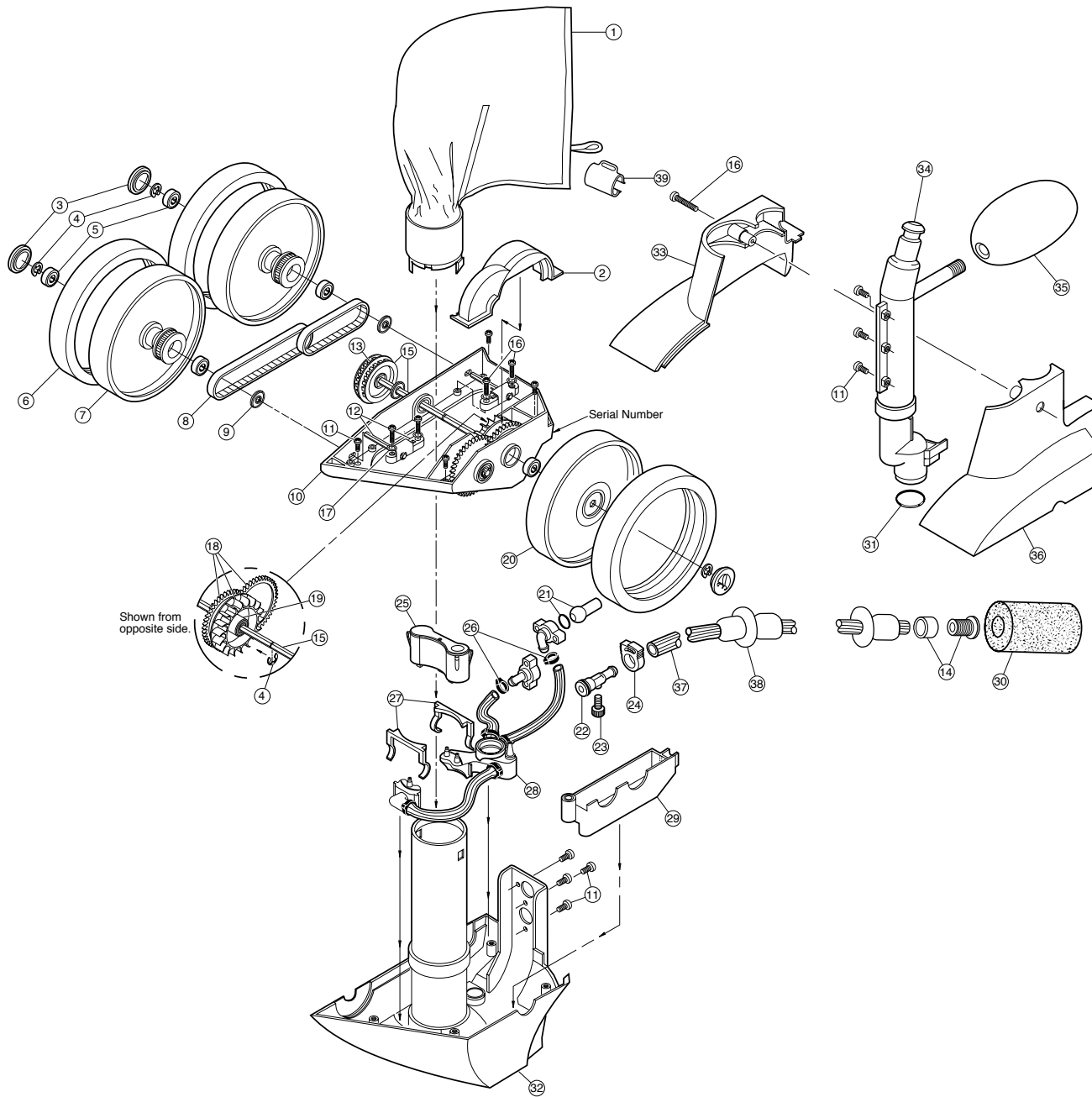


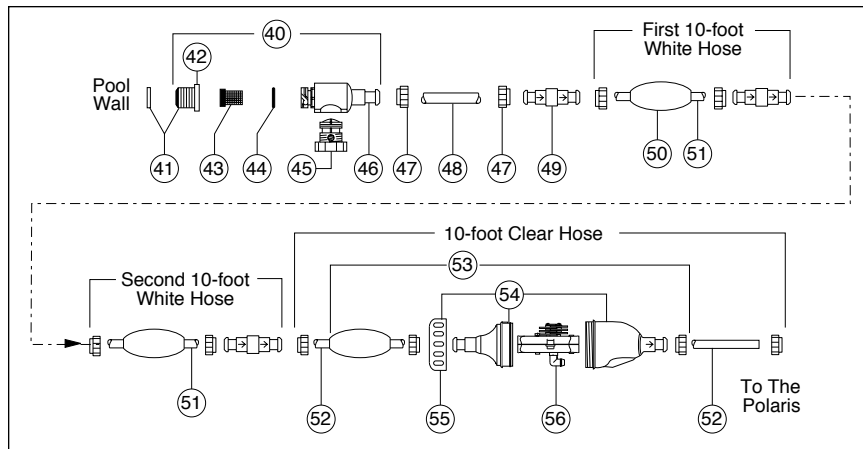
380 EXPLODED PARTS DIAGRAM



No.	Part#	Description	Qty.
1	9-100-1014	All Purpose Bag	1
2	9-100-1152	Housing, Turbine Upper	1
3	9-100-1114	Hub Cap	3
4	9-100-5107	E-clip, Stainless Steel	10
5	9-100-1108	Ball Bearing	8
6	C-10	Tire, White	3
7	9-100-1008	Wheel, Double-side	2
8	9-100-1017	Belt Kit, Small and Large	1
9	9-100-7011	Shield, Bearing	3
10	9-100-1005	Frame, Exchange Only	1
11	9-100-5117	Screw, 8-32 x 3/8" S/S Pan Head	11
12	9-100-1139	Axle Block Assembly	2
13	9-100-1010	Belt Divider, Transfer Pulley	1
14	B-25	Orifice Tip with Orifice Tip Guard	1
15	9-100-1007	Transfer Pulley/Drive Shaft Assembly	1
16	9-100-5115	Screw, 8-32 x 3/4" S/S Pan Head	5
17	9-100-5130	Lock Washer, Axle Block	4
18	9-100-1132	Drive Train Gear Kit w/Turbine Bearing	1
19	9-100-1103	Turbine Wheel with Bearing	1
20	9-100-1116	Wheel, Single-side	1
21	C-131	Thrust Jet Kit	1
22	9-100-7008	Sweep Hose Barb Complete	1
23	B-20	Adjustment Screw, Sweep Hose	1
24	B-15	Sweep Hose Attach Clamp, White	1
25	9-100-9004	Base Weight	1
26	9-100-7170	Hose Clamp for WMS	6
27	9-100-7009	Jet Retainer	2
28	9-100-7010	Water Management System (WMS)	1
29	9-100-1155	Housing, Turbine Lower	1
30	9-100-3105	Sweep Hose Scrubber	1
31	9-100-5132	O-ring, In-head Timer/Feed Pipe Assy	1
32	9-100-7016	Base Assy for In-line Back-up Valve, White	1
33	9-100-1141	Top Cover, Double Wheel Side	1
34	9-100-7003	Feed Pipe/Timer Blank Assembly	1
35	A-20	Float, Head	1
36	9-100-1140	Top Cover, Single Wheel Side	1
37	B-5	Sweep Hose Complete	1
38	B-10	Wear Rings	8
39	9-100-1018	Bag Collar	1

To insure proper operation and long life for the Polaris, be sure to insist on genuine Polaris parts.

380 HOSE PARTS DIAGRAM

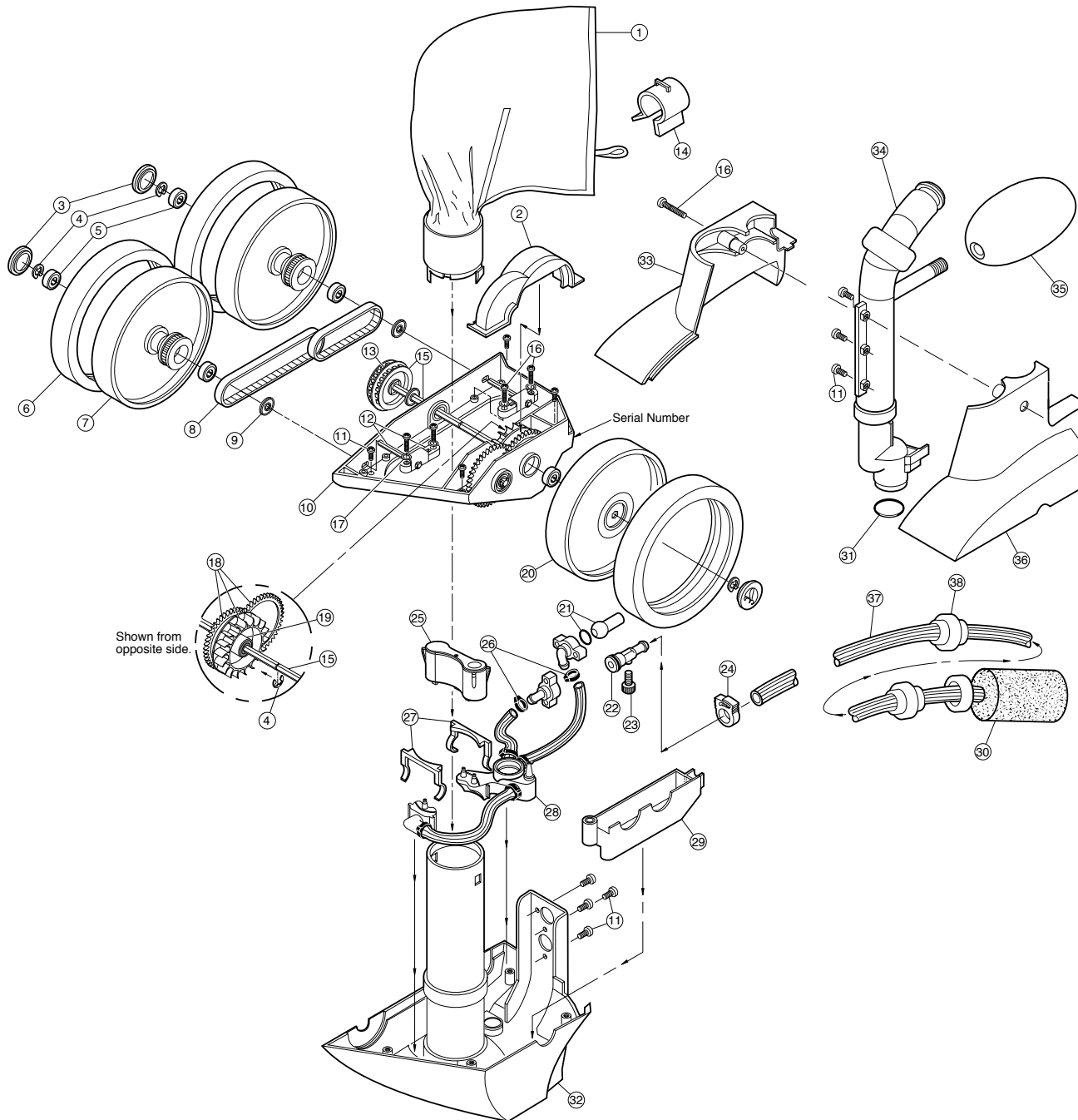


No.	Part#	Description	Qty.
40	9-100-9001	UWF Connector Assembly	1
41	10-108-00	UWF Restrictor Kit	1
42	6-500-00	Universal Wall Fitting (UWF)	1
43	6-504-00	Filter Screen, UWF/QD	1
44	6-505-00	O-ring, UWF/QD	1
45	9-100-9002	Pressure Relief Valve, Black	1
46	D-29	Quick Disconnect, UWF	1
47	D-15	Nut, Feed Hose	10
48	*	Adapter Hose, 8-1/2"	1
49	D-20	Swivel, Ball Bearing	3
50	D-10	Float, Feed Hose	9
51	D-45	Feed Hose, White, 10 Foot, Hard	2
52	D-50	Feed Hose, Clear, 10 Foot, Soft	1
53	G-52	Back-up Valve Kit	1
54	G-54	Case Kit for G-52	1
55	G-57	Collar, Back-up Valve	1
56	G-53	Mechanism for G-52	1
		Parts Not Shown	
	G-5	Feed Hose Complete w/UWF, No Back-up Valve	
	G-9	Coupling, 1 1/2" NPTF x 3/4" NPTM	
	9-100-3104	Feed Hose with Floats, White	
	9-100-3108	Feed Hose with Floats, Clear	
	9-100-9003	Street Ell	

To insure proper operation and long life for the Polaris, be sure to insist on genuine Polaris parts.

*Not sold separately.

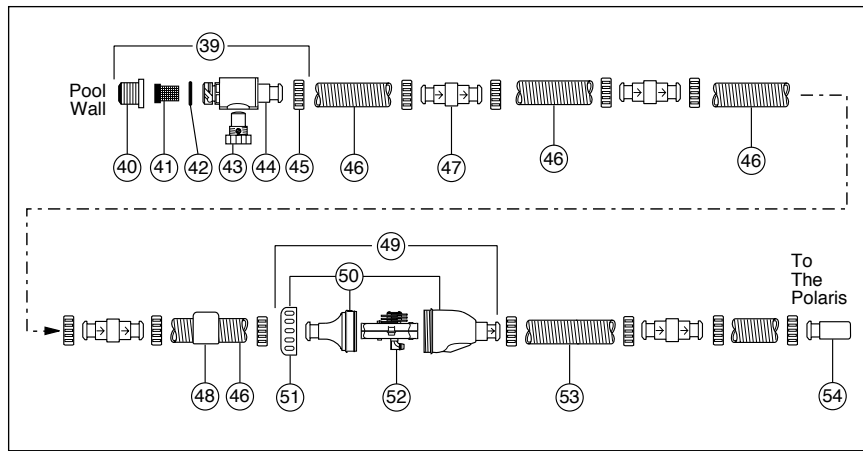
360 EXPLODED PARTS DIAGRAM



No.	Part#	Description	Qty.
1	9-100-1014	All Purpose Bag	1
2	9-100-1152	Housing, Turbine Upper	1
3	9-100-1114	Hub Cap	3
4	9-100-5107	E-clip, Stainless Steel	10
5	9-100-1108	Ball Bearing	8
6	C-10	Tire, White	3
7	9-100-1008	Wheel, Double-side	2
8	9-100-1017	Belt Kit, Small and Large	1
9	9-100-7011	Shield, Bearing	3
10	9-100-1005	Frame, Exchange Only	1
11	9-100-5117	Screw, 8-32 x 3/8" S/S Pan Head	11
12	9-100-1139	Axle Block Assembly	2
13	9-100-1010	Belt Divider, Transfer Pulley	1
14	9-100-3135	Collar, Bag Tie	1
15	9-100-1007	Transfer Pulley/Drive Shaft Assembly	1
16	9-100-5115	Screw, 8-32 x 3/4" S/S Pan Head	5
17	9-100-5130	Lock Washer, Axle Block	4
18	9-100-1132	Drive Train Gear Kit w/Turbine Bearing	1
19	9-100-1103	Turbine Wheel with Bearing	1
20	9-100-1116	Wheel, Single-side	1
21	C-131	Thrust Jet Kit	1
22	9-100-7008	Sweep Hose Barb Complete	1
23	B-20	Adjustment Screw, Sweep Hose	1
24	B-15	Sweep Hose Attach Clamp	1
25	9-100-3005	Base Weight	1
26	9-100-7170	Hose Clamp for WMS	6
27	9-100-7009	Jet Retainer	2
28	9-100-7014	Water Management System (WMS)	1
29	9-100-1155	Housing, Turbine Lower	1
30	9-100-3105	Sweep Hose Scrubber	1
31	9-100-5132	O-ring, In-head Timer/Feed Pipe Assy	1
32	9-100-7016	Base Assy for In-line Back-up Valve, White	1
33	9-100-1141	Top Cover, Double Wheel Side	1
34	9-100-1002	Feed Pipe/Timer Blank Assembly	1
35	A-20	Float, Head	1
36	9-100-1140	Top Cover, Single Wheel Side	1
37	9-100-1011	Sweep Hose Complete	1
38	B-10	Wear Rings	7

To insure proper operation and long life for the Polaris, be sure to insist on genuine Polaris parts.

360 HOSE PARTS DIAGRAM



No.	Part#	Description	Qty.
39	9-100-3008	UWF Connector Assembly	1
40	6-500-00	Universal Wall Fitting, UWF	1
41	6-504-00	Filter Screen, UWF/QD	1
42	6-505-00	O-ring, UWF/QD	1
43	9-100-3009	Pressure Relief Valve, White	1
44	9-100-3006	Quick Disconnect, UWF	1
45	9-100-3109	Hose Nut	12
46	9-100-3102	Feed Hose, 6 Foot	4
47	9-100-3002	Swivel, Hose	4
48	9-100-1206	Float, Feed Hose	3
49	9-100-1200	In-line Back-up Valve	1
50	9-100-1202	Case Kit, In-line Back-up Valve	1
51	G-57	Collar, Back-up Valve	1
52	9-100-1204	Mechanism, In-line Back-up Valve	1
53	9-100-3103	Feed Hose, 1 Foot	1
54	*	Pressure Tester	1
Parts Not Shown			
	9-100-3100	Feed Hose Complete w/UWF, No Back-up Valve	
	9-100-9003	Street Ell	

To insure proper operation and long life for the Polaris, be sure to insist on genuine Polaris parts.

*Not sold separately.

REPLACEMENT PARTS TO STOCK

All parts are interchangeable between the 380 and 360 except where noted.

Name	Part #
Polaris 380/360 Tune-up Kit	9-100-9010
Polaris 380 Rebuild Kit	9-100-9030
Polaris 360 Rebuild Kit	9-100-9060
380 In-line Back-up Valve Conversion Kit	9-100-9040
360 In-line Back-up Valve Conversion Kit	9-100-3200
360 Pressure Gauge Kit	9-100-6400
360 In-line Back-up Valve Case Kit	9-100-1202
*All Purpose Bag	9-100-1014
*Wheel, Single-side	9-100-1116
*Wheel, Double-side	9-100-1008
*Transfer Pulley/Drive Shaft Assembly	9-100-1007
*Axle Block Assembly	9-100-1139
*Drive Train Gear Kit w/Turbine Bearing	9-100-1132
*Belt Kit, Small and Large	9-100-1017
*Sweep Hose Scrubber	9-100-3105
*Tire, White	C-10
*E-clip, Stainless Steel	9-100-5107
*O-ring, In-head Timer/Feed Pipe Assy.	9-100-5132
*Hub Cap	9-100-1114
*Ball Bearing	9-100-1108
*Hose Clamp for WMS	9-100-7170
*Housing, Turbine Upper	9-100-1152
*Shield, Bearing	9-100-7011
**380 Back-up Valve Kit	G-52
**380 Base Weight	9-100-9004
**Jet Retainer	9-100-7009
**Sweep Hose Attach Clamp, White	B-15
**Feed Pipe/Timer Blank Assembly	9-100-7003
**380 Sweep Hose Complete	B-5
**Adjustment Screw, Sweep Hose	B-20
**Thrust Jet Kit	C-131
**Top Cover, Single Wheel Side	9-100-1140
**Top Cover, Double Wheel Side	9-100-1141
**Housing, Turbine Lower	9-100-1155
**Sweep Hose Barb Complete	9-100-7008
**380 Water Management System	9-100-7010

**Base Assembly, White	9-100-7016
**Float, Head	A-20
UWF Restrictor Kit	10-108-00
Float, Feed Hose	D-10
Wear Rings	B-10
Universal Wall Fitting	6-500-00
Mender Nut, Feed Hose	D-15
Swivel, Ball Bearing	D-20
Filter Screen, UWF/QD	6-504-00
Quick Disconnect, UWF	D-29
Pressure Relief Valve, Black	9-100-9002
Pressure Relief Valve, Red	D-28
Screw (Axle Blocks, Tops)	9-100-5115
Screw	9-100-5117
In-head Timer Assembly	9-100-7006
Pump Seal	P-55
Impeller	P-15
Pump Motor	P-61
360 Base Weight	9-100-3005
360 UWF Eyeball Fitting	6-511-00
360 Feed Hose Complete, w/UWF, No Back-up Valve	9-100-3100
360 Feed Hose, 1 Foot	9-100-3103
360 Mechanism, In-line Back-up Valve	9-100-1204
360 Base Weight	9-100-3005
360 Collar, Bag Tie	9-100-3135
360 Water Management System	9-100-7014
360 Feed Pipe/Timer Blank Assembly	9-100-1002
*360 Sweep Hose Complete	9-100-1011
360 UWF Connector Assembly	9-100-3008
360 Pressure Relief Valve, White	9-100-3009
360 Quick Disconnect, UWF	9-100-3006
360 Hose Nut	9-100-3109
360 Hose Feed, 6 Foot	9-100-3102
360 Hose Swivel	9-100-3112
360 Float, Feed Hose	9-100-1206
360 In-line Back-up Valve	9-100-1200

*Included in Polaris 380/360 Tune-up Kit and 380 Rebuild Kit

**Included in Polaris 380 Rebuild Kit

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I. INTRODUCTION

This handbook is designed as a quick reference guide for the service professional to aid in identifying and correcting problems with a Polaris Vac-Sweep® 380 or a Polaris Vac-Sweep® 360 automatic pool cleaner. **Information exclusive to the 360 is shown in blue text.** As you use this handbook, please refer to the exploded parts diagrams and the hose parts diagrams at the beginning of this book to identify part location and part numbers. If you still have questions after using this handbook, please call our Customer Service Department at 1-800-VAC-SWEEP (822-7933), Monday through Friday, 7:30am-5:00pm, Pacific Standard Time or fax us at 1-800-479-TECH (8324).

Service Man's Tools

Phillips-head Screwdriver	Needle-nose Pliers
Flat-blade Screwdriver	0-60 psi Pressure Gauge
Knife or Scissors	Slip Joint Pliers
Tape Measure	1/2" and 9/16" Wrench
Magic Marker	1/8" Hex Wrench
Tube of Silicone Sealant	Paper Clip
0-30 psi Gauge	

Special Polaris Tools

Name	Part #
380 Pressure Tester	G-35
380 Wet Function Bench Test	G-110
UWF Removal Tool, Plastic	10-102-00
UWF Removal Tool, Stainless Steel	10-104-00
360 Pressure Stick	9-100-6000
360 Wet Bench	9-100-6005

II. INSTALLATION BASICS

380 INSTALLATION BASICS

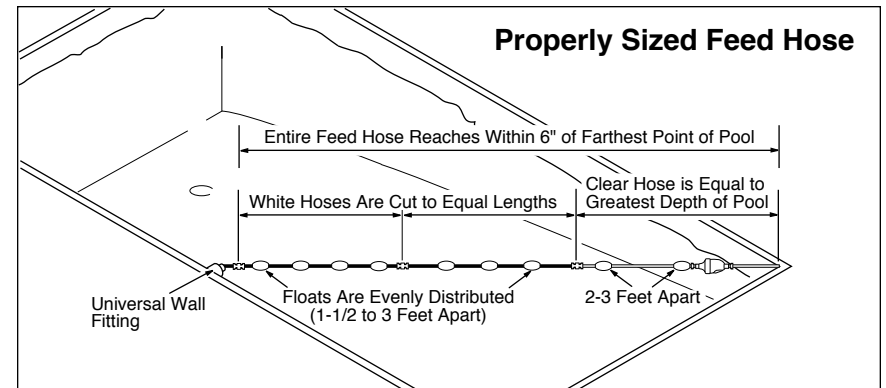
Connection Points

1. Dedicated cleaner line: 1-1/2 inches female threaded wall fitting in the midpoint of the long wall, approximately 6 inches below the water surface.
2. Over deck: Over-the-deck Kit (part #G-12) for pools without a dedicated cleaner line.

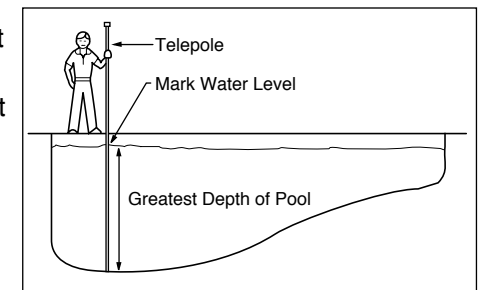
Booster Pump

The booster pump should be installed downstream from the filter and heater, but upstream from any air inducing equipment, solar systems and/or chlorinator. Never run the booster pump without the pool filtration pump running. (Refer to page 41 for booster pump installation basics.)

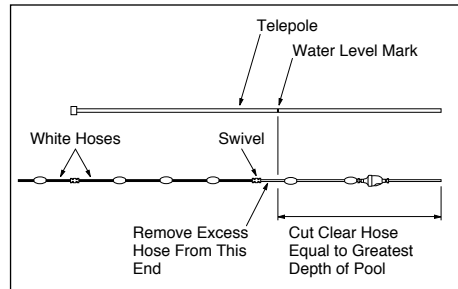
Hose Cutting



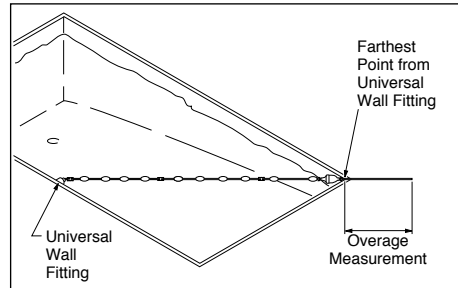
1. Straighten the feed hose by soaking it in hot water or laying it flat in the sun.
2. Measure and mark the deepest part of the pool (usually the main drain) with a telepole. **If the pool depth is 10 feet or more, do not cut the clear hose and skip to step 4.**



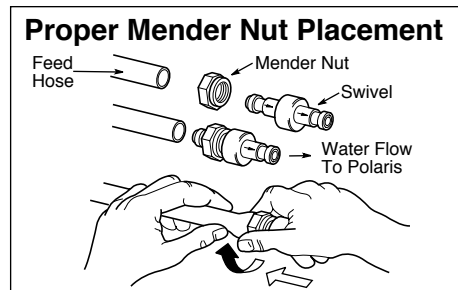
3. Lay the telepole next to the clear hose. If the clear hose is longer than the mark on the telepole, cut the excess from the end attached to the white hose. Do not cut off the float. Reattach the clear hose to the white hose. It is easier to reinstall the swivels when the hose and swivels are wet.



4. Screw the universal wall fitting into the dedicated return line. Attach the Quick Disconnect at the end of the white hose to the Universal Wall Fitting.



5. Extend the hose to the farthest point of the pool. (The Polaris will not usually climb onto the top step, so do not count it in your measurement.) If the hose is within 6 inches of the farthest point of the pool, go to step 10 on the next page. If the hose is more than 6 inches short, add a 10-foot section of White Feed Hose with Floats (part #9-100-3104), two Mender Nuts (part #D-15), and one Swivel (part #D-20). Do not add more than one 10-foot hose section.



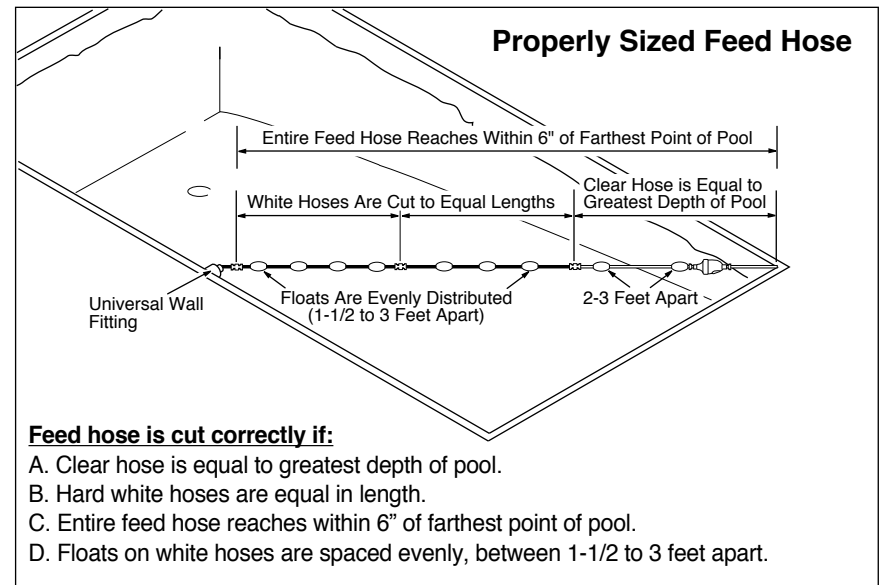
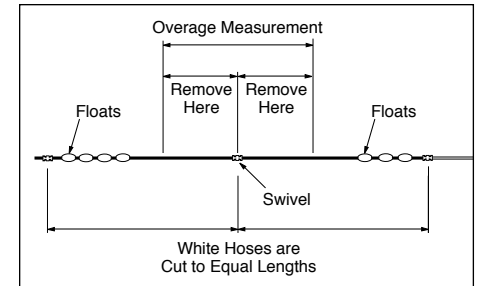
6. Measure the amount of hose that extends past the farthest point of the pool. This is the overage measurement. **Do not cut the hose yet.**

7. Lay the hose on the deck. Go to the swivel between the 10-foot white hoses. Slide the floats away from the swivel and remove the swivel.

8. Cut an equal amount of the **overage** measurement from each 10-foot white hose.

9. Reinstall the swivel with the flow arrows on the swivel pointing toward the Polaris. (Refer to the "Proper Mender Nut Placement" diagram above.)

10. On the clear hose, make sure one float is against the back-up valve on the side opposite the cleaner and another float is within 2-3 feet. On the white hoses, space the floats no less than 1-1/2 feet and no more than 3 feet apart, so that the white hoses do not sag. It may be necessary to remove floats to maintain proper spacing.



11. After the cleaner has been connected, it is important to check the wheel RPM:

- Mark the single-side wheel.
- Turn on the filtration and booster pumps, and allow the back-up valve to complete a back-up cycle.
- Hold the cleaner completely under the water and count the wheel revolutions for one minute.
- RPM range needs to be 28-32. (If it is not, refer to page 25.)



Pool Connections

1. The Polaris 360 comes equipped to connect to a 1-1/2 inch female pipe fitting on a dedicated cleaner line. An adjustable valve and pressure gauge should be installed to allow you to adjust the water flow to the Polaris.
2. If the pool does not have a dedicated cleaner line, you may be able to connect the Polaris 360 by using a special adapter kit. All of the kits connect to plastic pipe only.
3. If a spa is connected to the pool filtration equipment, you may also need to obtain some expansion regulators in addition to one of the standard kits available. Contact our Technical Support Department at 1-800-VAC-SWEEP to determine what parts are necessary.

Installing the Universal Wall Fitting

1. Turn on the filtration pump and flush out the plumbing line. Then turn pump off.
2. Remove the Universal Wall Fitting (part #6-500-00) from the Quick Disconnect (part #9-100-3006).
3. Screw the Universal Wall Fitting into the return line by hand. Turn the Quick Disconnect clockwise into the Universal Wall Fitting and pull away to secure. Turn the Quick Disconnect by hand to tighten the Universal Wall fitting; do not over tighten. Once the Universal Wall Fitting is secure, the Quick Disconnect can be removed without removing the Universal Wall Fitting.

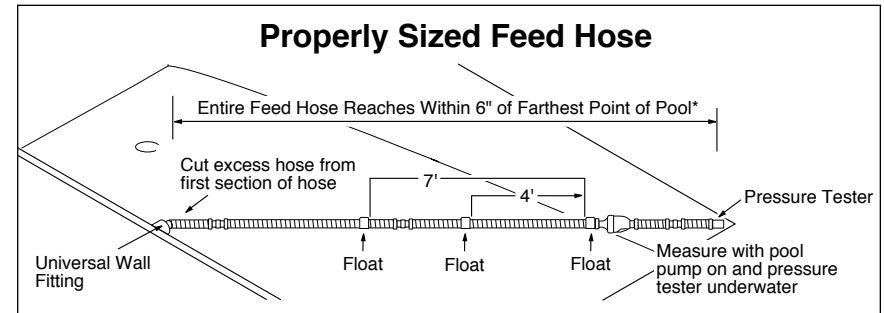
Pressure Testing Instructions

1. Before installing the Polaris 360, make sure the pool filter is clean.
2. Connect the Quick Disconnect to the Universal Wall Fitting.
3. While someone holds the free end of the hose in the pool, turn on the pool pump. Hold the free end of the hose underwater and cover the large hole at the end of the pressure tester. Reach down and feel around the Quick Disconnect to see if the Pressure Relief Valve (part #9-100-3009) is releasing water. If it is, continue with "Cutting the Feed Hose." If it isn't, the filtration pump may not have sufficient water pressure to operate the Polaris.

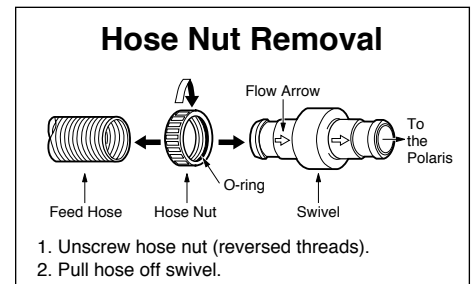
Dedicated Line Installations: Increase flow to dedicated line until Pressure Relief Valve releases water.

Cutting the Feed Hose

1. **With the pool pump on**, hold the pressure tester underwater. Pull the hose to the farthest point of the pool. (The Polaris will not usually climb onto the top step, so do not count it in the measurement.) If the hose just reaches the farthest point of the pool, go to "Hooking Up the Polaris."

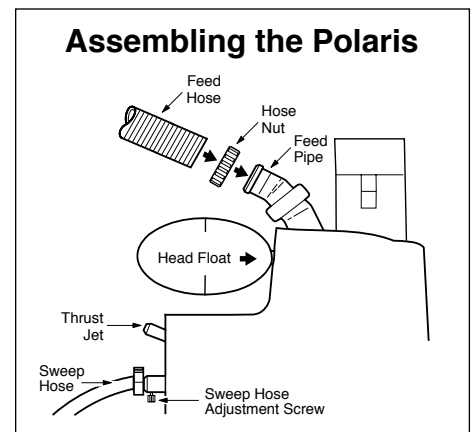


2. If the hose is short of the farthest point, add an additional 6 Foot Hose (part #9-100-3102), one Swivel (part #9-100-3002), and two Hose Nuts (part #9-100-3109). Do not add more than one 6 foot hose.
3. If the hose extends past the farthest point of the pool, mark the excess hose. **Turn off the pump** and measure the marked amount.
4. Go to the first section of hose from the pool wall and disconnect the hose at the swivel. Cut off the measured amount of excess hose. Reconnect the hose to the swivel.
5. Double check the hose length by repeating Step 1.



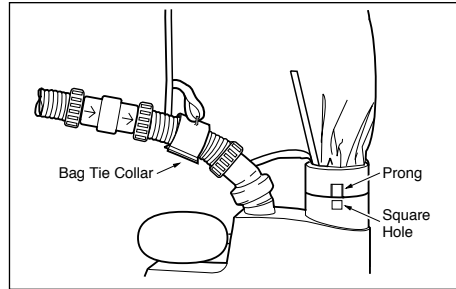
Hooking Up the Polaris

1. Remove the pressure tester from the hose by unscrewing the hose nut. See the "Hose Nut Removal" diagram above.
2. Remove the hose nut from the pressure tester and push it onto the feed pipe. Connect the hose to the feed pipe with the hose nut. If the end of the hose



that connects to the Polaris has a curve to it, align it with the curve in the feed pipe.

3. Loop the velcro strip through the eye on the bag tie collar. Bag tie should be attached below the first swivel.
4. Gently place the Polaris into the pool. Turn on the pool filtration pump.
5. Verify that the wheel RPM is between 28 and 32. Refer to “Fine Tuning the Polaris, Checking Wheel RPM” below.



Checking Operation

Approximately every 3-1/2 minutes the Polaris 360 will go into back-up mode. At this time the back-up valve will pull the Polaris away from potential obstacles. The sweep hose operates in a gentle sweeping motion to prevent debris from becoming trapped in hard-to-reach corners of the pool. If the Polaris does not travel into all areas of the pool, turn off the pool filtration pump and make the necessary adjustments below.

Fine Tuning the Polaris

• Thrust Jet Adjustment

The thrust jet adjusts the direction of the Polaris. Its standard position is eleven o'clock. See the “Assembling the Polaris” diagram shown on page 7 for the location of the thrust jet.

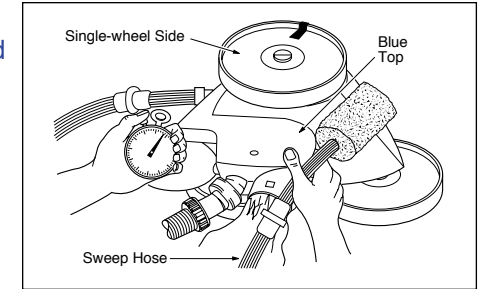
• Sweep Hose Adjustment

The sweep hose should operate in a gentle sweeping motion. To decrease the motion of the sweep hose, turn the sweep hose adjustment screw clockwise. Make sure the Sweep Hose Scrubber (part #9-100-3105) is not blocking the water flowing out the end of the sweep hose. See the “Assembling the Polaris” diagram on page 7.

• Checking the Wheel RPM

To determine whether the Polaris is receiving proper water pressure, turn off and carefully remove the Polaris from the pool. Mark the outer edge of the tire on the single-wheel side of the Polaris. Place the Polaris back into the pool and turn on the filtration pump.

To avoid damaging the Polaris, hold it by the blue top, suspended on its side **just below the water level**. Hold it away from the pool wall with the single-wheel side up. **Hold the sweep hose to avoid getting wet.**



Count the revolutions of the marked wheel for exactly one minute, beginning after it has completed a back-up cycle. This gives the wheel Revolutions Per Minute (RPM).

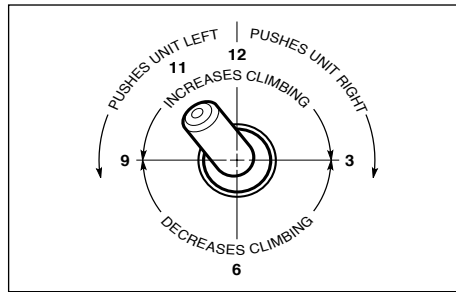
For proper operation, the Polaris should operate **between 28 and 32 RPM**. If it has **less than 28 RPM**, follow the instructions below.

1. Clean the Filter Screen (part #6-504-00). A dirty filter screen will restrict the water flow to the Polaris.
2. Clean the pool skimmer, filter, and pump basket.
3. Check the hoses, connections, and swivels for leaks that could cause loss of water pressure.
4. If an adjustable valve has been installed, adjust the valve to increase water to the Polaris.
5. You may need to install Adjustable Eyeball Fittings (part #10-104-00) in some returns.

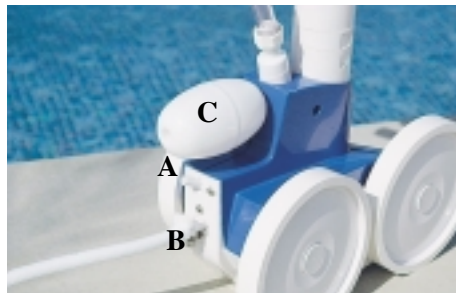
If you have **more than 32 RPM**, unscrew the Pressure Relief Valve (part #9-100-3009) until the proper RPM is reached. If an adjustable valve has been installed, adjust the valve to reduce the amount of water going into the Polaris.

III. 380/360 HEAD ADJUSTMENTS AND FUNCTIONS

A. Thrust Jet: Acts as a steering mechanism; **the recommended setting is 11 o'clock.** Moving the thrust jet to the left will turn the cleaner left and vice versa. Setting the thrust jet between 11:00 and 1:00 will provide maximum climbing ability.



B. Sweep Hose Adjustment Screw: Regulates water flow to the sweep hose; **the recommended setting is adjusted to provide a gentle sweeping motion.** The sweep hose removes debris from corners and steps. Tightening the screw decreases the sweeping motion and vice versa.



C. Head Float: Affects the ballast of the cleaner; **the recommended setting is all the way forward.** Moving the head float forward (toward the cleaner) improves climbing ability and vice versa.



D. Wheel RPM: The pressure relief valve is designed to automatically regulate the pressure to the cleaner. **For proper operation the cleaner should run between 28-32 RPM.** (For the 380, the water pressure should not exceed the wheel RPM by more than 2 psi; **for the 360, the water pressure should be between 12-14 psi.**)
For 380: The RPM can be reduced by replacing the blue UWF restrictor with the red UWF restrictor. If needed, the RPM can be reduced further by unscrewing the pressure relief valve.

IV. TROUBLESHOOTING OVER THE PHONE

The following topics should be discussed to aid you in troubleshooting a Polaris 380 or Polaris 360 over the phone. By asking specific questions, you should be able to identify the cause of a problem before the cleaner is brought in to be serviced. For the best results, follow the topics in order. If the cleaner must come in for repair, request that the feed hose also be brought in for evaluation.

With the Cleaner On:

Topic	Recommendation
1. Verify the wheel RPM	It should be between 28 and 32. (Remember, the poolowner needs to hold the cleaner completely under the water when counting the wheel RPM.)
If it's too high— For 380:	Replace the blue UWF restrictor with the red UWF restrictor. If that does not correct the wheel RPM, unscrew the pressure relief valve.
For 360:	For dedicated cleaner line, adjust the cleaner line valve or open the pressure relief valve. For return line installations, open up the holes on the return jets until desired wheel RPM is achieved.
If it's too low— For 380:	Check the filter screen for debris. If that does not correct the wheel RPM, remove the blue UWF restrictor.
For 360:	For dedicated cleaner line, adjust the cleaner line valve. If that doesn't correct the wheel RPM, back wash or clean the filter. If that doesn't work, try the following steps: clean skimmer and pump baskets; clean filter screen; check for excessively leaking swivels; install smaller eyeballs in return lines.
2. Are the vacuum jets unobstructed?	Hold the cleaner upside down and carefully look into the vacuum tube. There should be three distinct, even jets of water. If not, bring the cleaner in for repair.

3. Is the back-up valve cycling? Watch the back-up jet. The jet should cycle on and off. The jet should stay off longer than it stays on. If it does not cycle properly, bring the cleaner and hose in for repair.

With the Cleaner Off:

- | Topic | Recommendation |
|-------------------------------------|---|
| 1. Verify the recommended settings: | <ul style="list-style-type: none"> • Thrust jet set at 11 o'clock position. • Head float pushed all the way forward. • Sweep hose adjusted for a gentle sweeping motion when the cleaner is running. |
| 2. Is the drive train functioning? | Spin each wheel independently. As you spin each wheel, all the wheels should spin together freely. If not, bring the cleaner in for repair. |
| 3. Is the hose cut properly? | <p>For 380:</p> <ul style="list-style-type: none"> • The soft clear hose (first section closest to the cleaner) should be equal to the greatest depth of the pool. (After a period of time in the water, the clear hose will begin to turn white.) • The hard white hose sections should be equal in length. • The end of the feed hose should reach within 6 inches of the farthest point of the pool. <p>For 360:</p> <ul style="list-style-type: none"> • The end of the hose should reach within 6 inches of the farthest point with the pool pump on. |

4. Is the hose floating properly? **For 380:** The white hoses (hose sections closest to the pool wall) should float at the surface of the pool with no dips or sags in the hose. The soft clear hose (first section closest to the cleaner) should angle down to the Polaris with no dips or sags. If the hoses do not float properly, check the float placement:
- There should be one float against the in-line back-up valve on the side opposite the cleaner and another float within 2-3 feet.
 - Floats on the white hoses should be no less than 1-1/2 feet and no more than 3 feet apart, so that the white hoses do not sag.
 - It may be necessary to remove floats to maintain proper spacing.

If the float placement is correct and the hoses still do not float properly, replace the floats.

- For 360:**
- **There should be one float on the back-up valve, one float 4 feet back and one float 7 feet back from the back-up valve.**
 - **The hose should angle down to the Polaris with no dips or sags.**
- If the float placement is correct and the hoses still do not float properly, replace the floats.*

V. TROUBLESHOOTING ON THE BENCH

Quite often retail dealers and service centers are faced with a Polaris which is brought into the bench (retail store or service department) with no detailed operational information other than “it isn’t working” or “it stays on the steps.” This does not give the technician much in the way of direction for troubleshooting the cleaner. Often the technician identifies and fixes an obvious problem without looking further for other less visible problems within the cleaner. When these less visible problems are not caught on the first trip to the bench, and return trips are required, or when the cleaner’s operation is compromised due to incomplete service, the customer can lose confidence in both the dealer and the product. The following tips will help in troubleshooting the Polaris 380/360 and will allow you to solve your customers’ problems correctly the first time.

The Wet Function Bench Test Kit (380 part #G-10; **360 part #9-100-6005**) removes the guesswork from bench repairs. This kit allows you to connect the Polaris to a water source (i.e. garden hose or water faucet) at your bench facility and test all of the operational functions of the cleaner head and back-up valve. The Wet Function Bench Test can be used both inside a store with a test tank facility or a deep sink, or outside of the store. High pressure water streams will be emitting from various orifices of the Polaris during the testing, so be sure to choose a work area that will not be damaged by water.

The Testing Begins

Have the customer bring both the cleaner head and the feed hose into the bench.

Visual Inspection

Start by doing a visual inspection, checking the following:

1. Verify the filter screen is clean.
2. Verify the swivels turn smoothly and the arrows are pointing toward the cleaner head.
3. Verify the hose cutting.

For 380:

Verify hose floats are evenly spaced on the white hoses and both the white hoses are the same length. Verify the clear hose is cut to the depth of the pool. For the 380 clear hose, verify there is one float against the back-up valve on the side opposite the cleaner and another float within 2-3 feet. For the 280/180 clear hose, verify there is one float on either side of the back-up valve and another float within 2-3 feet.

For 360:

Verify there is one float pushed as close to the back-up valve as possible on the side opposite the cleaner and two additional floats installed one 4 inches upstream and one 7 feet upstream from the back-up valve.

4. Always review hose cutting with the customer. For complete hose cutting procedures, refer to page 3, or the installation section of the cleaner’s owner’s manual.

Wet Function Bench Test

For 380: Disconnect the clear hose from the white feed hose and connect the clear hose, using the swivel, directly to the end of the Wet Function Bench Test hose. (If you don’t have the clear hose, attach the Wet Function Bench Test hose directly to the Polaris head.) Attach the other end of the clear hose to the Polaris head, and then thread the inlet fitting to the water source.

For 360: Attach the feed hose to the Polaris. Disconnect the quick disconnect from the hose and attach the inlet fitting. If the feed hose is unavailable, attach the inlet fitting to the bench test hose provided and attach the bench test directly to the Polaris. Attach the inlet fitting to the water source.

Set the Polaris on a brick or piece of wood (2 inches x 4 inches) or something similar to allow the wheels to spin freely. Remove the bag. Place a coping brick or deck-o-seal can over the vacuum tube to cover the vac jets. Secure the sweep hose and turn on the water. Adjust water volume to activate the wheels.

1. Verify that all the wheels are rotating. If not:
 - Check for a clogged drive jet.
 - Check for a broken wheel axle or stripped single-side wheel.
 - Check for a broken or damaged drive belt or stripped transfer pulley.
 - Check for a pebble binding the drive train gears.
2. Verify that there is water flow through the sweep hose and thrust jet. If not:
 - Check the water management system for leaks.
 - Check the water management system hoses and hose clamps.
3. Carefully lift the brick on top of the vacuum tube and verify that there are three even, distinct jets in the vacuum tube. It may be easiest to check this with the cleaner flipped upside down. If all distinct jets are not present:
 - Check the water management system hose clamps.
 - Clear the vacuum jets which are obstructed.
 - If additional spray is present, check the water management system for leaks or loose hose clamps.

4. Verify that back-up valve is working correctly:

For the in-line back-up valve part #G-52 (380 serial #335727 or higher) and part #9-100-1200 (360 serial #537791 or higher):

- Verify the in-line back-up valve is cycling.
- If not, open the valve and remove the mechanism.
- Separate the mechanism and inspect the turbine for debris.
- Flush or clear debris as necessary.

For the in-line back-up valve part #G-41 (380 serial #225071-335726) and in-head timer assembly part #9-100-7006 (380 serial #K225070 or lower) and in-head timer assembly part #9-100-1003 (360 serial #537790 or lower):

- Verify the valve/timer is cycling.
- If not, open the valve/timer and check the turbine jet for debris (380 jet is red, **360 jet is white**).
- If the jet is clear, replace the timer assembly or mechanism with in-line back-up using an In-line Back-up Kit (380 part #9-100-9040; **360 part #9-100-3200**). Refer to Section H, Converting an In-head Timer to an In-line Back-up Valve on page 31.

Even if the cleaner passes all of the Wet Function Bench Tests, it is always a good idea to remove the tops and to do a visual inspection of the moving parts, along with the water management system hoses and o-rings inside the cleaner.

Once you have made any necessary repairs, run through the wet test one more time. Verify all the functions are operating and that the basic factory head adjustments are made to the thrust jet and head float. Then, with a piece of black tape, mark a single-side wheel and remind the customer that when reinstalled in the pool, the taped wheel should rotate at 28-32 RPM for the 380/360.

Remember, being able to diagnose the problem the first time will build your customer's confidence in both you and the Polaris product. If you have any question or would like to receive a free Wet Function Bench Test (Part #G-110 for the 380 or **part #9-100-6005 for the 360**), please call our Technical Support Department at 1-800-VAC-SWEEP.

VI. TROUBLESHOOTING PROCEDURES POOLSIDE

380 Poolside Procedures

Polaris strongly recommends always following these troubleshooting procedures. By using these procedures, most problems will be identified within minutes. If you have any questions, please call 1-800-VAC-SWEEP.

With the Cleaner On:

Steps

1. Check water pressure using the Pressure Tester (part #G-35):
2. Check the wheel RPM:
3. Check that all jets are flowing unobstructed:
4. Check that the back-up valve is cycling properly:

Recommendation

- It should be between 28-32 psi. Refer to page 25.
- It should be between 28 and 32. (Remember to hold the cleaner under water when counting the wheel RPM.) Refer to page 26.
The psi should not exceed RPM by more than 2 psi.
- Turn the cleaner upside down. The three vacuum jets should have even, unobstructed flow. Check the thrust jet and sweep hose orifice. Refer to page 29.
- The back-up jet cycles on and off. It should stay off longer than it stays on.

With the Cleaner Off:

Steps

1. Check the feed hose length:

Recommendation

- Clear hose length equal to greatest depth of pool.
- Hard white hoses equal in length.
- Entire feed hose reaches within 6 inches of farthest point of pool.
- Floats on the white hoses spaced evenly, 1-1/2 to 3 feet apart.

2. Check the drive train: Spin one of the wheels; all wheels should spin freely together. Refer to page 33.
3. Check the head float: If there's any water in it, replace it.
4. Check the head adjustments:
 - Head float all the way forward.
 - Thrust jet set at 11:00 position.
 - Sweep hose adjusted for gentle sweeping motion when the cleaner is running.
 - Bag should be clear of debris. Refer to page 10.
5. Check that hose floats properly: If the hose does not float properly, check the float placement. Refer to # 4 on page 13.

360 Poolside Procedures

Polaris strongly recommends always following these troubleshooting procedures. By using these procedures, most problems will be identified within minutes. If you have any questions, please call 1-800-VAC-SWEEP.

Note: The 360 Cleaner requires 1 HP pump.

With the Cleaner On:

- | Steps | Recommendation |
|--|--|
| 1. Check water pressure using a pressure stick: | It should be between 12-14 psi. |
| 2. Check the wheel RPM: | It should be between 28 and 32. (Remember to hold the cleaner under water when counting the wheel RPM.) |
| 3. Check that all jets are flowing unobstructed: | Turn the cleaner upside down. The three vacuum jets should have even, unobstructed flow. Thrust jet and sweep hose should be active. |
| 4. Check that the back-up valve is cycling properly: | The back-up jet cycles on and off. It should stay off longer than it stays on. |

5. Check the feed hose length and flotation:
 - Cleaner should pull all loops from hose when it reaches farthest point of pool.
 - Position one hose float against the back-up valve on side opposite of cleaner.
 - Position one float 4 feet away and one float 7 feet away from the back-up valve.

With the Cleaner Off:

Steps

1. Check the drive train:
2. Check the head float:
3. Check the head adjustments:

Recommendation

Spin one of the wheels; all wheels should spin freely together.

If there's any water in it, replace it.

- Head float all the way forward.
- Thrust jet set at 11:00 position.
- Sweep hose adjusted for gentle sweeping motion when the cleaner is running.

VII. PROBLEM/SOLUTION TROUBLESHOOTING

For best results follow the problem/solution troubleshooting scenarios in the order in which they are listed. If you have any questions, please call 1-800-VAC-SWEEP.

PROBLEM: Cleaner hangs up on corners, steps or other obstacles longer than two back-up cycles.

SOLUTION:

1. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
2. Verify the in-line back-up valve is cycling. (Refer to pages 30-31.)
3. Check for debris in bag.
4. Verify the floats are floating and spaced properly. (Refer to #4 on page 13.)
5. Adjust the thrust jet to prevent the cleaner from hanging up. (Note: verify that the new setting does not cause the cleaner to circle or hinder its wall climbing.)
6. Move the head float back to decrease the cleaner's ability to climb into areas where it may hang up.
7. Move the back-up valve and its adjacent float further back on the hose (away from the cleaner).
8. Install a Ladder Guard Kit (part #G-21) where applicable.



PROBLEM: Feed hose tangles or ties itself in knots.

SOLUTION:

1. Verify the hose is cut correctly. (380 refer to page 3; **360 refer to page 7.**)
2. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
3. Verify the floats are floating and spaced properly. (Refer to #4 on page 13.)
4. Verify the swivels turn freely and the flow arrows point toward the cleaner.

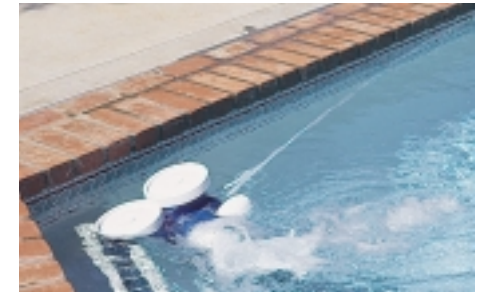


5. Verify that the base weight is installed.
6. Check the feed hose for excessive swelling or leaks.
7. Install a Street Ell at the wall (part #9-100-9003).

PROBLEM: Thrust jet and/or sweep hose sprays out of the pool when the cleaner is hung up on a step or the UWF.

SOLUTION:

1. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
2. Verify the hose is cut correctly. (380 refer to page 3; **360 refer to page 7.**)
3. Check that the pool water level is not too high.
4. Trim 7 inches off the sweep hose (at the end that attaches to the Polaris) and add a Sweep Hose Weight (part #B-2).
5. If the cleaner hangs up on the Universal Wall Fitting, install a Street Ell at the wall (part #9-100-9003).



PROBLEM: Cleaner moves too slowly.

SOLUTION:

1. Check the filter screen in the quick disconnect for debris.
2. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
3. Check for leaks in hoses, connections and swivels.
4. Check the back-up valve for proper operation. (Refer to pages 30-31.)
5. Check for holes in the sweep hose.
6. Check for debris in the drive jet. (Refer to page 29.)
7. Check the drive train. (Refer to page 33.)
8. Check the water management system hoses for leaks and loose hose clamps.

PROBLEM: Cleaner will not climb walls.

SOLUTION:

1. Check the filter screen in the quick disconnect for debris.
2. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
3. Position the thrust jet between 11:00 and 1:00 for maximum climbing ability.
4. Verify the head float is positioned all the way forward.
5. Check the drive train. (Refer to page 33.)
6. Check for debris in the vacuum jets. (Refer to page 29.)
7. Install Kraton® Tires (part #C-12).

PROBLEM: Sweep hose sprays too much water.

SOLUTION:

1. Verify there is a Sweep Hose Scrubber (part #9-100-3105) installed.
2. Screw in the sweep hose adjustment screw to decrease the sweep hose action.
3. Trim 7 inches off the sweep hose (at the end that attaches to the Polaris) and add a Sweep Hose Weight (part #B-2).
4. Adjust the head float or thrust jet to reduce climbing ability.



PROBLEM: Sweep hose is sucked into the vacuum tube.

SOLUTION:

1. Verify the sweep hose orifice is not blocked by the sweep hose scrubber.
2. If the sweep hose is whipping wildly or there is no movement at all, adjust the sweep hose adjustment screw until the sweep hose has a gentle sweeping motion.
3. Trim 7 inches off the sweep hose (at the end that attaches to the Polaris).



PROBLEM: Cleaner runs in circles; it does not cover the entire pool.

SOLUTION:

1. Verify the cleaner is adjusted to the recommended settings. (Refer to page 10.)
2. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
3. Check the drive train. (Refer to page 33.)
4. If the first section of hose at the cleaner has a curve to it, verify that the curve is aligned with the curve of the feed pipe.
5. Verify proper hose cutting and float placement. (380 refer to page 3; **360 refer to page 7.**)
6. Adjust the thrust jet to make the cleaner run in more of a straight direction. (Refer to page 9.)
7. If the cleaner has an in-line back-up valve, verify that there is either a timer blank and base weight, or a disabled in-head timer installed. (Refer to page 30.)
8. If the cleaner is installed in a vinyl or fiberglass pool, install Kraton® Tires (part #C-12).
9. If the pool is deep, position thrust jet down to help drive the cleaner out of the hopper.
10. Check axle block alignment.

PROBLEM: Cleaner spends too much time on the pool walls; it does not cover the pool floor.

SOLUTION:

1. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
2. Verify that the base weight is installed.
3. Adjust the head float or thrust jet to reduce climbing ability.

PROBLEM: Cleaner will not stay on pool bottom; it floats around the pool.

SOLUTION:

1. Verify proper water pressure and wheel RPM (380–28-32 psi; **360–12-14 psi**; 380/360–28-32 RPM). (Refer to pages 25-26.)
2. Verify the back-up valve is cycling. (Refer to page 30-31.)
3. Check the vacuum jets. (Refer to page 29.)
4. Check for proper float placement. (Refer to #4 on page 13.)
5. Verify that the base weight is installed.
6. Look for air entry from the filtration system.
7. Replace the bag if it is full of algae.

PROBLEM: Cleaner runs on its side.

SOLUTION:

1. Verify the bag is empty.
2. Check the head float. If it has water in it, replace it.
3. Verify the hose floats are floating and spaced properly. (Refer to #4 on page 5.)
4. Check the feed hose for leaks.
5. Check the vacuum jets. (Refer to page 29.)



VIII. HOW TO CHECK AND SERVICE

A. Pressure

For 380: When checking water pressure, you should also check wheel RPM (see Section B on page 26). Water pressure should not exceed 32 psi and wheel RPM should not be lower than 28. Also, water pressure should not exceed wheel RPM by more than 2 psi.

For 360: Water pressure should be between 12-14 psi, and wheel RPM between 28-32.

CHECK:

1. Attach the pressure stick to the end of the feed hose.
2. Turn on the filtration pump and then the booster pump.
3. Hold the end of the pressure stick under the water.
4. The pressure should be between 28-32 psi for the 380 and **between 12-14 psi for the 360.**



Note: Use a 0 - 60 psi gauge for the 380, and a 0 - 30 psi gauge for the 360.

SERVICE:

If the pressure is too high:

For 380:

1. Install a blue UWF Restrictor (part #10-108-00) if one is not already installed.
2. Replace the blue UWF restrictor with the red UWF restrictor.
3. Unscrew the pressure relief valve until the pressure is 28-32 psi.



For 360:

1. If there is a dedicated line, adjust the valve until proper psi is achieved.
2. For after market installations,



open up a return line. If that doesn't work, make the holes in the adjustable eyeball larger.

If the pressure is too low:

For 380:

1. Check the filter screen for debris.
2. Make sure the pressure relief valve is screwed in completely. If it is and water is being released, replace the pressure relief valve.
3. Remove the UWF restrictor if one is installed.
4. Check hose and swivels for leaks.
5. Completely open the gate valve on the booster pump if there is one.
6. Make sure the skimmer basket and pump basket are clean.
7. Check the pump hose washers for swelling (old style black hoses), see picture on page 25.
8. Remove the pressure restrictor in the pump if one is installed.
9. Verify the pump installation is correct. (Refer to page 31.)
10. Check for kinked or collapsed booster pump hoses.
11. If there is an over-the-deck installation, make sure the feed hose is at least 3/4 inch in diameter.

For 360:

1. Check the filter screen for debris.
2. Make sure the pressure relief valve is screwed in completely. If it is and water is being released, replace the pressure relief valve.
3. Remove the UWF restrictor if one is installed.
4. Check hose and swivels for leaks.
5. Make sure the skimmer basket and pump basket are clean.

B. Wheel RPM

For 380: When checking wheel RPM, you should also check water pressure (see Section A on the previous page). Water pressure should not exceed 32 psi and wheel RPM should not be lower than 28. Also, water pressure should not exceed wheel RPM by more than 2 psi.

For 360: Water pressure should be between 12-14 psi, and wheel RPM between 28-32.

CHECK:

1. Mark the single-side wheel.
2. Turn on the filtration and booster pumps, and allow the back-up valve to complete a back-up cycle.
3. Hold the cleaner completely



under the water and count the wheel revolutions for one minute.

4. Wheel RPM should be 28-32.

SERVICE:

If the pressure is more than 32 RPM:

For 380:

1. Install a blue UWF Restrictor (part #10-108-00) if one is not already installed.
2. Replace the blue UWF restrictor with the red UWF restrictor.
3. Unscrew the pressure relief valve until the proper RPM is reached.

For 360:

1. For dedicated cleaner line, adjust the pressure relief valve.
2. For after market installations, open up the holes on the return jets until desired wheel RPM is achieved.



If the pressure is less than 28 RPM:

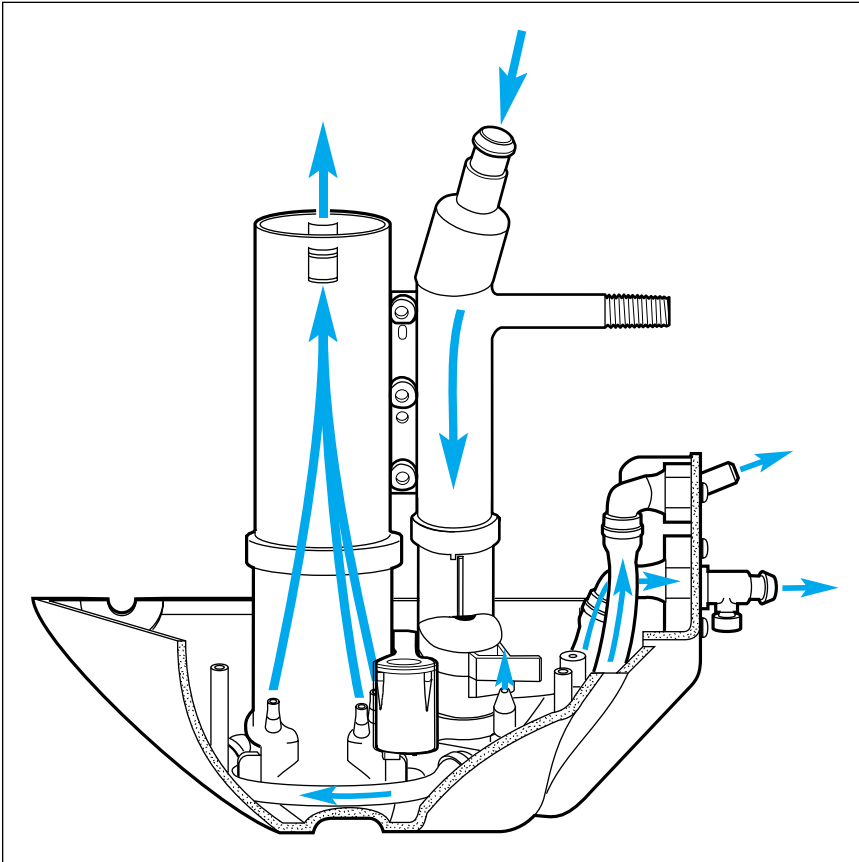
For 380:

1. Remove the UWF restrictor if one is installed.
2. Verify there is adequate water pressure (28-32 psi). (Refer to page 25.)
3. Check the drive train. (Refer to page 33.)
4. Check the drive jet. (Refer to page 29.)
5. Check the o-ring between the feed pipe/timer blank assembly and the water management system.
6. Check the water management system hoses for leaks and loose hose clamps.

For 360:

1. For dedicated cleaner line, adjust the cleaner line valve.
2. Back wash or clean the filter.
3. Clean skimmer and pump baskets.
4. Clean filter screen.
5. Check for excessively leaking swivels.
6. Install smaller eyeballs in return lines (Eyeball Regulator, part #10-107-00).

C. Water Flow Diagram



The following tests can be performed poolside or at a service center with the use of a Wet Function Bench Test Kit (380: part #G-110; 360: part #9-100-6005).



D. Jets

CHECK:

1. Turn the cleaner upside down. The three vacuum jets should have even, unobstructed flow.
2. Additional spray around the vacuum jets indicates cracks. If cracks are present, replace the water management system. (Refer to page 38.)
3. The thrust jet and sweep hose jet should have even, unobstructed flow. **If you find one clogged jet, all jets should be checked for debris including the drive jet.** (Refer to page 18.)



SERVICE:

If the single jet is obstructed:

1. Tear down the cleaner to the water management system. (Refer to page 38.)
2. Lift out the front jet and cut the hose clamp.
3. Remove the jet and clear it with a paper clip. Make sure you remove the debris completely.



If the double jets are obstructed:

1. Clear the jets while in place with a paper clip.
2. Run water through the jets to flush the debris out the water management system inlet.

E. Drive Jet

CHECK:

1. Remove the drive train. (Refer to DRIVE TRAIN REMOVAL AND REPLACEMENT disassembly steps on page 35.)
2. Reinstall the feed pipe/timer blank assembly and feed hose.
3. Verify that the drive jet is clear. **If you find a clogged jet, all jets should be checked for debris.**



SERVICE:

1. If the drive jet is obstructed with debris, remove the feed pipe/timer blank assembly. Clear the jet with a paper clip. After clearing the jet, run water through the jet to flush the debris out the water management system inlet.
2. Reinstall the feed pipe/timer blank assembly and retest.
3. Remove the feed pipe/timer blank assembly and reassemble the cleaner. (Refer to DRIVE TRAIN REMOVAL AND REPLACEMENT reassembly steps on page 35.)



F. In-line Back-up Valves

380 - Part #G-52; 360 - Part #9-100-1200

(For 380 cleaners with serial #337487 or higher and 360 cleaners with serial #537710 or higher)

CHECK:

The back-up jet should cycle on and off. It should stay off longer than it stays on. There should be no spray from around the back-up jet. If so, check the housing for cracks or a damaged o-ring.

SERVICE:

If the back-up valve does not cycle properly, check the mechanism for debris:

1. Unscrew the back-up valve collar and pull apart the back-up valve cases.
2. Remove the mechanism.
3. Depress the tabs on the sides of the mechanism and separate the mechanism.
4. Inspect the turbine for debris and flush or clear debris as necessary.



5. Reassemble the mechanism making sure the valve seat is in place.
6. Replace the mechanism in the case making sure the back-up jet sits in the jet opening at the bottom of the case.
7. Reattach the valve to the feed hose making sure the flow arrows point toward the cleaner.

380 - Part #G-41

(For 380 cleaners with serial #225071 - 337486)

CHECK:

The back-up jet should cycle on and off. It should stay off longer than it stays on.

SERVICE:

If the back-up valve does not cycle properly, check the turbine jet for debris:

1. Remove the back-up valve case.
2. Disconnect the mechanism from the feed hose.
3. Remove the top housing, teflon washer and turbine wheel.
4. Visually check the red jet for debris and clear it with a paper clip. Do not allow the debris to fall into the back-up valve. **If the jet was clogged, all jets should be checked for debris.**
5. Reassemble the mechanism. If no debris was present, replace the Mechanism (part #E-60) and reassemble the back-up valve.



G. In-head Back-up Timer

(For 380 cleaners with serial numbers prior to 225071, and 360 cleaners with serial numbers prior to 537710 which have not been converted previously to an in-line back-up valve)

CHECK:

1. Turn the cleaner upside down.
2. The back-up jet should cycle on and off. It should stay off longer than it stays on.

SERVICE:

If the back-up timer does not cycle properly, check the turbine jet for debris:

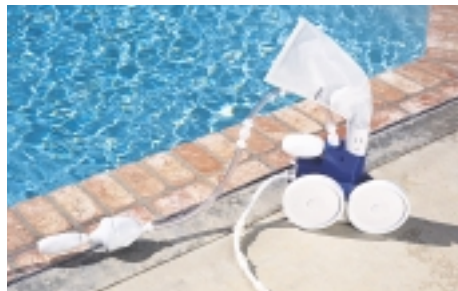
1. Remove the drive train. (Refer to DRIVE TRAIN REMOVAL AND REPLACEMENT disassembly steps on page 35.)
2. Remove the in-head timer.
3. Remove the two screws on the top of the timer.
4. Remove the top housing, teflon washer and turbine wheel.
5. Visually check the red jet for debris and clear it with a paper clip. Do not allow the debris to fall into the back-up timer. **If the jet was clogged, all jets should be checked for debris.**
6. Reassemble the timer. If no debris was present, replace the timer (part #9-100-7006) and reassemble the cleaner. (Refer to DRIVE TRAIN REMOVAL AND REPLACEMENT reassembly steps on page 35.)



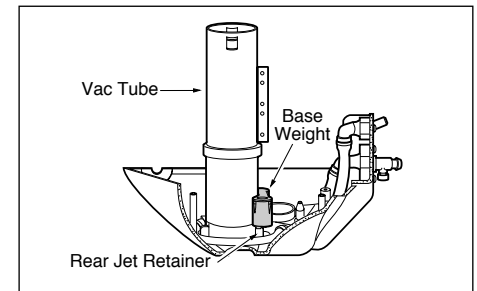
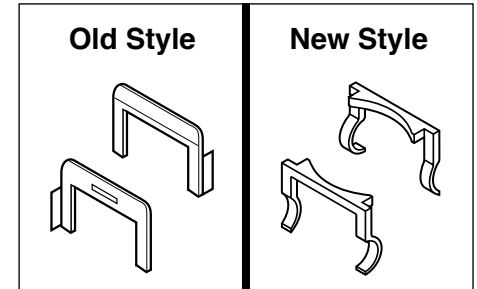
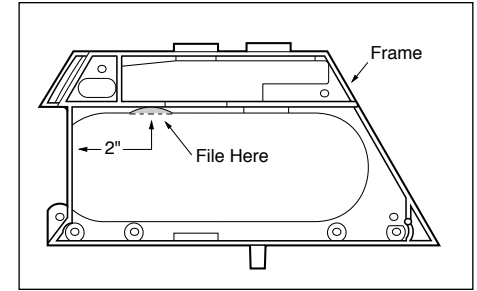
H. Converting an In-head Timer to an In-line Back-up Valve

(Using In-line Back-up Valve Conversion Kit #9-100-9040 for the 380, and #9-100-3200 for the 360)

1. Disconnect the cleaner and remove the bag, head float, tops, feed pipe, drive train and in-head timer. Discard the back-up timer and old feed pipe.
2. If the frame has not already been notched, file the frame to provide proper clearance for the feed pipe/timer blank assembly.



3. If the jet retainers are the old style shown at left, remove them by breaking the glue joint with a flat-blade screwdriver. If they are the new style jet retainers, skip to step 5.
4. Hold the water management system in place and snap in the new jet retainers.
5. Place the new base weight on the rear jet retainer with the weight flush against the vac tube.
6. Reinstall the frame onto the base of the cleaner and reinstall the four screws, leaving them loose.
7. Place the o-ring onto the new feed pipe/timer blank assembly and install the feed pipe being careful not to pinch the o-ring.
8. Tighten the four screws into the frame and reassemble the cleaner.



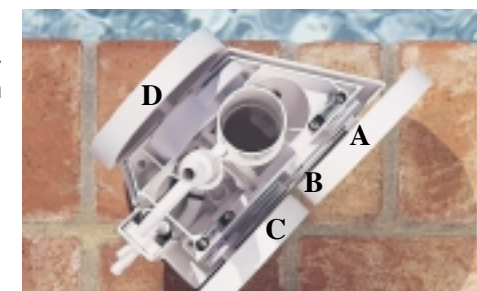
I. Drive Train

CHECK:

1. Spin each wheel. All wheels should turn freely and together.
2. Check for binding and debris in the gears, frame and bearings.

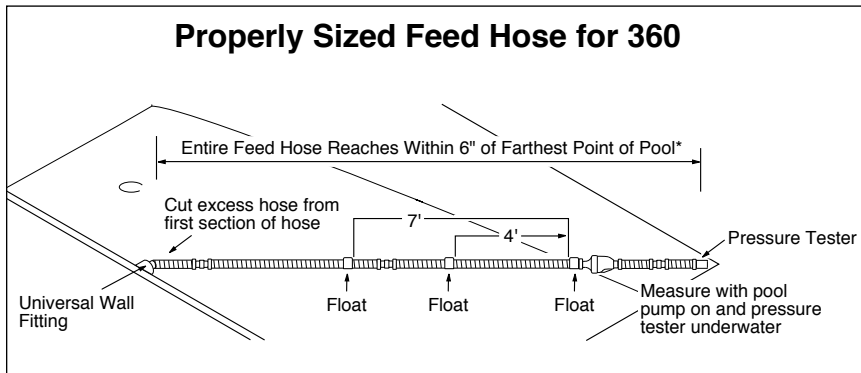
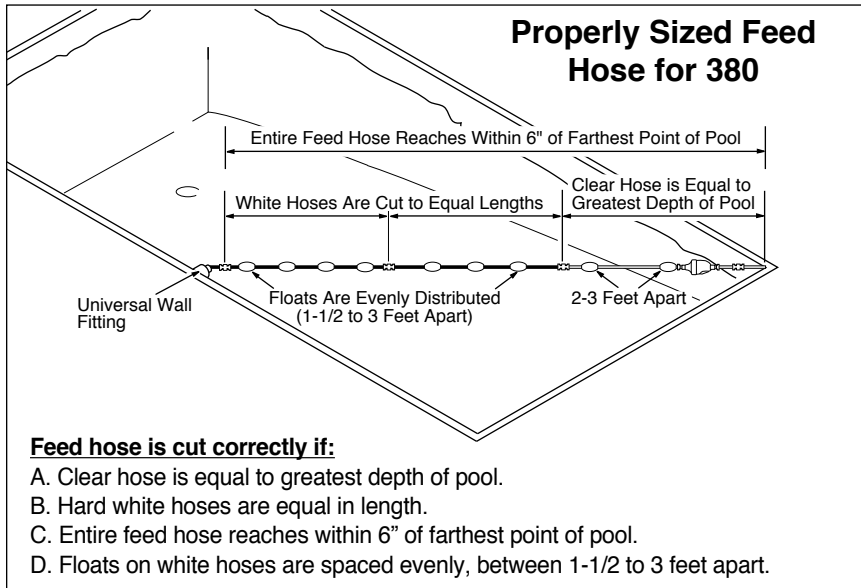
SERVICE:

1. If the front double-side wheel turns independently or skips, check for a broken wheel axle (A: part #9-100-1008), or broken or stripped drive belts (B: part #9-100-1017).
2. If the front double-side wheel turns independently or skips, check for a stripped transfer pulley (C: part #9-100-1007) and/or a stripped single-side wheel (D: part #9-100-1116), or a stripped drive gear (part #9-100-1132).



J. Hose Length

To service the feed hose, refer to "Hose Cutting" in Section II (380 refer to page 3; 360 refer to page 7.)



IX. PART REMOVAL AND REPLACEMENT

A. Single-side Wheel

DISASSEMBLY:

1. Remove the head float.
2. Remove the tops (screw is on the double-wheel side).
3. Remove the hub cap.
4. Remove the e-clip.
5. Remove the wheel.
6. Remove the tire from the wheel.

REASSEMBLY:

1. Install the tire on the new wheel.
2. Support the transfer pulley shaft and install the new wheel by pushing it down onto the shaft until the e-clip groove is flush with the wheel.
3. Replace the e-clip.
4. Replace the hub cap.
5. Replace the tops:
 - Install the top for the double-wheel side; make sure the tabs are inside the base.
 - Install the top for the single-wheel side; make sure the tabs are inside the base. Push down on the top until it snaps into place.
 - Install the screw from the double-wheel side.
6. Replace the head float to the recommended setting.



B. Drive Train Removal and Replacement

The following DRIVE TRAIN REPAIR AND REPLACEMENT steps must be followed for Sections C through H below. *Note: Whenever possible, check the bearings and replace them if they do not spin freely.*

DISASSEMBLY:

1. Remove the head float.
2. Remove the tops (screw is on the double-wheel side).
3. Remove the feed pipe/timer blank assembly (3 screws).
4. Loosen the four frame screws.
5. Lift up at the rear of the frame and pull straight up.



REASSEMBLY:

1. Install the drive train, dropping it in nose first. Lift the base up to the frame and tighten the four frame screws.
2. Install the feed pipe/timer blank assembly (3 screws). Make sure the o-ring has not pushed out.
3. Replace the tops:
 - Install the double-wheel side top; make sure the tabs are inside the base.
 - Install the single-wheel side top; make sure the tabs are inside the base. Push down on the top until it snaps into place.
 - Install the screw from the double-wheel side.
4. Replace the head float to the recommended setting.



C. Double-side Wheels

DISASSEMBLY:

1. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT disassembly steps.
2. Disengage the drive belt.
3. Remove the wheel (note the direction of the bearing shield if applicable):
 - Remove the hub cap.
 - Remove the e-clip.
 - Remove the wheel.
 - Remove the belt.
4. Remove and check the two bearings.
5. Remove the tire from the wheel.



REASSEMBLY:

1. Install the tire, two bearings (shielded side out) and belt onto the new wheel.
2. Verify that the bearing shield is positioned correctly and install the new wheel onto the shaft.

3. Install the e-clip and hub cap.
4. Engage the drive belt. Belts should have about 1/4 inch deflection. If they are excessively loose, refer to the tension adjustment section on page 37.
5. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT reassembly steps.

D. Drive Belts

DISASSEMBLY:

1. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT disassembly steps.
2. Disengage both drive belts.
3. Remove both wheels from the double-wheel side (note the direction of the bearing shields if applicable):
 - Remove the hub caps.
 - Remove the e-clips.
 - Remove the wheels.
 - Remove the belts.



REASSEMBLY:

1. Verify that the bearing shields are positioned correctly.
2. Place the new large belt on the front wheel and the new small belt on the back wheel, and install the wheels, e-clips and hub caps.
3. Engage the rear belt inside the belt divider on the transfer pulley and then onto the rear wheel.
4. Engage the front belt outside the belt divider on the transfer pulley and then onto the front wheel.
5. Follow the tension adjustment steps below.
6. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT reassembly steps.

TENSION ADJUSTMENT:

The drive belts should have approximately 1/4 inch deflection. If the belts seem excessively loose:

1. Loosen the axle block screws.
2. To align the wheels, lay the cleaner down flat on the double-side wheels.
3. Move the axle block until the belt has 1/4 inch deflection. (Very tight or very loose belts could adversely affect cleaner performance.)
4. Tighten the axle block screws.
5. Spin the double-side wheels and recheck the drive belt deflection.

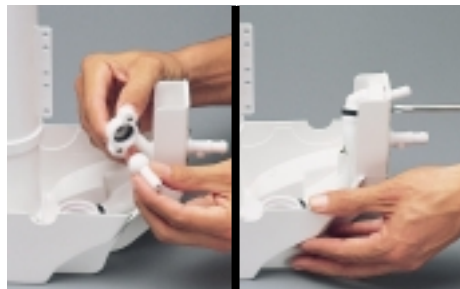
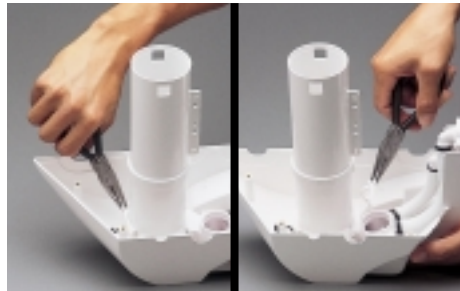
E. Water Management System

DISASSEMBLY:

1. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT disassembly steps.
2. Remove the base weight.
3. Remove the lower turbine housing.
4. Remove the sweep hose adjustment screw.
5. Remove the thrust jet and o-ring, and the sweep hose barb (4 screws).
6. Remove the jet retainers by popping them out with needle-nose pliers.
7. Remove the water management system.

REASSEMBLY:

1. Install the new water management system.
2. Install the sweep hose barb with the keyway aligned, and insert it through the lower hole in the base (2 screws).
3. Install the jet retainers.
4. Install the o-ring and thrust jet through the top hole in the base, and adjust the thrust jet to 11 o'clock position.
5. Install the two thrust jet screws (be careful not to overtighten).
6. Install the sweep hose adjustment screw.
7. Replace the lower turbine housing and base weight.
8. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT reassembly steps.



F. Frame Exchange

DISASSEMBLY:

1. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT disassembly steps.
2. Remove the wheels:
 - Remove the hub caps.
 - Remove the e-clips.
 - Remove the belts.
 - Remove the wheels.

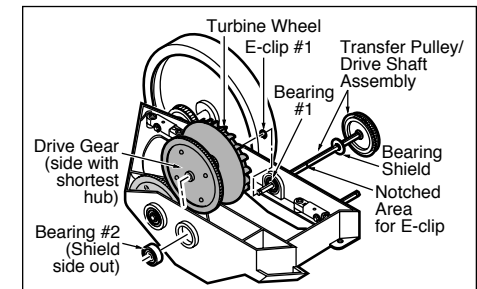
3. Remove the bearing shields from the double-wheel side.
4. Remove the upper turbine housing.
5. Call Polaris at 1-800-VAC-SWEEP for a return goods authorization number and frame exchange procedures.



G. Transfer Pulley/Drive Shaft Assembly

DISASSEMBLY:

1. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT disassembly steps.
2. Remove the upper turbine housing.
3. Disengage both drive belts from the transfer pulley.
4. Remove the rear double-side wheel and the single-side wheel:
 - Remove the hub caps.
 - Remove the e-clips.
 - Remove the wheels.
 - Remove the belt (double-side wheel only).
5. Remove the transfer pulley/drive shaft assembly:
 - Remove e-clip #1.
 - Pull out the transfer pulley/drive shaft assembly.
 - Push out bearing #2.



REASSEMBLY:

1. Install the bearing shield onto the new shaft.
2. Install the shaft through bearing #1.
3. Install the e-clip near the middle of the shaft.
4. Insert the shaft through the turbine wheel, drive gear and frame. Lift the end of the shaft and push until the e-clip is flush against the bearing.
5. Install bearing #2 shielded side out.
6. Place the belt on the double-side wheel and install the wheel, e-clip and hub cap.
7. Engage the rear belt inside the belt divider on the transfer pulley and then onto the rear wheel.
8. Engage the front belt outside the belt divider on the transfer pulley and then onto the front wheel.
9. Install the single-side wheel, e-clip and hub cap.

10. Install the upper turbine housing.
11. Follow DRIVE TRAIN REMOVAL AND REPLACEMENT reassembly steps.

H. Gear Kit

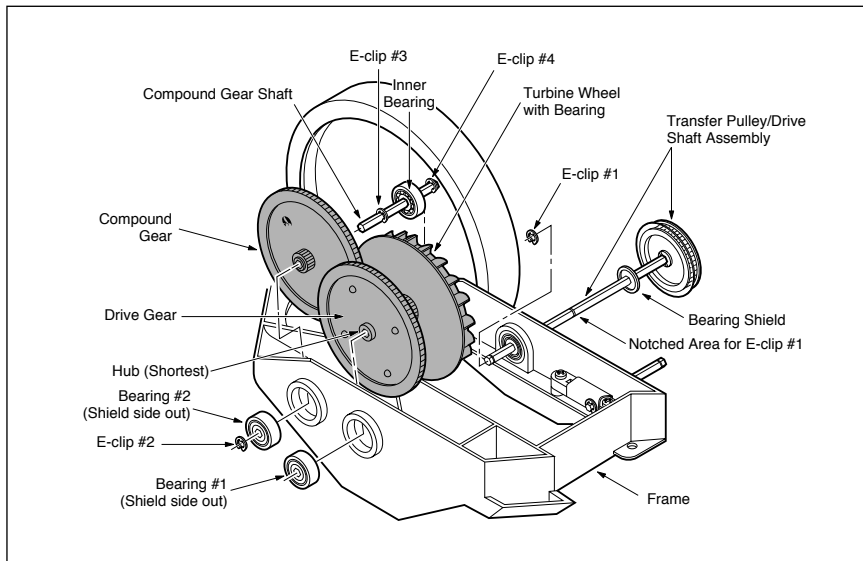
Here are basic steps for replacing the gear kit. More explicit instructions are contained with the gear kit.

DISASSEMBLY:

1. Follow steps 1-5 of Section F on page 39.
2. Remove the turbine wheel and drive gear.
3. Remove the compound gear.

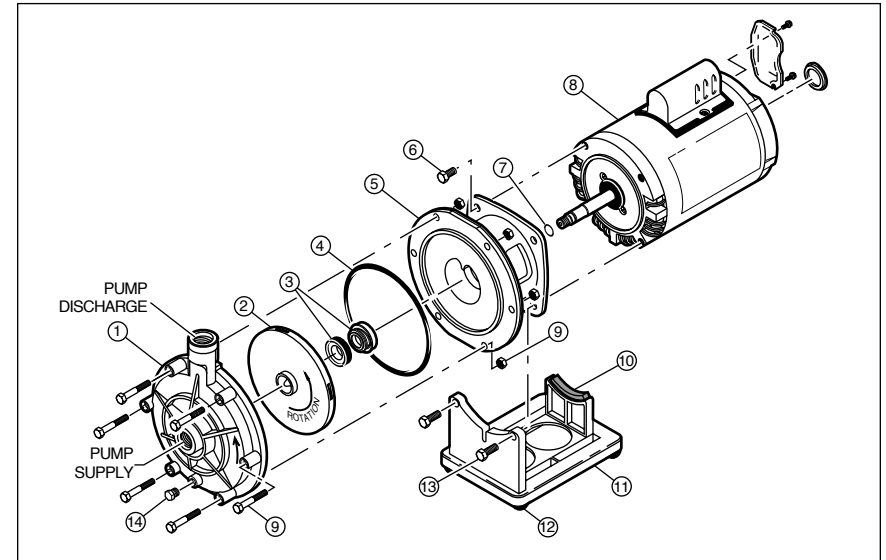
REASSEMBLY:

1. Install the new compound gear.
2. Replace the turbine wheel and drive gear.



X. POLARIS BOOSTER PUMP FOR POLARIS 380

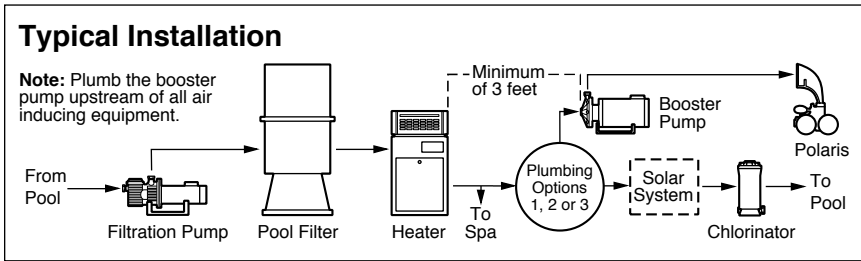
A. Exploded Parts Diagram



Index	Part Number	Quantity	Description
1	P-5	1	Volute
2	P-15	1	Impeller
3	P-55	1	Seal, Stainless Steel Cup and Spring
4	P-95	1	O-ring, Bracket
5	P-10	1	Bracket
6	P-35	2	Bolt, Stainless, Bracket to Motor
7	P-40	1	O-ring for Shaft
8	P-61	1	Motor, 3/4" HP, Threaded Shaft
9	P-25	6	Bolt/Nut, Stainless, Volute to Bracket
10	P-80	1	Rubber Strip, Motor and Bracket
11	P-70	1	Pump Stand with Feet, Strip
12	P-75	4	Rubber Feet
13	P-65	2	Bolt, Stainless, Stand to Bracket and Motor
14	P-20	1	1/8" NPTM Plug, Plastic

PLEASE NOTE: All of the parts fit the PB3 Booster Pump produced in 1978 except P-20 and P-25. Call 1-800-VAC-SWEEP for more information on the Polaris Booster Pump.

B. Installation Basics



Plumbing Configuration

The booster pump should be plumbed into the system so it always receives positive water flow from the filtration pump. To ensure proper water flow:

- The booster pump inlet connection line should be at least 3/4 inch pipe.
 - Follow our recommended plumbing configurations at left.
- Do not tap into the top of a horizontal line; tapping into the top of a horizontal line may cause pump damage.**

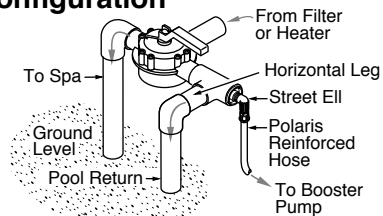
Note: If the plumbing configuration causes tight bends in the Polaris reinforced hose, use 90° street ells to minimize the bends and loops.

Checking Water Flow

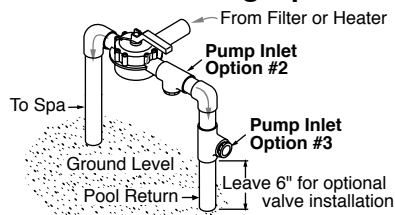
To check the water flow, disconnect the supply hose to the booster pump and turn on the filtration pump. If there is no flow:

- Verify the installation is correct.
- Install a valve on the return line after the booster pump inlet. This valve may need to be closed slightly.
- Use smaller eyeball fittings in the return lines.
- Plug a return line.

Preferred Plumbing Configuration



Alternate Plumbing Options



C. Troubleshooting

PROBLEM: Pump leaks.

SOLUTION:

Identify location of leak.

Seal Area

1. If the leak is at point A:
 - Replace the seals and shaft o-ring.
 - When replacing the seals, check the impeller seal pocket. If it is damaged, replace the impeller. If the impeller seal pocket is damaged, the pump was run dry. Check that the circulation pump is operating and verify that the time clock sequence is correct.
2. If the leak is at point B:
 - Inspect the bracket for cracks.
 - If cracked, replace the bracket and seals.
 - If not cracked, replace the seals.

Connection Area

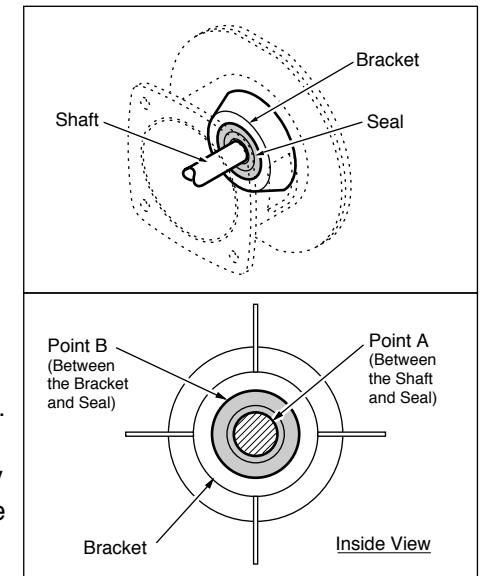
Check all intake and discharge hoses and connections:

1. Replace any cracked parts.
2. Check for hardened washers on old style (black) connections.
3. Reseal loose connections with rubber silicone sealant.

PROBLEM: Excessive vibration or noise.

SOLUTION:

1. Verify rubber feet are on the pump base.
2. Verify that the cleaner is installed (low back pressure causes excessive noise).
3. Replace the hard plumbing with flexible hoses to dampen the vibration.
4. Check the impeller for foreign material.
5. Remove the wet end and run the motor alone to check for excessive vibration.



PROBLEM: Lack of pressure.

SOLUTION:

1. Verify that the booster pump is correctly installed (motor is wired for proper voltage) and receiving supply water; it is not self-priming. (Refer to page 42 for installation basics.)
2. Verify that there are no leaks at the inlet or outlet of the pump.
3. Check the pump hose washers for swelling (old style black hoses).
4. If there is a valve installed on the discharge side of the pump, verify that the valve is open.
5. Check the impeller for foreign material.
6. Verify that the booster pump discharge is plumbed into the dedicated cleaner line rather than a normal return line.

PROBLEM: Motor runs then shuts off.

SOLUTION:

1. Verify that the cleaner is connected when the pump is running.
2. Check the amperage and voltage levels. Refer to the motor label.
3. Install a pump pressure restrictor (part #P-53) or a valve on the discharge side of the booster pump.
4. Ensure that the motor vents are free from debris and receiving sufficient ventilation.
5. See solutions under “Lack of pressure” problem.

PROBLEM: Motor hums, but does not turn.

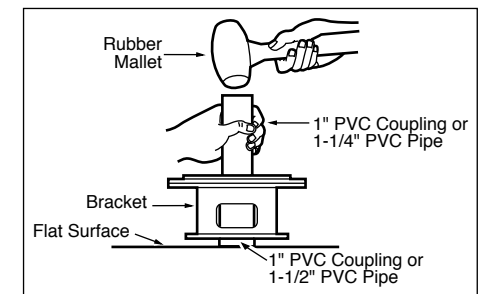
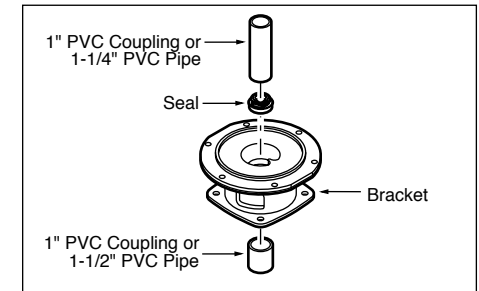
SOLUTION:

1. Turn off the power to the pump.
2. Spin the shaft by hand. If it turns freely, there is a motor or electrical problem.
3. If it does not turn:
 - Disassemble the volute.
 - Check the impeller for foreign material.
 - If the impeller or volute are damaged from contact, remove and replace them. Then reset the impeller distance if it is a keyed shaft motor with a brass shaft extension. The impeller should be about 1/8 inch from the bracket face.

D. Seal Replacement

REMOVAL:

1. Turn off the power to the pump.
2. Remove the volute bolts and volute.
3. Remove the motor shaft cap at the back of the motor and secure the shaft.
4. Spin off the impeller.
5. Remove the bracket bolts and bracket.
6. Remove the white ceramic seal and rubber cup ring from the impeller.
7. Tap the seal out of the bracket and remove any silicone from the seal pocket.



INSTALLATION:

1. Support the seal pocket in the bracket with 1 inch PVC coupling or 1-1/2 inch PVC pipe (at least 2-5/8 inch long).
2. Coat the stainless steel seal retainer with rubber silicone sealant.
3. Tap the seal into place using 1 inch PVC coupling or 1-1/4 inch PVC pipe.
4. Press the white ceramic seal into the impeller. Be careful not to touch the seal face.

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