

FlowVis[®] Flow Meter



Know the Flow.

Introducing the most advanced, affordable, and reliable precision Flow Meter designed specifically for pools, spas, fountains, and water features.



Manufactured in the U.S.A



Know the Flow

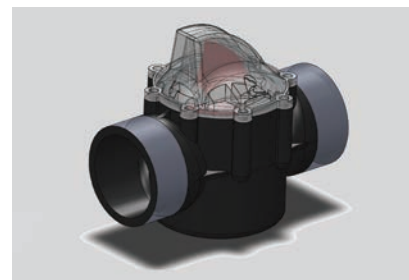
Every now and again, a great new idea results in a product that has people saying “now why didn’t I think of that?”. The patent pending FlowVis® from H₂flow is just such a product. It is a revolutionary, affordable, and highly accurate Flow Meter that guarantees you will **Know the Flow**.

Ingenious in concept, FlowVis® has undergone exhaustive testing and calibration to ensure long life, accuracy, and repeatability. No other Flow Meter at this price point comes remotely close to its +/- 2 GPM accuracy.*

FlowVis® is more than a Flow Meter; it is also a fully functioning Check Valve. As flow increases and decreases, the Check Valve’s flapper swings within its range of motion. A specifically designed calibration spring, indicating arm, and an extended height valve body lid, constitute the fundamentals of the FlowVis® design concept.

Saving energy using variable speed pumps is only possible if you know the flow. Setting the pump’s speed without an accurate measurement of flow is akin to driving a car without a speedometer. Too high uses more power than necessary and too low results in a dirty pool.

* Accuracy: +/- 2 GPM from 0 to 100 GPM



FlowVis® is available in two configurations:

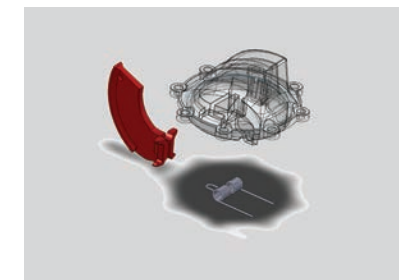
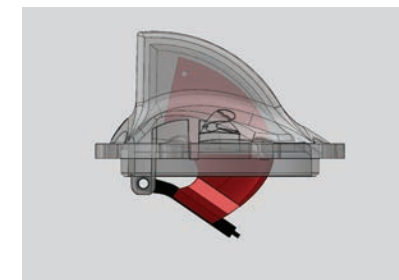
1. A retrofit kit that installs to a pre-existing Jandy or Praher 2” x 2.5” Check Valve assembly
2. A complete pre-assembled Check Valve assembly with FlowVis®

Unlike other Flow Meters, the position in which FlowVis® is installed (horizontal, vertical or relative to elbows and tees), has virtually zero effect on its accuracy.

What makes FlowVis® different?

Pool installers, owners, and operators finally have a Flow Meter that they can rely on. Accuracy, reliability, and longevity are key among a list of unique features that include:

- Combined functionality of Flow Meter and Check Valve
- Accuracy of +/- 2 GPM
- NSF 50 pending
- Installation flexibility - far less space required than other Flow Meters. No requirement for 10x clear pipe diameter before and 5x after. Install horizontal, vertical, or even upside down.
- Clear, easy to read scale in GPM with key velocity points (FPS)
- Installs in minutes
- No calibration required
- Unique design results in maintained accuracy even with entrained air caused by suction leaks
- Manufactured in the USA
- 5-year breakage warranty
- Pressure tested to >50psi
- Design life of 15 years with spring replacement every 7.5 years
- Less than 1 psi pressure drop across FlowVis®
- Consumes less than 0.2% additional motor power over having no check valve, e.g., 3 watts on a 2 HP pump.
- Can be used on 3” pipe if flow rate is 100 GPM or less



Retrofittable

Built to Last

FlowVis® is built to last. It’s robust, yet unobtrusive design means that unlike competing Flow Meters, FlowVis® won’t get kicked, tripped over, or broken. In fact, we’re so confident in the durability of FlowVis® that the product has a 5-year warranty on breakage!

Unlike Pitot tube / Rotameter style devices, FlowVis® will not stick, bounce, or provide inaccurate readings of flow. There are no saddle clamps to corrode, flat rubber seals to deteriorate, or small holes to become blocked.

Save Dollars, Save Energy

- FlowVis® provides a precise, easy-to-read flow rate
- Maximize energy savings by slowing the pump to its lowest required speed for pool sanitation
- Allows precise and repeatable valve positioning for perfect water feature operation

Installation

- No plumbing restrictions for precise flow measurement. Can be installed next to elbows, tees, etc. with little or no degradation in performance.
- Can be installed in any position
- Two options - 1) retrofit kit for existing Jandy or Praher 2" x 2.5" Check Valve* or 2) a complete valve assembly with FlowVis®.
- Consumes less plumbing space than individual Check Valve and Flow Meter combination

Pipe Size, Flow Range, and Model Options

FlowVis® Models

Retrofit kit for existing Jandy or Praher Valve	Retrofit kit for existing Jandy or Praher Valve	Complete FlowVis® including Valve Body	Complete FlowVis® including Valve Body	Pipe Size	Model
X				2 by 2 1/2"	FVJ-R
	X			1.5"	FVJ-R-15
		X		2 by 2 1/2"	FV-C
			X	1.5"	FV-C-15

NOTE: When used on 1.5" piping, installer will be required to provide and fit quantity two, 2" to 1.5" reducing bushings.



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FlowVis[®] Flow Meter Instruction Manual



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IMPORTANT - PLEASE READ THE FOLLOWING INSTRUCTIONS BEFORE INSTALLING FLOWVIS®

1.0 DESCRIPTION

FlowVis® is a revolutionary Patent Pending product that converts a standard Check Valve into a Flow Meter and Check Valve.

The product is currently available in two formats:

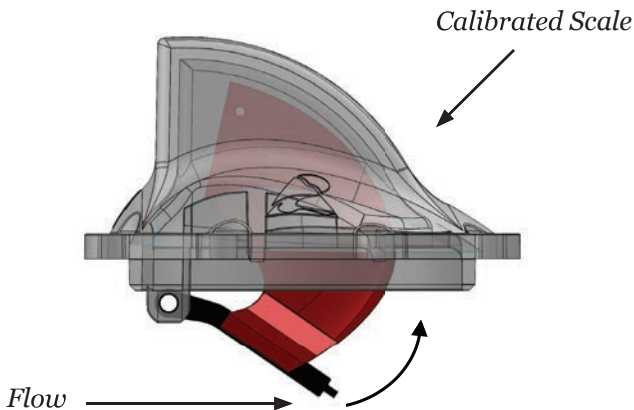
- a) Retrofit to install to an existing Jandy (7305) 2" by 2 1/2" Check Valve body.
- b) A complete Check Valve body assembled with FlowVis®.

The Retrofit kit comprises a fully assembled FlowVis® lid, calibrated spring, pin, indicator arm, 'O'-ring and calibrated scale. Installation simply requires the removal of the eight screws securing the existing lid, installing the new 'O'-ring and securing the FlowVis® with the original eight screws.



2.0 CONCEPT

As flow increases, the check valve flapper extends towards its fully open position. The angular position of the flapper is determined by the flow through the valve body. A calibrated scale on the valve lid provides an accurate reading of flow.

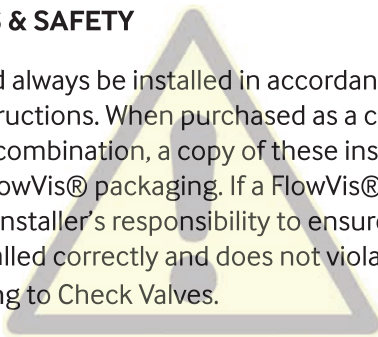


3.0 APPLICATIONS

FlowVis® is specifically designed for use in fresh water applications (i.e., swimming pools, spas, fountains, water features, etc). It is not suitable for applications that are contaminated with debris of such a size that it would prevent the check valve flapper from fully seating against the valve body.

4.0 WARNINGS & SAFETY

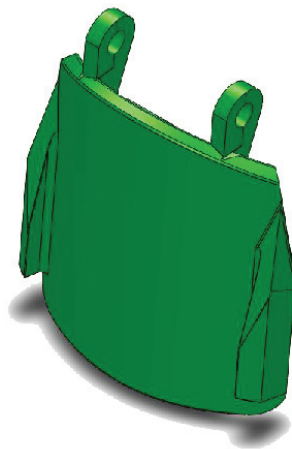
Check Valves should always be installed in accordance with the original manufacturer's instructions. When purchased as a complete Check Valve & Flow Meter combination, a copy of these instructions will be included with the FlowVis® packaging. If a FlowVis® retrofit kit has been purchased, it is the installer's responsibility to ensure that the Check Valve has been installed correctly and does not violate any local or federal codes relating to Check Valves.





The Virginia Graeme Baker Pool & Spa Act requires that all public swimming pools & spas that have a single main drain or multiple drains that are 3 feet or less (center to center) from each other, be fitted with a backup anti-entrapment system. Such systems include, but are not limited to, SVRS and Automatic Pump Shut Off systems. Special consideration must be made when installing a FlowVis® to such applications. Several of these systems do not allow the use of Check Valves. It is the responsibility of the installer to make sure that the requirements of the specific backup system in use are maintained.

An optional non-sealing flapper is available for these installations.



5.0 MODELS

FlowVis® is available in two different models:

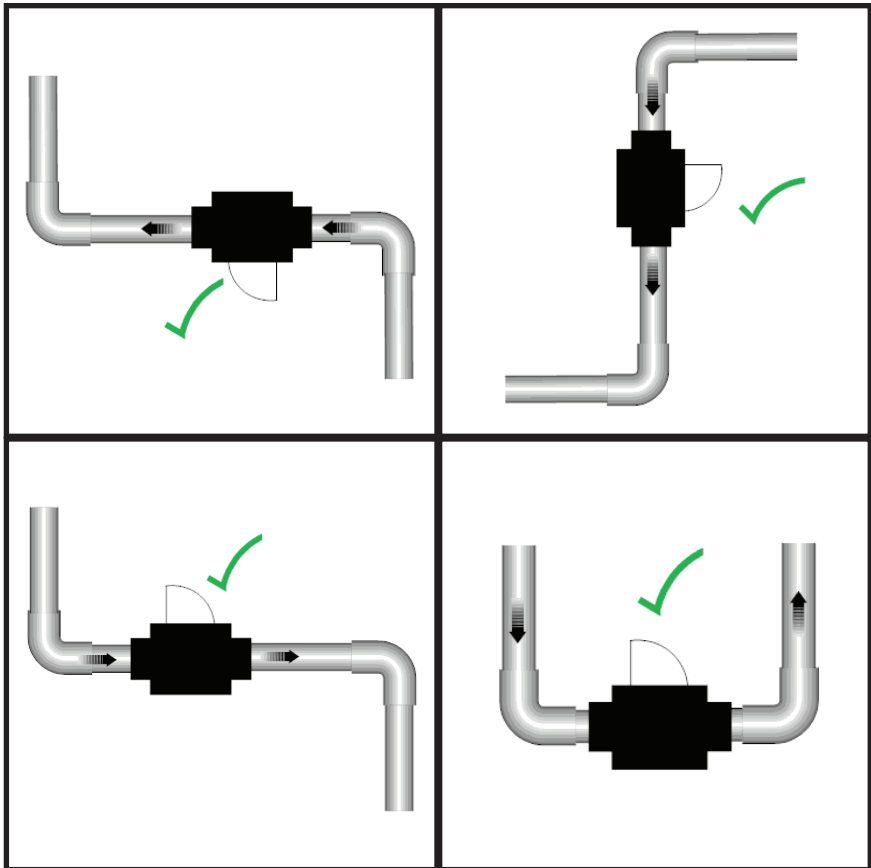
Model #	Description
FVJ-R	Retrofit kit for existing Jandy 7305 Check Valve
FVJ-C	Fully-assembled FlowVis®



6.0 INSTALLATION

Installation of the FlowVis® should be in accordance with the following instructions. Normal plumbing procedures such as cleaning, priming and gluing of fixtures should be followed in order to avoid leaks.

Unlike other flow meters, FlowVis® is not effected by flow stream disturbances caused by its proximity to pumps, elbows, tees, valves etc. FlowVis® does not require specific straight pipe lengths before or after its point of installation and can be installed close to, or even adjacent to other plumbing fittings. FlowVis® can be installed either horizontally or vertically.

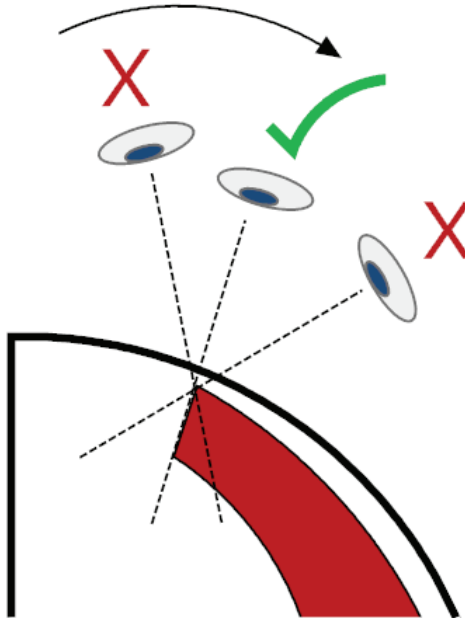


NOTE: When selecting a physical location to install FlowVis®, be sure to allow accessibility to read the scale on the lid.



7.0 OPERATION

The FlowVis® is factory-calibrated to be extremely accurate across its full operating range. Any 'inaccuracy' is related to the angle in which the scale is read. To avoid so-called 'parallax error', it is important to position your eye so that you are looking squarely at the tip of the indicator arm. To achieve this, simply move your head so that you just lose sight of the vertical leading edge of the red arm.



NOTE: Slowly move your head in this direction to the point where the leading edge of the indicating arm is not visible.



8.0 MAINTENANCE

Although FlowVis® is designed to be maintenance-free, periodic checks should be made to the following:

Item	Check for	Remedy
'O' ring seal	Check for leaks	Replace 'O' ring
Valve Body	Check for cracks or damage	Replace entire FlowVis®
Lid	Check for cracks or damage	Replace entire FlowVis®
Indicator Arm	Check to see if sticking due to build up of debris	Remove lid and flush out debris
Lid	Air bubbles in lid	Check plumbing system for air leak

9.0 SPECIFICATIONS

Materials used:

Item	Material / Comments
Valve Cover Screws	Stainless Steel
Valve Body	CPVC Plastic, Chlorine, Acid resistant
Valve Lid	Poly Carbonate (PC), Chlorine, Ozone resistant
Calibrated Spring	Stainless Steel
Pivot Pin	Stainless Steel
'O' Ring	Silicone-Lubricated Elastomer

Operation:

Function	Comments
Design Accuracy	+/- 2 GPM over operating range
Design Life	Greater than 7 years
Minimum operating ambient temperature	32°F (0°C)
Maximum operating ambient temperature	140°F (60°C)
Periodic Calibration	None required

10.0 WARRANTY

IMPORTANT, please read and keep this document on record.

1. Definition: H2flow Controls Inc. warrants that the products that it manufactures and sells will be free from defects in material and workmanship for a period of 12 months from the date of shipment.

Should the product prove defective during the warranty period, H2flow Controls Inc, at its discretion, either will repair the defective product or replace it with an equivalent product in exchange for the defective unit without charge for parts, labor, carriage and insurance.

2. Eligibility This warranty extends to the original purchaser only or to the end-user client of an H2flow Controls Inc authorized affiliate.

3. How to obtain service

To obtain service under the terms of this warranty, the customer is required to notify H2flow Controls Inc. before the expiration of the warranty period and to return the item in accordance with H2flow Controls Inc's product return policy. Any product returned for warranty repair must be accompanied by a full fault report specifying the symptoms and the conditions under which the fault occurs. Should H2flow Controls Inc incur additional cost as a result of a failure to complete the appropriate paperwork, an administrative charge may be levied.

4. Exclusions

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate care. H2flow Controls Inc shall not be obligated to provide service under this warranty if:

- a) damage has been caused by a failure to make a full and proper inspection of the product (as described by the documentation enclosed with the product at the time of shipment) on initial receipt of the product following shipment;
- b) damage has been caused by the attempts of individuals, other than H2flow Controls Inc staff to repair or service the product;
- c) damage has been caused by the improper use of the product

5. Charges

Under cover of this warranty, H2flow Controls Inc will pay the carriage and insurance charges for the shipment of defective product back to H2flow Controls Inc and for its return to the client's original site of dispatch except when:

- a) H2flow Controls Inc's product return policy has not been followed.
- b) product failure is caused by any of the exclusions described at paragraph 4 above, when the customer will be liable for the full cost of the repair (parts and labor) plus all carriage and insurance costs to and from H2flow Controls Inc's premises.
- c) the product is damaged in transit and a contributory cause is inadequate packaging. It is the customer's responsibility to ensure that the packaging used to return equipment to H2flow Controls Inc is the same, or has equivalent protective qualities, to that used to ship the product to the customer in the first instance. Any damage resulting from the use of inadequate packaging will nullify H2flow Controls Inc's obligations under this warranty. Should the customer's product be damaged in transit following a repair at H2flow Controls Inc's site, a full photographic record of the damage must be obtained (packaging and the product) to support any claim for recompense. Failure to present this evidence may limit H2flow Controls Inc's obligations under this warranty.

THIS WARRANTY IS GIVEN BY H2FLOW CONTROLS INC IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY, NON INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE. H2FLOW CONTROLS INC SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES. WE SPECIFICALLY DISCLAIM ANY AND ALL WARRANTIES TO CUSTOMERS OF THE CUSTOMER. THE CUSTOMER'S SOLE REMEDY FOR ANY BREACH OF WARRANTY IS THE REPAIR OR REPLACEMENT, AT H2FLOW CONTROLS INC'S DISCRETION, OF THE FAILED PRODUCT.

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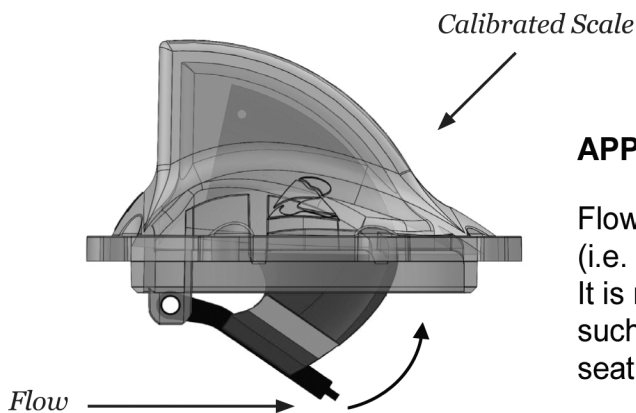


IMPORTANT - PLEASE READ THE FOLLOWING INSTRUCTIONS BEFORE INSTALLING FLOWVIS®



CONCEPT

As flow increases, the check valve flapper extends towards its fully open position. The angular position of the flapper is determined by the flow through the valve body. A calibrated scale on the valve lid provides an accurate reading of flow.



APPLICATIONS

FlowVis® is specifically designed for use in fresh water applications (i.e. swimming pools, spas, fountains, water features, etc.) It is not suitable for applications that are contaminated with debris of such size that it would prevent the check valve flapper from fully seating against the valve body.

VGB SAFETY

The Virginia Graeme Baker Pool & Spa Act requires that all public swimming pools & spas be fitted with a backup anti-entrapment system (SVRS). In some municipalities check valves may not be used in conjunction with SVRS systems. In this situation an optional non-sealing flapper is available for these installations.



INSTALLATION

Unlike other flow meters FlowVis® does not require specific straight pipe lengths before or after its point of installation and can be installed directly adjacent to other plumbing fittings. FlowVis® can be installed either horizontally or vertically. Normal plumbing procedures such as cleaning, priming & gluing of fixtures should be followed to avoid leaks.

For FlowVis® installations on pools with A&A's in-floor cleaning systems the flow meter should be located on the return side prior to A&A's actuator valve, but **AFTER** all other water "demands" (i.e. EcoSkim, Water Features, etc...) (See Figure 1 - Page 2)

It is recommended that during installation, a 1 1/2" separation be maintained between the FlowVis® & Actuator Valve .(See Figure 1 - Page 2)

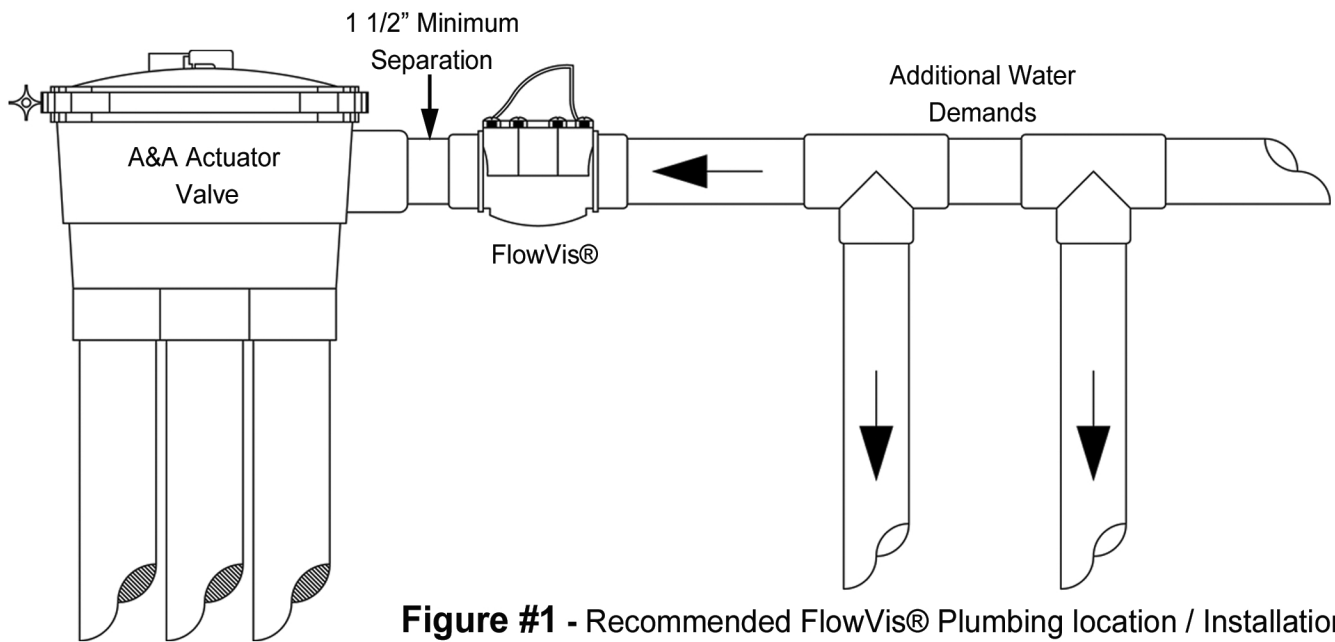


Figure #1 - Recommended FlowVis® Plumbing location / Installation

INSTALLATION CONT.

Be sure flow direction is correct & flow scale is positioned correctly to allow for accurate reading of scale.

To avoid so-called “parallax error”, it is important to position your eye so that you are looking squarely at the tip of the indicator arm. (See Figure 2).

To achieve this, simply move your head so that you just lose sight of the vertical leading edge of the red arm.

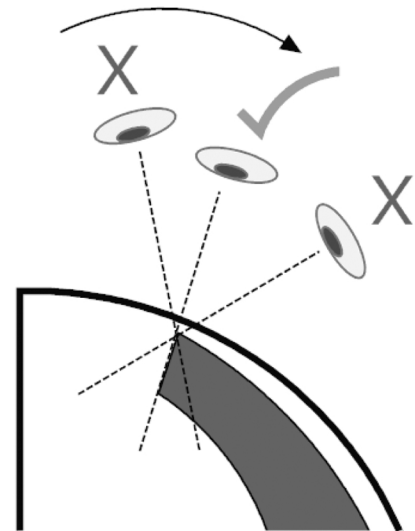


Figure #2 - Proper eye alignment for accurate meter reading

OPERATION & SETUP (A&A’S IN-FLOOR APPLICATION)

At pool start-up, using the controls on your variable speed pump, set the metered GPM based on the *estimated* “System Flow Rate” listed on the cleaning head layout provided by A&A’s design department for the pool. (See Figure #3).

This setting **MUST** be adjusted when **ALL** additional “upstream” water demands are open & functioning.

The GPM rating on your A&A plan (Figure #3) will be used as your “*Estimated Base Flow*”. To obtain improved cleaning increase the flow. Your “*Estimated Base Flow*” can also be used to determine if your filter is in need of cleaning.

Maximum A&A In-Floor System Requirement only :	72 GPM(s)
Any additional water demands may be met by separate pump and suction criteria and is the responsibility of the Dealer to calculate.	

Figure #3 - A Sample “System Flow Rate” as shown on Cleaning Head Layout Plan.



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Manufactured in the U.S.A



Know
the **FLOW™**



FlowVis® Flow Meter

(10) Things That You Need To Know About FlowVis®

1. Currently the only NSF 50 certified flow meter in the world
2. Install without the need for straight pipe before or after
3. Three products in one: Flow Meter, Check Valve and Velocity Meter
4. Average Accuracy of 97.9%
5. Patented and manufactured in the USA
6. Available for 1.5", 2.0" and 2.5" pipe
7. Retrofit models for existing Jandy and Praher valve bodies
8. Five-year breakage warranty
9. Maintains accuracy even with air in the system
10. Knowing the flow will guarantee maximum energy savings when using variable speed pumps:

Pool Gallons	Required Pump Speed RPM ⁽¹⁾	High Speed, example 1	Additional cost / year	Higher Speed, example 2	Additional cost / year
20,000	1463	1700	+\$103	2000	+\$284
25,000	1829	2000	+\$110	2400	+\$462
30,000	2195	2400	+\$198	2800	+\$706

(1) Optimum pump speed required to achieve effective filtration and maximum energy savings

(2) Data based on typical CA energy costs, typical run times and variable speed pump versus single speed pump

Using FlowVis® to accurately set the required pump speed will typically result in a payback of just one year.