



Installation / Operation / Maintenance Manual

BSH eV

Bulk Source Heater eV

Edition: Rev-

The information and data contained herein are proprietary to Versum Materials, Inc. and are not to be copied, reproduced, duplicated, or disclosed to others, in whole or in part, without prior written consent of Versum Materials, Inc. The information and data should be available only to those with a need to know. Versum Materials, Inc. makes no representation that the information and data is appropriate for the recipient, and each recipient needs to independently evaluate the appropriateness of the information and data for its use.

This Installation and Operation Manual is subject to change without notification. For current technical information please call Product Support at (866)624-7677 from continental U.S., or write Versum Materials, Inc., 1919 Vultee Street, Allentown, PA 18103, attention: Product Support.

Printed in the U.S.A.

WARRANTY

Versum Materials, Inc. (hereinafter referred to as "Versum Materials") warrants that:

(A) Each new Versum Materials Delivery System is free from defects in material and workmanship under normal use and service for a period of one year from the date of delivery by Versum Materials to the first purchaser.

(B) Each new accessory is free from defects in material and workmanship under normal use and service for a period of one (1) year from the date of delivery by Versum Materials to the first purchaser.

If any product requires service during the applicable warranty period, the purchaser should communicate directly with Versum Materials to determine appropriate repair. Repair or replacement will be carried out at Versum Materials expense subject to the terms of this warranty. It is the responsibility of the customer to perform routine maintenance and periodic calibration.

In no event shall Versum Materials be liable for any incidental, indirect or consequential damages in connection with the purchase or use of any Versum Materials product. This warranty shall not apply to, and Versum Materials shall not be responsible for, any loss arising in connection with the purchase or use of any Versum Materials product which has been repaired by anyone other than an authorized Versum Materials service representative or altered in any way so as, in Versum Materials judgment, to affect its stability or reliability, or which has been subject to misuse or negligence or accident, or which has the unit or lot number altered, effaced or removed, or which has been used otherwise than in accordance with the instructions furnished by Versum Materials. This warranty is in lieu of all other warranties, express or implied, and all other obligations or liabilities on Versum Materials part, and Versum Materials neither assumes nor authorizes any representative or other person to assume for it any other liability in connection with the sale of Versum Materials equipment.

VERSUM MATERIALS DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR APPLICATION.

Address:

Versum Materials, Inc.
1919 Vultee Street
Allentown, PA 18103, U.S.A

Revision Control Summary

Chapter	Revision	File Name
Chapter 1 – Safety		
• Initial Release	Rev-0	MNL000620.doc
Chapter 2 – Installation		
• Initial Release	Rev-0	MNL000609.doc
Chapter 3 – System Description		
• Initial Release	Rev-0	MNL000610.doc
Chapter 4 – Operation		
• Initial Release	Rev-0	MNL000611.doc
Chapter 5 – Troubleshooting		
• Initial Release	Rev-0	MNL000612.doc
Chapter 6 – Maintenance		
• Initial Release	Rev-0	MNL000613.doc
Chapter 7 – Drawings		
• Initial Release	Rev-0	MNL000614.doc
Chapter 8 – Spare Parts		
• Initial Release	Rev-0	MNL000615.doc
Chapter 9 – Facilitation and Startup Checklist		
• Initial Release	Rev-0	MNL000616.doc

TABLE OF CONTENTS

Chapter 1	Safety Warnings	
	Section 1	Introduction 1-2
	Section 2	Important Safety Warnings 1-5
	Section 3	Inert Gas Hazards 1-5
	Section 4	Pressurized Fluids/Gases 1-7
	Section 5	Electrical Hazard 1-7
	Section 6	Falling Equipment Hazard 1-7
	Section 7	Personal Protective Equipment..... 1-8
	Section 8	Ergonomic Hazard 1-8
	Section 9	Typical Minimal Lockout or Tagout System Procedures 1-9
	Section 10	Safety Signs and Labels..... 1-13
	Section 11	Equipment Safety Features 1-18
	Section 12	Safety Literature for Handling of Nitrogen Supply 1-18
Chapter 2	Installation	
	Section 1	Receiving Inspection 2-2
	Section 2	Unpacking and Handling..... 2-2
	Section 3	Module Installation 2-3
	Section 4	Electrical and Pneumatic Connections 2-5
	Section 5	Explosive Atmosphere (ATEX) Installations 2-33
Chapter 3	System Description	
	Section 1	System Specifications and Components 3-2
	Section 2	AP11 Controller 3-10
	Section 3	Power I/O Enclosures 3-20
Chapter 4	Operation	
	Section 1	Install and Remove Cylinder Blanket 4-2
	Section 2	Emergency Stop 4-14
	Section 3	AP11 Controller Operation 4-15
	Section 4	Startup and Operation 4-17
	Section 5	System Shutdown and Startup - Planned / Unplanned ... 4-24
Chapter 5	Troubleshooting	
	Section 1	System Errors/Alarm 5-2
	Section 2	Cylinder Heater Overtemperature Reset Procedure 5-8

Chapter 6	Maintenance	
	Section 1	Warranty 6-2
	Section 2	Routine Maintenance 6-3
	Section 3	Mechanical Integrity 6-7
	Section 4	Electrical Maintenance and Test Procedures 6-8
	Section 5	Electrical Component Life Expectancy 6-11
	Section 6	Decommissioning 6-12
Chapter 7	Drawings	
Chapter 8	Spare Parts	
Chapter 9	Facilitation / Startup Checklist	