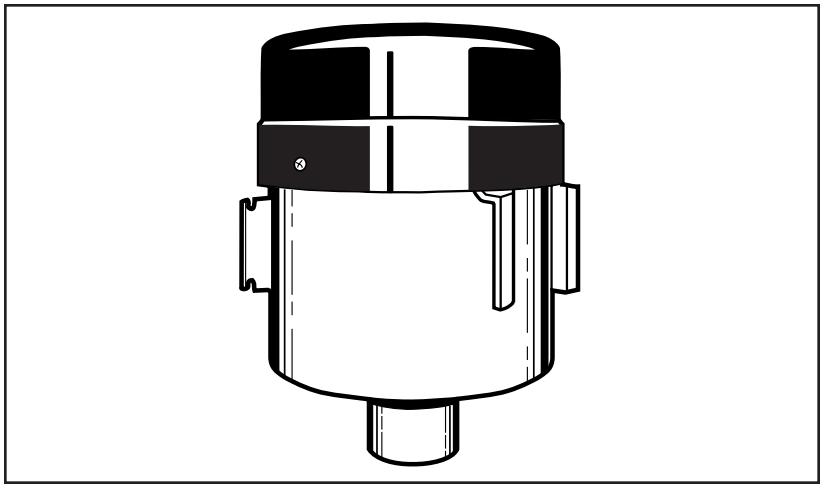
Table of Contents

I. Introduction

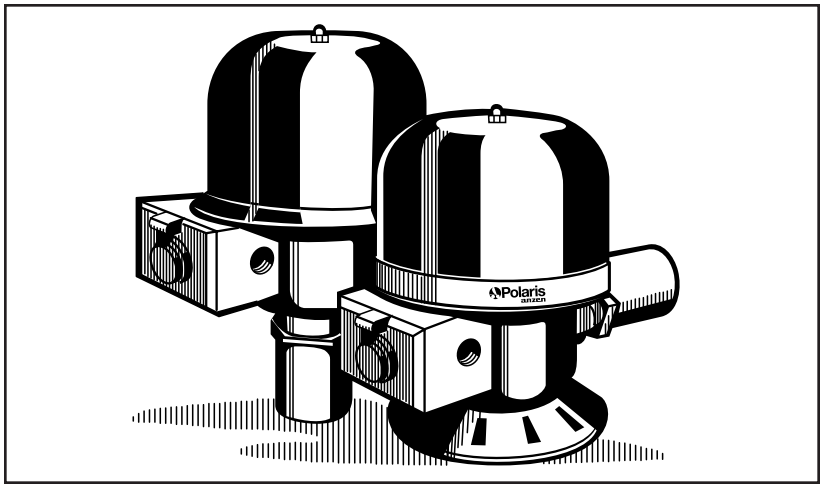
A. Series 400 QT Residential Air Blowers



The following Series 400 QT Blower models are available:

Model	Volts	Horsepower	Amps	Exhaust
1-460-01	120	1.0 HP	6.8	Bottom
1-460-02	240	1.0 HP	3.8	Bottom
1-470-01	120	1.5 HP	7.5	Bottom
1-470-02	240	1.5 HP	4.0	Bottom
1-480-01	120	2.0 HP	9.0	Bottom
1-480-02	240	2.0 HP	5.6	Bottom

B. Series 500 Metal Residential Air Blowers



U.L. Listed with Thermal Protection

The following Series 500 Metal Blower models are available:

120V Models	Horsepower	Amps	Exhaust
1-521-01	1.0 HP	6.8	Bottom
1-521-02	1.0 HP	6.8	Side
1-516-01	1.5 HP	7.5	Bottom
1-516-02	1.5 HP	7.5	Side
1-566-01	2.0 HP	9.0	Bottom
1-566-02	2.0 HP	9.0	Side

240V Models	Horsepower	Amps	Exhaust
1-521-03	1.0 HP	3.8	Bottom
1-521-04	1.0 HP	3.8	Side
1-516-03	1.5 HP	4.0	Bottom
1-516-04	1.5 HP	4.0	Side
1-566-03	2.0 HP	9.0	Bottom
1-566-04	2.0 HP	5.6	Side

Example: Order 1-521-01 for a 1.0 HP, 120V, bottom exhaust blower

II. Blower Sizing

A. Basic Information

What is sizing? Sizing is the process of matching the proper blower with a specific set of air holes in a specific spa.

Why do we size? Blower motors are air-cooled. The air moving over the motor keeps it from overheating. The amount of air required is determined by the blower H.P, the system backpressure, and the number and size of the air holes/jets. This air flow is measured in CFM (Cubic Feet per Minute).

What will TOO LITTLE air flow do to the motor? With too little airflow over the motor, it will overheat and shut down. This can damage the motor and reduce the brush life.

Do different horsepower blowers require different levels of airflow? Yes. A higher H.P. motor will require more air to pass over the motor to keep it cool.

System back pressure, measured in inches of water, is essential to **proper sizing.** It is the sum of the forces that restrict the ability of air to flow freely over the blower motor and through the spa plumbing. These limiting forces include:

- Pipe diameter
- Length of run
- Number of spa jets
- Number and type of elbows
- Check valves
- Size of spa jets

Note: As **back pressure increases**, **airflow will decrease,** thereby reducing the ability of the blower motor to stay within its normal operating temperatures.

Airflow Range for Different Sized Blowers

Blower HP	Minimum Airflow	Maximum Airflow for 2" PVC
1.0 HP blower	30 SCFM	90 SFCM
1.5 HP blower	45 SCFM	90 SFCM
2.0 HP blower	50 SCFM	90 SFCM

Maximum Back Pressure For Blowers

1.0 HP blower . . . . . .45 inches of water

1.5 HP blower . . . . . .45 inches of water

2.0 HP blower . . . . . .50 inches of water

B. Sizing a NEW SPA

STEP ONE: Calculate Back Pressure

To determine the spa's Back Pressure as an “inches of water” measurement, use the formula below and write the number in the box. (If available, use an Inches of Water gauge.)

Measure from water surface to air line _____ inches

\+ No. of feet of 2" pipe ___ divide by 10 = _____

\+ No. of 90° elbows_____ x .5 = _____

\+ No. of 45° elbow _____ x .125 = _____

\+ No. of ½ lb. check valves _____ x 4 = _____

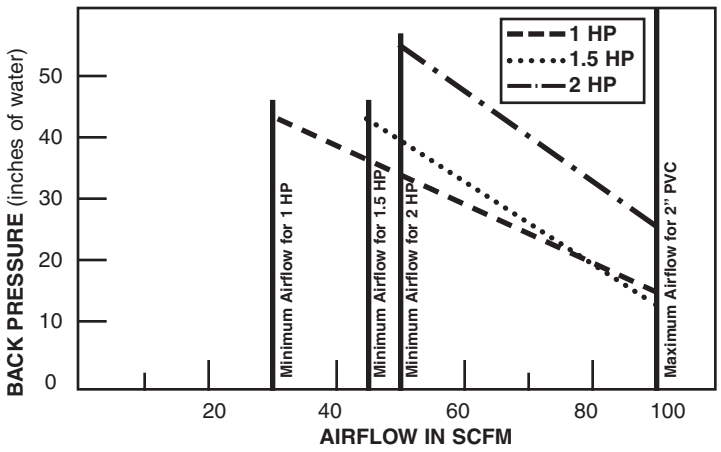
Total Back Pressure (inches of water) = ☐

STEP TWO: Determine the Airflow

Locate the **Total Back Pressure** number on the left side of the **Blower Performance Chart** below and draw a horizontal line. Note where your drawn line intersects at each dashed line. Read directly down to determine the necessary airflow for that size blower.

Total Airflow SCFM
(Standard Cubic Feet per Minute) ☐

Blower Performance Chart



STEP THREE: Calculate the Required Number of Air Holes

Choose an airhole size from the **Hole Sizing Chart** below and record the adjacent Conversion Factor on the second line of the formula below to determine how many holes of that size are needed to achieve the necessary air flow.

Hole Sizing Chart

Air Hole Size	Conversion Factor
1/8"	2.4
5/32"	1.5
3/16"	1.1
1/4"	.6
3/8"	.27
1/2"	.15
Jet	.1

Total Airflow (SCFM) From Step 2 _____

Conversion Factor From Chart Above **X** _____

Number of Holes Required **=** ☐

Note: Fewer holes than required will cause increased back pressure along the dashed line. **Do not increase back pressure beyond minimum airflow for your blower!** Too many holes will result in no air blowing from them. For assistance, contact our Customer Service Department at 1-800-VAC-SWEEP (USA and Canada only) or (760) 599-9600.

C. Sizing an EXISTING SPA

STEP ONE: Calculate Back Pressure

To determine the spa's Back Pressure as an “inches of water” measurement, use the formula below and write the number in the box. (If available, use an Inches of Water gauge.)

Measure from water surface to air line _____ inches

+ No. of feet of 2" pipe ___ divide by 10 = _____

+ No. of 90° elbows_____ x .5 = _____

+ No. of 45° elbow _____ x .125 = _____

+ No. of ½ lb. check valves _____ x 4 = _____

Total Back Pressure (inches of water) = ☐

STEP TWO: Calculate the airflow that the spa will allow

Count the number of **spa jets** and use this formula:

No. of jets _____

X **10**

Total Airflow spa will allow = ☐

OR count the **number and measure size of air holes** in the spa and use this formula:

No. of existing holes _____

Locate size of Airholes and record adjacent Conversion Factor number (from chart below) ÷ _____

Total Airflow spa will allow ☐

Airhole Sizing Chart

Air Hole Size	Conversion Factor
1/8"	2.4
5/32"	1.5
3/16"	1.1
1/4"	.6
3/8"	.27
1/2"	.15
Jet	.1

STEP THREE: Determine the Proper Blower

Refer to the Blower Performance Chart on page 4.

Draw a horizontal line across from your calculated **Back Pressure.** Draw a vertical line up from your calculated **Airflow**, and select the blower closest to the intersection of the two lines that you drew. If the intersection occurs between dashed lines, select the blower whose curve is below the intersection. If there is no curve below the intersection point, choose the first curve to the right of the intersection point.

Remember: Improper sizing can cause blower damage that is not covered under warranty. Always remember that bigger is not necessarily better.

III. Installation Guidelines

A. Series 400 Aboveground QT Blowers

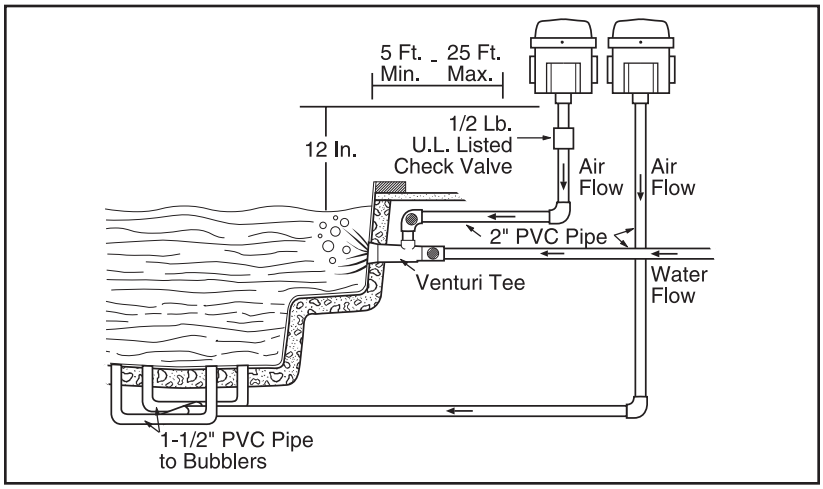
Polaris aboveground residential blowers are specially designed for installation in noise-sensitive environments. Like other Polaris blowers, the QT is thermally protected by a patented thermal valve. This valve prevents overheating from excessive back pressure, and reduces the chance of motor damage or blower shutdown.

Please Note: It is necessary to use 2" PVC pipe. As sizing is based on 2” PVC piping, the use of 1-1/2” PVC can cause problems.

1. Ensure the blower is properly sized. Improper sizing will reduce the life of the blower.
2. Pressure test the system prior to installation. This will prevent potential leakage or loss of air.

Please Note: This is especially important when using a Hartford loop.

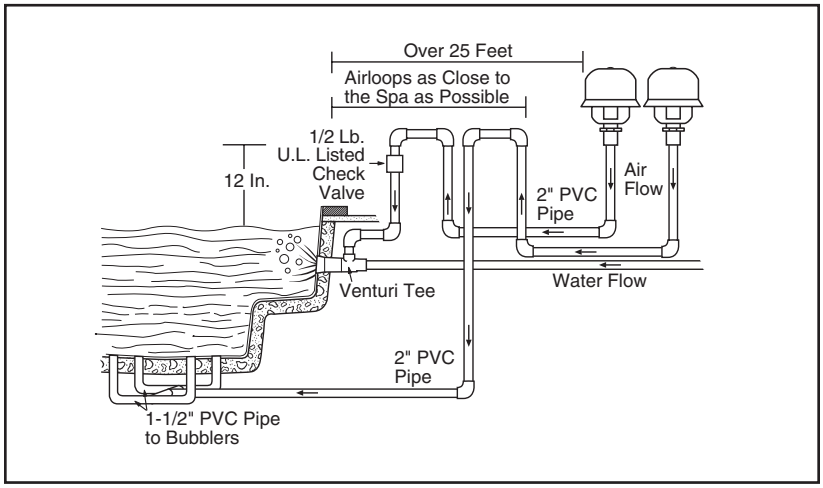
3. To install above the water level, the blower airloop or standpipe must stand at least 12" above the water level. Installing at a lower level can cause water damage, and is contrary to U.L. requirements.



INSTALLATIONS 5-25’ FROM SPA

4. When using the Polaris blower to supercharge the jets, a 1/2 lb. U.L. listed check valve must be installed between the blower and the jets to prevent possible damage to the blower.

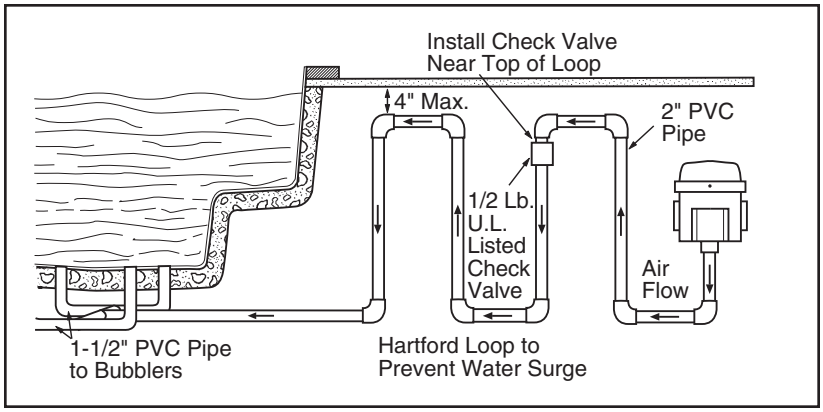
5. **If the blower is to be installed more than 25 feet from the spa, an air loop must be installed 12" above the spa as close to the spa as possible. The air loop will prevent the entire blower line from filling with water and overworking the blower. See diagram below.**



INSTALLATIONS OVER 25' FROM SPA

6. **Always install a check valve in an accessible location for ease of service.**

7. If the blower is to be installed below the water level, or if the blower air line drops below the bottom of the spa, a special plumbing configuration known as the Hartford Loop must be used to prevent the air line from filling with water. This installation method will require a 1/2 lb. U.L. listed check valve with no plumbing leaks, and the top of the loop must be within 4" of the surface of the spa. See diagram on the following page.



INSTALLATION BELOW WATER LEVEL

8. Do not install adjustable jets with the Polaris blower. Adjusting the jets can cause excessive back pressure.

9 Do not remove the surge protector, as this will cause damage to the blower.

10. Do not glue the blower to the standpipe. Glue fumes can potentially cause the blower to explode upon startup. If necessary, install a ¼" self-tapping screw to secure the blower to the standpipe.

11. Measuring the current draw under load using an amp meter. The maximum acceptable amp reduction due to back pressure is 1.0 amp for 120V motors or 0.5 amp for 240V motors.

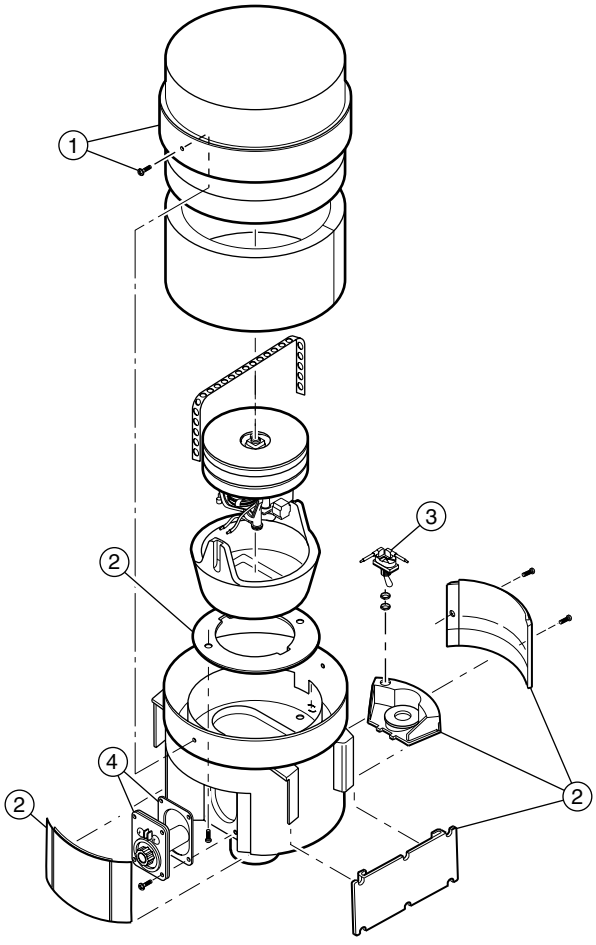
Directions for Measuring Amp Drop

1. Remove the piping from the outlet port of the air blower.
2. Clamp the ammeter around one of the hot wires feeding the air blower. Do not use the green ground wire.
3. Start the air blower and record the amp reading. It should be somewhere between 5 and 15 amps, depending on the blower size and voltage. Make a note of this number: _____
4. Turn the air blower off and reconnect the piping to the outlet port.
5. Start the air blower again. When air is seen coming out of each air hole in the spa, record the amp reading: _____

The acceptable difference between the two numbers should be 1.0 amp for 120V motors or 0.5 amp for 250V motors.

QT Blower Exploded Parts Diagram

No.	Part #	Description	Qty
1	1-400-10	Blower Top	1
2	1-400-20	Cover Plate Set	1
3	1-400-30	Switch, 120V	1
4	1-400-60	Thermo Valve and Gasket	1



B. Series 500 Aboveground Metal Blowers

Polaris aboveground residential blowers are specially designed for installation in noise-sensitive environments. The metal blower is U.L. Listed for both indoor and outdoor use with thermal protection. As with all of the blowers, it is equipped with a thermal protection device that will automatically shut down the motor in the case of a mechanical problem. Once cooled, the auto reset function will restart the motor.

Please Note: It is necessary to use a 2" pipe. It is also important to bond all metal blowers. The bonding lug is located on the outside of the blower.

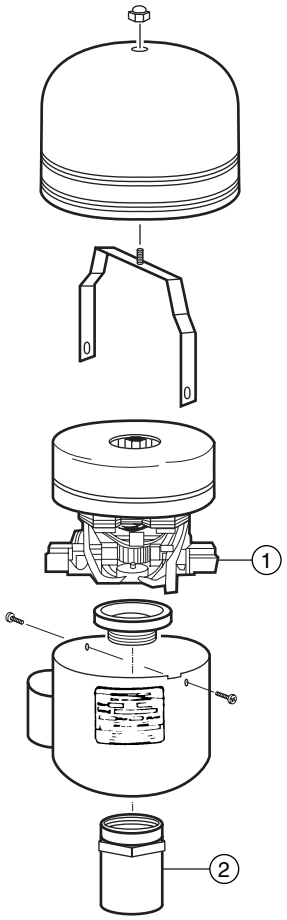
1. Ensure the blower is properly sized. Improper sizing will reduce the life of the blower.
2. Pressure test the system prior to installation. This will avoid potential leakage or loss of air.

   Note: This is especially important when using a Hartford loop.
3. To install above the water level, the blower airloop or standpipe must stand at least 12" above the water level. Installing at a lower level can cause water damage, and is contrary to U.L. requirements. See diagram on page 7.
4. When using the Polaris blower to supercharge the jets, a ½ lb. U.L. listed check valve must be installed between the blower and the jets to prevent possible damage to the blower.
5. If the blower is to be installed more than 25 feet from the spa, an air loop must be installed 12" above the spa as close to the spa as possible. The air loop will prevent the entire blower line from filling with water and overworking the blower. See diagram on page 8.
6. Always install a check valve in an accessible location for ease of service or maintenance.
7. To install below the water level, or if the blower air line drops below the bottom of the spa, a Hartford Loop must be used to prevent the air line from filling with water. This installation method will require a ½ lb. U.L. listed check valve with no plumbing leaks, and the top of the loop must be within 4" of the surface of the spa. See diagram on page 9.

8. Do not install adjustable jets with the Polaris blower. Adjusting the jets can cause excessive back pressure.
9. Do not remove the surge protector, as this will cause damage to the blower.
10. Do not glue the blower to the standpipe. Glue fumes can potentially cause the blower to explode upon startup. If necessary, install a 1/4" self-tapping screw or use silicone to seal the joints.
11. Measuring the current draw under load using an amp meter. The maximum acceptable amp reduction due to back pressure is 1.0 amp for 120V motors or 0.5 amp for 240V motors.

Metal Blower Exploded Parts Diagram

No.	Part #	Description	Qty
1	1-700-29	Motor Brush Kit	1
2	1-700-06	Check Valve, Bottom	1



C. Common Blower Problems

PROBLEM	HOW TO DETECT	CAUSE
Water Damage	• Corrosion on winding side of motor • Calcium deposits inside blower	• Blower or Hartford loop too low • Check valve not used • Blower too close to sprinklers • Blower mounted upside down without protection
Back Pressure	• Separation of housings • Black carbon build up • Melting and/or disfiguration of housings • Motor failure • Blower shuts off	• Not enough (or large enough) air holes in channel of spa • More than 8-90° elbows in the line • Debris blockage • Plumbed with less than 2" pipe • Extremely long run • Blower not sized properly • Check valve rated greater than 1/2 lb.
Motor Worn Out	• Motor brushes worn out in short amount of time • Blower at commercial spa	• Residential blower on commercial application • Blower wired into circulation system
Explosion	• Fan locked and "puffed" up on top • Casings separated (screws and/or plastic around screws broken)	• PVC glue fumes ignited from brush arc
110V unit wired to 220V	• Brushes disintegrated • Commutator blown	

IV. Replacement Instructions

General Information

The following list indicates the replacement kit model number for the 120V and 240V units.

1. 1-595-01 (120V) and 1-595-02 (240V) motors will replace blower model nos. 460, 502, 503, 510, 511, 512, 520, 521.
2. 1-593-01 (120V) and 1-593-02 (240V) motors will replace blower model nos. 470, 500, 501, 515, 516, 525, 526.
3. 1-597-01 (120V) and 1-597-02 (240V) motors will replace blower model nos. 480, 565, 566, 570, 571.

Features and Benefits

Thermal Protection: The thermally-protected motor shuts off automatically under excessive operating temperatures for protection against motor damage. Equipped with auto reset, the motor restarts automatically after cooling.

Works In Most Blowers: Polaris/Anzen replacement motors work in most residential blowers, even those manufactured by other companies, with or without thermal protection (except those with bypass motors).

Warranty: Motor replacement kits are covered by a one year, limited warranty. See the information packed with the product for complete warranty details.

Product Support: Blower motor replacement kits are backed by the same high level of technical support the industry has come to expect from Polaris.

Please Note: If you have any questions, please contact our Customer Service Department at 1-800-VAC-SWEEP (USA and Canada only) or (760) 599-9600, Monday through Friday, 7:30 a.m. to 5:00 p.m., PST.

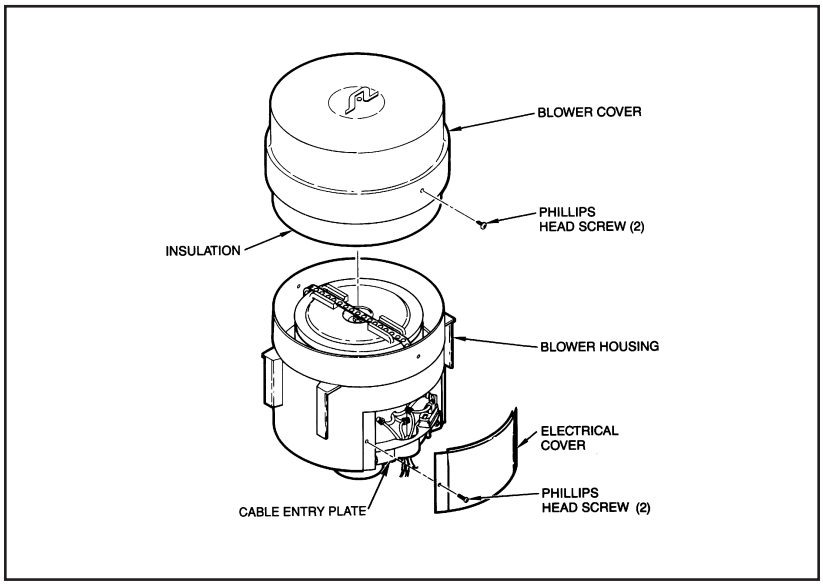
A. Series 400 Blower Repairs

Tools needed for Series 400 blower repair:

- Phillips-head screwdriver
- 5/16" hex-head screwdriver
- Wire Cutter
- Crimp Pliers

Motor Replacement Kit Installation Instructions

1. Turn off the power to the blower from the main supply panel.
2. Remove the two Phillips-head screws from the blower cover to lift off the cover and remove the insulation.

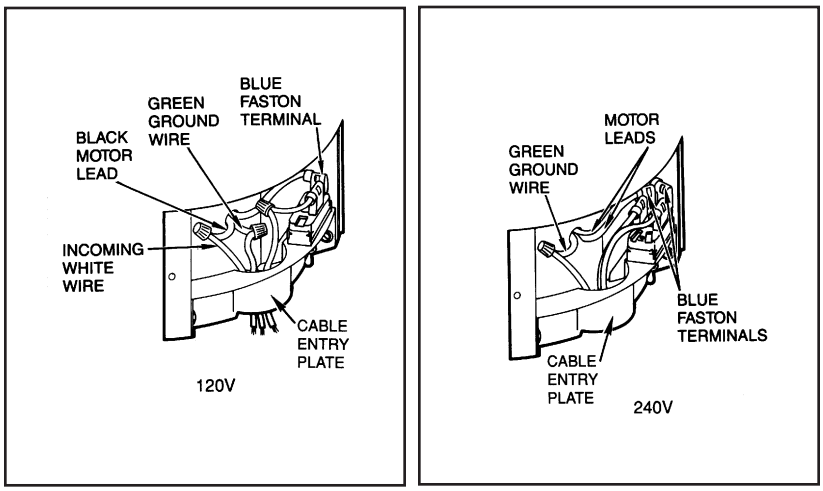


3. Remove the two Phillips-head screws that attach the electrical cover to the housing and take off the electrical cover.
4. Remove the two Phillips-head screws that attach the vent cover to the housing and snap out the vent cover.

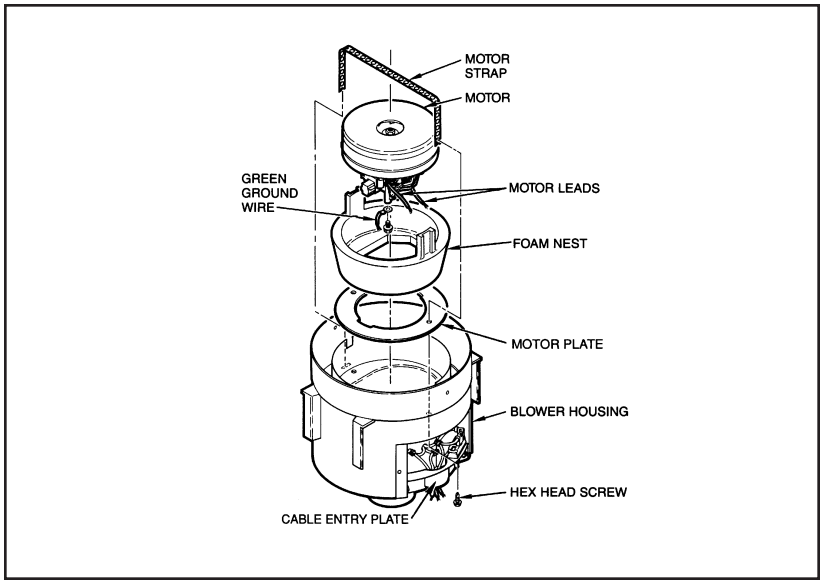
Please Note: Proper electrical connection is important to prevent motor failure or personal injury. Before disconnecting, mark all wires on the old and new motors, as well as incoming sources with matching numbers. We suggest the use of masking tape and a pen.

5. **For 120V motors:** Disconnect the motor lead wire that connects to the incoming white wire. Cut the black motor lead to the switch 3" from the blue Faston terminal. Disconnect the green ground wire.

   For 240V motors: Cut both black motor leads 2" below the blue Faston terminals. Disconnect the green ground wire.

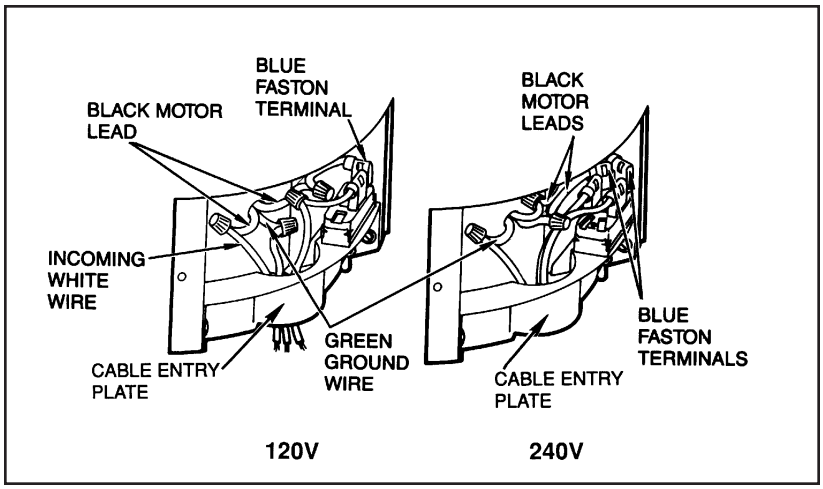


6. Remove both hex-head screws that hold the cable entry plate to the housing and remove the cable entry plate.
7. Remove the hex-head screws attaching each end of the motor strap to the housing.
8. Grasping the strap with pliers, release it from the locking tab and lift away from the housing. Discard the strap.
9. Lift out the motor and the foam nest, pulling the wires through the hole in the side of the housing.
10. Remove the motor plate and push the motor out from the foam nest.
11. Remove the green ground wire from the old motor and reconnect it to the same location on the new motor.



12. Grasping the motor leads and the ground wire, thread them through the foam nest.
13. Slide the motor plate over the wires until it rests on the foam nest.
14. Thread all the leads from the inside through the hole in the side of the housing. Set the new motor inside the foam nest, aligning the foam nest slots with the housing slots.
15. Fit one end of the new strap over the locking tab on the vent side of the housing and replace the screw.
16. Thread the strap through the slot on the opposite side of the housing. Pulling it tightly across the housing with pliers, attach the strap to the locking tab. Cut off any excess material, ensuring that two holes length is still showing. Affix the strap with the hex-head screw.
17. Reattach the cable entry plate with the two hex-head screws.
18. Replace the top onto the housing with the Phillips-head screws.
19. **For 120V motors:** Strip one motor lead and the 2" wire with the blue Faston terminal. Join the two wires with a wire nut. Reconnect the other motor lead to the incoming white wire, and the motor ground wire to the incoming ground wire (both green) with a wire nut.

For 240V motor: Strip one motor lead and the 2" wire with the blue Faston terminal, and join these two wires with a wire nut. Complete the same step with the other motor lead and 2" wire. Reconnect the ground wires in the same way as the 120V motor.

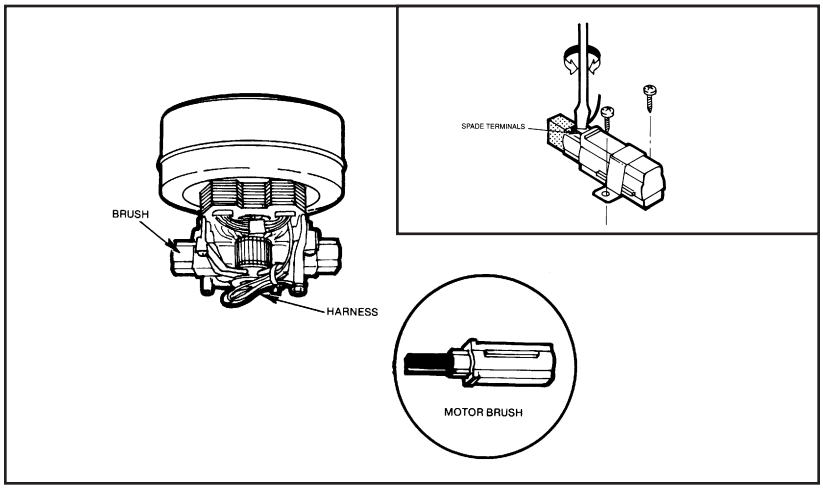


20. Fit the electrical cover onto the housing and replace the two Phillips-head screws.
21. Snap the vent cover back onto the housing and replace the two Phillips-head screws.
22. Turn on the power to the unit to verify that the motor runs and the spa action meets expected standards.

Motor Brushes Replacement Instructions

1. Turn off the power to the blower from the main supply panel.
2. Unscrew the 3/8" acorn nut from the top of the blower dome and lift off the dome.
3. Remove the 5/16" dome bracket screws from each side of the blower and remove the dome bracket.
4. With a small chisel or flat blade screwdriver and a hammer, tap the lip of the crimped slot (located at the blower housing seam) in an upward motion to loosen until the top can be removed. Separate the motor from the housing.

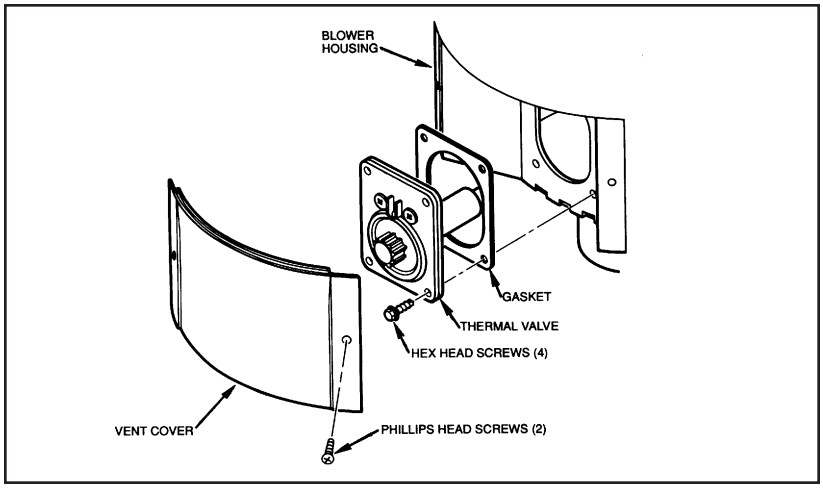
5. If necessary, cut the tie-wraps holding the wires to the motor frame.
6. Using a flat blade screwdriver, pry the spade terminal from each brush holder.
7. Each brush is held in place by a harness and two screws. Remove the two screws and lift the harness and brushes from the motor.



8. Insert the spade terminals into the new brush holders.
9. Place the new brushes into the motor and replace the harness and screws. Tighten securely.
10. Reinstall the motor into the blower housing.
11. Turn on the power to the unit to verify that the motor runs and the spa action meets expected standards.

QT Thermal Valve Replacement Instructions

Polaris' QT blower is equipped with a patented thermal valve to prevent the unit from overheating from excessive back pressure.



1. Turn off the power to the blower from the main supply panel.
2. Remove the two Phillips-head screws that attach the vent cover to the housing and snap out the vent cover.
3. Using the 5/16" hex-head screwdriver, remove the four hex-head screws attaching the thermal valve to the blower housing.
4. Grasp the center knob of the thermal valve and remove the valve from the housing.
5. Replace the thermal valve and gasket with the new parts (part# 1-400-50). Discard the old valve and gasket.

Please Note: Ensure the arrow-shaped pointer is facing upward when inserting the thermal valve into the housing.

6. Replace the four hex-head screws through the face of the thermal valve and the gasket.
7. Snap the vent cover back into place and replace the two Phillips-head screws.
8. Turn on the power to the unit to verify that the motor runs and the spa action meets expected standards.

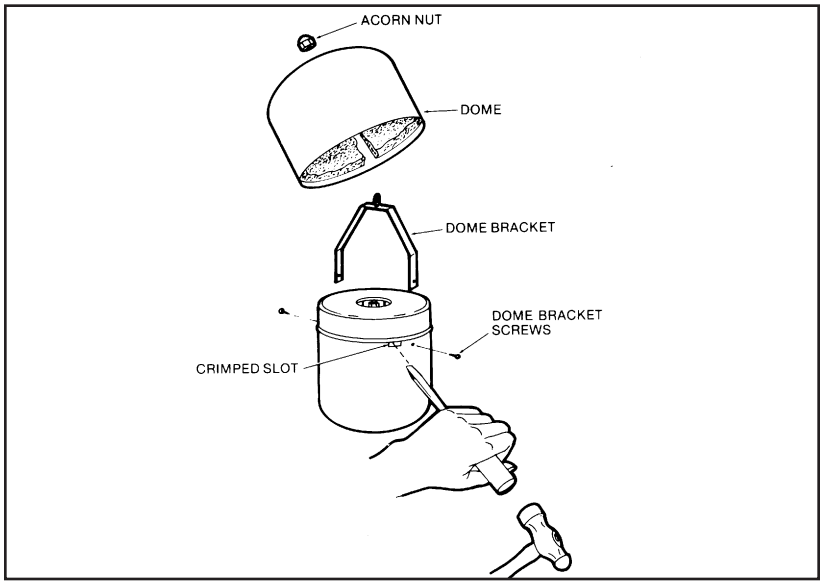
B. Series 500 Blower Repairs

Tools needed for Series 500 blower repair:

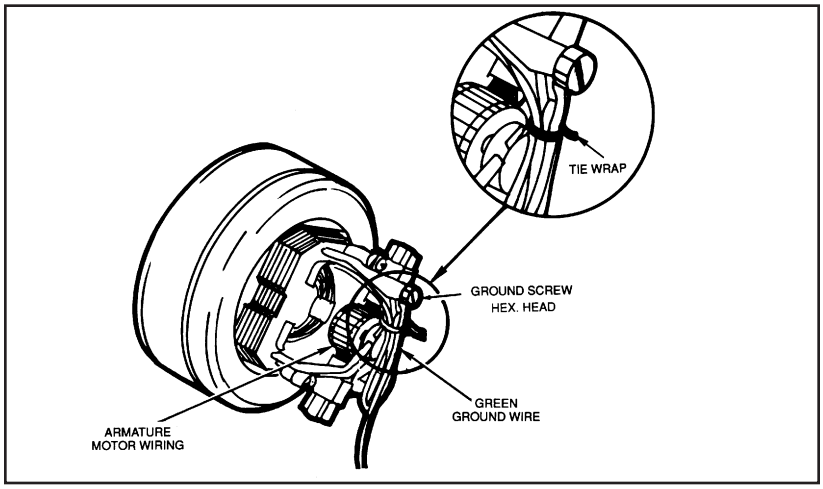
- 3/8" nut driver
- 5/16" nut driver
- Small chisel or flat blade screwdriver
- Hammer
- Wire Cutter
- Crimp Pliers
- Belt wrench or two 2-1/2" channel-lock pliers
- Silicone or tub caulking

Motor Replacement Kit Installation Instructions

1. Turn off the power to the blower from the main supply panel.
2. Unscrew the 3/8" acorn nut from the top of the blower dome and lift off the dome.

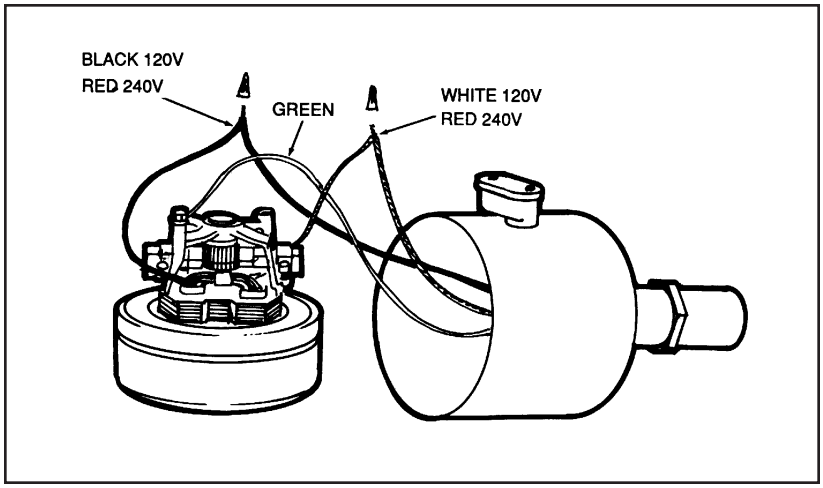


3. Remove the 5/16" dome bracket screws from each side of the blower and remove the dome bracket.
4. With a small chisel or flat blade screwdriver and a hammer, tap the lip of the crimped slot (located at the blower housing seam) in an upward motion to loosen until the top can be removed. Separate the motor from the housing.
5. Cut the tie-wraps holding the wires to the motor frame.



Please Note: A 120V motor has one black wire, one white wire and one green ground wire. The 240V motor has two red wires and a green ground wire.

6. Remove the green ground wire from its screw mounting on the motor.
7. Cut off the crimp caps from the wires and disconnect the motor.
8. Strip the insulation on both colored motor leads.
9. Fasten the green ground wire to the motor frame.



10. Using the supplied wire nuts, connect the replacement motor leads to the incoming wires inside the blower housing bottom can.

Please Note: Ensure the wires are securely tie-wrapped to the motor frame. Loose wires caught in the armature can cause a shortage in the motor.

11. Fit the motor in the housing by aligning the pre-drilled mounting holes. With the hammer and chisel, tap the motor down along the lip of the housing until it is properly sealed. Caution: Do not tap on the impeller cover. This can cause severe damage, resulting in an inoperable motor replacement kit.
12. Align the dome bracket holes with the blower holes. Push the dome bracket down onto the impeller cover as far as possible. Using the self-tapping screws from the replacement kit, secure the dome bracket to the unit.
13. Reinstall the dome and acorn nut. Turn on the power to the unit to verify that the motor runs and the spa action meets expected standards.

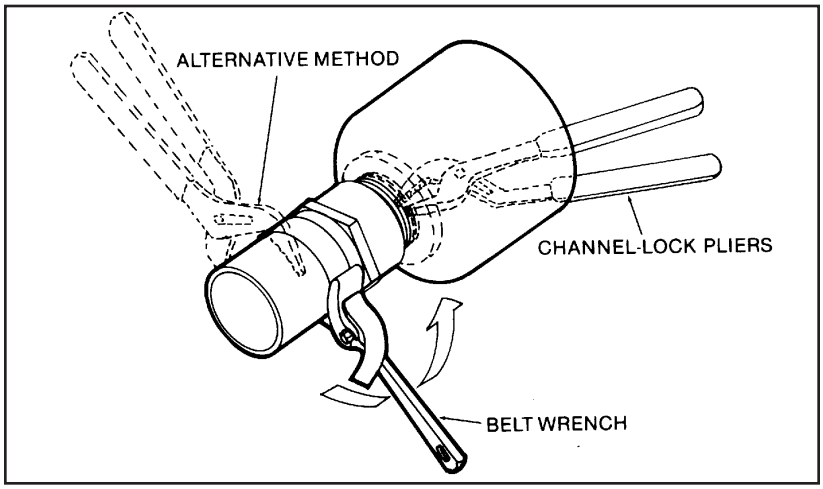
Motor Brushes Replacement Instructions

The motor brushes on all Polaris blowers and Motor Replacement Kits are rated for approximately 1000 hours of life under normal operating conditions. Excessive back pressure is a major cause of premature brush breakdown. An indication of this condition is a coating of dust in the exhaust port of the blower. Brush sets (part# 1-700-29) are available at the local Polaris distributor. Motor brushes can be easily replaced by following these instructions. Note: Inspect the condition of the armature. If it is badly worn, the entire motor must be replaced.

1. Turn off the power to the blower from the main supply panel.
2. Unscrew the 3/8" acorn nut from the top of the blower dome and lift off the dome.
3. Remove the 5/16" dome bracket screws from each side of the blower and remove the dome bracket.
4. With a small chisel or flat blade screwdriver and a hammer, tap the lip of the crimped slot (located at the blower housing seam) in an upward motion to loosen until the top can be removed. Separate the motor from the housing.
5. If necessary, cut the tie-wraps holding the wires to the motor frame.
6. Using a flat blade screwdriver, pry the spade terminal from each brush holder.
7. Each brush is held in place by a harness and two screws. Remove the two screws and lift the harness and brushes from the motor.
8. Insert the spade terminals into the new brush holders.
9. Place the new brushes into the motor and replace the harness and screws. Tighten securely.
10. Reinstall the motor into the blower housing.
11. Turn on the power to the unit to verify that the motor runs and the spa action meets expected standards.

Bottom-Mount Check Valve Replacement

1. Turn off the power to the blower from the main supply panel.
2. Remove the blower from the standpipe.
3. Unscrew the 3/8" acorn nut from the top of the blower dome and lift off the dome.

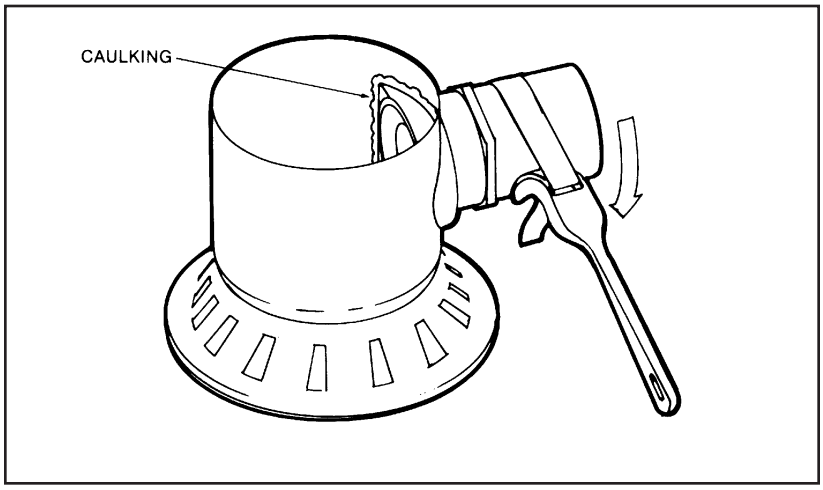


4. Remove the 5/16" dome bracket screws from each side of the blower and remove the dome bracket.
5. With a small chisel or flat blade screwdriver and a hammer, tap the lip of the crimped slot (located at the blower housing seam) in an upward motion to loosen until the top can be removed. Separate the motor from the housing.
6. Using a belt wrench channel-lock pliers (or two channel-lock pliers), unscrew the check valve from the bottom nut. Remove the bottom nut from the inside of the can.
7. Place the new bottom nut through the bottom of the can and attach the check valve. Using the belt wrench or channel-lock pliers, tighten securely.
8. Reinstall the motor into the housing by reversing steps 2 through 4 from the Motor Replacement Kit installation on page 22.

9. Reinstall the blower on the standpipe.
10. Turn on the power to the unit to verify that the motor runs and the spa action meets expected standards.

Side-Mount Check Valve Replacement

1. Turn off the power to the blower from the main supply panel.
2. Remove the blower from the standpipe.



3. Unscrew the 3/8" acorn nut from the top of the blower dome and lift off the dome.
4. Remove the 5/16" dome bracket screws from each side of the blower and remove the dome bracket.
5. With a small chisel or flat blade screwdriver and a hammer, tap the lip of the crimped slot (located at the blower housing seam) in an upward motion to loosen until the top can be removed. Separate the motor from the housing.
6. Using a belt wrench channel-lock pliers (or two channel-lock pliers), unscrew the check valve from the bottom nut. Remove the bottom nut from the inside of the can.
7. Remove the radius nut from the inside of the can. This may require a sharp tap from the outside with a hammer.

8. Apply tub caulking or silicone onto the base surface of the new radius nut, and push the nut through the hole in the side of the blower can.
9. Put the new radius nut washer over the nut, while pushing it firmly against the side of the blower.
10. Screw the check valve onto the nut and tighten securely with a belt wrench or channel-lock pliers.
11. Reinstall the motor into the housing by reversing steps 2 through 4 from the Motor Replacement Kit installation on page 19.
12. Reinstall the blower on the standpipe.
13. Turn on the power to the unit to verify that the motor runs and the spa action meets expected standards. Check for any air leaks around the check valve fitting.

C. General Replacement Parts

In addition to the assembly-specific replacement instructions, the parts listed below may be replaced in the Polaris blowers.

- Optional in-line check valve
- 120V and 240V toggle switches
- 120V and 240V circuit breakers

Tools needed for these repairs:

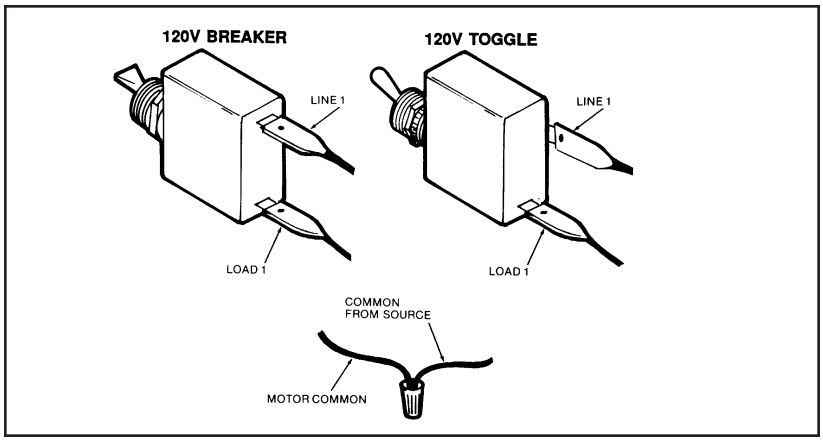
- Rubber mallet
- Flat-blade screwdriver
- Phillips screwdriver
- Pliers
- 1/4" nut driver

Please Note: Early models of the blowers use circuit breakers. Late thermally-protected models use toggle switches.

120V Toggle Switch or Circuit Breaker Replacement Instructions

A switch rated at 15A-150VAC can be used to replace the 120V toggle switch. The 120V circuit breaker must be replaced with the identical circuit breaker. These parts are available at any electrical supply store.

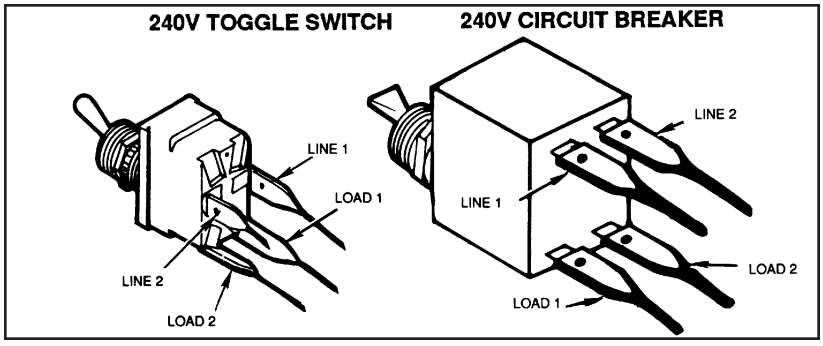
1. Turn off the power to the blower from the main supply panel.
2. Remove the two screws on the switch cover of the bell box and remove the cover to gain access to the toggle switch.
3. Remove the two 1/4" hex-head switch bracket screws and pull the switch assembly out of the bell box to the fullest length possible.
4. Remove the spade terminals from the switch prongs, but do not cut the wires. Remove the nut from the face of the switch and remove the bracket.
5. Insert the new switch into the bracket. Replace the nut and tighten securely.
6. Reattach the spade terminals to the new switch.
7. Carefully push the wires back into the bell box, and attach the bracket to the bell box with the two hex-head screws.
8. Securely replace the cover plate.
9. Turn on the main power supply.



240V Toggle Switch or Circuit Breaker Replacement Instructions

A switch rated at 11.75A-277VAC can be used to replace the 240V toggle switch. The 240V circuit breaker must be replaced with the identical circuit breaker. These parts are available at any electrical supply store.

1. Turn off the power to the blower from the main supply panel.
2. Remove the two screws on the switch cover of the bell box and remove the cover to gain access to the toggle switch.
3. Remove the two 1/4" hex-head switch bracket screws and pull the switch assembly out of the bell box to the fullest length possible.
4. Remove the spade terminals from the switch prongs, but do not cut the wires. Remove the nut from the face of the switch and remove the bracket.
5. Insert the new switch into the bracket. Replace the nut and tighten securely.
6. Attach the motor leads (Load 1 and 2) to the bottom terminals of the new switch.
7. Attach the power supply leads (Line 1 and 2) to the top terminals on the new switch. Ensure that the polarity is not reversed or the main breaker will trip.
8. Carefully push the wires back into the bell box, and attach the bracket to the bell box with the two hex-head screws.
9. Securely replace the cover plate.
10. Turn on the main power supply.



V. Limited Warranty

This limited warranty is extended to the original consumer purchaser of this Polaris blower manufactured by Polaris Pool Systems, Inc., 2620 Commerce Way, Vista, CA 92083-8438, USA.

Polaris warrants the blower it manufactures, including all parts and components thereof, to be free of defects in material and workmanship. We do not cover improper installation of the Polaris blower, but our instruction manual is complete enough to solve any problems - particularly if it is read before, rather than after, the installation. If you have any questions regarding your Polaris blower, please feel free to write us. Be sure to include the serial number of your unit.

The warranty commences on the date of installation of the blower. The Polaris blower is warranted for a period of one year, but in no event shall be in effect for more than two years from the date of manufacture of the unit as established by the serial number.

This limited warranty does not apply if the failure is caused or contributed to by any of the following: incorrect blower sizing, water damage, plumbing problems, improper usage installation, unsuitable application of the unit, lack of reasonable and necessary maintenance, or repairs made or attempted by other than Polaris or one of its Authorized Service Centers. Polaris will repair or replace, at its option, a unit or part proved to be defective within the warranty period and under the conditions of the warranty.

The consumer must deliver or ship the unit or warranty parts freight prepaid to the nearest Polaris Authorized Service Center or return it freight prepaid (after proper authorization) to the plant of manufacture. Authorization to return a unit or part to the plant of manufacture must be obtained from the Polaris Customer Service Department. Check with your dealer for the local procedure before exercising this warranty. If further directions or instructions should be required, contact the Polaris Customer Service Department at 1-800-VAC-SWEEP (USA and Canada only) or (760) 599-9600. Be sure you insure your shipments against loss or damage in transit.

Polaris is not responsible for the cost of removal of the unit or part, damages due to removal, or any other expenses incurred in shipping the unit or part to or from the factory or its Authorized Service Centers, or the installation of the repaired or replacement unit. The consumer must bear these expenses.

This warranty does not cover repair or replacement of a unit or part except at our factory or a Polaris Authorized Service Center.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL SUCH OTHER WARRANTIES ARE DISCLAIMED EXCEPT TO THE EXTENT ANY IMPLIED WARRANTY MAY BE IMPOSED BY STATE CONSUMER LAW. ANY SUCH IMPLIED WARRANTY IMPOSED BY STATE CONSUMER LAW IS LIMITED IN DURATION TO ONE (1) YEAR FROM DATE OF PURCHASE.

IN NO EVENT SHALL POLARIS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE OR KIND OR FOR DAMAGES TO PERSONS OR PROPERTY, INCLUDING ANY DAMAGE RESULTING FROM THE USE OF THE POLARIS BLOWER WITH A SUBSTANDARD POOL CIRCULATION SYSTEM.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

This limited warranty is valid only in the United States of America, and it does not apply to Polaris blowers sold or installed in any other country.

VI. Non-Warranty Conditions

The initial step in correcting a blower problem is to determine whether the unit is covered by our warranty. For warranty conditions, contact Polaris Customer Service at 1-800 VAC-SWEEP (USA and Canada only) or (760) 599-9600, Monday through Friday, 7:30a.m. - 5:00 p.m., PST. The warranty does not cover problems resulting from the conditions described below.

Incorrect Blower Sizing

Check the motor for proper operation. If no mechanical problems are apparent and the motor runs for 20 minutes when removed from the standpipe, then check the spa specifications (see sizing chart on page 4). If the blower is incorrectly sized, call our Customer Service Department, 1-800-VAC-SWEEP.

Water Damage

Open the unit and examine for any observable water damage. If there are any signs of water or residue such as rust or calcium build-up, the warranty is void. Contact Customer Service, 1-800-VAC-SWEEP, for future prevention tips.

Plumbing Problems

Complete a test for amperage while on and off the standpipe. Motor amperage will drop under load (on the pipe). If the drop is more than 0.5 amps for 240V motors or 1.0 amps for 120V motors, a sizing problem may exist. The cause may be excessive back pressure, plumbing block, or other plumbing issues. See “Directions for Measuring Amp Drop” on page 9.

Incorrect Blower Choice

Verify the installation method. If a residential blower is being used in a commercial application, the warranty is void. The residential blower is not designed for the rigors of commercial usage.

Warranty Expired

Check the date of installation. Polaris blowers are warrantied for one year from the date of installation.

©2002 Polaris Pools Systems, Inc. All Rights Reserved. TL-500 10/00