HMHT Ducting System

Mechanical Installation Guide

To re-order quote part number:	HD0822
Revision:	1.0.0
Revision date:	April 2018

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CUSTOMER RESPONSIBILITY

The customer in applying the product described in this documentation accepts that the product is a programmable electronic system which is inherently complex and which may not be completely free of errors. In doing so the customer therefore undertakes responsibility to ensure that the product is properly installed commissioned operated and maintained by competent and suitably trained persons and in accordance with any instructions or safety precautions made available or good engineering practice and to thoroughly verify the use of the product in the particular application.

ERRORS IN DOCUMENTATION

The product described in this documentation is subject to continuous development and improvement. All information of a technical nature and particulars of the product and its use including the information and particulars contained in this documentation are given by Hydronix in good faith.

Hydronix welcomes comments and suggestions relating to the product and this documentation

ACKNOWLEDGEMENTS

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Revision history

Revision No	Date	Description of Change
1.0.0	April 2018	First Release

Table of Contents

Table of Figures

1 HMHT Ducting System

The HMHT Ducting System has been designed to maintain a stable material flow over the Hydronix Hydro-Mix HT Microwave Moisture Sensor. The Ducting is available in two models: Vertical and Angled. The HMHT Ducting System Vertical is designed to be installed in an existing Vertical duct. The HMHT Ducting System Angled has been designed to be installed in ducting at between 30-50° to the vertical. Both HMHT Ducting Systems have been designed for use in process temperatures of up to 120°C

The HMHT Ducting System must remain full at all times when the material is flowing with any excess material over flowing. Three different sized outlet baffles are supplied (50mm, 70mm and 100mm) to enable the flow rate to be adjusted to achieve a stable consistent flow.

2 HMHT Ducting System Vertical

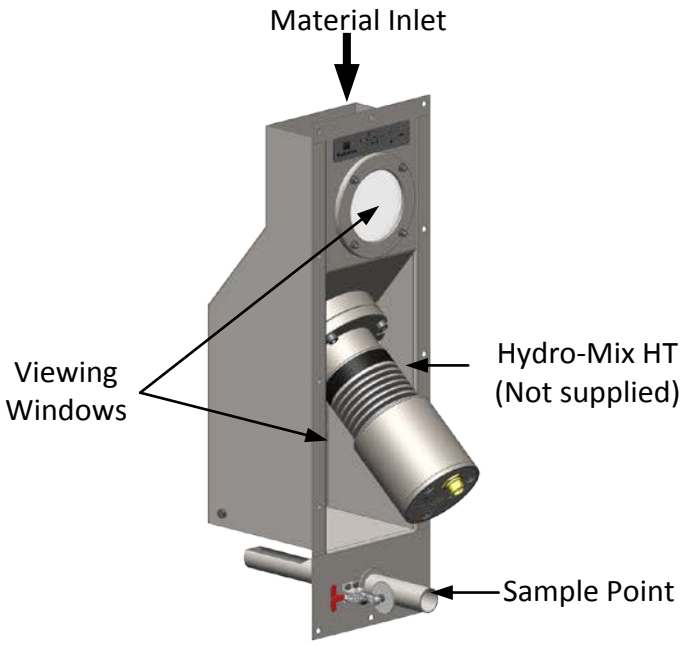

Figure 1: HMHT Ducting System Vertical - Overview

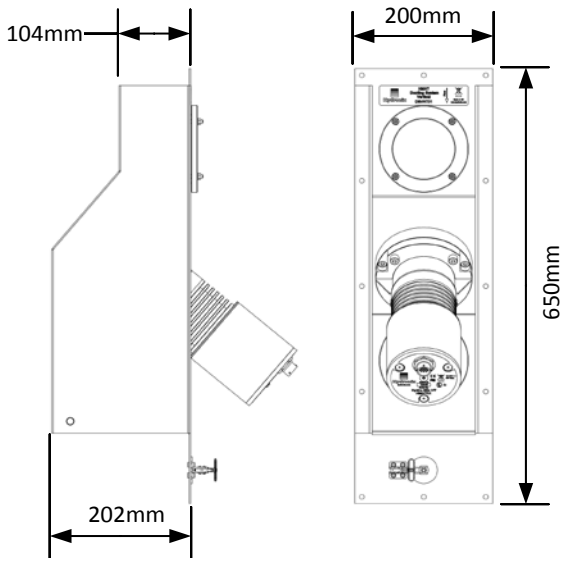

Figure 2: HMHT Ducting System Vertical - Dimensions

3 HMHT Ducting System Angled

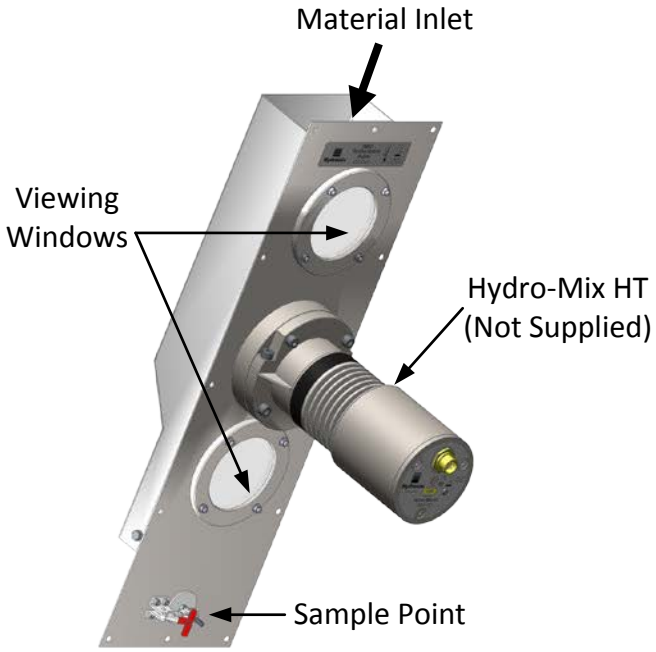

Figure 3: HMHT Ducting System Angled - Overview

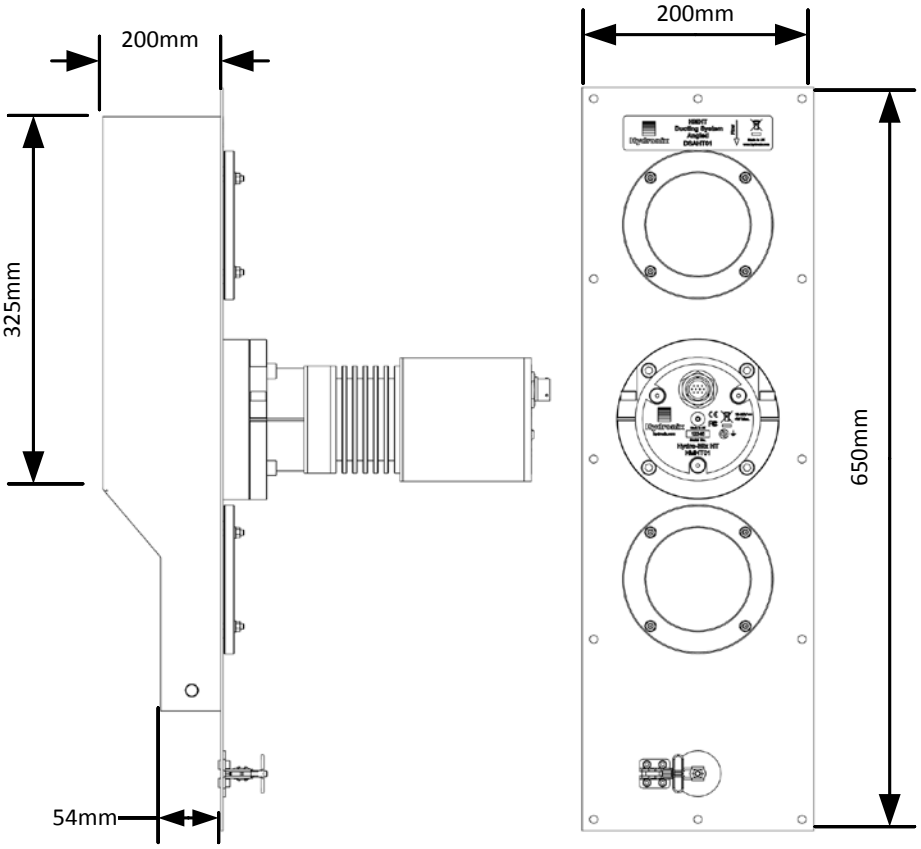

Figure 4: HMHT Ducting System Angled - Dimensions

4 Installation Method

4.1 Cut Out (applies to both models)

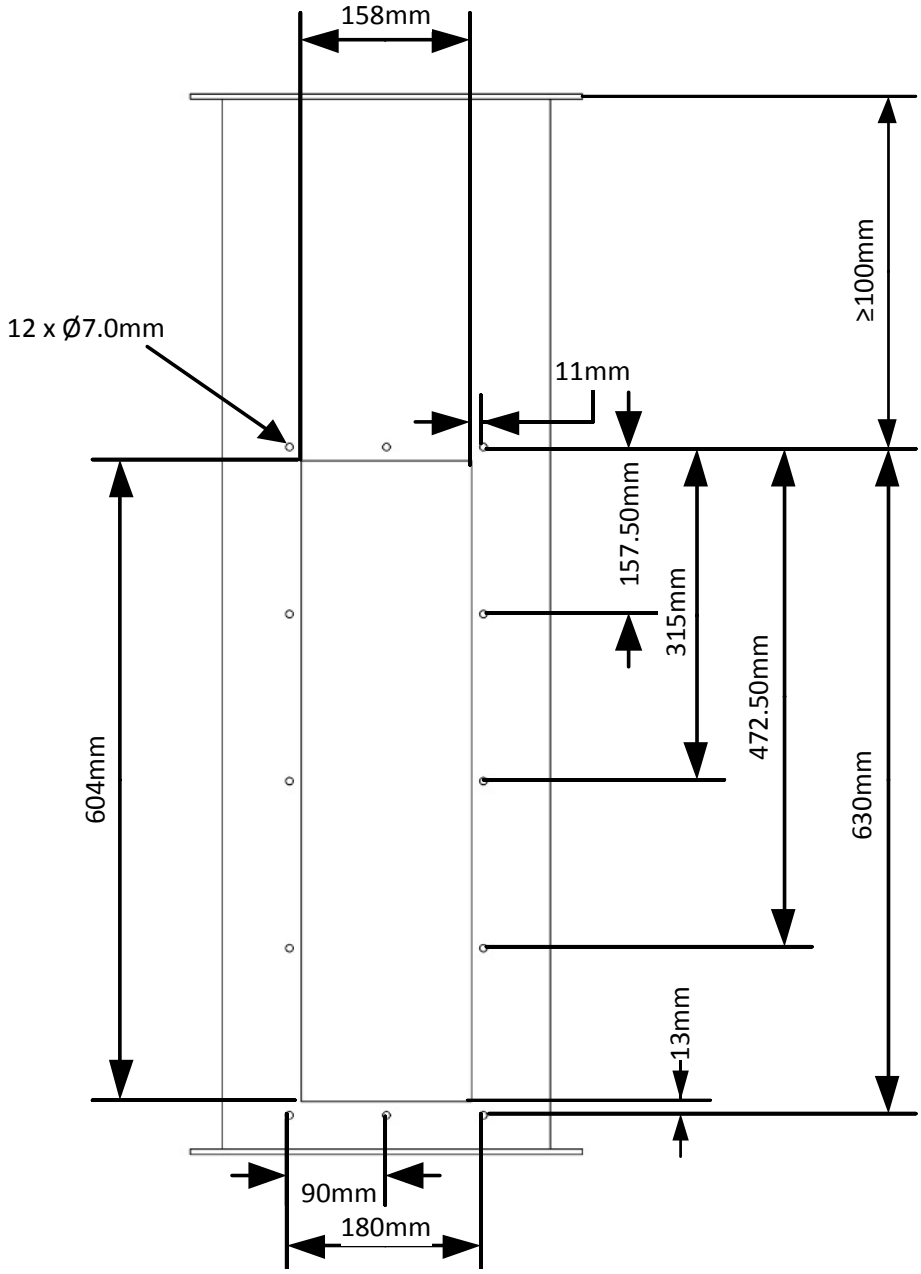

Figure 5: Cut Out Dimensions

4.2 Installing the Ducting System

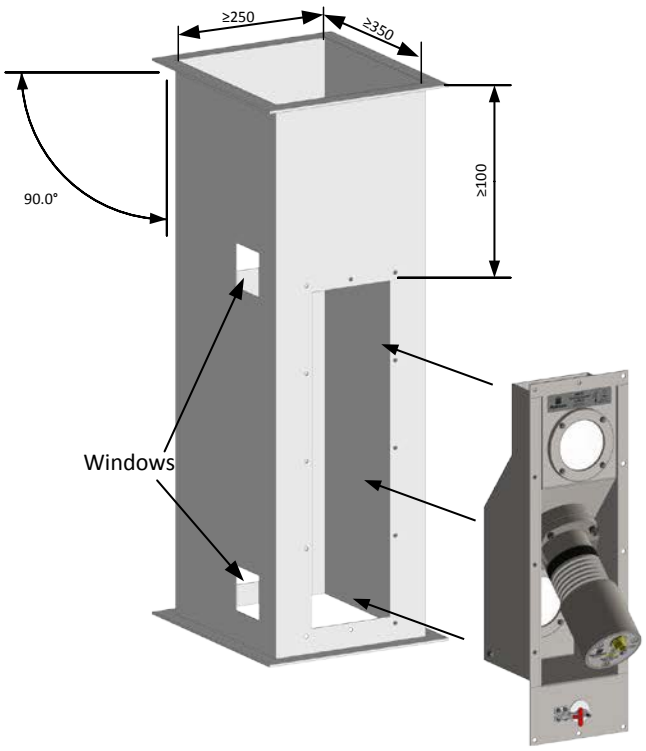

Figure 6: HMHT Ducting System Vertical - Installation

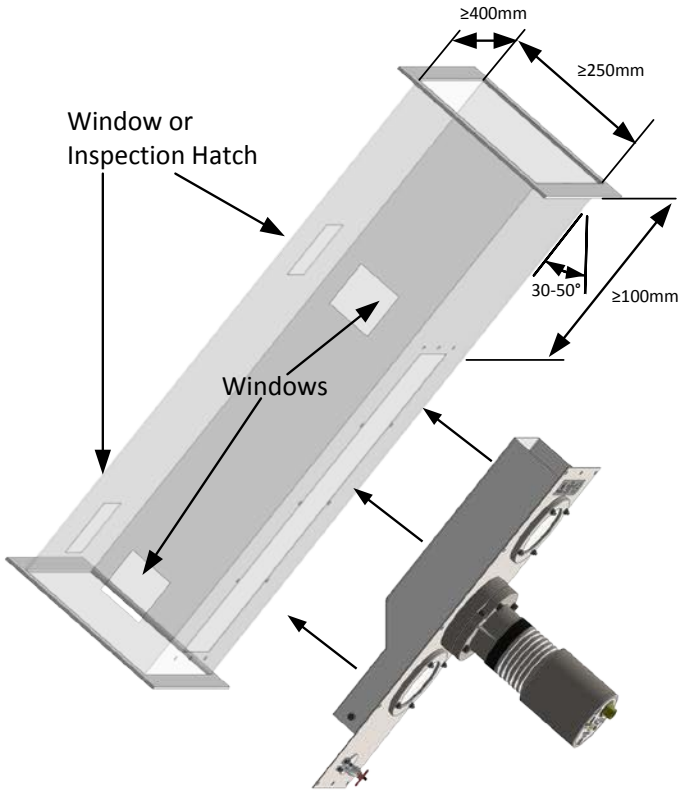

Figure 7: HMHT Ducting System Angled - Installation

4.3 Installing the HMHT Ducting System into a Round Duct

To maintain a stable material flow over the sensor when the existing ducting is round the following installation methods are recommended.

Ensure all transitions from round to square duct are smooth to avoid material flow disruptions.

4.3.1 HMHT Ducting System Vertical

Note: The Material Inlet and the Round to Square Duct Transition are not supplied by Hydronix

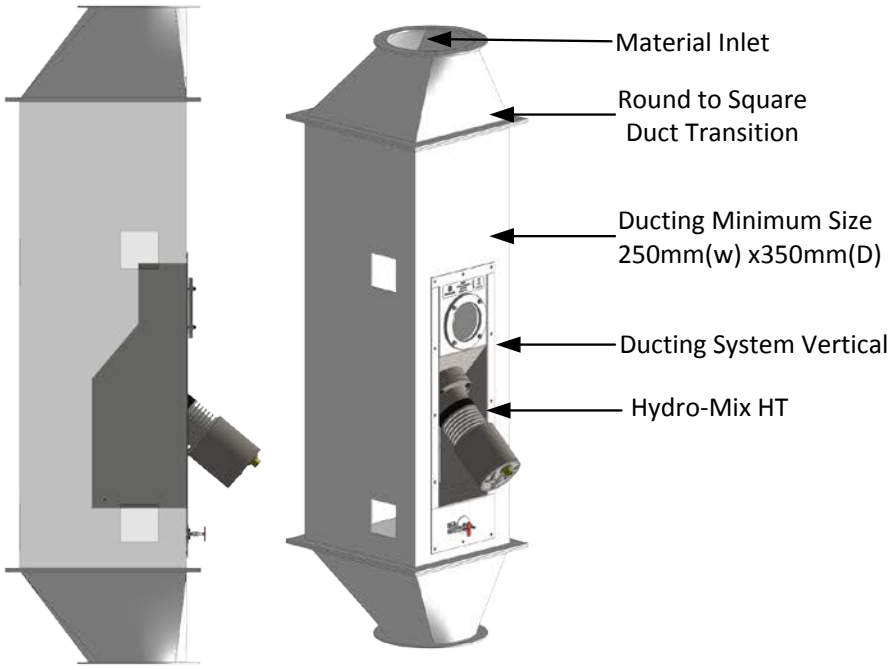

Figure 8: HMHT Ducting System Vertical - Round Duct Installation

4.3.2 HMHT Ducting System Angled

Note: The Material Inlet and the Round to Square Duct Transition are not supplied by Hydronix

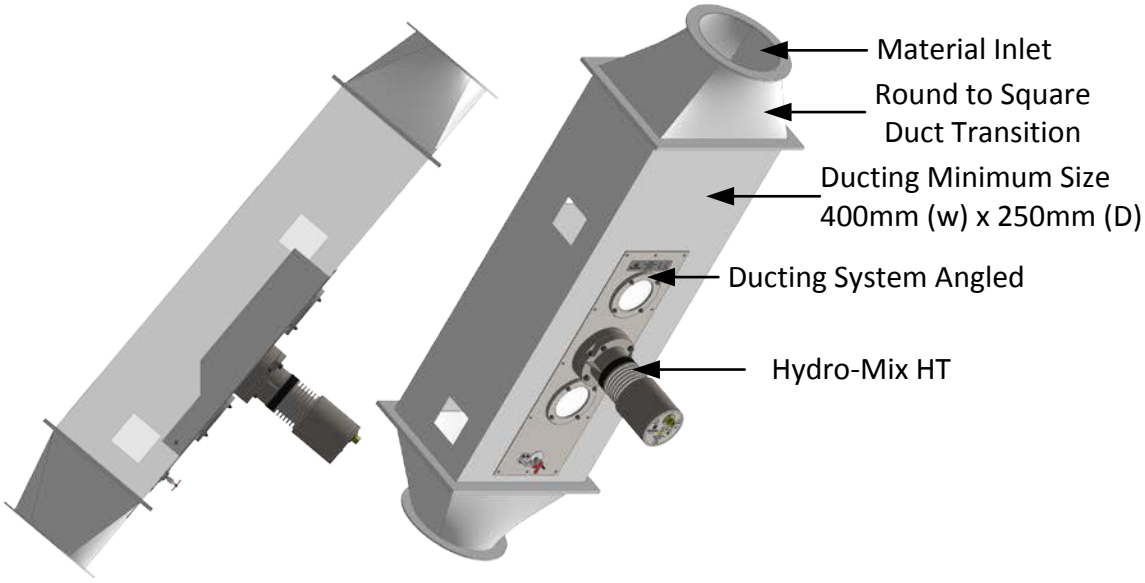

Figure 9: HMHT Ducting System Angled - Round Duct Installation

4.4 Installing the Sensor

To ensure the sensor is installed flush with the inside wall of the HMHT Ducting System, Spacer Plates are supplied with the HMHT Clamp Ring. Install the Spacer Plates, as shown in Figure 10, to the Clamp ring. Do not fully tighten the Clamp Ring Bolts.

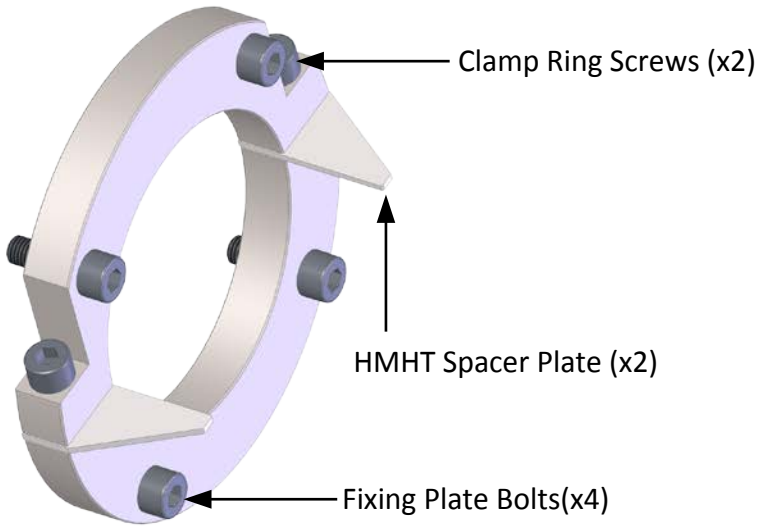

Figure 10: Installing the Spacer Plates

Install the Clamp Ring onto the HMHT and ensure the Spacer Plates are touching the ridge on the sensor. Tighten the Clamp Ring Screws to lock the Clamp Ring into place (Figure 11).

Figure 11: Installing the Clamp Ring

Install the sensor into the HMHT Ducting System (Figure 12). Tighten the 4 Fixing Plate Bolts. Ensure the Clamp Ring is in contact with the Fixing Plate. The ceramic sensing face of the sensor should be flush with the internal wall of the HMHT Ducting System. If it is not flush check that the Clamp Ring is fully inserted onto the sensor.

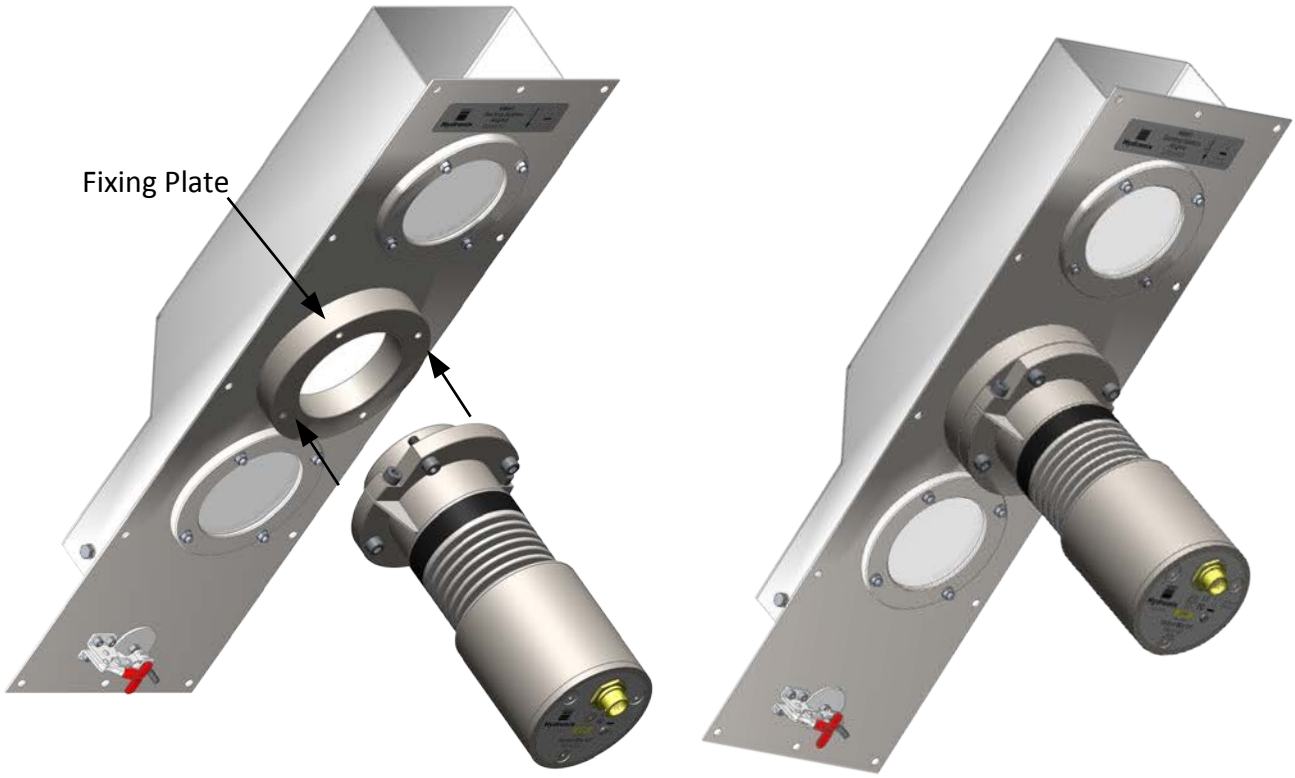

Figure 12: Installing the Sensor

The Hydro-Mix HT should be orientated so the cable connector is positioned top centre with the serial number label horizontal (Figure 13).

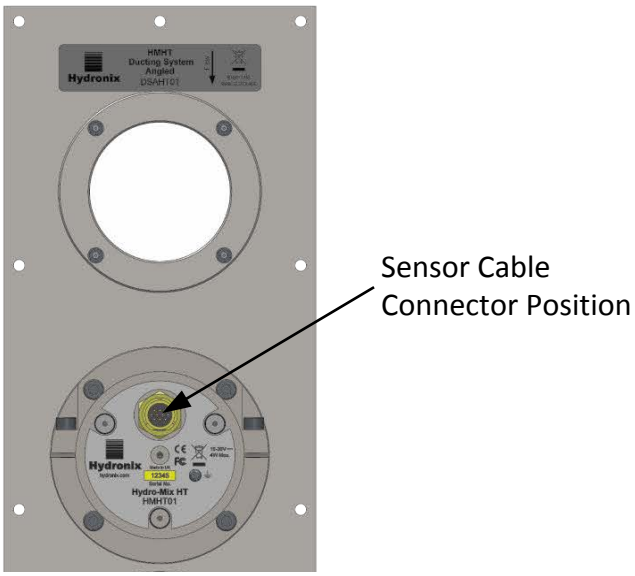

Figure 13: Sensor Orientation

5 Commissioning

5.1 Adjusting the outlet flow rate

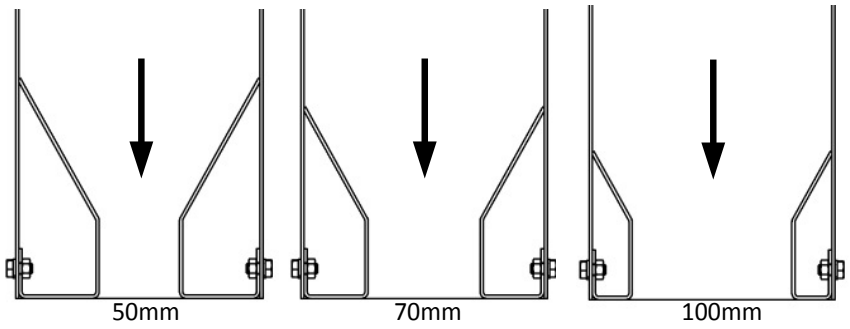

Figure 14: Outlet Baffles (3 pairs supplied)

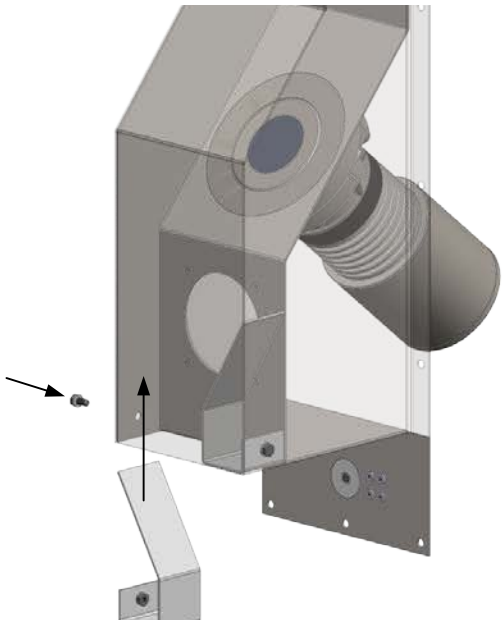

Figure 15: Installing the Baffles

6 Material Flow

6.1 Ideal Material Flow

An ideal material flow will ensure that the HMHT Ducting System remains full at all times with excess material overflowing (Figure 16 and Figure 17). The outlet of the HMHT Ducting system must not be restricted. Enough space must be provided to ensure that the overflowing material is able to flow without restriction.

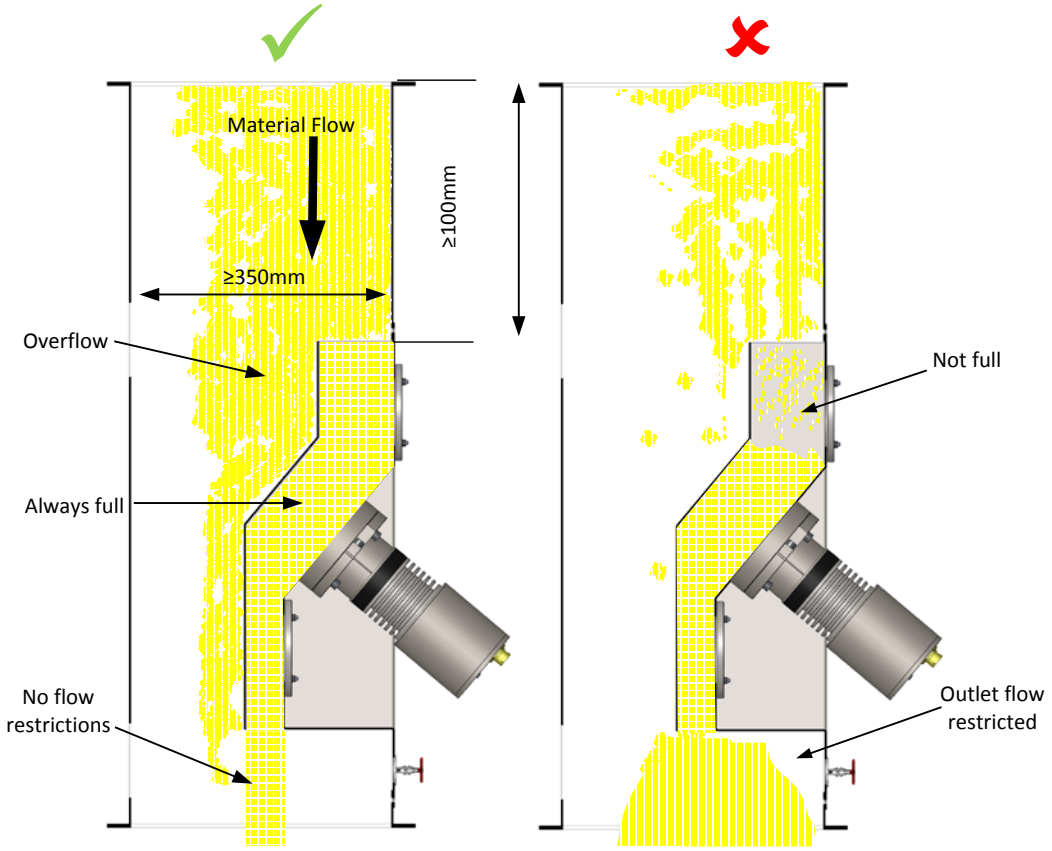

Figure 16: HMHT Ducting System Vertical - Material Flow

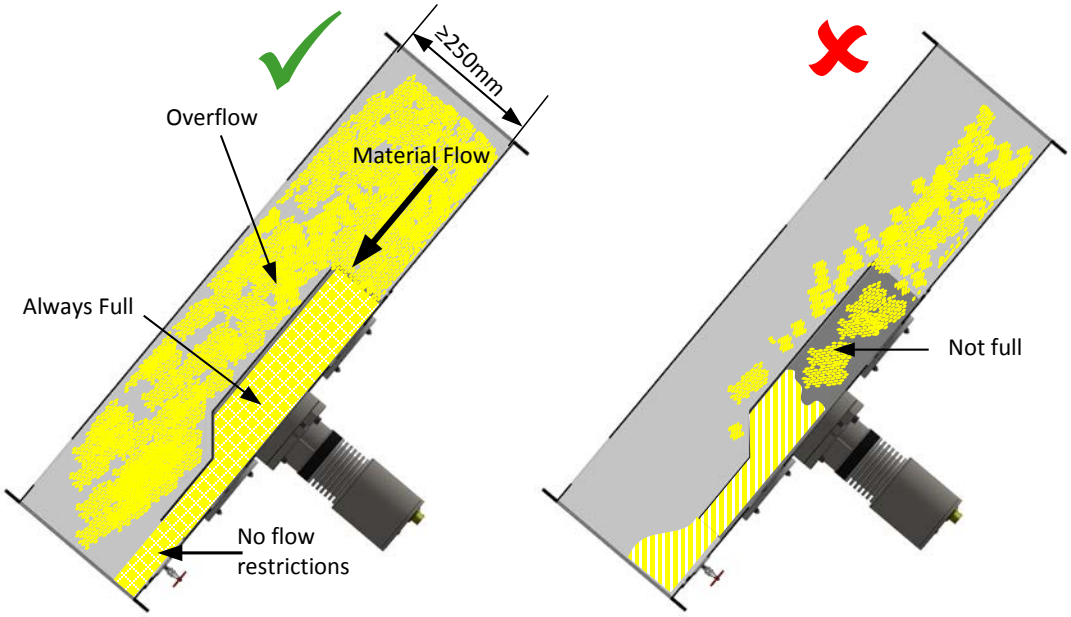

Figure 17: HMHT Ducting System Angled - Material Flow

6.2 Visual Check on Material flow

A visual check of the two viewing windows will indicate if the material flow is sufficient to keep the HMHT Ducting System full at all times.

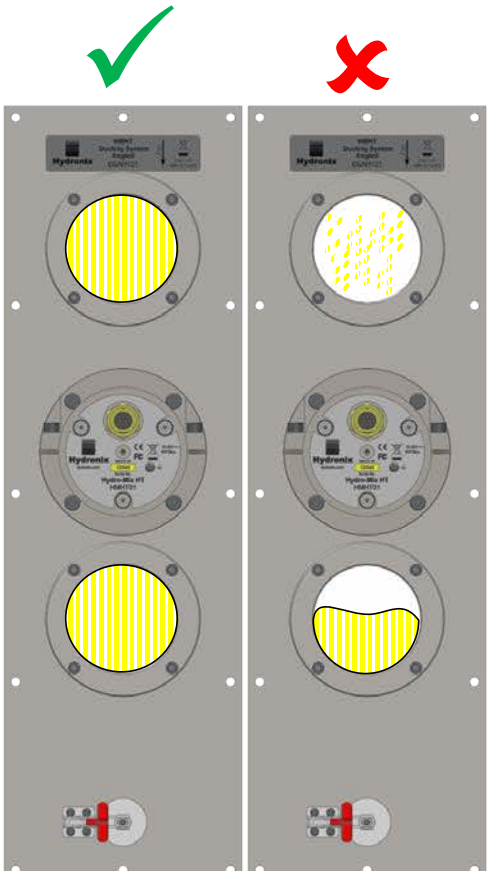

Figure 18: Checking Material Flow using the Viewing Windows

6.3 Directing Material Flow

If the material flow towards the HMHT Ducting System is not sufficient to keep it full a diverter can be used to direct the material flow (Figure 19). The design and position of the diverter would be specific to the installation (not supplied by Hydronix).

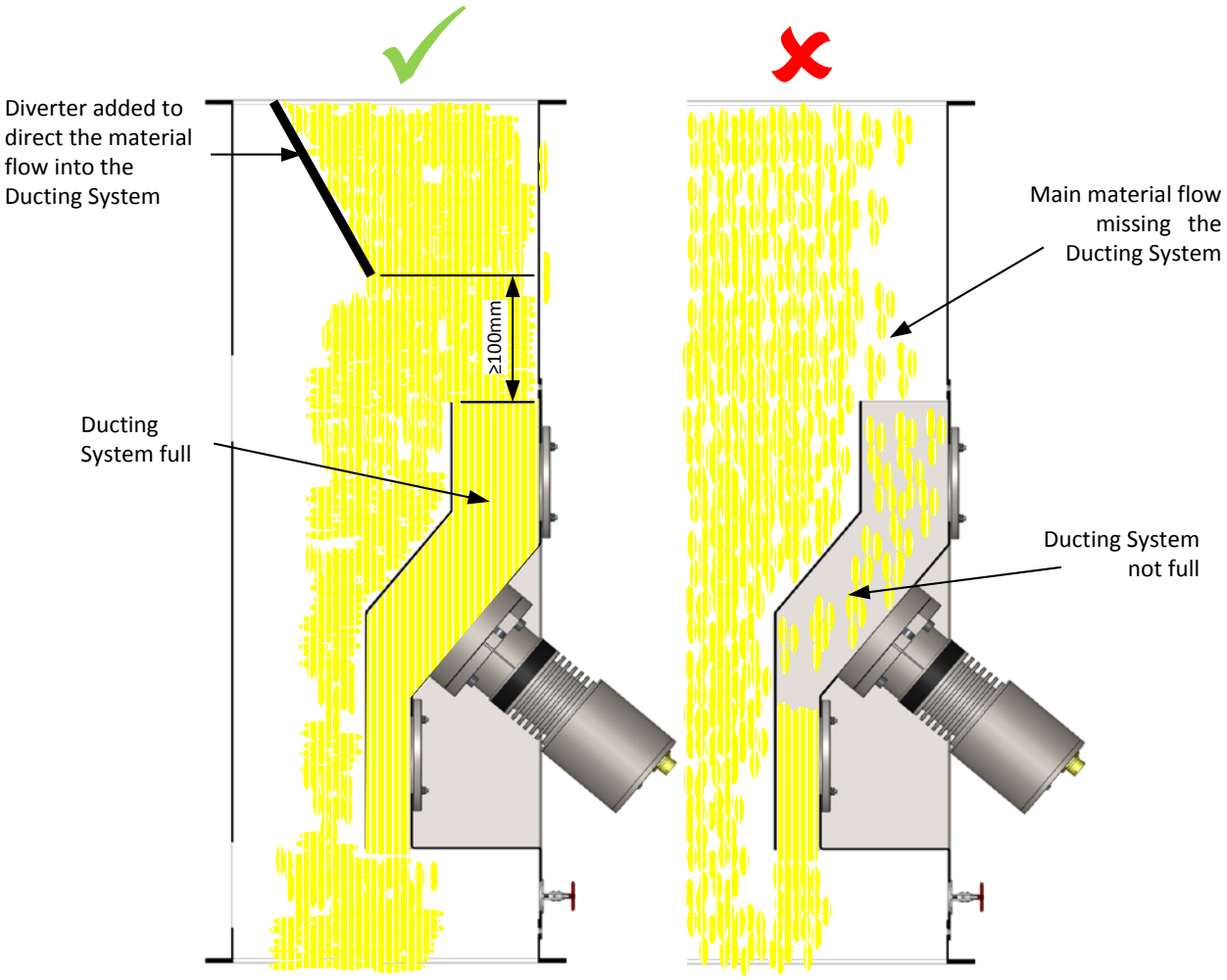

Figure 19: Directing Material Flow

7 Collecting Calibration Samples

For calibration purposes a material sample can be collected using the Sampling point. The HMHT Ducting System Vertical (Figure 20) requires the use of the Sampling Tube (Only supplied with the HMHT Ducting System Vertical). Material samples from the HMHT Ducting System Angled can be collected by opening the Sample Point, a Sampling Tube is not required for this (Figure 21).

Figure 20: HMHT Ducting System Vertical Sample Collection

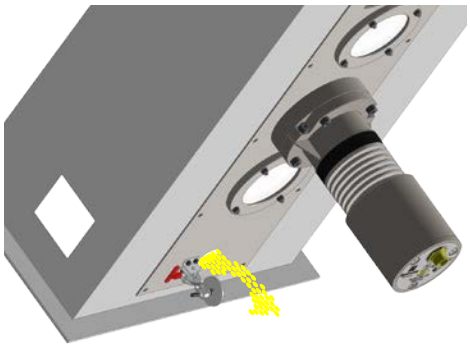

Figure 21: HMHT Ducting System Angled Sample Collection

1 Document Cross Reference

This section lists all of the other documents that are referred to in this User Guide. You may find it beneficial to have a copy available when reading to this guide.

Document Number	Title
HD0679	Hydronix Moisture Sensor Configuration and Calibration Guide
HD0678	Hydronix Moisture Sensor Electrical Installtion Guide
HD0766	Hydro-Mix HT Installation Guide

Index