IWS Industrial Water Solutions

Distributors of equipment manufactured by MARLO INCORPORATED

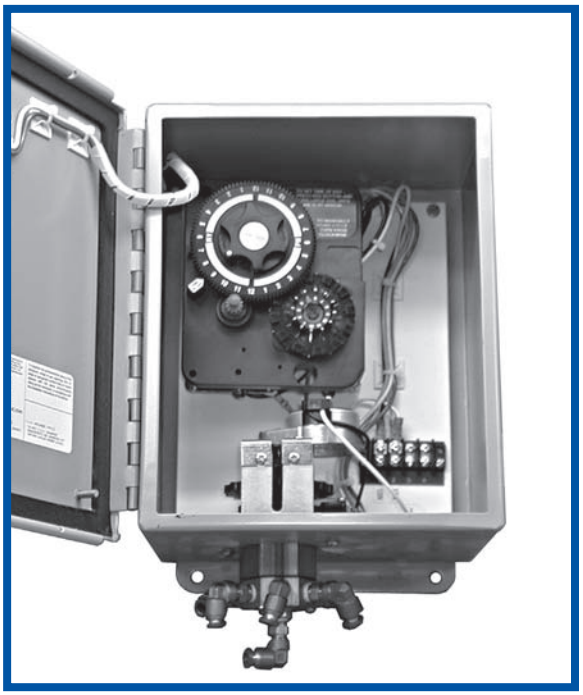
M-300 Series

# STAGER CONTROLLERS

## SERIES M-300-RS REMOTE START

### Activated by Water Meter

The M-300-RS Remote Start Controller consists of an adjustable automatic timer and a multi-port stager with motor. The timer is started by an initiating signal from an auto-reset water meter in the outlet line of the water softener. A manual initiation control is supplied as standard. A remote push-button may be added as an optional extra. This timer, through two-way switches, controls the intervals at which the stager motor operates to change the regeneration cycle steps. For description of the stager, see reverse side of this sheet.
Enclosure dimensions: 10" x 8" x 6"
Electrical requirements: 120 VAC, 1-phase, 60 Hz



## SERIES M-300-TC

### Activated by Built-In Time Clock

The M-300-TC Controller has a built-in automatic initiating time clock which will start the regeneration cycle at a selected time of day (or night) at selected intervals (in days) between cycles. A twelve (12) day range time clock is standard. A remote push-button may be added as an optional extra. Stager operation is the same as the remote start controller described above.
Enclosure dimensions: 10" x 8" x 6"
Electrical requirements: 120 VAC, 1-phase, 60 Hz

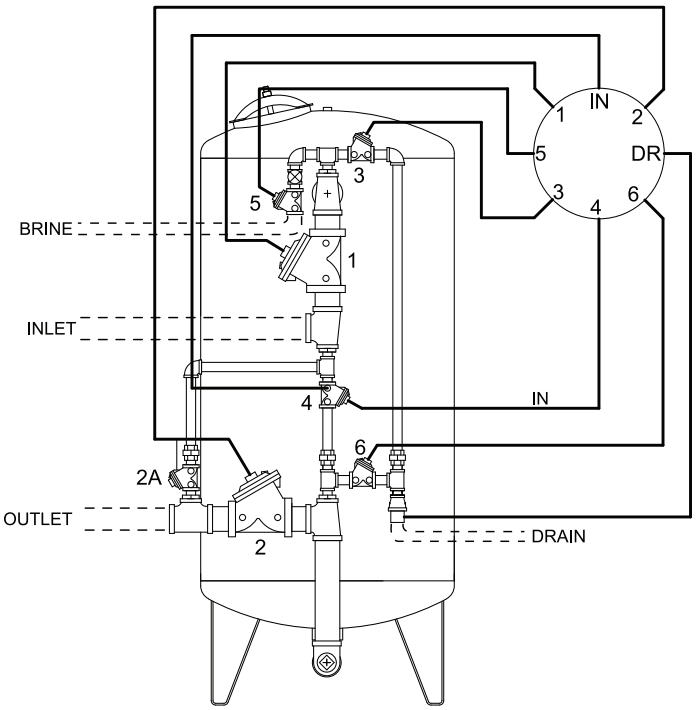
## THE MULTI-PORT STAGER VALVE

The "Stager" is a six-port, four-position, motor-driven rotary valve. The rotating internal stemplate has openings, when in position, will pressurize and vent ports in the body of the Stager. By changing the positions of the stemplate, different ports are pressurized and vented, thus accomplishing a series of cycles to regenerate a water softener. The stemplate is driven by a motor. Should there be a power failure, the unit can be returned to Service by manually turning the index wheel to the left (clockwise).

The stager controllers are also available for filter applications and more complex softener designs such as timed brine draw and salt recycling. Consult the Marlo factory for more details.

## A TYPICAL CIRCUIT APPLICATION

The drawing shows water softener piping with diaphragm valves which can be remotely operated by small hydraulic control lines (1/4" O.D. tubing) leading to the six ports on the stager. All the diaphragm valves are normally-open type, except 2A, an optional hard water by-pass, which is normally-closed. (In a multi-tank system, the piping on each tank will be like this, except that valve 2A will be omitted.) The table below shows the valves that are open at each of the four stager positions.




| Stager Position | Softener Function | Valves Open |
|---|---|---|
| 4 | Service | 1 & 2 |
| 1 | Backwash | 3 & 4 & 2A |
| 2 | Brine Draw / Slow Rinse | 5 & 6 & 2A |
| 3 | Fast Rinse | 6 & 1 & 2A |

**Note:** When high iron content or turbid waters are encountered, put a small cartridge filter ahead of the stager inlet port.