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MANUFACTURING TECHNOLOGIES AND ACCEPTANCE REQUIREMENTS FOR FASTENERS

Manufacturing of standard parts and fulfilment of the acceptance requirements according to Technical Specifications

Technical Specification	Manufacturing and testing requirements
<p>DIN 65058 / AIR 9173 / NAS 4003 / ISO 8168 for corrosion-resisting steel, strength class 900 MPa and 1.100 MPa (1.4944.4 / 1.4944.6)</p>	<ul style="list-style-type: none"> ○ The head of the bolts shall be forged to achieve the head to shank grain flow and fillet work effect
<p>ISO 9152 / AIR9185 / NAS 4004 / DIN 65251 for titanium alloy, strength class 1.100 MPa (3.7164.7)</p>	<ul style="list-style-type: none"> ○ The thread shall be rolled to achieve thread grain flow and fillet work effect
<p>DIN 65251 / AIR 9184 / NAS 4004 for titanium alloy, strength class 900 MPa (3.7164.1)</p>	<ul style="list-style-type: none"> ○ Microstructure examinations of the head to shank and the thread grain flow, the fillet work effect, as well as the grain structure and grain size of the finished part
<p>DIN 65013 / AS 7468 for work strengthened and corrosion resistant Co-alloys, strength class 1.800 MPa (MP 35 N)</p>	<ul style="list-style-type: none"> ○ Tensile tests at room temperature
<p>LN 65009 / AIR 9173 / NAS 4002 for tempering steels, strength class 1.100 MPa and 1.250 MPa</p>	<ul style="list-style-type: none"> ○ Tension fatigue tests at room temperature
<p>EN 2583 / AIR 9167 / AS 7466 high strength precipitation-hardening nickel alloy, strength class 1.270 MPa (2.4668.7)</p>	<ul style="list-style-type: none"> ○ Hardness tests according to Vickers or Rockwell
<p>ISO 9154 / EN 3833 / AIR 9169 / NAS 4008 high strength precipitation-hardening nickel alloy, strength class 1.550 MPa (2.4668.9)</p>	<ul style="list-style-type: none"> ○ Magnetic or dye penetration testing to check surface discontinuities by aerospace qualified people according to DIN EN 4179 / NAS 410 and DIN EN 473
<p>DIN 65 160 Normal tensile strength 1220 MPa, 1.400 MPa and 1.550MPa (1.4534.4 / 1.4534.5 / 1.4534.6)</p>	



THREADS

Comparison of ISO metric threads and MJ – threads with different tolerances and their advantages

screw thread	pitch-diameter [mm]		core-diameter [mm]		stressed cross section [mm ²]	root of thread radius [mm]
	max.	min.	max.	min.		
M4x0,7 - 6g	3,523	3,433	3,119	3,002	8,658	0,101 – 0,088
M4x0,7 - 4h	3,545	3,489	3,141	3,058	8,773	
MJ4x0,7 - 4h6h	3,545	3,489	3,192	3,094	8,907	0,126 – 0,105
M6x1 - 6g	5,324	5,212	4,747	4,596	19,905	0,144 – 0,125
M6x1 - 4h	5,350	5,279	4,773	4,663	20,111	
MJ6x1 - 4h6h	5,350	5,279	4,845	4,713	20,398	0,180 – 0,150
M10x1,5 - 6g	8,994	8,862	8,128	7,938	57,533	0,216 – 0,188
M10x1,5 - 4h	9,026	8,936	8,160	8,017	57,964	
MJ10x1,5 - 4h6h	9,026	8,936	8,268	8,087	58,695	0,271 – 0,255

Advantages of MJ - thread:

- larger core diameter

⇒ larger stressed cross section

- larger root of thread radius

⇒ lower stress concentration / notch effect

Resulting characteristics:

- ⇒ increased tensile strength but
- ⇒ mainly improved tension fatigue strength



Hexagon bolts

Standard / Description		
<p>DIN 65 115 / Aerospace</p> <p>Hexagon bolts, with waisted shank and MJ thread, for temperatures up to 235 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 1.6604.5</p> <p>Technical specification acc. LN 65 009</p> <p><u>Surface treatment:</u></p> <p>Code letter E: Cadmium plated acc. LN 9368-3000.2 acc. EN 2133 typ 3</p>		
Norm	Ø	Length from to
DIN 65115-xxxxxE	05	030 to 110
	08	035 to 110
	10	045 to 110
	12	045 to 110
	14	050 to 110
	16	050 to 110
	18	055 to 110
	20	055 to 110

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Hexagon bolts

Standard / Description		
<u>DIN 65 265 / Aerospace</u> Screws, hexagon bolts with MJ thread, threaded approximately to head, titanium alloy, for temperatures up to 315 °C		
Nominal Tensile Strength: 1.100 Mpa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Available versions:</u>		
Code letter - (hyphen): Configuration without locking hole		
Code letter A : Configuration with locking hole		
<u>Surface treatment:</u>		
Code letter A : No surface treatment		
Code letter T : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913		
Code letter Z : Aluminium pigmented acc. EN 4473 typ IV		
Norm	∅	Length from to
<ul style="list-style-type: none">• DIN 65265-xxxxxA• DIN 65265-xxxxxT• DIN 65265-xxxxxZ• DIN 65265AxxxxxA• DIN 65265AxxxxxT• DIN 65265AxxxxxZ	03	004 to 030
	04	006 to 040
	05	008 to 050
	06	010 to 060
	08	010 to 080
	10	014 to 100
	12	016 to 120

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Hexagon bolts

Standard / Description		
<p><u>DIN 65 267 / Aerospace</u> Screws, hexagon, with MJ thread, threaded approximately to head, steel, for temperatures up to 235 °C</p> <p>Nominal Tensile Strength: 900 Mpa</p> <p>Material: 1.7224.5</p> <p>Technical specification acc. ≤ 04: DIN 65 149 / ≥ 05: LN 65 010</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without locking hole Code letter A: With locking hole</p> <p><u>Surface treatment:</u></p> <p>Code letter A: Inactive for new design: Without surface treatment Code letter E: Cadmium plated LN 9368-3000.2 acc. EN 2133 typ 3 Code letter Z: Inactive for new design: Aluminium pigmented acc. EN 4473 typ IV</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • EN 65267-xxxxxA • EN 65267-xxxxxE • EN 65267-xxxxxZ • EN 65267AxxxxxA • EN 65267AxxxxxE • EN 65267AxxxxxZ 	03	004 to 030
	04	006 to 040
	05	008 to 050
	06	010 to 060
	08	010 to 080
	10	014 to 100
	12	016 to 120

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Hexagon bolts

Standard / Description		
<u>DIN 65 339 / Aerospace</u> Hexagon bolts, close tolerance, with short-length MJ thread, corrosion-resisting steel – Nominal tensile strength 1 100 MPa, for temperatures up to 425 °C		
Nominal Tensile Strength: 1.100 Mpa		
Material: 1.4944.6		
Technical specification acc. DIN 65 058		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole and without split pin hole		
Code letter A : With locking hole and without split pin hole		
Code letter C : With locking hole and with split pin hole		
Code letter K : Without locking hole and with split pin hole		
<u>Surface treatment:</u>		
Code letter B : Passivated acc. EN 2516 C2		
Code letter Z : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
<ul style="list-style-type: none">• DIN 65339-xxxxxB• DIN 65339-xxxxxZ• DIN 65339AxxxxxB• DIN 65339AxxxxxZ• DIN 65339CxxxxxB• DIN 65339CxxxxxZ• DIN 65339KxxxxxB• DIN 65339KxxxxxZ	04	002 to 040
	05	003 to 050
	06	003 to 080
	08	004 to 080
	10	005 to 100
	12	006 to 120
	14	007 to 140
	16	008 to 160
	18	009 to 180
	20	010 to 200

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Hexagon bolts

Standard / Description		
<u>DIN 65 522 / Aerospace</u> Hexagon screw with MJ-thread, threaded approximately to head, corrosion-resisting steel, for temperatures up to 425 °C		
Nominal Tensile Strength: 700 Mpa		
Material: 1.4541 / A2-70		
Technical specification acc. ≤ 04: DIN 65 149 / ≥ 05: LN 65 010		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole		
Code letter A : With locking hole		
<u>Surface treatment:</u>		
Code letter B : Passivated acc. EN 2516 C2		
Norm	∅	Length from to
<ul style="list-style-type: none">• DIN 65522-xxxxxB• DIN 65522AxxxxxB	03	004 to 030
	04	006 to 040
	05	008 to 050
	06	010 to 060
	08	010 to 080
	10	014 to 100
	12	016 to 120

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Hexagon bolts

Standard / Description		
<u>DIN 65 524 / Aerospace</u> Hexagon bolts, with MJ-thread, steel, short thread, steel, for temperatures up to 235 °C		
Nominal Tensile Strength: 900 Mpa		
Material: 1.7220.5		
Technical specification acc. LN 65 010		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole and without split pin hole		
Code letter A : With locking hole and without split pin hole		
Code letter C : With locking hole and with split pin hole		
Code letter K : With locking hole and without split pin hole		
<u>Surface treatment:</u>		
Code letter E : Cadmium plated acc. LN 9368-3000.2 acc. EN 2133 type 3		
Norm	Ø	Length from to
<ul style="list-style-type: none">• EN 65524-xxxxxE• EN 65524AxxxxxE• EN 65524CxxxxxE• EN 65524KxxxxxE• EN 65524KxxxxxE	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100
	12	006 to 120
	14	007 to 140
	16	008 to 160

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Hexagon bolts

Standard / Description		
<p><u>DIN 65 525 / Aerospace</u></p> <p>Bolts, hexagon, close tolerance, with MJ-thread, short thread, steel, for temperatures up to 235 °C</p>		
<p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 1.6604.5</p> <p>Technical specification acc. LN 65 009</p>		
<p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without locking hole and without split pin hole Code letter A: With locking hole and without split pin hole Code letter C: With locking hole and with split pin hole Code letter K: Without locking hole and with split pin hole</p>		
<p><u>Surface treatment:</u></p> <p>Code letter E: Cadmium plated acc. LN 9368-3000.2 acc. EN 2133 type 3 Code letter Z: Inactive for new design: Aluminium pigmented acc. EN 4473 typ IV</p>		
Norm	Ø	Length from to
• DIN 65525-xxxxxE	05	003 to 050
• DIN 65525-xxxxxZ	06	003 to 060
• DIN 65525AxxxxxE	08	004 to 080
• DIN 65525AxxxxxZ	10	005 to 100
• DIN 65525CxxxxxE	12	006 to 120
• DIN 65525CxxxxxZ	14	007 to 140
• DIN 65525KxxxxxE	16	008 to 160
• DIN 65525KxxxxxZ		

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Hexagon bolts

Standard / Description		
<p><u>DIN 65 526 / Aerospace</u></p> <p>Hexagon bolt, close tolerance, with short length MJ-thread, titanium alloy for temperatures up to 315 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. DIN 65 251</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without locking hole and without split pin hole Code letter A: With locking hole and without split pin hole Code letter C: With locking hole and with split pin hole Code letter K: Without locking hole and with split pin hole</p> <p><u>Surface treatment:</u></p> <p>Code letter A: No surface treatment Code letter T: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913 Code letter Z: Aluminium pigmented acc. EN 4473 typ IV</p>		
Norm	Ø	Length from to
• DIN 65526-xxxxxA	04	002 to 040
• DIN 65526-xxxxxT	05	003 to 050
• DIN 65526-xxxxxZ	06	003 to 060
• DIN 65526AxxxxxA	08	004 to 080
• DIN 65526AxxxxxT	10	005 to 100
• DIN 65526AxxxxxZ	12	006 to 120
• DIN 65526CxxxxxA	14	007 to 140
• DIN 65526CxxxxxT	16	008 to 160
• DIN 65526CxxxxxZ	18	009 to 180
• DIN 65526KxxxxxA	20	010 to 200
• DIN 65526KxxxxxT		
• DIN 65526KxxxxxZ		

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Hexagon bolts

Standard / Description		
<u>DIN 65 527 / Aerospace</u> Hexagon bolts, close tolerance, with MJ-thread, short thread, steel, for temperatures up to 235 °C		
Nominal Tensile Strength: 1.100 Mpa		
Material: 1.6604.5		
Technical specification acc. LN 65 009		
<u>Available versions:</u>		
Code letter - (hyphen): Without split pin hole		
Code letter K : With split pin hole		
<u>Surface treatment:</u>		
Code letter E : Cadmium plated acc. LN 9368-3000.2 acc. EN 2133 type 3		
Norm	Ø	Length from to
<ul style="list-style-type: none">• DIN 65527-xxxxxE• DIN 65527KxxxxxE	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100
	12	006 to 120
	15	008 to 148
	17	009 to 168
	20	010 to 200
	22	011 to 220
	25	013 to 248

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Hexagon bolts

Standard / Description		
<p><u>DIN 65 555 / Aerospace</u> Hexagon bolts with short-length MJ thread, corrosion-resisting steel, for temperatures up to 425 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 1.4944.6</p> <p>Technical specification acc. DIN 65 058</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without locking hole and without split pin hole Code letter A: With locking hole and without split pin hole Code letter C: With locking hole and with split pin hole Code letter K: Without locking hole and with split pin hole</p> <p><u>Surface treatment:</u></p> <p>Code letter B: Passivated acc. EN 2516 C2</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • DIN 65555-xxxxxB • DIN 65555AxxxxxB • DIN 65555CxxxxxB • DIN 65555KxxxxxB 	05	003 to 060
	06	003 to 040
	08	004 to 080
	10	005 to 100
	12	006 to 120
	14	007 to 140
	16	008 to 160

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Hexagon bolts

Standard / Description		
<p><u>EN 2549 / Aerospace</u></p> <p>Bolts, normal hexagonal head, metric, close tolerance normal shank, short thread in titanium alloy, anodized, MoS₂, at ambient temperature 315 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): No hole Code letter H: Lockwire Code letter D: Split pin Code letter C: Lockwire and split pin</p> <p><u>Surface treatment:</u></p> <p>Code letter F: Anodized + Molykote 3400A Code letter J: Anodized + Everlube 620C</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • EN 2549-xxxxxxF • EN 2549-xxxxxxJ • EN 2549HxxxxxxF • EN 2549HxxxxxxJ • EN 2549DxxxxxxF • EN 2549DxxxxxxJ • EN 2549CxxxxxxF • EN 2549CxxxxxxJ 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120
	140	007 to 140
	160	008 to 160
180	009 to 180	
200	010 to 200	

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Hexagon bolts

Standard / Description		
<p><u>EN 2887 / Aerospace</u></p> <p>Bolts, normal hexagonal head, threaded to head, corrosion resisting steel, passivated, at ambient temperature 425 °C</p> <p>Nominal Tensile Strength: 600 Mpa</p> <p>Material: 1.4541</p> <p>Technical specification acc. ISO 8168</p> <p>Available versions:</p> <p>Code letter - (hyphen): No hole Code letter H: With Hole</p> <p>Surface treatment:</p> <p>Without code letter: Passivated acc. EN 2516 C2</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 2887-xxxxxx • EN 2887Hxxxxxx 	030	004 to 042
	040	006 to 056
	050	008 to 070
	060	010 to 084
	070	010 to 098
	080	010 to 112
	100	014 to 140
	120	016 to 168
	140	018 to 196
	160	020 to 224
	180	022 to 252
	200	022 to 280

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Hexagon bolts

Standard / Description		
<u>EN 2938 / Aerospace</u> Screws, hexagon head, threaded to head, in heat resisting steel, silver plated, at ambient temperature 650 °C		
Nominal Tensile Strength: 900 Mpa		
Material: 1.4944.4		
Technical specification acc. EN 3043		
<u>Surface treatment:</u>		
Without code letter: Electrolytic silver plating acc. EN 2786		
Norm	∅	Length from to
• EN 2938-xxxxxx	030	004 to 042
	040	006 to 056

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Hexagon bolts

Standard / Description		
<p><u>EN 3052 / Aerospace</u></p> <p>Bolts, normal hexagonal head, close tolerance normal shank, short thread, in heat and corrosion resisting steel, passivated, at ambient temperature 425 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 1.4944.6</p> <p>Technical specification acc. ISO 8168</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): No locking hole Code letter H: Lockwire hole Code letter D: Split pin hole Code letter C: Lockwire and split pin hole</p> <p><u>Surface treatment:</u></p> <p>Without code letter: Passivated acc. EN 2516 C2</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • EN 3052-xxxxxx • EN 3052Hxxxxxx • EN 3052Dxxxxxx • EN 3052Cxxxxxx 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120
	140	007 to 140
	160	008 to 160
	180	009 to 180
	200	010 to 200

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Hexagon bolts

Standard / Description		
<p><u>EN 3308 / Aerospace</u></p> <p>Screws, normal hexagonal head, threaded to head, in titanium alloy, anodized, MoS₂, at ambient temperature 315 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p>Available versions:</p> <p>Code letter - (hyphen): No hole Code letter H: With hole</p> <p>Surface treatment:</p> <p>Code letter F: Anodized acc. LN 9368-2500 + Molykote 3400A Code letter J: Anodized acc. LN 9368-2500 + MoS₂ (Everlube 620C) acc. LN 9368-5913</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 3308-xxxxxF • EN 3308-xxxxxJ • EN 3308HxxxxxF • EN 3308HxxxxxJ 	030	004 to 042
	040	006 to 056
	050	008 to 070
	060	010 to 084
	070	010 to 098
	080	010 to 112
	100	014 to 140
	120	016 to 168
	140	018 to 196
	160	020 to 224
	180	022 to 252
	200	022 to 280

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Hexagon bolts

Standard / Description		
<p><u>EN 3820 / Aerospace</u></p> <p>Metric bolts, normal hexagon head, coarse tolerance normal shank, short thread, in titanium alloy, anodized, MoS₂ at ambient temperature 315 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): No hole Code letter H: Lockwire Code letter D: Split pin Code letter C: Lockwire and split pin</p> <p><u>Surface treatment:</u></p> <p>Code letter F: Anodized acc. LN 9368-2500 + Molykote 3400A Code letter J: Anodized acc. LN 9368-2500 + MoS₂ (Everlube 620C) acc. LN 9368-5913</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 3820-xxxxxxF • EN 3820-xxxxxxJ • EN 3820HxxxxxxF • EN 3820HxxxxxxJ • EN 3820DxxxxxxF • EN 3820DxxxxxxJ • EN 3820CxxxxxxF • EN 3820CxxxxxxJ 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120
	140	007 to 140
	160	007 to 160
	180	009 to 180
	200	010 to 200

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Hexagon bolts

Standard / Description		
<p><u>EN 4127 / Aerospace</u></p> <p>Bolts, normal hexagonal head, coarse tolerance normal shank, short thread, in titanium alloy, aluminium IVD coated, at ambient temperature 425 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): No hole Code letter H: Lockwire Code letter D: Split pin Code letter C: Lockwire and split pin</p> <p><u>Surface treatment:</u></p> <p>Without code letter: Aluminium pigmented coated IVD acc. MIL-DTL-83488D, Type II, class 3, 4</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 4127-xxxxxx • EN 4127Hxxxxxx • EN 4127Dxxxxxx • EN 4127Cxxxxxx 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120
	140	007 to 140
	160	008 to 160
	180	009 to 180
200	010 to 200	

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Hexagon bolts

Standard / Description		
<p><u>EN 4131 / Aerospace</u></p> <p>Bolts, normal hexagonal head, coarse tolerance normal shank, medium length thread, In heat resisting nickel base alloy, aluminium IVD coated, at ambient temperature 425 °C</p> <p>Nominal Tensile Strength: 1.250 Mpa</p> <p>Material: 2.4668.7</p> <p>Technical specification acc. ISO 9154</p> <p>Available versions:</p> <p>Code letter - (hyphen): No hole Code letter H: Lockwire Code letter D: Split pin Code letter C: Lockwire and split pin</p> <p>Surface treatment:</p> <p>Without code letter: Aluminium pigmented coated IVD acc. MIL-DTL-83488D, Type II, class 3, 4</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN4131-xxxxxx • EN4131Hxxxxxx • EN4131Dxxxxxx • EN4131Cxxxxxx 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120
	140	007 to 140
	160	008 to 160
	180	009 to 180
200	010 to 200	

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Hexagon bolts

Standard / Description		
LN 29 792 / Aerospace Bolts, hexagon, close tolerance, of titanium alloy		
Nominal Tensile Strength: 1.100 Mpa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Available versions:</u> Code letter - (hyphen): Without locking hole Code letter K : With locking hole		
<u>Surface treatment:</u> Without code letter: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • LN 29792-xxxx • LN 29792Kxxxx 	05	03 to 50
	06	03 to 50
	08	04 to 50
	10	05 to 50
	12	06 to 50
	14	06 to 50
	16	06 to 50

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Hexagon bolts

Standard / Description		
LN 29 943 / Aerospace Bolts, hexagon, close tolerance, short thread, of titanium alloy		
Nominal Tensile Strength: 1.100 Mpa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Available versions:</u> Code letter - (hyphen): Without locking hole and without split pin hole Code letter K : With locking hole Code letter S : With split pin hole		
<u>Surface treatment:</u> Code letter A : Without surface treatment Code letter C : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913		
Norm	∅	Length from to
<ul style="list-style-type: none"> • LN 29943-xxxxxA • LN 29943-xxxxxC • LN 29943KxxxxxA • LN 29943KxxxxxC • LN 29943SxxxxxA • LN 29943SxxxxxC 	05	003 to 025
	06	003 to 030
	08	004 to 040
	10	005 to 050
	12	006 to 050
	14	007 to 050
	16	008 to 050

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Hexagon bolts

Standard / Description		
<p><u>LN 9386 / Aerospace</u> Bolts, reduced hexagon head, titanium alloy</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. DIN 65 251</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Configuration without locking hole Code letter K: Configuration with locking hole</p> <p><u>Surface treatment:</u></p> <p>Without code letter: No surface treatment Code letter C: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • LN 9386-xxxxx • LN 9386-xxxxxB • LN 9386Kxxxxx • LN 9386KxxxxxB 	04	006 to 050
	05	008 to 060
	06	008 to 075
	08	010 to 090
	10	020 to 100
	12	022 to 100

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Cheese head screws with internal serration

Standard / Description		
<p><u>DIN 65 515 / Aerospace</u></p> <p>Cheese head bolts, with internal serration and MJ thread, short thread, titanium alloy for, temperatures up to 315 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without locking hole and without split pin hole Code letter A: With locking hole and without split pin hole Code letter C: With locking hole and with split pin hole Code letter K: Without locking hole and with split pin hole</p> <p><u>Surface treatment:</u></p> <p>Code letter A: Without surface treatment Code letter T: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913</p>		
Norm	Ø	Length from to
• DIN 65515-xxxxxA	04	002 to 040
• DIN 65515-xxxxxT	05	003 to 050
• DIN 65515AxxxxxA	06	003 to 060
• DIN 65515AxxxxxT	08	004 to 080
• DIN 65515CxxxxxA	10	005 to 100
• DIN 65515CxxxxxT	12	006 to 120
• DIN 65515KxxxxxA		
• DIN 65515KxxxxxT		

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Cheese head screws with internal serration

Standard / Description		
<u>DIN 65 517 / Aerospace</u>		
Cheese head bolts, close tolerance, with internal serrations and MJ thread, short thread, titanium alloy for temperatures up to 315 °C		
Nominal Tensile Strength: 1.100 Mpa		
Material: 3.7164.7		
Technical specification acc. ISO 9152		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole and without split pin hole		
Code letter A : With locking hole and without split pin hole		
Code letter C : With locking hole and with split pin hole		
Code letter K : Without locking hole and with split pin hole		
<u>Surface treatment:</u>		
Code letter A : Without surface treatment		
Code letter T : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913		
Code letter Z : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
• DIN 65517-xxxxxA	04	002 to 040
• DIN 65517-xxxxxT	05	003 to 050
• DIN 65517-xxxxxZ	06	003 to 060
• DIN 65517AxxxxxA	08	004 to 080
• DIN 65517AxxxxxT	10	005 to 100
• DIN 65517AxxxxxZ	12	006 to 120
• DIN 65517CxxxxxA		
• DIN 65517CxxxxxT		
• DIN 65517CxxxxxZ		
• DIN 65517KxxxxxA		
• DIN 65517KxxxxxT		
• DIN 65517KxxxxxZ		

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Cheese head screws with internal serration

Standard / Description		
<u>DIN 65 537 / Aerospace</u> Cheese head bolts with bihexagon socket and MJ thread, nickel alloy, for temperatures up to 315 °C / 425 °C		
Nominal Tensile Strength: 1.250 Mpa		
Material: 2.4668.7		
Technical specification acc. EN 2583		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole and without split pin hole		
Code letter A : With locking hole and without split pin hole		
Code letter C : With split pin hole and with locking hole		
Code letter K : With split pin hole and without locking hole		
<u>Surface treatment:</u>		
Code letter X : Anodic polishing acc. DIN 65230		
Code letter Y : Anodic polishing acc. DIN 65230 + MoS2 (Everlube 620C) acc. LN 9368-5913		
Norm	Ø	Length from to
• DIN 65537-xxxxX	04	002 to 040
• DIN 65537-xxxxY	05	003 to 050
• DIN 65537AxxxxX	06	003 to 060
• DIN 65537AxxxxY	08	004 to 080
• DIN 65537CxxxxX	10	005 to 100
• DIN 65537CxxxxY	12	006 to 120
• DIN 65537KxxxxX		
• DIN 65537KxxxxY		

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Cheese head screws with internal serration

Standard / Description		
<p><u>DIN 65 539 / Aerospace</u></p> <p>Cheese head bolts, with internal serration and MJ thread, reduced shank, nickel alloy, for temperatures up to 315 °C / 425 °C</p> <p>Nominal Tensile Strength: 1.250 Mpa</p> <p>Material: 2.4668.7</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without locking hole Code letter A: With locking hole</p> <p><u>Surface treatment:</u></p> <p>Code letter X: Anodic polishing acc. DIN 65230 Code letter Y: Anodic polishing acc. DIN 65230 + MoS2 (Everlube 620C) acc. LN 9368-5913</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • DIN 65539-xxxxxX • DIN 65539-xxxxxY • DIN 65539AxxxxxX • DIN 65539AxxxxxY 	04	002 to 040
	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100
	12	006 to 120

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Cheese head screws with internal serration

Standard / Description		
<p><u>DIN 65 540 / Aerospace</u></p> <p>Cheese head bolts, with internal serration and MJ thread, reduced shank, titanium alloy, for temperatures up to 315 °C</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without locking hole Code letter A: With locking hole</p> <p><u>Surface treatment:</u></p> <p>Code letter A: Without surface treatment Code letter T: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • DIN 65540-xxxxxA • DIN 65540-xxxxxT • DIN 65540AxxxxxA • DIN 65540AxxxxxT 	04	002 to 040
	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100
	12	006 to 120

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Cheese head screws with internal serration

Standard / Description		
<u>LN 29 949 / Aerospace</u> Cheese screws with internal serration, corrosion resistant, for temperatures up to 650 °C		
Nominal Tensile Strength: 1.100 Mpa		
Material: 1.4944.6		
Technical specification acc. DIN 65 058		
<u>Available versions:</u>		
Code letter - (hyphen): Metric thread		
Code letter J : MJ thread		
<u>Surface treatment:</u>		
Without code letter: Passivated acc. EN 2516 C2		
Norm	∅	Length from to
<ul style="list-style-type: none">• LN 29949-xxxx• LN 29949Jxxxx	03	06 to 20
	04	06 to 40
	05	10 to 50
	06	12 to 50
	08	16 to 50
	10	20 to 50
	12	24 to 50

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Cheese head screws with internal serration

Standard / Description		
<p><u>LN 29 950 / Aerospace</u></p> <p>Cheese head screws with internal serration in titanium alloy</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: ≤ M/MJ4 3.7164.1 ≥ M/MJ4 3.7164.7</p> <p>Technical specification acc. DIN 65 251</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Metric thread Code letter J: MJ thread</p> <p><u>Surface treatment:</u></p> <p>Without code letter: Without surface treatment Code letter B: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913 Code letter Z: Aluminium pigmented acc. EN 4473 typ IV</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • LN 29950-xxxx • LN 29950Jxxxx • LN 29950-xxxxB • LN 29950JxxxxB • LN 29950-xxxxZ • LN 29950JxxxxZ 	03	06 to 20
	04	06 to 40
	05	10 to 50
	06	12 to 50
	08	16 to 50
	10	20 to 50
	12	24 to 50

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Hexagon socket screws

Standard / Description		
<p><u>ISO 4762</u> Hexagon socket head cap screws</p> <p>Nominal Tensile Strength: depending on material and thread size</p> <p>Material: 8.8 / 10.9 / 12.9 / A2-70 / A4-70 / A2-50 / A4-50</p> <p>Technical specification: depending on material</p> <p><u>Surface treatment:</u> Blank / acc. customer requirements (ask our sales team)</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> ISO 4762-MX_{XX}-... 	M1,6	2,5 to 16
	M2	3 to 20
	M2,5	4 to 25
	M3	5 to 30
	M4	6 to 40
	M5	8 to 50
	M6	10 to 60
	M8	12 to 80
	M10	16 to 100
	M12	20 to 120
	M14	25 to 140
	M16	25 to 160
	M20	30 to 200
	M24	40 to 240
	M30	45 to 300
	M36	55 to 300
	M42	60 to 300
M48	70 to 300	
M56	80 to 300	
M64	90 to 300	

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Hexagon socket screws

Standard / Description		
<p><u>ISO 10 642</u></p> <p>Hexagon socket countersunk head screws with reduced loadability</p> <p>Nominal Tensile Strength: depending on material and thread size</p> <p>Material: 8.8 / A2-70 / A2-50</p> <p>Technical specification: depending on material</p> <p><u>Surface treatment:</u></p> <p>Blank / acc. customer requirements (ask our sales team)</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> ISO 10642-M 	M2	5 to 16
	M2,5	6 to 25
	M3	8 to 30
	M4	10 to 40
	M5	12 to 50
	M6	12 to 60
	M8	16 to 80
	M10	20 to 100
	M12	25 to 100
	(M14)	30 to 100
	M16	35 to 100
	M20	40 to 100

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Hexagon socket screws

Standard / Description		
<u>NF L22-220</u> Hexagonal socket cylindrical head screw with hole for lockwire ISO thread, 4h class		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	Ø	Length from to
NF L22-220 + code letter for Material + thread and length code + code letter for surface Example: NF L22-220TX080016XA	3	5 to 30
	4	6 to 34
	5	7 to 34
	6	8 to 34
	7	10 to 34
	8	12 to 34
	10	14 to 48
	12	16 to 48
	14	18 to 64
	16	22 to 64
	18	24 to 60
20	26 to 56	

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Hexagon socket screws

Standard / Description		
<u>NF L22-224</u> Hexagonal socket cylindrical head screw with hole for lockwire ISO thread, 4g class		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	Ø	Length from to
NF L22-224 + code letter for Material + thread and length code + code letter for surface Example: NF L22-224TX080016XA	3	5 to 30
	4	6 to 34
	5	7 to 34
	6	8 to 34
	7	10 to 34
	8	12 to 34
	10	14 to 48
	12	16 to 48
	14	18 to 64
	16	22 to 64
	18	24 to 60
20	26 to 56	

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Hexagon socket screws

Standard / Description		
<u>NF L22-225</u> Hexagonal socket cylindrical head screw, threaded to head, without hole for lockwire, ISO thread, 4g class		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	Ø	Length from to
NF L22-225 + code letter for Material + thread and length code + code letter for surface Example: NF L22-225TX080016XA	3	5 to 30
	4	6 to 34
	5	7 to 34
	6	8 to 34
	7	10 to 34
	8	12 to 34
	10	14 to 48
	12	16 to 48
	14	18 to 64
	16	22 to 64
	18	24 to 60
20	26 to 56	

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Double hexagon bolts

Standard / Description		
<u>DIN 65 440 / Aerospace</u> Bihexagonal head bolts, close tolerance, with MJ-thread, medium thread length, in corrosion resisting nickel alloy, for temperatures up to 315 °C		
Nominal Tensile Strength: 1.250 Mpa		
Material: 2.4668.7		
Technical specification acc. EN 2583		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole		
Code letter A : With locking hole		
<u>Surface treatment:</u>		
Code letter X : Anodic polishing acc. DIN 65230		
Norm	∅	Length from to
<ul style="list-style-type: none">• DIN 65440-xxxxX• DIN 65440AxxxxX	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100
	12	006 to 120
	14	007 to 140
	16	008 to 160
	18	009 to 180
	20	010 to 200

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Double hexagon bolts

Standard / Description		
<u>DIN 65 442 / Aerospace</u> Bihexagonal head bolts, close tolerance, with medium length MJ thread, corrosion resisting nickel alloy, for temperatures up to 315 °C		
Nominal Tensile Strength: 1.550 Mpa		
Material: 2.4668.9		
Technical specification acc. LN 65 013		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole		
Code letter A : With locking hole		
<u>Surface treatment:</u>		
Code letter X : Anodic polishing acc. LN 9368-2600 acc. DIN 65230		
Code letter Z : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
<ul style="list-style-type: none">• DIN 65442-xxxxX• DIN 65442AxxxxX• DIN 65442-xxxxZ• DIN 65442AxxxxZ	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100
	12	006 to 120
	14	007 to 140
	16	008 to 160
	18	009 to 180
	20	010 to 200

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Double hexagon bolts

Standard / Description		
<p><u>EN 2870 / Aerospace</u></p> <p>Bolts, normal bihexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, MoS2 lubricated</p> <p>Nominal Tensile Strength: 1.100 Mpa (at ambient temperature) / 315 °C</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p>Available versions:</p> <p>Code letter - (hyphen): Without hole Code letter H: With hole</p> <p>Surface treatment:</p> <p>Without code letter: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • EN 2870-xxxxxx • EN 2870Hxxxxxx 	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120

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Double hexagon bolts

Standard / Description		
<p><u>EN 2874 / Aerospace</u></p> <p>Bolts, large bihexagonal head, close tolerance normal shank, medium length thread, in heat resisting nickel base alloy, passivated</p> <p>Nominal Tensile Strength: 1.550 Mpa (at ambient temperature) / 315 °C</p> <p>Material: 2.4668.9</p> <p>Technical specification acc. ISO 9154</p> <p>Available versions:</p> <p>Code letter - (hyphen): Without hole Code letter H: With hole</p> <p>Surface treatment:</p> <p>Without code letter: Passivated acc. EN 2516 C2 Code letter P: Passivated acc. EN 2516 C2 + electropolished acc. EN 3769</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 2874-xxxxx • EN 2874Hxxxxx • EN 2874-xxxxxP • EN 2874HxxxxxP 	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120
	140	007 to 140
	160	008 to 160
	180	009 to 180
	200	010 to 200
	220	011 to 220
	240	012 to 240

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Double hexagon bolts

Standard / Description		
<u>EN 2928 / Aerospace</u> Bolts, double hexagon head, relieved shank, long thread, in heat resisting nickel base alloy, silver plated		
Nominal Tensile Strength: 1.250 Mpa (at ambient temperature) / 650 °C		
Material: 2.4668.7		
Technical specification acc. EN 2583		
Surface treatment:		
Without code letter: Electrolytic silver plating acc. EN 2786		
Norm	Ø	Length from to
• EN 2928-xxxxx	050	008 to 070
	060	010 to 084
	070	010 to 098
	080	010 to 112
	100	014 to 140
	120	016 to 168

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Double hexagon bolts

Standard / Description		
<u>EN 4136 / Aerospace</u> Bolts, double hexagon head, relieved shank, long thread, in heat resisting nickel base alloy, silver plated		
Nominal Tensile Strength: 1.100 Mpa (at ambient temperature) / 235 °C		
Material: 30 NCD 16 (1.6604.5)		
Technical specification acc. ISO 7689		
<u>Available versions:</u>		
Code letter - (hyphen): Without hole		
Code letter H : With hole		
<u>Surface treatment:</u>		
Without code letter: Cadmium plated acc. EN 2133		
Code letter B : Black cadmium plated acc. EN 2133		
Norm	∅	Length from to
<ul style="list-style-type: none">• EN 4136-xxxxxx• EN 4136Hxxxxxx• EN 4136-xxxxxxB• EN 4136HxxxxxxB	050	020 to 070
	060	022 to 084
	070	024 to 098
	080	026 to 112
	100	032 to 140
	120	036 to 168

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Double hexagon bolts

Standard / Description		
<u>LN 29 551 / Aerospace</u> Bolts, double hexagon for temperatures up to 650 °C		
Nominal Tensile Strength: 900 Mpa		
Material: 1.4944.4		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole		
Code letter K : With locking hole		
<u>Surface treatment:</u>		
Without code letter: Passivated acc. EN 2516 C2		
Norm	Ø	Length from to
<ul style="list-style-type: none">• LN 29551-xxxxx• LN 29551Kxxxxx	05	008 to 040
	06	010 to 050
	07	012 to 050
	08	016 to 050
	09	016 to 050
	10	020 to 050
	11	020 to 050
	12	020 to 050
	13	020 to 050

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Double hexagon bolts

Standard / Description		
<u>LN 29 902 / Aerospace</u> Double hexagon head precision bolts, for temperatures up to 650 °C		
Nominal Tensile Strength: 900 Mpa		
Material: 1.4944.4		
Technical specification acc. DIN 65 058		
<u>Surface treatment:</u>		
Blank		
Norm	Ø	Length from to
• LN 29902-xxxxx	05	002 to 090
	06	003 to 100
	07	003 to 100
	08	003 to 100
	10	004 to 100
	12	004 to 100

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Double hexagon bolts

Standard / Description		
<u>LN 29 955 / Aerospace</u> Double hexagon bolts, close tolerance, nominal tensile strength 1.500 N/mm ² , medium thread length; Inactive for new design		
Nominal Tensile Strength: 1.500 Mpa		
Material: 1.4534.6		
Technical specification acc. LN 65 013		
<u>Available versions:</u>		
Code letter - (hyphen): Without locking hole		
Code letter K : With locking hole		
<u>Surface treatment:</u>		
Without code letter: Passivated acc. EN 2516 C8		
Norm	Ø	Length from to
<ul style="list-style-type: none">• LN 29955-xxxxx• LN 29955Kxxxxx	06	006 to 030
	08	006 to 040
	10	006 to 050
	12	006 to 060
	14	007 to 070
	16	008 to 080
	18	009 to 080
	20	010 to 080
	22	011 to 080
	24	012 to 080

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Double hexagon bolts

Standard / Description		
<p><u>LN 65 056 / Aerospace</u></p> <p>Double hexagon head bolts, close tolerance, from titanium alloy, medium thread length</p> <p>Nominal Tensile Strength: 1.100 Mpa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p>Available versions:</p> <p>Code letter - (hyphen): Without locking hole Code letter K: With locking hole</p> <p>Surface treatment:</p> <p>Without Code letter: No surface treatment Code letter A: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • LN 65056-xxxxx • LN 65056-xxxxxA • LN 65056Kxxxxx • LN 65056KxxxxxA 	06	006 to 030
	08	006 to 038
	10	006 to 050
	12	006 to 060
	14	007 to 070
	16	008 to 080
	18	009 to 080
	20	010 to 080
	22	011 to 080
	24	012 to 080

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Double hexagon bolts

Standard / Description		
<u>NF L22-231 / Aerospace</u> Bolt, hexagonal head, ISO thread, 4h class		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	∅	Length from to
NF L22-231 + code letter for Material + thread and length code + code letter for surface Example: NF L22-231TX080016XA	5	8 to 40
	6	8 to 40
	7	10 to 30
	8	12 to 32
	10	14 to 36
	12	16 to 40

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Double hexagon bolts

Standard / Description		
<u>NF L22-232 / Aerospace</u> Bolt, hexagonal head, ISO thread, 4h class		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	Ø	Length from to
NF L22-232 + code letter for Material + thread and length code + code letter for surface Example: NF L22-232TX080016XA	5	8 to 40
	6	8 to 40
	7	10 to 30
	8	12 to 32
	10	14 to 36
	12	16 to 40

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Double hexagon bolts

Standard / Description		
<u>NF L22-236 / Aerospace</u> Bolt, hexagonal head, ISO thread, 4h class		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	Ø	Length from to
NF L22-236 + code letter for Material + thread and length code + code letter for surface Example: NF L22-236TX080016XA	5	8 to 40
	6	8 to 40
	7	10 to 30
	8	12 to 32
	10	14 to 36
	12	16 to 40

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Double hexagon bolts

Standard / Description		
<u>NF L22-237 / Aerospace</u> Bolt, hexagonal head, ISO thread, 4h class		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	Ø	Length from to
NF L22-237 + code letter for Material + thread and length code + code letter for surface Example: NF L22-237TX080016XA	5	8 to 40
	6	8 to 40
	7	10 to 30
	8	12 to 32
	10	14 to 36
	12	16 to 40

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Hexalobular / six lobe recess bolts

Standard / Description		
<u>ASN A0090</u> Pan head screw six-lobe recess, ISO M thread		
Nominal Tensile Strength: depending on code letter (material)		
Material: acc. NF L09-752		
Technical specification: depending on material		
<u>Surface treatment:</u>		
Code letter: acc. NF L09-753		
Norm	∅	Length from to
ASN-A0090 + code letter for Material + thread and length code + code letter for surface Example: ASN-A0090BE030064LB	3	5 to 40
	4	6 to 36
	5	7 to 34
	6	8 to 32
	8	12 to 28
	10	14 to 44
	12	16 to 44

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Hexalobular / six lobe recess bolts

Standard / Description		
<p><u>ISO 14 579</u> Hexalobular socket head cap screws</p> <p>Nominal Tensile Strength: depending on material and thread size</p> <p>Material: 8.8 / 10.9 / 12.9 / A2-70 / A4-70 / A2-50 / A4-50</p> <p>Surface treatment: Blank / acc. customer requirements (ask our sales team)</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> ISO 14579-MXxxx-Material 	M2	3 to 20
	M2,5	4 to 25
	M3	5 to 30
	M4	6 to 40
	M5	8 to 50
	M6	10 to 60
	M8	12 to 80
	M10	16 to 100
	M12	20 to 120
	M14	25 to 140
	M16	25 to 160
	M18	30 to 180
	M20	30 to 200

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Hexalobular / six lobe recess bolts

Standard / Description		
<u>ISO 14 580</u> Hexalobular socket cheese head screws		
Nominal Tensile Strength: depending on material and thread size		
Material: 8.8 / 10.9 / 12.9 / A2-70 / A4-70 / A2-50 / A4-50		
Surface treatment: Blank / acc. customer requirements (ask our sales team)		
Norm	Ø	Length from to
• ISO 14580-MXxxx- Material	M2	3 to 20
	M2,5	3 to 25
	M3	4 to 30
	M3,5	5 to 35
	M4	5 to 40
	M5	6 to 50
	M6	8 to 60
	M8	10 to 80
	M10	12 to 80

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Hexalobular / six lobe recess bolts

Standard / Description		
<p><u>ISO 14 581</u> Hexalobular socket countersunk flat head screws (common head style) with reduced loadability</p> <p>Nominal Tensile Strength: depending on material and thread size</p> <p>Material: 8.8 / 10.9 / 12.9 / A2-70 / A4-70 / A2-50 / A4-50</p> <p>Surface treatment: Blank / acc. customer requirements (ask our sales team)</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> ISO 14581-MXxxx-Material 	M2	5 to 20
	M2,5	6 to 25
	M3	8 to 30
	M3,5	8 to 35
	M4	10 to 40
	M5	12 to 50
	M6	12 to 60
	M8	16 to 60
	M10	20 to 60

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Hexalobular / six lobe recess bolts

Standard / Description		
<u>ISO 14 583</u> Hexalobular socket pan head screws		
Nominal Tensile Strength: depending on material and thread size		
Material: 8.8 / 10.9 / 12.9 / A2-70 / A4-70 / A2-50 / A4-50		
Surface treatment: Blank / acc. customer requirements (ask our sales team)		
Norm	Ø	Length from to
• ISO 14583-MXxxx- Material	M2	3 to 20
	M2,5	3 to 25
	M3	4 to 30
	M3,5	5 to 35
	M4	5 to 40
	M5	6 to 50
	M6	8 to 60
	M8	10 to 60
	M10	12 to 60

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Pan head and countersunk bolts

Standard / Description		
<u>DIN 65 179 / Aerospace</u>		
Countersunk head bolts, close tolerance, with internal offset cruciform ribbed drive and MJ thread, short thread length, titanium alloy, for temperatures up to 315 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Available versions:</u>		
Code letter - (hyphen): Without split pin hole		
Code letter K : With split pin hole		
<u>Surface treatment:</u>		
Code letter A : No surface treatment		
Code letter T : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620C) acc. LN 9368-5913		
Code letter Z : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
• DIN 65179-xxxxxA	04	008 to 040
• DIN 65179-xxxxxT	05	008 to 050
• DIN 65179-xxxxxZ	06	008 to 060
• DIN 65179KxxxxxA	08	008 to 080
• DIN 65179KxxxxxT	10	008 to 100
• DIN 65179KxxxxxZ	12	010 to 108

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Pan head and countersunk bolts

Standard / Description		
<u>DIN 65 284 / Aerospace</u> Countersunk head screws, with ribbed TORQ-SET (ACR) recess and MJ thread, fully threaded, corrosion-resisting steel, for temperatures up to 425 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 1.4944.6		
Technical specification acc. DIN 65 058		
<u>Surface treatment:</u> Code letter B : Passivated acc. EN 2516 C2		
Norm	Ø	Length from to
• DIN 65284-xxxxxB	03	004 to 030
	04	006 to 040
	05	008 to 048
	06	010 to 048
	08	010 to 048
	10	014 to 048
	12	014 to 048

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Pan head and countersunk bolts

Standard / Description		
<u>DIN 65 314 / Aerospace</u>		
Countersunk head bolts, close tolerance, with internal offset cruciform ribbed drive and MJ thread, short thread length, steel, for temperatures up to 235 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 1.6604.5		
Technical specification acc. LN 65 009		
<u>Available versions:</u>		
Code letter - (hyphen): Without split pin hole		
Code letter K : With split pin hole		
<u>Surface treatment:</u>		
Code letter E : Cadmium plated acc. LN 9368-3001.2 acc. EN 2133 typ IV		
Code letter Z : Inactive for new design : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
<ul style="list-style-type: none">• DIN 65314-xxxxxE• DIN 65314-xxxxxZ• DIN 65314KxxxxxE• DIN 65314KxxxxxZ	04	004 to 040
	05	004 to 050
	06	005 to 060
	08	007 to 080
	10	008 to 100
	12	010 to 120

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Pan head and countersunk bolts

Standard / Description		
<u>DIN 65 316 / Aerospace</u>		
Countersunk head bolts, close tolerance, with internal offset cruciform ribbed drive and MJ thread, short thread length, corrosion-resisting steel, for temperatures up to 425 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 1.4944.6		
Technical specification acc. DIN 65 058		
<u>Available versions:</u>		
Code letter - (hyphen): Without split pin hole		
Code letter K : With split pin hole		
<u>Surface treatment:</u>		
Code letter B : Passivated acc. EN 2516 C2		
Code letter Z : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
<ul style="list-style-type: none">• DIN 65316-xxxxxB• DIN 65316-xxxxxZ• DIN 65316KxxxxxB• DIN 65316KxxxxxZ	04	004 to 040
	05	004 to 050
	06	005 to 060
	08	007 to 080
	10	008 to 100
	12	010 to 120

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Pan head and countersunk bolts

Standard / Description		
<p>DIN 65 319 / Aerospace</p> <p>Pan head bolts, close tolerance, with ribbed TORQ-SET (ACR) recess and short-length MJ thread, corrosion-resisting steel, for temperatures up to 425 °C</p> <p>Nominal Tensile Strength: 1.100 MPa</p> <p>Material: 1.4944.6</p> <p>Technical specification acc. DIN 65 058</p> <p><u>Surface treatment:</u></p> <p>Code letter B: Passivated acc. EN 2516 C2</p>		
Norm	Ø	Length from to
• DIN 65319-xxxxxB	03	002 to 030
	04	002 to 040
	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100

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Pan head and countersunk bolts

Standard / Description		
<u>DIN 65 324 / Aerospace</u> Pan head bolts, close tolerance, with internal offset cruciform ribbed drive recess and short-length MJ thread, titanium alloy, for temperatures up to 315 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Surface treatment:</u>		
Code letter A : No surface treatment		
Code letter T : Anodized acc. LN 9368-2500 + MoS ₂ (Everlube 620c) acc. LN 9368-5913		
Code letter Z : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
<ul style="list-style-type: none">• DIN 65324-xxxxxA• DIN 65324-xxxxxT• DIN 65324-xxxxxZ	03	002 to 030
	04	002 to 040
	05	003 to 050
	06	003 to 060
	08	004 to 080
	10	005 to 100

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Pan head and countersunk bolts

Standard / Description		
<p><u>EN 3037 / Aerospace</u></p> <p>Screws, pan head, offset cruciform recess, close tolerance normal shank, short thread, in titanium alloy, anodized, MoS2 lubricated, at ambient temperature 315 °C</p> <p>Nominal Tensile Strength: 1.100 MPa</p> <p>Material: 3.7164.7</p> <p>Technical specification acc. ISO 9152</p> <p>Available versions:</p> <p>Code letter - (hyphen): Without hole Code letter D: With hole</p> <p>Code letter R: Drive ISO 7994 Code letter A: Drive ISO 7994 unribbed</p> <p>Surface treatment:</p> <p>Code letter F: Anodized acc. LN 9368-2500 + Molykote 3400A</p>		
Norm	∅	Length from to
<ul style="list-style-type: none"> • EN 3037-xxxxxxRF • EN 3037-xxxxxxAF • EN 3037DxxxxxxRF • EN 3037DxxxxxxAF 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120

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Pan head and countersunk bolts

Standard / Description		
<p><u>EN 3038 / Aerospace</u></p> <p>Screws, pan head, offset cruciform recess, close tolerance normal shank, short thread, in heat and corrosion resisting steel, passivated, at ambient temperature 425 °C</p> <p>Nominal Tensile Strength: 1.100 MPa</p> <p>Material: 1.4944.6</p> <p>Technical specification acc. ISO 8168</p> <p>Available versions:</p> <p>Code letter - (hyphen): Without hole Code letter D: With hole</p> <p>Code letter R: Drive ISO 7994 Code letter A: Drive ISO 7994 unribbed</p> <p>Surface treatment:</p> <p>Without code letter: Passivated acc. EN 2516 C2</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 3038-xxxxxxR • EN 3038-xxxxxxA • EN 3038DxxxxxxR • EN 3038DxxxxxxA 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	070	004 to 070
	080	004 to 080
	100	005 to 100
	120	006 to 120

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Pan head and countersunk bolts

Standard / Description		
<u>EN 3304 / Aerospace</u>		
Screws, 100° countersunk reduced head, offset cruciform recess, close tolerance normal shank, short thread, in titanium alloy, anodized, MoS2 lubricated, at ambient temperature 315 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. ISO 9152		
<u>Available versions:</u>		
Code letter - (hyphen): Without hole		
Code letter D: With hole		
Code letter R: Drive ISO 7994		
Code letter A: Drive ISO 7994 unribbed		
<u>Surface treatment:</u>		
Code letter F: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 3304-xxxxxxRF • EN 3304-xxxxxxAF • EN 3304DxxxxxxRF • EN 3304DxxxxxxAF 	040	003 to 040
	050	004 to 050
	060	005 to 060
	070	006 to 070
	080	006 to 080
	100	008 to 100
	120	010 to 120
	140	010 to 140
	160	010 to 160
	180	011 to 180
200	012 to 200	

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Pan head and countersunk bolts

Standard / Description		
<u>EN 3381 / Aerospace</u>		
Screws, 100° countersunk normal head, offset cruciform recess, close tolerance normal shank, short thread, in titanium, anodized, MoS2 lubricated, at ambient temperature 315 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. ISO 9152		
<u>Available versions:</u>		
Code letter - (hyphen): Without hole		
Code letter D : With hole		
Code letter R : Drive ISO 7994		
Code letter A : Drive ISO 7994 unribbed		
<u>Surface treatment:</u>		
Code letter F : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 3381-xxxxxxRF • EN 3381-xxxxxxAF • EN 3381DxxxxxxRF • EN 3381DxxxxxxAF 	030	003 to 020
	040	003 to 040
	050	004 to 050
	060	005 to 060
	070	006 to 070
	080	006 to 080
	100	008 to 100
	120	010 to 120
	140	010 to 140
	160	010 to 160
	180	011 to 180
	200	012 to 200

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Pan head and countersunk bolts

Standard / Description		
<p><u>EN 3759 / Aerospace</u></p> <p>Screws, pan head, offset cruciform recess, threaded to head, in heat and corrosion resisting steel, passivated, at ambient temperature 425 °C</p> <p>Nominal Tensile Strength: 1.100 MPa</p> <p>Material: 1.4944.6</p> <p>Technical specification acc. ISO 8168</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without hole Code letter D: With hole</p> <p>Code letter R: Drive ISO 7994 Code letter A: Drive ISO 7994 unribbed</p> <p><u>Surface treatment:</u></p> <p>Without code letter: Passivated acc. EN 2516 C2</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 3759-xxxxxxR • EN 3759-xxxxxxA • EN 3759DxxxxxxR • EN 3759DxxxxxxA 	030	004 to 042
	040	006 to 056
	050	008 to 070
	060	010 to 084
	070	010 to 098
	080	010 to 112
	100	014 to 140
	120	016 to 168

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Pan head and countersunk bolts

Standard / Description		
<p><u>EN 3760 / Aerospace</u></p> <p>Screws, 100° countersunk normal head, offset cruciform recess, threaded to head, in heat and corrosion resisting steel, passivated, at ambient temperature 425 °C</p> <p>Nominal Tensile Strength: 1.100 MPa</p> <p>Material: 1.4944.6</p> <p>Technical specification acc. ISO 8168</p> <p><u>Available versions:</u></p> <p>Code letter - (hyphen): Without hole Code letter D: With hole</p> <p>Code letter R: Drive ISO 7994 Code letter A: Drive ISO 7994 unribbed</p> <p><u>Surface treatment:</u></p> <p>Without code letter: Passivated acc. EN 2516 C2</p>		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • EN 3760-xxxxxxR • EN 3760-xxxxxxA • EN 3760DxxxxxxR • EN 3760DxxxxxxA 	030	006 to 042
	040	008 to 056
	050	010 to 070
	060	012 to 084
	070	012 to 098
	080	014 to 112
	100	018 to 140
	120	020 to 168

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Pan head and countersunk bolts

Standard / Description		
<u>EN 4178 / Aerospace</u>		
Screws, pan head, six lobe recess, coarse tolerance normal shank, medium length thread, in titanium alloy, anodized, MoS2 lubricated, at ambient temperature 315 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. ISO 9152		
<u>Available versions:</u>		
Code letter - (hyphen): No hole		
Code letter H : Lockwire		
Code letter D : Split pin		
Code letter C : Lockwire and split pin		
<u>Surface treatment:</u>		
Code letter F : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913		
Norm	∅	Length from to
<ul style="list-style-type: none"> • EN 4178-xxxxxF • EN 4178HxxxxxF • EN 4178DxxxxxF • EN 4178CxxxxxF 	030	002 to 030
	040	002 to 040
	050	003 to 050
	060	003 to 060
	080	004 to 080
	100	005 to 100
	120	006 to 120

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Pan head and countersunk bolts

Standard / Description		
<u>EN 4499 / Aerospace</u>		
Screws, 100° countersunk reduced head, offset cruciform recess, close tolerance normal shank, short thread, in titanium alloy, anodized, with aluminium pigmented coating, at ambient temperature 315 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. ISO 9152		
<u>Available versions:</u>		
Code letter - (hyphen): Without hole		
Code letter D : With hole		
Code letter R : Drive ISO 7994		
Code letter A : Drive ISO 7994 unribbed		
<u>Surface treatment:</u>		
Code letter A : Aluminium pigmented acc. EN 4473 typ IV		
Norm	Ø	Length from to
<ul style="list-style-type: none">• EN 4499-xxxxxxR• EN 4499-xxxxxxA• EN 4499DxxxxxxR• EN 4499DxxxxxxA	040	003 to 040
	050	004 to 050
	060	005 to 060
	070	006 to 070
	080	006 to 080
	100	008 to 100
	120	010 to 120
	140	010 to 140
	160	010 to 160
	180	011 to 180
	200	012 to 200

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Pan head and countersunk bolts

Standard / Description		
EN 4634 / Aerospace Screws, 100° countersunk head, six lobe recess, short thread, in heat resisting steel FE-PA2601 (A286), passivated, at ambient temperature 650 °C		
Nominal Tensile Strength: 900 MPa		
Material: 1.4944.4		
Technical specification acc. EN 2576		
<u>Surface treatment:</u>		
Without code letter: Passivated acc. EN 2516 C2		
Norm	Ø	Length from to
• EN 4634-xxxxxx	030	003 to 030
	040	003 to 040
	050	004 to 050
	060	005 to 060
	080	006 to 080
	100	008 to 100
	120	010 to 100

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Pan head and countersunk bolts

Standard / Description		
<u>EN 4636 / Aerospace</u>		
Screws, 100° countersunk head, six lobe recess, short thread, in titanium alloy TI-P64001, with aluminium pigmented coating, at ambient temperature 315 °C		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. ISO 9152		
<u>Surface treatment:</u>		
Without code letter: Aluminium pigmented acc. EN 4473 typ IV		
Norm	∅	Length from to
• EN 4636-xxxxxx	030	003 to 030
	040	003 to 040
	050	004 to 050
	060	005 to 060
	080	006 to 080
	100	008 to 100
	120	010 to 100

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Pan head and countersunk bolts

Standard / Description		
LN 29 787 / Aerospace Countersunk head screws, with TORQ-SET recess, fully threaded to head, of titanium alloy		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Surface treatment:</u>		
Without code letter: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913 Code letter A : No surface treatment		
Norm	∅	Length from to
<ul style="list-style-type: none"> • LN 29787-xxxxx • LN 29787-xxxxxA 	03	006 to 030
	04	008 to 040
	05	006 to 050
	06	006 to 050
	08	006 to 050

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Pan head and countersunk bolts

Standard / Description		
LN 29 957 / Aerospace		
Pan head bolts with TORQ-SET recess, of titanium alloy, short thread length; Inactive for new design		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Surface treatment:</u>		
Without code letter: No surface treatment		
Code letter A: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913		
Norm	∅	Length from to
• LN 29957-xxxxx	05	003 to 025
• LN 29957-xxxxxA	06	003 to 030
	08	004 to 040

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Pan head and countersunk bolts

Standard / Description		
LN 29 958 / Aerospace		
Pan head screws with TORQ-SET recess in titanium alloy, threaded to head; Inactive for new design		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification acc. DIN 65 251		
<u>Surface treatment:</u>		
Without code letter: Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913 Code letter A : No surface treatment		
Norm	Ø	Length from to
<ul style="list-style-type: none"> • LN 29958-xxxx • LN 29958-xxxxA 	03	06 to 30
	04	08 to 40
	05	10 to 50
	06	12 to 50
	08	16 to 50

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Pan head and countersunk bolts

Standard / Description		
LN 9136 / Aerospace Screws, countersunk head, cross-recessed, non-magnetizable		
Nominal Tensile Strength: 700 MPa		
Material: 1.4541 / A2-70		
Technical specification: ≤ M4 acc. DIN 65 149 / ≥ M5 acc. LN 65 010		
<u>Surface treatment:</u>		
Without code letter: Passivated acc. EN 2516 C2		
Norm	Ø	Length from to
• LN 9136-xxxx	03	006 to 032
	04	008 to 040
	05	008 to 050
	06	008 to 050

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Pan head and countersunk bolts

Standard / Description		
LN 9139 / Aerospace Screws, machine, round head, cross-recessed, antimagnetic		
Nominal Tensile Strength: 700 MPa		
Material: 1.4541 / A2-70		
Technical specification: ≤ M4 acc. DIN 65 149 / ≥ M5 acc. LN 65 010		
<u>Surface treatment:</u>		
Without code letter: Passivated acc. EN 2516 C2		
Norm	Ø	Length from to
• LN 9139-MxXx	M3	6 to 30
	M4	8 to 40
	M5	8 o 50
	M6	8 to 50

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Pan head and countersunk bolts

Standard / Description		
<u>LN 9441 / Aerospace</u> Screws, flat head, cross recessed, titanium alloy		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification: ISO 9152		
<u>Surface treatment:</u>		
Code letter A : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913		
Norm	Ø	Length from to
• LN 9441-MxXx	M4	8 to 50
	M5	8 to 50
	M6	8 to 50

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Pan head and countersunk bolts

Standard / Description		
<u>LN 9442 / Aerospace</u> Screws, pan head, cross recess, titanium alloy		
Nominal Tensile Strength: 1.100 MPa		
Material: 3.7164.7		
Technical specification: DIN 65 251		
<u>Surface treatment:</u>		
Without code letter: No surface treatment Code letter A : Anodized acc. LN 9368-2500 + MoS2 (Everlube 620c) acc. LN 9368-5913		
Norm	∅	Length from to
<ul style="list-style-type: none">LN 9442 MXxXXLN 9442 MXxXXA	M4	8 to 40
	M5	8 to 50
	M6	8 to 50
	M8	10 to 50

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Washers

Standard / Description	
<p><u>DIN 65 209 / Aerospace</u> Washers, countersunk</p> <p>Material: 1.4544.9 / 1.4944.4</p> <p><u>Surface treatment:</u> Code letter L: Passivated acc. EN 2516 C2 Code letter M: Passivated acc. EN 2516 C2</p>	
Norm	Code
<ul style="list-style-type: none">• DIN 65209-xxL• DIN 65209-xxM	03
	04
	05
	06
	08
	10
	12
	14
	16
	18
	20
	22
	24

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Washers

Standard / Description		
LN 29 952 / Aerospace Washers, outside diameter = 3 times hole diameter; Inactive for new design Material: 1.4544.9 Surface treatment: Code letter M : Passivated acc. EN 2516 C2		
Norm	Ø	Wide
• LN 29952-xxxxM	03	05 to 10
	04	05 to 10
	05	10 to 15
	06	10 to 15
	07	10 to 15
	08	15 to 25
	10	15 to 25
	12	15 to 25

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Washers

Standard / Description	
<p><u>LN 9016 / Aerospace</u> Washers, bevelled</p> <p>Material: 1.4544.9 / 1.4944.4</p> <p>Surface treatment: Code letter L: Material 1.4544.9 + passivated acc. EN 2516 C2 Code letter M: Material 1.4944.4 + passivated acc. EN 2516 C2</p>	
Norm	Code
<ul style="list-style-type: none">• LN 9016-xxL• LN 9016-xxM	03
	04
	05
	06
	08
	10
	12
	14
	16
	18
	20
	22
	24
	27
30	

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Washers

Standard / Description		
LN 9025 / Aerospace Washers		
Material: 1.7734.4 / 1.7224.5 / 1.4544.9 / 1.4944.4		
Surface treatment:		
Code letter L : Material 1.4544.9 + passivated acc. EN 2516 C2 Code letter K : Material 1.7734.4 / 1.7224.5 + cadmium plated acc. LN 9368-3000.3 Code letter P : Material 1.4944.4 + passivated acc. EN 2516 C2		
Norm	∅	Wide
<ul style="list-style-type: none"> LN 9025-xxxx 	03	05 to 10
	04	05 to 10
	05	10 to 20
	06	10 to 20
	07	10 to 20
	08	10 to 20
	10	10 to 20
	12	10 to 20
	14	10 to 20
	16	10 to 20
	18	15 to 30
	20	15 to 30
	22	15 to 30
	24	15 to 30
	27	30
	30	40
	33	40
36	40	
39	50	
42	50	

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