

Prefabricated / Close Coupled Hook-ups

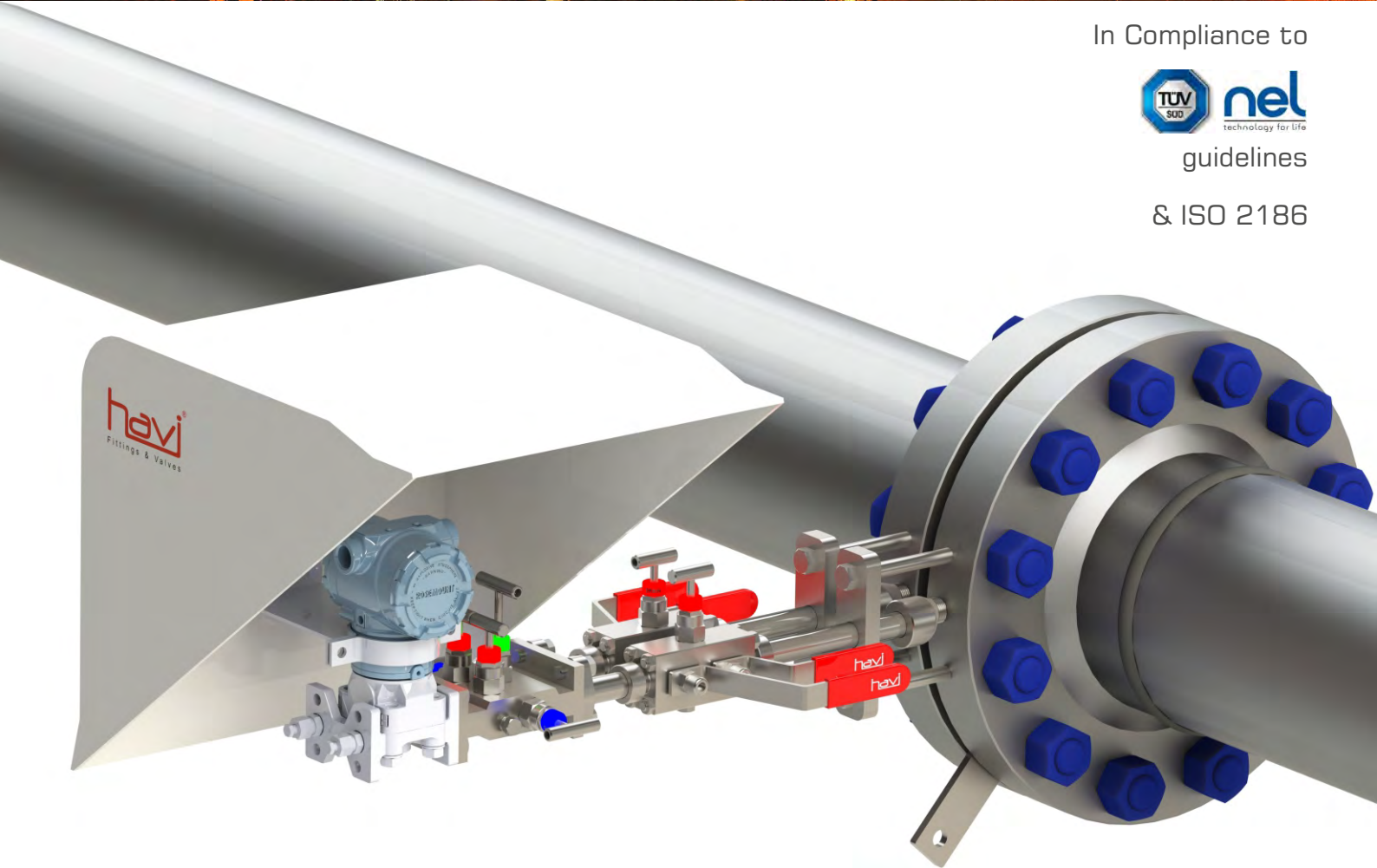


In Compliance to



guidelines

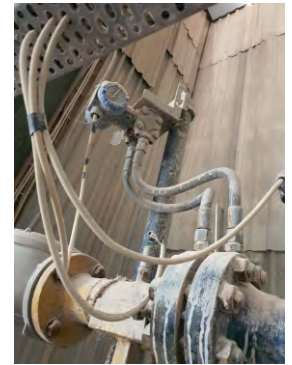
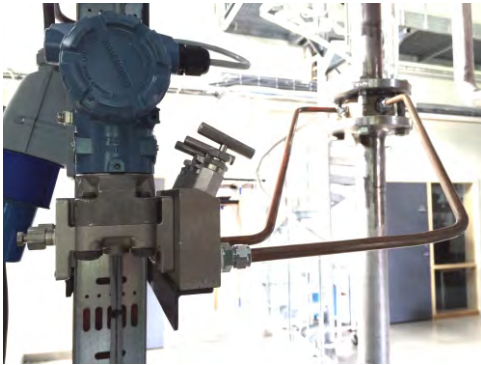
& ISO 2186



Your **SMART** Partner
for **SMART** Products

Traditional Installation

Lot of Innovation & Development has happened in Electronic Transmitter across all the major Brands in World. These Transmitters now have high Accuracy, Reliability and Stability. But very less development has been done in the Installation Technique of Transmitters.



Actual Photographs of Traditional Installations

Long & Plugged Impulse Lines

Plugging of Transmitters or associated Impulse Lines is a major issue especially when you are measuring pressure of Fluid with suspended Particles. This is formed by Hydrate formation experienced at Low or Ambient Process Temperatures. This impacts the accuracy of measurement and at times even fail the Transmitter to show readings.

Distance between Process line and Instrument

More the distance between Process Lines and Transmitter, less the accuracy of the measurement. Number of Hours get involved in designing the Routing and fabricating the same increases. It becomes very difficult to identify the leakage point in the entire Installation.

Leak Paths

Instrument Manifolds are connected using Tube Fittings, Flanged, threads, etc which can deteriorate due to Vibrations, Temperature change or Wear resulting in Process leaks. This can cause a serious threat to Safety of Personnel and Equipment.

Trapped Bubbles in Wet Legs

The main concern while liquid measurement is Trapped Bubbles as the line is supposed to be only filled with Liquid. This affects the measurement accuracy and can be avoided by proper tapping locations, proper Instrument Locations and proper Installation Methodology.

HAVI Low Emission Pre-Fabricated Hook-ups

Inhouse **FEA** Facility

Designed as per **TUV Nel / ISO 2186** guidelines

PDS/PDMS/SP3D Modelling to eliminate Clashes

CHOICE of Gate, Globe or Ball Valve for Isolation

CLASS - A Fugitive Emission tested

ENGINEERED as per your requirement

COST Effective Solutions for each Tag

100% Factory tested

Integrated **DBB** with Hook-ups

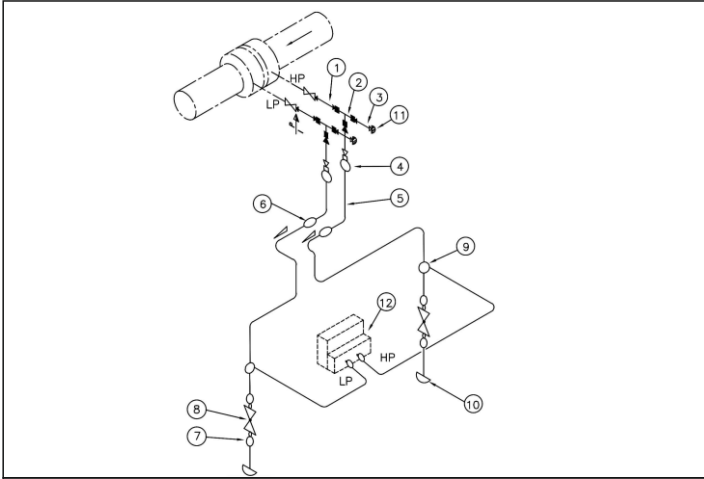
Metal Seated Isolation Valve as per **Class - 6**

Site Support to ease the Installation

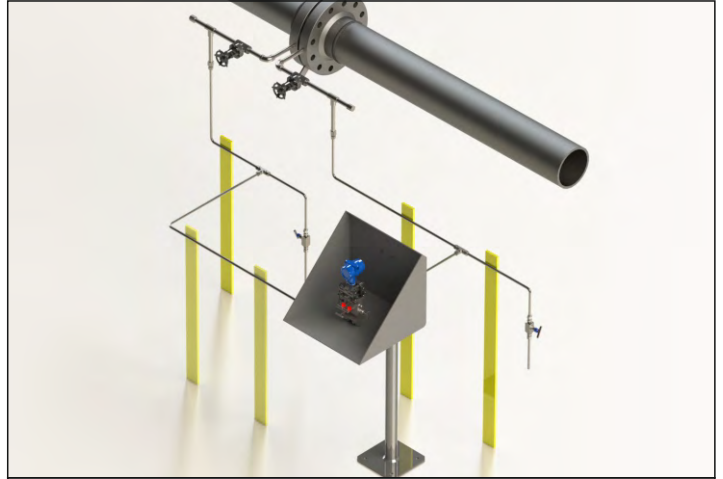


Your **SMART PARTNER**

from **CONCEPT** to **COMMISSIONING**



Typical P&ID of Hook-up



Model of Hook-up having multiple Fittings & Valves

Prefabricated Hook-up as per
TUV Nel, UK guidelines

This is the

SMART move



Eliminates almost **70%** of Joints

Installation time reduces by **80%** . JUST MAKE 2 JOINTS

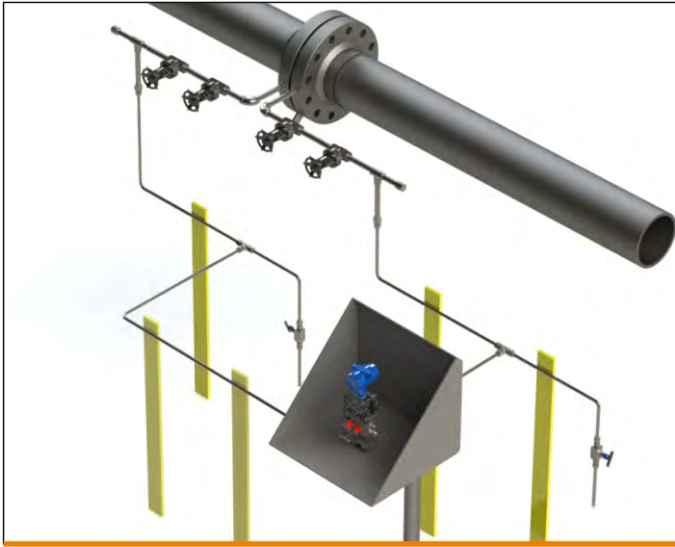
MINIMUM Impulse Tubings used

Hook-up Testing time reduces by **75%** .

Engineering Hours reduces by **25%** .

Leak paths reduces by **80%** .

Number of Joints in Hook-up Installation plays a very important role in reducing the Risk of Leakage and Emission. Innovations are being done to reduce the Joints that eventually helps in achieving lesser Risk and the Plant becoming more Environment Friendly .



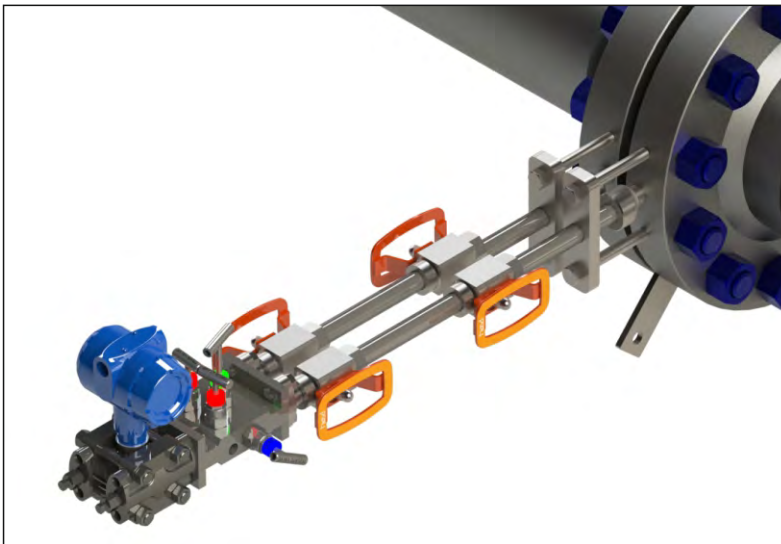
Flow Hook-up at 200 Deg Cen
Traditional Installation

Number of
Threaded, Bolted
& Swaged Joints

18

Number of
Welded Joints

22



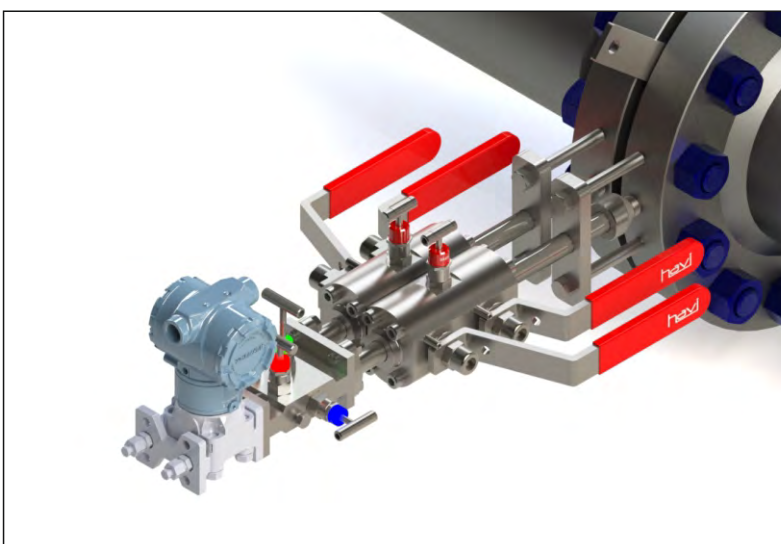
Flow Hook-up at 200 Deg Cen
Pre Fabricated/Close Coupled

Number of
Threaded, Bolted
& Swaged Joints

4

Number of
Welded Joints

12



Flow Hook-up at 200 Deg Cen
DBB Hook-up

Number of
Threaded, Bolted
& Swaged Joints

4

Number of
Welded Joints

8

We need from **YOU**

Hook-up P&ID and Data Sheets

What we **DELIVER**

We will prepare 3D / 2D Model Drawings for each Hook-Up Tag

FE Analysis for Thermal & Structural, CFD Analysis for Fluids (Optional)

We will understand clashes if any in your Model using PDS / PDMS / Smart Plant, etc Soft wares

Make alterations in the Routine, if required and get your Approval.

Manufacturing & Fabrication of Hook-Ups as per Approved Model.

Testing the Hook-Up as per your required Testing parameters like Hydro/Pneumatic, FET, Radiography & other NDT's.

Hook-Ups are packed as per TAG numbers and supplied with Documentation as required by you.

Supervision and Assistance in the Installation of Hook-Ups at Site (Optional).

Typical Solutions

Pre Fabricated Hook-Ups for Flow Measurement

Pre Fabricated DBB Hook-Ups for Flow Measurement

Pre Fabricated Hook-Ups for Pressure Measurement

Pre Fabricated DBB Hook-Ups for Pressure Measurement

Pre Fabricated Hook-Ups for Level Measurement

Pre Fabricated Hook-Ups for Metering Skid

Pre Fabricated Hook-Ups for Filters

Pre Fabricated Hook-Ups for Low & High Temperature Applications with DBB and Conventional

Design Codes & Specifications

ANSI/ASME B16.34/ EEMUA 182/ IS 17292 - DBB Design Standard

ANSI/ASME B16.5 - Flange Dimensions

ASME VIII - Design Procedures Materials

ANSI/ASME B 1.20.1 - NPT Threads

API 607 / BS 6755 / API 6FA / ISO 10497- Fire Test Standards

MSS SP 25 - Marking

FE Class A & B as per ISO 15848 Part 1 & Part 2

API 6D - Testing Code

MESC SPE 77/300 - TAT (Design Validation Testing)

MESC SPE 77/312 Class A & B - Fugitive Emission Test

API 598/ ISO 5208/ EN 12266-1/EN 12266-2 - Valve Testing

MESC SPE 76/210 - Forging Requirements

MESC SPE 77/312 - FET Class A & Class B

MESC SPE 77/100 & 110 for Ball Valves

MESC SPE 77/200 for Cryogenic Services



Prefabricated Hook-up



Solution for Pressure Measurement at Low Temperature upto 200 Deg Cen.
Isolation Valve Directly Installed with 2 Valve Manifold to Process Pipe.

Prefabricated Hook-up



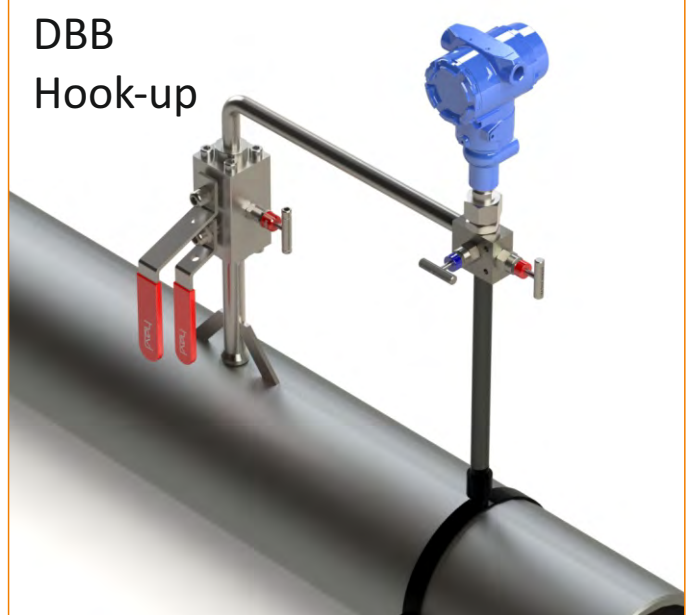
Solution for Pressure Measurement at High Temperature at 200 - 550 Deg Cen.
1 Isolation Valve with Extended Pipe and 2 Valve Manifold Installed on Process Pipe.

Prefabricated DBB Hook-up



Solution for Low Pressure Measurement at 200 Deg Cen.
HAVI DBB Installed with Compact 2 Valve Manifold on Process Pipe.

Prefabricated DBB Hook-up



Solution for Pressure Measurement at High Temperature at 200 - 550 Deg Cen.
HAVI DBB with Extended Pipe and 2 Valve Manifold Installed on Process Pipe.

**Prefabricated
DBB
Hook-up**



Solution for Pressure Measurement at Low Temperature at 200 Deg Cen.
HAVI Monoflange Valve Directly Installed on Process Flange

**Prefabricated
DBB
Hook-up**



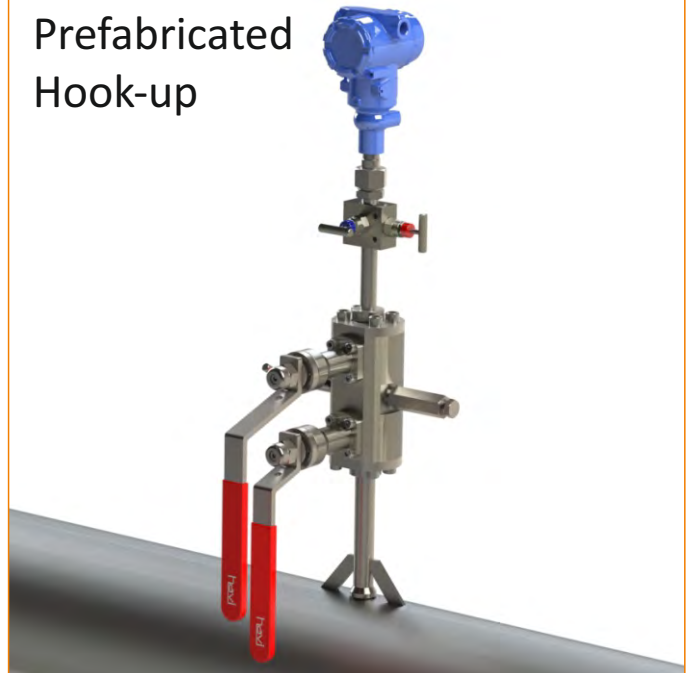
Solution for Pressure Measurement at Low Temperature at 200 Deg Cen.
HAVI DBB Directly Installed on Process Flange

**Prefabricated
Hook-up**



Solution for Pressure Measurement for Cryogenic Services.
Cryogenic Isolation Valve installed with 2 Valve Manifold.

**Prefabricated
Hook-up**



Solution for Pressure Measurement for Cryogenic Services.
Cryogenic DBB installed with 2 Valve Manifold.

Prefabricated
DBB
Hook-up



Solution for Pressure Measurement at High Temperature applications at 200 - 550 Deg Cen. HAVI DBB with Finned Pipe Installed on Process Pipe.

Prefabricated
Hook-up



Solution for Pressure Measurement. Isolation Valve integral with 2 Valve Manifold directly on Process Pipe.

Prefabricated
DBB
Hook-up

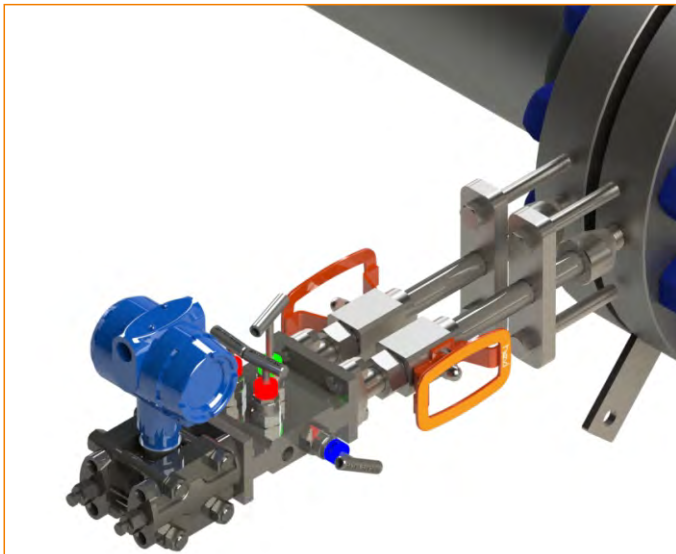


Solution for Pressure Measurement of High Viscous Medium. Diaphragm directly mounted on HAVI DBB with Flush Ring integrated in the DBB.

Prefabricated
Hook-up

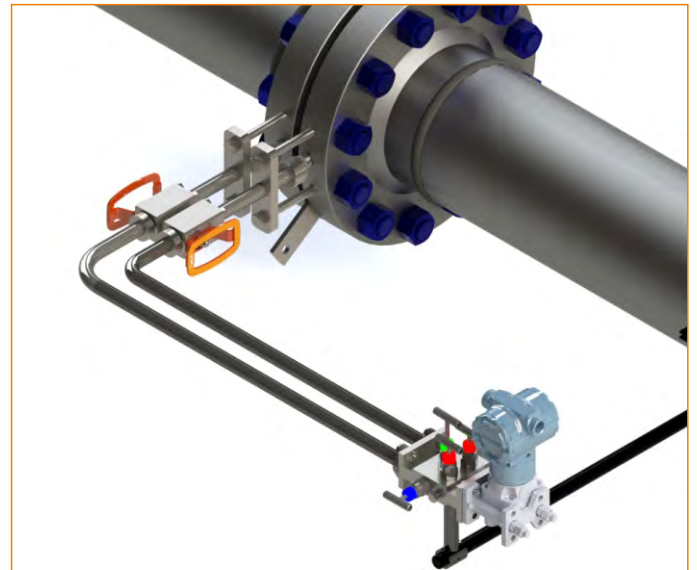


Solution for Pressure Measurement. 1 Isolation Valve and Coiled Syphon installed with 2 Valve Manifold.



**Prefabricated
Hook-up**

Solution for Flow Measurement at Low Temperature at 200 Deg Cen applications. 1 Isolation Valve Installed with H type Manifold directly mounted on Orifice Flange.



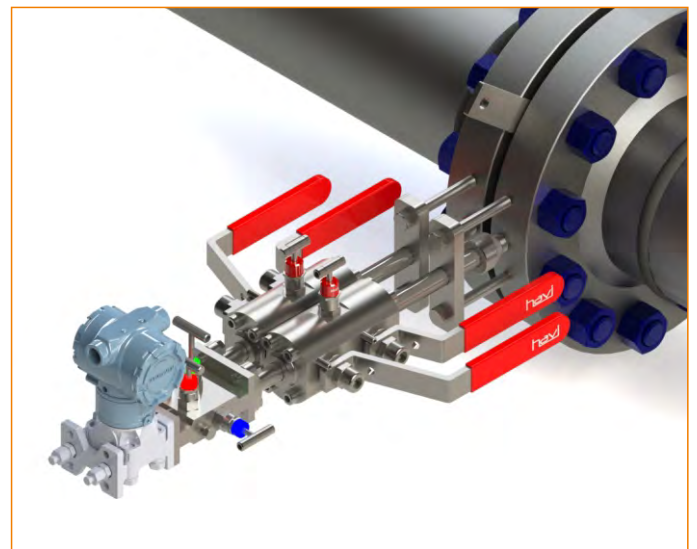
**Prefabricated
Hook-up**

Solution for Flow Measurement at High Temperature at 200 - 550 Deg Cen applications. 2 Metal Seated Isolation Valve Installed with H type Manifold mounted with Extension Pipe on Orifice Flange.



**Prefabricated
Hook-up**

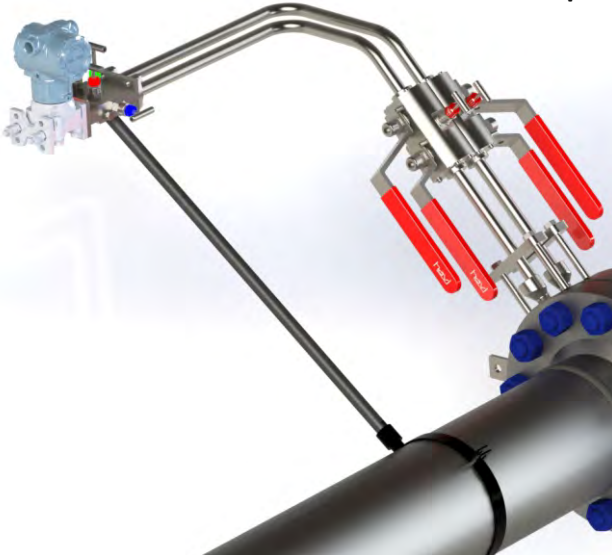
Solution for Pressure at Low Temperature at 200 Deg Cen applications. 2 Isolation Valve installed with Manifold Valve directly mounted on Orifice Flange.



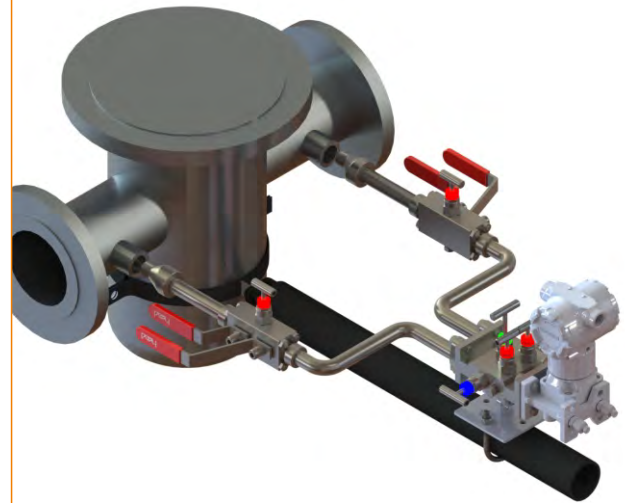
**Prefabricated
DBB Hook-up**

Solution for Flow Measurement at Low Temperature at 200 Deg Cen applications. HAVI DBB Installed with H type Manifold directly mounted on Orifice Flange.

**Prefabricated
DBB Hook-up**



Solution for Flow Measurement at High Temperature at 200 - 550 Deg Cen applications. HAVI DBB Installed with H type Manifold mounted with Extension Pipe on Orifice Flange.



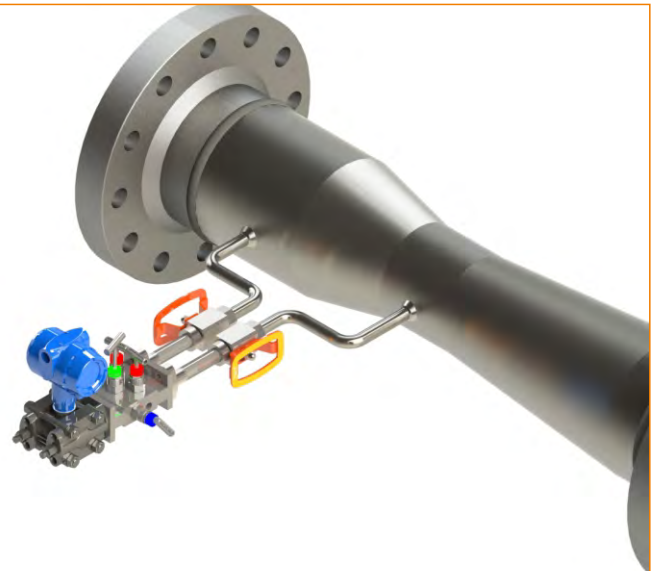
**Prefabricated
DBB Hook-up**

Solution for Flow Measurement of Filter. HAVI DBB Installed with H type Manifold mounted on Filter Pipes.



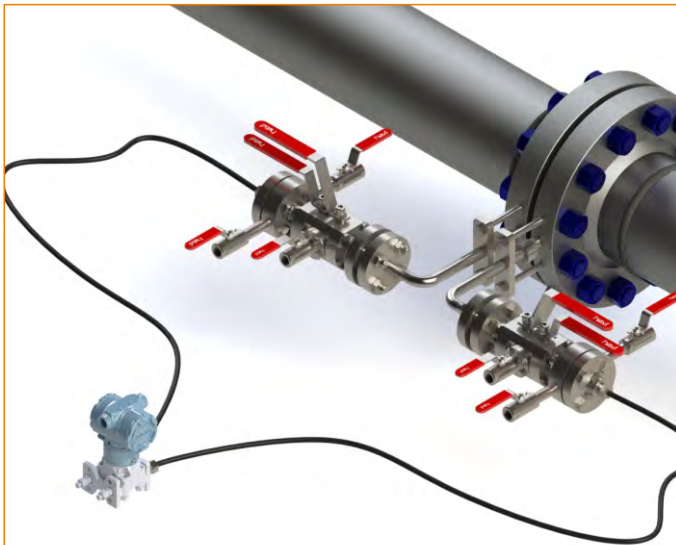
**Prefabricated
Hook-up**

Solution for Flow Measurement at Low Temperature at 200 Deg Cen applications. Isolation Valve installed with Manifold Valve directly on Orifice Plate Assembly.



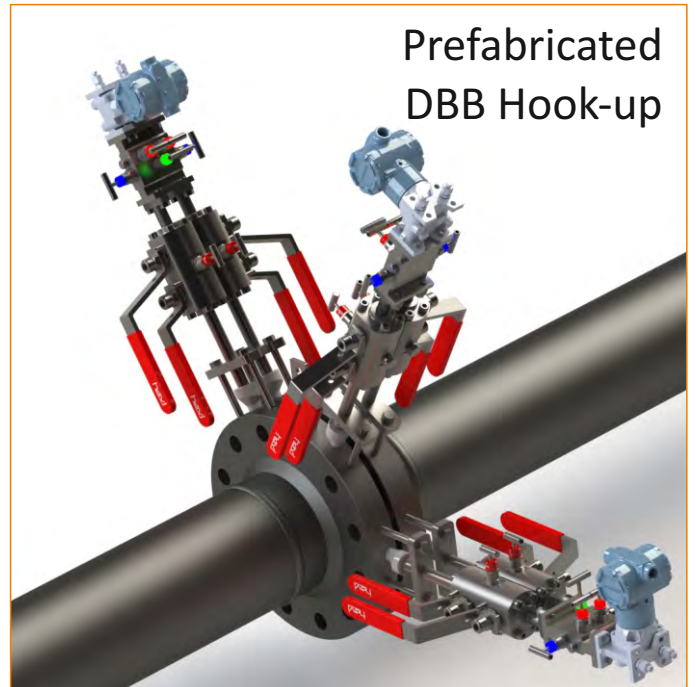
**Prefabricated
Hook-up**

Solution for Flow Measurement with Venturi Meter. Isolation Valve Installed with H type Manifold directly mounted on Venturi.



Prefabricated DBB Hook-up

Solution for Flow Measurement of High Viscous Medium. Diaphragm Remotely / directly mounted on HAVI DBB with Flush Ring integrated in the DBB.



Prefabricated DBB Hook-up

Solution for Flow Measurement of critical Applications. Multiple DBB Hook-up installed directly on the Orifice Flange.



Prefabricated Hook-up

Solution for Pressure and Flow Measurement on Meter run Assembly. Isolation Valve installed with Manifold Valve for Flow and Pressure Transmitter.



Prefabricated Hook-up

Solution for Flow Measurement of Steam in 12 O'Clock configuration. Isolation Valve, T type Manifold & Condensate Pot to Drain the moisture present mounted on Orifice Flange.

Based on the Site Conditions and location of Hook-ups, variety of Support systems are designed. HAVI gives its commitment till the Hook-up is installed on the Site.



Closed Loop Sampling System

Customised to Clients requirements

Emission Free

Entire System tested for Fugitive Emission

as per MESC specifications

For Hydrocarbons, Steam, Liquid, Liquefied

Gas, Gas Samples

Complete SS316 Construction

High Quality of Fabrication

100% Factory Tested

Configurations Available

On/Off

with Process Back or Needle Purge

Bypass

Fixed Volume

Flow Thru

DB&B Direct Mount

With Cooler or Heaters



* Refer DBB Product Catalog for more Technical Details on DBB



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Information
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