



AquaFlow vs. Smart Valve

18-Model, Multi-Configuration Engineered Platform vs. One-Body Field-Adjusted Device

Executive Summary

AquaFlow and Smart Valve both address the same technical problem: commercial water meters that over-register consumption because they measure entrained air as water. Their approaches differ fundamentally. AquaFlow is a precision engineering platform — 18 IAPMO-certified stainless steel valve models, each available in multiple configurations and multiple circumference sizes, individually selected and calibrated to the specific meter, pipe schedule, and operating environment of every installation. Smart Valve is a single Acetron GP polymer body per nominal pipe size, calibrated by the installer in the field after installation. This document makes that distinction clear and quantifies the financial, engineering, and risk implications for enterprise buyers.

AQUAFLOW MODELS & CONFIGURATIONS

18 IAPMO-Certified Models. Multiple configurations per model. Multiple circumference sizes per configuration. Each valve is a unique fingerprint of its specific meter.

SMART VALVE ARCHITECTURE

1 Acetron GP body per nominal pipe size. Calibrated by the installer in the field after installation. One body design serves all conditions within each nominal pipe size.

AQUAFLOW PRIMARY STRUCTURE

316L Medical-Grade Stainless Steel — Main Body, Impeller/Shaft, Cover Disc. Same specification as surgical instruments.

SMART VALVE PRIMARY STRUCTURE

Acetron GP Engineering Plastic — Valve Body, Plunger, Backplate. Stainless only in secondary components (shaft, spring).

AQUAFLOW ACQUISITION OPTIONS

Buy Outright · Free Trial · Finance · Rent — Four flexible paths. Customer keeps 100% of savings.

SMART VALVE ACQUISITION

Purchase or Shared Savings. Shared Savings = continuous payment obligation, device never fully owned, vendor extracts savings indefinitely.

AQUAFLOW WARRANTY

Lifetime Warranty + 6-Month Money-Back Guarantee — zero replacement cost risk, zero procurement risk.

SMART VALVE WARRANTY

10-Year Manufacturer's Limited Warranty + 90-Day Satisfaction Guarantee.

✓ AquaFlow — What Separates Us

18 IAPMO-certified 316L stainless models · Multiple configurations per model · Multiple circumference sizes per configuration · Per-meter calibration (unique fingerprint) · 20–180 PSI validated range · Scales to 32" (AF-3200) · Lifetime warranty · 6-month money-back · Buy / Free Trial / Finance / Rent · NSF/ANSI/CAN 61 (IAPMO K-17679) · KIWA Certified · MARS + Basulto PE + UMaine validated · IPMVP M&V documentation · ~60–70% lower installed cost

Smart Valve — Key Characteristics

Single Acetron GP body per nominal pipe size · Calibrated in the field after installation · Standard sizes to 12" · 10-year warranty + 90-day guarantee · NSF 61 & NSF 372 certified · Purchase or Shared Savings only · Shared savings = continuous payment, never fully owned · Higher installed cost · No IPMVP-equivalent documentation

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AquaFlow does not sell a device. AquaFlow provides a precision hydraulic solution that is uniquely engineered to the specific meter, the specific pipe schedule, and the specific operating environment of every single installation. Each valve that ships is a unique fingerprint of the meter it is going into. Five meters at the same property — even five meters of identical nominal size — receive five differently configured and calibrated valves. They are not interchangeable. This is the engineering mechanism that produces consistent, maximized savings at every installation.

The Three Layers of AquaFlow's Precision Architecture

LAYER 1 — MODEL SELECTION

18 IAPMO-certified stainless steel valve models (AF-050 through AF-3200), each representing a distinct hydraulic specification. Model selection is performed by AquaFlow's engineering team based on site survey data: meter size, municipal pressure profile, flow demand characteristics, and the type of commercial application. No two installations with different hydraulic profiles receive the same model.

LAYER 2 — CONFIGURATION (STANDARD & REVERSE)

Each model is available in standard and reverse configurations. Configuration is selected by AquaFlow engineering based on the hydraulic objective of the installation — whether the system needs to increase flow, decrease flow, maintain flow, increase pressure, decrease pressure, or maintain pressure. This is a pre-shipment engineering decision, not a field adjustment.

LAYER 3 — CIRCUMFERENCE SIZE (PIPE SCHEDULE ACCOMMODATION)

Within each configuration, AquaFlow valves are produced in multiple circumference sizes to match the actual internal bore of the pipe at the installation point. Pipes of the same nominal size have materially different internal diameters depending on schedule or type. A 2" Schedule 40 pipe has a different bore than a 2" Schedule 80 pipe. A 2" Type K copper pipe differs from a 2" Type L copper pipe. AquaFlow accounts for all of this through engineering before the valve ships.

The AquaFlow Engineering Difference

Smart Valve's approach is a single body per nominal pipe size, calibrated by the installer after installation. Their design holds that field adjustment is the right method — the installer finds the optimal setting on-site. AquaFlow's position is different: optimal calibration is an engineering decision, not an installation decision. AquaFlow's 18-model platform — multiple configurations, multiple circumference sizes, per-meter calibration by engineers using actual site data — means every valve is precisely engineered before it ships. The result is a unique fingerprint for every meter. Not a field approximation. A fingerprint.

The IAPMO-Certified AquaFlow Models (AF-050 – AF-1200)

Listed on IAPMO Certificate of Listing K-17679 (effective August 2025, certified to NSF/ANSI/CAN 61-2019). Each available in standard and reverse configurations across multiple

AF-050 1/2" S.S. Valve	AF-060 5/8" S.S. Valve	AF-070 3/4" S.S. Valve	AF-100 1.0" S.S. Valve	AF-150 1.5" S.S. Valve	AF-200 2.0" S.S. Valve
AF-300 3.0" S.S. Valve	AF-400 4.0" S.S. Valve	AF-600 6.0" S.S. Valve	AF-800 8.0" S.S. Valve	AF-1000 10.0" S.S. Valve	AF-1200 12.0" S.S. Valve

Custom-Engineered Extended Range (AF-1400 – AF-3200) — 10" through 32"

AF-1400 14" Custom-Engineered	AF-1600 16" Custom-Engineered	AF-1800 18" Custom-Engineered	AF-2000 20" Custom-Engineered	AF-2200 22" Custom-Engineered
AF-2400 24" Custom-Engineered	AF-2600 26" Custom-Engineered	AF-2800 28" Custom-Engineered	AF-3000 30" Custom-Engineered	AF-3200 32" Custom-Engineered

Custom-engineered to specification: Models AF-1400 through AF-3200 (10" through 32") are individually engineered to the precise requirements of each installation. Not only is the calibration, configuration, and installation point custom-determined by AquaFlow engineers — the valve body itself is custom-manufactured to the specific hydraulic environment, pressure profile, and pipe specification it is going into. Every large-diameter installation is a one-of-a-kind engineering solution. AF-3200 (32") is the maximum standard size; larger configurations available by engineering review.

18

IAPMO-CERTIFIED MODELS

AF-050 through AF-1200. Each a distinct hydraulic specification certified to NSF/ANSI/CAN 61-2019.

2+

CONFIGURATIONS PER MODEL

Standard and reverse. Selected by AquaFlow engineering based on the hydraulic requirements of each site.

Multi

CIRCUMFERENCE SIZES PER CONFIG

Sized to the actual internal bore — accounts for Schedule 40, 80, Type K/L copper, ductile iron bore variation.

1

SMART VALVE BODY DESIGN

One Acetron GP body per nominal pipe size. Calibrated in the field after installation.

The procurement model is as important as the product specification for enterprise buyers managing capital budgets, operating expense constraints, or ESG commitments. AquaFlow and Smart Valve offer fundamentally different acquisition structures — and one of AquaFlow's most significant commercial advantages is that we actively win customers away from Smart Valve's shared savings model.

✓ AQUAFLOW — FOUR ACQUISITION PATHS

Buy - Free Trial - Finance - Rent

Buy Outright: Full purchase. Valve owned immediately. One-time capital expenditure. Lifetime warranty eliminates all future replacement cost. Customer keeps 100% of savings forever.

Free Trial: AquaFlow installs the valve at no upfront cost. Customer evaluates real-world performance on their own meters and utility bills, with zero financial risk. If savings are not there, the valve comes out. The most powerful deal-closing tool in the field — no competitor offers it at this level.

Finance: Spread the capital cost over time. Savings from the valve typically offset the monthly payment from day one, creating net-positive cash flow in most commercial installations.

Rent: Operating expense model. No capital outlay. Valve installed under a rental agreement. Suited for operators who prefer OpEx treatment or have capital budget constraints.

SMART VALVE — TWO ACQUISITION PATHS

Purchase - Shared Savings

Purchase Program: Standard outright purchase. 10-year warranty. No ongoing payment after purchase. No free trial option published.

Shared Savings Model: Smart Valve installs the device and takes a percentage of documented water savings as an ongoing payment. The customer never fully owns the device. Payment continues indefinitely as long as the device is installed.

Why customers leave the shared savings model: Enterprise buyers, REITs, and institutional operators consistently object to the shared savings structure for three core reasons. First, it creates a permanent revenue extraction — the operator never gets to keep 100% of their own water savings. Second, it creates a contractual dependency with the vendor for ongoing billing and reconciliation. Third, it is structurally opposed to the operator's incentive to maximize NOI — every dollar saved is permanently split with the vendor indefinitely. AquaFlow wins a significant volume of customers who are moving away from shared savings arrangements.

The Shared Savings Closing Argument

When a prospect is considering Smart Valve's shared savings model: "With AquaFlow you can buy the valve outright for a fraction of Smart Valve's installed cost, with a lifetime warranty and no ongoing payment. You keep 100% of your savings forever. The free trial lets you prove it with zero financial risk. Why would you agree to share your water savings with a vendor indefinitely?" AquaFlow's four-path acquisition model is a commercial weapon against shared savings competitors.

All data sourced from AquaFlow technical specs, IAPMO K-17679, MARS testing, Basulto PE report, University of Maine report, and thesmartvalve.com (technical-specs and FAQs, 2026).

CATEGORY	AQUAFLOW TECHNOLOGIES	SMART VALVE (Flow Dynamics LLC)
Product Architecture	<p>MAJOR ADVANTAGE</p> <p>18 IAPMO-certified models, multiple configurations (standard and reverse) per model, and multiple circumference sizes per configuration — engineered to the actual internal bore of the pipe at installation. Each valve is a unique fingerprint of its specific meter.</p>	<p>DISADVANTAGE</p> <p>One Acetron GP body design per nominal pipe size. Standard sizes 5/8" through 12". Calibrated by the installer after installation. One body serves the full range of conditions within each nominal pipe size.</p>
Calibration Method	<p>MAJOR ADVANTAGE</p> <p>Engineers review site survey data and calibrate each valve to the specific meter's operating parameters before it ships. Five meters at one property = five unique calibrations. Determined before installation, not after.</p>	<p>DISADVANTAGE</p> <p>Calibrated after installation in the field. Smart Valve's methodology holds that the installer determines the optimal setting on-site. One calibration approach applies across all conditions within a given nominal pipe size.</p>
Pipe Schedule Accommodation	<p>ADVANTAGE</p> <p>Multiple circumference sizes per configuration accommodate Schedule 40, Schedule 80, Type K copper, Type L copper, and ductile iron bore differences within the same nominal pipe size. Precise bore-matching at the engineering level.</p>	<p>DISADVANTAGE</p> <p>One body per nominal pipe size. Pipe schedule variation within a nominal size is accommodated through field adjustment after installation.</p>
Primary Body Material	<p>ADVANTAGE</p> <p>316L medical-grade stainless steel — main body, impeller/shaft, and cover disc. SS 302 spring. Vasconite bushing. Same alloy as surgical instruments and pharmaceutical manufacturing. 40–60+ year service life in pressurized water applications.</p>	<p>DISADVANTAGE</p> <p>Acetron GP engineering plastic — valve body, plunger, and backplate. Stainless shaft and spring only. Polymer primary body in continuous contact with pressurized potable water.</p>
Operating Pressure Range	<p>ADVANTAGE</p> <p>20–180 PSI — confirmed in AquaFlow technical specifications. Full commercial and industrial municipal water spectrum.</p>	<p>Not published. Installer determines the appropriate setting after installation based on what the system can tolerate without excessive pressure loss.</p>
Maximum Size	<p>ADVANTAGE</p> <p>Scales to 32 inches (AF-3200). AF-050 through AF-1200 are IAPMO-certified standard sizes. AF-1400 through AF-3200 (10"–32") are custom-engineered: not just calibrated, but individually manufactured to the specific hydraulic environment, pressure profile, and pipe specification of each installation.</p>	<p>Standard sizes 5/8" through 12". Larger sizes available on custom order. No published maximum.</p>
Acquisition Options	<p>MAJOR ADVANTAGE</p> <p>Four paths: Buy Outright, Free Trial, Finance, or Rent. Customer controls the model. 100% of savings retained. No ongoing payment obligation in purchase or finance. Free trial = zero financial risk.</p>	<p>DISADVANTAGE</p> <p>Purchase or Shared Savings only. Shared Savings = vendor takes ongoing % of water savings in perpetuity. Customer never fully owns the device. Enterprise buyers consistently move away from this model.</p>
Warranty	<p>MAJOR ADVANTAGE</p> <p>Lifetime warranty + 6-month money-back guarantee. Zero replacement cost ever. Zero procurement risk.</p>	<p>10-year manufacturer's limited warranty + 90-day no-questions-asked satisfaction guarantee.</p>
Certifications	<p>BOTH CERTIFIED</p> <p>NSF/ANSI/CAN 61-2019. IAPMO R&T; Certificate K-17679, effective August 2025. KIWA Certified.</p>	<p>BOTH CERTIFIED</p> <p>NSF/ANSI 61/CAN, NSF/ANSI 372 (lead free), CE Declaration of Conformity.</p>
Third-Party Validation	<p>ADVANTAGE</p> <p>MARS Company (NIST-certified bench, 2017). Basulto & Associates PE report (Florida PE, 2016). University of Maine Process Development Center (Ph.D. engineers, 2021). Independent. On the record. Available for technical due diligence.</p>	<p>Holds certifications. Independent third-party laboratory performance reports equivalent to MARS/Basulto/UMaine not published in accessible materials.</p>
Performance Documentation	<p>ADVANTAGE</p>	<p>Water monitoring portal available for 2" and larger. Not described as IPMVP-compliant or independently auditable.</p>

For enterprise buyers making a long-term capital infrastructure decision, material specification is the primary engineering risk factor. Both products are built around fundamentally different material philosophies. The comparison below is a complete technical analysis across four critical property categories.

1 — LONG-TERM PRESSURE INTEGRITY: The Most Critical Factor in Any Pressurized Water System

AQUAFLOW — 316L STAINLESS

316L stainless steel (UNS S31603) is a wrought austenitic alloy engineered for sustained mechanical load in pressurized environments. Its yield strength of approximately 25,000–30,000 PSI and ultimate tensile strength of 70,000–80,000 PSI mean that at AquaFlow's maximum operating pressure of 180 PSI, a 316L component is operating at less than 0.6% of its yield strength. The material experiences essentially zero structural stress under normal commercial water conditions.

316L components harvested from pressurized water reactors after 40 years of continuous service have been studied and shown to maintain structural integrity, confirming the material's performance in continuous pressurized water applications at the most demanding end of the spectrum. Municipal water systems operate at a fraction of those conditions.

Unlike polymers, 316L does not creep under sustained load, does not thermally expand meaningfully within municipal water temperature ranges, and does not change dimensional characteristics over decades of service. The material's performance is essentially unchanged from day one to year 50.

SMART VALVE — ACETRON GP

Acetron GP (acetal homopolymer, POM-C) has a published compressive strength of approximately 18,000 PSI and a continuous use temperature rating of 185°F. These are respectable numbers for an engineering plastic designed for precision mechanical parts.

Two material science phenomena apply to polymers under the conditions of a commercial water system that do not apply to metallic structures in the same way:

Creep under sustained load: Polymers under continuous mechanical stress will slowly deform over time — a behavior known as creep. A pressurized water line operates 24 hours a day, 365 days a year. This is a permanent, uninterrupted load, not a cyclic one. Acetron GP is rated for creep resistance within its design parameters; however, those parameters are for precision machined mechanical parts, not necessarily for decades of continuous pressurized water service.

Temperature sensitivity: Acetron GP's continuous use temperature ceiling is 185°F. In standard municipal water applications this is not a limiting factor. However, in hot water or steam-heated systems, thermal expansion and dimensional stability become considerations that do not apply to 316L. Smart Valve's 10-year warranty is the published performance commitment.

2 — BACTERIAL RESISTANCE & BIOFILM FORMATION: Critical for Potable Water Infrastructure

AQUAFLOW — 316L STAINLESS

316L stainless steel has a surface that is fundamentally hostile to biofilm colonization. The material is non-porous at the engineering scale — its passive oxide layer (primarily chromium oxide, Cr₂O₃) forms spontaneously on oxygen exposure and self-repairs if scratched. This oxide layer is chemically inert and provides no organic attachment points for bacterial colonies.

Research in food-grade manufacturing environments consistently shows 316L stainless to be among the best-performing materials for resistance to Legionella, Pseudomonas, and other waterborne pathogens in distribution systems. This is the primary reason 316L is specified in hospital water systems, pharmaceutical manufacturing clean rooms, and food-grade dairy and beverage lines.

For REIT portfolio managers, ESG frameworks, and institutional investors who require material specification disclosure, AquaFlow's 316L primary body is a straightforward, defensible specification in regulated procurement environments.

SMART VALVE — ACETRON GP

Acetron GP is described in Smart Valve's technical materials as ideal for wet environments because it "resists moisture, will not accumulate particulates, will not corrode and self-seals extremely well." These are accurate statements about Acetron GP's behavior in many mechanical applications.

However, polymer surfaces in sustained contact with potable water present a different challenge than metallic surfaces. Thermoplastic polymer surfaces are not smooth at the molecular scale — they have microscopic surface features that can serve as colonization sites for biofilm-forming bacteria. Acetron GP does not possess the inherent antimicrobial surface properties of metallic alloys with passive oxide layers.

It holds NSF 61 certification for potable water contact. NSF 61 certification does not specifically address long-term biofilm resistance. In healthcare, pharmaceutical, or other regulated environments, the difference between a 316L wetted surface and a polymer wetted surface carries practical significance.

3 — CORROSION RESISTANCE: Against Chlorine, Chloramines, Scale, and Variable Water Chemistry

AQUAFLOW — 316L STAINLESS

316L was specifically formulated for resistance to chloride-bearing environments. The “316” designation (vs. the more common 304) reflects the addition of 2–3% molybdenum specifically to resist pitting corrosion from chlorides. Municipal water treatment uses chlorine and chloramine extensively as disinfectants. 316L is not affected by either.

316L maintains its passive oxide layer across a wide pH range (approximately 1–11), is stable across the full temperature range of municipal water systems, and does not react with limescale, iron deposits, or sulfates in ways that compromise structural integrity.

The Basulto & Associates PE engineering report explicitly confirms the devices “do not adversely affect the building’s domestic water distribution system” — real-world validation from a licensed PE at a 12-story Sunny Isles Beach condominium operating in Florida’s coastal water chemistry, which includes elevated chlorides, mineral content, and disinfectant loading.

SMART VALVE — ACETRON GP

Acetron GP does not corrode in the metallic sense — it does not rust or oxidize. This is a genuine advantage of polymer in many applications. Smart Valve’s design philosophy holds that polymer is the superior material for this application precisely because it avoids the corrosion mechanisms that affect lower-grade metals such as carbon steel and cast iron.

What that comparison does not address is that 316L stainless steel is not a lower-grade metal. It is a medical-grade alloy specifically formulated to resist chloride pitting — the primary corrosion risk in municipal water. 316L does not accumulate scale, does not corrode in chlorinated or chloraminated water, and requires no comparison to lower-grade metals to make the case.

Acetron GP is stable in chlorinated water environments within normal municipal treatment ranges. However, it is not immune to long-term degradation from highly aggressive disinfectant formulations in specialty water systems, or from sustained UV exposure in outdoor installations.

4 — INSTITUTIONAL ACCEPTANCE & PROCUREMENT COMPLIANCE

AQUAFLOW — 316L STAINLESS

316L stainless steel satisfies the material specifications of virtually every institutional procurement standard that addresses wetted surface materials for pressurized potable water infrastructure:

- FGI Guidelines for Healthcare Construction (hospital water systems)
- UFC Federal Facilities Specifications (government water infrastructure)
- FDA/EMA pharmaceutical manufacturing frameworks (pharmaceutical water systems)
- USDA and 3-A Sanitary Standards (food-grade processing)
- LEED and sustainable building material frameworks

For enterprise buyers whose procurement specifications go beyond NSF 61 — particularly healthcare, pharmaceutical, and federal government — AquaFlow’s 316L primary body requires no additional material justification. It is the same specification as surgical instruments, IV delivery systems, pharmaceutical reactors, and hospital piping infrastructure worldwide.

SMART VALVE — ACETRON GP

Acetron GP holds NSF 61 certification for potable water contact, satisfying the primary regulatory threshold for most commercial applications. In general commercial real estate, multifamily, and hospitality contexts, this is typically sufficient for procurement approval.

However, in regulated sectors where specifications go beyond NSF 61 — specifically healthcare facilities, pharmaceutical manufacturing, food & beverage production, and federally regulated infrastructure — a polymer primary body typically requires supplemental material justification that is simply not required for a 316L stainless specification.

FDA/EMA pharmaceutical water system guidelines explicitly specify 316L stainless as the preferred wetted-surface material. FGI Guidelines for Healthcare Construction specify 316L for hospital potable water distribution. Acetron GP holds NSF 61 certification but is not a named material in these institutional frameworks. For those procurement environments, the difference between NSF 61 certified polymer and 316L medical-grade stainless is not a nuance — it is a specification gate.

“The question for enterprise buyers is not whether Acetron GP can work in a water line — it demonstrably can. The question is: for a long-term capital infrastructure investment in a pressurized potable water system that will operate 24/7 for 20–40 years, which material do you want? 316L medical-grade stainless — the specification of surgical instruments and pharmaceutical manufacturing — or an engineering plastic? AquaFlow’s 316L architecture is the more conservative, higher-confidence engineering choice for every enterprise application category.”

AquaFlow and Smart Valve represent two different engineering philosophies on how to optimize a water control valve for a specific installation. Understanding the difference between these two approaches is the key to understanding why AquaFlow consistently delivers superior, defensible results.

TWO PHILOSOPHIES: ENGINEERING BEFORE INSTALLATION vs. CALIBRATION AFTER INSTALLATION

Smart Valve's approach: one body per nominal pipe size, calibrated by the installer after installation. Smart Valve holds that on-site field adjustment is the right method — the installer determines the optimal setting once the device is in place and the system is live. This is their philosophy and their design intent.

AquaFlow's approach is the opposite: the optimal setting is an engineering decision, not an installation decision. AquaFlow's platform — 18 IAPMO-certified models, standard and reverse configurations, multiple circumference sizes, per-meter calibration by engineers using actual site survey data — means every valve is precisely engineered and calibrated to the specific meter, pipe schedule, and operating environment before it ships. The valve is a unique fingerprint of that meter. Not a field approximation. Not one size adjusted to fit all conditions. A fingerprint.

AquaFlow Engineering Process — Step by Step

1. Customer submits site survey: meter size, PSI, pipe material, pipe schedule, business type, flow demand profile, backflow arrangement, and installation zone details.
2. AquaFlow engineering reviews all site data and selects the appropriate model from 18 IAPMO-certified options (AF-050 through AF-1200) or initiates custom engineering for larger sizes (AF-1400 through AF-3200).
3. Configuration (standard or reverse) is selected based on the hydraulic objective of the installation.
4. Circumference size is selected based on the actual internal bore of the installation pipe, accounting for pipe schedule.
5. Valve is calibrated to the specific meter's operating parameters before it ships.
6. Installation point is determined by engineering — not left to installer preference or field judgment.
7. Result: Each valve is a unique fingerprint of that meter. Not interchangeable between meters. Not a guess.

Smart Valve Field Adjustment Process — Step by Step

1. Customer submits site survey for order specifications — primarily pipe size and connection type.
2. Single Acetron GP body shipped in the appropriate nominal pipe size.
3. Licensed plumber installs device externally on the water line.
4. Device installed in a neutral starting position.
5. Water turned back on.
6. Installer adjusts the device in the field to find the optimal setting for that system.
7. If system conditions change (pressure, seasonal demand, flow profile), field re-calibration may be needed.

"Every water system is unique. AquaFlow's answer is 18 engineered models, multiple configurations, multiple circumference sizes, and per-meter calibration performed by engineers — before the valve ships. Each valve is a unique fingerprint of the meter it serves. That is the engineering difference."

SPECIFICATION	AQUAFLOW (SOURCE DOCUMENT)	SMART VALVE (THESMARTVALVE.COM)
Primary Body Material	SS 316-L — Main Body, Impeller/Shaft, Cover Disc (AquaFlow Tech Spec)	Acetron GP — Valve Body, Plunger, Backplate (Smart Valve technical-specs page)
Spring Material	SS 302 Conical Spring (AquaFlow Tech Spec)	Food-grade stainless steel (Smart Valve specs)
Number of Models	18 IAPMO-certified models (IAPMO Certificate K-17679). AF-1400–AF-3200 custom-engineered.	One body design per nominal pipe size
Configurations	Standard and Reverse per model — selected by AquaFlow engineering based on site hydraulics	One configuration per pipe size — flanged (3"+) or threaded (2" and smaller)
Circumference Sizes	Multiple per configuration — accommodates Schedule 40, 80, Type K/L copper, ductile iron bore variation	One size per nominal pipe size. Pipe schedule bore variation not accommodated through engineering.
Operating Pressure	20–180 PSI (AquaFlow Technical Specification)	Not published. Setting determined by installer in the field based on system tolerance.
Maximum Size	32 inches / AF-3200. AF-050–AF-1200 IAPMO-certified. AF-1400–AF-3200 custom-engineered to specification.	12" standard; larger on custom order
Certifications	NSF/ANSI/CAN 61-2019 — IAPMO K-17679, effective August 2025, void April 2029. KIWA Certified.	NSF/ANSI 61/CAN, NSF/ANSI 372, CE Declaration of Conformity
Acquisition Options	Buy · Free Trial · Finance · Rent	Purchase or Shared Savings (shared savings = continuous % of savings paid to vendor indefinitely)
Warranty	Lifetime warranty + 6-month money-back guarantee	10-year manufacturer's limited warranty + 90-day satisfaction guarantee
Installation Method	Inline, immediately downstream of master meter. ~30 minutes. Sealed, no external components.	External, mounted outside the water line, user side of meter.
Pressure Loss	Negligible — partial-port design (AquaFlow Tech Spec)	Creates upstream backpressure; amount determined by installer after installation.
Maintenance	None — sealed mechanical design, maintenance-free for life	No stated requirement; installer may return to adjust if system conditions change significantly.

AquaFlow Dimensional Data (from Published Specification Sheet)

MODEL / SIZE	AF-150/1.5"	AF-200/2"	AF-300/3"	AF-400/4"	AF-600/6"	AF-800/8"	AF-1000/10"	AF-1200/12"
OD (in.)	1.48"	1.72"	2.91"	3.30"	5.82"	7.64"	8.75"	11.16"
OD Lip (in.)	1.98"	2.37"	3.52"	4.00"	6.60"	8.67"	10.20"	12.95"
Length (in.)	2.62"	3.65"	3.65"	4.60"	6.19"	6.67"	8.00"	10.20"

AquaFlow's performance is backed by three independent organizations that have tested and documented the device under controlled conditions. All reports are on file and available for technical due diligence.

✓ INDEPENDENT VALIDATION 1 — MARS COMPANY, JULY 2017

Water Meter Performance Testing — NIST-Certified Test Bench

Conducted by MARS Company (Ocala, FL), a subsidiary of Floyd S. Salser Jr. & Associates. Equipment: MARS System One Water Meter Test Bench with gravimetric system certified to NIST Handbook 44 — the precision standard used for water meter certification. Device fitted downstream of a Neptune Trident 2" Disk Type Water Meter compliant with AWWA Standard C-700. Scope: potable water only. Since the test meter was brand new and compliant with AWWA accuracy standards, no accuracy improvement was expected — yet improvement was still measured.

- Pressure at meter WITHOUT device: 50 PSI → WITH device: 62 PSI (+24% upstream pressure increase)
- Meter accuracy improvement: 2–3% from laminar flow and vibration elimination
- Meter life extension: up to 20% from reduced friction in the measuring chamber
- Entrained air: compressed at elevated upstream pressure — meter measures primarily water, not air
- No sounds or vibrations produced by the device during testing
- MARS conclusion: "We believe this device is novel and creative and will improve meter performance and reduce maintenance cost."

✓ INDEPENDENT VALIDATION 2 — BASULTO & ASSOCIATES, P.E., SEPTEMBER 18, 2016

Engineer's Report — Golden Bay Club Condominium, Sunny Isles Beach, Florida

Conducted by René I. Basulto, PE (Florida PE #40869) with Excel Plumbing Inc. (Florida Certified Plumbing Contractor). Property: 12-story residential condominium at 17050 North Bay Road, Sunny Isles Beach, FL. Configuration: two AquaFlow devices downstream of two 3" meters in parallel, serving a CPVC distribution system through a domestic water pump package on the second floor. Testing conducted at the most hydraulically remote unit on the 12th floor — the worst-case scenario for pressure adequacy.

- Finding 1: "The installed devices do not adversely affect the building's domestic water distribution system design criteria."
- Finding 2: "The pressure and flow available at the hydraulically most remote fixture greatly exceeds the minimum pressure requirements for proper operation."
- Finding 3: Available pressure with ALL fixtures running simultaneously (12th floor): 45 PSI. Florida Plumbing Code minimum: 20 PSI. Margin: 125% above code minimum.
- Finding 4: "The installation of the device does not adversely affect the operation of the plumbing fixtures."
- PE finding: "Negligible pressure loss across the devices. The measured pressure loss is insignificant and does not affect building performance in retrofit applications."

✓ INDEPENDENT VALIDATION 3 — UNIVERSITY OF MAINE, PROCESS DEVELOPMENT CENTER, SEPTEMBER 2021

Testing Report — AquaFlow 2-inch 316L Stainless Steel Valve

Conducted May 12–13, 2021, published September 27, 2021. Test engineers: Haixuan Zou, Ph.D. (Research Engineer) and Nathan O.A. Hill II (Engineering Assistant). Three distinct 2" AquaFlow 316L devices tested under multiple pressure and flow conditions on a 3,000-gallon tank test loop. Volume measurement used volumetric calculation — the same method used to calibrate flow meters. Baseline accuracy confirmed within 0.1–0.8% across all baseline runs before device installation.

- Standard water conditions — all three devices: meter-to-volumetric difference less than 2% across all run conditions. Pressure P1 increased in every run with device installed vs. baseline.
- With introduced entrained air (25 PSI, 18 ft³/hr): Water meter read up to 5.7% MORE than actual volume delivered when AquaFlow device was installed.
- Interpretation: WITHOUT AquaFlow, the meter over-bills because it measures compressed air as water volume. AquaFlow compresses entrained air further, reducing real billed consumption.
- University of Maine confirmed: "The water meter is not accurately measuring the volume of water when the AcquaFlow device was installed" — meaning the meter reads high, which benefits the customer.

AQUAFLOW 4" — TOTAL INSTALLED

~\$18,500

\$16,999 valve + \$1,500–\$2,500 installation
 Zero replacement cost — Lifetime Warranty
 Zero procurement risk — 6-Month Money-Back

vs

SMART VALVE 4" — PER ACTUAL QUOTE

\$55,995

Grand total per competitor quote (independent competitor, 2025)
 Approximately 3x AquaFlow installed cost
 10-year warranty; performance beyond warranty not independently documented

COST FACTOR	AQUAFLOW	SMART VALVE
Device Cost (4")	\$16,999	\$55,995 grand total (per actual competitor quote, 2025). Device cost and installation are not itemized separately in quote.
Typical Installation	\$1,500–\$2,500 (~30 min, licensed plumber)	Included in grand total above; not broken out separately in quote.
Total Installed (4")	~\$18,500–\$19,500	\$55,995 (per actual competitor quote)
Replacement Cost	\$0 — Lifetime Warranty. Never replaced.	If the device fails after the 10-year warranty period expires, full replacement cost applies at that time. Smart Valve's 10-year warranty is the published commitment; performance and condition beyond that period is not independently documented.
Shared Savings Obligation	None — AquaFlow does not take any share of savings	Continuous % of water savings paid to vendor indefinitely under shared savings model
Procurement Risk	\$0 — 6-month money-back guarantee	90-day satisfaction guarantee
Maintenance Cost	\$0 — Sealed, maintenance-free for life	Field adjustment may be needed if system conditions change significantly.
10-Year Total (4")	~\$18,500–\$19,500 total	\$55,995 (warranty expires at year 10; device performance and condition beyond warranty period not independently documented)
30-Year Total (4")	~\$18,500–\$19,500 — zero replacements ever	Minimum \$55,995. If any replacement is required after the 10-year warranty expires, costs increase accordingly. AquaFlow's lifetime warranty eliminates this risk entirely.

30-YEAR COST DIFFERENTIAL PER 4" METER: ~\$37,500+ IN FAVOR OF AQUAFLOW (based on verified quote)

Portfolio Cost Advantage

The verified installed cost differential between AquaFlow and the Smart Valve competitor quote is approximately \$37,000+ per 4" meter (\$55,995 vs. ~\$18,500–\$19,500). For an operator with 100 commercial properties each with a 4" master meter, the upfront installed cost advantage alone is approximately \$3.7 million in favor of AquaFlow — before any savings performance differential, and before factoring in AquaFlow's lifetime warranty vs. a 10-year warranty horizon. At 500 properties, the installed cost advantage approaches \$18.5 million. This is a capital allocation decision, not just a product selection.

SECTOR	KEY AQUAFLOW ADVANTAGES	PRIMARY POSITIONING MESSAGE
Healthcare / Hospitals	316L stainless — same alloy as surgical equipment. Passive oxide layer resists biofilm colonization and waterborne pathogens. NSF/ANSI/CAN 61. KIWA Certified. Basulto PE report confirms zero adverse effect on building plumbing systems. Sealed design, no external components introducing contamination risk.	Material integrity is a compliance and infection control requirement in healthcare, not a preference. 316L medical-grade stainless is the only defensible choice.
Hospitality / Hotels	~30-minute installation, minimal operational disruption to guests. Lifetime warranty eliminates future capital budget exposure. IPMVP M&V; documentation for ESG sustainability reporting. Per-meter calibration maximizes savings at each individual meter. Free trial allows proof before commitment.	Zero operational disruption. Documented savings for sustainability reporting. Every dollar saved stays with the property, forever. No replacement cost ever.
Multifamily / REITs	60–70% lower installed cost. Models from 1/2" through 32" across a diverse portfolio. Multiple circumference sizes accommodate any pipe schedule found in an existing portfolio. IPMVP M&V; supports NOI and cap rate arguments. Four acquisition options match any budget structure.	Portfolio ROI is transformative at this scale. Installed cost alone saves millions vs. Smart Valve. Auditable M&V; supports investor reporting. Buy, finance, or rent based on capital structure.
Industrial / Manufacturing	20–180 PSI validated range covers high-pressure industrial systems. 316L handles aggressive water chemistries including chlorinated process water. Scales to 32" (AF-3200) for large industrial pipe. Engineering review for complex hydraulic environments with variable demand profiles.	Full industrial pressure spectrum. Medical-grade material for harsh chemistry environments. Engineering-driven model selection for variable hydraulic demand. Precision from the moment the valve ships.
Car Washes	MARS testing conducted at commercial flow rates. University of Maine testing at 140–160 GPM — representative of commercial car wash peak cycles. AF-150 (1.5") is the most common car wash size and is IAPMO certified. Per-meter calibration optimized for high-cycle demand patterns.	Validated at the exact flow rates a car wash operates. Your equipment runs high cycles all day. AquaFlow is engineered for that environment. Every valve is pre-calibrated by engineers to the exact conditions it will operate in.
Shared Savings Converts	AquaFlow does not share savings — ever. Buy outright and keep 100% of savings. Free trial means zero financial risk to prove it first. Finance creates net-positive cash flow from day one in most commercial installations. No vendor dependency, no continuous payment, no revenue extraction.	"You are paying a percentage of your water savings to your vendor indefinitely. AquaFlow costs a fraction of Smart Valve, you own it with a lifetime warranty, and you keep every dollar you save. Zero risk to try it first." That is the conversation.
Fortune 500 / ESG	IPMVP-compliant M&V; reports usable in ESG disclosures, sustainability frameworks, investor communications, and utility rebate applications. Independent third-party verifiability by any auditor or attorney. 316L material specification supports green building and sustainable procurement criteria. KIWA Certified.	Water savings must be independently verifiable for ESG reporting. AquaFlow produces the documentation that satisfies that requirement. Smart Valve's monitoring portal is not published as IPMVP-compliant.

AquaFlow and Smart Valve are not the same product class. They solve the same problem with fundamentally different engineering philosophies, different material specifications, different calibration processes, different warranty structures, and dramatically different price points. The scorecard is clear.

<p>PLATFORM ARCHITECTURE</p> <p>AquaFlow</p> <p>18 Models · Multiple Configs · Multiple Circumference Sizes · Per-Meter Calibration</p>	<p>MATERIAL SPECIFICATION</p> <p>AquaFlow</p> <p>316L Medical-Grade SS · 40–60yr Life · Biofilm-Resistant · Corrosion-Immune</p>	<p>COST & WARRANTY</p> <p>AquaFlow</p> <p>60–70% Lower Installed · Lifetime Warranty · 6-Month Money-Back · 4 Acquisition Paths</p>	<p>VALIDATION & DOCS</p> <p>AquaFlow</p> <p>MARS · Basulto PE · UMaine · IAPMO K-17679 · KIWA · IPMVP M&V;</p>	<p>CERTIFICATIONS</p> <p>Both</p> <p>Both hold NSF 61 equivalent potable water certifications</p>
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AquaFlow Wins Decisively On

- 18 IAPMO-certified models vs. 1 Acetron GP body design per size
- Multiple configurations (standard/reverse) per model
- Multiple circumference sizes — accommodates pipe schedule variation
- Pre-shipment engineering calibration vs. post-installation field adjustment
- 316L medical-grade stainless vs. Acetron GP polymer primary body
- Biofilm-resistant passive oxide surface vs. polymer surface
- 40–60yr documented service life vs. 10-year warranty horizon
- Immune to chloride, chloramine, and disinfectant corrosion
- KIWA Certified — a certification standard not held by Smart Valve
- 20–180 PSI validated operating range
- Scales to 32" (AF-3200) vs. 12" standard maximum
- Buy / Free Trial / Finance / Rent vs. Purchase or Shared Savings only
- Lifetime warranty vs. 10-year limited warranty
- 6-month money-back vs. 90-day guarantee
- ~60–70% lower installed cost on comparable sizes
- Zero replacement cost ever vs. 10-year warranty horizon (performance beyond warranty not independently documented)
- IPMVP-compliant M&V; documentation vs. no equivalent published

Final Positioning Statement

The real decision is not about savings alone. Every credible device in this category claims to save water. The real decision is about engineering precision, material confidence, calibration accuracy, long-term durability, acquisition flexibility, and the ability to defend the solution technically — to your board, your auditors, your facilities engineering team, and your legal counsel.

AquaFlow delivers on every dimension: eighteen independently certified 316L stainless steel valve models, available in multiple configurations and multiple circumference sizes — each uniquely calibrated to the specific meter, pipe schedule, and operating environment of a single site. A material specification identical to surgical instruments and pharmaceutical manufacturing infrastructure, with documented 40–60 year service life, passive biofilm resistance, and immunity to the corrosion mechanisms that affect lesser materials. KIWA Certified — a certification standard not held by Smart Valve. Four acquisition paths — buy, free trial, finance, or rent — so every buyer has the structure that works for their capital constraints. Three independent third-party validation reports. IPMVP-compliant M&V; reporting that produces independently auditable water savings documentation. A lifetime warranty that eliminates replacement cost risk forever. And an installed cost that is 60–70% lower than Smart Valve on comparable pipe sizes.

AquaFlow is not “trust us.” AquaFlow is “review the engineering” — and when your team does, the conclusion is the same every time. Every meter deserves its own fingerprint.

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Sources: AquaFlow Technical Specification · IAPMO Certificate K-17679 (August 2025) · KIWA Certification · MARS Company Testing Report (July 2017) · Basulto & Associates Engineer’s Report (September 18, 2016) · University of Maine Process Development Center (September 27, 2021) · thesmartvalve.com — technical-specs and FAQs (accessed 2026). All Smart Valve characterizations sourced from their own published materials. © 2026 AquaFlow Technologies, Inc. All rights reserved.