



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

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 boiler feed and deaerator makeup, condensate loss replacement, water softener and pretreatment supply, and plant facility demand. 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 boiler operating parameters, steam distribution, and water treatment chemistry — no process change is required. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ Makeup water cost above steam models

Water and sewer costs persistently exceed what steam demand models project.

☐ Sewer moves in lockstep with water

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

☐ Intake exceeds makeup and blowdown math

Metered volume won't reconcile against feed makeup, blowdown, and condensate return rates.

☐ Audits confirmed usage, not the source

Plant audits confirmed high usage without finding leaks or an operating cause.

☐ Pressure swings at feed pump draw

Feed pump starts and softener regeneration produce visible pressure swings — entrained air registers as billable volume.

☐ Makeup treated as fixed plant cost

Makeup water is budgeted as an uncontrollable cost rather than a correctable one.

WHERE OVER-READING HITS THE OPERATION

Steam Plant Economics

Inflated makeup intake flows into cost per thousand pounds of steam — with sewer billed from the same meter, every over-read gallon hits twice.

Condensate Return ROI Clarity

Over-reading masks the true payback of condensate return improvements — correction shows what your return rate actually saves.

Feed & Regeneration Demand Events

Feed pump starts, deaerator draw, and softener regeneration create exactly the events that entrain air at the meter — around the clock.

Boiler System Isolation

The FCD installs immediately after the meter, ahead of all pretreatment and feed systems — meter correction with no effect on boiler chemistry.

ENGINEERING Q&A

Q: Will the FCD affect feedwater pressure, softener operation, or boiler chemistry?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs immediately after the meter, ahead of pretreatment and feed systems. Feed pressures, softener cycles, and all water chemistry are unchanged.

Q: We track makeup closely for cycles of concentration — does the FCD change that math?

A: It corrects it. Over-read makeup volume distorts cycles and blowdown calculations. After installation, metered makeup reflects actual demand — your treatment math gets more accurate, not less.

Q: How does the FCD affect sewer charges?

A: Sewer charges are typically calculated from metered intake. When the meter over-reads feed and regeneration demand, both charges are inflated. After installation, intake reflects actual consumption, reducing both line items.

Q: How do we estimate savings before committing?

A: Use the Water & Sewer Bill Savings Calculator at waterflowinnovations.com for an instant projection, then request the free savings analysis — a documented, plant-specific projection suitable for an engineering package.

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: ASME CSD-1 · National Board Inspection Code (NBIC) · ABMA