



INSTRUMENTATION AND SPECIALTY CONTROLS DIVISION
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**TC-Series Circulating Bath:
 Installation Qualification,
 Operation Qualification,
 and
 Performance Qualification
 Procedure**

3Qs053

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This guideline for IQ, OQ, PQ is offered as a supplement to the “Installation” section of the manual. Some customers have particular requirements for validation. It is hoped that this guideline will assist in meeting those needs. You may also contact Brookfield AMETEK for a more detailed document, or on-site IQ,OQ,PQ service conducted by a Brookfield AMETEK representative.

All Brookfield AMETEK instrumentation should be unpacked, assembled and operated according to the operating instructions. Recommendations for installation, operation and performance qualification appear below.

IQ:	<p>INSTALLATION QUALIFICATION</p> <ul style="list-style-type: none"> - Inspect package for shipping damage - Confirm that all components have been supplied as detailed in the Operating Manual and Packing List - Locate circulator on a level surface within proper environment as stated within manual. - Fill Reservoir to appropriate level with correct fluid. - Connect power cord to proper voltage source.
OQ:	<p>OPERATION QUALIFICATION</p> <ul style="list-style-type: none"> - Turn Power on - Set Safety Set Point - Set Initial temperature - Set High and Low Safety Limits - Confirm temperature unit
PQ:	<p>PERFORMANCE QUALIFICATION</p> <ul style="list-style-type: none"> - Verify unit reaching desired set point - Verify temperatures reading are within tolerance for controller, as per procedure below.

Successful completion of installation, operation and performance procedures as described above confirm that the Brookfield AMETEK TC-Series Temperature Bath is operating

properly and to specification. **In the event that any of the above steps cannot be performed satisfactorily, please contact Brookfield AMETEK or the dealer from whom you purchased the equipment.**

Temperature Accuracy Test & Results

Set temperature set point to values listed in table. Allow unit to stabilize and confirm readings are within tolerance for controller via a calibrated temperature Probe.

Test Value	Low Limit	Thermometer Reading	High Limit	Passed?
20.00°C	19.5°C		20.5°C	
80.00°C	79.5°C		80.5°C	

Any reading outside these limits may indicate that an off-set may need to be entered into the controller. Please consult the controller manual for “Setting the Offset Calibration” or contact the Brookfield AMETEK technical sales department or your local Brookfield AMETEK dealer/ distributor with test results to determine the nature of the problem.

Comments: _____

BEL representative: _____ Verified by: _____

Date: _____

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