

FED. SUPPLY CLASS

5320

1. SCOPE

- 1.1 **Purpose.** This standard practice classification establishes the requirements of dimensional design and instructional usage for swage locking pins and collar inspection gages.

2. APPLICABLE DOCUMENTS

NAS621 Fasteners, Titanium Alloy Procurement Specification For
 NAS1413 Pins and Collars, Swage Locking
 NAS1080 Collar, Swage Locking For Pull-Type and Stump-Type Lockbolts
 NAS2013 Collar, Grooved, Pin-Rivet, Titanium (Composite Applications)

Copies can be obtained from the Aerospace Industries Association, 1000 Wilson Blvd., Suite 1700, Arlington, VA 22209. www.aia-aerospace.org

3. GAGE SELECTION

- 3.1 Selection of the proper gage part number must be determined by the tables shown in NAS1080 or NAS2013.

4. DESIGN AND USE

- 4.1 In addition to visual inspection, the installed swage locking pins and collars may be inspected or verified by using the inspection gages referenced herein.
- (a) **Pin Position Gages.** These gages are designed to inspect the position of the installed swage locking pins in relation to the sheet line or work surface, verifying the correct length of fastener was installed.
- (b) **Pin Position and Swage Gages.** These gages, in addition to inspection of proper grip length, are also designed to inspect the swaged collar in relation to the sheet line or work surface to determine that the installed collar is completely and sufficiently swaged.

5. INSTRUCTIONS

- 5.1 How to use instructions of the various type gages are shown on Sheets 8 thru 15.

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PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST
REVISION DATE.

REVISION DATE: APRIL 30, 2013

ISSUE DATE: MAY 1960

THIRD ANGLE PROJECTION	CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 11
PROCUREMENT SPECIFICATION NONE	TITLE GAGES, PINS AND COLLAR INSPECTION, SWAGE LOCKING	CLASSIFICATION STANDARD PRACTICE NAS1563 SHEET 1 OF 15



Documents
SHEET 1 OF 15

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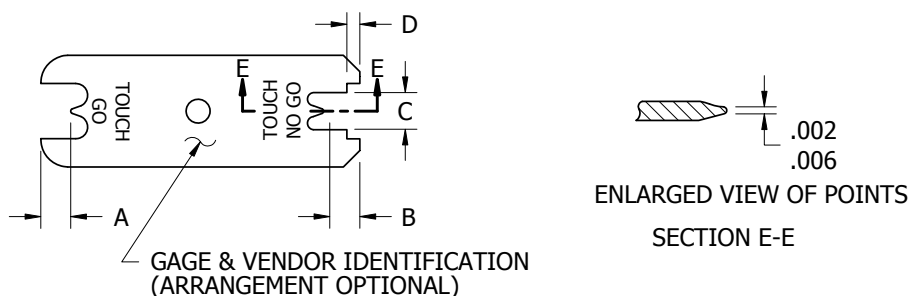


FIGURE 1 – TENSION & SHEAR STUMP-TYPE GAGE

TABLE I – TENSION STUMP-TYPE DIMENSIONS

NOM SIZE	GAGE NUMBER	A +.001 –.000	B +.000 –.001	C ±.0010	D ±.0010
.164	34D-9A	.168	.260	.2400	.0885
	34D-10A	.168	.254	.2400	.0795
	34D-11	.168	.254	.2530	.0605
.190 & .203	34D-1	.238	.322	.2972	.0665
	34D-2	.218	.288	.2972	.0725
.250 & .266	34D-3	.307	.399	.3942	.0725
	34D-4	.301	.379	.3942	.0995
.312 & .328	34D-5	.399	.479	.4992	.0635
	34D-6	.384	.449	.4862	.1055
.375 & .391	34D-7	.496	.582	.5892	.1185
	34D-8	.480	.545	.5892	.1555

TABLE II – SHEAR STUMP-TYPE DIMENSIONS

NOM SIZE	GAGE NUMBER	A +.001 –.000	B +.000 –.001	C	D
.156 & .164	75-5	.169	.241	.2405	.081
	75-8			.2400	.080
.190	75-1	.194	.266	.2795	.115
				.2775	.113
.250	75-2	.246	.318	.3704	.140
				.3684	.138
.312	75-3	.265	.337	.4720	.130
				.4700	.128
.375	75-4	.308	.380	.5657	.160
				.5637	.158

(a) For 75-6 & 75-7, see Figure 6.

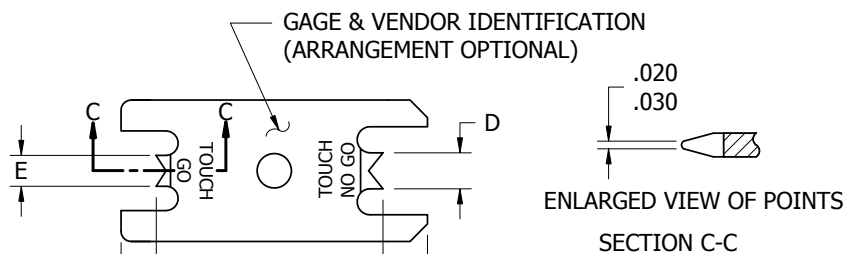


FIGURE 2 – SHEAR & SHEAR/TENSION PULL-TYPE

TABLE III – SHEAR PULL-TYPE DIMENSIONS

NOM SIZE	GAGE NUMBER	A +.001 -.000	B +.000 -.001	D ±.001	E ±.001
.190 & .203	76-1A	.194	.264	.164	.150
.250 & .266	76-2A	.248	.316	.224	.200
.312 & .328	76-3	.268	.341	.268	.268
.375 & .391	76-4	.319	.390	.339	.339

TABLE IV – SHEAR/TENSION PULL-TYPE DIMENSIONS

NOM SIZE	GAGE NUMBER	A +.001 -.000	B +.000 -.001	D ±.001	E ±.001
.125	90-4	.160	.236	.100	.100
.156	90-5	.181	.261	.125	.125
.190	90-6	.186	.279	.164	.164
.250	90-8	.226	.318	.224	.224
.312	90-10	.265	.366	.268	.268
.375	90-12	.298	.403	.339	.339

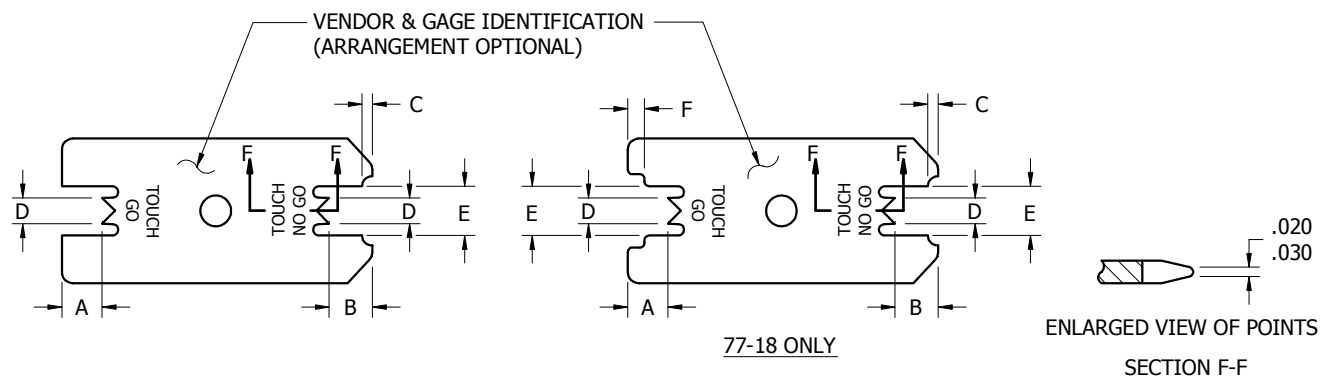


FIGURE 3 – SHEAR & SHEAR/TENSION PULL-TYPE (W/ COLLAR SWAGE)

TABLE V – SHEAR PULL-TYPE DIMENSIONS (W/ COLLAR SWAGE)

NOM SIZE	GAGE NUMBER	A	B	C	D	E	F
.190	77-11A	.192 .191	.264 .263	.115 .113	.165 .163	.2795 .2775	–
.190	77-14A	.192 .191	.264 .263	.137 .135	.165 .163	.2795 .2775	–
.250	77-13A	.244 .243	.316 .315	.140 .138	.225 .223	.3704 .3684	–
.312	77-16A	.269 .268	.341 .340	.130 .128	.269 .267	.4720 .4700	–
.375	77-17A	.321 .319	.390 .389	.160 .158	.340 .338	.5657 .5637	–
.375	77-18A	.321 .319	.406 .404	.233 .231	.340 .338	.5657 .5637	.172 .170

TABLE VI – SHEAR/TENSION PULL-TYPE DIMENSIONS

NOM SIZE	GAGE NUMBER	A +.001 –.000	B +.000 –.000	C	D ±.001	E
.156	112-5	.181	.261	.081 .079	.125	.2410 .2390

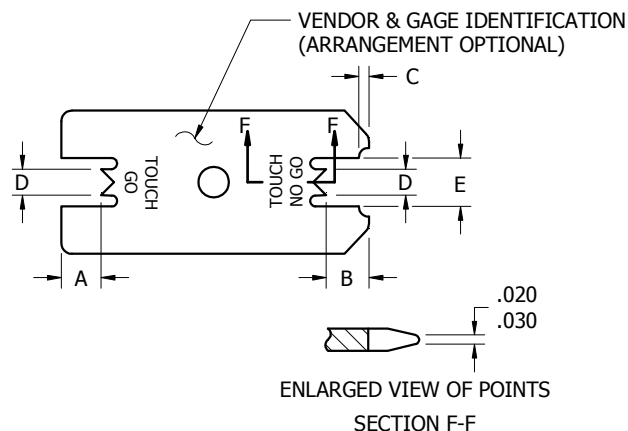


FIGURE 4 – TENSION PULL-TYPE

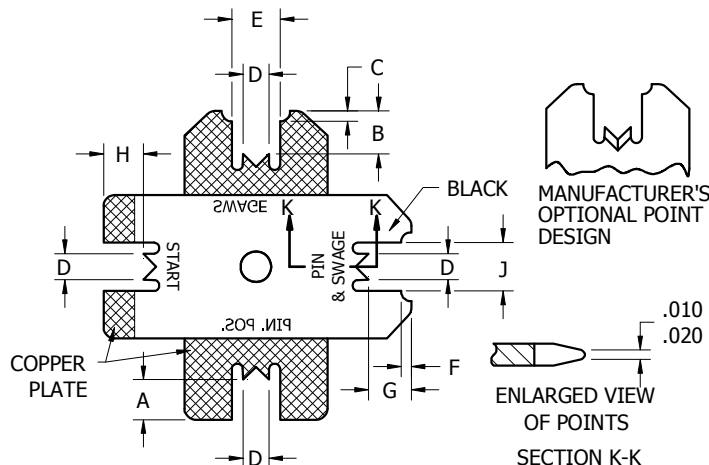


FIGURE 5 – TENSION PULL-TYPE (85-10)

TABLE VII – TENSION PULL-TYPE DIMENSIONS

NOM SIZE	GAGE NUMBER	A +.001 -.000	B	C	D ±.001	E
.164	85-7	.167	.230 .229	.030 .028	.136	.2540 .2520
	85-12	.161	.234 .233	.037 .036	.136	.2535 .2530
.190 & .203	85-17	.200	.280 .279	.081 .079	.164	.2860 .2840
.250 & .266	85-2	.295	.374 .373	.038 .036	.224	.4010 .3990
	85-2A	.295	.381 .379	.058 .056	.224	.4010 .3990
	85-18	.287	.364 .363	.058 .056	.224	.4010 .3990
	85-21	.287	.364 .363	.140 .138	.224	.3704 .3684
.312 & .328	85-3	.339	.459 .458	.083 .081	.268	.4870 .4850
	85-8	.404	.492 .491	.110 .109	.268	.4725 .4720
	85-19	.404	.492 .491	.104 .102	.268	.4870 .4850
.375 & .391	85-4	.411	.549 .548	.062 .060	.339	.6030 .6010
	85-9	.507	.604 .603	.120 .119	.339	.5755 .5750
	85-22	.507	.604 .603	.150 .149	.339	.5755 .5750

11

TABLE VIII – TENSION PULL-TYPE DIMENSIONS

NOM SIZE	GAGE NUMBER	A +.001 -.000	B	C	D ±.001	E	F	G	H	J
.190 & .203	85-10	.208	.2260	.039	.164	.304	.060	.280	.2255	.304
			.2255	.037		.302	.058	.279	.2250	.302

REVISION

11

NAS1563
SHEET 5



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