



The Flow Conditioning Device: Installation Point, Mechanism, and Meter Accuracy

Water Flow Innovations LLC

Flow Conditioning Device (FCD)
waterflowinnovations.com

INSTALLATION POINT & MECHANISM

Installed Just After the Meter — Ahead of Every Validated Process System

The Flow Conditioning Device (FCD) installs between two pipe joints on the main water line immediately after your water meter — ahead of your facility's internal distribution to CIP systems, process and batching water, boiler feed, refrigeration condenser makeup, and sanitation wash-down headers. Each FCD is custom-built to the facility's exact specifications — pipe size, operating water pressure, and existing PRV configuration — and may include an integral check valve depending on the installation requirements. It requires no power and is installed by a licensed plumber or mechanical contractor with water off for approximately one hour.

Mechanically, the FCD creates a slight static back-pressure that extends back through the meter, reducing the air, gas, and turbulence that form during demand events and delivering a laminar-like flow profile through the measurement chamber.

Municipal meters register volumetric displacement — entrained air and turbulent flow register as billable volume. Pressure loss through the device is under 0.8 psi across all flow conditions; downstream pressures, temperatures, and flow rates are effectively unchanged. Because the FCD sits just after the meter, it is outside HACCP plans, FDA registration scope, and sanitation SOPs — typically no food safety documentation change or re-validation is required; confirm with your compliance team. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ Bills rising with no clear cause

Water charges climb steadily with no identified operational explanation.

☐ Sewer moving in lockstep with water

Sewer charges track the inflated meter reading — the over-read is billed twice.

☐ CIP use higher than the process explains

CIP consumption runs above what circuit design and cycle counts predict.

☐ Audits never found the source

Water audits confirmed high usage without locating leaks or a source.

☐ Air or spitting at fixtures

Air discharge or spitting at fixtures and outlets — the same entrained air registers as billable volume at the meter.

☐ Water treated as uncontrollable

Water and sewer are budgeted as uncontrollable costs rather than managed inputs.

WHERE OVER-READING HITS THE OPERATION

Unit Cost & Plant Margin

Inflated intake flows directly into unit production costs — billed on both the water and sewer side of every production day.

The Audit That Finds Nothing

Fixture audits count water that arrives; over-read volume never arrived and is invisible to them — the source is the flow conditions at the meter.

Food Safety Documentation Unaffected

HACCP plans, FDA registration, and sanitation SOPs are untouched — the FCD sits just after the meter, ahead of all process and product water.

Operations & Engineering

Water balance, CIP optimization, and sustainability projects start from a meter reading that includes volume that never arrived.

ENGINEERING Q&A

Q: Will the FCD affect CIP effectiveness, process water, or product quality?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of all plant systems. CIP pressure and chemistry, batching accuracy, boiler feed, and sanitation flow are effectively unchanged — the device never contacts process or product water.

Q: Does installation require HACCP or FDA documentation changes?

A: No. The FCD installs immediately after the municipal meter, outside HACCP plan and FDA registration scope. Technical documentation is provided for your food safety team's change control records.

Q: We hear air spitting at fixtures — what does that mean for the bill?

A: That visible air is the same entrained air that passes through your supply meter — where it registers as billable water volume. Audible air at fixtures is one of the most direct field indicators of meter over-reading.

Q: How does the FCD affect our sewer charges and surcharges?

A: Sewer charges — and the volume basis of strength surcharges — are typically calculated from metered intake. After installation, intake reflects actual consumption, reducing the volume side of both. Discharge strength is unaffected.

Q: How quickly do savings appear?

A: The meter reads accurately immediately after installation. Savings appear on the next full water and sewer billing cycle — no ramp-up period. 90% of installed customers reach full return on investment in under 12 months.

ENGAGEMENT PROCESS — FOUR STEPS

From Analysis to Verified Bill Reduction

1

Free Savings Analysis

We review your water and sewer bills and facility demand profile — no cost, no obligation.

2

Documented Projection

You receive a written savings projection specific to your facility before any commitment.

3

FCD Installation

Licensed plumber or mechanical contractor installs immediately after the meter — water off approximately one hour.

4

Verified Bill Reduction

Before-and-after bill comparison verifies the reduction on your next billing cycles.

GUARANTEE & WARRANTY TERMS

6-Month Money-Back Guarantee

If you're not satisfied within 6 months of installation, the FCD purchase is fully refunded — no questions asked. Installation labor is non-refundable.

Lifetime Transferable Warranty

The FCD carries a lifetime warranty, transferable to the new building owner if the facility changes hands (a transfer fee applies).

DEVICE SPECIFICATIONS

Construction, Certification & Installation

Custom-built to each facility's specifications — pipe size, operating pressure, PRV configuration · 316L stainless steel construction; titanium and specialty alloys available by special order for medical and other specialized applications · Configuration may include an integral check valve per installation requirements · No power required · Under 0.8 psi pressure loss · Certifications: IAPMO, NSF/ANSI/CAN 61, KIWA, GMP, SQF · Installed by licensed plumber or mechanical contractor

Regulatory & Standards References: FDA FSMA · HACCP · USDA · EPA NPDES · SQF