

# SUNKYE CONNECTOR D011 Series

## High Temperature & High Pressure Connectors

### HTHP Connectors For Oil & Gas Application Equipment

Sunkye is a global solutions provider of innovative seal solutions and differentiated products to the global oil and gas industry. We serve a wide range of customers including oil and gas producers, original equipment manufacturers (OEMs), and engineering and service companies which utilize our technologies, products, and services for producing oil and gas from land-based and offshore platforms throughout the world.

Sunkye is uniquely qualified to deliver turnkey custom solutions for a complete range of High-Pressure, High-Temperature (HPHT) applications. Our industry-leading materials knowledge, engineering design experience, and testing capabilities are key to achieving reliable service in the most extreme HPHT environments.

### Product Introduction

- Part No. D011-01P-232
- Glass Sintering Adapter with Single Contact
- High Temperature Alloy Shell
- Alloy Contact, Ceramic and Glass Insulator



### Technical Characteristics

#### Mechanical Performance

- Random Vibration: 10Hz-2000Hz, 0.3G<sup>2</sup>/Hz, acceleration 20G, 200°C. 4h on direction X, Y, Z.
- Shock: 490m<sup>2</sup>/s, 11ms

#### Electrical Performance

- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current ≤5mA
- Normal Temperature Insulate Resistance: ≥5000MΩ (500VDC, normal-tem.)
- High Temperature Insulate Resistance: ≥500MΩ (500VDC, 200°C)
- Rated Current: 1A continuous current

#### Environmental Performance

- Temperature Range: -55°C to +200°C
- Operating Pressure: 0 MPa to 172.5 MPa
- High Temperature Life: 200°C, 600h
- Temperature Shock: -55°C to +200°C, 15 cycles, the temperature switching time is ≤ 15min
- Salt Spray: 24h
- Air Leak: helium leak test ≤ 1×10<sup>-3</sup>Pa.cm<sup>3</sup>/s
- High Temperature High Pressure: 172.5MPa, 200°C, 336h

## Product Introduction

- Part No. D011-01P-497
- Injection Sealed Single Contact Adapter
- Beryllium Bronze Shell and Contact
- PEEK Injection Sealed Insulator



## Technical Characteristics

### Mechanical Performance

- Random Vibration: 10Hz-2000Hz, 0.3G<sup>2</sup>/Hz, acceleration 20G, 175°C.4h on direction X, Y, Z.
- Shock: 490m<sup>2</sup>/s, 11ms
- Endurance: 500 cycles

### Electrical Performance

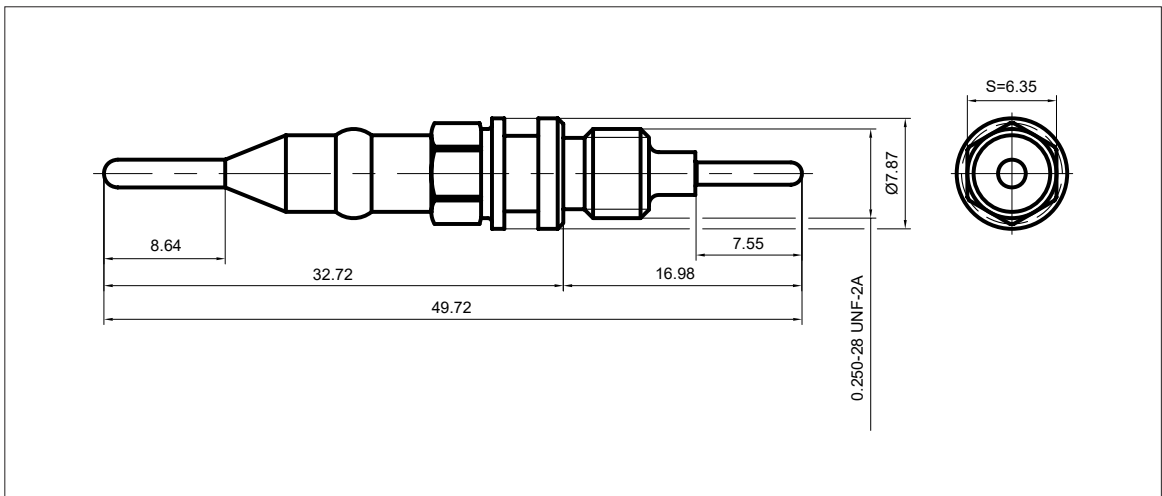
- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current ≤5mA
- Normal Temperature Insulate Resistance: ≥5000MΩ (500VDC, normal-tem.)
- High Temperature Insulate Resistance: ≥500MΩ (500VDC, 175°C)
- Rated Current: 1A continuous current

### Environmental Performance

- Temperature Range: -55°C to +175°C
- Operating Pressure: 0 MPa to 140 MPa
- High Temperature Life: 175°C, 600h
- Temperature Shock: -55°C to +175°C, 15 cycles, the temperature switching time is ≤ 15min
- Salt Spray: 48h
- Air Leak: helium leak test ≤ 1×10<sup>-3</sup>Pa.cm<sup>3</sup>/s
- High Temperature High Pressure: 140MPa, 175°C, 10h

## Outline Demensions

Dimensions: The contact end is #14 socket, the other end max welding # 16 wire.



## Product Introduction

- Part No. D011-01P-627
- Glass Sintering Adapter with Single Contact
- High Temperature Alloy and Fluororubber Shell
- Alloy Contact, Ceramic , Glass and Rubber Insulator



## Technical Characteristics

### Mechanical Performance

- Random Vibration: 10Hz-2000Hz, 0.3G<sup>2</sup>/Hz, acceleration 20G, 175°C.4h on direction X, Y, Z.
- Shock: 490m<sup>2</sup>/s, 11ms
- Endurance: 500 cycles

### Electrical Performance

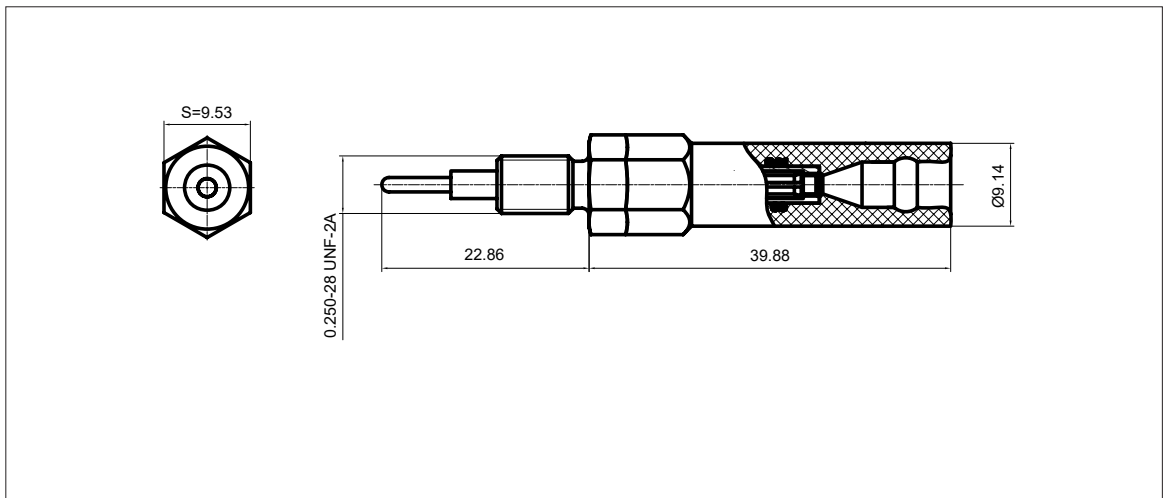
- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current ≤5mA
- Normal Temperature Insulate Resistance: ≥5000MΩ (500VDC, normal-tem.)
- High Temperature Insulate Resistance: ≥500MΩ (500VDC, 200°C)
- Rated Current: 1A continuous current

### Environmental Performance

- Temperature Range: -55°C to +200°C
- Operating Pressure: 0 MPa to 140 MPa
- High Temperature Life: 200°C, 600h
- Temperature Shock: -55°C to +200°C , 15 cycles, the temperature switching time is ≤ 15min
- Salt Spray: 48h
- Air Leak: helium leak test ≤ 1×10<sup>-3</sup>Pa.cm<sup>3</sup>/s
- High Temperature High Pressure: 140MPa, 200°C , 10h

## Outline Demensions

Dimensions: One end is #14 pin, the other end is # 16 socket.



## Product Introduction

- Part No. D011-01P-770
- Glass Sintering Adapter with Single Contact
- High Temperature Alloy Shell
- Alloy Contact, Ceramic and Glass Insulator

## Technical Characteristics

### Mechanical Performance

- Random Vibration: 10Hz-2000Hz,  $0.3G^2/Hz$ , acceleration 20G, 200°C.4h on direction X, Y, Z.
- Shock:  $490m^2/s$ , 11ms
- Endurance: 500 cycles

### Electrical Performance

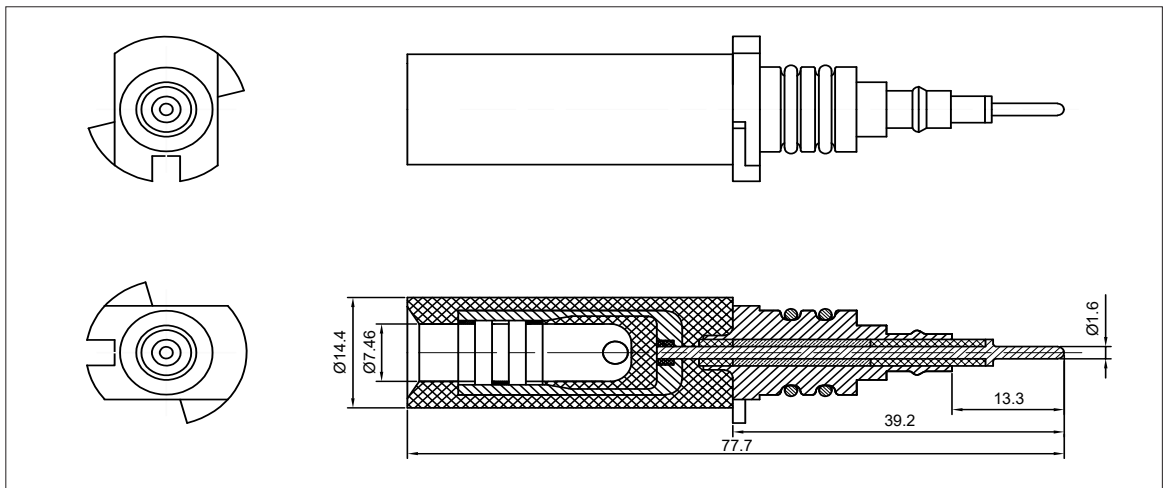
- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current  $\leq 5mA$
- Normal Temperature Insulate Resistance:  $\geq 5000M\Omega$  (500VDC, normal-tem.)
- High Temperature Insulate Resistance:  $\geq 500M\Omega$  (500VDC, 200°C)
- Rated Current: 1A continuous current

### Environmental Performance

- Temperature Range: -55°C to +200°C
- Operating Pressure: 0 MPa to 140 MPa
- High Temperature Life: 200°C, 600h
- Temperature Shock: -55°C to +200°C , 15 cycles, the temperature switching time is  $\leq 15min$
- Salt Spray: 48h
- Air Leak: helium leak test  $\leq 1 \times 10^{-3} Pa \cdot cm^3/s$
- High Temperature High Pressure: 140MPa, 200°C , 10h

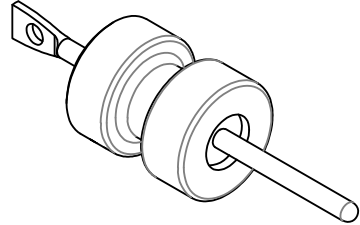
## Outline Demensions

Dimensions:



## Product Introduction

- Part No. D011-01P-229
- Glass Sintering Adapter with Single Contact
- High Temperature Alloy Shell
- Alloy Contact, Ceramic and Glass Insulator



## Technical Characteristics

### Mechanical Performance

- Random Vibration: 10Hz-2000Hz,  $0.3G^2/Hz$ , acceleration 20G, 200°C.4h on direction X, Y, Z.
- Shock:  $490m^2/s$ , 11ms
- Endurance: 500 cycles

### Electrical Performance

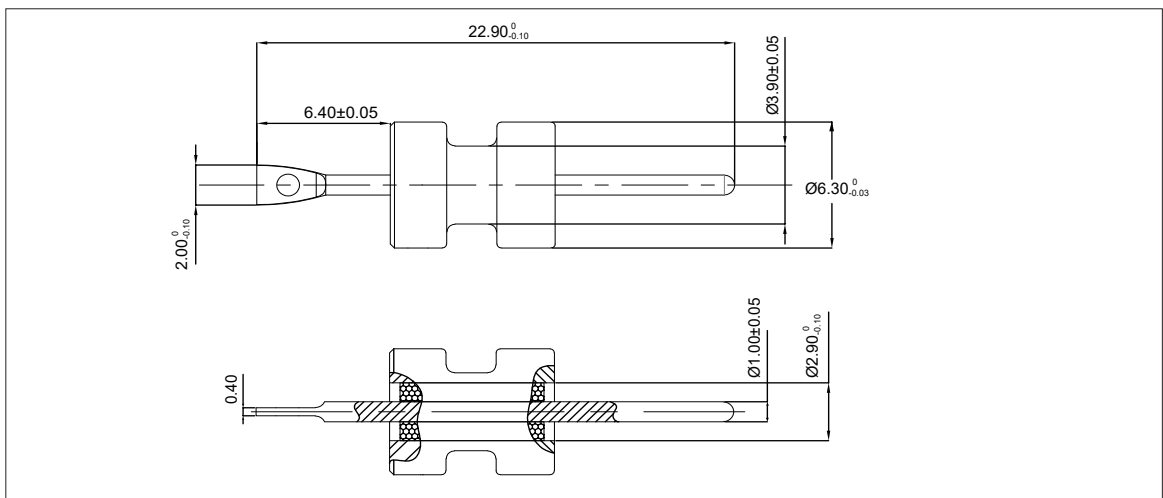
- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current  $\leq 5mA$
- Normal Temperature Insulate Resistance:  $\geq 5000M\Omega$  (500VDC, normal-tem.)
- High Temperature Insulate Resistance:  $\geq 500M\Omega$  (500VDC, 200°C)
- Rated Current: 1A continuous current

### Environmental Performance

- Temperature Range: -55°C to +200°C
- Operating Pressure: 0 MPa to 140 MPa
- High Temperature Life: 200°C, 600h
- Temperature Shock: -55°C to +200°C, 15 cycles, the temperature switching time is  $\leq 15min$
- Salt Spray: 48h
- Air Leak: helium leak test  $\leq 1 \times 10^{-3} Pa \cdot cm^3/s$
- High Temperature High Pressure: 140MPa, 200°C, 10h

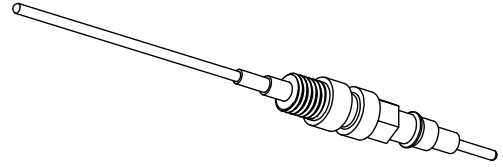
## Outline Dimensions

Dimensions:



## Product Introduction

- Part No. D011-01P-968
- Injection Sealed Single Contact Adapter
- Beryllium Bronze Shell and Contact
- PEEK Injection Sealed Insulator



## Technical Characteristics

### Mechanical Performance

- Random Vibration: 10Hz-2000Hz, 0.3G<sup>2</sup>/Hz, acceleration 20G, 175°C.4h on direction X, Y, Z.
- Shock: 490m<sup>2</sup>/s, 11ms
- Endurance: 500 cycles

### Electrical Performance

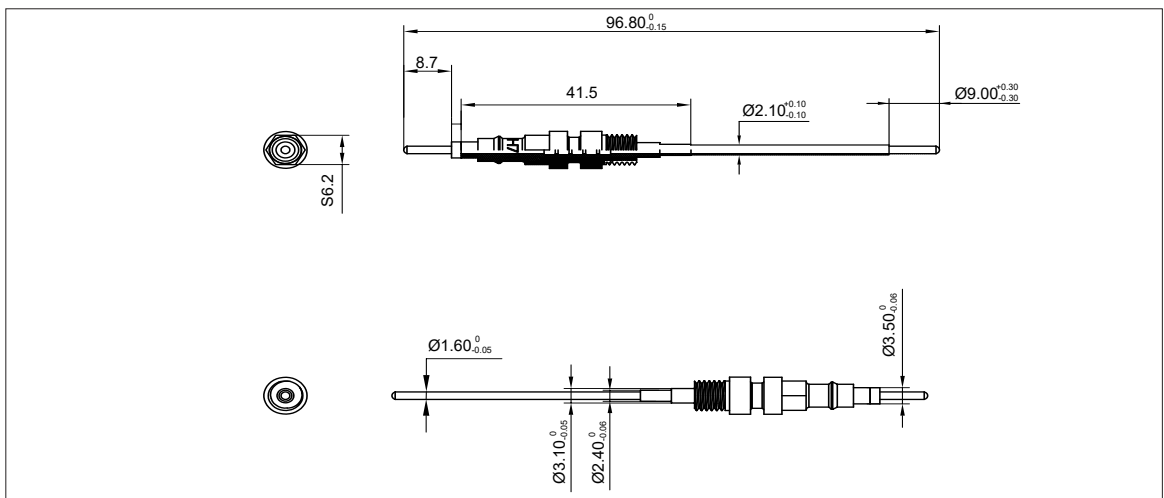
- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current ≤5mA
- Normal Temperature Insulate Resistance: ≥5000MΩ (500VDC, normal-tem.)
- High Temperature Insulate Resistance: ≥500MΩ (500VDC, 175°C)
- Rated Current: 1A continuous current

### Environmental Performance

- Temperature Range: -55°C to +175°C
- Operating Pressure: 0 MPa to 140 MPa
- High Temperature Life: 175°C, 600h
- Temperature Shock: -55°C to +175°C , 15 cycles, the temperature switching time is ≤ 15min
- Salt Spray: 48h
- Air Leak: helium leak test ≤ 1×10<sup>-3</sup>Pa.cm<sup>3</sup>/s
- High Temperature High Pressure: 140MPa, 175°C , 10h

## Outline Dimensions

Dimensions:



## Product Introduction

- Part No. D011-01P-777
- Glass Sintering Adapter with Single Contact
- High Temperature Alloy Shell
- Alloy Contact, Ceramic and Glass Insulator

## Technical Characteristics

### Mechanical Performance

- Random Vibration: 10Hz-2000Hz,  $0.3G^2/Hz$ , acceleration 20G, 200°C.4h on direction X, Y, Z.
- Shock:  $490m^2/s$ , 11ms
- Endurance: 500 cycles

### Electrical Performance

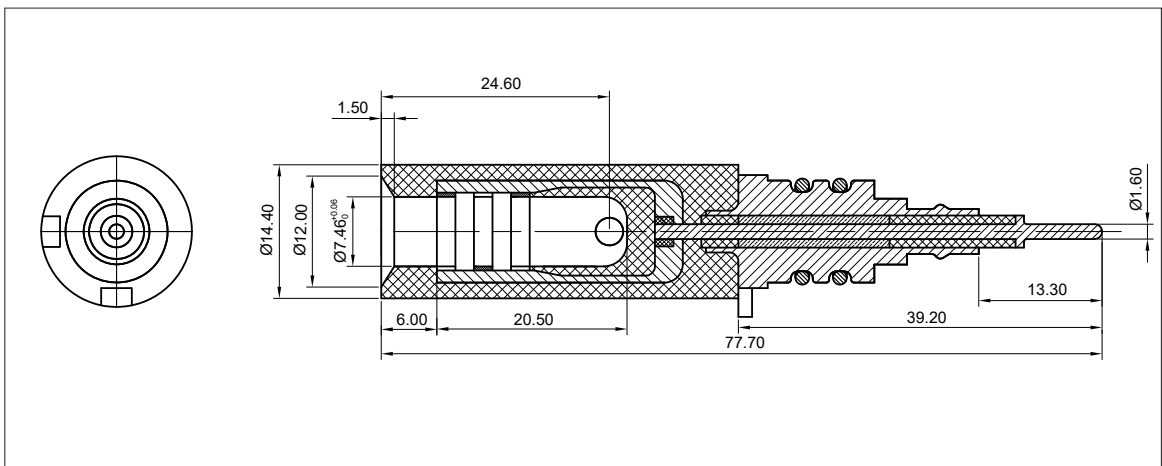
- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current  $\leq 5mA$
- Normal Temperature Insulate Resistance:  $\geq 5000M\Omega$  (500VDC, normal-tem.)
- High Temperature Insulate Resistance:  $\geq 500M\Omega$  (500VDC, 200°C)
- Rated Current: 1A continuous current

### Environmental Performance

- Temperature Range: -55°C to +200°C
- Operating Pressure: 0 MPa to 140 MPa
- High Temperature Life: 200°C, 600h
- Temperature Shock: -55°C to +200°C , 15 cycles, the temperature switching time is  $\leq 15min$
- Salt Spray: 48h
- Air Leak: helium leak test  $\leq 1 \times 10^{-3} Pa \cdot cm^3/s$
- High Temperature High Pressure: 140MPa, 200°C , 10h

## Outline Demensions

Dimensions:



## Product Introduction

- Part No. D011-22P-596
- Glass Sintering FeedThru 22P Connector
- High Temperature Alloy Shell
- Alloy Contact, Ceramic and Glass Insulator

## Technical Characteristics

### Mechanical Performance

- Random Vibration: 10Hz-2000Hz, 0.3G<sup>2</sup>/Hz, acceleration 20G, 175°C.4h on direction X, Y, Z.
- Shock: 490m<sup>2</sup>/s, 11ms
- Endurance: 500 cycles

### Electrical Performance

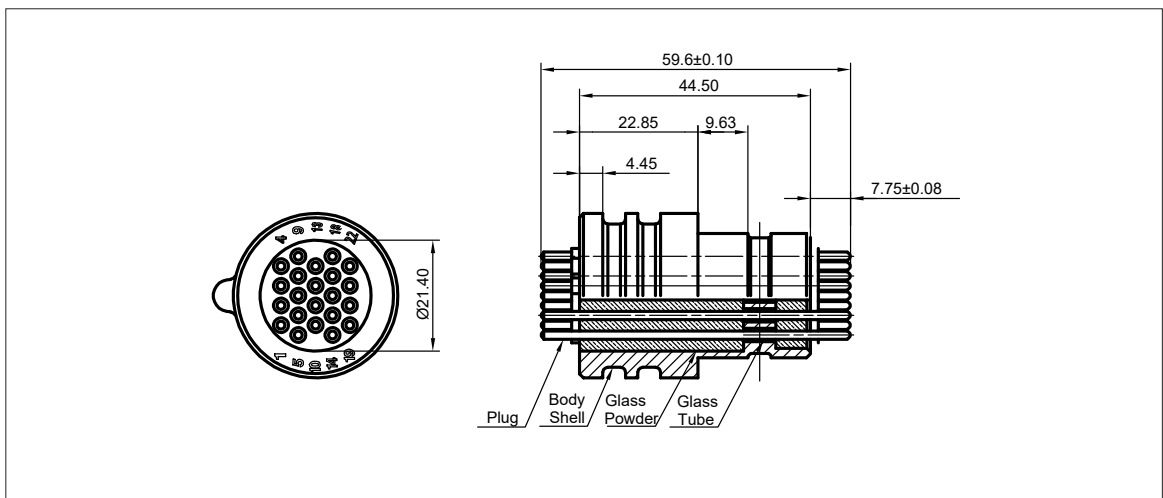
- Dielectric Withstanding Voltage: 1000VDC, 60s, leak current ≤5mA
- Normal Temperature Insulate Resistance: ≥5000MΩ (500VDC, normal-tem.)
- High Temperature Insulate Resistance: ≥500MΩ (500VDC, 175°C)
- Rated Current: 1A continuous current

### Environmental Performance

- Temperature Range: -55°C to +175°C
- Operating Pressure: 0 MPa to 140 MPa
- High Temperature Life: 175°C, 600h
- Temperature Shock: -55°C to +175°C , 15 cycles, the temperature switching time is ≤ 15min
- Salt Spray: 48h
- Air Leak: helium leak test ≤ 1×10<sup>-3</sup>Pa.cm<sup>3</sup>/s
- High Temperature High Pressure: 140MPa, 175°C , 10h

## Outline Demensions

Dimensions:





## Materials Expertise Second to None

- In-house materials research and development capabilities for elastomers, plastics, and metal
- Extensive experience with a wide range of materials and products to provide optimal solutions
- Fully equipped labs enable complete pre-production material and process validation

## Rigorous Analysis and Testing

- Finite Element Analysis (FEA) to support qualified HPHT solutions
- In-house testing capabilities for extreme pressures and temperatures and chemical compatibility and rapid gas decompression testing to meet industry standards

## Custom-Engineered Solutions

- Experienced design and applications engineering staff works directly with customers from concept to delivery
- Comprehensive seal system designs that deliver high-performance and ease of installation
- Sealing system designs combine various seal geometries with specially developed HPHT materials
- Robust sealing systems for pressures exceeding 30,000 psi and temperatures in excess of 300°C
- Only seal solution provider able to offer elastomeric, thermoplastic, metal to metal and high integrity connector
- CMM dimensional verification with Real time data collection plus remote monitoring & Logs of temperature and pressure profiles during the testing