

THERMOCOUPLE CLAMPING SYSTEMS

for Lyophilizer Shelf Uniformity Testing

INTRODUCTION

The Thermocouple Clamping System (TCS) is designed to minimize the temperature variation between thermocouples typically associated with thermocouple preparation, placement in the required location and holding on the shelf, eliminating the test method from being a factor in determining a lyophilizer shelf temperature uniformity distribution.



KEY ADVANTAGES:

Using a unique combination of a thermocouple holding system, a compressible clamp and a placement tool, the TCS offers the following key advantages:

SAFE

- No need for operators to insert themselves into the Lyophilizer chamber or to place their hands between shelves for thermocouple placement

ACCURATE

- Test method variation of 0.35°C between thermocouples

RELIABLE & REPEATABLE

- Identical test setup for each thermocouple removing operator variability associated with thermocouple preparation and placement
- Precise thermocouple placement on the Lyophilizer shelf
- Uniform thermocouple holding pressure with no lifting of thermocouple during test
- Total repeatability from test to test

EFFICIENT

- Rapid operator setup & removal
- No residues to remove from shelf

VERSATILE

- Allows testing under vacuum for actual production conditions
- Allows thermocouples to be held for steam sterilization



BULKHEAD FITTING

For Connecting Test Wiring To Equipment

INTRODUCTION

The Bulkhead Fitting System (BFS) is designed to ensure the leak tight connection of test wiring to environmental chambers, including Lyophilizers, Autoclaves and Dry Heat Ovens and Vessels.



KEY ADVANTAGES

The BFS offers the following key advantages:

- Integrates a large quantity of test wires into a small diameter fitting (standard size allows 40 thermocouple wires through 75mm diameter sanitary fittings)
- Totally repeatable setup from test to test
- Rapid operator setup & removal
- Operates from full vacuum to 90psi
- One Bulkhead Fitting can accommodate all 48 Thermocouple wires for new Kaye Validator AVS (Advanced Validation System)

