



WILLOUGHBY INDIVIDUAL TIMING SYSTEM

(SYSTEM DESCRIPTION, OPERATION AND TROUBLE-SHOOTING)

The WITS system is capable of controlling the hot and cold lavatory valves, and flush valves on 2 combination fixtures, or 2 toilets and 2 lavatories. The circuit board controls up to six solenoid valves and requires 24 volts AC, 100 VA for operation. Timers across the top of the circuit board can adjust the metering cycles for hot, cold and flush from 2 to 100 seconds. All of the timers are interruptible, meaning a push of the button during a metering cycle will turn the water off. Two additional timer control knobs are located under the six main timers. These are flush re-initiate delays used to discourage water waste by limiting the number of flushes allowed during a certain time period. These timers can be set from 0 seconds (no delay between flushes) to 10 minutes (a maximum of 6 flushes per hour) or anywhere in between.

The circuit board has LED indicators that monitor all WITS functions. Two of these show when the re-initiate delays are in effect. LED #3 corresponds to flush 1 and LED #5 comes on when flush 2 has been delayed. LED #1 is the green LED on the left edge of the circuit board that shows when the power is on. The LEDs across the bottom left of the circuit board are connected to the hot, cold and flush push buttons on the fixtures, if an LED does not light up when a button is pressed, a problem exists with either the push button or the wiring. The LEDs on the bottom right of the circuit board are used to trouble shoot the solenoid valves. If an output LED is on, but the valve does not open, the problem is either in the valve or the wiring. Two other LEDs on the circuit board are used as overflow indicators. LED #2 or #4 will turn on depending on which toilet was approaching an overflow condition. The flush valve on that particular toilet will stay shut off until the overflow LED is reset with the button on the bottom of the control box.

Normally, the output corresponding to each input will energize immediately. If a flush valve fails to come on, check to be sure the re-initiate delay or overflow has not been activated. If LEDs on the input side of the circuit board come on, but the outputs do not, consult Willoughby Industries, Inc. toll-free at 1-800-428-4065 for assistance.

The wiring harnesses for the push buttons and solenoid valves have color coded wires to make installations and trouble-shooting easier. Red and blue wires are used for the hot and cold lavatory valves respectively and white is used on the flush valves. The push button wiring harness has 1/4" male quick connect terminals for connecting to the push buttons and the valve harness is terminated with 1/4" female quick connects. This keeps the harnesses from becoming switched around. To test a push button, disconnect the harness from the button and use a jumper across the ends of the harness to try to turn on the water. Testing a solenoid valve can be done the same way by testing for 24 VAC across the ends of the valve harness.

The overflow indicators are vacuum operated and the switches can be tested by pulling a small vacuum on them with a short section of tubing connected to the box. If an overflow indicator LED lights up when it shouldn't, the bowl sensor may be blocked and will need to be blown out.

Visit our website at <http://www.willoughby-ind.com>

2210 West Morris Street PO Box 21217 Indianapolis, IN 46221
(317) 638-2381 Fax (317)638-6110 Toll Free (800) 428-4065