55 LB. COIN TIMER WASHERS SCHEMATIC

WCN55AEK

START CIRCUIT

Power travels into the control trough on L1 &L2. 240VAC goes to a Control Trans- former that steps the voltage down to 120VAC for the controls. 120VAC then travels thru the 1.5 amp Circuit Breaker and travels on the white/red wire to the Coin Accumulator Transformer where it is stepped down to 12VAC. This 12VAC powers the Coin Accumulator Board via the gray wire. With the board now powered up, the insert coins light will be illuminated and it's ready to count coins. 120VAC is also supplied to the Main Timer Start and On-Off Contacts on the white/red wire. The Start Contact is closed before the machine has been started so 120VAC travels through the Start Contact and is supplied to the Coin Accumulator Board Start Relay. The S4 Coin Switch counts the quarters and sends a signal to the Coin Accumulator Board. When the coin count is satisfied, the Coin Accumulator Board closes the Start Relay and sends a short 120VAC signal on the orange/white wire to the Rapid Advance Timer Motor.

This timer motor starts advancing the Main Timer to the preselected starting position. A few seconds after the Coin Accumulator Board sends the start signal to the Rapid Advance Timer Motor, the Coin Accumulator Start Relay opens, the display goes blank and the On-Off Contact in the Main Timer closes to insure that the S1 Door Switch is closed (showing that the door is locked). The On-Off Contact also provides 120VAC to the On Light on the red wire. With the S1 Switch closed the Door Lock Solenoid is now powered with 120VAC via the white/ red wire. The Door Lock Solenoid pulls in, locking the door and closing the S2 and S3 Switches. The S2 Switch is a backup to the S1 Switch so that the adjustment on S1 isn't as critical. The S3 Switch provides 120VAC to Timer Contact RA-3 to power the Rapid Advance Motor again and the Main Timer is allowed to advance on to the preselected start position. The blue wire furnishes the neutral for the controls.

FILL CIRCUIT-WARM

120VAC is supplied to the controls through the S1, S2, and S3 Door Switches. The On Light and the Door Lock Solenoid (discussed in Start Circuit) will remain on throughout the cycle. The Lock Thermoactuator Contact in the Main Timer is closed and provides the neutral side to operate the Thermoactuator. 120VAC is provided to the Lock Thermoactua- tor on the orange wire from the S3 Door Switch. The Drain Contact in the Main Timer is closed and provides 120VAC to the Drain Valve on the brown/yellow wire which closes the valve. The Wash Contact in the Main Timer is closed and provides 120VAC to the Revers- ing Timer and the Reversing Timer Motor on the blue/black wire. This will start the Revers- ing Timer operating which will alternately open and close the Micro Switches that provide the direction of tumble for the wash basket. The Wash Light Contact in the Main Timer is closed and provides 120VAC to the Wash Light. The orange wire coming from the S3 Door Switch provides power to the Wash Water Contact in the Main Timer. 120VAC connects from the Wash Water Contact to the Wash Temperature Contact via an internal timer con- nection. With 120VAC on the orange wire & neutral on the orange/yellow wire, the Coin Accumulator Board turns on the Time Remaining Light & starts counting down in minutes. (If delay fill kit is installed, time count down is stopped during fill.)

Now a cycle must be selected with the Selector Switch. We'll use Normal Wash. The washer fills the tub through the back of the machine with either one or both the C1 Cold and H1 Hot Water Valves. At the beginning of the cycle, the detergent dispenser flushes the detergent into the tub. This is accomplished with the Wash Dispenser Contact in the Main Timer. 120VAC travels through the closed Wash dispenser Contact and is supplied to the H2 Hot Water Valve Solenoid by the red/orange wire. As the washer fills with water, the Wash Basket will tumble one direction for 19 seconds, pause, and then reverse direction for 19 seconds. 120VAC travels from the Wash Water Timer Contact to the Heavy Duty Contact in the Selector Switch via the white/black wire. 120VAC goes through the closed Heavy Duty Contact in the Selector Switch and energizes the C1 Cold Water Valve Solenoid via the white/orange wire. 120VAC also travels to the closed Wool/Delicate Contact in the Selector Switch. This closed contact provides power to the H1 Hot Water Valve Solenoid via the red/yellow wire. When the water reaches the predetermined level the Pressure Switch moves to the full position and opens the neutral side of the line to the Water Valves. This shuts the Water Valves off. The neutral for the Water Valves & Main Timer Motor is provided through the Pressure Switch. The Main Timer is stopped until the Pressure Switch provides neutral when full level is reached. Neutral for the Main Timer Motor during drain and spin is provided through the Delay Fill Timer Contact.

WASH CIRCUIT

As the washer fills the tub through the back of the machine with either one or both the C1 Cold and H1 Hot Water Valves, the Wash Basket will tumble one direction for 19 seconds, pause, and then reverse direction for 19 seconds. This is accomplished through the use of a Reversing Timer. 120VAC is supplied to the Reversing Timer Motor on the blue/black wire from the Wash Motor Timer Contact in the Main Timer and 120VAC is supplied to the R1 Run Relay any time the door is locked. This R1 Relay closes & provides 24VDC thru the ReversingTimer Wash Micro Switches. The Reversing Timer will alter-nately open and close the two Wash Micro Switches and provide 24VDC to the FW (for- ward) or RV (reverse) terminals on the Variable Frequency Drive.

As discussed in Start and Fill, the Lock Thermoactuator, Drain Valve, On Light, and Main Timer Motor (except in fill) are all operating throughout the Wash Cycle.

DRAIN, RINSE 1 & 2, & FINAL RINSE CIRCUIT

The Drain Contact on the Main Timer opens removing power to the Drain Valve. The normally open spring-loaded Drain Valve opens and empties the tub.

For Rinse 1 & 2, the Rinse Light Contact in the Main Timer closes and provides 120VAC to the Rinse Light. The Rinse Water Contact in the Main Timer also closes and provides 120VAC to the C1 Cold Water Solenoid. The tub will fill until the predetermined level is achieved at which time the Pressure Switch Contact will open the neutral side of the line shutting off the C1 Cold Water Solenoid. When the tub is full, the pressure switch also closes a neutral circuit to the M1 Timer Motor and to the orange/yellow wire on the Coin Accumulator Board. This allows the Main Timer to advance only after the tub is full and stalls the time count down on the Coin Accumulator Board during fills.

For the Final Rinse, the Final Rinse Light Contact in the Main Timer closes and provides 120VAC to the Final Rinse Light. Rinse water is the same as in Rinses above.

As discussed in Start and Fill, the Lock Thermoactuator, Drain Valve, On Light, and Main Timer Motor (except in fill) are all operating throughout the Wash Cycle.

INERMEDIATE EXTRACT CIRCUIT

The Wash Contact remains closed and provides 24VDC to the closed Clockwise Micro Switch on the Reversing Timer. 24VDC is then fed to the Counter Clockwise Micro Switch via a jumper wire. 120VAC is then sent to the Delay Spin Micro Switch. The Delay Spin Micro Switch provides 120VAC to the Spin Motor Contact in the Main Timer on the blue/white wire. The Spin Motor Contact is closed for spin and the voltage continues on to the R2 Spin Motor Relay Coil on the red/black wire. With 120VAC to the R2 Spin Motor Relay Coil two things happen. 120VAC is now provided from the orange wire directly to the Relay eliminating the Reversing Timer and the Micro Switches from the circuit.

The second thing that happens when the R2 Relay is closed is that 24VDC is provided from the DCM terminal of the Variable Frequency Drive through the R1 Run Relay through the R2 Spin Relay to terminals Ml1 & Ml3 on the Drive and the washer spins at intermediate speed.

FINAL EXTRACT CIRCUIT

Same as Intermediate Extract but adds the R3 Extract Relay. The Main Timer pro- vides 120VAC to the Extract Relay Coil. When this relay closes it provides 24VDC to the Ml2 terminal on the Variable Frequency Drive. This means that all 3 terminals M11, Ml2 & Ml3 are powered for high spin.

THERMOACTUATOR AND SHAKE OUT CIRCUIT

The Lock Thermoactuator Contact in the Main Timer opens removing the neutral to the Thermoactuator approximately 3 minutes before the end of the cycle. This allows the Thermoactuator time to retract by the end of the cycle.

To insure that the Lock Thermoactuator has retracted by the end of the cycle, one minute prior to the end of the cycle, the Unlock Thermoactuator is powered with 120VAC through the Unlock Themoactuator Contact in the Main Timer.

The Spin Motor Contact in the Main Timer opens, stopping voltage to the R2 Spin Motor Relay & the motor. The basket will coast to a stop. The Wash Motor Contact in the Main Timer closes providing power to the Reversing Timer once again (discussed in Wash Cycle). The washer will tumble for approximately 30 seconds to let the clothes shake loose and then stop. The neutral for the Main Timer Motor is provided through the Delay **Fill** Timer Contact.

END OF CYCLE CIRCUIT

The On-Off Contact in the Main Timer opens removing power to the Door Lock Switches and Contactors. The machine is now stopped. The Start Contact on the Main Timer is closed providing 120VAC to the Coin Accumulator Board on the white/green wire. The End Of Cycle Contact in the Main Timer is closed sending a 120 volt signal to the Coin Accumulator Board on the white/yellow wire telling it that the cycle is over. This does 2 things:

1. The beeper will signal for 3 seconds letting the user know that it is the end of the cycle.
2. It resets the Coin Accumulator Board and it is now ready to count coins again.