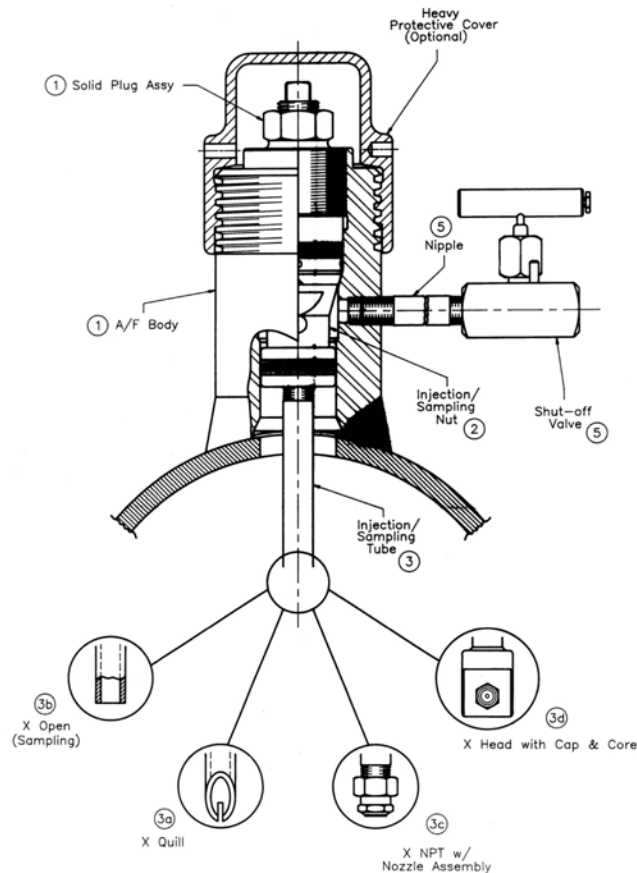


Model 63

# COSASCO<sup>®</sup> Two-Inch System Injection and Sampling Assemblies



TYPICAL COSASCO<sup>®</sup> INJECTION/SAMPLING SYSTEM  
WITH VARIOUS INJECTION/SAMPLING DISPERSION ENDS  
AND COMPONENTS

## Specifications:

- **Access Under Pressure — Injection/Sampling Tube can be Removed for Cleaning While System is Under Pressure**
- **Temp Rating — -20 °F (-28.9 °C) to +350 °F (+176.6 °C)**
- **Pressure Rating — Maximum 6000 PSI/41.3 MPa Working (Depends on Style of Access Fitting)**
- **Material — Injection/Sampling Components 316 S.S.**
- **Meets NACE MR0175 and MR0103**



One of the most practical preventive maintenance methods for minimizing or controlling corrosion in product pipelines, vessels, etc., is to treat the corrosive environment with chemical inhibitors.

While corrosion inhibition is a complex technology and is under constant study and development, it is an effective means of corrosion control. Using the COSASCO® Injection System for easy, reliable access, inhibitors can be injected with safety and simplicity while under full operating pressure. In addition, a variety of injection devices and systems can be used to provide the most efficient delivery and dispersion for a given application.

Most of the parts involved in the COSASCO® Injection System are interchangeable with the COSASCO® Sampling System. The COSASCO® Sampling System offers a means of extracting samples from pipelines or vessels while under full system operating pressure. A typical COSASCO® Injection System with various injection dispersion ends and components is shown in the figure on the front page. The components are described with ordering information on the following pages.

### 1. Access Fitting Assembly With Solid Plug Assembly

Tee Access Fitting Assemblies offered as standard by COSASCO® are for hydraulic injection only and therefore utilize a single Tee for injection product inlet. A complete description, various configurations, and part number ordering information is explained for Tee Access Fitting Assemblies in the Data Sheets for Model 50, 52, 53, 54, 56, 57 and 58 Access Fitting Assemblies.

### 2. Injection/Sampling Nut

This is, depending upon application, a multiple-use nut that replaces the nut of the Solid Plug Assembly in the Access Fitting Assembly. Its function is to direct the injection product to the Injection Tube or directly to the atomization device. The Injection/Sampling Nut has bleed ports in the side wall above an access fitting body bore o-ring seal; and is drilled and tapped with 1/4" NPT threads to enable attachment of different size Injection/Sampling Tubes or Nozzle Assemblies.

### Ordering Information: Injection Nut Assembly (1/4" NPT)

Access Fitting Body Height	Order Number	Length
5.25"	120603	1.75"
6.25"	204728	2.75"
7.25"	122217	3.75"
8.25"	120556	5.50"

### 3. Injection/Sampling Tubes

Depending upon the application, you may choose an Injection Tube or Sampling Tube. The Injection Tube is the pathway for the injected product flowing from the Injection Nut to the process. Standard COSASCO® Injection Tubes are offered in 1/4" NPT sizes to mate with like size NPT Injection Nuts.

#### a. Injection Tube x Quill

This style is similar to the open NPT Injection Tube but has a scarf and quill cut instead of a plain open end. It utilizes the turbulence created by its design, in conjunction with the natural turbulence within the pipe or vessel, to accomplish distribution of the injected product into the product media flow.

**Sizing Formula:** See last page.

### Ordering Information: Injection Tube 1/4" NPT X Quill

Order Number	Description
6300-LL.LL	Injection Tube (1/4" NPT X Quill)

LL.LL = Length in 1/4" increments from 1.25" to 36.00 inches

#### b. Sampling Tube (1/4" NPT x Open)

A tube allowing for sampling; no atomization or dispersion device is attached.

**Sizing Formula:** See last page.

## Ordering Information: Sampling Tube 1/4" NPT X Open

Order Number	Description
6301-LL.LL	Sampling Tube (1/4" NPT X Open)

LL.LL= Length in 1/4" increments from 1.25" to 36.00 inches

### c. Injection Tube (1/4" NPT x 1/4" NPT)

This Injection Tube has 1/4" male NPT end which accommodates a selection of 1/4" female NPT nozzles for perpendicular Injection/Atomization.

**Sizing Formula:** See last page.

## Ordering Information: Injection Tube 1/4" NPT X 1/4" NPT

Order Number	Description
6302-LL.LL	Injection Tube (1/4" NPT X 1/4" NPT)

## Ordering Information: 1/4" NPT Nozzle (Female)

Order Number	Orifice Size	GPH Capacity @ Pressure Differential			
		40 PSI	60 PSI	80 PSI	100 PSI
200904	.006	.30	.36	.42	.48
200905	.012	.40	.48	.56	.64
200906	.016	.60	.72	.84	.96

### d. Injection Tube (1/4" NPT X Head)

This assembly consists of an Injection Tube with a right angle head that accommodates a selection of cap and core assemblies.

**Sizing Formula:** See last page.

## Ordering Information: Injection Tube 1/4" NPT X Head

Order Number	Description
6304-LL.LL	Injection Tube (1/4" NPT X Head)

LL.LL = Length in 1/4" increments from 2.25 inches to 36.00 inches

**Sizing Formula:** See last page.

## Ordering Information: Cap with Core (Male)

Order Number	Orifice Size	GPH Capacity @ Pressure Differential			
		40 PSI	60 PSI	80 PSI	100 PSI
129490	.006	.30	.36	.42	.48
129473	.012	.40	.48	.56	.64
129472	.016	.60	.72	.84	.96

## 4. 1/4" NPT Flush Nozzle (Male)

This nozzle threads directly into the Injection Nut Assembly to provide spray injection flush with the pipe wall when the correct injection nut is used.

**Sizing Formula:** See last page.

## Ordering Information: 1/4" NPT Flush Nozzle (Male)

Order Number	Orifice Size	GPH Capacity @ Pressure Differential			
		40 PSI	60 PSI	80 PSI	100 PSI
129183	.006	.30	.36	.42	.48
201020	.012	.40	.48	.56	.64
201021	.016	.60	.72	.84	.96

## 5. Nipples and Shutoff Valves

Short nipples and shutoff valves are available to interface the Tee Access Fitting Assembly with the Injection/Sampling System.

## Ordering Information: Nipples and Valves

Order No.	Description
128993	Nipple 1/4" x 1/4" NPT - Length 4.00 – 316 S.S.
127472	Nipple 1/2" x 1/2" NPT - Length 4.00 – 316 S.S.
125504	Nipple 3/4" x 3/4" NPT - Length 4.00 – 316 S.S.
125505	Nipple 1" x 1" NPT - Length 4.00 – 316 S.S.
200022	Shutoff Valve 1/4" NPT – 316 S.S.
200023	Shutoff Valve 1/2" NPT – 316 S.S.
200024	Shutoff Valve 3/4" NPT – 316 S.S.
200025	Shutoff Valve 1" NPT – 316 S.S.

For other sizes of injection/sampling nuts, tubes, and nozzles, please contact the factory.

## Sizing Formulas:

Our recommended injection location is the center of pipe. Thus the following sizing formula is applicable:

### Non-Flanged Access Fitting Assemblies

$$A + WG + 1/2 PD - 2.25 - N = \text{Length}^*$$

### Flanged Access Fitting Assemblies

$$A + FG + MF + 1/2 PD - 2.25 - N = \text{Length}^*$$

Sampling locations may vary. If sampling from the center of pipe or vessel, the above listed sizing formula applies. If bottom of line sampling is required with the access fitting assembly in the 12:00 O'clock position, the following sizing formula applies:

### Non-Flanged Access Fitting Assemblies

$$A + WG + PD - 2.50 - N - PW = \text{Length}^*$$

### Flanged Access Fitting Assemblies

$$A + FG + MF + PD - 2.50 - N - PW = \text{Length}^*$$

\*Ordering Lengths should be rounded down to nearest 1/4" increments.

## Abbreviations Key:

- A = Access Fitting Assembly length
- Wg = Weld Gap (1/16", or 1.59 mm is normal per ANSI B31.1 1973)
- PW = Pipe Wall thickness
- PD = Pipe outside diameter
- Fg = Flange gap - 1/16th inch (0.0625 or 1.6mm) is normal
- MF = Mating Flange Height root/base-to-face dimension
- N = Injection/Sampling Nut length

To order a complete Injection/Sampling Tubes Assembly, select:

- Injection/Sampling Nut (item 2)
- Injection/Sampling Tube (item 3)(Except when flush perpendicular injection is required.)
- Nozzle Assembly, if required (item 3 and 4)
- Nipple and Shutoff Valve (item 5)

## Ordering Example:

You want to inject into a 12" oil line and your injection line is 1/2" pipe. Your complete system would consist of the following:

1 ea. P/N #50-111-2-18-G10220-1  
{2" Access Fitting Assembly FW 18-12x2/UN 1/2 6.25-G316-1022}

1 ea. P/N #204728  
{2" Injection Nut Assembly 1/4 NPT x 2.75" Inj. Nut was chosen since the access fitting body height is 6.25"} }

1 ea. P/N #6300-7.75  
{2" Injection Tube 1/4" x Quill 7.75-316 (6.25 (A) + .0625 (WG) + 6.375 (1/2PD - 2.25 - 2.75 (N) = 7.75)}

1 ea. P/N #127472  
{Nipple 1/2" x 4.00 - 316}

1 ea. P/N #200023  
{Shut-Off Valve 1/2" NPT - 316}



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