

The Type 21 (Type 31 Hard Face) is an all purpose seal which rotates with the shaft against a stationary mating face. The Type 21 features mechanically crimped components eliminating the use of adhesives. Hexagonal torque drive reduces elastomer stress by distributing torque forces over the greatest possible area. It will accommodate variations in a seal cavity length and pump misalignment. This seal may also be used as a double seal when two seals are placed back to back with a common spring between. Available in a variety of stocked materials to meet specific operating conditions.

Applications:

A moderately priced shaft seal for pumps used for well water, diesel engine coolant, waste water, boiler feed, cooking oil and compressors.

Fluid Media:

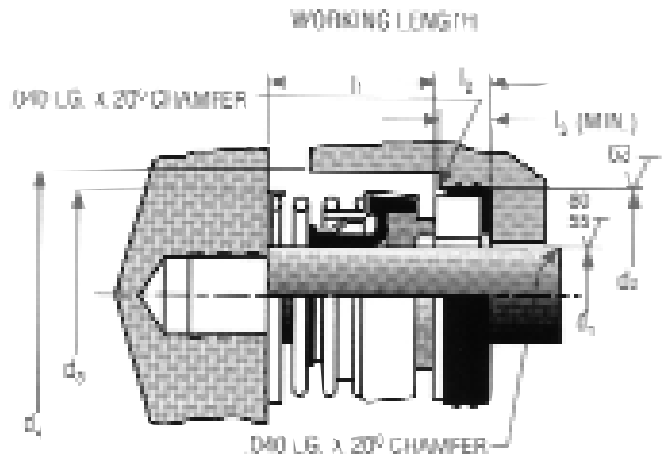
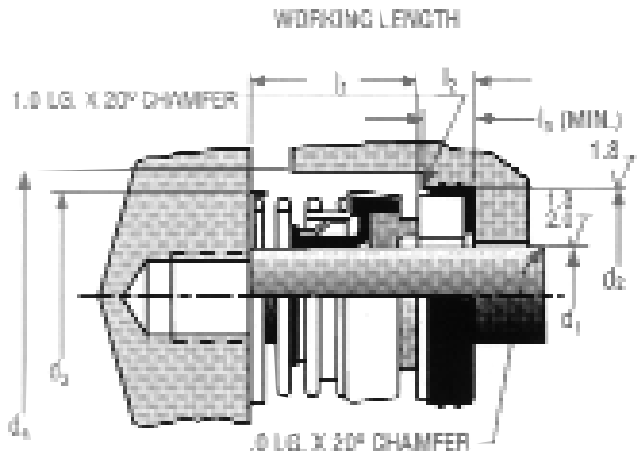
Water, oil, hydraulic fluids and general liquids.

Operating Limits:

Pressure = 650 psi Balanced
= 250 psi Unbalanced
Speed = 5,000 ft./min.
Temperature = -40 to 400°F

Equivalent:

JOHN CRANE Type 21
SEALOL Type 43 CU SHORT & CE SHORT
US SEAL Type C
Alternate Seat Design:
CENTERED O-RING MOUNT



STYLE: 21-800002 UK

Replaces: JOHN CRANE Type 21 & Type 2
SEALOL Type 43

Alternate seat design: CENTERED O-RING MOUNT.

d ₁	d ₂	d ₃	d ₄ *	l ₁	l ₂	l ₃ *
All Dimensions in Millimeters						
8	24.6	23.3	27	25.4	8.7	7.5
10	24.6	23.3	31	25.4	8.7	7.5
12	27.8	23.3	31	25.4	8.7	7.5
14	30.95	30.1	34	25.4	10.3	9.0
16	30.95	30.1	34	25.4	10.3	9.0
18	34.15	33.1	38	25.4	10.3	9.0
20	35.7	36.3	41	25.4	10.3	9.0
22	37.3	36.3	41	25.4	10.3	9.0
24	40.5	39.4	44	25.4	10.3	9.0
25	40.5	39.4	44	25.4	10.3	9.0
28	47.65	44.4	51	33.3	11.9	10.5
30	50.8	47.6	54	33.3	11.9	10.5
32	50.8	47.6	54	33.3	11.9	10.5
33	54.0	50.8	57	33.3	11.9	10.5
35	54.0	50.8	57	33.3	11.9	10.5
38	57.15	54.0	61	33.3	11.9	10.5
39	60.35	54.0	61	33.3	12.7	10.5
40	60.35	60.3	64	33.3	11.9	10.5
43	63.5	60.3	64	40.5	11.9	10.5
45	63.5	66.7	73	40.5	11.9	10.5
48	66.7	66.7	73	40.5	11.9	10.5
50	69.85	66.7	73	40.5	13.5	12.0
53	73.05	74.6	80	40.5	13.5	12.0
55	76.2	74.6	80	40.5	13.5	12.0
58	79.4	82.0	86	40.5	13.5	12.0
60	79.4	82.0	86	40.5	13.5	12.0
63	82.55	86.1	96	40.5	13.5	12.0
65	92.1	86.1	96	49.0	15.9	14.5
68	95.25	88.9	99	49.0	15.9	14.5
70	95.25	88.9	99	49.0	15.9	14.5
75	101.6	96.5	105	52.0	15.9	14.5

*Minimum

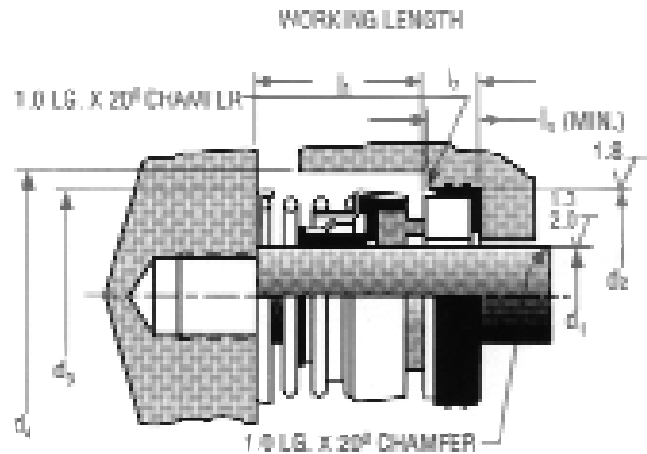
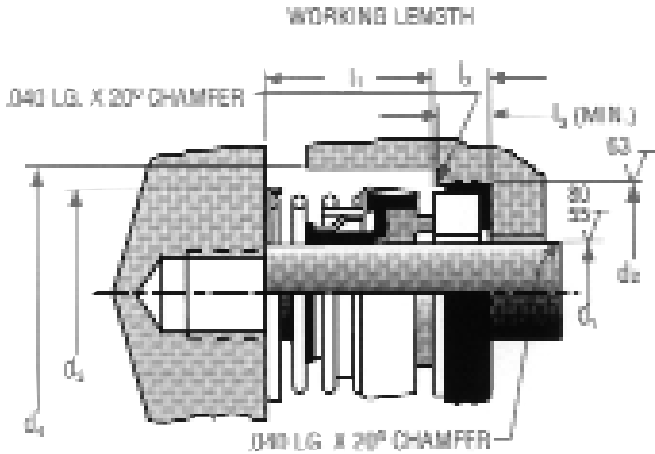
STYLE: 21-800003 UK

Replaces: JOHN CRANE Type 21 & Type 2
SEALOL Type 43

Alternate seat design: CENTERED O-RING MOUNT.

d ₁	d ₂	d ₃	d ₄ *	l ₁	l ₂	l ₃ *
All Dimensions in Inches						
.375	.968	.917	1.250	1.000	.344	.294
.500	1.094	.917	1.250	1.000	.344	.294
.625	1.218	1.185	1.375	1.000	.406	.353
.750	1.344	1.302	1.500	1.000	.406	.353
.875	1.468	1.429	1.625	1.000	.406	.353
1.000	1.594	1.552	1.750	1.000	.406	.353
1.125	1.875	1.750	2.000	1.299	.469	.412
1.250	2.000	1.875	2.125	1.299	.469	.412
1.375	2.125	2.000	2.250	1.299	.469	.412
1.500	2.250	2.125	2.375	1.299	.469	.412
1.625	2.375	2.375	2.625	1.299	.469	.412
1.750	2.500	2.375	2.625	1.615	.469	.412
1.875	2.625	2.515	2.750	1.615	.469	.412
2.000	2.750	2.625	2.875	1.615	.531	.471
2.125	2.875	2.938	3.125	1.615	.531	.471
2.250	3.000	2.938	3.125	1.615	.531	.471
2.375	3.125	3.230	3.375	1.615	.531	.471
2.500	3.250	3.390	3.750	1.615	.531	.471
2.625	3.625	3.390	3.750	1.937	.625	.562
2.750	3.750	3.500	3.875	1.937	.625	.562
2.875	3.875	3.800	4.125	2.062	.625	.562
3.000	4.000	3.800	4.125	2.062	.625	.562

*Minimum



STYLE: 21-800004 US

Replaces: JOHN CRANE Type 21 & Type 2
SEALOL Type 43

Alternate seat design: CENTERED O-RING MOUNT.

d1	d2	d3	d4*	l1	l2	l3*
All Dimensions in Inches						
.250	.750	.687	.875	.562	.250	.218
.375	.875	.917	1.125	.812	.284	.250
.437	1.000	.917	1.125	.812	.312	.281
.500	1.000	.917	1.125	.812	.312	.281
.562	1.250	1.110	1.375	.875	.406	.344
.625	1.250	1.185	1.375	.875	.406	.344
.750	1.375	1.302	1.500	.875	.406	.344
.875	1.500	1.429	1.625	.937	.406	.344
1.000	1.625	1.552	1.750	1.000	.437	.375
1.125	1.750	1.750	1.875	1.062	.437	.375
1.250	1.875	1.875	2.000	1.062	.437	.375
1.375	2.000	2.000	2.125	1.125	.437	.375
1.437	2.125	2.125	2.250	1.125	.437	.375
1.500	2.125	2.125	2.250	1.125	.437	.375
1.625	2.375	2.375	2.625	1.375	.500	.437
1.750	2.500	2.375	2.625	1.375	.500	.437
1.875	2.625	2.625	2.750	1.500	.500	.437
2.000	2.750	2.625	2.875	1.500	.500	.437
2.125	3.000	2.938	3.250	1.687	.562	.500
2.250	3.125	2.938	3.250	1.687	.562	.500
2.375	3.250	3.230	3.375	1.812	.562	.500
2.437	3.250	3.230	3.375	1.812	.562	.500
2.500	3.375	3.390	3.500	1.812	.562	.500
2.625	3.375	3.390	3.500	1.937	.625	.562
2.750	3.500	3.500	3.625	1.937	.625	.562
2.875	3.750	3.800	4.000	2.062	.625	.562
3.000	3.875	3.800	4.000	2.062	.625	.562

*Minimum

STYLE: 21-800006 US

Replaces: JOHN CRANE Type 21 & Type 2
SEALOL Type 43

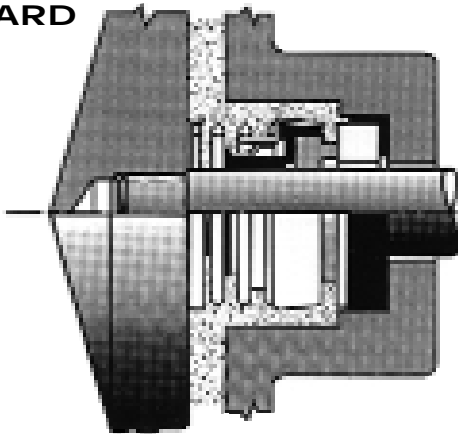
Alternate seat design: CENTERED O-RING MOUNT.

d1	d2	d3	d4*	l1	l2	l3*
All Dimensions in Millimeters						
8	25.4	23.3	25.4	19.0	7.9	7.1
10	25.4	23.3	25.4	19.0	7.9	7.1
12	25.4	23.3	25.4	19.0	7.9	7.1
14	31.75	30.1	32.0	22.5	10.3	8.7
16	31.75	30.1	32.0	22.5	10.3	8.7
18	34.92	33.1	35.0	22.5	10.3	8.7
20	38.1	36.3	38.5	24.0	10.3	8.7
22	38.1	36.3	38.5	24.0	10.3	8.7
24	41.27	39.4	41.5	25.4	11.1	9.5
25	41.27	39.4	41.5	25.4	11.1	9.5
28	44.45	44.45	46.0	27.0	11.1	9.5
30	47.62	47.62	49.5	27.0	11.1	9.5
32	47.62	47.62	49.5	27.0	11.1	9.5
33	50.8	50.8	52.5	28.5	11.1	9.5
35	50.8	50.8	52.5	28.5	11.1	9.5
38	53.98	53.98	55.5	28.5	11.1	9.5
39	60.32	60.32	62.0	35.0	12.7	11.1
40	60.32	60.32	62.0	35.0	12.7	11.1
43	63.5	60.32	65.0	35.0	12.7	11.1
45	66.68	69.19	68.5	38.0	12.7	11.1
48	69.85	69.19	71.5	38.0	12.7	11.1
50	69.85	69.19	71.5	38.0	12.7	11.1
53	76.2	74.6	78.0	43.0	14.3	12.7
55	79.38	74.6	81.0	43.0	14.3	12.7
58	82.55	82.0	84.5	46.0	14.3	12.7
60	82.55	82.0	84.5	46.0	14.3	12.7
63	85.72	86.1	89.0	46.0	14.3	12.7
65	85.72	86.1	89.0	49.0	15.9	14.3
68	88.9	88.9	92.0	49.0	15.9	14.3
70	88.9	88.9	92.0	49.0	15.9	14.3
73	95.25	96.52	100.0	52.5	15.9	14.3
75	98.42	96.52	102.0	52.5	15.9	14.3

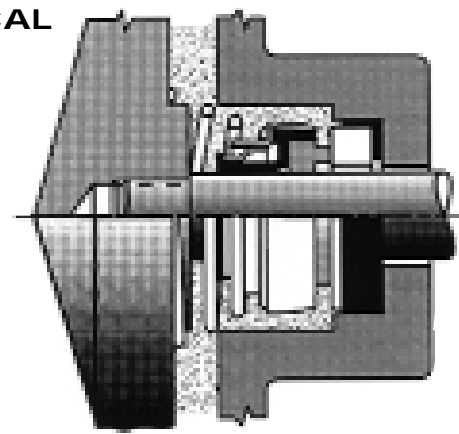
*Minimum

TYPICAL INSTALLATIONS

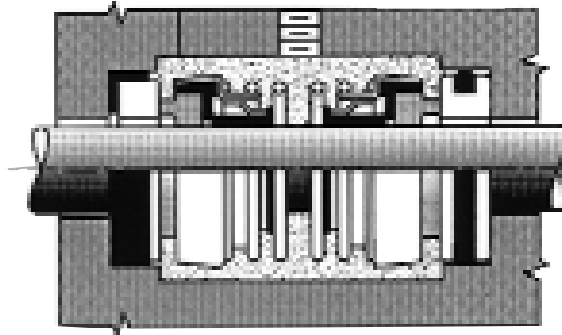
STANDARD



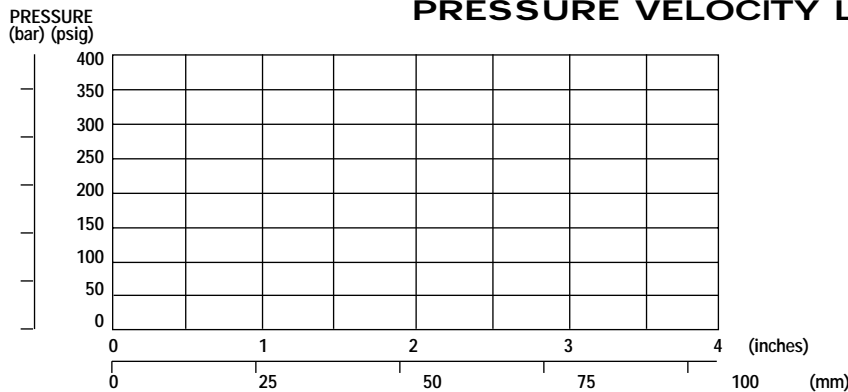
CONICAL



DOUBLE



PRESSURE VELOCITY LIMITS



CARBON VS.

- TUNGSTEN CARBIDE OR SILICON CARBIDE (1800 RPM) —————
- TUNGSTEN CARBIDE OR SILICON CARBIDE (3600 RPM) ······
- ALUMINA CERAMIC OR NI-RESIST (1800 RPM) - - - - -
- ALUMINA CERAMIC OR NI-RESIST (3600 RPM) - · - · - ·

Consult PAC-SEAL Engineering if operating conditions exceed shown PV limits.

AVAILABLE MATERIALS

Seal Ring	Mating Ring Seat	Elastomer	Metal Components
Carbon	Ceramic	Buna (FDA & U.L.)	302/304 Stainless
Tungsten Carbide	NiResist	Viton	316 Stainless
Silicon Carbide	Tungsten Carbide	EPT	Monel
	Silicon Carbide	Neoprene	
		Aflas	

TEMPERATURE LIMITS FOR ELASTOMERS

