

Interceptor™

Gas Sampling System



Affordable Composite Sampling

The Interceptor Gas Sampling System provides true representative average sampling with both time-based and flow-based capability. This compact, easy to use and install sample system delivers accurate, high quality gas samples each and every collection period. The Interceptor provides a more cost effective sampling method when compared to on-line gas chromatographs and is far more accurate and comprehensive than traditional spot sampling.

Product Features:

- Compatible with all flow computers
- On-line serviceability
- All materials meet NACE MR0175/ISO 15156
- Standard pump construction is hard anodized 6061-T6 aluminum
- CSA approved, intrinsically safe, Class I, Div. 1, Group C & D hazardous locations
- Direct or remote mounted
- Inlet pressures from -10 Hg vacuum to 2200 PSIG
- 200°F maximum temperature



ENGINEERING YOUR SUCCESS.

Interceptor Gas Sampling Systems

Accurate Natural Gas Quality Measurement

In order to meet contractual obligations with business partners and maximize profits, accurate measurement of natural gas quality is critical for all energy companies. Whether buying or selling, non-compliant sampling systems and methods can contaminate a natural gas sample and yield erroneous BTU or gas quality values. As represented by the table below, even a small error in BTU measurement can add up and quickly lead to substantial revenue imbalances. This lost accuracy can be compounded by additional volumetric miscalculations due to natural gas composition errors. These volumetric calculations are based on accurate and correct gas analysis that can be obtained by utilizing the Parker Interceptor Natural Gas Sampling System.

Parker’s Interceptor Natural Gas Sampling System delivers accurate, high quality gas samples each and every collection period. Gas compositions and flow rates can vary widely through your custody transfer points over a given billing period. The Interceptor accurately obtains a representative average of the gas composition in your pipeline. It provides a more affordable sampling method when compared to complicated on-line gas chromatographs and is a more accurate method than traditional spot sampling.

The rugged Interceptor pump design, with the G6000 control card, can be neatly packaged with Parker sample probes and cylinders to provide field selectable TIME BASED or FLOW PROPORTIONAL composite sampling. Simply program the sampling method, select the sample bite size, and return at the end of the sample period to retrieve accurate and complete natural gas samples every time.

Interceptor is part of Parker’s family of highly engineered Custody Transfer Components that include Hot-Shot™ Heated Enclosure Systems that meet API 14.1 requirements to maintain natural gas samples above the hydrocarbon dew point, NOVA™ Natural Gas and Liquid Sampling Systems, Direct-Mount® Systems utilized to reduce installation costs and the effects of pulsation on natural gas measurement, and ThermoSync® Temperature Systems for accurate temperature measurement.

No. of Wells	Cost/MMBTU	Calculated BTU/scf	Flow Rate (MCF/day)	Value of Gas Produced Per Day	% BTU Error	Cost of Error		
						Per Day	Per Month	Per Year
1	\$7	1,000	200	\$1,400	1%	\$14	\$420	\$5,040
					3%	\$42	\$1,260	\$15,330
					5%	\$70	\$2,100	\$25,200
200	\$7	1,000	200	\$1,400	1%	\$2,800	\$84,000	\$1,008,000
					3%	\$8,400	\$252,000	\$3,066,000
					5%	\$14,000	\$420,000	\$5,040,000

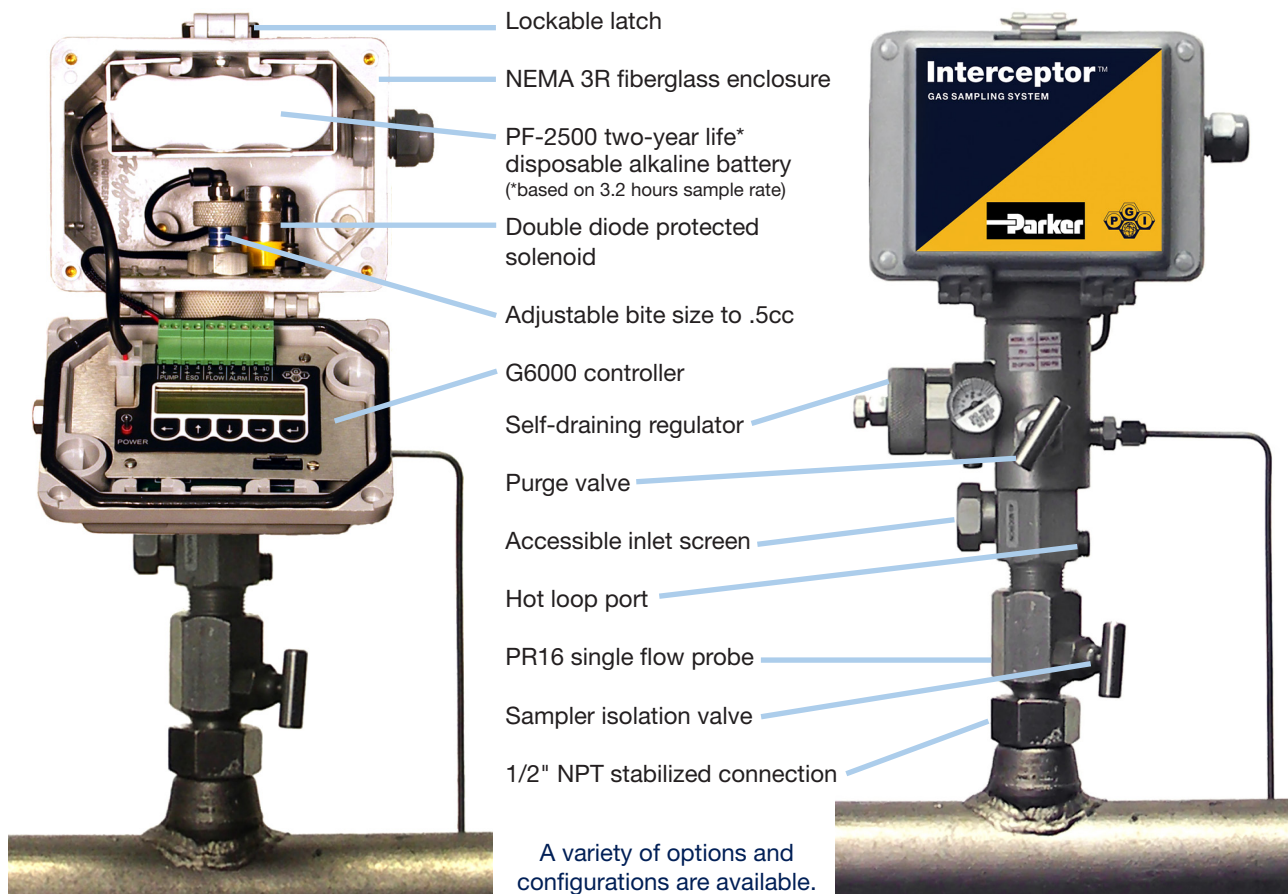


Interceptor Pump: Why Aluminum vs. Stainless?

Parker’s standard pump construction is hard anodized 6061-T6 aluminum. A salt spray test conducted by an independent lab concludes that “after exposure to 192 continuous hours in a 5% salt-fog environment in accordance with ASTM B 117, the 316 stainless steel bar exhibited more severe corrosive attack than the hard anodized 6061-T6 aluminum bar.”

Interceptor Gas Sampling Systems

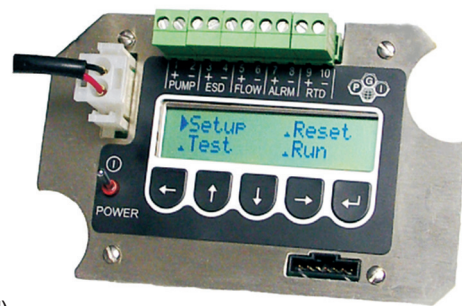
Product Components:



G6000 Electronic Controller

The G6000 Control Card has the following standard features:

- Sample Rate can be set to Time-Based or Flow-Based.
- Flow Signal type is field selectable to accept pulses, voltage (1-5 volts), or current (4-20 milliamps).
- RTD input used to display and monitor heated sample enclosure temperature. (Separate 100 Ohm RTD sensor required)
- Configurable alarm output can be enabled for one or more of the following events:
Low battery, Power switch off, Emergency Shut Down (ESD) detected, Low and/or High RTD temperature and Maximum Sample Count.
- Sample count limit can be set to disable pump or alarm after a fixed number of samples have been taken.
- Time-Stamped Event log for operational history.
- G6000 will remember previous settings even after power is removed.



Ordering Information

Part Number Construction:

Building a Part Number: *Example: PF3MD-XXXXXX*

Example Part Number:	PF	3	M	D	-	X	X	X	X	X	X
Ordering Parameters/ Options:	Base Series	Pump Style	System Configuration	Mounting Methods		Available Options (see below)					
Table Reference: (see below)		A	B	C		D1	D2	D3	D4	D5	D6

A - 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 (requires alternative source to operate solenoid)
3	Yes	Balance Valve	90 to 1480 PSI (see Z2 option for 90 - 2200 PSI)

B - System Configuration

Code	Controller	Solenoid	Electronics Enclosure	Bite Size Adjustment	Power
C	None	12 VDC	On Top of Pump	Adjustable from 0 to .5cc	Customer Supplied
*K	None	12 VDC	None	Adjustable from 0 to .5cc.	Customer Supplied
M	G6000	6 VDC	On Top of Pump	Adjustable from 0 to .5cc	PF-2500 (14 amp hour battery)
*P	G6000	6 VDC	On Top of Heated Enclosure	Adjustable from 0 to .5cc	PF-2500 (14 amp hour battery)
R	None	24 VDC	On Top of Pump	Adjustable from 0 to .5cc	Customer Supplied
*T	None	24 VDC	None	Adjustable from 0 to .5cc	Customer Supplied

C - Mounting Methods

Code	Description
D	Direct Mount: (includes PR16 SS Single flow) 1/2" MNPT x 3/4" FNPT stabilized probe See N3 and N4 option for 3/4" or 1" process connection sizes.
L	Direct Mount: (No Probe; 3/4" MNPT connection, includes SS)
P	Pipe Mount: (No Probe; 3/8" FNPT connection, includes SS pipe mounting bracket) Valid with C and M Configurations only

NOTES:

*For heated enclosures only

† Requires a minimum of 30 PSI alternative source to operate solenoid.

‡ 140°F Maximum temperature to meet NACE MR0175/ISO 15156

D - Options:

First letter of an Option is written once (i.e., Option "Z2, Z4 & Z5" write as "Z245")

D1 - Option: Pressure Gauge

Code	Description
G	316 SS 0-2000 PSI Liquid Filled Pressure Gauge (previously Z9 option)
G2	316 SS 0-100 PSI Liquid Filled Pressure Gauge

D2 - Option: Heated Enclosure Mounting Option

Code	Description
H6	Pump Mounted inside HE-6 Heated Enclosure

D3 - Option: Vessel Rack

Code	Description
M2	16" Fiberglass Channel Direct mount Vessel Rack (includes SS bracket)
M7	Mounting Bracket and Hardware for Spun End Cylinder (for Direct Mount only - see G Option for Gauge)

D4 - Option: Probe

Code	Description
N3	3/4" MNPT on Sample Probe (1/2" standard) Valid with "D" Mounting method only
N4	1" MNPT on Sample Probe (1/2" standard) Valid with "D" Mounting method only

D5 - Option: Solenoid and Low-Pressure Pump Set Options

Code	Description
S2	Low Pressure Solenoid (12, 6 or 24 VDC), 50 PSI Maximum pipeline pressure. (15 to 50 PSI factory-set Spring Check) - PF1 Only
S2P1	Low Pressure Solenoid, (5 to 15 PSI factory-set Spring Check) - PF1 Only
S2P2	Low Pressure Solenoid, (Vacuum to 5 PSI factory-set Spring Check, .5cc Minimum Bite) - PF1 Only†

D6 - Option: Pump

Code	Description
ZA	PF3 Low Temperature O-Rings (-40°F)
Z2	316 SS Pump and Regulator for PF3 (rated to 2200 PSI Maximum Inlet Pressure **)
Z3	316 SS Pump for PF1 and PF2 (rating changes to 2200 PSI Maximum Inlet Pressure for PF2 only‡)
Z4	"E" Nickel/316 SS Fittings to Solenoid. Not valid with "M" configuration
Z5	CO ₂ Service O-Rings
Z8	316 SS Tee with 316 SS 0-2000 PSI Liquid Filled Pressure Gauge at Outlet Port

Configuration Examples

PF2MP-Z8

- For severe service locations
- Flow proportional sampling using internal two-year life* disposable alkaline battery (*based upon 3.2 hour sample rate)
- Requires customer-supplied gas/air to power actuator (90 PSI max)
- Unit shown includes G6000 controller card
- Bite size infinitely adjustable from 0 to 0.5cc
- Can be used with single flow or dual flow hot loop type probes



PF3MD-M2

- Most versatile direct mount sampler
- Selectable time based or flow proportional sampling
- Requires external signal for flow proportional sampling
- Power with internal two-year life* disposable alkaline battery (*based upon 3.2 hour sample rate)
- Probe mounts to any 1/2" NPT port
- Bite size infinitely adjustable from 0 to 0.5cc
- M2 option shown (fiberglass vessel rack)



Spare Parts

Part Number	Description
Controller Cards	
SM-G6000-1	Controller Card only (replaces G2500 through G4000 cards)
Battery Pack	
SPF-2500	14 Amp Hour battery Pack (System Configuration M and P)
SK-PF-22	Retrofit Bracket Kit for PF-2500 Battery Pack)
Solenoid and Solenoid Kits	
SS-C80-555	12 VDC Solenoid (System Configuration C)
SS-C80-556	6 VDC Solenoid (System Configuration M or P)
SS-C80-559	24 VDC Solenoid (System Configuration R, or T)
SS-C80-528	6 VDC Low Pressure Solenoid (50 PSI Maximum Pipeline Pressure)
SS-C80-519	12 VDC Low Pressure Solenoid (50 PSI Maximum Pipeline Pressure)
Pump Service Kit - Complete Rebuild Pump Kit	
SK-PF-01	PF1 Series: FKM soft goods standard, includes Pump Rod assembly and Check Spring
SK-PF-02	PF2 Series: FKM soft goods standard, includes Pump Rod assembly
SK-PF-03	PF3 Series: FKM soft goods standard, includes Pump Rod assembly
SK-PF-ZA	PF2 Low Temperature O-Ring Service Kit
SK-PF-16-5	CO ₂ Service PF3 Mini Rebuild Kit
P9-061	Super Lube® Synthetic Grease
PF3 Conversion from High Pressure to Low Pressure	
SK-PF-04	Spring Check Housing Conversion Kit (high to low pressure) - below 50 PSI, requires S2 solenoid option
Balance Valve Kit	
SK-PF-07	PF2 or PF3 Replacement Balance Valve
SK-PF-07-5	Co ₂ Service PF3 Balance Valve Assembly
SK-PF-07-Z2	PF2 or PF3 Replacement Balance Valve - 316SS
Spring Check Rebuild Kit	
SK-PF-08	Outlet Spring Check Kit (PF1 only)
Regulator Kits Kit	
SK-PF-09	Regulator Kit, FKM Soft Goods (PF3 only)
SK-PF-R	Pressure Regulator / Adjustable Regulator Kit
SK-PF-RS	Pressure Gauge/ Regulator Kit in 316 SS material
Pump Service Kit (Upper Body only)	
SK-PF-10	Upper Pump Body, FKM Soft Goods Kit with Pump Rod Assembly (PF1 and PF2 only)
SK-PF-11	Upper Pump Body, FKM Soft Goods Kit with Pump Rod Assembly (PF3 only)
Pump Service Kit (Lower Body only)	
SK-PF-12	Lower Pump Body, FKM Soft Goods Kit (PF1, PF2, and PF3)

Spare Parts

Part Number	Description
Inlet Strainer	
SK-PF-13	Inlet Strainer Service Kit (40 micron only)
Purge and Probe Block Valve Parts	
SK-PF-17	Delrin® Purge Valve Seat and FKM O-Ring Seal
SK-PF-18	Kel-F® Purge Valve Seat and FKM O-Ring Seal
Vessel Racks and Spun End Brackets	
SPF-M2	16" Fiberglass Channel Direct Mount Vessel Rack (includes SS bracket)
SPF-M7	Aluminum Mounting Bracket and hardware for Spun End Cylinder (see SPF-G for Gauge)
Pump Pressure Gauge	
SPF-G	316 SS, 0-2000 PSI Liquid Filled Pressure Gauge
SPF-G2	316 SS, 0-100 PSI Liquid Filled Pressure Gauge

Sample Cylinders and Accessories

Sample Probes

Parker offers a full range of sampling probes to meet your applications. Hot Tap, Single Flow, Dual Flow, and Direct Mount with and without block valves. Parker also offers unique stabilized connections for extra strength in high vibration installations. A wide variety of end connections are available from 1/2" (12.7 mm) to 2" (50.8 mm) and 900 ANSI Class RTJ flanges. All probes are available in 316 SS and meet the requirements of NACE MR0175/ISO 15156.



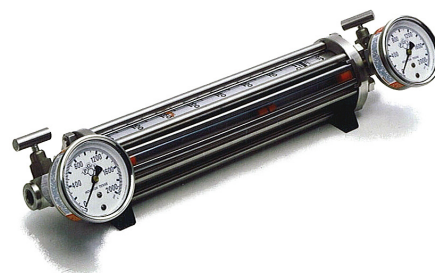
Spun End Cylinders

- 1800 PSI DOT-3E rating
- Seamless 316 stainless steel construction to NACE MR0175 / ISO 15156 standards
- Heat code traceability
- Hydrostatic test certificates available



Ultra-Seal Constant Pressure Cylinders

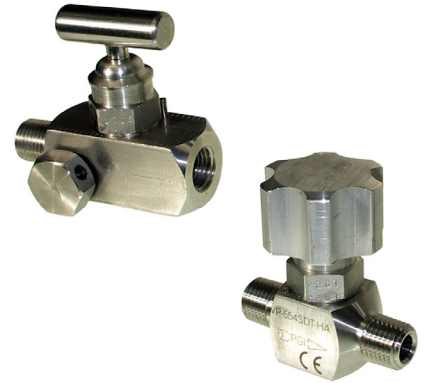
- 316 SS shut-off valves on each end with Acetal (Delrin) soft seats and PTFE Pressure-Core® stem seals — standard with 5-year no-leak warranty
- Burst disc holder and 2,000 PSI SS pressure gauges
- Mag-N-Tube™ volume indicator
- Gas and liquid designs
- Patented piston with ceramic magnets and magnetic field intensifier
- Optional 80% fill switch provides additional operator safety
- CRN – Canadian registration certificates available



Sample Cylinders and Accessories

VP Series Cylinder Valves

- Features patented Pressure-Core® stem seal technology — standard with 5-year no-leak warranty
- 316 SS design meets NACE MR0175/ISO 15156
- Provides four times the sealing area of a standard Mini Seat — 3,000 PSI @ 200° max. to 6,000 PSI @ 200° max. Seats available
- CO₂ and H₂S compatible materials standard
- Same C_v rating (.22 max.) as the conventional Mini Bonnet
- Integral rupture disc and gauge ports available



Cylinder Valves

- Miniature valves with FKM O-Ring stem seals or PTFE stem packing
- .22 C_v rating



NOTES:

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further information call 1-800-C-Parker.

MARKET	KEY MARKETS		KEY PRODUCTS	
 AEROSPACE	Aircraft Engines Commercial Commercial Transports Military Aircraft Regional Transports	Business and General Aviation Land-Based Weapons Systems Missiles and Launch Vehicles Unmanned Aerial Vehicles	Flight Control Systems & Components Fluid Conveyance Systems Fluid Metering Delivery & Atomization Devices Fuel Systems & Components	Hydraulic Systems & Components Inert Nitrogen Generating Systems Pneumatic Systems & Components Wheels & Brakes
 CLIMATE CONTROL	Agriculture Food, Beverage and Dairy Precision Cooling Transportation	Air Conditioning Life Sciences & Medical Processing	Co2 Controls Electronic Controllers Filter Driers Hand Shut-Off Valves Hose & Fittings	Pressure Regulating Valves Refrigerant Distributors Safety Relief Valves Solenoid Valves Thermostatic Expansion Valves
 ELECTRO-MECHANICAL	Aerospace Life Science & Medical Packaging Machinery Plastics Machinery & Converting Semiconductor & Electronics Factory Automation	Machine Tools Paper Machinery Primary Metals Textile Wire & Cable	AC/DC Drives & Systems Electric Actuators, Gantry Robots & Slides Electrohydraulic Actuation Systems Electromechanical Actuation Systems Human Machine Interface	Linear Motors Stepper Motors, Servo Motors Drives & Controls Structural Extrusions
 FILTRATION	Food & Beverage Life Sciences Mobile Equipment Power Generation Transportation	Industrial Machinery Marine Oil & Gas Process	Analytical Gas Generators Compressed Air & Gas Filters Condition Monitoring Engine Air, Fuel & Oil Filtration & Systems	Hydraulic, Lubrication & Coolant Filters Process, Chemical, Water Microfiltration Filters Nitrogen, Hydrogen & Zero Air Generators
 FLUID and GAS HANDLING	Aerospace Agriculture Bulk Chemical Handling Construction Machinery Food & Beverage Fuel & Gas Delivery	Industrial Machinery Mobile Oil & Gas Transportation Welding	Brass Fittings & Valves Diagnostic Equipment Fluid Conveyance Systems Industrial Hose	PTFE & PFA Hose, Tubing & Plastic Fittings Rubber & Thermoplastic Hose & Couplings Tube Fittings & Adapters Quick Disconnects
 HYDRAULICS	Aerospace Aerial lift Agriculture Construction Machinery Forestry	Industrial Machinery Mining Oil & Gas Power Generation & Energy Truck Hydraulics	Diagnostic Equipment Hydraulic Cylinders & Accumulators Hydraulic Motors & Pumps Hydraulic Systems Hydraulic Valves & Controls	Power Take-Offs Rubber & Thermoplastic Hose & Couplings Tube Fittings & Adapters Quick Disconnects
 PNEUMATICS	Aerospace Conveyor & Material Handling Factory Automation Life Science & Medical	Machine Tools Packaging Machinery Transportation & Automotive	Air Preparation Brass Fittings & Valves Manifolds Pneumatic Accessories Pneumatic Actuators & Grippers Pneumatic Valves & Controls	Quick Disconnects Rotary Actuators Rubber & Thermoplastic Hose & Couplings Structural Extrusions Thermoplastic Tubing & Fittings Vacuum Generators, Cups & Sensors
 PROCESS CONTROL	Chemical & Refining Food, Beverage & Dairy Medical & Dental	Microelectronics Oil & Gas Power Generation	Analytical Sample Conditioning Products & Systems Fluoropolymer Chemical Delivery Fittings, Valves & Pumps High Purity Gas Delivery Fittings, & Valves & Regulators	Instrumentation Fittings, Valves Regulators Medium Pressure Fittings & Valves Process Control Manifolds
 SEALING and SHIELDING	Aerospace Chemical Processing Consumer Energy, Oil & Gas Fluid Power General Industrial	Information Technology Life Sciences Military Semiconductor Transportation	Dynamic Seals Elastomeric O-Rings EMI Shielding Extruded & Precision-Cut, Fabricated Elastomeric Seals	Homogeneous & Inserted Elastomeric Shapes High Temperature Metal Seals Metal & Plastic Retained Composite Seals Thermal Management

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WARNING

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