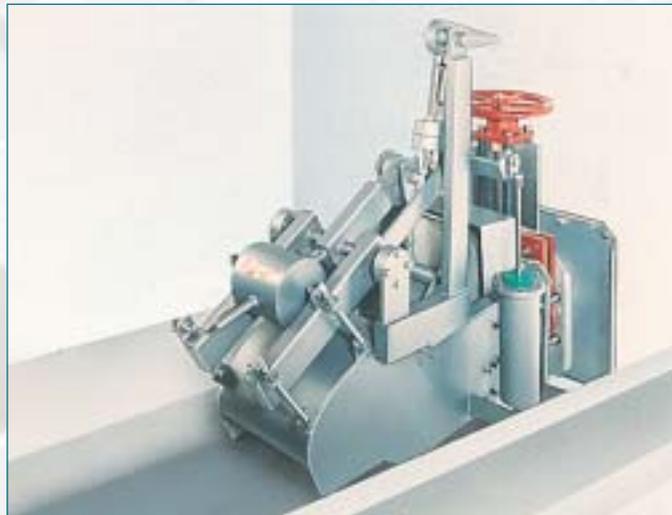


ACU-JET Flow Regulator

Flow range 15-2000 l/s (250-32,000 gpm)

The Clear Solution



Application

The **ACU-JET** flow regulator is designed to control discharges in storm water basins and sewer systems. It utilizes the water's kinetic energy to maintain a constant discharge independent of the upstream or downstream water level. The **ACU-JET** regulator requires no floor offset and is especially suited for low-slope sewer systems. It operates reliably, even under backflow conditions. Based on the automatic self-flushing effect, the **ACU-JET** ensures high discharge accuracy and reliability.

The **ACU-JET** regulator's compact design reduces the space required for installation. The **ACU-JET** has a broad discharge range of 250 - 32,000 gpm (15 - 2000 L/s).

The **ACU-JET** regulator can be remote-controlled, and the discharge can be adjusted at any time to an infinitely variable setting. Owing to their minimum space requirements, jet regulators are especially recommended for retro-fitting into existing structures.

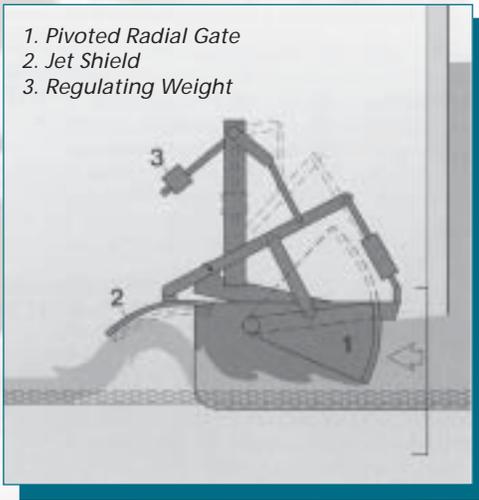
Features:

- High discharge accuracy ($\pm 5\%$), independent of the upstream water level, ensures a vertical Q/H (constant flow).
- Using a pivoted radial gate, in conjunction with permanently sealed stainless steel ball bearings, ensures accurate, low-friction, constant flow regulation.
- Stainless steel 316 construction.
- Suitable for headwater levels of up to 12 m (40 feet).
- Automatic self-flushing effect prevents clogging.

- Design discharge can be infinitely varied within a broad range including closing function ($Q_d = 0$).
- No floor offset required, and thus especially suited for low-slope sewer systems.
- Small structure requirements.
- Designed to work in submerged conditions.
- Can be equipped with a servo-control unit for remote-control operation.
- Can be used to monitor flows.



The ACU-JET flow regulator in service



Operating diagram of ACU-JET flow regulator

Operation

The most important functional elements of the ACU-JET regulator are the pivoted radial gate, the jet shield and the regulating weight. These remain in the rest position during low discharge periods with the pivoted radial gate in the fully open position. When a storm event occurs and the water level upstream of the unit increases, the water jet, flowing through the regulator, is deflected and hits the movable jet shield. The force of this jet produces the energy required for starting the regulating process. The stronger the force acting on the jet shield, the more the pivoted radial gate decreases the discharge section. The regulator opening is adjusted to match the force of the water on the jet shield, in such a way as to result in a constant discharge, for all variations of the upstream water level. The position of the regulating weight determines the discharge setting which can be easily adjusted on site to modify the design discharge should it be required.

If a blockage occurs, then the flow through the regulator decreases, resulting in a corresponding decrease of the regulating force on the jet shield. The jet shield will drop thereby causing the pivoted radial gate to open automatically and fully. This causes the blockage to be flushed out under the pressure of the upstream water level (flush-out effect), after which the regulating process resumes.

The design discharge of the ACU-JET regulator is not affected by downstream water level fluctuations or submergence.

Represented locally by:

ACU-JET Regulator Discharge Calibration

The ACU-JET regulator has been calibrated on a fully functional, full scale test stand. It has undergone hundreds of calibration tests so that each regulator size is fully defined. Each ACU-JET regulator is shipped to site pre-set to the desired design flow. In addition, set points are clearly indicated for future in-situ flow adjustments (should they be required). The regulator can then be installed and put into operation without requiring time consuming and cost intensive in-situ flow calibration or measurement.



ACU-JET flow regulator with servo-control system

ACU-JET Regulator with Servo-Control

The ACU-JET regulator can be remote-controlled by equipping or retro-fitting with an electric servo-control system. An ACU-JET equipped with a servo-control unit can be varied from fully open (ON) to fully closed (OFF), either manually on-site or from a remote, central control location. In case of power outages, the regulator will continue to operate automatically maintaining the constant discharge it was last set at.