STEAMOVAP

SOS/SOE

STEAMOSORB MULTI-RAMPS

Installation and Operation Manual

Please read and save this manual

Tel.: 1-844-357-4477 • www.steamOvap.com

Rev.210102

Introduction

Foreword

Thank you for purchasing this SOS/SOE from steamOvap.
If you have questions or comments please contact us:
www.steamOvap.com
info@steamOvap.com
1-844-357-4477

Intended use

SOS/SOE steamOsorb multi-ramps steam distributor is intended exclusively to distribute steam at atmospheric pressure from steam humidifier into ventilation air duct.
Operating conditions are specified in this Installation and Operation Manual (IOM).
Operation of this steamOsorb multi-ramps in the intended use scope requires that all directions and information contained in this IOM are observed.
Any other use or operation outside the above design scope without written authorization from steamOvap may lead to trouble and hazardous conditions and will void warranty.
No alteration or modification to the **SOS/SOE** must be done without written authorization from steamOvap.
Replacement of any defective components must be done with original component and spare parts from steamOvap representative.

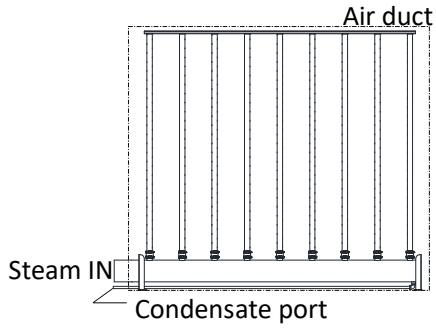
Installation and Operation Manual Limitation

This IOM is intended for trained and qualified personnel and must be applied along with the applicable local codes and regulations.
Any work related to installation or service for this humidifier must comply with local code and regulation regarding safety and prevention of accidents.

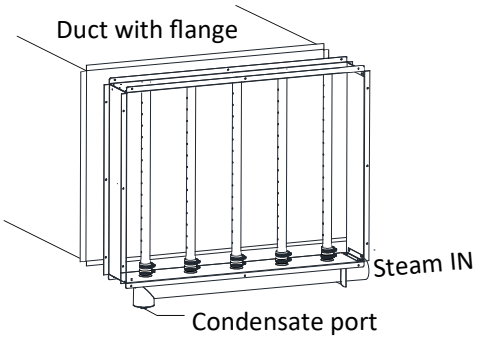
End of life disposition

Ensure that **SOS/SOE** is empty from water, if not proceed to a complete drain of its content.
Disconnect **SOS/SOE** from steam supply and condensate drain. **SOS/SOE** can then be removed from the installation.
SOS/SOE is made of stainless steel and rubber that can be recycled.
This product can be returned to the closest steamOvap authorized representative for proper dismantling, recycling and disposition of components according to local regulations.

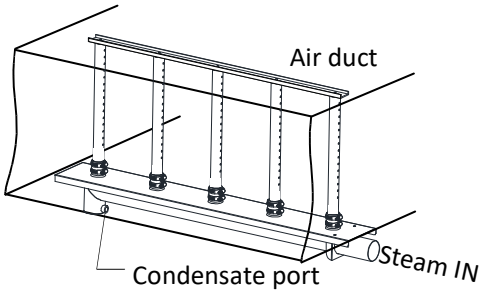
Table of content



Model SOS is steamOsorb multi-ramps steam distributor without thermal insulation.
Model SOE is the same with thermal insulation.



Option FF : Frame with flange,
With this option steam header of **SOS** or **SOE** is located outside and below the air duct.
SOS/E-FF is to be attached to duct through the provided flanges



Option FI : Frame for insertion,
with this option steam header of **SOS** or **SOE** is located outside and below the air duct.
SOS/E-FI is to be inserted into the duct from underneath.

section 0

Safety warnings

General

Any work related to installation and service of this product must comply with local code and regulation regarding safety and prevention of accidents.

Water safety warning

Any work related to steam supply, drain connection as well as condensate returns lines installation or service of this product must comply with local code and regulation regarding safety and prevention of accidents.

 **Risk of flooding.** Condensate and drain lines should not have any restriction or blockage that may cause flooding.

 **Risk of freezing**. Plan an anti-freeze system in case of installation in a location that would be exposed to outside conditions and susceptible of freezing.

Before to proceed to Installation

Please read this Installation and Operation manual before to proceed to the Installation

Receiving and Unpacking

1. Upon receipt verify that packaging is complete and not damaged.
   In case of damage, and/or missing boxes advise immediately the carrier by writing a note on the waybill.
2. Verify that model of the product matches the purchase order and that all accessories are included.
3. Any missing item should be reported as soon as possible to steamOvap or its representative and within 5 business days after receipt.
   steamOvap will not assume any responsibility for missing item after this delay.
4. Proceed carefully to unpacking, and check that the **SOS/SOE** and its accessories are not damaged. in case of damage please proceed as for point 3

SOS/SOE Overview

steamOsorb multi-ramps

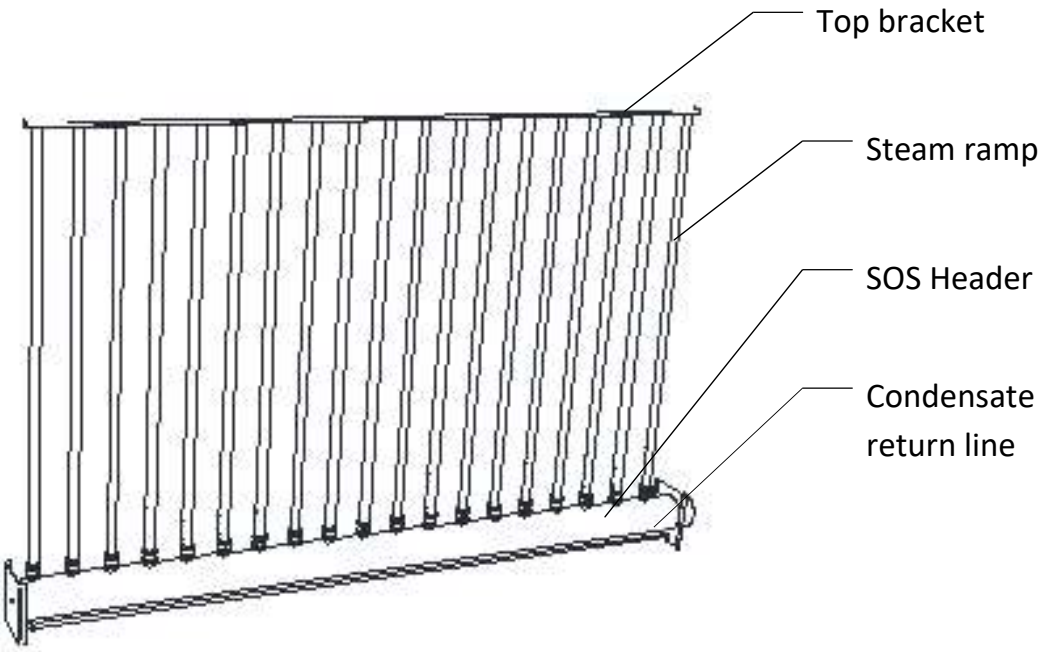


Figure 1 – SOS/SOE Overview

Principle of operation

Model SOS is steamOsorb multi-ramps steam distributor without thermal insulation.
Model SOE is the same with thermal insulation.

SOS/SOE is composed of 3 main elements:

- **SOS/SOE** Header that is connected to the steam supply and distribute the collected steam to the vertical ramps.
- **SOS/SOE** ramps which are vertical tubes with 2 rows of steam outlets distributing the steam in the ventilation air duct
- Top bracket, the vertical ramps are attached this top bracket that is also serving as a mean of attachment to the air duct walls.

Condensate should be collected through the condensate port and directed to the main building drain.

Depending on overall dimensions (typically 36x36in [90x90cm]) the SOS or SOE main element and accessories are factory assembled or to be assembled on site.

Option FF : Frame with flange, with this option steam header of **SOS** or **SOE** is located outside and below the air duct. **SOS/E-FF** is to be attached to duct through the provided flanges.
If dimensions are smaller than 36x36in [90x90cm] , the SOS/E-FF is supplied factory assembled. If bigger than 36x36in [90x90cm] the frame is supplied un-assembled and should be assembled on site.

Option FI : Frame for insertion, with this option steam header of **SOS** or **SOE** is located outside and below the air duct. **SOS/E-FI** is to be inserted into the duct from underneath.
If dimensions are smaller than 36x36in [90x90cm] , the **SOS/E-FI** is supplied factory assembled. If bigger than 36x36in [90x90cm] the frame is supplied un-assembled and should be assembled on site.

Steam distribution with SOS or SOE typical installation

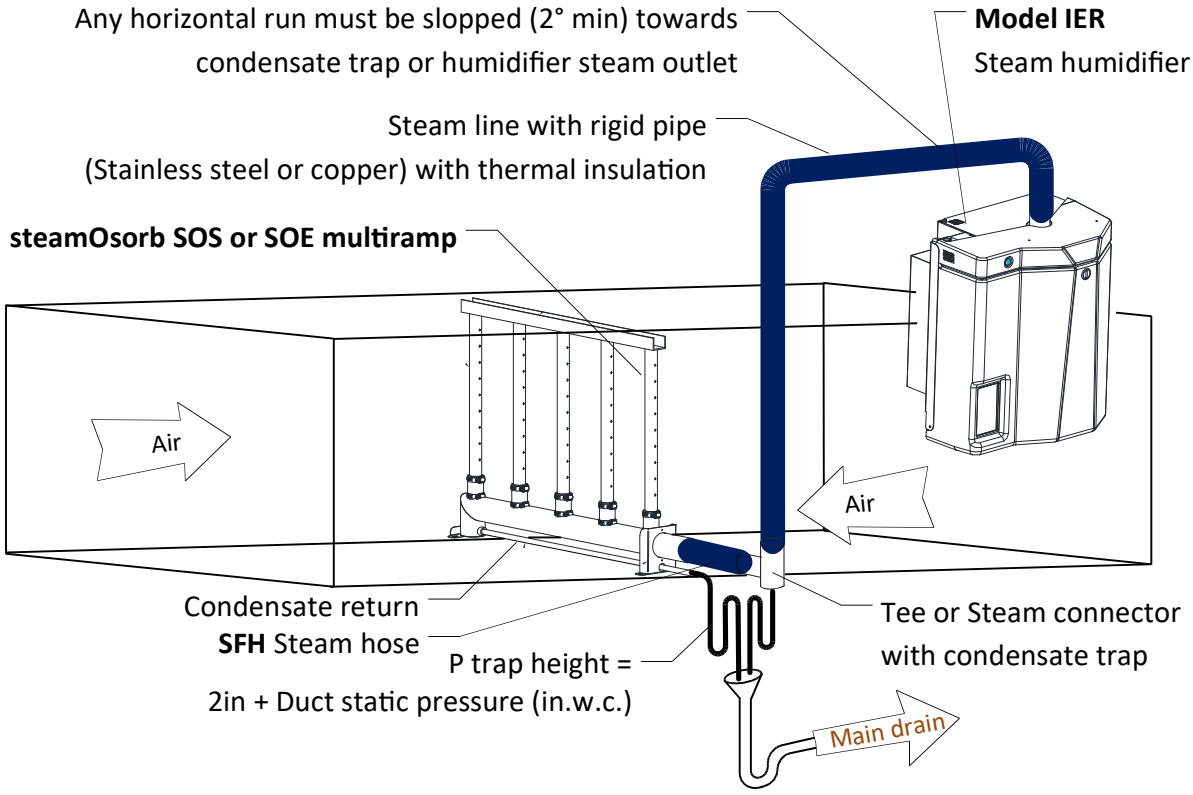


Figure 2 – SOS/SOE typical installation

Standard SOS/SOE Dimensions

SOS/SOE multi-ramps dimensions are adapted for each project and Air duct dimensions; please refer to the project's detailed drawing for exact dimension of your SOS/SOE.
Standard SOS or SOE are installed inside the air duct. Steam header is simply placed on the air duct ''floor''.

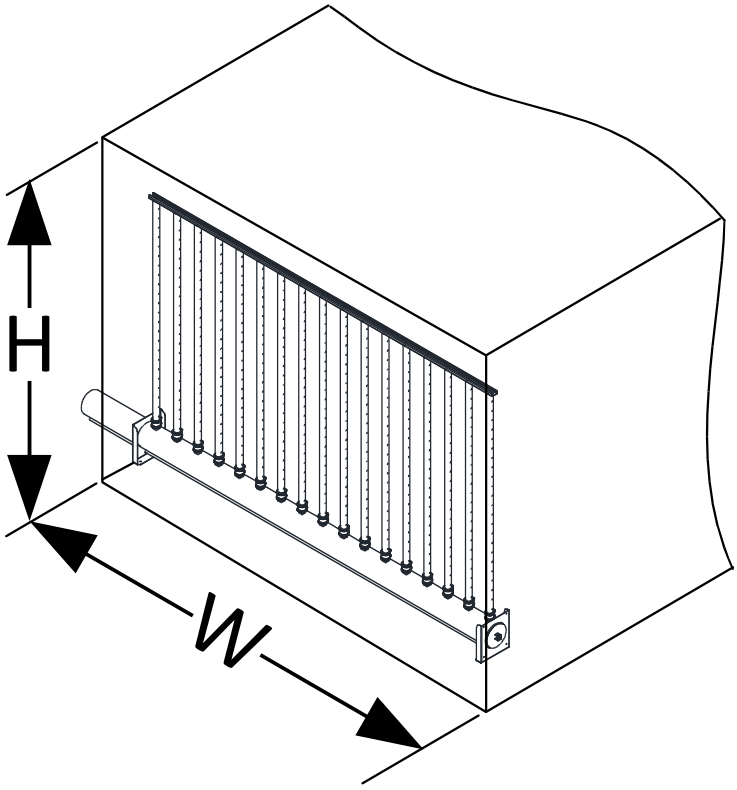


Figure 3 – SOS/SOE standard Dimensions

General rules for dimensions

Duct Width conditions	SOS/SOE Width
W Duct ≤ 24in [600mm]	W SOS/SOE=W Duct – 2x3in [76mm] minimum
24in [60mm] ≤ W Duct ≤ 48in [1200mm]	W SOS/SOE = W Duct – 2x5in [125mm] minimum
W Duct > 48in [1200mm]	W SOS/SOE = W Duct – 2x6in [150mm] minimum

Height for **SOS/SOE** = Height of Duct – 2in [50mm]
Height for **SOS/SOE** is including the steam header height.

SOS/SOE-FF or FI Dimensions

SOS/SOE-FF or FI multi-ramps dimensions are adapted for each project and Air duct dimensions; please refer to the project's detailed drawing for exact dimension of your SOS/SOE steamOsorb multiramp.
Option -FF or -FI are allowing to eliminate the dead spot caused by steam header inside the air duct, as this one is then placed outside and below the air duct

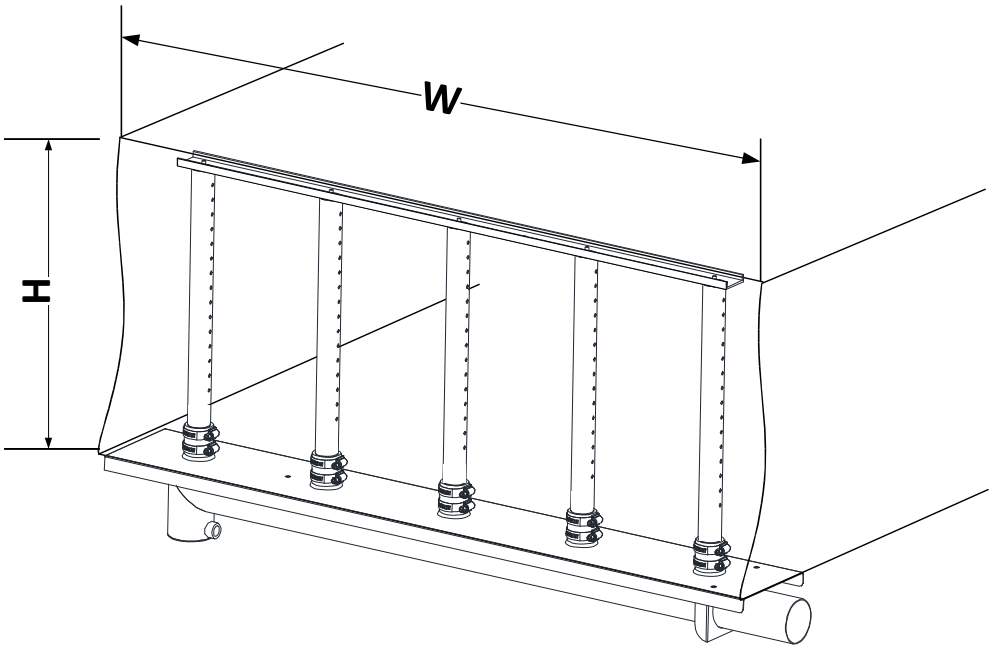


Figure 4 – SOS/SOE with option FI Dimensions

General rules for dimensions

Duct Width	SOS/SOE-FF or FI Width
W Duct ≤ 24in [600mm]	W SOS/SOE=W Duct – 2x3in [76mm] minimum
24in [60mm] ≤ W Duct ≤ 48in [1200mm]	W SOS/SOE = W Duct – 2x5in [125mm] minimum
W Duct > 48in [1200mm]	W SOS/SOE = W Duct – 2x6in [150mm] minimum

Height for SOS/SOE = Height of Duct – 1/2in [12mm]
Height for SOS/SOE-FF or FI is excluding the steam header height.

section 3

Installation

General

1. Installation of this **SOS/SOE** should be carried out by trained and qualified personnel.
2. Any work related to installation of this **SOS/SOE** must comply with local code and regulation regarding safety and prevention of accidents.
3. **SOS/SOE** for duct dimensions smaller than 36in by 36in are factory assembled and do not need assembly on site.

Standard SOS or SOE in Horizontal duct

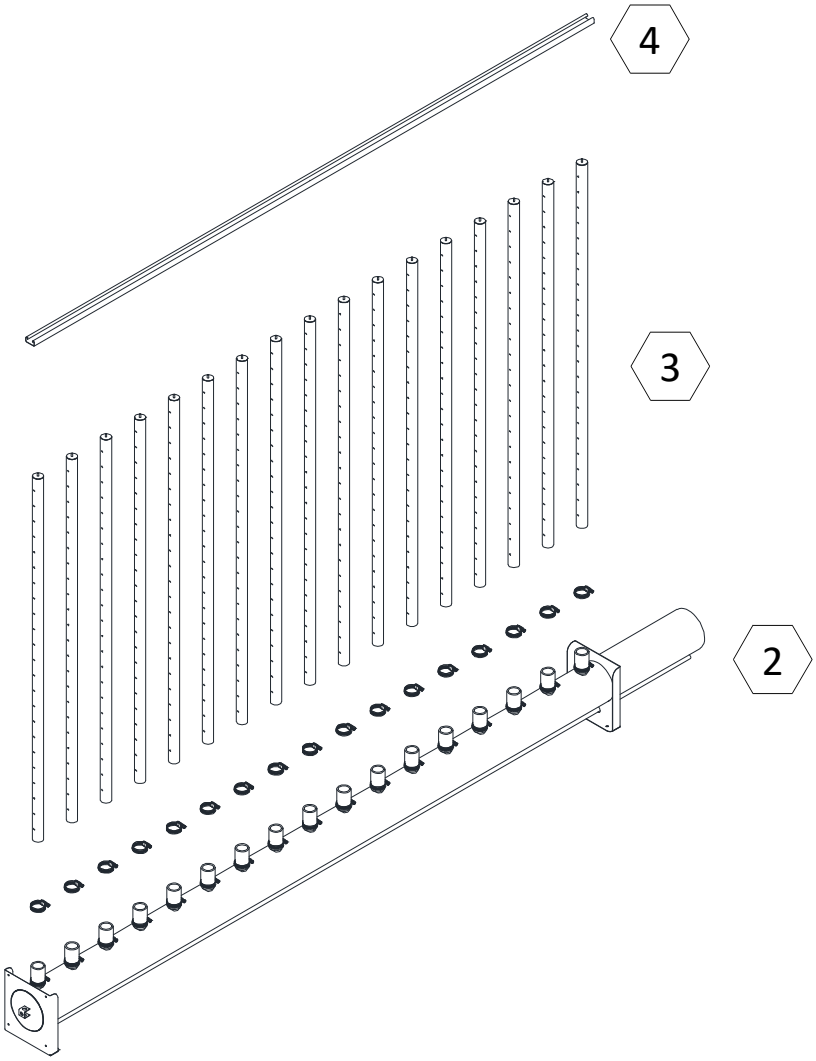


Figure 5 – SOS/SOE assembly

Installation steps (On-site assembly)

1. Plan for the positioning of the **SOS/SOE** in the air duct.
   Make sure there will be sufficient space downstream for the full absorption of the steam.

Prepare 1 or 2 openings in the air duct for the steam connection and for the condensate line. Condensate line can be located below the **SOS/SOE** header or a line can be returned below end next to the steam inlet.

2. Install the **SOS/SOE** Header into the air duct.
   in a horizontal duct the Header should be installed on the air duct floor.
   Header is supplied with front and end bracket to allow for easy installation.
   Position and attach those 2 brackets to the Duct floor with bolts or screws (not supplied)
3. Install the vertical ramps onto the muffs connections already attached to the **SOS/SOE** Header.
   Make sure that the steam outlets are positioned perpendicular to the air flow.

Figure 6 – steam outlets should be perpendicular to air flow

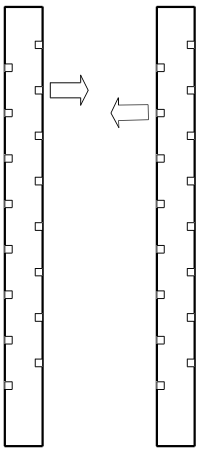


Figure 7 – steam outlets should be staggered

Ensure that the steam outlets are staggered to each other's in between ramps.
Once properly positioned, prepare the clamps on the muffs connections; do not tighten the clamps yet.

4. Install the top bracket onto the vertical ramps, and secure it with the provided nuts.
   At this point you can verify proper position of the vertical steam ramps and tighten all the muffs clamps.
   Attach the top bracket to the air duct walls.

5. Connect the steam supply line to the steam inlet of **SOS/SOE** Header.
   It is a good practice to install a piece interconnection hose in between steam supply rigid line and the steam inlet of the **SOS/SOE** Header.
6. Connect the condensate line.
   Make sure that the condensate line is equipped with a P-trap of sufficient height.
   Condensate P-trap height should be 2in [50mm] +air duct static pressure measured in inch of water column [mm of water column].
   Ensure that the condensate line is made of material compatible to hot water (212°F [100°C]).
   Refer to Figure 2 – SOS/SOE typical installation

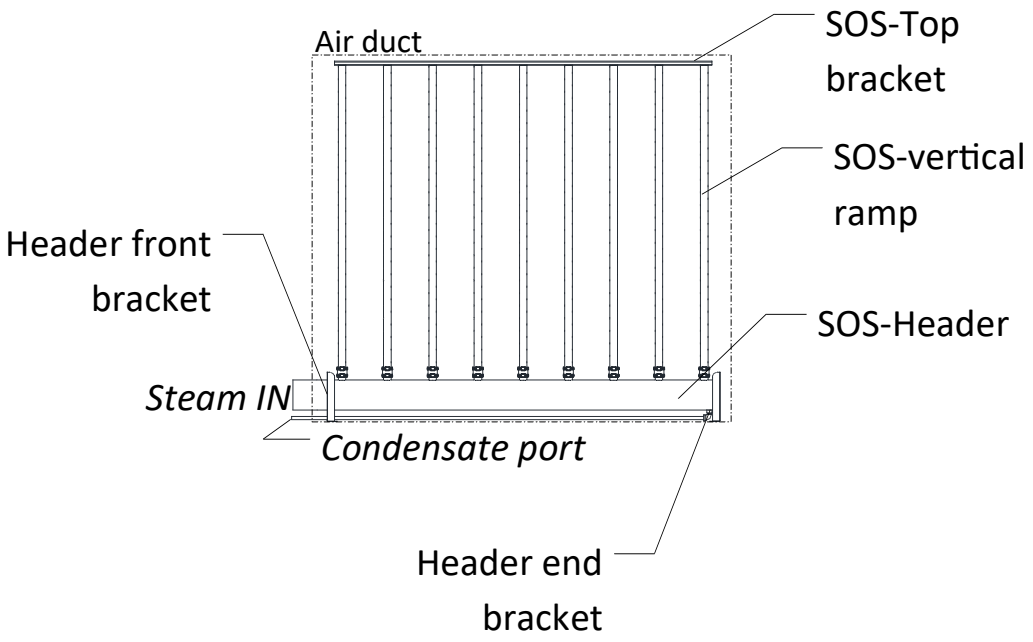


Figure 8 – SOS/SOE in horizontal duct

Installation steps (factory assembled SOS/SOE)

1. Plan for the positioning of the **SOS/SOE** in the air duct.
   Make sure there will be sufficient space downstream for the full absorption of the steam.
2. Prepare 1 or 2 openings in the air duct for the steam connection and for the condensate line. Condensate line can be located below the **SOS/SOE** header or a line can be returned below end next to the steam inlet.
3. Slide in the **SOS/SOE** assembly into the air duct.
   Header is supplied with front and end bracket to allow for easy installation.
   Position and attach those 2 brackets to the Duct floor with bolts or screws (not supplied)
4. Attach the top bracket to the air duct walls.
5. Connect the steam supply line to the steam inlet of **SOS/SOE** Header.
   It is a good practice to install a piece interconnection hose in between steam supply rigid line and the steam inlet of the **SOS/SOE** Header.
6. Connect the condensate line.
   Make sure that the condensate line is equipped with a P-trap of sufficient height.
   Condensate P-trap height should be 2in [50mm] +air duct static pressure measured in inch of water column [mm of water column].
   Ensure that the condensate line is made of material compatible to hot water (212°F [100°C]).
   Refer to Figure 2 – SOS/SOE typical installation

SOS or SOE-FI in Horizontal duct

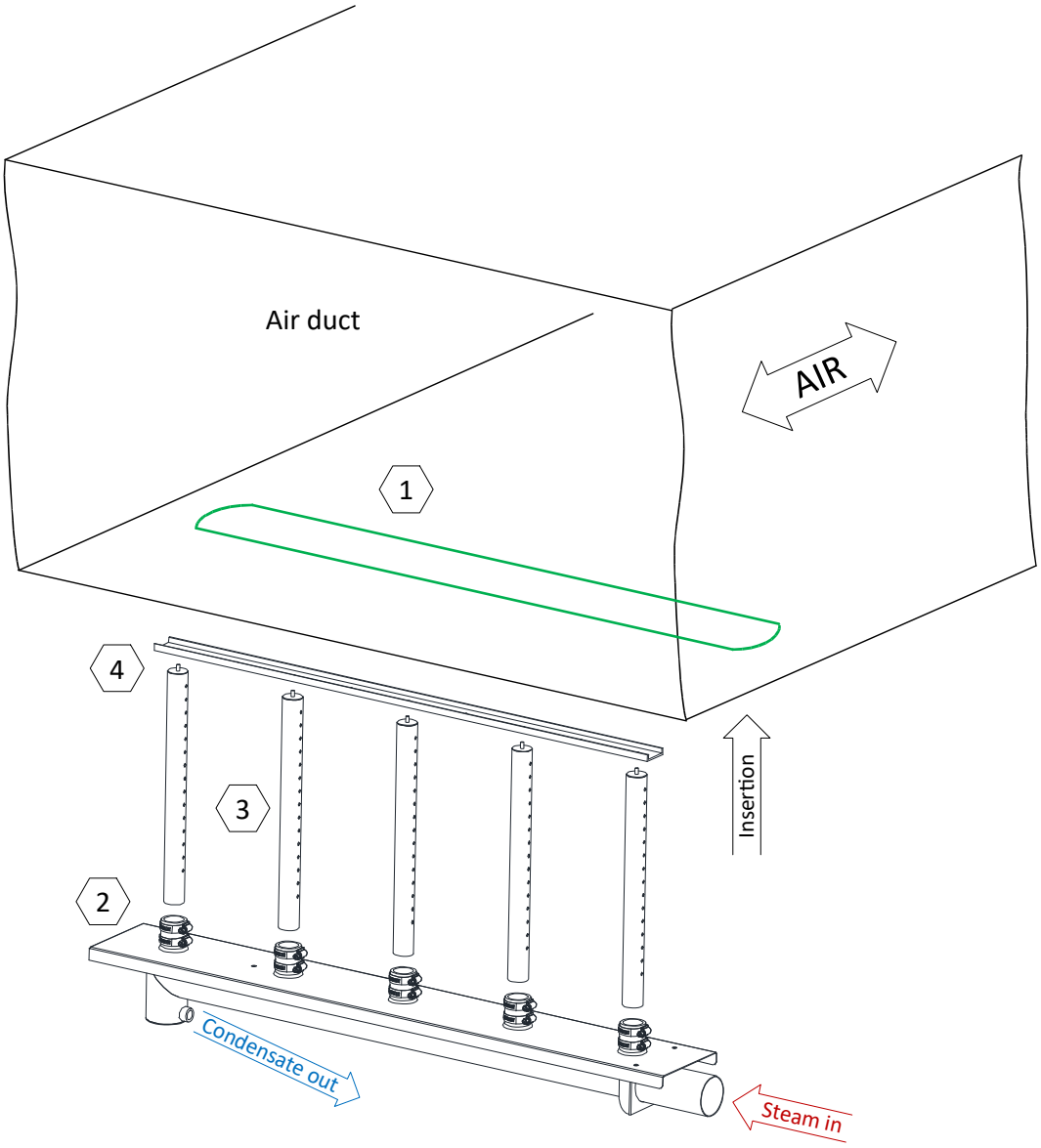


Figure 9 – SOS/SOE-FI installation

Installation steps

1. Plan for the positioning of the **SOS/SOE-FI** in the air duct.
   Make sure there will be sufficient space downstream for the full absorption of the steam.
   Prepare one opening in the air duct bottom plate to be able to insert the SOS or SOE-FI from underneath the duct.
2. Install the **SOS/SOE-FI** Header underneath the air duct and attach it with the supplied brackets.
3. Install the vertical ramps onto the muffs connections already attached to the **SOS/SOE-FI** Header.
   Make sure that the steam outlets are positioned perpendicular to the air flow.
   Ensure that the steam outlets are staggered to each other's in between ramps.
   Once properly positioned, prepare the clamps on the muffs connections; do not tighten the clamps yet.

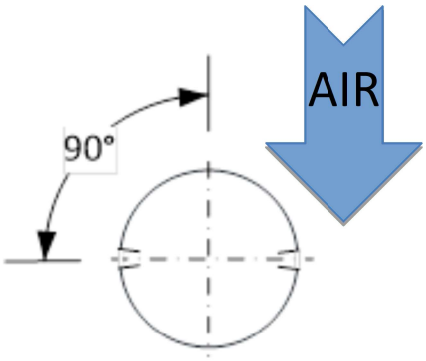


Figure 10 – steam outlets should be perpendicular to air flow

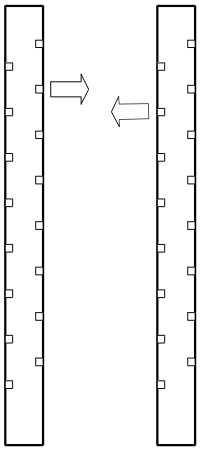


Figure 11 – steam outlets should be staggered

4. Install the top bracket onto the vertical ramps, and secure it with the supplied lock washers and nuts.
   At this point you can verify proper position of the vertical steam ramps and tighten all the muffs clamps.
   Attach the top bracket to the air duct walls.

5. Connect the steam supply line to the steam inlet of **SOS/SOE-FI** Header.
   It is a good practice to install a piece interconnection hose in between steam supply rigid line and the steam inlet of the **SOS/SOE** Header.
6. Connect the condensate line.
   Make sure that the condensate line is equipped with a P-trap of sufficient height.
   Condensate P-trap height should be 2in [50mm]+air duct static pressure measured in inch of water column [mm of water column].
   Ensure that the condensate line is made of material compatible to hot water (212°F [100°C]).
   Refer to Figure 2 – SOS/SOE typical installation

SOS or SOE-FF in Horizontal duct

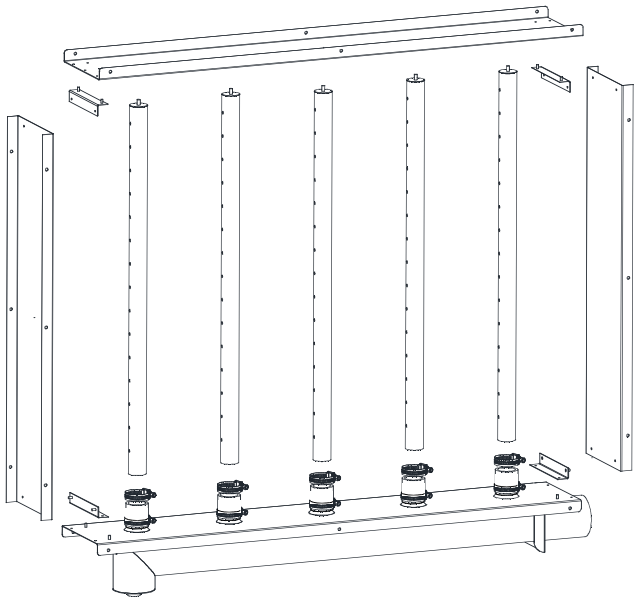


Figure 12 – SOS/SOE-FF installation

Installation steps

1. If **SOS/SOE-FF** is delivered un-assembled, proceed to its assembly, as per the below steps and exploded view:
    a. Install the 2 side frames with flange on the **SOS/SOE-FF** header. Attach them by using the 2 L brackets supplied.
    b. Install the vertical tubes onto the header and prepare the clamps on the muffs connections; do not tighten the clamps yet.
    Ensure that the steam outlets are staggered to each other's in between ramps.
    c. Install the top frame on the top of the tubes and the 2 side frames, install the lock washers and brass nuts supplied.
    Verified proper orientation and position of the vertical ramps and tighten the clamps on the muffs connections.
    Finish the assembly by installing the 2 top L brackets in each corner
    d. Ensure that all parts are tightened up.

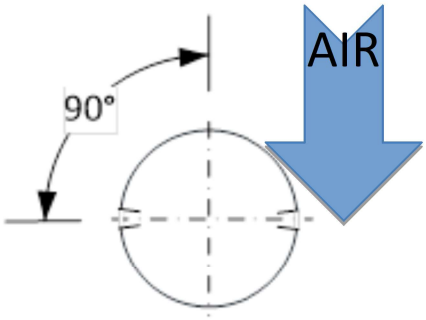


Figure 13 – steam outlets should be perpendicular to air flow

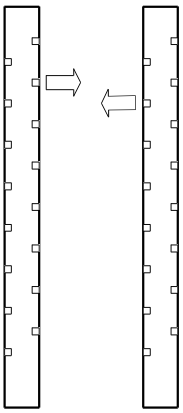


Figure 14 – steam outlets should be staggered

2. Plan for the positioning of the **SOS/SOE-FF** in the air duct.
   Make sure there will be sufficient space downstream for the full absorption of the steam.
3. Install the **SOS/SOE-FF** on the flange from air duct and bolt it to the duct.
   Ensure that the joint is sealed as per the duct manufacturer requirement.

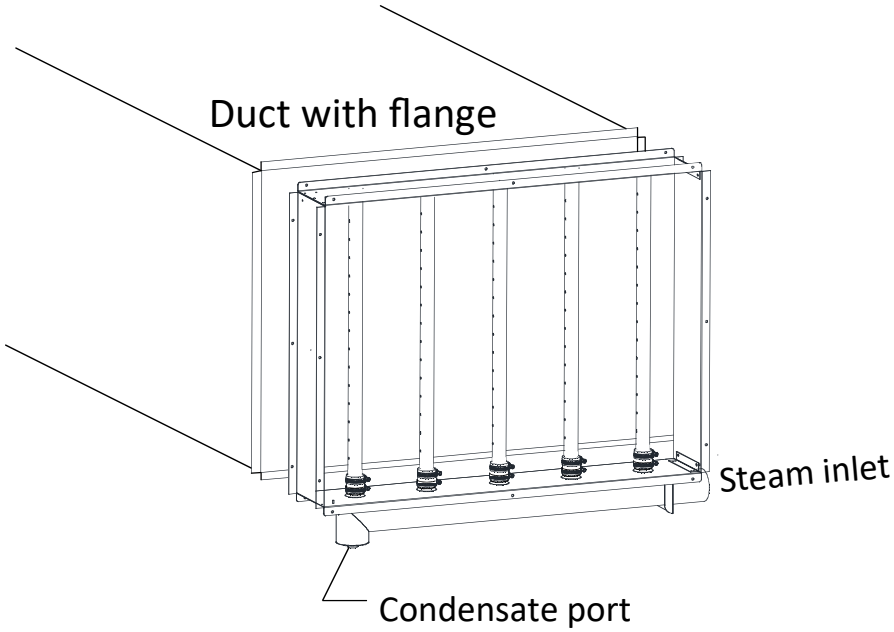


Figure 15 – SOS/SOE-FF on a duct with flange

4. Connect the steam supply line to the steam inlet of **SOS/SOE-FF** Header.
   It is a good practice to install a piece of interconnection hose in between steam supply rigid line and the steam inlet of the **SOS/SOE** Header.

5. Connect the condensate line.
   Make sure that the condensate line is equipped with a P-trap of sufficient height.
   Condensate P-trap height should be 2in [50mm] +air duct static pressure measured in inch of water column [mm of water column].
   Ensure that the condensate line is made of material compatible to hot water (212°F [100°C]).
   Refer to Figure 2 – SOS/SOE typical installation

SOS or SOE in vertical duct

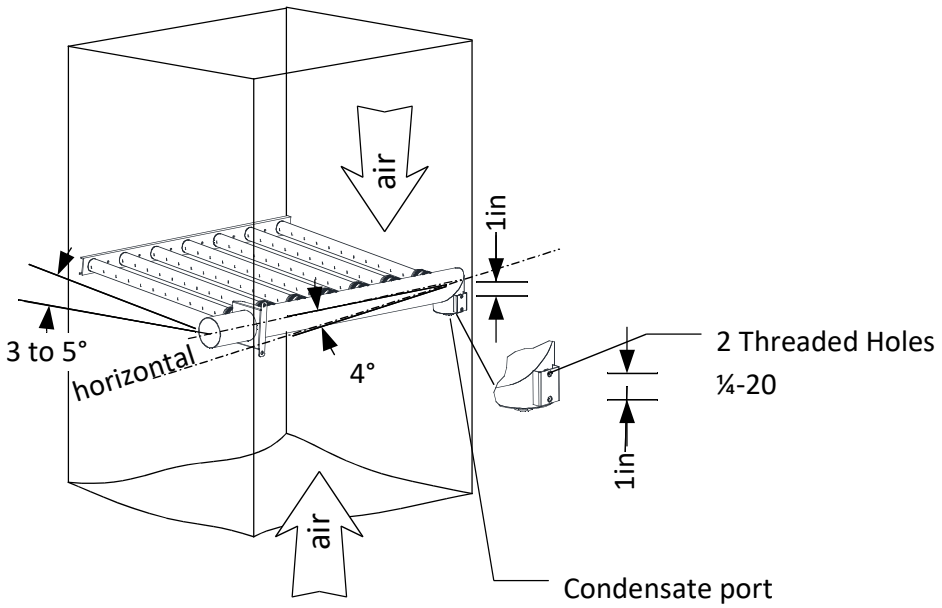


Figure 16 – SOS/SOE in vertical duct installation

Installation steps

1. If **SOS/SOE for vertical duct is delivered** assembled,
2. IMPORTANT NOTE
   a 3 to 5° slope must be provided for the steam ramp to the header
   SOS/SOE is designed and produced to ensure the header is sloped with 4° angle towards the condensate port. This 4° angle must be respected during installation

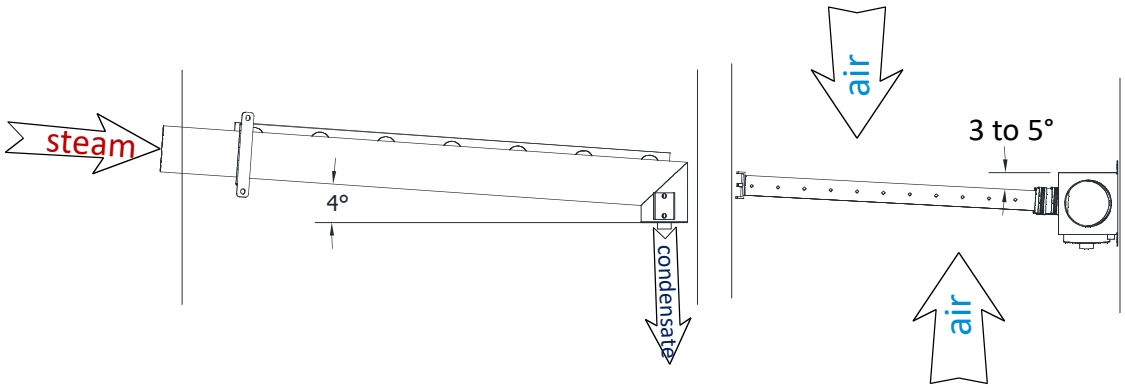


Figure 17 – Slopes in header and steam ramps

3. Access door into the vertical duct should be provided
4. Plan carefully for the position of the SOS/SOE steam ramps so that access is optimal and slopes (see above) are ensured.
5. Cut a round hole opening into side wall of the duct to the OD of the Header.

6. Measure up and drill the 2 holes for 2 1/4-20 screws located at the opposite of the header inlet
   refer to provided drawing prepared for the project and included in the package for the exact dimensions
7. Slide in the SOS/SOE assembled into the duct and insert the header inlet through the opening made in the duct.
   Install the 2 screws (1/4-20) (supplied) in the end bracket.
8. Attach the top bracket to the duct wall opposite to the SOS/SOE header
   Ensure that a 3 to 5° angle slope down to the header is provided for the steam distribution ramps
9. Attach the header front bracket with bolts (by others) to the duct wall

10. Connect the steam supply line to the steam inlet of **SOS/SOE** Header.
    It is a good practice to install a piece interconnection hose in between steam supply rigid line and the steam inlet of the **SOS/SOE** Header.

11. Connect the condensate line.
    Make sure that the condensate line is equipped with a P-trap of sufficient height.
    Condensate P-trap height should be 2in [50mm] +air duct static pressure measured in inch of water column [mm of water column].
    Ensure that the condensate line is made of material compatible to hot water (212°F [100°C]).
    Refer to Figure 2 – SOS/SOE typical installation

Condensate drained specification:

Drained water temperature: 212°F [100°C]

Service

SOS/SOE is maintenance free

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Information contain in this manual are subject to change without notice.
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