



Dual-Force Vac
TWO-WAY DRUM PUMP

OPERATION AND SAFETY INSTRUCTIONS

MODEL 2109, 2109BSP
Transvector® Vacuum Pump System

IMPORTANT

READ ALL INSTRUCTIONS BEFORE ATTEMPTING TO OPERATE THIS PRODUCT.

INTRODUCTION

The Dual-Force Vac pulls liquids into and empties liquids from a sealed 55 gallon drum. The compressed air powered pump is used for handling sludge, used coolant (complete with metal chips), hydraulic oil, tramp oil or solvents. Liquids can be pulled from milling machines, lathes, EDM machines, sumps, parts washers, open pits or chemical processes, etc.

COMPRESSED AIR SUPPLY

The compressed air supply must be filtered (5 micron maximum) to remove water and dirt. Vortec's #701S-24A Compressed Air Filter is supplied for this purpose. If oil is present in the compressed air supply, remove the oil using a 0.01 micron (maximum) air filter. Use Vortec oil filter #701S-48, sold separately. Change filter elements as needed. Operating pressure at the Dual-Force Vac should be 60 to 100 PSIG.

NOTE: Do not exceed air supply pressures over 100 PSIG when operating the Dual-Force Vac.

LIMITED WARRANTY

Vortec compressed air products manufactured by ITW Air Management will be replaced or repaired if found to be defective due to manufacture within ten years from the date of invoice. Refer to our website itwvortec.com for complete warranty details and limitations. ITW Air Management makes no specific warranty of merchantability or warrant of fitness for a particular purpose.

WARNING / DANGER
COMPRESSED AIR COULD CAUSE DEATH, BLINDNESS OR INJURY.

1. The closed head steel drum must be in "as new" condition and meet the requirements of UN1A1/X1.8/300.
2. Operating the Dual-Force Vac at compressed air pressures above 60 PSIG requires the use of a drum consisting entirely of 16 gauge steel or stronger.
3. Do not operate the Dual-Force Vac at compressed air pressures above 100 PSIG (6.9 Bar).
4. Do not operate the Dual-Force Vac at line temperatures above 110°F (43°C).
5. DANGER: Do not operate the Dual-Force Vac with flammable or volatile liquids such as gasoline, alcohol, kerosene, aviation fuel, mineral spirits or any material that has a low flash point.
6. Do not operate the Dual-Force Vac without the gold cap assembly in place secured by the three screws. Operating without the three screws in place could result in a hazardous situation.
7. Do not operate the Dual-Force Vac without the float valve assembly installed between the pump body and the drum.
8. Do not restrict or block the discharge flow of liquid out of the conveying hose.
9. Avoid direct contact with compressed air; do not direct compressed air at any person.
10. When using compressed air, wear safety glasses with side shields.

INSTALLATION

Remove the top mounted 2" and ¾" bung plugs from the closed head steel drum. The customer-supplied drum must meet UN1A1/X1.8/300 specifications and be constructed entirely of 16 gauge steel or stronger.

1. Install the Dual-Force Vac pump into the ¾" bung hole in the drum. The lower stainless steel float valve portion of the pump rotates independently of the top part of the pump. This aids in the installation of the pump, or when moving the pump from drum to drum without having to disconnect the air supply hose. Use a 1 1/8" open-end wrench to tighten the lower portion of the pump onto the drum. The top part of the pump is now free to rotate so the ball valve can be positioned in the most convenient location.
2. Attach the compressed air filter (#701S-24A) to the Dual-Force pump using the pipe fittings supplied. (Air flow arrow must point to the Dual-Force pump.)
3. Connect your compressed air supply hose (3/8" inside diameter minimum) to the compressed air filter (3/8" NPT).
4. Install the 36" long aluminum evacuation tube into the 2" bung hole. Carefully screw the black polypropylene fitting at the end of the tube into the hole in the drum.
5. Attach the cam-lever coupling on the 10' long conveying hose to the black polypropylene fitting on the drum. Be sure both levers are engaged in the up position and that the conveying hose is securely attached to the drum.
6. Fit the 19" wand into the cuffed end of the conveying hose.

FILLING THE DRUM

1. Rotate the knob on top of the pump counter-clockwise 1/4 turn until the knob pops up.
2. Open the brass ball valve to operate the unit. Immerse the end of the wand into the liquid to be picked up.
3. The top of the drum will "pop" inward as the vacuum is created and the liquid starts to fill the drum. As the drum reaches maximum capacity, the float valve on the pump will isolate the drum interior from the Dual-Force Vac and the liquid flow will stop. A small amount of liquid may be expelled out the bottom of the Dual-Force Vac before the float valve completely closes. Shut off the brass ball valve to stop the compressed air flow.

EMPTYING THE DRUM

1. Push the knob on the top of the pump down and rotate it 1/4 turn clockwise until it locks in position.
2. Be sure the conveying hose is securely attached to the drum fitting.
DO NOT RESTRICT OR IN ANY WAY BLOCK THE FLOW OF LIQUID FROM THE CONVEYING HOSE.
3. Slowly open the brass ball valve.
4. The top of the drum will "pop" outward as the drum is pressurized and liquid starts to flow from the conveying hose. The drum is pressurized to a maximum of 8 PSIG and is held at this pressure by the pressure relief valve.
5. To stop operation, close the brass ball valve and slowly rotate the knob on top of the Dual-Force Vac to the "FILL" position. This will aid in venting residual pressure in the drum and stop the flow of liquid.

CLEANING THE DUAL-FORCE VAC PUMP ASSEMBLY

1. Remove the Dual-Force Vac from the drum and remove the compressed air filter.
2. Turn the knob to the "FILL" position.
3. With a 9/16" open-end wrench, unscrew the brass pipe nipple and ball valve from the side of the pump. Remove the 3 shoulder screws.
4. Lift the cap assembly off the pump body, and pull the float valve assembly from the bottom of the pump.
5. Unscrew the hex barrel from the pump body.
6. Remove the three-lobed centering ring and rubber spacer. Carefully remove the red and/or green shims from the hex barrel.
7. Thoroughly clean the parts in solvent and dry with compressed air.
8. The float valve assembly and the cap assembly should be inspected. Verify that the float moves freely inside the stainless steel guide tube and that the O-ring is attached to the float.
9. The guide rod should move freely in the cap assembly (approximately 39/64" axial travel) and the poppet should move freely on the guide rod (approximately 27/32" axial travel).

10. Inspect the shim(s) removed from the hex barrel.
Replace them if they are damaged. (Green=.003" thick, Red=.002" thick)
11. Re-assemble the pump in reverse order of disassembly. Do not over-tighten the hex barrel in the pump body.

Repair parts kits are available for the Dual-Force Vac pump. Call ITW Air Management for assistance.

For information contact your local authorized distributor or:

Vortec

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