WASHERS

As we all learned in grade school, the washers' basic function is to act as a load bearing face to prevent a bolt and/or nut from digging into the surfaces of what is being clamped together. Washers also make good shims. Those listed below are the most regularly specified.

AN 960 WASHERS –

Commonly referred to as "AN" washers they are available in "regular" and "light" thickness in a given diameter. Gold cad-plated steel; they are also available in stainless steel.

AN 960 FLAT WASHERS

DASH NO.	BOLT OR SCREW SIZE	O.D. (in)	I.D. (in)	THICKNESS Lt.	THICKNESS Reg.
–4	#4	.312	.124	.016	.032
–6	#6	.375	.149	.016	.032
–8	#8	.375	.174	.016	.032
–10	3/16"	.438	.203	.032	.063
–416	1/4"	.500	.265	.032	.063
–516	5/16"	.562	.328	.032	.063
–616	3/8"	.625	.390	.032	.063
–716	7/16"	.750	.453	.032	.063
–816	1/2"	.875	.515	.032	.063
–916	9/16"	1.062	.578	.032	.063
–1016	5/8"	1.118	.640	.032	.063
–1216	3/4"	1.312	.765	.032	.090

AN 970 WASHERS –

These large OD steel "fender" washers are used where a large washer bearing area is required. Gold cad-plated steel.

AN 970 FLAT WASHERS

DASH NO.	BOLT SIZE	O.D. (in)	I.D. (in)	THICKNESS(in)
–3	3/16"	.875	.203	.063
–4	1/4"	1.125	.265	.063
–5	5/16"	1.375	.328	.063
–6	3/8"	1.625	.390	.063
–7	7/16"	1.812	.453	.109
–8	1/2"	2.000	.515	.109
–10	5/8"	2.375	.640	.125

TINNERMAN COUNTERSUNK FINISHING WASHERS –

For use with 100° flat-head aircraft bolts and screws such as NAS 1102 torq-set and MS 24694 machine screws. Provides a reinforced, flush profile attachment. Made of spring steel, clear (silver) cad-plated.

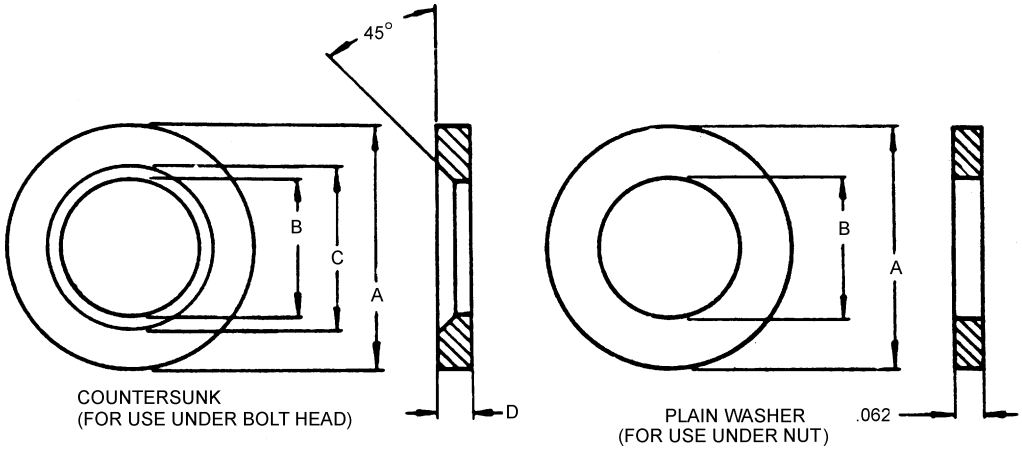
TINNERMAN WASHERS

PART NUMBER	SCREW SIZE	O.D. (in)	I.D. (in)
A3135 017 24A	#8	.560	.171
A3235 028 24A	#10	.750	.196
A3475 028 24A	1/4"	.810	.255

MS 20002C/MS 20002 WASHERS -

A high strength, heat-treated washer which must be used ("C" version) with the MS/NAS twelve point and internal wrenching bolts. The chamfer matches the radius under the bolt head. Also good for use with heavy torquing loads where ordinary steel washers would gall. Note: Although the MS 20002 washer will fit over the shanks of standard NAS (1103/1303/6403 etc.) hexbolts, the washer ID is small enough that it will usually "crash" with the bolt head-to-shank radius.

DO NOT USE MS 20002 WASHERS UNDER THE HEAD OF STANDARD NAS HEX BOLTS.



Thread Size	MS Part No.		A Dia	B Dia		C Dia		D	Flatness Tolerance
	Counter-sunk	Plain		Max	Min	Max	Min		Max
1/4	MS20002C4	MS20002-4	0.531	0.26	0.252	0.344	0.334		
5/16	MS20002C5	MS20002-5	0.593	0.324	0.315	0.406	0.396		
3/8	MS20002C6	MS20002-6	0.687	0.388	0.378	0.495	0.483		0.007
7/16	MS20002C7	MS20002-7	0.781	0.451	0.441	0.557	0.543		
1/2	MS20002C8	MS20002-8	0.875	0.515	0.504	0.62	0.604		
9/16	MS20002C9	MS20002-9	0.968	0.579	0.568	0.687	0.667	0.078	
5/8	MS20002C10	MS20002-10	1.062	0.643	0.631	0.785	0.765		
3/4	MS20002C12	MS20002-12	1.25	0.77	0.757	0.91	0.89		
7/8	MS20002C14	MS20002-14	1.437	0.897	0.884	1.035	1.015		0.01
1	MS20002C16	MS20002-16	1.625	1.025	1.01	1.16	1.14		
1-1/8	MS20002C18	MS20002-18	1.875	1.15	1.135	1.285	1.265		
1-1/4	MS20002C20	MS20002-20	2.125	1.275	1.26	1.447	1.427		
1-3/8	MS20002C22	MS20002-22	2.313	1.4	1.385	1.572	1.552	0.094	0.015
1-1/2	MS20002C24	MS20002-24	2.5	1.5252	1.51	1.697	1.677		

MATERIAL: Alloy steel.

HEAT TREAT: 125,000 to 145,000 (MIL-H-6875).

FINISH: Cadmium plating, Type II, Class 2.

Washer faces parallel within .002" inch