



Pac-Seal Replacement Pump Shaft Seals

- Buna elastomer temp. range: -40° to 225°F
- Viton® elastomer temp. range: -25° to 400°F
- PTFE elastomer temp. range: -350° to 500°F
- 2cc P80 lubricant is included with every seal

Rotary units have crimped head to withstand higher pressures and shaft speeds; stay in-place during installation and protect against being dislodged by foreign material. Hex-torque drive system provides longer seal life and helps reduce wear on shaft.

- **Types 8T/9T**—High-quality, positively driven multispring pusher style for industrial and severe chemical applications. The rotary unit is set-screwed to the shaft for positive drive. Rotaries feature replaceable seal rings. O-ring mount.
- **Replace Crane Type 8 and 9, respectively**

- **Type 16**—Offer greater pressure and speed capabilities. Unitized rotary seal incorporates crimped-head design and hex-torque drive.
- **Replace US Seal Type A, Crane Type 6, and Sealol Type 60L**

Shaft Size (in.)	Nom. Working Length (in.)	Seal Bore (in.)	Seal Thick. (in.)	Material Content (see above)	Std. Industry Seal No.	Item No.
Seal Type 8T						
1	1	1.625	0.437	VCRJR	—	5NC50
Seal Type 9T						
¾	0.937	1.375	0.406	QCRJR	—	5NC55
1	1	1.625	0.437	QCRJR	—	5NC56
1 ¼	1	1.875	0.437	QCRJR	—	5NC57
Seal Type 16						
¾	0.718	1.187	0.343	BMFJF	100	1R311
¾	0.718	1.25	0.406	VCFJF	200V, 516V	1R300
¾	0.718	1.25	0.406	BMFJF	516	1R303
¾	0.718	1.25	0.406	BMFJF	200	1R312
¾	0.812	1.25	0.406	BMFJF	501, 909	1R315
¾	0.718	1.375	0.406	VCFJF	201V, 851V	1R245
¾	0.718	1.375	0.406	BMFJF	851	1R299
¾	0.718	1.375	0.406	BMFJF	201	1R313
¾	0.812	1.437	0.406	BMFJF	101	1R319
1	0.812	1.625	0.437	BMFJF	360	5NC01

* Pac Seal brand.

- **Types 21/31**—Offer dependable sealing in mechanical pumps up to 250 psi. Hex-shaped outer shell reduces stress on components. Type 31 O-ring mount. 1R316, 5NC05, 1R307, and 1R301 need no spring retainer.
- **Replace US Seal Type C, Crane Type 21, and Sealol Type 43**

- **Types 51/52**—Convolution in seal bellows allows for greater axial movement and shaft deflection than Type 21. Narrow cross-section for ANSI and DIN 24960 seal bores.
- **Replace US Seal Types E, D, and Crane Types 1 and 2**



Type 8T/9T



Type 16



Type 21/31

- **Type 68**—Designed for use in pool and spa pumps. Install with the spring-loaded portion pressed into the pump housing and the mating ring rotating with the shaft.
- **Replace US Seal Type B and Crane Type 6A**



Type 51/52



Type 68

Elastomer (1st Letter)		Seal Ring (2nd Letter)		MATERIAL CONTENT			Seat (4th Letter)		Spring (5th Letter)				
B = Buna		C = Carbon		F = Stainless Steel			J = Ceramic		F = Stainless Steel				
V = Viton®		M = Molded Plastic		R = 316 Stainless Steel			F = Stainless Steel		R = 316 Stainless Steel				
Q = PTFE		X = Silicon Carbide					X = Silicon Carbide						
							K = Ni-Resist						
Shaft Size (in.)	Nom. Working Length (in.)	Seal Bore (in.)	Seal Thick. (in.)	Material Content (see above)	Std. Industry Seal No.	Item No.	Shaft Size (in.)	Nom. Working Length (in.)	Seal Bore (in.)	Seal Thick. (in.)	Material Content (see above)	Std. Industry Seal No.	Item No.
Seal Type 21													
½	0.75	0.934	0.237	BCFJF	392	5NC03	¾	0.718	1.375	0.406	VXFXF	—	5NC20
½	0.812	1	0.312	BCFJF	1002, 168	5NC02	¾	0.875	1.375	0.406	VXFXF	265VSC	5NC19
¾	0.718	1.25	0.406	BCFJF	10619	5NC06	¾	0.937	1.5	0.406	VXFXF	250VSC	5NC21
¾	0.875	1.25	0.406	BCFJF	—	1R304	1 ¼	1.062	1.875	0.473	VXFXF	—	5NC23
¾	0.875	1.25	0.406	BCFJF	508	1R316	1 ½	1.125	2.125	0.473	VXFXF	939VSC	5NC24
¾	0.875	1.25	0.375	BCFKF	732, 734	5NC04	Seal Type 51						
¾	0.875	1.25	0.406	VCFJF	359V	5NC07	¾	1.312	1.375	0.406	VCRJR	—	5NC26
¾	1.312	1.148	0.312	VCRJR	800	5NC05	¾	1.375	1.5	0.406	VCRJR	—	5NC27
¾	1.328	1.141	0.313	BCFJF	—	1R307	1	1.562	1.625	0.437	VCRJR	754V	5NC28
¾	0.718	1.375	0.406	BCFJF	—	1R308	1 ¼	1.625	1.75	0.437	VCRJR	204V	5NC29
¾	0.875	1.375	0.406	VCFJF	—	1R309	1 ¼	1.625	1.875	0.437	VCRJR	361V	5NC30
¾	0.937	1.5	0.406	BCFJF	309, 703	5NC08	1 ½	1.687	2	0.437	VCRJR	354V	5NC31
1	1	1.625	0.437	VCFKF	248V	5NC10	1 ½	1.687	2.125	0.437	VCRJR	305V, 899V	5NC32
1	1	1.625	0.437	BCFJF	235, 380, 813	5NC09	1 ¾	2	2.5	0.5	VCRJR	205V	5NC34
1 ½	1.062	1.75	0.437	BCFJF	—	1R301	1 ¾	2.125	2.625	0.5	VCRJR	523V	5NC35
1 ½	1.062	1.75	0.437	VXFXF	—	4P974	2	2.125	2.75	0.5	VCRJR	479V	5NC36
1 ½	1.062	1.75	0.437	BCFJF	344, 356, 604, 814	5NC11	2 ¼	2.375	3.125	0.562	VCRJR	—	5NC38
Seal Type 52													
1	1	1.625	0.437	VCRJR	—	5NC40	1	1	1.625	0.437	VCRJR	—	5NC40
1 ¼	1.062	1.875	0.437	VCRJR	—	5NC42	1 ¼	1.062	1.875	0.437	VCRJR	—	5NC42
1 ½	1.125	2.125	0.437	VCRJR	—	5NC43	1 ½	1.125	2.125	0.437	VCRJR	—	5NC43
Seal Type 68													
¾	0.615	1.078	0.21	BMFJF	80611	1R302	¾	0.615	1.078	0.21	BMFJF	80611	1R302
¾	0.615	1.25	0.406	BMFJF	668	1R317	¾	0.615	1.25	0.406	BMFJF	668	1R317
¾	0.615	1.25	0.406	BMFJF	RS 1000SS	1R318 *	¾	0.615	1.25	0.406	BMFJF	RS 1000SS	1R318 *
¾	0.615	shaft mtd	0.225	BMFFF	80613	1R306	¾	0.615	shaft mtd	0.225	BMFFF	80613	1R306
¾	0.615	shaft mtd	0.225	VCFJF	80613V	1R324	¾	0.615	shaft mtd	0.225	VCFJF	80613V	1R324
¾	0.615	shaft mtd	0.213	BMFJF	—	5NC45	¾	0.615	shaft mtd	0.213	BMFJF	—	5NC45
¾	0.615	shaft mtd	0.213	BCFJF	—	5NC46	¾	0.615	shaft mtd	0.213	BCFJF	—	5NC46



5NAR9

Eductor Jet Pumps

Pumps use high-pressure liquid or steam to create strong suction within the pump body. The suction draws a second liquid or gas into the pump and then forces it out, under pressure, through the discharge. Suitable for mixing fluids, vacuum pumping water, and seawater desalination.

Temp. range: -40° to 230°F, except liquid-operated PVC is -40° to 70°F. Max. head: 40 ft. Max. suction lift pumping liquids: 27 ft. liquid-operated models, 20 ft. steam-operated models. Inlet pressure pumping liquids: 35 to 150 psi, except 15 to 200 psi liquid-operated with 316 SS and bronze inlet and 15 to 100 psi liquid-operated with PVC inlet. Steam-operated models inlet pressure pumping gases: 20 to 80 psi.

For Liquid-Operated Pumps*

Discharge Head, ft.	25 psi Water	5-ft. Lift	75 psi Water	200 psi Water	25 psi Water	15-ft. Lift	75 psi Water	200 psi Water	25 psi Water	25-ft. Lift	75 psi Water	200 psi Water
0	32 gpm		38.9 gpm	41 gpm	25 gpm	34 gpm	37 gpm	37 gpm	10 gpm	24 gpm	29 gpm	29 gpm
10	15.1 gpm		38.9 gpm	41 gpm	9.4 gpm	34 gpm	37 gpm	37 gpm	—	24 gpm	29 gpm	29 gpm
20	—		38.9 gpm	41 gpm	—	34 gpm	37 gpm	37 gpm	—	24 gpm	29 gpm	29 gpm
30	—		33 gpm	34.8 gpm	—	28 gpm	31 gpm	31 gpm	—	17.8 gpm	21 gpm	21 gpm
40	—		21 gpm	22.5 gpm	—	17 gpm	18.5 gpm	18.5 gpm	—	8 gpm	9.6 gpm	9.6 gpm

For Steam-Operated Pumps*

Discharge Head	50 psi Water	5-ft. Lift	100 psi Water	150 psi Water	50 psi Water	10-ft. Lift	100 psi Water	150 psi Water	50 psi Water	20-ft. Lift	100 psi Water	150 psi Water
0-40	53 gpm		48 gpm	30 gpm	46 gpm	40 gpm	40 gpm	22 gpm	28 gpm	21 gpm	21 gpm	8 gpm
Gas Suction (cfm)												
Suction Pressure												
30 psi Steam, Max. Outlet 0 psi												
60 psi Steam, Max. Outlet 0 psi												
90 psi Steam, Max. Outlet 0 psi												
Atmos. 36 cfm												
15" Hg 6 cfm												

* Charts show suction flow based on a 1 ½" suction/discharge pipe size. To determine the suction flow for other pipe sizes, use the sizing factor shown in the table as a multiplier. For example, a pump with a 40-ft. discharge head, 5-ft. lift, and 200 psi water pressure, has a suction flow of 22.5 gpm (based on 1 ½" suction/discharge). For the suction flow of a pump with a 1 ¼" suction/discharge, multiply 22.5 gpm by the 0.61 sizing factor to get 13.7 gpm.