



Aerospace-standards fasteners catalogue



UNI EN ISO 9001:2015
EN 9100:2018 / AS9100D
Certified for aerospace
applications





TITANIUM



LLS Titanium

C'è un filo che unisce il mondo della velocità, del volo e delle grandi sfide ingegneristiche: la capacità di creare componenti leggeri, resistenti e affidabili.

Da oltre trent'anni, LLS Titanium trasforma questa capacità in realtà, lavorando titanio puro e leghe speciali con la stessa cura con cui si costruisce un motore da competizione o un sistema aerospaziale.

Siamo specialisti nella produzione di viterie, minuterie e componenti di precisione in titanio, alluminio ad alta resistenza (Al7075), acciai speciali e carbonio.

Gestiamo internamente ogni fase, dallo stampaggio a caldo alla torneria multiasse, dai trattamenti termici alla finitura elettrocolore, per garantire qualità costante, tracciabilità e tempi certi.

Tecnologia, metodo e passione ci guidano ogni giorno.

Operiamo secondo gli standard EN 9100:2018 / AS9100D e ISO 9001:2015, collaborando con i reparti R&D di clienti che non accettano compromessi.

LLS Titanium è parte del gruppo Castellini, insieme a Breka e Carbon-Ti: un network industriale italiano che unisce tradizione meccanica e innovazione tecnologica per spingere più in là i limiti della precisione.

A single thread connects the worlds of speed, flight, and great engineering challenges: the ability to create components that are light, strong, and reliable.

For over thirty years, LLS Titanium has turned that ability into reality — machining pure titanium and special alloys with the same care used to craft a race engine or an aerospace system.

We specialize in high-precision fasteners, small parts, and custom components made from titanium, high-strength aluminum (Al7075), special steels, and carbon composites.

Every stage is managed in-house, from hot forging to multi-axis turning, from heat treatment to electro-color finishing, ensuring consistent quality, full traceability, and on-time delivery.

Technology, method, and passion drive us every day.

We operate according to EN 9100:2018 / AS9100D and ISO 9001:2015 standards, working closely with R&D teams that accept no compromises.

LLS Titanium is part of the Castellini Group, together with Breka and Carbon-Ti: an Italian industrial network that combines mechanical tradition with technological innovation to push the limits of precision



Cheese head screws with internal serration

Standard	Description	Material
LN 29950	Aerospace Cheese head screw with internal serration, titanium alloy 1100 MPa	3.7164.7
DIN 65540	Aerospace Cheese head bolt with internal serration, MJ thread, reduced shank, titanium alloy for temperatures up to 315 °C 1100 MPa	3.7164.7
DIN 65517	Aerospace Cheese head bolt with internal serration, close tolerance, MJ thread, short thread, titanium alloy for temperatures up to 315°C 1100 Mpa	3.7164.7
DIN 65515	Aerospace Cheese head bolt with internal serration, MJ thread, short thread, titanium alloy for temperatures up to 315 °C 1100 MPa	3.7164.7
LN 29949	Aerospace Cheese head screw with internal serration, corrosion resisting steel, for temperatures up to 650 °C 1100 MPa	1.4944.6
DIN 65539	Aerospace cheese head bolts, with internal serration and MJ thread, reduced shank, nickel alloy, normal tensile strength 1250 MPa, temperatures up to 315°/425°	1.4944.6

Six lobe recess bolts

Standard	Description	Material
DIN EN ISO 14579	Hexalobular socket head cap screw depending on material and thread size	A2/50/70/80 A4/50/70/80 3.7164.7 1.4944.6 Aluminium Al7075
DIN EN ISO 14580	Hexalobular socket cheese head screw depending on material and thread size	A2/50/70/80 A4/50/70/80 3.7164.7 1.4944.6 Aluminium Al7075
DIN EN ISO 14581	Hexalobular socket countersunk flat head depending on material and thread size	A2/50/70/80 A4/50/70/80

		3.7164.7 1.4944.6 Aluminium Al7075
DIN EN ISO 14583	Hexalobular socket pan head screw depending on material and thread size	A2/50/70/80 A4/50/70/80 3.7164.7 1.4944.6 Aluminium Al7075
ASN A0090	Pan head screw with six lobe recess, ISO thread- see NFL bolts / see NFL bolts	A2/50/70/80 A4/50/70/80 3.7164.7 1.4944.6 Aluminium Al7075
ASNA0084	Pan head screw with six lobe recess, ISO thread- see NFL bolts / see NFL bolts	A2/50/70/80 A4/50/70/80 3.7164.7 1.4944.6 Aluminium Al7075

Hexagon and double hexagon bolts

Standard Parts	Description	Material
DIN 65265	Aerospace Hexagon screw with MJ thread, titanium alloy, threaded approximately to head for temperatures up to 315 °C 100 Mpa	3.7164.7
DIN 65522	Aerospace Hexagon screw with MJ thread, corrosionresisting steel, threaded approximately to head for temperatures up to 425 °C 700 Mpa	1.4541 A2-70/80
DIN EN ISO 4762 (DIN 912)	Hexagon socket head cap screw, steel, corrosionresisting steel, nonferrous metal depending on material and thread size	A2/50/70/80 A4/50/70/80 3.7164.7 Aluminium Al7075 1.4944.6
DIN EN ISO 10642 (DIN 7991) (UNI 5933)	Hexagon socket countersunk head screw, steel, corrosionresisting steel, nonferrous metal depending on material and thread size	A2/50/70/80A4/50/70/80 3.7164.7 1.4944.6 Aluminium Al7075
DIN 65338	Hexagon bolts, close tolerance, with short length MJ thread, shoulder, titanium alloy nominal tensile strength 1 100 MPa, for temperatures up to 315 °C	3.7164.7

DIN 65339	Hexagon bolts, close tolerance, with short length MJ thread, corrosion resisting steel Nominal tensile strength 1100 MPa, for temperatures up to 425 °C	1.4944.6
LN 65056	Aerospace Double hexagon head bolt, close tolerance, from titanium alloy, medium thread length- 1100 Mpa	3.7164.7
LN 29902	Aerospace Double hexagon screw, close tolerance, heat resisting steel, for temperatures up to 650°C 900 Mpa	1.4944.4
LN 29551	Aerospace Double hexagon screw, corrosion resisting steel for temperatures up to 650°C 900 Mpa	1.4944.4
NFL 22232	Bi-hexagonal bolt with locking hole, ISO thread, 4h class depending on code letter (material)	TX-3.7164.7 CM-1.4944.4 CX-1.4944.6
NFL 22237	Bi-hexagonal bolt with locking hole, ISO thread, 4g class depending on code letter (material)	TX-3.7164.7 GM 1.4944.4 CX-1.4944.6
NFL22-224	Hexagon Socket head cap screw	A2/50/70/80 A4/50/70/80 3.7164.7 Aluminium Al7075 1.4944.6
LN29943	Bolts, Hexagon, close tolerance, short thread titanium alloy	3.7164.7
EN3308	Screws, normal Hexagon head, threaded head, in titanium alloy, anodized, MoS ₂ lubricated, 1100 MPa (at ambient temperature)/315°C	3.7164.7
ISO 7379	Hexagon socket head shoulder screw	A2/50/70/80 A4/50/70/80 3.7164.7 1.4944.6
LN29522	Hexagon Bolts, close tolerance, for shear and tensile loads	1.6604.6

Pan head and countersunk bolts

Standard Parts	Description	Material
DIN EN 4178	Aerospace Pan head, six lobe recess, close tolerance normal shank, medium length thread, titanium, anodized, 700 Mpa	3.7164.7
LN 9139	Aerospace Round head screw, cross recessed non-magnetizable 700 Mpa	1.4541 A2-70/80
LN 9441	Aerospace Countersunk head screw, cross recessed, titanium alloy 1100 Mpa	3.7164.7
LN 9442	Aerospace Pan head screw, cross recessed, titanium alloy 1100 Mpa	3.7164.7
LN 29958	Aerospace Pan head screw with internal offset cruciform ribbed drive recess, titanium alloy threaded to head 1100 Mpa	3.7164.7
DIN EN 3759	Aerospace pan head screws, offset cruciform recess, threaded to head, heat and corrosion resisting steel, passivated 1100 Mpa	1.4944.6
DIN EN 3760	Aerospace 100° countersunk normal head offset cruciform recess, threaded to head, heat and corrosion resisting steel, passivated 1100 Mpa	1.4944.6
DIN 65324	Aerospace Pan head screw, close tolerance with internal offset cruciform ribbed drive recess, titanium alloy, short length MJ-thread, for temperatures up to 315°C 1100 Mpa	3.7164.7
DIN 65179	Aerospace Countersunk head screw, close tolerance, with internal offset cruciform ribbed drive recess, titanium alloy, short length thread, for temperatures up to 315°C 1100 Mpa	3.7164.7
DIN 65316	Aerospace Countersunk head screw, close tolerance, with internal offset cruciform ribbed drive recess, corrosion resisting steel, short length MJ-thread, for temperatures up to 425°C 1100 Mpa	1.4944.6
LN 9136	Aerospace Countersunk head screw, cross recessed, non-magnetizable 700 Mpa	1.4541 A20

DIN EN 3037	Aerospace Pan head, offset cruciform recess, close tolerance normal shank, short thread, titanium, anodized, MoS2 1100 Mpa	3.7164.7
DIN EN 3038	Aerospace Pan head, offset cruciform recess, close tolerance normal shank, short thread, corrosion resistant steel, passivated 1100 Mpa	1.4944.6
DIN EN 3304	Aerospace Countersunk reduced head, offset cruciform recess, close tolerance, short thread, titanium, anodized, MoS2 1100 Mpa	3.7164.7

Torq-set screws

Standard Parts	Description	Material
DIN 65284	Aerospace Countersunk head screw with torq-set recess and MJ thread, fully threaded, corrosion resisting steel, for temperatures up to 425°C 1100 Mpa	1.4944.6
DIN 65285	Aerospace; countersunk head screws, with torq-set (ACR) recess and MJ thread, short thread length, corrosion resistant steel, Nominal tensile strength 1100MPa, for temperature up to 425°C	1.4944.6
LN 29787	Aerospace Countersunk head screw with torq-set recess, fully threaded to head, titanium alloy- 1100 Mpa	3.7164.7
LN 29794	Screws, countersunk head TORQ-SET recess, Nearly threaded to the head	1.72205

Nuts

Standard Parts	Description	Material
DIN 65281	Nuts, hexagon, thin, with MJ thread, corrosion resisting steel, classification: 1100 MPa/300 °C/425 °C	1.4944
ISO 4032	Nuts, Hexagon	1.4944 A2/50/70/80 A4/50/70/80 3.7164.7 Aluminium Al7075

ISO 4035	Nuts, Hexagon	1.4944 A2/50/70/80 A4/50/70/80 3.7164.7 Aluminium Al7075
ISO 8673	Nuts, Hexagon, fine pitch thread	1.4944 A2/50/70/80 A4/50/70/80 3.7164.7 Aluminium Al7075

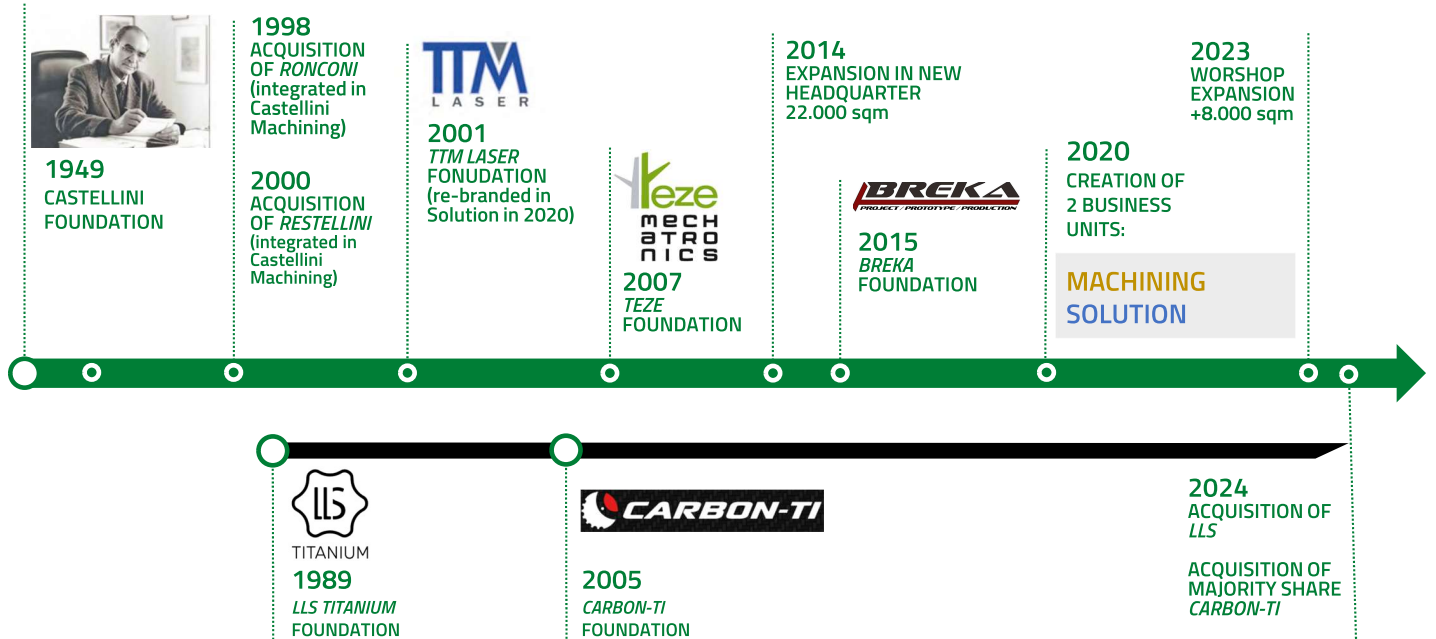
Washers

Standard Parts	Description	Material
LN 9025	Aerospace Washer	1.4944
LN 9016	Aerospace Washer, bevelled	1.4944
DIN 65209	Washers, countersunk	1.4944
ISO 7092	Plain Washers	1.4944 A2/50/70/80 A4/50/70/80 3.7164.7 Aluminium Al7075

Manufacturing technologies and acceptance requirements for fasteners

Acceptance requirements to technical specification	Manufacturing and testing requirements
DIN 65058/AIR 9173/NAS 4003 for corrosion resisting steel, strength class 900 MPa and 1100 MPa (1.4944.4 / 1.4944.6)	The head of the bolts is forged in such a way that the grain of the material remains unchanged and that the longitudinal continuity of the fibers remains unchanged even in the critical transition area between head and stem, thanks to the control of the molding temperatures
DIN ISO 9152/DIN 65251/AIR 9185/ISO 8168/NAS 4004 for titanium alloy, strength class 1100 MPa (3.7164.7)	The thread is cold rolled to obtain a significant increase in resistance thanks to cold plastic deformation, excellent roughness values on the thread sides and on the lower radius, no interruption of the direction of the fibers as occurs in cut threads and reduced sensitivity to notch
DIN 65251/AIR 9184/AIR 9185 NAS 4004 for titanium alloy, strength class 900 MPa and 1100 MPa (3.7164.1 / 3.7164.7)	Microstructure examinations of the head to shank and the thread grain flow, the fillet work effect, well as the grain structure and grain size of the finished part
ECSS-E-HB-32-23A / Space engineering Threaded fasteners handbook	Tensile Tests Double Shear Test - Tension Fatigue Tests
ECSS-Q-ST-70-46C Rev1 / Space product assurance, requirements for manufacturing and procurement of threaded fasteners	Hardness tests according to Vickers or Rockwell
	Magnetic or Dye Penetration testing to check surface discontinuities by aerospace qualified people

Part of Castellini Group since 2024



Condizioni generali di vendita

Le vendite sono effettuate in base alle nostre condizioni generali; altre condizioni d'acquisto del committente hanno valore solo se da noi confermate per iscritto.

I nostri prezzi possono subire variazioni dovute a modifiche delle condizioni di mercato e/o oscillazioni dei cambi valutari.

I nostri prezzi sono calcolati di volta in volta in base alle richieste del cliente e alle condizioni di mercato del momento.

Le nostre offerte hanno validità 5 giorni e si intendono franco magazzino LLS. I singoli prezzi valgono per l'intera offerta; in caso di ordini parziali, i prezzi subiranno un incremento minimo del 20%. Minimo d'ordine accettabile 200 euro + IVA. Costo dei certificati, se richiesti, min. 13 euro cad.

I termini di consegna offerti e accettati verranno da noi rispettati nel miglior modo possibile, salvo casi imprevedibili e a noi non imputabili.

Le condizioni di pagamento vengono comunicate direttamente sull'offerta.

Fermo restando la nostra garanzia di qualità su tutti i prodotti da noi forniti, eventuali difetti devono essere segnalati tempestivamente, e comunque entro 10 giorni dal ricevimento della merce, per iscritto.

Sono esclusi dalla garanzia tutti i difetti attribuibili a normale usura, scarsa manutenzione, trattamento non idoneo. La nostra garanzia consiste, a nostra discrezione, nella sostituzione dei pezzi risultati non conformi a un nostro successivo controllo.

Eventuali annullamenti di ordini presuppongono il nostro accordo scritto e l'accettazione delle spese già da noi sostenute.

Ci riteniamo autorizzati al recesso da obbligo di consegna se la situazione finanziaria del committente è nel frattempo peggiorata.

General sales conditions

Sales are carried out according to our general terms and conditions; any other purchasing terms proposed by the customer are valid only if confirmed by us in writing.

Our prices may vary due to changes in market conditions and/or fluctuations in exchange rates.

Prices are calculated each time based on the customer's requests and the market conditions at that moment.

Our offers are valid for 5 days and are intended as ex-works LLS. Individual prices apply only if the offer is accepted in full; in the case of partial orders, prices will increase by a minimum of 20%. Minimum acceptable order: 200 euros + VAT. Cost of certificates, if required: minimum 13 euros each.

The delivery terms offered and accepted will be met to the best of our ability, except in cases of unforeseeable circumstances beyond our control.

Payment terms are communicated directly in the offer.

Without prejudice to our quality guarantee on all supplied products, any defects must be reported promptly—in any case within 10 days of receipt of the goods—and in writing.

Defects attributable to normal wear, poor maintenance, or improper handling are excluded from the warranty. Our warranty consists, at our discretion, in replacing parts found to be non-conforming following our inspection.

Any order cancellations require our written agreement and acceptance of the costs already incurred.

We reserve the right to withdraw from delivery obligations if the customer's financial situation has deteriorated in the meantime.

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Organizzazione con Sistema di Gestione per
la Qualità certificato UNI EN ISO 9001:2015