



## EVOLUTION® vs. VCFS®

*This document is intended to take you through the differences between EVOLUTION® and VCFS®, to highlight why you may see Evolution® quoted in addition to a standard VCFS®, giving you the option of the most innovative isolation gasket on the market.*

GASKET IMAGE	EVOLUTION®	VCFS®
		
PHYSICAL GASKET CHARACTERISTICS		
	EVOLUTION®	VCFS®
<b>GASKET THICKNESS</b>	0.125" / 3.2mm	0.260" / 6.6mm
<b>GASKET ID MATCHING PIPE BORE?</b>	Yes	Yes
<b>RETAINER MATERIAL</b>	316L Stainless Steel core fully encapsulated by an innovative, proprietary high dielectric strength coating specially designed for the oil and gas industry.	316L Stainless Steel core, laminated on each side by Glass Reinforced Epoxy (GRE).
<b>SEALING MATERIAL</b>	Dual Seal Design: <ul style="list-style-type: none"> <li>• <i>Primary</i> - Pressure Activated restructured PTFE seal</li> <li>• <i>Secondary (Fire Safe Seal)</i> - Inconel 718 coated C-Ring</li> </ul>	Dual Seal Design <ul style="list-style-type: none"> <li>• <i>Primary</i> - PTFE Spring Energized Seal</li> <li>• <i>Secondary (Fire Safe Seal)</i> – Inconel coated E-Ring &amp; Carbon steel coated Backup ring</li> </ul>
<b>ID SEAL</b>	Yes	No
<b>IDENTIFICATION</b>	Easily identified on a tag and on the gasket retainer.	Laser marked on the gasket retainer
APPLICATIONS		
	EVOLUTION®	VCFS®
<b>FIRE SAFE</b>	Yes	Yes
<b>RTJ FLANGES</b>	Yes	Yes (only for 2" and above)

<b>MISMATCHED RTJ TO RF FLANGES</b>	Yes	Yes
<b>SUITABLE WITH H<sub>2</sub>S</b>	Yes	Depends on Application
<b>SUITABLE WITH STEAM</b>	Yes	No
<b>EXOTIC CORE NECESSARY</b>	No	Yes
<b>AGGRESSIVE MEDIA</b>	Yes	Depends on Application
<b>SPECIFICATIONS</b>		
	<b>EVOLUTION®</b>	<b>VCFS®</b>
<b>MAXIMUM OPERATING TEMPERATURE</b>	500 °F/260 °C	392 °F/200 °C
<b>MINIMUM OPERATING TEMPERATURE</b>	-300 °F/-184 °C	-200 °F/-128 °C
<b>MAXIMUM PRESSURE RATING</b>	2500#/API 15K	2500#/API 5K
<b>SIZES OFFERED</b>	½"-36" (DN15-DN900)	1"-36" (DN25-DN900)
<b>PHYSICAL PROPERTIES</b>		
	<b>EVOLUTION®</b>	<b>VCFS®</b>
<b>WATER ABSORPTION</b>	0.03%	0.10%
<b>COMPRESSIVE STRENGTH</b>	63,000 psi	66,000 psi
<b>DIELECTRIC STRENGTH</b>	1,400 vols/mil	800 volts/mil
<b>FLEXURAL STRENGTH</b>	80,000 psi	LW 65,000 psi / CW 52,000 psi
<b>TENSILE STRENGTH</b>	43,000 psi	LW 40,000 psi / CW 32,000 psi
<b>PERFORMANCE</b>		
	<b>EVOLUTION®</b>	<b>VCFS®</b>
<b>PERMEATION</b>	No	Yes
<b>EMISSIONS (SHELL MESC 85/300, AMBIENT TEMPERATURE)</b>	6.48 x 10 <sup>-12</sup> Pa*m <sup>3</sup> /sec	2.31 x 10 <sup>-6</sup> Pa*m <sup>3</sup> /sec
<b>LEAK RATE EQUIVALENTS</b>	1 cc Helium leaked every 3000 years	1 cc Helium leaked every 24 hours
<b>EFFECTIVE ISOLATING DISTANCE</b>	Longer (due to ID Seal)	Shorter (due to exposed metal core)
<b>HYDROTESTING</b>	Yes	No (issues have been seen due to permeation)
<b>CREEP/RELAXATION</b>	No	No