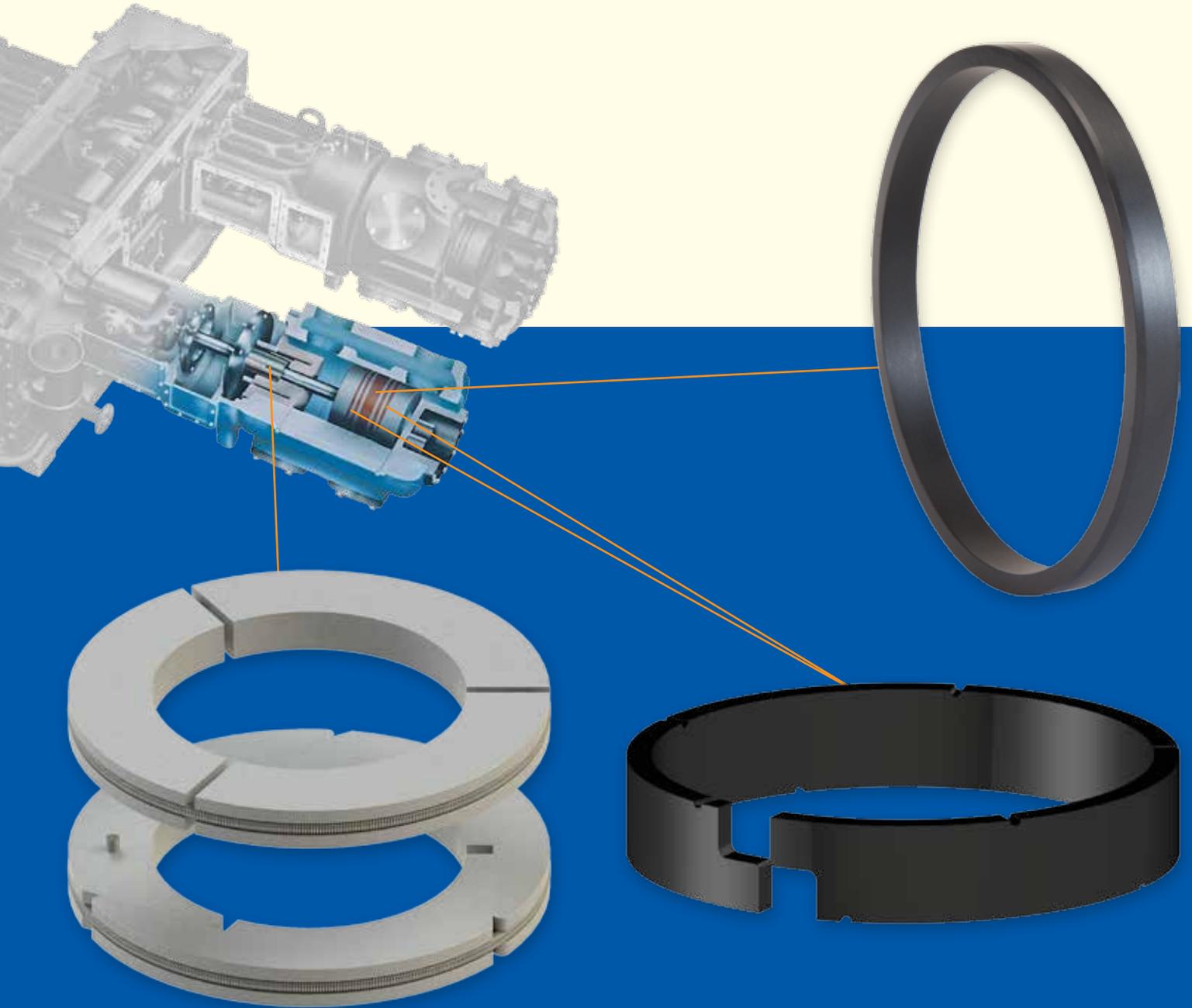


# Reciprocating Gas Compressors Material and Application Guide



Materials. Engineering. Precision.

A member of the global group Fenner.



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At EGC we control our materials from the start, which decreases the customer lead time and allows for an efficient manufacturing process. Our capabilities include in-house material blending and testing which enable EGC to develop proprietary blends that fit your individual application needs and enhance the performance of both Field and Process gas compressors. These in-house capabilities enable us to maintain stringent traceability controls throughout every stage of manufacturing from compounding materials to finished products, and these records are preserved throughout the product life cycle.

Our expansive portfolio of high-performance polymeric materials combined with on-site engineering and design expertise offers our customers an invaluable resource for transforming advanced engineering materials into high-performance solutions. Our materials portfolio includes an extensive selection of compounds created with the following base resins:

- PTFE (Polytetrafluoroethylene)
- PPS (Polyphenylene Sulfide)
- PEEK (Polyetheretherketone)
- PI (Polyimide)

This variety of base resins allows for outstanding performance in environments ranging from natural gas and air to bone-dry process gasses. This wide range of application performance is detailed in the Materials Selection Guide.

Our materials engineers develop new, proprietary material formulations by combining years of application knowledge with modern techniques. Material development is enhanced by our ability to perform thorough in-house mechanical and tribological testing. Material characterization techniques include:

- Design of Experiments (DOE)
- Differential Scanning Calorimetry (DSC)
- Thermogravimetric Analysis (TGA)
- Fourier Transform Infrared Spectroscopy (FT-IR)
- Thermomechanical Analysis (TMA)

## Materials Solution

### Customer

Chemical processing company using a 500 RPM, two-stage, non-lubricated, Process Gas Compressor

### Service

Hydrogen, Nitrogen, Ethylene, and Isobutane

### 1st stage

23-1/2" & 25-1/2" Cylinder bores. Suction pressure 2 psig, discharge pressure 40-50 psig

### 2nd stage

11" & 13-1/2" Cylinder bores. Suction pressure 100 psig, discharge pressure 250 psig

### Challenge

The customer experienced unacceptable Mean-Time-Between-Repair (MTBR), only 4 months, due to excessive wear of the components. The determining factor was deemed to be the use of standard carbon-filled PTFE in the piston rings, rider rings and pressure packing.

### Solution

EGC provided piston rings, rider rings and radial-tangent pressure packing produced from our A50 compound which is a superior performing, low wear grade PTFE material.

### Results

The average life of rings and packing increased to 12 months, three times the life of the parts produced from the competitor's material.



# EGC Compounds for Compressor Applications

## PTFE Compounds

**A90** is a compression molded carbon-graphite filled PTFE compound. This material is resistant to most chemicals and recommended for both lubricated and non-lubricated applications for piston rings, rider rings, and rod packing. A90 exhibits good mechanical and wear properties.

**A71** is a compression molded, glass-fiber reinforced, PTFE compound. Glass fibers are added to decrease creep and wear rate. A71 is somewhat abrasive and should not be used against soft mating surfaces. A71 is recommended for air and oxygen service.

**A172** is a compression molded, glass fiber and molybdenum disulfide filled, PTFE compound. A172 offers better lubricity than A71 material. A172 is a preferred material for natural gas applications. A172 is recommended for both lubricated and non-lubricated applications for piston rings, rider rings, and rod packing.

**A175** is a compression molded, glass fiber, lubricated PTFE compound. A175 offers better lubricity than A172, A71, and A90 materials. A175 is recommended for both lubricated and non-lubricated applications for piston rings, cut rider rings, and rod packing.

**A50** is a compression molded, proprietary PTFE compound. A50 is a proven material for process gas and bone-dry gas applications especially in hydrogen and oxygen services. A50 has excellent wear properties and is non-abrasive against soft mating surfaces. A50 is recommended for both lubricated and non-lubricated applications for piston rings, rider rings, and rod packing.

**A636** is a compression molded, proprietary PTFE compound. A636 is a proven material for dry gas and bone-dry gas applications such as carbon dioxide, ammonia, and hydrocarbon mixture services. A636 is recommended for both lubricated and non-lubricated applications for piston rings, cut rider rings, and rod packing. A636 is not suitable for solid rider rings due to limited elongation values. A636 is not recommended for dry air and oil lubricated services.

**A108** is a compression molded, proprietary PTFE compound. A108 is a proven material for dry gas and bone-dry gas applications such as oil-free nitrogen and other inert gases such as helium services. A108 provides exceptional wear properties compared to traditional PTFE compounds. A108 is recommended for both lubricated and non-lubricated applications for piston rings, cut rider rings, and rod packing. A108 is not suitable for solid rider rings due to limited elongation values. A108 is not recommended for any gases which contain oxygen.

ASTM Test Method	D-1708	D-1708	D-791
Compound	Tensile Strength, psi	Elongation, %	Specific Gravity
<b>A90</b>	1,800	90	2.05
<b>A71</b>	2,400	250	2.22
<b>A172</b>	2,375	240	2.27
<b>A175</b>	1,900	110	2.21
<b>A50</b>	1,600	175	1.82
<b>A636</b>	1,800	4.0	1.80
<b>A108</b>	1,750	4.7	1.83
<b>A633</b>	1,500	20	1.85
<b>A91</b>	2,000	90	3.78
<b>A91M</b>	1,900	85	3.75
<b>LX318</b>	2,200	40.0	2.18
<b>LX319</b>	2,400	4.0	1.83
<b>LX320</b>	2,000	6.0	1.84

**A633** is a compression molded, PPS and carbon filled, PTFE compound. A633 exhibits lower deformation than other PTFE compounds at elevated temperatures. A633 is recommended for both lubricated and non-lubricated applications for piston rings, cut rider rings, and rod packing. A633 is not suitable for solid rider rings due to limited elongation values.

**A91** is a compression molded, bronze-filled, PTFE compound. A91 material has better thermal conductivity than carbon and glass filled PTFE compounds. A91 is recommended for high temperature and high pressure wet air compression applications. A91 is recommended for piston rings, rider rings, and rod packing.

**A91M** is a compression molded, bronze and molybdenum disulfide filled, PTFE compound. A91M material has better thermal conductivity than carbon and glass filled PTFE compounds. A91M is recommended for non-lubricated dry air compression applications. A91M is recommended for piston rings, rider rings, and rod packings.

**LX318** is a compression molded, proprietary, filled PTFE compound. LX318 was specifically developed for bone-dry gas applications such as hydrogen, methane, ethylene, and other gases. LX318 can also be used in lubricated gas compressor applications. LX318 exhibits excellent wear and deformation properties compared to traditional filled PTFE compounds. LX318 is recommended for piston rings, rider rings, and rod packing in both lubricated and non-lube applications.

**LX319** is a compression molded, proprietary, filled PTFE compound. LX319 was specifically developed for bone-dry gas applications for rod packing. LX319 can also be used in lubricated gas compressor applications. LX319 exhibits excellent wear and deformation properties compared to traditional filled PTFE compounds. LX319 is recommended for piston rings, cut rider rings and rod packings in both lubricated and non-lubricated applications.

**LX320** is a compression molded, proprietary, filled PTFE compound. LX320 was specifically developed for bone-dry gas applications for rod packing. LX320 can also be used in lubricated gas compressor applications. LX320 exhibits excellent wear and deformation properties compared to traditional filled PTFE compounds. LX320 is recommended for piston rings, cut rider rings, and rod packings in both lubricated and non-lube applications.

### Typical Properties

D-2240	D-3702	E-228
Hardness, Shore-D	Coefficient of Friction	Coefficient of Thermal Expansion, 78 °F to 300 °F
63	0.09	$4.9 \times 10^5$ in/in/°F
57	0.12	$4.19 \times 10^5$ in/in/°F
58	0.09	$3.55 \times 10^5$ in/in/°F
64	0.08	$4.50 \times 10^5$ in/in/°F
57	0.08	$5.50 \times 10^5$ in/in/°F
65	0.12	$4.50 \times 10^5$ in/in/°F
68	0.12	$4.00 \times 10^5$ in/in/°F
65	0.10	$5.00 \times 10^5$ in/in/°F
65	0.13	$4.35 \times 10^5$ in/in/°F
65	0.13	$4.5 \times 10^5$ in/in/°F
66	0.20	$4.5 \times 10^5$ in/in/°F
72	0.25	$4.0 \times 10^5$ in/in/°F
70	0.25	$4.0 \times 10^5$ in/in/°F

# EGC Compounds for Compressor Applications

## PEEK Compounds

**A450** is a hot compression molded, virgin PEEK compound. A450 is recommended for lubricated compressors for high-pressure, high-temperature applications. A450 has excellent chemical resistance to the most chemicals except chlorine. A450 is recommended for piston rings, cut rider rings, and rod packing in lubricated applications.

**A455** is a hot compression molded, proprietary, filled PEEK compound. The high strength and toughness of A455, coupled with its excellent wear properties in dry gases, allow it to be used for very high-pressure gas applications such as natural gas injection. A455 was successfully used in steam, propylene, hydrogen, gas injection, and methane applications. A455 has excellent chemical resistance to the most chemicals except chlorine. A455 is recommended for piston rings, cut rider rings, and rod packing in both lubricated and some non-lubricated applications.

**A456** is a hot compression molded, proprietary, filled PEEK compound. A456 exhibits excellent wear and deformation properties at elevated temperatures and pressures where filled PTFE compounds will fail. A456 has excellent chemical resistance to the most chemicals except chlorine. A456 is recommended for piston rings, cut rider rings, and rod packing in both lubricated and non-lubricated applications.

**A458** is a hot compression molded, proprietary, filled PEEK compound. A458 exhibits better deformation properties than A450 and A456 at elevated temperatures and pressures. A458 was successfully used in hydrogen service for seal rider applications. A458 was also successfully used in bone-dry gas applications. A458 is recommended for piston rings, cut rider rings, and rod packing in both lubricated and non-lubricated applications.

Compound	Typical Properties					
	Tensile Strength, psi	Elongation, %	Specific Gravity	Hardness, Shore-D	Coefficient of Friction	Coefficient of Thermal Expansion, 78 °F to 300 °F
ASTM Test Method	D-1708	D-1708	D-791	D-2240	D-3702	E-228
A450	13,000	15	1.32	85	0.30	$3.0 \times 10^5$ in/in/°F
A455	8,500	2.7	1.48	87	0.28	$2.5 \times 10^5$ in/in/°F
A456	8,000	3.0	1.46	80	0.25	$3.5 \times 10^5$ in/in/°F
A458	11,500	13	1.43	84	0.28	$3.2 \times 10^5$ in/in/°F



## PI Compounds

**A571** is a hot compression molded, proprietary, filled Polyimide (PI) compound. A571 was developed for extreme service gas compressor applications. A571 can handle higher service temperatures than PEEK compounds. A571 exhibits excellent wear properties at elevated temperatures. A571 is resistant to most chemicals except steam and ammonia. A571 is recommended for piston rings, cut-rider rings, and rod packing in both lubricated and mini-lube applications.

## PPS Compounds

**A655** is a hot compression molded, proprietary, filled PPS compound. A655 exhibits excellent wear and deformation properties at elevated temperatures and pressures where filled PTFE compounds will fail. A655 has excellent chemical resistance to the most chemicals except chlorine. A655 was successfully used in process gas and natural gas compression applications. A655 is recommended for piston rings, cut-rider rings, and rod packing in both lubricated and mini-lube applications.

		Typical Properties					
Compound		Tensile Strength, psi	Elongation, %	Specific Gravity	Hardness, Shore-D	Coefficient of Friction	Coefficient of Thermal Expansion, 78 °F to 300 °F
ASTM Test Method		D-1708	D-1708	D-791	D-2240	D-3702	E-228
PI	<b>A571</b>	11,000	4.0	1.41	80	0.28	$2.5 \times 10^5$ in/in/°F
PPS	<b>A655</b>	6,500	2.0	1.51	84	0.35	$3.5 \times 10^5$ in/in/°F



# Material Selection Guide

Material	Operating Conditions			Type of Sealing Component			Common Applications	
	Lube	Non-Lube	Bone-Dry	Piston Rings	Rider Rings, Solid or Cut	Pressure Packing Rings		
PTFE	A90	•	•	N/A	•	Solid & Cut	•	Air, Carbon Dioxide, Ethylene, Hydrocarbons, Natural Gas
	A71	•	•	N/A	•	Solid & Cut	•	Air, Oxygen
	A172	•	•	N/A	•	Solid & Cut	•	Air, Carbon Dioxide, Natural Gas
	A175	•	•	N/A	•	Solid & Cut	•	Hydrocarbons, Natural Gas, Sour Gas
	A50	•	•	•	•	Solid & Cut	•	Benzene, Ethylene, Hydrogen, Isobutane, Nitrogen, Propane
	A636	•	•	•	•	Cut	•	Ammonia, Carbon Dioxide, Dry and Bone-dry Process Gases
	A108	•	•	•	•	Cut	•	Dry and Bone-dry Process Gases, Helium, Nitrogen
	A633	•	•	N/A	•	Cut	•	Hydrocarbons, Natural Gas
	A91	•	•	N/A	•	Solid & Cut	•	High Temperature Air
	A91M	•	•	N/A	•	Solid & Cut	•	Air, PET Services
	LX318	•	•	•	•	Cut	•	Dry and Bone-dry Process Gases, Hydrogen, Methane, Propylene
	LX319	•	•	•	•	Cut	•	Dry and Bone-dry Process Gases, Hydrogen, Nitrogen, Propane
	LX320	•	•	•	•	Cut	•	Dry and Bone-dry Process Gases, Ethylene, Helium, Hydrogen
PEEK	A450	•	N/A	N/A	•	N/A	•	High-Pressure Process Gases, Hydrocarbons, Natural Gas
	A455	•	•	•	•	Cut	•	High-Pressure Natural Gas Injection, Methane, Propylene, Steam
	A456	•	•	•	•	Cut	•	High-Pressure Process Gases, Hydrogen
	A458	•	•	N/A	•	N/A	•	High-Pressure process Gases, Hydrogen
PI	A571	•	N/A	N/A	•	Cut	•	High-Pressure Gases (Not recommended for steam and ammonia)
PPS	A655	•	•	N/A	•	Cut	•	High-Pressure Process Gases, Hydrogen, Methane, Propane

Visit our website to download material and application data sheets at [www.EGCcomponents.com/about-us/downloads](http://www.EGCcomponents.com/about-us/downloads)

# Design and Manufacturing

EGC's exceptional Engineering staff combines material, application, and development expertise to create unique solutions for the most demanding industry problems. Our technical staff optimizes the design and manufacturing process by using state-of-the-art programs such as:

- 3D solid modeling (CAD/CAM)
- Finite Elemental Analysis (FEA)
- Mold Flow Analysis (MFA)

Starting with material development and continuing through component design and manufacturing, EGC provides every service under one roof. EGC offers a wide array of traditional and modern machining capabilities to manufacture compressor parts, from short runs to full-scale production. We offer some of the most extensive molding and manufacturing capabilities in the industry, including:

- PTFE based compounds up to 100" in diameter
- Thermoplastic based compounds up to 44" in diameter
- Assembly and Finishing
- Injection Molding of finished and semi-finished parts
- Multi-Access CNC machining

Our manufacturing, design, safety, and quality expertise are backed up by our certifications to ISO 9001, ISO 14001, and OHSAS 18001.

Benefits of specifying EGC engineered thermoplastic compressor components over metallic parts:

- Made from materials resistant to corrosion and breakage
- Longer product life and less leakage
- Resistance to dust and dirt
- Reduced maintenance
- Lower mass than metal components means less energy at impact of sealing surfaces
- Thermoplastic components can act as sacrificial components protecting against damage to the compressor reducing the risk of more costly repairs

EGC offers One Stop Shopping for all your thermoplastic compressor needs:

- Materials
- Design
- Prototyping
- Technical Support
- High Volume Manufacturing

## Design Solution

### Customer

Gas Transmission Company using a 900 RPM three stage, lubricated, natural gas transmission compressor with a 7" stroke.

### Service

Natural Gas

### 1st stage

Cylinder bore 20", two rings per piston, 5/8" groove width, suction pressure 10 psig, suction temperature 75 °F, discharge pressure 30 psig, discharge temperature 125 °F

### 2nd stage

Cylinder bore 15", two rings per piston, 5/8" groove width, suction pressure 18 psig, suction temperature 75 °F, discharge pressure 60 psig, discharge temperature 150 °F

### 3rd stage

Cylinder bore 11", two rings per piston, 5/8" groove width, suction pressure 50 psig, suction temperature 125 °F, discharge pressure 200 psig, discharge temperature 200 °F

### Challenge

The customer experienced rapid ring wear, after only 6 months, caused by piston rings produced with a traditional filled-PTFE material. The customer also experienced scoring of the cylinders as well as piston breakage due to the original piston being designed with insufficient clearance for rider rings.

### Solution

EGC redesigned the piston by turning the outside diameter of the pistons to increase the piston-cylinder clearance, which allowed for usage of a Seal Rider design. For the Seal Rider Rings on 2nd and 3rd stage pistons, EGC used our A455 compound which is a high performance, low wear grade PEEK material.

### Results

The redesign and material change of the rings increased the average ring life to over 24 months, while the redesign of the pistons eliminated the scoring of the cylinder bore and the breakage of the pistons.

# Piston and Rider Rings

For proper sealing and support of the piston and rod assembly, piston and rider rings must be designed from high-performance materials that prevent premature wear. EGC experts carefully evaluate ring geometry requirements, dimensions, and the application environment before making any recommendations for technical configurations.

Our engineering staff creates custom designs suitable for both lubricated and non-lubricated reciprocating air and gas compressors. Custom-tailored configurations can also be manufactured upon request. The charts below show common piston and rider ring configurations.

Regardless of the size and complexity, EGC has the design expertise and molding tools needed to manufacture material stock shapes for any sealing component. Molding processes include compression molding, melt molding, and injection molding.

## Piston Ring Designs

The function of the piston ring is to seal the gas pressure within the cylinder. EGC offers a variety of piston ring styles and materials to provide optimum sealing and ring life. Piston rings are installed in the grooves machined on the OD of a metallic piston.



### Style 01 Butt (Straight) Cut

This piston ring can be made in 1, 2 or 3-piece designs. Depending on the application, expanders may or may not be required.



### Style 02 Angle Cut

This piston ring can be made in 1, 2 or 3-piece designs. Depending on the application, expanders may or may not be required.



### Style 03 Step Cut

This piston ring can be made in 1, 2 or 3-piece designs. Depending on the application, expanders may or may not be required. This design provides a better seal than Butt (Straight) Cut or Angle Cut rings.



### Style 04 Balanced or Partially Balanced

This piston ring is designed to prolong the ring life in high-pressure applications by minimizing the frictional heat and pressure at the sealing surface. It can be made in 1, 2 or 3-piece designs. Depending on the application, expanders may or may not be required.

## Rider Ring Designs

The function of the rider band ring is to support the weight of the piston and rod assembly and prevent metal-to-metal contact. EGC offers various rider ring styles and materials to provide optimum ring life for a variety of applications.



### Style 05 Solid (Uncut)

This design is preferred when field conditions do not restrict installation. Depending on the application, face or OD of the ring may or may not have pressure relief grooves. This ring is available as non-mounted, board mounted, or piston mounted.



### Style 06 Butt (Straight) Cut

The face of the ring has pressure relief grooves, and depending on the application, ring OD may or may not have pressure relief grooves as well. This style is usually made as a one-piece ring with Butt (Straight) Cut end gap.



### Style 07 Angle Cut

Ring face has pressure relief grooves. Depending on the application, ring OD may or may not have pressure relief grooves. This style is usually made as a one-piece ring with angle cut end gap.



### Style 08 Step Cut

Ring face has pressure relief grooves. Depending on the application, ring OD may or may not have pressure relief grooves. This style is usually made as a one-piece ring with step cut end gap.



Visit our website to download material and application data sheets at [www.EGCcomponents.com/about-us/downloads](http://www.EGCcomponents.com/about-us/downloads). Cannot find what you are looking for or need other custom piston and rider ring designs? Contact your EGC Sales Representative at 281.774.6100. We have the design and manufacturing capabilities to offer custom piston and rider rings per OEM and aftermarket specifications.

# Rod Packing Rings

The rod packing components designed and engineered by EGC specialists are selected from a broad range of materials that are capable of withstanding the temperature and pressure requirements of your application. Our media-specific material selection and precise engineering design reduces leak frequency and maintains the tightest seal possible around piston rods. Along with material selection and design, proper assembly and alignment are key requirements to achieve optimum sealability.

## Rod Packing Designs

Pressure packing rings are dynamic, pressure actuated seals. The basic sealing ring is an assembly of two rings cut into segments and overlapped at the joints to form a seal. Garter springs hold the segments together and keep them in contact with the piston rod during the assembly and while the compressor is shut down. EGC offers different pressure packing styles and materials to provide optimum seal and ring life.

The following chart lists some of the common rod packing designs available while additional configurations can be custom-tailored upon request.



### Style 10 Radial-Tangent

This is the most common type of seal and suitable for most of the applications. It is a single acting seal which seals gas pressure in one direction only. It consists of one radial cut ring and one tangent cut ring. Both rings are dowelled together and gaps are staggered. The radial ring must face the pressure.



### Style 20 Tangent-Tangent

This is a double acting seal which seals gas pressure in both directions. It consists of two tangent cut rings dowelled together. Either ring may face the pressure. This style is used in low-pressure and vacuum applications.



### Style 30 Tangent-to-Rod (Face Pressure Relief Grooves) with Back-up

It is a single acting seal which seals gas pressure in one direction only. It consists of one tangent cut ring and one radial cut metal back-up ring. Rings are not dowelled together. Tangent cut ring must face the pressure. Radial grooves on the face ensure that ring seals in one direction only.



#### **Style 40** Tangent-to-Rod with Back-up

A double acting seal which seals gas pressure in both directions. It consists of one tangent cut ring and one metal, radial cut, back-up ring. The tangent cut ring must face the pressure. This is the same as Style 30 except that the face pressure relief grooves are eliminated.



#### **Style 50** Pressure Breaker

This seal is used to reduce and control the gas pressure in high-pressure applications. Reduced pressure leads to longer seal life and better sealing efficiency. It is usually used one per groove in the first and second cups of a pressure packing case. Pressure Breaker may be made out of metal, PTFE, or thermoplastic.



#### **Style 60** Radial-Tangent with Back-up

Three single-acting rings, one radial cut, one tangent cut, and one radial cut back-up ring combine to comprise this design. Radial and tangent cut seal rings are dowelled together. Radial cut ring must face the pressure. The back-up ring may be made out of metal, PTFE, or thermoplastic.



#### **Style 70** Tangent-Tangent with Back-up

This double acting ring consists of two tangent cut rings and a radial cut back-up ring. Tangent cut rings must face the pressure and are dowelled together. The back-up ring may be made out of metal, PTFE, or thermoplastic.



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# Valve Components

## Valve Plates

Valve plates are a critical component of ported plate compressor valves. Valve plates are subjected to impact loads by repeated contact with the guard and seat. They are also subjected to fatigue loads caused by the varying differential pressure. Additionally, dirty, corrosive gas and/or liquids in the gas can reduce valve plate lifespan.

EGC manufactures high-performance ported valve plates out of 747 (30% glass-filled) PEEK material.

Parts are machined to close tolerances and lapped to provide a good surface finish and flatness.

Benefits of 747 PEEK valve plates include:

- Excellent mechanical properties
- High impact strength preventing breakage due to impact fatigue loads
- Resistance to dust and corrosion
- Non hygroscopic, low moisture absorption
- Superior dimensional stability
- Strength retention in high-temperature environments after a long exposure
- Seats last longer with less leakage thereby reducing valve maintenance

## Valve Poppets and Buttons

EGC manufactures buttons and poppets for gas compressor valves as replacement parts.

Buttons are used in Ring type valve. Buttons are usually made of EGC 700 Virgin PTFE and A71 (25% Glass fiber) reinforced PTFE. These materials offer excellent chemical resistance, mechanical, impact and wear properties.

Nonmetallic poppets are used in Poppet type valves. Poppets are usually made of A451 (30% Carbon fiber) Reinforced PEEK material.

A451 PEEK material offer excellent chemical, wear, and impact & fatigue resistance compared to other thermoplastic materials.

EGC can also offer other materials for buttons and poppets depending on customer application requirements. EGC has in-house material compounding capabilities to formulate materials for specific applications.



Visit our website to download material and application data sheets at [www.EGCcomponents.com/about-us/downloads](http://www.EGCcomponents.com/about-us/downloads). Cannot find what you are looking for or need other valve plate, poppet, and button designs? Contact your EGC Sales Representative at 281.774.6100. We have the design and manufacturing capabilities to offer valve plates as per OEM or aftermarket specifications.

Quality, dependability and flexibility are the driving forces behind the unique solutions provided every day by EGC Critical Components. We consistently solve industrial challenges with more than 50 years of experience designing and manufacturing high-performance, non-metallic compressor parts. Supported by specifications with some of the industry's leading companies and over 30 manufacturing processes, EGC has the extensive experience, modern equipment and the breadth of capabilities to produce high-quality parts that keep your compressors efficient and reliable.

Our Materials Engineers have developed several custom high-performance polymeric compounds for petrochemical/chemical, refinery, gas transportation and storage, and industrial gas compression applications. From piston rings and rider rings, to rod packing and wiper packing, our custom-engineered compressor solutions can be tailored for lubricated, non-lubricated, and bone-dry gas applications to provide optimum performance.

We have a wide range of tooling enabling us to produce stock shapes and parts from 1" to over 100" in diameter. We also maintain a large stock of resins and have the ability to mold and fabricate parts within a short lead time. Our record of safety and commitment to quality has enabled us to maintain our position as an industry leader for superior compressor components.

## Customized Products

From piston rings and rider rings to rod packing and wiper packing, our custom-engineered compressor solutions can be tailored for lubricated, non-lubricated, and bone-dry gas applications to provide optimum performance.



To learn how EGC Critical Components can improve performance in your operations, please visit our website at: [EGCcomponents.com](http://EGCcomponents.com)

Or talk with our experts at 281.774.6100.

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### **In-depth Solution**

EGC Critical Components is a designer and manufacturer of custom plastic and elastomeric products. As a part of the global group Fenner, we partner with clients to produce unique solutions in a multitude of energy industries, including power generation and nuclear, LNG, energy transportation, petrochemical and refining.



**Disclaimer:** The descriptions, design, performance information, and recommended uses for the products described herein are based generally on our design and manufacturing experience, product testing in specific conditions, and industry standards. The foregoing information is for general guidance only and does not constitute a guaranty or warranty of design or warranty of performance. Every effort has been made to ensure the information provided is accurate and up to date. However, the information provided herein is provided "as-is" and we make no representations or warranties of any kind, express or implied, with respect to the information provided. We reserve the right to make product changes from time to time, without prior notification, which may change some of the information provided herein. All warranties regarding the products described herein will be given in writing at the time of sale of such products. Each purchaser of such products must decide if the products are suitable to the intended use of such purchaser.

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