

Volume

1.0

OPERATIONAL MANUAL

MODEL: VP-100 TANKLESS VACUUM PUMP FOR CORE DRILLS



by BLUEROCK® Tools



UNPACKING THE ITEM

CAUTION: This machine is packed together with items that may be sharp, oily and overly heavy objects. Remove the machine from the packaging in a safe manner. Check to ensure all accessories are included with the item while unpacking. If any parts are found to be missing, contact the retailer as soon as possible. Do not throw away the packaging until the item is out of the guarantee period. Dispose of the packaging in an environmentally responsible manner. Recycle if possible. Keep all plastic bags away from children due to risk of suffocation.



WEEE - Waste Electrical & Electronic Equipment. Note that parts of this machine should be disposed of as electrical & electronic waste.

SLURRY DISPOSAL

NOTE: It is recommended to dispose of the drilling slurry (the muddy/dusty water material) in an environmentally responsible manner. The disposal of slurry directly into sewage systems, sewers, lakes, rivers, or direct earth without treatment can be environmentally harmful and possibly illegal. Ask your local public authorities about current regulations in your area.

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Safety

DO NOT USE THIS MACHINE UNLESS YOU HAVE READ THE OPERATING INSTRUCTIONS!



Safety glasses must be worn at all times in work areas.



Appropriate footwear must be worn.



Safety gloves should be worn at all times and jewelry must not be worn.



Hard-hat must be worn while using machine.



Read operational manual prior to use.



Long and loose hair must be contained.



Close fitting/protective clothing must be worn.



Hearing protection should be worn when using this machine.



Dust mask must be worn while using this machine.

PRE-OPERATIONAL SAFETY CHECKS

- Examine the body of the machine and inspect for damage or defects.
- Inspect the air hoses for any leaks or defects.
- Inspect for damage and correct/tighten any loose connections.
- Inspect the machine's water trap is clean and has not water in the canister.
- Check to ensure the air exhaust filter is clean.

OPERATIONAL SAFETY CHECKS (as these will be used with core drills, some of these are reminders for using a core drill)

- ONLY to be operated by qualified personal who have read instructions.
 - NOTE: Failure to read and follow instructions could result in electrical shock, fire, property damage and/or serious injury!
- DO ONLY USE THIS VACUUM PUMP ON A DRY SMOOTH CUTTING SURFACE
- DO ENSURE THE MACHINE IS SAFETY SECURED TO THE VACUUM BASE
- DO STOP DRILLING IMMEDIATELY IF THERE IS AN ELECTRICAL POWER LOSS
- DO ensure all non-essential people are clear of the immediate work area.
- DO be attentive at all times. Keep your eye on the work piece. Always be in a sensible state of mind and do not use the machine if you cannot fully concentrate.
- DO keep body parts, clothing & power cords clear of turning/cutting pieces. Stay alert and use common sense when using this tool.
- DO allow machine to reach operating speed before starting a hole.
- DO shut down machine while changing or adjusting cutting bits so as not to accidentally turn machine on.
- DO remove adjusting wrenches prior to turning the machine on.
- DO be mindful that power tools can expose an operator to vibrations transmitted through contact with the machine. Prolonged exposure can lead to medical issues which should be discussed with a medical professional.
- DO use a dust extraction system for cutting materials that create dust. The operator should also wear a protective respiratory device.
- DO NOT make adjustments to machine while the machine is running.
- DO NOT switch off the machine when it is under load, except in an emergency.
- DO NOT leave the machine running when not in use.
- DO NOT touch the motor or motor parts while hot as burns may occur.
- DO NOT hold the work piece by hand or using body. Always mechanically clamp or secure work piece.
- DO NOT allow liquids to enter the machine's ventilation system.
- DO NOT operate machine outside of machine specifications.
- DO NOT touch moving parts while the machine is running as death or dismemberment could occur.
- DO NOT allow children or untrained personal to operate machine.
- DO NOT use this machine in the rain or a wet environment.

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| ➤ DO NOT operate in the presence of explosive materials as power tools create sparks which may ignite dust or fumes. |
| ➤ DO NOT place anything on the motor while running. |
| ➤ DO NOT drill into an area that may contain a live electrical wire/circuit. |
| ➤ DO NOT use full water pressure when drilling with “wet” type bits! You need minimal water to drill with these machines. Extreme water pressure can damage machine and cutting bits. |

HEALTH WARNINGS

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| ➤ Certain dust created by drilling contains chemicals known to cause cancer, birth defects or other reproductive harm. The examples of these chemicals are below: |
| ○ Lead from lead based paint. |
| ○ Crystalline silica from bricks, cement and assorted masonry products. |
| ▪ TO REDUCE RISK OF EXPOSURE TO THESE CHEMICALS, WORK IN A WELL VENTILATED AREA WITH VACUUM SYSTEMS, RESPIRATORS AND WITH ALL SUITABLE SAFETY EQUIPMENT. |

Specifications

MOTOR DATA	
Motor Type	Electric Vacuum Pump
Motor Model	VP-200
Voltage	110V, 60Hz
Current	3.6A
Speed	1720 RPM
Type	Piston Type Pump
Air Flow	113L/Min
Max Pressure	-0.09MPA

MECHANICAL DATA	
Item Weight	48 Lbs

Included Accessories

DESCRIPTION	QTY
Instruction Manual	1
Vacuum Hose	1
1/4" NPT Male Connector	1

Note

UPON RECEIPT, CHECK CAREFULLY TO ENSURE THAT THE MACHINE IS IN GOOD CONDITION AND HAS ALL ACCESSORIES LISTED ABOVE.

Additional Available Accessories

Additional accessories for this machine can be found in BLUEROCK® Tools online shop at www.bluerocktools.com or from your local retailer.

Chapter

3

Operations

Note

THOROUGHLY READ THROUGH THE ENTIRE MANUAL BEFORE OPERATING THIS MACHINE!

PURPOSE

- The purpose of VP-100 is to act as a negative pressure vacuum pump when using special vacuum pump equipped core drills.
 - NOTE: These machines can be used vertically only. Not to be used horizontally or overhead (inverted).

MACHINE COMPONENTS

- The main components of the VP-200 is the air hose, motor, pressure gauge, water trap, and muffler.

TRANSPORTING AND STORAGE OF THE MACHINE

- When transporting the machine, always use two hands.
- The machine should be stored in a clean, dry, ventilated environment.

RUNNING THE PUMP

- Do all pre-operational and operational safety checks from Chapter 1.
- Consider your security and stability as well as the orientation of the machine in the work area.
 - DO NOT use this item in an unstable position (such as on a ladder, leaning outside of center of gravity, etc).
 - Consider the work surface material, condition, strength, density and rigidity. These factors directly affect the pumps efficiency.

➤	Ensure the work surface is free of debris, oil, water. The surface has to be DRY. If it is not dry, the vacuum pump will not adhere properly.
➤	If using a wet type coring bit and a water system, make sure to divert the water away from the vacuum base.
	▪ CAUTION: IF WATER IS NOT CONTAINED, IT CAN BREAK THE VACUUM SEAL OF THE BASE DECREASING VACUUM ADHESION AND BE VERY DANGEROUS! IT CAN CAUSE THE DRILL TO SPIN WHICH COULD CAUSE SERIOUS INJURY OR DEATH. IF IN DOUBT CONTACT A QUALIFIED CORE DRILLING PROFESSIONAL.
	▪ ATTENTION: CONTINUOUSLY CHECK THE WATER TRAP DURING OPERATIONS. If any water is noticed in the clear trap, stop drilling immediately!
➤	Attach machine to the vacuum base. Make certain it is securely mounted with the appropriate mounting hardware.
➤	Set the machine in the place where the hole will be drilled.
	○ Ensure the machine is secure and does not tip.
➤	Attach vacuum hose to the vacuum base and vacuum pump.
➤	Turn on vacuum pump.
	○ Check the system for any leaks
	○ Ensure the vacuum pump pressure gauge full energizes.
	○ If it does not, or there are leaks in the system, turn pump off and check all negative pressure points of air exit.
	▪ Perhaps the vacuum base seal is not aligned, or some of the pressure fittings are loose. It is recommended to use Teflon tape between all fittings.
➤	If the system is holding strong, test the vacuum seal by pushing with machine from the top against all axis. You want a strong seal as core drilling uses a lot of torque.
➤	If the seal is stable and not leaking, turn the core drill on.
➤	Very slowly engage the cutting bit with the material surface by lightly engaging the bit with the material.
	○ NOTE: Do not force the hole. Let the machine do most of the work. Excessive physical effort should be avoided as it can cause damage to the machine or cause injury to the user. It can also cause the seal to break causing harm to person or property.
	○ If the unit jams in a hole, stop the drill immediately by quickly disengaging drilling pressure to prevent injury. Loosen the cutter by turning drill spindle counterclockwise. Never attempt to free a stuck bit by starting motor!
	▪ After an interruption in drilling, make sure the drill bit is free and turns before restarting the hole. Be very careful at this point to make certain the drill does not bind when restarting.
➤	Ease up on pressure as the cutter starts breaking through the backside of the material (if cutting completely through the material)
	○ Be certain all is clear on the output side of this core to prevent injury to persons or property.

○ If drilling completely through the material, stop drilling after breaking through the bottom, stop bit rotation and slowly pull out the bit and the core.
➤ If drilling to a specified depth (and not breaking all the way through the material) leave the drill bit rotating until you reach your desired depth. Continue to leave the drill bit rotating as you pull the bit completely out of the material.
➤ If at any point the vacuum seal seems to be leaking or you notice any water be sucked into the water trap, immediately stop drilling!
➤ Once you have achieved your drilling goal, raise the core bit back up out of the hole and turn the drilling machine off.
➤ Turn off the vacuum pump.
➤ To release the negative pressure in the vacuum base, You can either wait for the negative pressure to slowly release any vacuum pressure. ○ CAUTION: Make sure the drill is held or secured in some way so it does not fall and injure persons or property.

General Maintenance

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| ➤ Inspect machine and machine body connections. |
| ➤ Drain the machine of all water that may have entered after each use. |
| ➤ Make sure to run the pump dry after each use. |
| ➤ Check the exhaust muffler is free of debris or liquid. |
| ➤ Make sure the water trap is empty. |

Occasional Maintenance

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| ➤ Have the tool serviced by a qualified service technician using identical replacement parts. |
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Motor Parts List

No.	Parts name	Qty	No.	Parts name	Qty
1	Self-tapping screw (st2.9x8)	4	21	Intake valve (31x11x0.08)	2
2	Side cover 550	2	22	Metal cushion (11x8x0.8)	4
3	Left fan (14x116)	1	23	Right fan (14x116)	1
4	Left crank case 750	1	24	Crank 550/750	2
5	Connect rod (55x72)	2	25	Bearing 6006	2
6	Piston ring (49x68x0.8)	2	26	Screw (M8x8)	4
7	Fasten plate (60.8x3.5)	2	27	Screw (M5x20)	2
8	Screw (M16x16)	2	28	Adjustable waser	
9	Cylinder (63.7x24.5)	2	29	Right crank case	1
10	Cylinder sealring(ø63.7x2.6)	2	30	Wire fasten ring	1
11	Cylinder cover seal ring 550	2	31	Bolt (M5x152)	2
12	Cylinder cover 550	2	32	Screw (M5x120)	2
13	Flat washer (ø5)	12	33	Spring cushion (ø5)	4
14	Screw (M5x25)	12	34	Stator (109x66.6x80)	1
15	*O*seal ring (ø9.5*2.2)	4	35	Nut M5	4
16	Connect pipe (12.8x81)	2	36	Rotor (66.1x18x80.5)	1
17	Screw (M4x6)	4	37	Bearing	2
18	Fasten part (34.5x13.5x13)	2	38	Closed end crimp cap (ø5)	2
19	Exhaust valve (33x13xq.08)	2	39	Rubber tube sleeve	2
20	Valve plate 550	2	40	V-shaped terminal	3

Motor Breakdown View - Overview

