

## **WATER DISTRIBUTION SYSTEM**

The water distribution system consists of an upper and lower spray arm, upper (spray) arm delivery tube, filter, soil director, pump, sump, and check ball. The system is designed to operate only one spray arm at a time.

During the first wash and first and second rinses, only the lower spray arm operates. In the second wash, third and fourth rinses the spray arms alternate about every 90 seconds.

This alternating of the spray arms is achieved with a check ball located on a ramp between two outlets of the pump. There is an outlet to the bottom spray arm and an outlet to the upper arm delivery tube. In the normal position the ball is at the bottom of the ramp, in front of the opening to the upper arm delivery tube.



When the pump starts, the force of the water pushes the ball to block the opening to the upper arm delivery tube.



Not all of the water is blocked however. The opening is constructed to allow a small amount of water to bypass the ball and enter the tube, and fills the tube at a rate of approximately four inches a second. At the same time, the outlet to the lower spray arm is open, so the lower spray arm operates. When the pump stops, the pressure is removed from the ball and the water flows down the tube, forcing the ball up the ramp and against the outlet to the lower spray arm. If the pump remains off for more than 3 seconds, all the water in the tube escapes and the ball returns to the bottom of the ramp. But, if the pump is started in less than .6 seconds, the water from the upper arm delivery tube is still forcing the ball up the ramp against the outlet to the lower spray arm. The force of the water from the pump continues to hold the ball against the outlet to the lower spray arm which leaves the outlet to the upper arm delivery tube open. When the ball is in this position only the upper spray arm operates. This momentary stopping of the pump is controlled by a contact in the timer.