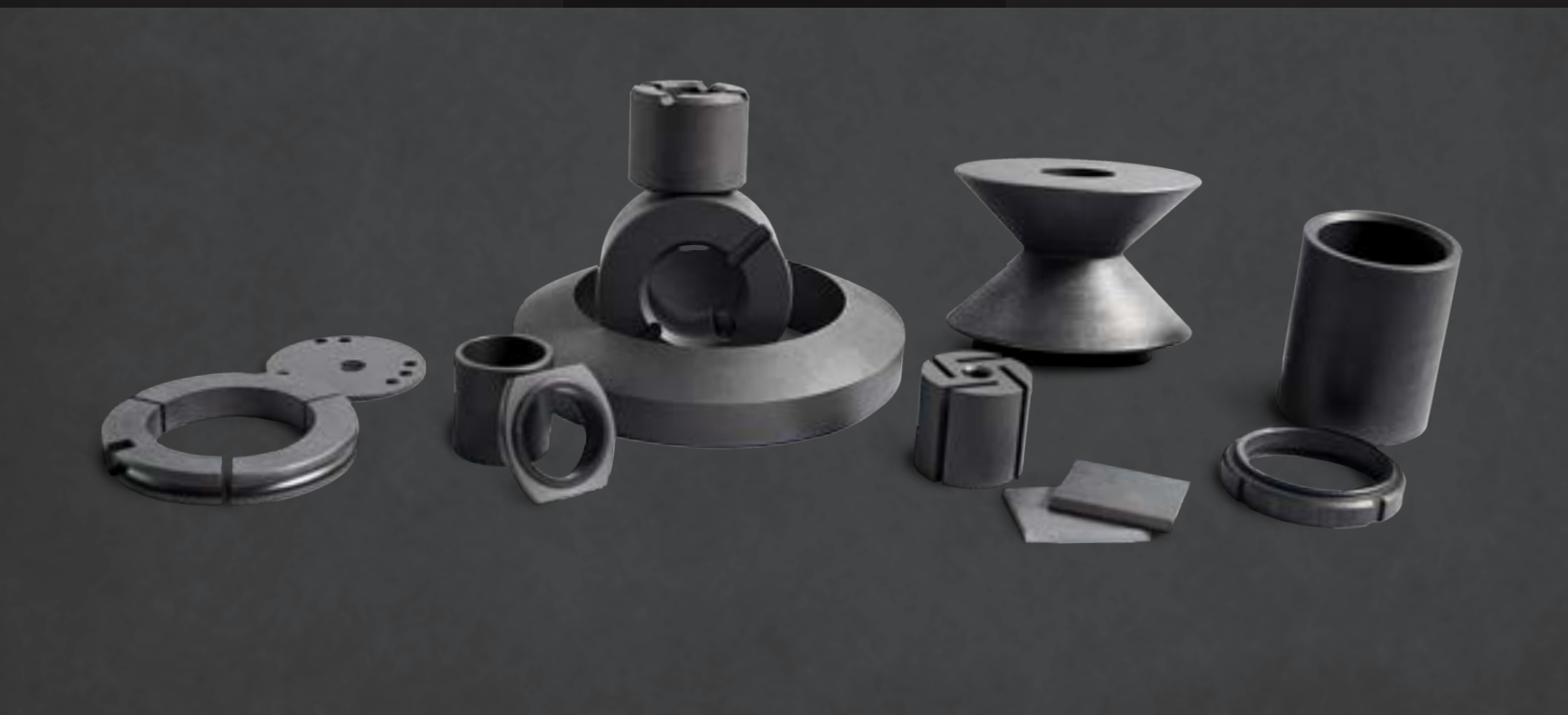
SUPERIOR PRECISION & DURABILITY

CARBON GRAPHITE COMPONENTS

SEALS | RINGS | BEARINGS | BUSHINGS | VANES & ROTORS

HELWIG® CARBON PRODUCTS, INC.

helwigcarbon.com



PRECISION MACHINED AND SELF-LUBRICATING

Helwig Carbon Products custom engineers your mechanical carbons manufactured with extreme tolerances

ADVANTAGES OF CARBON GRAPHITE

- Self lubricating
- Low coefficient of friction
- Resistance to chemicals, corrosion and oxidation
- Excellent thermal conductivity
- Superior mechanical strength
- Low coefficient of thermal expansion
- Durable thermal shock capabilities
- Food and pharmaceutical compatible
- Extremely low wear rate

VANES & ROTORS

- Precision machined carbon vanes with tight tolerances of +/- 0.0005" are maintained as well as perpendicularity and parallelism, resulting in optimal product performance
- Specialized equipment enables part-to-part consistency throughout the production process

INDUSTRIES WE SERVE

- Aerospace
- Chemicals & Fuels
- Defense
- Food & Beverage
- Home Appliances
- Industrial
- Marine
- Medical
- Oil & Gas
- Power & Energy
- Security
- Transportation
- Wastewater & Water Systems

SEALS & STEAM JOINTS

- Carbon graphite is the ideal seal material in every aspect
- Self lapping and flexible enough to conform to the mating face, very hard, self lubricating and resistant to wear
- Also lubricated by almost any fluid, so the media being sealed will add additional lubrication

HELWIG CARBON ADVANTAGES

- Over 60 years of mechanical carbon experience
- Design, engineering, and manufacturing expertise
- Dedicated & knowledgeable Customer Service team
- On-time delivery averaged better than 98%
- Expert problem diagnosis and technical recommendations
- Custom engineered solutions for superior carbon graphite component performance

HIGH QUALITY
RELIABLE GRADES

ISO 9001

BEARINGS & BUSHINGS

- Self lubricating carbon graphite bushings and bearings are ideal for applications where normal lubricants cannot be used
- Carbon graphite is also lubricated by almost any fluid, so any media at the interface of the bearing and shaft will offer additional lubrication

SEGMENTED RINGS

- Ability to manufacture segmented carbon graphite rings up to 12 sections and 80" in diameter
- Our CNC machining centers allow us to precision machine these specialty graphite components to tolerances as tight as +/-.001"

OTHER CARBON GRAPHITE COMPONENTS

- Crucibles
- End Plates
- Segmented Shaft Seals
- Thrust and Dryer Bearings
- Valve Seats
- Vacuum Rings
- Wear Plates

NEED TECHNICAL SUPPORT?

With 30 Representatives all over the USA, Canada, & Mexico, we can provide on-site support for all of your carbon graphite needs

- **Superior strength, hardness and wear resistant components**
- **Dimensionally stable in most corrosive environments**
- **Ability to be compatible with a wide spectrum of materials**
- **High-quality components from experienced craftsman**
- **ISO 9001 Certified for accuracy and consistency**
- **Made In The USA**

CARBON GRAPHITE PROPERTIES

	Density (gmc/cc)	Hardness (Shore)	Compressive Strength (psi)	Transverse Strength (psi)	Tensile Strength (psi)	Modulus of Elasticity (x 10^6 psi)	Coefficient of Thermal Expansion (X 10^{-6} In/In/°F)	Thermal Conductivity (Btu/hr/ft/°F)	Max Operating Temperature in Air (°F)	Porosity (% volume)	Composition
250	1.71	70	12000	5400	2800	1.7	2.9	8.0	750	15	CG
3499	1.66	36	7000	3700	1700	1.1	2.5		800	26	EG
3499Z	1.80	65	22000	8000	6000	2.7			500	0	EGR
580	1.76	45	11000	4800	2000	2.0	2.6	24.0	750	24	EG
580Z	1.82	70	25000	8000		3.0	2.5	8.0	500	2	EGR
873S	1.77	38	6500	3200		1.8	2.4		750	23	CG
890S	1.66	34	7000	3200					750	26	CG
F001	1.80	75	12000	8500	5000	1.6	2.1	60.0	750	15	G
F05	1.80	70	18500	8700	5800	4.3	2.1	57.0	900	8	G
F10	1.70	85	30000	9000	6000	2.5	2.1	6.0	700	0	CG
F15	1.90	90	36000	12500	9500	3.0	2.3	7.6	600	1	CGR
F160	2.45	90	40000	12000	8500	3.9	3.1	7.0	400	0	CGBa
F162	2.40	65	26000	10000	7500	3.7	3.0	9.0	400	0	CGBa
F20	1.70	80	23000	8000		2.9	1.9	8.1	750	5	CG
F20Z	1.85	90	32000	10000	6500	3.8	2.7	8.0	500	0	CGR
F220	1.80	90	31900	10150		3.8	2.7	8.0	500	0	CGR
F24	1.70	90	26000	8000		2.6	2.3	8.0	750	2.5	CG
F24Z	1.81	100	30500	10000		2.8	3.0	10.0	500	0	CGR
F32	2.20	95	36000	11500		3.5	2.6	12.0	750	<1	CGSb
F35	2.25	95	37500	13500		4.2	2.2	12.0	750	<1	CGSb
F40	1.85	85	30000	9500	6500	3.2	2.9	8.0	500	0	CGR
F41	1.80	95	40000	12500	8500	3.3	3.2	6.0	500	0	CGR
F57	1.82	80	16000	6500		1.7	1.9	26.0	1100	10	GH
F58	1.85	80	22000	8500	6000	1.8	2.0	40.0	1200	0	CGH
F60	1.74	60	22000	11000			6.1		350	0	G
F62	1.85	70	21500	8500		2.0	2.2	46.0	1100	10	GH
F72B	2.40	70	27000	9500		4.2	2.3	12.0	400	2.5	CGBa
H	1.64	55	12500	4600	3000	1.7	2.1		700	27	CG
HZ	1.78	70	21000	6200					500	1	CGR
MH1	1.70	50	11000	9000			5.0	5.8	375		GR

The values provided above are for reference only and should not be used for specification purposes.

ABOUT HELWIG CARBON

Helwig Carbon Products, Inc. is the premier, family-owned, American manufacturer of carbon brushes, brush holders, spring assemblies, bearing protection kits, metal graphite brushes, and mechanical carbons. Since 1928, we have forged innovations that have since become industry standards and requirements. We pride ourselves on manufacturing all of our products to the highest standard and performance because we know your application depends on it.

HELWIG® CARBON PRODUCTS, INC.

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MADE IN USA