

Hot-Shot™ Heated Enclosure Systems

Gas Sample Heating System



Preserving Sample Integrity with API 14.1 Compliance

The Hot-Shot Heated Enclosure System will help prevent natural gas sampling distortion caused by condensation. This condition occurs when the temperature of the sampled gas drops below the hydrocarbon dew point of the flowing gas stream.

To avoid errors of 10% or more, the Heated Enclosure keeps the sample collected as well as all sample system components at least 30°F above the hydrocarbon dew point of the gas being sampled.

The compact, versatile and cost-effective Heated Enclosure eliminates this problem by enclosing and heating the entire sampling system.



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Product Features:

- Complies with API 14.1 recommendations for accurate sampling
- Sample probe, pump and cylinder are heated to between 100°F – 140°F using catalytic heater technology
- Certified Class I, Division 1 components
- Propane powered and electric powered heaters available
- Many mounting configurations available to fit all applications
- Field tested in hundreds of installations
- Gas BTU range of 900 – 1,250 BTU/Cu. Ft. natural gas (other ranges optional)



ENGINEERING YOUR SUCCESS.

Heated Enclosures Overview



- Complies with API 14.1 recommendations for accurate sampling
- Sample probe, pump and cylinder are heated to between 100°F and 140°F
- Certified Class I, Division 1 components
- Can be retrofitted in the field
- Heater supply gas taken from sample probe
- Propane powered and electric powered heaters available
- Enclosure has overheat protection
- Large capacity scrubber protects heater and sampler solenoid from moisture and H₂S
- Many mounting configurations available to fit all applications
- Field tested in hundreds of installations
- Gas BTU range of 900-1250 BTU/cu. ft. natural gas (See code BXX on Options list for gas supply outside this range)

Introduction to Hot-Shot™ Heated Enclosures

Over years of research and extensive testing to determine the best practices for collection and handling of natural gas samples for custody transfer, the American Petroleum Institute (API) continues to update Chapter 14.1 of the Manual of Petroleum Measurement Standards (MPMS). API 14.1 recommends all natural gas sample system components be maintained at least 30° above the hydrocarbon dew point temperature of the gas being sampled. Tests indicate that if the temperature of any sampling system component drops below the hydrocarbon dew point, errors of more than 10% may occur.

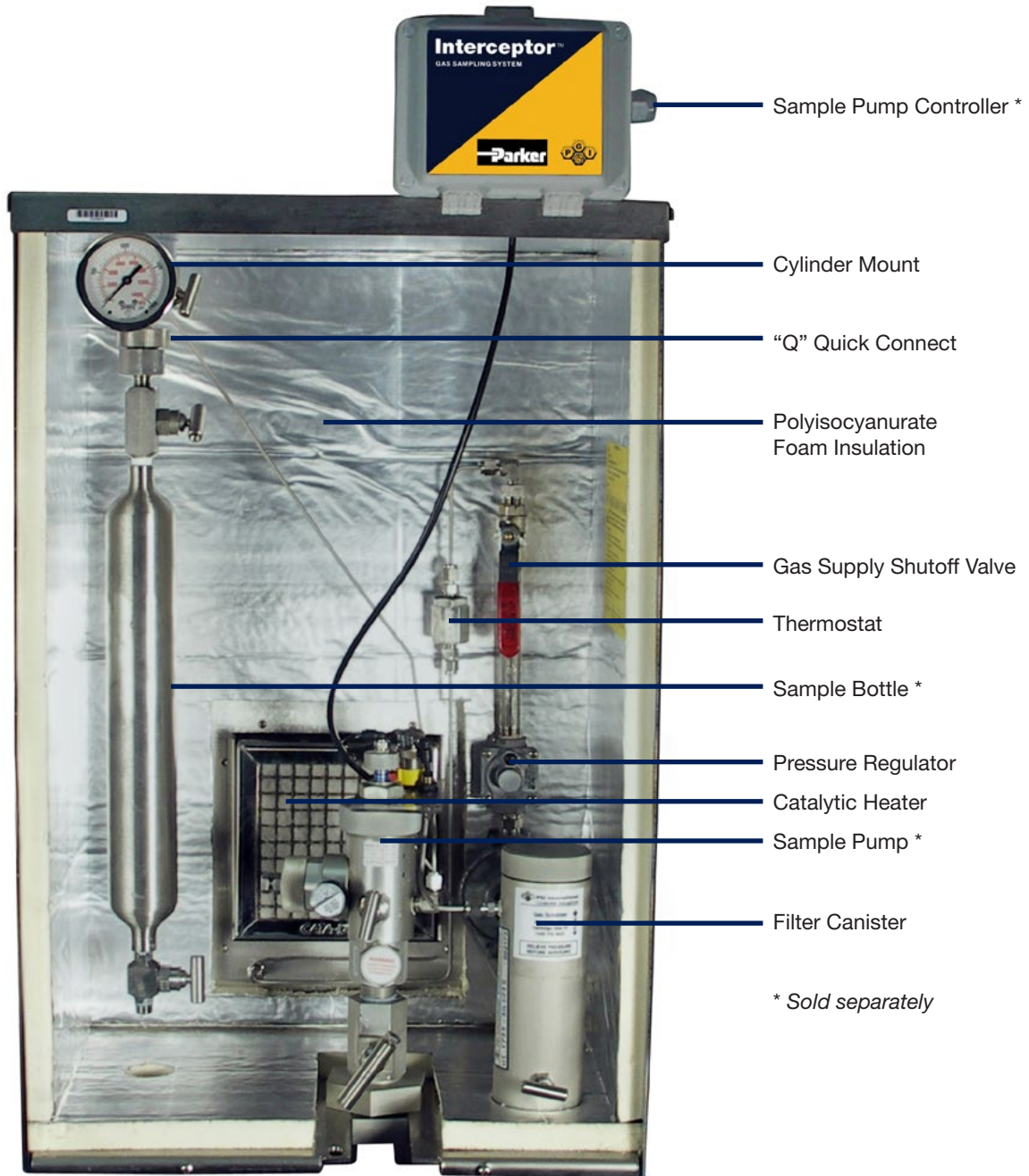
Parker's Hot-Shot Heated Enclosure Systems are engineered and designed to ensure natural gas samples and composite sampling system components are consistently maintained at a temperature above the natural gas' hydrocarbon dew point. Hot-Shot assures that your composite natural gas sample is a true representation of the sample source.

Parker's Hot-Shot Heated Enclosure Systems meet the requirements of API 14.1. All sampling components are heated and maintained between 100°F and 140°F (37°C and 60°C).

Utilizing proven catalytic heater technology, the system runs off the natural gas sample source. If the enclosure temperature exceeds 200°F, a patented thermostat design ensures overheat protection with a safety shut-off feature.

Two compact Hot-Shot Heated Enclosure styles are now available and provide unique mounting capabilities. An array of additional options to customize your system is available to meet your specific sampling needs.

Heated Enclosure Components



HE-5 Ordering Information and Options

Cylinders and pumps ordered separately.

Heated Enclosure System		
Part Number Base	Pump Style	Options
HE-5	XXX	XXXXXXX



Pump Style	
Code	Description
P1	PF1A, B, or S
P1E	PF1P
P1K	PF1K, L, or T
P2	PF2A, B, or S
P2E	PF2P
P2K	PF2K, L, or T
P3	PF3A, B, or S
P3E	PF3P
P3K	PF3K, L, or T

See page 10.

Options	
Code	Description
A	Additional Installs into the HE <i>(see pages 10-11 for Sampler model number selection)</i>
B7	Catalytic Heater for 600 – 800 BTU/Cu. Ft. Natural Gas
B16	Catalytic Heater for 1500 – 1700 BTU/Cu. Ft. Natural Gas
B19	Catalytic Heater for 1800 – 2000 BTU/Cu. Ft. Natural Gas
C	120V Electric Heater
D	Propane Heater
E	Electrical Start Up Leads Installed, 25' Length
GA	Visual Temperature Gauge on Door
GPA	Genie Filter Adapter
G	0 – 2000 PSI Liquid Filled Pressure Gauge
G1	0 – 1000 PSI Liquid Filled Pressure Gauge
G2	0 – 100 PSI Liquid Filled Pressure Gauge
G3	0 – 30 PSI Liquid Filled Pressure Gauge
G6	0 – 600 PSI Liquid Filled Pressure Gauge
Kxxx	Temperature Switch (Open Std); Close @ xxx°F (10° increments only)
L01	Customer Probe Adapter (1/2" MNPT standard)
L02	2" Insertion Length (1/2" MNPT standard)
L03	3" Insertion Length (1/2" MNPT standard)
L06	6" Insertion Length (1/2" MNPT standard)
L10	10" Insertion Length (1/2" MNPT standard)
LS	Liquid Shut-Off Valve
MF	Membrane Filter Assembly
MP	Carbon Steel Pipe Mount Stabilizer Kit
MP1	300 Series SS Pipe Mount Stabilizer Kit
P	Pressure Transducer on Sample Cylinder 0 – 2000 PSI, 1 – 5 volt output
P1	Pressure Transducer on Sample Cylinder 0 – 1000 PSI, 1 – 5 volt output
QM	Sample Pump Quick Mount Assembly
QN	1/4" MNPT Nipple for Bottle Mount (replaces "Q" adapter)
QS	Quick Connect Bottle Mount (replaces "Q" adapter)
R1	10" Probe Riser
R7	7" Probe Riser
S	316 SS Tubing and Fitting
T	4 Wire 100 Ohm RTD with cable for enclosure temperature monitoring

N3 = 3/4" MNPT
N4 = 1" MNPT

See page 8 (HE-5 only)

HE-5 Base Unit Includes:

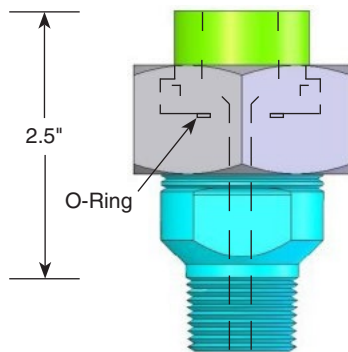
- 300 Series SS enclosure, heater, and pressure regulator
- 140°F control thermostat with 200°F overheat protection
- Bottle mount, including male "Q" adapter
- Filter canister with CO₂, H₂S, and moisture scrubber element
- Lockable door for added security

Note: The heater is designed to operate with 900 – 1,250 BTU/Cu. Ft. natural gas. For operations with gas outside of this range, see code BXX of Options list. If you are between options, select lower heater BTU range option.

See our Sample Cylinders & Accessories brochure for more product offerings.

HE-5 Accessories

Sample Pump Quick Mount Assembly (Union Style)

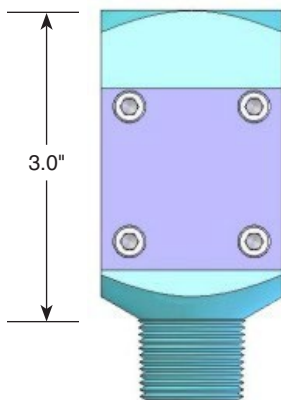


Part Number: HE-PA-QM

As System Option: QM

- Installs right below the pump to allow easy fast pump change out without disturbing the heated enclosure system
- Hard anodized aluminum
- 2,000 PSI max pressure @ 400°F
- 3/4" MNPT inlet x 3/4" FNPT outlet

Membrane Filter Assembly

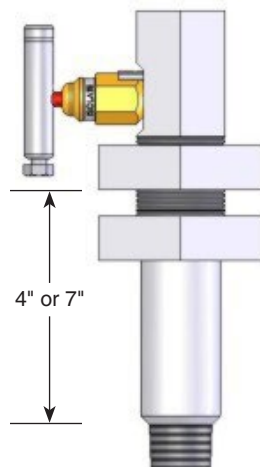


Part Number: HE-PA-MF

As System Option: MF

- Mounts directly below customer probe adapter outside the enclosure
- Customer supplied insulation required
- Hard anodized aluminum construction for heat transfer and corrosion resistance
- Uses industry standard membrane disks
- 2,000 PSI max pressure @ 200°F
- 3/4" MNPT inlet x 3/4" FNPT outlet

Probe Risers



Part Number: HE-PA-PR1 (10")

HE-PA-PR7 (7")

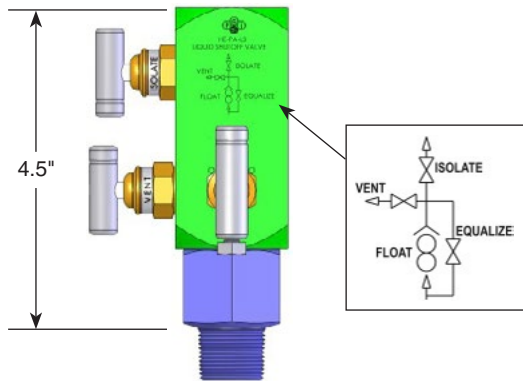
As System Option: R1 (10")

R7 (7")

- To raise enclosure for pipeline equipment clearance by 7" or 10" when mounted on existing probe
- Integral soft seat full port shut-off valve
- Hard anodized aluminum construction for heat transfer and corrosion resistance
- Customer supplied insulation required
- 3/4" MNPT inlet x 3/4" FNPT outlet
- 2,000 PSI max pressure @ 200°F

HE-5 Accessories

Liquid Shut-Off Valve

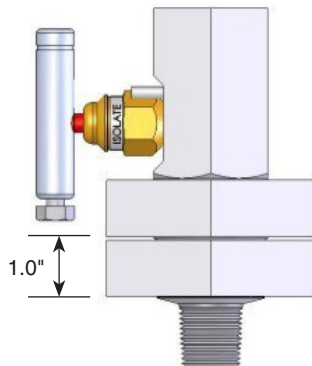


Part Number: HE-PA-LS

As System Option: LS

- Installs below the pump inside the enclosure
- Includes vent and equalize valves for resetting
- Hard anodized aluminum
- 2,000 PSI max pressure @ 200°F
- 3/4" MNPT inlet x 3/4" FNPT outlet

Customer Probe Adapters



Part Number: HE-PA-PA-(NX)

As System Option: L01(NX)

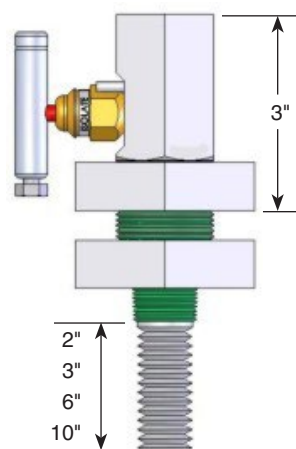
(Blank) = 1/2" MNPT Inlet Std.

(N3) = 3/4" MNPT Inlet

(N4) = 1" MNPT Inlet

- To adapt any sample probe for heated enclosure mounting
- Integral soft seat full port shut-off valve
- Functions as a 4" probe riser when mounted on existing probe
- Hard anodized aluminum construction for heat transfer and corrosion resistance
- Customer supplied insulation required
- 2,000 PSI max pressure @ 200°F
- 1/2" MNPT inlet x 3/4" FNPT outlet

Finned Probe Assembly



Part Number: HE-P-STD-LXX(NX)

L02 = 2" Insertion length

L03 = 3" Insertion length

L06 = 6" Insertion length

L10 = 10" Insertion length

(Blank) = 1/2" MNPT Inlet Std.

(N3) = 3/4" MNPT Inlet

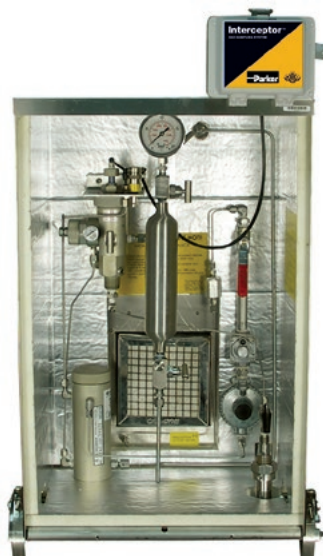
(N4) = 1" MNPT Inlet

- Integral sample probe and enclosure mount
- Integral soft seat full port shut-off valve
- Hard anodized aluminum construction for heat transfer and corrosion resistance
- 2,000 PSI max pressure @ 200°F

HE-6 Ordering Information and Options

Cylinders and pumps ordered separately.

Heated Enclosure System		
Part Number Base	Pump Style	Options
HE-6	XXX	XXXXXXXX



Pump Style	
Code	Description
P1E	PF1P
P1K	PF1K, L, or T
P2E	PF2P
P2K	PF2K, L, or T
P3E	PF3P
P3K	PF3K, L, or T

See page 10.

Options	
Code	Description
B7	Catalytic Heater for 600 – 800 BTU/Cu. Ft. Natural Gas
B16	Catalytic Heater for 1500 – 1700 BTU/Cu. Ft. Natural Gas
B19	Catalytic Heater for 1800 – 2000 BTU/Cu. Ft. Natural Gas
C	120V Electric Heater
D	Propane Heater
E	Electrical Start Up Leads Installed, 25' Length
GA	Visual Temperature Gauge on Door
G	0 - 2000 PSI Liquid Filled Pressure Gauge
G1	0 - 1000 PSI Liquid Filled Pressure Gauge
G2	0 - 100 PSI Liquid Filled Pressure Gauge
G3	0 - 30 PSI Liquid Filled Pressure Gauge
G6	0 - 600 PSI Liquid Filled Pressure Gauge
H2	Genie Probe Length 2-3" (includes shut-off valve)
H4	Genie Probe Length 4" (includes shut-off valve)
H6	Genie Probe Length 6-8" (includes shut-off valve)
H10	Genie Probe Length 10-12" (includes shut-off valve)
J2*	Saddle Mount Bracket for 2" Pipe Size
J3*	Saddle Mount Bracket for 3" Pipe Size
J4*	Saddle Mount Bracket for 4" Pipe Size
J6*	Saddle Mount Bracket for 6" Pipe Size
J8*	Saddle Mount Bracket for 8" Pipe Size
J10*	Saddle Mount Bracket for 10" Pipe Size
J12*	Saddle Mount Bracket for 12" Pipe Size
P1	Pressure Transducer on Sample Cylinder 0 – 1000 PSI, 1 – 5 volt output
QN	1/4" MNPT Nipple for Bottle Mount (replaces tube fitting)
QS	Quick Connect Bottle Mount (replaces tube fitting)
R	Inline High Pressure Regulator installed between Probe & Sampler
T	4 Wire 100 Ohm RTD with cable for Enclosure Temperature Monitoring

H option must fit J option

HE-6 Base Unit Includes:

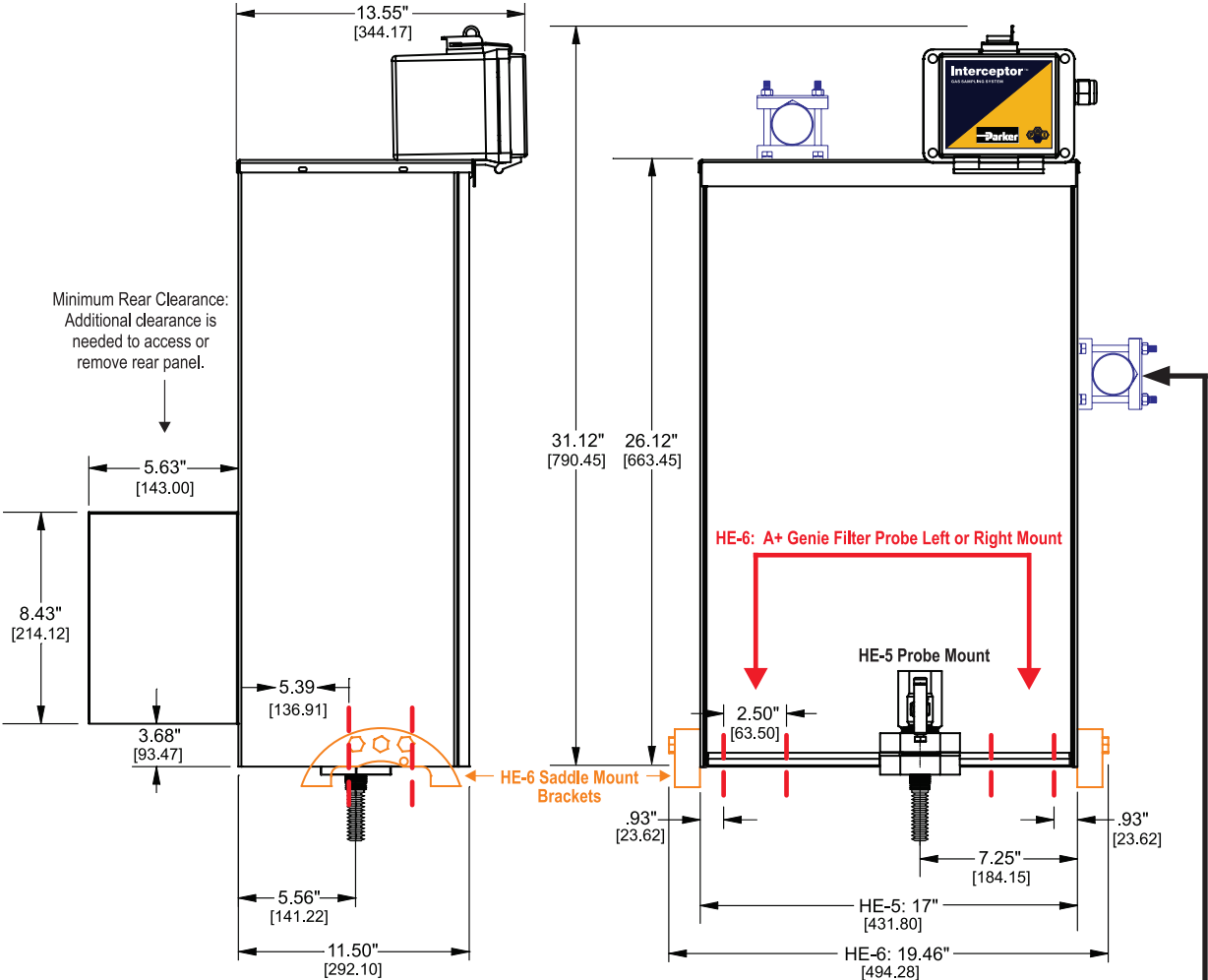
- 300 Series SS enclosure, heater, and pressure regulator
- 316 SS tubing and fittings
- 140°F control thermostat with 200°F overheat protection
- Filter canister with CO₂, H₂S and moisture scrubber element
- Tubing to mount probe on right or left side
- 3 ft. pigtail with 1/32" orifice
- Parker "Q" adapter cylinder mount
- Lockable door for added security

Note: The heater is designed to operate with 900 - 1,250 BTU/Cu. Ft. natural gas. For operations with gas outside of this range, see code BXX of Options list. If you are between options, select lower heater BTU range option.

* J selection required on HE-6.

See our Sample Cylinders & Accessories brochure for more product offerings.

HE-5 and HE-6 Dimensions



Pipe Mount Stabilizer Kits

To accommodate 2" pipe support in high wind or vibration conditions. (Installed on-site)

Includes Stabilizing Plate, (2) 2" (50.8mm) U-Bolt Brackets, (4) Split and Flat Washers, (2) O-Rings, and (6) Hex Head Bolts.

Part Number: HE-MP Carbon Steel
HE-MP1 SS

Spare Parts and Accessories

Sample Pump Quick Mount “Q” Adapter O-Ring	
Part Number: P5-131-R1	Replacement O-ring

H ₂ S / H ₂ O Filter Cartridge	
Part Number: P7-147	Replacement cartridge for CO ₂ , H ₂ S, and H ₂ O filtration

Cartridge Filter Canister Assembly (HE-5 only)	
<p>Part Number: CFU CFU-C (Canada only)</p>	<p>Drop-in replacement for unit in heated enclosure system</p> <p>Options: F = H₂S/H₂O Contamination Indicator Assembly P = Piggyback Canister</p> <p>Optional configurations for heated enclosure include: CFU-F, CFU-P, CFU-FP (add “C” for Canadian version)</p>

“Q” Bottle Mount Service Kit	
Part Number: SK-HE-003	Bottle mount, spacer, valve and seat plus mounting screws

Genie Filter Probe Adapter (HE-5 only)	
Part Number: HE-PA-GPA	Mounts to the Genie membrane filter sample probe and provides for enclosure mounting; aluminum construction; integral shut-off valve

Heated Enclosure Thermostat Assembly	
Part Number: HE-T-1420-11 Natural Gas	Replacement thermostat assembly set between 100°F – 140°F with 200°F max. overheat protection
HE-T-1420-P Propane	

Sample Bottle Quick Mount “Q” Adapters	
Includes a safety plug for guaranteed sample retention in transit	
<p>Part Number: QA-M-14-S 316 SS QA-M-14-CS Carbon Steel</p> <p>To order adapter <i>without</i> safety plug: Part Number: HE-037-C0 316 SS HE-037-10 Carbon Steel</p>	<p>Adapts a sample bottle having a female shut-off valve outlet for use with the heated enclosure system. Includes Safety Plug and O-Ring, 1/4" Male NPT inlet x “Q” Adapter outlet.</p>
<p>Part Number: QA-F-14-S 316 SS QA-F-14-CS Carbon Steel</p> <p>To order adapter <i>without</i> safety plug: Part Number: HE-080-C0 316 SS HE-080-10 Carbon Steel</p>	<p>Adapts a sample bottle having a male shut-off valve outlet for use with the heated enclosure system. Includes Safety Plug and O-Ring, 1/4" Female NPT inlet x “Q” Adapter outlet.</p>

HE-5 and HE-6 Interceptor Samplers

Base Mode Number				
	Pump	System	Mount	Options
PF	X	X	L	— See next page

Pump Style			
Code	Regulator	Outlet Control	Inlet Pressure
1	No	Spring check	50 to 90 PSI (See S2 options for under 50 PSI)
2	No	Balance valve	90 to 1480 PSI hazardous locations (requires alternative source to operate solenoid)
3	Yes	Balance valve	90 to 1480 PSI (See Z2 option for 1480 to 2200 PSI)

Mounting Methods	
HE-5 Heated Enclosure	
Code	Description
L	No probe; 3/4" MNPT pump connection; requires addition of a probe adapter, probe or riser option (L01/L02/L03/L06/L10/R1 or R7) in the HE-5 Heated Enclosure Part No. selection
HE-6 Heated Enclosure	
Code	Description
L	No probe; 3/8" FNPT with tubing pump connection (Genie Probe selected in the HE-6 Heated Enclosure Part No. selection)

System Configuration					
Code	Controller	Solenoid	Electronics Enclosure	Bite Size Adjustment	Power
A*	None	12 VDC	None	.1cc, .2cc, .3cc, .4cc, or .5cc selectable	Customer supplied
B*	None	6 VDC	None	.1cc, .2cc, .3cc, .4cc, or .5cc selectable	Customer supplied
K	None	12 VDC	None	Adjustable from 0cc to .5cc	Customer supplied
L	None	6 VDC	None	Adjustable from 0cc to .5cc	Customer supplied
P	G 6000	6 VDC	On top of Heated Enclosure	Adjustable from 0cc to .5cc	PF-2500 (14 amp hour battery)
S*	None	24 VDC	None	.1cc, .2cc, .3cc, .4cc, or .5cc selectable	Customer supplied
T	None	24 VDC	None	Adjustable from 0cc to .5cc	Customer supplied

System configuration code P replaces all previous electronic controller options (E, F, G, H, and J)
 * HE-5 only

HE-5 and HE-6 Interceptor Options

Option

XX

Options <i>Note: First letter of an option is written once (Option 'N3' & 'N4' write as 'N34')</i>	
Heated Enclosure Mounting Option	
Code	Description
H6	Pump mounted inside Heated Enclosure (HE-6 only)
Solenoid and Low-Pressure Pump Set Options	
Code	Description
S1	25' cable for system configurations A or B only (replaces standard 10' cable)
S2	Low pressure solenoid, 12 VDC or 6 VDC, 50 PSI max. pipeline pressure (15 to 50 PSI factory-set spring check)
S2P1	Low pressure solenoid, 5 to 15 PSI factory-set spring check (.5cc min. bite) PF1 only
S2P2	Low pressure solenoid, vacuum to 5 PSI factory-set spring check (.5cc min. bite) PF1 only*
S3	Replace 10' of Belden® wire with 25' of Belden® wire
S4	Replace 10' of Belden® wire with 15' of Belden® wire
S5	Solenoid Pipe-Away vent to bulkhead fitting
Miscellaneous Options	
Code	Description
X1	SealTite cable electrical box connector (standard is Belden® cable box connector)
X2	Kel-F® purge valve seat (Delrin® standard)
Pump Options	
Code	Description
ZA	PF3 low-temperature O-rings (-40°F)
Z1	SS tubing and fittings to solenoid (for system configurations A, B, K, or L only)
Z2	316 SS pump and regulator for PF3 – rated to 2200 PSI max. inlet pressure**
Z3	316 SS pump for PF1 and PF2 – rating changes to 2200 PSI max. inlet pressure for the PF2 only**
Z4	“E” nickel/316 SS fittings to solenoid for H ₂ S / CO ₂ service***
Z5	CO ₂ service O-rings
Z7	Install (1) V-556SDV-H8 into Hot Loop Port on Interceptor

* Requires a minimum of 30 PSI alternative source to operate solenoid

** 140°F max. temperature to meet NACE MR0175/ISO 15156-3

*** Valid with Interceptor electronics enclosures only

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Safety Guide – See www.parker.com/safety.

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