

# Thermal Shock Module

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Increase the Versatility  
of AGREE Chambers  
with TSM



# Turn Your AGREE Chamber into a True Thermal Shock System

The TSM Thermal Shock Module upgrades your existing AGREE chamber into a two-zone thermal shock system—delivering faster qualification testing, improved control, and seamless integration without major capital expense.

## How It Works—Simple and Efficient:

- 1. Position & Connect** – Roll the TSM into place beneath your AGREE chamber. Connect power and air to prepare for operation.
- 2. Load & Precondition** – While the hot and cold zones stabilize, load the test article—minimizing idle time before the test begins.
- 3. Automated Cycle Control** – The integrated controller manages all transfers and dwells, executing the thermal cycle without manual intervention.
- 4. Fast, Repeatable Transfers** – The moving platform moves the test article between temperature zones in seconds, ensuring consistent thermal stress.
- 5. Fully Integrated Workflow** – Upon completion of the cycle, the article returns to the cold zone for easy removal and post-test inspection.

TYPICAL PERFORMANCE Note: Faster Change Rates with Greater $\Delta T$						
CHAMBER	PRODUCT PAYLOAD	TEMPERATURE HOT	TEMPERATURE COLD	RECOVERY HOT TO COLD	RECOVERY COLD TO HOT	°C/Min CHANGE
F-12	75 LBS.	+71°C	-54°C	3 min	3 min	40°C/Min
F-32	100 LBS.	+71°C	-54°C	2 min	2 min	60°C/Min
F-62	200 LBS.	+71°C	-54°C	2 min	2 min	60°C/Min
F-110	300 LBS.	+71°C	-54°C	3.5 min	3.5 min	35°C/Min

TSM STANDARD MODELS											
THERMOTRON		EMPULSE		RUSSELL		EMPULSE		CSZ		EMPULSE	
F-12-CHV	TSM-12	RBV-14	TSM-14	AV-14	TSM-14						
F-32-CHV	TSM-32	RBV-32	TSM-32	AV-33	TSM-33						
F-42-CHV	TSM-42	RBV-42	TSM-42	AV-41	TSM-41						
F-62-CHV	TSM-62	RBV-61	TSM-61	AV-61	TSM-61						
F-82-CHV	TSM-82	RBV-108	TSM-108	AV-81	TSM-81						
F-110-CHV	TSM-110	RBV-117	TSM-117	AV-108	TSM-108						
F-144-CHV	TSM-144	RBV-144	TSM-144	AV-117	TSM-117						
				AV-121	TSM-121						
				AV-144	TSM-144						

Note: Other Standard Models available for Tenney, Envirotronics, Ransco.  
Custom Models available for any AGREE Chamber.

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## Thermal Shock Module



**Utility Requirements:** Air-80 P.S.I (Clean, Dry)

**Power:** 460V AC/3/60 - 18 F.L.A.  
230V AC/3/60 - 36 F.L.A.  
208V AC/3/60 - 40 F.L.A.

**Dimensions:** Example: 32 cu. ft. AGREE Chamber  
TSM-32 Cabinet 40"W x 40"H x 26"H  
Moving Platform 34" x 34"

Note: Dimensions will change as the AGREE Chambers dimensions on other sizes change.



**Transfer Time:** For hot to cold and cold to hot: 3-5 seconds adjustable

**Instrumentation:** Watlow Programmer/Controller System switches with indicating lights.

**Safety Features:** Electrical interlock with chamber door, excessive product temperature, auto shut off, audible and visual alarm

**Construction:** Inner liner series 300 stainless steel, heliarc welded

**Exterior Cabinet:** Welded 16 gauge steel, cleaned, and primed with air dried, liquid sprayed finish

**Insulation:** Movable platforms, diaphragm rail inserts and side walls insulated with low "K" non-settling, ovengrade, fiberglass insulation

**Optional:** Recorder to provide a printed record of cycle times and temperatures of cold chamber and hot chamber

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