model "RA"

IRROMETER

for automatic control of irrigation systems
DRIP . . . SUBSURFACE . . . SPRINKLER

CLOSURE
Large cap for easy operation and better control. Cap removed when filling reservoir. Submerged valve gives a positive leakproof seal. Unscrewing cap part way releases air and fills tube. Servicing is instantaneous — a twist of the wrist.

RESERVOIR
Holds a reserve supply of fluid sufficient for several irrigation cycles under average operating conditions. Unscrewing cap part way releases air and fills tube. (This is to replace fluid lost by action of drying soil.) (Pat. 2878671)

ALL SOLVENT WELDED JOINTS ARE PERMANENTLY LEAK-PROOF

CERAMIC TIP
Has many times the strength of conventional tips. It is more porous to give quick response to variations in soil moisture.

HERMETICALLY SEALED GAUGE
Accuracy and long gauge life are insured by a hermetically sealed neoprene cover with a molded-in diaphragm which keeps out dirt and moisture and compensates for variations in temperature and barometric pressure. (Pat. 2773388) (Pat. 3394694) (Pat. 3559962)

AIR FREE GAUGE
The water seal prevents air from entering gauge, as gauge and chamber remain full regardless of water level in instrument.

The IRROMETER BODY
is constructed of tough durable plastic impervious to attack by soil chemicals or electrolysis.

MODEL "SR" (not pictured)
Threaded tip connection makes tip replacement easy. Uses o-ring seal.

IRROMETER
REG. U.S. PAT. OFF.
MOISTURE INDICATOR

The IRROMETER is available in standard lengths of 6, 12, 18, 24, and 36. Other lengths available on request.

finest tensiometer

How the IRROMETER . . . Adjustable SELECTOR and Automatic Switch Operates

The IRROMETER registers available soil moisture *directly, accurately, continuously.* The instrument is in effect a "dummy root" registering how hard roots are working to extract moisture from the soil. The patented Adjustable Moisture Level SELECTOR mounts on top of the IRROMETER Gauge and may be turned clockwise or counterclockwise to the optimum soil moisture reading. As soil moisture is depleted a vacuum is created which is registered by the Indicating Needle on the gauge. On the photo above the SELECTOR has been set at 20 centibars. When the Indicating Needle reads 20 or above, the Automatic Switch is closed and allows the Controller to operate as programmed. The Controller continues as programmed until the Indicating Needle falls below the setting on the Automatic Switch. The Adjustable Moisture Level SELECTOR can be compared to a thermostat, automatically placing the Controller (or Solenoid Valve) into operation whenever a water application is desirable, or keeps it out of operation when there is no need for additional water application.

NOTE: Special "Reverse" gauges are available on request. With this specification, the switch is "closed" when the indicator needle is below the switch set point. The switch "opens" when the indicator needle reaches the switch set point.

In some drip and subsurface irrigation systems, the IRROMETER SYSTEM can be used to directly switch the solenoid valve thereby eliminating the need for a controller. The SELECTOR Switch will both open and close the valve at the optimum moisture level set on the gauge.

The IRROMETER AUTOMATIC SYSTEM is designed to operate with any standard electric controller, time clock or solenoid valve when programming is desired.

DO NOT EXCEED 30 VOLTS — 4 AMPS. The standard SELECTOR Switch is designed for use with AC current. When using DC current (battery systems) special switches are required. Consult with the IRROMETER Company for correct specifications on all battery systems.

For automatic control of turf irrigation, use IRROMETER Model TGA.

How to install automatic control on drip or subsurface irrigation systems

When one solenoid valve is controlling 2, 20, or 200 acres, the IRROMETER AUTOMATIC CONTROL SYSTEM is basically the same. As indicated in Figure 1, IRROMETER CONTROL STATIONS are installed in two representative locations to monitor and control the irrigation for the surrounding area. These sites must be carefully chosen so as to be representative of the soil types, topography, and sun exposure of the area being controlled. Where acreage is large, soil variations prevalent and topography a factor, the use of additional IRROMETER STATIONS is advisable to monitor these additional variables and to compare readings to the two wired IRROMETER CONTROL STATIONS.

Where more than one valve is used, it is advisable to control each valve separately, since each valve irrigates an independent irrigation "block." IRROMETER CONTROL STATIONS are located in representative sites within each "block" and instruments are wired in *parallel* to override the individual valve for that "block" (Figure 2). Parallel wiring of the instruments assures that each depth of instrument can call independently for water, thus providing water to the exact depth required. Normally three depths of instruments are installed at each IRROMETER CONTROL STATION with any drip, trickle or other low volume system (Figure 2).

If no controller is used, the IRROMETER CONTROL STATION wires are connected to the 24 volt power source and solenoid valve (Figure 3). Whenever DC power (battery) is used, special switches are required.

When a Controller is used it should be programmed to water daily and as frequently as possible. For most drip installations 2 hours on and one hour off, for 24 hours a day is favored. This allows complete water penetration before recycling. Remember, the system will *only* operate when the IRROMETER Control Stations "tell" it to. Any Control IRROMETER can activate and turn on the irrigation system – all Control IRROMETERS must be wet for the system to turn off.

NOTE: IRROMETER CONTROL STATIONS can be overridden to "irrigate-in" fertilizer, or when other manual operations are desired. The Adjustable Moisture Level SELECTOR and Switch can be easily removed, without disconnecting its wire system, for removal of the IRROMETER, if necessary. When the Switch is removed from the IRROMETER, it remains closed and allows the controller to operate as programmed.

finest tensiometer

FIGURE 1

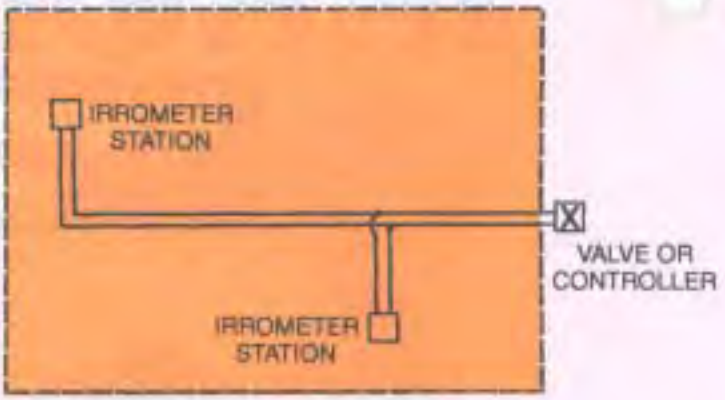


FIGURE 2

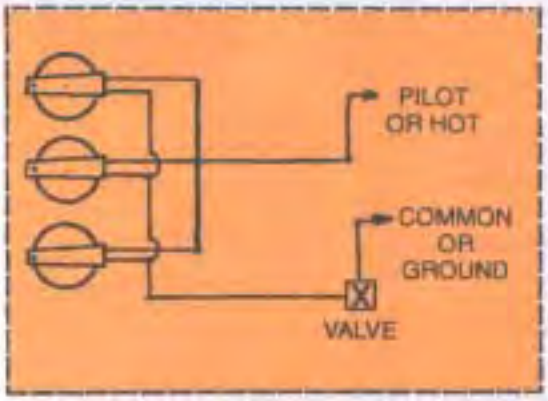
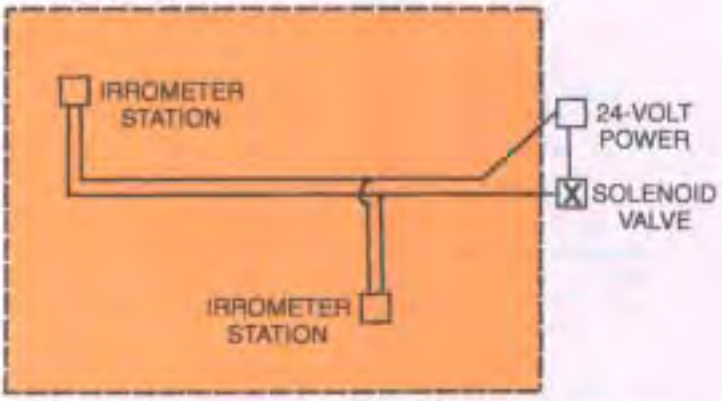


FIGURE 3



CAUTION — Do not exceed a maximum load of 30 volts at the IRROMETER. Maximum switching capacity — 4 amps.

Use #14 AWG insulated valve wire, or larger, for field wiring.