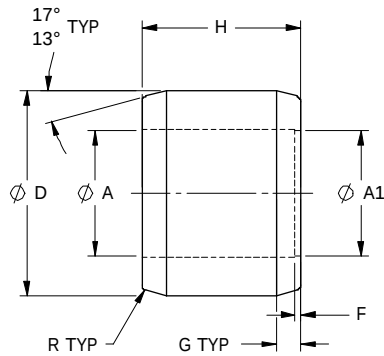




MANUFACTURER'S IDENTIFICATION REQUIRED FOR NOMINAL SIZES .190 AND LARGER, ADD "M" FOR MK SERIES, DEPRESSED OR RAISED .010 MAXIMUM. MANUFACTURER'S OPTION TO IDENTIFY EITHER OR BOTH ENDS OR ON PERIPHERY OF COLLAR.

NOMINAL SIZES .125, .156, AND .164 DO NOT REQUIRE IDENTIFICATION. MANUFACTURER'S OPTION TO IDENTIFY EITHER OR BOTH ENDS OR ON PERIPHERY OF COLLAR.

FIGURE 1
COLLARS - DOUBLE ENDED

TABLE I DIMENSIONS (a) - COLLARS - DOUBLE ENDED (SEE FIGURE 1)

TABLE I DIMENSIONS (a) - COLLARS - DOUBLE ENDED (SEE FIGURE 1)														
NAS PART NUMBERS (b)			PIN NOM DIA	DIAMETERS					LENGTHS					RAD
				ØA		ØA1	ØD		F	G		H		R
ALUMINUM	STEEL/CRES	NICKEL-COPPER		MAX	MIN	MIN	MAX	MIN	MAX	MAX	MIN	MAX	MIN	MAX
NAS1080AG04	NAS1080UG04	NAS1080MG04	.125	.128	.124	.122	.201	.197	.016	.033	.013	.188	.171	.010
NAS1080C04	NAS1080E04											.168	.157	
NAS1080K04				.134	.129	.127	.206	.202						
	NAS1080UK04	NAS1080MK04		.130	.126	.121	.204	.200				.210	.197	
NAS1080AG05	NAS1080UG05	NAS1080MG05	.164	.173	.168	.165	.260	.256	.016	.038	.018	.208	.197	.010
NAS1080C05	NAS1080E05		.156	.160	.155	.152	.249	.245		.055	.035	.188	.178	
NAS1080K05				.173	.168	.165	.260	.256		.028	.016	.234	.219	
	NAS1080UK05	NAS1080MK05		.161	.157	.152	.252	.248						
NAS1080AG06			.190	.192	.187	.183	.303	.299	.016	.045	.025	.240	.225	.015
NAS1080G06										.040	.030			
NAS1080K06				.208	.203	.200	.310	.306		.033	.021	.253	.238	
	NAS1080UK06	NAS1080MK06		.194	.190	.184	.302	.298						
NAS1080AG08			.250	.253	.248	.245	.396	.392	.016	.055	.035	.298	.283	.015
NAS1080G08										.050	.040			
NAS1080K08				.271	.266	.263	.410	.406		.042	.030			
	NAS1080UK08	NAS1080MK08		.254	.250	.244	.399	.394						
NAS1080AG10			.312	.315	.310	.307	.497	.492	.031	.090	.070	.317	.302	.015
NAS1080G10										.085	.075			
NAS1080K10				.336	.330	.327	.511	.506		.053	.037	.334	.319	
	NAS1080UK10	NAS1080MK10		.318	.313	.306	.500	.494						
NAS1080AG12			.375	.378	.373	.370	.601	.596	.031	.098	.078	.396	.381	.020
NAS1080G12										.094	.062			
NAS1080K12				.399	.393	.390	.612	.607		.062	.046	.370	.355	
	NAS1080UK12	NAS1080MK12		.380	.375	.368	.600	.594						

CODE: "E" = C1006, C1008, C1018, C1213, OR C1215 CARBON STEEL
 "C", "G", AND "K" = 2024 ALUMINUM ALLOY
 "AG" = 2219 ALUMINUM ALLOY
 "UG", AND "UK" = A-286 CRES
 "MG", AND "MK" = NICKEL-COPPER ALLOY

(a) FOR ADDITIONAL DIMENSIONAL DATA RELATING TO FABRICATION CHARACTERISTICS SEE FIGURE 7.

(b) FOR PIN-COLLAR COMBINATIONS SEE TABLES VI, VII, AND VIII.

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THIRD ANGLE PROJECTION	CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 14
PROCUREMENT SPECIFICATION NAS1413	TITLE COLLAR, SWAGE LOCKING FOR PULL-TYPE AND STUMP-TYPE LOCKBOLTS	CLASSIFICATION PART STANDARD

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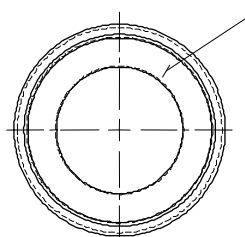
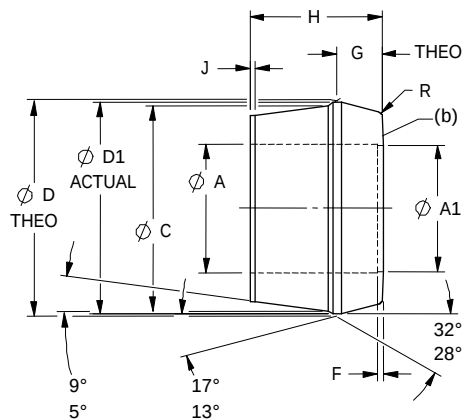
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MANUFACTURER'S IDENTIFICATION
DEPRESSED OR RAISED .010
MAXIMUM FOR NOMINAL SIZES .190
AND LARGER. MANUFACTURER'S
OPTION TO IDENTIFY .164 SIZE.
LOCATION ON END AS SHOWN OR
ON PERIPHERY OF COLLAR.

TOP VIEW OF FIGURES 2, 3, 4, 5, & 6

FIGURE 2
BEADED SHEAR TYPE COLLARS
NAS1080C06 AND NAS1080C08
(SEE DETAIL 2)

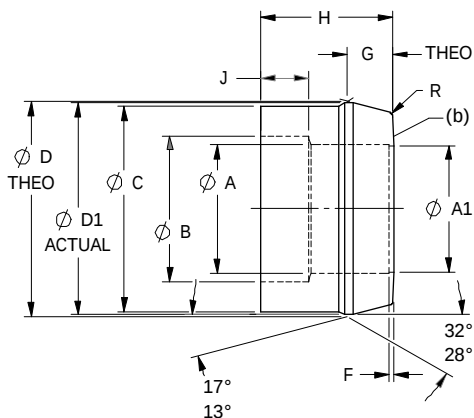


FIGURE 3
BEADED SHEAR TYPE COLLARS
NAS1080C10 AND NAS1080C12
(SEE DETAIL 3)

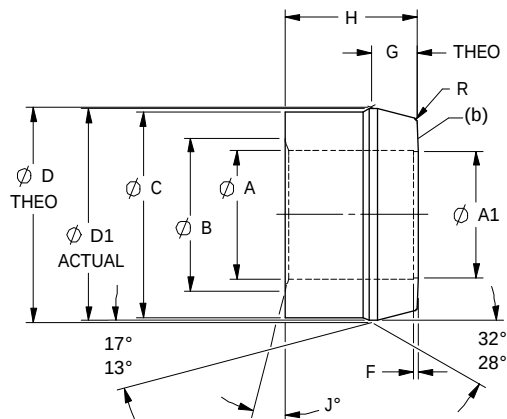


FIGURE 4
BEADED SHEAR TYPE COLLARS
NAS1080E06 THRU NAS1080E12
(SEE DETAIL 4)

TABLE II DIMENSIONS (c) - BEADED SHEAR TYPE (SEE FIGURES 2, 3, & 4)

NAS PART NUMBERS (d)	PIN NOM DIA	DIAMETERS										LENGTHS				RADIUS			
		ØA		ØA1		ØB		ØC		ØD		ØD1 (a)		F	G	H	J	R	
		MAX	MIN	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
NAS1080C06	.190	.191	.187	.183	n/a		.305	.300	.320	.313	.308	.016		.075	.060	.205	.185	.020	n/a
NAS1080E06		.1935	.1885	.185			.294	.288											
NAS1080C08	.250	.252	.248	.243	n/a		.397	.392	.420	.413	.409	.016		.070	.055	.236	.220	.030	n/a
NAS1080E08							.394	.388											
NAS1080C10	.312	.309	.305	.301	.356	.349	.497	.492	.520	.513	.506	.031		.115	.100	.270	.250	.099	.091
NAS1080E10					.361		.495	.489											
NAS1080C12	.375	.377	.373	.367	.416	.408	.596	.589	.626	.618	.604	.031		.125	.110	.322	.298	.092	.084
NAS1080E12					.566	.554	.596	.589											
									.612	.603	.600			.105	.090	.323	.303	13°	7°

CODE: "C" = 2024 ALUMINUM ALLOY

"E" = C1006, C1008, C1018, C1213, OR C1215 CARBON STEEL

(a) "D1" DIAMETER (FLAT) PERMITTED, 17°/13° AND 32°/28° ANGLES MUST FALL WITHIN THEORETICAL INTERSECTION OF "D".

(b) 17° MAXIMUM ANGLE PERMITTED BEYOND "H" LENGTH, ANGLE MUST BE TANGENT TO "R" RADIUS.

(c) FOR ADDITIONAL DIMENSIONAL DATA RELATIVE TO FABRICATION CHARACTERISTICS SEE FIGURE 7.

(d) FOR PIN COLLAR COMBINATIONS SEE TABLE VI.

(e) FOR COLLAR ORIENTATION SEE FIGURE 8.

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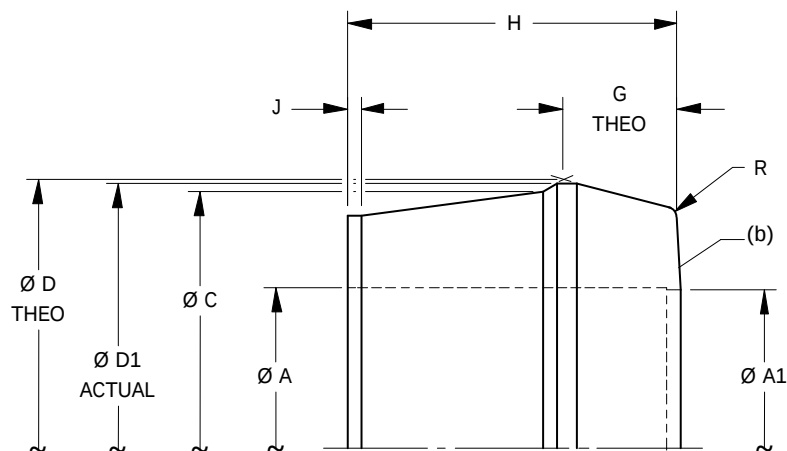
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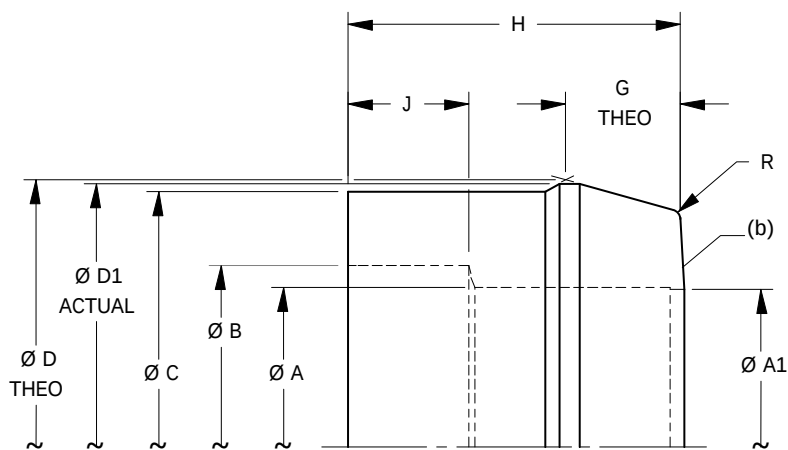
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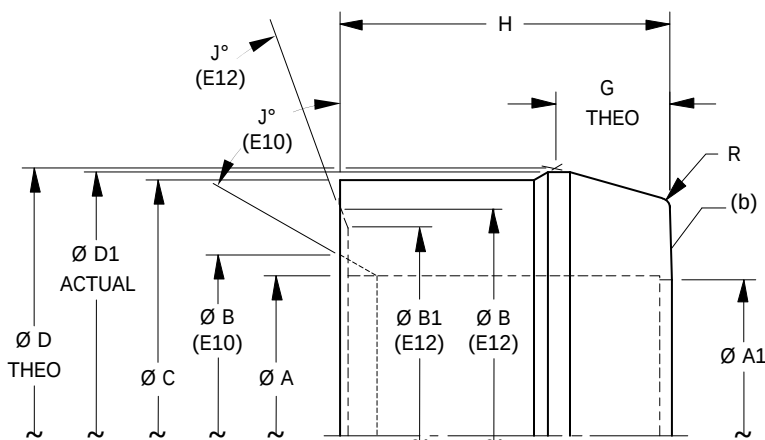
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DETAIL 2
BEADED SHEAR TYPE COLLARS
NAS1080C06 AND NAS1080C08
(SEE FIGURE 2 AND TABLE II)



DETAIL 3
BEADED SHEAR TYPE COLLARS
NAS1080C10 AND NAS1080C12
(SEE FIGURE 3 AND TABLE II)



DETAIL 4
BEADED SHEAR TYPE COLLARS
NAS1080E06 THRU NAS1080E12
(SEE FIGURE 4 AND TABLE II)

NAS PART NUMBER	PIN NOM DIA	DIAMETER ØB1	
		MAX	MIN
NAS1080E12	.375	.431	.415

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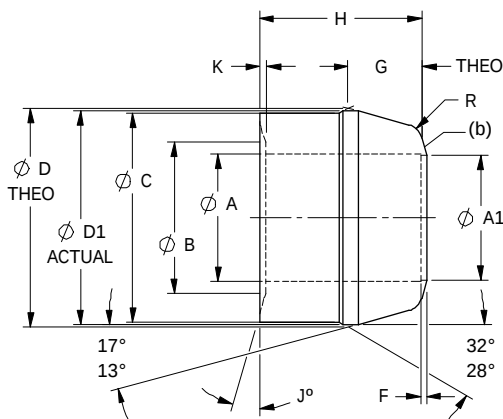


FIGURE 5
BEADED TENSION TYPE COLLARS
FOR 4-LOCKING-GROOVE TYPE LOCKBOLTS
(SEE DETAIL 5)

SEE SHEET 2 FOR TOP VIEW

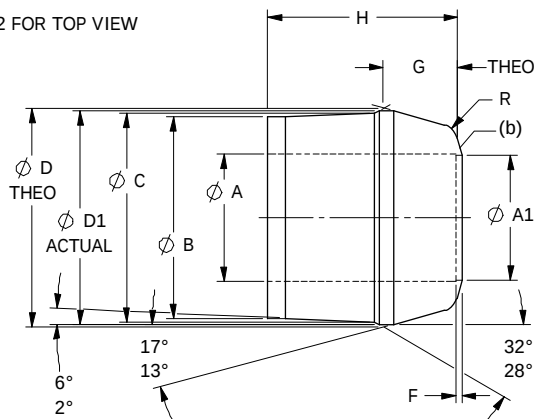


FIGURE 6
BEADED TENSION TYPE COLLARS
FOR 5-LOCKING-GROOVE TYPE LOCKBOLTS
(SEE DETAIL 6)

TABLE III DIMENSIONS (c) - BEADED TENSION TYPE (SEE FIGURE 5)																					
NAS PART NUMBERS (d)	PIN NOM DIA	DIAMETERS										LENGTHS					ANGLE		RADIUS		
		ØA		ØA1	ØB		ØC		ØD		ØD1 (a)		F	G		H		J °		R	
		MAX	MIN	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
NAS1080-05	.164	.169	.164	.163	.186	.170	.266	.256	.278	.270	.270	.264	.016	.093	.076	.200	.170	19°	14°	.025	.003
NAS1080AT05											n/a	.264									
NAS1080D05																					
NAS1080R05																					
NAS1080-06	.190	.193	.187	.184	.230	.214	.310	.304	.327	.317	.317	.311	.016	.120	.103	.263	.233	19°	14°	.041	.009
NAS1080AT06											n/a	.311									
NAS1080D06																					
NAS1080R06																					
NAS1080-08	.250	.254	.246	.244	.298	.282	.409	.402	.432	.422	.418	.412	.016	.143	.126	.335	.305	19°	14°	.046	.014
NAS1080AT08											n/a	.412									
NAS1080D08																					
NAS1080R08																					
NAS1080-10	.312	.312	.304	.301	.353	.337	.507	.499	.530	.520	n/a	.512	.031	.169	.152	.380	.350	33°	27°	.051	.019
NAS1080AT10																					
NAS1080D10																					
NAS1080-12	.375	.378	.371	.367	.431	.415	.609	.600	.634	.624	n/a	.612	.031	.181	.164	.509	.479	19°	14°	.056	.024
NAS1080AT12																.460	.430				
NAS1080D12																					

TABLE IV DIMENSIONS (c) - BEADED TENSION TYPE (SEE FIGURE 6)																			
NAS PART NUMBERS (d)	PIN NOM DIA	DIAMETERS										LENGTHS					RADIUS		
		ØA		ØA1	ØB		ØC		ØD		ØD1 (a)		F	G		H		R	
		MAX	MIN	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX	MIN	MAX	MIN	MAX	MIN
NAS1080P10	.312	.316	.310	.301	.488	.481	.501	.494	.528	.518	.520	.510	.031	.144	.127	.420	.390	.051	.019
NAS1080AP10					n/a	.510													
NAS1080R10					.477	.470	.504	.496											
NAS1080P12	.375	.380	.372	.367	.579	.571	.616	.608	.636	.626	.626	.618	.031	.191	.174	.540	.510	.056	.020
NAS1080AP12					n/a	.618													
NAS1080R12					.573	.565	.605	.595											

CODE: "–" AND "P" = 2024 ALUMINUM ALLOY
 "AT" AND "AP" = 2219 ALUMINUM ALLOY
 "D" = 6061 ALUMINUM ALLOY
 "R" = C1006, C1008, C1018, C1213, OR C1215 CARBON STEEL

- (a) "D1" DIAMETER (FLAT) PERMITTED, 17°/13° AND 32°/28° ANGLES MUST FALL WITHIN THEORETICAL INTERSECTION OF "D"
 (b) 17° MAXIMUM ANGLE PERMITTED BEYOND "H" LENGTH, ANGLE MUST BE TANGENT TO "R" RADIUS.
 (c) FOR ADDITIONAL DIMENSIONAL DATA RELATIVE TO FABRICATION CHARACTERISTICS SEE FIGURE 7.
 (d) FOR PIN COLLAR COMBINATIONS SEE TABLE VIII.
 (e) FOR COLLAR ORIENTATION SEE FIGURE 8.

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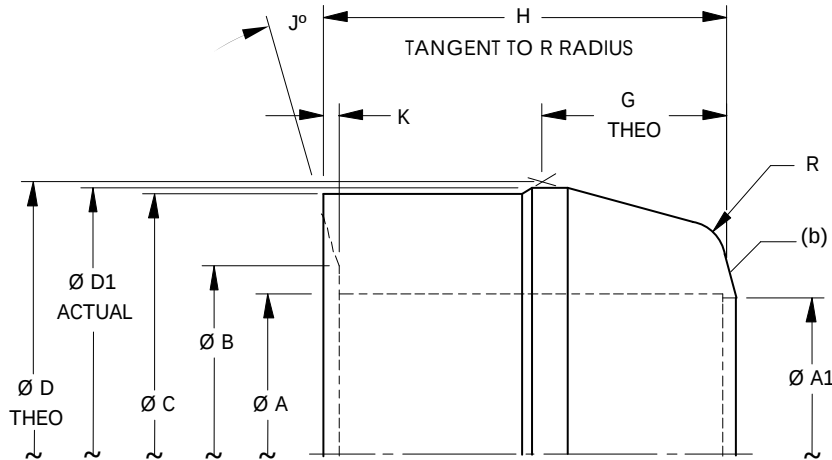
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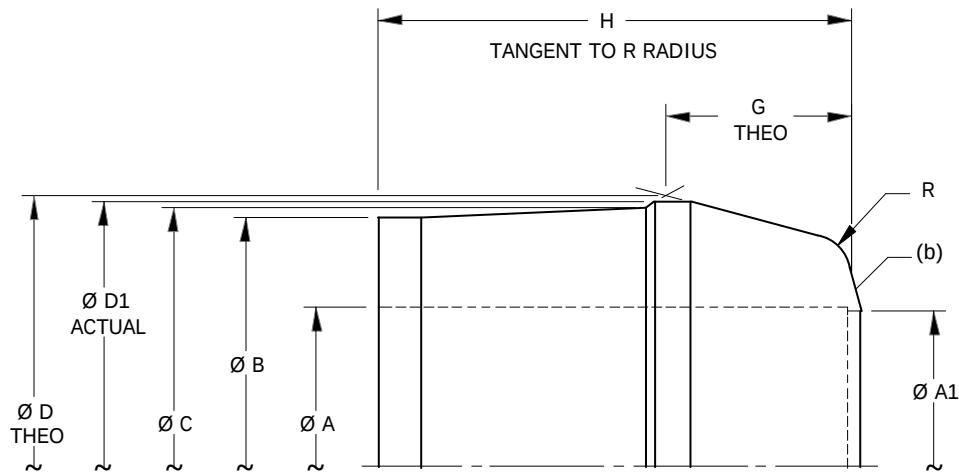
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DETAIL 5
BEADED TENSION TYPE COLLARS
FOR 4-LOCKING-GROOVE
TYPE LOCKBOLTS
(SEE FIGURE 5 AND TABLE III)

NAS PART NUMBERS	PIN NOM DIA	LENGTHS K	
		MAX	MIN
NAS1080-05	.164	.010	.004
NAS1080AT05			
NAS1080D05			
NAS1080R05			
NAS1080-06	.190	.012	.006
NAS1080AT06			
NAS1080D06			
NAS1080R06			
NAS1080-08	.250	.016	.008
NAS1080AT08			
NAS1080D08			
NAS1080R08			
NAS1080-10	.312	.032	.024
NAS1080AT10			
NAS1080D10			
NAS1080-12	.375	.023	.015
NAS1080AT12			
NAS1080D12			
NAS1080D12		.038	.030



DETAIL 6
BEADED TENSION TYPE COLLARS
FOR 5-LOCKING-GROOVE
TYPE LOCKBOLTS
(SEE FIGURE 6 AND TABLE IV)

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