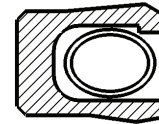




ECLIPSE

CANTED COIL SPRING ENERGIZED SEAL



ECS ROD SERIES

**FULL SERVICE SEAL & BEARING ENGINEERING,
MANUFACTURING AND DISTRIBUTION.**

Address

2540 S Main St., Erie, CO 80516
p: 303-460-1540 / f: 303-635-3005

Contact

sales@eclipseseal.com
www.eclipseseal.com



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Full service seal & bearing engineering,
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03 | Spring Seal Rod introduction

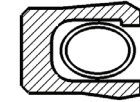
04 | Ordering overview

05 | Standard materials

06 | Standard part numbers

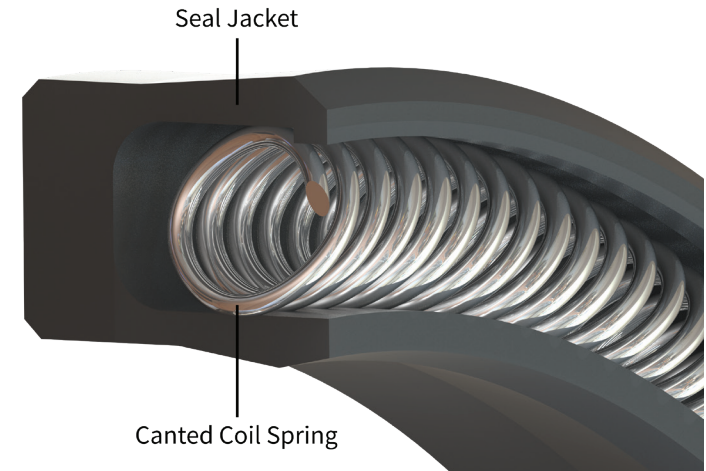
16 | Hardware details





ECLIPSE ECS - CANTED COIL SPRING ENERGIZED ROD SEAL

Eclipse Canted Coil Spring Seals employ a specialty wound wire spring installed in a polymer jacket. The canted coil is unique in the sealing industry because of its semi-linear load curve. As an engineered loading device, canted coil springs display a very constant load over a large deflection range. This feature allows Canted Coil Spring Seals to operate in friction sensitive applications like HPLC, encoders and flap actuators with consistent performance. Seals used in battery operated devices utilize these seals – minimizing seal friction and optimizing battery life. On the other end of the spectrum, Canted Coil Spring Seals are used with heavy load springs for use in highly viscous media such as epoxies and urethanes. Eclipse maintains an extensive inventory of canted coil spring making it possible to tailor seal requirements to nearly any application.



TYPICAL RANGE OF APPLICATION

Pressure	Temperature
Vacuum to 3,000 psi [0 to 200 bar]	-320°F to 450°F [-195°C to 230°C]

Ratings will vary based on materials and operating conditions

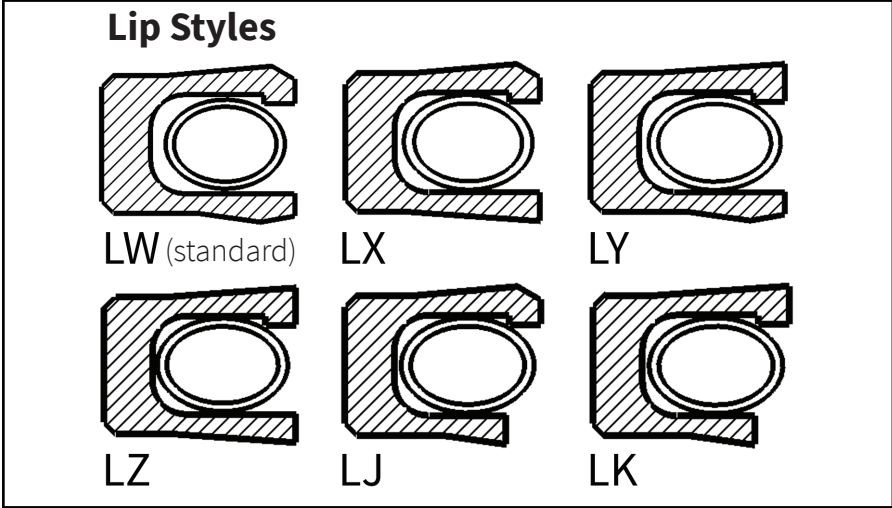
Values and ratings in this catalog are based on industry standard applications operating under ideal conditions. The customer should assume responsibility for validation testing of performance and suitability of Eclipse Engineering products. Eclipse Engineering accepts no liability for the accuracy and applicability of provided information.

STANDARD ORDERING EXAMPLE:

ECS-R-234-LW-ET006-M-S

- ECS** = Seal Series
- R** = Rod
- 234** = Dash Number
- LW** = Lip Style
- ET006** = Seal Material Code

- M** = Spring Load
L - Light
M - Medium
H - Heavy
- S** = Spring Material
S - Stainless Steel
E - Elgiloy®
H - Hastelloy®

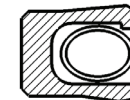


NON-STANDARD ORDERING EXAMPLE:

ECS-R-C-02953-LW-ET006-M-S

- C** = Nominal Cross-Section
A = 1/16 in. (000 Series)
B = 3/32 in. (100 Series)
C = 1/8 in. (200 Series)
D = 3/16 in. (300 Series)
E = 1/4 in. (400 Series)

- 02953** = Rod Diameter in 1000ths
Example: 02953 = Ø2.953
[75MM] Rod Diameter



ECS STANDARD SEAL MATERIALS

ECLIPSE MATERIAL CODE	DESCRIPTION	COLOR	APPLICATIONS
ET000	Virgin PTFE	White	Light Duty / Static / Cryogenics
ET006	Carbon filled PTFE	Black	General Purpose
EU000	Virgin UHMWPE	Translucent White	Viscous Media / Water
ET014	Polyimide filled PTFE	Orange/Brown	High Sealability / Soft Hardware

See [Eclipse Material Guide](#) for complete list of available materials.

ECS STANDARD SPRING MATERIALS

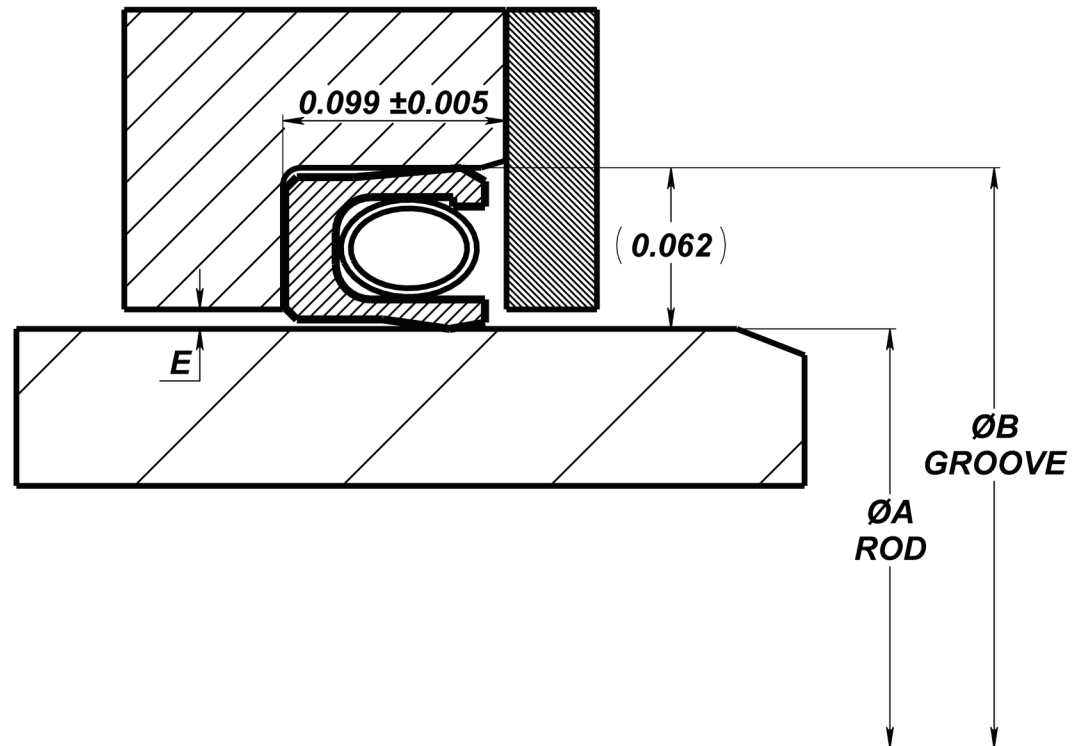
ECLIPSE MATERIAL CODE	SPRING MATERIAL	APPLICATION
S	300 Series Stainless Steel	General purpose, standard spring material
E	Elgiloy®	Improved performance and corrosion resistance; NACE approved
H	Hastelloy® C276	Maximum chemical/corrosion resistance

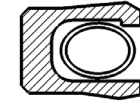
000 SERIES STANDARD DASH NUMBERS

GLAND TOLERANCES		
SEAL ID	ØA	ØB
0.125 to 0.374	+0.000 -0.001	+0.001 -0.000
0.375 to 2.999	+0.000 -0.002	+0.002 -0.000
3.000 to 7.999	+0.000 -0.003	+0.003 -0.000
8.000 and up	+0.000 -0.004	+0.004 -0.000

000 SERIES MAXIMUM EXTRUSION GAP (E), AT 70° F			
300 psi	1500 psi	3000 psi	6000 psi
0.008	0.004	0.003	0.002

Consult Eclipse Engineering for all custom or unlisted sizes.





000 SERIES STANDARD DASH NUMBERS:

DASH #	A	B
006	0.125	0.250
007	0.156	0.281
008	0.187	0.312
009	0.218	0.343
010	0.250	0.375
011	0.312	0.437
012	0.375	0.500
013	0.437	0.562
014	0.500	0.625
015	0.562	0.687

DASH #	A	B
016	0.625	0.750
017	0.687	0.812
018	0.750	0.875
019	0.812	0.937
020	0.875	1.000
021	0.937	1.062
022	1.000	1.125
023	1.062	1.187
024	1.125	1.250
025	1.187	1.312

DASH #	A	B
026	1.250	1.375
027	1.312	1.437
028	1.375	1.500
029	1.500	1.625
030	1.625	1.750
031	1.750	1.875
032	1.875	2.000
033	2.000	2.125
034	2.125	2.250
035	2.250	2.375

DASH #	A	B
036	2.375	2.500
037	2.500	2.625
038	2.625	2.750
039	2.750	2.875
040	2.875	3.000
041	3.000	3.125
042	3.250	3.375
043	3.500	3.625
044	3.750	3.875
045	4.000	4.125

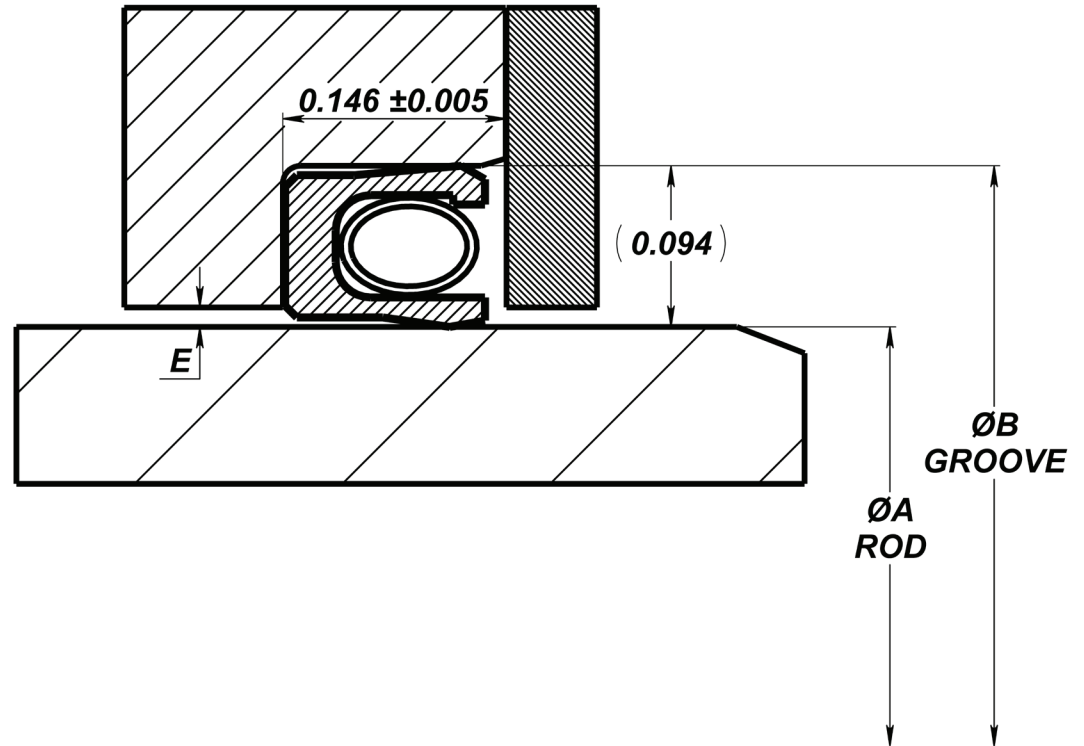
Consult Eclipse Engineering for all custom or unlisted sizes.

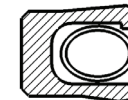
100 SERIES STANDARD DASH NUMBERS

GLAND TOLERANCES		
SEAL ID	ØA	ØB
0.125 to 0.374	+0.000 -0.001	+0.001 -0.000
0.375 to 2.999	+0.000 -0.002	+0.002 -0.000
3.000 to 7.999	+0.000 -0.003	+0.003 -0.000
8.000 and up	+0.000 -0.004	+0.004 -0.000

100 SERIES MAXIMUM EXTRUSION GAP (E), AT 70° F			
300 psi	1500 psi	3000 psi	6000 psi
0.010	0.006	0.004	0.003

Consult Eclipse Engineering for all custom or unlisted sizes.





100 SERIES STANDARD DASH NUMBERS:

DASH #	A	B
106	0.187	0.375
107	0.219	0.406
108	0.250	0.437
109	0.312	0.500
110	0.375	0.562
111	0.437	0.625
112	0.500	0.687
113	0.562	0.750
114	0.625	0.812
115	0.687	0.875
116	0.750	0.937
117	0.812	1.000
118	0.875	1.062
119	0.937	1.125

DASH #	A	B
120	1.000	1.187
121	1.062	1.250
122	1.125	1.312
123	1.187	1.375
124	1.250	1.437
125	1.312	1.500
126	1.375	1.562
127	1.437	1.625
128	1.500	1.687
129	1.562	1.750
130	1.625	1.812
131	1.687	1.875
132	1.750	1.937
133	1.812	2.000

DASH #	A	B
134	1.875	2.062
135	1.937	2.125
136	2.000	2.187
137	2.062	2.250
138	2.125	2.312
139	2.187	2.375
140	2.250	2.437
141	2.312	2.500
142	2.375	2.562
143	2.437	2.625
144	2.500	2.687
145	2.562	2.750
146	2.625	2.812
147	2.687	2.875

DASH #	A	B
148	2.750	2.937
149	2.812	3.000
150	2.875	3.062
151	3.000	3.187
152	3.250	3.437
153	3.500	3.687
154	3.750	3.937
155	4.000	4.187
156	4.250	4.437
157	4.500	4.687
158	4.750	4.937
159	5.000	5.187
160	5.250	5.437
161	5.500	5.687

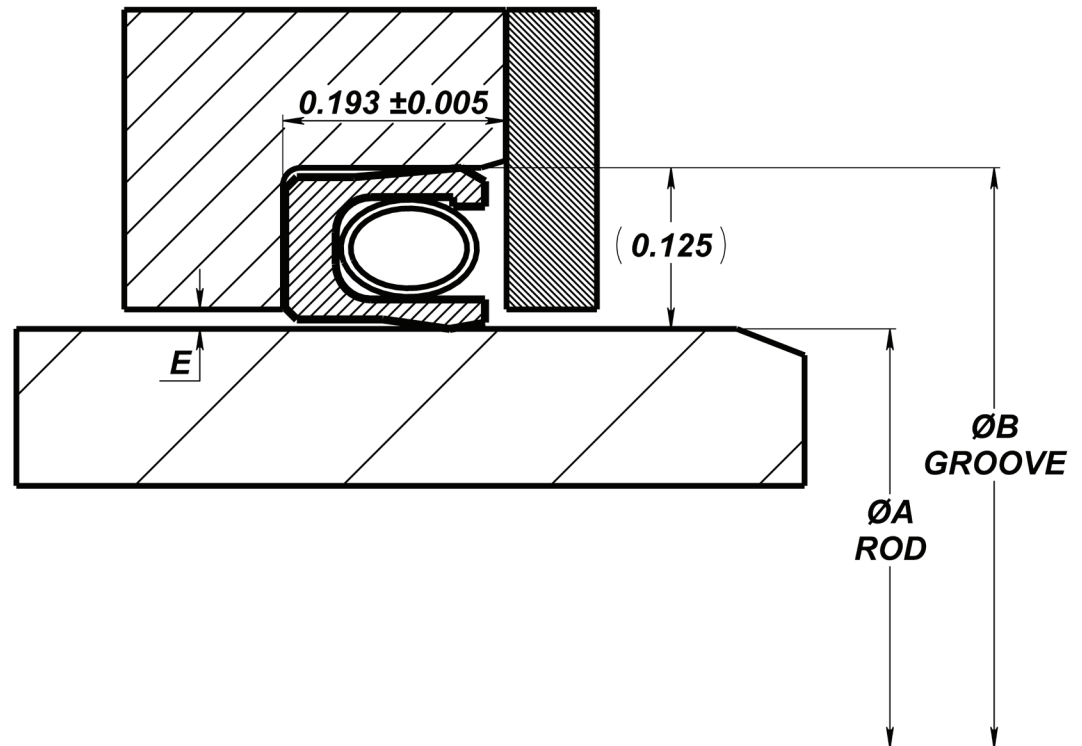
Consult Eclipse Engineering for all custom or unlisted sizes.

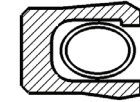
200 SERIES STANDARD DASH NUMBERS

GLAND TOLERANCES		
SEAL ID	ØA	ØB
0.125 to 0.374	+0.000 -0.001	+0.001 -0.000
0.375 to 2.999	+0.000 -0.002	+0.002 -0.000
3.000 to 7.999	+0.000 -0.003	+0.003 -0.000
8.000 and up	+0.000 -0.004	+0.004 -0.000

200 SERIES MAXIMUM EXTRUSION GAP (E), AT 70° F			
300 psi	1500 psi	3000 psi	6000 psi
0.014	0.008	0.006	0.003

Consult Eclipse Engineering for all custom or unlisted sizes.





200 SERIES STANDARD DASH NUMBERS:

DASH #	A	B
202	0.250	0.500
204	0.375	0.625
206	0.500	0.750
208	0.625	0.875
209	0.687	0.937
210	0.750	1.000
211	0.812	1.062
212	0.875	1.125
213	0.937	1.187
214	1.000	1.250
215	1.062	1.312
216	1.125	1.375
217	1.187	1.437
218	1.250	1.500

DASH #	A	B
219	1.312	1.562
220	1.375	1.625
221	1.437	1.687
222	1.500	1.750
223	1.625	1.875
224	1.750	2.000
225	1.875	2.125
226	2.000	2.250
227	2.125	2.375
228	2.250	2.500
229	2.375	2.625
230	2.500	2.750
231	2.625	2.875
232	2.750	3.000

DASH #	A	B
233	2.875	3.125
234	3.000	3.250
235	3.125	3.375
236	3.250	3.500
237	3.375	3.625
238	3.500	3.750
239	3.625	3.875
240	3.750	4.000
241	3.875	4.125
242	4.000	4.250
243	4.125	4.375
244	4.250	4.500
245	4.375	4.625
246	4.500	4.750

DASH #	A	B
247	4.625	4.875
248	4.750	5.000
249	4.875	5.125
250	5.000	5.250
252	5.250	5.500
254	5.500	5.750
256	5.750	6.000
258	6.000	6.250
260	6.500	6.750
262	7.000	7.250
264	7.500	7.750
266	8.000	8.250
268	8.500	8.750
270	9.000	9.250

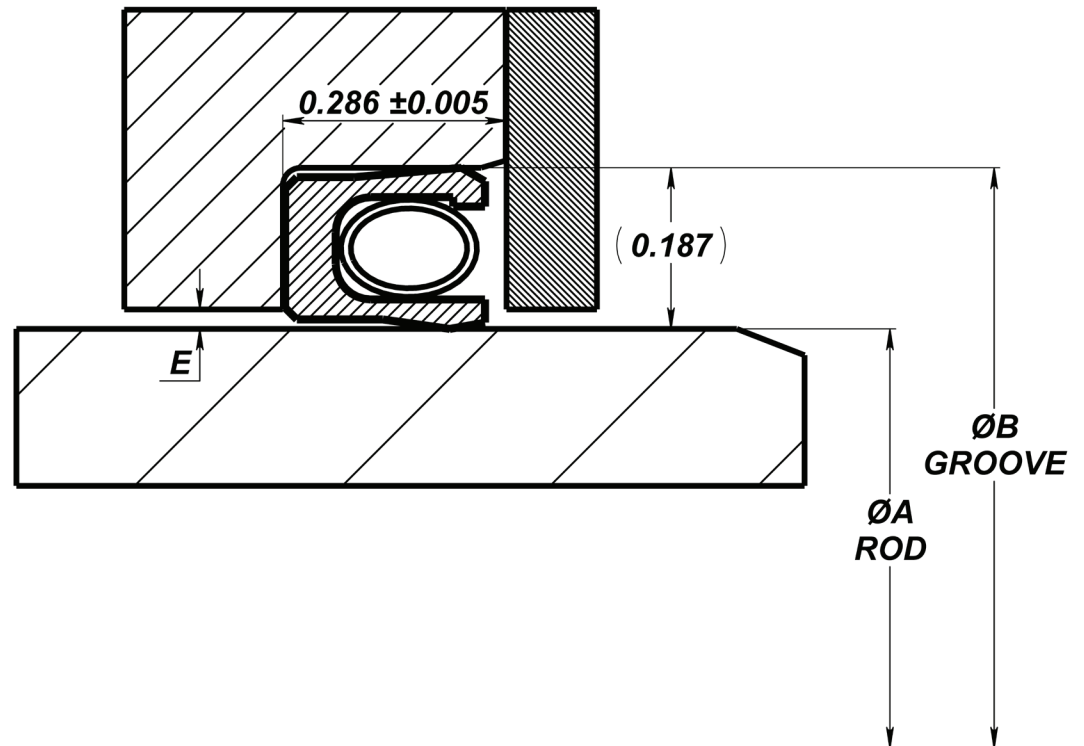
Consult Eclipse Engineering for all custom or unlisted sizes.

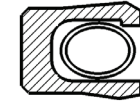
300 SERIES STANDARD DASH NUMBERS

GLAND TOLERANCES		
SEAL ID	ØA	ØB
0.125 to 0.374	+0.000 -0.001	+0.001 -0.000
0.375 to 2.999	+0.000 -0.002	+0.002 -0.000
3.000 to 7.999	+0.000 -0.003	+0.003 -0.000
8.000 and up	+0.000 -0.004	+0.004 -0.000

300 SERIES MAXIMUM EXTRUSION GAP (E), AT 70° F			
300 psi	1500 psi	3000 psi	6000 psi
0.020	0.010	0.008	0.004

Consult Eclipse Engineering for all custom or unlisted sizes.





300 SERIES STANDARD DASH NUMBERS:

DASH #	A	B
316	0.875	1.250
317	0.937	1.312
318	1.000	1.375
319	1.062	1.437
320	1.125	1.500
321	1.187	1.562
322	1.250	1.625
323	1.312	1.687
324	1.375	1.750
325	1.500	1.875
326	1.625	2.000
327	1.750	2.125
328	1.875	2.250
329	2.000	2.375

DASH #	A	B
330	2.125	2.500
331	2.250	2.625
332	2.375	2.750
333	2.500	2.875
334	2.625	3.000
335	2.750	3.125
336	2.875	3.250
337	3.000	3.375
338	3.125	3.500
339	3.250	3.625
340	3.375	3.750
341	3.500	3.875
342	3.625	4.000
343	3.750	4.125

DASH #	A	B
344	3.875	4.250
345	4.000	4.375
346	4.125	4.500
347	4.250	4.625
348	4.375	4.750
349	4.500	4.875
350	4.625	5.000
351	4.750	5.125
352	4.875	5.250
353	5.000	5.375
354	5.125	5.500
355	5.250	5.625
356	5.375	5.750
357	5.500	5.875

DASH #	A	B
358	5.625	6.000
359	5.750	6.125
360	5.875	6.250
361	6.000	6.375
362	6.250	6.625
363	6.500	6.875
365	7.000	7.375
367	7.500	7.875
369	8.000	8.375
371	8.500	8.875
373	9.000	9.375
375	9.500	9.875
377	10.000	10.375
378	10.500	10.875

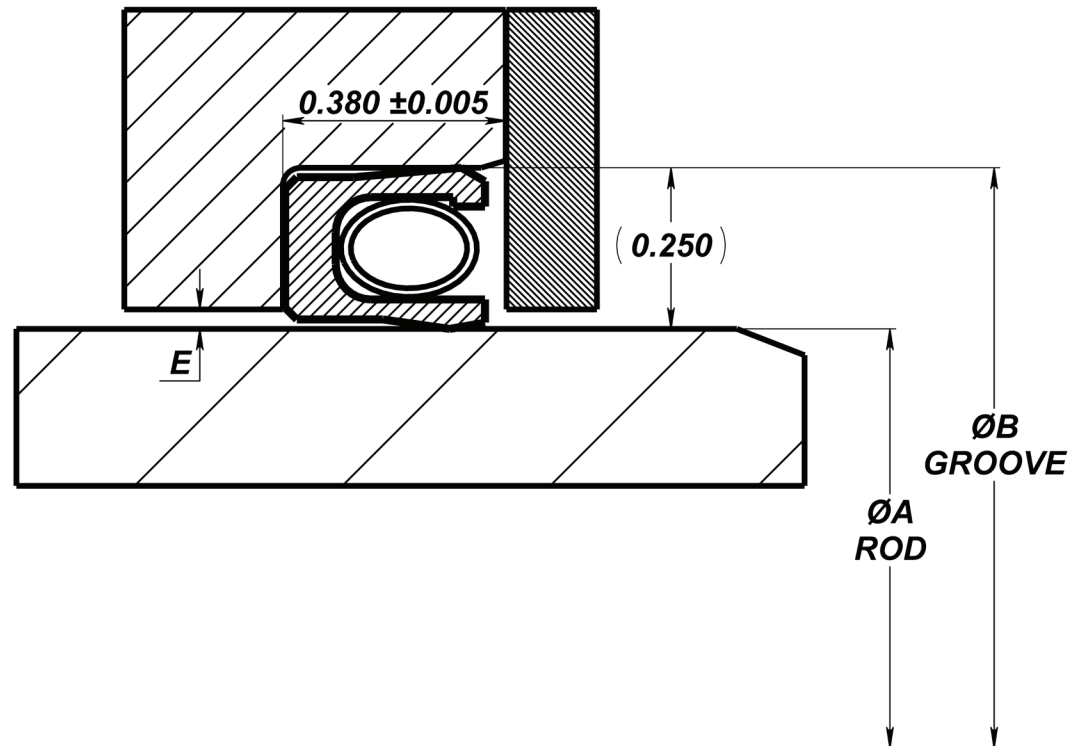
Consult Eclipse Engineering for all custom or unlisted sizes.

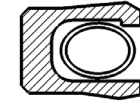
400 SERIES STANDARD DASH NUMBERS

GLAND TOLERANCES		
SEAL ID	ØA	ØB
0.125 to 0.374	+0.000 -0.001	+0.001 -0.000
0.375 to 2.999	+0.000 -0.002	+0.002 -0.000
3.000 to 7.999	+0.000 -0.003	+0.003 -0.000
8.000 and up	+0.000 -0.004	+0.004 -0.000

400 SERIES MAXIMUM EXTRUSION GAP (E), AT 70° F			
300 psi	1500 psi	3000 psi	6000 psi
0.024	0.012	0.010	0.005

Consult Eclipse Engineering for all custom or unlisted sizes.





400 SERIES STANDARD DASH NUMBERS:

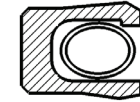
DASH #	A	B
401	1.500	2.000
402	1.625	2.125
403	1.750	2.250
404	1.875	2.375
405	2.000	2.500
406	2.125	2.625
407	2.250	2.750
408	2.375	2.875
409	2.500	3.000
410	2.625	3.125
411	2.750	3.250
412	2.875	3.375
413	3.000	3.500
414	3.125	3.625

DASH #	A	B
415	3.250	3.750
416	3.375	3.875
417	3.500	4.000
418	3.625	4.125
419	3.750	4.250
420	3.875	4.375
421	4.000	4.500
422	4.125	4.625
423	4.250	4.750
424	4.375	4.875
425	4.500	5.000
426	4.625	5.125
427	4.750	5.250
428	4.875	5.375

DASH #	A	B
429	5.000	5.500
430	5.125	5.625
431	5.250	5.750
432	5.375	5.875
433	5.500	6.000
434	5.625	6.125
435	5.750	6.250
436	5.875	6.375
437	6.000	6.500
438	6.250	6.750
439	6.500	7.000
440	6.750	7.250
441	7.000	7.500
442	7.250	7.750

DASH #	A	B
443	7.500	8.000
444	7.750	8.250
445	8.000	8.500
446	8.500	9.000
447	9.000	9.500
448	9.500	10.000
449	10.000	10.500
450	10.500	11.000
451	11.000	11.500
452	11.500	12.000
454	12.500	13.000
456	13.500	14.000
458	14.500	15.000
460	15.500	16.000

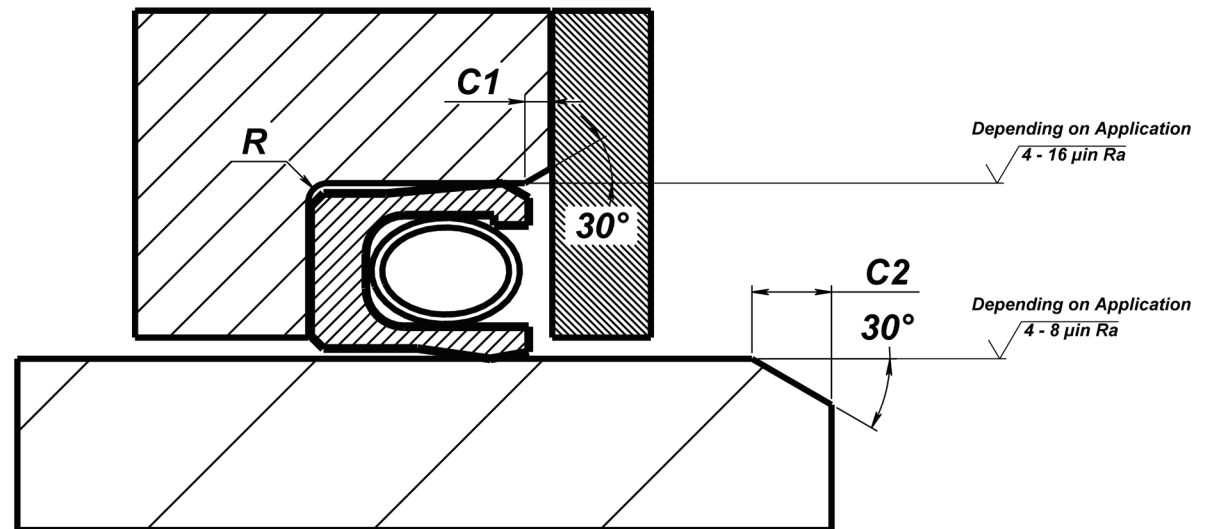
Consult Eclipse Engineering for all custom or unlisted sizes.



HARDWARE DETAILS - SPLIT GLAND

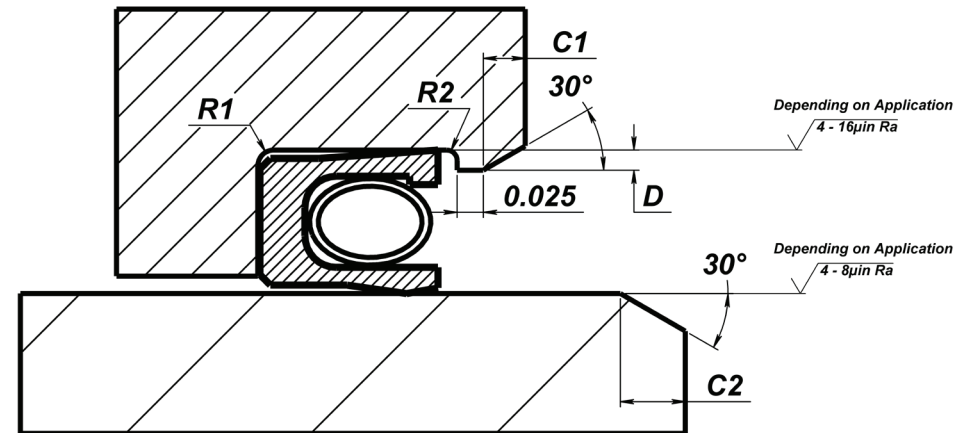
SERIES	R RADIUS MAX	C1 CHAMFER MIN	C2 CHAMFER MIN
000	0.010	0.010	0.031
100	0.015	0.015	0.050
200	0.015	0.015	0.062
300	0.015	0.020	0.093
400	0.020	0.020	0.125

Consult Eclipse Engineering for application/material specific design requirements or for use in solid or non-standard glands.



HARDWARE DETAILS - STEPPED GLAND

SERIES	000	100	200	300	400
R1 RADIUS MAX	0.010	0.015	0.015	0.015	0.020
R2 RADIUS MAX	0.005	0.005	0.007	0.010	0.010
D STEP HEIGHT	0.008/0.012	0.010/0.015	0.015/0.020	0.017/0.023	0.022/0.028
C1 CHAMFER MIN	0.025	0.030	0.040	0.045	0.055
C2 CHAMFER MIN	0.031	0.050	0.062	0.093	0.125
MIN ROD Ø REQUIRED	0.250	0.375	0.750	1.000	2.000



Consult Eclipse Engineering for application/material specific design requirements or for use in solid or non-standard glands.

We started Eclipse with the premise that if we could solve enough of our customers problems they would continue to come back to us for solutions regardless of the type of products we offered.



Eclipse has evolved to produce standard product offerings for a wide range of industries including Hydraulics, Pneumatics, Energy Production, Aerospace as well as Pharmaceutical and Food Handling. Instituting ISO9001/AS9100 quality system in 2015 allowed Eclipse to become a top tier supplier.

Today, Eclipse can support our smaller customers that require only a few seals a year to those needing in the 100's of thousands. We continue to retain a quality product and are able to deliver consistently on time. Our customers continue to bring us challenging projects that allow our team to do what we do best, problem solving.



 **eclipse** | engineering inc.



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Eclipse Engineering

Full service seal & bearing engineering,
manufacturing and distribution.