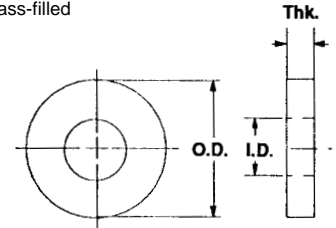


# MACHINED SPECIAL FLAT WASHERS

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

\*Available in the following materials:

Material Code	Material Name	Material Code	Material Name	Material Code	Material Name
-3	Lexan®, (clear)	-27	PVC	-41	Halar®
-4	Lexan®, (black)	-28	CPVC	-60	Nylon 6/6, 30% Short Glass-filled
-5	Ultem® 1000	-30	Tefzel®	-64	Delrin®, 25% Short Glass-filled
-11	Polypropylene	-32	PCTFE	-77	Ultem® 2300, (natural)
-13	Polyethylene	-33	Polysulfone	-78	Nylon 6/6, (black)
-14	ABS	-35	Noryl®	-213	Vespele®
-15	PEEK™	-37	PVDF	-272	PVC, (white)
-18	Nylon 6/6, (natural)	-38	Fiber Glass G10	-273	PVC, (black)
-23	Nylon Super Tough	-39	UHMW®	-229	Radel® R5000, Polyphenylsulfone
-24	Delrin®, (white)	-40	PFA, (Teflon®)		



## Part No. FN110 - (Size Code No.) - (Material Code No.)

Size Code No.	O.D. A	I.D. B	Thk. T	Size Code No.	O.D. A	I.D. B	Thk. T	Size Code No.	O.D. A	I.D. B	Thk. T	Size Code No.	O.D. A	I.D. B	Thk. T
-1	.125	.055	.016	-46	.281	.104	.016	-91	.625	.116	.062	-136	.437	.141	.031
-2	.187	.063	.016	-47	.312	.104	.016	-92	.250	.120	.016	-137	.500	.141	.031
-3	.218	.063	.016	-48	.180	.104	.025	-93	.281	.120	.020	-138	.562	.141	.031
-4	.250	.063	.016	-49	.180	.104	.031	-94	.281	.120	.031	-139	.625	.141	.031
-5	.281	.063	.016	-50	.187	.104	.031	-95	.281	.120	.040	-140	.218	.141	.040
-6	.187	.063	.031	-51	.218	.104	.031	-96	.281	.120	.062	-141	.312	.141	.047
-7	.218	.063	.031	-52	.281	.104	.031	-97	.375	.125	.062	-142	.250	.141	.062
-8	.250	.063	.031	-53	.312	.103	.031	-98	.187	.129	.016	-143	.281	.141	.062
-9	.281	.063	.031	-54	.343	.104	.031	-99	.218	.129	.016	-144	.312	.141	.062
-10	.187	.063	.062	-55	.375	.104	.031	-100	.250	.129	.016	-145	.343	.141	.062
-11	.218	.063	.062	-56	.437	.104	.031	-101	.281	.129	.016	-146	.375	.141	.062
-12	.250	.063	.062	-57	.500	.104	.031	-102	.312	.129	.016	-147	.437	.141	.062
-13	.281	.063	.062	-58	.562	.104	.031	-103	.187	.129	.031	-148	.500	.141	.062
-14	.250	.063	.093	-59	.625	.104	.031	-104	.218	.129	.031	-149	.562	.141	.062
-15	.281	.063	.093	-60	.250	.104	.062	-105	.250	.129	.031	-150	.625	.141	.062
-16	.125	.067	.016	-61	.281	.104	.062	-106	.281	.129	.031	-151	.187	.141	.016
-17	.187	.078	.031	-62	.312	.104	.062	-107	.312	.129	.031	-152	.218	.141	.016
-18	.187	.089	.016	-63	.343	.104	.062	-108	.343	.129	.031	-153	.250	.141	.016
-19	.218	.089	.016	-64	.375	.104	.062	-109	.375	.129	.031	-154	.281	.141	.016
-20	.250	.089	.016	-65	.437	.104	.062	-110	.437	.129	.031	-155	.312	.141	.016
-21	.281	.089	.016	-66	.500	.104	.062	-111	.500	.129	.031	-156	.343	.141	.016
-22	.312	.089	.016	-67	.562	.104	.062	-112	.562	.129	.031	-158	.375	.141	.016
-23	.187	.089	.031	-68	.625	.104	.062	-113	.625	.129	.031	-157	.437	.141	.016
-24	.250	.089	.031	-69	.250	.109	.031	-114	.218	.129	.040	-159	.500	.141	.016
-25	.281	.089	.031	-70	.187	.116	.016	-115	.312	.129	.047	-160	.562	.141	.016
-26	.312	.089	.031	-71	.218	.116	.016	-116	.250	.129	.062	-161	.625	.141	.016
-27	.343	.089	.031	-72	.281	.116	.016	-117	.281	.129	.062	-162	.312	.141	.047
-28	.375	.089	.031	-73	.312	.116	.016	-118	.312	.129	.062	-163	.250	.141	.062
-29	.437	.089	.031	-74	.187	.116	.031	-119	.343	.129	.062	-164	.281	.141	.062
-30	.500	.089	.031	-75	.218	.116	.031	-120	.375	.129	.062	-165	.312	.141	.062
-31	.562	.089	.031	-76	.250	.116	.031	-121	.437	.129	.062	-166	.343	.141	.062
-32	.625	.089	.031	-77	.312	.116	.031	-122	.500	.129	.062	-167	.375	.141	.062
-33	.218	.089	.062	-78	.343	.116	.031	-123	.562	.129	.062	-168	.437	.141	.062
-34	.250	.089	.062	-79	.375	.116	.031	-124	.625	.129	.062	-169	.500	.141	.062
-35	.281	.089	.062	-80	.437	.116	.031	-125	.187	.141	.016	-170	.562	.141	.062
-36	.343	.089	.062	-81	.500	.116	.031	-126	.218	.141	.016	-171	.625	.141	.062
-37	.375	.089	.062	-82	.562	.116	.031	-127	.250	.141	.016	-172	.312	.141	.093
-38	.218	.093	.031	-83	.625	.116	.031	-128	.281	.141	.016	-173	.343	.141	.093
-39	.250	.093	.016	-84	.281	.116	.047	-129	.312	.141	.016	-174	.375	.141	.093
-40	.312	.093	.062	-85	.250	.116	.062	-130	.218	.141	.031	-175	.437	.141	.093
-41	.500	.098	.124	-86	.312	.116	.062	-131	.250	.141	.031	-176	.500	.141	.093
-42	.180	.104	.016	-87	.343	.116	.062	-132	.281	.141	.031	-177	.562	.141	.093
-43	.187	.104	.016	-88	.437	.116	.062	-133	.312	.141	.031	-178	.625	.141	.093
-44	.218	.104	.016	-89	.500	.116	.062	-134	.343	.141	.031				
-45	.250	.104	.016	-90	.562	.116	.062	-135	.375	.141	.031				

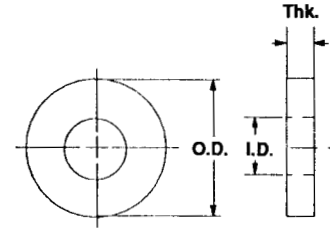
(continued next page)

Tolerances: O.D. +.020 - .000, I.D. +.010 - .000, Thickness +/- .005

**.055 I.D. to .141 I.D.**

MACHINED SPECIAL FLAT WASHERS (continued)

SEE PAGE 191 FOR AVAILABLE MATERIALS.



Part No. FN110 - (Size Code No.) - (Material Code No.)

Size Code No.	O.D. A	I.D. B	Thk. T	Size Code No.	O.D. A	I.D. B	Thk. T	Size Code No.	O.D. A	I.D. B	Thk. T	Size Code No.	O.D. A	I.D. B	Thk. T
-179	.312	.148	.205	-237	.375	.194	.062	-295	.625	.281	.062	-353	1.000	.515	.031
-180	.312	.150	.020	-238	.437	.194	.062	-296	.583	.307	.125	-354	.750	.515	.062
-181	.312	.150	.031	-239	.500	.194	.062	-297	.438	.312	.032	-355	.875	.515	.062
-182	.312	.150	.040	-240	.562	.194	.062	-298	.555	.315	.046	-356	1.000	.515	.062
-183	.312	.150	.050	-241	.625	.194	.062	-299	.500	.317	.020	-357	.750	.515	.093
-184	.312	.150	.062	-242	.687	.194	.062	-300	.500	.317	.031	-358	.875	.515	.093
-185	.312	.156	.031	-243	.750	.194	.062	-301	.562	.317	.031	-359	1.000	.515	.093
-186	.500	.156	.031	-244	.375	.194	.093	-302	.625	.317	.031	-360	.730	.525	.125
-187	.375	.156	.063	-245	.437	.194	.093	-303	.687	.317	.031	-361	.750	.569	.031
-188	.375	.158	.135	-246	.500	.194	.093	-304	.750	.317	.031	-362	.875	.569	.031
-189	.377	.163	.125	-247	.562	.194	.093	-305	.500	.317	.062	-363	1.000	.569	.031
-190	.500	.163	.125	-248	.625	.194	.093	-306	.562	.317	.062	-364	1.125	.569	.031
-191	.625	.165	.125	-249	.687	.194	.093	-307	.625	.317	.062	-365	1.250	.569	.031
-192	.375	.171	.020	-250	.750	.194	.093	-308	.687	.317	.062	-366	.750	.569	.062
-193	.250	.171	.031	-251	.437	.200	.062	-309	.750	.317	.062	-367	.875	.569	.062
-194	.281	.171	.031	-252	.312	.219	.031	-310	.500	.317	.093	-368	1.000	.569	.062
-195	.312	.171	.031	-253	.375	.219	.031	-311	.562	.317	.093	-369	1.125	.569	.062
-196	.343	.171	.031	-254	.437	.219	.031	-312	.625	.317	.093	-370	1.250	.569	.062
-197	.375	.171	.031	-255	.500	.219	.031	-313	.687	.317	.093	-371	.750	.569	.093
-198	.437	.171	.031	-256	.375	.219	.062	-314	.750	.317	.093	-372	.875	.569	.093
-199	.500	.171	.031	-257	.437	.219	.062	-315	.875	.328	.032	-373	1.000	.569	.093
-200	.625	.171	.031	-258	.500	.219	.062	-316	.502	.372	.080	-374	1.125	.569	.093
-201	.375	.171	.040	-259	.437	.219	.093	-317	.562	.377	.056	-375	1.250	.569	.093
-202	.375	.171	.050	-260	.500	.219	.093	-318	.750	.380	.094	-376	.730	.569	.125
-203	.312	.171	.062	-261	.278	.219	.125	-319	.625	.385	.031	-377	.875	.569	.125
-204	.343	.171	.062	-262	.437	.253	.031	-320	.687	.385	.031	-378	1.000	.569	.125
-205	.375	.171	.062	-263	.500	.253	.031	-321	.750	.385	.031	-379	1.125	.569	.125
-206	.437	.171	.062	-264	.562	.253	.031	-322	1.000	.385	.031	-380	1.250	.569	.125
-207	.500	.171	.062	-265	.625	.253	.031	-323	.625	.385	.047	-381	.828	.628	.025
-208	.562	.171	.062	-266	.687	.253	.031	-324	.625	.385	.062	-382	1.015	.640	.075
-209	.625	.171	.062	-267	.750	.253	.031	-325	.687	.385	.062	-383	1.125	.640	.031
-210	.625	.187	.016	-268	.812	.253	.031	-326	.750	.385	.062	-384	1.125	.758	.031
-211	.375	.187	.031	-269	.875	.253	.031	-327	1.000	.385	.062	-385	1.250	.758	.031
-212	.312	.187	.062	-270	.500	.253	.047	-328	.625	.385	.093	-386	1.500	.758	.031
-213	.437	.187	.062	-271	.437	.253	.062	-329	.687	.385	.093	-387	1.125	.758	.062
-214	.375	.187	.093	-272	.500	.253	.062	-330	.750	.385	.093	-388	1.250	.758	.062
-215	.437	.187	.093	-273	.562	.253	.062	-331	1.000	.385	.093	-389	1.500	.758	.062
-216	.500	.187	.093	-274	.625	.253	.062	-332	.609	.391	.047	-390	1.125	.758	.093
-217	.562	.187	.093	-275	.687	.253	.062	-333	.437	.395	.025	-391	1.250	.758	.093
-218	.625	.187	.093	-276	.750	.253	.062	-334	.812	.406	.062	-392	1.500	.758	.093
-219	.318	.190	.124	-277	.812	.253	.062	-335	.687	.443	.031	-393	1.125	.758	.125
-220	.500	.191	.062	-278	.875	.253	.062	-336	.750	.443	.031	-394	1.250	.758	.125
-221	.500	.191	.125	-279	.437	.253	.093	-337	.812	.443	.031	-395	1.500	.758	.125
-222	.625	.191	.062	-280	.500	.253	.093	-338	.875	.443	.031	-396	1.125	.765	.062
-223	.437	.194	.020	-281	.562	.253	.093	-339	.687	.443	.093	-397	1.250	.765	.062
-224	.312	.194	.031	-282	.625	.253	.092	-340	.750	.443	.062	-398	1.250	.765	.093
-225	.343	.194	.031	-283	.687	.253	.093	-341	.812	.443	.062	-399	1.500	.765	.125
-226	.375	.194	.031	-294	.312	.253	.125	-342	.875	.443	.062	-400	1.125	.875	.093
-227	.437	.194	.031	-285	.447	.254	.033	-343	.687	.443	.093				
-228	.500	.194	.031	-286	.625	.255	.187	-344	.750	.443	.093				
-229	.562	.194	.031	-287	.687	.260	.020	-345	.812	.443	.093				
-230	.625	.194	.031	-288	.687	.260	.031	-346	.875	.443	.093				
-231	.687	.194	.031	-289	.875	.260	.031	-347	.521	.450	.148				
-232	.750	.194	.031	-290	.680	.260	.040	-348	.750	.473	.031				
-233	.437	.194	.040	-291	.687	.260	.050	-349	.820	.500	.093				
-234	.437	.194	.050	-292	.562	.260	.062	-350	.750	.515	.031				
-235	.312	.194	.062	-293	.687	.260	.062	-351	.828	.515	.025				
-236	.343	.194	.062	-294	.437	.265	.062	-352	.875	.515	.031				

Tolerances: O.D. +.020 -.000, I.D. +.010 -.000, Thickness +/- .005

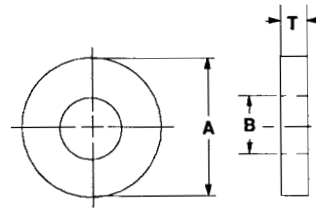
**.148 I.D. to .875 I.D.**

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

**MACHINED SPECIAL FLAT WASHERS (continued)**

\*Available in the following materials:

<b>Material Code No.</b>	<b>Material Name</b>	<b>Material Code No.</b>	<b>Material Name</b>	<b>Material Code No.</b>	<b>Material Name</b>
-5	Ultem® 1000	-24	Delrin®	-60	Nylon 6/6, 30% Short Glass-filled
-11	Polypropylene	-27	PVC	-77	Ultem® 2300, (natural)
-13	Polyethylene	-28	CPVC	-78	Nylon 6/6, (black)
-14	ABS	-32	PCTFE	-229	Radel® R5000, Polyphenylsulfone
-15	PEEK™	-37	PVDF		
-18	Nylon 6/6, (natural)	-40	PFA, (Teflon®)		



**Part No. G1200 - (Size Code No.) - (Material Code No.)**

Size Code No.	I.D. B	O.D. A	Thick T	Screw Size	Size Code No.	I.D. B	O.D. A	Thick T	Screw Size
-1	.031	.125	.020	-	-11	.189	.318	.125	#10
-2	.062	.250	.093	#0	-12	.200	.437	.062	#10
-3	.115	.281	.047	#4	-13	.218	.273	.125	-
-4	.140	.312	.047	#6	-14	.253	.312	.125	1/4
-5	.140	.500	.032	#6	-15	.255	.437	.062	1/4
-6	.158	3/8	.135	-	-16	.260	.562	.062	1/4
-7	.163	.377	.125	-	-17	.307	.583	1/8	-
-8	.163	.500	.125	-	-18	.406	.812	.062	-
-9	.165	.625	.125	#8	-19	.525	.730	.125	1/2
-10	.170	.375	.062	#8	-20	.562	.750	.125	9/16

## MACHINED FINISHING WASHERS

\*Available in other materials. See materials list in index.  
 Other sizes available on request.  
 See MOLDED FINISHING WASHERS for additional sizes starting on page 122.

\*Available in the following materials:

Material Code No.	Material Name	Material Code No.	Material Name	Material Code No.	Material Name
-5	Ultem® 1000	-18	Nylon 6/6, (natural)	-40	PFA, (Teflon®)
-11	Polypropylene	-24	Delrin®	-60	Nylon 6/6, 30% Short Glass-filled
-13	Polyethylene	-32	PCTFE	-77	Ultem® 2300, (natural)
-14	ABS	-37	PVDF	-78	Nylon 6/6, (black)

**Part No. F130 - (Size Code No.) - (Material Code No.)**

Size Code No.	O.D. A	I.D. B	Thick T	Screw Size
-1	.437	.143	.100	#6
-2	.515	.171	.115	#8
-3	.580	.191	.152	#10
-4	.683	.260	.183	1/4

