AEROSPATIALE NORMALISATION GENERALE	NORME D'ETUDES BLIND RIVETS, WITH SHANK LOCKING 100° COUNTERSUNK HEAD	ASNA0079 Issue : M Date : 02.04.99

1 FIELD OF APPLICATION

This ASN defines the main characteristics of blind rivets with mechanical shank locking, which can be attached by simple action.

They are of two types:

Type I Without abutment washer.
Type II With abutment washer, thus enabling the rivet to be installed using a gun, without an installation tool end being necessary.

2 NORMATIVE REFERENCES

AMS 5731	Steel bars, forgings, tubing and rings, corrosion heat resistant, 15 Cr-25.5 Ni-2.1 Ti-0.006B-0.30V- consummable electrode melted, 1800°F (982°C). Solution heat treated.
AMS 5732	Steel bars, wire, forgings, tubing, and rings corrosion and heat resistant, 15 Cr-25.5 Ni-1.2 Mo-2.1 Ti-0.006B-0.30V consumable electrode melted, 1800°F (982°C) solution and precipitation heat treated.
AMS 5734	Steel bars, forgings and tubing, corrosion and heat resistant, 15 Cr-25.5 Ni-1.2 Mo-2.1 Ti-0.006B-0.30V consumable electrode melted, 1650°F (899°C) solution heat treated.
AMS 5737	Steel bars, wire, forgings and tubing, corrosion and heat resistant 15 Cr-25.5 Ni-1.2 Mo-2.1 Ti-0.006B-0.30V consumable electrode melted, 1650°F (899°C) solution heat treated.
ASTM-A-967	Standard specification for chemical passivation treatments for stainless steel parts.
MIL-C-83488	Coating aluminium, ion vapor deposited.
QQ-P-416	Plating cadmium (electrodeposited).
QQ-A-225/4	Aluminium alloy 2014, bar, rod, wire and special shapes; rolled, drawn or cold finished.
QQ-A-430	Aluminium alloy rod and wire; for rivets and cold heading.
NAS 1722	Rivet, blind, self-plugging, mechanically locked spindle.
IGC 04.81.104	Monograms of fastener manufacturers.

These documents shall be consulted at the latest issue in effect.

Keywords: Blind rivet (TC) - Countersunk head rivet - Rivet.

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3 REQUIRED CHARACTERISTICS

3.1 Configuration - Dimensions - Type I

These rivets are composed of two parts:

① a body

② a grooved end shank

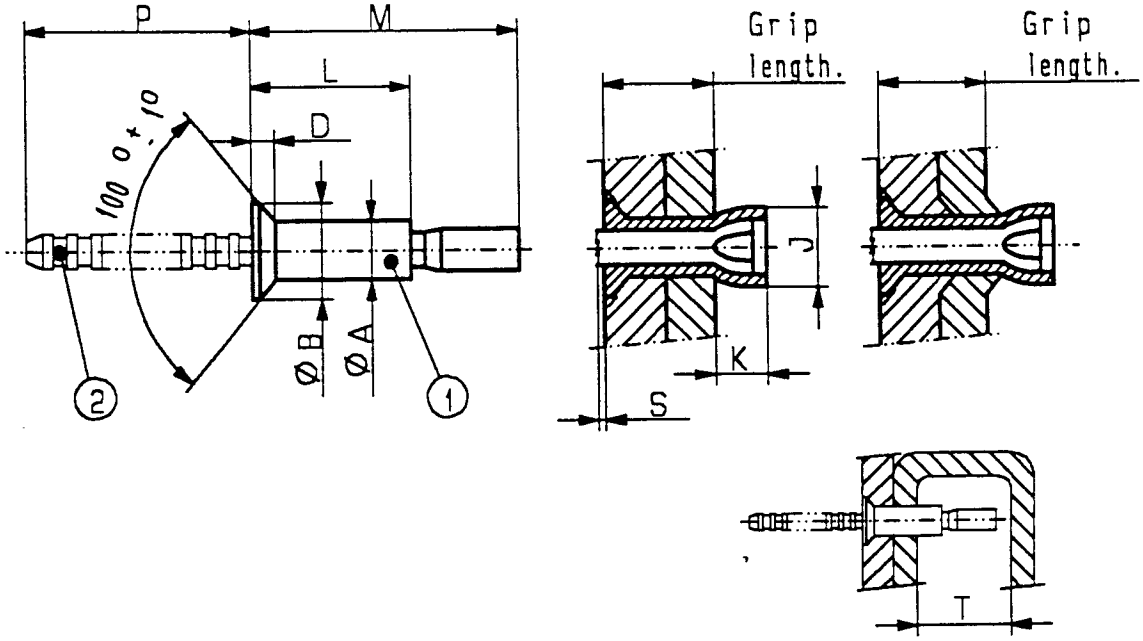


FIGURE 1

TABLE 1 - DIMENSIONS

Nominal Ø A		A				B		D		P		J		K	
		inch		mm		Min.		Nominal		Max.		Ref.		Max.	
inch	mm	Min.	Max.	Min.	Max.	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
1/8	3,2	.124	.129	3,15	3,27	.208	5,28	.041	1,04	1.150	29,21	.150	3,80	.08	2,10
5/32	4	.155	.160	3,94	4,06	.267	6,78	.053	1,35	1.250	31,75	.190	4,80	.09	2,30
3/16	4,8	.187	.192	4,75	4,88	.329	8,36	.068	1,73	1.250	31,75	.230	5,80	.12	3,12

Nominal Ø A		Rivet codes A and B		Rivet codes C, D and E	
		S		S	
inch	mm	inch	mm	inch	mm
1/8	3,2	+ .005 − .015	+ 0,13 − 0,38	+ .005 − .015	+ 0,13 − 0,38
5/32	4	+ .005 − .020	+ 0,13 − 0,51	+ .005 − .020	+ 0,13 − 0,51
3/16	4,8	+ .005 − .030	+ 0,13 − 0,76	+ .005 − .030	+ 0,13 − 0,76

3.2 Configuration - Dimensions - Type II

These rivets are composed of four parts:

① a body

② a grooved end shank

③ an abutment washer to be removed during assembly using a grooved shank

④ a locking ring (depending on the manufacturer)

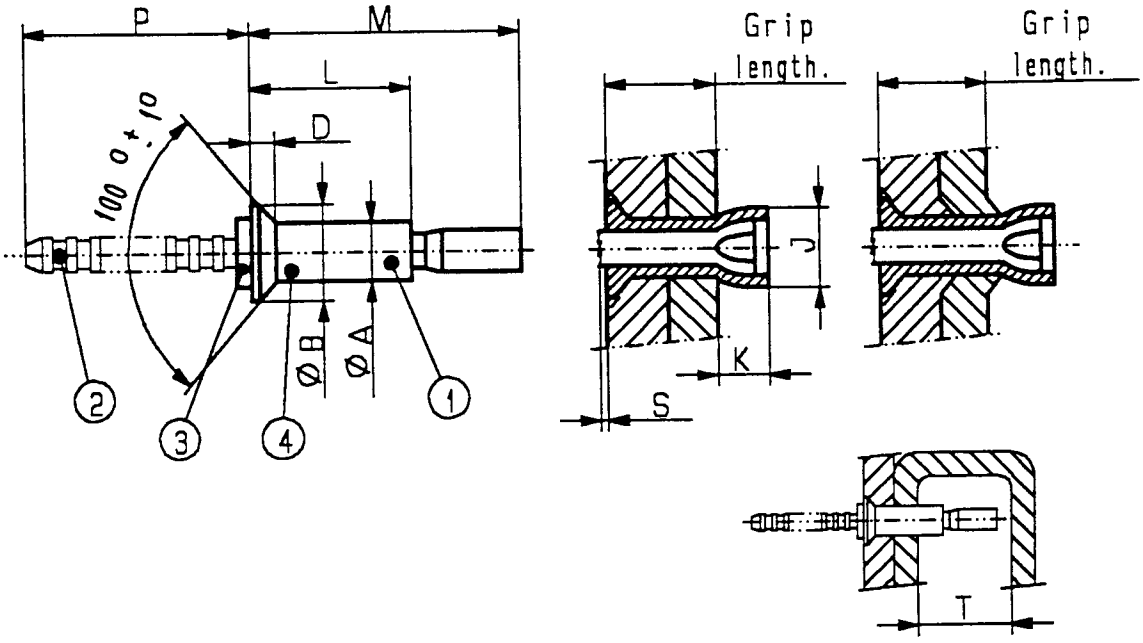


FIGURE 2

TABLE 2 - DIMENSIONS

Nominal Ø A		A				B		D		P		J		K	
		inch		mm		Min.		Nominal		Max.		Ref.		Max.	
inch	mm	Min.	Max.	Min.	Max.	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
1/8	3,2	.124	.129	3,15	3,27	.208	5,28	.041	1,04	1.150	29,21	.150	3,80	.08	2,10
5/32	4	.155	.160	3,94	4,06	.267	6,78	.053	1,35	1.250	31,75	.190	4,80	.09	2,30
3/16	4,8	.187	.192	4,75	4,88	.329	8,36	.068	1,73	1.250	31,75	.230	5,80	.12	3,12

Nominal Ø A		Rivet codes A and B		Rivet codes C, D and E	
		S		S	
inch	mm	inch	mm	inch	mm
1/8	3,2	+ .005 − .015	+ 0,13 − 0,38	+ .005 − .015	+ 0,13 − 0,38
5/32	4	+ .005 − .020	+ 0,13 − 0,51	+ .005 − .020	+ 0,13 − 0,51
3/16	4,8	+ .005 − .030	+ 0,13 − 0,76	+ .005 − .030	+ 0,13 − 0,76

3.3 Grip length

TABLE 3

Ø Nominal A	Grip length				Ø code and grip length	Grip length code	Rivet codes A and B							Rivet codes C, D and E						
	Min.		Max.				L max.		M max.		T min.		Mass kg	L max.		M max.		T min.		Mass * kg
	inch	mm	inch	mm			inch	mm	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm	
3,2	.050	1,27	.141	3,58	-407	2	.229	5,82	.390	9,90	.190	4,90	0,12	-	-	-	-	-	-	-
	.060	1,52	.141	3,58	-407	2	-	-	-	-	-	-	-	.263	6,68	.380	9,65	.190	4,90	0,37
	.109	2,77	.203	5,16	-409	3	.291	7,39	.490	12,50	.230	5,90	0,15	.325	8,25	.480	12,19	.230	5,90	0,47
3,2	.172	4,37	.266	6,76	-411	4	.354	8,99	.620	15,80	.290	7,40	0,18	.388	9,85	.600	15,24	.290	7,40	0,56
3,2	.234	5,94	.328	8,33	-413	5	.416	10,57	.730	18,60	.340	8,70	0,22	.450	11,43	.710	18,03	.340	8,70	0,65
	.297	7,54	.391	9,93	-415	6	.479	12,17	.840	21,40	.390	10,00	0,25	-	-	-	-	-	-	-
4	.062	1,57	.141	3,58	-508	2	.260	6,60	.410	10,50	.200	5,08	0,26	.274	6,96	.380	8,38	.180	4,60	0,59
	.109	2,77	.203	5,16	-510	3	.322	8,81	.550	14,00	.260	6,60	0,31	.336	8,53	.530	13,47	.260	6,60	0,74
4	.172	4,37	.266	6,76	-512	4	.385	9,78	.650	16,50	.300	7,60	0,36	.399	10,13	.610	15,50	.300	7,80	0,88
4	.234	5,94	.328	8,33	-514	5	.447	11,35	.760	19,30	.350	8,90	0,41	.461	11,71	.740	18,80	.350	8,90	1,02
	.297	7,54	.391	9,93	-516	6	.510	12,95	.870	22,10	.390	10,00	0,46	.524	13,31	.860	21,84	.390	10,00	1,16
4	.359	9,12	.453	11,51	-518	7	.572	14,53	.980	24,90	.440	11,20	0,51	-	-	-	-	-	-	-
	.422	10,72	.516	13,11	-520	8	.635	16,13	1.130	28,80	.540	13,80	0,56	-	-	-	-	-	-	-
4,8	.077	1,96	.141	3,58	-609	2	.291	7,39	.470	12,00	.220	5,60	0,42	.308	7,82	.430	10,92	.220	5,60	1,12
	.109	2,77	.203	5,16	-611	3	.354	8,99	.590	15,00	.280	7,20	0,49	.371	9,42	.550	13,97	.270	6,86	1,32
4,8	.172	4,37	.266	6,76	-613	4	.416	10,57	.700	17,80	.330	8,40	0,56	.433	11,0	.670	17,02	.330	8,40	1,54
4,8	.234	5,94	.328	8,33	-615	5	.479	12,17	.820	20,90	.390	9,90	0,63	.496	10,57	.780	19,81	.380	9,65	1,75
	.297	7,54	.391	9,93	-617	6	.541	13,74	.940	23,90	.440	11,20	0,69	.558	14,17	.900	22,86	.440	11,20	1,96
4,8	.359	9,12	.453	11,51	-619	7	.604	15,34	1.060	26,90	.500	12,70	0,76	.621	15,77	1.020	25,91	.490	12,45	2,17
	.422	10,72	.516	13,11	-621	8	.666	16,92	1.160	29,50	.540	13,80	0,83	.683	17,35	1.140	28,96	.550	13,97	2,38

* The mass is given for 1000 rivets laid.

3.4 Material - Surface treatment

TABLE 4

Code	Rivet	Element	Material	Surface treatment
A	NOT USED FOR METALLISATION	BODY	Aluminium alloy 2014-T4 QQ-A-225/4	Anodic oxidation
		SHANK	Aluminium alloy 7075-T6 QQ-A-430	Yellow anodic oxidation
		RING	Aluminium alloy 5056 QQ-A-430	None
B	USED FOR METALLISATION	BODY	Aluminium alloy 2014 QQ-A-225/4	None
		SHANK	Aluminium alloy 7075-T6 QQ-A-430	Yellow anodic oxidation
		RING	Aluminium alloy 5056 QQ-A-430	None
C		BODY	A 286 AMS 5731-5732-5734-5737	Cadmium-plating QQ-P-416 Type II CL 2
		SHANK	A 286 AMS 5731	Passivation as per ASTM-A-967
D		BODY	A 286 AMS 5731-5732-5734-5737	Passivation as per ASTM-A-967
		SHANK	A 286 AMS 5731	Passivation as per ASTM-A-967
E		BODY	A 286 AMS 5731-5732-5734-5737	I.V.D. MIL-C-83488 Type II CL 2
		SHANK	A 286 AMS 5731	None

NOTE: These rivets are delivered pre-lubrified and should not be degreased.

3.5 Tensile and shear strength

TABLE 5

Rivet code	Ø Nominal	3,2		4		4,8	
A and B	Single shear strength (N) min.	2002[1)]	2224[2)]	3114[1)]	3336[2)]	4226[1)]	4448[2)]
	Tensile test (N)	1245		2224		3114	
C - D - E	Single shear strength (N) min.	4448		6672		9786	
	Tensile test (N)	2847		4893		6672	

1) Single shear values taken for steel test piece.
2) Single shear values taken for aluminium alloy test piece.

4 DESIGNATION

The item shall be designated as follows:

4.1 New designation

Description block[1]	Identifier block [2]
BLIND RIVET	ASNA0079 -415 A (LC) ★

Standard reference
Diameter / grip length code (see § 3.3)
Rivet code (see § 3.4)

NOTE - Where necessary, the company code F5442[3] should be specified between the description block and the identifier block.

★NOTE: The use of the letters (LC) is reserved for the procurement departments for orders of Type II rivets.

4.2 Old designation (not valid for new design studies)

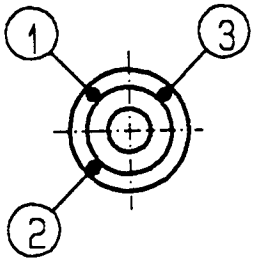
Description block	Identifier block
BLIND RIVET	ASNA-0079 -415 A

Standard reference
Diameter / grip length code (see § 3.3)
Rivet code (see § 3.4)

5 MARKING

The marking on the rivet head includes the following:

- item no. 1 - Manufacturer's initials: see IGC 04.81.104,
- item no. 2 - Grip length identification number (see paragraph 3.3),
- item no. 3 - The letter C designates stainless steel only.



6 TECHNICAL SPECIFICATIONS

NAS 1722.

7 MANUFACTURER

Refer to the list of qualified manufacturers and products.

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1) Optional use.
2) The identifier block shall be written without spaces. Those in the example are only intended to facilitate reading.
3) Company code assigned to AEROSPATIALE Normalisation Générale. F5442 is the designer's code for the present standard.

RECORD OF REVISIONS

Issue[1)]	Paragraph modified	Description of modification	Reason
A (05-80)		New standard	
B (10-81)	–	Cancelled: supersedes NSA 542.12 for new design studies	Helicopter Division request
C (12-83)	1	Shank fracture dimension changed from 0 to 0,25 to ± 0,25	Defined with the manufacturer
D (06-84)	5.2	Dimensions L - M and T modified	Defined with the manufacturer
E (11-85)	4 1 5 5.2	Single shear strength value modified Shank fracture dimension modified Dimension S added to table (shank fracture) Dimensions M and T modified	Defined with the manufacturer
F (05-86)		Typeset	
G (03-88)	3 4	Stainless steel material added Finish modified for rivet dimension A Old designation replaced by new designation for new design studies	TO request
H (09-88)	4.4	Codes specific to surface treatment deleted Codes D and E added Codes A-B-C-D-E define materials + surface treatments Standard revised	CN/DIR 1 AECMA rules applied
J (03-93)		Standard revised Type II rivet added Shank modified: grooved configuration	Brought into accordance with manufacturers documents. Second procurement source for type II added. DA request
K (09-95)	2 4.3	IF TO 939 - IGC 04.62.121 cancelled Table 3: M max dimensions for codes C, D and E 1.040 inch, 26,47 mm changed to 1.140 inch, 28,96 mm	Standards not indicated in the document Manufacturer's request

1) The issue I has not been used

RECORD OF REVISIONS

Issue	Paragraph modified	Description of modification	Reason
L (09-97)	2 Tables 1 and 2 Table 4 Table 5	Standard QQ-A-225/4 added Technical specifications L 601 S, L 699 S and PS-IMR-4000 superseded by NAS 1722. Dimension J nominal becomes J ref. Dimension S for rivets Ø 4 and 4.8 modified. Normative reference for the material for the body of rivets codes A and B modified, QQ-A-430 replaced by QQ-A-225/4 Single shear strength values for steel test pieces added for rivet codes A and B.	Aircraft Business request in accordance with note ref. 564 0707 dated 03/97
M	2 Table 4 4	Reference QQ-P-35 replaced by ASTM-A-967 Designation: reference to modified paragraphs	EUROCOPTER FRANCE request No. 67 dated 11/98