



# Offshore Drilling Riser Systems & Sealing Solutions

EPS5234



ENGINEERING YOUR SUCCESS.

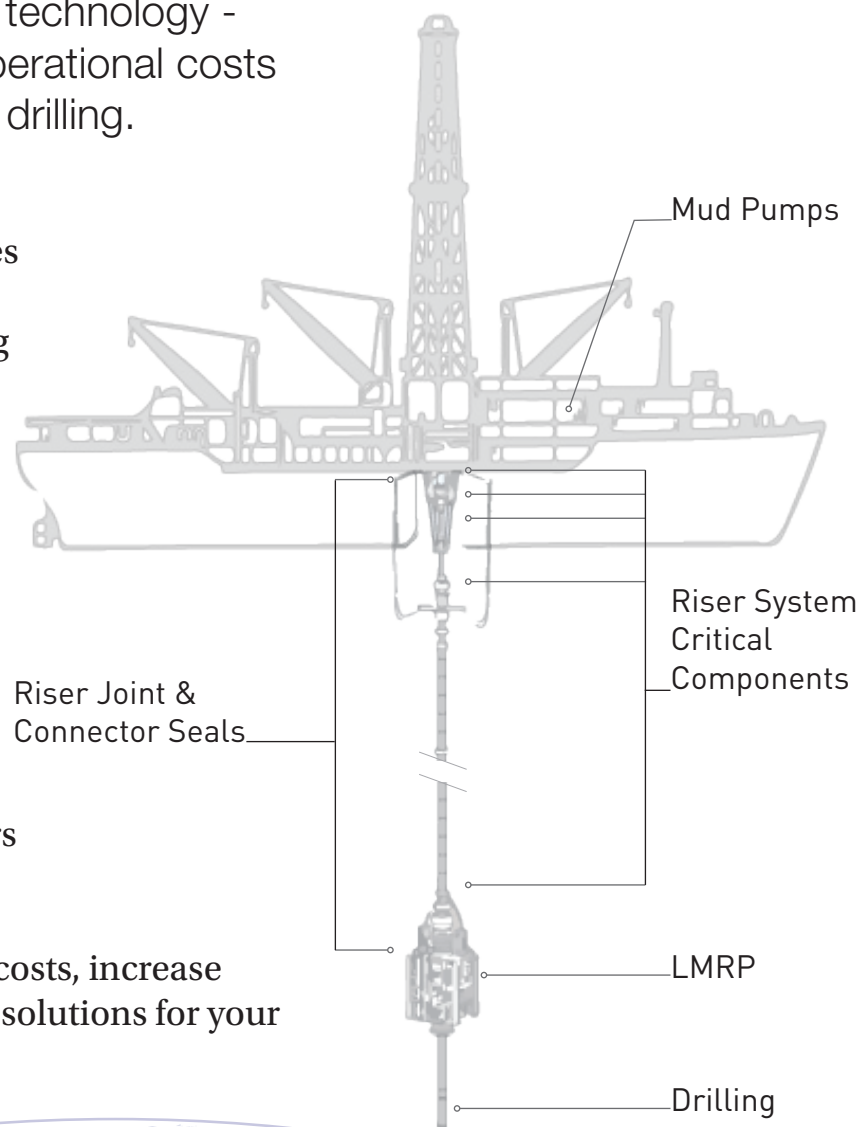
# THIS IS PARKER

Parker leads the industry in sealing technology - delivering reliability and reducing operational costs for deep water offshore oil and gas drilling.

Our wide range of innovative technologies and engineering expertise enable us to deliver reliable, high performance sealing systems, assemblies, and components. Parker solutions withstand the extreme temperatures, pressures and unique configurations confronting design engineers for a range of offshore drilling applications including:

- Riser System Components
- Riser Joint & Connector Seals
- Mud Pumps
- Mud Motor Drilling
- LMRP's, including blow-out preventers

Contact Parker. Together we can reduce costs, increase efficiencies and engineer reliable, robust solutions for your critical applications.

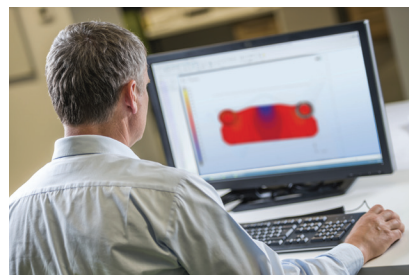


*Whether you are exploring new depths off the coast of Brazil or drilling offshore in the China Sea, Parker's worldwide network of manufacturing, sales and service centers keep you operating 24/7. We have the technology and infrastructure to simplify procurement and support your global business.*



# Enabling New Technology

Whether it's an ultra-deep well or a new riser design, Parker engineers and material scientists are ready to solve the next generation of critical sealing challenges. Our longevity in the Oil and Gas industry has given us in-depth knowledge of offshore drilling applications, operating envelopes and risk factors. From conceptual designs to rapid prototyping to quality production, we will help you meet your business challenges.



## More Sealing Material Choices

Parker's wide range of materials provides more performance options for our customers. Our elastomer and thermoplastic materials perform in critical applications at temperatures to 600° F and pressures above 20,000 psi. We have compounds compatible with traditional and exotic drilling fluids.

Parker compound formulations shown below have been tested to the following Oil & Gas industry standards:

- NORSOK M-710
- ISO 23936-2
- API 6A, Annex F, Immersion Testing
- API 16C, Annex B

Parker continues to expand its portfolio of materials specifically suited for Oil & Gas service. Certification and testing is ongoing.

KEY: ✓ = Tested \* = Testing in Progress

MATERIAL TYPE	PARKER MATERIAL CODE	TEMPERATURE RANGE (°F)		ISO 23936-2		NORSOK M-710		API 6A	API 16C
		Min	Max	RGD	H <sub>2</sub> S	RGD	H <sub>2</sub> S		
FFKM	FF102-75	5	525				✓		
	FF200-75	5	608				✓		
	FF580-75	5	525	*	*			✓	
	FF202-90	5	608				✓		
	V8588-90	5	572	*	*		✓	✓	
FKM	V1289-75	-50	400				✓		
	VP104-85	10	400	✓	*		✓		
	VG109-90	-49	400	✓	*	✓	✓	✓	✓
	V1238-95	-15	400	*	*	✓		✓	
	V4266A95	-5	400						✓
HNBR	KA183-85 / N4031A85	-50	300	✓	*		✓		
	KB163-90 / N4033A90	-30	300	✓	*	✓	✓	✓	
	N4007A95	-25	300	✓	*	✓	✓	✓	✓
TFE/P AFLAS®	V1041A85	15	450	✓	*	✓	✓		
	VP103-90	15	450	✓	*		✓		
TPU	P4615A90	-65	200		✓				
	P4300A90	-65	275		✓				
	P4301A90	-35	275 <sup>†</sup>		✓				✓
	P4304D60	-65	275		✓				
	P4350A90	-65	300		*				*
TPCE	Z4651D60	-65	275		✓				✓

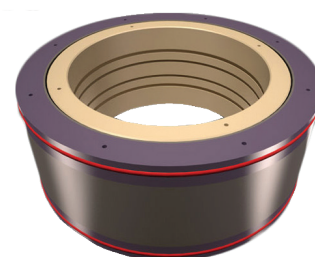
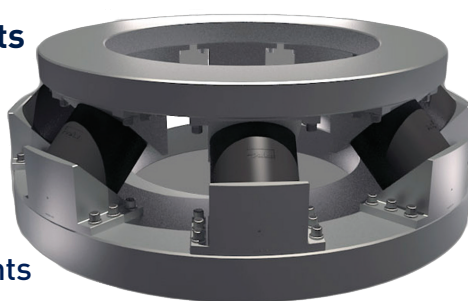
<sup>†</sup> +225°F in not water

AFLAS® is a registered trademark of Asahi Glass Co.

## Riser System Critical Components

Gimbal Bearings & Brackets  
Riser Clamps  
Flow-Line Seals  
Telescoping Joint (TJ) Packers  
Rig Side and Subsea Flexible Elements

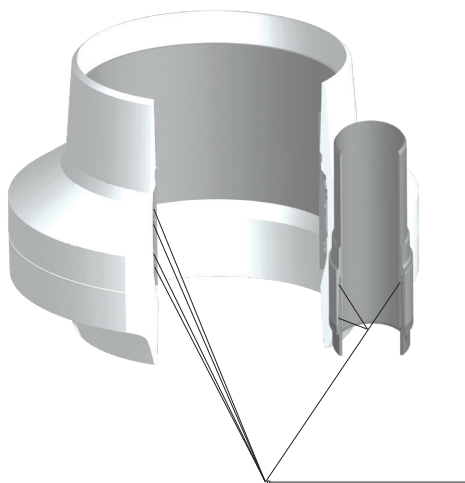
Parker has years of experience providing critical riser components to the offshore drilling industry. Our sophisticated non-linear FEA models and vast knowledge of material properties combine to provide custom solutions in energy management and sealing in extreme conditions.



## Riser Joint and Connector Seals

Hydraulic Seals for Tensioners  
Riser Seals  
Choke and Kill Seals  
Auxiliary Line Seals  
Connector Seals

Our riser seals have been sealing riser joints for over 30 years. Parker has developed performance materials to seal large extrusion gaps and prevent seal extrusion in high pressure / high temperature applications. We can provide seals for custom groove geometries.



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## Mud Pumps

**Resilon® Polyurethane Mud Pistons**  
**Resilon® Polyurethane Pony Rod Seals**  
**Well Service Packings**  
**Resilon® Polyurethane Valve Seats**  
**Resilon® HGP Profile Cover Seals**

Drilling mud is one of the most destructive fluids to be sealed. Parker's patented Resilon® Polyurethane, with its superior wear resistance and the highest operating temperature profile on the market can extend uptime on mud pump components and reduce operating costs.



## Mud Motor Drilling

**Resilon® Polyurethane Mud Motor Boots**  
**RM Profile Rotary Motor Seals**

Extending the operating life of drilling motors is critical to reducing operating costs. Parker's rotary seals and boots protect drilling equipment from the effects of harsh drilling muds and help keep the drilling motor downhole longer.



## LMRP

**BOP Elements**  
**Ram and Shear Rubbers**  
**Control Valve Stem Packings**  
**Control Valve Seats**

Parker understands the critical sealing requirements and components in an LMRP. Our engineers are available to help design sealing solutions for proprietary LMRP configurations.





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