Pump pressure is supplied to 'A' Port extending Right Angle Cylinder.
- F.) As Plow angles to the left, fluid from the Left Angle Cylinder returns to the Reservoir.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: ANGLE RIGHT FUNCTION - ELECTRICAL

What Happens:

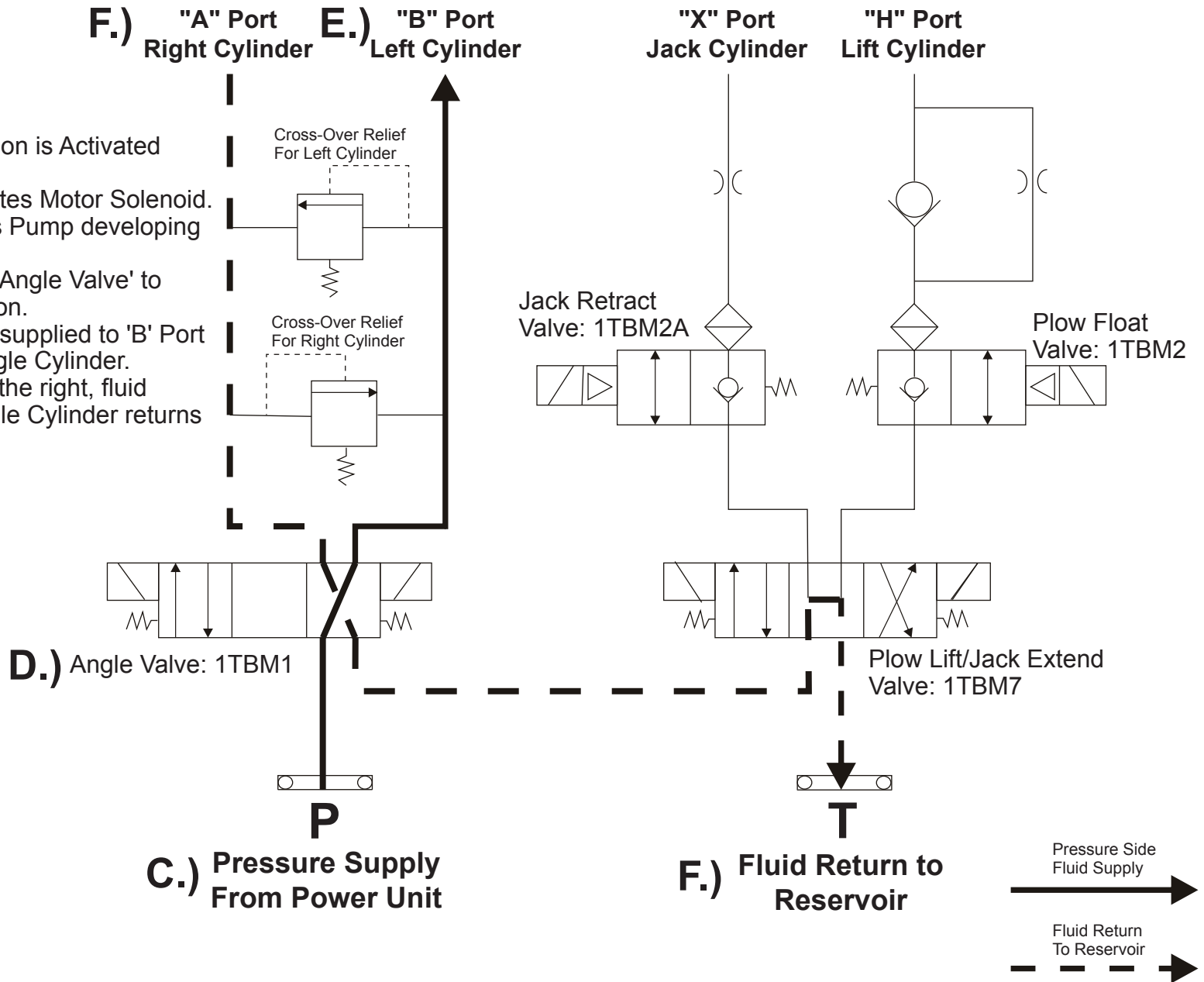
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Angle Right' position energizes the White 'Angle Right' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The White 'Angle Right' Wire sends 12vdc power to the Angle Right Valve Coil.
- E.) See next page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: ANGLE RIGHT FUNCTION - HYDRAULIC

What Happens:

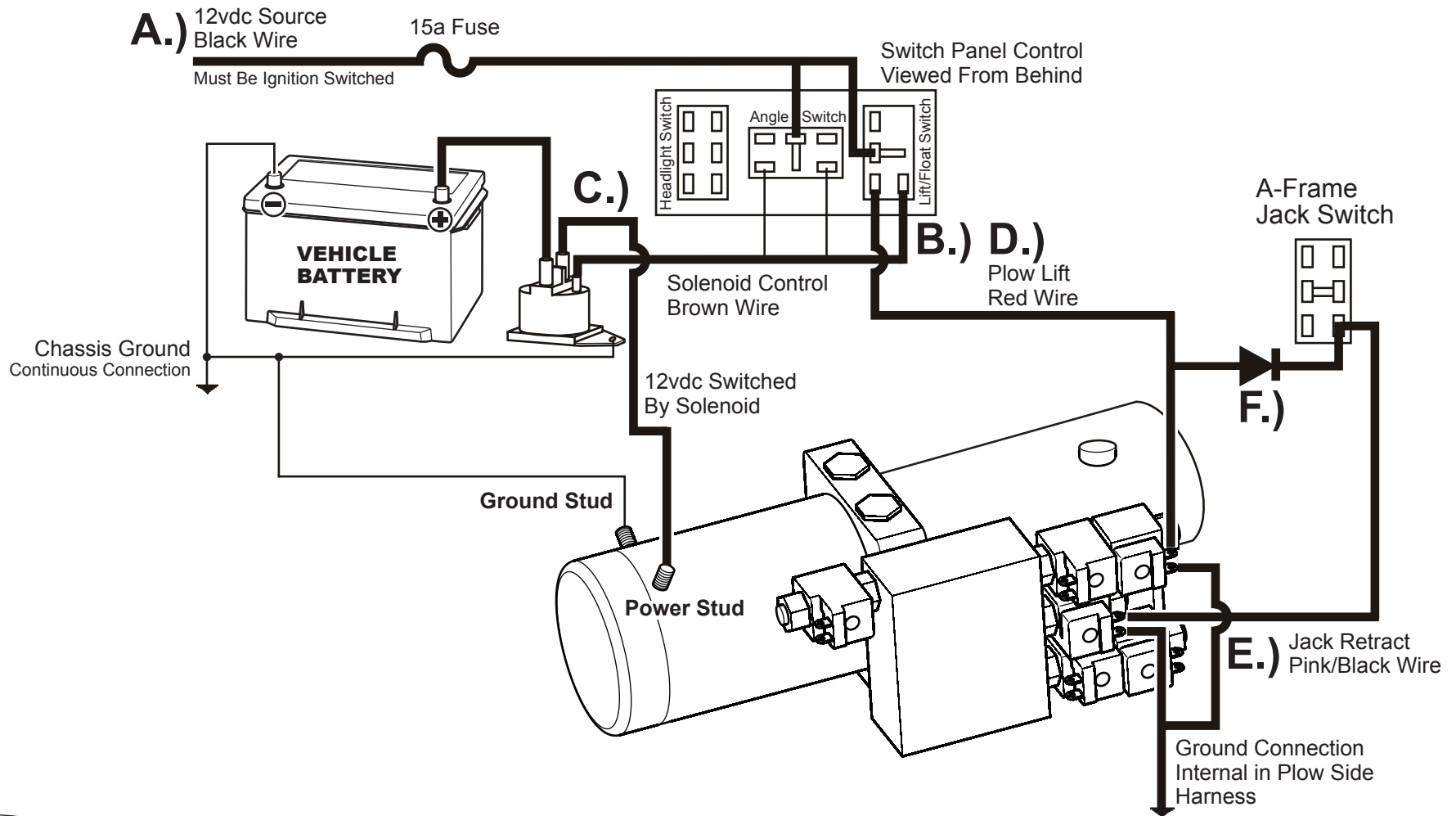
- A.) Right Angle Function is Activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) White Wire shifts 'Angle Valve' to Angle Right position.
- E.) Pump pressure is supplied to 'B' Port extending Left Angle Cylinder.
- F.) As Plow angles to the right, fluid from the Right Angle Cylinder returns to the Reservoir.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: AUTOMATIC JACK RETRACT FUNCTION - ELECTRICAL

What Happens:

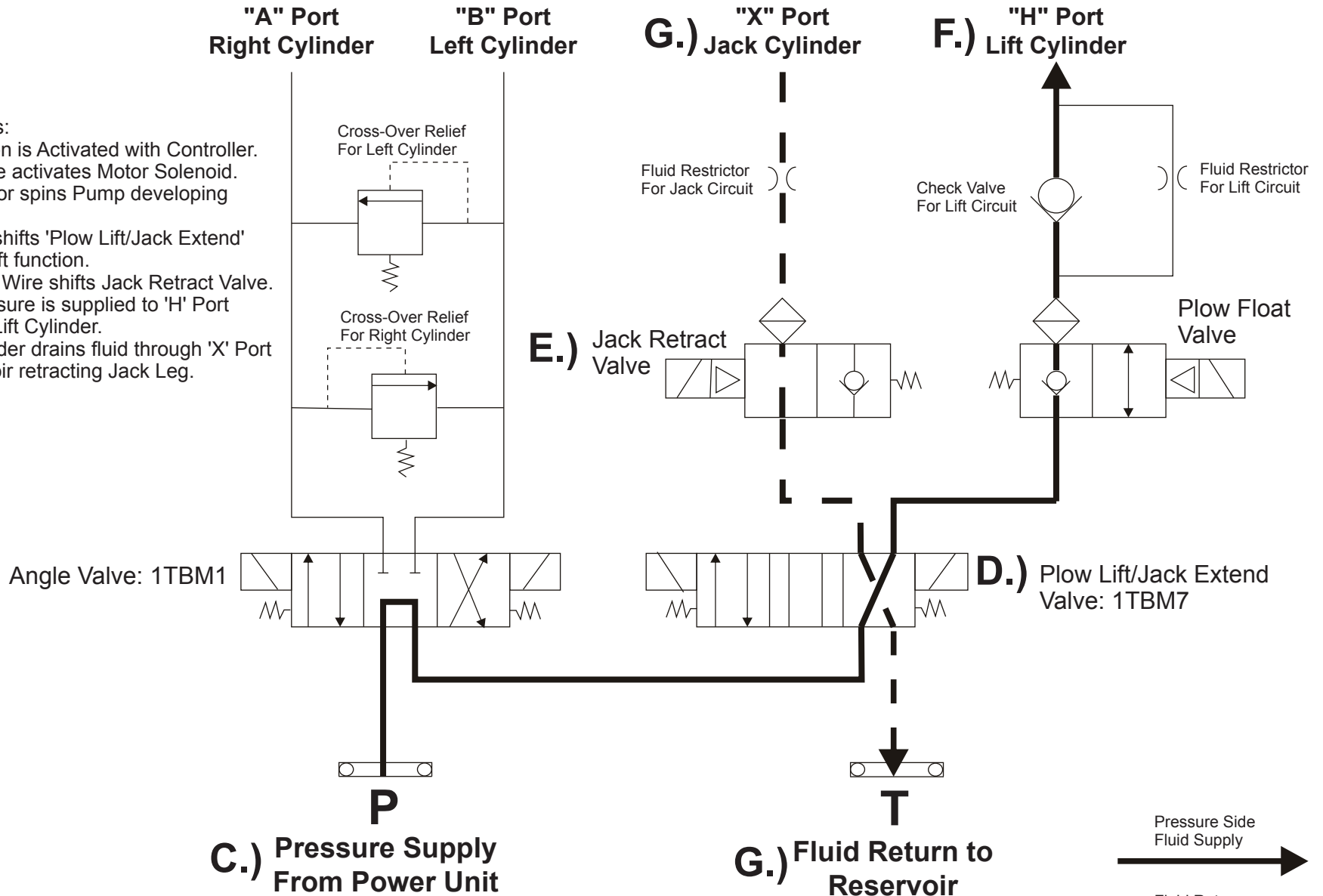
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Plow Lift' position energizes the Red 'Plow Lift' Wire, the Brown 'Solenoid' Wire, and the Pink/Black 'Jack Retract' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The Red 'Plow Lift' Wire sends 12vdc power to the Plow Lift Valve Coil.
- E.) The Pink/Black 'Jack Retract' Wire sends 12vdc power to the Jack Retract Valve Coil.
- F.) Note: A Diode is installed between the connection of the Red 'Plow Lift' Wire and the Pink/Black 'Jack Retract' Wire. This prevents the Plow Lift Circuit from being activated when the A-Frame Jack Switch is used for the Jack Retract function.
- G.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: JACK RETRACT USING LIFT FUNCTION - HYDRAULIC

What Happens:

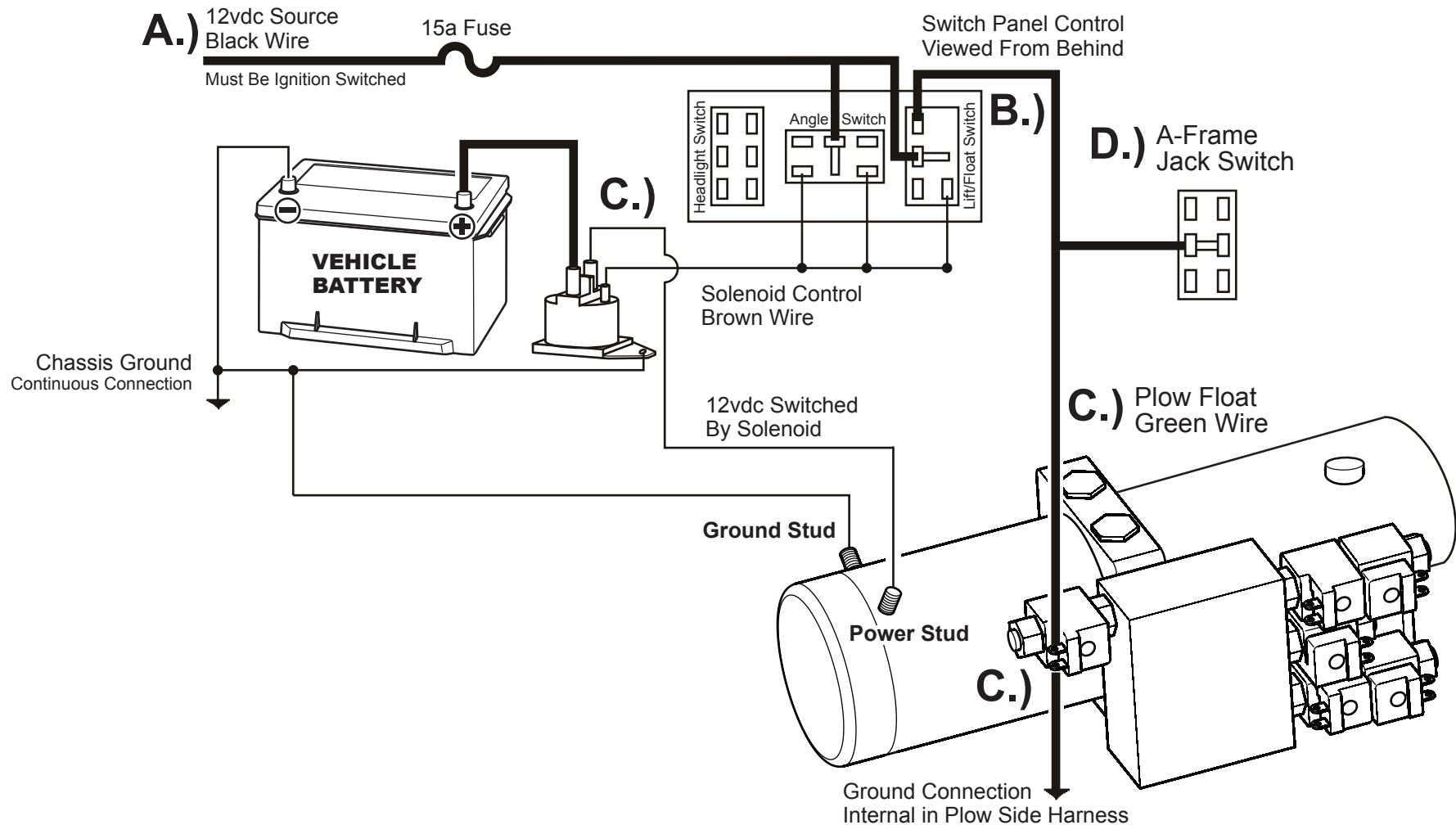
- A.) Lift Function is Activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) Red Wire shifts 'Plow Lift/Jack Extend' Valve to Lift function.
- E.) Pink/Black Wire shifts Jack Retract Valve.
- F.) Pump pressure is supplied to 'H' Port extending Lift Cylinder.
- G.) Jack Cylinder drains fluid through 'X' Port to Reservoir retracting Jack Leg.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: PLOW FLOAT FUNCTION - ELECTRICAL

What Happens:

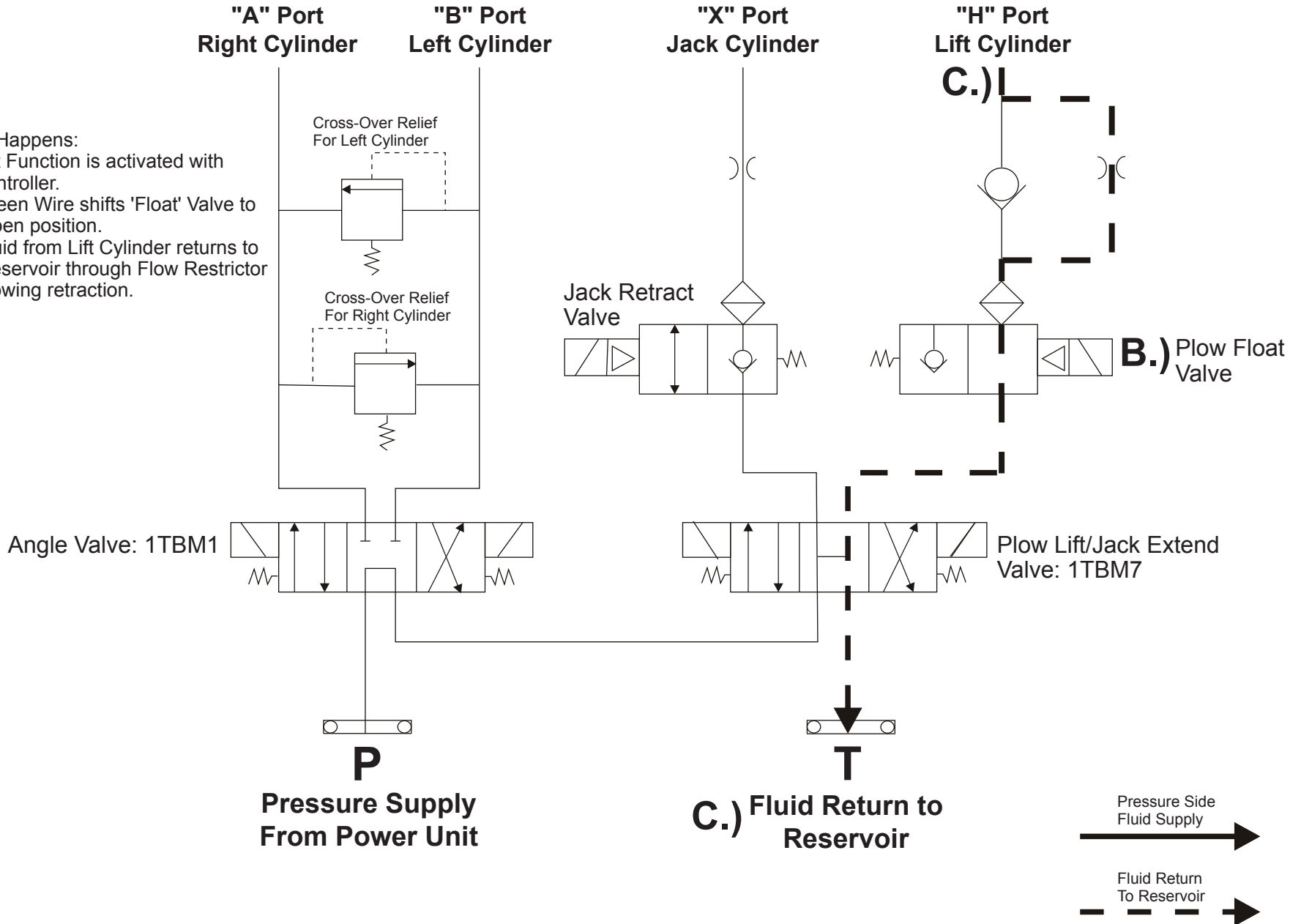
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Plow Float' position energizes the Green 'Float' Wire.
- C.) The Green 'Float' Wire sends 12vdc power to the Float Valve Coil.
- D.) The A-Frame Jack Switch is energized any time 'Float' is activated.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: PLOW FLOAT FUNCTION - HYDRAULIC

What Happens:

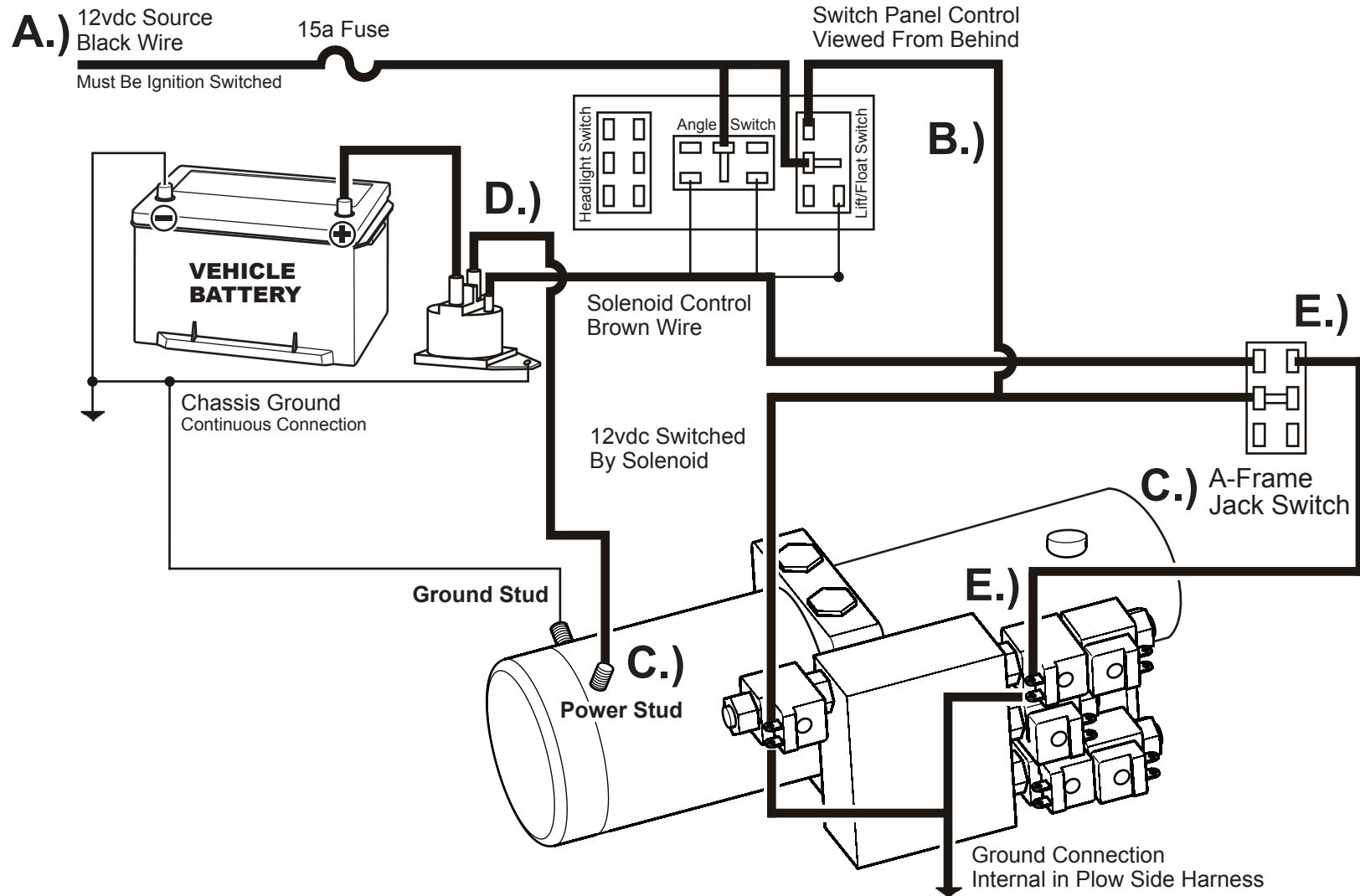
- A.) Lift Function is activated with Controller.
- B.) Green Wire shifts 'Float' Valve to Open position.
- C.) Fluid from Lift Cylinder returns to Reservoir through Flow Restrictor slowing retraction.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: JACK EXTEND FUNCTION - ELECTRICAL

What Happens:

- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Plow Float' position energizes the Green 'Plow Float' Wire which, in turn, sends power to the A-Frame Jack Switch.
- C.) Moving the A-Frame Jack Switch to the 'Jack Extend' position energizes the Blue/Black 'Jack Extend' Wire and the Brown 'Solenoid' Wire.
- D.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- E.) The Blue/Black 'Jack Extend' Wire sends 12vdc power to the Jack Extend Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.

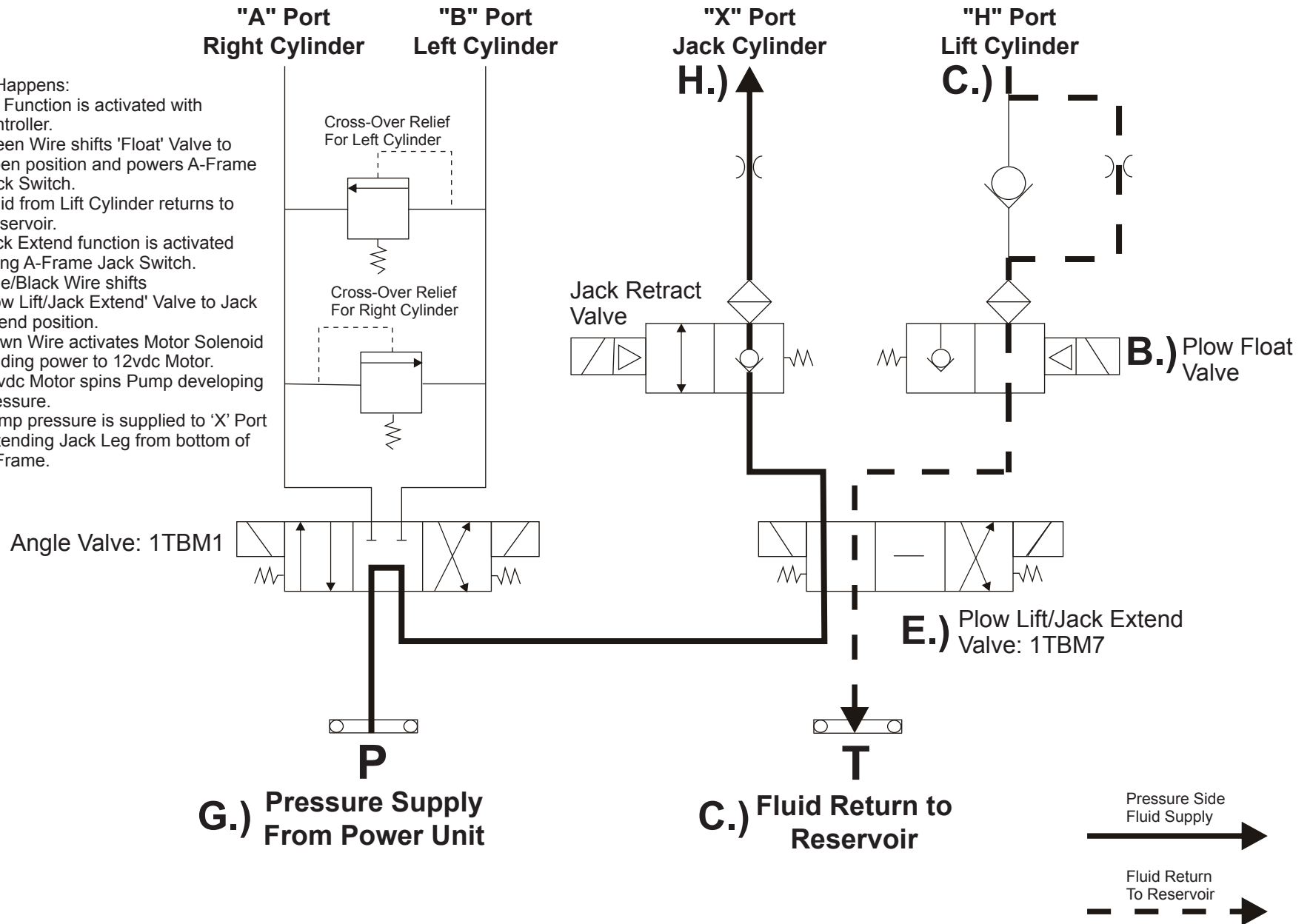




# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: JACK EXTEND FUNCTION - HYDRAULIC

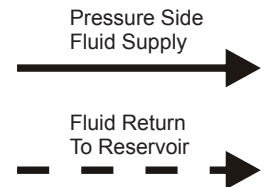
What Happens:

- A.) Lift Function is activated with Controller.
- B.) Green Wire shifts 'Float' Valve to Open position and powers A-Frame Jack Switch.
- C.) Fluid from Lift Cylinder returns to Reservoir.
- D.) Jack Extend function is activated using A-Frame Jack Switch.
- E.) Blue/Black Wire shifts 'Plow Lift/Jack Extend' Valve to Jack Extend position.
- F.) Brown Wire activates Motor Solenoid sending power to 12vdc Motor.
- G.) 12vdc Motor spins Pump developing pressure.
- H.) Pump pressure is supplied to 'X' Port extending Jack Leg from bottom of A-Frame.



**G.) Pressure Supply From Power Unit**

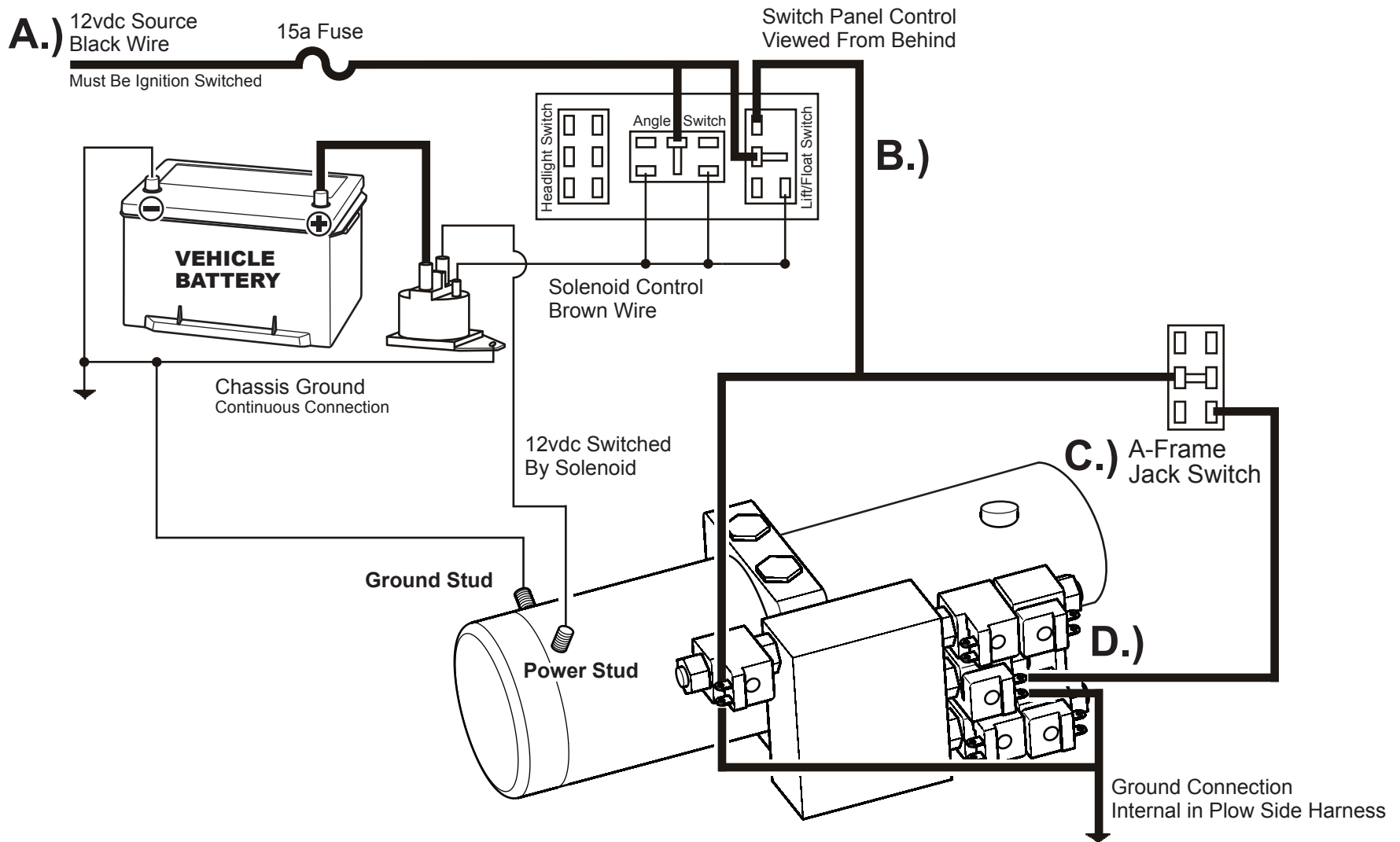
**C.) Fluid Return to Reservoir**



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: JACK RETRACT FUNCTION - ELECTRICAL USING A-FRAME JACK SWITCH

What Happens:

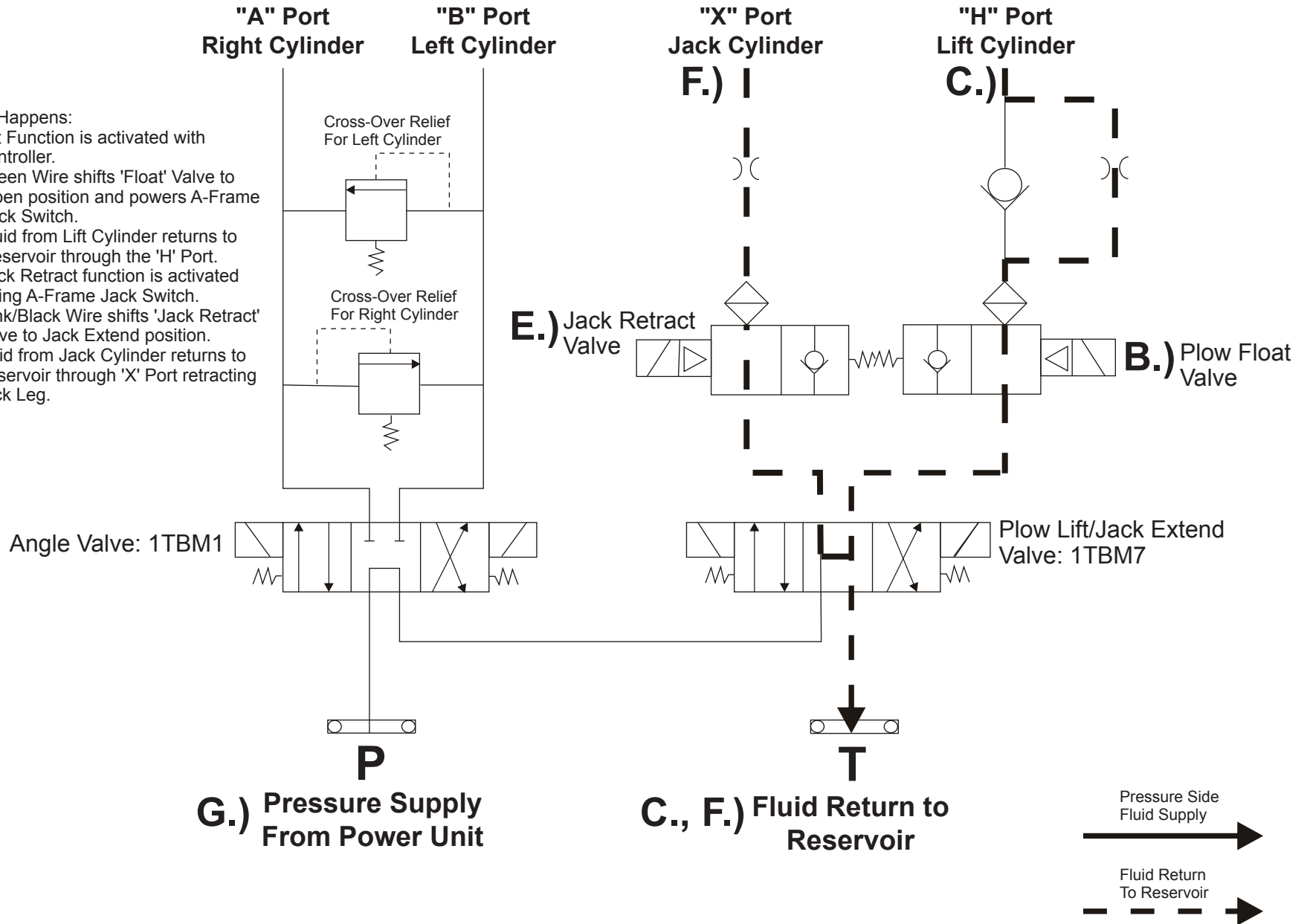
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Plow Float' position energizes the Green 'Plow Float' Wire which, in turn, sends power to the A-Frame Jack Switch.
- C.) Moving the A-Frame Jack Switch to the 'Jack Retract' position energizes the Pink/Black 'Jack Retract' Wire.
- D.) The Pink/Black 'Jack Retract' Wire sends 12vdc power to the Jack Retract Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: JACK RETRACT FUNCTION - HYDRAULIC USING A-FRAME JACK SWITCH

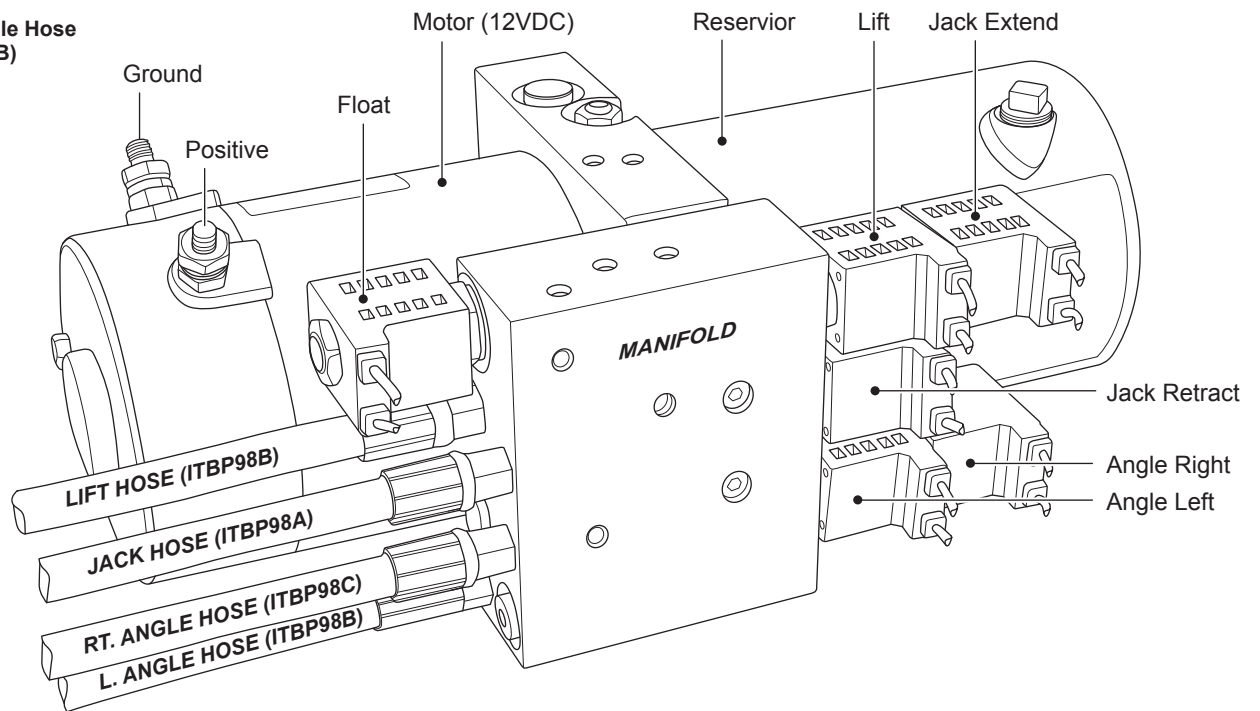
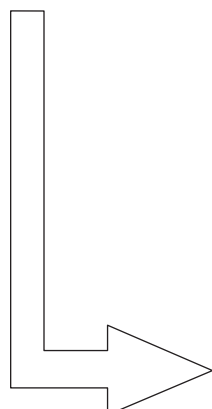
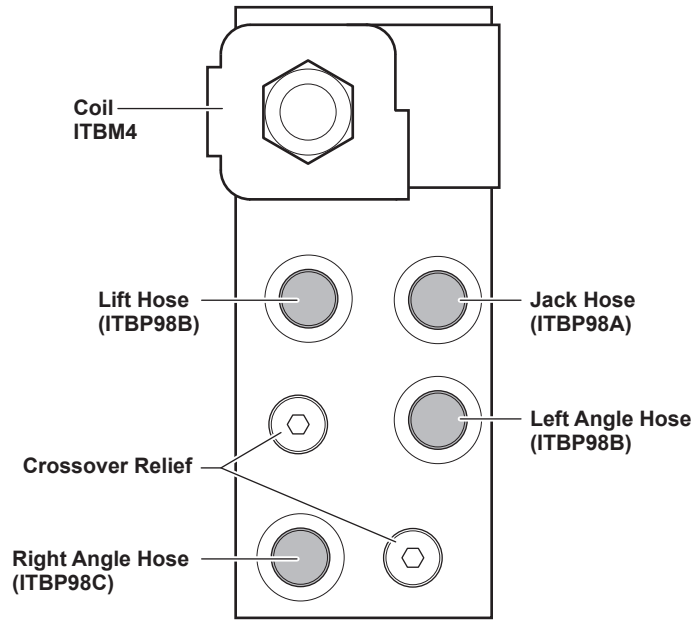
What Happens:

- A.) Lift Function is activated with Controller.
- B.) Green Wire shifts 'Float' Valve to Open position and powers A-Frame Jack Switch.
- C.) Fluid from Lift Cylinder returns to Reservoir through the 'H' Port.
- D.) Jack Retract function is activated using A-Frame Jack Switch.
- E.) Pink/Black Wire shifts 'Jack Retract' Valve to Jack Extend position.
- F.) Fluid from Jack Cylinder returns to Reservoir through 'X' Port retracting Jack Leg.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/HYD. JACK: ELECTRICAL/HYDRAULIC POWER UNIT W/MANIFOLD

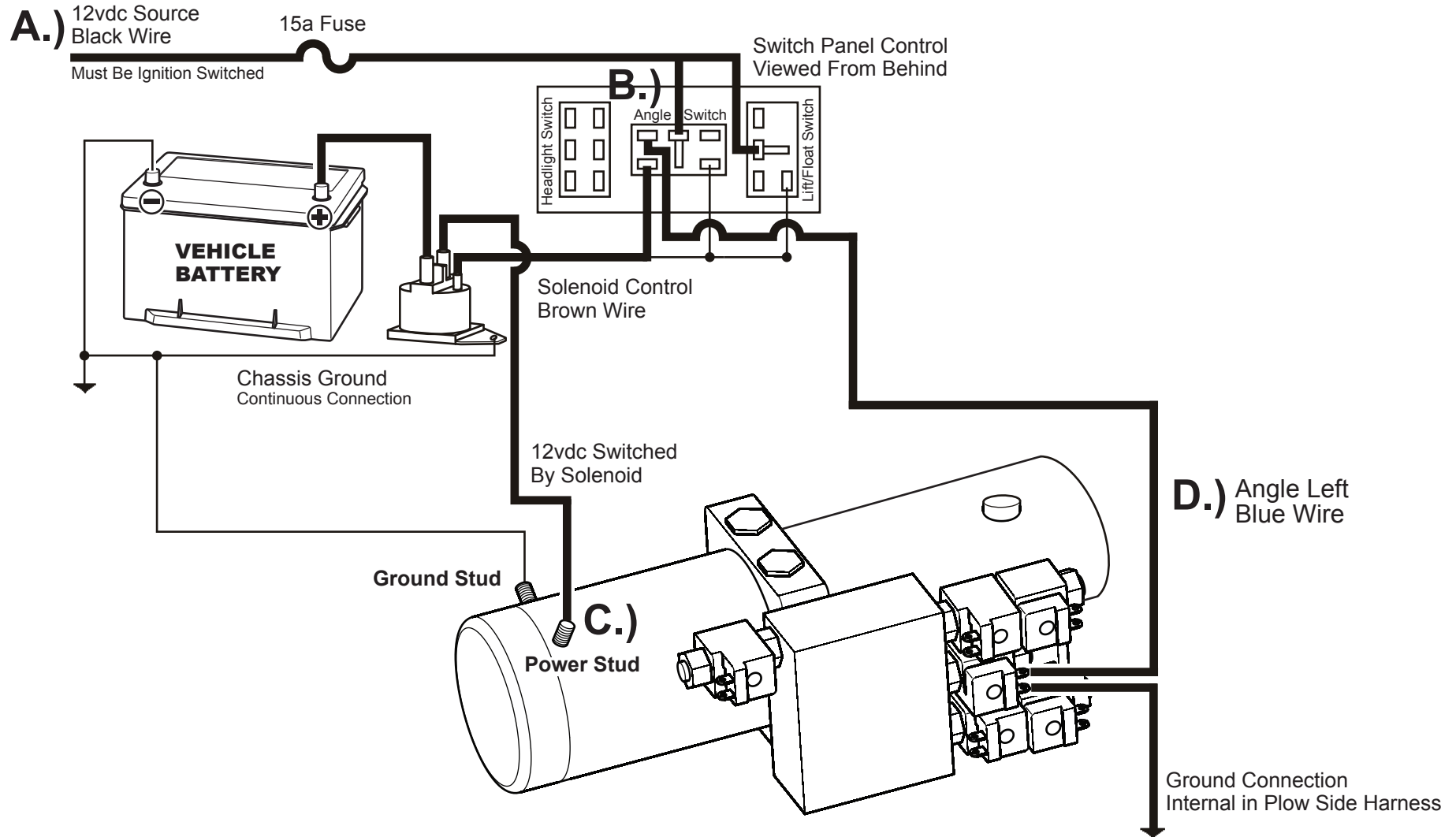
**MANIFOLD END VIEW**



# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: ANGLE LEFT FUNCTION - ELECTRICAL

What Happens:

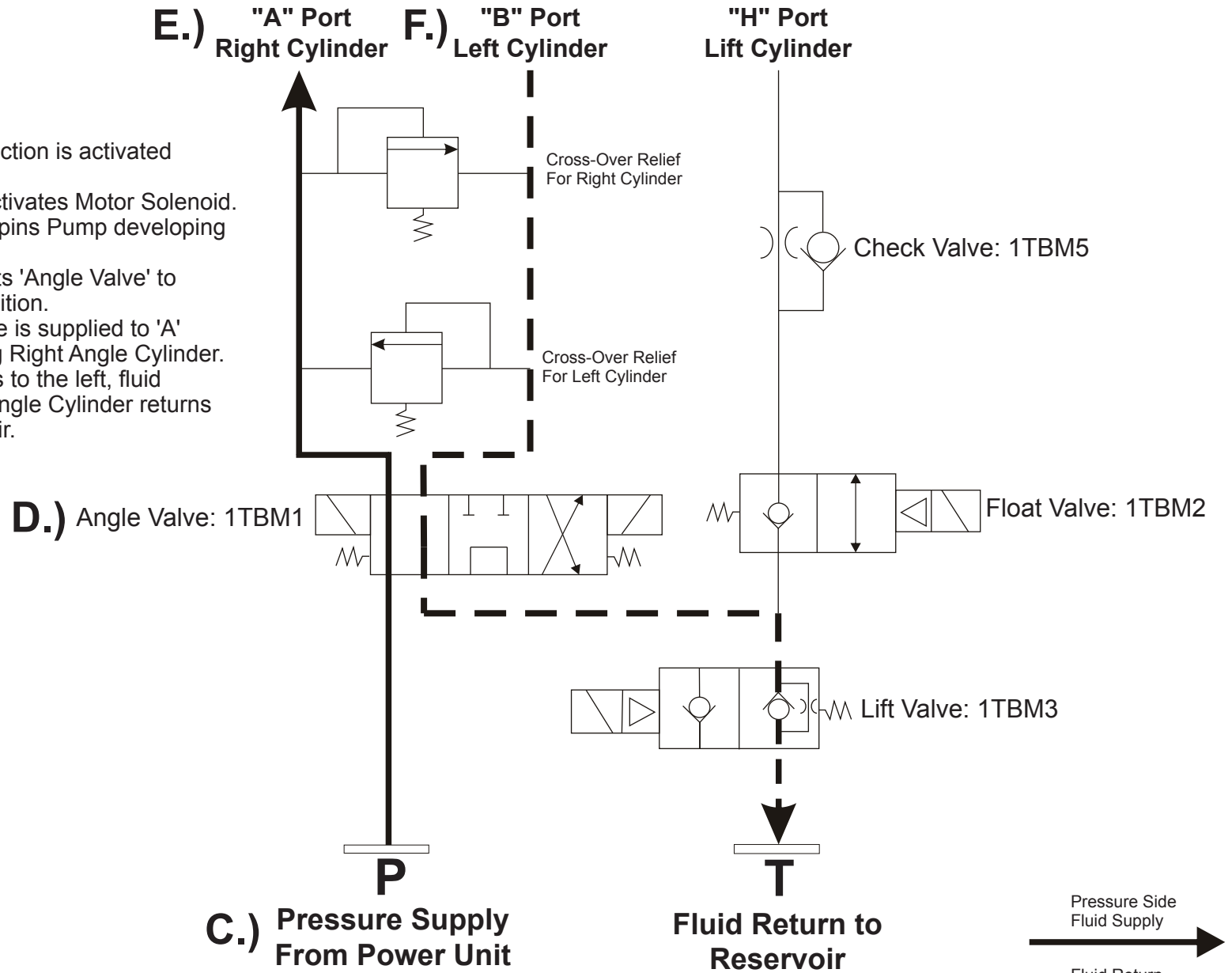
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Angle Left' position energizes the Blue 'Angle Left' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The Blue 'Angle Left' Wire sends 12vdc power to the Angle Left Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: ANGLE LEFT FUNCTION - HYDRAULIC

What Happens:

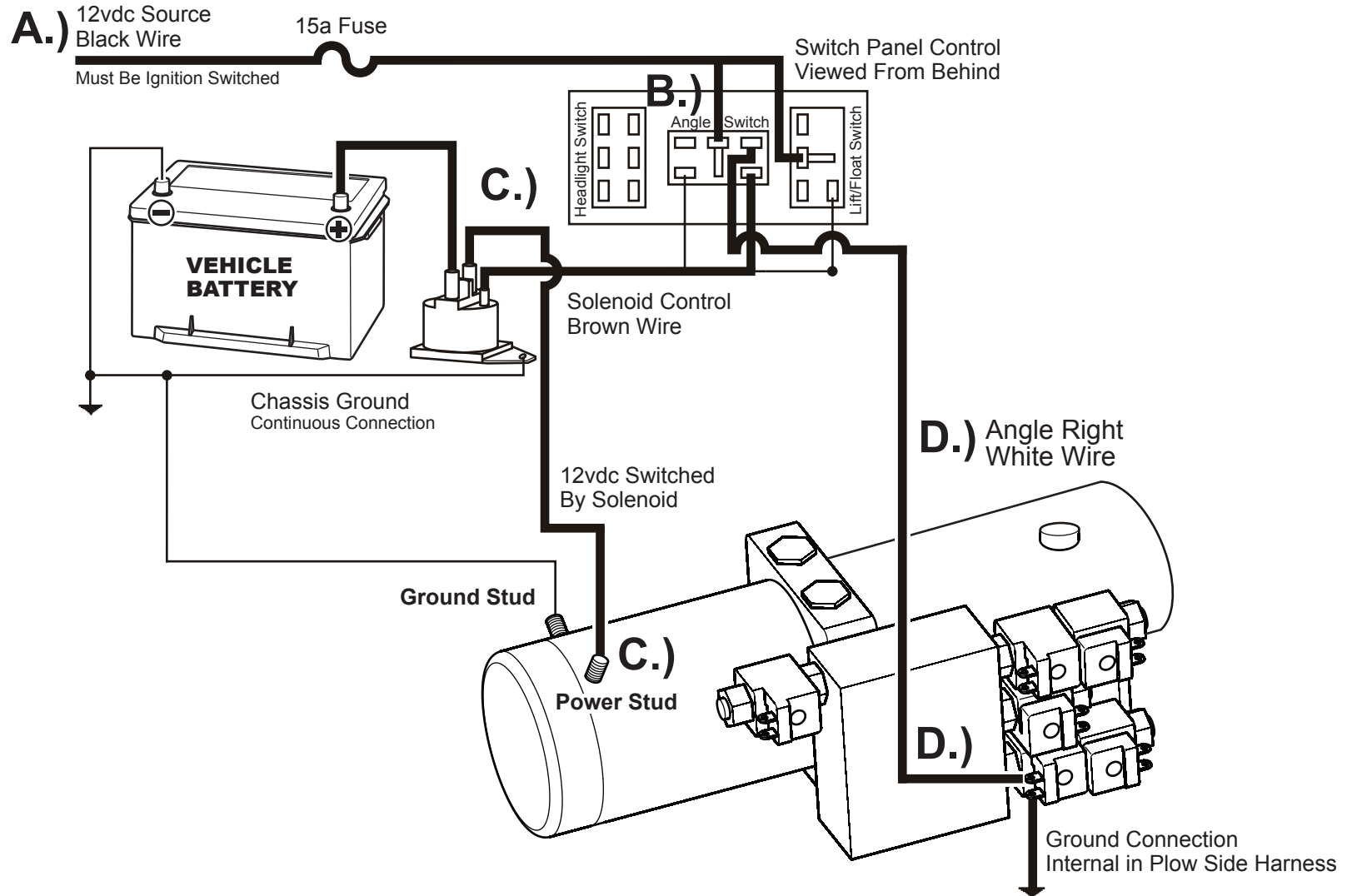
- A.) Left Angle Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) Blue Wire shifts 'Angle Valve' to Angle Left position.
- E.) Pump pressure is supplied to 'A' Port extending Right Angle Cylinder.
- F.) As Plow angles to the left, fluid from the Left Angle Cylinder returns to the Reservoir.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: ANGLE RIGHT FUNCTION - ELECTRICAL

What Happens:

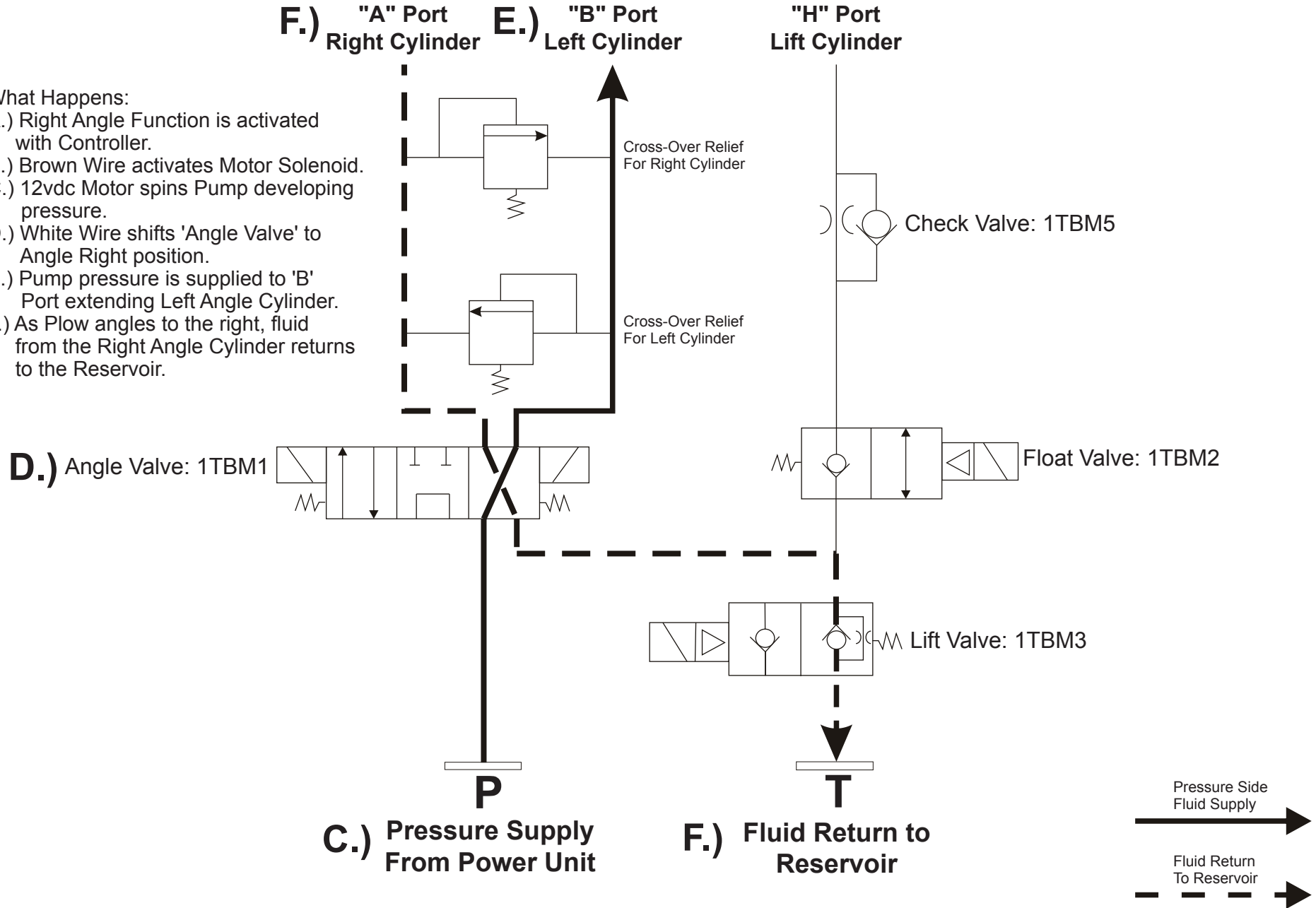
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Angle Right' position energizes the White 'Angle Right' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The White 'Angle Right' Wire sends 12vdc power to the Angle Right Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: ANGLE RIGHT FUNCTION - HYDRAULIC

What Happens:

- A.) Right Angle Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) White Wire shifts 'Angle Valve' to Angle Right position.
- E.) Pump pressure is supplied to 'B' Port extending Left Angle Cylinder.
- F.) As Plow angles to the right, fluid from the Right Angle Cylinder returns to the Reservoir.

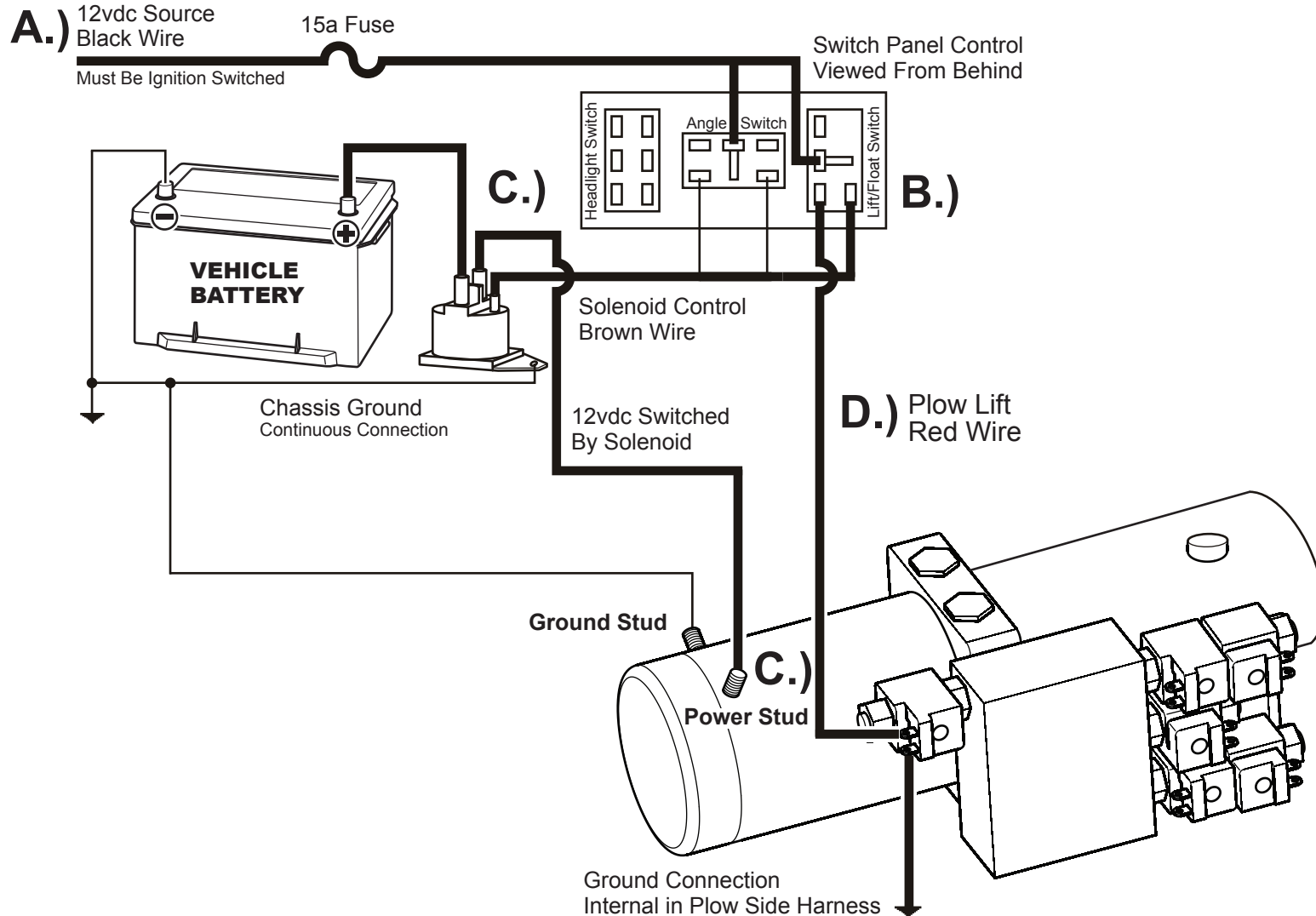




# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: PLOW LIFT FUNCTION - ELECTRICAL

What Happens:

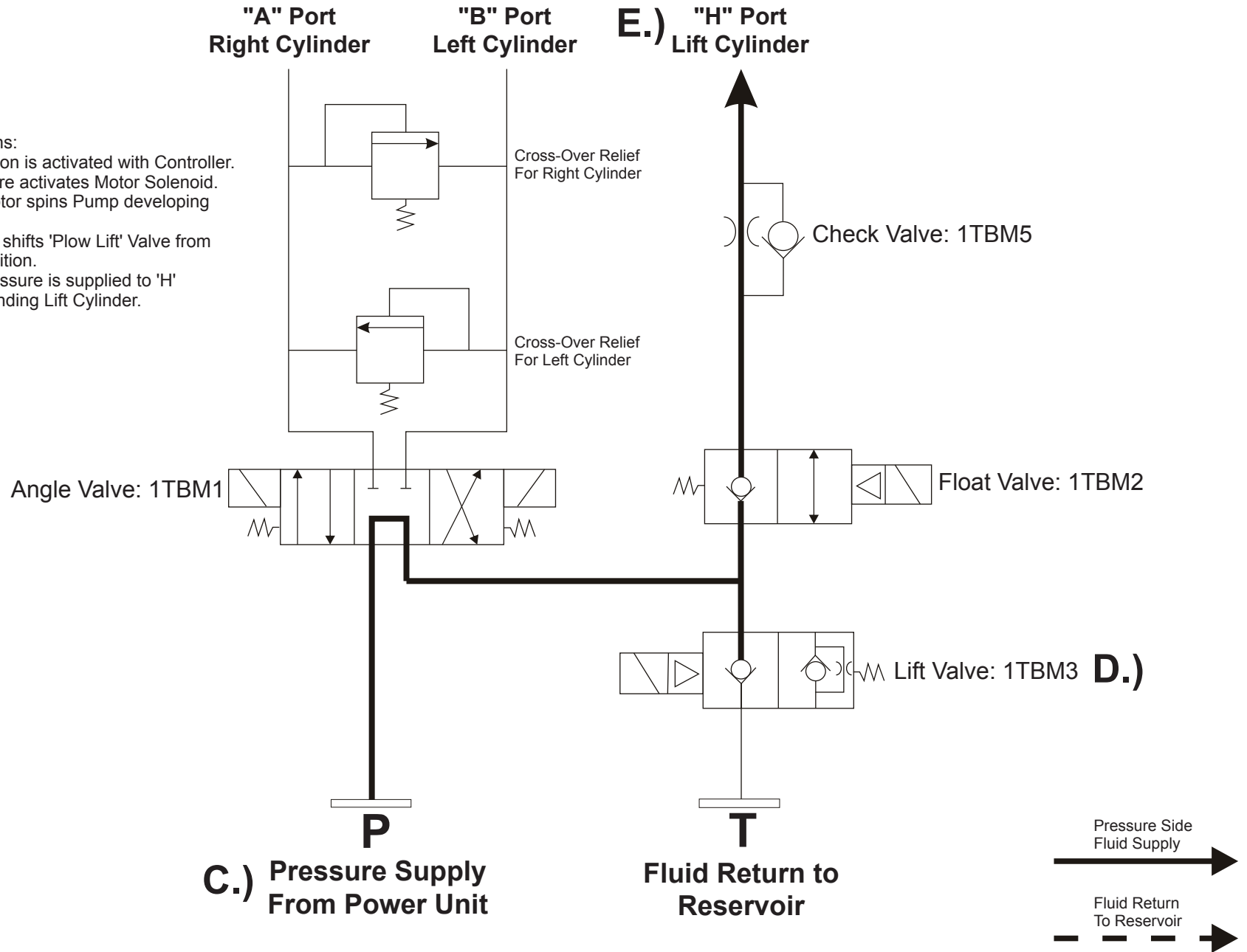
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Plow Lift' position energizes the Red 'Lift' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The Red 'Lift' Wire sends 12vdc power to the Lift Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: PLOW LIFT FUNCTION - HYDRAULIC

What Happens:

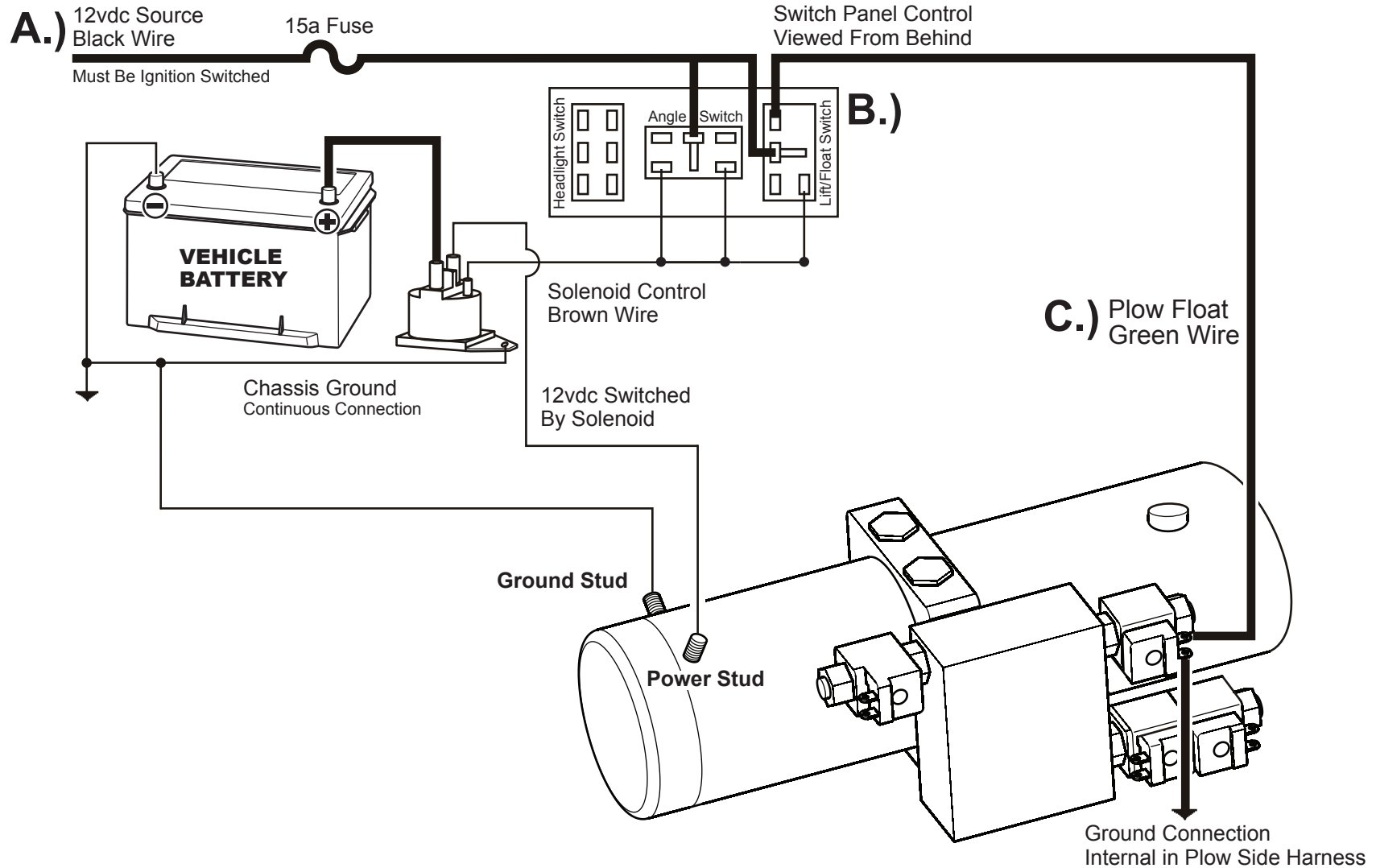
- A.) Lift Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) Red Wire shifts 'Plow Lift' Valve from static position.
- E.) Pump pressure is supplied to 'H' Port extending Lift Cylinder.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: PLOW FLOAT FUNCTION - ELECTRICAL

What Happens:

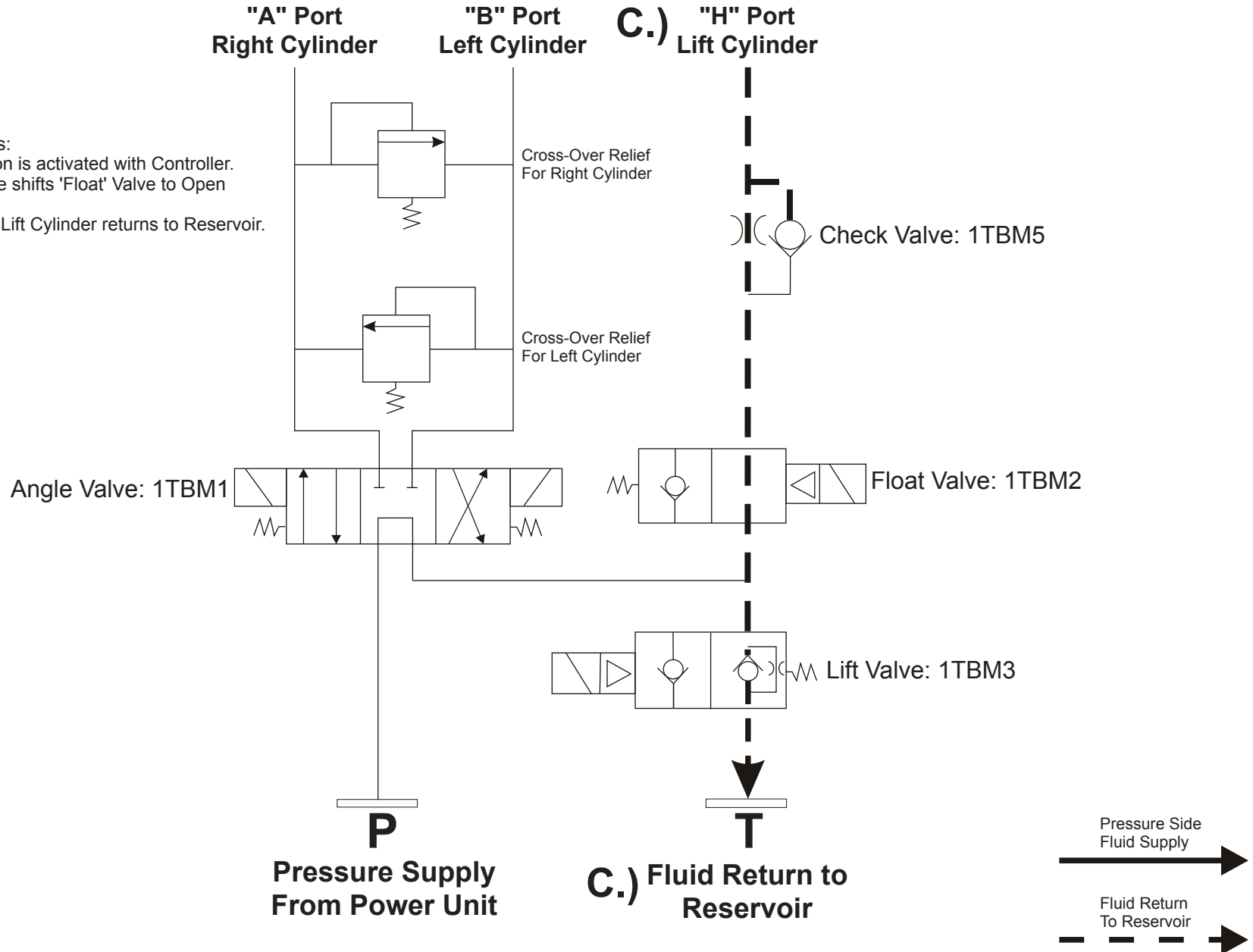
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. If equipped with a Joystick or Touch Pad, the Controller Power Switch must be in the 'On' position.
- B.) Moving the Controller to 'Plow Float' position energizes the Green 'Float' Wire.
- C.) The Green 'Float' Wire sends v power to the Float Valve Coil.
- D.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO / HOME-PRO / TRIP-EDGE w/GAS SPRING JACK: PLOW FLOAT FUNCTION - HYDRAULIC

What Happens:

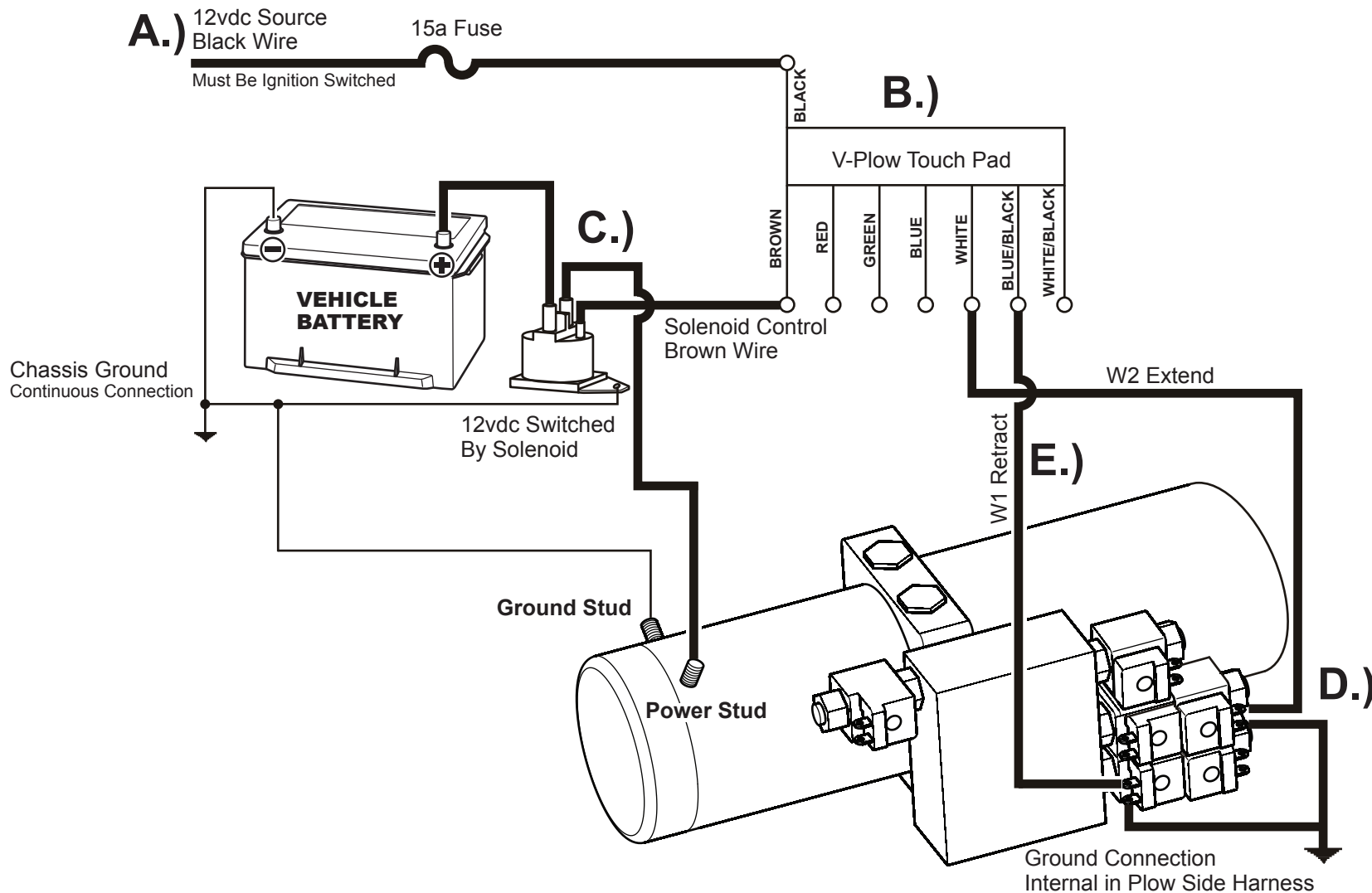
- A.) Lift Function is activated with Controller.
- B.) Green Wire shifts 'Float' Valve to Open position.
- C.) Fluid from Lift Cylinder returns to Reservoir.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: LEFT ANGLE FUNCTION - ELECTRICAL

What Happens:

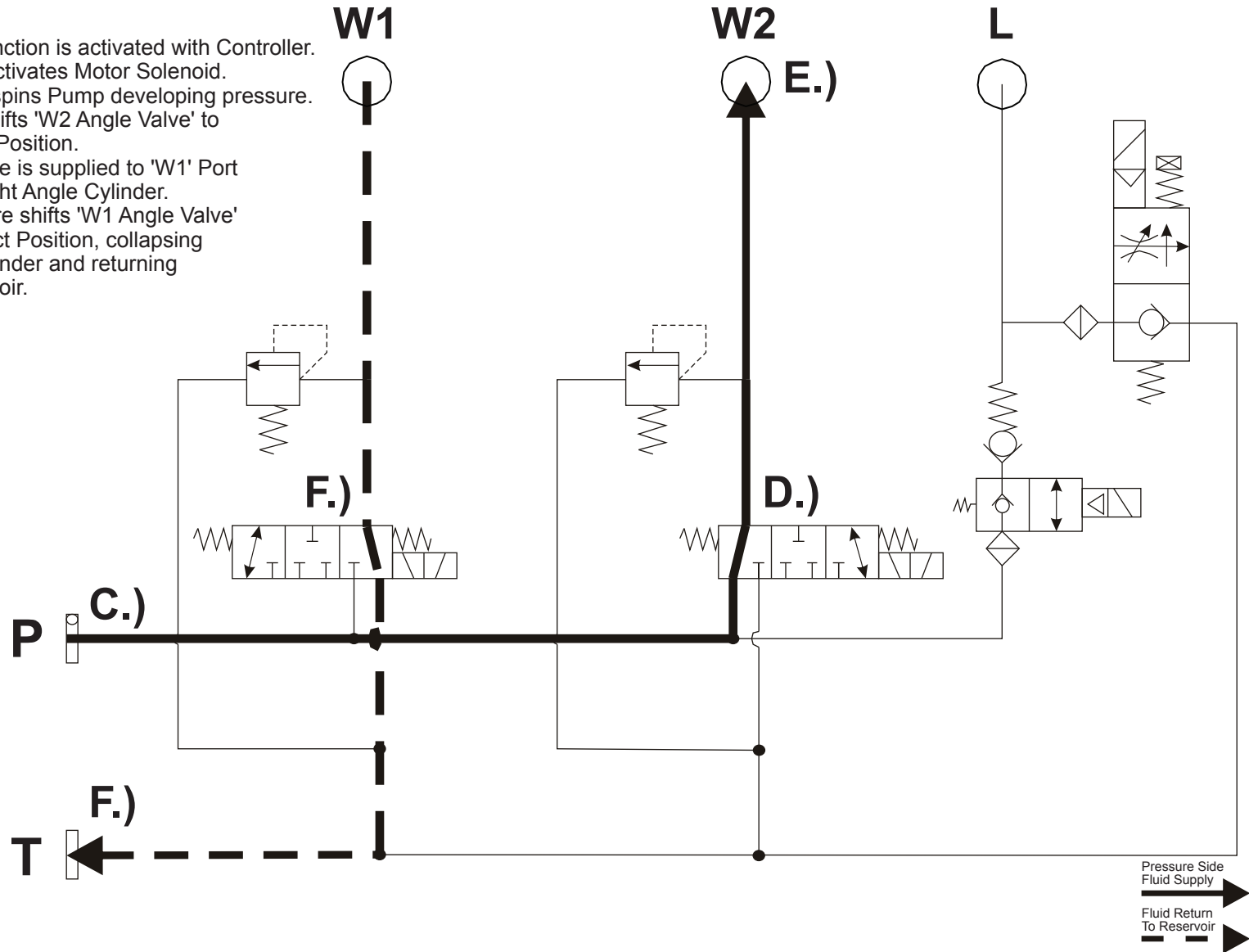
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Left Angle' button energizes the White 'W2 Extend' Wire, Blue/Black 'W1 Retract' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The White 'W2 Extend' Wire sends 12vdc power to the W2 Extend Valve Coil.
- E.) The Blue/Black 'W1 Retract' Wire sends 12vdc power to the W1 Retract Valve Coil. See Next Page for Hydraulic Flow Chart.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: LEFT ANGLE FUNCTION - HYDRAULIC

What Happens:

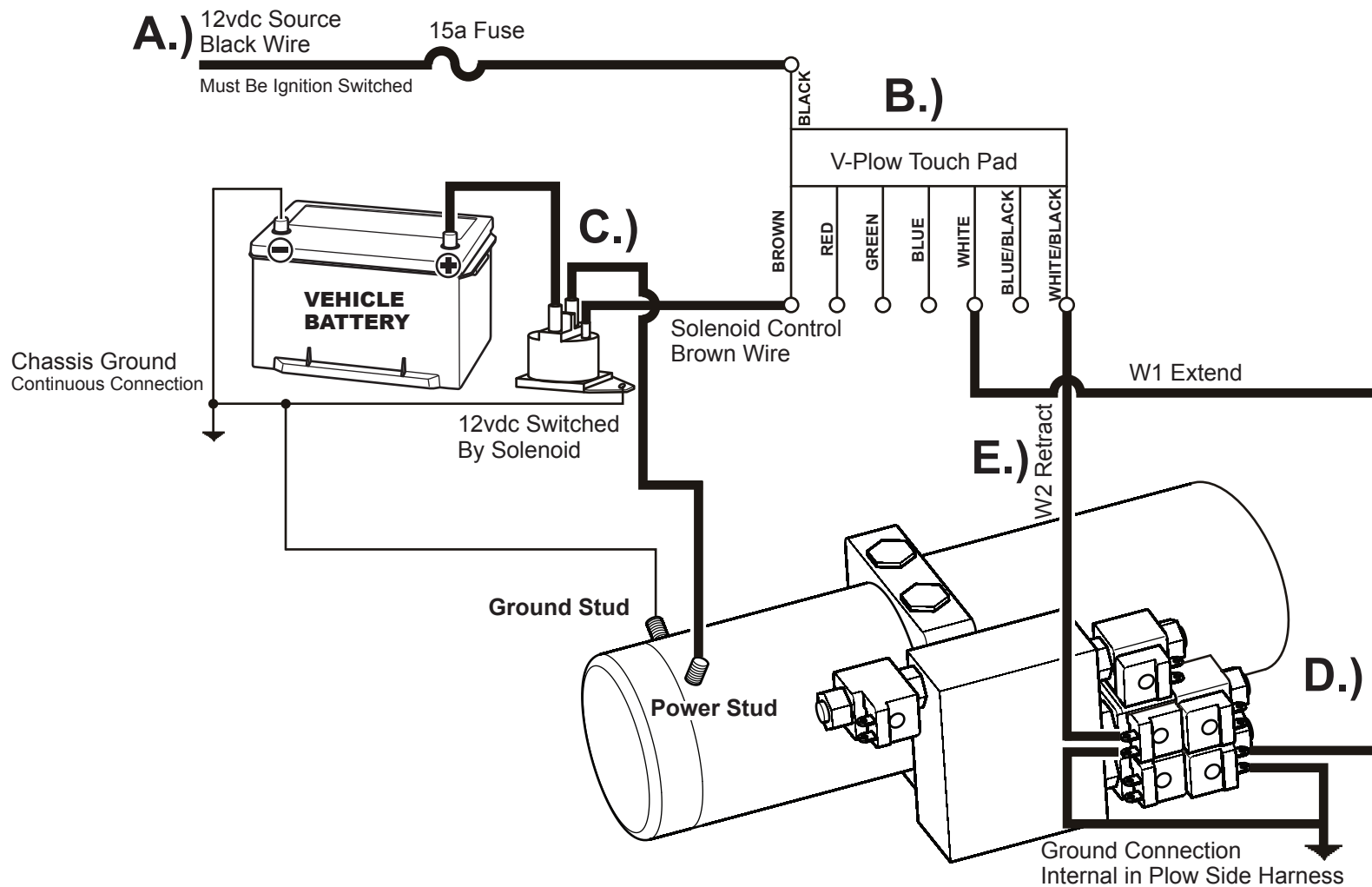
- A.) Left Angle Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) White Wire shifts 'W2 Angle Valve' to Wing Extend Position.
- E.) Pump pressure is supplied to 'W1' Port extending Right Angle Cylinder.
- F.) Blue/Black Wire shifts 'W1 Angle Valve' to Wing Retract Position, collapsing Left Angle Cylinder and returning fluid to Reservoir.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: RIGHT ANGLE FUNCTION - ELECTRICAL

What Happens:

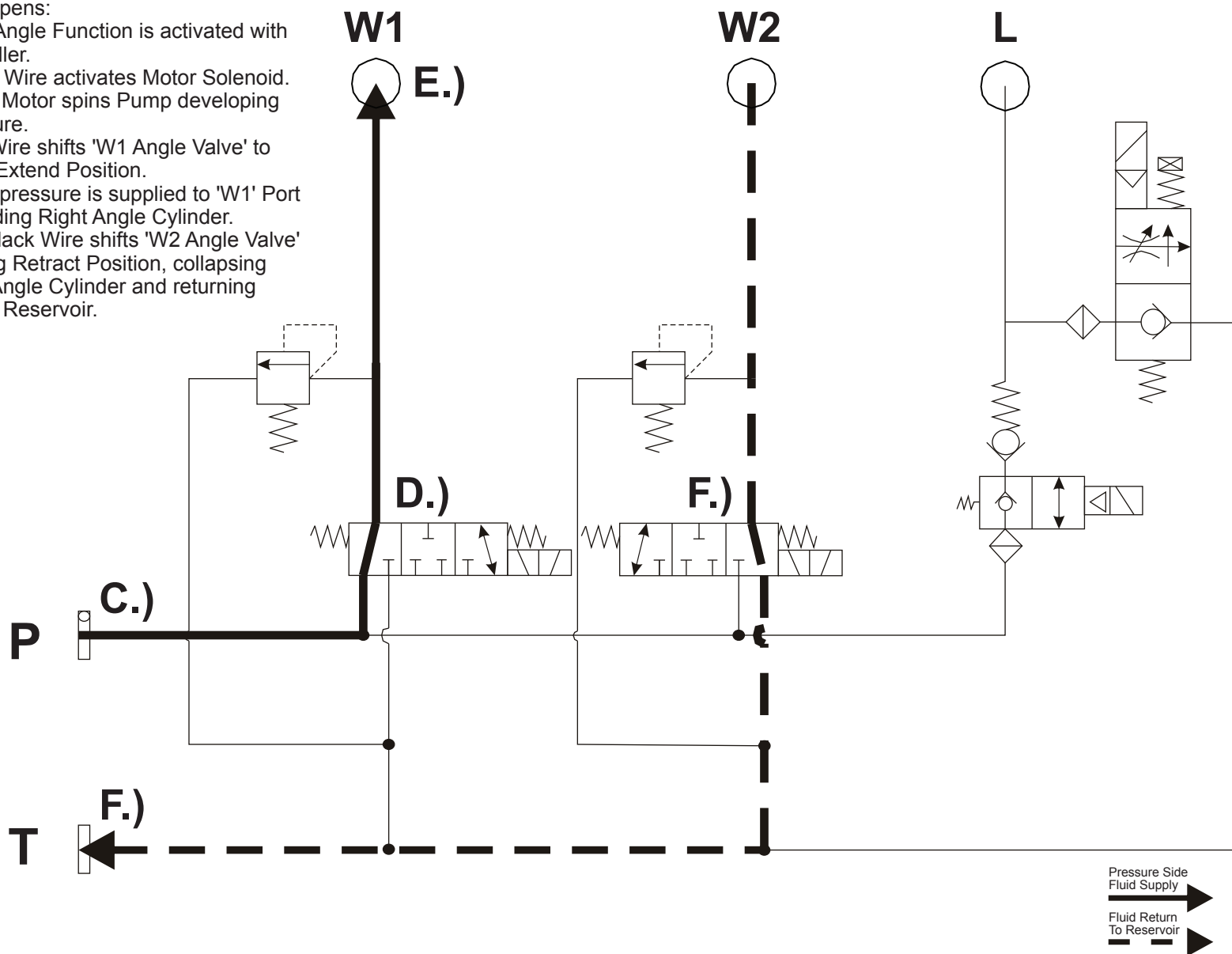
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Right Angle' button energizes the Blue 'W1 Extend' Wire, White/Black 'W2 Retract' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The Blue 'W1 Extend' Wire sends 12vdc power to the W1 Extend Valve Coil.
- E.) The White/Black 'W2 Retract' Wire sends 12vdc power to the W2 Retract Valve Coil. See Next Page for Hydraulic Flow Chart.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: RIGHT ANGLE FUNCTION - HYDRAULIC

What Happens:

- A.) Right Angle Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) Blue Wire shifts 'W1 Angle Valve' to Wing Extend Position.
- E.) Pump pressure is supplied to 'W1' Port extending Right Angle Cylinder.
- F.) Blue/Black Wire shifts 'W2 Angle Valve' to Wing Retract Position, collapsing Right Angle Cylinder and returning fluid to Reservoir.

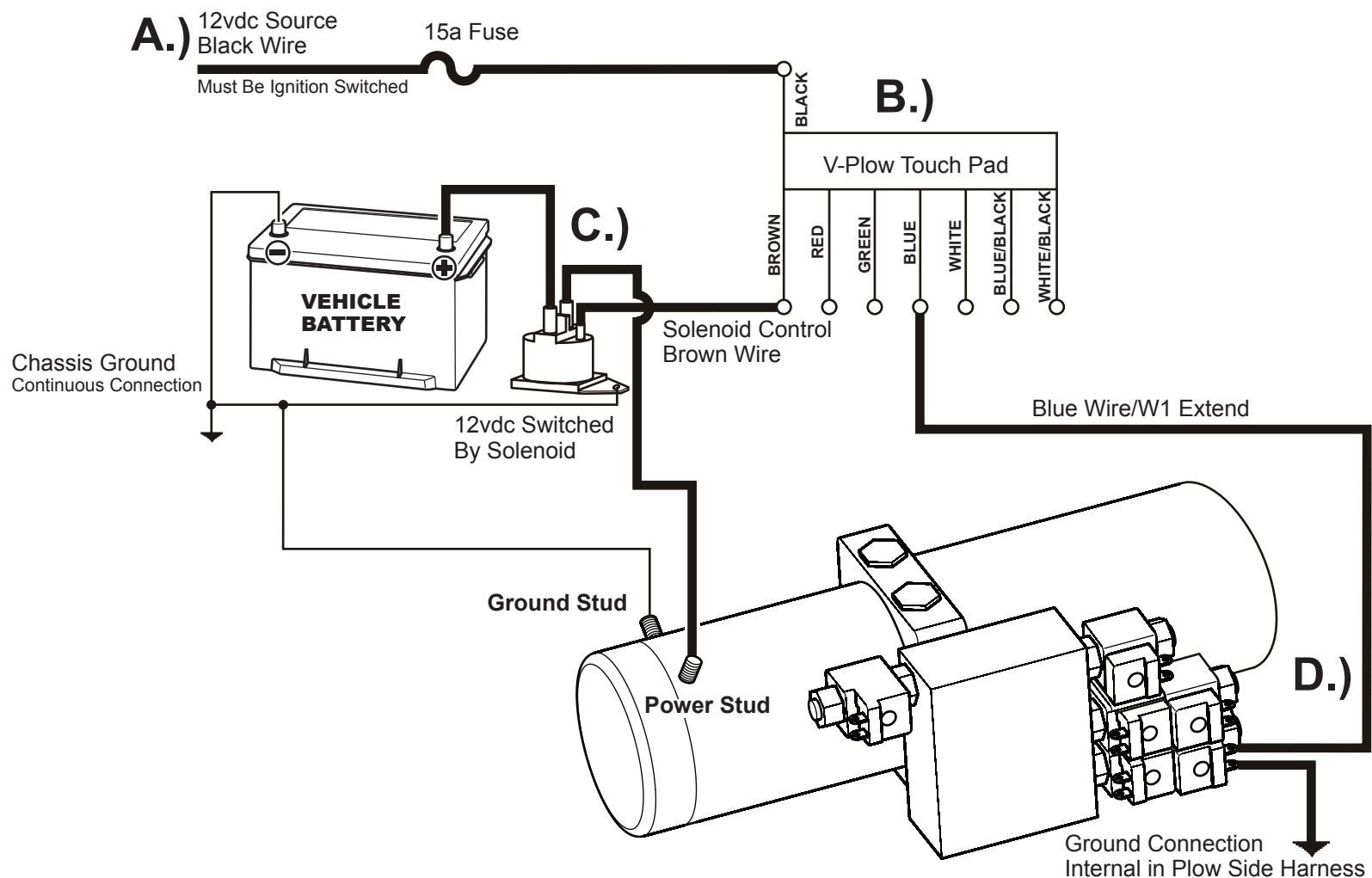




# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: LEFT WING EXTEND FUNCTION - ELECTRICAL

What Happens:

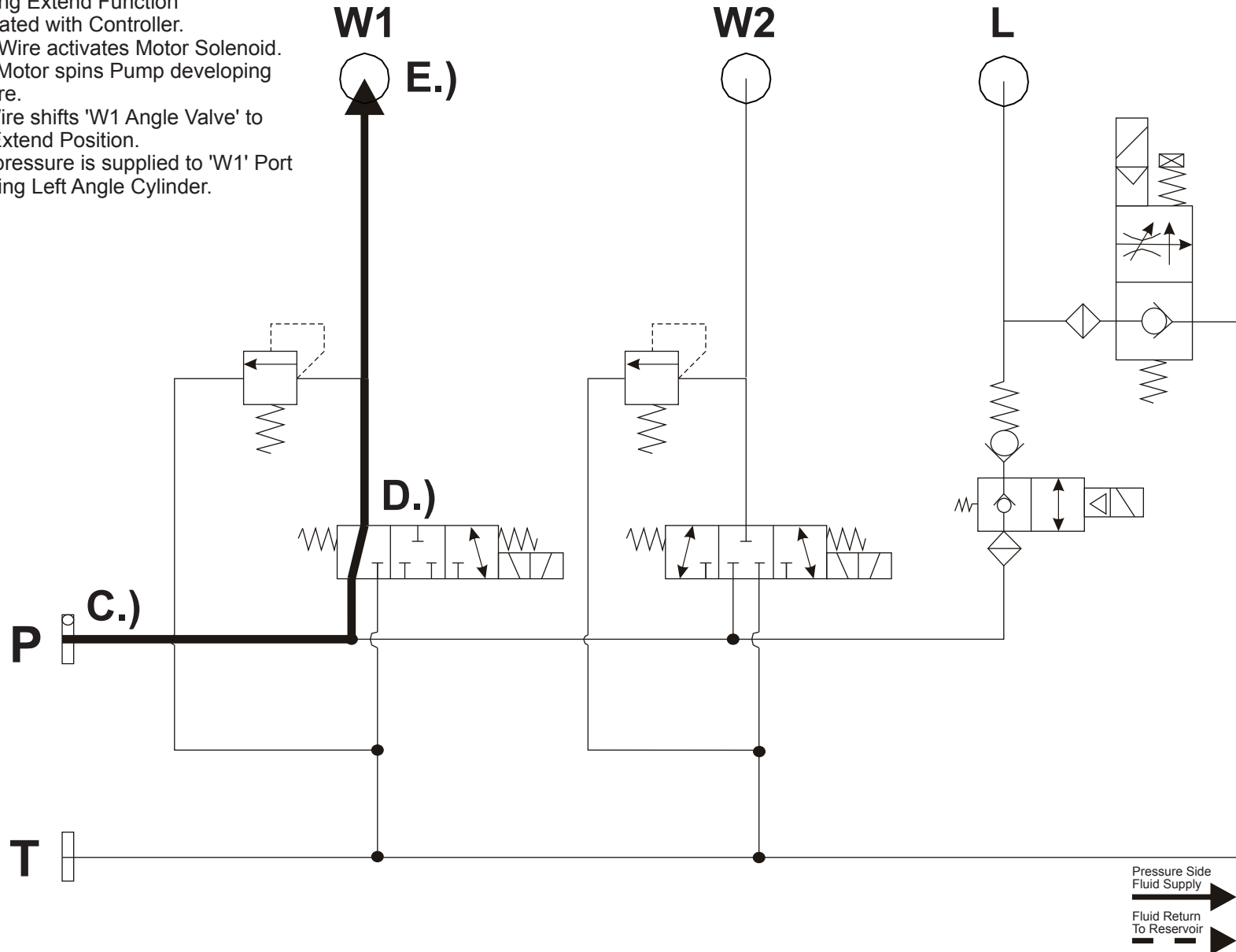
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Left Extend' button energizes the Blue 'W1 Extend' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The Blue 'W1 Extend' Wire sends 12vdc power to the W1 Extend Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: LEFT WING EXTEND FUNCTION - HYDRAULIC

What Happens:

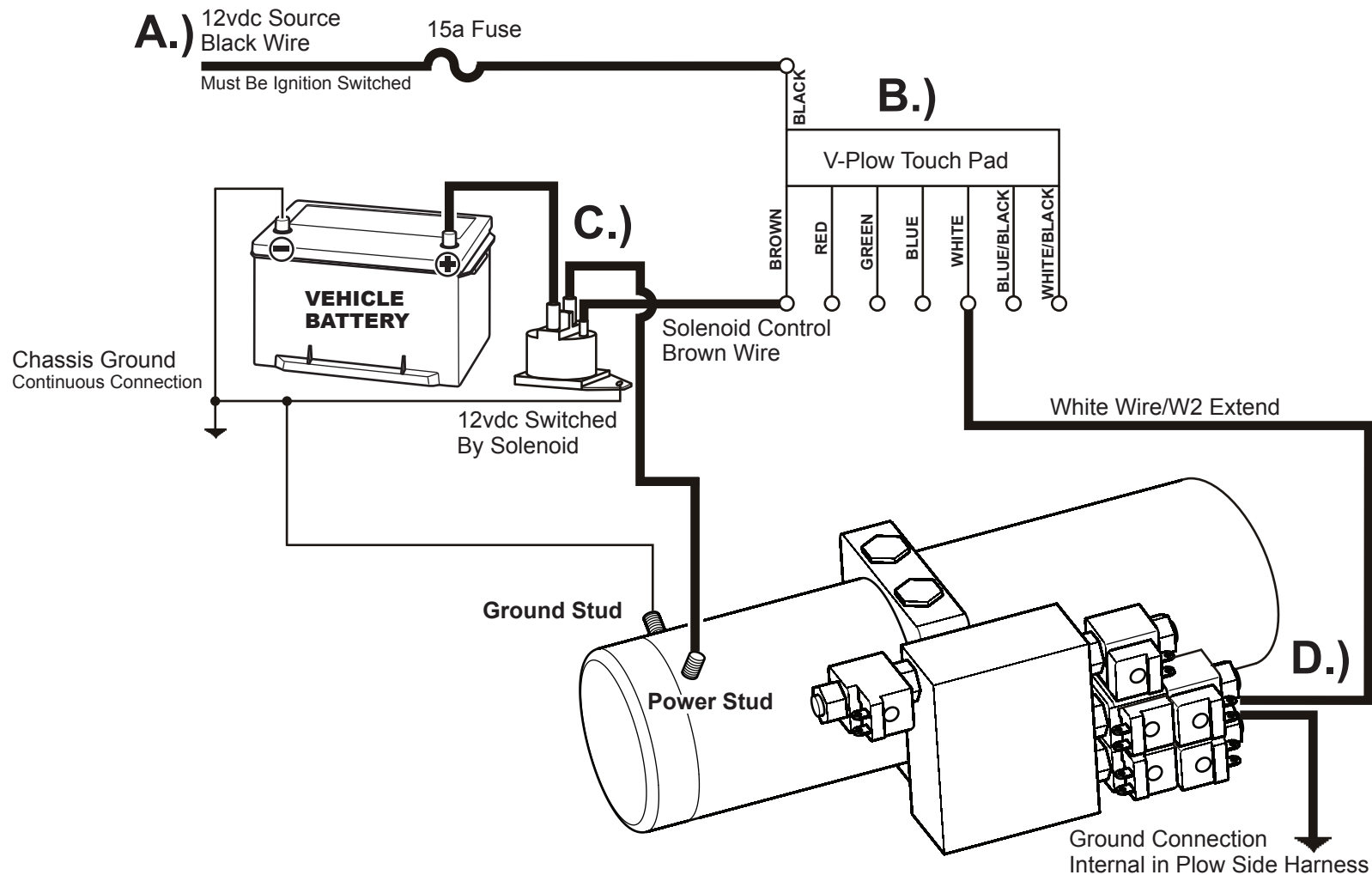
- A.) Left Wing Extend Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) Blue Wire shifts 'W1 Angle Valve' to Wing Extend Position.
- E.) Pump pressure is supplied to 'W1' Port extending Left Angle Cylinder.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: RIGHT WING EXTEND FUNCTION - ELECTRICAL

What Happens:

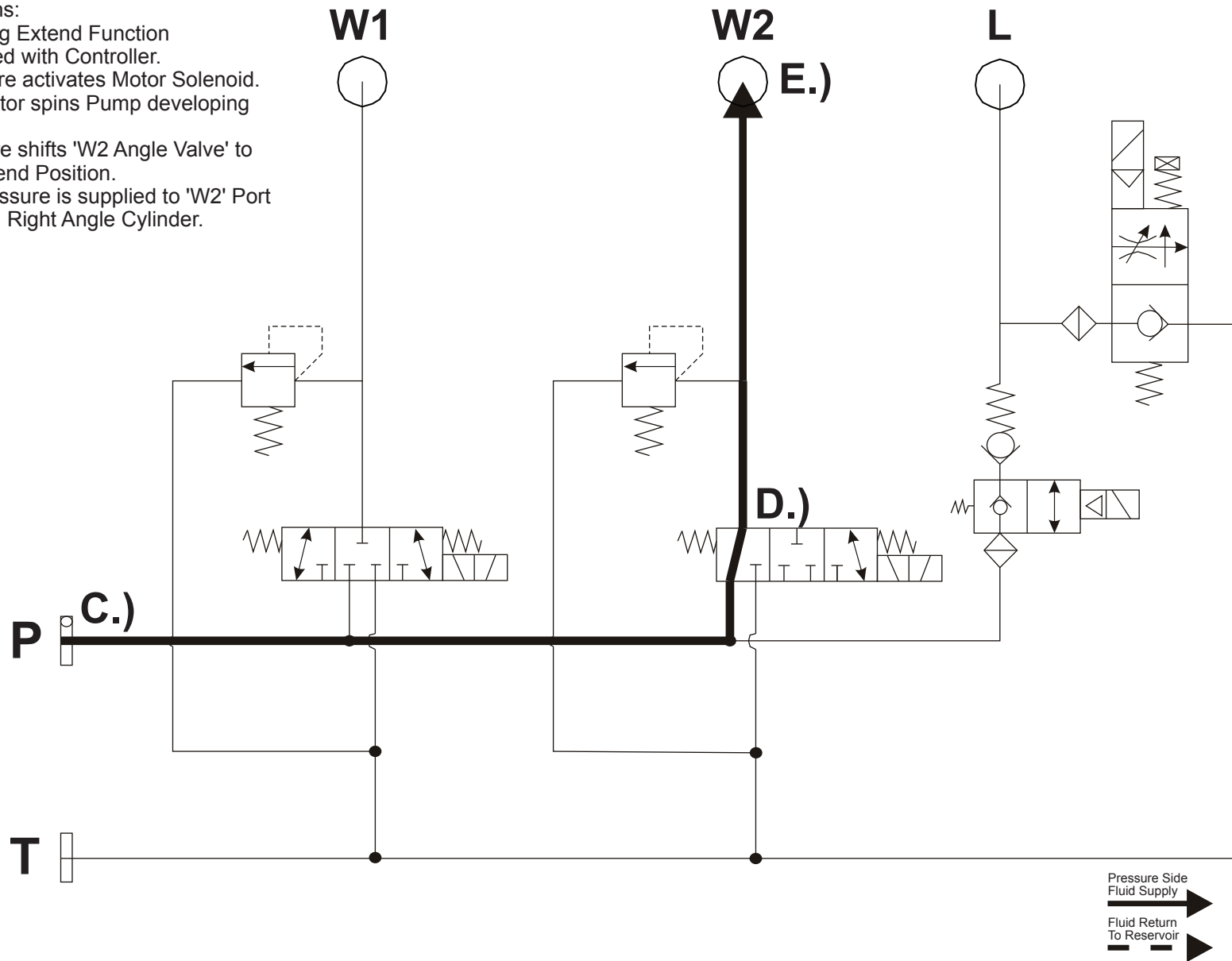
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Right Extend' button energizes the White 'W2 Extend' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The White 'W2 Extend' Wire sends 12vdc power to the W2 Extend Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: RIGHT WING EXTEND FUNCTION - HYDRAULIC

What Happens:

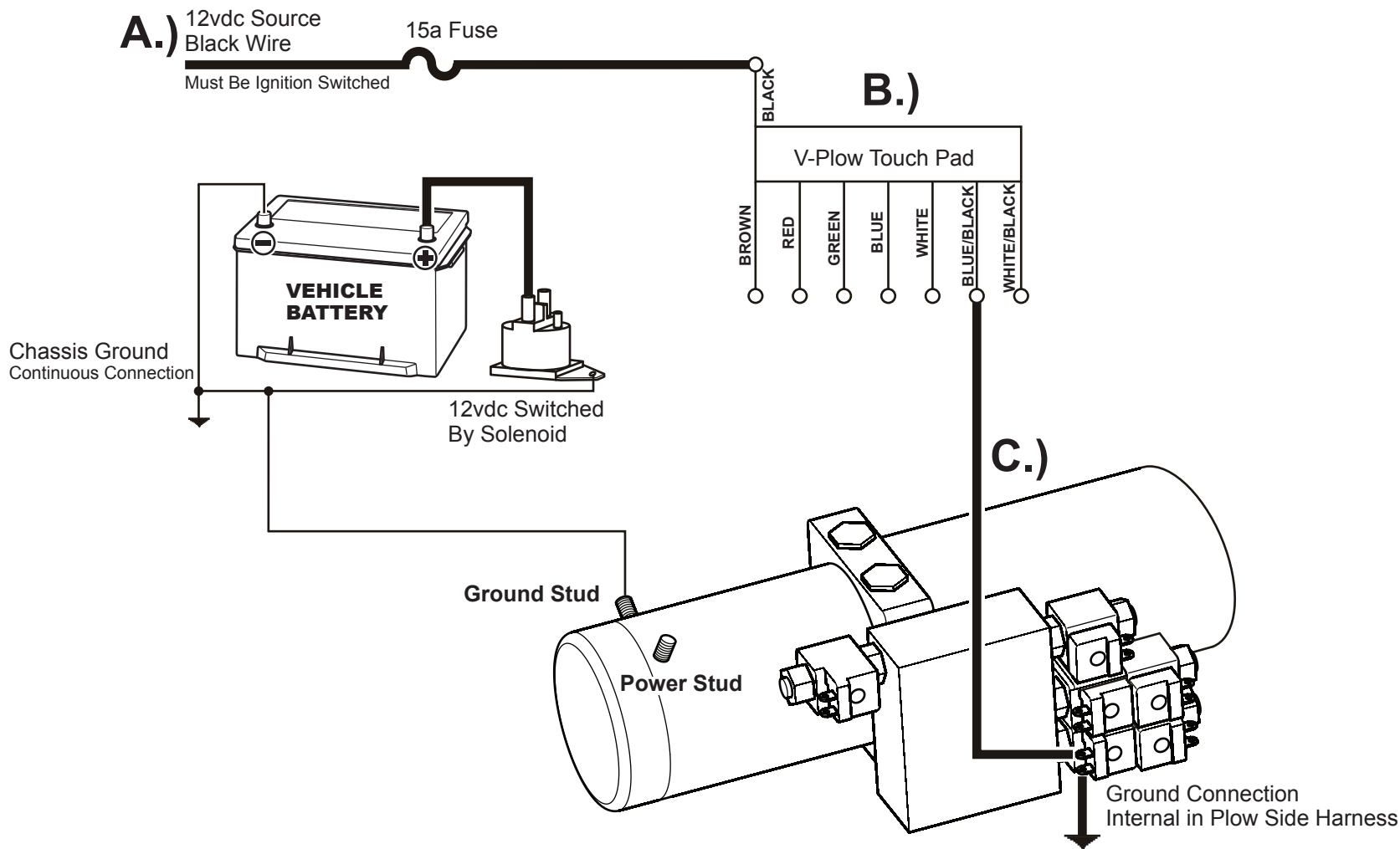
- A.) Right Wing Extend Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) White Wire shifts 'W2 Angle Valve' to Wing Extend Position.
- E.) Pump pressure is supplied to 'W2' Port extending Right Angle Cylinder.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: LEFT WING RETRACT FUNCTION - ELECTRICAL

What Happens:

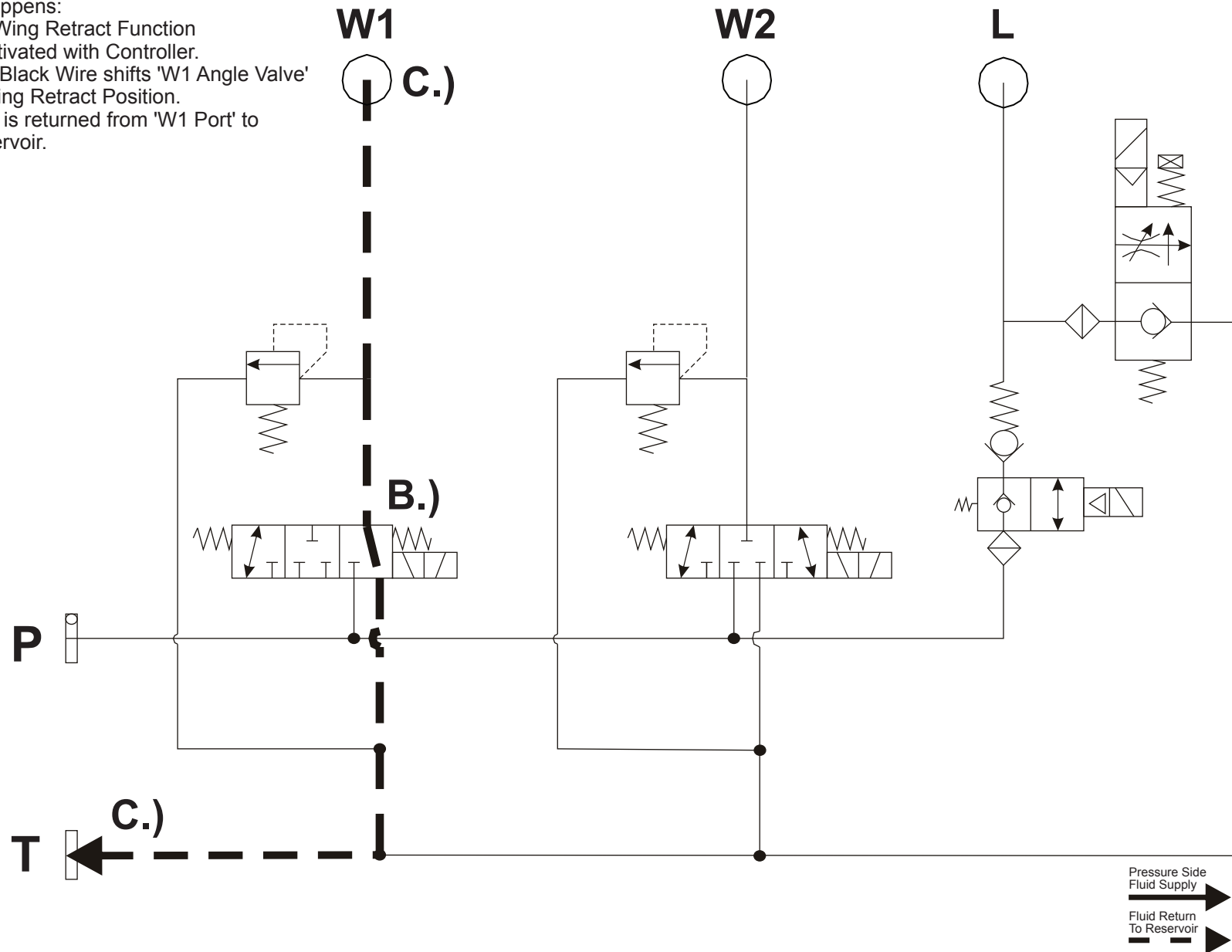
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Left Retract' button energizes the Blue/Black 'W1 Retract' Wire.
- C.) The Blue/Black 'W1 Retract' Wire sends 12vdc power to the W1 Retract Valve Coil.
- D.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: LEFT WING RETRACT FUNCTION - HYDRAULIC

What Happens:

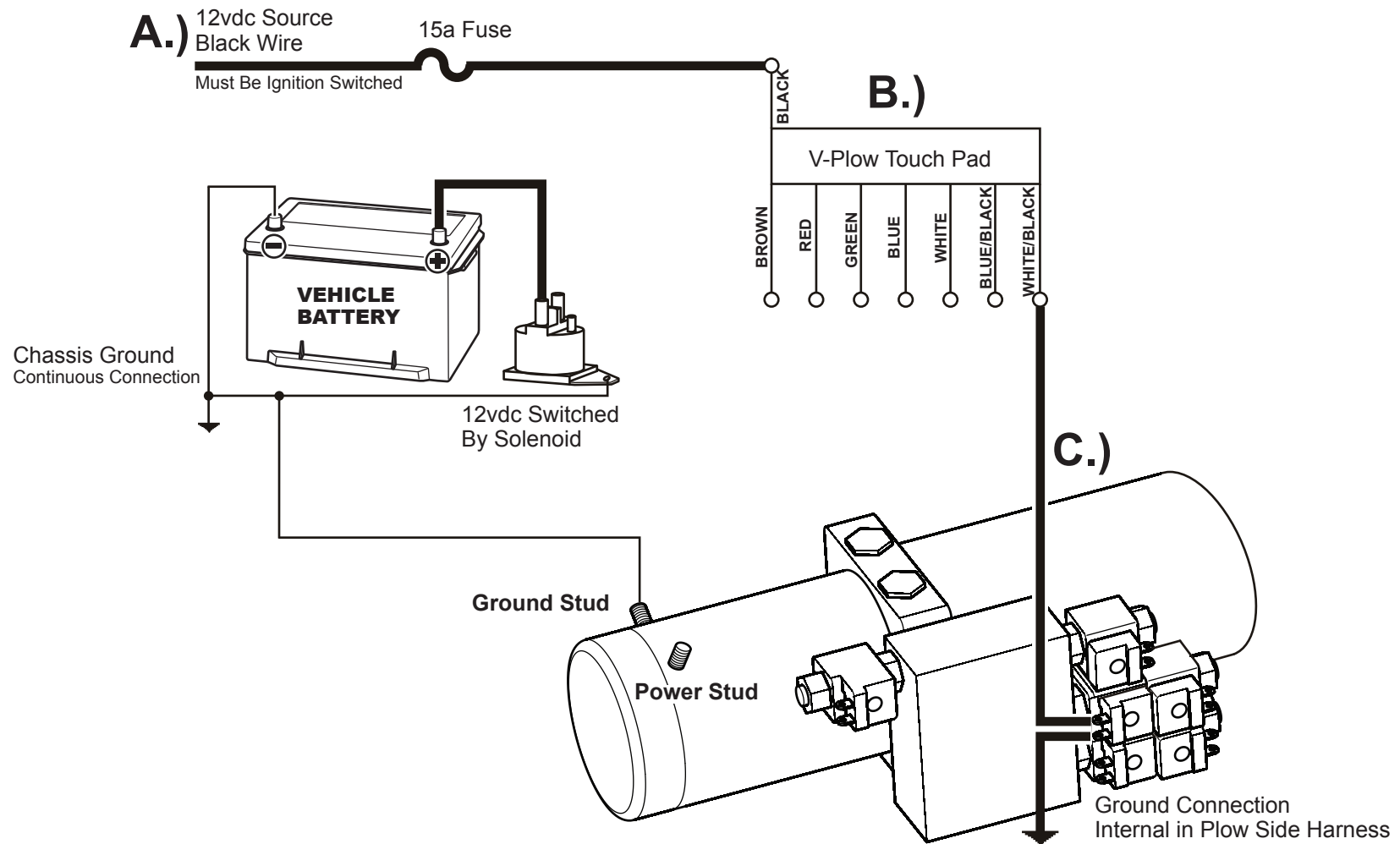
- A.) Left Wing Retract Function is activated with Controller.
- B.) Blue/Black Wire shifts 'W1 Angle Valve' to Wing Retract Position.
- C.) Fluid is returned from 'W1 Port' to Reservoir.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: RIGHT WING RETRACT FUNCTION - ELECTRICAL

What Happens:

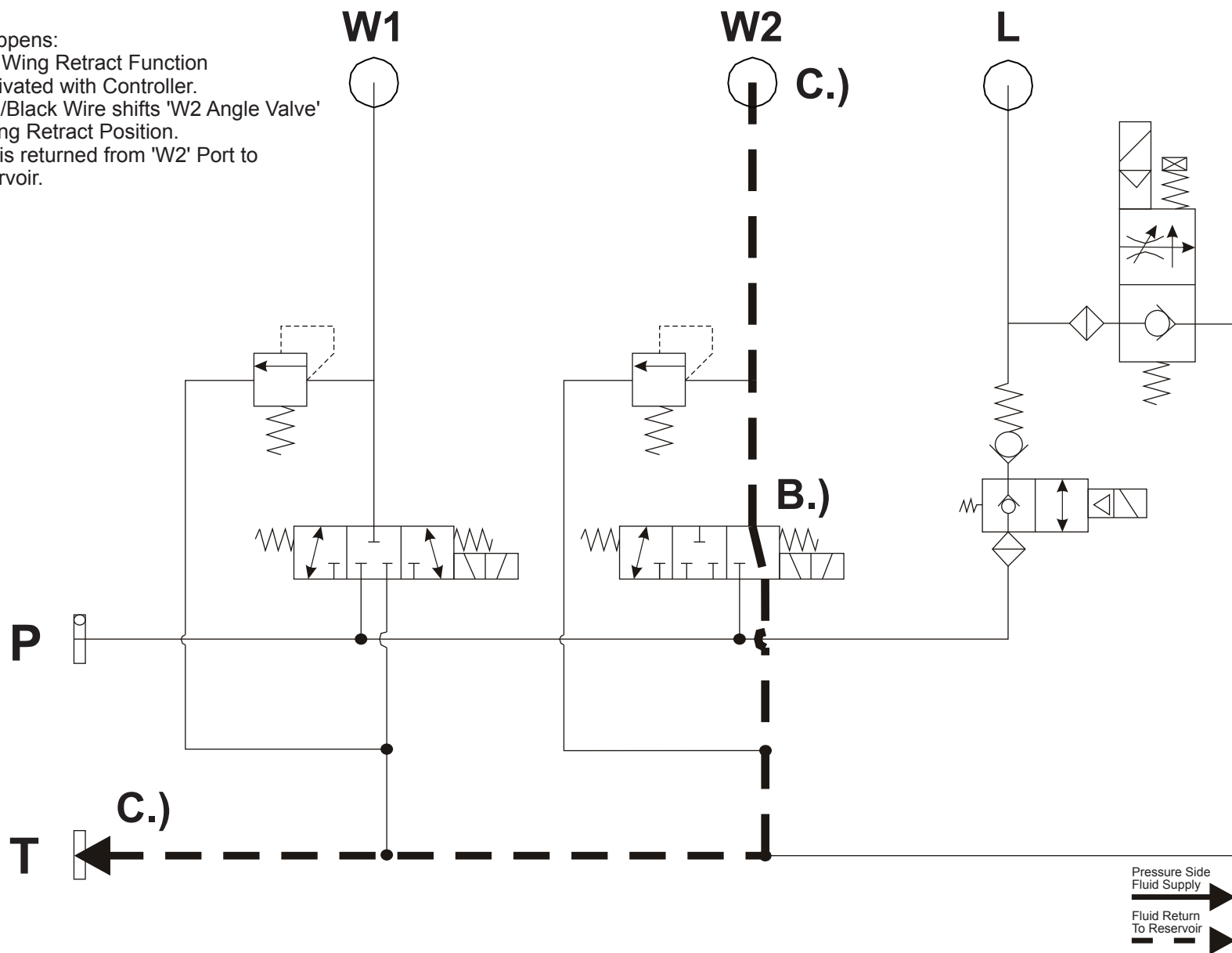
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Right Retract' button energizes the White/Black 'W2 Retract' Wire.
- C.) The White/Black 'W2 Retract' Wire sends 12vdc power to the Retract Valve Coil.
- D.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: RIGHT WING RETRACT FUNCTION - HYDRAULIC

What Happens:

- A.) Right Wing Retract Function is activated with Controller.
- B.) White/Black Wire shifts 'W2 Angle Valve' to Wing Retract Position.
- C.) Fluid is returned from 'W2' Port to Reservoir.

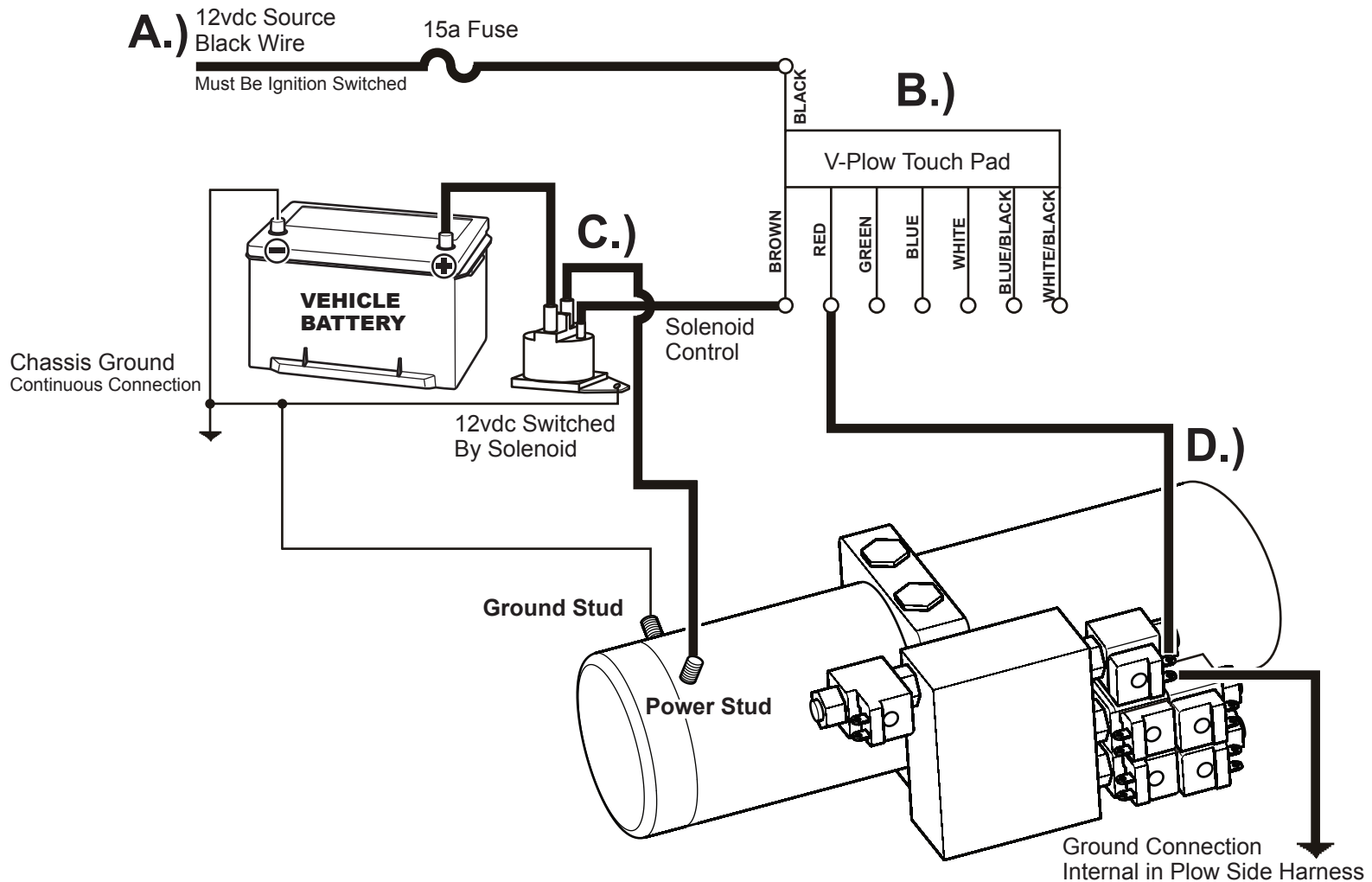




# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: PLOW LIFT FUNCTION - ELECTRICAL

What Happens:

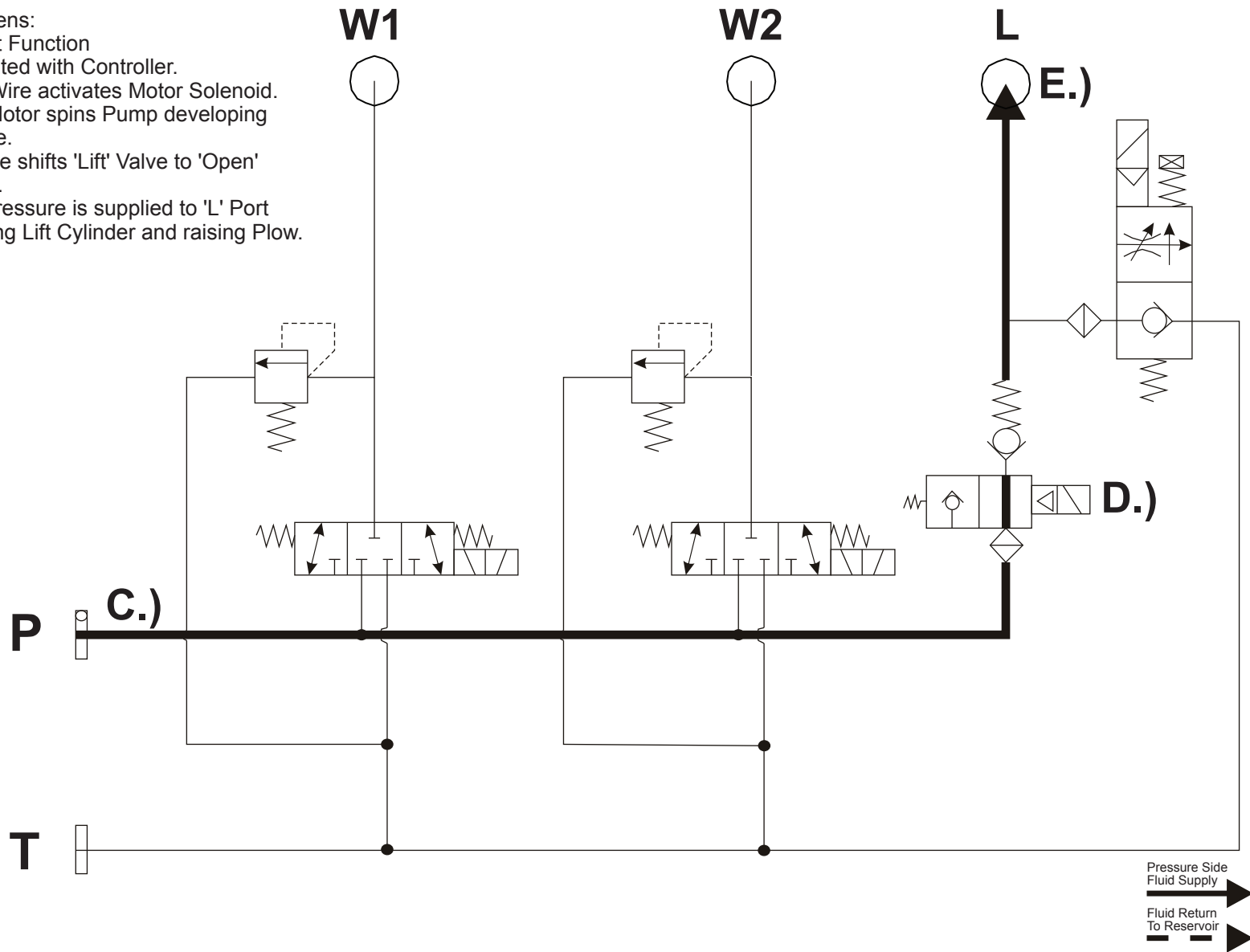
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Plow Lift' Button energizes the Red 'Lift' Wire and the Brown 'Solenoid' Wire.
- C.) The Brown 'Solenoid' Wire closes the Solenoid Contacts and sends 12vdc power to the Pump Motor.
- D.) The Red 'Lift' Wire sends 12vdc power to the Plow Lift Valve Coil.
- E.) See Next Page for Hydraulic Flow Chart.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: PLOW LIFT FUNCTION - HYDRAULIC

What Happens:

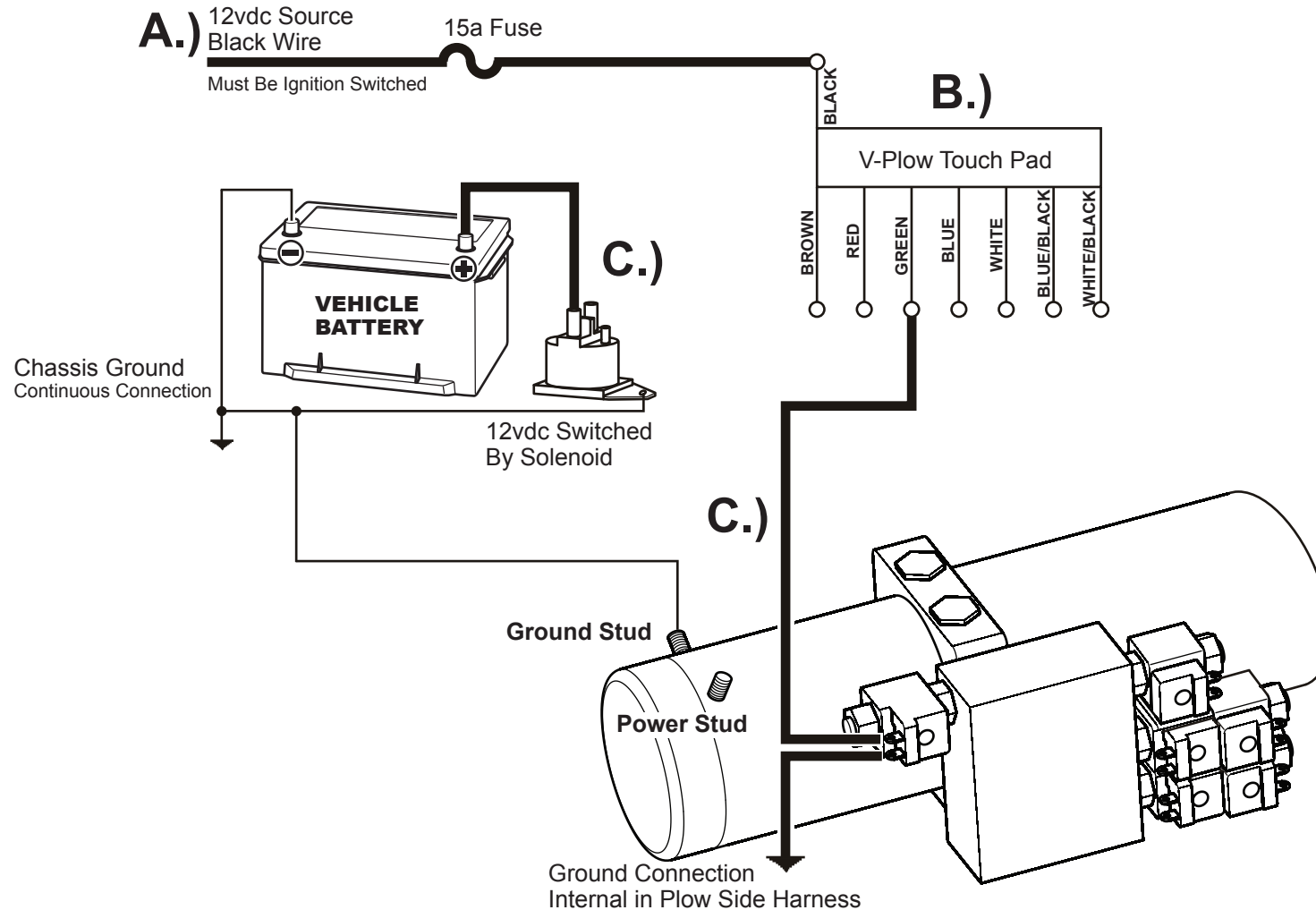
- A.) Plow Lift Function is activated with Controller.
- B.) Brown Wire activates Motor Solenoid.
- C.) 12vdc Motor spins Pump developing pressure.
- D.) Red Wire shifts 'Lift' Valve to 'Open' position.
- E.) Pump pressure is supplied to 'L' Port extending Lift Cylinder and raising Plow.



# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: PLOW FLOAT FUNCTION - ELECTRICAL

What Happens:

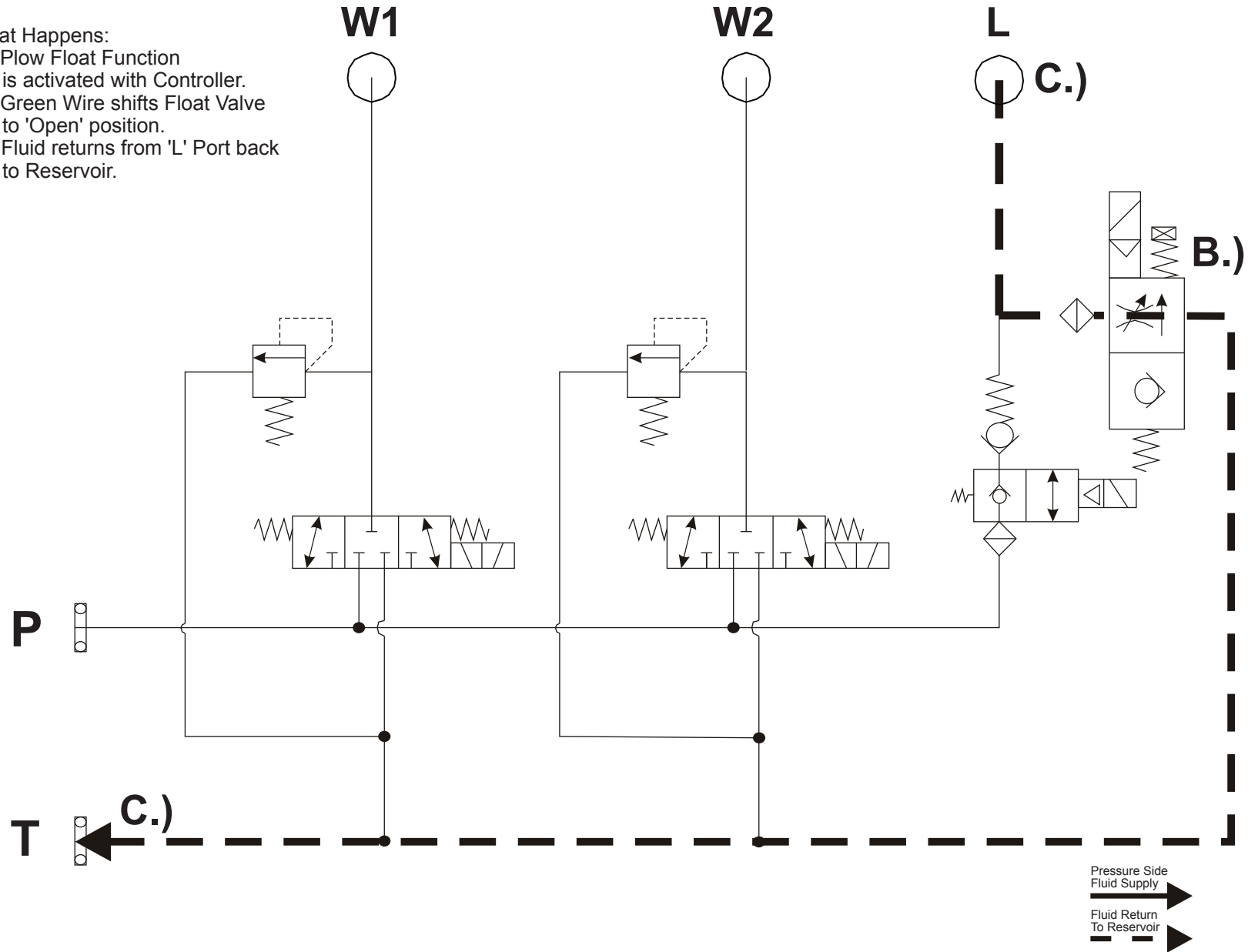
- A.) Ignition 'On' energizes the Controller Power source sending 12vdc into the Controller. Touch Pad Power Switch must be in the 'On' position.
- B.) Pushing the 'Plow Float' Button energizes the Green 'Float' Wire.
- C.) The Green 'Plow Float' Wire sends 12vdc power to the Plow Float Valve Coil.
- D.) See Next Page for Hydraulic Flow Chart.



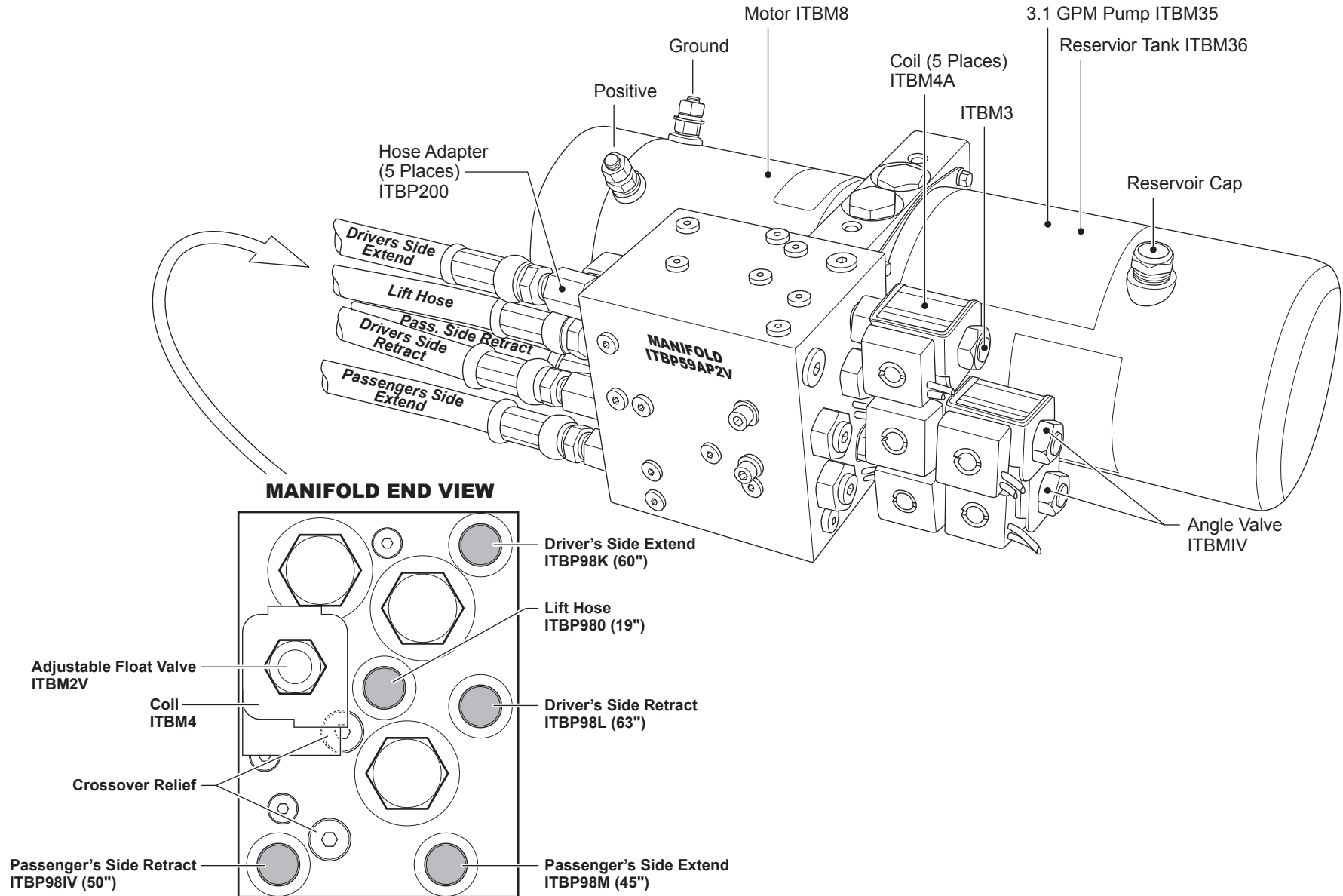
# SNO-PRO V-PLOW w/SINGLE ACTING CYLINDERS & SPRING RETURN: PLOW FLOAT FUNCTION - HYDRAULIC

What Happens:

- A.) Plow Float Function is activated with Controller.
- B.) Green Wire shifts Float Valve to 'Open' position.
- C.) Fluid returns from 'L' Port back to Reservoir.



# POLY TRIP EDGE V-PLOW ELECTRIC/HYDRAULIC POWER UNIT WITH MANIFOLD

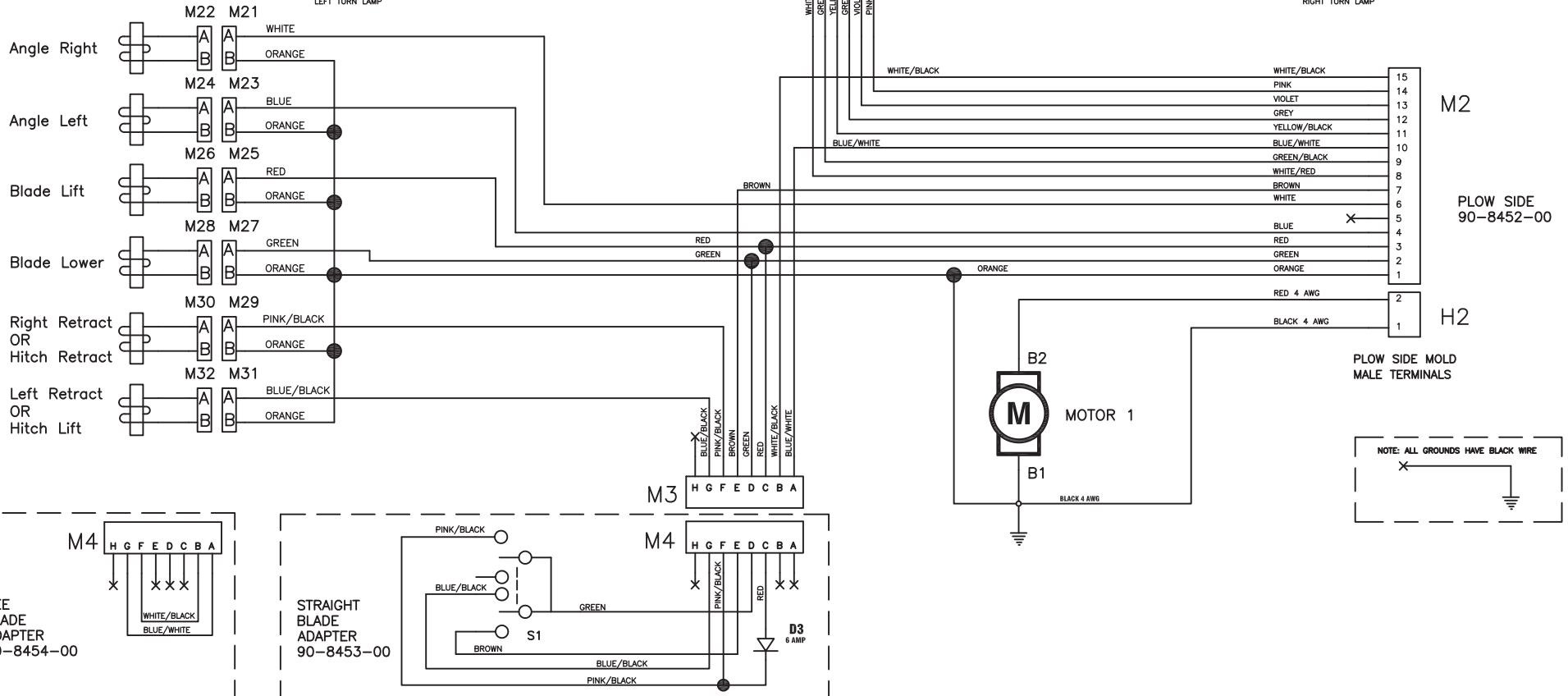
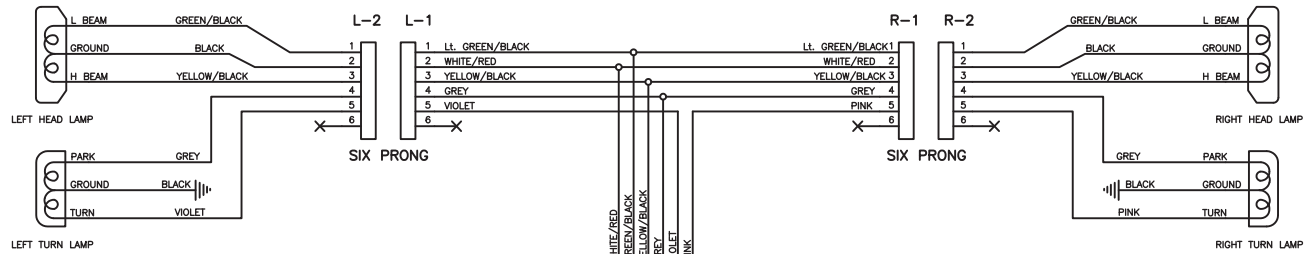




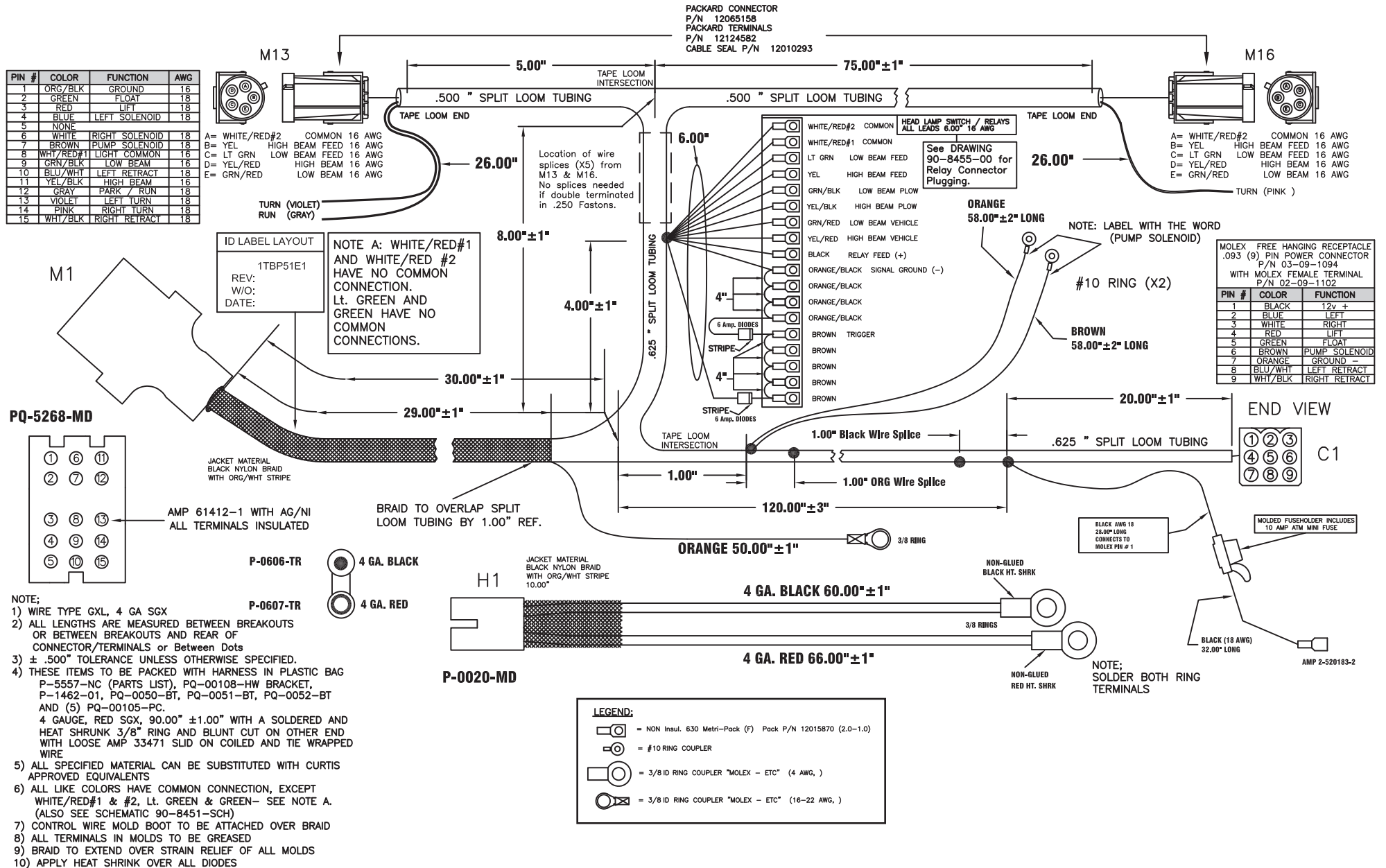
# CURTIS UNIVERSAL PLOW SIDE HARNESS SCHEMATIC P/N: 1UHP

L-1, L-2, R-1 & R-2 - 6-Prong Molded

1. LOW BEAM (Lt. GREEN/BLACK) = (E)
2. WHITE/RED (COMMON) = (A)
3. HIGH BEAM (YELLOW/BLACK) = (F)
4. PARK (GREY) = (D)
5. LEFT/RIGHT TURN (VIOLET/PINK) = (C)
6. NOT USED = (B)

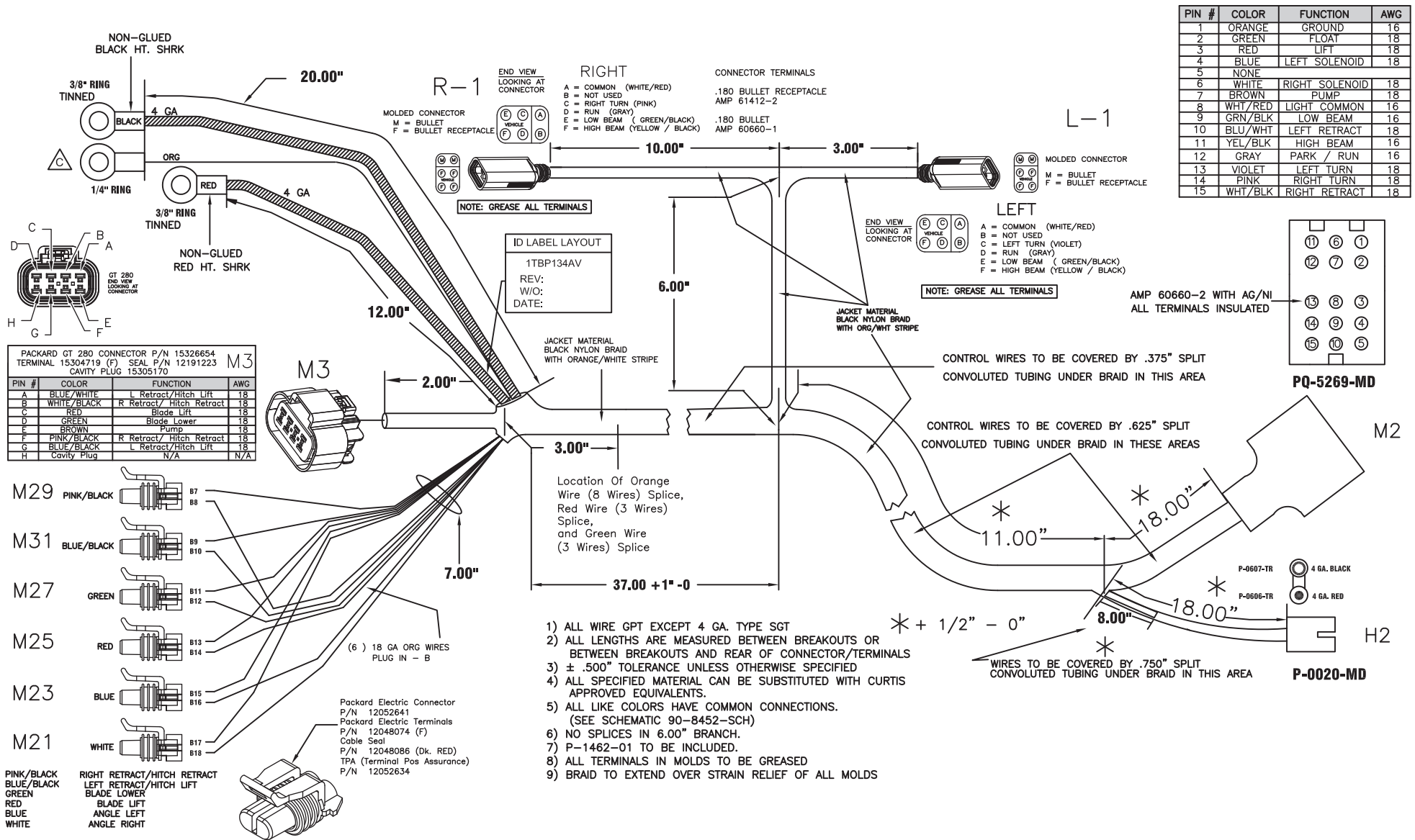


# CURTIS UNIVERSAL VEHICLE SIDE HARNESS LAYOUT P/N: 1UHT





# CURTIS UNIVERSAL PLOW SIDE HARNESS LAYOUT P/N: 1UHP



PIN #	COLOR	FUNCTION	AWG
1	ORANGE	GROUND	18
2	GREEN	FLOAT	18
3	RED	LIFT	18
4	BLUE	LEFT SOLENOID	18
5	NONE		
6	WHITE	RIGHT SOLENOID	18
7	BROWN	PUMP	18
8	WHT/RED	LIGHT COMMON	18
9	GRN/BLK	LOW BEAM	18
10	BLU/WHT	LEFT RETRACT	18
11	YEL/BLK	HIGH BEAM	18
12	GRAY	PARK / RUN	18
13	VIOLET	LEFT TURN	18
14	PINK	RIGHT TURN	18
15	WHT/BLK	RIGHT RETRACT	18

PACKARD GT 280 CONNECTOR P/N 15326654  
TERMINAL 15304719 (F) SEAL P/N 12191223  
CAVITY PLUG 15305170

PIN #	COLOR	FUNCTION	AWG
A	BLUE/WHITE	L Retract/Hitch Lift	18
B	WHITE/BLACK	R Retract/Hitch Retract	18
C	RED	Blade Lift	18
D	GREEN	Blade Lower	18
E	BROWN	Pump	18
F	PINK/BLACK	R Retract/Hitch Retract	18
G	BLUE/BLACK	L Retract/Hitch Lift	18
H	Cavity Plug	N/A	N/A

M	COLOR	FUNCTION	AWG
M29	PINK/BLACK		B7, B8
M31	BLUE/BLACK		B9, B10
M27	GREEN		B11, B12
M25	RED		B13, B14
M23	BLUE		B15, B16
M21	WHITE		B17, B18

Packard Electric Connector P/N 12052641  
Packard Electric Terminals P/N 12048074 (F)  
Cable Seal P/N 12048086 (Dk. RED)  
TPA (Terminal Pos Assurance) P/N 12052634

RIGHT RETRACT/HITCH RETRACT  
LEFT RETRACT/HITCH LIFT  
BLADE LOWER  
BLADE LIFT  
ANGLE LEFT  
ANGLE RIGHT

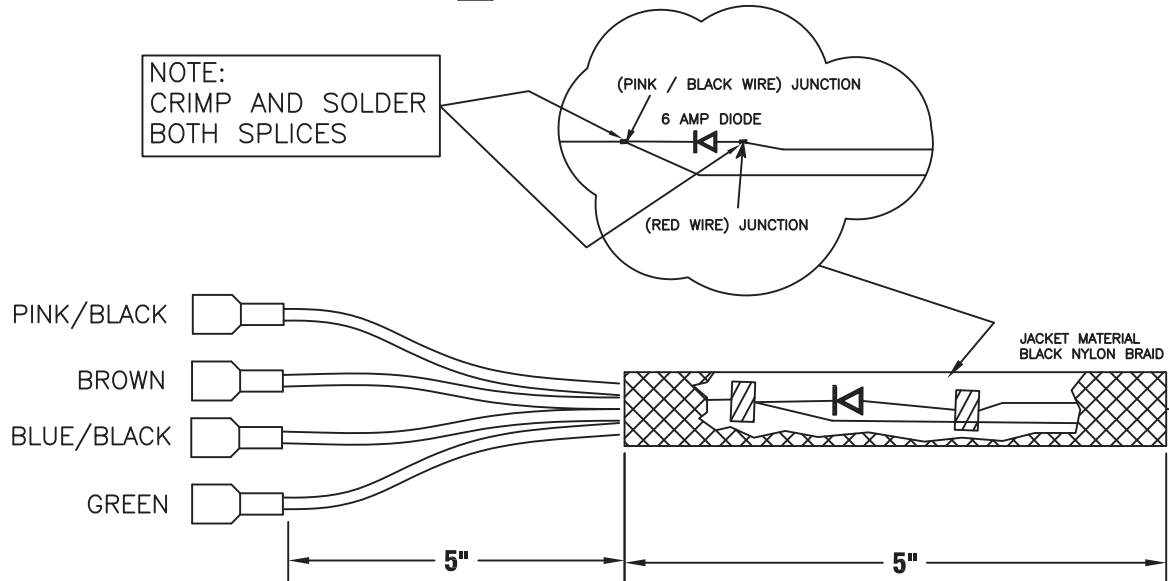
- 1) ALL WIRE GPT EXCEPT 4 GA. TYPE SGT
- 2) ALL LENGTHS ARE MEASURED BETWEEN BREAKOUTS OR BETWEEN BREAKOUTS AND REAR OF CONNECTOR/TERMINALS
- 3) ± .500" TOLERANCE UNLESS OTHERWISE SPECIFIED
- 4) ALL SPECIFIED MATERIAL CAN BE SUBSTITUTED WITH CURTIS APPROVED EQUIVALENTS.
- 5) ALL LIKE COLORS HAVE COMMON CONNECTIONS. (SEE SCHEMATIC 90-8452-SCH)
- 6) NO SPLICES IN 6.00" BRANCH.
- 7) P-1462-01 TO BE INCLUDED.
- 8) ALL TERMINALS IN MOLDS TO BE GREASED
- 9) BRAID TO EXTEND OVER STRAIN RELIEF OF ALL MOLDS

# CURTIS PLOW SIDE HARNESS JACK ADAPTER FOR HYDRAULIC JACK EQUIPPED SNOWPLOWS P/N: 1UHJA

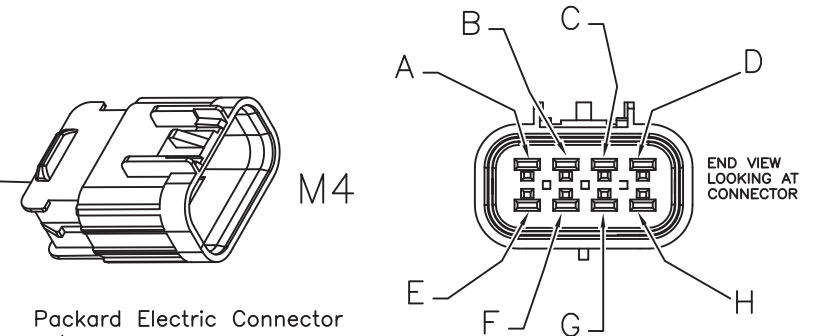
**LEGEND:**

 = Insul. FEMALE COUPLERS .250 FASTON (Single)

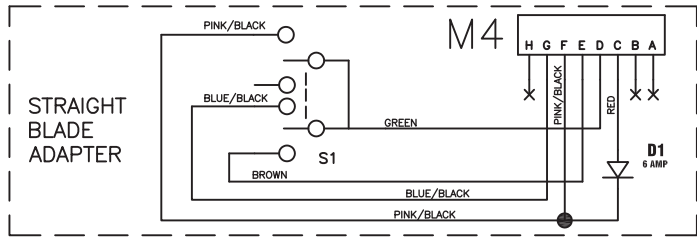
**NOTE:**  
CRIMP AND SOLDER  
BOTH SPLICES



PACKARD GT 280 CONNECTOR P/N 15326655				M4
TERMINAL 15304731 (M) SEAL P/N 12191223				
CAVITY PLUG 15305170				
PIN #	COLOR	FUNCTION	AWG	
A	Cavity Plug	N/A	N/A	
B	Cavity Plug	N/A	N/A	
C	RED	LIFT	18	
D	GREEN	LOWER	18	
E	BROWN	PUMP	18	
F	PINK/BLACK	Hitch Retract	18	
G	BLUE/BLACK	Hitch Lift	18	
H	Cavity Plug	N/A	N/A	



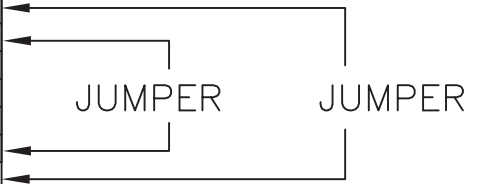
Packard Electric Connector  
P/N 15326655  
Packard Electric Terminals  
P/N 15304731 (M)  
Cable Seal  
P/N 12191223 (TAN)  
CAVITY PLUG 15305170



- 1) ALL WIRE GPT
- 2) ALL LENGTHS ARE MEASURED BETWEEN BREAKOUTS OR BETWEEN BREAKOUTS AND REAR OF CONNECTOR/TERMINALS
- 3) ± .500" TOLERANCE UNLESS OTHERWISE SPECIFIED
- 4) ALL SPECIFIED MATERIAL CAN BE SUBSTITUTED WITH CURTIS APPROVED EQUIVALENTS.

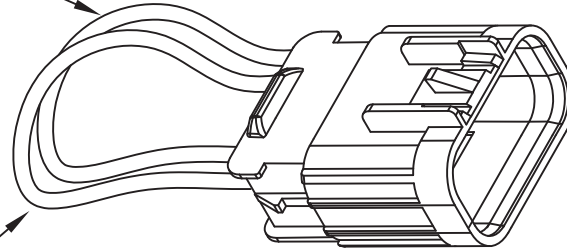
# CURTIS PLOW SIDE HARNESS V-PLOW ADAPTER P/N: 1UHVA

PACKARD GT 280 CONNECTOR P/N 15326655			
TERMINAL 15304731 (M) SEAL P/N 12191223			
CAVITY PLUG 15305170			
M4			
PIN #	COLOR	FUNCTION	AWG
A	BLUE/WHITE	L Retract	18
B	WHITE/BLACK	R Retract	16
C	Cavity Plug	N/A	N/A
D	Cavity Plug	N/A	N/A
E	Cavity Plug	N/A	N/A
F	WHITE/BLACK	R Retract	16
G	BLUE/WHITE	L Retract	18
H	Cavity Plug	N/A	N/A

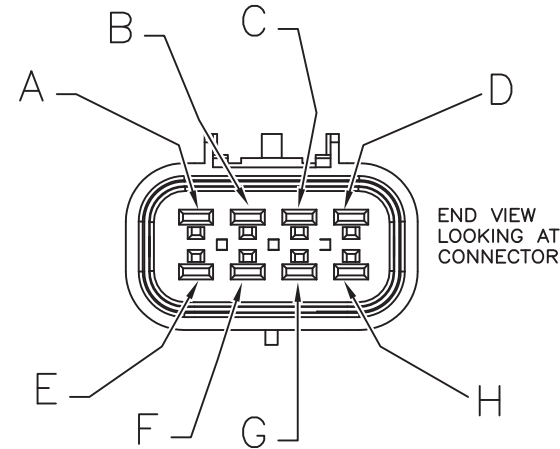


BLUE/WHITE 3.5"

WHITE/BLACK 3.5"



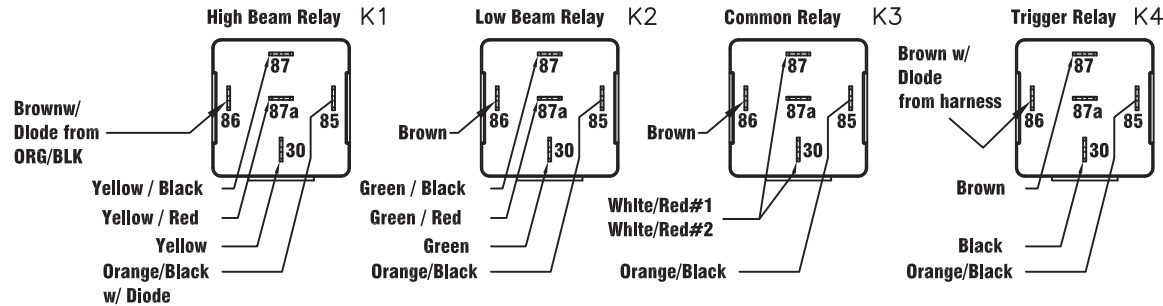
M4



Packard Electric Connector  
P/N 15326655  
Packard Electric Terminals  
P/N 15304731 (M)  
Cable Seal  
P/N 12191223 (TAN)  
CAVITY PLUG 15305170

- 1) ALL WIRE GPT
- 2) ALL LENGTHS ARE MEASURED BETWEEN BREAKOUTS OR BETWEEN BREAKOUTS AND REAR OF CONNECTOR/TERMINALS
- 3) ± .500" TOLERANCE UNLESS OTHERWISE SPECIFIED
- 4) ALL SPECIFIED MATERIAL CAN BE SUBSTITUTED WITH CURTIS APPROVED EQUIVALENTS.

# CURTIS VEHICLE SIDE HARNESS RELAY CONNECTOR CONNECTIONS

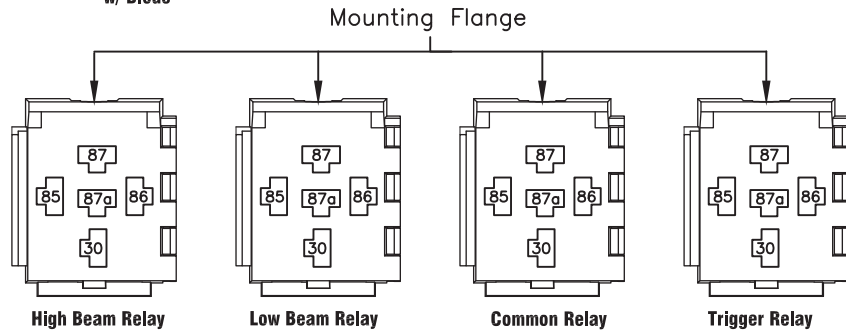


FRONT VIEW  
 LOOKING AT  
 PINNING FACE  
 (X4)

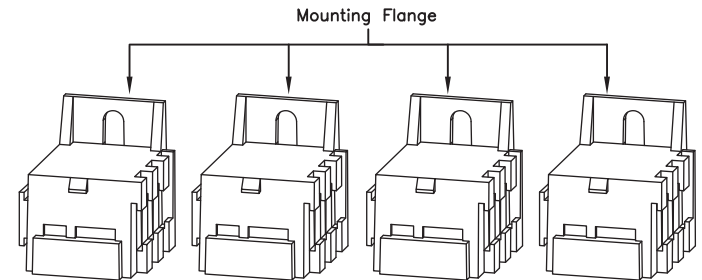
All Terminals Plug To Relay Connectors  
 (X4 Shown Below)

Relay Connector  
 P/N 12033871  
 TPA  
 P/N 12033872

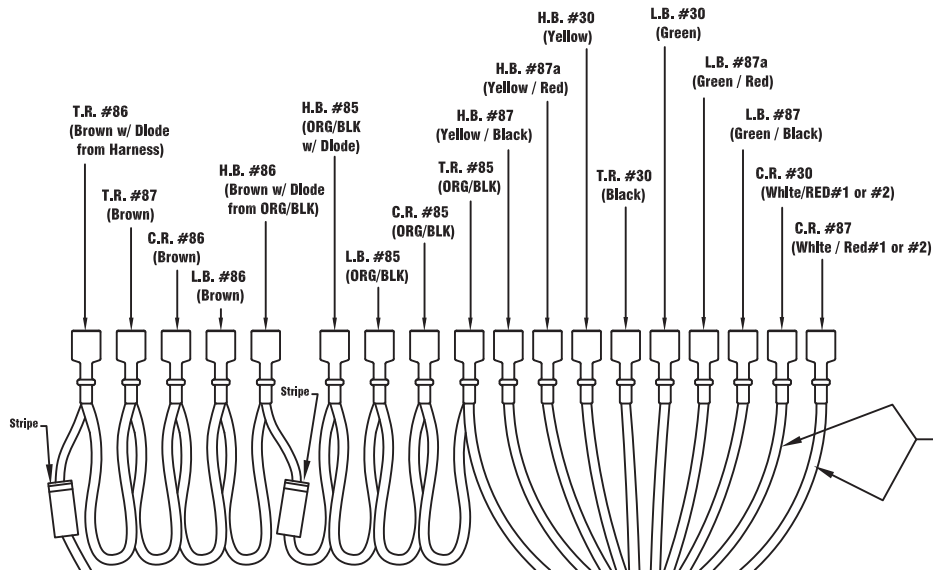
No Markings on Relay Connectors  
 -Use Markings on Relays to Determine  
 Proper Plugging of Relay Connectors



FRONT VIEW  
 LOOKING AT  
 PINNING FACE  
 (X4)



Ref. Drawing # 90-8451-00  
 Curtis Vehicle Side ALT with 4 Relay



EITHER WHITE/RED WIRE  
 MAY PLUG TO EITHER C.R. #30  
 or C.R. #87  
 WHITE/RED#1 & WHITE/RED#2  
 ARE INTERCHANGEABLE

Vehicle Side Harness  
 Plow Headlights / Vehicle Headlights Terminals



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