



# **Product Catalog**

2022

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# Chemical Injection \

# ECOsystem™ Hydrogen Injection System



The Welker ECOsystem™ is a simple, reliable gas injection system designed to deliver precise, controlled volumes of hydrogen into natural gas pipelines.



## Features

- Few moving parts
- Proprietary program automatically adjusts the injection rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trail and alarms log backed up to microSD card
- Welker F-9 Filters removes contaminants from injection gas

## Benefits

- Reduce maintenance
- Continuous proportional to flow injection
- Off-site system monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Contaminant removal prolongs operational life and reliability
- Redundancy limits interruptions to operation

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



# The Oiler Small Volume Chemical Injection System



Prevent bearing burnout in turbine meter systems with the Welker Original Oiler Small Volume Chemical Injection System. This compact system automatically delivers a small fixed volume of chemical—such as lubricating oil—on a time or proportional to flow basis.

## Features

- Rain-tight, watertight, corrosion-resistant enclosure with padlock hasp and clear cover
- Injection pump actuated by regulated process gas
- Easy-access injection chemical reservoir
- Panel-mounted
- On-board UL listed Welker 6Tc Timer/Controller (optional)

## Benefits

- Automatic consistent and even chemical injection
- Confidently inject desired chemical in aggressive environments and remote locations
- Easy on-site visual monitoring of regulator pressure and injection chemical volume
- No auxiliary pneumatic supply required
- Refill the injection chemical reservoir without opening the enclosure
- Secure system to a 2" pole or pipe stand
- System operates proportional to flow or time without an external power supply (optional)



## SPECIFICATIONS

THE OILER SMALL VOLUME CHEMICAL INJECTION SYSTEM

### The Oiler

Materials of Construction	316/316L Stainless Steel, Anodized Aluminum, Butyrate, PTFE, Nylon, Viton®
Operating Range	0–100 psig @ -20 °F to 140 °F
	20–1440 psig @ -20 °F to 140 °F
Connections	<b>Instrument Supply Inlet:</b> ¼" FNPT
	<b>Injection Chemical Outlet:</b> ¼" FNPT
Injection Volume	0.25 cc/Stroke
Injection Chemical Reservoir Volume	250 cc
Mounting	Panel-Mount for 2" Pole or Pipe Stand
Weight	Approx. 10 lb
Dimensions	<b>Enclosure:</b> 10" (H) x 8" (W) x 4" (D)
	<b>Panel:</b> 12.75" (H) x 8" (W)
Operating Pressure	100 psig @ -20 °F to 140 °F
	1440 psig @ -20 °F to 140 °F
Electrical Area Classification	NEC Class I, Div. 1, Groups C & D, T3C
Options	CSA Approval, Instrument Supply Regulation Package, Solenoid (DC 6 V, DC 12 V, or DC 24 V), Stainless Steel Tubing and Fittings, Welker 6Tc Timer/Controller

Weight and/or dimensions are approximate. Specifications subject to change without notice.

## Cleaning & Maintenance \



Welker's Grime-X™ is a professional-strength general purpose cleaner tough enough for industrial applications but safe enough to use at home. Able to quickly cut through oil, grease, and stains, Grime-X™ is the perfect sidekick for rapid cleanup on the job.

### Application

Grime-X™ quickly cuts through oil and grease for rapid cleanup. Though safe to use on all surfaces, Grime-X™ is ideally suited for cleaning machines, equipment, tools, and more.

### Directions for Use

Wear appropriate personal protective equipment (PPE) during use. For small, targeted cleaning, directly spray onto problem surface and wipe away. No rinsing required.

Safely apply Grime-X™ with a steam cleaner, pressure washer, or foamer for heavy-duty cleaning applications or to clean large areas.

**Pressure Washing:** Apply 12–16 US fl oz Grime-X™ : 1 US gal Water

**Foam Cleaning:** Apply 12–16 US fl oz Grime-X™ : 1 US gal Water

### Features

- Non-VOC
- Non-Toxic
- Non-Hazardous
- Safe
- Water Soluble



## PHYSICAL PROPERTIES

GRIME-X™ MULTIPURPOSE CLEANER

Grime-X™	
Physical State	Liquid
Color	Yellow
pH	11.4–12.4
Percent Volatile	80%
Flash Point	None to Boiling
Boiling Point	ND
Solubility in Water	Soluble
Specific Gravity	1.02 to 1.05

Wear safety glasses and gloves.  
Refer to the Safety Data Sheet for further handling information.

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# Scale-X™ Dithiazine Remover



Hydrogen sulfide (H<sub>2</sub>S) scavenging is bittersweet—it removes corrosive (H<sub>2</sub>S) from your natural gas stream but produces dithiazine, an insoluble solid that can plug valves and instrumentation. Removing this unwanted byproduct has been a time-consuming and labor intensive process **until now**. Welker's Scale-X™ is an acidic cleaner and descaler specially formulated to dissolve troublesome dithiazine buildup and optimize flow performance.

## Application

Over time, amorphous dithiazine—an insoluble solid produced when certain amine-based hydrogen sulfide (H<sub>2</sub>S) scavengers react with hydrogen sulfide (H<sub>2</sub>S)—collects inside valves and instrumentation, reducing flow. Scale-X™ is specially formulated to dissolve this buildup and optimize flow performance.

## Directions for Use

Wear appropriate personal protective equipment (PPE) during use. Directly spray onto affected parts until soaked. After allowing an appropriate amount of time, wipe the treated surface. No rinsing required.

## Features

- Non-VOC
- Non-Toxic
- Non-Hazardous
- Safe
- Water Soluble



## PHYSICAL PROPERTIES

SCALE-X™ DITHIAZINE REMOVER

Scale-X™	
Physical State	Liquid
Color	Green
pH	2.5–3.5
Percent Volatile	70–75%
Flash Point	None to Boiling
Boiling Point	210 °F to 220 °F
Solubility in Water	Soluble
Specific Gravity	1.17 to 1.18

Do not get in eyes or on skin or clothing.  
Refer to the Safety Data Sheet for further handling information.

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# WelkerScope® Lite Inspection Tool

The WelkerScope® Lite is a liquid gel illuminated inspection device that provides a means of inspecting meter tubes or other piping configurations without disassembly.

## Features

- Rechargeable power packs
- Liquid gel for superior light transmission
- Largest field of view available in a portable scope

## Benefits

- Portable, lightweight and easy to use
- Easy hook-up to digital camera
- Convenient inspection without disassembly of your meter tubes



## SPECIFICATIONS

WELKERSCOPE® LITE INSPECTION TOOL

### WelkerScope®

Materials of Construction	316/316L Stainless Steel, Aluminum
Temperature Range	20 °F to 104 °F
Pipeline Connection	½" MNPT or larger coupling
Insertion Length	8" to 10"
Electrical Connection	AC 120 V
Maximum Line Pressure	Atmospheric

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# AEF Atmospheric Exhaust Filter



The Welker AEF Atmospheric Exhaust Filter is an economical solution for passive removal of mercaptan odor from exhaust and vent gases. Available in three capacities: 1 Quart, 15 US Gallons, and 55 US Gallons, there is an AEF suitable for your application.

**Features**

- Proprietary blend filters mercaptan odor

**Benefits**

- Prevents the release of odorized gas into the atmosphere
- Minimizes unnecessary leak calls



## SPECIFICATIONS

AEF ATMOSPHERIC EXHAUST FILTER

	AEF
Inlet Connection	1/4" FNPT
	1/2" FNPT
	3/4" FNPT
Nominal Volume	1 Quart
	15 US Gallons
	55 US Gallons
Temperature Range	0 °F to 140 °F
Operating Pressure	Atmospheric Conditions Only

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# MerCapture™ Kit Odor Containment Case & Kit



CONTROL



CONTAIN



The Welker OdorEyes MerCapture™ Kit Odor Containment Case and Kit has everything you need to deodorize and return odorizer parts contaminated by mercaptan and other odorants inside a portable, shipping-friendly case.



## Features

- Hard sided polypropylene case with automatic air release valves
- Odor-tight, watertight seal
- Soft grip handles
- Stay open lid
- Off road style wheels
- Retractable handle
- Padlock holes
- OdorXice™ Plus

## Benefits

- Protects case contents during transport and shipping
- Keeps unwanted moisture and dust out and unpleasant odors in
- Comfortably carry the case
- No pinched fingers
- Smooth transport and easy maneuvering in the field and through airports
- Added security during shipment or air travel
- Eliminates odors caused by mercaptan, sulfide, and thiophene



Weight and/or dimensions are approximate. Specifications subject to change without notice.

# OdorXice™ Plus Odorant Remover



The Welker OdorXice™ Plus removed odorization chemicals added to natural gas. This non-toxic solution is water soluble and effectively eliminates odors caused by mercaptan, sulfide, and thiophene from containers, parts, vehicles, clothing, and tools instead of merely masking the smell.

## Features

- Non-toxic
- Non-hazardous

## Benefits

Available in:

- 8 oz
- 1 US Quart
- 1 US Gallon



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



# Spill Kit



A key part of any company's safety program is an emergency spill response plan. Welker's Spill Kit is the solutions for emergency response to liquid odorant spills. Each kit includes personal protective equipment (PPE), tools, and clean up equipment needed to appropriately address spills of various sizes.

## Features

- Tools
- PPE
- OdorXice™ Plus
- Clean up equipment

## Benefits

- Minimizes hazards
- Neutralizes odors



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

## Containers \

# CP-2GM Constant Pressure Sample Cylinder



The Welker CP-2GM Constant Pressure Sample Cylinder is recognized for its versatile abilities to safely transport a sample in original pipeline condition and provide a uniform mix using the internal Gravity Mixer™ prior to lab analysis.

## Features

- Proven safety in cylinder design
- Maintains integrity of the sample at full line pressure from collection to analysis
- Product and pre-charge sides with floating piston
- Internal Gravity Mixer™
- DOT and Transport Canada\* approval for transportation
- Manufactured with over 40 years of industry-expertise

## Benefits

- Safety features allow user to control and monitor pressure at all time
- Cylinder design eliminates the need for excessive purging and venting gas or liquid to the atmosphere
- Pre-charging the back side of the piston protects against phase change
- Internal Gravity Mixer™ provides a proper sample mix for accurate lab analysis
- Repeatable results
- Easy to handle



## SPECIFICATIONS

CP-2GM CONSTANT PRESSURE SAMPLE CYLINDER

CP-2GM	
Materials of Construction	316/316L Stainless Steel
Seal Material	Viton®
Sample Inlet Connections	¼" FNPT
Sample Outlet Connections	¼" FNPT
Cylinder Volume	500 cc
Cylinder Mixer Type	Gravity Mixer™
Cylinder Accessories	Rupture Discs, Reliefs, Valves, and Gauges
Operating Pressure	1800 psig MAOP @ -20 °F to 120 °F
Transport Approvals	DOT-SP 7657 Transport Canada SU 4781*
Industry Standards	Complies with API 8.1, API 14.1, ASTM D1265, ASTM D3700, ASTM D4057, GPA 2166, GPA 2174, ISO 3170, ISO 4257, and ISO 10715

\*Available upon request.

## STANDARD OPTIONS

CP-2GM CONSTANT PRESSURE SAMPLE CYLINDER

**C2SD110** **AA0B0A00A0**  
SEALS  
A or F

## SEALS

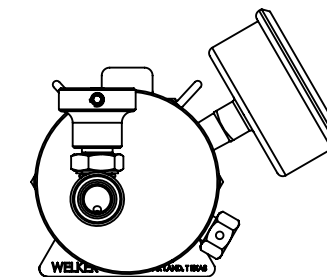
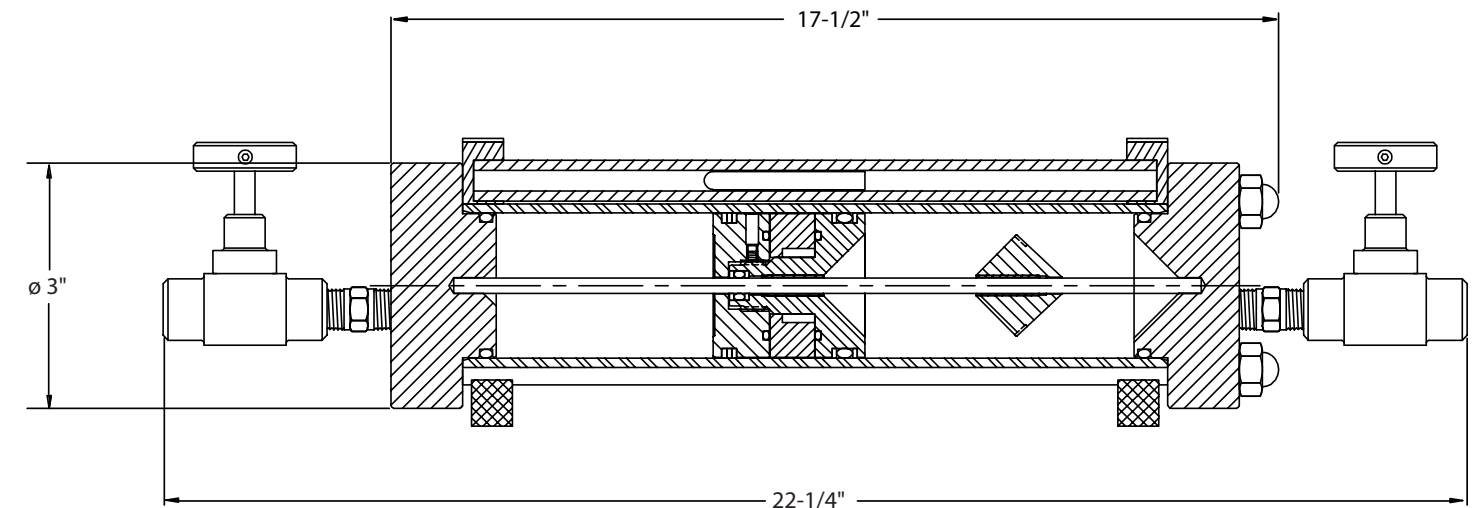
- A: Viton®
- B: Kalrez® (Product Side) and Viton® (Pre-charge side)

For custom options, choose **Plus Welker™**.

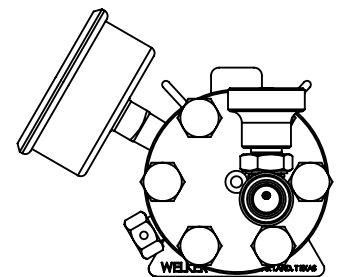


Customer Inspired. Welker Manufactured.  
Collaborate with us to create a custom product unique to your application.

## DIMENSIONS



Weight: 13.5 lb empty



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# SC Cylinder Single Cavity Cylinder



SAMPLE



CONTAIN

A DOT 3E cylinder, the Welker SC Single Cavity Cylinder is designed for the safe collection and transportation of natural gas and light liquid hydrocarbon samples.

**Complies with:** API Chapter 8, GPA 2174, ASTM D1265, ASTM D3700, AND ISO 4257 (Light Liquid Hydrocarbons)

**Complies with:** GPA 2166, API 14.1, ASTM D5287, ISO 10715 (Natural Gas)

## Features

- DOT compliance
- Welker instrument valves and relief\*
- Seamless 316L stainless steel construction
- Smooth wall-to-neck transitions
- Welker Chembar™ or Sulfinert™ treatment on sample exposed parts (optional)
- Outage tube (optional)
- Foam-lined carrying case (optional)

## Benefits

- Safely transport the cylinder to and from an off-site laboratory
- Precise flow control and overpressure protection\*
- Minimized corrosion, absorption, adsorption, and chemical reactivity
- Consistent wall thickness, size, and capacity
- No trapped fluids to skew analysis
- Easy to clean
- No vulnerable welds
- Protect against sulfur absorption and corrosion in sour gas applications (optional)
- Provide vapor space for light liquid hydrocarbons (optional)
- Carrying case stabilizes and protects the cylinder during transport (optional)



\* Standard for cylinders 500 cc and larger

## SPECIFICATIONS

SC CYLINDER

SC Cylinder	
Materials of Construction	316/316L Stainless Steel
Connections	<b>Inlet:</b> ¼" FNPT
	<b>Outlet:</b> ¼" FNPT
	Others Available
Volume	300 cc
	500 cc
	1000 cc
Options	Transport Canada Compliance Carrying Case Chembar™-Treated Sample Exposed Parts Outage Tube Sulfinert™-Treated Sample Exposed Parts
Operating Pressure	1800 psig @ -20 °F to 100 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# CC-1 Carrying Case



Welker carrying cases protect DOT 3E and 3A sample cylinders and their valves, gauges, and reliefs against costly damage during transport and shipping.

### Features

- Enhanced polypropylene case
- Watertight seal
- PrecisionFoam™ lining
- Soft grip handle
- Stay open lid
- Lifetime guarantee
- Wheels
- Retractable handle
- Reinforced metal padlock holes
- Locking TSA latches with keys



### Benefits

- Protects sample cylinders from bumps, drops, and falls
- Keeps unwanted moisture and dust out of the case
- Custom-cut foam lining provides tailored support and prevents movement within the case
- Comfortably carry the case
- No pinched fingers
- Smooth transport and easy maneuvering through airports
- Added security during shipment or air travel

MODEL	WEIGHT	INTERIOR DIMENSIONS (L x W x H)	EXTERIOR DIMENSIONS (L x W x H)
CC1GGM1K5	21 lb	36.63" x 14.5" x 6.0"	39.75" x 17.31" x 6.63"
CC1GGM1K5L.3	22 lb	44.0" x 14.5" x 6.0"	47.1" x 17.3" x 6.6"



Weight and/or dimensions are approximate. Specifications subject to change without notice.



Welker carrying cases protect valuable sample cylinders against costly damage during transport and shipping.

### Features

- Fiberglass case
- Convoluted foam lining
- Heated option
- Lay flat lid with full-length continuous hinge

### Benefits

- Protects sample cylinders from bumps, drops, and falls
- Keeps unwanted moisture and dust out of the case
- Foam lining provides tailored support and event movement within the case
- Comfortably carry the case
- No pinched fingers
- Added security during shipment or air travel



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

## Control Valve \

Invented in 1958 by Robert H. Welker, PE, the Welker Jet® is the only natural gas control valve designed by a natural gas engineer specifically to meet the needs of the natural gas industry. Even after more than 60 years, no other control valve can compare to the quiet, durable, and versatile Jet®.

Optimize transmission stations, regulating stations, city gate stations, power plants, co-generation plants, and supply fuel gas skids with a Welker Jet®. Available in top entry, flanged, or insert styles up to 600 ANSI and in five sizes ranging from 1" to 8", there is a Jet® suitable for your application.

## Features

- Pneumatically operated diaphragm motor
- High recovery
- Streamlined flow path

## Benefits

- Infinite rangeability across all valve sizes
- Noise-canceling design
- High controllable capacity
- Positive shutoff
- Frictionless hydraulic system
- Easy maintenance



## SPECIFICATIONS

WELKERJET® CONTROL VALVE

WelkerJet®	
Materials of Construction	A350 LF2 Carbon Steel, 1045 Carbon Steel, Aluminum 7075-T6 Bar, Buna, Proprietary Nitrile (Inner Valve), PTFE
Valve Size	1" 2" 4" 6" 8"
Pipeline Connection	<b>Size:</b> 1", 2", 4", 6", 8", 10", or 12" <b>Rating:</b> 150, 300, or 600 ANSI <b>Flange Facing:</b> RF or RTJ
Utility Requirements	<b>Hydraulic Supply for Inner Valve Control:</b> Texaco Aircraft Hydraulic Oil 5606G <b>Pneumatic Supply for Motor Actuation:</b> Maximum 100 psig
Operation	Diaphragm Motor
Operating Pressure	<b>150 ANSI Carbon Steel:</b> 285 psig @ -20 °F to 100 °F <b>300 ANSI Carbon Steel:</b> 740 psig @ -20 °F to 100 °F <b>600 ANSI Carbon Steel:</b> 1440 psig @ -20 °F to 100 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.



## Crude Oil Sampling \



The Essentials™ Crude Oil sampler is a probe-mounted volume regulator with a 3-way solenoid for remote operation. It's a low-cost, low-maintenance composite sampler ideal for light, stabilized crude oil.

### Features

- Externally adjustable sample volume
- Explosion-proof electric solenoid operation
- Probe-mounted with isolation valve

### Benefits

- Meet varying sample volume demands without removing the sampler from the pipeline
- No pneumatic or hydraulic supply needed for operation
- Maintain the solenoid and Welker Volume Regulator without removing the unit from the pipeline



## SPECIFICATIONS

ESSENTIALS™ CRUDE OIL SAMPLER

### Essentials™ Crude Oil Sampler

Materials of Construction	316/316L Stainless Steel
Pipeline Connection	¾" MNPT
Sample Outlet Connection	¼" FNPT
Insertion Length	10" Standard (Cut to Fit)
Electronics Options	DC 12 V, ½" FNPT Solenoid
	DC 24 V, ½" FNPT Solenoid
Sample Volume	2–5 cc
	2–10 cc
Minimum Pipeline Pressure Required	50 psig
Operating Pressure	125 psig @ -20 °F to 120 °F
Industry Standards	API Chapter 8.2, ASTM D4177, ISO 3171

Weight and/or dimensions are approximate. Specifications subject to change without notice.



The Welker inFlow™ Crude Oil Sampler is a sample extractor for condensate, crude oil, and other liquid hydrocarbons. Direct-mount with a fixed insertion length, the inFlow™ reaches the center third to collect isokinetic samples from conditioned 2"–4" pipelines.

**Features**

- Double-acting piston motor
- Fixed insertion
- Fixed or adjustable volume positive displacement collection heads
- Welker Volume Eliminator
- Collection head with inline relief
- Optional pipe spool, sand reliefs, and Welker Purge Tube

**Benefits**

- Pumping power capable of sampling high-viscosity products
- Capture and fully push samples to the sample container
- With adjustable collection heads, collect larger grabs for smaller volume batches
- Minimize sample retention and keep residual sample at a minimum
- Prevents collected samples from flowing back to the pipeline if pressure drops
- Improve sample accuracy on Lease Automatic Custody Transfer (LACT) Units for truck and rail car loading and unloading (optional)
- Pipe spools with integrated static mixer ensures a homogeneous mix reaches the sample extractor (optional)
- Sample products containing basic sediment and water (BS&W) without the extra wear and tear (optional)
- Purge trapped liquid from the collection head to the sample container for a complete composite sample and to prevent batch cross-contamination (optional)



**SPECIFICATIONS**

INFLOW™ CRUDE OIL SAMPLER

inFlow™							
Materials of Construction	316/316L Stainless Steel Wetted Parts, Carbon Steel Motor and Base, PTFE, Buna Non-Wetted Seals, and Viton® Wetted Seals						
	Others Available						
Pipeline Connection	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">NPT</th> <th style="width: 50%; text-align: center;">Flanged</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">¼"</td> <td style="text-align: center;"><b>Size:</b> 2" (Standard), 3", or 4"</td> </tr> <tr> <td style="text-align: center;">2"</td> <td style="text-align: center;"><b>Rating:</b> 150, 300, or 600 ANSI RF</td> </tr> </tbody> </table>	NPT	Flanged	¼"	<b>Size:</b> 2" (Standard), 3", or 4"	2"	<b>Rating:</b> 150, 300, or 600 ANSI RF
NPT	Flanged						
¼"	<b>Size:</b> 2" (Standard), 3", or 4"						
2"	<b>Rating:</b> 150, 300, or 600 ANSI RF						
Sample Outlet Connection	¼" FNPT						
Insertion Length	¼" FNPT (Standard)						
Sample Outlet Connection	½" FNPT						
Motor Housing Actuation Ports	<b>Hydraulic or Pneumatic Supply for Motor Operation:</b> 50 psig						
Utility Requirements	<b>Inert Gas Supply for Purge Operation:</b> ¼" FNPT						

**SPECIFICATIONS**

INFLOW™ FIXED INSERTION CRUDE OIL SAMPLER

inFlow™	
Insertion Length	4 ½" (Without Shaft Extension) (Standard)
	6 ¼" (With Shaft Extension) (Standard)
	Others Available
Pneumatic Consumption	<b>Air:</b> 0.095 scf/Stroke @ 50 psig
	<b>Natural Gas (With 0.6 Specific Gravity):</b> 0.123 scf/Stroke @ 50 psig
	<b>Nitrogen:</b> 0.097 scf/Stroke @ 50 psig
Sample Volume	<b>B-Style Collection Head:</b> 0.5 cc, 1.0 cc (Standard), 1.5 cc, or 2.0 cc
	<b>D-Style Collection Head (Long Motor):</b> 3–7 cc (½" piston) or 5–12 cc (¾" piston)
	<b>D-Style Collection Head (Short Motor):</b> 0–2 cc (½" piston) or 0–5 cc (¾" piston)
	<b>Vanishing Chamber™ Collection Cup:</b> 0.22 cc, 0.5 cc, 1.0 cc, or 1.5 cc
Operating Pressure	<b>150 ANSI Carbon Steel:</b> 285 psig @ -20 °F to 100 °F (19 barg @ -28 °C to 37 °C)
	<b>300 ANSI Carbon Steel:</b> 740 psig @ -20 °F to 100 °F (51 barg @ -28 °C to 37 °C)
	<b>600 ANSI Carbon Steel:</b> 1480 psig @ -20 °F to 100 °F (102 barg @ -28 °C to 37 °C)
	<b>1¼" and 2" MNPT:</b> 2220 psig @ -20 °F to 120 °F (153 barg @ -28 °C to 48 °C)
	Others Available
Features	External Adjustable Relief
	Internal Relief
	Welker Volume Eliminator
Options	External Sand Relief
	Pipeline Spool (With or Without Mixer)
	Purge Tube
	CE Compliance
	NACE Compliance

Weight and/or dimensions are approximate. Specifications subject to change without notice.



The Welker inFlow™ ACE Crude Oil Sampler is an all conditions sample extractor for condensate, crude oil, and other liquid hydrocarbons. With an adjustable insertion length and sample volume, fast sample speeds, shaft seal protection, Welker Purge Tube, and optional insertion tool, adapt the inFlow™ ACE to your changing main line sampling application needs and maintain sample integrity.

**Features**

- Double-acting piston motor
- Manual or automatic insertion with insertion tool (optional)
- Adjustable insertion length
- Coated 316/316L stainless steel solid bar insertion shaft
- Sand reliefs
- Adjustable volume positive displacement collection heads
- External sample volume adjustment
- Welker Purge Tube
- Collection head with inline relief

**Benefits**

- Pumping power capable of sampling high-viscosity products
- Insert and retract the shaft under reduced or full pipeline pressure
- Retractable shaft allows for pipeline pigging and inspection or equipment maintenance without costly shutdowns
- Sample products containing basic sediment and water (BS&W) without the extra wear and tear
- Reach the center third of most transmission pipelines
- Capture and fully push samples to the sample container
- With adjustable collection heads, collect large grabs for small volume batches
- Change sample grab size without removing the sample extractor from the pipeline
- Purge trapped liquid from the collection head to the sample container for a complete composite sample and to prevent batch cross-contamination
- Prevents collected samples from flowing back to the pipeline if pipeline pressure drops



**SPECIFICATIONS**

INFLOW™ ACE CRUDE OIL SAMPLER

inFlow™ ACE	
Materials of Constructions	316/316L Stainless Steel Wetted Parts, Anodized Aluminum Upper Housing, Carbon Steel Lubricator Body, PTFE, Viton® Wetted Seals, Buna and Viton® Non-Wetted Seal
Pipeline Connection	¾" FNPT
Sample Outlet Connection	¼" FNPT
Insertion Length	10" Standard (Cut to Fit)
Electronics Options	DC 12 V, ½" FNPT Solenoid DC 24 V, ½" FNPT Solenoid
Sample Volume	2–5 cc
	2–10 cc
Minimum Pipeline Pressure Required	50 psig
Operating Pressure	125 psig @ -20 °F to 120 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.



The Welker inLoop™ Crude Oil Sampler is a fixed volume positive displacement pump designed for crude oil and light liquid sampling applications. Ideal for lines up to 1", incorporate the inLoop™ into a bypass sampling system to collect quality sample grabs proportional to flow or time.

### Features

- Double-acting piston motor
- Fixed volume positive displacement collection heads
- Inline relief at sample outlet

### Benefits

- Pumping power capable of sampling high-viscosity products
- Capture and fully push samples to the sample container
- Piston-style collection head compatible with extreme temperatures, high pressures, and chemical contaminants
- Prevents collected samples from flowing back to the pipeline if pipeline pressure drop



## SPECIFICATIONS

INLOOP™ CRUDE OIL SAMPLER

inLoop™	
Materials of Constructions	316/316L Stainless Steel, Fluorotrel®, PTFE, Viton®
Pipeline Spool Connection	<b>Size:</b> 1" or 1½"
	<b>Rating:</b> 150, 300, 600, 900, or 1500 ANSI RF
Process Connection	¼" FNPT
	½" FNPT
	1" FNPT
Sample Outlet Connection	¼" FNPT
Motor Housing Actuation Ports	25 cc Cylinder and 50 cc Purge (Standard)
Utility Requirements	<b>Hydraulic or Pneumatic Supply:</b> 40–65 psig
Sample Volume	<b>B-Style Collection Head:</b> 0.5 cc, 1 cc, or 2 cc
	<b>Vanishing Chamber™ Collection Cup:</b> 0.22 cc, 0.5 cc, 1 cc, or 1.5 cc
Operation	Piston-Operated Motor
Operating Pressure	<b>150 ANSI Stainless Steel:</b> 275 psig @ -20 °F to 100 °F
	<b>300 ANSI Stainless Steel:</b> 720 psig @ -20 °F to 100 °F
	<b>600 ANSI Stainless Steel:</b> 1440 psig @ -20 °F to 100 °F
	<b>900 ANSI Stainless Steel:</b> 2160 psig @ -20 °F to 100 °F
	<b>1500 ANSI Stainless Steel:</b> 3600 psig @ -20 °F to 100 °F
	<b>FNPT Process Connection:</b> 3600 psig @ -20 °F to 100 °F
Industry Standards	API Chapter 8.2, ASTM D4177, ISO 3171

Weight and/or dimensions are approximate. Specifications subject to change without notice.



The Welker inLoop™ ACE Crude Oil Sampler takes representative samples from a bypass loop in accordance with industry standards API 8.2 and ISO 3171.

**Features**

- 0.5–5 cc sample collection head capacity
- Externally adjustable sample volume
- Check valves designed to capture complete makeup of product
- 316/316L stainless steel material for wetted parts
- Coated protection on shafts and sealing surfaces
- Optional VCO process connection
- Optional purge
- Optional mounting bracket

**Benefits**

- High-speed sampling for short batches
- External adjustment allows sample volume to be set without removing the sampler from the bypass loop
- Built with durable construction material for equipment longevity
- Option VCO connection allows for easy retrofitting of existing systems
- Optional purge design prevents sample batch cross-contamination



**SPECIFICATIONS**

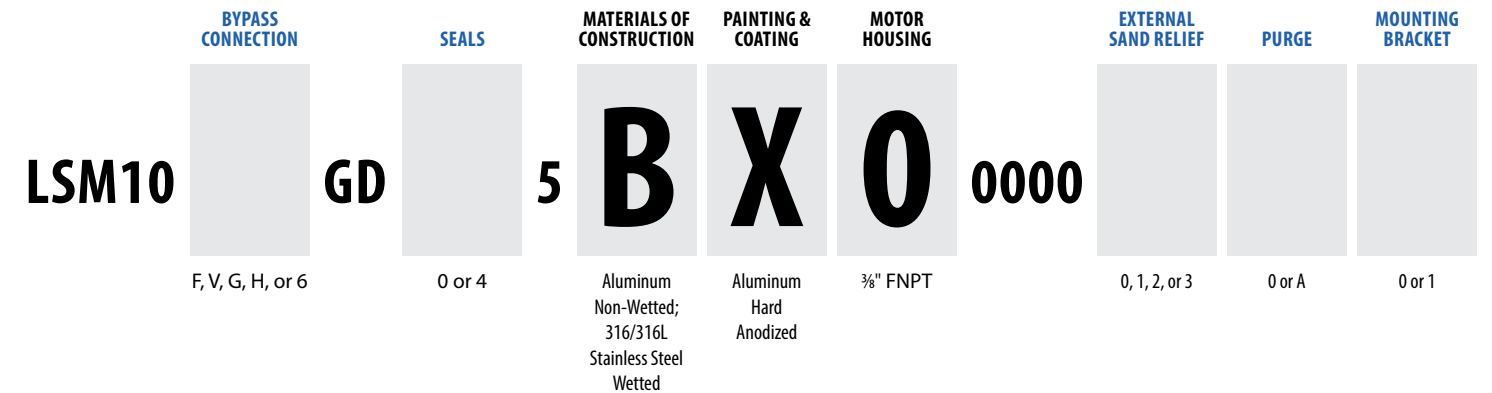
INLOOP™ ACE CRUDE OIL SAMPLER

inLoop™ ACE	
Materials of Constructions	316/316L Stainless Steel Wetted Parts, (Anodized) Aluminum Non-Wetted Parts
Seal Material Options	Viton® Kalrez® Wetted, Viton® Non-Wetted
Viscosity Range	Up to 4000 cP
Process Connection and Operating Pressure Options	<b>1" FNPT or VCO:</b> 1480 psig MAOP @ -20 °F to 100 °F <b>1" – 150 ANSI Stainless Steel:</b> 275 psig MAOP @ -20 °F to 100 °F <b>1" – 300 ANSI Stainless Steel:</b> 720 psig MAOP @ -20 °F to 100 °F <b>1" – 600 ANSI Stainless Steel:</b> 1440 psig MAOP @ -20 °F to 100 °F
Ambient Temperature	-20 °F to 120 °F
Operating Temperature*	20 °F to 200 °F
Utility Requirements	<b>Hydraulic or Pneumatic Supply:</b> 30–200 psig, <b>Actuation Consumption (per Sample Grab @ 80 psig):</b> 0.06 ft³
Sample Volume	0.5–5 cc (Adjustable)
Sample Grab Rate	Up to 30 Grabs per Minute**
Industry Standards	Complies With API 8.2 and ISO 3171

\*Contact Welker for Special Requirements  
\*\*Sample Grab Rate Dependent on Product Viscosity and Operating Pressure

**STANDARD OPTIONS**

INLOOP™ ACE CRUDE OIL SAMPLER



**BYPASS CONNECTION**

**F:** 1" FNPT  
**V:** 1" VCO Fittings  
**G:** 1" – 150 ANSI RF  
**H:** 1" – 300 ANSI RF  
**6:** 1" – 600 ANSI RF

**SEALS**

**0:** Viton®  
**4:** Kalrez® Wetted, Viton® Non-Wetted

**EXTERNAL SAND RELIEF**

**0:** None  
**1:** 50–350 psig  
**2:** 350–750 psig  
**3:** 750–1500 psig

**PURGE**

**0:** None  
**A:** With Purge

**MOUNTING BRACKET**

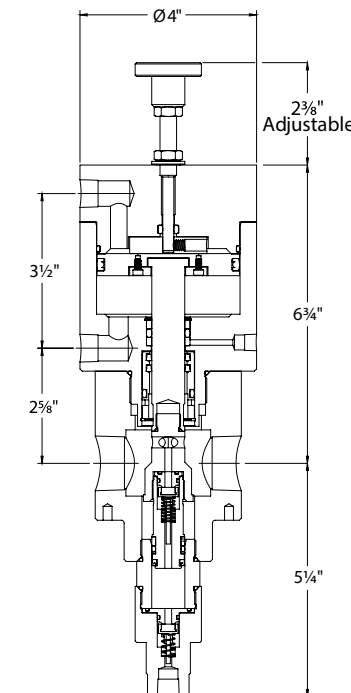
**0:** None  
**1:** With Mounting Bracket

For custom options, choose **Plus Welker™**.



Customer Inspired. Welker Manufactured.  
Collaborate with us to create a custom product unique to your application.

**DIMENSIONS**



Weight and/or dimensions are approximate. Specifications subject to change without notice.



Prevent costly shrinkage with Welker's award-winning CPCCP Constant Pressure Crude Oil Container. If you're sampling live crude, keeping entrained gases in your composite sample is of utmost importance. To prevent gaseous crude from going flat, you need a container capable of maintaining pipeline conditions. Collect, retain, and mix high vapor pressure liquid products at pipeline pressure with the CPCCP for highly accurate measurement of *all* components.

### Features

- Self-contained with motor mixing capabilities
- No dead volumes for the water to hide
- Adaptable to all current crude oil sampling installations
- Volume level indicator
- Contamination prevention
- Environmental protection

### Benefits

- Meets and exceeds API 8.2, ISO 3171, and ASTM D4177
- Reduction in custody transfer BS&W error



## SPECIFICATIONS

CONSTANT PRESSURE CRUDE OIL CONTAINER

### CPCCP

Materials of Construction	316/316L Stainless Steel, PTFE, Viton®
Connections	Composite Sample Draw/Drain/Return/Purge: ¼" FNPT
	Compressed Air Inlet: 1¼" FNPT (for Pneumatic Motor Operation)
	Pre-Charge Inlet: ¼" FNPT
	Product Inlet: ¼" FNPT
Utility Requirements	(Filtered, Regulated, and Lubricated) Compressed Air (Pneumatic Motor Operation)
	Inert Gas Supply (Pre-Charge)
Volume	3½" US Gallons @ 100%
Operating Pressure	2160 psig MAOP @ -20 °F to 100 °F
Industry Standards	API Chapter 8, ASTM D3700, ASTM D4057, ASTM D4177, ASTM D5854, ISO 3170, ISO 3171

Weight and/or dimensions are approximate. Specifications subject to change without notice.



With the Welker SCC Stationary Crude Oil Container, you can collect and mix composite samples of stabilized crude in the same container. A stationary sample container and closed loop mixing system in one, the SCC is the ideal primary container for large batches of crude oil and lengthy sample periods.

**FEATURES**

- Internal epoxy coating
- Static mixer and circulation system
- Local on/off switch
- Subsample draw off valve
- Skid-mounted sample container and mixing and cleaning system

**BENEFITS**

- Corrosion protection
- Prevents water and other components from clinging to the container
- Improve sample representativeness and water cut measurement accuracy
- Easier cleanup to prevent cross-contamination
- Kinetic and external energy uniformly mix contents to avoid sample bias
- Greater control over operations to prevent under- and over-mixing
- Collect test specimens directly from the mixing loop during operation before the sample can re-stratify
- Reduce equipment costs and save space

**ROUNDED BOTTOM**

- No pockets or dead spots to bias the sample
- Facilitates mixing and complete sample withdrawal

**INTERNAL SPRAY BAR**

- Evenly disperses components during mixing for representative subsamples
- Evenly disperses solvent for thorough cleaning

**HINGED FULLY OPENING LID**

- Facilitates filling, inspection, and cleaning
- Protects samples from contamination and maintains sample integrity

**VACUUM BREAKER**

- Prevents cavitation during mixing
- Prevents a vacuum from forming during sample withdrawal

**FILL VOLUME MONITORING**

- Full-length sight glass for on-site monitoring
- Optional high-level switch for remote monitoring

**BOTTOM SUCTION PORT & TOP RETURN PORT**

- Connect to closed loop mixing system to homogenize the sample and clean the container



**SPECIFICATIONS**

SCC STATIONARY CRUDE OIL CONTAINER

SCC	
Materials of Construction	Carbon Steel
Connections	¼" MNPT, ½" MNPT
Volume	3 US Gallons, 5 US Gallons, 10 US Gallons, 15 US Gallons, 20 US Gallons, 30 US Gallons, 40 US Gallons
Operating Pressure	140 psig @ -20°F to 100°F
Industry Standards	API Chapter 8, ASTM D4057, ASTM D4177, ASTM D5854, ISO 3170, ISO 3171

Weight and/or dimensions are approximate. Specifications subject to change without notice.





When local sample analysis isn't an option, a portable primary container reduces the uncertainty associated with intermediary containers. Welker's TCC Transportable Crude Oil Container does just that. With the TCC, you can collect, transport, mix, and re-mix stabilized crude oil all in the same container. Available in five capacities, there's a TCC suitable for your sample batch size.

The key features of Welker's TCCs meet the requirements of **API**, **ASTM**, and **ISO** to help maintain representativeness from collection to analysis.

**VACUUM BREAKER**

- Prevents cavitation during mixing
- Prevents a vacuum from forming during sample withdrawal

**FILL VOLUME MONITORING**

- Visual liquid level gauge for on-site monitoring
- Optional high-level switch for remote monitoring

**PRESSURE RELIEF VALVE**

- Protects the container from overpressurization

**PRESSURE GAUGE**

- On-site pressure indication

**ROUNDED BOTTOM**

- No pockets or dead spots to bias the sample
- Facilitates mixing and complete sample withdrawal

**BOTTOM SUCTION PORT & TOP RETURN PORT**

- Connect to closed loop mixing system to homogenize the sample and clean the container

**INTERNAL SPRAY BAR**

- Evenly disperses components during mixing for representative subsamples
- Evenly disperses solvent for thorough cleaning



**SPECIFICATIONS**

TCC CRUDE OIL CONTAINER

	TCC-1	TCC-2	TCC-3	TCC-5	TCC-10
Volume	1 US Gallon	2 US Gallons	3 US Gallons	5 US Gallons	1 US Gallon
Operating Pressure	132 psig @ 10 °F to 100 °F	185 psig @ -20 °F to 100 °F	185 psig @ -20 °F to 100 °F	136 psig @ -20 °F to 100 °F	115 psig @ -20 °F to 100 °F
Industry Standards	API Chapter 8, ASTM D4057, ASTM D4177, ASTM D5854, ISO 3170, ASME code stamped				

Weight and/or dimensions are approximate. Specifications subject to change without notice.



No on-site lab? Meet the Welker TCC Optimum™, the only crude oil container on the market with DOT and Transport Canada\* approval. With the compact TCC Optimum™ as your primary container, safely getting your composite sample of stabilized crude to an off-site lab for mixing and analysis is possible. Special design features exceed industry standards and improve the operator experience.

## FEATURES

- ProSlick™ Finish
- Lightweight design
- Carry handle and ring chime base
- Quick-connects

## BENEFITS

- Prevents water and other components from clinging to the container
- Improves sample representativeness and water cut measurement accuracy
- Easy cleanup to prevent cross-contamination
- Reduce physical strain during container installation, removal, and transport
- Quickly install and remove the container

The key features of Welker's TCC Optimum™ meet the requirements of API, ASTM, and ISO to help maintain representativeness from collection to analysis.

## ROUNDED BOTTOM

- No pockets or dead spots to bias the sample
- Facilitates mixing and complete sample withdrawal

## BOTTOM SUCTION PORT & TOP RETURN PORT

- Connect to closed loop mixing system to homogenize the sample and clean the container

## INTERNAL SPRAY BAR

- Evenly disperses components during mixing for representative subsamples
- Evenly disperses solvent for thorough cleaning

## EASY-OPEN LID

- Facilitates filling, inspection, and cleaning
- Protects samples from contamination and maintains sample integrity

## PRESSURE RELIEF VALVE

- Protects the container from overpressurization

## VACUUM BREAKER

- Prevents cavitation during mixing
- Prevents a vacuum from forming during sample withdrawal

## PRESSURE GAUGE

- On-site pressure indication

## FILL VOLUME MONITORING

- Full-length sight glass for on-site monitoring
- Optional high-level switch for remote monitoring



## SPECIFICATIONS

TCC OPTIMUM™ TRANSPORTABLE CRUDE OIL CONTAINER

TCC Optimum™	
Materials of Construction	316/316L Stainless Steel Container with Stainless Steel Fittings
Volume	2.5 US Gallons
	5 US Gallons
Weight	<b>2.5-Gallon:</b> 15 lb (Dry)
	<b>5-Gallon:</b> 22 lb (Dry)
Operating Pressure	136 psig @ -20 °F to 100 °F
Industry Standards	API Chapter 8, ASME code stamped, ASTM D4057, ASTM D4177, ASTM D5854, ISO 3170, ISO 3171

\*Only on 2.5-gallon models  
Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

The Welker MSTCC Laboratory Mixing Skid is a stationary closed loop mixing system that evenly disperses and distributes stratified composite samples for accurate basic sediment and water (BS&W) measurement. The MSTCC homogenizes that contents of portable sample containers like the Welker TCC Transportable Crude Oil Containers. After collecting subsamples for analysis, the MSTCC can be used to clean the sample container.

### Features

- Static mixer and circulation system
- Flexible hoses with quick-connects
- Local on/off switch
- Subsample draw off valve
- Mixing and cleaning system
- Compact footprint

### Benefits

- Kinetic and external energy uniformly mix contents to avoid sample bias
- Quickly install and remove sample containers
- Accommodate containers of different heights and volumes
- Greater control over system operations to prevent under- and over-mixing
- Collect test specimens directly from the mixer during operation before the sample can stratify
- Reduce equipment costs and reclaim precious lab space
- Space-saving standardized 24" x 28" skid with container placement ring



## SPECIFICATIONS

MSTCC SAMPLE BITE VERIFICATION PANEL

MSTCC	
Materials of Construction	Carbon Steel Skid With 316/316L Stainless Steel or Carbon Steel Fittings
Connections	<b>Discharge:</b> ½" Quick-Connect
	<b>Drain:</b> ½" FNPT
	<b>Spot Sample Draw Off:</b> ¼" FNPT
	<b>Suction:</b> ½" Quick-Connect
Electrical Connections	<b>MSTCCO, MSTCCX:</b> AC 110 V, ½" FNPT
	<b>MSTCCB, MSTCCD, MSTCCE, MSTCCF:</b> AC 220 V, ½" FNPT
Dimensions	24" x 28" (Length x Width)
Operating Pressure	200 psig @ -20 °F to 100 °F
Industry Standards	API Chapter 8, ASTM D4057, ASTM D4177, ASTM D5854, ISO 3170, ISO 3171

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Checkpoint™ Sample Bite Verification Panel

Confirm actual sample grab size from one convenient spot. A valuable addition to your liquid sampling system, the Welker Checkpoint™ Sample Bite Verification Panel makes sampler performance monitoring easy. A pressure switch and relief valve on the panel provide an additional layer of system protection.

## Features

- Quick-connect outlet connection with tubing
- Outlet check valve
- Pressure switch with external adjustable relief valve
- Modular design with two panel configurations

## Benefits

- Prevent sample bias with appropriate batch sampling frequency
- Easily verify sample volume setting of adjustable samplers
- Check sampler performance to ensure repeatability of adjustable or non-adjustable samplers
- Eliminate drips between pulses for mess-free sample grab validation
- Distinct samples for accuracy and easy counting
- Remote warning of sample line overpressurization
- Standardized 16" x 20" panel for easy mounting
- Easily upgrade an existing system or customize a new system



## SPECIFICATIONS

CHECKPOINT™ SAMPLE BITE VERIFICATION PANEL

Checkpoint™	
Materials of Construction	316L Stainless Steel, Ethylene Propylene, Neoprene, and PTFE
Connections	Pressure Switch Test Port and Safety Relief Test Port: ¼" Tubing
	Pressure Switch Test Port and Safety Relief Test Port: ⅜" Tubing
	Sample Bite Verification Outlet, Sample Inlet, and Sample Outlet: ¼" Tubing
Electrical Connections	DC 30 V
	DC 125 V
	AC 250 V
Dimensions	16" x 20" (Width x Height)
Operating Pressure	2500 psig @ -10 °F to 120 °F
	Others Available
Electrical Area Classification	NEC Class I, Div. 1, Groups C & D, T3

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Plug & Purge™ Automatic Purging System

The Welker Plug & Purge™ Automatic Purging System safely and effectively purges samplers and sampling systems to ensure a representative sample and prevent cross-contamination between sample batches. The first of its kind, the Plug and Purge™ meets the latest recommendation of API 8.2 and ASTM D4177.

## Features

- Welker Purge Cylinder delivers the same volume of compressed inert gas each purge cycle
- Valve actuator for remote purging
- Regulator with safety relief valve ensures proper purge pressure
- Modular design with two mounting options
- Optional pressure transmitter signals the Programmable Logic Controller (PLC) when the inert gas supply tank needs servicing

## Benefits

- Achieve a full purge in under a minute
- Sample representativeness is not compromised by under- or over-purging
- No trapped samples to contaminate the next sample batch
- No trapped water to skew the results of water injection tests
- No wasted inert gas
- Off-site operation & monitoring
- Standardized panel for easy wall or pipe stand mounting
- Easily upgrade an existing system or customize a new system



## SPECIFICATIONS

PLUG & PURGE™ AUTOMATIC PURGING SYSTEM

### Plug & Purge™

Materials of Constructions	316/316 L Stainless Steel, PTFE, Viton®
Connections	<b>Inert Gas Inlet, Purge Outlet, Solenoid Output, Solenoid Return:</b> ¼" FNPT
	<b>Test Port (Optional Pressure Transmitter):</b> ¼" FNPT
Utility Requirements	Inert Gas Supply for Purge Operation
	<b>Hydraulic or Pneumatic Supply (Optional):</b> 50 – 100 psig
Electrical Connections	<b>Solenoid:</b> ½" FNPT, AC 120 V
	<b>Hydraulic or Pneumatic Supply (Optional):</b> 50 – 100 psig
Volume	25 cc Cylinder and 50 cc Purge (Standard)
Dimensions	20" Length x 20" Height x ¼" Width
Operating Pressure	<b>Actuation:</b> 100 psig @ -20 °F to 120 °F
	<b>Downstream of Regulator:</b> 1500 psig @ -20 °F to 120 °F
	<b>Pneumatic:</b> 2500 psig @ -15 °F to 120 °F
Electrical Area Classification	NEC Class I, Div. 1, Groups A, B, C, & D, T3

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# ESG \

# ECOsystem™ Hydrogen Injection System



The Welker ECOsystem™ is a simple, reliable gas injection system designed to deliver precise, controlled volumes of hydrogen into natural gas pipelines.



## Features

- Few moving parts
- Proprietary program automatically adjusts the injection rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trail and alarms log backed up to microSD card
- Welker F-9 Filters removes contaminants from injection gas

## Benefits

- Reduce maintenance
- Continuous proportional to flow injection
- Off-site system monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Contaminant removal prolongs operational life and reliability
- Redundancy limits interruptions to operation

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# LeakHawk™ Leak Detection Manifold



Capture fugitive emissions before they enter the atmosphere with Welker's latest patent-pending solution! Install the LeakHawk™ Leak Detection Manifold to a pump for advanced on-site or remote notification of the need for pump seal maintenance so you can catch and proactively repair leaks.

The LeakHawk™ is a simple, cost-effective device that can be used to increase the effectiveness of a Leak Detection and Repair (LDAR) program, which has the added benefits of protecting the health and safety of personnel and the surrounding community and reducing product loss.



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.





The Welker I-Series Instrument Regulators maintain downstream pressure control in analytical, process, sampling, or injection systems to protect sensitive equipment from costly damage. These instrument regulators are spring-loaded pressure-reducing valves designed to reduce a higher pressure filtered pneumatic supply to lower outlet pressure safe for downstream instrumentation.

The ISPE model in the I-Series is a cost-effective, standalone piston-sensing instrument regulator suitable for regulating air and light gases, such as hydrogen.

### Features

- Piston-sensing
- Compact, lightweight design
- Multiple flow coefficients and pressure control ranges
- Flexible port configuration

### Benefits

- Capable of regulating higher inlet pressures with minimal flow drop
- Suitable for small enclosures and for portable and on-vehicle applications
- Adaptable to pressure requirements of downstream equipment
- Select accessory arrangement best suited for the installation and application
- Uncomplicated maintenance requires no special tools and little downtime



## SPECIFICATIONS

ISPE INSTRUMENT REGULATOR

### ISPE

	Body: Nickel-Plated Aluminum Piston: Aluminum Seat: PCTFE Seals: Viton® Others Available	Body: Plastic Piston: Aluminum Seat: PCTFE Seals: Viton® Others Available
Materials of Constructions		
Maximum Allowable Inlet Pressure	2160 psig (148 barg)	500 psig (34 barg)
Temperature Range*	32 °F to 392 °F (0 °C to 200 °C)	
	Others Available	
Ports	¼" FNPT or SAE Inlet, Outlet, Relief, and Gauge	
Flow Coefficient (C <sub>v</sub> )	0.02	
	0.06	
	0.10	
Pressure Control Ranges	0–25 psig (0–1.7 barg)	
	0–50 psig (0–3.4 barg)	
	0–100 psig (0–6.8 barg)	
	0–200 psig (0–13.7 barg)	
Weight	0.5 lb (0.2 kg)	

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Accu/Line™ Zero Emissions Zero Emissions Odorizer



Reduce methane emissions with Welker's proven technology! The design of the Accu/Line™ Zero Emissions includes all the key features of the Accu/Line™ family of smart odorant injection systems but eliminates the use of pipeline gas as the instrument supply, meaning no natural gas is released during normal operation.

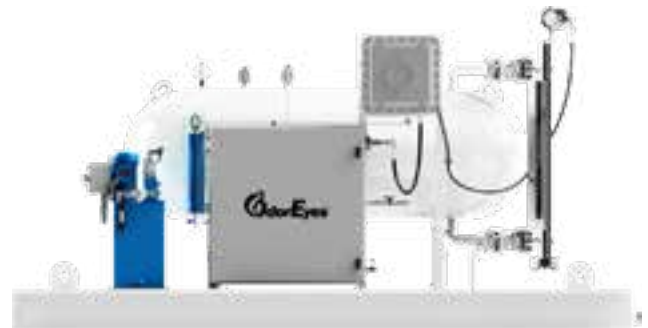
This Accu/Line™ is a turnkey odorant injection system designed to inject liquid odorant proportional to flow into the natural gas pipelines with flow rates from 10 Mscfh up to 70 MMscfh.

## Features

- Zero-emission design
- Intuitive touch screen controller automatically adjusts the injection rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trail and alarms log backed up to microSD card
- Redundant pumps with automatic failover
- Self-priming pumps

## Benefits

- No methane is released to the atmosphere during normal operation
- Continuous proportional to flow odorization
- Off-site monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Limit interruptions to operation
- Eliminate vapor lock for dependable odorant delivery



## SPECIFICATIONS

ACCU/LINE™ ZERO EMISSIONS ODORIZER

	Accu/Line™ Lo 1 Mscfh–720 Mscfh	Accu/Line™ 10 Mscfh–7 MMscfh
Materials of Construction	316/316L Stainless Steel, Anodized Aluminum, Kalrez®, PTFE	
Power	Electro-hydraulic Unit (EHUC): AC 110 V, 60 Hz, 1 Phase, 7.5 A, ½ HP	
Injection Outlet Connection	¼" Tubing	
Instrument Gas Connection	¾" Tubing	
Odorant Inlet Connection	¾" Tubing	
Vent Connection	¾" Tubing	
Odorant Inlet Pressure Required	10 psig–50 psig	
Hydraulic Supply	5 US Gallons	
Injection Volume	0.5 – 10 cc	10 – 150 cc
Injection Rate	Up to 5 Injections/Minute	Up to 3 Injections/Minute
Tank Volume	120, 250, 500, 1000 US Gallons	
Ambient Temperature	-20 °F to 120 °F	
Operating Pressure	1800 psig	

Weight and/or dimensions are approximate. Specifications subject to change without notice.

The Welker ECOsysteM™ Automatic Bypass System supersaturates carrier gas in an odorant tank to properly odorize natural gas pipeline. Our design uses differential pressure to odorize your gas line while minimizing moving parts and maintenance on the system. Since odorant is vaporized before infusing with the gas, it bonds more effectively than when injecting odorant in liquid form. Once the system is installed, you can remotely monitor the odorant level, actions performed, and warning alarms by interfacing with the included Programmable Logic Controller (PLC).

### Features

- Properly odorizes gas pipelines with supersaturated carrier gas (vaporized odorant)
- Reduces maintenance with fewer moving parts
- Automatically adjusts injected odorant to match flow rate
- Remote monitoring and communication with Ethernet, Modbus, or cell/phone modem
- Audit data is constantly backed up to an SD memory card



## SPECIFICATIONS

ECOSYSTEM™ AUTOMATIC BYPASS SYSTEM

ECOsysteM™	
Electrical Connection	AC 120 V
	DC 24 V
Odorant Tank Volume	20 US Gallons (75 L)
	60 US Gallons (75 L)
	120 US Gallons (75 L)
	250 US Gallons (75 L)
	Other Sizes Available

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# ECOsysteM™ Liquid Pumpless Injection System



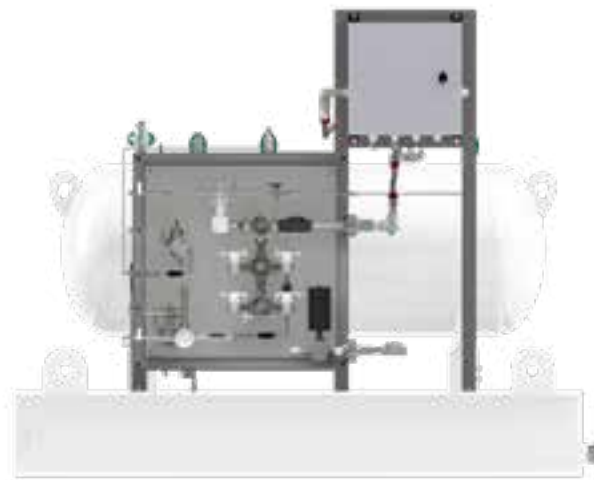
Reduce methane emissions with Welker's proven technology! The ECOsystem™ Liquid Pumpless Injection System is based on the zero-emission design of our standard ECOsystem™ and incorporates the accuracy and verification of the Accu/Line™ family of smart liquid odorant injection systems. This ECOsystem™ is a turnkey odorant injection system designed to inject liquid odorant proportional to flow into natural gas pipelines with flow rates from 1 Mscfh up to 8.5 MMscfh with no adjustments.

## Features

- Zero-emission design
- Pumpless
- Accuracy measured to 0.002 cc
- Low pressure differential required for injection
- Intuitive touch screen controller with Welker program automatically adjusts the injection volume and rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trails and alarms log backed up to microSD card
- Redundant solenoids with automatic failover
- Low-pressure odorant supply tank with 110% containment sloped to drain

## Benefits

- No methane is released to the atmosphere during normal operation
- Eliminate vapor lock for dependable odorant delivery
- Reduced maintenance
- Reduced pneumatic supply pressure required compared to pump injection systems
- Know the injection volume of each actuation
- No manual injection volume adjustment
- Continuous proportional to flow odorization
- Off-site system monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Skid containment protects the ground from contamination



## SPECIFICATIONS

ECOSYSTEM™ LIQUID SYSTEM

### ECOsysteM™ Liquid

Materials of Constructions	316/ 316L Stainless Steel, Painted Carbon Steel, PTFE, Kalrez®, Viton®
Ambient Temperature	-4 °F to 120 °F
Power	DC 24 V, AC 120 V, Optional Solar Panel
Injection Outlet Connection	¼" Tubing
Injection Pressure	Up to 200 psig
Odorant Inlet Pressure Required	15 psig – 50 psig
Instrument Gas Pressure Required	> 5 psig Over Injection Pressure
Flow Rate	5 Mscfh – 10 MMscfh
Tank Volume	60, 120, 250, 500, 1000 US Gallons

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Filtration \

# F Filter Dryer Series F-19 | F-4 | F-5 | F-31



The Welker F Filter Dryer series helps protect sensitive equipment from damage and contamination by cleaning and drying natural gas or instrument air for use as a pneumatic instrument supply. With a variety of sizes, Welker has the Filter Dryer needed to meet the flow capacity and space requirements for your application.

## Features

- Spin on filter body
- Mounting bracket
- Filter cartridge media to remove water, liquid hydrocarbons, mercaptan, and sulfur

## Benefits

- Simplified cartridge change outs
- Clean, dry supply gas



## SPECIFICATIONS

F FILTER DRYER SERIES

	F-19	F-4	F-5	F-31
Materials of Constructions	Buna, Carbon Steel, PTFE Others Available			
Connection	¼" FNPT			1" FNPT
Nominal Filter Rating	3 Microns	0.45 Microns 3 Microns	1.2 Microns 3 Microns	0.45 Microns 1.2 Microns
Flow Rate	Up to 50 scfm			Up to 182 scfm
Options	Drain Valve External Bypass	Drain Valve Internal Bypass Moisture Indicating Eye		Drain Valve External Bypass
Operating Pressure	1500 psig MAOP @ -32 °F to 122 °F Higher Pressures Available			

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# ALD Automatic Liquid Dump



The Welker Automatic Liquid Dump is designed for use in systems where it is necessary to filter entrained liquids from a process gas. A steady pressure is maintained from the supply source to the instrumentation connected to the unit. As product enters the device, any free liquids are dropped to a float at the bottom of the dump. A downcomer is installed inside the float, and as liquids fill the device, the downcomer itself will begin to float. The downcomer is connected to the dump port, and eventually, the buoyancy of the float will cause the downcomer to lift. When the downcomer lifts, it will open the dump port, allowing the liquids to be drained.

## Features

- Screws directly into the bottom drain valve or orifice fitting to remove free liquid build-up from upstream or downstream side of orifice plates.

## Benefits

- Provides automatic dumping of free liquids off coalescing pots, drip pots, orifice fittings, etc.
- Will not affect differential pressure



## SPECIFICATIONS

ALD AUTOMATIC LIQUID DUMP

ALD	
Materials of Construction	Carbon Steel, Buna-N, PTFE Others Available
Outlet Connection	¼" FNPT ( <b>ALD-5</b> : 1" FNPT)
Inlet Connection	¼" FNPT ( <b>ALD-5</b> : 1" FNPT)
Auxillary Connections	¼" FNPT
Capacity	15 US Gallons per Hour at Atmospheric Pressure 25 US Gallons per Hour dumping at 500 psi to Atmospheric Pressure

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# DP-15 Drip Pot



The Welker DP-15 Drip Pot is a sample line separator that removes free liquids from natural gas streams. Install the DP-15 upstream of your spot sampling system when using industry-recommended methods for a more representative spot sample.



## SPECIFICATIONS

DP-15 DRIP POT

DP-15	
Application	Free Liquid Removal Upstream of Spot Sampling System
Materials of Construction	316/316L Stainless Steel
Connections	1/4" FNPT
	1/2" FNPT Inlet and Outlet, 1/4" FNPT Drain
	3/4" FNPT
Option	Baffle Plate
Operating Pressure	2160 psig @ -20 °F to 100 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.



# Fluid Sentinel



The Welker Fluid Sentinel separates free liquids from natural gas stream by filtration or impingement. The WFS-1 model includes a membrane that screens out liquids while allowing gas to flow to the sample cylinder. The flow path within the WFS-3 causes gas to collide with the inner surface of the sight glass, encouraging liquids to coalesce and drop out.

## Features

- Sight glass with protection shield
- Centrifugal-engineered flow path
- Protective shroud

## Benefits

- Separates free liquids from gas via centrifugal flow design
- Reduces free or created liquid carryover
- Provides visual observation of sample gas
- Makes maintenance and required cleaning quick and easy



## SPECIFICATIONS

FLUID SENTINEL

Fluid Sentinel	
Materials of Construction	316/316L Stainless Steel, Glass, Viton®
Maximum Temperature	250 °F
Inlet Connection	2000 psig MAOP @ -20 °F to 100 °F

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# MLD-1 Manual Liquid Dump



The Welker MLD-1 Manual Liquid Dump is designed to protect downstream instrumentation from damage and contamination by separating free liquids from a wet gas stream. Gas flows freely through the MLD-1, but any aerosols or free liquids are separated from the stream as they pass through the internal coalescer. Gravity causes the separated liquids to fall to the bottom of the MLD-1, where they collect until drained by an operator.



## SPECIFICATIONS

MLD-1 MANUAL LIQUID DUMP

### MLD-1

Materials of Constructions	316/316L Stainless Steel, Buna, Carbon Steel, PTFE
Maximum Allowable Operating Pressure	1500 psig @ -20 °F to 120 °F
Connections	<b>Drain:</b> ¼" FNPT
	<b>Inlet:</b> ½" FNPT
	<b>Outlet:</b> ¼" FNPT
Filtration	5 Microns

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# MI-2 Moisture Indicator



The Welker MI-2 is designed to provide an accurate method of determining the moisture content. The clear acrylic housing allows desiccant to be viewed. The desiccant appears cobalt blue when dry and pink when saturated.



## SPECIFICATIONS

MI-2 MOISTURE INDICATOR

MI-2	
Flow Rate	Up to 50 scfm
Inlet Connection	1/4" FNPT
Outlet Connection	1/4" FNPT
Operating Pressure	200 psig @ 125 °F

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

## Instrument Grade Gas \

# CleanFlow™ Instrument Grade Natural Gas Systems



CONDITION



REGULATE



CONTROL

The Welker CleanFlow™ Instrument Grade Natural Gas Systems effectively remove contaminants and liquids from pipeline gas, protecting pneumatic instruments from costly damage, clogs, and freezes.

## Features

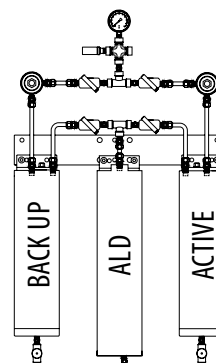
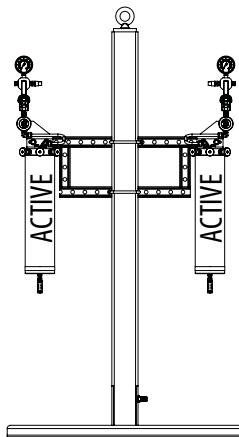
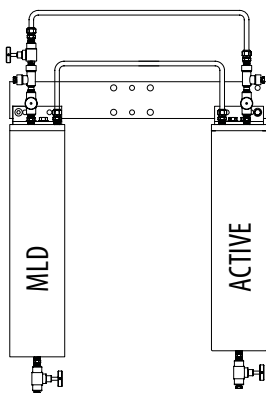
- Industry-recognized Welker Filter Dryer
- Integrated backup filter and regulator system
- Welker Automatic Liquid Dump (ALD) or Manual Liquid Dump (MLD)
- Optional catalytic heater heats pipeline gas to desired temperature

## Benefits

- Use pipeline gas to supply pneumatic instruments
- Protects sensitive equipment from damage caused by liquids and contaminants
- Backup filter and regulator automatically activate when primary filter and/or regulator require maintenance
- Effectively reduce pipeline pressure to functional range
- Prevent service interruptions due to freezing



CleanFlow™ Plus



CleanFlow™ Basic	CleanFlow™	CleanFlow™ Plus
Active Filter With ALD or MLD	Active Filter With Regulator, Optional ALD or MLD, Optional Heater	Active Filter With Regulator, Backup Filter With Regulator, Optional MLD or ALD, Optional Heater
OR	OR	
>1 Active Filters	Active Filter(s) With Regulator(s), Optional Heater	

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# CleanFlow™ F-31 Instrument Grade Gas Conditioning System



The Welker CleanFlow™ F-31 Instrument Grade Gas Conditioning System is designed to provide a continuous supply of clean, dry gas to critical pneumatic instruments and industrial equipment, such as compressors with dry gas seals and valve actuators.

This simple, low maintenance system includes 2 or 4 of Welker's high-capacity F-31 Filter Dryers to accommodate high-pressure, high-flow gas streams. With a long service interval, these efficient filters maximize reliable operation.

## Features

- Industry-recognized Welker Filter Dryers
- Single, dual, or quad filter service configurations
- Filter cartridge options
- 4-Step cartridge change-out
- Welker ALD Automatic Liquid Dump for wet gas streams (optional)
- Differential pressure gauge(s) (optional)

## Benefits

- Effectively remove contaminants and moisture from pipeline gas for use as seal gas
- Select Filter Dryer number and configuration best suited for the installation and application
- Proprietary filter media for targeted contaminant removal
- Simplified filter maintenance
- Increase the interval between cartridge change-outs (optional)
- Local indication of the need for cartridge maintenance (optional)



## SPECIFICATIONS

CLEANFLOW™ F-31 INSTRUMENT GRADE GAS CONDITIONING SYSTEM

CleanFlow™ F-31			
Materials of Constructions	Buna, Carbon Steel, PTFE, and Stainless Steel (Valves & Fittings)		
Connections	Inlet & Outlet: 1" FNPT		
	Inlet & Outlet: 1½" FNPT		
Flow Rate	Single Filter: Up to 182 scfm, Dual Filter: Up to 300 scfm, With ALD: 100 scfm		
Nominal Filter Rating	4 Microns		
Filter Media to Remove	Moisture	Moisture, Liquid Hydrocarbons, and Odorant and Mercaptan	Odorant and Mercaptan
Mounting	Bracket or Stand		
Maximum Allowable Temperature	200 °F		
Maximum Allowable Operating Pressure	1500 psig*		
Features	Welker F-31 Filter Dryers (2 for Single or Dual Service; 4 for Dual or Quad Service)		
Options	Built-in Moisture Indicator, Differential Pressure Gauge(s), Welker ALD Automatic Liquid Dump		

\*Temperature Limited by Valves

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Instrumentation \

# AP-3 Sample Probe

The Welker Adjustable Probe is designed for use in systems where it is desirable to insert or retract the probe while the pipeline remains pressurized. The preferred location for the installation of the probe is in a straight section of inlet piping in which the product is well mixed, before the flowing stream is subjected to turns and impingements that can result in turbulent flow.

## Features

- Adjustable probe length
- Large port outlet valve

## Benefits

- May be manually inserted against line pressures up to 1,000 psig
- Easily retracted to allow passage of pigs or other pipeline equipment



## SPECIFICATIONS

AP-3 SAMPLE PROBE

### AP-3

Materials of Constructions	316/316L Stainless Steel, PTFE, Viton®
Pipeline Connection	½", ¾", or 1" MNPT for ¼" Tubing
	¾", or 1" MNPT for ⅜" Tubing
	1" MNPT for ½" Tubing
Outlet Connection	¼" NPT for ¼" and ⅜" Tubing
	¼" or ½" NPT for ½" Tubing
Insertion Length	18" (Standard)
	Others Available in 1" Increments
Viscosity Range	0.009 cp - 2000 cp
Operating Pressure	1440 psig MAOP @ -20 °F to 100 °F
Maximum Allowable Temperature	400 °F @ 1030 psig

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



# PP-2 Sample Probe

The Welker PP-2 is designed to extract a sample of the fluid in a process from a designated point, create a flow loop through an instrument, and return to the pipeline via the same probe. The PP-2 series pitot probe includes outlet (P1) and return (P2) valves.

### Features

- Outlet and return ports provided for hot-loop operation
- Complete with full open outlet and return valves



## SPECIFICATIONS

PP-2 SAMPLE PROBE

PP-2	
Materials of Constructions	316/316L Stainless Steel, PTFE, Viton®
Pipeline Connection	Flanged or MNPT
Outlet Ports	¼" NPT (Other Available)
Operating Pressure	MAOP Will Vary According to Customer Specifications of Probe See Assembly Drawing for Product or Contact Welker for this Information

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# SP-1 Sample Probe

The Welker SP-1 is designed to extract a sample of the fluid in a process from a designated point in the process. The SP-1 series sample probe is supplied as a probe with a specific process connection.



## SPECIFICATIONS

SP-1 SAMPLE PROBE

SP-1	
Materials of Constructions	316/316L Stainless Steel
Pipeline Connection	1/2" MNPT
	3/4" MNPT
	1" MNPT
	2" MNPT
Outlet Connection	1/4" NPT with NV-2 Large Ported Valve
Probe Length	8"
Operating Pressure	1/2" MNPT: 7700 psig @ -50 °F to 300 °F
	3/4" MNPT: 7300 psig @ -50 °F to 300 °F
	1" MNPT: 5300 psig @ -50 °F to 300 °F
	2" MNPT: 3900 psig @ -50 °F to 300 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# SP-2 Sample Probe

The Welker SP-2 Probe is ideal for use in your spot sampling, composite sampling, chemical injection, liquid extraction, or attachment insertion application. In addition, Welker SP-2 probes can be integrated easily into almost any custom project via flanged or npt connection. Our probes are available in multiple lengths and seal materials to suit your applications.



## SPECIFICATIONS

SP-2 SAMPLE PROBE

	SP-2
Materials of Constructions	316/316L Stainless Steel
Pipeline Connection	1/2" MNPT
	3/4" MNPT
	1" MNPT
Outlet Connection	1/4" NPT with NV-2 Large Ported Valve
Probe Length	8"
Operating Pressure	6000 psig MAOP @ -20 °F to 120 °F (1/2" MNPT & 3/4" MNPT)
	5350 psig @ -20 °F to 120 °F (1" MNPT)

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# ATEX/IECEX HR Heated Regulator



REGULATE



SAMPLE



CONDITION



The Welker HR Heated Instrument Regulator is a single-stage, spring-loaded, electrically heated pressure reducing valve designed to provide an analytical system with a conditioned gas sample stream at a safe output pressure and temperature. The HR's controlled heating compensates for the cooling brought on by the Joule-Thomson effect to prevent condensation and maintain sample integrity. The HR is specifically designed for use in explosive atmospheres.

## Features

- IECEx / ATEX Certified
- Side entry electric heating element with adjustable thermostat
- Diaphragm- or piston-sensing with multiple pressure control ranges
- Variety of body and seat materials
- Ergonomic 4-point hand knob

## Benefits

- Safe to use in Ex areas around the world
- Efficient heat transfer at the appropriate temperature
- Well-suited to installations with height restrictions
- Adaptable to pressure requirements of downstream equipment
- Corrosion resistance and process fluid compatibility
- Quickly, easily, and comfortably adjust the outlet pressure.



## SPECIFICATIONS

ATEX/IECEX HR HEATED REGULATOR

### ATEX/IECEX HR

Materials of Constructions

**Regulator Base and Body:** 316/316L Stainless Steel (Standard), Others Available  
**Seals:** Varies Based on Customer Specifications and the MAOP and MAOT of the Unit

Temperature Range

**Ambient:** -31 °F to 140 °F  
**Process:** -20 °F to 68 °F

Connections

¼" FNPT

Pressure Control Ranges

0–25 psig

0–50 psig

20–100 psig

75–200 psig

Operation

Diaphragm-Sensing

Piston-Sensing

Features

Explosion-proof Electrical Housing  
 Thermostatically Controlled Heating Element

Explosive Atmosphere /  
 Hazardous Location Certifications\*

IECEx Certification (Certificate of Conformity IECEx SIR 16.0072X)  
 ATEX Certification (EU-Type Examination Certificate Sira 16ATEX1221X)  
 Group II, Category 2G, Ex db IIB+H2T3 Gb  
 Tamb -35 °C to +60 °C

Options

Mounting Bracket

Relief Valve and Pressure Gauge

\*To maintain its certifications, the HR must be installed, operated, and maintained in accordance with the instructions in the Welker IOM Manual.  
 Note: A downstream relief is required.

# FIR-1 Filter / Instrument Regulator

The Welker FIR-1 Filter/Instrument Regulator is designed to filter and provide regulation of an instrument pneumatic supply. It is intended for use as part of instrument packages. Welker recommends that a relief valve, such as the Welker RV-1 or RV-3 series relief valves installed downstream of the engine.



## SPECIFICATIONS

FIR-1 FILTER / INSTRUMENT REGULATOR

FIR-1	
Materials of Constructions	316/316L Stainless Steel, Kel-F® Seat, PTFE, Teflon®, Viton®
Filter Element	10 micron Linear Polyethylene
	35 micron Linear Polyethylene
Operating Pressure	3000 psig MAOP @ -20 °F to 120 °F
Maximum Allowable Temperature	200 °F
Inlet Pressure	0 – 3000 psig
Outlet Pressure	Dependent on Spring Range. Refer to the Spring Range Dis under the Regulator Jam Nut
Instrument Air Connections	¼" NPT

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# IRA-4SS Probe Regulator



The Welker IRA-4SS Probe Regulator is designed to regulate a gas sample stream to an analyzer without interrupting pipeline flow. With AI Control™, the probe automatically inserts and retracts using pipeline pressure.

## Features

- Provides properly conditioned sample stream
- Insert and retract probe at full pipeline pressure
- Easily adjustable to multiple insertion depths
- Point of regulation occurs at the tip of the probe in the flowing stream
- Probe design inhibits creation of free liquids and mitigates the Joule-Thomson effect
- Diaphragm design for optimizing low-pressure output sensitivity

## Benefits

- Proven safety with AI Control™ provides peace of mind
- Reduces line pack for analyzer applications
- Probe retraction design allows maintenance to be performed during continuous pipeline operation
- Design allows for easy installation and intuitive operation
- Transferable from location to location



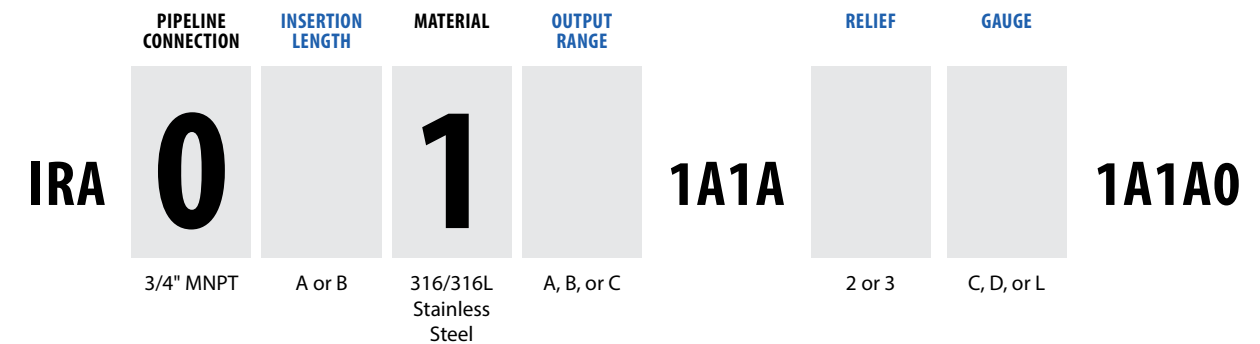
## SPECIFICATIONS

IRA-4SS PROBE REGULATOR

IRA-4SS	
Materials of Construction	316/316L Stainless Steel
Seat Material	Teflon®
Seal Material	Viton®
Pipeline Connection	3/4" MNPT
Outlet Connection	1/4" FNPT
Outlet Range Options	0–25 psig
	0–50 psig
	20–100 psig
Insertion Length Options	0–12"
	0–18"
Mounting	Vertical
Operating Pressure	2160 psig MAOP @ -20 °F to 120 °F
Probe Diameter	5/8" shaft
Industry Standards	Complies with API 14.1, GPA 2166, and ISO 10715

## STANDARD OPTIONS

IRA-4SS AUTOMATIC INSERTION PROBE REGULATOR



### INSERTION LENGTH

- A: 0–12"
- B: 0–18"

### OUTPUT RANGE

- A: 0–25 psig
- B: 0–50 psig
- C: 20–100 psig

### RELIEF *Determined by Output Range*

- 2: 0–50 psig RV-1D (Output Range A or B)
- 3: 0–100 psig RV-1D (Output Range C)

### GAUGE *Determined by Output Range*

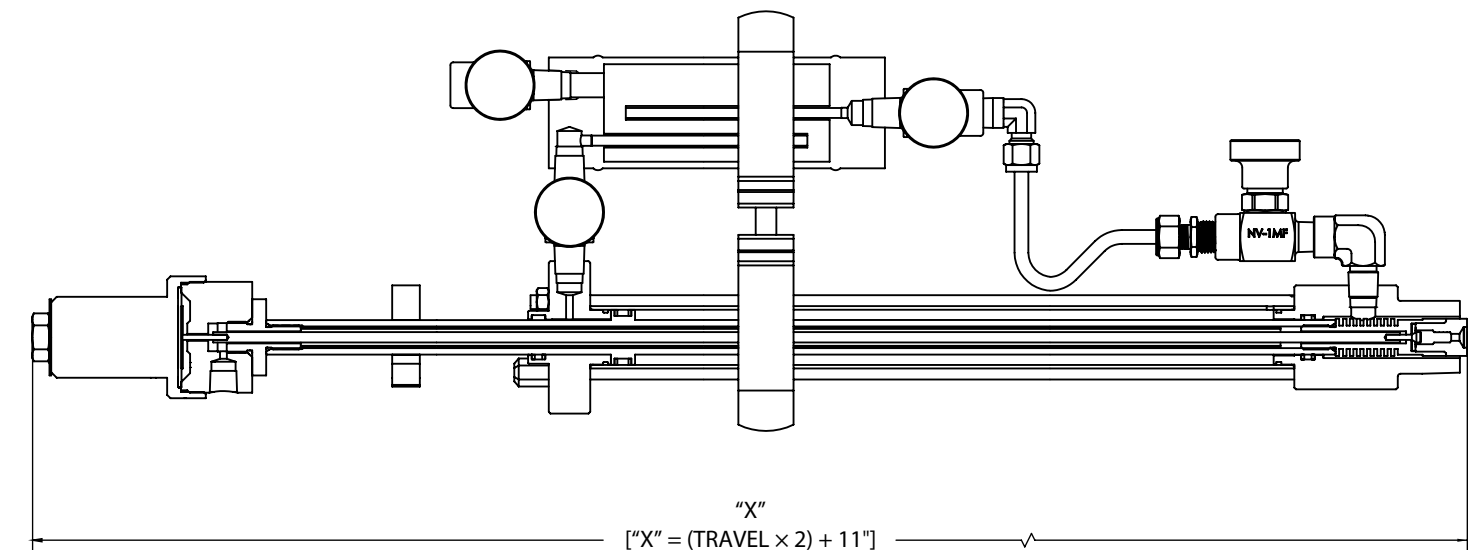
- C: 0–30 psig (Output Range A)
- D: 0–60 psig (Output Range B)
- L: 0–100 psig (Output Range C)

For custom options, choose **Plus Welker™**.



Customer Inspired. Welker Manufactured.  
Collaborate with us to create a custom product unique to your application.

## DIMENSIONS



Weight: 15 lb for 12"  
17 lb for 18"

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



REGULATE



SAMPLE



CONDITION

The Welker Original IRD Probe Regulator delivers a continuous supply of representative samples to an analyzer in the appropriate pressure for real-time natural gas analysis of high-volume lines.

### Features

- Fixed insertion length
- Pressure-regulating probe tip with thermal fins
- Low internal volume
- Multiple pressure control ranges
- Welker Spring Range Kit (IRD-4SS option)

### Benefits

- Collect representative samples from the center one-third of the pipeline
- Regulation point in the pipeline
- Mitigate the Joule-Thomson effect and prevent sample condensation
- Reduced lag time
- Real-time sample analysis
- Adaptable to pressure requirements of downstream analyzer
- Easily swap springs to change the output pressure range for a new application or downstream device (IRD-4SS option)



## SPECIFICATIONS

### IRD PROBE REGULATOR

IRD	
Materials of Construction	316/316L Stainless Steel, Kel-F®, PTFE, and Viton® Others Available
Connections	<b>Outlet:</b> ¼" FNPT <b>Pipeline:</b> ½", ¾", 1", or 2" MNPT
Output Range	<b>IRD-1:</b> 75-200 psig (5-13 barg) <b>IRD-2:</b> 100-500 psig (6-34 barg) <b>IRD-4:</b> 0-25 psig (0-1.7 barg); 0-50 psig (0-3.4 barg); 20-100 psig (1.3-6 barg); or 75-200 psig (5-13 barg) <b>IRD-6:</b> 250-1500 psig (17-103 barg)
Insertion Length	2.2" Standard for 2" and 3" Pipe 3.6" Standard for 4" and 6" Pipe 5.9" Standard for 8", 10", and 12" Pipe
Flow Coefficient (C <sub>v</sub> )	<b>IRD-1, IRD-2, and IRD-6:</b> 0.092 <b>IRD-4:</b> 0.138
Operation	<b>IRD-1 and IRD-4:</b> Diaphragm-Operated <b>IRD-1, IRD-2, and IRD-6:</b> Piston-Operated
Operating Pressure	<b>IRD-1, IRD-2, and IRD-6:</b> 5000 psig @ -20 °F to 100 °F (344 barg @ -28 °C to 37 °C) <b>IRD-4:</b> 3600 psig @ -20 °F to 100 °F (248 barg @ -28 °C to 37 °C)

\* Downstream Relief Required

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# ISD Regulator Instrument Regulator



The Welker I-Series Instrument Regulators maintain downstream pressure control in analytical, process, sampling, or injection systems to protect sensitive equipment from costly damage. These instrument regulators are spring-loaded pressure-reducing valves designed to reduce a higher pressure filtered pneumatic supply to lower outlet pressure safe for downstream instrumentation.

The ISD model in the I-Series is a standalone diaphragm-sensing instrument regulator suitable for use in general and corrosive elements.

## Features

- Compact design
- Multiple flow coefficients and pressure control ranges
- Port configuration options
- All 316/316L stainless steel body and trim
- Knurled spring housing

## Benefits

- Suitable for small enclosures and panel mounting
- Adaptable to pressure requirements of downstream equipment
- Select accessory arrangement best suited for the installation and application
- Prevent hand slippage during maintenance
- Uncomplicated maintenance requires no special tools and little downtime



## SPECIFICATIONS

ISD INSTRUMENT REGULATOR

ISD	
Materials of Constructions	316/316 L Stainless Steel, Buna Nitrile, and PCTFE Others Available
Maximum Allowable Inlet Pressure	600 psig
Temperature Range*	32 °F to 392 °F
Ports	¼" FNPT Inlet, Outlet, Relief, and Gauge
Flow Coefficient (C <sub>v</sub> )	0.02
	0.06
	0.10
Pressure Control Ranges	0–25 psig
	0–50 psig
	0–100 psig
	0–200 psig
Weight	2 lb
Options	(3) Port Configurations

Weight and/or dimensions are approximate. Specifications subject to change without notice.





The Welker I-Series Instrument Regulators maintain downstream pressure control in analytical, process, sampling, or injection systems to protect sensitive equipment from costly damage. These instrument regulators are spring-loaded pressure-reducing valves designed to reduce a higher pressure filtered pneumatic supply to lower outlet pressure safe for downstream instrumentation.

The ISPE model in the I-Series is a cost-effective, standalone piston-sensing instrument regulator suitable for regulating air and light gases, such as hydrogen.

### Features

- Piston-sensing
- Compact, lightweight design
- Multiple flow coefficients and pressure control ranges
- Flexible port configuration

### Benefits

- Capable of regulating higher inlet pressures with minimal flow drop
- Suitable for small enclosures and for portable and on-vehicle applications
- Adaptable to pressure requirements of downstream equipment
- Select accessory arrangement best suited for the installation and application
- Uncomplicated maintenance requires no special tools and little downtime



## SPECIFICATIONS

ISPE INSTRUMENT REGULATOR

ISPE	
Materials of Constructions	<b>Body:</b> Nickel-Plated Aluminum <b>Piston:</b> Aluminum <b>Seat:</b> PCTFE <b>Seals:</b> Viton® Others Available
Maximum Allowable Inlet Pressure	2160 psig (148 barg)
Temperature Range*	32 °F to 392 °F (0 °C to 200 °C) Others Available
Ports	¼" FNPT or SAE Inlet, Outlet, Relief, and Gauge
Flow Coefficient (C <sub>v</sub> )	0.02 0.06 0.10
Pressure Control Ranges	0–25 psig (0–1.7 barg) 0–50 psig (0–3.4 barg) 0–100 psig (0–6.8 barg) 0–200 psig (0–13.7 barg)
Weight	0.5 lb (0.2 kg)

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# IR-1 Instrument Regulator



The Welker IR-1 Instrument Regulator reduces higher pressure filtered gas or air to a lower outlet pressure safe for your downstream instrumentation, helping prevent costly damage and interruptions to operation.



## SPECIFICATIONS

IR-1 INSTRUMENT REGULATOR

IR-1	
Materials of Constructions	316/316 L Stainless Steel, Viton®, PTFE, Buna-N®, Kel-f®
	Others Available
Sample Outlet Connection	¼" NPT
Sample Inlet Connection	¼" NPT
Auxillary Connections	¼" NPT
Maximum Allowable Inlet Pressure	5000 psig MAOP @ -20 °F to 100 °F
Output Range	0–200 psig MAOP @ -20 °F to 100 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# IR-4 Instrument Regulator



The Welker IR-4 Instrument Regulator reduces higher pressure filtered gas or air to a lower outlet pressure safe for your downstream instrumentation, helping prevent costly damage and interruptions to operation.



## SPECIFICATIONS

IR-4 INSTRUMENT REGULATOR

### IR-4

Materials of Constructions

316/316 L Stainless Steel, Viton®, PTFE, Buna-N®, Kel-f®

Others Available

Sample Outlet Connection

¼" NPT

Sample Inlet Connection

¼" NPT

Auxillary Connections

¼" NPT

Maximum Allowable Inlet Pressure

3600 psig MAOP @ -20 °F to 100 °F

Output Range

0–200 psig MAOP @ -20 °F to 100 °F

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# IR-7 Instrument Regulator



The Welker IR-7 Instrument Regulator is designed to provide an output pressure adequate for downstream instrumentation that is unable to sustain high pressures. The input pressure is reduced as the supply travels through the input to the output.

## Features

- Compact design
- Cross configuration of dual inlet and outlet ports
- All 316/316L stainless steel body and trim

## Benefits

- Replaceable cartridge assembly allows for easy maintenance and repair
- Protects downstream instrumentation that is unable to sustain high pressures



## SPECIFICATIONS

IR-7 INSTRUMENT REGULATOR

IR-7	
Materials of Constructions	316/316 L Stainless Steel
Seat Material	Teflon®
Seal Material	Viton®
Outlet Connection	¼" FNPT
Output Range Options	0–25 psig
	0–50 psig
	75–200 psig
Operating Pressure	3600 psig MAOP @ -20 °F to 120 °F

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

The Welker SG Sight Glass enables technicians to visually observe process fluid flow on site to ensure sampling and injection systems are functioning properly without interrupting operations. For gas or liquid sampling applications where positive flow is less obvious, an indicator improves visibility.

**Options**

- Visual flow indicator (optional)
- Sulfinert® treatment on wetted parts (optional)

**Benefits**

- Improved visibility of gas or liquid flow (optional)
- Protect against sulfur absorption and corrosion in sour gas applications (optional)



**SPECIFICATIONS**

SG SIGHT GLASS

	SG-3	SG-4
Materials of Constructions	Carbon Steel, Plexiglas®, Viton®, Tempered Glass <b>Floating Indicator:</b> Nylon <b>Spinner Indicator:</b> PCTFE and Teflon®	316/316L Stainless Steel, Plexiglas®, Viton®, Tempered Glass <b>Spinner Indicator:</b> Delrin®
Connections	Others Available	
	¼" FNPT (Standard)	
	⅜" FNPT	
	½" FNPT	
Weight	3.5 lb	2.5 lb
Dimensions (L x W x H)	2.25" x 2.25" x 4.5"	2.5" x 2.5" x 3.75"
	Visual Flow Indicator (Floating Style or Spinner Style)	High Flow
		Visual Flow Indicator (Spinner Wheel)
		Sulfinert®-Treated Wetted Parts
Operating Pressure	CE Compliance 2000 psig @ -20 °F to 100 °F	

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# CV-1 Check Valves



The Welker CV-1 Check Valve is a ball-type valve designed to allow product flow in one direction only. The ball in the standard CV-1 is spring-loaded to remain shut and will only operate once the upstream or inlet pressure exceeds the tension on the spring; this is referred to as the "cracking pressure." The CV-1 can be ordered without a spring for vertical installation; without a spring, gravity causes the CV-1 to remain shut until upstream of inlet pressure exceeds the downstream or outlet pressure. Shutoff of the liquid or gas is achieved in both styles when the upstream or inlet pressure falls below the downstream or outlet pressure and the ball seats on the O-ring, forming a positive seal.



## SPECIFICATIONS

CV-1 RELIEF VALVE

	CV-1
Materials of Construction	316/316 L Stainless Steel, Ceramic (Ball), PTFE, Viton®
Inlet Connection	¼" FNPT
	½" FNPT
Outlet Connection	¼" MNPT or FNPT
Operating Pressure	5000 psig @ -20 °F to 100 °F
Options	No Spring
	CE Compliance

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# NV-1 Needle Valve



The Welker NV-1 Needle Valve is designed for use in high pressure instrumentation applications. The low operating torque makes it easy to open and close under pressure. The ported globe design reduces chilling due to the Joule-Thomson effect. The blow-out proof stem with durable construction makes it safe to operate at high pressure.



NV-1FF



NV-1MM



NV-1MF



NV-1MFR



NV-1MMR

**Features**

- Soft seat design
- Low operating torque
- Ported with a globe design
- Blow-out proof stem with durable construction

**Benefits**

- Positive shut-off
- Easily opens and closes under pressure
- Less prone to develop leaks
- Safe to operate at high pressure

**SPECIFICATIONS**

NV-1 NEEDLE VALVE

NV-1	
Materials of Constructions	316/316L Stainless Steel, Aluminum, Viton®, PTFE
Connections	¼" NPT
Operating Pressure	6000 psig MAOP @ -20 °F to 400 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# RV-1 Relief Valves



The Welker RV-1 Relief Valve is designed to protect instruments and regulators from overpressurization. The RV-1 is specifically designed to relieve moderate capacity instruments in the 0–200 psig range.



## SPECIFICATIONS

CV-1 RELIEF VALVE

	CV-1
Materials of Construction	316/316 L Stainless Steel, PTFE, Viton®
Inlet Connection	¼" MNPT (Standard)
	⅛" MNPT
Outlet Connection	Atmospheric
	¼" MNPT
	½" MNPT
Spring Range	0–50 psig
	0–100 psig
	0–200 psig
Maximum Allowable Inlet Pressure	2500 psig
	5000 psig (Standard)
	6000 psig
Options	Pre-Set Relief
	Sulfinert®-Treated Wetted Parts
	CRN Alberta Certification
	NACE Compliance

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



# RV-110 Series Relief Valves



The Welker RV-110 series Relief Valves protect high capacity gas instrumentation from damage and catastrophic failure. Designed with ASME standards in mind, these stainless-steel reliefs have a 10% overpressure relief capacity.

Model RV-110A reliefs vent to atmosphere and can be used where this is allowed, such as a non-hazardous gas application. Model RV-110V reliefs have a threaded outlet port for applications that require gases to be vented to a safe area.



RV-110A



RV-110V

## SPECIFICATIONS

RV-110 SERIES SAFETY RELIEF VALVES

	RV-110A	RV-110V
Materials of Constructions	316/316L Stainless Steel Others Available	
Maximum Allowable Inlet Pressure	300 psig	500 psig
Temperature Range	-65 °F to 400 °F May Vary Based on Seal Material Selection	
Connections	<b>Inlet:</b> ¼" MNPT <b>Outlet:</b> Atmospheric	<b>Inlet:</b> ¼" FNPT <b>Outlet:</b> ½" FNPT
Flow Rate	Up to 70 scfm	Up to 135 scfm
Connections	15–30 psig 31–90 psig 91–140 psig	10–150 psig 151–250 psig
Weight	0.25 lb	1.25 lb
Dimensions (L x W x H)	1" x 1" x 1.5"	1.25" x 2" x 5.5"
Feature	10% Overpressure Relief Capacity	
Product Certifications	CE Compliance* NACE Compliance	

\*Applies only when used on Welker CE equipment

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Light Liquid Sampling \

# Essentials™ Light Liquid Sampler



The Welker Essentials™ Light Liquid Sampler is a double-acting positive displacement pump designed to take quality samples of low volume (100–4000 bbl/d) natural gas liquid streams proportional to flow. Connect a 4-way solenoid, pneumatic supply, controller signal, and constant pressure cylinder with internal mixer to this bypass sample pump and you've got a complete liquid sampling system ideal for accurate composition analysis, quality control, or custody transfer.



## SPECIFICATIONS

ESSENTIALS™ LIGHT LIQUID SAMPLER

Essentials™	
Materials of Construction	316/316L Stainless Steel, Teflon®, Viton®
Probe Inlet Connection	1" MNPT
	¾" MNPT
Operating Pressure	1440 psig MAOP @ -20 °F to 120 °F

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# inFlow™ Lite Sample Pump



The Welker inFlow™ Lite is a double-acting inline sample pump designed to take quality samples of high flow condensates and natural gas liquids (NGLs) proportional to flow. Connect a solenoid, controller signal, pneumatic or hydraulic sample, and sample container to this direct mount sample pump, and you've got a complete liquid sampling system.



## SPECIFICATIONS

INFLOW™ LITE SAMPLE PUMP

inFlow™ Lite	
Materials of Construction	316/316L Stainless Steel Wetted Parts, Aluminum, PTFE
Seal Material	Viton®
Pipeline Connection	¾" MNPT
Insertion Length Options	1.5"
	2.5"
	3.5"
	4.5"
Injection Volume	0.25 – 7.50 cc with Volume Indicator Rod
Mounting	Probe
Operating Pressure	2160 psig MAOP @ -20 °F to 120 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# inLoop™ RFP Light Liquid Sampler



The Welker inLoop™ RFP is a double-acting bypass sample pump designed to take quality samples of refined products, such as diesel, gasolines, and jet fuel. Incorporate the inLoop™ RFP into your blend header or refined product sampling system to ensure repeatable representative samples.



## SPECIFICATIONS

INLOOP™ RFP SAMPLE PUMP

inLoop™ RFP	
Materials of Construction	316/316L Stainless Steel Wetted Parts, Aluminum, Viton®
Pressure Limit	Actuation: 30–225 psig
	Injection: 1800 psig
	Power End: 225 psig
Injection Volume	5 cc
	10 cc
	25 cc
	30 cc
	50 cc
	61.5 cc
	100 cc
	150 cc
	200 cc
Operating Pressure	1800 psig MAOP @ -20 °F to 120 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# LSSM-1PM Sample Pump



The Welker LSSM-1 is a self-purging positive displacement pump designed to take quality samples proportional to flow or time. Connect a controller signal, pneumatic supply, and sample container to this pump for a complete liquid sampling system.

## Features

- Representative sampling with hot loop through sampler body or bypass
- Samples a fixed volume at full line pressure
- Equipped with Vanishing Chamber™ collection head
- Minimum number of moving parts
- All 316 stainless steel construction

## Benefits

- Meets ISO 10715 and API Chapter 14.1 for gas
- Meets ISO 3171, API 8.2, ASTM D4177 and GPA 2174 for liquid
- Works with constant pressure or standard cylinders
- Pneumatically operated
- Easy maintenance



## SPECIFICATIONS

LSSM-1PM SAMPLE PUMP

### LSSM-1PM

Materials of Construction

316/316L Stainless Steel, PTFE, Viton®

Pipeline Connection

½" MNPT

¾" MNPT

1" MNPT

Electrical Connection

AC 110 V

DC 6 V

DC 12 V

DC 24 V

Sample Volume

0.065 cc Vanishing Chamber™ Collection Cup

0.22 Vanishing Chamber™ Collection Cup

0.5 Vanishing Chamber™ Collection Cup

1.0 cc Vanishing Chamber™ Collection Cup

1.5 cc Vanishing Chamber™ Collection Cup

Operation

Piston-Operated Motor

Operating Pressure

3600 psig MAOP @ -20 °F to 120 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# LSS-1F Sample Pump



The Welker LSS-1F is a self-purging positive displacement pump with 2" pipe spool and integrated static mixer designed to take quality samples of low flow liquid hydrocarbon streams proportional to flow or time. Connect a controller signal, pneumatic supply, and constant pressure container with internal mixer to this inline sample pump and you've got a complete liquid sampling system ideal for accurate water cut measurement.



## SPECIFICATIONS

LSS-1F SAMPLE PUMP

### LSS-1F

Materials of Construction	316/316L Stainless Steel, Carbon Steel, Viton®, PTFE
Pipeline Connection	2" - 150RF or 2" - 600RF
Sample Outlet Connection	¼" MNPT
Pneumatic Supply Connection	¼" FNPT
Pneumatic Supply Pressure	65 psig – 100 psig
Operating Pressure	1480 psig MAOP @ -20 °F to 100 °F

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# CP-2GM Constant Pressure Sample Cylinder



The Welker CP-2GM Constant Pressure Sample Cylinder is recognized for its versatile abilities to safely transport a sample in original pipeline condition and provide a uniform mix using the internal Gravity Mixer™ prior to lab analysis.

## Features

- Proven safety in cylinder design
- Maintains integrity of the sample at full line pressure from collection to analysis
- Product and pre-charge sides with floating piston
- Internal Gravity Mixer™
- DOT and Transport Canada\* approval for transportation
- Manufactured with over 40 years of industry-expertise

## Benefits

- Safety features allow user to control and monitor pressure at all time
- Cylinder design eliminates the need for excessive purging and venting gas or liquid to the atmosphere
- Pre-charging the back side of the piston protects against phase change
- Internal Gravity Mixer™ provides a proper sample mix for accurate lab analysis
- Repeatable results
- Easy to handle



## SPECIFICATIONS

CP-2GM CONSTANT PRESSURE SAMPLE CYLINDER

CP-2GM	
Materials of Construction	316/316L Stainless Steel
Seal Material	Viton®
Sample Inlet Connections	¼" FNPT
Sample Outlet Connections	¼" FNPT
Cylinder Volume	500 cc
Cylinder Mixer Type	Gravity Mixer™
Cylinder Accessories	Rupture Discs, Reliefs, Valves, and Gauges
Operating Pressure	1800 psig MAOP @ -20 °F to 120 °F
Transport Approvals	DOT-SP 7657 Transport Canada SU 4781*
Industry Standards	Complies with API 8.1, API 14.1, ASTM D1265, ASTM D3700, ASTM D4057, GPA 2166, GPA 2174, ISO 3170, ISO 4257, and ISO 10715

\*Available upon request.

## STANDARD OPTIONS

CP-2GM CONSTANT PRESSURE SAMPLE CYLINDER

**C2SD110** **AA0B0A00A0**  
SEALS  
A or F

## SEALS

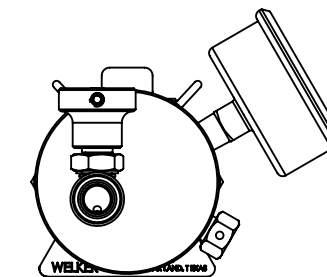
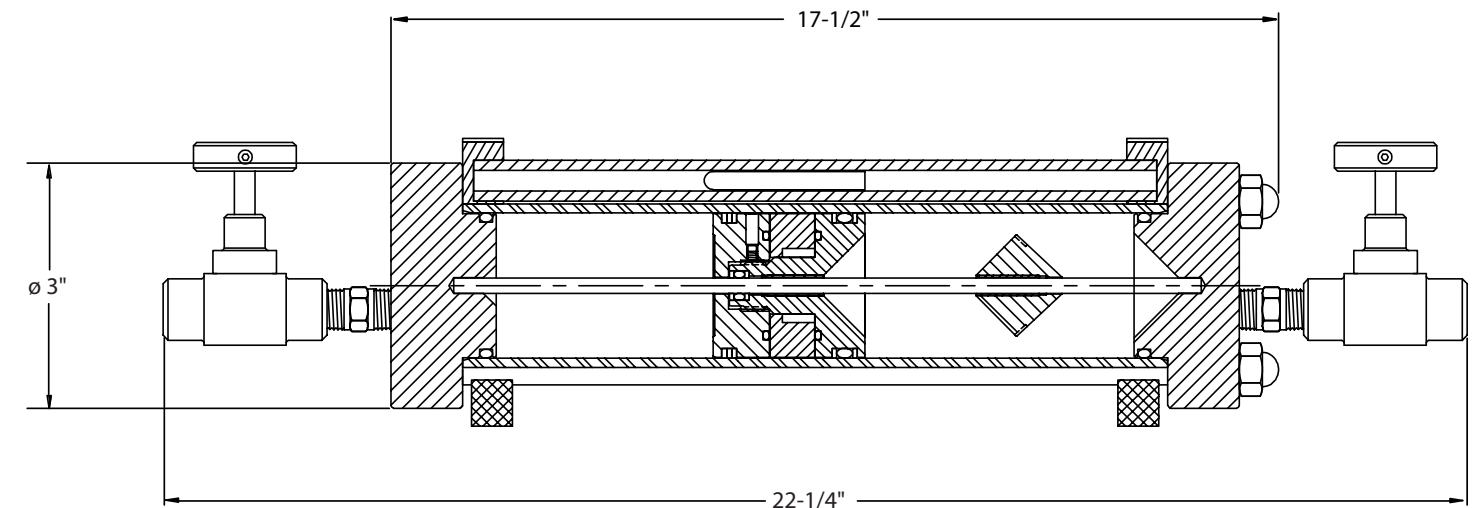
- A: Viton®
- B: Kalrez® (Product Side) and Viton® (Pre-charge side)

For custom options, choose **Plus Welker™**.

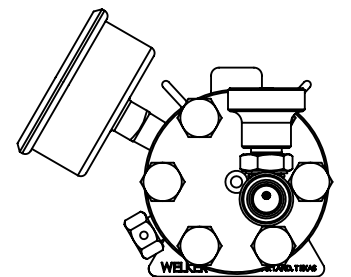


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## DIMENSIONS



Weight: 13.5 lb empty



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



# LS-14 Light Liquid Sampling System



The Welker LS-14 Light Liquid Sampling System is an all-in-one solution that collects, mixes, and maintains a large volume of a representative composite sample.

## Features

- Welker sample pump
- Large capacity constant pressure sample container with visual volume indicator
- Built-in mixer with push-button actuation
- Supply tank for customer-supplied inert pre-charge gas
- Optional Mod Skid™ with center mast and lifting lug

## Benefits

- Welker sample pumps offer quality design and customer-proven results
- Constant pressure sample container ensures that the collected samples are maintained in pipeline condition
- Mixing system provides a uniform mixture prior to sample withdrawal and transport
- Lifting lug included on Mod Skid™ makes system installation and relocation easy
- Mod Skid allows detachable components to be serviced individually and quickly, minimizing downtime
- All-in-one solution with a compact footprint



Mod Skid™

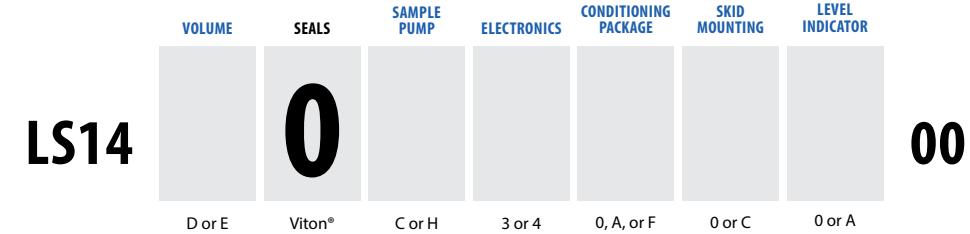
## SPECIFICATIONS

LS-14 LIGHT LIQUID SAMPLING SYSTEM

LS-14	
Materials of Construction	316/316L Stainless Steel, Aluminum, Carbon Steel, Teflon®, and Viton®
Composite Sample Draw-Off Connection	¼" FNPT
Sample Inlet Connection	¼" FNPT
Container Volume Options	3 US Gallons @ 80%
	5 US Gallons @ 80%
Operating Pressure	2160 psig MAOP @ -20 °F to 100 °F
Sample Pump Options	MPS-2
	SSO-9MED
Skid Options	12" x 12" Mounting Plate
	36" x 22" x 2" Mod Skid™ With Center Mast and Lifting Lug
Industry Standards	Complies with API 8.2, ASTM D1265, ASTM D4177, GPA 2174, ISO 3171, and ISO 4257

## STANDARD OPTIONS

LS-14 LIGHT LIQUID SAMPLING SYSTEM



### VOLUME

- D:** 3 US Gallons at 80%
- E:** 5 US Gallons at 80%

### SAMPLE PUMP

- C:** MPS-2
- H:** SSO-9MED

### CONDITIONING PACKAGE FOR INSTRUMENTATION

- 0:** None
- A:** IR-4SS, RV-1D, Pressure Gauge, and Air Lubricator
- F:** IR-4SS, RV-1D, Pressure Gauge, Air Lubricator, and F-4

### SKID/MOUNTING

- 0:** 12" x 12" Mounting Plate
- C:** 36" x 22" x 2" Mod Skid™ With Center Mast

### LEVEL INDICATOR

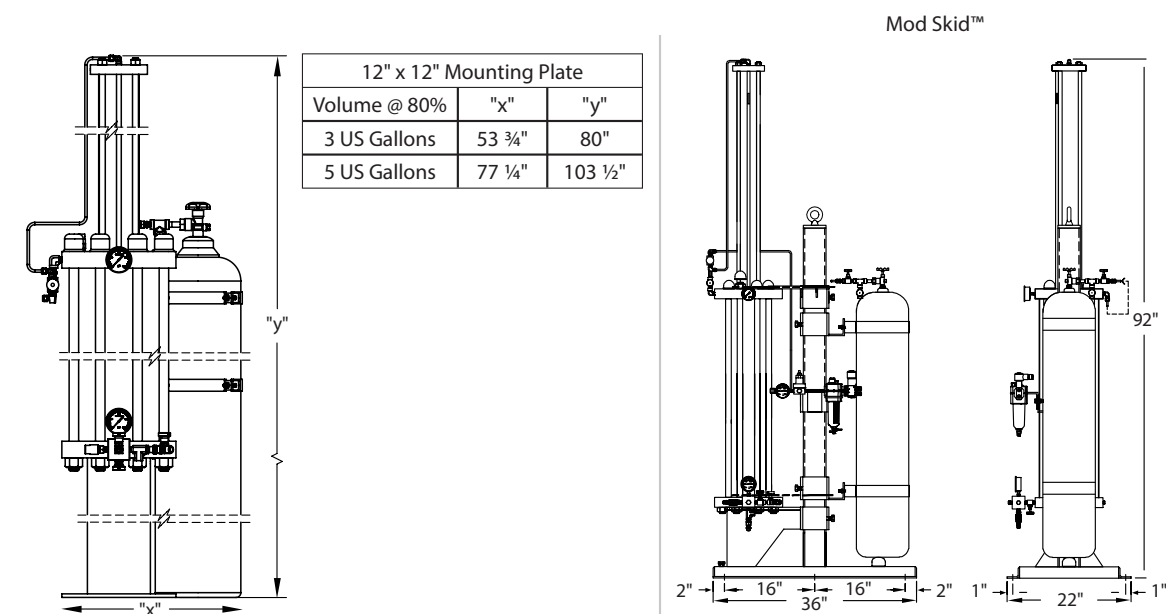
- 0:** Tracker Tube
- A:** MTS Magnetostrictive Level Indicator With Tracker Tube

For custom options, choose **Plus Welker™**.



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## DIMENSIONS



Weight and/or dimensions are approximate. Specifications subject to change without notice.

## Natural Gas Sampling \



The Essentials™ Gas Sampling System is a low-cost composite sampling solution for a clean, dry single-phase natural gas. The self-purging probe-mounted system collects fresh samples proportional to flow or time. Durable and low maintenance, it is well-suited for remote locations.



### Features

- Probe mounted with isolation valve
- Welker Fresh Sample System™
- Positive displacement piston sample pump
- Inline relief at sample outlet
- Purge manifold with pressure gauge
- Stainless steel Welker regulator with 40-micron filtration and relief
- Sample pump actuated by regulated process gas
- Manual solenoid test button
- Rain-tight, watertight, corrosion-resistant enclosure with padlock hasp
- Optional on-board Welker 6Tc Timer/Controller

### Benefits

- Collect representative samples from the center one-third of the pipeline
- Perform standard maintenance without removing the system from the pipeline
- No lag time
- Self-purging design ensures a fresh sample every cycle
- Collect repeatable fixed volume samples at line pressure
- Inline relief prevents collected samples from flowing back to the pipeline if pipeline pressure drops
- Purge sample cylinder using industry standard practices
- On-site monitoring of single cavity sample cylinders fill volume
- Remove unwanted particles from process gas for sample pump actuation
- No auxiliary pneumatic supply required
- Actuate the sample pump for on-site system assessment and troubleshooting
- Confidently sample in aggressive environments and remote locations
- Sample proportional to flow or time without an external power supply (optional)

## SPECIFICATIONS

ESSENTIALS™ GAS SAMPLER

### Essentials™ Gas Sampler

Materials of Construction	316/316L Stainless Steel (Wetted Parts), Anodized Aluminum (Non-wetted Parts), Polycarbonate (Enclosure), PTFE, Teflon®, Viton®
Connections	<b>Pipeline:</b> ¾" MNPT <b>Sample Outlet:</b> ¼" MNPT
Regular Output Range	50–100 psig
Insertion Length	8"
Insertion Diameter	¾"
Electrical Connection	DC 6 V DC 12 V DC 24 V (Standard)
Sample Volume	0.25 cc
Operation	Piston-Operated Pump
Enclosure Dimensions (L x W x H)	8" x 4" x 10"
Option	Welker 6Tc Timer/Controller
Operating Pressure	1440 psig @ -20 °F to 120 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# GSS-4PM Composite Gas Sampler



APA 14.1 | GPA 2166 | ISO 10715

The Welker GSS-4PM Composite Gas Sampler extracts a sample from the flowing product in the pipeline and uses positive displacement to capture a representative sample.

## Features

- Designed to collect a representative composite sample
- Vanishing Chamber™ collection cup
- Self-purging system
- Actuated by regulated pipeline pressure or auxiliary pneumatic supply

## Benefits

- Sampling directly from the flowing product allows for a truly representative sample
- Sampler design has minimal interference between the pipeline and sample pathway
- The Vanishing Chamber™ collection cup utilizes positive displacement to capture and push the complete sample to the sample container
- The unique self-purging system ensures a fresh sample with every actuation
- Easy to install



## SPECIFICATIONS

GSS-4PM COMPOSITE GAS SAMPLER

GSS-4PM	
Materials of Construction	316/316L Stainless Steel
Seal Material	Viton®
Pipeline Connection	3/4" MNPT
Outlet Connection	1/4" FNPT
Collection Cup	Viton® Vanishing Chamber™
Relief Type	Inline Relief
Insertion Length	8"
Sample Volume	0.22 cc
Bypass	Integrated Bypass Manifold with Built-in Valve
Operation	Diaphragm-Operated Pump
Operating Pressure	2160 psig MAOP @ -20 °F to 120 °F
Industry Standards	Complies with API 14.1, GPA 2166, and ISO 10715

## STANDARD OPTIONS

GSS-4PM COMPOSITE GAS SAMPLER



### VOLTAGE

- 3: DC 24 V
- 4: DC 12 V

### RELIEF

Please specify line pressure

- 2: Inline Relief 300–1000 psig
- 3: Inline Relief 900–1500 psig

### OPTIONS

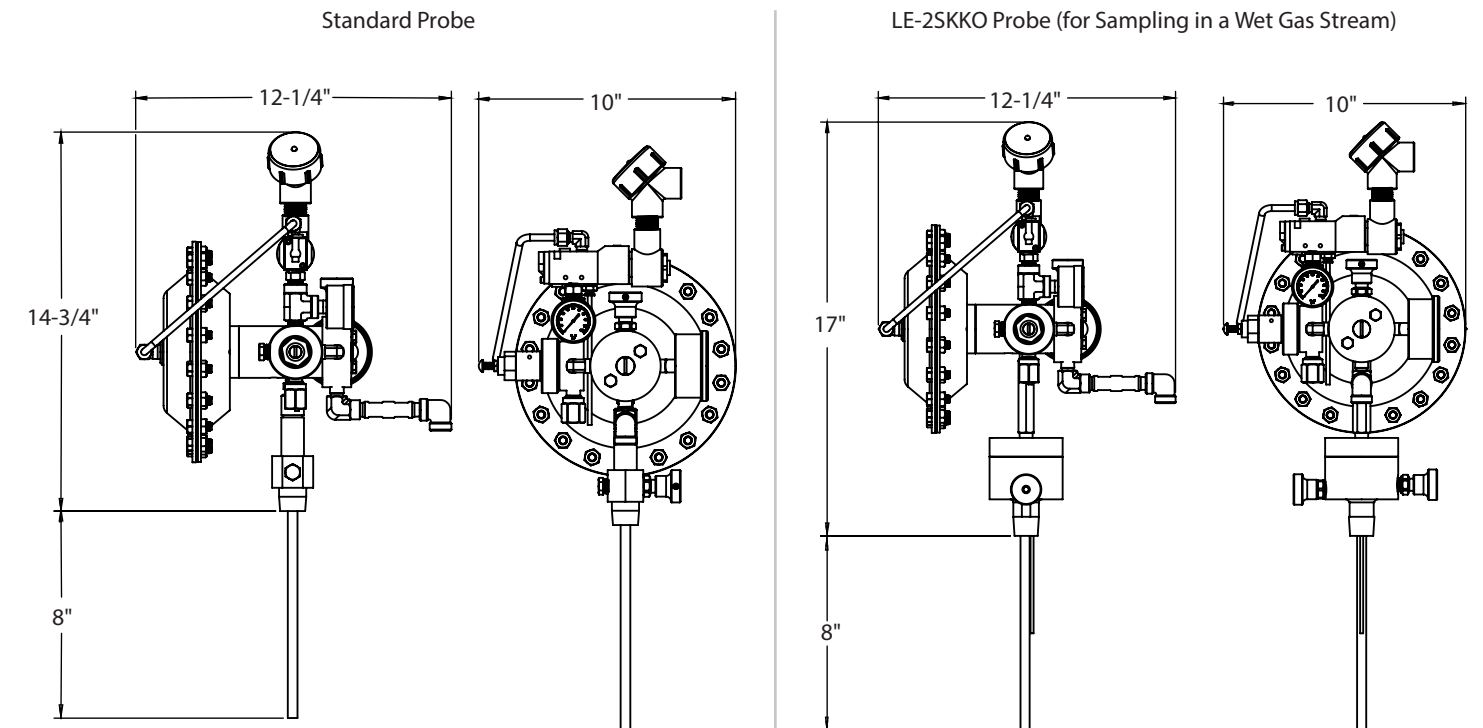
- C: Single Cavity Cylinder Manifold
- J: LE-2SSKO Probe (for Sampling in a Wet Gas Stream)

For custom options, choose **Plus Welker™**.



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## DIMENSIONS



Weight and/or dimensions are approximate. Specifications subject to change without notice.

The Welker HGS Heated Gas Sampler is a composite sampling solution for natural gas at or near the hydrocarbon dew point. The HGS maintains the sampling equipment above the hydrocarbon dew point to ensure composite samples are representative and not distorted by phase change. Connect the HGS to a sample probe to collect fresh samples proportional to flow or time.

## Features

- Welker Fresh Sample System™
- Positive displacement piston sample pump
- Inline relief at sample outlet
- Purge manifold with pressure gauge
- Heater with thermostat
- Insulated corrosion-resistant enclosure with external temperature gauge
- Optional on-board Welker 6Tc Timer/Controller

## Benefits

- Self-purging design ensures a fresh sample every cycle
- Collect repeatable fixed volume samples at line pressure
- Inline relief prevents collected samples from flowing back to the pipeline if pipeline pressure drops
- Maintain an internal temperature above the hydrocarbon dew point to prevent condensation
- Confidently sample in harsh environments and remote locations
- Sample proportional to flow or time without an external power supply (optional)



## SPECIFICATIONS

HGS HEATED GAS SAMPLER

HGS	
Materials of Construction	316/316L Stainless Steel Wetted Parts, Anodized Aluminum Non-Wetted Parts, Carbon Steel, Polyester/Propylene (Enclosure), PTFE, Teflon®, and Viton®
Connections	<p><b>Actuation:</b> ¼" MNPT</p> <p><b>Product Inlet:</b> ⅜" MNPT</p> <p><b>Relief Outlet:</b> ¼" MNPT</p>
Utility Requirements	<b>Pneumatic:</b> 65–70 psig
Electrical Connections	<p><b>Electric Heater:</b> AC 110 V</p> <p><b>Solenoid:</b> DC 12 V or DC 24 V</p>
Sample Volume	0.25 cc
Container Volume	300 cc
Operation	500 cc
Operating Pressure	1440 psig MAOP @ -20 °F to 120 °F
Industry Standards	Complies with GPA 2166, API 14.1, ASTM D5287, ISO 10715

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# SSM-1 Spot Sampling Manifold



APA 14.1

GPA  
2166

ASTM  
D5287

ISO  
10715

The Welke SSM-1 Spot Sampling Manifold is designed to optimize natural gas spot sampling procedures by reducing liquid carryover and prevent the creation of liquids. Connect a Welker Sample Probe and a Welker Single Cavity Cylinder to the SSM-1 and you've got a complete spot sampling system.



## SPECIFICATIONS

SSM-1 SPOT SAMPLING MANIFOLD

### SSM-1

Materials of Construction	316/316L Stainless Steel
Inlet Port	¼" NPT
Outlet	¼" NPT
Outlet Connection	¼" NPT
Operating Pressure	2160 psig MAOP @ -20 °F to 120 °F
Industry Standards	Complies with GPA 2166, API 14.1, ASTM D5287, ISO 10715

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# CP-2GM Constant Pressure Sample Cylinder



The Welker CP-2GM Constant Pressure Sample Cylinder is recognized for its versatile abilities to safely transport a sample in original pipeline condition and provide a uniform mix using the internal Gravity Mixer™ prior to lab analysis.

## Features

- Proven safety in cylinder design
- Maintains integrity of the sample at full line pressure from collection to analysis
- Product and pre-charge sides with floating piston
- Internal Gravity Mixer™
- DOT and Transport Canada\* approval for transportation
- Manufactured with over 40 years of industry-expertise

## Benefits

- Safety features allow user to control and monitor pressure at all time
- Cylinder design eliminates the need for excessive purging and venting gas or liquid to the atmosphere
- Pre-charging the back side of the piston protects against phase change
- Internal Gravity Mixer™ provides a proper sample mix for accurate lab analysis
- Repeatable results
- Easy to handle



## SPECIFICATIONS

CP-2GM CONSTANT PRESSURE SAMPLE CYLINDER

CP-2GM	
Materials of Construction	316/316L Stainless Steel
Seal Material	Viton®
Sample Inlet Connections	¼" FNPT
Sample Outlet Connections	¼" FNPT
Cylinder Volume	500 cc
Cylinder Mixer Type	Gravity Mixer™
Cylinder Accessories	Rupture Discs, Reliefs, Valves, and Gauges
Operating Pressure	1800 psig MAOP @ -20 °F to 120 °F
Transport Approvals	DOT-SP 7657 Transport Canada SU 4781*
Industry Standards	Complies with API 8.1, API 14.1, ASTM D1265, ASTM D3700, ASTM D4057, GPA 2166, GPA 2174, ISO 3170, ISO 4257, and ISO 10715

\*Available upon request.

## STANDARD OPTIONS

CP-2GM CONSTANT PRESSURE SAMPLE CYLINDER

**C2SD110** **AA0B0A00A0**  
SEALS  
A or F

## SEALS

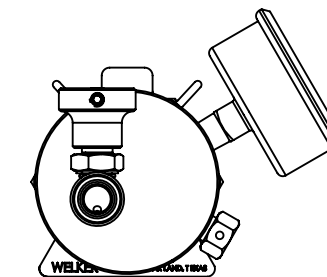
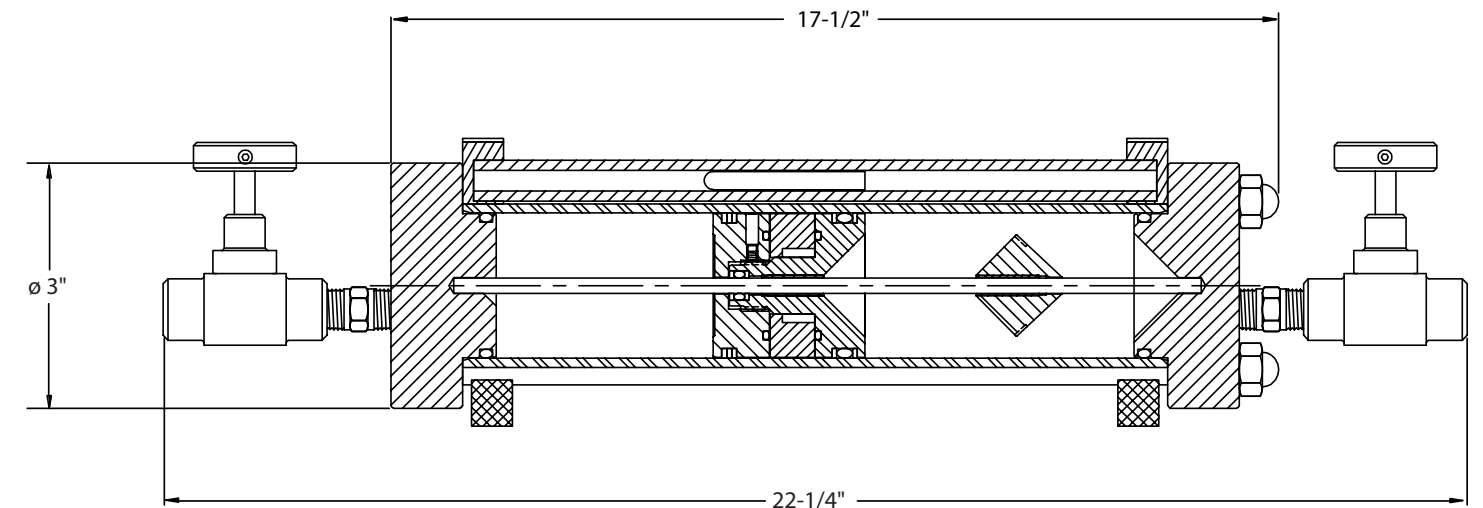
- A: Viton®
- B: Kalrez® (Product Side) and Viton® (Pre-charge side)

For custom options, choose **Plus Welker™**.

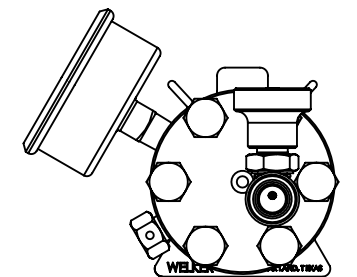


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## DIMENSIONS



Weight: 13.5 lb empty



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



# SC Cylinder Single Cavity Cylinder



SAMPLE



CONTAIN

A DOT 3E cylinder, the Welker SC Single Cavity Cylinder is designed for the safe collection and transportation of natural gas and light liquid hydrocarbon samples.

**Complies with:** API Chapter 8, GPA 2174, ASTM D1265, ASTM D3700, AND ISO 4257 (Light Liquid Hydrocarbons)

**Complies with:** GPA 2166, API 14.1, ASTM D5287, ISO 10715 (Natural Gas)

## Features

- DOT compliance
- Welker instrument valves and relief\*
- Seamless 316L stainless steel construction
- Smooth wall-to-neck transitions
- Welker Chembar™ or Sulfinert™ treatment on sample exposed parts (optional)
- Outage tube (optional)
- Foam-lined carrying case (optional)

## Benefits

- Safely transport the cylinder to and from an off-site laboratory
- Precise flow control and overpressure protection\*
- Minimized corrosion, absorption, adsorption, and chemical reactivity
- Consistent wall thickness, size, and capacity
- No trapped fluids to skew analysis
- Easy to clean
- No vulnerable welds
- Protect against sulfur absorption and corrosion in sour gas applications (optional)
- Provide vapor space for light liquid hydrocarbons (optional)
- Carrying case stabilizes and protects the cylinder during transport (optional)



\* Standard for cylinders 500 cc and larger

## SPECIFICATIONS

SC CYLINDER

SC Cylinder	
Materials of Construction	316/316L Stainless Steel
Connections	<b>Inlet:</b> ¼" FNPT
	<b>Outlet:</b> ¼" FNPT
	Others Available
Volume	300 cc
	500 cc
	1000 cc
Options	Transport Canada Compliance Carrying Case Chembar™-Treated Sample Exposed Parts Outage Tube Sulfinert™-Treated Sample Exposed Parts
Operating Pressure	1800 psig @ -20 °F to 100 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.



# ALS-1/ALS-2 Analyzer Liquid Shut-Off



SAMPLE



CONTROL

The Welker ALS Analyzer Liquid Shut-Off is a low-cost, high quality device that protects sensitive equipment and high-value operations. Installed upstream, of your gas chromatograph, the ALS allows gas to flow freely for online sampling but shuts off flow in the presence of liquids.

## Features

- Simple design
- Corrosion resistant material
- Ball check valve in transparent housing

## Benefits

- Uncomplicated maintenance requires no special tools and little downtime
- Back-flushing with dry inert gas quickly pushes liquids back to the pipeline
- Long-lasting analyzer protection
- Visual verification of gas flow
- Ball forms leak-tight seal in the presence of liquids



## SPECIFICATIONS

ALS-1 & ALS-2 ANALYZER LIQUID SHUT-OFF

### ALS-1

Materials of Construction	316/316L Stainless Steel, Aluminum, Glass, LEXAN™, Teflon®, Viton®
Inlet Connection	1/8" FNPT
Outlet Connection	1/8" FNPT
Operating Pressure	<b>Standard:</b> 1000 psig MAOP @ -20 °F to 100 °F <b>High Pressure:</b> 1440 psig MAOP @ -20 °F to 100 °F
Product Certification	NACE Compliance

### ALS-2

Materials of Construction	Anodized Aluminum, Glass, LEXAN™, Teflon®, Viton®
Inlet Connection	1/8" FNPT
Outlet Connection	1/8" FNPT
Operating Pressure	600 psig MAOP @ -20 °F to 100 °F

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# ALS-4 Analyzer Liquid Shut-Off



Put an end to costly damage and operational shutdowns—install a Welker ALS-4 Analyzer Liquid Shut-Off upstream of your gas chromatograph. Gas flows freely through the ALS-4 for online sampling but shuts off flow to your analytical device in the presence of liquids.

## Features

- Simple design
- Corrosion resistant material
- Ball check valve in transparent housing

## Benefits

- Uncomplicated maintenance requires no special tools and little downtime
- Back-flushing with dry inert gas quickly pushes liquids back to the pipeline
- Long-lasting analyzer protection



## SPECIFICATIONS

ALS-4 ANALYZER LIQUID SHUT-OFF

### ALS-4

Materials of Construction	316/316L Stainless Steel, Aluminum, PTFE, Viton®
Inlet Connection	¼" FNPT or ⅜" FNPT
Outlet Connection	¼" FNPT or ⅜" FNPT
Operating Pressure	2160 psig @ -20 °F to 100 °F
Product Certification	NACE Compliance

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

The Welker LE Liquid Eliminator series helps protect sensitive equipment from damage and contamination by removing free liquids from natural gas sample streams. Install the LE as a standalone unit or as part of a conditioning system upstream of your analyzer.

**Features**

- Integrated liquid and sediment filtration
- Liquid-eliminating chamber
- Self-draining design
- Mounting bracket
- Threaded housing cap (LE-5)

**Benefits**

- Prevent free liquids and particulates from reaching the analyzer
- Quick and easy installation
- Quick and easy maintenance (LE-5)



LE-2  
4 lb | 3.5" x 3" x 3"



LE-3  
2.5 lb | 3" x 2.25" x 2.625"



LE-5  
3.5 lb | 2.75" x 3.25" x 3.375"

**SPECIFICATIONS**

LE LIQUID ELIMINATORS

	LE-2	LE-2HP	LE-3	LE-5
Materials of Constructions	304 Stainless Steel, 316/316L Stainless Steel, Copolymer Filter Element, Delrin®, Viton® Others Available			304 Stainless Steel, 316/316L Stainless Steel, Copolymer Filter Element, Teflon®, Viton®
Connections	¼" FNPT			⅜" FNPT
Features	CE Compliance			CE Compliance
	Mounting Bracket			Threaded Housing Cap
Operating Pressure	1440 psig @ -20 °F to 120 °F	2160 psig @ -20 °F to 120 °F 3600 psig @ -20 °F to 120 °F	1440 psig @ -20 °F to 120 °F	2160 psig @ -20 °F to 300 °F
Industry Standards	GPA 2166, API 14.1, ASTM D5287, ISO 10715			

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# LE-2SSKO Probe-Mounted Liquid Eliminator



SAMPLE



CONTROL

The Welker Original IRD Probe Regulator delivers a continuous supply of representative samples to an analyzer in the appropriate pressure for real-time natural gas analysis of high-volume lines.

## Features

- Integrated liquid and sediment filtration
- Liquid-eliminating chamber
- Self-draining design
- Knock-Out Probe™
- x-Wave™ Probe Tip (optional)
- Welker Regulator or Welker Heated Regulator (optional)

## Benefits

- Prevent free liquids and particulates from reaching the analyzer
- Separated liquids automatically drain back to the pipeline
- Prevent rising liquid levels from flooding the liquid separator (optional)
- Reduce pressure to an acceptable level and add heat to prevent sample distortion (optional)



## SPECIFICATIONS

LE-2SSKO PROBE-MOUNTED LIQUID ELIMINATOR

### LE-2SSKO

Materials of Construction	316/316L Stainless Steel, Kel-F®, PTFE, and Viton®
	Others Available
Connections	<b>Outlet:</b> ¼" FNPT
Output Range	<b>IRD-1:</b> 75-200 psig (5-13 barg)
Insertion Length	2.2" Standard for 2" and 3" Pipe
Flow Coefficient (C <sub>v</sub> )	<b>IRD-1, IRD-2w, and IRD-6:</b> 0.092
Operation	<b>IRD-1 and IRD-4:</b> Diaphragm-Operated
Operating Pressure	<b>IRD-1, IRD-2, and IRD-6:</b> 5000 psig @ -20 °F to 100 °F (344 barg @ -28 °C to 37 °C)

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



The Welker SCHS Sample Conditioning Heated System properly conditions a flowing gas stream and protects analyzers from free liquids.

**Features**

- 3-stage protection system for analyzers
- Pipeline-mounted system for analyzer grade conditioned gas
- Liquid-eliminating probe assembly with integrated liquid and sediment filtration
- Effective sample heat retention before point of regulation to mitigate the Joule-Thomson effect and prevent gas composition from being compromised
- Fail-safe shutoff in the presence of liquid in the system
- Modular design and removable insulated enclosure

**Benefits**

- Analyzer is fortified by patented lines of protection
- Properly conditioned gas sample for analysis
- Effective protection against costly damage to analyzer
- Compact footprint
- Easy access to individual components for convenient maintenance



R: P<sub>2</sub> Electrical Connection Option Shown

**SPECIFICATIONS**

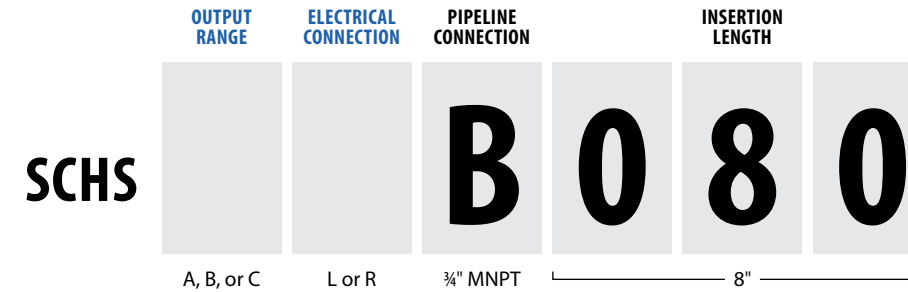
SCHS SAMPLE CONDITIONING HEATED SYSTEM

ISPE	
Materials of Construction	304 Stainless Steel, 316/316L Stainless Steel, Aluminum, Glass, Teflon®, Viton®
Seat Material	Teflon®
Seal Material	Viton®
Pipeline Connection	3/4" MNPT
Outlet Connection	1/8" MNPT Tube Connection
Flow Coefficient (C <sub>v</sub> )	0–25 psig
	0–50 psig
	20–100 psig
Insertion Length	8"
Electrical Connection	AC 120 V
Operating Pressure	2160 psig MAOP @ -20 °F to 100 °F
Industry Standards	Complies with API 14.1 and GPA 2166

Product and/or components are manufactured under US Patent: 6,764,536 and 7,471,882

**STANDARD OPTIONS**

SCHS SAMPLE CONDITIONING HEATED SYSTEM



**OUTPUT RANGE**

- A:** 0–25 psig With 30 psig Gauge, 30 psig Relief
- B:** 20–100 psig With 160 psig Gauge, 130 psig Relief
- C:** 0–50 psig With 60 psig Gauge, 50 psig Relief

**ELECTRICAL CONNECTION**

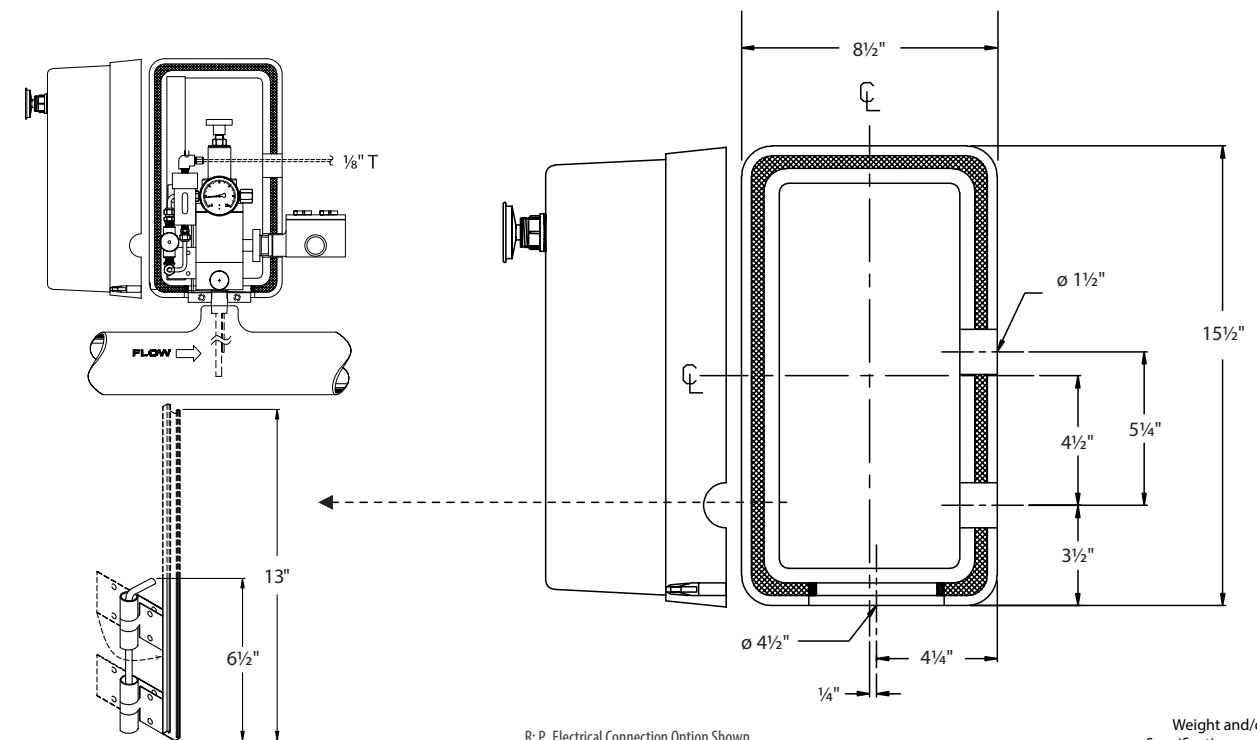
- L:** On P<sub>1</sub> Side of Enclosure
- R:** On P<sub>2</sub> Side of Enclosure

For custom options, choose **Plus Welker™**.



Customer Inspired. Welker Manufactured. Collaborate with us to create a custom product unique to your application.

**DIMENSIONS**



R: P<sub>2</sub> Electrical Connection Option Shown

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Odorization \



Rooted in Welker's commitment to creative, quality solutions, we engineered the SafeBurn™ to exceed your expectations. Safe, portable, and easy to use, the SafeBurn™ Odorant Flare is designed to burn off odorant vapors and blanket gases from tanks up to 1000 gallons prior to maintenance or decommissioning.

### Features

- Auto igniter
- Touch-safe heat shielding
- Flare gas check valve
- Mounted on two-wheel hand truck
- Hoses and fittings with carrying case included
- Corrosion-resistant materials

### Benefits

- Fast, easy, and safe pilot lighting
- Protect against burns
- Prevent the flame from backing up into the tank
- Modular, portable, and stable
- Quick and easy installation and operation
- Longer operational life



## SPECIFICATIONS

SAFEURN™ ODORANT FLARE

	OF-1 (4")	OF-2 (8")
Application	0–250 Gallon Odorant Supply Tank	0–1000 Gallon Odorant Supply Tank
Materials of Construction	<b>Body and Trim:</b> 316/316L Stainless Steel, Aluminum <b>Seals:</b> Viton® (Others Available)	
Maximum Allowable Flare Gas Inlet Pressure	1500 psig @ 10 °F to 100 °F	750 psig @ 10 °F to 100 °F
Maximum Allowable Pilot Gas Inlet	60 psig @ 10 °F to 100 °F	
Connections	<b>Flare Gas Inlet:</b> ¼" Quick-Connect <b>Pilot Gas Inlet:</b> ¼" Quick-Connect	<b>Flare Gas Inlet:</b> ½" Quick-Connect <b>Pilot Gas Inlet:</b> ¼" Quick-Connect
Flare Capacity	Up to 6 scfm	Up to 24 scfm
Burner Size	4"	8"
Mounting	Hand Truck	
Weight	Approx. 60 lb	Approx. 155 lb
Dimensions	48-½" (H) x 19-½" (W) x 20" (D)	60-½" (H) x 22-½" (W) x 28" (D)
Features	Auto Igniter Flare Gas Check Valve Flex Hoses With Valve and Quick-Connect Fittings in Carrying Case	

Weight and/or dimensions are approximate. Specifications subject to change without notice.



The Welker AEF Atmospheric Exhaust Filter is an economical solution for passive removal of mercaptan odor from exhaust and vent gases. Available in three capacities: 1 Quart, 15 US Gallons, and 55 US Gallons, there is an AEF suitable for your application.

### Features

- Proprietary blend filters mercaptan odor

### Benefits

- Prevents the release of odorized gas into the atmosphere
- Minimizes unnecessary leak calls



## SPECIFICATIONS

### AEF ATMOSPHERIC EXHAUST FILTER

	AEF
Inlet Connection	¼" FNPT
	½" FNPT
	¾" FNPT
Nominal Volume	1 Quart
	15 US Gallons
	55 US Gallons
Temperature Range	0 °F to 140 °F
Operating Pressure	Atmospheric Conditions Only

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.



# MerCapture™ Kit Odor Containment Case & Kit



CONTROL



CONTAIN



The Welker OdorEyes MerCapture™ Kit Odor Containment Case and Kit has everything you need to deodorize and return odorizer parts contaminated by mercaptan and other odorants inside a portable, shipping-friendly case.



## Features

- Hard sided polypropylene case with automatic air release valves
- Odor-tight, watertight seal
- Soft grip handles
- Stay open lid
- Off road style wheels
- Retractable handle
- Padlock holes
- OdorXice™ Plus

## Benefits

- Protects case contents during transport and shipping
- Keeps unwanted moisture and dust out and unpleasant odors in
- Comfortably carry the case
- No pinched fingers
- Smooth transport and easy maneuvering in the field and through airports
- Added security during shipment or air travel
- Eliminates odors caused by mercaptan, sulfide, and thiophene



Weight and/or dimensions are approximate. Specifications subject to change without notice.

# OdorXice™ Plus Odorant Remover



The Welker OdorXice™ Plus removed odorization chemicals added to natural gas. This non-toxic solution is water soluble and effectively eliminates odors caused by mercaptan, sulfide, and thiophene from containers, parts, vehicles, clothing, and tools instead of merely masking the smell.

## Features

- Non-toxic
- Non-hazardous

## Benefits

Available in:

- 8 oz
- 1 US Quart
- 1 US Gallon



Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

The Welker IntelliScent™ Odorant Monitor uses industry-proven electrochemical sensor technology to measure the level of odorants in natural gas.

## Features

- Designed for use in Class I, Div 1 Hazardous Locations
- Sensors for mercaptan, THT, and common odorant mixtures
- Manual or automatic calibration from stream or cal reference gas

## Benefits

- Welker IntelliScent™ App provides local wireless monitoring and control
- Built-in flow meter provides visual confirmation of gas flow rate
- Large LCD color display shows current reading, alarms, and status



## SPECIFICATIONS

INTELLISCENT™ ODORANT MONITOR

### IntelliScent™

Materials of Constructions	<b>Instrument Housings:</b> Aluminum
	<b>Tubing &amp; Fittings:</b> 316 Stainless Steel
Temperature Range	-4 °F to 122 °F
Power	DC 12 V ± 5% < 12 W
Analog Output	4–20mA, 750 Ω Loop Resistance
Digital Output	R-485 2-Wire ModBus
Connections	Filter Drain
	Purge Air Inlet
	Sample Exhaust
	<b>Sample Inlet:</b> ¼" Tubing
Utility Requirements	Ambient Air for Purge
	<b>Temperature Range:</b> 14 °F to 104 °F
	<b>Humidity Range:</b> 10–95% RH, Non-Condensing
Sample Rate	Up to 24 Samples Per Day at 1-Hour Intervals
Operating Pressure	1500 psig MAOP @ -32 °F to 122 °F
Electrical Area Classification	CSA Class I, Div. 1, Groups B, C, and D (Sensor)

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# Diffusing Probe



The Welker Diffusing Probe is designed for use with injection odorizers to allow for rapid odorant dispersal across the full diameter of the pipeline, ensuring uniform odorization, even during times of variable flow.

**Features**

- Prevents wasting odorant
- Works with small or large volume injectors
- Up to 900 ANSI working pressure
- Evens out effects of a pulse injection
- Manual and automatic insertion models
- Designed to rapidly dispense odorant with a limited retention for continuous odorant

**Benefits**

- Enhanced odorant vaporization
- Prevents drips and puddling odorant
- Insertion styles that meet your pipeline needs



## SPECIFICATIONS

DIFFUSING PROBE

### Diffusing Probe

Materials of Construction	316/316L Stainless Steel, Braided Nylon, Viton®
Inlet Connection	1/4" FNPT
Pipeline Connection	1/2" MNPT
	3/4" MNPT
	1" MNPT
Operating Pressure	1/2" MNPT: 7700 psig @ -20 °F to 120 °F
	3/4" MNPT: 7300 psig @ -20 °F to 120 °F
	1" MNPT: 5300 psig @ -20 °F to 120 °F

Weight and/or dimensions are approximate. Specifications subject to change without notice.



The Welker Accu/Line™ Injection Systems are turnkey odorant injection systems designed to inject liquid odorant proportional to flow into natural gas pipelines with flow rates from 1 Mscfh up to 70 MMscfh.

### Features

- Intuitive touch screen controller automatically adjusts the injection rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trail and alarms log backed up to microSD card
- Redundant pumps with automatic fall-over
- Self-priming pumps

### Benefits

- Continuous proportional to flow odorization
- Off-site monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Limit interruptions to operation
- Eliminate vapor lock for dependable odorant delivery



Accu/Line™

## SPECIFICATIONS

ACCU/LINE™ INJECTION SYSTEMS

	Accu/Line™ Lo 1 Mscfh–720 Mscfh	Accu/Line™ 10 Mscfh–7 MMscfh	Accu/Line™ Hi 50 Mscfh–70 MMscfh
Materials of Construction	316/316L Stainless Steel, Anodized Aluminum, Buna, Kalrez®, PTFE, Viton®	316/316L Stainless Steel, Anodized Aluminum, Kalrez®, PTFE	316/316L Stainless Steel, Anodized Aluminum, Kalrez®, PTFE
Power		DC 24 V	
		AC 120 V	
		Optional Solar Panel	
Injection Outlet Connection		¼" Tubing	
Instrument Gas Connection		⅜" Tubing	
Odorant Inlet Connection		⅜" Tubing	
Vent Connection		⅜" Tubing	
Odorant Inlet Pressure Required		10 psig–50 psig	
Instrument Gas Pressure Required	15 psig–70 psig	30 psig–225 psig	30 psig–225 psig
Injection Volume	0.06 cc, 0.2 cc, 0.5 cc	0.5 – 10 cc	10 – 50 cc
Injection Rate	Up to 10 Injections/Minute	Up to 5 Injections/Minute	Up to 3 Injections/Minute
Tank Volume		120, 250, 500, 1000 US Gallons	
Ambient Temperature		-20 °F to 120 °F	
Operating Pressure		1800 psig	

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Portable Odorizer

Portable Liquid Injection Odorizer



Welker's compact portable injection odorizer is your safeguard against emergency interruptions to operation. The Portable Odorizer provides temporary, time-based odorization for flow rates up to 6.5 MMscfh and pipelines with a maximum operating pressure of 2000 psig.

The Portable Odorizer is a safe and convenient solution for temporary odorization, pipeline conditioning (AKA pickling), or as a supplement to an existing odorization system.

## Features

- Mounted on two-wheel hand truck
- Flexlines with quick-connects
- Intuitive touch screen controller with Welker program automatically adjusts the injection rate to changing flow conditions (optional)
- Remote monitoring and communication using Modbus or Ethernet (optional)
- Audit trails and alarms log backed up to microSD card (optional)
- Solar panel with backup battery (optional)

## Benefits

- Modular, portable, and stable
- Quick and easy installation
- Continuous proportional to flow odorization (optional)
- Off-site monitoring and troubleshooting (optional)
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling (optional)
- Limit interruptions to controller operation in remote locations (optional)



## SPECIFICATIONS

PORTABLE ODORIZER

### Portable Odorizer

Application	Liquid Odorant Injection
Utility Requirements	<b>Pneumatic Supply:</b> For Pump Operation <b>Pneumatic Supply:</b> For Blanket Pressure
Electrical Connections	DC 24V
Injection Volume	<b>BIP-1:</b> 0.5–3 cc
	<b>BIP-3:</b> 1–9 cc
Operation	<b>BIP:</b> Piston-Operated
Mounting	On 2-Wheel Hand Truck
Maximum Allowable Operating Pressure	2000 psig @ -20 °F to 120 °F
Electrical Area Classification	NEC Class I, Div. 1
Options	3-Way Solenoid Valve, Flow Meter With Bypass, Pneumatic Counter, Purge Valve, Solar Panel Mounted on Second 2-Wheel Hand Truck, Touch Screen Controller With NEMA 4X Enclosure, Welker SG-4 Sight Glass

Weight and/or dimensions are approximate. Specifications subject to change without notice.



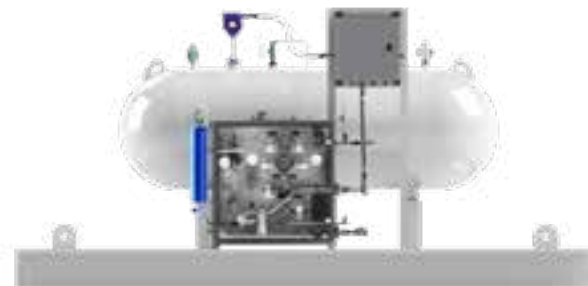
The Welker PulseInject™ Injection System is a pumpless, pressure-driven odorant injection system designed to inject liquid odorant proportional to flow into a natural gas pipeline.

## Features

- Few moving parts
- Low pressure differential required for injection
- Programmable Logic Controller (PLC) automatically adjusts the injection volume and rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trail and alarms log backed up to microSD card
- Welker F-9 Filter and Welker F-5 Filter Dryer remove contaminants from odorant and pneumatic supplies
- Low-pressure odorant supply tank with 110% containment sloped to drain

## Benefits

- Reduced maintenance
- Reduced pneumatic supply pressure required compared to pump injection systems
- No manual injection volume adjustment
- Continuous proportional to flow odorization
- Off-site system monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Contaminant removal prolongs operational life and reliability
- Skid containment protect the ground from contamination and eases clean up
- Identical redundant solenoids limit interruptions to operation



## SPECIFICATIONS

PULSEINJECT™ INJECTION SYSTEM

PulseInject™	
Materials of Constructions	316/ 316L Stainless Steel, Painted Carbon Steel, PTFE, Kalrez®, Viton®
Ambient Temperature	-4 °F to 120 °F
Power	DC 24 V, AC 120 V, Optional Solar Panel
Injection Outlet Connection	¼" Tubing
Injection Pressure	Up to 1480 psig
Odorant Inlet Pressure Required	15 psig – 50 psig
Instrument Gas Pressure Required	30 psig – 1480 psig
Power Required	DC 24 V, AC 120 V
Odorant Volume	120, 250, 500, 1000 US Gallons

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# Accu/Line™ Zero Emissions Zero Emissions Odorizer



Reduce methane emissions with Welker's proven technology! The design of the Accu/Line™ Zero Emissions includes all the key features of the Accu/Line™ family of smart odorant injection systems but eliminates the use of pipeline gas as the instrument supply, meaning no natural gas is released during normal operation.

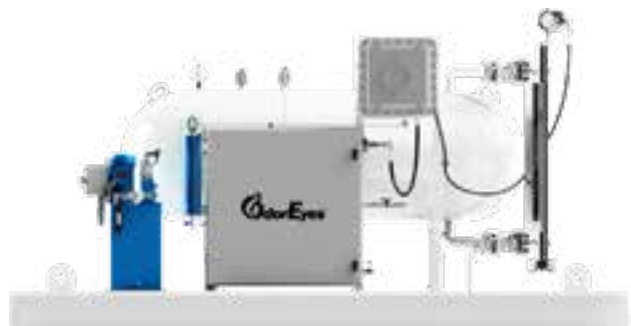
This Accu/Line™ is a turnkey odorant injection system designed to inject liquid odorant proportional to flow into the natural gas pipelines with flow rates from 10 Mscfh up to 70 MMscfh.

## Features

- Zero-emission design
- Intuitive touch screen controller automatically adjusts the injection rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trail and alarms log backed up to microSD card
- Redundant pumps with automatic failover
- Self-priming pumps

## Benefits

- No methane is released to the atmosphere during normal operation
- Continuous proportional to flow odorization
- Off-site monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Limit interruptions to operation
- Eliminate vapor lock for dependable odorant delivery



## SPECIFICATIONS

ACCU/LINE™ ZERO EMISSIONS ODORIZER

	Accu/Line™ Lo 1 Mscfh–720 Mscfh	Accu/Line™ 10 Mscfh–7 MMscfh
Materials of Construction	316/316L Stainless Steel, Anodized Aluminum, Kalrez®, PTFE	
Power	Electro-hydraulic Unit (EHUC): AC 110 V, 60 Hz, 1 Phase, 7.5 A, ½ HP	
Injection Outlet Connection	¼" Tubing	
Instrument Gas Connection	⅜" Tubing	
Odorant Inlet Connection	⅜" Tubing	
Vent Connection	⅜" Tubing	
Odorant Inlet Pressure Required	10 psig–50 psig	
Hydraulic Supply	5 US Gallons	
Injection Volume	0.5 – 10 cc	10 – 150 cc
Injection Rate	Up to 5 Injections/Minute	Up to 3 Injections/Minute
Tank Volume	120, 250, 500, 1000 US Gallons	
Ambient Temperature	-20 °F to 120 °F	
Operating Pressure	1800 psig	

Weight and/or dimensions are approximate. Specifications subject to change without notice.



# ECOsysteM™ Automatic Bypass System



The Welker ECOsysteM™ Automatic Bypass System supersaturates carrier gas in an odorant tank to properly odorize natural gas pipeline. Our design uses differential pressure to odorize your gas line while minimizing moving parts and maintenance on the system. Since odorant is vaporized before infusing with the gas, it bonds more effectively than when injecting odorant in liquid form. Once the system is installed, you can remotely monitor the odorant level, actions performed, and warning alarms by interfacing with the included Programmable Logic Controller (PLC).

### Features

- Properly odorizes gas pipelines with supersaturated carrier gas (vaporized odorant)
- Reduces maintenance with fewer moving parts
- Automatically adjusts injected odorant to match flow rate
- Remote monitoring and communication with Ethernet, Modbus, or cell/phone modem
- Audit data is constantly backed up to an SD memory card



## SPECIFICATIONS

ECOSYSTEM™ AUTOMATIC BYPASS SYSTEM

ECOsysteM™	
Electrical Connection	AC 120 V
	DC 24 V
Odorant Tank Volume	20 US Gallons (75 L)
	60 US Gallons (75 L)
	120 US Gallons (75 L)
	250 US Gallons (75 L)
	Other Sizes Available

Weight and/or dimensions are approximate. Specifications subject to change without notice.

# ECOsyste<sup>TM</sup>m Liquid Pumpless Injection System



Reduce methane emissions with Welker's proven technology! The ECOsystem<sup>TM</sup> Liquid Pumpless Injection System is based on the zero-emission design of our standard ECOsystem<sup>TM</sup> and incorporates the accuracy and verification of the Accu/Line<sup>TM</sup> family of smart liquid odorant injection systems. This ECOsystem<sup>TM</sup> is a turnkey odorant injection system designed to inject liquid odorant proportional to flow into natural gas pipelines with flow rates from 1 Mscfh up to 8.5 MMscfh with no adjustments.

## Features

- Zero-emission design
- Pumpless
- Accuracy measured to 0.002 cc
- Low pressure differential required for injection
- Intuitive touch screen controller with Welker program automatically adjusts the injection volume and rate to changing flow conditions
- Remote monitoring and communication using Modbus or Ethernet
- Audit trails and alarms log backed up to microSD card
- Redundant solenoids with automatic failover
- Low-pressure odorant supply tank with 110% containment sloped to drain

## Benefits

- No methane is released to the atmosphere during normal operation
- Eliminate vapor lock for dependable odorant delivery
- Reduced maintenance
- Reduced pneumatic supply pressure required compared to pump injection systems
- Know the injection volume of each actuation
- No manual injection volume adjustment
- Continuous proportional to flow odorization
- Off-site system monitoring and troubleshooting
- Time- and date-stamped historical records for accurate reporting, planning, and scheduling
- Skid containment protects the ground from contamination



## SPECIFICATIONS

ECOSYSTEM<sup>TM</sup> LIQUID SYSTEM

### ECOsyste<sup>TM</sup>m Liquid

Materials of Constructions	316/ 316L Stainless Steel, Painted Carbon Steel, PTFE, Kalrez <sup>®</sup> , Viton <sup>®</sup>
Ambient Temperature	-4 °F to 120 °F
Power	DC 24 V, AC 120 V, Optional Solar Panel
Injection Outlet Connection	¼" Tubing
Injection Pressure	Up to 200 psig
Odorant Inlet Pressure Required	15 psig – 50 psig
Instrument Gas Pressure Required	> 5 psig Over Injection Pressure
Flow Rate	5 Mscfh – 10 MMscfh
Tank Volume	60, 120, 250, 500, 1000 US Gallons

Weight and/or dimensions are approximate. Specifications subject to change without notice.

## Turbine & Rotary Meter Support \



The Welker FLN Flow Limiting Nozzle puts the brakes on rotor over-speeding to protect your turbine or rotary meter from damage and preserve its accuracy. Installed downstream of the meter between two raised face flanges, the FLN protects against high gas velocities that can occur when pressurizing and blowing down the pipeline and during times of high demand. The FLN helps develop the flow profile of the gas after limiting flow, reducing turbulence and minimizing pressure loss.

### Features

- Customized to the application and meter
- Proven over-range protection
- High recovery with minimal pressure loss
- Quick installation
- Maintenance-free

### Benefits

- Tailored protection against meter damage
- Prevent mechanical failure and costly downtime for meter repair
- Improved meter accuracy
- More usable gas
- Prevent large pressure loss associated with gas control



## SPECIFICATIONS

FLN FLOW LIMITING NOZZLE

### FLN

Materials of Construction	Carbon Steel (Standard) or 316/316L Stainless Steel
Pipeline Connection	<b>Size:</b> 1", 2", 3", 4", 5", 6", 8", or 12" <b>Rating:</b> 150, 300, or 600 ANSI RF
Features	Lifting Eyebolt (for 8" and 12") Stud Bolts and Nuts

Weight and/or dimensions are approximate.  
Specifications subject to change without notice.

# The Oiler

Small Volume Chemical Injection System



Prevent bearing burnout in turbine meter systems with the Welker Original Oiler Small Volume Chemical Injection System. This compact system automatically delivers a small fixed volume of chemical—such as lubricating oil—on a time or proportional to flow basis.

## Features

- Rain-tight, watertight, corrosion-resistant enclosure with padlock hasp and clear cover
- Injection pump actuated by regulated process gas
- Easy-access injection chemical reservoir
- Panel-mounted
- On-board UL listed Welcome 6Tc Timer/Controller (optional)

## Benefits

- Automatic consistent and even chemical injection
- Confidently inject desired chemical in aggressive environments and remote locations
- Easy on-site visual monitoring of regulator pressure and injection chemical volume
- No auxiliary pneumatic supply required
- Refill the injection chemical reservoir without opening the enclosure
- Secure system to a 2" pole or pipe stand
- System operates proportional to flow or time without an external power supply (optional)



## SPECIFICATIONS

THE OILER SMALL VOLUME CHEMICAL INJECTION SYSTEM

### The Oiler

Materials of Construction	316/316L Stainless Steel, Anodized Aluminum, Butyrate, PTFE, Nylon, Viton®
Operating Range	0–100 psig @ -20 °F to 140 °F
	20–1440 psig @ -20 °F to 140 °F
Connections	<b>Instrument Supply Inlet:</b> ¼" FNPT
	<b>Injection Chemical Outlet:</b> ¼" FNPT
Injection Volume	0.25 cc/Stroke
Injection Chemical Reservoir Volume	250 cc
Mounting	Panel-Mount for 2" Pole or Pipe Stand
Weight	Approx. 10 lb
Dimensions	<b>Enclosure:</b> 10" (H) x 8" (W) x 4" (D)
	<b>Panel:</b> 12.75" (H) x 8" (W)
Operating Pressure	100 psig @ -20 °F to 140 °F
	1440 psig @ -20 °F to 140 °F
Electrical Area Classification	NEC Class I, Div. 1, Groups C & D, T3C
Options	CSA Approval, Instrument Supply Regulation Package, Solenoid (DC 6 V, DC 12 V, or DC 24 V), Stainless Steel Tubing and Fittings, Welker 6Tc Timer/Controller

Weight and/or dimensions are approximate. Specifications subject to change without notice.