

TECHNICAL SUPPORT MATERIAL

Routine and Preventative Maintenance

Cam Timer Adjustment Is the First PM Step

Timers are available with 6-, 7-, or 8-cams. The cycle times are not adjustable. The cams of the timer are wheels whose positions are either fixed or adjustable. Each cam controls a specific machine function, as noted on the timer decal. Adjustable cams are comprised of two wheels held together at the hub. The perimeter of each wheel is divided into 180-degrees of high cam and 180-degrees of low cam. When one of these wheels is rotated on the hub in relation to the opposing wheel, the two lower cam segments can form a notch in the perimeter (see photo below right). Above each cam is a timer switch with a metal finger that rides along the outer edge of the cam. When the finger drops into the lower cam notch, the function of that cam starts.

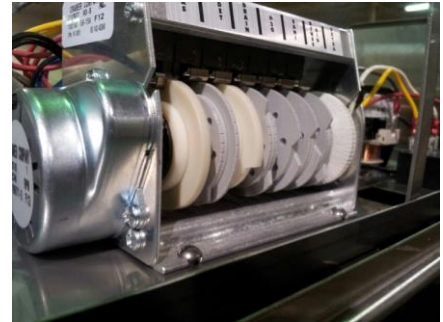
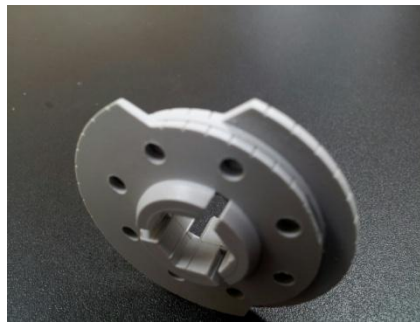


Cam adjustment tool



Spray arm pressure tester #088-1048

To widen the notch (length = time energized) or close the notch use the timer adjustment tool, which is provided and taped to the control box shelf. This tool has two raised buttons that fit into the holes on the side of each wheel. The factory sets the start of each function using the right-side wheel of the cam. TO ADJUST rotate only the left-side cam wheel. The left-side of the wheel controls the point when that specific functions ends. Factory settings are only initial settings, adjustments will be required for each chemical and the water fill time because water pressures will be different for every account.



The left photo shows arrow is pointed at the left-side wheel of the cam which is used to lengthen or shorten the low cam or the time ON for the respective switch. Center photo shows high-cam & low-cam notch. Adjustable cams are colored either black or gray.

Looking at the front of the cams with the cam timer assembly sitting on its mounting base

#1 Cam: The white cam on the left is the master cam. It controls the total time of the cycle and is not adjustable.

#2 Cam: Continuing left to right, this black or gray cam controls detergent. The detergent cam is adjustable and should begin as soon as the wash action starts.

#3 Cam: This white cam controls the drain time and is not adjustable.

#4 Cam: The H2O or fill cam opens the water solenoid. Too little water will cause the pump to cavitate (surging). Overfilling does not allow the soiled wash water to fully drain between cycles, causing carry-over. Do not move the right side of the cam wheel. Adjust the left-side of the cam wheel to close the water solenoid when the dishmachine reaches full spray arm pressure.

#5 Cam: This black or gray cam controls sanitizer. The sanitizer cam is adjustable. Set sanitizer concentrations at 50 parts per million. Monitor chlorine levels by using chlorine test strips. To Test—run a rack of dishes through a complete cycle, use the test strip to test water samples from the top of any glass.

#6 Cam: This black or gray cam controls rinse additive. The rinse-aid cam is adjustable.

#7 Cam: This cam is used to pause or “burp” the pump on the 3D-S, ES, 5AG-S, 5CD, and L Series. It is set at the factory but can be adjusted.

TUNING A DUMP & FILL MACHINE SECTION

Tuning is essential for proper cleaning; do not skip this IMPORTANT PROCEDURE

The key to understanding proper tuning is to realize that the drain sequence cannot be changed. It is a fixed time function and the regulator of the cycle between wash and rinse. Therefore, all tuning is accomplished by setting or adjusting the fill cam in relationship to the fixed drain cam. The goal of tuning is to eliminate all soiled wash water through the drain, before the drain closes. A sign that soiled wash water has exited the tank will be the typical hollow sound of a pump running without water.

It is at this point that the H2O (FILL) cam should be adjusted so the water solenoid turns the fill water on. That function is controlled by the adjustment of the fill cam. For optimum results, allow the fill water to flush the interior of the machine for a few seconds before the drain closes. Once the drain is closed the fill cycle begins. Fill must continue until full spray arm pressure is reached. This can be verified with the use of a spray arm pressure tester (Kit #088-1048) attached where one of the end plugs are usually screwed into the lower wash arm. The tester gauge will indicate full spray arm pressure when the needle stops fluctuating and remains steady. Adjust the fill cam to turn the water OFF when this point of steady pressure is reached. It is important that the machine is not overfilled. Use just enough water to reach Full Spray-arm Pressure (FSP), no more than that is needed for proper operation.

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Typical 90-second timer operation [Pump shut off]-[*sanitizer here]
START [-----WASH 45-Seconds-----] - [--DRAIN 15-Sec--] - [--30-sec to FILL and RINSE---] END
      [*detergent here]                [-Fill until FSP is reached-]
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If a pressure gauge tester is not available, an approximation of full spray arm pressure could be determined by the sound of the spray arm. There would be a typical continuous swishing sound of the water spraying. Again, when this sound is heard, that would be the point to turn the water OFF. Seven seconds of full spray arm rinse pressure is required by health code. In the event that air is trapped in the pump during fill, a vapor lock can occur where the pump is turning but there is no spraying.

If this vapor lock occurs, check incoming water temperature and reduce the temperature if it is above 140-150F. Operating temperature of 120F degrees is the minimum, 130-140F degrees is recommended. If the problem is caused by low water pressure to the machine, increase by running a clean ¾” line from the water heater or install a pressure bladder tank. If vapor lock is still present, electrically stop or pause the pump to release air. If the machine has a 7-cam timer, this feature is wired into the 7th cam from the factory.