SECTION 407313 - PRESSURE AND DIFFERENTIAL PRESSURE GAUGES

Note that this section has only been edited for NYSOGS standardization and has not been technically edited. The designer shall make all technical edits specific to the project for this section.

This Section specifies pressure gages, including differential, compound, and digital types. Diaphragm seals to isolate gages from process fluid are specified in Section 407363.

1. GENERAL
	* + 1. SUMMARY
				1. Section Includes: Pressure gages.
				2. Related Requirements:

List other Sections directly related to or affecting Work of this Section. Include Sections specifying information expected to be found in this Section as well as Sections required to describe complete system or assembly requirements.

Section 407363 - Diaphragm Seals: Isolation of gages from process fluid.

* + - 1. REFERENCE STANDARDS

List reference standards included within text of this Section, with designations, numbers, and complete document titles.

* + - * 1. ASME International:

ASME B40.100 - Pressure Gauges and Gauge Attachments.

* + - * 1. NSF International:

NSF 61 - Drinking Water System Components - Health Effects.

NSF 372 - Drinking Water System Components - Lead Content.

* + - 1. COORDINATION
				1. Coordinate Work of this Section with [**piping Work**] [**tank Work**] [**pump installation**] <**\_\_\_\_\_\_\_\_**>.
			2. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Architect Product Data: Submit manufacturer information for system materials and component equipment, including connection requirements.
				5. Shop Drawings:

Indicate system materials and component equipment.

Submit installation requirements and other details.

* + - * 1. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

Include separate Paragraphs for additional certifications.

* + - * 1. Source Quality-Control Submittals: Indicate results of [**shop**] [**factory**] tests and inspections.
				2. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
				3. Qualifications Statement:

Coordinate following Subparagraph with requirements specified in QUALIFICATIONS Article.

Submit qualifications for manufacturer.

* + - 1. CLOSEOUT SUBMITTALS
				1. Project Record Documents: Record actual locations of equipment and accessories.
			2. MAINTENANCE MATERIAL SUBMITTALS
				1. Extra Stock Materials:

Gages Other Than Diaphragm Protected: Furnish 20 percent spare gages, with a minimum of one gage for each range used.

Diaphragm-Protected Gages: Furnish 20 percent spare gages, with a minimum of one gage for each range used, complete with diaphragm seals.

* + - 1. QUALITY ASSURANCE

Include this Article to specify compliance with overall reference standards affecting products and installation included in this Section.

* + - * 1. Ensure that materials of construction of wetted parts are compatible with process liquid.
				2. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.

In following Paragraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

* + - * 1. Perform Work according to <**\_\_\_\_\_\_\_\_**> standards.

Include following Paragraph only when cost of acquiring specified standards is justified.

* + - * 1. Maintain <**\_\_\_\_\_\_\_\_**> [**copy**] [**copies**] of each standard affecting Work of this Section on Site.
			1. QUALIFICATIONS

Coordinate following Paragraph with requirements specified in SUBMITTALS Article.

* + - * 1. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum [**three**] <**\_\_\_\_\_\_\_\_**> years' [**documented**] experience.
			1. DELIVERY, STORAGE, AND HANDLING
				1. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
				2. Store materials according to manufacturer instructions.
				3. Protection:

Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.

Provide additional protection according to manufacturer instructions.

* + - 1. WARRANTY

This Article extends warranty period beyond one year. Extended warranties may increase construction costs and Owner enforcement responsibilities. Specify warranties with caution.

* + - * 1. Furnish [**five**] <**\_\_\_\_\_\_\_\_**>-year manufacturer's warranty for pressure gages.
1. PRODUCTS
	* + 1. PRESSURE GAGES
				1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=11613&mf=04&src=wd):

designer to provide two manufacturers and approved equivalent for all listed products.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

In following Subparagraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

Furnish materials according to <**\_\_\_\_\_\_\_\_**> standards.

Insert descriptive specifications below to identify Project requirements and to eliminate conflicts with products specified above.

If specialized pressure gages are required, select type in following Paragraph and edit this Article accordingly.

* + - * 1. Type: [**Differential**] [**Compound**] [**Digital**] <**\_\_\_\_\_\_\_\_**>.
				2. Dials:

Nominal Diameter: 4-1/2 inches.

Face: White, laminated plastic dials with black graduations.

Scale: Extend over arc not less than 270 degrees.

Ranges and Graduation Units: As indicated [**on Drawings**] [**on pressure gage schedule**] <**\_\_\_\_\_\_\_\_**>.

* + - * 1. Cases:

[**Weatherproof**] [**Liquid filled**].

Material: [**Phenolic**] [**or**] [**high-impact polypropylene**].

Type: Blowout protected.

Blowout Disc Encasement Material: [**Phenolic**] [**Steel**] [**Cast iron**].

Provide removable rear plate.

Windows:

Material: Clear, shatterproof glass.

Thickness: 1/8 inch.

Provide gasket.

* + - * 1. Connection:

Location: [**Bottom**] [**Back**].

Socket:

1/4-inch NPT male thread.

Material: Brass forging.

Extend minimum 1-1/4 inches below gage cases.

Provide wrench flats.

Mounting: [**Stem**] [**Surface**] [**Flush**] [**Panel**] [**As indicated on Drawings**].

* + - * 1. Measuring Element:

Bourdon Tubes:

Material: [**Phosphor bronze**] [**Stainless steel**], [**silver-soldered**] [**or**] [**brazed**] to brass socket.

Provide welded, stress-relieved joints.

Movement:

[**Rotary geared**] <**\_\_\_\_\_\_\_\_**>.

Material: Stainless steel.

Accuracy:

Comply with ASME B40.100.

Plus and minus [**0.5**] <**\_\_\_\_\_\_\_\_**> percent of full-scale range.

* + - * 1. Adjustment:

Provide for zero-reading adjustment.

Adjusting Screws: Accessible from rear of case without need for disassembly.

* + - * 1. Accessories:

Pressure Snubber:

Material: Type 316 stainless steel.

Provide isolation valve.

Shutoff Cocks: Furnished by gage manufacturer.

* + - 1. SOURCE QUALITY CONTROL
				1. Provide shop inspection and testing of completed assembly.
1. EXECUTION
	* + 1. EXAMINATION
				1. Verify that items provided by other Sections of Work are ready to receive Work of this Section.
			2. INSTALLATION
				1. According to manufacturer instructions.
				2. Coordinate location and orientation of gages and seal assemblies with final piping and equipment installations.
				3. Ensure that gages are located to be easily read during operation and easily accessible for maintenance.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

In following Paragraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

* + - * 1. Installation Standards: Install Work according to <**\_\_\_\_\_\_\_\_**> standards.
			1. FIELD QUALITY CONTROL
				1. Equipment Acceptance:

Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.

Make final adjustments to equipment under direction of manufacturer's representative.

* + - 1. DEMONSTRATION
				1. Demonstrate equipment startup, shutdown, routine maintenance, and emergency repair procedures to Director’s Representative.
			2. ATTACHMENTS

When relying on separate schedules, tables, illustrations, or forms to specify product requirements, include list of each attachment. Include identical list of attachments in Project Manual table of contents.

Insert attachments following END OF SECTION. Consider following examples when developing Project schedule.

* + - * 1. Pressure Gage Schedule:

PI-463:

[**Manufacturer: <\_\_\_\_\_\_\_\_>.**]

[**Model: <\_\_\_\_\_\_\_\_>.**]

Location: <**\_\_\_\_\_\_\_\_**>.

Type: <**\_\_\_\_\_\_\_\_**>.

Connection: <**\_\_\_\_\_\_\_\_**>.

Mounting: <**\_\_\_\_\_\_\_\_**>.

Diaphragm Seal: <**\_\_\_\_\_\_\_\_**>.

Process Fluid: <**\_\_\_\_\_\_\_\_**>.

PI-464:

[**Manufacturer: <\_\_\_\_\_\_\_\_>.**]

[**Model: <\_\_\_\_\_\_\_\_>.**]

Location: <**\_\_\_\_\_\_\_\_**>.

Type: <**\_\_\_\_\_\_\_\_**>.

Connection: <**\_\_\_\_\_\_\_\_**>.

Mounting: <**\_\_\_\_\_\_\_\_**>.

Diaphragm Seal: <**\_\_\_\_\_\_\_\_**>.

Process Fluid: <**\_\_\_\_\_\_\_\_**>.

END OF SECTION 407313