

NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N.W., WASHINGTON, D. C. 20036

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FED. SUP CLASS

TABLE I
NAS 542
40/80 DIAMETRAL PITCH

2nd DASH NO. OR NO. OF TEETH	PITCH DIA REF	BASE CIRCLE DIA REF	MAJOR DIA +.0000 -.0020	MINOR DIA +.0000 -.0020	TRUE INVOLUTE FORM DIA MAX	CIRCULAR TOOTH THICK		MEAS OVER PINS	
						DIMENSIONAL MIN	EFFECTIVE MAX	MAX	MIN
-40 -39	.9750	.6894	1.0000	.9500	.9575	.0411	.0438	1.0531	1.0521
-40 -44	1.1000	.7778	1.1250	1.0750	1.0825	.0410	.0438	1.1789	1.1779
-40 -49	1.2250	.8662	1.2500	1.2000	1.2075	.0410	.0438	1.3033	1.3023
-40 -54	1.3500	.9546	1.3750	1.3250	1.3325	.0410	.0438	1.4290	1.4280
-40 -59	1.4750	1.0430	1.5000	1.4500	1.4575	.0410	.0438	1.5535	1.5525
CIRCULAR PITCH -.0785			CIRCULAR SPACE WIDTH -.0342			MEAS PIN DIA -.0480			
ADDENDUM -.0125			DEDENDUM -.0125			MAX FILLET RAD -.011			

TABLE II
NAS 542
48/96 DIAMETRAL PITCH

2nd DASH NO. OR NO. OF TEETH	PITCH DIA REF	BASE CIRCLE DIA REF	MAJOR DIA +.0000 -.0020	MINOR DIA +.0000 -.0020	TRUE INVOLUTE FORM DIA MAX	CIRCULAR TOOTH THICK		MEAS OVER PINS	
						DIMENSIONAL MIN	EFFECTIVE MAX	MAX	MIN
-48 -26	.5417	.3830	.5625	.5209	.5271	.0337	.0364	.6069	.6059
-48 -29	.6042	.4272	.6250	.5833	.5896	.0337	.0364	.6685	.6675
-48 -32	.6667	.4714	.6875	.6459	.6521	.0337	.0364	.7320	.7310
-48 -35	.7292	.5156	.7500	.7083	.7146	.0337	.0364	.7938	.7928
-48 -38	.7917	.5598	.8125	.7709	.7771	.0337	.0364	.8571	.8561
-48 -41	.8542	.6040	.8750	.8333	.8396	.0337	.0364	.9190	.9180
-48 -44	.9167	.6482	.9375	.8959	.9021	.0336	.0264	.9821	.9811
CIRCULAR PITCH -.0654			CIRCULAR SPACE WIDTH -.0285			MEAS PIN DIA -.0400			
ADDENDUM -.0104			DEDENDUM -.0104			MAX FILLET RAD -.009			

TABLE III
NAS 542
64/128 DIAMETRAL PITCH

2nd DASH NO. OR NO. OF TEETH	PITCH DIA REF	BASE CIRCLE DIA REF	MAJOR DIA +.0000 -.0020	MINOR DIA +.0000 -.0020	TRUE INVOLUTE FORM DIA MAX	CIRCULAR TOOTH THICK		MEAS OVER PINS	
						DIMENSIONAL MIN	EFFECTIVE MAX	MAX	MIN
-64-19	.2969	.2100	.3125	.2812	.2859	.0245	.0272	.3442	.3432
-64-23	.3594	.2541	.3750	.3437	.3485	.0245	.0272	.4070	.4060
-64-27	.4219	.2983	.4375	.4062	.4109	.0245	.0272	.4696	.4686
-64-31	.4844	.3425	.5000	.4687	.4734	.0245	.0272	.5322	.5312
CIRCULAR PITCH -.0491			CIRCULAR SPACE WIDTH -.0214			MEAS PIN DIA -.0300			
ADDENDUM -.0078			DEDENDUM -.0078			MAX FILLET RAD -.007			

TABLE IV
NAS 542
80/160 DIAMETRAL PITCH

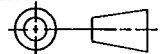
2nd DASH NO. OR NO. OF TEETH	PITCH DIA REF	BASE CIRCLE DIA REF	MAJOR DIA +.0000 -.0020	MINOR DIA +.0000 -.0020	TRUE INVOLUTE FORM DIA MAX	CIRCULAR TOOTH THICK		MEAS OVER PINS	
						DIMENSIONAL MIN	EFFECTIVE MAX	MAX	MIN
-80 -11	.1375	.0972	.1500	.1250	.1288	.0189	.0216	.1739	.1730
-80 -14	.1750	.1237	.1875	.1625	.1663	.0189	.0216	.2131	.2122
-80 -16	.2000	.1414	.2125	.1875	.1913	.0189	.0216	.2381	.2372
-80 -19	.2375	.1679	.2500	.2250	.2288	.0189	.0216	.2748	.2739
CIRCULAR PITCH -.0393			CIRCULAR SPACE WIDTH -.0172			MEAS PIN DIA -.0240			
ADDENDUM -.0063			DEDENDUM -.0063			MAX FILLET RAD -.006			

- NOTE: 1. THE FITS AND TOLERANCES IN THESE TABLES ARE TO BE CONSIDERED BINDING ON A MANUFACTURER OR SELLER ONLY WHEN SPECIFICALLY AGREED TO IN WRITING.
2. VALUES SHOWN FOR FILLET RADIUS REPRESENT MAX SINGLE TANGENTIAL RADIUS OF CUTTER.
3. VALUES FOR MEASUREMENT OVER PINS ARE FOR MAX AND MIN DIMENSIONAL TOOTH THICKNESS. (MACHINING HIGH AND LOW LIMITS).
4. ALLOWANCES FOR LEAD ERROR ARE NOT INCLUDED. TO ALLOW FOR LEAD ERROR, SUBTRACT 60% OF THE ERROR, MULTIPLIED BY FACTOR "E", FROM MAX AND MIN MEAS OVER PINS.
5. DRAWINGS OF PLATED SERRATIONS SHALL SPECIFY THAT ALL DIMENSIONS ARE TO BE MET BEFORE PLATING.

② INACTIVE FOR NEW DESIGN AFTER AUGUST 1983
USE ANSI B92.1 - 1970.

LIST OF ACTIVE SHEETS
SHEET NO. REV. NO
1 2
2 2

CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE

THIRD
ANGLE
PROJECTIONPROCUREMENT
SPECIFICATION

TITLE

CLASSIFICATION
STANDARD PRACTICE

NONE

INVOLUTE SERRATIONS - EXTERNAL

45° PRESSURE ANGLE LOOSE FIT

AVAS Documents
NAS 542
Document Sharing Hub

SHEET 1 OF 2

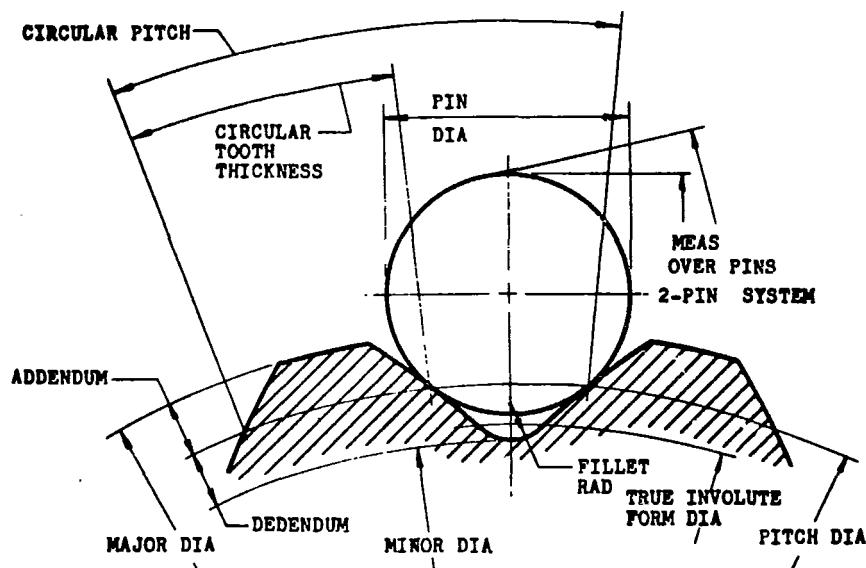
1 May 1964 ② 7 Sept 1983
REVISION ①
APPROVAL DATE 7/15/54

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE
SAME PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS
FROM THE LAST DATE OF APPROVAL SHOWN HEREON.

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ALLOWABLE ERRORS

TABLE V

DIAMETRAL PITCH	INVOLUTE PROFILE ERRORS	ACCUMULATED PITCH ERROR BETWEEN ANY TWO TEETH	LEAD ERRORS					
			LENGTH OF SERRATION					
			0 TO 0.49	0.50 TO 1.24	1.25 TO 2.49	2.50 TO 3.99	4.00 TO 5.24	5.25 TO 6.50
ALL	.0005	.0015	0	.0003	.0003	.0004	.0005	.0006

TABLE VI

DIAMETRAL PITCH	NO. TEETH	OUT OF ROUNDNESS	FACTOR E	NO. TEETH	OUT OF ROUNDNESS	FACTOR E
ALL	11	.0008	.914	32	.0009	.963
	14	.0008	.928	35	.0009	.966
	16	.0008	.935	38	.0009	.968
	19	.0008	.943	39	.0009	.969
	23	.0009	.951	41	.0009	.971
	26	.0009	.956	44	.0010	.972
	27	.0009	.958	49	.0010	.975
	29	.0009	.960	54	.0010	.977
	31	.0009	.962	59	.0010	.979

- ② NOTES: 1. VALUES SHOWN IN THE TABLES TAKEN DIRECTLY FROM AMERICAN STANDARD FOR INVOLUTE SERRATIONS, ASA B5.26 - 1950, WITH THE EXCEPTION OF MAXIMUM MEASUREMENT OVER PINS WHICH IS THE VALUE FOR THE HIGH LIMIT OF THE MACHINING TOLERANCE.
2. FOR RECOMMENDED DESIGN PRACTICE SEE NAS 540.

- ② INACTIVE FOR NEW DESIGN AFTER AUGUST 1983
USE ANSI B92.1 - 1970.

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APPROVAL DATE 7/15/84 REVISION ① 1 May 1964 ② 7 Sept 1983