

Methanol Sparger

User Manual Revision 2



Manual #: 21

Rev No. 2

Date: 1 February 2018

COPYRIGHT

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise, without prior written permission of United Process Controls Inc.

DISCLAIMER:

The *Methanol Sparger* is to be used by the industrial operator under his/her direction. United Process Controls Inc. is not responsible or liable for any product, process, damage or injury incurred while using the *Methanol Sparger*. United Process Controls Inc. makes no representations or warranties with respect to the contents hereof and specifically disclaim any implied warranties or merchantability or fitness for any particular purpose.

For assistance please contact:

United Process Controls Inc.

TEL: +1-414-462-8200 • FAX: +1-414-462-7022

Toll free North America: +1-800-438-3347

waukee.support@group-upc.com

www.group-upc.com

TABLE OF CONTENTS

| | |
|---|----------|
| 1. WARNING | 4 |
| 2. MANUAL OVERVIEW | 5 |
| 3. INSTALLATION | 6 |
| 3.1 <i>Sparger Location.....</i> | 6 |
| 3.2 <i>Sparger Installation</i> | 6 |
| 4. OPTIONAL SPARGER PURGE INSTALLATION | 7 |
| 4.1 <i>Solenoid Valve Installation</i> | 7 |
| 4.2 <i>Wiring Solenoid Valve.....</i> | 7 |
| 5. MAINTENANCE | 7 |
| 6. PLUMBING DIAGRAM | 8 |
| 7. SPARE PARTS LIST..... | 9 |

1. WARNING

Thank you for purchasing equipment from United Process Controls. We want your new equipment to operate safely. Anyone who uses this equipment should read this publication (and any other relevant publications) before installing or operating the equipment.

To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and usually change with time. It is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation is in compliance with the latest version of these codes.

At a minimum, you should follow all applicable sections of the National Fire Code, National Electrical Code, and codes of the National Electrical Manufacturer's Association (NEMA). There may be local regulatory or government offices that can also help determine which codes and standards are necessary for safe installation and operation.

Equipment damage or serious injury to personnel can result from failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call us at 414-462-8200



WARNING: Read this manual thoroughly before using Sparger.



WARNING: Methanol may be harmful if inhaled. It may be fatal or cause blindness if swallowed. Methanol cannot be made non-poisonous. Contact with eyes may cause blindness and with skin may be harmful. If eye or skin contact occurs, flush with water and call a physician.



WARNING: Nitrogen gas cannot be detected by human senses. It can cause asphyxiation in confined areas, which are not properly ventilated. Do not enter areas which are not properly ventilated.

2. MANUAL OVERVIEW

The Purpose of this Manual

Thank you for purchasing a Methanol Sparger from United Process Control. This manual illustrates how to install, wire and maintain a Methanol Sparger. This manual contains important information and should be read and understood by all individuals who install, use or service this equipment.

Technical Support

If you cannot find the solution to your particular application, or, if for any reason you need technical assistance, please call us at:

+1-414-462-8200 Toll free North America: +1-800-438-3347

Our technical support group will work with you to answer your questions. They are available Monday through Friday from 8:00 A.M. to 4:30 P.M. Central Standard Time. We also encourage you to visit our web site where you can find additional technical and non-technical information about our products and company.

<http://www.group-upc.com>

If you have a comment, question or suggestion about any of our products, services, or manuals, please e-mail or contact us by phone.

Conventions Used



When you see the “exclamation point” icon in the left-hand margin, the paragraph to its immediate right will be a warning. This information could prevent injury, loss of property, or even death in extreme cases. Any warning in this manual should be regarded as critical information that should be read in its entirety. The word **WARNING** or **CAUTION** in boldface will mark the beginning of the text.



When you see the “notepad” icon in the left-hand margin, the paragraph to its immediate right will be a special note.

3. INSTALLATION

3.1 Sparger Location

The Sparger should be installed vertically in the roof of the furnace, with the nozzle just below the refractory and above the fan. Prior to installation, the furnace must have a 1-1/4" NPT mounting flange.



CAUTION: If the sparger is located within the vicinity of a carbon probe, ensure that the sparger is located far enough away to prevent methanol droplets from coming into contact with the probe. Failure to do so may result in damage to the probe.

3.2 Sparger Installation

Start by loose fitting all 1-1/4" pipes and fittings. Then insert the sparger and screw loosely into place.

Observing inside the furnace where the sparger protrudes through, determine how much more or less the sparger needs to stick into the furnace. Varying the 1-1/4" pipe nipple lengths will allow for length adjustments of the protruding nozzle.

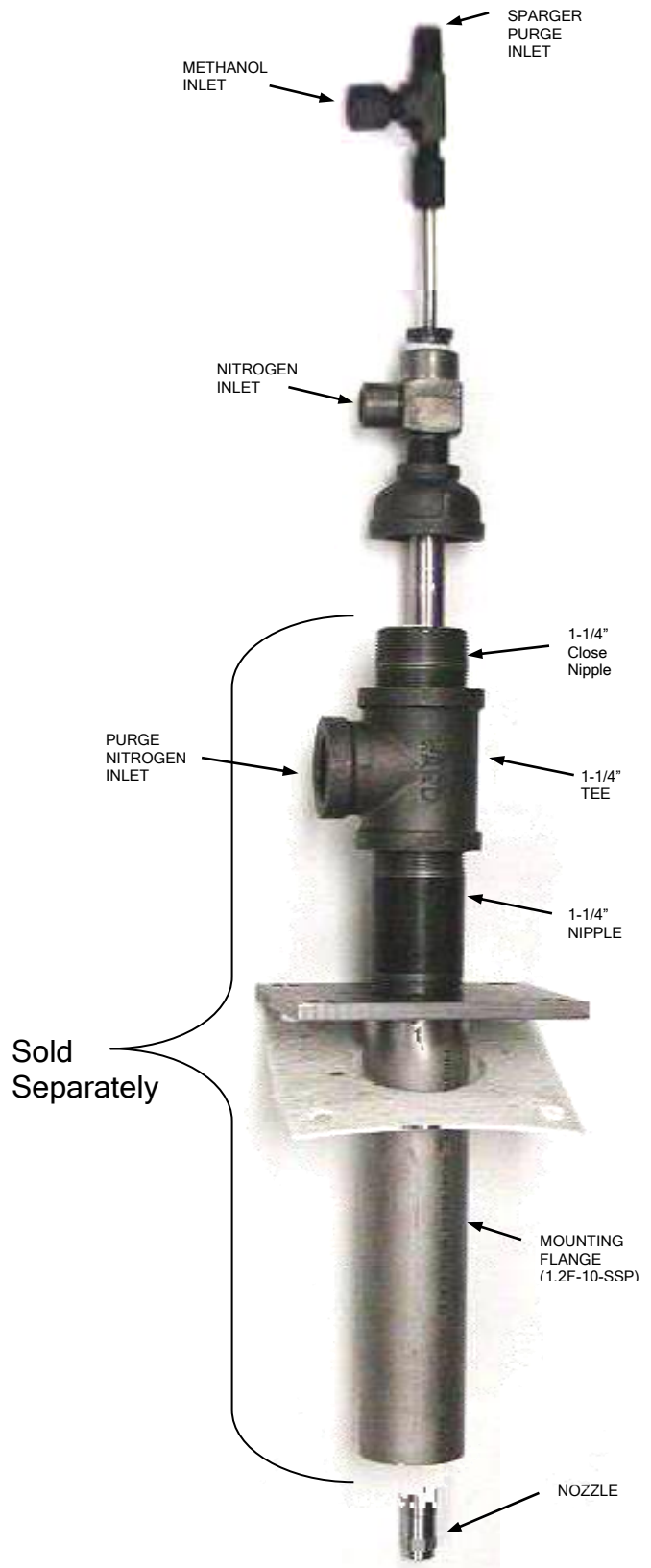
Once the proper length is determined, apply pipe sealer to the threads of all components and tighten into place.

Make supply connections as shown in the adjacent diagram.

Check all connections for leaks.



The 1/4" tee in the Methanol line is only included when the optional Sparger Purge is ordered.



4. OPTIONAL SPARGER PURGE INSTALLATION

4.1 Solenoid Valve Installation

The *Sparger Purge Solenoid Valve* should be located near the gas mixing panel that is servicing the furnace where the sparger is installed on.

Connect the inlet of the solenoid valve to a constant source of Nitrogen.

Plumb a ¼” copper or stainless steel tube (Not Included) between the outlet of the (N.O.) solenoid and the *Sparger Purge Inlet* as shown in the previous page.

4.2 Wiring Solenoid Valve

The *Sparger Purge Solenoid Valve* requires a source of 24VDC that is energized when the methanol is flowing and “OFF” when the methanol is not flowing.



CAUTION: To reduce the risk of electrical shock and also to prevent damage to the Sparger Solenoid Valve and equipment, it is advised to turn off the supply power to the control equipment before connecting or disconnecting any wires.



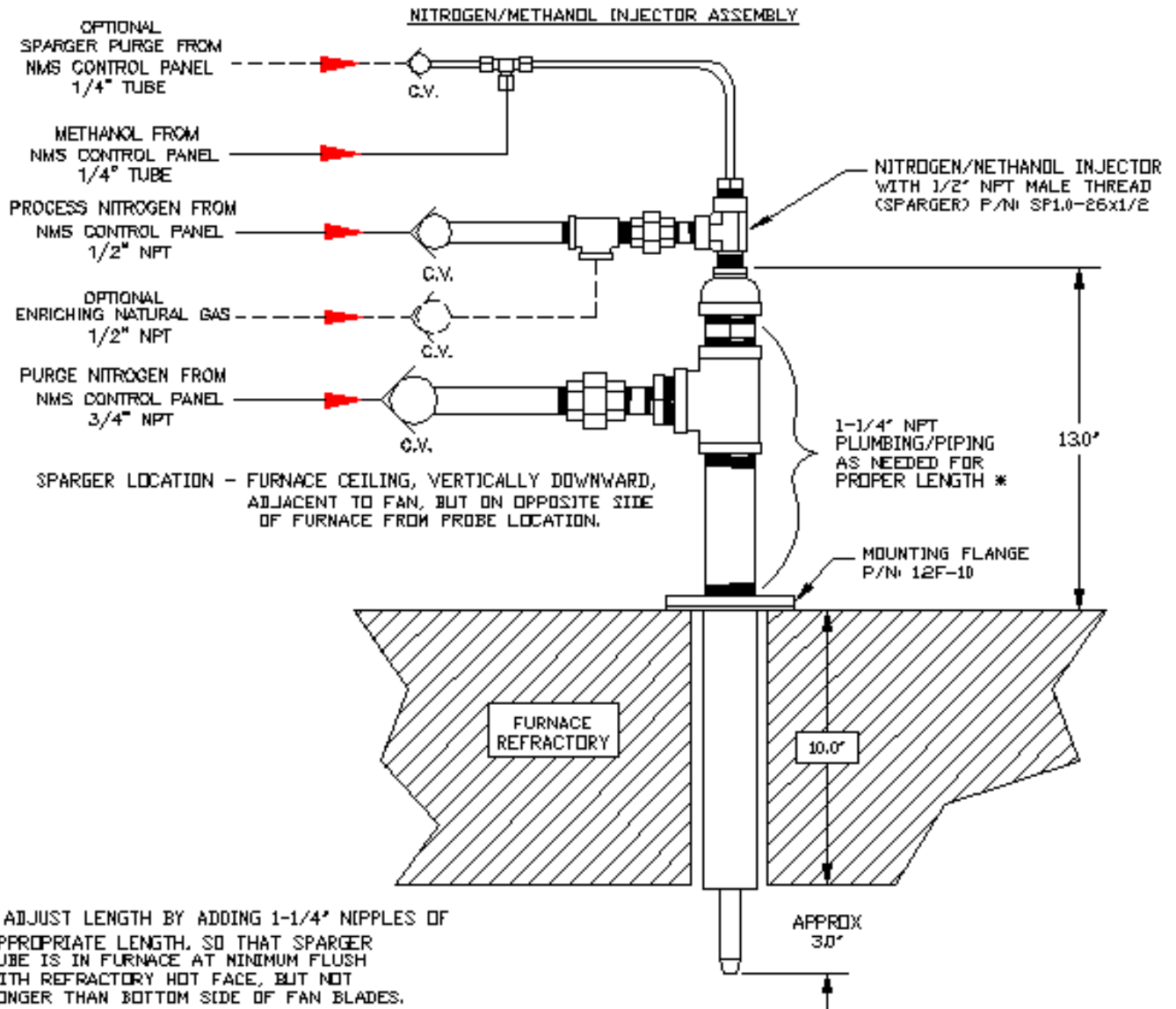
WARNING: Any electrical or mechanical modification to this equipment without prior written consent of United Process Controls will void all warranties and may result in hazardous safety conditions.

5. MAINTENANCE

The Methanol Sparger is designed to provide trouble free operation. In the event of extended absence of methanol flow, the sparger nozzle may become congested with soot and require cleaning. This is especially true if the sparger is not equipped with a Sparger Purge Valve.

To restore the methanol flow, removal of the nozzle is necessary. Once the nozzle is removed, it can be further taken apart; however, extreme care must be taken not to lose the flow diverter located inside the nozzle. Once disassembled, any degreaser can be used to clean the nozzle and its components.

6. PLUMBING DIAGRAM



7. SPARE PARTS LIST

Nozzle Only

| Description | UPC Part No. |
|-------------------------|--------------|
| 1 Gallon Sparger Nozzle | SP-1G |
| 2 Gallon Sparger Nozzle | SP-2G |
| 3 Gallon Sparger Nozzle | SP3-G |
| 5 Gallon Sparger Nozzle | SP-5G |

Sparger Complete w/ Nozzle

| Description | UPC Part No. |
|-------------------------------|--------------|
| Methanol Sparger Tube - 1 GPH | SP 1.0-26-1G |
| Methanol Sparger Tube - 2 GPH | SP 1.0-26-2G |
| Methanol Sparger Tube - 3 GPH | SP 1.0-26-3G |
| Methanol Sparger Tube - 5 GPH | SP 1.0-26-5G |

Sparger Purge Solenoid Valve

| Description | UPC Part No. |
|--------------------------|--------------|
| 1/4" N.O. Solenoid Valve | 1-3464 |

Reach us at www.group-upc.com

United Process Controls brings together leading brands to the heat treating industry including Waukee Engineering, Atmosphere Engineering, Furnace Control, Marathon Monitors i Process-Electronic.

We provide prime control solutions through our worldwide sales and services network with easy-to-access local support.

UNITED PROCESS CONTROLS INC.
5600 West Florist Avenue, Milwaukee, WI 53218, U.S.A.

Phone: +1-414-462-8200 Fax: +1-414-462-7022
Toll-Free North America +1-800-438-3347
E-mail: waukee.sales@group-upc.com

Copyright © United Process Controls Inc.



**United**
PROCESS CONTROLS



All rights to copy, reproduce and transmit are reserved