

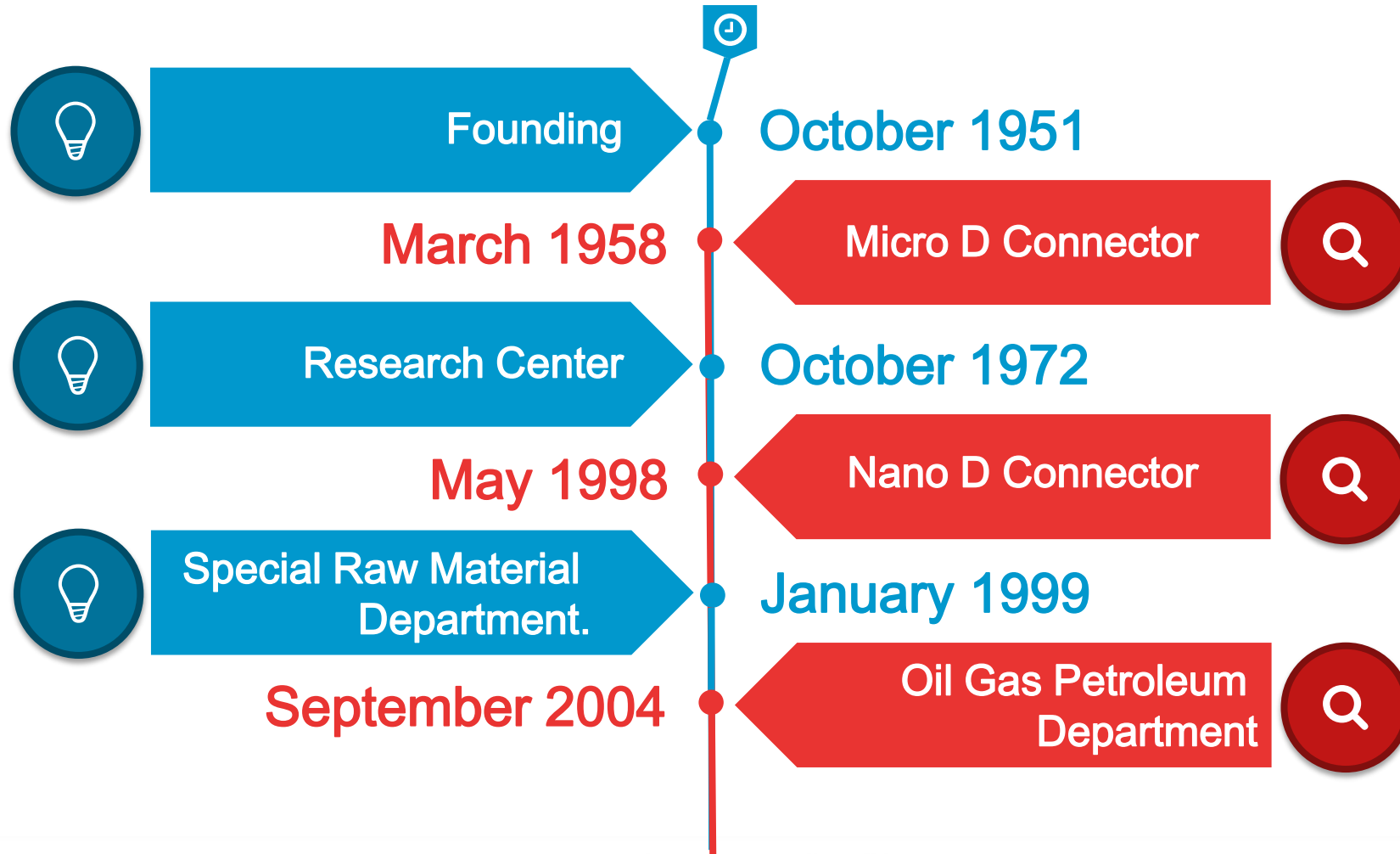


# Sunkye History

Timeline



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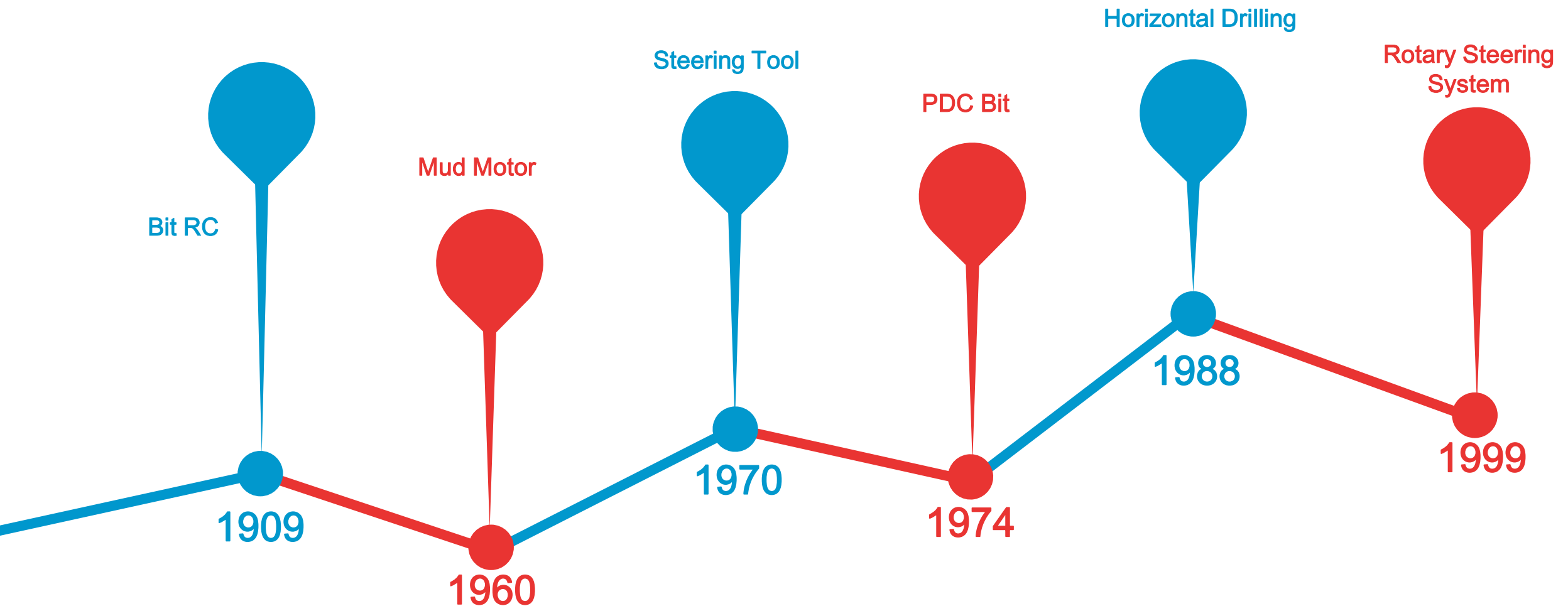




# Different Generations of Drilling Equipment



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# Oil Gas & Petroleum Series Products

High Performance Qualified



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## PEEK Connector

High Temperature & Pressured qualified products apply for the different systems



## HTHP Connector

Apply for harshness environment with various alloy



## Firing Head Connector

Apply for Perforating Gun Equipment in Drilling system for Downhole and Offshore

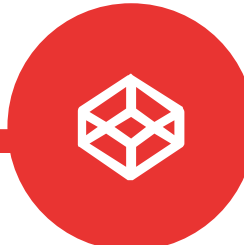
## Electrical Connector

System performance for the Oil and Gas & Petroleum system



## Glass Sintered Sealing Connector

Perfect Air leak Rate in the downhole and offshore solutions



## Mechanical FEED THRU Terminal

Apply for different interconnectivity solutions



# PEEK Connector

Performance & Features



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## PEEK Material Performance

Melts at a relatively high temperature (343 °C / 649.4 °F), benefits of physical performance with Pressure in 30,000PSI /207Mpa. Air leak: helium leak test  $\leq 1 \times 10^{-3} \text{ Pa.cm}^3 / \text{s}$

01

Self-Lubricating

02

Corrosion Resistance

## What's PEEK

PEEK is a thermoplastic semi crystalline with excellent mechanical and chemical resistance properties that are retained to high temperatures. PEEK has a glass transition temperature of around 143 °C (289 °F) and melts around 343 °C (662 °F). That's why PEEK seals and manifolds are commonly used in fluid applications.

Mechanical Electrical

Hydrolysis resistance

04

## PEEK SOLUTIONS

Currently mainly used in aerospace, automotive industry, electronics & electrical and medical machinery

03

## PEEK Full Identification

Polyether ether ketone (PEEK) is a colorless organic thermoplastic polymer in the polyaryletherketone (PAEK) family, used in engineering applications.

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# Materials Compare Table



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Material	Tensile Strength (Mpa)	Compressive strength (Mpa)	Elastic modulus (Gpa)	Fracture toughness (Mpa.m)
Cortical bone	50-151	100-230	7-30	2-12
Alumina	270-500	3000-5000	380-410	5-6
Bioglass	42	500	35	2
Hydroxyapatites	40-300	500-1000	80-120	0.6-1
<b>PEEK</b>	<b>98-105</b>	<b>125-130</b>	<b>4-4.1</b>	<b>2-8</b>
GF30-PEEK	90-157	215	6.2-8.1	0.87
CF30-PEEK	130-214	239	10-24	1.2
Stainless Steel	465-950	1000	200	55-95
Titanium	345	250-600	102.7	58-66
Ti-alloys	596-1100	450-1850	55-114	40-92

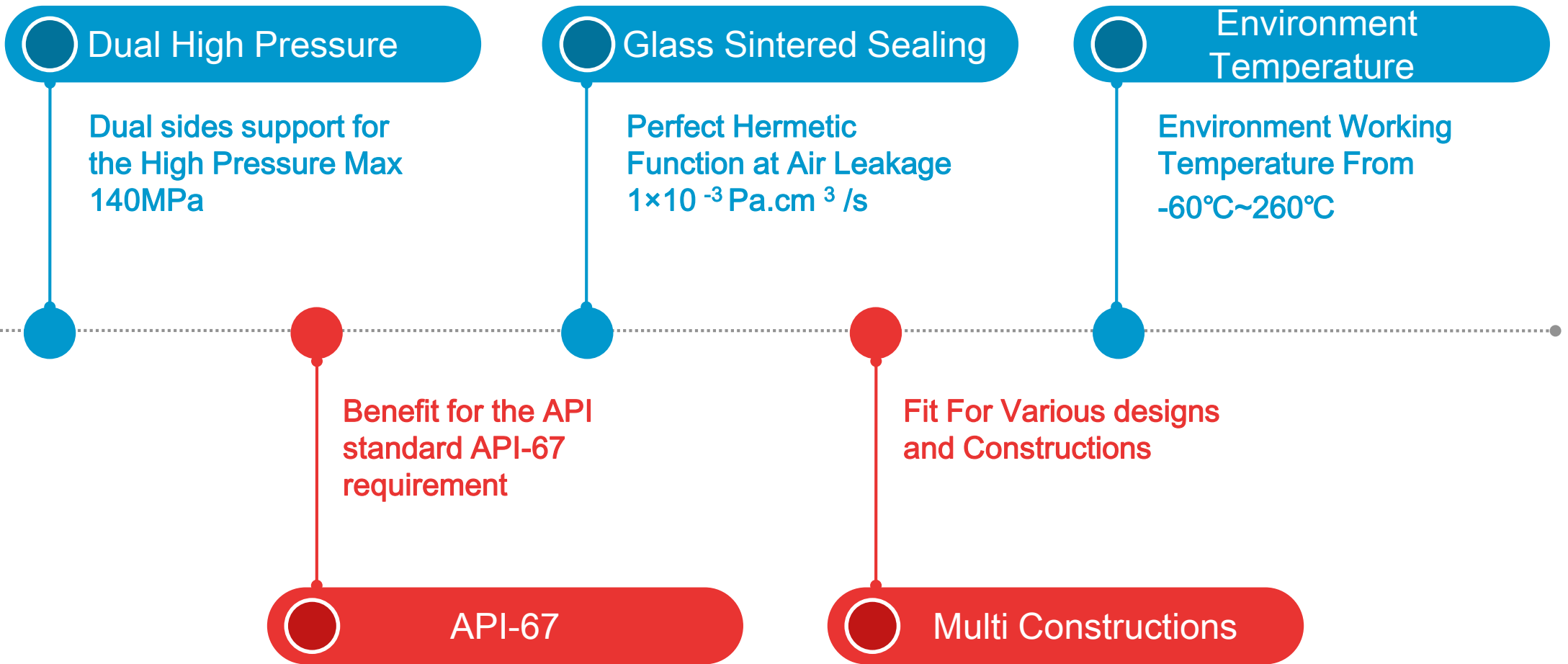


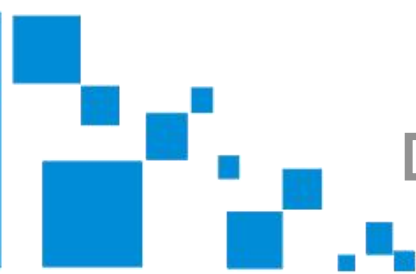
# Firing Head Connector

Performance & Features



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# BENEFITS FOR DRILLING SOLUTION

Perforating Gun Application



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Efficient perforating operations



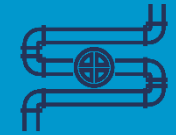
Precise depth control



No need to pump fluid to detonate



Lower perforating costs



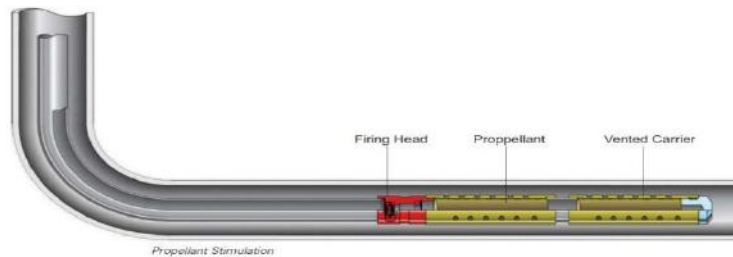
Improved hydrocarbon-to-market time



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## PRESSURE FIRING HEAD CONNECTOR SPECIFICATIONS

Firing Head Connector Part Number	SK19.SYD.001	SK19.SYD.002
O.D. [mm]	28±0.01	28±0.05
Pin connector Length mm	65+0.1	41±0.05
Max. 100 Hour Temperature Rating[oC]†	200	200
Min. Required Pinning Pressure (psi)[MPa]	1,800psi/12MPa	1,800psi/12MPa
Max. Operating Pressure (psi)[MPa]‡	20,000psi/138MPa	20,000psi/138MPa
Air Leakage Rate	1x10 <sup>-3</sup> Pa.CM <sup>3</sup> /s	1x10 <sup>-3</sup> Pa.CM <sup>3</sup> /s
Shell Material	X-750	X-750
Contact Material	Alloy 52 Gold Plating	Alloy 52 Gold Plating
Rated Current per Pin	5A	5A
Dielectric Strength	≥5000MΩ	≥5000MΩ
Contact Resistance	≤10mΩ	≤10mΩ
Life Time	1000times	1000times







# HTHP Connector

Performance & Features



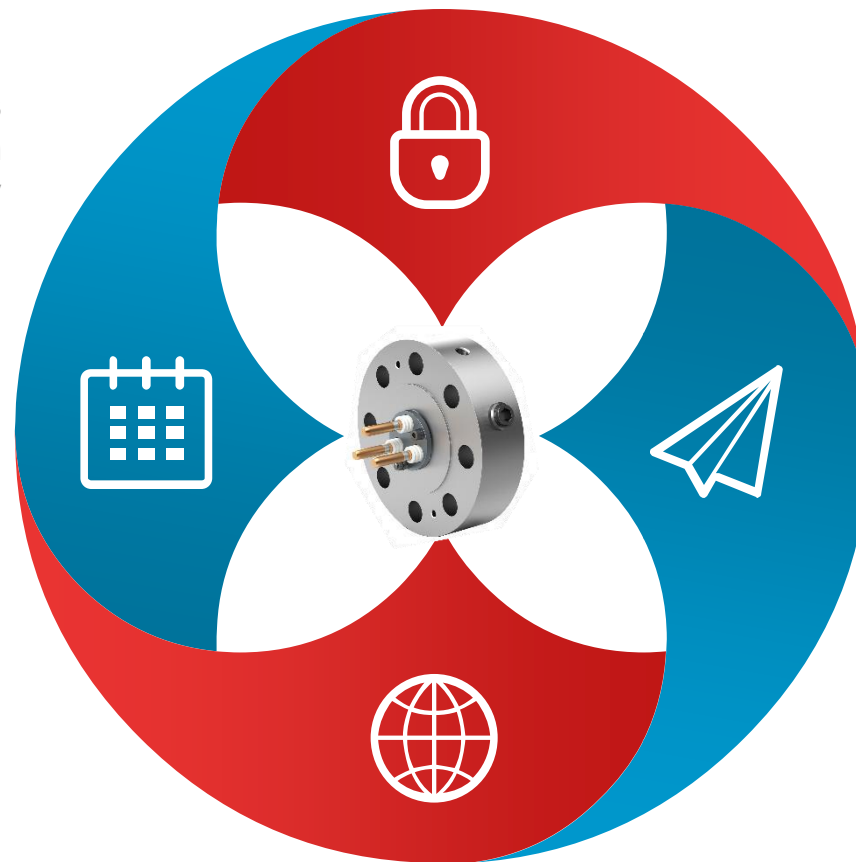
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### Design Engineering

Experienced design and applications engineering staff works directly with customers from concept to delivery

### Environment Requirement

for extreme pressures and temperatures and chemical compatibility and rapid gas decompression testing to meet industry standards



### Sealing Performance

Comprehensive seal system designs that deliver high-performance and ease of installation

### Developing Ability

Sealing system designs combine various seal geometries with specially developed HPHT materials



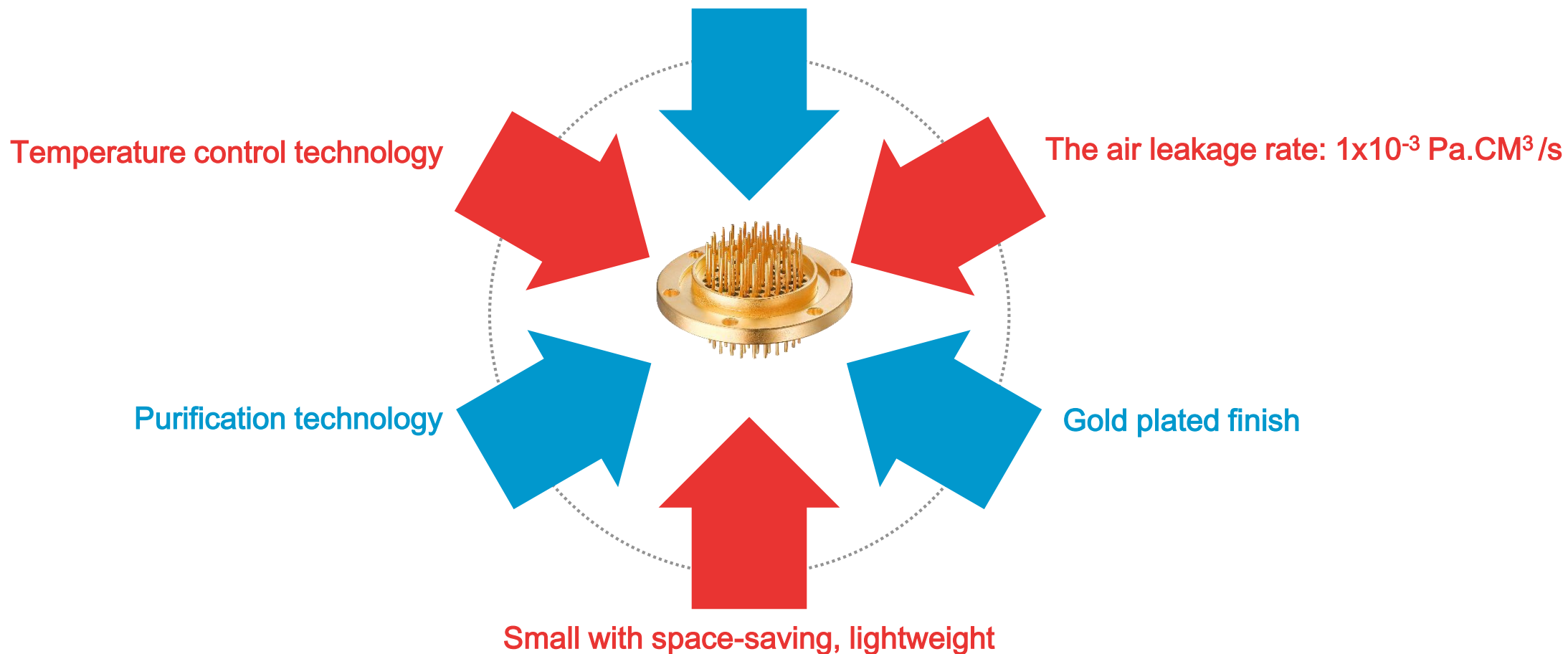
# Glass Sintered Sealing Connector

Performance & Features



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Aluminum alloy glass-sintered sealing technology



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# Electrical Connector

Performance & Features



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## Locked Connectors

Experienced design and applications engineering staff works directly with customers from concept to delivery



## ESD Shielded Connectors

Electrostatic discharge can damage wiring and components. ESD shielded connectors provide additional protection against this.

## Hermetically Sealed Connectors

These connectors are purpose-built to be fully functioning underwater and withstand pressure up to certain depths.



## EMI / RFI Filtering

Additional features built into the housing to protect the connectors from electromagnetic interference (EMI) or radio frequency interference (RFI), which can affect circuits carrying electrical signals.

## Water Resistant Connectors

These connectors are purpose-built to be fully functioning underwater and withstand pressure up to certain depths.



## Moisture/Oil Resistant Connectors

These connectors are purpose-built to be fully functioning underwater and withstand pressure up to certain depths.

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# Mechanical FEED THRU Terminal

Performance & Features



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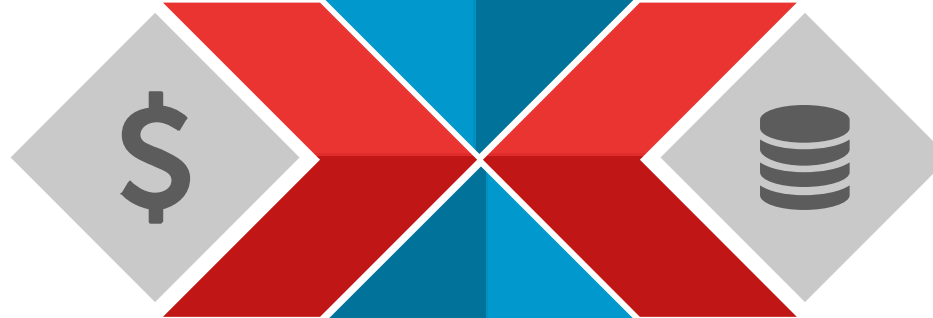
Wide product range for multiple applications

01



02

Internal clamping, wire-wrap and solder contacts



Direct ground contact to the housing

04



03

Various mounting options to meet requirements



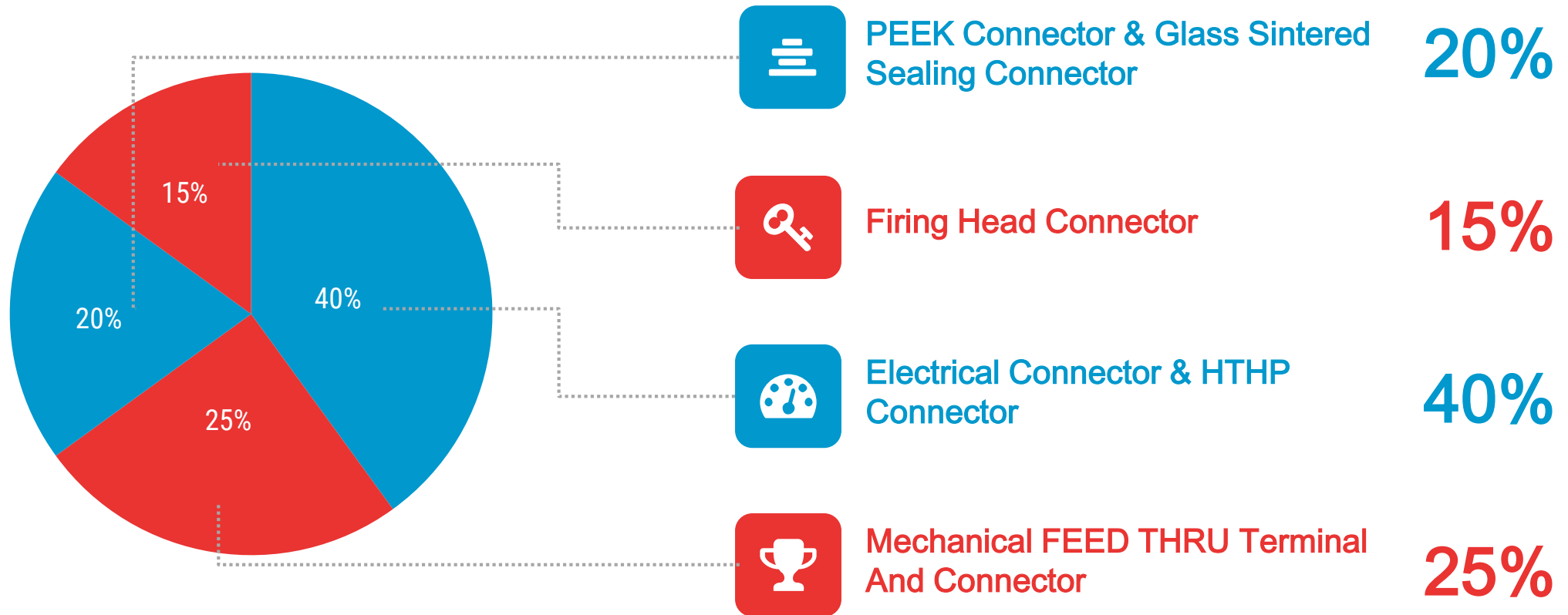


# Business Occupancy

2018-2019 Year



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**THANKS**



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