

# **PFT**® **BLACK GATOR**®

**POWER FEED-THRU CONNECTORS**



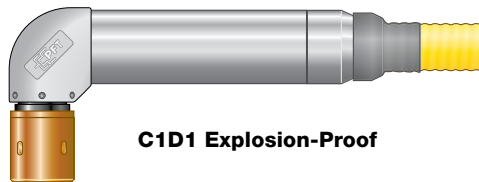
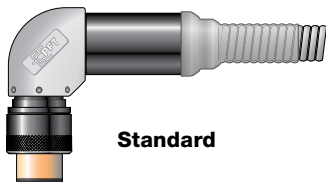
# KEEPING IT SIMPLE

**The PFT Black Gator® system sets the benchmark for maximum component flexibility and in-field performance.**

- Quickest field assembly in the industry
- Saves thousands every year in reduced rig down-time
- Modular design reduces inventory expense
- Robust and innovative sealing technologies
- Optimized engineered solutions



## Surface Connectors

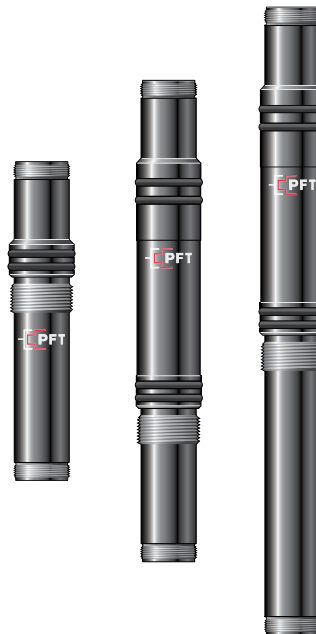


## Packer Penetrators

### Gator Splice®



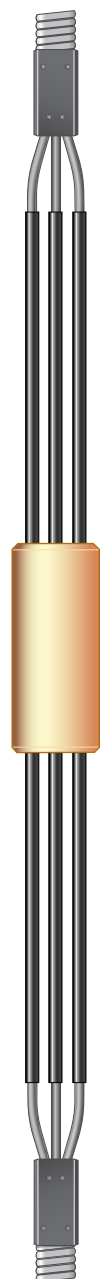
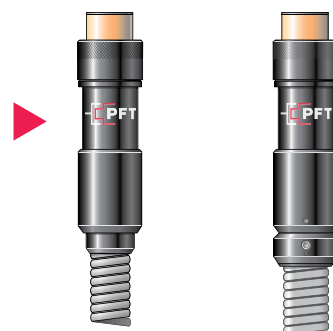
### Wellhead Penetrators



### Gator Feed®



### Lower Connectors



**Gator-PAK™  
5,000 psi  
No-Splice  
Packer Penetrator**

**Black Gator®  
7,500 psi  
No-Splice  
Packer Penetrator**

**Tri-Gator®  
Packer  
Penetrator**



# FLEXIBILITY

**Our innovative designs allow us to minimize the number of total parts, yet have the flexibility to produce numerous stand-alone components.**

## **PFT's Innovative Black Gator® Line**

The key to the Black Gator® line is our integrated, selective standardization. Our connectors' modular design can accommodate various downhole cable types and sizes (up to #1/0) by merely changing out the cable seal, Gator Grip® Crimpless Contacts and armor adapter. It can accommodate flat or round cable as a pigtail or supplied as the most user-friendly field attachable connectors on the market.

In most circumstances connectors can be assembled on a cable in less than 30 minutes, greatly reducing installation time, lowering cost and delivering superior run-time reliability. Depending on cable size, Black Gator® connectors can be used up to 5kV, 205Amps and can be supplied in an explosion-proof version.

## **Lower Connectors**

- Supplied as a base kit, add cable kit to fit specific cable size and type; #8 – #1/0 flat or round
- Adapted to fit the Black Gator® No-Splice Packer Penetrator
- Half of the Gator Splice®

## **Penetrators**

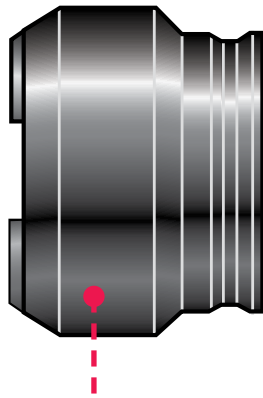
- Numerous OD profiles but all with the same male electrical connection and mechanical connection to the lower connector
- Gator-PAK™ combines the lower connector and power sub in one convenient unit
- Modified penetrator becomes a power sub in the Black Gator® No-Splice Packer Penetrator

## **I-Seal™**

- Can be adapted to all system designs

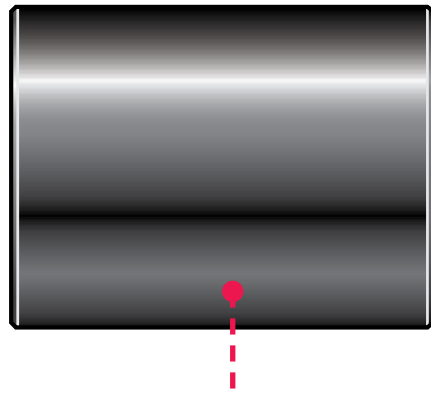
# KEEPING IT WHOLE DOWNHOLE

Our innovative Black Gator® system delivers to you the best technology to solve your ESP power feed-thru challenges. With the Black Gator® you get maximum endurance and total flexibility.



**Armor Adapter**

Supplied for various sizes of flat or round cable, PFT's new flat armor adapter eliminates the need (and time) to reconfigure flat cables into a round configuration for use with a field-attachable connector.



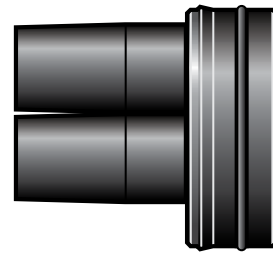
**Connector Body Parts**

Components are carbon steel and meet NACE MRO 175 specifications. The black finish provides maximum corrosion protection and lubrication for the threaded components. Stainless steel components are also available.

**Follower with Wave Spring**



**Cable Seal**

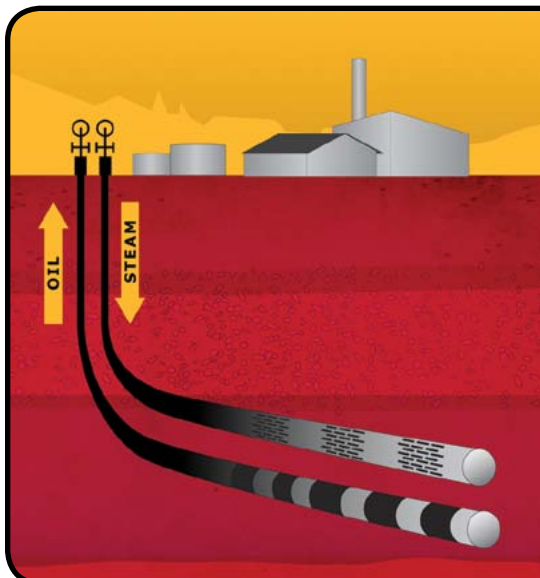


**Cable Seal Nose**



**Cable Seal Assembly**

Our innovative "floating" cable seal design incorporates the latest technology in elastomers with the ability to adjust to thermal expansion and decompression. Cable seals are sized for specific cable types in sizes from #8AWG – 1/0 and available in material options to meet your operating conditions.



## PFT= Proven SAGD Performance

We've combined the latest developments in high temperature thermoplastics and elastomers along with our innovative I-Seal™, Gator Loc™ thread system, Gator Grrip® crimpless contacts and dynamic floating seal system with a product design that is downhole proven in the Canadian SAGD environment.

At PFT, innovation is the key to successful product development.

### SAGD Ratings:

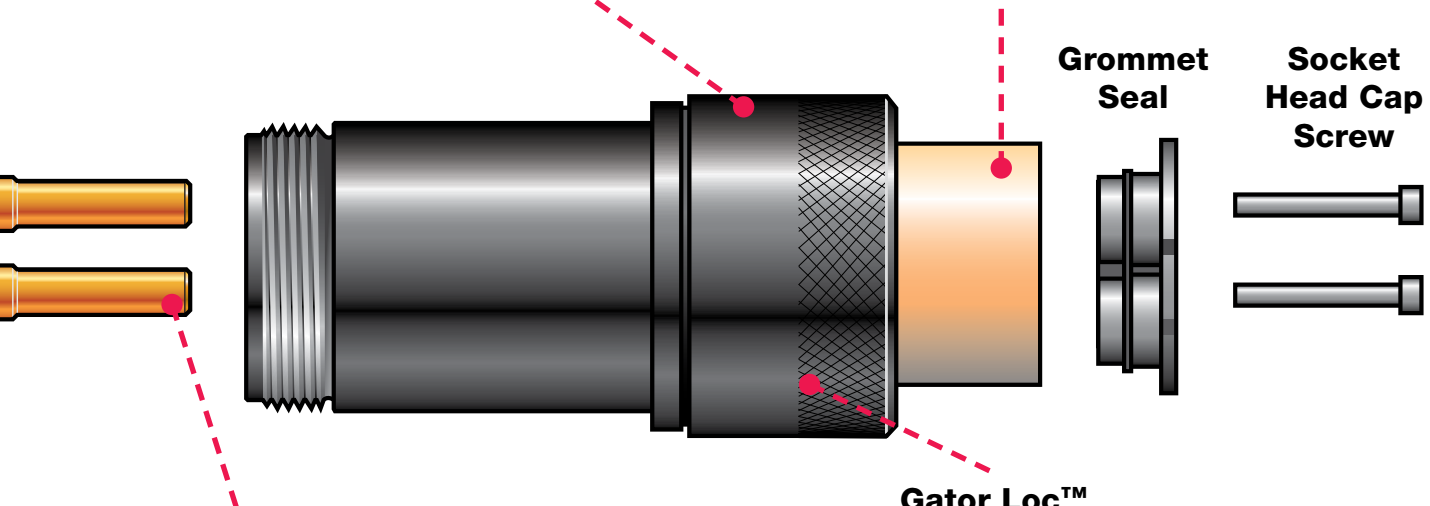
- 450 Deg. F. (230 Deg. C.)
- 3000 psi
- 5kV, 160A
- CSA C1D1 Approved

## Threads

While we do not advocate attaching our connectors to penetrators supplied by other manufacturers, we offer several thread profiles that will mate with various penetrators. Please contact PFT for confirmation before purchasing.

## Thermoplastic (PEEK™) Insulator Components

PEEK™ is extremely well suited for all downhole applications. Depending on the material grade, PEEK™ can work continuously at elevated temperatures in comparison to molded rubber. PEEK™, in comparison to molded rubber, does not take a “set” when compressed nor is it subject to gas penetration. Combined with our oversized copper contacts, the PFT Black Gator® Connector results in a longer run life and the ability to re-run components.



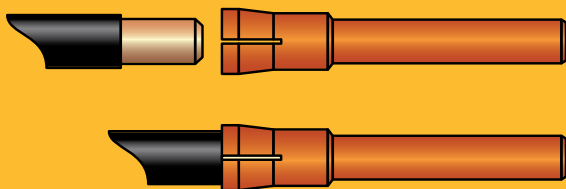
### Gator Grrip®

Our crimpless contact provides maximum conductivity with minimum heat buildup. Conductors do not have to be spread to accommodate a crimping tool, thus eliminating possible damage to the insulation or barrier. There is no “guessing” as to how much crimp force is required or how many crimps are needed. Additionally, as the contacts are not deformed (from the crimp), there are no ridges to sand nor do the conductors need straightening.

### Gator Loc™ 2-Turn Connection

PFT line of products can be supplied with Gator Loc™. The 2-turn connection thread provides fast makeup between Black Gator® components.

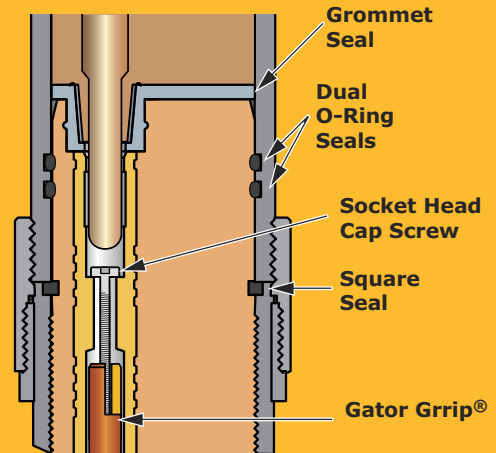
### Gator Grrip®



### I-Seal™

The latest in Downhole Connector Sealing Technology:

- 4 Seals in 1
- No “key” or “keyway”
- Can be adapted to all system designs





# Black Gator® Surface Connectors

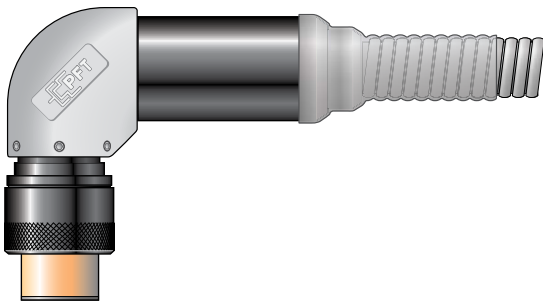
## Standard Non-explosion Proof

### FEATURES

- Available in 90°, 45°, low-profile & tri-lead designs
- Black anti-corrosive and anti-galling finish
- Compact factory-assembled unit
- Fits with all PFT non-explosion proof wellhead penetrators
- Available with various types and lengths of cable

### SPECS

- 5kV
- 205A (depending on cable size)



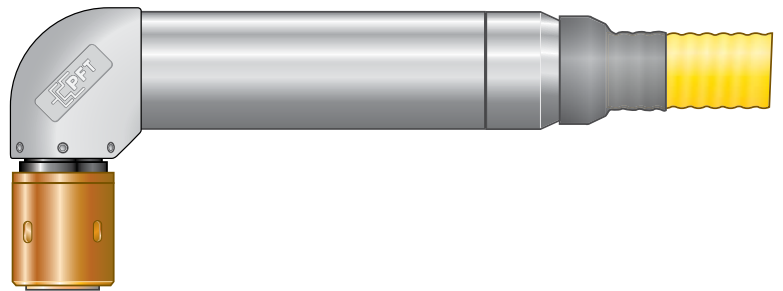
## C1D1 Explosion Proof

### FEATURES

- CSA approved for use in C1D1 hazardous locations
- Available in 90°, 45°, & low-profile designs
- Available with various types and lengths of cable

### SPECS

- 5kV, up to #1/0 AWG shielded cable
- 5kV, #2 AWG non-shielded cable (Canada only)
- 2.4kV non-shielded cable
- 205A (depending on cable size)



# Black Gator® Lower Connector

### FEATURES

- Flexible: one body; multiple cable kits
- Flat armor adapter: no need to transition “flat to round”
- Black anti-corrosive and anti-galling finish
- No potting
- Gator Grip® crimpless contacts
- Floating seal
- Re-buildable
- Reduced assembly time
- Available with high temperature components for SAGD applications
- Supplied attached to flat or round cable as a pigtail or supplied as a field attachable connector
- Optional 2-turn Gator Loc™ and I-Seal™



### SPECS

- 5kV
- 205A (depending on cable size)
- Flat or round cable: #6 – #1/0 AWG
- 5000 psi
- Up to 450°F (230°C) with high temperature components

# Black Gator® Gator Feed®

## FEATURES

- Black anti-corrosive and anti-galling finish
- Thermoplastic insulators and pressure block
- Economical alternative for replacing\* cable pack-off assemblies
- Two-piece system
- Supplied attached to flat or round cable as a pigtail or supplied as a field attachable connector
- Re-buildable
- Utilizes same technology as PFT's Black Gator® Lower Connectors
- Shorter profile length allows for installation in short or restricted tubing head bowls
- Standard or C1D1 Explosion Proof versions available

## SPECS

- 5kV
- 205A (depending on cable size)
- Flat or round cable: #6 – #1 AWG 3000 psi

\* A mandrel tubing hanger is required when replacing a cable pack-off



# Wellhead Penetrators

## FEATURES

- Black anti-corrosive and anti-galling finish
- Thermoplastic insulators and pressure block
- Optional 2-Turn Gator Loc™ connection and I-Seal™
- Standard or C1D1 Explosion Proof versions available
- Available with high temperature components for SAGD applications
- Available in Slim-Line O.D. as small as 1.20"

## SPECS

- 5kV
- 205A
- 5000 psi
- Up to 450°F (230°C) with high temperature components



# Packer Penetrators

## Black Gator® No-Splice Packer Penetrator

### FEATURES

- Flat or round cable
- Eliminates costly vertical splices
- Flat armor adapter: No need to transition “flat to round”
- Black anti-corrosive and anti-galling finish
- No potting
- Gator Grip® Crimpless Contacts
- Floating seal and I-Seal™
- Reduced assembly time

### SPECS

- 7500 psi
- 5kV
- 205A (depending on cable size)
- Up to 350 Deg. F. (175 Deg. C.) depending on operating requirements and conditions

## Gator-PAK™ No-Splice Packer Penetrator

### FEATURES

- Offers all the same features as the Black Gator® Packer Penetrator above, but combines the power sub and lower connector into one convenient unit

### SPECS

- 5000 psi
- 5kV
- 205A (depending on cable size)
- Up to 350 Deg. F. (175 Deg. C.) depending on operating requirements and conditions

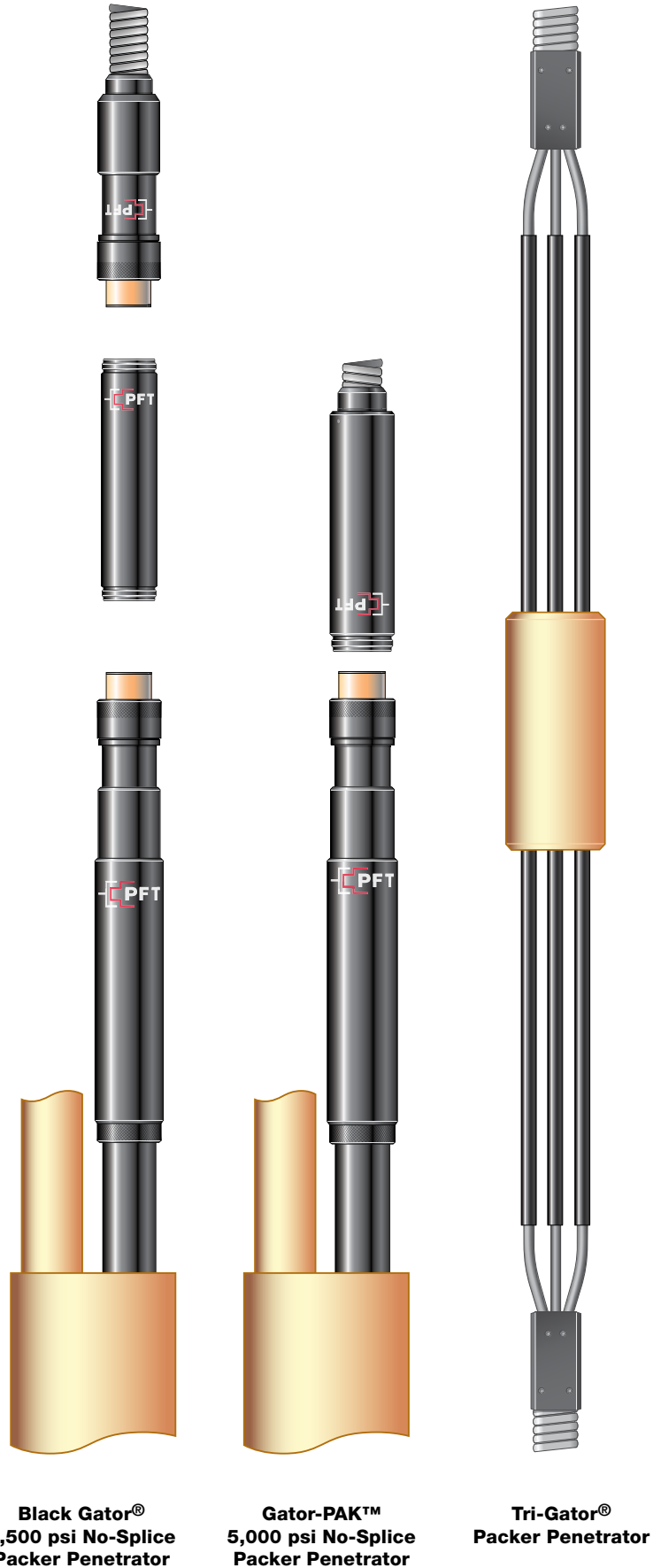
## Tri-Gator® Packer Penetrator

### FEATURES

- Field attachable
- Thermoplastic components
- Compact 0.99" O.D. profile
- No potting

### SPECS

- 5000 psi
- 5kV
- Up to 350 Deg. F. (175 Deg. C.) depending on operating requirements and conditions





# Gator Splice®

## FEATURES

- No splicing required
- Gator Loc™ 2-turn connection
- Flat or round cable up to #1/0
- Floating seal and I-Seal™
- Gator Grrip® crimpless contacts
- Quick and easy to assemble
- Reduced rig time = reduced cost
- Two major components:
  - Field attachable lower connector
  - Field attachable Gator Splice™

## SPECS

- 5000 psi
- 5kV
- 205A (depending on cable size)
- Up to 350 Deg. F. (175 Deg. C.) depending on operating requirements and conditions



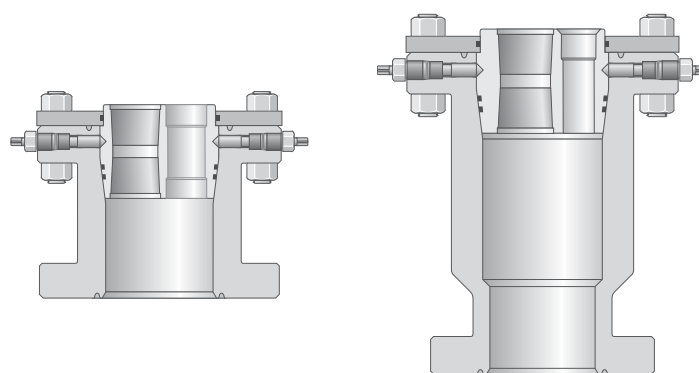
# Wellhead Adapters

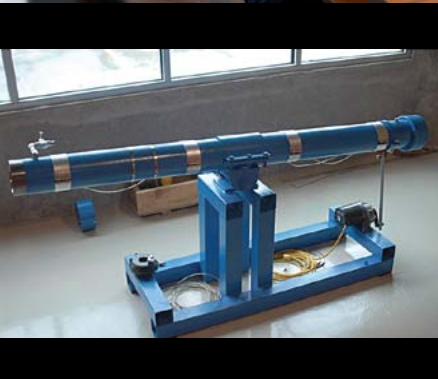
## GT6 Wellhead Adapter

- API 7-1/16" flanged top and bottom
- Can be supplied with lockscrews in top flange
- 7" tubing hanger will accommodate 2-3/8" or 2-7/8" tubing
- Feed-thru port will accept mini-mandrel or Gator Feed®

## GT8 Wellhead Adapter

- API 7-1/16" flanged bottom x 9" flanged top
- Can be supplied with lockscrews in top flange
- 9" tubing hanger will accommodate 2-3/8" to 3-1/2" tubing
- Feed-thru port will accept mini-mandrel or Gator Feed®





# KEEPING OUR WORD

**PFT's experience and innovation bring you a superior product and responsive service.**

## **Industry Experience**

PFT's leadership team has decades of design, manufacturing, installation and service experience with electrical feed-thru systems for ESP installations.

## **Fast Turnaround**

PFT is able to build and deliver products much faster by stocking all parts. Selective standardization eliminates most custom fabrication, streamlining product assembly and greatly reducing the time from order to ship.

## **Field Training**

A PFT technician is available to conduct onsite training in:

- Connector assembly
- Testing of new and used feed-thru systems
- Installation
- Product selection

## **Engineering**

PFT's engineering department can provide Black Gator® feed-thru solutions for your specific application. We are available to meet and coordinate with wellhead manufacturers and pump companies to ensure the optimum system for the application.

## **Innovation & Continual R&D**

PFT is committed to developing the best products possible. The Black Gator® product line represents the first true revolution in the electrical feed-thru system category in years. You can count on PFT to continue to develop even better technology to increase product reliability and our ability to respond to your field challenges.

## **Testing**

PFT's in-house testing facilities allow every product to be tested in real-time while various pressures and temperatures are being applied. Our Test Vessel Capabilities:

- 15000 psi
- 500°F
- Gas injectable
- Oscillating
- Differential pressures

## **Certifications**

- PFT's explosion-proof connectors are CSA approved for use in Class 1 Division 1 hazardous locations
- PFT is ISO 9001:2008 certified for the design and assembly of electrical feed-thru systems and connectors including wellheads and wellhead hangers





**“Our innovative Black Gator® modular designs have the flexibility to produce numerous stand-alone components. Our customers get a cost-effective system with faster delivery from us and easier field assembly.”**

***Mike Colescott, President  
PFT Systems & Connectors LLC***





# KEEPING IT FLOWING AROUND THE WORLD

PFT has the experience, expertise and technology to provide products, solutions and services to every oil market in the world no matter how challenging. Our industry-leading technology will provide you with the easiest, most reliable electrical connections for your application.



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