PROCESS INDUSTRY PRACTICES

EDITORIAL CORRECTION
March 2022

Piping

PIP PNF0200
Vents, Drains, and Instrument Connection Details

PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.

PUBLISHING HISTORY

July 2001	*Issued*	*March 2022*	*Complete Revision*
January 2018	*Complete Revision*	*March 2022*	*Editorial Correction*

Not printed with State funds

PIP PNF0200
Vents, Drains, and Instrument Connection Details

Table of Contents

DRAWINGS

PNF0418 – V/D-27 – Valved Vents & Drains – Butt Weld PMSs – Line Sizes NPS ¾ - 1½

PNF0419 – V/D-28 – Valved Vents & Drains – Butt Weld PMSs – Line Sizes ≥ NPS 2

PNF0420 – V/D-29 – Valved Vents & Drains – Plastic Lined PMSs – Line Sizes ≥ NPS 1

PNF0421 – V/D-34 – Valved Vents & Drains – Socket Weld PMSs – Line Sizes NPS ¾ - 1½

PNF0422 – V/D-35 – Valved Vents & Drains – Socket Weld PMSs – Line Sizes ≥ NPS 2

PNF0426 – V/D-44 – Valved Vents & Drains – Socket Weld PVC/CPVC PMSs – Line Sizes ≥ NPS ¾

PNF0432 – V/D-56 – Valved Vents & Drains – Tubing PMSs – ¼" - 1" OD

PNF0501 – P-01 – Pressure Connection – Threaded PMSs – Line Sizes ≥ NPS ¾

PNF0502 – P-02 – Pressure Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾

PNF0504 – P-04 – Pressure Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾

PNF0507 – P-07 – Double Valved Pressure Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾

PNF0512 – P-12 – Pressure Connection – Butt Weld PMSs – Line Sizes ≥ NPS ¾

PNF0513 – P-13 – Pressure Connection – Plastic Lined PMSs – Line Sizes ≥ NPS 1

PNF0519 – P-19 – Pressure Connection – Socket Weld PVC/CPVC PMSs – Line Sizes ≥ NPS ¾

PNF0521 – P-21 – Pressure Connection – Tubing PMSs – ¼" - 1" OD

PNF0523 – P-23 – Double Block & Bleed Pressure Connection – Tubing PMSs – ¼" - 1” OD

PNF0527 – P-27 – Double Block & Bleed Pressure Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾

PNF0532 – P-32 – Double Block & Bleed Pressure Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾

PNF0601 – T-01 – Thermowell Connection – Threaded PMSs – Line Sizes ≥ NPS ¾, w/ 90° branch outlet fitting

PNF0602 – T-02 – Thermowell Connection – Threaded PMSs – Line Sizes ≥ NPS ¾, w/ 45° branch outlet fitting

PNF0603 – T-03 – Thermowell Connection – Threaded PMSs – Line Sizes ≥ NPS ¾, w/ elbow branch outlet fitting

PNF0604 – T-04 – Thermowell Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾, w/ 90° branch outlet fitting

PNF0605 – T-05 – Thermowell Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾, w/ 45° branch outlet fitting

PNF0606 – T-06 – Thermowell Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾, w/ elbow branch outlet fitting

PNF0607 – T-07 – Flanged Thermowell Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾, w/ 90° branch outlet fitting

PNF0608 – T-08 – Flanged Thermowell Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾, w/ 45° branch outlet fitting

PNF0609 – T-09 – Flanged Thermowell Connection – Socket Weld PMSs – Line Sizes ≥ NPS ¾, w/ elbow branch outlet

PNF0613 – T-13 – Flanged Thermowell Connection – Butt Weld PMSs – Line Sizes ≥ NPS ¾, w/ 90° branch outlet fitting

PNF0614 – T-14 – Flanged Thermowell Connection – Butt Weld PMSs – Line Sizes ≥ NPS ¾, w/ 45° branch outlet fitting

PNF0615 – T-15 – Flanged Thermowell Connection – Butt Weld PMSs – Line Sizes ≥ NPS ¾, w/ elbow branch outlet

PNF0616 – T-16 – Flanged Thermowell Connection – Plastic Lined PMSs – Line Sizes ≥ NPS 2

PNF0617 – T-17 – Flanged Thermowell Connection – Plastic Lined PMSs – Line Sizes ≥ NPS 1 & 1½

PNF0622 – T-23 – Flanged Thermowell Connection – PVC/CPVC PMSs – Line Sizes ≥ NPS ¾

PNF0624 – T-25 – Thermowell Connection – Tubing PMSs – ¼" - 1" OD

PNF0701 – OR-01 – Orifice Flange Tap Connection – Threaded PMSs – Line Sizes ≥ NPS 2

PNF0702 – OR-02 – Orifice Flange Tap Connection – Socket Weld PMSs – Line Sizes ≥ NPS 2

PNF0704 – OR-04 – Orifice Flange Tap Connection – Butt Weld PMSs – Line Sizes ≥ NPS 2

PNF0705 – OR-05 – Orifice Flange Tap Connection – Plastic Lined PMSs – Line Sizes ≥ NPS 1

PNF0706 – OR-06 – Double Valved Orifice Flange Tap Connection – Socket Weld PMSs – Line Sizes ≥ NPS 2

1. Scope

This Practice provides fabrication and installation details for piping vents, drains, and instrumentation connections including:

a. Hydrostatic Test Vents
b. Hydrostatic Test Drains
c. Valved Vents
d. Valved Drains
e. Pressure Connections
f. Thermowell Connections
g. Orifice Flange Tap Connections

Cross reference Table 1 is provided to relate the vent, drain, and instrument connection details to associated *PIP Piping Material Specifications*.

2. References

Applicable parts of the following Practices shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles will be used herein where appropriate.

Process Industry Practices (PIP)

– PIP Piping Material Specifications
– PIP PCIFL100 – *Orifice Plate Installation Details*

3. Definitions

hydrostatic test vents and drains: Connections that are located at high points and low points of piping systems for use during leak testing only. Hydrostatic test vent and drain connections are shown on the detailed construction piping drawings and are provided as required based upon the physical piping configuration. Hydrostatic test vent and drain connections are not typically shown on the P&IDs. Hydrostatic test vent and drain connections are provided without valves. Temporary valves are provided for leak tests as required. Closure devices (i.e., plug, cap, or blind) are provided for permanent installation.

orifice flange tap connections: Valved connections for flow (differential pressure) instruments

pressure connections: Valved connections for pressure instruments

thermowell connections: Unvalved connections for the installation of thermowells

valved vents and drains: Connections that are located at high points and low points of piping systems for use during operation and/or maintenance. Valved vent and drain connections are shown on the P&IDs and detailed piping drawings, are always provided with valves and closure devices (e.g., plug, cap, or blind), and are located to be accessible by operations or maintenance personnel.