



Form Number: F-2884
Issue Date: May 8, 2020

Tank to Pump Valves

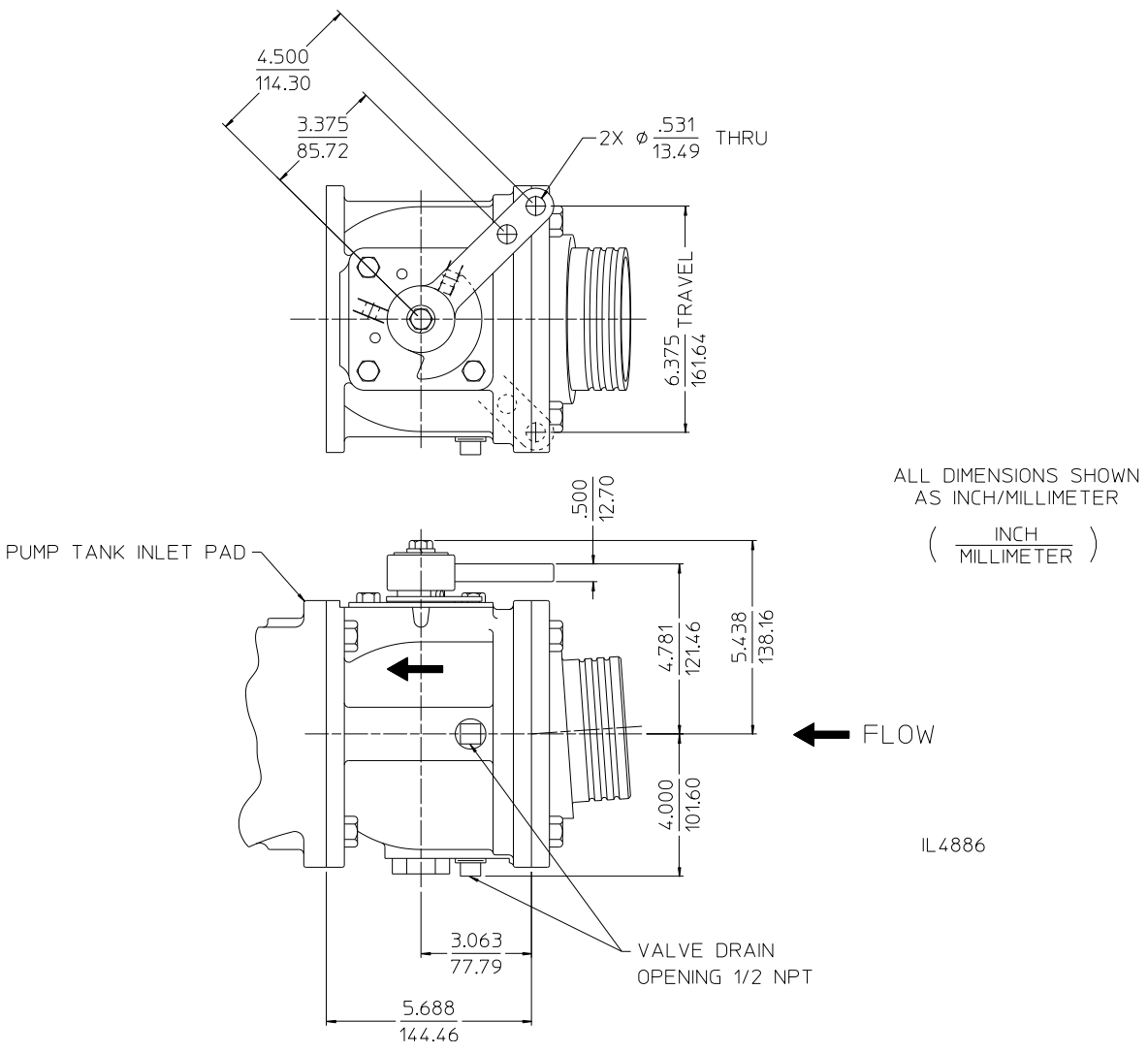
Installation, Operation and Maintenance Instructions

Index

Valve Manufacturer	Operational Method		See Page							
	Type	Actuator	Installation and Operation						Maintenance	Troubleshooting
			Valve Dimensions	Available Operator Positions	Panel Connection			Drain Line Connection		
					Components	Manual Override	Description			
Waterous	Manual	1/4 Turn Handle	2	3	Provided by OEM	Not Applicable	9	9	10	11
		Rotary Actuator	4	4	5					
	Electric	Rotary Actuator	6	6	7	6				
Akron	Manual	1/4 Turn Handle	8	8	Provided by OEM	Not Applicable				
Elkhart	Manual	1/4 Turn Handle								

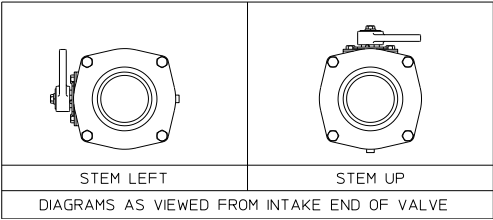
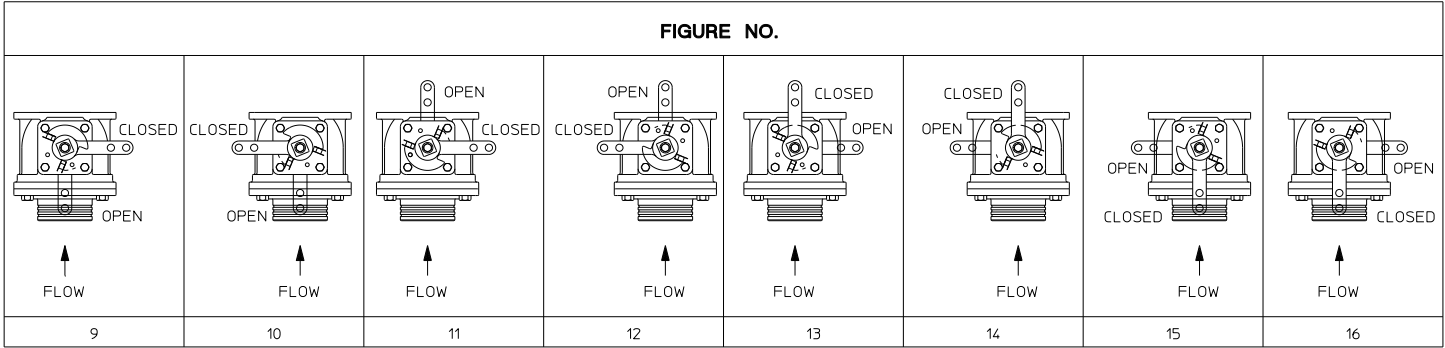
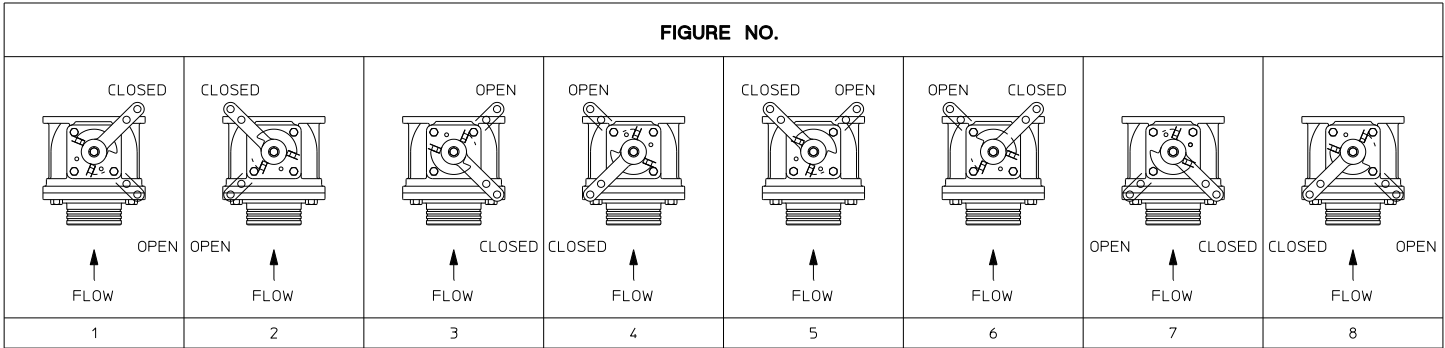
Waterous Valve – Manual 1/4 Turn Handle

Dimensions



Waterous Valve – Manual 1/4 Turn Handle

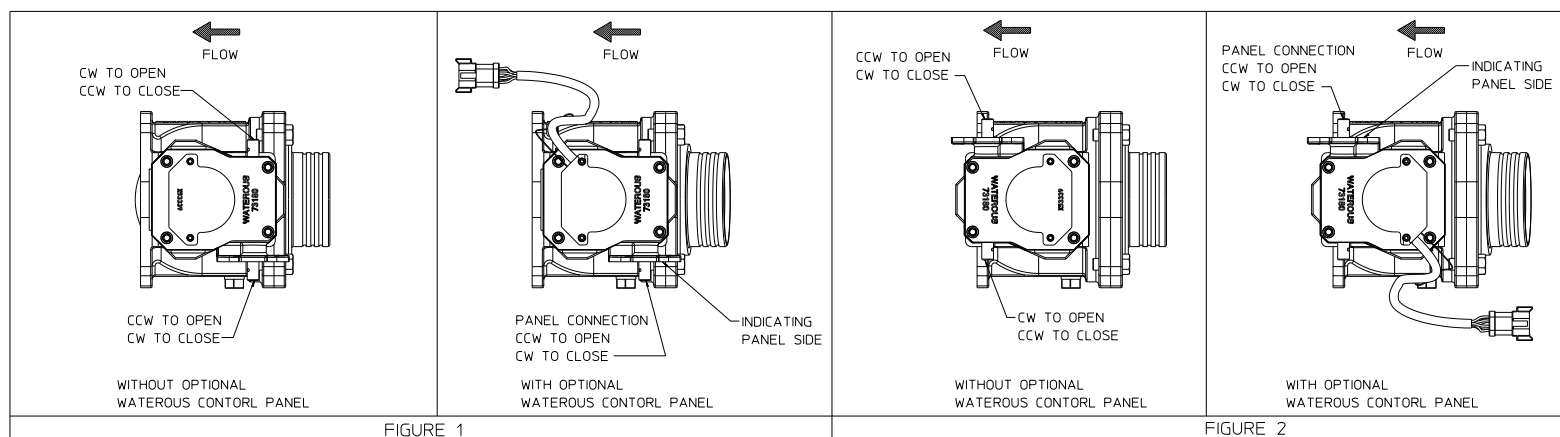
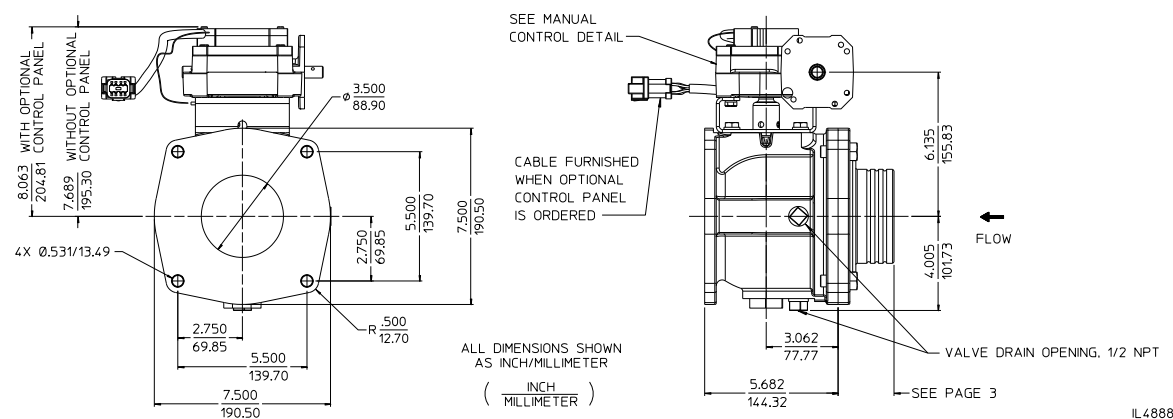
Available Operator Positions



IL4887

Waterous Valve – Manual Rotary Actuator

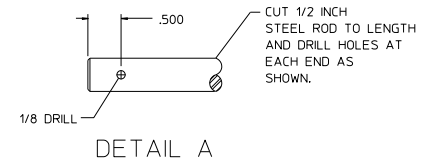
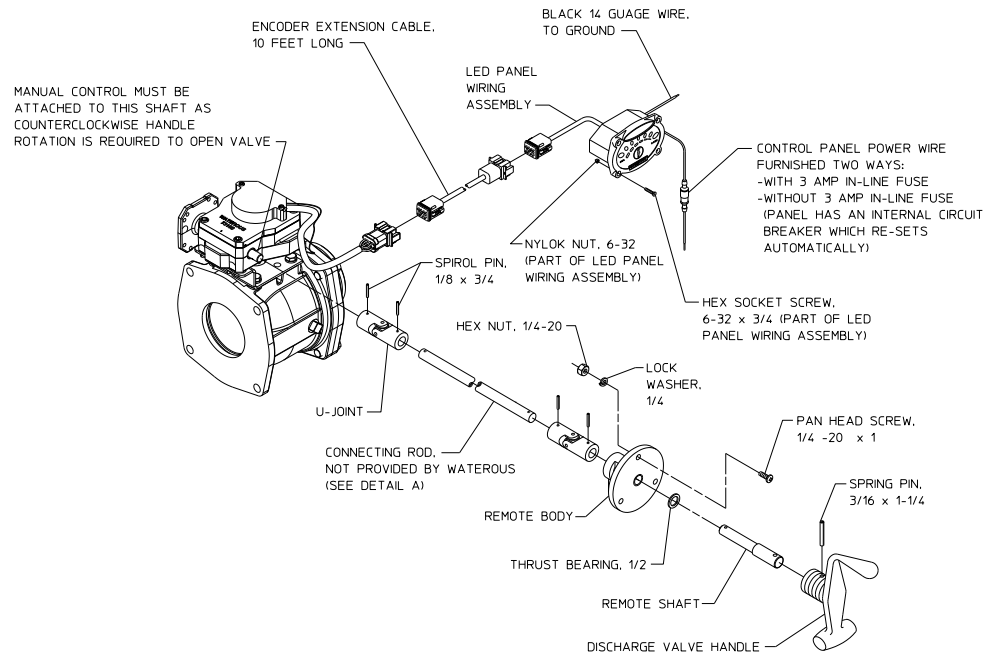
Dimensions and Available Operator Positions



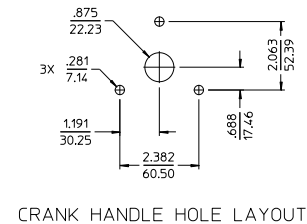
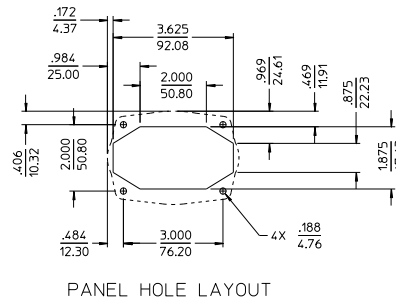
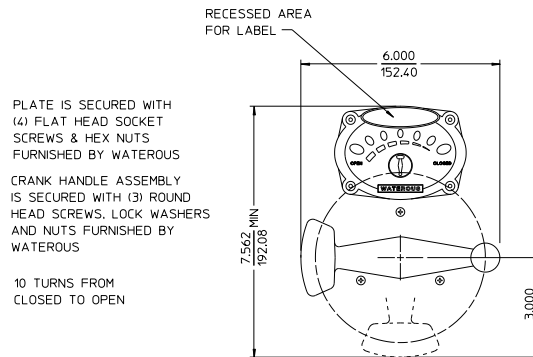
Waterous Valve – Manual Rotary Actuator

Panel Connection

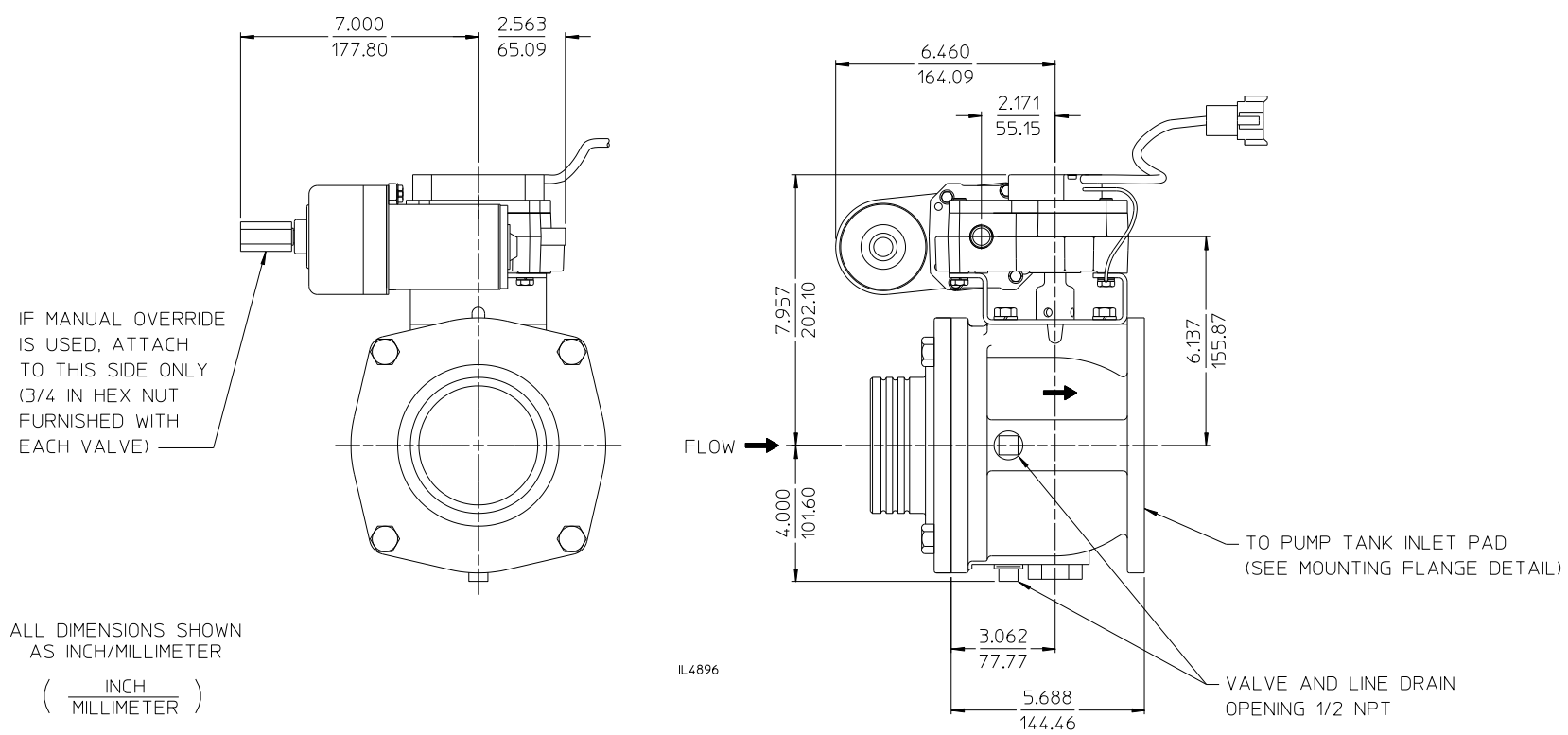
Note: If additional cable extensions are required, order Waterous part no. K 1101.



IL4889

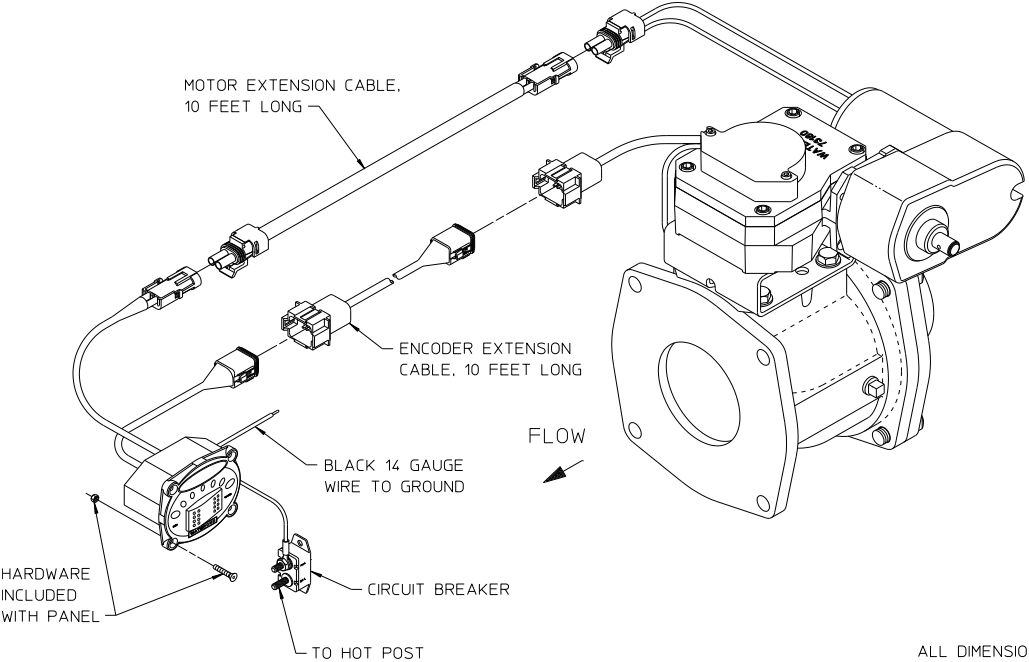


Waterous Valve – Electric Rotary Actuator Dimensions, Available Operator Positions



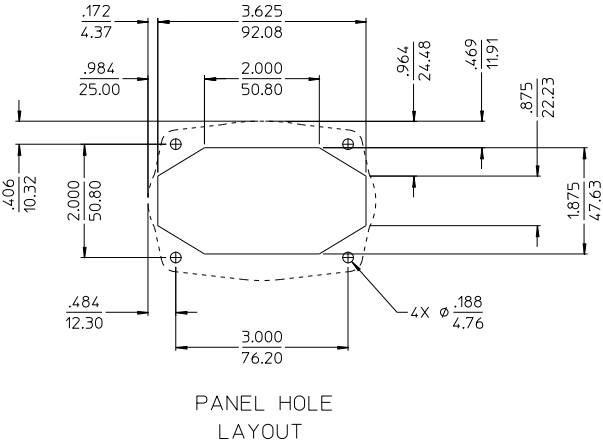
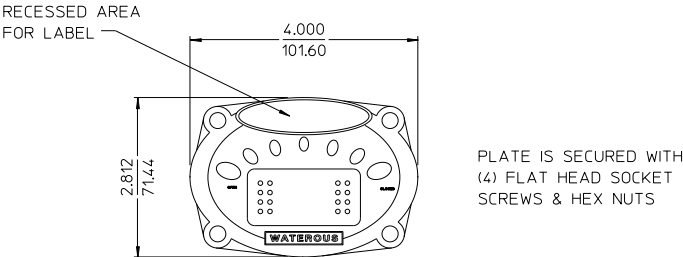
Waterous Valve – Electric Rotary Actuator Panel Connection

Note: If additional cable extensions are required, order Waterous part no. K 1100.



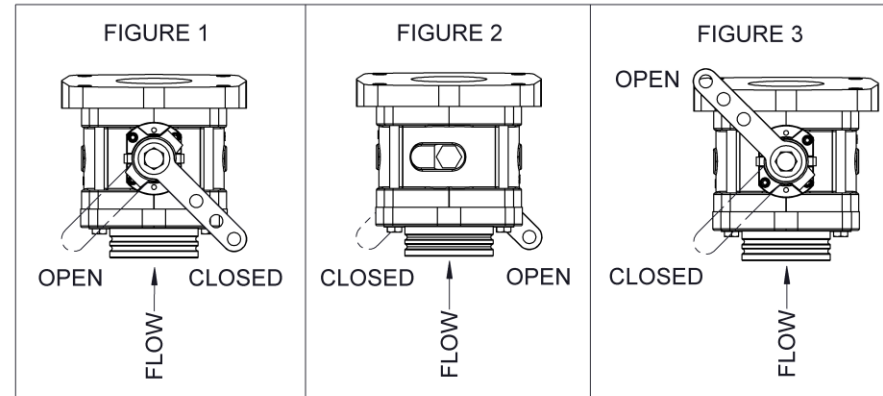
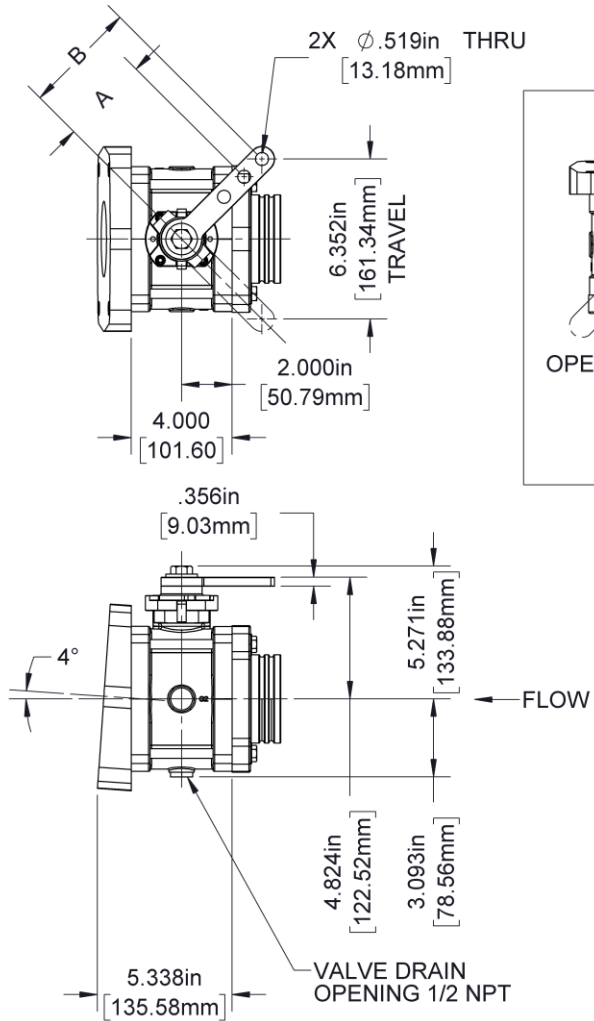
IL4890

ALL DIMENSIONS SHOWN AS INCH/MILLIMETER
(INCH / MILLIMETER)



Akron and Elkhart Valves – Manual 1/4 Turn Handle

Dimensions and Available Operator Positions



VALVE MANUFACTURER	DIMENSION	
	A	B
AKRON	3.250in/ 82.55mm	4.500in/114.30mm
ELKHART (LONG HANDLE)	4.968in/126.18mm	7.000in/177.80mm
ELKHART (SHORT HANDLE)	3.250in/82.55mm	4.500in/114.30mm

IL4891

Panel Connection - Description

1/4 Turn Handle Operation:

The valve is operated by a separate OEM provided cable, rod, bell crank or power actuator connected to the valve control arm.

Note that multiple control arm positions are available relative to the waterflow (sixteen for Waterous valves and three for Akron/Elkhart valves) to satisfy necessary rod connections. See pages 3 and 8.

Manual Rotary Actuator Operation:

See page 5 for panel components. The valve is operated by a crank handle located on the operator's panel which is connected to the valve by a .50 in. diameter control rod. The indicating panel is optional as some OEM's furnish their panel.

Note that Waterous offers four actuator positions relative to waterflow and control rod connection location, see page 4.

Electric Rotary Actuator Operation:

See pages 6 and 7 for panel components and manual override. The valve is operated by an electric motor on the valve. A control panel is furnished for opening and closing the valve which also indicates the open-closed position. The valve may be manually operated via a hex nut on the valve's electric motor.

Note that it is normal for the valve to produce a ratcheting sound upon reaching the full open or completely closed position.

Drain Line Connection

Each valve has one 1/2 in. FNPT on the bottom of the valve body which is to be used for draining the valve.

Maintenance

Waterous Valves

The effectiveness of a ball-type valve depends greatly upon the tightness of its seal, as a leaking seal allows air to enter the pump during priming or water to escape when operating. Sand or other abrasive material in the water being pumped can score and roughen the surfaces of the valve parts. These rough surfaces may gradually cut the seal and cause leakage.

If valve leakage is detected, rotate the valve ball 180° so the seal contacts the opposite side of the ball. If turning the ball does not stop the leakage, replace the ball. If valve still leaks, replace the seal.

Operating linkages should be kept free of grease and dirt. No lubrication is required. Operate the valves at least monthly (with water flowing) to flush and lubricate the seals.

Akron and Elkhart Valves

Consult the appropriate Akron or Elkhart literature.

Troubleshooting – Waterous Valves Only

Problem	Possible Cause	Solution
Valve leaking	Damaged seal	Replace seal with appropriate seal kit
	Scored / Corroded valve ball	Clean with emery cloth, rotate ball 180°, or replace
Panel LED's all illuminated constantly	Encoder not grounded	Check for ground on encoder assembly
	Defective encoder	Unplug encoder from panel – if LED's turn off, replace encoder
Valve Position LED's NOT illuminated	No power to panel	Check for power supply to panel
	Encoder not grounded	Check for ground on panel
	Defective panel	Connect jumper wire from 12V red wire deutsch connector to each other pin of the connector – should light the individual LED's on the panel
Electric Valve doesn't open or close	Defective switch	Check for proper connections
	Motor to switch connection	Check wiring from motor to switch
	Defective motor	Unplug connection at motor and measure motor continuity with an Ohm meter – should be less than 5 Ohms
	No power to panel	Check for power supply to panel
	Damaged Actuator	Replace Actuator
Motor runs constantly	Defective switch / short circuit across switch	Check for circuit across switch – replace if necessary