



PRODUCT BULLETIN MODEL 820 BELLOW SEAL

American-Marsh Model 820 non-pusher bellow seals are industrial purpose seals for use in demanding applications. The seal utilizes an elastomeric bellow for positive sealing. The spring is manufactured of stainless steel and is of the non-clogging design.

Temperatures*: -40°C To 205°C / -40°F To 400°F
Pressures*: To 29 Bar /425 PSI
Speeds: To 3600 RPM

*Depending on fluid pumped and materials of construction

Material Specifications		
Part	Construction	
	Standard	Optional
Rotary Face	Carbon (C ₂₀)	Silicon-Carbide (X ₁₄) Tungsten-Carbide (X ₇₄)
Stationary Face	Silicon-Carbide (X ₁₄)	Tungsten-Carbide (X ₇₄)
Elastomers	Ethylene-Propylene (E ₆)	Neoprene (E ₉) Buna-Nitrile (E ₇) Fluoro-Elastomer (E ₁)
Hardware	18-8 Stainless (S ₁₈₋₈)	316 Stainless Steel (S ₃₁₆) Monel (H ₄₂)
Spring	18-8 Stainless (S ₁₈₋₈)	316 Stainless Steel (S ₃₁₆) Monel (H ₄₂)

Seal De-Rating (Standard Materials)			
Lubricity of Fluid	Gasoline, Kerosene, Oil or Better	x 1.00	
	Aqueous, Water, etc.	x 0.75	
Fluid Temperature	Below 79°C/175°F	x 1.00	
	Above 79°C to 121°C/175°F to 250°F	x 0.90	
	Above 121°C to 177°C/250°F to 350°F	x 0.80	
	Above 177°C/350°F	x 0.65	
Seal Size and Rotational Speed	Seal Size	1800 RPM	3600 RPM
	1.000 to 2.000	x 1.00	x 0.50
	2.125 to 2.500	x 0.92	x 0.46
	2.625 to 3.000	x 0.80	x 0.40
	3.125 to 3.500	x 0.60	x 0.30
	3.625 to 4.000	x 0.51	x 0.25



Seal Designation Example

C₂₀/E₁ - X₇₄/E₁ - S₃₁₆

Rotating Face

Carbon

Rotating Face Elastomer

Viton

Stationary Face

Tungsten-Carbide

Stationary Face Elastomer

Viton

Seal Metal Parts

316 Stainless Steel

Seal Gland and/or Sleeve Material

N/A

Seal De-Rating Example

Fluid: Water

Temperature: 325°F

Seal Size: 2.375"

Rotational Speed: 3600 RPM

425 PSI x 0.75 (Lubricity of Fluid) = 318.8 PSI

318.8 PSI x 0.80 (Fluid Temperature) = 255 PSI

255 PSI x 0.46 (Rotational Speed) = 117.3 PSI

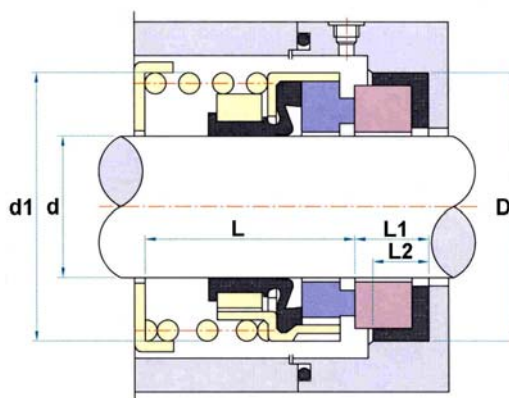
MAX SEAL PRESSURE = 117.3 PSI

Elastomer Temperature Limits	
Material	Temperature Limits
Buna-Nitrile (E ₇)	-40°C To 107°C -40°F To 225°F
Fluoro-Elastomer (E ₁)	-29°C To 205°C -20°F To 400°F
Ethylene-Propylene (E ₆)	-45°C To 150°C -49°F To 300°F
Neoprene (E ₉)	-40°C To 100°C -40°F To 212°F

Installation Criteria	
Shaft/Sleeve	Limits
Surface Finish	≤ 3.125" – 63 Ra < 3.125" – 32 Ra
Concentricity	± 0.051mm/0.002"
End Play	± 0.13mm/0.005"

Centrifugal Pumps, Mixers, OEM Equipment, Rotary Pumps, Compressors, Chillers, Agitators
Markets: Water, Waste Water, Industrial, Marine, Pulp & Paper, Automotive, Petrochemical, Water Systems

**PRODUCT BULLETIN
MODEL 820 BELLOW SEAL**



Approximate General Dimensions

(Do not use for construction purposes)

Series 820 Non-Pusher Elastomeric Bellows Mechanical Seals						
d	Min. Bore	d1	D	L	L1	L2
0.250	1.063	0.813	0.875	1.188	0.313	0.250
0.375	1.063	0.813	0.875	1.188	0.313	0.250
0.500	1.188	0.938	1.000	1.188	0.313	0.250
0.625	1.343	1.094	1.250	1.313	0.406	0.344
0.750	1.469	1.219	1.375	1.313	0.406	0.344
0.875	1.656	1.406	1.500	1.375	0.406	0.344
1.000	1.750	1.500	1.625	1.563	0.438	0.375
1.125	1.875	1.625	1.750	1.625	0.438	0.375
1.250	2.000	1.812	1.875	1.625	0.438	0.375
1.375	2.125	1.875	2.000	1.688	0.438	0.375
1.500	2.250	2.000	2.125	1.688	0.438	0.375
1.625	2.500	2.250	2.375	2.000	0.500	0.438
1.750	2.625	2.375	2.500	2.000	0.500	0.438
1.875	2.750	2.500	2.625	2.125	0.500	0.438
2.000	2.937	2.625	2.750	2.125	0.500	0.438
2.125	3.125	2.812	3.000	2.375	0.563	0.500
2.250	3.250	2.937	3.125	2.375	0.563	0.500
2.375	3.375	3.062	3.250	2.500	0.563	0.500
2.500	3.500	3.187	3.375	2.500	0.563	0.500
2.625	3.750	3.375	3.375	2.750	0.625	0.563
2.750	3.875	3.500	3.500	2.750	0.625	0.563
2.875	4.000	3.625	3.750	2.875	0.625	0.563
3.000	4.187	3.750	3.875	2.875	0.625	0.563
3.125	4.437	4.000	4.000	3.125	0.781	0.656
3.250	4.562	4.125	4.125	3.125	0.781	0.656
3.375	4.687	4.250	4.250	3.125	0.781	0.656
3.500	4.812	4.375	4.375	3.125	0.781	0.656
3.625	4.937	4.500	4.500	3.250	0.781	0.656
3.750	5.062	4.625	4.625	3.250	0.781	0.656
3.875	5.187	4.750	4.750	3.375	0.781	0.656
4.000	5.312	4.875	4.875	3.375	0.781	0.656

All dimensions are in inches.

- Your Local Authorized Distributor -



Sales & Marketing: 185 Progress Road • Collierville, Tennessee • 38017

Manufacturing: 185 Progress Road • Collierville, Tennessee • 38017

Phone: (800) 888-7167

Fax: (901) 860-2323