



VALVETTE SYSTEMS

WATER SAVINGS REPORT

January 14, 2015

Location: Westchester Parkway - North Side of Los Angeles International Airport (LAX)

Sprinkler testing protocol centered around efforts by the City of Los Angeles towards increased water conservation. The testing was jointly conducted by Nelson Loureiro, Irrigation supervisor for LAX, and Ted Sirkin, Operations Manager for Valvette Systems and a licensed landscape contractor and irrigation consultant.

The sprinklers in all of the valve systems all along Westchester Parkway are gear-driven rotors. The landscaping consists of 100% turf. For this comparison test, one of the valve systems had all 14 of its rotor sprinklers replaced with new 6" pop-up sprinklers supplied by the Toro Company with each sprinkler equipped with an In-Stem Flow Regulator (IFR), aka LittleValve. The nozzles were Toro's Precision Rotating Nozzles (PRN) that fit onto regular spray-type pop-up sprinkler bodies. Valvette Systems, supplied the 6" LittleValve IFR pop-up stems for the Toro 570s.

The other system in the test was one of the existing [unmodified] valve systems, which also had 14 rotor sprinklers. Hence the test was a comparison of rotors vs. PRN/LittleValve Combo sprinklers.

The testing consisted of reading the water meter to monitor usage for each valve system running for exactly 5 minutes, then after shut-off, reading the meter again – all to find out how much water each system used during its 5-minute period. The goal was to ascertain the total water usage for the 5-minute period for each valve system and also the GPMs for each nozzle type.

In 5 minutes, the 14 rotors used a total of 38 cubic feet of water or 284.24 gallons. That translates into each rotor emitting 4.06 gallons per minute.

In 5 minutes, 14 PRNs used a total of 11.74 cubic feet of water or 87.83 gallons. That translates into each PRN emitting 1.25 gallons per minute.

That translates into the PRNs using just 31% of the amount of water that the rotors use, or

Water Savings of 69% in a lawn area.

NOTE: The lawn areas are served with a dedicated meter. The meter reads were taken down to one cubic foot.

Understanding the results: It is true that the PRN/LittleValve Combo sprinklers saved 69% of the water but it must be assumed that during the summer, the turf along Westchester Parkway would likely need more water. However, to begin with, based on the appearance of the turf after the change-out and before the rains came, along with Sirkin's 3 years of experience field testing the Combo sprinklers, we know that for 3 seasons out of 4, the PRN/LittleValve Combo area will NOT need increased watering time to maintain a similar appearance as the rotor areas. In the summer time, we anticipate a maximum of a 100% increase for the watering time of the Combo area. In so doing, that means the water savings of the Combo usage over the rotor usage during the summer is 34.5%, still a substantial savings of water.

An important reason for the Combo's water savings is the tremendous uniformity [of the water application] that one gets from rotating nozzles, which is the prime reason why rotating nozzles are on the rebate list of the Metropolitan Water District of Southern California (MWD) and are strongly supported by the Los Angeles Department of Water & Power. (DWP). Additional assistance in achieving higher uniformity is provided by LittleValve IFR parts in that the water enters into the nozzle with considerably less turbulence.

Rotors are also notorious for creating excessive misting and fogging, which means the water is atomizing and rising up in the air and with even a mild breeze, blowing or floating away. LittleValves are extremely useful in overriding all high pressure and generally always eliminate all or most of the misting/fogging commonly seen. They also eliminate excessive water loss due to high pressure.

Because IFRs allow for precise placement of the water and total control over the distance of the water throw, they also eliminate over 90% of overspraying, the number one reason for excessive runoff.

The above reasons for water savings pertaining to the LittleValve is the reason why In-Stem Flow Regulators are presently the only sprinklers on the MWD Rebate list.

Lastly, the very low trajectory of PRNs also contributes to water savings in that it always undercuts the wind. Unless you have a very strong wind, i.e. 50+ MPH, the streams emanating from the PRN when its distance is longer than 8 -10 feet are hardly affected.

With the PRN/LittleValve Combo, every radius-style 'spray' nozzle can be eliminated from a nozzle inventory. All radius sprinkler areas can now be watered with just 2 models of sprinkler nozzles – an adjustable PRN and a full circle model. The only spray nozzles an irrigator will need to keep are side strips and center strips for long, narrow areas. PRNs come in both male and female styles and can be used on almost every sprinkler produced today.

This report was prepared by Ted Sirkin, licensed landscape contractor since 1963. Mr. Sirkin, started his landscape and irrigation career in 1959 and is a board member of the San Fernando Valley chapter of the California Landscape Contractor's Association. (CLCA) For the last 15 years, his landscaping efforts have been devoted exclusively to the practice of irrigation consulting, designing and manufacturing of irrigation products.