KEEP FOR FUTURE REFERENCE

INSTRUCTIONS MANUAL

908 W. Main • P.O. Box 368
Laurel, MT USA 59044
800-548-7341 (phone)
406-628-8231 (phone)
406-628-8354 (fax)
www.WPG.com

INTENDED FOR USE BY SKILLED PROFESSIONALS • READ AND UNDERSTAND BEFORE INSTALLING AND USING

DC VACUUM BACK-UP SYSTEM

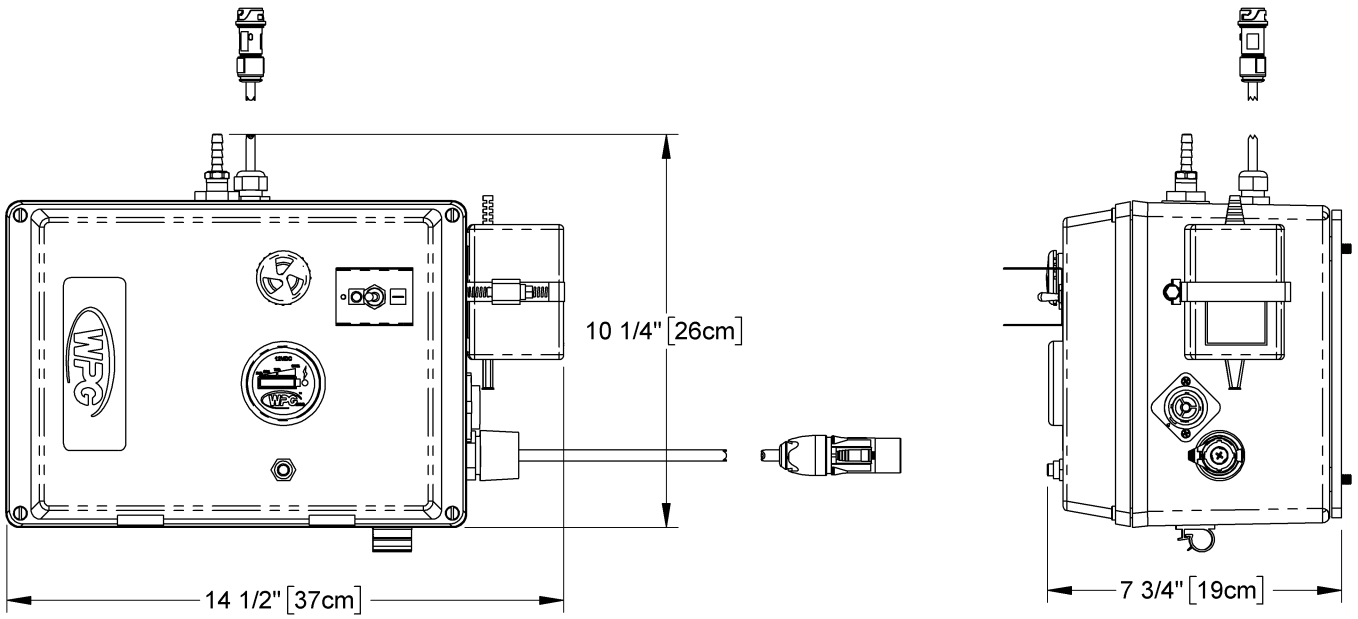
Stock numbers: 93756BM, 93756CM, 93756DM, 93756EM, 93756FM

TABLE OF CONTENTS

SPECIFICATIONS

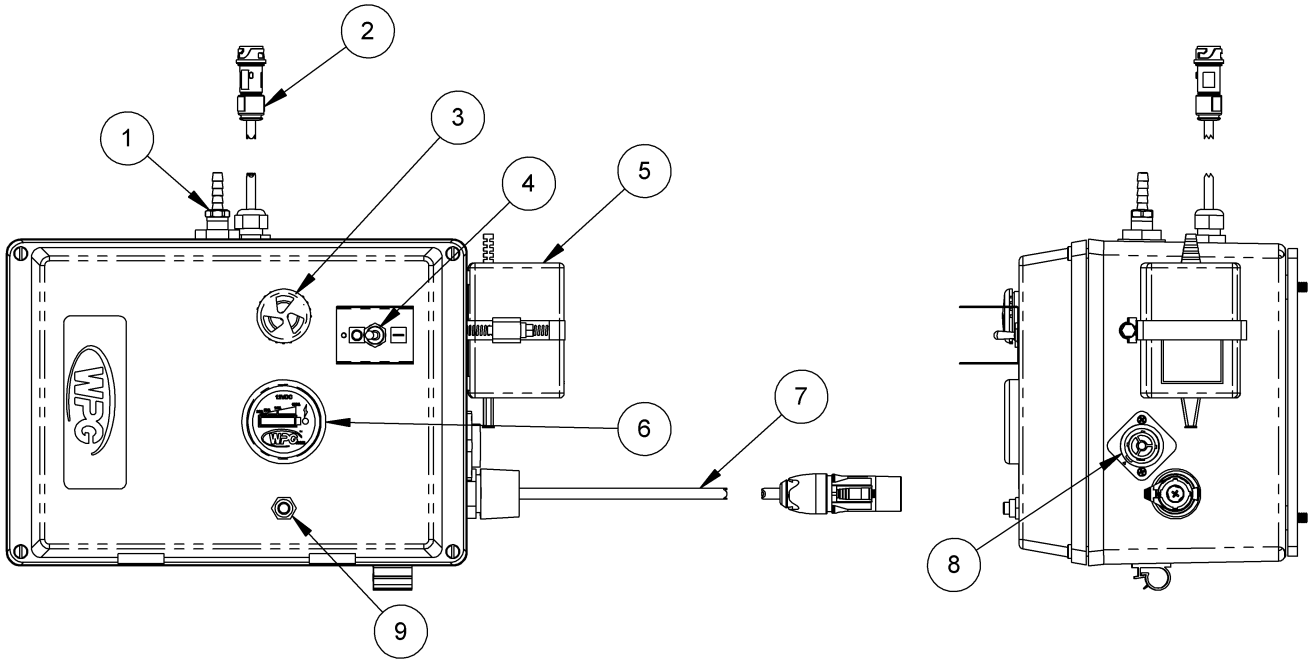
Product Description	The DC Vacuum Back-Up System is an auxiliary vacuum generating system with an independent power source, designed to maintain vacuum if the primary system fails to do so. Whenever the Back-Up System is activated, it monitors the vacuum level in the vacuum reservoir. If vacuum falls below the level specified for lifting the load, the Back-Up System's pump engages until vacuum is restored.
Stock Numbers	93756BM (center mount, with separate power switch) 93756CM (side mount, direct wired) 93756DM (side mount, with separate power switch) 93756EM (side mount, direct wired, with protective guard) 93756FM (center mount, direct wired)
Product Weight	30 lbs [14 kg] *Note: This weight should be added to the Lifter Weight when determining hoisting equipment capacity.*
Power Source	12 volts DC, 3.5 amps
Battery Capacity	7 amp-hours

Note: Before installing and using the DC Vacuum Back-Up System read, understand and follow the lifter's OPERATING INSTRUCTIONS except when directed differently in these option instructions. Intended use, inspections, tests and maintenance in the lifter's instructions should be understood to include options, when relevant. All warnings in the "SAFETY" section, as well as alerts in other sections, are applicable when using the DC Vacuum Back-Up System.



WITH A POWER SWITCH

Features shown here are underlined on their first appearance in each section following.



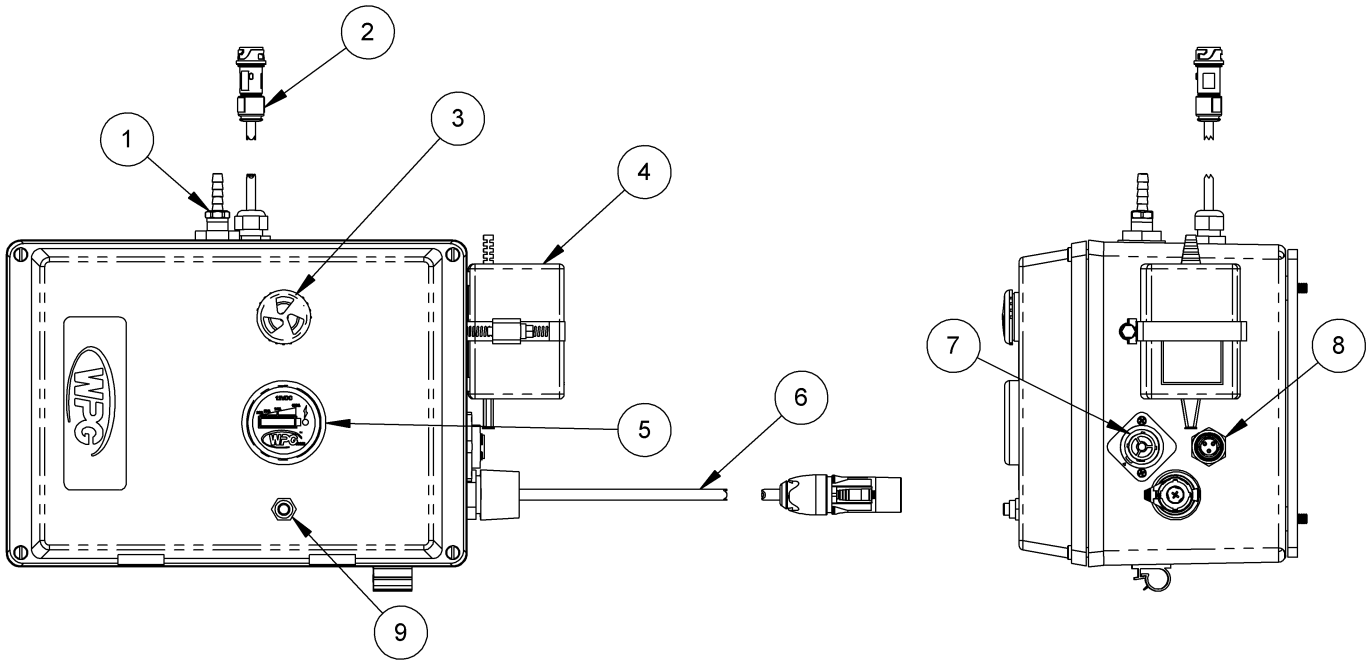
1	BARBED VACUUM HOSE FITTING	2	ELECTRICAL CONNECTORS (for the Battery Charger)	3	LOW VACUUM WARNING LIGHT/BUZZER
4	POWER SWITCH	5	BATTERY CHARGER	6	BATTERY GAUGE
7	ELECTRICAL CONNECTOR (for the Battery)	8	ELECTRICAL SOCKET (for the Battery)	9	BATTERY TEST BUTTON

Within enclosure: BATTERY, VACUUM PUMP, VACUUM SWITCH

For information about specific parts, see “REPLACEMENT PARTS”.

WIRED TO THE LIFTER'S POWER SWITCH

Features shown here are underlined on their first appearance in each section following.



1	BARBED VACUUM HOSE FITTING	2	ELECTRICAL CONNECTORS (for the Battery Charger)	3	LOW VACUUM WARNING LIGHT/BUZZER
4	BATTERY CHARGER	5	BATTERY GAUGE	6	ELECTRICAL CONNECTOR (for the Battery)
7	ELECTRICAL SOCKET (for the Battery)	8	ELECTRICAL CONNECTOR (to the lifter's power switch)	9	BATTERY TEST BUTTON

Within enclosure: BATTERY, VACUUM PUMP, VACUUM SWITCH

For information about specific parts, see "REPLACEMENT PARTS".

INSTALLATION

This installation should be performed by qualified service personnel.

1) Remove the DC Vacuum Back-Up System from its packaging.
2) Confirm the lifter is in good working order before installing the Back-Up System (see "INSPECTIONS and TESTS" and "MAINTENANCE" in the lifter's *OPERATING INSTRUCTIONS*).
3) Identify a mounting location where the Warning Buzzer will not interfere with lifter operation.[1]
4) Using the mounting plate (fig. 4A) as a template, drill mounting holes and tap them as necessary to receive two provided 1/4-20 flat head mounting screws.

   Note: If necessary, remove the cover of the Back-Up System enclosure and interior screws, to access the mounting plate.

4A

5) Mount the Back-Up System securely on the lifter with the two flat head screws.
6) Locate the vacuum hose connecting to the lifter's vacuum reservoir.[2] Cut it and insert the 1/4" barbed tee fitting (fig. 6A), to splice the hose together and connect to the vacuum hose leading to the Back-Up System.

6A

1..... If necessary, consult the lifter's manufacturer for appropriate locations to install the DC Vacuum Back-Up System.

2..... Hose must have enough flexibility and space to allow a new fitting to be inserted.

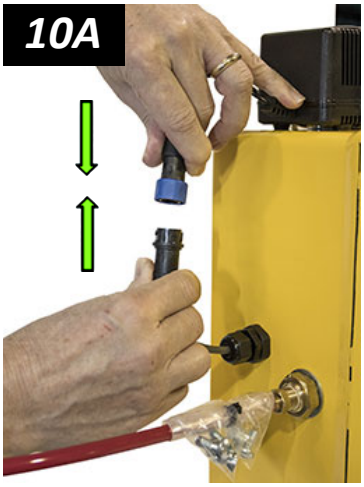
Securely position vacuum hose to avoid damage during lifter operation.

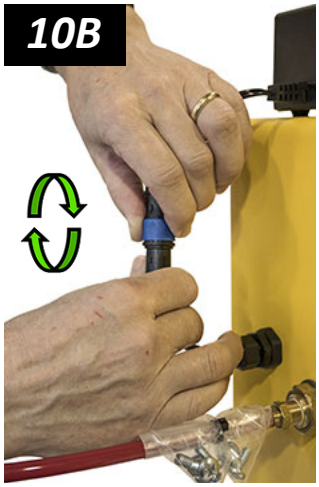
7) Route the vacuum hose from the tee fitting to the Back-Up System. Then attach the free end of the vacuum hose to the barbed vacuum hose fitting (fig. 7A).

8) If the Back-Up System will be wired directly to the lifter's power switch, connect the electrical connector to the lifter's power switch according to the wiring diagram marked "REMOTE ON/OFF".[1] If not, skip to step 9.

9) Plug the electrical connector for the battery into the electrical socket for the battery (figs. 9A-B).

10) Connect the electrical connectors for the battery charger (figs. 10A-B).





11) Perform the "BACK-UP FUNCTION TEST". Then reinstall the enclosure cover.

1..... To view the wiring diagram, go to *"ENGINEERING DRAWINGS"* at the end of this booklet.

BEFORE USING THE BACK-UP SYSTEM

Checking the Battery

Use the battery gauge to determine whether the battery needs to be charged (see "BATTERY RECHARGE").[1]

Always check DC Vacuum Back-Up System's battery energy at the start of each work day.

- While the DC Vacuum Back-Up System is powered up (see "TO USE THE BACK-UP SYSTEM"), the battery gauge automatically shows battery energy.[2]
- While the DC Vacuum Back-Up System is ***not*** powered up, use the battery test button to check the battery energy (figs. 1A-B).[3]

Do not rely on Back-Up System unless its battery gauge shows in the green range.

1A

1B

1..... If the vacuum pump is running or the battery charger is connected to an AC power source, the battery gauge will show an inaccurate energy level.

2..... After the pump stops running, the battery gauge requires a few moments to stabilize before it shows an accurate energy level.

3..... If the lifter has not been used since the battery was charged, the battery gauge may falsely show a high energy level. This "surface charge" dissipates after the pump runs for about 1 minute, allowing the gauge to show accurate energy.

TO USE THE BACK-UP SYSTEM

If the DC Vacuum Back-Up System ***is equipped with a power switch,*** place the switch in the "on" position (|). If the Back-Up System ***is wired to the lifter's power switch,*** the Back-Up System automatically turns on whenever that switch is in the "on" position (|).

Use the lifter as directed in its *OPERATING INSTRUCTIONS*.

Note: When the Back-Up System is initially powered up, its low vacuum warning light/buzzer (figs. 1A-B) illuminates and sounds an alarm until the vacuum reservoir is evacuated; this is normal.[1]

1A

1B

If the lifter's vacuum generating system does not function for an extended period, the Back-Up System's vacuum pump turns on and off (along with the warning light/buzzer) as necessary to maintain sufficient vacuum for lifting. If the pump runs frequently during this time, test both the lifter's vacuum system (see the lifter's *OPERATING INSTRUCTIONS*) and the Back-Up System (see "BACK-UP FUNCTION TEST") and correct any faults before resuming normal operation of the lifter.

Do not turn off Back-Up System while lifting load, ESPECIALLY if lifter's vacuum-generating system does not function.

Any attempt to lift the load while the warning light/buzzer is activated could result in a load release and personal injury.

Do not lift load while warning light/buzzer is activated.

1..... If the lifter's vacuum reservoir is not isolated, the Back-Up System's vacuum pump and warning light/buzzer turn on each time the lifter is attached to a load. This may result in a need to charge the battery more frequently.

When the Back-Up System is Not in Use

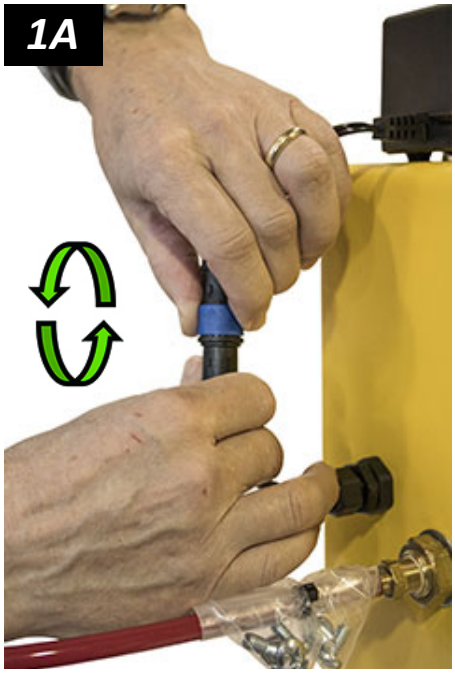
If the DC Vacuum Back-Up System ***is equipped with a power switch,*** place the switch in the "off" position (◯). If the Back-Up System ***is wired to the lifter's power switch,*** the Back-Up System automatically turns off whenever that switch is in the "off" position (◯).

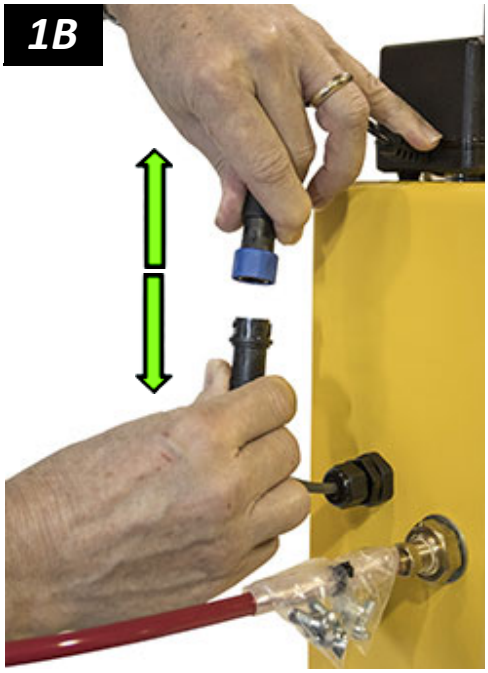
Storing the Back-Up System

Store the Back-Up System with the lifter as directed in the lifter's *OPERATING INSTRUCTIONS*, after completing the following steps:

1) Charge the Back-Up System's battery completely and every 6 months (see "Battery Recharge").

2) Disconnect the electrical connectors for the battery charger, to prevent battery discharge (figs. 1A-B).





Note: Unless service is required, the electrical connector for the battery does not need to be unplugged from the electrical socket for the battery.

BACK-UP FUNCTION TEST

Test the function of the DC Vacuum Back-Up System following every 20-40 hours of use or whenever it has been out of service for 1 month or more:

This test should be performed by qualified service personnel.

1) Attach the lifter to a test surface (see "TO ATTACH THE PADS TO A LOAD" in the lifter's *OPERATING INSTRUCTIONS)*.

   Note: Any test material used must be fully and independently supported, and capable of bearing the lifter's weight.

Do not use lifter to lift test material during test.

2) While the Back-Up System is powered up (see "TO USE THE BACK-UP SYSTEM"), disconnect the power source to the lifter's vacuum generating system.
3) Carefully break the seal between one or more vacuum pads and the test surface, to intentionally create a leak in the lifter's vacuum system.
4) Monitor the lifter's vacuum gauge: The Back-Up System's vacuum pump should turn on before vacuum becomes insufficient for lifting (see "SPECIFICATIONS" in the lifter's *OPERATING INSTRUCTIONS*).

If the Back-Up System does not function normally, adjust the vacuum switch (see "VACUUM SWITCH ADJUSTMENT") and repeat the test. If the Back-Up System still fails to function normally, correct any fault before resuming normal use.

BATTERY CHARGER TEST

*Note: Before performing this test, make sure the DC Vacuum Back-Up System is not powered up (see "WHEN THE BACK-UP SYSTEM IS NOT IN USE") **and** the battery charger is **not** plugged into an AC power source.*

1) Check the battery energy (see "Checking the Battery"). Proceed to step 2 only when the battery gauge indicates the battery is ***not*** fully charged.
2) Plug the battery charger into an appropriate AC power source (see "BATTERY RECHARGE"). Then check the battery energy again:
   - If the charger is functioning correctly, the voltage reading on the battery gauge should begin to increase when the charger is plugged in.
   - If the charger is ***not*** functioning correctly, replace it and repeat the test (see "REPLACEMENT PARTS").

BATTERY RECHARGE

Charge the battery whenever the battery gauge shows reduced energy.[1]

Caution: *Make sure the DC Vacuum Back-Up System is* ***not*** *powered up.*

> ***Make sure power source has ground fault circuit interrupter.***

Identify the input voltage marked on the battery charger (fig. 1A), and plug it in to an appropriate power source.[2]

Normally, the battery should take no more than 16 hours to charge completely. If not perform the "BATTERY CHARGER TEST".[3]

Replace the battery when necessary. Before you return the lifter to service, recheck the battery as previously directed.

1A

1..... To maximize the battery's lifespan, charge it promptly after each use.

2..... Any external power supply must conform to all applicable local codes. The DC Vacuum Back-up System is not intended for use while the charger is connected to AC power.

3..... The charger automatically reduces the charging rate when the battery is fully charged.

VACUUM SWITCH ADJUSTMENT

This maintenance should be performed by qualified service personnel.

The vacuum switch turns the vacuum pump on and off as needed to maintain sufficient vacuum for lifting the maximum load weight, as shown on the lifter's vacuum gauge.

Note: The low vacuum warning light/buzzer turns on and off along with the vacuum pump, to signal a vacuum loss.

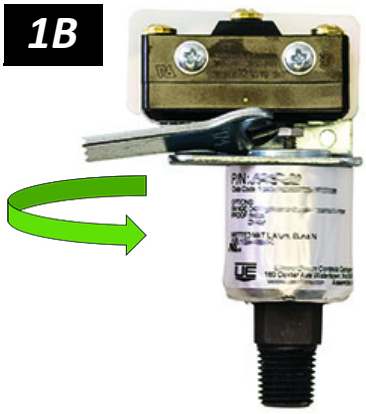
If the switch is adjusted correctly, the pump turns off only *after* vacuum becomes sufficient for lifting; and turns on again *before* vacuum becomes insufficient for lifting.[1] Adjust the vacuum switch when necessary:

Lifting capacity decreases whenever vacuum switch is adjusted to maintain lower vacuum level.

1) Use the 1/4" open-end wrench provided to turn the adjustment screw (circled in fig. 1A) about 1/6th turn at a time:
   - To *increase* the vacuum level maintained by the lifter, turn the screw *counterclockwise* (fig. 1B).
   - To *reduce* the vacuum level maintained by the lifter, turn the screw *clockwise* (fig. 1C).
2) Recheck pump activity in relation to the vacuum level.[2] Continue to make incremental adjustments until the vacuum switch is functioning correctly.

1A

1B



1C

1..... In order to observe lifter functions while vacuum is decreasing, it may be necessary to create a controlled leak in the vacuum system (see "BACK-UP FUNCTION TEST").

2..... In order to test the adjustment accurately, release the vacuum pads completely before reattaching them to a test surface.

VACUUM PUMP MAINTENANCE – MODEL DV1032102

This maintenance should be performed by qualified service personnel.

Disconnect power source before proceeding.

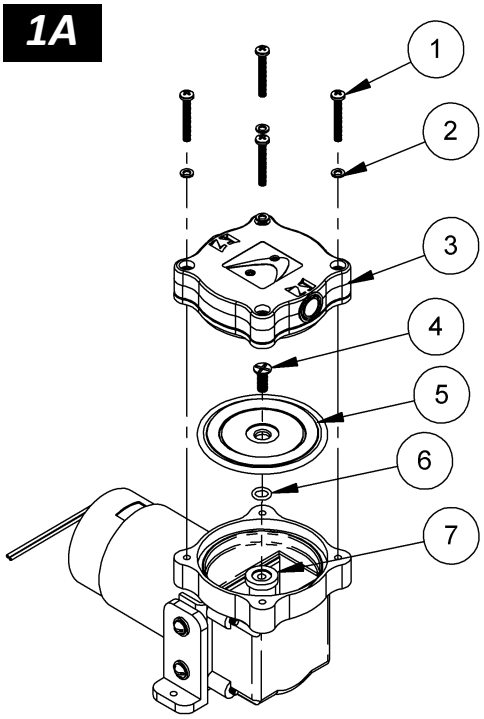
If the vacuum pump takes too long to attain full vacuum, replace the diaphragm or the head assembly as necessary to obtain acceptable pump performance (fig. 1A):

Caution: *Do not overtighten the head screws, because this may damage the pump body's threads.*

Replacing the Diaphragm

1) Remove the four head screws (item 1 in fig. 1A) and lock washers (item 2), and remove the head assembly (item 3).
2) Remove the diaphragm retaining screw (item 4), diaphragm (item 5), rubber O-ring (item 6) and flat washer (item 7).
3) Replace the flat washer, rubber O-ring, diaphragm and diaphragm retaining screw.
4) Reverse these steps to reassemble the pump.

1A



1 HEAD SCREW
2 LOCK WASHER
3 HEAD ASSEMBLY (**#66197AA**)
4 DIAPHRAGM RETAINING SCREW
5 DIAPHRAGM (**#66197AM**)
6 RUBBER O-RING
7 FLAT WASHER

Replacing the Head Assembly[1]

1) Remove the hose fittings from the head assembly, and carefully clean the threads. Be sure to note the fitting locations for reassembly.
2) Remove the four head screws (item 1 in fig. 1A), lock washers (item 2) and head assembly (item 3).
3) Replace the head assembly (reverse *step 2*).
4) Reinstall the hose fittings, using an appropriate thread sealant.

1..... ***Caution:*** Depending on the product, the head assembly (3) may be rotated to an orientation different from the one shown. When removing the head assembly, always take note of its orientation and install it the same way during reassembly.

REPLACEMENT PARTS

Stock No.	Description	Qty.
93220	Vacuum Pump – Diaphragm Type – 1-SCFM – 12 V DC	1
66197AM	Pump Diaphragm Kit	1
66197	Pump Head Assembly	1
65440	Vacuum Hose – 0.245" ID x 3/8" OD – Red	*
65211	Check Valve – 1/8 NPT	1
64707AU	Battery Charger – 240 V AC – Australian Type	1
64706EU	Battery Charger – 240 V AC	1
64702US	Battery Charger – 100 / 120 V AC	1
64664	Battery – 12 V DC – 7 Amp-Hours	1
64590	Battery Gauge	1
64460	Circuit Breaker – 15 A	1
64236	Vacuum Switch – 1/4 NPT	1
20270	1/4" Open-End Wrench (for adjusting vacuum switch)	1

* — Length as required; sold by the foot (approx 30.5 cm).

SERVICE ONLY WITH IDENTICAL REPLACEMENT PARTS,
AVAILABLE AT WPG.COM OR THROUGH AN AUTHORIZED WPG DEALER

LIMITED WARRANTY

Wood's Powr-Grip® (WPG) products are carefully constructed, thoroughly inspected at various stages of production, and individually tested. They are warranted to be free from defects in workmanship and materials for a period of one year from the date of purchase.

If a problem develops during the warranty period, follow the instructions below to obtain warranty service. If inspection shows that the problem is due to defective workmanship or materials, WPG will repair the product without charge.

Warranty does not apply when ...

- modifications have been made to the product after leaving the factory
- rubber portions have been cut or scratched during use;
- repairs are required due to abnormal wear and tear, and/or;
- the product has been damaged, misused or neglected.

If a problem is not covered under warranty, WPG will notify the customer of costs prior to repair. If the customer agrees to pay all repair costs and to receive the repaired product on a C.O.D. basis, then WPG will proceed with repairs.

To Obtain Repairs or Warranty Service

For purchases in *North America*:

Contact the WPG Technical Service Department. When factory service is required, ship the complete product – prepaid – along with your name, address and phone number to the street address listed at the bottom of this page. WPG may be reached by phone or fax numbers listed below.

For purchases in all *other localities*:

Contact your dealer or the WPG Technical Service Department for assistance. WPG may be reached by phone or fax numbers listed below.

Wood's Powr-Grip Co., Inc.	406-628-8231 (phone)
908 West Main St.	800-548-7341 (phone)
Laurel, MT 59044 USA	406-628-8354 (fax)

KEEP FOR FUTURE REFERENCE

ENGINEERING DRAWINGS

WOOD'S POWR-GRIP WPG.com

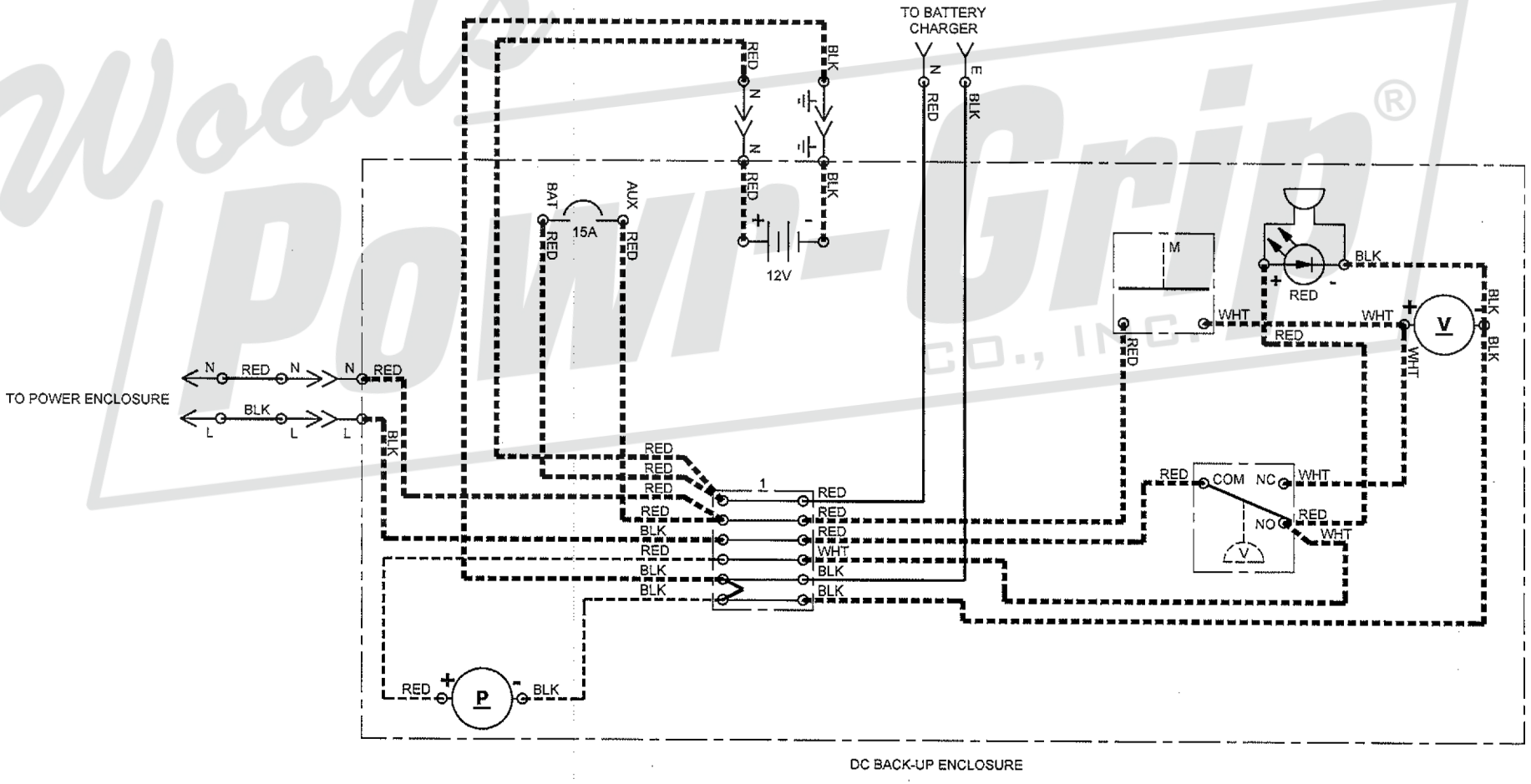
908 W. Main • P.O. Box 368
Laurel, MT USA 59044
800-548-7341 (phone) • 406-628-8231 (phone)
406-628-8354 (fax) • www.WPG.com

INTENDED FOR USE BY SKILLED TECHNICAL PROFESSIONALS • READ AND UNDERSTAND BEFORE ROUTING, WIRING AND/OR ASSEMBLING

DC VACUUM BACK-UP SYSTEM

Model numbers: See “SPECIFICATIONS” on page 3

WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW. LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE. N/A 20AWG N/A 18AWG N/A 16AWG N/A N/A	TYPE: STANDARD	FILE DIRECTORY: 721 FILE [SHEET]: 721-W01 [W01]						
	THIS DRAWING IS THE PROPERTY OF WOOD'S POWR-GRIP CO., INC. 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. LAUREL, MONTANA U.S.A.							
PRODUCT MANAGER: DANIEL M. / DATE: 08/14/1998	DC VACUUM BACK-UP SYSTEM N/A REMOTE ON/OFF WIRING SCHEMATIC D721-W01 [W01]							
CHECKED: CR / 09-26-17								
APPROVED: [signature] / 9-26-17	SIZE: A	SCALE: NONE	REVISION: 02.A	ECN NUMBER: 4366	ECN DATE: 09/21/2017	ECN BY: CCH	EST. WEIGHT: N/A	



WIRE LEGEND: CONTROLLED BY WIRING SYMBOLS DRAWING EXCEPT AS NOTED AND BELOW.	TYPE: STANDARD	FILE DIRECTORY: 721
LINE STYLES AND WIDTHS FOR WIRE UNLESS NOTED OTHERWISE. N/A 20AWG N/A 18AWG N/A 16AWG N/A N/A	FILE [SHEET]:	721-W01 [A-W01]

LAUREL, MONTANA U.S.A.

PRODUCT MANAGER:	DATE:
DANIEL M.	02/07/2012
CHECKED: CR	09-27-17
APPROVED:	9-27-17

DC VACUUM BACK-UP SYSTEM
LOCAL ON/OFF
LOCAL ON/OFF WIRING SCHEMATIC
D721-W01 [A-W01]

SIZE:	SCALE:	REVISION:	ECN NUMBER:	ECN DATE:	ECN BY:	EST. WEIGHT:
A	NONE	02.A	4366	09/21/2017	CCH	N/A