



V-SEALS
JV SERIES



JETCAT No. 04

JETSEAL, INC.

TEL: 509-467-9133

WWW.JETSEAL.COM

V-SEAL SERIES

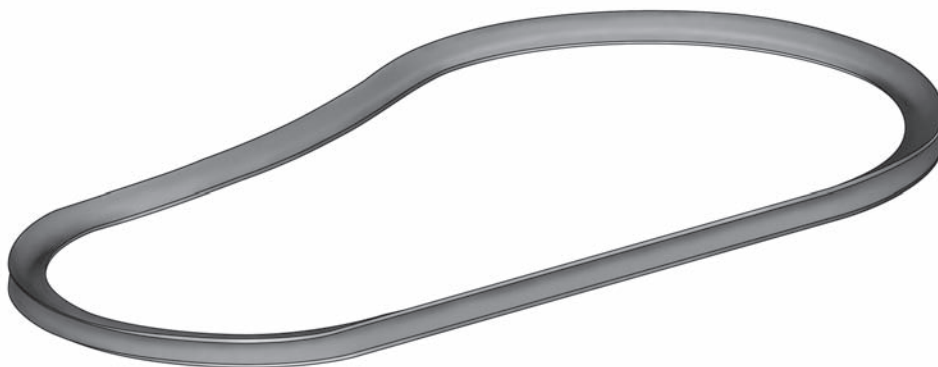
The V-Seal is our most effective metallic seal. Because it is machined from stock materials, rather than formed from sheet, strip or tube materials, we are able to engineer the optimum seal shape, by profiling its cross-section, thus providing a carefully controlled variable wall thickness to maximize springback and to optimize the sealing contact force.

While our formed seals are ideal for many applications, the most demanding applications are better served by JETSEAL's V-Seals, which combine the advantages of compactness, lowest leakage rates, high pressure capability and high springback.

If extreme performance is not required for your application, and economy with merely excellent performance is all that is needed, we suggest you turn to our C-Seal manual. If virtually leakage free ($1 \cdot 10^{-9}$ mb./s) operation is your imperative, this section is for you.

Cavity Engineering and quality for metallic seal applications is always important to correct functioning of the sealing system. In the case of V-Seals, it is doubly important that the cavity be as precisely engineered and manufactured as the seal. Precision-machined V-Seals are lapped on both sealing faces to a very high degree of flatness before they are plated with a tightly-adhering, smooth, defect-free soft coating. It is therefore essential that cavity faces also be flat, parallel and separated within the specified depth limits. A high integrity surface finish of 32 micro-inches or better is required but, here, lapping of cavity sealing faces is not only unnecessary but possibly disadvantageous. Experience shows that a good phonograph finish ("concentric" lay) is superior; probably because the almost concentric toolmarks create a labyrinth effect as their peaks are impressed into the soft plating, thereby occluding microscopic discontinuities and other cavity surface defects—as well as producing a longer flowpath with many turns, to increase the pressure drop opposing leakage flow.

We are not suggesting that sealing against a lapped surface is necessarily less efficient; both methods are capable of giving excellent results. The lapping of the bottoms of sealing grooves and faces is difficult to perform, however, and may not provide the benefits envisioned.

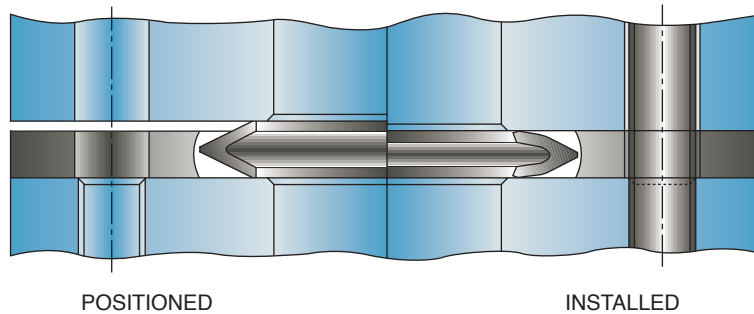


Non-circular V-Seal

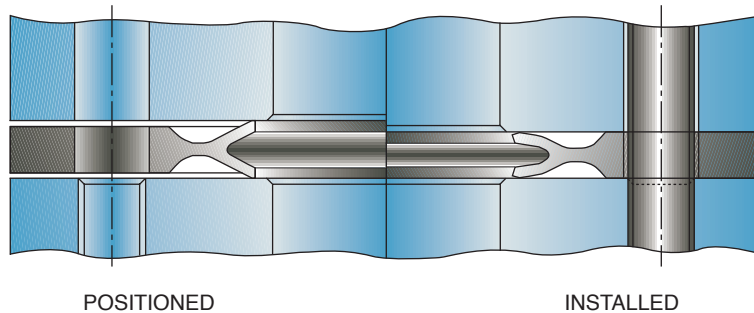
Non-circular seal planforms can be produced to virtually any definable geometric shape, provided that the corner radius guidelines in this manual are respected. Grooves should be wider than those recommended for circular seals, in order to provide for reasonable manufacturing tolerances for corner radii and geometric features of seals and cavities.

JETSEAL V-Seals, because of their extremely low individual leakage rates are also suitable for stacking, with interleaving spacer plates, to accommodate large tolerance accumulations and small cyclic movements. JETSEAL will be glad to furnish package or cartridge designs and to work concurrently with you to engineer and integrate the sealing system.

JETSEAL V-Seals can also be provided with their own limiter plates to enable sealing between flat (non-grooved) surfaces, where the plate provides a load path for the flange bolting load and prevents over-compression of the seal. The seal and limiter plate may also be produced as a single integrated part.



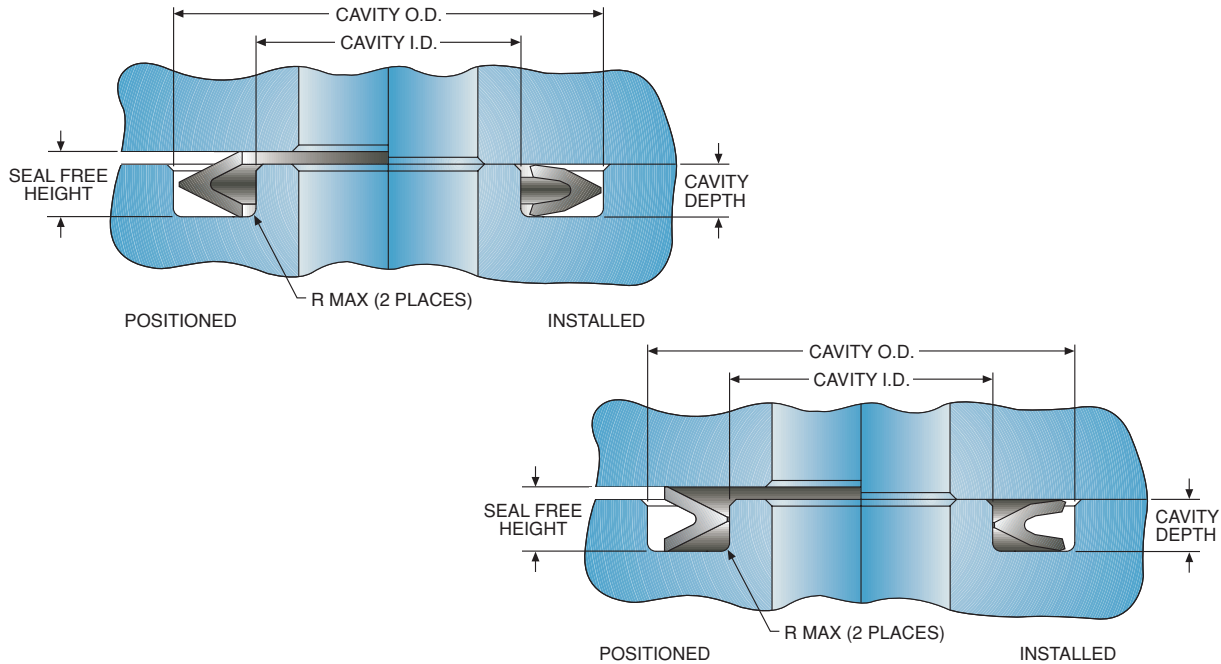
V-Seal & Retainer/Limiter Plate Assembly
 (Seal snap-fitted into plate for pre-installation retention)



Integral V-Seal & Limiter Plate Assembly

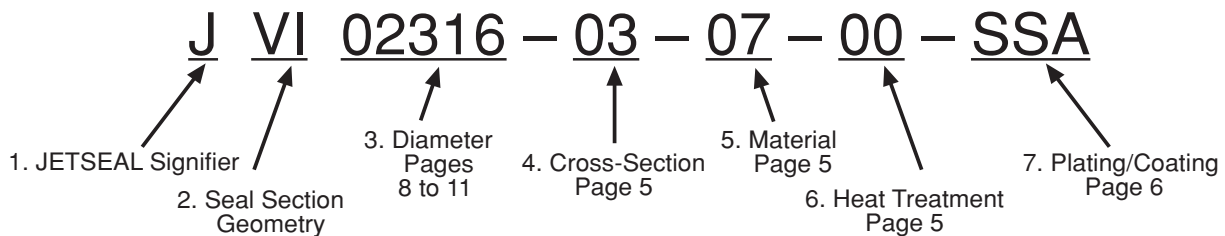
V-SEALS, SERIES JVI & JVE

JETSEAL Intelligent Part Numbering System for Standard V-Seals.
 (non-standard seals are described by numerical part numbers with non-significant digits.)



Here is how to order the seal to suit your application using the *JETSEAL intelligent part numbering system for standard V-Seals*:

Example of Intelligent P/N (part number whose characters signify discrete properties of the product).



1. J Prefix indicates seal P/N defines seal in English units.

I prefix indicates ISO metric system units (see separate catalog section).

2. Seal Section Geometry:

VI	=	V-Seal, Internal Pressure
VE	=	V-Seal, External Pressure

3. Diameter code: Expressed in one-thousandths of an inch, *e.g.*

02707	=	2.707 inches
99500	=	99.500 inches

For JVI seals, the maximum external diameter is encoded. For JVE seals, the minimum internal diameter is used.

P/N JVI 02316-03-07-00-SSA, defines an internal pressure V-Seal, 2.316 – 2.308 outside diameter, .092 – .089 free height, .018 thick. Hastelloy X, non-heat-treated, plated with silver .0005 – .0010 thick.

4. Cross-Section Codes:

Code	Nominal Section	Free Height	Material Thickness	Cavity Depth	Cavity Corner Rad. (Max)
01	3/32	.035 - .033	.008	.028 - .030	.016
02	1/16	.063 - .060	.012	.050 - .052	.016
03	3/32	.092 - .089	.018	.076 - .078	.016
04	1/8	.122 - .125	.022	.106 - .110	.016

5. Material Codes:

Code	Material	Specification	Temperature Limit (°F) ¹	Remarks
01	Alloy 718	AMS 5596 AMS 5589	1200	Superior performance (NACE approved H.T. available)
02	Alloy X-750	AMS 5598 AMS 5582	1100	Excellent performance Lower load/Springback
03	Waspaloy	AMS 5544	1350	Superior creep, stress relaxation above 1200°F
04	Cres 304	AMS 5511 AMS 5560	800	Effective within reduced temp. range. Low springback
05	Elgiloy	AMS 5876	900	Excellent H ₂ embrittlement resistance
06	Incoloy 909®	AMS 5892	1200	Low expansion alloy
07	Hastelloy X	AMS 5754 AMS 5587 AMS 5530	1500	High temperature oxidation resistance.

¹ Temperatures may be exceeded for certain applications; especially short duration.

6. Heat Treatment Codes:

Codes	Heat Treatment	Remarks
00	None	Strain hardened & non-hardenable materials.
01	Solution & Precipitation	Alloy 718: General applications.
03	Solution & Precipitation (NACE)	Special H.T. for sour gas(Hydrogen Sulfide) service.
04	Solution, Stabilization & Precipitation	Waspaloy: Creep & Relaxation resistance.
05	Solution & Precipitation(H ₂)	Alloy 718: High temperature H ₂ gas service.
06	Precipitation only.	Static applications

7. Plating and Coating Codes for V-seals:

Note: All JETSEAL seals have rotationally generated or lapped substrate surface profiles.

Code	Plating/Coating	Thickness, inch	Remarks
---	None		
S S A	Silver	.0005 – .0010	Inert gas annealed @ 950° F
S S B	Silver	.0010 – .0015	Inert gas annealed @ 950° F
S S C	Silver	.0015 – .0020	Inert gas annealed @ 950° F
S S D	Silver	.0020 – .0025	Inert gas annealed @ 950° F
S A A	Silver w/gold u/lay	.0005 – .0010	Inert gas annealed @ 950° F (Thickness does not incl.u/lay)
S A B	Silver w/gold u/lay	.0010 – .0015	Inert gas annealed @ 950° F (Thickness does not incl.u/lay)
S A C	Silver w/gold u/lay	.0015 – .0020	Inert gas annealed @ 950° F (Thickness does not incl.u/lay)
N I A	Soft nickel	.0005 – .0010	Inert gas annealed @ 1200° F
N I B	Soft nickel	.0010 – .0015	Inert gas annealed @ 1200° F
N I C	Soft nickel	.0015 – .0020	Inert gas annealed @ 1200° F
N A A	Soft nickel w/gold u/lay	.0005 – .0010	Inert gas annealed @ 1200° F
N A B	Soft nickel w/gold u/lay	.0010 – .0015	Inert gas annealed @ 1200° F
N A C	Soft nickel w/gold u/lay	.0015 – .0020	Inert gas annealed @ 1200° F
A A A	Gold	.0005 – .0010	Inert gas annealed @ 1200° F
A A B	Gold	.0010 – .0015	Inert gas annealed @ 1200° F
C U A	Copper	.0005 – .0010	Inert gas annealed @ 1200° F
C U B	Copper	.0010 – .0015	Inert gas annealed @ 1200° F
C U C	Copper	.0015 – .0020	Inert gas annealed @ 1200° F
C A A	Copper w/gold u/lay	.0005 – .0010	Inert gas annealed @ 1200° F
C A B	Copper w/gold u/lay	.0010 – .0015	Inert gas annealed @ 1200° F
C A C	Copper w/gold u/lay	.0015 – .0020	Inert gas annealed @ 1200° F
P B C	Lead	.0015 – .0020	
P B D	Lead	.0020 – .0025	
T F B	Teflon®	.0010 – .0015	
T F D	Teflon®	.0020 – .0025	

Specification of Geometrical Tolerances:

Depending on their diameter to cross-section and material thickness ratios, JETSEAL standard metallic seal rings range from moderate to high flexibility when deflected across a diametral plane or perpendicular to such plane. It is necessary, therefore, to allow reasonably large roundness and flatness tolerances for these metallic seals in the unrestrained condition.

For example, a small section V-Seal, ten inches in diameter becomes slightly oval when suspended from a point on its diameter, simply due to the effects of gravitational acceleration on its own mass. When laid “flat” on a surface table, this seal may arch slightly above the surface due to extremely slight variations in the symmetry of its cross-section within specified tolerances. Such “non-conformances” may be eliminated by the touch of a finger and have no bearing on the performance of the seal in its installed, restrained, state.

The tolerances shown in the following table are standard for all JETSEAL metallic seals in the unrestrained condition and are additional to feature tolerances. In the restrained condition, JETSEAL Series V-Seals conform to the feature size tolerances shown elsewhere in this manual.

Mean Diameter range (in)	Roundness (in)	Flatness (in)
To 1.000	.015	.005
1.001 – 2.000	.020	.010
2.001 – 3.500	.030	.015
3.501 – 7.500	.050	.025
7.501 – 10.000	.065	.035
10.001 – 15.000	.085	.050

Seals with Non-Circular Geometry:

JETSEAL metallic seals may be supplied shaped to match the contour of virtually any groove, provided that practical restraints on corner radius form are respected. The following guidelines are considered safe for V-Seals:

Minimum Inside Corner (bend) Radius				
Cross-Section (F.H.)	01	02	03	04
Radius	.200	.300	.500	.600

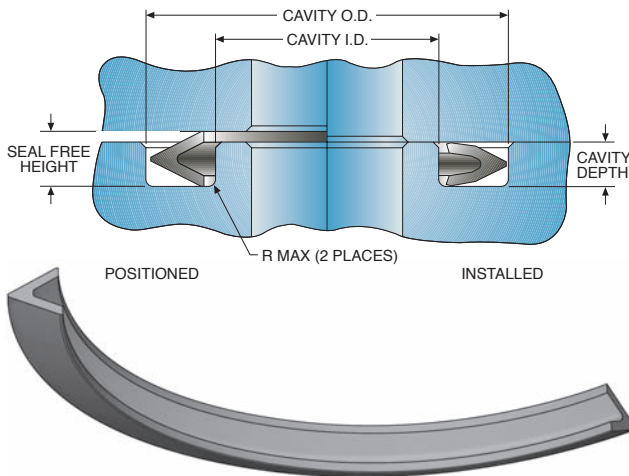
Typical Performance¹:

Cross Section	Max Operating Pressure (PSID)	Compression Inches (ref)	Seating force ^{2,3} (lbf per inch circ)	Springback ² (inches)
01 (1/32 – .008)	36400	.005	240	.002
02 (1/16 – .012)	24800	.010	275	.004
03 (3/32 – .018)	38400	.014	500	.007
04 (1/8 – .022)	23100	.016	460	.010

¹ Values listed are for Alloy 718. Use correction factors for other materials and elevated temperatures, from table in the JETSEAL Guide (JETCAT No. 01). Radial support of the seal by its cavity is assumed to be in effect at higher pressures. Operating pressure ratings are therefore independent of diameter.

² Seating force increases and springback may decrease for small diameter to cross-section ratios. If these parameters are critical for your application, please consult JETSEAL's technical support staff for further information.

³ Unpressurized, at nominal deflection.



- Recommended for high pressure liquid and gas systems and equipment.
- High deflection capability.
- See page 5 for all dimensions and tolerances other than those for diameters.
- Seal diameters are average. See roundness table, page 7.
- Inner cavity wall optional.
- Standard sizes are presented. Non-standard diameters may be derived by interpolation. Tooling engineering charges may apply.
- Cavity sealing surface texture 32 μ-in. circ. lay.

P/N: JVI

seal type _____ diameter code _____ cross-section _____ material _____ heat treatment _____ plating _____
derived from seal O.D., Pages 8 & 9 Page 5 Page 5 Page 5 Page 6

THESE ARE THE RECOMMENDED SEAL SIZES, HOWEVER, IT DOES NOT GUARANTEE TOOLING AVAILABILITY

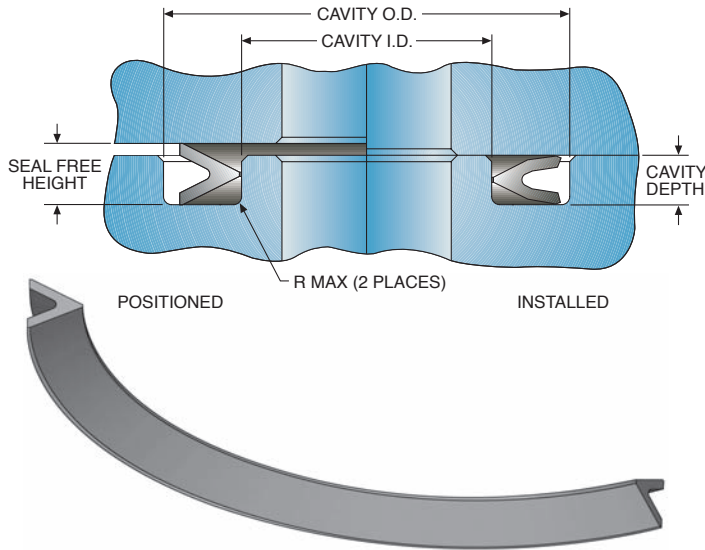
FREE HEIGHT .034					FREE HEIGHT .062				
SEAL DIA. CODE	CAVITY		SEAL		SEAL DIA. CODE	CAVITY		SEAL	
	I.D. (MAX)	O.D. (+.005 - .000)	I.D. (MIN)	O.D. (+.000 - .008)		I.D. (MAX)	O.D. (+.005 - .000)	I.D. (MIN)	O.D. (+.000 - .008)
00254	.143	.260	.183	.254					
00316	.206	.322	.246	.316					
00379	.268	.385	.308	.379					
00441	.331	.447	.371	.441					
00504	.393	.510	.433	.504	00504	.331	.510	.371	.504
00566	.456	.572	.496	.566	00566	.393	.572	.433	.566
00629	.518	.635	.558	.629	00629	.456	.635	.496	.629
00691	.581	.697	.621	.691	00691	.518	.697	.558	.691
00754	.643	.760	.683	.754	00754	.581	.760	.621	.754
00816	.706	.822	.746	.816	00816	.643	.822	.683	.816
00879	.768	.885	.808	.879	00879	.706	.885	.746	.879
00941	.831	.947	.871	.941	00941	.768	.947	.808	.941
01004	.893	1.010	.933	1.004	01004	.831	1.010	.871	1.004
01066	.956	1.072	.996	1.066	01066	.893	1.072	.933	1.066
01129	1.018	1.135	1.058	1.129	01129	.956	1.135	.996	1.129
01191	1.081	1.197	1.121	1.191	01191	1.018	1.197	1.058	1.191
01254	1.143	1.260	1.183	1.254	01254	1.081	1.260	1.121	1.254
01316	1.206	1.322	1.246	1.316	01316	1.143	1.322	1.183	1.316
01379	1.268	1.385	1.308	1.379	01379	1.206	1.385	1.246	1.379
01441	1.331	1.447	1.371	1.441	01441	1.268	1.447	1.308	1.441
01504	1.393	1.510	1.433	1.504	01504	1.331	1.510	1.371	1.504
					01566	1.393	1.572	1.433	1.566
					01629	1.456	1.635	1.496	1.629
					01691	1.518	1.697	1.558	1.691
					01754	1.581	1.760	1.621	1.754
					01816	1.643	1.822	1.683	1.816
					01879	1.706	1.885	1.746	1.879
					01941	1.768	1.947	1.808	1.941
					02004	1.831	2.010	1.871	2.004

Seal dimensions in inches, prior to plating or coating

THESE ARE THE RECOMMENDED SEAL SIZES, HOWEVER, IT DOES NOT GUARANTEE TOOLING AVAILABILITY

FREE HEIGHT .091					FREE HEIGHT .123					FREE HEIGHT .123				
SEAL DIA. CODE	CAVITY		SEAL		SEAL DIA. CODE	CAVITY		SEAL		SEAL DIA. CODE	CAVITY		SEAL	
	I.D.	O.D.	I.D.	O.D.		I.D.	O.D.	I.D.	O.D.		I.D.	O.D.	I.D.	O.D.
	(MAX)	+0.005 -.000	(MIN)	+0.000 -.008		(MAX)	+0.005 -.000	(MIN)	+0.000 -.008		(MAX)	+0.005 -.000	(MIN)	+0.000 -.008
01004	.768	1.010	.808	1.004										
01066	.830	1.072	.870	1.066										
01129	.893	1.135	.933	1.129										
01191	.955	1.197	.995	1.191										
01254	1.018	1.260	1.058	1.254										
01316	1.080	1.322	1.120	1.316										
01379	1.143	1.385	1.183	1.379										
01441	1.205	1.447	1.245	1.441										
01504	1.268	1.510	1.308	1.504										
01566	1.330	1.572	1.370	1.566										
01629	1.393	1.635	1.433	1.629										
01691	1.455	1.697	1.495	1.691										
01754	1.518	1.760	1.558	1.754										
01816	1.580	1.822	1.620	1.816										
01879	1.643	1.885	1.683	1.879										
01941	1.705	1.947	1.745	1.941										
02004	1.768	2.010	1.808	2.004	02004	1.706	2.010	1.746	2.004					
02066	1.830	2.072	1.870	2.066	02066	1.768	2.072	1.808	2.066					
02129	1.893	2.135	1.933	2.129	02129	1.831	2.135	1.871	2.129					
02191	1.955	2.197	1.995	2.191	02191	1.893	2.197	1.933	2.191					
02254	2.018	2.260	2.058	2.254	02254	1.956	2.260	1.996	2.254					
02316	2.080	2.322	2.120	2.316	02316	2.018	2.322	2.058	2.316					
02379	2.143	2.385	2.183	2.379	02379	2.081	2.385	2.121	2.379					
02441	2.205	2.447	2.245	2.441	02441	2.143	2.447	2.183	2.441					
02504	2.268	2.510	2.308	2.504	02504	2.206	2.510	2.246	2.504					
02566	2.330	2.572	2.370	2.566	02566	2.268	2.572	2.308	2.566					
02629	2.393	2.635	2.433	2.629	02629	2.331	2.635	2.371	2.629					
02691	2.455	2.697	2.495	2.691	02691	2.393	2.697	2.433	2.691					
02754	2.518	2.760	2.558	2.754	02754	2.456	2.760	4.496	2.754					
02816	2.580	2.822	2.620	2.816	02816	2.518	2.822	2.558	2.816					
02879	2.643	2.885	2.683	2.879	02879	2.581	2.885	2.621	2.879					
02941	2.705	2.947	2.745	2.941	02941	2.643	2.947	2.683	2.941					
03004	2.768	3.010	2.808	3.004	03004	2.706	3.010	2.746	3.004					
03066	2.830	3.072	2.870	3.066	03066	2.768	3.072	2.808	3.066					
03129	2.893	3.135	2.933	3.129	03129	2.831	3.135	2.871	3.129					
03191	2.955	3.197	2.995	3.191	03191	2.893	3.197	2.933	3.191					
03254	3.018	3.260	3.058	3.254	03254	2.956	3.260	2.996	3.254					
03316	3.080	3.322	3.120	3.316	03316	3.018	3.322	3.058	3.316					
03379	3.143	3.385	3.183	3.379	03379	3.081	3.385	3.121	3.379					
03441	3.205	3.447	3.245	3.441	03441	3.143	3.447	3.183	3.441					
03504	3.268	3.510	3.308	3.504	03504	3.206	3.510	3.246	3.504					
03629	3.330	3.635	3.433	3.629	03629	3.331	3.635	3.371	3.629					
03754	3.518	3.760	3.558	3.754	03754	3.456	3.760	3.496	3.754					
03879	3.643	3.885	3.683	3.879	03879	3.581	3.885	3.621	3.879					
04004	3.768	4.010	3.808	4.004	04004	3.706	4.010	3.746	4.004					
04129	3.893	4.135	3.933	4.129	04129	3.831	4.135	3.871	4.129	06254	5.956	6.260	5.996	6.254
04254	4.018	4.260	4.058	4.254	04254	3.956	4.260	3.996	4.254	06504	6.206	6.510	6.246	6.504
04379	4.143	4.385	4.183	4.379	04379	4.081	4.385	4.121	4.379	06754	6.456	6.760	6.496	6.754
04504	4.268	4.510	4.308	4.504	04504	4.206	4.510	4.246	4.504	07004	6.706	7.010	6.746	7.004
04629	4.393	4.635	4.433	4.629	04629	4.331	4.635	4.371	4.629	07254	6.956	7.260	6.996	7.254
04754	4.518	4.760	4.558	4.754	04754	4.456	4.760	4.496	4.754	07504	7.206	7.510	7.246	7.504
04879	4.643	4.885	4.683	4.879	04879	4.581	4.885	4.621	4.879	07754	7.456	7.760	7.496	7.754
05004	4.768	5.010	4.808	5.004	05004	4.706	5.010	4.746	5.004	08004	7.706	8.010	7.746	8.004
05129	4.893	5.135	4.933	5.129	05129	4.831	5.135	4.871	5.129	08254	7.956	8.260	7.996	8.254
05254	5.018	5.260	5.058	5.254	05254	4.956	5.260	4.996	5.254	08504	8.206	8.510	8.246	8.504
05374	5.143	5.385	5.183	5.379	05374	5.081	5.385	5.121	5.379	08754	8.456	8.760	8.496	8.754
05504	5.268	5.510	5.308	5.504	05504	5.206	5.510	5.246	5.504	09004	8.706	9.010	8.746	9.004
05629	5.393	5.635	5.433	5.629	05629	5.331	5.635	5.371	5.629	09254	8.956	9.260	8.996	9.254
05754	5.518	5.760	5.558	5.754	05754	5.456	5.760	5.496	5.754	09504	9.206	9.510	9.246	9.504
05879	5.643	5.885	5.683	5.879	05879	5.581	5.885	5.621	5.879	09754	9.456	9.760	9.496	9.754
06004	5.768	6.010	5.808	6.004	06004	5.706	6.010	5.746	6.004	10004	9.706	10.010	9.746	10.004

Seal dimensions in inches, prior to plating or coating



- Recommended for high pressure liquid and gas systems and equipment.
- See page 5 for all dimensions and tolerances other than those for diameters.
- Seal diameters are average. See roundness table, Page 7.
- Inner cavity wall optional.
- Standard sizes are presented. Non-standard diameters may be derived by interpolation. Tooling engineering charges may apply.
- Cavity sealing surface texture 32 μ-in. circ. lay..

P/N: JVE

seal type diameter code cross-section material heat treatment plating
derived from seal I.D., Pages 10 & 11 Page 5 Page 5 Page 5 Page 6

THESE ARE THE RECOMMENDED SEAL SIZES, HOWEVER, IT DOES NOT GUARANTEE TOOLING AVAILABILITY

FREE HEIGHT .034					FREE HEIGHT .062					FREE HEIGHT .091				
SEAL DIA. CODE	CAVITY		SEAL		SEAL DIA. CODE	CAVITY		SEAL		SEAL DIA. CODE	CAVITY		SEAL	
	I.D.	O.D.	I.D.	O.D.		I.D.	O.D.	I.D.	O.D.		I.D.	O.D.	I.D.	O.D.
	+0.000	(MIN)	+0.008	(MAX)		+0.000	(MIN)	+0.008	(MAX)		+0.000	(MIN)	+0.008	(MAX)
	-0.005		-0.000			-0.005		-0.000			-0.005		-0.000	
00183	.177	.294	.183	.254										
00246	.240	.356	.246	.316										
00308	.302	.419	.308	.379										
00371	.365	.481	.371	.441	00371	.365	.544	.371	.504					
00433	.427	.544	.433	.504	00433	.427	.596	.433	.556					
00496	.490	.596	.496	.556	00496	.490	.669	.496	.629					
00558	.552	.669	.558	.629	00558	.552	.731	.558	.691					
00621	.615	.731	.621	.691	00621	.615	.794	.621	.754					
00683	.677	.794	.683	.754	00683	.677	.856	.683	.816					
00746	.740	.856	.746	.816	00746	.740	.919	.746	.879					
00808	.802	.919	.808	.879	00808	.802	.981	.808	.941	00808	.802	1.044	.808	1.004
00871	.865	.981	.871	.941	00871	.865	1.044	.871	1.004	00871	.865	1.106	.871	1.066
00933	.927	1.044	.933	1.004	00933	.927	1.106	.933	1.066	00933	.927	1.169	.933	1.129
00996	.990	1.106	.996	1.066	00996	.990	1.169	.996	1.129	00996	.990	1.231	.996	1.191
01058	1.052	1.169	1.058	1.129	01058	1.052	1.231	1.058	1.191	01058	1.052	1.294	1.058	1.254
01121	1.115	1.231	1.121	1.191	01121	1.115	1.294	1.121	1.254	01121	1.115	1.356	1.121	1.316
01183	1.177	1.294	1.183	1.254	01183	1.177	1.356	1.183	1.316	01183	1.177	1.419	1.183	1.379
01246	1.240	1.356	1.246	1.316	01246	1.240	1.419	1.246	1.379	01246	1.240	1.481	1.246	1.441
01308	1.302	1.419	1.308	1.379	01308	1.302	1.481	1.308	1.441	01308	1.302	1.544	1.308	1.504
01371	1.365	1.481	1.371	1.441	01371	1.365	1.544	1.371	1.504	01371	1.365	1.606	1.371	1.566
01433	1.427	1.544	1.433	1.504	01433	1.427	1.606	1.433	1.566	01433	1.427	1.669	1.433	1.629
					01496	1.490	1.669	1.496	1.629	01496	1.490	1.731	1.496	1.691
					01558	1.552	1.731	1.558	1.691	01558	1.552	1.794	1.558	1.754
					01621	1.615	1.794	1.621	1.754	01621	1.615	1.856	1.621	1.816
					01683	1.677	1.856	1.683	1.816	01683	1.677	1.919	1.683	1.879
					01746	1.740	1.919	1.746	1.879	01746	1.740	1.981	1.746	1.941
					01808	1.802	1.981	1.808	1.941	01808	1.802	2.044	1.808	2.004

Seal dimensions in inches, prior to plating or coating

THESE ARE THE RECOMMENDED SEAL SIZES, HOWEVER, IT DOES NOT GUARANTEE TOOLING AVAILABILITY

FREE HEIGHT .091					FREE HEIGHT .123					FREE HEIGHT .123				
SEAL DIA. CODE	CAVITY		SEAL		SEAL DIA. CODE	CAVITY		SEAL		SEAL DIA. CODE	CAVITY		SEAL	
	I.D.	O.D.	I.D.	O.D.		I.D.	O.D.	I.D.	O.D.		I.D.	O.D.	I.D.	O.D.
	+0.000	(MIN)	+0.008	(MAX)		+0.000	(MIN)	+0.008	(MAX)		+0.000	(MIN)	+0.008	(MAX)
01871	1.865	2.106	1.871	2.066	01871	1.865	2.169	1.871	2.129					
01933	1.927	2.169	1.933	2.129	01933	1.927	2.231	1.933	2.191					
01996	1.990	2.231	1.996	2.191	01996	1.990	2.294	1.996	2.254					
02058	2.052	2.294	2.058	2.254	02058	2.052	2.356	2.058	2.316					
02121	2.115	2.356	2.121	2.316	02121	2.115	2.419	2.121	2.379					
02183	2.177	2.419	2.183	2.379	02183	2.177	2.481	2.183	2.441					
02246	2.240	2.481	2.246	2.441	02246	2.240	2.544	2.246	2.504					
02308	2.302	2.544	2.308	2.504	02308	2.302	2.606	2.308	2.566					
02371	2.365	2.606	2.371	2.566	02371	2.365	2.669	2.371	2.629					
02433	2.427	2.669	2.433	2.629	02433	2.427	2.731	2.433	2.691					
02496	2.490	2.731	2.496	2.691	02496	2.490	2.794	2.496	2.754					
02558	2.552	2.794	2.558	2.754	02558	2.552	2.856	2.558	2.816					
02621	2.615	2.856	2.621	2.816	02621	2.615	2.919	2.621	2.879					
02683	2.677	2.919	2.683	2.879	02683	2.677	2.981	2.683	2.941					
02746	2.740	2.981	2.746	2.941	02746	2.740	3.044	2.746	3.004					
02808	2.802	3.044	2.808	3.004	02808	2.802	3.106	2.808	3.066					
02871	2.865	3.106	2.871	3.066	02871	2.865	3.169	2.871	3.129					
02933	2.927	3.169	2.933	3.129	02933	2.927	3.231	2.933	3.191					
02996	2.990	3.231	2.996	3.191	02996	2.990	3.294	2.996	3.254					
03058	3.052	3.294	3.058	3.254	03058	3.052	3.356	3.058	3.316					
03121	3.115	3.356	3.121	3.316	03121	3.115	3.419	3.121	3.379					
03183	3.177	3.419	3.183	3.379	03183	3.177	3.481	3.183	3.441					
03246	3.240	3.481	3.246	3.441	03246	3.240	3.544	3.246	3.504					
03308	3.302	3.544	3.308	3.504	03308	3.302	3.606	3.308	3.566					
03371	3.365	3.606	3.371	3.566	03371	3.365	3.669	3.371	3.629					
03433	3.427	3.669	3.433	3.629	03433	3.427	3.731	3.433	3.691					
03496	3.490	3.731	3.496	3.691	03496	3.490	3.794	3.496	3.754					
03558	3.552	3.794	3.558	3.754	03558	3.552	3.856	3.558	3.816					
03621	3.615	3.856	3.621	3.816	03621	3.615	3.919	3.621	3.879					
03683	3.677	3.919	3.683	3.879	03683	3.677	3.981	3.683	3.941					
03746	3.740	3.981	3.746	3.941	03746	3.740	4.044	3.746	4.004					
03808	3.802	4.044	3.808	4.004	03808	3.802	4.106	3.808	4.066					
03871	3.865	4.106	3.871	4.066	03871	3.865	4.169	3.871	4.129	06496	6.490	6.794	6.496	6.754
03933	3.927	4.169	3.933	4.129	03933	3.927	4.231	3.933	4.191	06746	6.740	7.044	6.746	7.004
03996	3.990	4.231	3.996	4.191	03996	3.990	4.294	3.996	4.254	06996	6.990	7.294	6.996	7.254
04058	4.052	4.294	4.058	4.254	04121	4.115	4.419	4.121	4.379	07246	7.240	7.544	7.246	7.504
04183	4.177	4.419	4.183	4.379	04246	4.240	4.544	4.246	4.504	07496	7.490	7.794	7.496	7.754
04308	4.302	4.544	4.308	4.504	04371	4.365	4.669	4.371	4.629	07746	4.740	8.044	7.746	8.004
04433	4.427	4.669	4.433	4.629	04496	4.490	4.794	4.496	4.754	07996	7.990	8.294	7.996	8.254
04558	4.552	4.794	4.558	4.754	04621	4.615	4.919	4.621	4.879	08246	8.240	8.544	8.246	8.504
04683	4.677	4.919	4.683	4.879	04746	4.740	5.044	4.746	5.004	08496	8.490	8.794	8.496	8.754
04808	4.802	5.044	4.808	5.004	04871	4.865	5.169	4.871	5.129	08746	8.740	9.044	8.746	9.004
04933	4.927	5.169	4.933	5.129	04996	4.990	5.294	4.996	5.254	08996	8.990	9.294	8.996	9.254
05058	5.052	5.294	5.058	5.254	05121	5.115	5.419	5.121	5.379	09246	9.240	9.544	9.246	9.504
05183	5.177	5.419	5.183	5.379	05246	5.240	5.544	5.246	5.504	09496	9.490	9.794	9.496	9.754
05308	5.302	5.544	5.308	5.504	05371	5.365	5.669	5.371	5.629	09746	9.740	10.044	9.746	10.004
05433	5.427	5.669	5.433	5.629	05496	5.490	5.794	5.496	5.754	09996	9.990	10.294	9.996	10.254
05558	5.552	5.794	5.558	5.754	05621	5.615	5.919	5.621	5.879	10246	10.240	10.544	10.246	10.504
05683	5.677	5.919	5.683	5.879	05746	5.740	6.044	5.746	6.004	10496	10.490	10.794	10.496	10.754
05808	5.802	6.044	5.808	6.004	05996	5.990	6.294	5.996	6.254	10746	10.740	11.044	10.746	11.004
05933	5.927	6.169	5.933	6.129	06246	6.240	6.544	6.246	6.504	10996	10.990	11.294	10.996	11.254

Seal dimensions in inches, prior to plating or coating