

TROUBLESHOOTER GUIDE:

POSSIBLE SYMPTOMS, CAUSES AND SOLUTIONS

System covered:

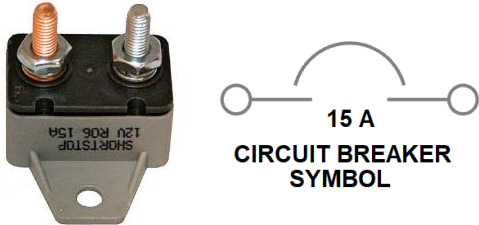
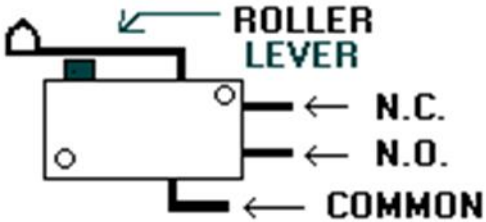
DC Lifters, Single Vacuum System with Manual control valve

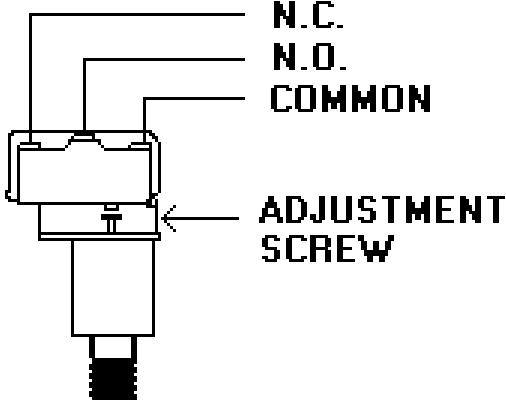


SVS MANUAL VALVE
(FITTINGS NOT SHOWN)


Wiring diagram: 705-W01 [W01]

KEEP FOR FUTURE REFERENCE

SYMPTOM	CAUSE(S)	SOLUTION
LEAKAGE	ANY PART OF A VACUUM SYSTEM MAY LEAK. TYPICAL CAUSES ARE CUT/DAMAGED VACUUM PADS AND LINES, CRACKED OR BROKEN FITTINGS, LEAKING CHECK VALVE OR FILTER.	LOCATE AND REPAIR LEAK(S). REFER TO THE APPROPRIATE LEAK TESTING GUIDE FOR YOUR LIFTER.
LIFTER WILL NOT TURN ON	CHECK FOR BROKEN, CUT OR LOOSE WIRES.	LOCATE AND REPAIR WIRING AS NEEDED. WIRING DIAGRAM INCLUDED IN THE BACK OF THIS DOCUMENT.
	VERIFY THAT THE BATTERY IS CHARGED. NOTE: IF BATTERY IS NOT CHARGED, CHECK THE OUTPUT OF THE CHARGER TO VERIFY THAT IT IS NOT THE CAUSE.	CHARGE OR REPLACE BATTERY. REPLACE CHARGER IF DEFECTIVE.
	VERIFY THE CIRCUIT BREAKER IS NOT TRIPPED. 	CHECK INCOMING POWER TO & FROM BREAKER, AND REPLACE IT IF NEEDED. REFER TO THE WIRING DIAGRAM IN THE BACK OF THIS DOCUMENT. NOTE: IF THE BATTERY GAUGE REGISTERS WHEN YOU PRESS THE BATTERY TEST BUTTON, THE BREAKER IS FUNCTIONING PROPERLY. IF THE BREAKER TRIPS ONLY WHEN THE LIFTER IS ATTACHED, AN ELECTRICAL SHORT IS INDICATED.
	VERIFY THAT THE MICRO-SWITCH IS FUNCTIONING PROPERLY.	DISCONNECT BATTERY. CHECK THAT THE MICRO-SWITCH ROLLER LEVER HAS SLIGHT SPRING TENSION AND THAT, IF YOU PUSH IN ON THE LEVER & RELEASE IT, YOU CAN HEAR AN AUDIBLE 'CLICK' WHEN THE MICRO-SWITCH ENGAGES AND DISENGAGES. IF THE SWITCH DOES NOT MEET BOTH THESE CONDITIONS, REPLACE THE MICRO-SWITCH.
VERIFY MICRO-SWITCH ADJUSTMENT. 	IF THE SWITCH IS FUNCTIONING, CHECK THAT THE ROLLER LEVER IS PROPERLY ADJUSTED: SLOWLY PULL OUT ON THE VALVE HANDLE AND LISTEN FOR THE SWITCH TO 'CLICK' WHEN THE SHAFT STOP ENGAGES THE ROLLER LEVER. ADJUST THE LEVER AS NEEDED (TYPICALLY BY BENDING IT SLIGHTLY) TO PROVIDE PROPER ENGAGEMENT. WHEN THE ROLLER LEVER IS NOT PRESSED AGAINST THE SWITCH PLUNGER (CONTROL VALVE IN RELEASE POSITION), THE SWITCH IS CLOSED BETWEEN THE COMMON & N.C. CONTACTS; WHEN THE ROLLER LEVER PRESSES AGAINST THE SWITCH PLUNGER (CONTROL VALVE IN APPLY POSITION), THE SWITCH IS CLOSED BETWEEN THE COMMON & N.O. CONTACTS.	

<p>LIFTER WILL NOT TURN ON (CONTINUED)</p>	<p>VERIFY THAT THE VACUUM SWITCH IS FUNCTIONING PROPERLY.</p>  <p>N.C. N.O. COMMON</p> <p>ADJUSTMENT SCREW</p> <p><i>NOTE: WITHOUT VACUUM APPLIED, THE SWITCH IS CLOSED BETWEEN THE COMMON & N.O. CONTACTS; WHEN THE SET VACUUM LEVEL IS REACHED, THE SWITCH IS CLOSED BETWEEN THE COMMON & N.C. CONTACTS.</i></p>	<p>THE VACUUM SWITCH OPERATES OFF A DIAPHRAGM LOCATED IN THE MAIN HOUSING; THIS PUSHES ON THE ADJUSTMENT SCREW (1/4" HEX SCREW) LOCATED BETWEEN THE DIAPHRAGM HOUSING AND THE CONTACT BLOCK.</p> <p>THE ACTION OF THE ADJUSTMENT SCREW PUSHING AGAINST OR PULLING AWAY FROM THE CONTACT BLOCK PLUNGER IS WHAT CAUSES THE SWITCHING ACTION.</p> <p>VERIFY THAT THE ADJUSTMENT SCREW IS MAKING GOOD CONTACT WITH THE CONTACT BLOCK PLUNGER. IF NEEDED, MOVE THE SCREW CLOSER TO THE PLUNGER BY TURNING THE ADJUSTMENT SCREW COUNTER-CLOCKWISE (WHEN VIEWING THE VACUUM SWITCH FROM THE END WITH ELECTRICAL CONNECTORS). FOR ADDITIONAL INFORMATION ON ADJUSTING THE VACUUM SWITCH, PLEASE REFER TO THE MAINTENANCE SECTION OF YOUR INSTRUCTION OR SERVICE MANUAL.</p>
<p>AT THIS POINT, IF ALL THE PREVIOUS COMPONENTS & WIRES HAVE BEEN TESTED AND PASSED, YOU SHOULD HAVE 12 V. DC AT THE BARRIER STRIP (PUMP CONNECTIONS). IF YOUR LIFTER IS STILL NOT RUNNING, CONTACT WOOD'S POWR-GRIP FOR ADDITIONAL INFORMATION OR ASSISTANCE.</p>		
<p>LIFTER RUNS BUT WILL NOT REACH THE REQUIRED VACUUM LEVEL & DOES NOT SHUT OFF</p>	<p>VACUUM LEAK.</p>	<p>PERFORM THE VACUUM TEST DESCRIBED IN THE MAINTENANCE SECTION OF YOUR INSTRUCTION MANUAL TO DETERMINE IF YOUR LIFTER IS LEAKING.</p>
	<p>VACUUM PUMP DIAPHRAGM OR VALVES ARE WORN.</p>	<p>REFER TO THE VACUUM PUMP MAINTENANCE SECTION OF YOUR INSTRUCTION OR SERVICE MANUAL FOR ASSEMBLY / DISASSEMBLY INFORMATION.</p>
	<p>WORKING AT HIGH ELEVATION – TYPICALLY GREATER THAN 5000 FT. [1525 M] ABOVE SEA LEVEL. NOTE: VACUUM SWITCHES MAY BE RESET, BUT ANY SETTING BELOW 16" HG [-54 kPa] REDUCES THE LIFTER'S CAPACITY.</p>	<p>AS ELEVATION INCREASES, THE ACHIEVABLE VACUUM LEVEL DECREASES. CONTACT WPG FOR INFORMATION ON WHAT VACUUM LEVEL YOU CAN ACHIEVE AND HOW THIS AFFECTS CAPACITY.</p>
<p>LIFTER SHUTS OFF BEFORE REACHING REQUIRED VACUUM LEVEL</p>	<p>VACUUM SWITCH IS OUT OF ADJUSTMENT.</p>	<p>REFER TO THE MAINTENANCE SECTION OF YOUR INSTRUCTION OR SERVICE MANUAL FOR INFORMATION ON ADJUSTING YOUR VACUUM SWITCH. IF PROPER ADJUSTMENT CANNOT BE ACHIEVED, REPLACE THE SWITCH.</p>

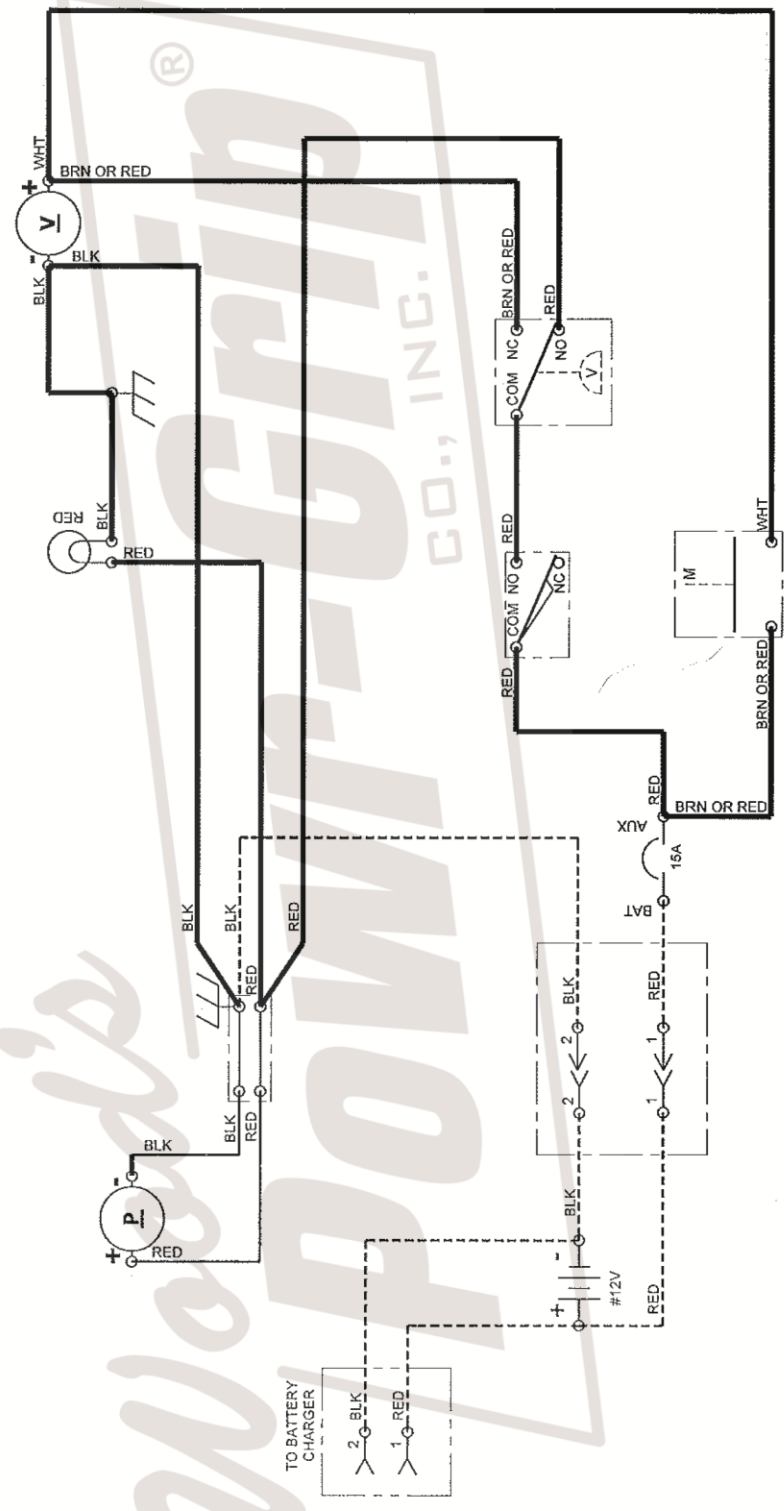
LIFTER SHUTS OFF BEFORE REACHING REQUIRED VACUUM LEVEL (CONTINUED)	VACUUM GAUGE IS DEFECTIVE. VACUUM GAUGES ARE EXPECTED TO BE ACCURATE AT 16"HG [-54 kPa] ± 0.5"HG [1.6 kPa].	CHECK GAUGE TO SEE IF NEEDLE ZEROS WHEN LIFTER IS RELEASED OR THE GAUGE SHOWS ANY INDICATION OF DAMAGE. IF NECESSARY, OBTAIN AN ADDITIONAL GAUGE TO VERIFY YOUR SYSTEM IS FUNCTIONING CORRECTLY.
LIFTER ACHIEVES GOOD VACUUM BUT DOES NOT SHUT OFF	VACUUM SWITCH IS OUT OF ADJUSTMENT, PLUGGED OR DEFECTIVE.	REFER TO THE MAINTENANCE SECTION OF YOUR INSTRUCTION OR SERVICE MANUAL FOR INFORMATION ON ADJUSTING YOUR VACUUM SWITCH.
LIFTER RUNS BUT DOES NOT GET ANY VACUUM AT ALL – VACUUM GAUGE REGISTERS 0 VACUUM	SEVERE LEAK.	VISUALLY INSPECT LIFTER FOR CUT VACUUM PADS OR LINES, CRACKED OR BROKEN FITTINGS OR FILTER. IF THE SYSTEM GENERATES NO VACUUM AT ALL, DAMAGED PARTS SHOULD BE EVIDENT.
	CHECK VALVE IS STUCK CLOSED. <i>NOTE: TYPICAL ONLY IF LIFTER HAS NOT BEEN USED FOR AN EXTENDED TIME.</i>	1) REMOVE THE VACUUM LINE FROM THE FITTINGS ATTACHED TO THE VACUUM PUMP. RUN THE LIFTER WHILE HOLDING YOUR FINGER OVER THE FITTING & CHECK WHETHER YOU CAN FEEL ANY VACUUM. 2) REMOVE CHECK VALVE (WITH FITTINGS ATTACHED) FROM THE PUMP HEAD & REPEAT THE PROCESS WITH YOUR FINGER OVER THE OPEN PORT. IF YOU FEEL A NOTICEABLE DIFFERENCE, CLEAN OR REPLACE YOUR CHECK VALVE.
	VACUUM PUMP DIAPHRAGM OR VALVES ARE WORN.	REFER TO THE VACUUM PUMP MAINTENANCE SECTION OF YOUR INSTRUCTION OR SERVICE MANUAL FOR ASSEMBLY / DISASSEMBLY INFORMATION. CHECK THAT THE DIAPHRAGM IS FLEXIBLE & FREE OF CRACKS OR TEARS. VALVE TYPE IS DEPENDENT ON PUMP MODEL.
	VACUUM GAUGE IS DEFECTIVE.	CHECK GAUGE TO SEE WHETHER IT SHOWS ANY INDICATION OF DAMAGE. IF NECESSARY, OBTAIN AN ADDITIONAL GAUGE TO VERIFY YOUR SYSTEM IS FUNCTIONING CORRECTLY.
LIFTER IS TAKING NOTICEABLY MORE TIME TO ATTACH	PAD SCREENS HAVE BECOME PLUGGED (DIRTY).	VISUALLY INSPECT PAD SCREENS. CLEAN OR REPLACE AS NEEDED.
	VACUUM FILTER HAS BECOME PLUGGED	REFER TO THE AIR FILTER MAINTENANCE SECTION OF YOUR INSTRUCTION OR SERVICE MANUAL FOR ASSEMBLY / DISASSEMBLY INFORMATION. SERVICE AS NEEDED.
	VACUUM PUMP DIAPHRAGM OR VALVES ARE WORN.	REFER TO THE VACUUM PUMP MAINTENANCE SECTION OF YOUR INSTRUCTION OR SERVICE MANUAL FOR ASSEMBLY / DISASSEMBLY INFORMATION. SERVICE AS NEEDED.

<p>LIFTER IS TAKING NOTICEABLY MORE TIME TO ATTACH (CONTINUED)</p>	<p>VACUUM PUMP EXHAUST MUFFLER HAS BECOME PLUGGED.</p>	<p>REMOVE THE MUFFLER FROM THE PUMP HEAD (THE FITTING OPPOSITE THE SIDE THE HOSES CONNECT TO). ATTACH THE LIFTER. IF THERE IS A NOTICEABLE IMPROVEMENT, REPLACE THE MUFFLER.</p>
<p>LIFTER ATTACHES NORMALLY, BUT IS TAKING NOTICEABLY MORE TIME TO RELEASE</p>	<p>VALVE BLOCK EXHAUST VENT PLUG HAS BECOME PLUGGED.</p> 	<p>THIS IS THE SINTERED BRONZE VENT PLUG LOCATED BY THE MICRO-SWITCH. IF THIS APPEARS TO BE PLUGGED, REMOVE THE VENT, AND THEN REATTACH AND RELEASE THE LIFTER. IF THERE IS A NOTICEABLE IMPROVEMENT, REPLACE THE VENT PLUG. EXCEPT FOR THE PURPOSE OF THIS TEST, DO NOT OPERATE THE LIFTER WITHOUT THE VENT PLUG INSTALLED.</p>

WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW. LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE. --- 14AWG - - - - - 16AWG - - - - - 18AWG		DIRECTORY: STANDARD FILE (SHEET): 705-W01 [W01]	H:\Working\STD\705-DCRUECN 3011\1
DRAWN: B. VANDYKE CHECKED: <i>CR</i> APPROVED: <i>Cham</i>	DATE: 12/16/1996 12-11-12 12-12-12	THIS DRAWING IS THE PROPERTY OF WOOD'S POWER-GRIP CO., INC. , LAUREL, MONTANA U.S.A. IT IS LOANED WITH THE UNDERSTANDING THAT NEITHER IT NOR ANY INFORMATION CONTAINED THEREIN WILL BE COPIED, PUBLISHED OR TRANSMITTED TO OTHERS WITHOUT EXPRESS WRITTEN PERMISSION.	
1 SCFM DC VACUUM PACKAGE N/A		1 SCFM DC VACUUM PACKAGE WIRING DIAGRAM D705-W01 [W01]	
SIZE: A SCALE: NONE REV: 7	ECN NUMBER: 3011 DATE: 11/14/2012	BY: RAS	EST. WEIGHT: N/A



NOTES:
 1) 16AWG OR 20AWG WIRE, BASED ON VACUUM PUMP USED.



ADDITIONAL INFORMATION

- 1) When requesting information on a particular lifter, please have the model number and serial number available.
- 2) **CAUTION:** Always proceed with caution when opening enclosures containing electrical wiring. Wiring is often connected to components in the cover, as well as the enclosure itself.
- 3) In some cases a leak may be identified in an assembly (such as a filter or valve assembly) but the actual cause is not apparent (neither the filter nor the valve itself are the cause). In these cases, the leak may be caused by a cracked fitting. Cracks in fittings may be visible but are often virtually impossible to locate except under factory test conditions. They may appear as dark lines along the seam of female fittings, along the hex nut section of female hose nipples, or at the base of the threads on male fittings. If a leak is traced to an assembly and the cause is not visibly apparent, it may be best to simply replace the whole assembly rather than a single component.
- 4) If any metal fittings are disassembled during testing, **always** apply thread sealant (Teflon tape or similar product) to the male threads prior to reassembly, in order to avoid vacuum leaks.

For plastic fittings, use only Teflon tape. Liquid or paste sealants must not be used on plastic fittings because they may damage plastic parts.

- 5) When assembling fittings, do not over-tighten. After first applying adequate thread sealant or tape, the fitting should be finger-tightened as much as possible.

A straight fitting should be tightened no more than two additional revolutions with a wrench.

An elbow fitting should be tightened no more than one and one-half additional revolutions with a wrench.

Once an elbow or tee fitting is tightened with a wrench, the fitting should be aligned clockwise with a wrench.

- 6) Please note: The information gathered when performing a vacuum test is only valid if the tools used to perform the test are accurate. Be sure that the tools you use are capable of completely sealing your system.

If needed, test equipment is available from Wood's Powr-Grip Co.

For further suggestions or information, please contact our staff at:

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ALL LIFTERS MUST BE TESTED AFTER MAINTENANCE
SEE INSTRUCTION MANUAL

