1 FIELD OF APPLICATION

The purpose of this ASN is to define the 3 types, I, II and III, of blind, self-locking bolts with hexagonal head. Although they are of a slightly differing design, their mechanical characteristics and dimensions are such that they are interchangeable.

The hexagonal head of types I and II means that the bolt can be immobilised while being attached.

Type III is an improved version: the bolt is immobilised using a nut which is gripped in the end of the installation tool.

Advantages of type III:

- For a given bolt diameter, the nut dimensions are the same whether the head is countersunk or hexagonal.
- Easy installation, particularly where access is difficult.
- Reduced installation time.
- Simplification, rationalisation and reduction of wear to the end of the installation tool.

Keywords: Blind rivet (TC) - Blind bolt - Hexagonal head rivet - Hexagonal head bolt - Rivet.

Original French text drawn up by Centre Commun de Recherches Louis Blériot and approved by Direction de la Qualité	Translated and certified by Département Information - Documentation on the 02.12.97		ASNA0082

2 NORMATIVE REFERENCES

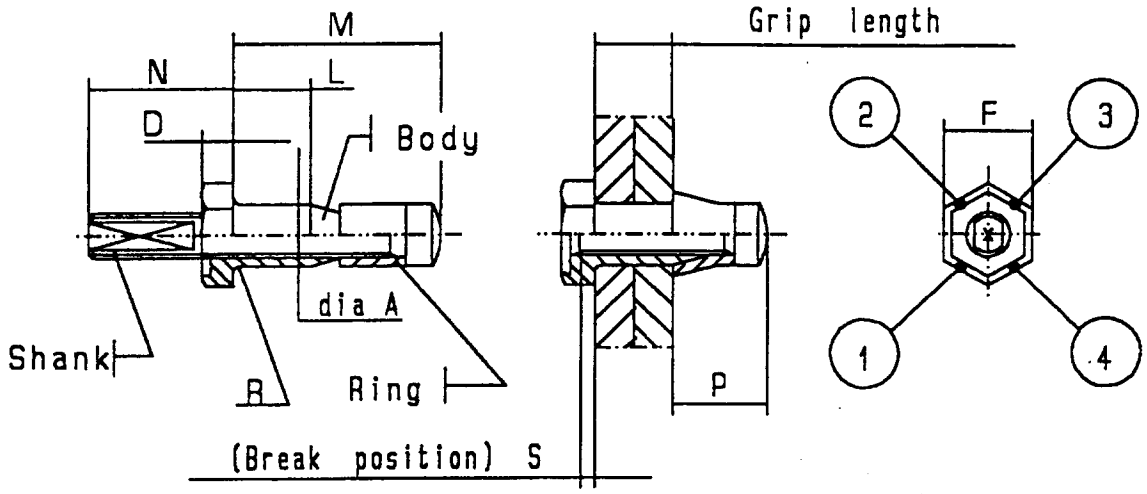
NAS 1675	Fastener-blind, internally threaded, external sleeve self-locking.
MIL-C-83488	Coating, Aluminum, ion vapor deposited.
MIL-L-46010	Lubricant, solid film, heat aered, corrosion inhibiting
MIL-L-81329	Lubricant, solid film, extreme environment
MIL-L-87132	Lubricant, cetyl alcohol, 1-hexadecanol, application to fastener
MIL-S-5002	Surface treatments and inorganic coatings for metal - surfaces of weapons systems.
MIL-S-5626	Steel chrome-molybdenum (4140) bars, rods, and forging stock (for aircraft application).
MIL-S-6049	Steel, chrome - nickel - molybdenum (8740) bars and reforging stock (aircraft quality).
MIL-S-6758	Steel, chrome - molybdenum (4130) bars and reforging stock (aircraft quality).
AMS 4928	Titanium alloy bars, wire, forgings, and rings 6 AL-4V annealed.
AMS 4967	Titanium alloy bars, forgings, and rings 6.OAL-4.OV annealed, heat treatable.
AMS 5639	Steel bars, wire, forgings, tubing and rings, corrosion resistant 19 Cr-10 Ni (SAE 30304) - Solution heat treated.
AMS 5641	Steel, corrosion resistant, bars, wire, and forging 18.5 Cr-10 Ni-0.22 Se (SAE 30303 Se) - Free-Machining ; Swaging or Upsetting Solution Heat Treated.
AMS 5731	Steel bars, forgings, tubing, and rings, corrosion and heat resistant 15 Cr - 25.5 Ni - 1.2 Mo - 2.1 Ti - 0,006B - 0.30 V - consumable electrode melted, 1800 °F (982 °C) solution heat treated.
AMS 5732	Stell bars, wire, forgings, tubing, and rings, corrosion and heat resistant 15 Cr - 25.5 Ni - 1.2 Mo - 2.1 Ti - 0,006B - 0.30 V - consumable electrode melted, 1800 °F (982 °C) solution and precipitation heat treated.
AMS 5737	Stell bars, wire, forging, and tubing, corrosion and heat resistant 15 Cr - 25.5 Ni - 1.2 Mo - 2.1 Ti - 0,006B - 0.30 V - consumable electrode melted 1650 °F (899 °C) solution and precipitation heat treated.
DTD 5036	Low carbon chromium - nickel - corrosion resisting stell wire, rivets split pins.
QQ-P-416	Plating, cadmium (electrodeposited).
QQ-S-763	Steel bars, wire, shapes, and forgings, corrosion resisting.
PLT 5000	**Blind fastener, internally threaded self locking.**
IGC 04.81.104	Monograms of fastener manufacturers.

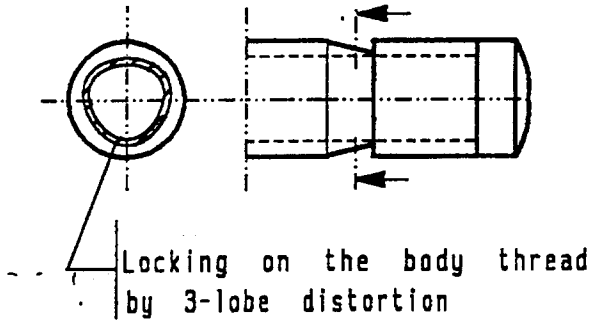
These documents shall be consulted at the latest issue in effect.

3 REQUIRED CHARACTERISTICS

3.1 Type I - Hexagonal head blind bolt

3.1.1 Configuration, marking





MARKING ON THE HEAD (see drawing item nos.)

Item no. 1 - Manufacturer's monogram: see IGC 04.81.104.
Item no. 2 - The letter "K" designates Ø item nos. 3 and 4 only.
Item no. 3 - The letters "SL" designate the self-locking.
Item no. 4 - The symbol "▪" designates the material: steel alloy.

DIMENSIONS: (see tables 6 and 7)

TENSILE AND SHEAR STRENGTH: (see table 8)

3.1.2 Materials and finish

TABLE 1

CODE	ELEMENT	MATERIAL	FINISH
- (hyphen)	BODY AND SHANK	Steel alloy S147 or SAE 8740	Cadmium plating QQ-P-416 Type I Class 2
	RING	Stainless steel DTD 5036 (AISI 304)	
NOTE: These bolts are supplied pre-lubricated and should not be degreased.			

3.1.3 Designation

Each blind bolt shall be designated by its name and identifier block only, as in the following example:

a) New designation

Description block [1]	Company code [1]	Identifier block [3]
BLIND BOLT	F5442 [2]	ASNA0082 - 4 02 (W)*

Number of the standard
Material / finish code (see table 1)
Diameter item no. (see table 6)
Grip length code (see table 7)

b) Old designation (not valid for new design studies)

Description block	Designer's code	Identifier block
BLIND BOLT	F5442	ASN-A0082 - 4 02 (W)*

Standard reference
Material / finish code (see table 1)
Diameter item no. (see table 6)
Grip length code (see table 7)

***CAUTION**: The use of the letter (W) is reserved for the procurement departments for orders.

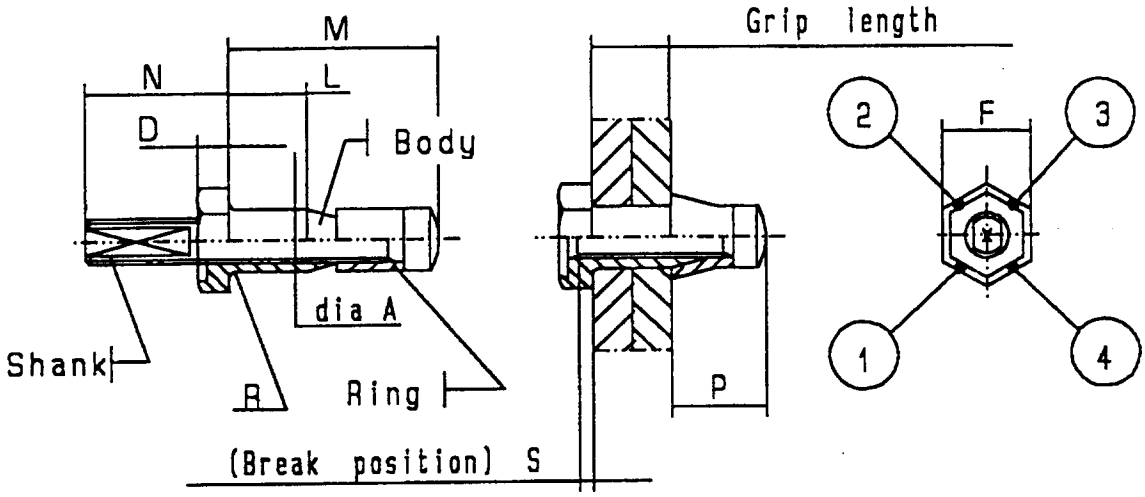
3.1.4 Technical specification

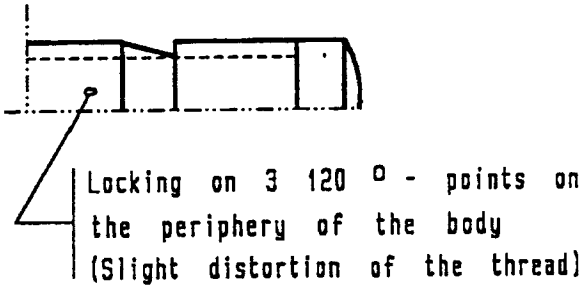
NAS 1675: except for shear and double tensile strength (see table 8).

1) Optional.
2) Company code assigned to AEROSPATIALE Normalisation Générale.
3) The identifier block shall be written without spaces. Those in the example are intended to facilitate reading.

3.2 Type II - Hexagonal head blind bolt with 3 120°-point locking

3.2.1 Configuration, marking





MARKING ON THE HEAD (see drawing item nos.)

Item no. 1 - Manufacturer's monogram: see IGC 04.81.104.
Item no. 2 - The letter "K" designates Ø item nos. 3 and 4 only for bolts made of steel or stainless steel.
Item no. 3 - The letters "SL" designate the self-locking for bolts made of steel and stainless steel.
The number "270" designates Ø item nos. 2 and 5 for self-locking titanium bolts.
The number "275" designates Ø item nos. 3 and 4 for self-locking titanium bolts.
Item no. 4 - **The symbol "■" designates the material: steel alloy.**
The symbol "●" designates the material: stainless steel.
The letter "X" designates the I.V.D. finish on titanium bolt bodies.

DIMENSIONS: (see tables 6 and 7)

3.2.2 Tensile and shear strength: (see table 8)

3.2.3 Materials and finish

TABLE 2

CODE	ELEMENT	MATERIAL	FINISH	LUBRICATION
- (hyphen)	BODY AND SHANK	Steel alloy 4130 as per MIL-S-6758 or 4140 as per MIL-S-5626 or 8740 as per MIL-S-6049	Cadmium plating as per QQ-P-416 Type II Class 2	Dry film as per MIL-L-46010 or MIL-L-81329 or cetylic alcohol as per MIL-L-87132 depending on the required performance
	RING	Stainless steel 303 or 304 as per QQ-S-763 or AMS 5639 or AMS 5641	Passivation as per MIL-S-5002 Cadmium plating as per QQ-P-416 Type I Class 3	
A	BODY AND SHANK	Stainless steel A-286 as per AMS 5731 or AMS 5737 or AMS 5732	Passivation as per MIL-S-5002	
	RING			
B	BODY	Titanium alloy 6Al-4V as per AMS 4928 or AMS 4967	I.V.D.* MIL-C-83488 Type II Class 3	KAL-GARD FC-2 or solid paraffin or Tiolon A-20 or Tiolon X-20 or cetylic alcohol depending on the required performance
	SHANK		KAL-GARD ANN-RO 1012 optional	
	RING	Stainless steel 303 or 304 as per QQ-S-763 or AMS 5639 or AMS 5641	Passivation as per MIL-S-5002 or KAL-GARD ANN-RO 1013 optional	

*I.V.D.: Ion Vapor Deposition.
NOTE: These bolts are supplied pre-lubricated and should not be degreased.

3.2.4 Designation

Each blind bolt shall be designated by its name and identifier block only, as in the following example:

a) New designation

Description block [1]	Company code [1]	Identifier block [3]
BLIND BOLT	F5442 [2]	ASNA0082 A 4 02 (Y)*

Number of the standard
Material / finish code (see table 2)
Diameter item no. (see table 6)
Grip length code (see table 7)

***CAUTION**: The use of the letter (Y) is reserved for the procurement departments for orders.

1) Optional.
2) Company code assigned to AEROSPATIALE Normalisation Générale.
3) The identifier block shall be written without spaces. Those in the example are intended to facilitate reading.

b) Old designation (not valid for new design studies)

Description block [1]	Designer's code [1]	Identifier block [3]
BLIND BOLT	F5442 [2]	ASN-A0082 A 4 02 (Y)*

Standard reference
Material / finish code (see table 2)
Diameter item no. (see table 6)
Grip length code (see table 7)

***CAUTION**: The use of the letter (Y) is reserved for the procurement departments for orders.

3.2.5 Technical specification

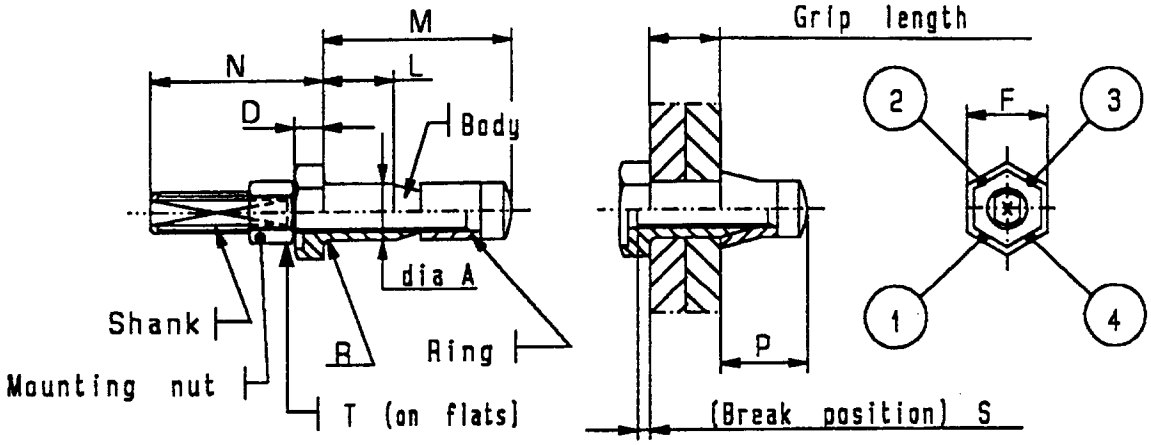
TABLE 3

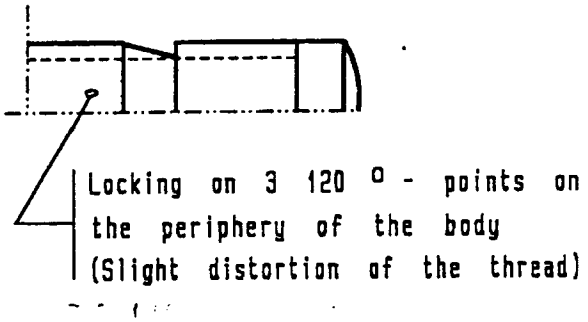
MATERIAL CODE	TECHNICAL SPECIFICATION
- (hyphen)	NAS 1675 except for tensile and double shear strength see table 8
A	
B	PLT 5000 - Class 5, type 5

1) Optional.
2) Designer's code assigned to AEROSPATIALE Normalisation Générale.
3) The identifier block shall be written without spaces. Those in the example are intended to facilitate reading.

3.3 Type III - Hexagonal head blind bolt with 3 120°-point locking and immobilisation nut (removed after installation)

3.3.1 Configuration, marking





MARKING ON THE HEAD (see drawing item nos.)

Item no. 1 - Manufacturer's monogram: see IGC 04.81.104.
Item no. 2 - The letter "K" designates Ø item nos. 3 and 4 only for bolts made of steel or stainless steel.
Item no. 3 - The letters "SL" designate the self-locking for bolts made of steel or stainless steel.
The number "5270" designates Ø item nos. 2 and 5 for self-locking titanium bolts.
The number "5275" designates Ø item nos. 3 and 4 for self-locking titanium bolts.
Item no. 4 - The symbol "■" designates the material: steel alloy.
The symbol "●" designates the material: stainless steel.
The letter "X" designates the I.V.D. finish on titanium bolt bodies.

DIMENSIONS: (see tables 6 and 7)

3.3.2 Tensile and shear strength: (see table 8)

3.3.3 Materials and finish

TABLE 4

CODE	ELEMENT	MATERIAL	FINISH	LUBRICATION
- (hyphen)	BODY AND SHANK	Steel alloy 4130 as per MIL-S-6758 or 4140 as per MIL-S-5626 or 8740 as per MIL-S-6049	Cadmium plating QQ-P-416 Type II Class 2	Dry film as per MIL-L-46010 or MIL-L-81329 or cetylic alcohol as per MIL-L-87132 depending on the required performance
	RING	Stainless steel 303 or 304 as per QQ-S-763 or AMS 5639 or AMS 5641	Passivation as per MIL-S-5002 Cadmium plating QQ-P-416 Type I Class 3	
	NUT	Mild steel	Anti-corrosion coating gold coloured	
A	BODY AND SHANK	Stainless steel A-286 as per AMS 5731 or AMS 5737 or AMS 5732	Passivation as per MIL-S-5002	Dry film as per MIL-L-46010 or MIL-L-81329 or cetylic alcohol as per MIL-L-87132 depending on the required performance
	RING			
	NUT	Mild steel	Anti-corrosion coating black	
B	BODY	Titanium alloy 6Al-4V as per AMS 4928 or AMS 4967	I.V.D.* MIL-C-83488 Type II Class 3	KAL-GARD FC-2 or solid paraffin or Tiolon A-20 or Tiolon X-20 or cetylic alcohol depending on the required performance
	SHANK		KAL-GARD ANN-RO 1012 optional	
	RING	Stainless steel 303 or 304 as per QQ-S-763 or AMS 5639 or AMS 5641	Passivation as per MIL-S-5002 or KAL-GARD ANN-RO 1013 optional	
	NUT	Mild steel	Anti-corrosion coating grey	

*I.V.D.: Ion Vapor Deposition.

NOTE: These bolts are supplied pre-lubricated and should not be degreased.

3.3.4 Designation

Each blind bolt shall be designated by its name and identifier block only, as in the following example:

a) New designation

Description block [1]	Company code [1]	Identifier block [3]
BLIND BOLT	F5442 [2]	ASNA0082 A 4 02 (Z)*

Number of the standard
Material / finish code (see table 4)
Diameter item no. (see table 6)
Grip length code (see table 7)

***CAUTION**: The use of the letter (Z) is reserved for the procurement departments for orders.

b) Old designation (not valid for new design studies)

Description block	Designer's code	Identifier block
BLIND BOLT	F5442	ASN-A0082 A 4 02 (Z)*

Standard reference
Material / finish code (see table 4)
Diameter item no. (see table 6)
Grip length code (see table 7)

***CAUTION**: The use of the letter (Z) is reserved for the procurement departments for orders.

3.3.5 Technical specification

TABLE 5

MATERIAL CODE	TECHNICAL SPECIFICATION
- (hyphen)	NAS 1675 except for tensile and double shear strength see table 8
A	
B	PLT 5000 - Class 5, type 5

1) Optional.
2) Company code assigned to AEROSPATIALE Normalisation Générale.
3) The identifier block shall be written without spaces. Those in the example are intended to facilitate reading.

TABLE 6 - Dimensions

Ø Item no.	Ø NOMINAL		A in		A mm		D max		R (radius) in		R (radius) mm		F in		F mm		N. Ref. Type I, II		N. Ref. Type III		T. Ref. Type III	
	in	mm	min	max	min	max	in	mm	min	max	min	max	min	max	min	max	in	mm	in	mm	in	mm
2	.1635	4.15	.1625	.1645	4.13	4.18	.096	2.44	.010	.030	0.25	0.76	.244	.250	6.20	6.35	.283	7.19	.737	18.72	.375	9.52
3	.1890	4.80	.188	.190	4.77	4.83	.113	2.87	.010	.030	0.25	0.76	.305	.312	7.75	7.92	.457	11.61	.760	19.30		
4	.2480	6.30	.247	.249	6.27	6.32	.135	3.43	.015	.040	0.38	1.02	.367	.375	9.32	9.52	.467	11.86	.900	22.86	.375	9.52
5	.3105	7.89	.3095	.3115	7.861	7.912	.160	4.06	.015	.040	0.38	1.02	.429	.437	10.90	11.10	.523	13.28	1.127	28.63	.500	12.7

TABLE 6 (cont'd)

Ø Item no.	STEEL BOLT P max		STEEL BOLT S in		STEEL BOLT S mm		STAINLESS STEEL BOLT P max		STAINLESS STEEL BOLT S in		STAINLESS STEEL BOLT S mm		TITANIUM BOLT P max		TITANIUM BOLT S in		TITANIUM BOLT S mm	
	in	mm	+	+	+	+	in	mm	+	+	+	+	in	mm	+	+	+	+
2	.246	6.25	.000	.088	0.00	2.24	.267	6.78	.000	.088	0.00	2.24	.257	6.53	.000	.088	0.00	2.24
3	.281	7.14	.010	.098	0.25	2.49	.302	7.67	.015	.103	0.38	2.62	.288	7.32	.010	.098	0.25	2.49
4	.325	8.25	.047	.135	1.19	3.43	.346	8.79	.032	.130	0.81	3.31	.320	8.13	.047	.135	1.19	3.43
5	.390	9.91	.043	.146	1.09	3.79	.414	10.52	.027	.130	0.68	3.31	.396	10.06	.043	.146	1.09	3.71

TABLE 7 - Lengths and grip lengths

Ø item no.	Grip length code	Grip length				L		M	
		in		mm		Nominal		max	
		min	max	min	max	in	mm	in	mm
2	01	.031	.093	0.79	2.36	.093	2.36	.472	11.99
	02	.094	.156	2.39	3.96	.156	3.96	.532	13.52
	03	.157	.219	3.99	5.56	.219	5.56	.590	14.99
	04	.220	.281	5.59	7.14	.281	7.14	.652	16.56
	05	.282	.344	7.16	8.74	.344	8.74	.722	18.34
	06	.345	.406	8.76	10.31	.406	10.31	.782	19.87
	07	.407	.469	10.34	11.91	.469	11.91	.842	21.39
	08	.470	.531	11.94	13.49	.531	13.49	.902	22.91
	09	.532	.594	13.51	15.09	.594	15.09	.972	24.69
	10	.595	.656	15.11	16.66	.656	16.66	1.032	26.22
	11	.657	.719	16.69	18.26	.719	18.26	1.092	27.74
	12	.720	.781	18.29	19.84	.781	19.84	1.152	29.26
	13	.782	.844	19.86	21.44	.844	21.44	1.222	31.04
	14	.845	.906	21.46	23.01	.906	23.01	1.282	32.57
	15	.907	.969	23.03	24.61	.969	24.61	1.342	34.09
	16	.970	1.031	24.64	26.19	1.031	26.19	1.402	35.61
3	01	.031	.093	0.79	2.36	.093	2.36	.514	13.05
	02	.094	.156	2.39	3.96	.156	3.96	.576	14.63
	03	.157	.219	3.99	5.56	.219	5.56	.639	16.23
	04	.220	.281	5.59	7.14	.281	7.14	.701	17.80
	05	.282	.344	7.16	8.74	.344	8.74	.764	19.40
	06	.345	.406	8.76	10.31	.406	10.31	.826	20.98
	07	.407	.469	10.34	11.91	.469	11.91	.889	22.58
	08	.470	.531	11.94	13.49	.531	13.49	.951	24.15
	09	.532	.594	13.51	15.09	.594	15.09	1.014	25.75
	10	.595	.656	15.11	16.66	.656	16.66	1.076	27.33
	11	.657	.719	16.69	18.26	.719	18.26	1.139	28.93
	12	.720	.781	18.29	19.84	.781	19.84	1.201	30.50
	13	.782	.844	19.86	21.44	.844	21.44	1.264	32.10
	14	.845	.906	21.46	23.01	.906	23.01	1.326	33.68
	15	.907	.969	23.03	24.61	.969	24.61	1.389	35.28
	16	.970	1.031	24.64	26.19	1.031	26.19	1.440	36.58
	17	1.032	1.094	26.21	27.79	1.094	27.79	1.514	38.45
	18	1.095	1.156	27.81	29.36	1.156	29.36	1.576	40.03
	19	1.157	1.219	29.39	30.96	1.219	30.96	1.639	41.63
	20	1.220	1.281	30.99	32.54	1.281	32.54	1.701	43.20
	21	1.282	1.344	32.56	34.14	1.344	34.14	1.764	44.80
	22	1.345	1.406	34.16	35.71	1.406	35.71	1.826	46.38
	23	1.407	1.469	35.74	37.31	1.469	37.31	1.889	47.98
	24	1.470	1.531	37.34	38.89	1.531	38.89	1.951	49.55
	25	1.532	1.594	38.91	40.49	1.594	40.49	2.014	51.15
	26	1.595	1.656	40.51	42.06	1.656	42.06	2.076	52.73
	27	1.657	1.719	42.09	43.66	1.719	43.66	2.139	54.33
	28	1.720	1.781	43.69	45.24	1.781	45.24	2.201	55.90
	29	1.782	1.844	45.26	46.84	1.844	46.84	2.264	57.50
	30	1.845	1.906	46.86	48.41	1.906	48.41	2.326	59.08
	31	1.907	1.969	48.44	50.01	1.969	50.01	2.389	60.68
	32	1.970	2.031	50.04	51.59	2.031	51.59	2.451	62.25

TABLE 7 (cont'd)

Ø item no.	Ø Grip length code	Grip length				L		M	
		in		mm		Nominal		max	
		min	max	min	max	in	mm	in	mm
4	02	.094	.156	2.39	3.96	.156	3.96	.629	15.98
	03	.157	.219	3.99	5.56	.219	5.56	.691	17.55
	04	.220	.281	5.59	7.14	.281	7.14	.754	19.15
	05	.282	.344	7.16	8.74	.344	8.74	.816	20.73
	06	.345	.406	8.76	10.31	.406	10.31	.879	22.33
	07	.407	.469	10.34	11.91	.469	11.91	.941	23.90
	08	.470	.531	11.94	13.49	.531	13.49	1.004	25.50
	09	.532	.594	13.51	15.09	.594	15.09	1.066	27.08
	10	.595	.656	15.11	16.66	.656	16.66	1.129	28.68
	11	.657	.719	16.69	18.26	.719	18.26	1.191	30.25
	12	.720	.781	18.29	19.84	.781	19.84	1.254	31.85
	13	.782	.844	19.86	21.44	.844	21.44	1.316	33.43
	14	.845	.906	21.46	23.01	.906	23.01	1.379	35.03
	15	.907	.969	23.03	24.61	.969	24.61	1.441	36.60
	16	.970	1.031	24.64	26.19	1.031	26.19	1.504	38.20
	17	1.032	1.094	26.21	27.79	1.094	27.79	1.566	39.78
	18	1.095	1.156	27.81	29.36	1.156	29.36	1.629	41.38
	19	1.157	1.219	29.39	30.96	1.219	30.96	1.691	42.95
	20	1.220	1.281	30.99	32.54	1.281	32.54	1.754	44.55
	21	1.282	1.344	32.56	34.14	1.344	34.14	1.816	46.13
	22	1.345	1.406	34.16	35.71	1.406	35.71	1.879	47.73
	23	1.407	1.469	35.74	37.31	1.469	37.31	1.941	49.30
	24	1.470	1.531	37.34	38.89	1.531	38.89	2.004	50.90
	25	1.532	1.594	38.91	40.49	1.594	40.49	2.066	52.48
	26	1.595	1.656	40.51	42.06	1.656	42.06	2.129	54.08
	27	1.657	1.719	42.09	43.66	1.719	43.66	2.191	55.65
	28	1.720	1.781	43.69	45.24	1.781	45.24	2.254	57.25
	29	1.782	1.844	45.26	46.84	1.844	46.84	2.316	58.83
	30	1.845	1.906	46.86	48.41	1.906	48.41	2.379	60.43
	31	1.907	1.969	48.44	50.01	1.969	50.01	2.441	62.00
	32	1.970	2.031	50.04	51.59	2.031	51.59	2.504	63.60

TABLE 7 (cont'd)

Ø item no.	Ø Grip length code	Grip length				L		M	
		in		mm		Nominal		max	
		min	max	min	max	in	mm	in	mm
	02	.094	.156	2.39	3.96	.156	3.96	.733	18.62
	03	.157	.219	3.99	5.56	.219	5.56	.796	20.22
	04	.220	.281	5.59	7.14	.281	7.14	.858	21.80
	05	.282	.344	7.16	8.74	.344	8.74	.921	23.40
	06	.345	.406	8.76	10.31	.406	10.31	.983	24.97
	07	.407	.469	10.34	11.91	.469	11.91	1.046	26.57
	08	.470	.531	11.94	13.49	.531	13.49	1.108	28.15
	09	.532	.594	13.51	15.09	.594	15.09	1.171	29.75
	10	.595	.656	15.11	16.66	.656	16.66	1.233	31.32
	11	.657	.719	16.69	18.26	.719	18.26	1.296	32.92
	12	.720	.781	18.29	19.84	.781	19.84	1.358	34.50
	13	.782	.844	19.86	21.44	.844	21.44	1.421	36.10
	14	.845	.906	21.46	23.01	.906	23.01	1.483	37.67
	15	.907	.969	23.03	24.61	.969	24.61	1.546	39.27
	16	.970	1.031	24.64	26.19	1.031	26.19	1.608	40.85
5	17	1.032	1.094	26.21	27.79	1.094	27.79	1.671	42.45
	18	1.095	1.156	27.81	29.36	1.156	29.36	1.733	44.02
	19	1.157	1.219	29.39	30.96	1.219	30.96	1.796	45.62
	20	1.220	1.281	30.99	32.54	1.281	32.54	1.858	47.20
	21	1.282	1.344	32.56	34.14	1.344	34.14	1.921	48.80
	22	1.345	1.406	34.16	35.71	1.406	35.71	1.983	50.37
	23	1.407	1.469	35.74	37.31	1.469	37.31	2.046	51.97
	24	1.470	1.531	37.34	38.89	1.531	38.89	2.108	53.55
	25	1.532	1.594	38.91	40.49	1.594	40.49	2.171	55.15
	26	1.595	1.656	40.51	42.06	1.656	42.06	2.233	56.72
	27	1.657	1.719	42.09	43.66	1.719	43.66	2.296	58.32
	28	1.720	1.781	43.69	45.24	1.781	45.24	2.358	59.90
	29	1.782	1.844	45.26	46.84	1.844	46.84	2.421	61.50
	30	1.845	1.906	46.86	48.41	1.906	48.41	2.379	63.07
	31	1.907	1.969	48.44	50.01	1.969	50.01	2.546	64.67
	32	1.970	2.031	50.04	51.59	2.031	51.59	2.608	66.25

5 TENSILE AND SHEAR STRENGTH

TABLE 8

Ø item no.	STEEL BOLT		STAINLESS STEEL BOLT		TITANIUM BOLT	
	Double shear strength min (N)	Tensile strength min (N)	Double shear strength min (N)	Tensile strength min (N)	Double shear strength min (N)	Tensile strength min (N)
2	14 900	4 000	12 010	4 000	14 010	4 000
3	18 240	5 780	18 680	6 230	18 680	6 230
4	31 140	9 120	32 030	9 340	32 030	9 340
5	53 300	16 010	50 480	16 010	50 480	16 010

6 MANUFACTURERS

Refer to the list of qualified manufacturers and products.

RECORD OF REVISIONS

Issue	Paragraph modified	Description of modification	Reason
A 08-80	-	New standard	
B 03-84		Standard revised. Equivalence added JO-LOK and VISU-LOK	Pre-distribution restricted to AIRBUS INDUSTRIE
C 09-85		Standard fully revised – Titanium bolt added – Bolt of type III added	– Further to AIRBUS INDUSTRIE request – Further to A/DET/D request
D 05-86		Typeset and updated	
E 08-87	2.1.3 2.2.3 2.3.3 2.2.1 2.3.1 2.2.2 2.3.2 3 4	New designations added for new design studies Paragraph on marking on the head modified Passivation on shank (code B) cancelled Dimensions - Diameters and Lengths Tables updated Table updated	Brought into accordance with manufacturer's documents
F 02-90	4	Øitem no. 3 and 4 – Steel bolt: double shear strength and tensile strength values modified for Ø 3 – Stainless steel bolt and titanium bolt: **double shear strength value modified**	Brought into accordance with manufacturer's documents
G 03-93	4.1.4 – 4.2.2 4.2.4 4.3.4 4	Technical specification L609S changed to L609S, issue 3 Material code A modified: AMS 5735 changed to AMS 5731 or AMS 5732 Technical specification modified: NAS1675 changed to ESCBB-2/ESCBB-9 – **Steel bolt, double shear strength: reference value 5 modified** – Titanium bolt: reference value 3 modified	Typing error Further to an update of manufacturer's documents

RECORD OF REVISIONS

Issue[1)]	Paragraph modified	Description of modification	Reason
H 12-93	4.2.1 4.3.1 4.3.5	Paragraph on marking on the head modified Item no. 3 - Numbers 170 or 5170 - 175 or 5175 replaced by 270 and 275 Item no. 3 - Numbers 170 or 5170 - 175 or 5175 replaced by 5270 and 5275 Technical specification: type 1 changed to type 5	Manufacturer's request as per letter A9497 dated 14/9/93
J 03-95	Table 8	Steel bolts: – shear strength Item no. 3: value 20680 changed to 18240 Item no. 4: value 34560 changed to 31140 – tensile strength Item no. 3: value 6230 changed to 5780 Item no. 4: value 9340 changed to 9120	Manufacturer's letter ref. 8811 dated 03/95
K	3.1.4 3.2.5 3.3.5 Tables 2, 4	Technical specification L 690 S replaced by NAS 1675 Technical specification ESCBB-2 class 1 (steel bolt) and ESCBB-2 class 2 (stainless steel bolt) replaced by NAS 1675 ESCBB-9 class 2 (titanium bolt) replaced by PLT 5000 class 5, type 5 Technical specification PLT 5000 - class 1, type 5 (steel bolt) and PLT 5000 - class 2, type 5 (stainless steel bolt) replaced by NAS 1675 **Code B: stainless steel ring material added**	Aircraft Business request further to note 048/96 dated 02/96 and AIRBUS Industrie request

1) The issue I has not been used