

# HP VALVES & FITTINGS INDIA PRIVATE LIMITED

## PROCESS FIELD INSTRUMENTS



### CONDENSATE POTS AND QUILLS

SERVING WORLD WIDE



## ABOUT US

HP VALVES & FITTINGS INDIA PRIVATE LIMITED, was established in the year of 2000, We are Integrated Management System (IMS) Certified Company (ISO 9001:2015, ISO 14001:2015, ISO 45001:2018) by TUV Nord Group for the scope of Design, Manufacture, Testing and Supply of Instrumentation Valves & Fittings i.e. Tube Fittings, Pipe Fittings, Sealant Injection Grease Fittings, Manifold Valves, Needle Valves, Ball Valves, Check Valves, Globe Valves, Gate Valves, Relief Valves, Air Filter Regulators, Air Headers, Condensate Pot, Injection Quills, Syphon, Instrument Hook - Up and Custom Build / Specialized Engineering Components

### Our Brand Name : HPLOCK / HPLOK / HP / HP INDIA

Mr. S. Harichandran – Managing Director, founder of this business with an aim to become a leader in this Field of Instrumentation System Solutions.

He has wide experience of 25 years in this field. With his sharp business acumen and constant efforts, he has earned a reputation for his business. Our aims towards achieving the highest level of business efficiency with integrity and honesty in order to create benchmark globally in quality of valves and fittings industry .

## WHY HP?

- ◆ Our Performance Meets your Expectations
- ◆ Focus on Consistent quality compliance
- ◆ Follow International codes & standards which ensures
- ◆ Recognition in the market
- ◆ Competitive cost effectiveness
- ◆ Continuous on our R&D Process
- ◆ Flexibility in design
- ◆ Quality and traceability on our products.
- ◆ Fully computerized inventory system
- ◆ Stringent quality control checks
- ◆ Dedicated Professional and expert workforce
- ◆ Timely delivery & Product durability
- ◆ Service 24 x 7
- ◆ Customized solutions

## FACILITIES

To ensure the timely and efficient accessibility of premium quality products, we have established with,

- Latest Modern Machineries.
- Modern Inspection Equipments.
- 8 Axis Multi Axis Machining Centre
- In-House Research & Development Centre
- Latest Design Applications
- In-House state of the art lab facility
- Industry 4.0 Shop Floor Digitization
- In-House Sophisticated Testing Facilities like low emission, Vaccum Test, Cryogenic Test, High Pressure Hydro & High Pressure Gas Test

## INTERNATIONAL CODES & STANDARDS

We are following below latest codes & standards for Design & Materials,

### FOR DESIGN



### FOR MATERIAL





# QUALITY ASSURANCE

## CERTIFICATIONS



ISO 9001 : 2015



ISO 14001 : 2015

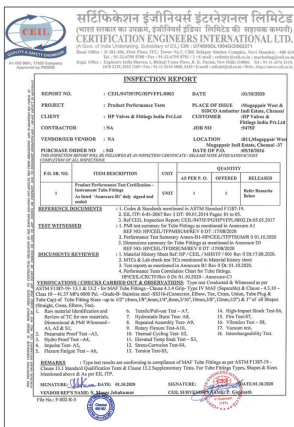


ISO 45001 : 2018

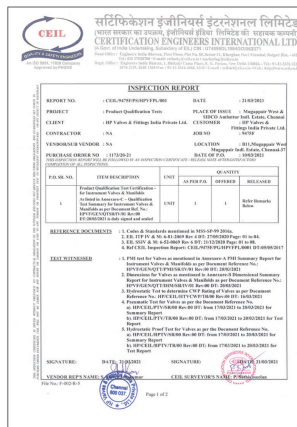


ISO/TS 22163:2017

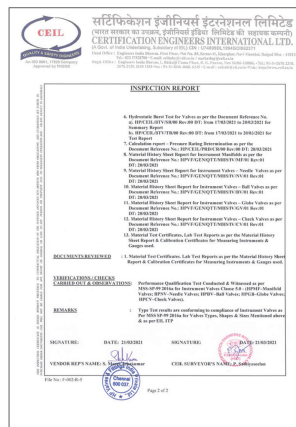
## APPROVALS



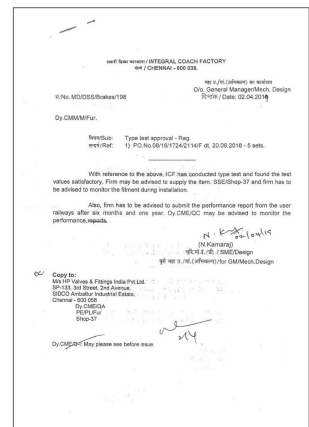
TYPE TEST CERTIFICATE (ASTM F1387-2019)



TYPE TEST CERTIFICATE (MSS SP-99-2016a)



TYPE TEST CERTIFICATE (MSS SP-99-2016a)

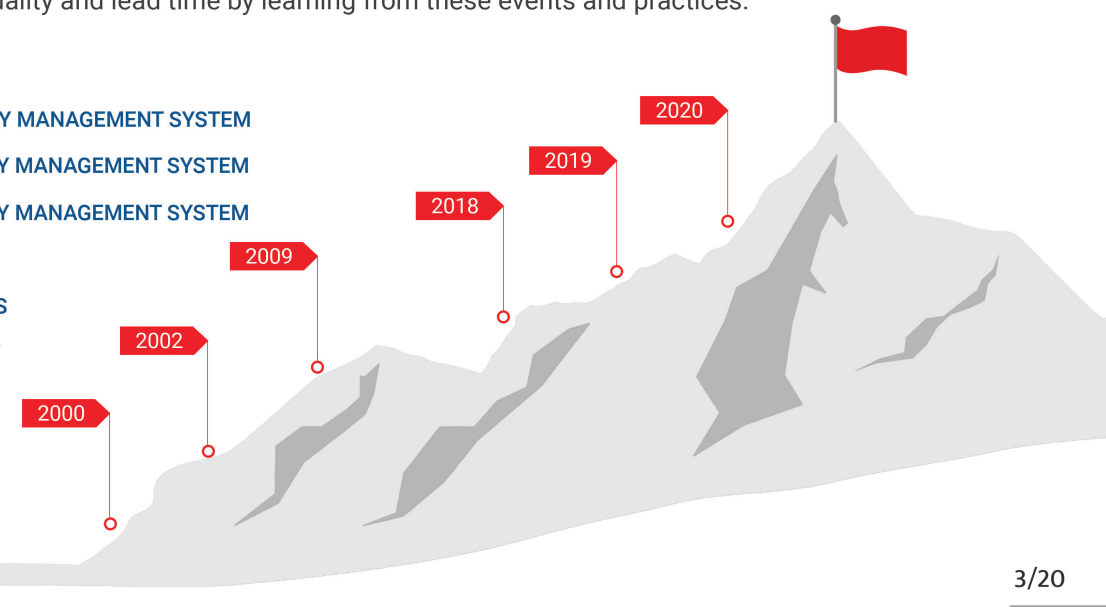


ICF TYPE TEST APPROVAL

# CONTINUOUS IMPROVEMENT

Since 2000 HP has capitalized on the importance of continuous improvement and introduced the concept of lean Manufacturing within the company. Under the leadership and guidance of our senior management who have encouraged everyone in HP to participate in all Kaizen events, this has proved to be a great success. HP is continually improving their technical capabilities, product quality and lead time by learning from these events and practices.

- 2000 • FOUNDATION
- 2002 • ISO 9001 : 2000 - QUALITY MANAGEMENT SYSTEM
- 2009 • ISO 9001 : 2008 - QUALITY MANAGEMENT SYSTEM
- 2018 • ISO 9001 : 2015 - QUALITY MANAGEMENT SYSTEM
- 2018 • ISO 14001 : 2015 - EMS
- 2019 • ISO 45001 : 2018 - OHSAS
- 2020 • IRIS - ISO/TS:22163-2017





**AUTHORIZED AGENCY CERTIFICATE**



**HP VALVES & FITTINGS INDIA PVT. LTD.**

MFRS: INSTRUMENTATION VALVES & MANIFOLDS, FITTINGS AND SEALANT INJECTION FITTINGS  
 AN IMS CERTIFIED COMPANY - ISO 9001 : 2015, ISO 14001 : 2015, ISO 45001 : 2018  
 AN IRIS CERTIFIED COMPANY - ISO/TS:22163-2017



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Registered Factory : B-11, Mugappair Industrial Estate, Mugappair West, Chennai - 600 037, Tamil Nadu, India.

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GSTIN : 33AACCH0510P1ZU | CIN : U29120TN2008PTC067808 | PAN : AACCH0510P

Date: 24/06/2021

**EXCLUSIVE AGENT APPOINTMENT LETTER**

HP VALVES & FITTINGS INDIA PRIVATE LIMITED, headquartered in SP-133, 3<sup>rd</sup> Street, 2<sup>nd</sup> Avenue; SIDCO Industrial Estate, Ambattur, Chennai, India is pleased to announce the appointment of:

M/s. VALVE TECHNICAL SERVICES FZC  
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 Hamriyah Free zone, Sharjah,  
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 Mob: +971 529 766 112  
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 E: sales@valvetechnical.com

As exclusive agent to sell HP Make Special Products like Condensate Pots, Fixed & Retractable Type Injections Quills, Sampling Quills etc., in the territory of United Arab Emirates.

M/s. VALVE TECHNICAL SERVICES FZC is committed to promote HP's products & services to the customers in United Arab Emirates.

When sold by M/s. VALVE TECHNICAL SERVICES FZC, our products come with standard factory warranty terms specified in applicable agreements.

For HP VALVES & FITTINGS INDIA PRIVATE LIMITED

*S. Harichandran*



S. HARICHANDRAN  
 MANAGING DIRECTOR

HPLOCK HPLOCK HPLOCK HPLOCK HPLOCK HPLOCK HPLOCK HPLOCK

**MANUFACTURER'S LOGO**

**AUTHORIZED AGENT'S LOGO**



# CONDENSATE POTS

**M.O.C** : CS / AS / SS / DSS / SDSS / SASS / MONEL / HASTELLOY /  
INCONEL / TITANIUM / TANTALUM  
**Size** : 2" to 6"

**End Connections** : NPT / BSP / BSPT / SW

**Pipe Schedule** : SCH 40 to SCH XXS

THREE PORT



HPCP601

FOUR PORT



HPCP602

SAMPLING POT



HPSP603

SINGLE PORT



HPCP604

TWO PORT



HPCP605

SIX PORT WITH LEVEL GAUGE ASSEMBLY



HPCP606



## TECHNICAL DETAILS

The primary use for condensate pots is to maximise the accuracy of differential pressure flow measurement on steam (or vapour) applications. They are used to ensure that the condensation of steam in the impulse lines does not impair the ability to accurately sense differential pressure fluctuations and to minimise gauge line error because of differences between pairs of impulse lines.

The theory of operation for condensate pots is that between the process tapping and the pot is steam vapour. Between the pot and the differential pressure transmitter is water (liquid) which eliminates any measurement errors due a liquid / vapour mix at the measurement device. In order for this to work correctly both high pressure (HP) and low pressure (LP) impulse lines should be of the same length. Thus, eliminating pressure head errors. One condensate pot will be required for each impulse line.

The condensate pots are available in a range of materials and have been designed in accordance with ASME SEC VIII Div. 1 and produced in an ASME coded workshop. All condensate pots are CE\* marked to PED 2014/68/EU upon request. For use with Group 2 Gases.

Installation can be either vertical or horizontal lines between the primary (Flow Meter) and the secondary (transmitter/ gauge) to act as a barrier to the line fluid permitting direct sensing of the flow conditions. Units should be mounted at the same level minimising possible error that could arise due to unequal head of fluid in the connecting pressure lines. Please refer to our Condensate Pot Installation Guide for further details.

Typical industry applications include Refineries, Power plants, Chemical and Petrochemical, Steel plants and other process industries

## FEATURES

- CE\* marked to PED 2014/68/EU upon request.
- High/Low Pressure Rating options
- Available in 0.5 to 5.0L
- Range of exotic materials
- Use as liquid or condensate traps, seal pots, vapour chambers and knockout pots.
- All connectors are furnished with plastic plugs
- Chambers are made from seamless pipe and weld caps. All pipe connections are 3000# / 6000# / 9000# half couplings mounted on 90° angle. Extra connections can be furnished upon customer request.
- All welding as per ASME SEC IX
- All butt-weld joints will be 100% radiographed and fillet weld will be D.P. tested.
- All threads will be protected with dead plugs/plastic caps.
- ASME VIII U stamping and TR CU certification available on request.

\*\*For condensate pots with internal volumes of 1 litre or less, a CE mark is not permitted as they are covered by a manufacturers declaration under SEP

## TECHNICAL DETAILS

All condensate pots are designed in accordance with ASME VIII Div. 1 and produced in an ASME Coded workshop. All are CE\* Marked to PED 2014/68/ EU for use with Group 2 Gases (non-hazardous) upon request.

ASME VIII U stamping and TR CU certification are available upon request & at extra cost.

Design temperature 100 °C.

\*\*Other pressures, temperatures and materials available as special order. For these applications, please state pressure, temperature and material requirements.

**Design Pressures in Bar		
Material	LP	HP
Stainless Steel	132	190
Monel	107	154
Stainless Steel	131	189
Steel	112	163
6Mo	150	217

Dimensional Details for standard pots		
Capacity	Diameter	Length 'L'
0.5 Litres	73mm	246mm
1.0 Litres	88.9mm	282mm
2.0 Litres	114.3mm	347mm
3.0 Litres	114.3mm	482mm
5.0 Litres	114.3mm	754mm

## TECHNICAL SPECIFICATION :

- **Standard size:** Pipe size 3" 4" and larger size upon request
- **Standard length:** Pipe length 8", 10", 12" and larger length as per volume and upon request.
- **Working pressure:** Up to 6000 psi [41.34 MPa]
- **Standard material of construction:** SS316, SS316L, ASTM A106Gr.B, ASTM A335 P11, P22, P92, ASTM A182 F9/ F92
- Optional Sour Gas service valves are available, confirming to NACE Std. MR-01-75.
- **Pipe Schedule:** 40 80, 160, Seamless pipe.
- Chamber as per ISA RP3
- NPT as per ANSI B2.1 taper pipe thread ½" furnished.
- Socket weld as per ANSI B16.11
- Butt-weld as per ANSI B16.9
- All chambers are 100% factory tested prior to shipment
- **Testing:** Hydrostatic shell test is performed 1.3 times the working pressure.

## CHEMICAL INJECTION QUILLS & CORPORATION STOPS :

### **The Purpose of an Injection Quill is to...**

- Provide a safe and effective means of connecting a liquid chemical feed to a pipeline or vessel;
- Introduce the chemical into the more dynamic section of the process flow.

### **The Risks of not using a Quill**

The chemical line was connected directly to the tap corroding out both the saddle and the main.

## ORIENTATION

Injection quills are often shown in photos and literature as being mounted at a 12 o'clock position. However, this orientation is not always required. Several factors need to be considered when determining orientation of the quill on the process pipe. Below is a brief overview of some of the more common considerations that need to be taken into account.

## CHEMICAL FEED CONNECTION

Each application will present its own unique considerations when it comes to the particular method of connecting the quill to the chemical feed line. Connections can be made to the injection quills in two main ways:

### **• Rigid Connection**

This connection type utilizes rigid pipe to carry the chemical and eventually connect to the quill. The big drawback to this method is that it can require additional isolation valves and unions to be in place to allow the connection to be broken so that the quill can be free to be retracted. The advantage to rigid connections is that it can allow for higher working pressures as compared to flexible hose or tubing.

### **• Flexible Connection**

In this instance, flexible hose or tubing is run to the quill and connected. The advantage here is that the line does not have to be disconnected to remove the quill. In many installation scenarios, details will depict chemical piping only up to a certain point. The last bit of connection between the quill and the chemical feed is often left up to the installing contractor. Our flexible hose assemblies help take some of the mystery out of the connection by providing an assembly that allows the quill to connect to the point where the chemical feed piping terminates.

## SELECTING

Selecting an injection quill should not be difficult. Yet, at the same time, selecting the wrong quill can lead to a whole host of headaches. As a result, it is important to consider selection. There is no such thing as a 'standard' quill. Each quill we manufacture is specifically configured for its intended use. This configuration takes into account the chemical feed parameters, the process conditions, and a whole host of other information that can affect the final design. This is unfortunately, where the process might seem more difficult than it needs to be. This guide works to help reduce the headache by providing an in depth look at the various factors that go into quill selection. While not exhaustive of the subject, we hope this guide helps to provide a common understanding of the various aspects of quill selection.



## TECHNICAL DETAILS

### *Before Selecting*

It is important to gather as much information as possible on the intended application you are trying to select for. Below is the initial information we recommend gathering. Rarely is all of the information available, but every bit helps.

### **TEE-TYPE ACCESS FITTING :**

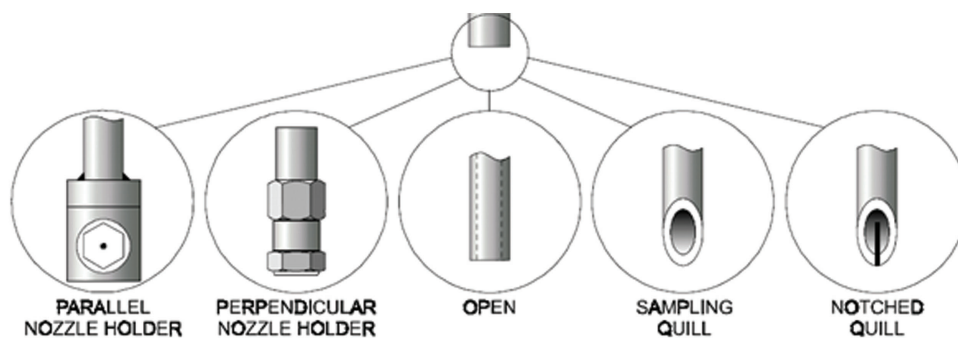
The tee-type access fittings are designed for use in applications that require inlet or outlet of fluids under pressure. Examples of applications using tee-type access fittings include chemical injection systems and systems for the sampling of process fluid and monitoring using sacrificial probes. In addition, with the tee sealed off, the body can also be used for all the applications of non-tee bodies such as corrosion coupons, electrical resistance probes and linear polarization probes.

The recommended sealing of the tee is accomplished with a nipple and shut-off valve, or with a flanged shut-off valve connected to the Flangeolet. This maintains the hydrostatic integrity of the system during connection and removal of ancillary equipment used with the tee fitting.



### **SPRAY ANGLE :**

Spray angle is affected by viscosity, spray distance, and pressure differential.



### **SPRAY COVERAGE :**

This is the theoretical coverage area.

### **SPECIFIC GRAVITY :**

The specific gravity of a liquid is the density ratio of the liquid to water. The flow rate of a liquid is affected by its specific gravity.

## TECHNICAL DETAILS

### INJECTION RATE :

This is the amount of chemical to be injected within a specified time and is defined as Gallons per Hour (GPH), Litres per Day (LPD), etc. Injection Systems are available for injection rates varying from 0.1 GPH (0.38 litres/hr) to 65.7 GPH (250 litres/hr).

An Access Fitting body with a side Tee through which the fluid transfer takes place. The Tee may be threaded or welded. Welded Tees either are flanged or butt-weld nipples. Threaded Tees are based on an NPT tapped hole in the fitting body. The Tee size is rated according to the injection rate and viscosity of the injected chemical.

A **Solid Plug Assembly** inside the fitting body is used to carry an injection nut that has the injection tube/nozzle assembly screwed into its base. The plug assembly fits within the access fitting body and provides a complete pressure seal. It also acts as a retrievable carrier for the monitoring devices. Two basic plug assemblies are offered as standard offerings: solid or hollow. A solid plug is required for the Chemical Injection and Sampling system.

**1. An Injection/Sampling Nut** is a multiple use device that replaces the nut on the end of the solid plug. It is used to direct the injected product to the injection tube or atomization device.



### **2. The Injection/Sampling Tube or Nozzle.**

a. **Quill** is an open-ended tube cut at a 45° angle with a slot.

It utilizes the turbulence created by its unique design to achieve distribution of the injected chemical into the product flow. Injection Tube Quills are clog proof and give extremely good dispersion of the inhibitor if the product flow is 15 ft. per second or greater. As with the Open Tube, injection rate must be controlled at the injection pump or shut-off valve.

b. **Open** is an open tube. The natural turbulence within the pipeline is used to insure even distribution. There is essentially no pressure differential experienced at the orifice, so it is necessary to control the injection rate at the injection pump or the shut-off valve.

c. **NPT** is similar to the Open Tube but is threaded at the dispersion end, thus allowing attachment of female nozzle assemblies. Injection may be perpendicular to the flow with the use of a straight nozzle or parallel to the flow with the use of a right angle nozzle.

d. **Head with Caps, Cores, and Strainers** are the various devices that, when attached to the dispersion end of the Injection Tube, permit atomization of the fluid as it is injected into the product line or vessel. The assemblies can be provided in complete units that contain caps, cores, and strainers. The head has female threads to match threads on the caps, cores, and strainers, so that these attachments can easily be replaced.

**3. Nipples** are used with threaded Tee Access Fitting bodies and are the means of connecting the shut-off valve to the Access Fitting body.

## TECHNICAL DETAILS

4. **Shut-Off Valves** are required to cut off the injection flow and maintain pressure integrity through the Tee when the Solid Plug Assembly is being removed or replaced. They are also used to control the injection flow rate.

5. **Check Valves** are optional items that may be fitted either within the Injection Tube or in the inlet line to the Access Fitting Body Tee

6. **The Injection or Feed Pump** must be capable of generating sufficient injection line pressure to overcome the line operating pressure and thus create the required pressure differential across the atomizing nozzle or injection tube.

### PROTECTIVE COVER :

The heavy protective mechanical steel covers have an Acme ID thread to mate with the access fitting body. They provide thread protection, and help prevent damage caused by weather, tampering, or vandalism. The hydraulic cover also holds the plug towards the sealing surface for the hydraulic access system.

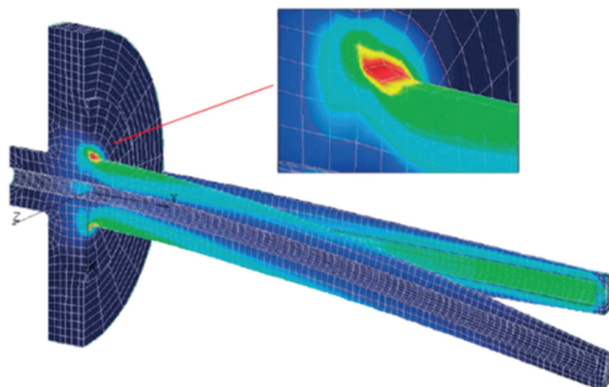
The mechanical and hydraulic protective covers are available in two versions:

- Cover without hole
- Cover with bleed and pressure gauge



### INJECTION TUBE SIZING :

(Lengths are rounded down to the nearest 1/4", except for flush devices, which are rounded down to the nearest 1/8".)





## TECHNICAL DETAILS

### 1).NON-RETRACTABLE /FIXED INJECTION QUILL :

These are used to inject corrosion inhibitors and other special chemicals into the Oil, Gas, Crude & other fluid pipe line. The typical material of construction is SS 316 / 304 grade, Inconel 625 / 825, Monel, Hastelloy, Super Duplex Etc.

**MODEL NO.**  
**HPIQ101**



### Non-Retractable – Chemical Injection Quills

Injection quills are designed to ensure a uniform and rapid dispersal of injection chemicals into the center stream of a process pipeline. This prevents corrosive liquids from clinging to the side of the pipe.

Injection quills are available in a variety of materials and pressure ranges. Pressure and temperature are dependent on the material of construction and vary from 150 to 10000 psi and 100 °F (37 °C) and 500 °F (260 °C). Fixed or retractable quills that have an isolation and / or a bleed valve incorporated in the design will facilitate the safe discharge of trapped or excess chemical to a drain or safe disposal area or container.

### Options :

- With or without check valves;
- Standard lengths of 2 3/4” for 4” pipes;
- Custom lengths to 36” (SP);
- Materials: PVC, Stainless Steel.

### Recommendations :

- For lines smaller than 4” diameter, trim quill can be used so that the chemical is released near center of line. Use as is for lines over 4” diameter or order special length that will disperse the chemical near the center of the pipe.
- Install with “Tell-tale” V-notch facing upstream so flow strikes angled face at end of quill for most rapid dispersal of injected chemical.
- For maintenance ease, installation of an isolation valve, rated above line operating pressure, immediately behind the quill is recommended.

### Features :

- Lever operated stop eliminates the need for a wrench.
- Protection chain prevents withdrawal before Corporation Stop is closed.
- Operating pressures to 150 psi.
- Quill available in Corrosion-resistant CPVC, 316 stainless steel.
- Corporation Stop (brass standard, stainless steel optional) available with 1/2”, 3/4” or 1” process connections.
- Inlet connection 1/2” female on all models.

## TECHNICAL DETAILS

### 2).RETRACTABLE QUILL

The distinction between the two types is whether the quill can be inserted and retracted while the process pipe is pressurized. Non-retractable quills are like other various pipefittings in that the system needs to be depressurized in order for the quill to be inserted or removed.

Retractable injection quills are the more complex of the two types. Their design allows the solution tube to be inserted and retracted without having to fully depressurize the process main. Understanding their operation and their role in the overall metering system goes a long way to ensure a trouble free chemical feed application.

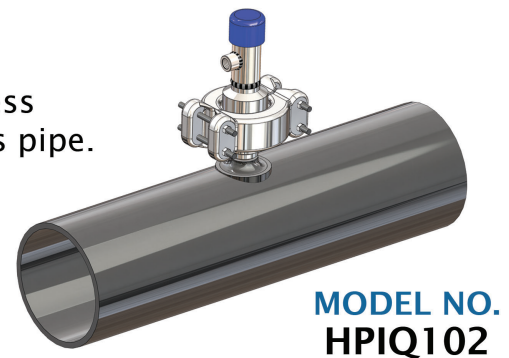
Treatment chemicals present a variety of risks and hazards. It is the job of the entire metering system to mitigate these risks while simultaneously delivering the proper amount of chemical to where it is needed. Injection quills are central to this. The right quill will efficiently deliver chemical while protecting operators and equipment.

Quills dose the chemical into the interior section of the flow, keeping the chemical away from the sidewall and fittings.

This helps to prevent damage and has the added benefit of introducing the chemical into the higher velocity interior section of the flow. This allows the chemical feed to make the best use of existing flow dynamics to improve chemical

#### Retractable Injection Quills :

Retractable sampling probes allow a representative process sample to be drawn from the interior section of a process pipe. The sample enters through the bevelled tip of the probe. The isolation on the end of the probe allows for either use of the probe for simple jar sampling or for connection to a sample line running to an analyser.



#### The Reason for Retractable :

Many treatment chemicals are prone to forming deposits, which can clog an injector. Retractable injection quills allow for removal of the quill without having to fully depressurize the process. This speeds up the regular maintenance cycle time and avoids costly shutdowns.

#### Parts of a Retractable :

While specific components vary, all retractable quills consist of the following features.

##### 1. Solution Tube

The solution tube is chemically wetted portion of the quill that carries the treatment chemical from the feedline to the point of discharge. It passes down through the port of the isolation valve assembly and then protrudes down into the process flow. This ensures the chemical is contained and isolated from start to finish.

##### 2. Restraint System

The restraint system serves two purposes.

- First, when in operation, the restraint system keeps the solution tube in place, holding back against the process pressure.
- Second, when inserting and retracting the quill, the chain(s) limit the tube's extraction to a point where it is clear of the valve but still sealed off by the compression gland.

## RETRACTABLE QUILL

### 3. Isolation Valve Assembly

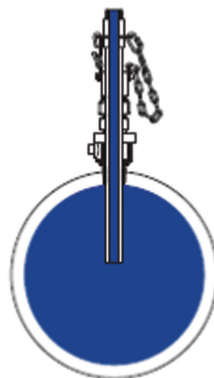
The isolation valve assembly consists of a valve and compression gland. The gland compresses an O-ring against the outside of the solution tube sealing off against the process pressure. When the quill is being retracted, the isolation valve closes to fully isolate off against the process pressure so that the solution tube can be fully removed.

#### • RETRACTION PROCESS

The steps below illustrate the basic phases in retracting an injection quill. Refer to individual installation manuals for exact details on a specific model.

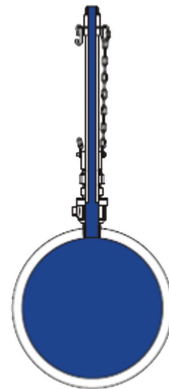
#### • Operating Position

In operation, the solution tube passes through the port of the valve. The compression gland seals against the outside of the tube, preventing process line pressure from passing out of the valve



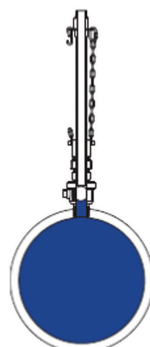
#### • Retracted, Valve Open

The quill is retracted until the limit chain is fully extended. At this point, the tip of the quill is clear of the valve and the gland is still sealing off against the process pressure.



#### • Isolation Valve Closed

With the tube clear, the isolation valve is closed sealing off against the process pressure. Once sealed, the gland can be slowly backed off, allowing any pocket of pressure to bleed off.



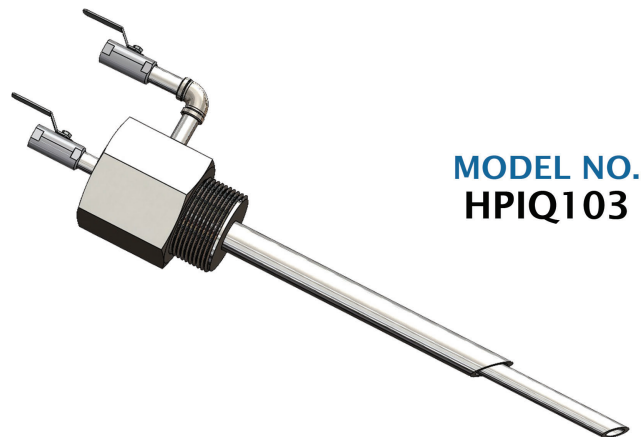


## TECHNICAL DETAILS

### 3).DUAL PORT INJECTION QUILL

These dual port chemical injection quills are specially designed to ensure a more uniform and rapid dispersal of Two chemical injects into one port. This allows the chemicals to be injected near the center of the process stream pipe and minimizes any chance of chemicals clinging / damaging of the pipe inner surface.

The dual injection quills are primarily made of Type 316 SSTL; they are designed to allow two chemicals to be injected into one port simultaneously.

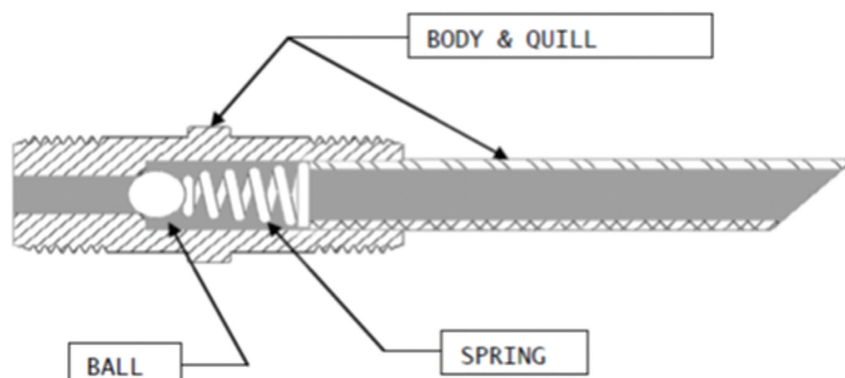


### Standard P/N Design Options :

- Process Connection Size: 1/2", 3/4", or 1" mnpt (-050, -075, & -100, respectively).
- High Pressure Check Valve Kits
- Shutoff Ball Valves

### Features :

- Check valve kits are an option for the pump side connection for easy installation and come assembled ready for use.
- Insertion length of the inner tube is adjustable, based on where the compression fitting is secured.
- Hex shaped body allows a wrench to be used during installation
- This product includes two 1/4" or 1/2" pump connectors for quick connection of you 1/4" or 1/2" chemical tubes.

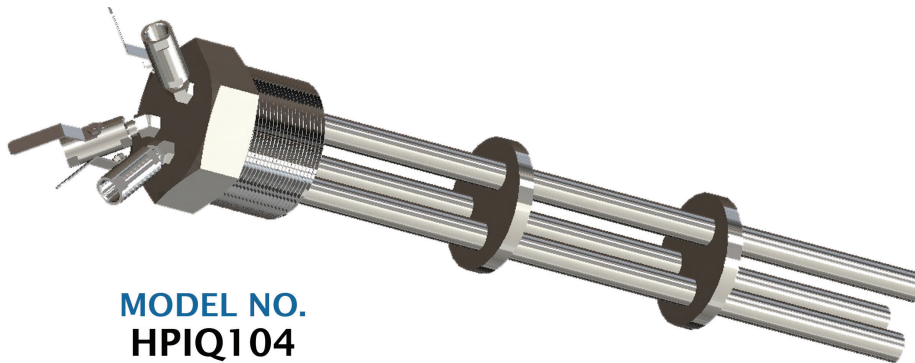


## TECHNICAL DETAILS

### 4).RETRACTABLE 3 PORT QUILL

#### Application Includes

- Injection Quills are designed to ensure a more uniform and rapid dispersal of injection chemicals into the center of the process pipe of tank.
- Deaerator and boiler feed water tank applications are suited well for this product.
- This product is primarily made of type 316 stainless steel.



#### Features

- Three shut off ball valves are included with this product.
- Alloy 20 and Hastelloy materials are also available.
- Special quill lengths may also be order upon request.
- Hex body shape allows for a wrench to be used during installation.
- Each quill is welded to two rings to prevent quills from unscrewing.
- Optional: Check valves are optional with this unit. If ordered they come installed.
- This retractable chemical injection quill allows for proper injection into liquid, gas or mixed phase system.
- Nozzles can be removed for inspection without system shutdown.
- Adjustable quill permits precise positioning of quill in fluid flow.
- Restrains stinger during insertion/removal.
- Standard size includes: 1/2", 3/4", & 1" MNPT (standard).
- Other available in larger sizes, up to 3" MNPT connection.
- Welded safety collar.
- Other available CPVC, Alloy 20 Hastelloy.
- Quill internal diameter is 1/4".
- Pressure rating: 300 psi.
- Wetted Parts: 316 stainless steel.
- Packing: Graphite (maximum temperature 700 F).
- Rated to 500 °F.
- Includes one 316 SSTL shut off ball valve.

## TECHNICAL DETAILS

### 5).4 PORTS INJECTION QUILL

These 3 and 4 port chemical injection quills are specially designed to ensure a more uniform and rapid dispersal of three or four chemicals into one port. This allows the chemicals to be injected near the center of the process stream tank or deaerator.



**MODEL NO.  
HPIQ105**

This standard product is made of 316 SSTL, Alloy 20 and Hastelloy materials are also available upon request.

#### Features :

- Manufactured with 1", 1 1/2", and 2" mnpt process connect threads.
- Hex body shape allows a wrench to be used during installation.
- Each quill is welded to two rings to prevent quills from unscrewing.
- The product may be ordered with 3 or 4 inject ports.

Optional shut off ball valves and check valve kits may be added to your order

### 6.SAMPLING QUILL/PROBES :

Sample and Injection Quills are generally constructed from an alloy such as 316/316L stainless steel. Materials to manufacture quills include bar stock, ASME pipe, flanges and fittings. Quill assemblies are manufactured to include valves and other process piping components.

**MODEL NO.  
HPIQ106**



Typically, the need would be to allow a small process sample to be removed for evaluation under full system pressure.

Usually this is achieved by opening and closing of the primary isolation valve thus trapping a sample of the process fluid between the primary and secondary isolation valves. Using the Vent valve, this sample can then be safely vented off at reduced pressure.

Alternatively, if larger samples are required then this can be achieved by use of the primary and secondary isolation valves with an optional Non Return Check Valve being fitted to prevent back flow into the process stream.



## CONSTRUCTION

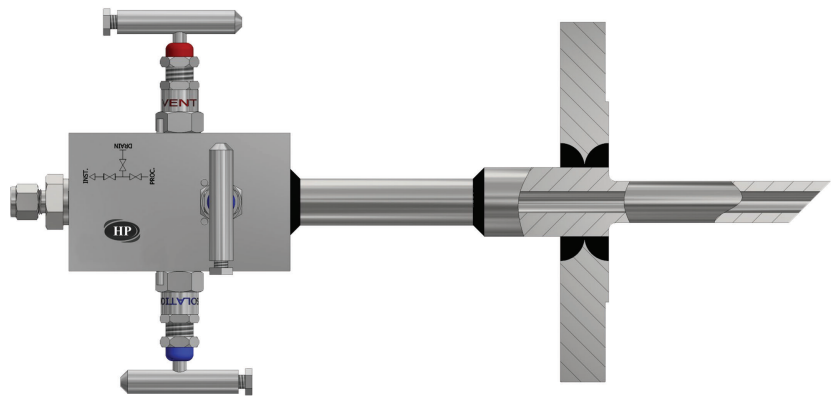
Probes / Quills can be manufactured in several ways to suit the user's requirement:

- \* The outlet flange and the probe can be made from a single one-piece forging or from forged bar stock
- \* The Quill / probe is manufactured from forged bar stock, which is then screwed and torqued into the outlet flange. If required the probe can also be seam welded to provide added strength.
- \* The Quill / Probe can be socket welded into the outlet flange

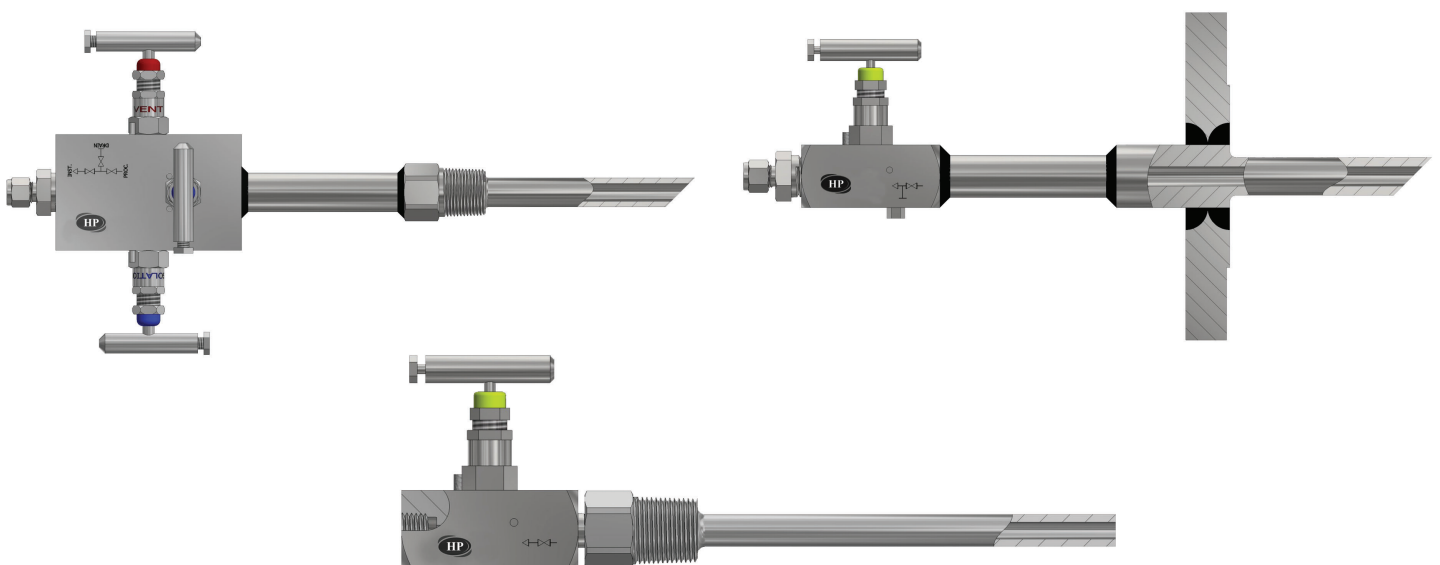
### DESIGN CONSIDERATIONS

When designing a quill to suit your application it is important to consider the following:

- Bore size
- Piping Connection
- Process connection
- Material
- Insertion (U) length
- Overall length
- Quill material
- Tip diameter
- Root diameter
- Process temperature
- Process pressure
- Process compatibility

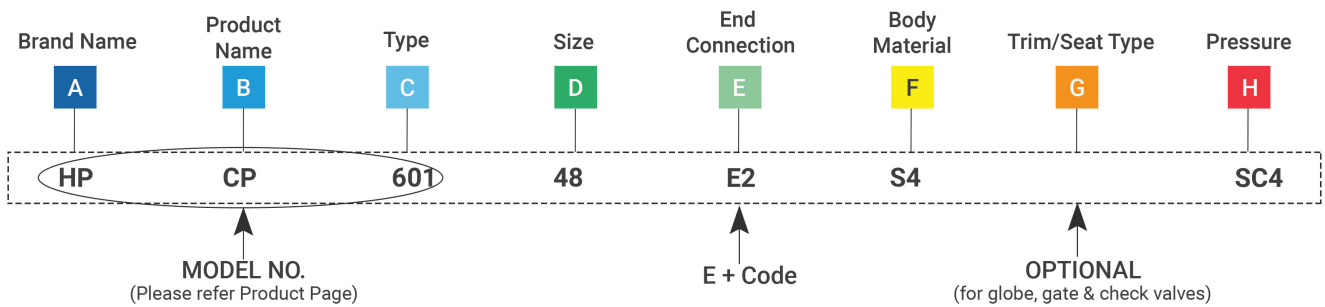


The fluid is typically sampled from or injected to the center of the pipeline. The pipe of the sampling probe/injection quill has to be run through the nozzle and reaches out to the middle of the process pipe. The flange and pipe are jointed to one piece to ensure a solid and leakage-free integration. Depending on the material, the pipe for the sampling probe/injection quill is made of bar material



# CONDENSATE POTS - PART NO. ORDERING SYSTEM

Example: Condensate Pot, 3", SCH80, SS316, 3Port Type.



D	SIZE		
6m	6mm	<b>INCH</b>	
8m	8mm	1	1/16"
10m	10mm	2	1/8"
12m	12mm	3	3/16"
16m	16mm	4	1/4"
18m	18mm	5	5/16"
20m	20mm	6	3/8"
25m	25mm	8	1/2"
28m	28mm	10	5/8"
<b>METRIC</b>		12	3/4"
M10	M10	14	7/8"
M12	M12	16	1"
M14	M14	20	1-1/4"
M16	M16	24	1-1/2"
M18	M18	26	1-5/8"
M20	M20	28	1-3/4"
<b>NOMINAL BORE</b>		32	2"
15N	15 NB	40	2-1/2"
20N	20 NB	48	3"
25N	25 NB	56	3-1/2"
32N	32 NB	64	4"
40N	40 NB	96	6"
50N	50 NB	-	-
80N	80 NB	-	-
100N	100 NB	-	-
150N	150 NB	-	-
200N	200 NB	-	-
250N	250 NB	-	-
300N	300 NB	-	-

E	END CONN.
1	OD
2	NPT
3	BSPP
4	BSPT
5	UNF
6	METRIC
7	NB(PL) or NB
8	OD(PL)
9	SW
10	Tube Ends
11	Flanged Ends (Raised Face)
12	Flanged Ends (Ring Type Joint)
13	Flanged Ends (Flat Face)
14	Butt Weld Ends
15	Screwed Ends
16	Lugged Ends
17	Wafer Ends

G	SEAL TYPE
GL	Grafoil
PE	PTFE
PK	PEEK

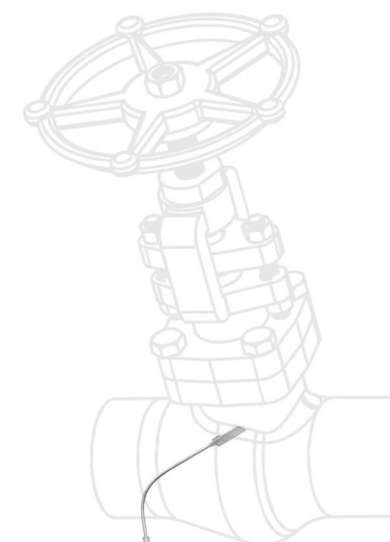
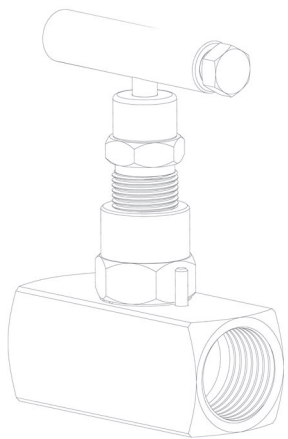
G	TRIM
T1	1
T2	2
T3	5
T4	8
T5	10
T6	12
T7	15
T8	16

F	BODY MATERIAL	
<b>Carbon Steel</b>		
C1	ASTM A105	
C2	ASTM A106	
C3	ASTM A350 Gr.LF2	
C4	EN 1215	
C5	EN 4140	
C6	ASTM A216 Gr.WCB	
C7	ASTM A352 Gr. LCB	
C8	ASTM A216 Gr.WCC	
<b>High Nickel Alloy Steel</b>		
N1	Monel K400	
N2	Monel K500	
N3	Inconel 600	
N4	Inconel 625	
N5	Inconel 718	
N6	Inconel 750	
N7	Inconel 825	
N8	Hastelloy C276	
N9	ASTM A484 CU5MCuC	
N10	ASTM A494 CY40	
N11	ASTM A494 M35-1	
<b>Stainless Steel</b>		
S1	ASTM A182/A479/A312/A213/A269 Gr.304	
S2	ASTM A182/A479/A312/A213/A269 Gr.304L	
S3	ASTM A182/A479/A312/A213 Gr.304H	
S4	ASTM A182/A479/A312/A213/A269 Gr.316	
S5	ASTM A182/A479/A312/A213/A269 Gr.316L	
S6	ASTM A182/A479/A312/A213/A269 Gr.316/316L	
S7	ASTM A182/A479/A312/A213 Gr.316H	
S8	ASTM A182 Gr.316Ti	
S9	ASTM A182/479 Gr.317	
S10	ASTM A182/479 Gr.321	
S11	ASTM A182 Gr. F347	
S12	ASTM A479 Gr.410	
<b>Alloy Steel</b>		
A1	ASTM A182 Gr.F11	
A2	ASTM A335 Gr.P11	
A3	ASTM A182 Gr.F22	
A4	ASTM A335 Gr.P22	
A5	ASTM A182 Gr.F91	
A6	ASTM A335 Gr.P91	
A7	ASTM A182 Gr.F92	
A8	ASTM A335 Gr.P92	
<b>Other Material</b>		
MS	MS	
CU	Copper	
BR	Brass	
PE	PTFE	
TC	Tungsten Carbide	
PE4	PTFE with SS304 Braided	
PE6	PTFE with SS316 Braided	
PP	Polypropylene	
GI	Galvanized	
CP	CPVC	
UP	UPVC	
PL	Plastic	
AL	Aluminium	
-	-	
-	-	
-	-	
S28	ASTM CK3MCuN	

H	PRESSURE	
<b>PSI (Bar)</b>		
P1	150 (10)	
P2	210 (15)	
P3	1000 (70)	
P4	2000 (140)	
P5	3000 (200)	
P6	6000 (400)	
P7	9000 (630)	
P8	10000 (700)	
P9	15000 (1055)	
P10	20000 (1400)	
P11	30000 (2110)	
P12	40000 (2800)	
<b>Class Rating</b>		
C1	150	
C2	300	
C3	600	
C4	800	
C5	900	
C6	1500	
C7	2500	
C8	2500SPL	
C9	3000	
C10	3000SPL	
C11	4500	
<b>Schedule</b>		
SC1	10	
SC2	20	
SC3	40	
SC4	80	
SC5	160	
SC6	XXS	



# CLIENT LOCATIONS ACROSS THE WORLD



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**Roc(CIN):** U29120TN2008PTC067808 | **GST No:** 33AACCH0510P1ZU | **IEC No:** 408028777

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