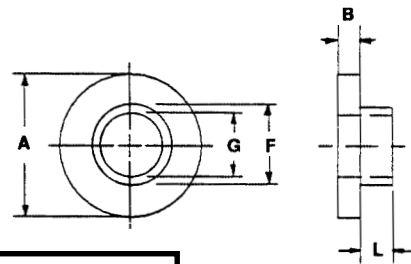


# FLUROPLASTIC SHOULDER WASHERS

\*Available in the following materials:

Material Code No.	Material Name	Material Code No.	Material Name
-29	Teflon®	-37	PVDF
-30	Tefzel®	-40	PFA (Teflon®)
-31	FEP®	-41	Halar®
-32	PCTFE		

\*Available in other materials. See materials list in index.  
Other sizes available on request.



Part No. D212 - (Size Code No.) - (Material Code No.)

Size Code No.	Shank Thk. L	Flange O.D. A	Flange Thk. B	Shank O.D. F	Shank I.D. G	Size Code No.	Shank Thk. L	Flange O.D. A	Flange Thk. B	Shank O.D. F	Shank I.D. G
-1	.047	.105	.047	.084	.061	-52	.062	.312	.062	.170	.120
-2	.031	.228	.031	.122	.093	-53	.047	.312	.062	.170	.120
-3	.031	.182	.078	.131	.085	-54	.125	.312	.047	.234	.144
-4	.016	.187	.031	.119	.089	-55	.016	.250	.031	.150	.116
-5	.062	.195	.031	.120	.093	-56	.218	.295	.031	.234	.140
-6	.031	.200	.078	.135	.116	-57	.031	.312	.062	.250	.196
-7	.187	.187	.031	.119	.063	-58	.172	.250	.047	.145	.115
-8	.078	.205	.031	.125	.093	-59	.047	.250	.031	.185	.116
-9	.109	.205	.031	.125	.093	-60	.109	.235	.047	.140	.115
-10	.187	.205	.031	.125	.093	-61	.140	.250	.047	.145	.115
-11	.047	.202	.016	.145	.120	-62	.187	.312	.062	.250	.156
-12	.062	.224	.031	.154	.120	-63	.094	.240	.031	.185	.125
-13	.156	.235	.047	.135	.110	-64	.047	.250	.047	.143	.115
-14	.062	.200	.031	.120	.093	-65	.109	.250	.047	.145	.115
-15	.047	.210	.016	.145	.120	-66	.062	.312	.047	.170	.140
-16	.047	.230	.016	.142	.122	-67	.047	.250	.062	.185	.116
-17	.031	.218	.047	.135	.115	-68	.031	.240	.047	.139	.115
-18	.437	.224	.031	.154	.120	-69	.031	.205	.031	.157	.126
-19	.031	.235	.047	.137	.115	-70	.031	.312	.062	.187	.141
-20	.047	.200	.031	.138	.109	-71	.312	.312	.031	.154	.130
-21	.218	.250	.172	.150	.115	-72	.187	.312	.031	.234	.184
-22	.031	.240	.031	.150	.098	-73	.218	.295	.031	.234	.140
-23	.031	.228	.047	.138	.100	-74	.062	.300	.047	.194	.160
-24	.125	.235	.047	.140	.115	-75	.016	.312	.047	.160	.090
-25	.125	.290	.016	.250	.193	-76	.094	.312	.047	.187	.128
-26	.047	.234	.047	.147	.115	-77	.062	.312	.047	.234	.144
-27	.094	.235	.047	.145	.115	-78	.031	.312	.047	.203	.120
-28	.125	.235	.047	.145	.115	-79	.031	.313	.031	.219	.136
-29	.031	.250	.062	.187	.140	-80	.250	.290	.047	.170	.140
-30	.047	.260	.062	.190	.140	-81	.047	.328	.047	.218	.146
-31	.672	.250	.047	.187	.095	-82	.047	.340	.078	.250	.140
-32	.062	.250	.031	.143	.118	-83	.062	.289	.062	.215	.093
-33	.016	.260	.016	.154	.095	-84	.047	.290	.047	.170	.140
-34	.125	.250	.047	.130	.118	-85	.047	.312	.031	.185	.116
-35	.156	.265	.031	.205	.142	-86	.094	.316	.047	.158	.116
-36	.094	.235	.047	.140	.115	-87	.031	.324	.062	.204	.140
-37	.250	.235	.047	.145	.115	-88	.375	.344	.062	.195	.170
-38	.062	.312	.062	.149	.115	-89	.094	.340	.062	.220	.175
-39	.094	.312	.062	.149	.115	-90	.375	.345	.062	.205	.173
-40	.016	.250	.047	.124	.111	-91	.062	.349	.047	.248	.140
-41	.125	.250	.031	.195	.130	-92	.172	.350	.016	.300	.112
-42	.031	.250	.047	.114	.100	-93	.375	.344	.062	.205	.173
-43	.062	.250	.031	.143	.155	-94	.062	.375	.031	.195	.171
-44	.062	.250	.031	.169	.102	-95	.406	.500	.062	.250	.171
-45	.094	.250	.047	.114	.100	-96	.031	.375	.062	.250	.171
-46	.125	.281	.094	.158	.093	-97	.047	.375	.047	.245	.192
-47	.187	.293	.047	.218	.138	-98	.094	.375	.031	.260	.220
-48	.172	.250	.047	.186	.125	-99	.109	.375	.047	.195	.136
-49	.016	.310	.062	.183	.139	-100	.047	.380	.078	.244	.150
-50	.016	.312	.062	.187	.115						
-51	.031	.312	.031	.185	.140						

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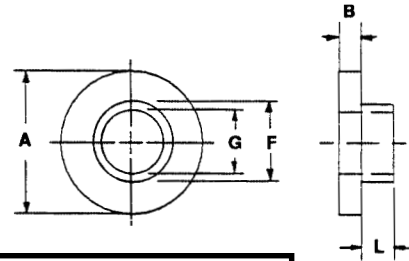
Tolerances:  
 Flange O.D. +/- .005  
 Flange Thickness +/- .005  
 Shank O.D. - .005/+0.00  
 Shank Thickness +/- .005  
 Shank I.D. + .005/-.000

FLUOROPLASTIC SHOULDER WASHERS (continued)

\*Available in the following materials:

Material Code No.	Material Name	Material Code No.	Material Name
-29	Teflon®	-37	PVDF
-30	Tefzel®	-40	PFA (Teflon®)
-31	FEP®	-41	Halar®
-32	PCTFE		

\*Available in other materials. See materials list in index.  
Other sizes available on request.



Part No. D212 - (Size Code No.) - (Material Code No.)

Size Code No.	Shank Thk. L	Flange O.D. A	Flange Thk. B	Shank O.D. F	Shank I.D. G	Size Code No.	Shank Thk. L	Flange O.D. A	Flange Thk. B	Shank O.D. F	Shank I.D. G
-101	.094	.375	.031	.185	.140	-152	.437	.500	.125	.250	.167
-102	.031	.375	.031	.250	.169	-153	.062	.562	.094	.375	.260
-103	.047	.375	.062	.218	.140	-154	.187	.625	.062	.322	.255
-104	.031	.375	.062	.246	.167	-155	.047	.630	.031	.310	.253
-105	.062	.437	.062	.313	.188	-156	.062	.640	.062	.380	.195
-106	.031	.375	.062	.185	.140	-157	.047	.625	.031	.248	.171
-107	.031	.375	.062	.308	.196	-158	.047	.625	.062	.375	.190
-108	.203	.370	.078	.145	.115	-159	.047	.555	.078	.300	.260
-109	.078	.375	.218	.199	.140	-160	.375	.437	.062	.282	.225
-110	.047	.375	.062	.185	.140	-161	.437	.562	.062	.375	.255
-111	.062	.375	.094	.250	.140	-162	.094	.500	.062	.281	.200
-112	.031	.385	.062	.240	.145	-163	.031	.500	.094	.250	.156
-113	.062	.375	.094	.250	.138	-164	.312	.500	.062	.312	.200
-114	.094	.375	.062	.248	.136	-165	.031	.500	.031	.312	.252
-115	.047	.375	.062	.248	.194	-166	.016	.500	.078	.250	.165
-116	.109	.375	.062	.240	.138	-167	.094	.500	.062	.343	.257
-117	.094	.375	.016	.185	.140	-168	.187	.500	.250	.310	.195
-118	.156	.375	.078	.193	.116	-169	.437	.500	.062	.375	.250
-119	.062	.375	.062	.250	.145	-170	.156	.500	.062	.250	.190
-120	.140	.375	.031	.245	.187	-171	.156	.500	.125	.250	.190
-121	.203	.380	.062	.220	.148	-172	.031	.500	.031	.312	.260
-122	.187	.390	.078	.287	.196	-173	.031	.500	.031	.318	.193
-123	.078	.390	.078	.313	.203	-174	.078	.500	.031	.318	.265
-124	.125	.400	.125	.275	.140	-175	.078	.500	.031	.318	.193
-125	.047	.400	.047	.243	.156	-176	.016	.500	.031	.318	.141
-126	.047	.415	.156	.243	.141	-177	.047	.500	.031	.318	.193
-127	.062	.400	.109	.243	.141	-178	.047	.500	.031	.318	.141
-128	.187	.408	.062	.240	.220	-179	.062	.500	.062	.330	.150
-129	.031	.437	.062	.245	.156	-180	.047	.500	.031	.305	.080
-130	.031	.425	.062	.245	.156	-181	.140	.515	.062	.312	.260
-131	.375	.437	.062	.282	.225	-182	.047	.562	.047	.300	.260
-132	.062	.425	.062	.310	.250	-183	.062	.562	.109	.365	.215
-133	.094	.438	.031	.267	.203	-184	.422	.550	.062	.375	.255
-134	.140	.440	.031	.303	.196	-185	.031	.562	.125	.312	.169
-135	.187	.743	.062	.437	.376	-186	.375	.570	.062	.470	.385
-136	.047	.468	.062	.248	.140	-187	.047	.578	.062	.185	.140
-137	.375	.399	.062	.260	.220	-188	.047	.615	.047	.315	.208
-138	.094	.438	.062	.267	.203	-189	.047	.625	.125	.310	.172
-139	.187	.745	.031	.282	.234	-190	.750	.625	.125	.400	.260
-140	.140	.438	.031	.250	.135	-191	.125	.630	.062	.327	.260
-141	.078	.464	.016	.312	.255	-192	.500	.620	.062	.370	.316
-142	.172	.425	.062	.377	.260	-193	.187	.630	.062	.375	.254
-143	.047	.437	.047	.281	.201	-194	.375	.513	.062	.312	.255
-144	.047	.620	.047	.312	.205	-195	.125	.467	.047	.312	.255
-145	.062	.750	.031	.368	.320	-196	.031	.625	.062	.375	.295
-146	.047	.625	.094	.375	.250	-197	.125	.687	.125	.437	.328
-147	.062	.687	.094	.485	.257	-198	.031	.500	.062	.312	.252
-148	.125	.687	.062	.359	.266	-199	.312	.625	.062	.500	.380
-149	.047	.688	.016	.543	.500	-200	.125	.600	.125	.370	.250
-150	.031	.437	.031	.310	.253						
-151	.047	.500	.094	.275	.145						

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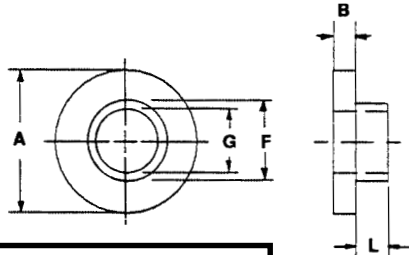
Tolerances:  
Flange O.D. +/- .005  
Flange Thickness +/- .005  
Shank O.D. - .005/+0.000  
Shank Thickness +/- .005  
Shank I.D. + .005/- .000

FLUOROPLASTIC SHOULDER WASHERS (continued)

\*Available in other materials. See materials list in index.  
Other sizes available on request.

\*Available in the following materials:

Material Code No.	Material Name	Material Code No.	Material Name
-29	Teflon®	-37	PVDF
-30	Tefzel®	-40	PFA (Teflon®)
-31	FEP®	-41	Halar®
-32	PCTFE		



Part No. D212 - (Size Code No.) - (Material Code No.)

Size Code No.	Shank Thk. L	Flange O.D. A	Flange Thk. B	Shank O.D. F	Shank I.D. G	Size Code No.	Shank Thk. L	Flange O.D. A	Flange Thk. B	Shank O.D. F	Shank I.D. G
-201	.156	.715	.156	.437	.375	-223	.218	.750	.094	.380	.266
-202	.156	.720	.062	.485	.270	-224	.062	.750	.094	.359	.152
-203	.187	.743	.062	.443	.375	-225	.031	.750	.125	.500	.375
-204	.344	.750	.094	.375	.266	-226	.062	.750	.031	.560	.500
-205	.125	.750	.094	.380	.266	-227	.500	.825	.062	.620	.520
-206	.078	.750	.094	.380	.266	-228	1.000	.875	.062	.500	.375
-207	.047	.750	.187	.500	.430	-229	.375	.875	.125	.625	.440
-208	.062	.735	.125	.500	.250	-230	.187	.995	.125	.792	.695
-209	.109	.750	.094	.500	.375	-231	.625	.995	.125	.787	.695
-210	.047	.735	.187	.490	.435	-232	.109	.750	.094	.577	.390
-211	.187	.750	.062	.500	.375	-233	.422	.790	.047	.625	.550
-212	.125	.750	.062	.500	.375	-234	.406	.825	.094	.445	.306
-213	.047	.750	.031	.371	.263	-235	.203	.880	.047	.750	.630
-214	.422	.750	.172	.434	.312	-236	.150	1.000	.125	.562	.390
-215	.250	.750	.078	.500	.378	-237	.031	1.000	.094	.616	.515
-216	.250	.750	.062	.250	.150	-238	.562	1.000	.062	.500	.382
-217	.468	.750	.156	.375	.250	-239	.109	1.000	.078	.770	.508
-218	.047	.750	.031	.341	.253	-240	.062	1.000	.062	.298	.203
-219	.688	.750	.140	.385	.260	-241	.437	1.125	.094	.700	.500
-220	.312	.755	.031	.560	.500	-242	.094	1.125	.062	.740	.515
-221	.125	.700	.062	.437	.328	-243	.094	1.230	.062	.980	.510
-222	.047	.750	.047	.375	.323	-244	.281	1.105	.125	.752	.515

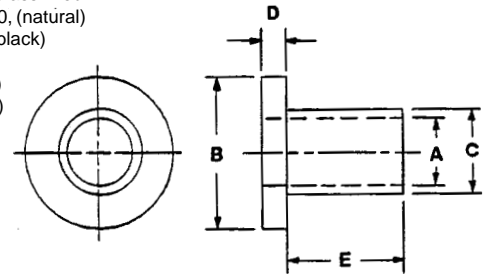
Tolerances:  
 Flange O.D. +/- .005  
 Flange Thickness +/- .005  
 Shank O.D. - .005/+ .000  
 Shank Thickness +/- .005  
 Shank I.D. + .005/- .000

# HIGH TECHNOLOGY PLASTIC SHOULDER BUSHINGS

\*Available in the following materials:

Material Code No.	Material Name	Material Code No.	Material Name	Material Code No.	Material Name
-3	Lexan®, (clear)	-24	Delrin®	-40	PFA, (Teflon®)
-4	Lexan®, (black)	-27	PVC	-41	Halar®
-5	Ultem® 1000	-28	CPVC	-60	Nylon 6/6, 30% Short Glass-filled
-9	Celcon®	-29	Teflon®	-77	Ultem® 2300, (natural)
-10	Celcon®, Glass-filled	-30	Tefzel®	-78	Nylon 6/6, (black)
-11	Polypropylene	-32	PCTFE	-213	VespeI®
-13	Polyethylene	-33	Polysulfone	-272	PVC, (white)
-14	ABS	-35	Noryl®	-273	PVC, (black)
-15	PEEK™	-37	PVDF		
-18	Nylon 6/6, (natural)	-38	Fiber Glass G10		
-23	Nylon Super Tough	-39	UHMW®		

\*Available in other materials.  
See materials list in index.  
Other sizes available on request.



Part No. DN211 - (Size Code No.) - (Material Code No.)

Size Code No.	A Shank I.D.	B Flange O.D.	C Shank O.D.	D Flange Thk.	E Shank Thk.	Size Code No.	A Shank I.D.	B Flange O.D.	C Shank O.D.	D Flange Thk.	E Shank Thk.
-1	.089	.250	.158	.030	.135	-42	.174	.375	.218	.062	.187
-2	.093	.187	.125	.062	.125	-43	.174	.375	.218	.062	.250
-3	.093	.187	.125	.062	.187	-44	.174	.375	.218	.062	.312
-4	.093	.187	.125	.062	.250	-45	.174	.375	.218	.062	.375
-5	.093	.187	.125	.062	.312	-46	.174	.375	.218	.062	.437
-6	.093	.187	.125	.062	.375	-47	.174	.375	.218	.062	.500
-7	.105	.510	.305	.065	.080	-48	.180	.375	.305	.400	.160
-8	.120	.330	.220	.030	.285	-49	.180	.410	.250	.035	.140
-9	.120	.625	.250	.065	.250	-50	.180	.430	.305	.070	.215
-10	.125	.250	.156	.062	.125	-51	.180	.430	.305	.078	.250
-11	.125	.250	.156	.062	.187	-52	.185	.430	.310	.060	.250
-12	.125	.250	.156	.062	.250	-53	.185	.435	.250	.120	.130
-13	.125	.310	.180	.065	.335	-54	.185	.435	.310	.060	.230
-14	.125	.437	.250	.040	.103	-55	.185	.435	.316	.070	.230
-15	.125	.500	.240	.060	.030	-56	.185	.440	.305	.065	.255
-16	.130	.355	.150	.065	.080	-57	.185	.500	.310	.125	.155
-17	.130	.375	.320	.125	.125	-58	.187	.500	.322	.060	.310
-18	.135	.375	.250	.065	.085	-59	.190	.370	.250	.125	.080
-19	.135	.555	.215	.133	.102	-60	.190	.400	.280	.065	.630
-20	.140	.315	.233	.055	.045	-61	.190	.435	.250	.065	.095
-21	.140	.367	.232	.095	.085	-62	.190	.440	.315	.060	.255
-22	.140	.375	.185	.045	.045	-63	.190	.490	.370	.105	.270
-23	.140	.375	.235	.060	.030	-64	.190	.500	.250	.125	.165
-24	.140	.437	.279	.037	.077	-65	.190	.505	.255	.065	.170
-25	.140	.443	.260	.150	.105	-66	.190	1.000	.365	.060	.165
-26	.140	.490	.255	.060	.065	-67	.195	.440	.250	.125	.255
-27	.140	.490	.260	.060	.170	-68	.195	.620	.370	.070	.557
-28	.145	.290	.205	.035	.147	-69	.195	.750	.320	.065	.250
-29	.147	.312	.172	.062	.125	-70	.200	.437	.250	.062	.187
-30	.147	.312	.172	.062	.187	-71	.200	.437	.250	.062	.250
-31	.150	.230	.194	.015	.040	-72	.200	.437	.250	.062	.312
-32	.150	.390	.245	.080	.045	-73	.200	.437	.250	.062	.375
-33	.150	.580	.235	.062	.320	-74	.200	.437	.250	.062	.437
-34	.150	.590	.200	.062	.255	-75	.200	.437	.250	.062	.500
-35	.150	.730	.290	.125	.425	-76	.200	.440	.250	.063	.095
-36	.165	.250	.235	.022	.110	-77	.200	.440	.253	.065	.060
-37	.165	.340	.205	.065	.130	-78	.205	.425	.315	.070	.320
-38	.165	.340	.205	.065	.625	-79	.215	.435	.340	.310	.135
-39	.170	.350	.210	.065	.095	-80	.215	.555	.365	.105	.055
-40	.170	.750	.320	.065	.250						
-41	.170	.990	.365	.155	.190						

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Tolerances:  
Flange O.D. +/- .005  
Flange Thickness +/- .005

**.089 I.D. to .215 I.D.**

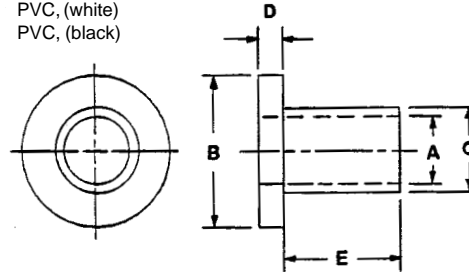
Shank O.D. - .005/+ .000  
Shank Thickness +/- .005  
Shank I.D. + .005/- .000

HIGH TECHNOLOGY PLASTIC SHOULDER BUSHINGS (continued)

\*Available in the following materials:

Material Code No.	Material Name	Material Code No.	Material Name	Material Code No.	Material Name
-3	Lexan®, (clear)	-24	Delrin®	-40	PFA, (Teflon®)
-4	Lexan®, (black)	-27	PVC	-41	Halar®
-5	Ultem® 1000	-28	CPVC	-60	Nylon 6/6, 30% Short Glass-filled
-9	Celcon®	-29	Teflon®	-77	Ultem® 2300, (natural)
-10	Celcon®, Glass-filled	-30	Tefzel®	-78	Nylon 6/6, (black)
-11	Polypropylene	-32	PCTFE	-213	VespeI®
-13	Polyethylene	-33	Polysulfone	-272	PVC, (white)
-14	ABS	-35	Noryl®	-273	PVC, (black)
-15	PEEK™	-37	PVDF		
-18	Nylon 6/6, (natural)	-38	Fiber Glass G10		
-23	Nylon Super Tough	-39	UHMW®		

\*Available in other materials.  
See materials list in index.  
Other sizes available on request.



Part No. DN211 - (Size Code No.) - (Material Code No.)

Size Code No.	A Shank I.D.	B Flange O.D.	C Shank O.D.	D Flange Thk.	E Shank Thk.	Size Code No.	A Shank I.D.	B Flange O.D.	C Shank O.D.	D Flange Thk.	E Shank Thk.
-81	.220	.750	.320	.065	.250	-122	.316	.562	.374	.025	.156
-82	.228	.660	.356	.115	.282	-123	.316	.625	.373	.187	.396
-83	.235	.490	.370	.040	.035	-124	.316	.650	.375	.062	.270
-84	.240	.495	.400	.060	.085	-125	.335	.870	.617	.130	.490
-85	.240	.740	.350	.065	.250	-126	.356	.700	.566	.090	.700
-86	.240	.750	.495	.330	.160	-127	.365	1.238	.685	.310	.185
-87	.241	.408	.307	.031	.165	-128	.375	.555	.500	.060	.100
-88	.246	.406	.312	.031	.165	-129	.375	.755	.490	.130	1.010
-89	.250	.385	.310	.035	.720	-130	.375	.755	.493	.125	.030
-90	.250	.440	.310	.030	.130	-131	.375	.995	.490	.175	.050
-91	.250	.460	.350	.210	.740	-132	.385	.750	.500	.185	.065
-92	.250	.625	.378	.065	.315	-133	.388	.562	.438	.025	.265
-93	.251	.437	.281	.022	.086	-134	.400	.750	.500	.130	.090
-94	.252	.562	.380	.120	.260	-135	.406	.562	.500	.032	.250
-95	.254	.437	.310	.028	.156	-136	.415	.750	.560	.080	.550
-96	.254	.560	.372	.062	.500	-137	.420	.615	.500	.375	.315
-97	.254	.600	.372	.125	.250	-138	.430	.750	.500	.187	.036
-98	.255	.420	.315	.060	.180	-139	.500	.875	.620	.065	.190
-99	.255	.505	.365	.065	.370	-140	.505	.810	.690	.130	.370
-100	.255	.755	.320	.065	.250	-141	.515	.875	.625	.062	.620
-101	.256	.625	.344	.063	.328	-142	.750	1.000	.800	.030	.155
-102	.260	.430	.315	.063	.087	-143	.900	2.175	1.110	.125	1.000
-103	.260	.435	.340	.060	.025	-144	.930	1.500	1.010	.040	.265
-104	.260	.495	.370	.030	.045						
-105	.260	.500	.310	.065	.125						
-106	.260	.500	.312	.062	.187						
-107	.260	.500	.312	.062	.250						
-108	.260	.500	.312	.062	.312						
-109	.260	.500	.312	.062	.375						
-110	.260	.500	.312	.062	.437						
-111	.260	.500	.312	.062	.500						
-112	.260	.500	.315	.065	.075						
-113	.260	.750	.365	.130	.050						
-114	.305	.600	.382	.035	.125						
-115	.305	.615	.550	.063	.437						
-116	.308	.500	.375	.031	.156						
-117	.310	.500	.370	.035	.225						
-118	.310	.560	.455	.060	.085						
-119	.310	.870	.436	.090	.340						
-120	.312	.500	.380	.023	.146						
-121	.316	.468	.374	.025	.218						

Tolerances:  
Flange O.D. +/- .005  
Flange Thickness +/- .005

**.220 I.D. to .930 I.D.**

Shank O.D. - .005/+0.00  
Shank Thickness +/- .005  
Shank I.D. + .005/-0.00