DRIVE PIN BLIND RIVETS

1. Scope.

1.1 Scope. This standard establishes the requirements for drive pin blind rivets suitable for use in joining the component parts of an assembly.

1.2 Definitions.

1.2.1 *Blind Rivet.* A blind rivet is a blind fastener which has a self-contained mechanical or other feature which permits the formation of an upset on the blind end of the rivet and expansion of the rivet shank during rivet setting to join the component parts of an assembly.

1.2.2 *Drive Pin.* A drive pin rivet is a blind rivet consisting of a rivet body and a pin which is contained in the rivet body and which projects above the rivet head. In the setting operation, the rivet is inserted into the components to be joined, and the pin is forced into the rivet body until the pin end is flush with the top of the rivet head. This action flares or spreads the end of the rivet body forming a blind head.

1.2.3 Definitions of other terms used in this standard are given in IFI-110, "Glossary of Terms Relating to Blind Rivets," page K-40.

2. Designations.

2.1 Styles. The two basic styles of drive pin blind rivets are designated as protruding head and flush head. Flush head rivets are available in two styles designated as 100 deg. countersunk head and 78 deg. countersunk head.

2.2 Grades. The material combinations of drive pin blind rivets are designated as grades, with each material combination representing a different combination of rivet body material and mandrel material as given in Table 1.

2.3 Design. The design of drive pin blind rivets shall be in accordance with the practice of the manufacturer.

3. Requirements.

3.1 Materials and Processes.

Table 1 Grades of Drive Pin Blind Rivets

Grade Designation	Rivet Body Material	Pin Material
12	Aluminum Alloy 5056	Aluminum Alloy
14	Aluminum Alloy 2117	Aluminum Alloy
30	Low Carbon Steel	Carbon Steel
31	Low Carbon Steel	300 Series Stainless Steel
60	Aluminum Alloy 2117	300 Series Stainless Steel
61	Aluminum Alloy 5056	300 Series Stainless Steel

Note: At manufacturer's option, Grade 31 rivets may be substituted for Grade 30.

3.1.1 *Material.* Rivet bodies and mandrels shall be made of the material specified for the grade in Table 1. When the specific material analysis is not given, the analysis shall be selected by the manufacturer.

3.1.2 *Heat Treatment.* Rivet components shall be heat treated when necessary. Heat treatment shall be in accordance with good commercial practice.

3.1.3 *Finish.* Grade 60 rivet bodies may be anodized at the manufacturer's option except when specified by the purchaser. The stainless steel pins of Grades 60, 61, and 31 may be passivated or mill finish in accordance with the practice of the manufacturer.

Unless otherwise specified, Grades 30 and 31 rivet bodies shall be cadmium plated with a minimum plating thickness of 0.00015 in.

3.2 Dimensional Requirements.

3.2.1 *Rivet Dimensions.* Protruding and 100° and 78° flush head rivets shall conform to the dimensions given in Tables 2 and 4, respectively.

3.2.2 *Application Data.* Recommendations on the selection and application of protruding and

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100° and 78° flush head rivets are given in Tables 3 and 5, respectively.

4. Inspection.

Rivets shall be inspected to determine conformance with dimensional, mechanical, and performance requirements. Inspection shall be as agreed upon between manufacturer and purchaser.

In case of dispute following shipment of rivets, acceptability shall be determined in accordance with the procedures given in IFI-137, page K-93.

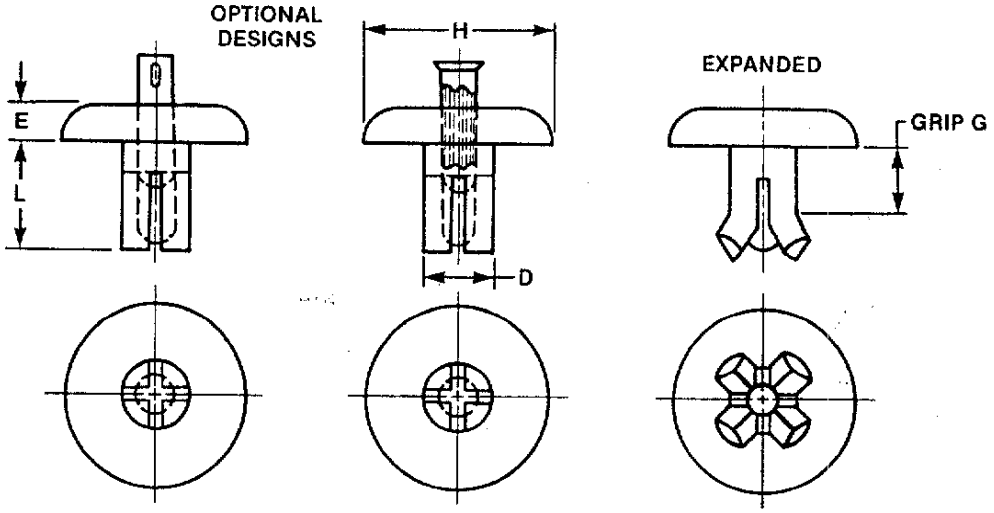

Table 2 Dimensions of Protruding Head Drive Pin Blind Rivets

Rivet Series No.	Nom Rivet Dia	D		H		E		L
		Body Dia		Head Dia		Head Height		Rivet Body Length
		Max	Min	Max	Min	Max	Min	Max
4	1/8 0.1250	0.127	0.121	0.262	0.238	0.064	0.054	See Table 3
5	5/32 0.1562	0.158	0.152	0.328	0.296	0.077	0.067	
6	3/16 0.1875	0.190	0.184	0.394	0.356	0.090	0.080	
8	1/4 0.2500	0.252	0.246	0.525	0.475	0.117	0.107	
See Note 3								

NOTES:

1. All dimensions are in inches.
2. For application data, see Table 3.
3. Rivet series numbers represent the nominal size in 1/32 in.
4. The slotted shanks of No. 4 rivets may produce 2, 3, or 4 segments. Slotted rivet shanks of larger sizes may produce 3 or 4 segments.
5. Illustrations are for basic dimensioning purposes only and are not intended to restrict designs and shapes of rivets otherwise conforming to the dimensional requirements.

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Table 3 Application Data For Protruding Head Drive Pin Blind Rivets

Rivet Series No.	Nom Rivet Size	Recommended Drill Size	Recommended Hole Size		Rivet No.	Grip Range	Rivet Body Length
			Max	Min			Max
4	1/8 0.1250	#30	0.133	0.129	42	.046 – .078	0.186
					43	.079 – .109	.218
					44	.110 – .140	.249
					45	.141 – .171	.280
					46	.172 – .203	.311
					47	.204 – .234	.342
					48	.235 – .265	.374
					49	.266 – .296	.405
					410	.297 – .328	.436
					411	.329 – .359	.468
					412	.360 – .390	.499
					413	.391 – .421	.530
5	5/32 0.1562	#20	0.164	0.160	52	.046 – .078	.218
					53	.079 – .109	.249
					54	.110 – .140	.280
					55	.141 – .171	.311
					56	.172 – .203	.342
					57	.204 – .234	.374
					58	.235 – .265	.405
					59	.266 – .296	.436
					510	.297 – .328	.468
					511	.329 – .359	.499
					512	.360 – .390	.530
					513	.391 – .421	.561
					514	.422 – .453	.592
					515	.454 – .484	.623
					516	.485 – .515	.655
					517	.516 – .546	.686
					518	.547 – .578	.718
					519	.579 – .609	.748
					520	.610 – .640	.780
6	3/16 0.1875	#11	0.196	0.192	62	.046 – .109	.280
					64	.110 – .171	.311
					66	.172 – .234	.374
					68	.235 – .296	.436
					610	.297 – .359	.499
					612	.360 – .421	.561
					614	.422 – .484	.624
					616	.485 – .546	.686
					618	.547 – .609	.749
					620	.610 – .671	.811
8	1/4 0.2500	F	0.261	0.257	84	.110 – .171	.311
					86	.172 – .234	.374
					88	.235 – .296	.436
					810	.297 – .359	.499
					812	.360 – .421	.561
					814	.422 – .484	.624
					816	.485 – .546	.686
					818	.547 – .609	.749
					820	.610 – .671	.811
See Notes		3			2		4

NOTES:

1. All dimensions are in inches.
2. The first numeral in the rivet number designates the rivet diameter in 1/32 inches. (See table for specified grip range.)
3. Recommended drill sizes are those which normally produce holes within the specified hole size limits.
4. Minimum blind side clearance necessary to permit proper rivet setting equals max rivet length minus total thickness of material to be joined (grip).

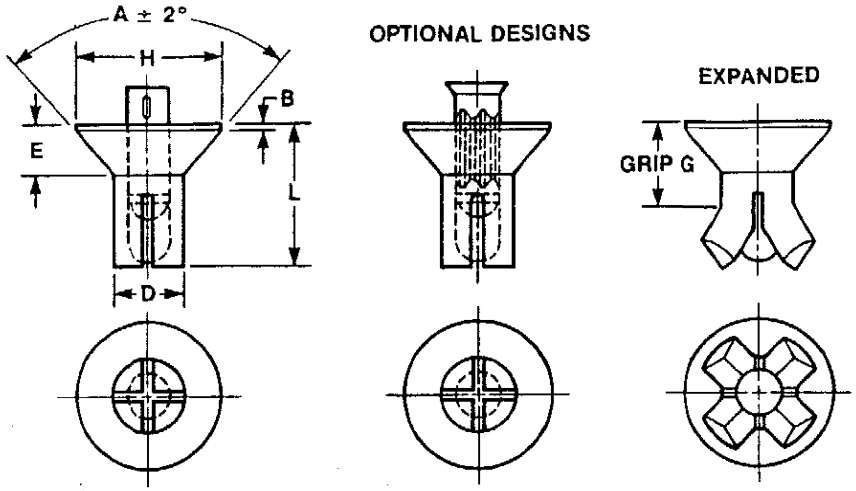

Table 4 Dimensions of Flush Head Drive Pin Blind Rivets

Rivet Series No.	Nom Rivet Size	D		A	H		E	A	H		E	B			L
		Body Dia		Head Angle	Head Dia		Head Height	Head Angle	Head Dia		Head Height	Flat on Edge of Head			Rivet Body Length
												Grades 12, 14, 60, 61		Grades 30, 31	
		Max	Min	Deg Nom	Max	Min	Ref	Deg Nom	Max	Min	Ref	Max	Min	Max	Max
4	1/8 0.1250	0.127	0.121	100	0.229	0.204	.042	78	0.229	0.210	0.062	0.006	0.002	0.008	See Table 5
5	5/32 0.1562	0.158	0.152	100	0.291	0.262	0.55	78	0.290	0.264	0.078	0.007	0.003	0.010	
6	3/16 0.1875	0.190	0.184	100	0.359	0.324	.070	78	0.343	0.316	0.094	0.009	0.003	0.010	
8	1/4 0.2500	0.252	0.246	100	0.484	0.439	.095	78	0.456	0.426	0.125	0.011	0.005	0.012	
See Note 3				6			7	6			7				

NOTES:

1. All dimensions are in inches.
2. For application data see Table 5.
3. Rivet series numbers represent the nominal size in 1/32 inches.
4. The slotted shanks of No. 4 rivets may produce 2, 3, or 4 segments. Slotted rivet shanks of larger rivets may produce 3 or 4 segments.
5. Illustrations are for basic dimensioning purposes only and are not intended to restrict designs and shapes of rivets otherwise conforming to the dimensional requirements.
6. Max head diameter is calculated on nominal body diameter and nominal head angle extended to a theoretical sharp corner. Min head diameter is absolute.
7. Head height is given for reference purposes only. Variations in this dimension are controlled by the diameters (H) and (D) and the included angle of the head.

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Table 5 Application Data For 100 Deg Flush Head Drive Pin Blind Rivets

Rivet Series No.	Nom Rivet Size	Recommended Drill Size	Recommended Hole Size		Rivet No.	Grip Range	Rivet Body Length
			Max	Min			Max
4	1/8 0.1250	#30	0.133	0.129	44	.110 – .140	.249
					45	.141 – .171	.280
					46	.172 – .203	.311
					47	.204 – .234	.342
					48	.235 – .265	.374
					49	.266 – .296	.405
					410	.297 – .328	.436
					411	.329 – .359	.468
					412	.360 – .390	.499
					413	.391 – .421	.530
5	5/32 0.1562	#20	0.164	0.160	54	.109 – .140	.280
					55	.141 – .171	.311
					56	.172 – .203	.342
					57	.204 – .234	.374
					58	.235 – .265	.405
					59	.266 – .296	.436
					510	.297 – .328	.468
					511	.329 – .359	.499
					512	.360 – .390	.530
					513	.391 – .421	.561
					514	.422 – .453	.592
					515	.454 – .484	.624
					516	.485 – .515	.655
					517	.516 – .546	.686
					518	.547 – .578	.718
					519	.579 – .609	.749
					520	.610 – .640	.780
6	3/16 0.1875	#11	0.196	0.192	66	.172 – .234	.374
					68	.235 – .296	.436
					610	.297 – .359	.499
					612	.360 – .421	.561
					614	.422 – .484	.624
					616	.485 – .546	.686
					618	.547 – .609	.749
					620	.610 – .671	.811
8	1/4 0.2500	F	0.261	0.257	86	.172 – .234	.374
					88	.235 – .296	.436
					810	.297 – .359	.499
					812	.360 – .421	.561
					814	.422 – .484	.624
					816	.485 – .546	.686
					818	.547 – .609	.749
					820	.610 – .671	.811
See Note		3			2		4

NOTES:

1. All dimensions are in inches.
2. The first numeral in the rivet number designates the rivet diameter in 1/32 inches. (See table for specified grip range.)
3. Recommended drill sizes are those which normally produce holes within the specified hole size limits.
4. Minimum blind side clearance necessary to permit proper rivet setting equals max rivet length minus total thickness of material to be joined (grip).