

Overview

The BladeValve is a remotely operated high-flow pipe valve that makes surface irrigation less labor-intensive and more flexible. It provides the freedom to irrigate without having to be on site and the ability to precisely time irrigations to help you improve yields and reduce water use.

With a few mouse-clicks from any location with an internet connection you can open or close the BladeValve. You can also set-up pre-planned irrigation sequences to time the opening and closing of a series of BladeValves and receive alerts from the field to give you peace of mind that all is going as planned.

The BladeValve's all-in-one design means everything has been designed – solar power, motor control and communications – to function as one single unit. Continuing Rubicon's tradition of completely rethinking gravity irrigation to design innovative solutions from the ground-up, the result is a rugged product designed for reliability and lower costs of installation, operation and overall cost of ownership.

Valve control technology

Traditional large diameter valves require a large force and expensive high-power actuators to close the valve against the pipe network's pressure. In contrast, the BladeValve's unique design allows the valve to seal under high pressures at large diameters using a high torque electric motor with minimal power from the solar power supply.

Remote operation

The BladeValve's secure pole mounted housing contains the electronics, high capacity power system and wireless communications for remote operation.

Each BladeValve communicates through a FarmConnect Gateway* installed in the field which is connected to a cellular network and then the internet, enabling remote management using your laptop, tablet or smartphone*.

GPS positioning ensures each BladeValve is accurately displayed on a Google Maps interface making remote opening, closing, programming and monitoring simple.

*Requires FarmConnect Software, sold separately.

†Consult Rubicon if operation under higher pressure is required.



Remote operation using web-based software.



Highlights

- Fits 16" vertical riser pipes
- Large diameter for lower water velocity
- Closes and seals under pressures up to 23 PSI†
- Capable of remote operation from anywhere with an internet connection
- Engineered and manufactured for long life
- Integrated GPS receiver for fast set-up and easy mapping
- Email and SMS text alerts to track irrigation progress

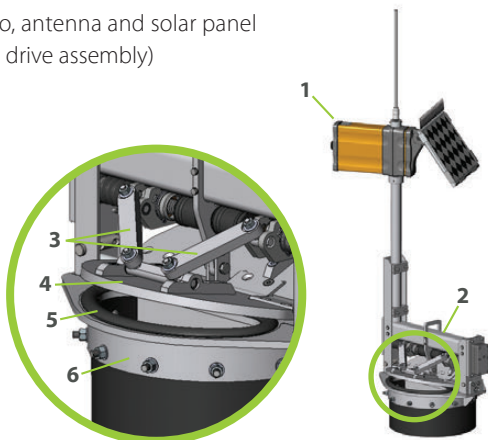
A FarmConnect® product

The BladeValve is part of the FarmConnect product range for farmers. FarmConnect's modular hardware and software enables precisely-timed application of water to crops using high-flow, high-performance surface irrigation. With FarmConnect, farmers can grow higher-value crops using less labor, water and energy.



BladeValve™ components

- 1 Housing with radio, antenna and solar panel
- 2 Top beam (houses drive assembly)
- 3 Actuator arms
- 4 Valve lid
- 5 Valve seal
- 6 Mounting collar



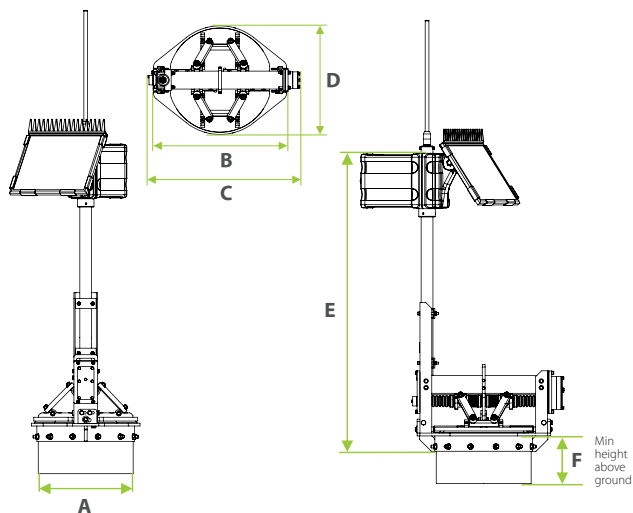
Typical application



Buried pipe distribution systems.

BladeValve™ sizes and dimensions

Model	A	B	C	D	E	F	Weight
	in	in	in	in	in	in	lbs
BV-400	16	22	26	18	61	8	97



BladeValve™ specifications

General	
Maximum static head (pressure)	52.5 ft (23 PSI) Consult Rubicon if operation under higher pressure is required.
Control	Local via a toggle switch or remote via FarmConnect Software (sold separately)
Drive mechanism	Motor driven screw connected to actuator arms
Electronics	Power management and control technology contained within integrated housing. Each unit passes a 12hr heat soak pre-stress and 100% functional test.
Weight	Refer to the BladeValve sizes and dimensions table
Motor	Brushless 12V DC
Typical stroke time	Less than 2 minutes
Valve position control	Can be set to open, closed or a percentage of open
Actuation options	12V DC powered (solar); manual with ratcheting socket wrench
Material	
Valve lid, mounting collar, actuator arms, top beam, housing pole	Structural grade aluminum
Hardware, shafts, pins	Structural grade stainless steel
Seals	EPDM rubber (Durometer 60 (Shore A))
Power	
Power supply	12V DC self-contained battery charged from solar panel
Solar panel	10W monocrystalline (20W optional)
Battery	12V sealed gel lead acid with temperature sensor (~5yr life, provides ~5 days of operation without solar power)
Communications	
Protocols	Modbus, analog/digital I/Os, USB
Data communications	ZigBee (international wireless communication standard)
Zigbee radio frequency	2.4GHz
Gateway (sold separately)	A FarmConnect Gateway provides the interface to cellular networks and can link up to 120 BladeValves. Additional gateways enable unlimited expansion.
Transmission range	0.6 mile (1km) between BladeValves. A BladeValve can reach the Gateway over much larger distances by passing data through intermediate BladeValves (called self-meshing).

Specifications subject to change.

About Rubicon Water

Rubicon Water delivers advanced technology that optimizes gravity-fed irrigation, providing unprecedented levels of operational efficiency and control, increasing water availability and improving farmers' lives.

Founded in 1995, Rubicon has more than 20,000 gates installed in systems in 10 countries.