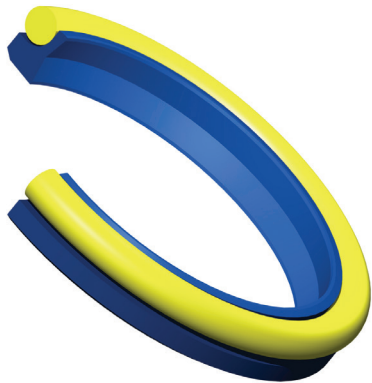


Special Series Scrapers

Fits AS4088/AS4052 Glands

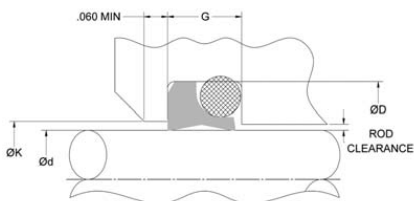


5460 Scraper



228X Scraper (Bidirectional)

2285/2286 Gland



Self-Venting Scrapers

These self-venting o-ring energized scrapers are designed to provide maximum exclusion capabilities when used in Type I or Type II gland configurations of SAE AS4088 and AS4052. The same rod and gland diameters apply for both AS4088 and AS4052 (AS4716 glands with an increased atmospheric lip diameter), and gland widths are variable depending on the specification. Depending on the specification, different gland lip diameters are used. AS4088 is typically used for hydraulic actuator systems, while AS4052 is typically used for landing gear shock struts.

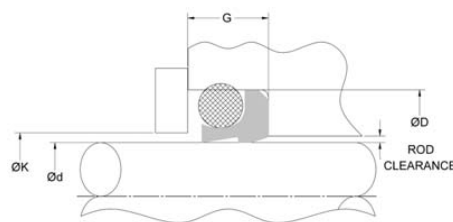
Features and Benefits

- Excellent wear resistance resulting in extended service life
- Maximum exclusion capabilities for elimination of contamination ingress
- Virtually eliminates rod wear and rolling and twisting, resulting in extended system service life
- Offered in a variety of configurations to meet most of the standard glands used in today's existing aircraft

Special Scrapers Configurations

Gland Dimensions

5460 Gland



Contact Us

Greene Tweed
Kulpsville, PA, USA

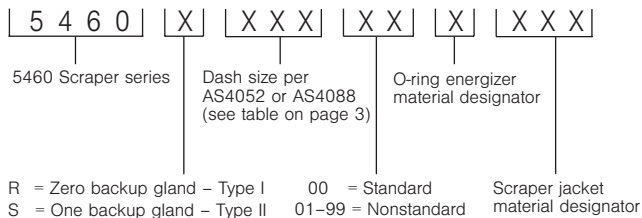
Tel: +1.215.256.9521
Fax: +1.215.256.0189

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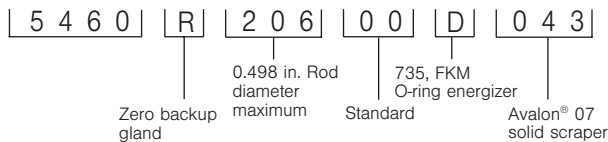
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5460 Series Scraper Part Numbering Systems

The part numbering system requires the use of the material designator tables found below. For nonstandard designs, contact Greene Tweed engineering.



Part Numbering Example – 5460 Series

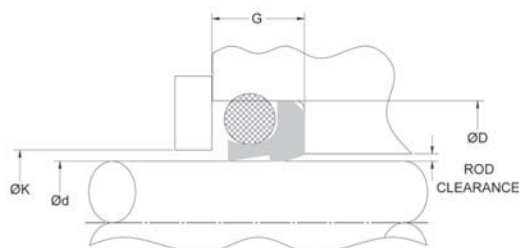


Material Designator Tables – 5460 Series

Code	Scraper Jacket
043	Avalon® 07
019	Avalon® 09
344	Avalon® 44
357	Avalon® 57
379	Avalon® 69
389	Avalon® 89

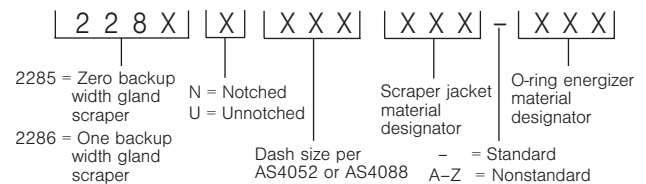
Code	O-Ring Energizer
C	165 NBR, Nitrile
H	193 NBR, Nitrile
D	735 FKM, Fluorocarbon
R	757 FKM, Fluorocarbon
J	963 EPDM, Ethylene Propylene

For Reference: 5460 Gland

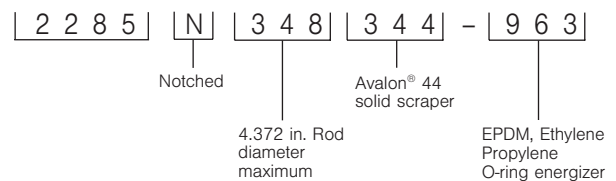


228X Series Scraper Part Numbering Systems

The part numbering system requires the use of the material designator tables found below. For nonstandard designs, contact Greene Tweed engineering.



Part Numbering Examples – 228X Scraper

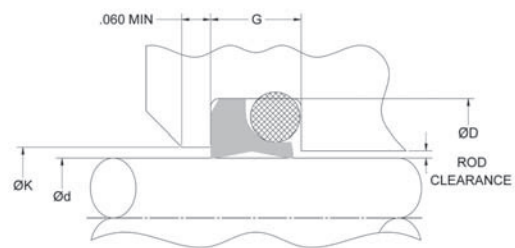


Material Designator Tables – 228X

Code	Scraper Jacket
043	Avalon® 07
019	Avalon® 09
344	Avalon® 44
357	Avalon® 57
379	Avalon® 69
389	Avalon® 89

Code	O-Ring Energizer
165	NBR, Nitrile
193	NBR, Nitrile
735	FKM, Fluorocarbon
757	FKM, Fluorocarbon
963	EPDM, Ethylene Propylene

For Reference: 2285/2286 Gland



Contact your local Greene Tweed representative for specific recommendations to suit higher performance requirements.

Contact Us

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Dimensional Information—AS4052/AS4088 (in Inches)

Dash No.	Ø d Rod O.D. +0.000 -0.001	Ø D Gland I.D. +0.001 -0.000	AS4088 Ø K Minor I.D. +0.010 -0.000	AS4052** Ø K Minor I.D. +0.010 -0.000	G Gland Width +0.010/-0.000	
					R Type I	S Type II
108	0.248	0.423	0.278		0.141	0.183
109	0.310	0.486	0.340		0.141	0.183
Dash No.	Ø d Rod O.D. +0.000 -0.002	Ø D Gland I.D. +0.002 -0.000	AS4088 Ø K Minor I.D. +0.010 -0.000	AS4052** Ø K Minor I.D. +0.010 -0.000	G Gland Width +0.010/-0.000	
					R Type I	S Type II
110	0.373	0.546	0.403		0.141	0.183
111	0.435	0.609	0.465			
112*	0.498	0.672	0.528			
113*	0.560	0.734	0.590			
114*	0.623	0.797	0.653			
115*	0.685	0.859	0.715			
116*	0.748	0.923	0.778			
206	0.498	0.741	0.528		0.188	0.235
207	0.560	0.803	0.590			
208	0.623	0.866	0.653			
209	0.685	0.928	0.715			
210	0.748	0.991	0.778			
211	0.810	1.053	0.852			
212	0.873	1.116	0.915			
213	0.935	1.178	0.977			
214	0.998	1.241	1.040			
215	1.060	1.303	1.102			
216	1.123	1.366	1.165			
217	1.185	1.428	1.227			
218	1.248	1.491	1.290			
219	1.310	1.553	1.352			
220	1.373	1.616	1.415			
221	1.435	1.678	1.477			
222	1.498	1.741	1.540			
325	1.498	1.870	1.540	1.674	0.281	0.334
326	1.623	1.995	1.665	1.799		
327	1.748	2.120	1.790	1.924		
328	1.873	2.245	1.915	2.049		
329	1.998	2.370	2.040	2.174		
330	2.123	2.495	2.165	2.299		
331	2.248	2.620	2.290	2.424		
332	2.373	2.745	2.415	2.549		
333	2.498	2.870	2.540	2.674		
334	2.623	2.995	2.665	2.799		
335	2.748	3.120	2.790	2.924		
336	2.873	3.245	2.915	3.049		
337	2.997	3.369	3.039	3.173		
338	3.122	3.494	3.164	3.299		
339	3.247	3.619	3.289	3.423		
340	3.372	3.744	3.414	3.548		
341	3.497	3.869	3.539	3.673		
342	3.622	3.994	3.664	3.799		
343	3.747	4.119	3.789	3.923		
344	3.872	4.244	3.914	4.048		
345	3.997	4.369	4.039	4.173		
346	4.122	4.494	4.164	4.299		
347	4.247	4.619	4.289	4.423		
348	4.372	4.744	4.414	4.548		
349	4.497	4.869	4.539	4.673		

Dash No.	Ø d Rod O.D. +0.000 -0.003	Ø D Gland I.D. +0.003 -0.000	AS4088 Ø K Minor I.D. +0.010 -0.000	AS4052** Ø K Minor I.D. +0.010 -0.000	G Gland Width +0.010/-0.000	
					R Type I	S Type II
425	4.497	4.974	4.539	4.726	0.375	0.475
426	4.622	5.099	4.664	4.851		
427	4.747	5.224	4.789	4.976		
428	4.872	5.349	4.914	5.101		
429	4.997	5.474	5.039	5.226		
430	5.122	5.599	5.164	5.351		
431	5.247	5.724	5.289	5.476		
432	5.372	5.849	5.414	5.601		
433	5.497	5.974	5.539	5.726		
434	5.622	6.099	5.664	5.851		
435	5.747	6.224	5.789	5.976		
436	5.872	6.349	5.914	6.101		
437	5.997	6.474	6.039	6.226		
438	6.247	6.724	6.289	6.476		
439	6.497	6.974	6.539	6.726		
440	6.747	7.224	6.789	6.976		
441	6.997	7.474	7.039	7.226		
442	7.247	7.724	7.289	7.476		
443	7.497	7.974	7.539	7.726		
444	7.747	8.224	7.789	7.976		
445	7.997	8.474	8.039	8.226		
446	8.497	8.974	8.539	8.726		
447	8.997	9.474	9.039	9.226		
448	9.497	9.974	9.539	9.726		
449	9.997	10.494	10.039	10.226		
450	10.497	10.974	10.539	10.726		
451	10.997	11.474	11.039	11.226		
452	11.497	11.974	11.539	11.726		
453	11.997	12.474	12.039	12.226		
454	12.497	12.974	12.539	12.726		
455	12.997	13.474	13.039	13.226		
456	13.497	13.974	13.539	13.726		
457	13.997	14.474	14.039	14.226		
458	14.497	14.974	14.539	14.726		
459	14.997	15.474	15.039	15.226		
460	15.497	15.974	15.539	15.726		

* Greene Tweed engineering assigned dash numbers not included in AS4088.

** AS4052, initial release (1994).

Note: Unless otherwise specified, gland dimensions per AS4716. R, Type I glands are not listed in AS4088 or AS4052 but are per AS4716 zero back-up width glands.

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