

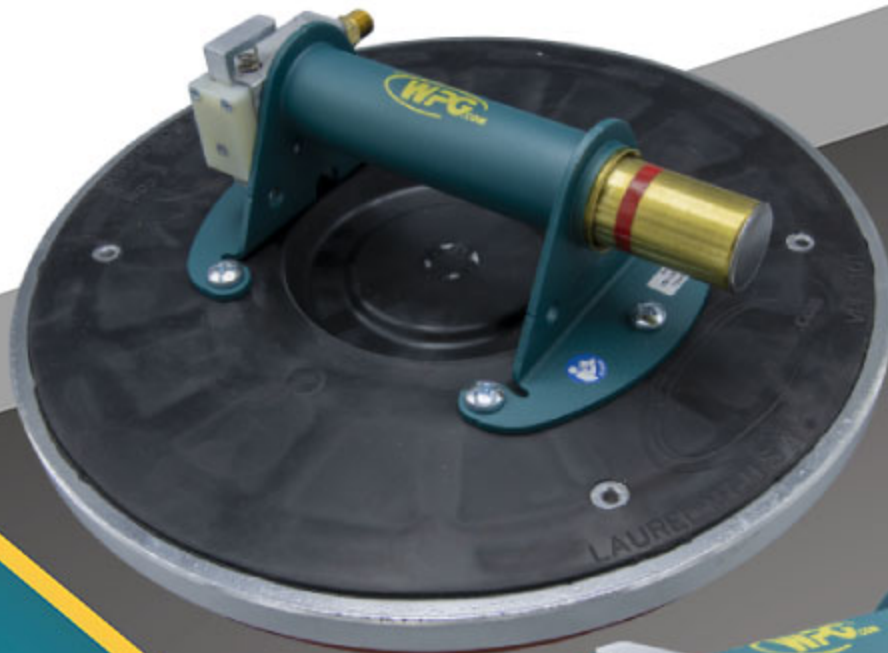
KEEP FOR FUTURE REFERENCE

OPERATING INSTRUCTIONS



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 **INTENDED FOR USE BY SKILLED
PROFESSIONALS • READ AND
UNDERSTAND BEFORE OPERATING**



HANDHELD VACUUM CUP, AIR-POWERED

Model numbers:
N10TAIR (shown at top-left),
N4950AIR (shown at bottom-right)

Record serial number in blank space above (to locate, see serial
label on the product).





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SPECIFICATIONS

Product Description	Designed for use with a compressed air supply, these N-Series hand cups employ vacuum for attaching to loads, which are manually lifted and carried, offering a wide range of handling options.	
Model Number	N4950AIR	N10TAIR
Vacuum Pad¹ / Pad Spread (standard rubber)	8" [20 cm] nominal diameter (Model G0695)	10" [25 cm] nominal diameter (Model VPFS10T ²)
 Maximum Load Capacity³	125 lbs [57 kg]	150 lbs [68 kg]
 Hand Cup Weight	3.33 lbs [1.51 kg]	6.26 lbs [2.84 kg]
Power Source	Compressed air, 70-80 psi [483-552 kPa] line pressure, 2 SCFM [57 liters/minute] @ 75 psi [517 kPa]	
 Operating Elevation	Up to 9,000' [2,743 m]	
 Operating Temperatures	10° — 120° F [-12° — 49° C]	
Service Life	20,000 lifting cycles, when used and maintained as intended ⁴	

- 1..... Available with other rubber compounds for special purposes (see www.wpg.com).
- 2..... Standard with replaceable sealing rings for rough or textured surfaces (see "REPLACEMENT PARTS").
- 3..... The Maximum Load Capacity is rated at a vacuum of 17.5" Hg [-59.25 kPa] on clean, smooth, nonporous flat surfaces with a friction coefficient of 1. Pad compound, load rigidity, strength, surface conditions, overhang, angle, center of gravity and temperature can also affect the lifting capacity. A "qualified person" should evaluate the effective lifting capacity for each use (see definition under "Pad-to-Load Friction Coefficient").
- 4..... Vacuum pad and other wear-out components are excluded.

SAFETY



Wear personal protective equipment that is appropriate for the load material. Follow trade association guidelines.



Do not attach the hand cup to hoists or any other lifting device. It is designed for manual use only.



Do not make any modifications to the hand cup (see "LIMITED WARRANTY").



Use the hand cup only in an approved "OPERATING ENVIRONMENT" (see "INTENDED USE").



Do not use a hand cup that is damaged, malfunctioning, or missing parts.



Do not use a hand cup if the sealing edge of the vacuum pad is cut or otherwise damaged.



Do not exceed the Maximum Load Capacity or lift loads the hand cup is not designed for (see "INTENDED USE: LOAD CHARACTERISTICS").



Do not use a hand cup to lift cracked or broken glass.



Make sure the contact surfaces of the load and vacuum pad are clean before attaching the pad (see "MAINTENANCE: VACUUM PAD MAINTENANCE").



Position the vacuum pad correctly on the load before lifting (see "OPERATION: TO ATTACH THE HAND CUP TO THE LOAD").



Do not lift a load when the red-line vacuum indicator is visible.



Do not touch the vacuum release button during a lift.



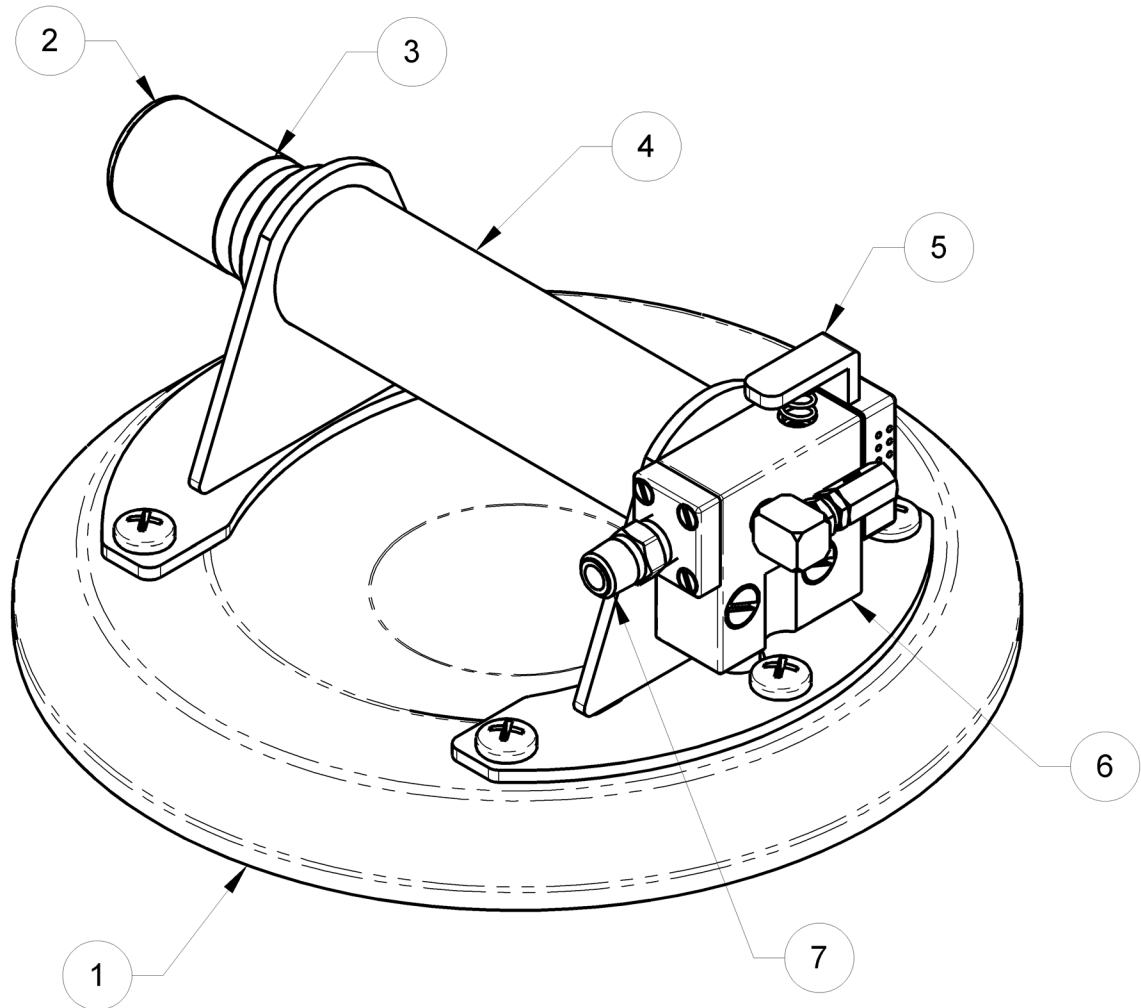
Do not use the hand cup to support a person.



Position yourself and other to avoid injury in case of an unintended load release.

OPERATING FEATURES

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



- 1 VACUUM PAD
- 2 PLUNGER
- 3 RED-LINE VACUUM INDICATOR
- 4 HANDLE
- 5 VACUUM RELEASE BUTTON
- 6 VACUUM PUMP (VENTURI)
- 7 1/8" NPT MALE FITTING

Note: A standard N4950AIR handheld vacuum cup is shown. Although some of the following photos do not show this specific hand cup, they all illustrate how this kind of hand cup functions.

For information about specific parts, see ["REPLACEMENT PARTS"](#).

ASSEMBLY

- 1) Remove the handheld vacuum cup (hand cup) from its carrying case or remove the pad cover, depending on the model. Save the case or cover for future use.
- 2) Connect the hand cup to an appropriate compressed air supply (see Power Source under “SPECIFICATIONS”):

Use appropriate hose and/or fittings to connect an air line from the compressed air supply to the 1/8" NPT male fitting on the vacuum pump (fig. 2A and inset).



Make sure the air line is routed so that it does not become tangled, damaged or obstructed during operation.



Any damage or obstruction in air line would result in unintentional load release and possible injury.

Note: Disconnect the compressed air line when the hand cup is not in use. Otherwise, the air compressor will cycle frequently.

- 3) Adjust the air pressure regulator to supply 70 psi [483 kPa]. Exceeding this pressure consumes more air and does not improve hand cup performance. Pressures greater than 80 psi [552 kPa] should be avoided.
- 4) Perform tests as required under “TESTING”.

INTENDED USE

LOAD CHARACTERISTICS

Make sure the hand cup is intended to handle each load according to these requirements:



Do NOT lift explosives, radioactive substances or other hazardous materials.



- The load weight must not exceed the Maximum Load Capacity.
- The load must be a single piece of relatively nonporous material with a flat and relatively smooth contact surface.¹ To determine whether the load is too porous or rough, attach the hand cup to the contact surface (see [“To ATTACH THE HAND CUP TO A LOAD”](#)) and determine whether the red-line vacuum indicator would remain hidden during a lift (see [“Interpreting the Red-Line Vacuum Indicator”](#)). If not, the load is not compatible with this hand cup.
- The load's contact surface must be able to obtain a friction coefficient of 1 with the hand cup's vacuum pad (see [“Pad-to-Load Friction Coefficient”](#)). Otherwise, the capacity should be derated appropriately.
- The load's surface temperature must not exceed the Operating Temperatures.²
- The load's *maximum* length and width are determined by its allowable overhang.³
- Although load thickness is not restricted, it may affect the angle of load orientation and the amount of operator effort required for handling loads.



Note: Standard vacuum pads can stain or deform load surfaces with light colors or soft coatings. Test such surfaces for damaging effects before using the hand cup on them.⁴

1..... Although concave vacuum pads can also attach to some curved loads, curvature can reduce lifting capacity. Contact WPG for more information.

2..... Vacuum pads made from a heat-resistant rubber compound can enable you to lift loads with higher surface temperatures. Contact WPG or an authorized dealer for more information.

3..... The allowable overhang is the amount of load material that can extend sideways beyond the vacuum pad without breaking or otherwise being damaged. This depends on the load material, its thickness, and the angle of handling (if any). Since every material has different physical properties, the allowable overhang must be evaluated separately for each load type. Contact WPG or an authorized dealer for more information.

4..... Alternative rubber compounds are available for these purposes. Contact WPG or an authorized dealer for more information.

INTENDED USE

OPERATING ENVIRONMENT

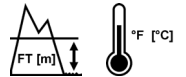
Make sure the hand cup is intended for use in each work environment, given the following restrictions:

- This hand cup is not intended for any environment that is dangerous to the operator or damaging to the hand cup. Avoid environments containing explosives, caustic chemicals and other dangerous substances.



Never use hand cup in dangerous environments.

- The work environment is limited by the Operating Elevation and Operating Temperatures.



- The hand cup is not designed to be watertight. Do not use it in rain or other unsuitable conditions.



Moisture can result in reduced lifting capacity.

DISPOSAL OF THE HAND CUP

After the Service Life of the hand cup has ended (see “SPECIFICATIONS”), dispose of it in compliance with all local codes and applicable regulatory standards.

OPERATION

BEFORE USING THE HAND CUP

Determine whether the hand cup is capable of each intended task (see “SPECIFICATIONS” and “[INTENDED USE](#)”). Then complete the following preparations:

Taking Safety Precautions

- Be trained in all relevant industry and regulatory standards in your region.
- Follow trade association guidelines about precautions needed for each load material.



Read all directions and safety rules before using hand cup.



Always wear appropriate personal protective equipment.

Performing Inspections and Tests

Follow the “[INSPECTION SCHEDULE](#)” and “[TESTING](#)”.

TO ATTACH THE HAND CUP TO A LOAD



Do not allow anything to interfere with free movement of plunger when operating hand cup.

The hand cup is designed for its vacuum pump to run continuously.

Caution: Any interruption of airflow during operation could cause a pad release and personal injury (see).

Positioning and Sealing the Pad on the Load

- 1) Make sure the contact surfaces of the load and vacuum pad are clean (fig. 1A —see “[Pad Cleaning](#)”).

1A



OPERATION

- 2) Center the hand cup on the load (fig. 2A). Make sure the entire sealing edge of the vacuum pad is in contact with the load.


2A



- 3) Press the hand cup against the load until the vacuum pad seals against the contact surface.¹ As the pad seals, the plunger should *automatically* retract into the handle, hiding the red-line vacuum indicator (fig. 3A).

3A



 **Do not allow anything to interfere with free movement of plunger while vacuum pad is attached.**

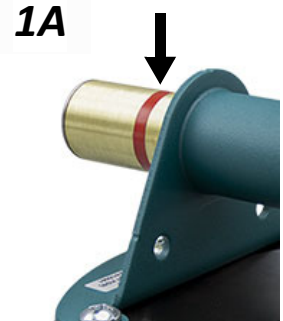
1..... Although the vacuum pad may have become distorted during shipping or storage, this condition should correct itself with continued use.

OPERATION

TO LIFT AND MOVE THE LOAD

Interpreting the Red-Line Vacuum Indicator

A red line on a plunger serves as a vacuum indicator. When the red-line vacuum indicator (arrow in fig. 1A) is hidden, vacuum is sufficient for lifting.



Never lift load when red-line indicator is visible, because this action could result in load release and personal injury.

If air leaks back into the hand cup, the red line will become visible, to signal the reduction in vacuum.

Lifting the Load



Always position yourself and others so as to avoid injury in the event of unintentional load release.

When the hand cup is ready, grasp the handle and use correct lifting technique to raise the load as needed to clear any obstacles while you are moving the load (fig. 1B).

1B



Monitoring the Red-Line Vacuum Indicator

The plunger must remain completely visible to the operator throughout the entire lift.



Monitor red-line vacuum indicator throughout lift.

Check the red-line indicator frequently, to make sure the vacuum pad remains securely attached. If the red-line indicator becomes visible, immediately lower the load to the ground or a stable support.



Set load down immediately if red-line vacuum indicator becomes visible.

Stop using the hand cup until the cause of the vacuum loss is identified (see “[INSPECTIONS AND TESTS](#)” and “[MAINTENANCE](#)”). Correct any deficiency before resuming normal operation of the hand cup.

OPERATION

In Case of Power Failure

A power failure at the compressed air supply could result in a load release and personal injury, unless action is taken immediately: Lower the load immediately to the ground or a stable support, and discontinue hand cup use until power is restored.

! *Set load down immediately if power failure occurs.*

To RELEASE THE HAND CUP FROM THE LOAD

! *Make sure load is supported independently before releasing vacuum pad.*

- 1) Use correct lifting technique to lower the load to the ground or a stable support.
- 2) When the load is at rest and fully supported, push the vacuum release button (fig. 2A) until the vacuum pad disengages completely from the load.



- 3) Move the pad well away from the load (fig. 3A) while continuing to hold the button; otherwise, the hand cup could reattach to the load.



OPERATION

AFTER USING THE HAND CUP

Disconnect the hand cup from the compressed air line (see “ASSEMBLY”) or turn off the compressed air supply, as appropriate.

Caution: Do not set the hand cup against any surface that could soil or damage the vacuum pad.

Use the carrying case (fig. 1A) or pad cover (fig. 1B) when storing the hand cup or transporting it to another location.

1A



1B



INSPECTIONS AND TESTS

INSPECTION SCHEDULE

Perform inspections according to the following frequency schedule. If any fault is found, correct it and perform the next most frequent inspection before using the hand cup.

Note: If a hand cup is used less than 1 day in a 2-week period, perform the Periodic Inspection before using it.

Action	Every Lift	Frequent ¹ (every 20-40 hrs)	Periodic ² (every 250-400 hrs)
Examine <u>vacuum pad</u> for contaminants or damage (see “ Pad Inspection ”).	✓	✓	✓
Examine load surface for contaminants or debris.	✓	✓	✓
Examine the vacuum pad, <u>red-line vacuum indicator</u> and other features for visual damage (see “ OPERATING FEATURES ”).	✓	✓	✓
Examine hand cup’s structure for visual damage.		✓	✓
Examine the air supply system (including fittings and hoses) for visual damage (see “ ASSEMBLY ”).		✓	✓
Check for unusual vibrations or noises while operating hand cup.		✓	✓
Examine entire hand cup for evidence of: <ul style="list-style-type: none"> • looseness, excessive wear or excessive corrosion • deformation, cracks, dents to structural or functional components • any other hazardous conditions 			✓

1..... The Frequent Inspection is also required whenever the hand cup has been out of service for 1 month or more.

2..... The Periodic Inspection is also required whenever the hand cup has been out of service for 1 year or more. Keep a written record of all Periodic Inspections. If necessary, return the hand cup to WPG or an authorized dealer for repair (see “[WARRANTY AND REGISTRATION](#)”).

TESTING

In addition to determining hand cup/load compatibility (see “[LOAD CHARACTERISTICS](#)”), test all features and functions of the hand cup (see and) before placing it in service *initially, following any repair, or whenever necessary.*

VACUUM PAD MAINTENANCE

Pad-to-Load Friction Coefficient

The friction coefficient represents the hand cup's ability to resist load slippage. The Maximum Load Capacity is based on a friction coefficient of 1, as determined by testing of a clean, new, standard rubber vacuum pad on clean, dry, regular glass. ***If the hand cup is used under any other conditions, a qualified person must first determine the effective lifting capacity.***¹

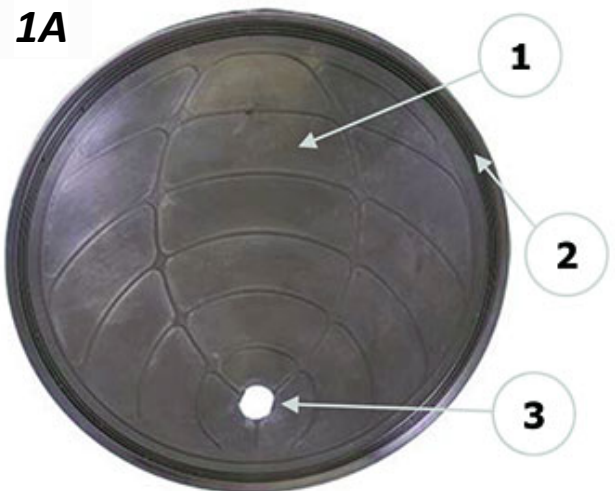


Long-term exposure to heat, chemicals or UV light can damage the vacuum pad. Replace the pad and sealing ring (if applicable) every 2 years or more often when necessary.

Pad Inspection

Inspect the vacuum pad (fig. 1A) according to the “INSPECTION SCHEDULE” and correct the following faults before using the hand cup (see “REPLACEMENT PARTS”, when applicable):

- Contaminates on the face (item 1 in fig. 1A) or sealing edge (item 2 in fig. 1A).
- Filter screen (item 3 in fig. 1A) missing from face.



Replace pad if it has damaged sealing edge.

- Nicks, cuts, deformation or abrasions in sealing edge.²
- Wear, stiffness or glaze.

1..... A “qualified person” has successfully demonstrated the ability to solve problems relating to the subject matter and work, either by possessing a recognized degree in an applicable field or a certificate of professional standing, or by possessing extensive knowledge, training and experience

2..... If the hand cup has a VPFS10T pad, the replaceable sealing ring is the sealing edge.

Pad Cleaning

- 1) Regularly clean the face of the vacuum pad (fig. 1A), using soapy water or other mild cleansers to remove oil, dust and other contaminants.



Never use harsh chemicals on vacuum pad.

Solvents, petroleum-based products (including kerosene, gasoline and diesel fuel) or other harsh chemicals can damage the vacuum pad.



Never use rubber conditioners on vacuum pad.

Many rubber conditioners can leave a hazardous film on the vacuum pad.

- 2) Prevent liquid from entering the vacuum system through the suction hole on the pad face.
- 3) Wipe the pad face clean, using a clean sponge or lint-free cloth to apply the cleanser.¹
- 4) Allow the pad to dry completely before using the hand cup.

1A



¹..... A brush with bristles *that do not harm rubber* can help remove contaminants clinging to sealing edges. If these cleaning methods are not successful, contact WPG or an authorized dealer for assistance.

MAINTENANCE

TO REPLACE SEALING RING IN VPFS10T PADS

If the lifter has VPFS10T vacuum pads, replace sealing rings (**#49724RT** or **#49724TT**) as follows:

- 1) Remove the old sealing ring (fig. 1A).

Note: Make sure the entire vacuum pad is clean, including the mounting groove.

- 2) Place the inside edge of a new sealing ring against the inside edge of the mounting groove (fig. 2A).

- 3) Push the sealing ring into the mounting groove, beginning in 4 locations as shown circled in fig. 3A.

- 4) Push gently and firmly on the outside edge of the sealing ring until the flat side fits flush against the bottom of the mounting groove (fig. 4A). A pad ring installation tool (circled in fig. 4A) makes this step easier (see “REPLACEMENT PARTS”).

- 5) Make sure the sealing ring seats securely in the mounting groove, all the way around the vacuum pad (fig. 5A).

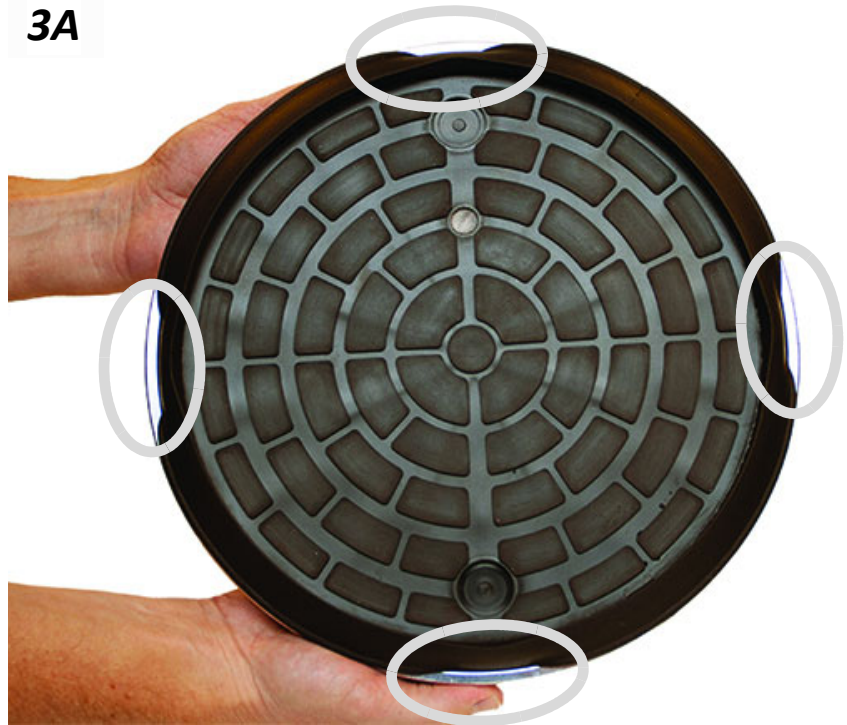
1A



2A



3A



4A



5A



Note: If any part of the sealing ring comes out of the mounting groove, inspect the sealing ring for damage and reinstall an undamaged sealing ring.

REPLACEMENT PARTS

Stock No.	Description	Qty.
90520	Plunger Assembly	1
90510	Handle	1
66155	Venturi Insert (aka, vacuum pump)	1
49724TT	Sealing Ring – Model VIFS10T2 – Closed Cell Foam (for VPFS10T pad)	1
49724RT	Sealing Ring – Model VIFS10T3 – Heat-Resistant Rubber (for VPFS10T pad)	1
49672FT	Vacuum Pad – Model VPFS10T / 10" [25 cm] Diameter – w/Replaceable Sealing Ring	1
49486T	Vacuum Pad – Model G0695 / 8" [20 cm] Diameter	1
29353	Pad Cover (for N10TAIR)	1
29334	Case – Black – 8" [20 cm] (for N4950AIR)	1
20050	Pad Ring Installation Tool (for VPFS10T pad)	1
15632	Pad Filter Screen – Small	1
10002	Screw – 1/4-20 x 1/2"	6

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

WARRANTY AND REGISTRATION



Note: Read the [WARRANTY RETURN FORM](#) at [wpg.com](#) for important details about the warranty.

Wood's Powr-Grip® (WPG) products are warranted to be free from defects in workmanship and materials for 1 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 product has a defect, WPG will repair or replace the product without charge.



TO OBTAIN WARRANTY SERVICE OR REPAIR SERVICE

For customers in the U.S. and Canada: Go to the [EXCHANGES, REPAIRS, & WARRANTIES](#) page at [wpg.com](#) and click the applicable link. Alternatively, you may contact the WPG Technical Service Department (see contact information at right).

For customers in all other localities: Contact the WPG Technical Service Department (see contact information at right) or your dealer for assistance.

Contact information

Address:

Wood's Powr-Grip Co., Inc.
908 West Main St.
Laurel, MT 59044 USA

Email:

contactus@wpg.com

Phone:

800-548-7341 or 406-628-8231

Fax:

406-628-8354

TO REGISTER THIS WPG PRODUCT

Go to the [PRODUCT REGISTRATION](#) page at [wpg.com](#) and complete the form. Registration keeps you advised of important updates and notifications, and simplifies inquiries to WPG regarding your product. Registration is **not** required to activate your warranty.