

TECHNICAL BULLETIN

NUMBER

22**FETCO®**
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email : techsupport@fetco.com**Subject: Discontinuation of Mercury Relays**
Applies to: See Below**Date: June 28, 2006**
Rev. January 15, 2007

In order to comply with new Underwriters Laboratories regulations (UL 197), the following changes have been made to several equipment models:

- Mercury relays have been eliminated and replaced with solid state relays (SSR).
- Temperature limit thermostats have been added to the water tanks as an additional protection against overheating. The limit thermostat is designed to cut power to the heaters if the tank temperature reaches 230°F. Once it is tripped, it cannot be reset and must be replaced.
- Water tanks have been modified to accept the SSRs and limit thermostats.
- CBS-70 Series only: Due to the high amperage of this series, a 100 amp contactor is being added to the heater protection circuit. If the tank overheats, the limit thermostat will disable the contactor, which will disable all heaters.

The models that are affected by this change are:

CBS-31Aap	CBS-51H10	CBS-52H15	CBS-61H	CBS-71A & AC	CBS-72AT & ATC
CBS-32Aap	CBS-51H15	CBS-52H20	CBS-62H	CBS-72A & AC	TBS-71AC

The following new part numbers have been assigned:*

Part #	Description	
108070	relay, solid state, 25 amp, 230 VAC	
108071	relay, solid state, 50 amp, 600 VAC	
108072	relay, solid state, 125 amp, 600 VAC	(CBS-70 Series only)
53071	thermostat, single shot, 25 amp, 240VAC	
53087	thermostat, single shot, 25 amp, 480VAC	(480 VAC only)
53088	thermostat, single shot, 40 amp, 240VAC	
52084	contactor, 100amp, 120VAC	(CBS-70 Series only)

* Refer to the wiring diagram on the inside of the machine cover for the specific SSR and thermostat used.

Questions & Answers

Q.) Can equipment manufactured prior to this change be retrofitted with SSRs?

A.) No. The UL listing does not allow field modifications to existing equipment.

Q.) Do the new regulations mean that older machines with mercury relays are no longer UL listed?

A.) No. This change does not affect the UL listing on equipment manufactured prior to the new regulations.

Q.) Will FETCO still stock mercury relays for servicing older equipment?

A.) Yes. FETCO will continue to stock mercury relays for the foreseeable future.

Q.) Will the SSRs be located in the same place as the mercury relays?

A.) No. The SSRs will be mounted to the bottom of the water tank in order to use the tank as a heat sink.

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Q.) How will this change affect troubleshooting procedures for the brewers?

A.) Troubleshooting is similar for both versions. Both relays receive power from the output of the thermostat on the blue wire when the system is calling for heat. When the relay is energized, the circuit closes and current flows from the terminal block to the heaters. Troubleshooting consists of using voltage and/or amperage measurements to determine if current is flowing to the heaters only when the blue wire is energized. There should be no current to the heaters when the blue wire is not energized.

One difference is that the SSR version opens and closes the circuit on only one of the heater wires. The mercury relay version opens and closes the circuit on all heater wires.

Another difference is the addition of the temperature limit thermostat, located on the top of the tank. This component is tested simply by checking continuity through it.

For comparison, the diagrams below show both versions of a CBS-32Aap.

