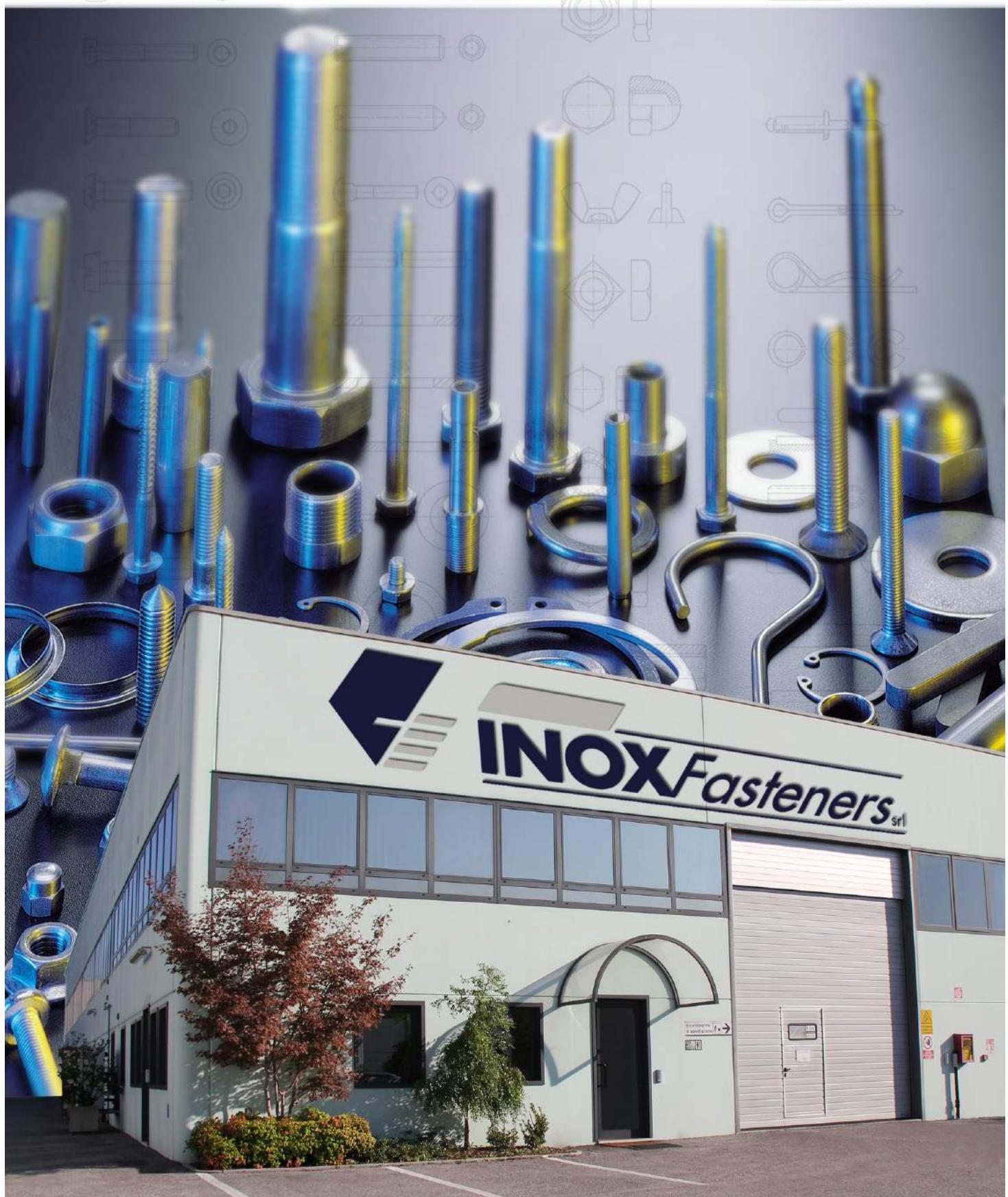




INOX*Fasteners*_{srl}



CHI SIAMO

Fondata nel 1985 da esperti conoscitori del settore e prima realtà nel Triveneto, vanta oggi un patrimonio di esperienza nel campo della viteria INOX unificata da potersi considerare azienda "SPECIALISTICA".

Sorta per dare un servizio di qualità e tempestività su un prodotto tecnico, può oggi offrire una vasta gamma di articoli in grado di soddisfare dal pronto le più svariate esigenze.

L'alto livello raggiunto ha permesso alla INOXFASTENERS, già dal 1996, di conseguire la certificazione UNI-ISO 9001:2000 che ci permette oggi, di misurarci con le nuove sfide del 3° millennio.

UN PARTNER SU MISURA

Dall'industria meccanica alla chimica, dall'alimentare all'enologia, dall'agricoltura all'edilizia, dall'urbanistica alla nautica ed in ogni altro settore dove bisogna combattere la corrosione o ridurre le manutenzioni INOXFASTENERS è la risposta inossidabile ad ogni Vostro problema.

A CUSTOMIZED PARTNER

INOXFASTENERS is the perfect reply to any of your needs, from the mechanical to the chemical, from the food to the wine industry, from agriculture to building, from urbanology to nautical science, and any other sector where corrosion has to be fought and maintenance has to be simplified or reduced.

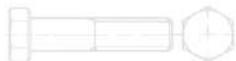


ABOUT US

Established in 1985 by category experts, and first reality in the Nord-East Italy, the company has accumulated a wealth of experience in the sector of standard stainless steel bolts and screws so that it can now be considered as a "SPECIALISED company".

The initial idea was to give a high-quality, timely service for a highly technical product, at present INOXFASTENERS offers a wide range of items that can immediately satisfy the most varied requests. INOXFASTENERS obtained UNI-ISO 9001:2000 certification in 1996, so it can hold its head high when facing the new challenges of the 3rd millennium.





SOLUZIONI INOSSIDABILI

Una vasta gamma di articoli, sia in AISI 304 che AISI 316, disponibili dal pronto e gestiti in tempo reale da un moderno sistema computerizzato che ne ottimizza le scorte ed i movimenti, ci permette di garantire ai nostri clienti il massimo del servizio e della competitività.



STAINLESS SOLUTIONS

We guarantee our customers the best possible service and competitiveness thanks to our wide range of AISI 304 and AISI 316 items always ready and available. We use a modern computerized system that handles our products in real time, and which optimizes product stock and movement.



*"La lotta alla corrosione la nostra missione
La Vostra soddisfazione il nostro obiettivo"*

Inoxfasteners





SOLUZIONI INOSSIDABILI SU MISURA

Un apposito e competente staff tecnico analizza, consiglia e propone a seconda della necessità del cliente, se è più opportuno orientarsi verso un articolo da stock o se l'esigenza richiede uno studio e una realizzazione appropriata. Per queste necessità specifiche siamo in grado di produrre su richiesta articoli di stampaggio o di torneria con materiali INOX 303-304-316-430, AVP, OT, AL e altro, attraverso la nostra consociata DIEMME MECCANICA che si avvale di un moderno parco macchine a controllo numerico. Possiamo fornire campionature prima di passare all'esecuzione effettiva del particolare, o intervenire con immediatezza quando l'urgenza diventa un fattore determinante oltre che qualitativo.



CUSTOMIZED STAINLESS SOLUTIONS

Our competent technical staff is placed at the customer's disposal to analyse, recommend and propose according to needs. We will tell you if you need a stock item, or if it would be more appropriate to study and create a new product. If requested by the client, we can produce moulding or turning items using INOX 303-304-316-430, AVP, BRASS, ALLUMINIUM and other materials. We can supply pre-production samples because we are in joint partnership with DIEMME MECCANICA, a company with a modern numeric control machine park. Thanks to this partnership we can also act immediately when urgency becomes a qualitatively determining factor.





GENERAL SALES CONDITIONS

. Condizioni generali di vendita



GENERAL SALES CONDITIONS

1. Foreword

These conditions ("Conditions") form an integral part of each and every offer or agreement for the sale of goods by INOX FASTENERS S.r.l. Any clause suggested by the Buyer in his or her order or anywhere else, will have effect only if it is expressly accepted in writing by INOX FASTENERS S.r.l. INOX FASTENERS S.r.l. will confirm the Buyer's order by means of an order confirmation and the contract will only come into force following the issuing of the afore-mentioned order confirmation ("Confirmation").

2. Definitions

For the purposes of these sales conditions, the terms referred to below are used with the meaning as specified, unless otherwise stated as each circumstance arises:

- By INOX FASTENERS reference is made to the company INOX FASTENERS S.r.l. (V.A.T. n.) the head office of which is located in Cazzago di Pianiga (Venezia) Via trentino Alto Adige, 9;
- Customer: reference is made to whoever sends the order and intends to finalise a sales contract;
- Order/s: reference is made to the purchase proposal/s sent by the customer;
- Product: reference is made to any of the goods marketed by INOX FASTENERS, the relevant instructions for use and the data;
- Price: reference is made to the price per piece or multiples of 100 (one hundred) and it is always given net of V.A.T. (which may be subject to variations).

3. Offers

An offer issued by INOX FASTENERS is valid for a period of 7 (seven) days from the date of issue, unless otherwise established specifically in the order itself. INOX FASTENERS may always cancel one of its offers prior to receipt of the acceptance from the Buyer. Documents concerning the offer, such as illustrations, drawings, weight and size specifications are only to be considered as a guideline, unless they have been expressly designated as binding.

4. Order

4.1. INOX FASTENERS only accepts Orders undersigned by the Customer's company;

4.2. In the Order the Customer must necessarily specify:

- a. The Customer's exact name, giving the full address (the registered office in the case of a company, or the owner's address in the case of a one-man business,
stating a telephone number, fax number and an e-mail address);
- b. Indication of the address to which the goods must be dispatched, only if it is different to the address given under paragraph a);
- c. Reference to the terms of payment agreed;
- d. Bank details including the C.A.B. (Bank sort code), A.B.I. (Italian Banker's Association), IBAN and C.I.N. (account control) numbers.

4.2. If the order should be received verbally, INOX FASTENERS will undertake to send an order confirmation for said Order.

5. Conclusion of the contract

5.1. The contract is considered to be concluded only following express acceptance of the Order in writing by INOX FASTENERS.

5.2. The Order may not under any circumstance be considered binding on INOX FASTENERS until such time as INOX FASTENERS has expressly accepted it. In fact, having received the Order, INOX FASTENERS reserves the right to check whether the Product ordered is available or not.

5.3. INOX FASTENERS will put the Order into effect in the shortest possible time permitted by the production situation. The Order lead times stated by INOX FASTENERS are given purely as a guideline. In any case, INOX FASTENERS cannot be held responsible in any way for delays or deferments in fulfilling the Order.

5.4. The terms of delivery are only specified in time, beginning at the end of the day on which an agreement is reached on all the details of the contract, but not before INOX FASTENERS has accepted the relevant order and not before the customer has provided all the necessary documents and approvals. The terms of delivery are considered valid if the object has been dispatched prior to the customer's expiry date or, in the event that the item cannot be dispatched or does not have to be dispatched, if INOX FASTENERS has sent notification of its availability for shipment prior to the expiry date for the buyer.

6. Specifications

The goods will comply with the specifications agreed. If specifications have not been agreed, the goods will comply with INOX FASTENERS's general specifications in force at the time of delivery. Any declarations stated in the information on the products, manuals, websites, price lists or in other informative documents concerning the goods, will be binding on INOX FASTENERS only if specific reference is made to such statements in an offer or a Confirmation.

7. Delivery

7.1. INOX FASTENERS reserves the right to make partial deliveries, on condition that such partial deliveries do not exceed a reasonable quantity. The customer does not have the right to demand partial deliveries, unless expressly agreed otherwise.

7.2. In the event that a delivery date has not been agreed, delivery will take place according to the planning of INOX FASTENERS's production capacity. If the delivery should be delayed by more than eight weeks, the sole remedy at the customer's disposal will be the right to cancel the contract by means of written notification to INOX FASTENERS, in this way cancelling the purchase of the goods that have been subject to a delay. The right to cancel the contract must be limited to the part of the contract that has not yet been fulfilled, unless the buyer is no longer interested in the part of the contract that still has to be concluded.

7.3. The quantity of goods to be supplied is agreed by piece and this quantity may be varied by INOX FASTENERS by up to 10% (+/-) of the total quantity of the order to be delivered for each type of product/type of steel and the price will be modified accordingly. Unless proven to the contrary, the quantity forged or otherwise stated on the goods supplied will be binding. INOX FASTENERS is not responsible for damage whether direct or indirect or for any other consequences deriving from delayed deliveries, unless as a result of a gross fault on the part of INOX FASTENERS itself.

7.4. INOX FASTENERS will be considered to have rendered its services as soon as the goods are available for dispatch and the buyer has been informed of their availability for dispatch; however, the firm's services will also be considered rendered as soon as the goods leave INOX FASTENERS's premises as provided for in the contract. If the dispatch is delayed for reasons due to the buyer's fault, the delivery period will be considered valid from the moment of the notification of the availability of the goods for dispatch. The terms and dates agreed or in any case applicable, are postponed and / or suspended for the whole period in which the buyer fails to fulfil his or her obligations deriving from an on-going business relationship and contractual obligations as provided for by other contracts.

7.5. Delays in delivery due to causes of force majeure, wars, revolts, strikes, lock-outs, machine breakdowns, shortages of material or other events that are beyond INOX FASTENERS's control, relieve INOX FASTENERS from its obligation to deliver for the whole duration of the impediment and authorise INOX FASTENERS to cancel the contract of its own choice, while the buyer will not have the right to cancel the contract in such circumstances; no claim may be made by the customer due to delays in deliveries for any reason.

7.6. The customer is required to check and sign the delivery note. Any objections must be notified to INOX FASTENERS in writing within 7 days from receipt of the product, otherwise the delivered quantity as stated on the delivery note will be considered to have been accepted.

7.7. INOX FASTENERS reserves the right to draw up sales contracts with deliveries in instalments. In this case orders on demand will be accepted only for a certain period. If the relative period of acceptance is not specified exactly, it will expire twelve months after the conclusion of the contract. In this case the goods are understood to be accepted in more or less equal monthly quantities or at a written request for the quantities according to the customer's indications. In any case, at the end of the contract INOX FASTENERS will deliver the goods remaining in the warehouse that have not yet been requested.

If the acceptance is not forthcoming within the agreed period, INOX FASTENERS has the right to dispatch the complete delivery without any further notice or store the goods in its warehouse at the Buyer's expense. Furthermore, INOX FASTENERS has the right to establish a deadline for the acceptance of the goods. If the trial period expires to no effect, in that case INOX FASTENERS has the right to cancel the sales contract concluding its obligation to deliver, and to ask for compensation for damages to cover the services not rendered in the part of the contract not yet fulfilled.

8. Delivery of the product in Italy *(Risks and expenses)*

8.1.The product is delivered to the Customer ex works at the premises of INOX FASTENERS in Cazzago di Pianiga (Venezia) Via trentino Alto Adige, 9.

8.2.If requested to do so by the Customer, INOX FASTENERS may stipulate the transport contract at the Customer's risk and expense. However, INOX FASTENERS cannot be held responsible in any way or on any account for damage that may occur during the transport itself. In this case the Product will be delivered free carrier to the place agreed with the Customer and the Product will travel, in any case, at the Customer's risk and expense.

8.3.In every case, when the Product is delivered to the carrier for transportation, INOX FASTENERS is discharged from every risk and liability. In fact, the Product always travels at the Customer's risk and peril. The cost of transport, as well as any other incidental expenses or additional charges, including those for the packaging, loading and unloading or any tax or duty charged are for the Customer's expense and the amount will be charged in the invoice.

8.4.In every case, the Customer is obliged to check that the indications given in the consignment note comply fully with the actual number of packages and to check the apparent state of the goods and their packaging at the time of delivery by the carrier, talINOX FASTENERS care, therefore, in the case of any differences to add the relevant reserves to the consignment note.

9. Delivery of the product outside Italy *(Risks and expenses)*

Delivery of the Product outside Italy is governed by Incoterms.

All sales agreed by INOX FASTENERS are understood to be for goods delivered ex works Cazzago di Pianiga (Venezia) Via trentino Alto Adige, 9 at the premises of the afore-mentioned company.

Application of the clauses in sub paragraphs 8.2, 8.3, 8.4 and 8.5 also hold good for Products delivered outside Italy.

10. Characteristics of the goods

10.1.The characteristics and quality are considered to be guaranteed if they have been expressly agreed in the contract. Verbal statements and statements made in KING's documents, including but not only samples, measurements, DIN/ISO-regulations, performance specifications and other information concerning the condition of the subject of the supply are only for the purpose of providing specifications and must not be considered as characteristics of a guarantee or a surety. If and to the extent that the materials used by KING have been specified in the contract, this will only guarantee conformity to such requirements and not the suitability of the materials for the purposes of the contract.

10.2.INOX FASTENERS reserves the right to deliver the goods with a tolerance of 10%, more or less on the quantity ordered and on the measurements and weights stated in the instructions and in the specifications, given that the use of the goods is not affected and they are not considered unacceptable by the buyer.

10.3.For the packaging, our company will make provisions according to its experience and customary practices, although it remains explicitly exonerated from any liability for losses or damage. The buyer must request the use of particular packaging, or the exclusion of packaging for goods that are normally packaged at the time of the order. Particular types of packaging will be charged in the invoice.

11. Faulty goods and missing quantities

11.1.Requests for guarantees and claims for damages are subject to the provisions of art. 1470 and subsequent articles of the Civil Code. The goods delivered must be flawless. The goods will be considered faulty only if they do not comply with the specifications as referred to above in article 10. INOX FASTENERS is not responsible for the functionality, the quality or the properties of the goods, except for the matters specified above. Any reference to laws or other regulations concerning quality or suitability of the goods for specific uses is expressly excluded.

11.2.If the goods should be found to be faulty or quantities missing, the Buyer is required to notify INOX FASTENERS in writing within one week from the arrival of the goods at the agreed destination. The Buyer must provide INOX FASTENERS with an appropriate quantity of the goods that he or she considers to be faulty in order to allow the necessary tests and inspections to be carried out and must also provide claims for damages from third parties promptly.

11.3.In the case of faults that could not be reasonably discovered at the arrival of the goods at the agreed destination, the Buyer is required to give notice of the faults in writing within two weeks from the date on which he or she discovered the fault. However, any notification given after more than a year from the moment in which the risk regarding the goods has passed to the Buyer is without any legal effect. In the event of delayed communication, INOX FASTENERS will not be obliged to remedy the situation in any way or acknowledge any reduction in price. If the goods should be faulty or quantities are missing and on condition that the Buyer has notified INOX FASTENERS of this within the due time and in compliance with the indications above, INOX FASTENERS will be required at its own expense, and bearing in mind the interval reasonably required for the production of the new goods (if necessary), to correct the fault or, as it prefers, deliver a new lot of flawless goods or, in the case of missing quantities, to deliver the missing quantity of goods to the agreed destination. The faulty goods must be returned to INOX FASTENERS at the same time as the delivery of any replacement product. Instead of tainOX FASTENERS steps to correct the fault or deliver the missing quantity, INOX FASTENERS may always, if it prefers, grant the Buyer a reduction in the value of the goods in correspondence with the fault or the missing quantity. In the event of faults or missing quantities of goods, the Buyer does not have the right, unless in the case of a serious fault on the part of INOX FASTENERS, to call upon other remedies besides the remedies and claims for damages expressly established in these Terms or in the Contract.

11.4.INOX FASTENERS will not be liable for any damage due to external causes, such as an unsuitable positioning of the goods or tampering with the same, inappropriate use or maintenance, corrosion or normal wear and tear.

11.5.Claims for damage due to shortcomings in the contract or quality are excluded provided they are not the result of fraudulent intention or a serious fault on our part or on the part of our agents or a negligent violation of the contractual obligations. Such contractual obligations protect the legal position of the customer and must be provided for by the content and scope of the contract. Moreover, actual contractual obligations are also those which are fulfilled only by the proper fulfilment of the contract itself and are those on which, as a general rule, the contractual partner bases himself and can rely on.

11.6.Exclusion from liability for a slight fault does not apply in the case of damage resulting from the risk of death or injury or from a violation of the contractual obligations or guarantees or claims based on legislation regarding the liability of the product. However, if a contractual obligation should be violated as a result of negligence, we can only be held responsible for average, foreseeable damage that is both typical and immediate, given the type of contract drawn up.

11.7.The above-mentioned limitation of liability does not apply to any lack in the guaranteed quality, characteristics or attributes, unless and only so far as the purpose of the guarantee is to prevent possible damage to the Buyer that may arise in the goods or services themselves. If and so far as the responsibility of INOX FASTENERS is excluded or limited, this limitation also applies to the civil liability of the company's employees, workers, agents and assistants. The limitation of the above-mentioned liability applies in any case even to indirect damage.

11.8.If the faults found on the products cannot be ascribed to INOX FASTENERS's responsibility, the costs for the repair and replacement of the products will be calculated and invoiced to the Buyer. If this is not the case, INOX FASTENERS will incur all the necessary costs for removing the fault, including, but not only the costs of transport, materials, etc., on condition that such expenses are not increased because the goods have been moved to a different place to that of delivery.

11.9.Whenever the goods are prepared by INOX FASTENERS according to specific demands/requests or to specific drawings provided by the customer (and, therefore, the goods are not subject to DIN regulations), the goods are understood to be sold "as they are". Consequently, in this case every right to remedies or claims for damage in the event of faults is expressly waived except for the specifications expressly agreed.

12. Proprietary rights

12.1.INOX FASTENERS remains the proprietor of the delivered goods until such time as the Buyer has paid in full for the goods in question..

12.2.Furthermore,INOX FASTENERS remains the proprietor of the delivered goods until such time as the Buyer has paid all outstanding amounts due to INOX FASTENERS.

12.3.Until the ownership of the goods is transferred, INOX FASTENERS has the right to take repossession of the goods of which it is the proprietor and which are in the Buyer's possession or control; therefore, INOX FASTENERS is hereby conferred with the right to gain access to any land or buildings in which the goods in question have been stored, in order to repossess them and to reclaim them.

12.4.If the Buyer should transform the unpaid goods into a new item or the goods are combined with others in order to create a new object, INOX FASTENERS will be acknowledged to have proprietary rights over the new object, in proportion to the value of the unpaid goods incorporated in the new object until such time as INOX FASTENERS has received full payment for the goods originally sold.

12.5.If the Buyer should sell the unpaid goods or the new items, the Buyer as from this moment relinquishes a part of the credit that he or she will claim from the third buyer, equal to the sum due for the unpaid goods/new objects sold, to INOX FASTENERS.

12.6.All the previous paragraphs (from 1 to 5) will have effect as separate clauses and, therefore, if one of said clauses should for any reason be ineffective, the remaining paragraphs will continue to be fully effective and applicable.

13. Prices – Payments

13.1.The prices of the products refer to the prices in force at the time of the acceptance of the sales offer by the Buyer or to the issuing of the order confirmation by INOX FASTENERS.

13.2.The prices of the products are understood at all times to be free carrier (FCA Incoterms 2010), unless otherwise agreed in writing between the parties.

13.3.The payments must be made in compliance with the relevant indications given in the sales offer or in the order confirmation. The payments and any other sum due for whatever reason to INOX FASTENERS must be made to the registered office of the same. Any payments made to INOX FASTENERS's agents, sales representatives or assistants will be not be considered and, therefore, do not free the buyer from his obligation until the relevant sums are received by the company.

13.4.Unless otherwise agreed, the payments will be made in euros.

13.5.Prices expressed in currencies other than euros may be subject to variation according to fluctuations in the relevant rate of exchange.

13.6.Any delay or irregularity in the payments gives INOX FASTENERS the right to:

- a. suspend outstanding supplies, even if they do not concern the payment in question;
- b. vary the payment and discount methods for subsequent supplies, even requesting advance payment or the issuing of further guarantees;
- c. request, starting from the expiry date foreseen for the payment and without the need for a formal demand notice, the interest on arrears on the amount still outstanding, at the rate provided for by the legal regulations currently in force for commercial transactions (in particular Decree Law 231/2002 and subsequent additions), subject in any case to INOX FASTENERS's faculty to claim damages for the greater amount of damage suffered

13.7.Furthermore, in the above-mentioned cases, any sum due to INOX FASTENERS for any reason will fall due immediately. The Buyer will be required to pay for the products in full even if exceptions, complaints or controversies should arise and are settled only after the payment of the amount due.

13.8.The buyer will refrain from asINOX FASTENERS to compensate any amounts due using credits it may be able to claim from INOX FASTENERS, however they may have originated.

14. Law of contract

The Contract is governed by Italian law.

15. Controversies

Any controversies, divergences or claims deriving from the Contract, including those regarding its execution, cancellation or invalidity will be resolved definitively according to the Italian jurisdiction in the Court where the sales company has its legal headquarters.

16. General limited liability

With the exception of the matters expressly established in these Terms or otherwise specifically agreed, under no circumstance, including the cases of product liability, will INOX FASTENERS be liable for any loss or incidental, direct, indirect or consequent damage or for missed profits, including, but not only loss of income, loss of production, productions to be scraped or complaints and claims on the part of the Buyer's customers. However, such limited liability does not apply in the case of fraudulent intention or a serious fault. In any case, INOX FASTENERS will never be liable for complaints or claims that are notified to the same after a year has lapsed from the date on which the risk regarding the goods is passed to the Buyer.

17. Protection of personal data and confidentiality

In performing the obligations undertaken with this contract, KING in compliance with the regulations regarding the protection of personal data as stated in Decree law 196/2003, undertakes to keep the information received in strictest confidence, including any personal data to be protected in compliance with the afore-mentioned law, concerning the Customer's business for which INOX FASTENERS undertakes to ensure that its employees or the personnel in charge keep such information in strictest confidence, especially the information containing personal data to be protected.

The Customer declares that he or she has read and is fully aware of the contents of the informative letter issued by INOX FASTENERS in compliance with Decree Law n. 196/03 regarding the treatment of his or her personal data.

The Customer undertakes to provide his or her personal data in a true and correct way and to notify any changes to the same in good time, assuming full responsibility for the notification of any inexact or incorrect data. Consequently, the Customer undertakes to indemnify and hold INOX FASTENERS harmless from any detrimental consequence connected with or deriving from the notification of incorrect or untrue data.

18. Final clauses

Any tolerance shown by INOX FASTENERS, even if repeated or prolonged, of any violations or non-observances on the part of the Customer towards clauses of this contract, will not set a precedent or diminish the validity or effectiveness of the contract.

If one or more of the clauses of this agreement is found to be null and void, annulable or ineffective, the remaining clauses of this agreement will be unaffected.

CONDIZIONI GENERALI DI VENDITA

1. Premessa

Le presenti condizioni ("Condizioni") formano parte integrante di ogni e qualsiasi offerta o accordo per la vendita di beni da parte di INOX FASTENERS S.r.l.. Qualsiasi clausola proposta dal Compratore nel suo ordine o altrove avrà effetto solamente se espressamente accettata da INOX FASTENERS S.r.l. per iscritto. INOX FASTENERS S.r.l. confermerà l'ordine del Compratore con una conferma d'ordine ed il contratto verrà in essere solamente a seguito della emissione della suddetta conferma d'ordine ("Conferma").

2. Definizioni

Ai sensi delle presenti condizioni di vendita i termini di seguito indicati sono impiegati con il significato che qui si precisa salvo diverse indicazioni caso per caso:

- INOX FASTENERS si intende la società INOX FASTENERS S.r.l. (p.Iva) con sede in Cazzago di Pianiga (Venezia) Via trentino Alto Adige, 9.
- Cliente: si intende colui che spedisce l'ordine e intende concludere il contratto di vendita;
- Ordine/i: si intende la/le proposta/e di acquisto inviata/e dal cliente;
- Prodotto: si intende qualsiasi merce commercializzata da INOX FASTENERS, la relativa documentazione d'uso ed i dati;
- Prezzo: si intende al pezzo o a multipli di 100 (cento) ed è sempre al netto di Iva (che potrà subire variazioni),

3. Offerte

Una offerta emessa da INOX FASTENERS è valida per un periodo di 7 (sette) giorni dalla data di emissione, a meno che l'offerta stessa non stabilisca espressamente altrimenti. INOX FASTENERS può sempre revocare una sua offerta antecedentemente alla ricezione dell'accettazione da parte del Compratore. Documenti relativi all'offerta, come illustrazioni, i disegni, le specifiche di peso e le dimensioni sono considerati solo come un valore approssimativo, a meno che non siano state espressamente designate come vincolanti.

4. Ordine

4.1. INOX FASTENERS accetta, esclusivamente, Ordini sottoscritti dalla società Cliente;

4.2. Nell'Ordine il Cliente dovrà obbligatoriamente indicare:

- a. l'esatta denominazione del Cliente, con indicazione dell'indirizzo completo (sede legale se si tratta di società, od indirizzo del titolare in caso di impresa individuale,
con indicazione di un numero di telefono, di fax e di un indirizzo di posta elettronica);
- b. l'indicazione della destinazione della merce solo se diversa dall'indirizzo indicato sub. a);
- c. indicazione delle condizioni di pagamento accordate;
- d. indicazione delle coordinate bancarie d'appoggio, compresi C.A.B., A.B.I., IBAN e C.I.N.

4.2. Qualora l'ordine dovesse pervenire in forma orale, INOX FASTENERS provvederà ad inviare conferma d'ordine.

5. Conclusione del contratto

5.1. Il contratto si considera concluso solo a seguito dell'espressa accettazione, per iscritto, dell'Ordine da parte di INOX FASTENERS.

5.2. L'Ordine non può ritenersi, in alcun modo, vincolante per INOX FASTENERS sino a che quest'ultima non l'avrà espressamente accettato. INOX FASTENERS infatti, ricevuto l'Ordine si riserva la facoltà di verificare la disponibilità o meno del Prodotto ordinato.

5.3. INOX FASTENERS darà esecuzione all'Ordine nel minor tempo possibile consentito dalle condizioni di produzione. I termini di evasione dell'Ordine indicati da INOX FASTENERS sono puramente indicativi. In ogni caso, nessuna responsabilità potrà essere addebitata a INOX FASTENERS in caso di ritardo o differimento nell'evasione dell'Ordine.

5.4. Un periodo di consegna viene definito solo per la sua lunghezza, inizia alla fine del giorno in cui è stato raggiunto un accordo su tutti i dettagli contrattuali, ma non prima che INOX FASTENERS abbia accettato il rispettivo ordine e non prima che il cliente abbia fornito tutti i documenti e le approvazioni necessarie. In termine di consegna si considera valido se l'oggetto è stato spedito prima della scadenza del termine per il cliente o, nel caso in cui l'articolo non può essere spedito o non deve essere spedito e INOX FASTENERS ha inviato la sua comunicazione della disponibilità per la spedizione prima della scadenza del termine per l'acquirente.

6. Specifiche

La merce sarà conforme alle specifiche pattuite. Se non sono state pattuite specifiche, allora la merce sarà conforme alle specifiche generali di INOX FASTENERS in vigore al momento della consegna. Eventuali dichiarazioni contenute in informative sui prodotti, manuali, siti internet, listini prezzi o in altre informative comunque concernenti la merce, saranno vincolanti per INOX FASTENERS solamente nel caso in cui esse vengano espressamente richiamate in una offerta o in una Conferma.

7. Consegnna

7.1. INOX FASTENERS si riserva il diritto di effettuare consegne parziali, a condizione che tali consegne parziali non siano oltre una ragionevole quantità. Il cliente non ha il diritto di esigere consegne parziali, se non diversamente espressamente concordato.

7.2. Nel caso in cui non sia stata pattuita una data di consegna, la consegna avrà luogo secondo la pianificazione della capacità produttiva di INOX FASTENERS. Qualora la consegna dovesse essere ritardata per più di otto settimane, il cliente avrà, come unico rimedio a sua disposizione, il diritto di recedere dal contratto mediante una comunicazione scritta ad INOX FASTENERS cancellando così l'acquisto delle merci soggette al ritardo. Il diritto di recedere dal contratto deve essere limitato alla parte del contratto non ancora eseguita, a meno che l'acquirente non sia più interessato alla parte del contratto ancora da concludere.

7.3. La quantità della merce da fornire è pattuita in base al pezzo, tale quantità può essere variata da INOX FASTENERS nei limiti del 10% (+/-) della quantità totale dell'ordine in consegna per ciascun tipo di prodotto/tipo di acciaio ed il prezzo verrà modificato di conseguenza. Salvo prova contraria, farà stato la quantità stampata o altrimenti indicata sulle merci fornite. INOX FASTENERS non è responsabile dei danni diretti o indiretti né di altre conseguenze di sorta connesse alla ritardata consegna, salvo in caso di colpa grave di INOX FASTENERS.

7.4. La prestazione di INOX FASTENERS si considera eseguita non appena le merci sono disponibili per la spedizione e l'acquirente è stato informato della disponibilità di spedizione; ma sarà considerata anche come eseguita non appena le merci lasciano la sede di INOX FASTENERS come previsto dal contratto. Se la spedizione viene ritardata per motivi legati a responsabilità dell'acquirente, il periodo di consegna si considera essere valido dal momento della comunicazione della disponibilità per la spedizione. Periodi e date concordate o comunque applicabili sono prorogati e / o messe in attesa per tutto il tempo in cui l'acquirente non adempie ai suoi obblighi - nell'ambito di un rapporto di affari correnti e anche di obblighi contrattuali previsti da altri contratti.

7.5. Ritardi di consegna dovuti a cause di forza maggiore, guerra, insurrezione, sciopero, serrata, guasto alla macchina, carenza di materiale o di altri eventi al di là della sfera di influenza di INOX FASTENERS solleva INOX FASTENERS dall'obbligo di consegnare per tutta la durata dell'impedimento e autorizzano INOX FASTENERS di recedere dal contratto per sua scelta, mentre l'acquirente non avrà diritto di recedere dal contratto in tali casi; deve essere escluso qualsiasi reclamo da parte del cliente a causa di ritardi nelle consegne, per qualsiasi motivo.

7.6. Il cliente è tenuto a controllare e riportare la bolla di consegna. Eventuali obiezioni possono essere sollevate alINOX FASTENERS in forma scritta, entro 7 giorni dal ricevimento del prodotto. In caso contrario si ritiene di aver accettato la quantità consegnata come da nota di consegna.

7.7. INOX FASTENERS si riserva la possibilità di stipulare contratti di vendita a consegna ripartita. In tale ipotesi gli ordini a richiesta saranno accettati solo per un determinato periodo di adesione. Se il rispettivo periodo di adesione non è specificato esattamente, esso scade dodici mesi dopo la conclusione del contratto. In questo caso le merci si intendono accettate in quantitativi mensili approssimativamente uguali ovvero a richiesta scritta del quantitativo secondo indicazioni del cliente. In ogni caso INOX FASTENERS consegnerà al termine del contratto la merce rimasta in magazzino e non ancora richiesta. Se l'accettazione non viene effettuata entro il periodo concordato, INOX FASTENERS ha il diritto di consegnare la spedizione completa senza ulteriori avvisi o immagazzinarla a spese dell'Acquirente. Inoltre INOX FASTENERS ha il diritto di fissare un termine ultimo per l'accettazione della merce. Se il periodo di prova scade inefficacemente in quel caso, INOX FASTENERS ha il diritto di recedere dal contratto di vendita concludendo il suo obbligo di consegnare e di richiedere il risarcimento dei danni in luogo della prestazione in relazione alla parte del contratto non ancora eseguita.

8. Consegnare il prodotto in Italia

(Rischio e spese)

8.1. Il Prodotto è consegnato al Cliente franco fabbrica presso la sede di INOX FASTENERS S.r.l. (V.A.T. n.) Cazzago di Pianiga (Venezia) Via trentino Alto Adige, 9.

8.2. Se richiesto dal Cliente, INOX FASTENERS può stipulare il contratto di trasporto a rischio e spese del Cliente. Nessuna responsabilità potrà essere comunque imputata a INOX FASTENERS, per nessun titolo o ragione, in relazione ai fatti dannosi che possano verificarsi nel corso del trasporto medesimo. In tal caso, il Prodotto sarà consegnato franco vettore presso il luogo convenuto con il Cliente ed il Prodotto viaggerà, comunque, a rischio e spese del Cliente.

8.3. In tutti i casi, con la rimessa del Prodotto al vettore per il trasporto, INOX FASTENERS è liberata da ogni rischio e da ogni responsabilità. Il Prodotto viaggia, infatti, sempre a rischio e pericolo del Cliente. Le spese del trasporto, così come ogni eventuale spesa accessoria o addizionale, incluse quelle di imballo, di carico e di scarico, tassa o imposta eventualmente richiesta sono a carico del Cliente, con addebito dell'importo in fattura.

8.4. In tutti i casi, il Cliente ha l'obbligo di verificare la piena rispondenza delle indicazioni risultanti dalla lettera di vettura con il numero effettivo dei colli e lo stato apparente delle merci o del loro imballaggio al momento della consegna da parte del vettore, avendo quindi cura di inserire - in caso di difformità - le relative riserve sulla lettera di vettura.

9. Consegnare il prodotto fuori dall'Italia

(Rischio e spese)

La consegna del Prodotto fuori dall'Italia è disciplinata dagli Incoterms.

Tutte le vendite concluse da INOX FASTENERS si intendono per merce resa franco fabbrica Cazzago di Pianiga (Venezia) Via trentino Alto Adige, 9, presso la sede di quest'ultima società. Resta ferma l'applicazione anche nel caso di consegna del Prodotto fuori dall'Italia delle clausole sub art. 8.2, 8.3, 8.4, 8.5.

10. Caratteristiche delle merci

10.1. Caratteristiche e qualità sono considerate come garanzie se sono stati espressamente concordate nel contratto. Dichiarazioni verbali e dichiarazioni nei documenti KING, tra cui, ma non limitatamente a, i campioni, le misurazioni, DIN-/ISO-regulations, le specifiche di prestazione e le altre informazioni riguardanti la condizione dell'oggetto della fornitura devono servire solo come specifiche e non devono essere considerati come caratteristiche di garanzia o fideiussioni. Se e nella misura in cui i materiali utilizzati da INOX FASTENERS sono stati specificati nel contratto, questo garantirà solo la conformità con tali requisiti e non l'idoneità dei materiali per scopi contrattuali.

10.2. INOX FASTENERS si riserva il diritto di fornire le merci con una tolleranza del 10%, in più o in meno sulla quantità ordinata, così come sulle misure e i pesi forniti dalle istruzioni e dalle specifiche, dato atto che le merci consegnate non sono inficiate nel loro utilizzo e non sono considerate non accettabili dall'acquirente.

10.3. All'imballaggio la nostra Società provvederà secondo esperienza ed usi restando peraltro esplicitamente esonerata da ogni responsabilità per perdite e avarie. L'impiego di imballaggi particolari, ovvero l'esclusione dell'imballaggio nel caso di merce per la quale esso è normalmente usato dovranno essere richiesti dal compratore, all'atto della ordinazione. Particolari tipi di imballaggio verranno conteggiati in fattura.

11. Merci difettose e carenze quantitative

11.1. Le richieste di garanzia e risarcimento sono soggette a quanto previsto agli art. 1470 e ss Codice civile. Le merci consegnate devono essere prive di vizi (difetti). Le merci saranno da considerare difettose solo ove non siano conformi alle specifiche di cui sopra all'articolo 10 INOX FASTENERS non è responsabile per la funzionalità, le qualità e le proprietà della merce, ad eccezione di quanto sopra precisato. Ogni riferimento a leggi od altre norme relative alla qualità od alla idoneità della merce a specifici usi è espressamente escluso.

11.2. Nel caso in cui la merce presenti difetti o carenze quantitative, il Compratore è tenuto a comunicarlo per iscritto ad INOX FASTENERS entro una settimana dall'arrivo delle merci alla destinazione stabilita. L'Acquirente dovrà fornire a INOX FASTENERS una quantità appropriata delle merci secondo lui difettose in modo da permettere i controlli e le verifiche necessari e dovrà inoltre fornire prontamente richieste di risarcimento da terze parti.

11.3. Nel caso di vizi che non potevano essere ragionevolmente scoperti all'arrivo delle merci alla destinazione stabilita, il Compratore è tenuto a comunicarli per iscritto entro due settimane dalla data in cui il Compratore ha scoperto il vizio. Tuttavia, è priva di qualsivoglia effetto legale la comunicazione che sia stata eseguita dopo oltre un anno dal momento in cui il rischio relativo alle merci è passato al Compratore. In caso di comunicazione tardiva, INOX FASTENERS non sarà tenuta a rimediare in alcun modo né a riconoscere qualsivoglia riduzione di prezzo. Nel caso in cui la merce presenti difetti o carenze quantitative e a condizione che il Compratore lo abbia comunicato a INOX FASTENERS nei termini dovuti ed in conformità con quanto sopra precisato, allora INOX FASTENERS sarà tenuta a proprie spese, e tenuto conto del lasso di tempo che ragionevolmente occorre per la produzione della nuova merce (se necessario), a correggere il difetto oppure, a sua scelta, a consegnare una nuova partita di merci non difettose, oppure ancora, nel caso di carenze quantitative, a consegnare la quantità mancante alla destinazione concordata. Le merci difettose dovranno essere restituite ad INOX FASTENERS contestualmente alla consegna di qualsiasi prodotto sostitutivo. Invece di procedere a correggere il difetto o la carenza quantitative, INOX FASTENERS potrà sempre, a sua scelta, accreditare al Compratore una diminuzione di valore delle merci commisurata al difetto o alla carenza quantitative. In caso di difetti o carenze quantitative nelle merci, il Compratore non ha diritto, salvo in caso di colpa grave di INOX FASTENERS, di invocare ulteriori rimedi oltre ai rimedi ed ai risarcimenti espressamente stabiliti nelle presenti Condizioni o nel Contratto.

11.4. I danni che sono causati da influenze esterne, quali posizionamento inadeguato o manomissione, inadeguato utilizzo o manutenzione, corrosione o usura normale e rottura non devono comportare responsabilità di INOX FASTENERS.

11.5. Richieste di risarcimento danni derivanti da difetti di titolo o di qualità sono esclusi purché non siano il risultato di dolo o colpa grave da parte nostra o dei nostri agenti o una violazione colposa di obblighi contrattuali. Tali obblighi contrattuali proteggono la posizione giuridica del cliente, che il contenuto e lo scopo del contratto devono fornire, effettive sono anche quelle obbligazioni contrattuali il cui adempimento è reso possibile solo dalla corretta esecuzione del contratto e sul quale, come regola generale, il partner contrattuale si basa e può contare.

11.6. Esclusione della responsabilità per colpa lieve non si applica ai danni risultanti da rischio di morte o di lesioni o dalla violazione di obblighi contrattuali o da garanzie o reclami basati sulla legislazione inerente la responsabilità del prodotto. Tuttavia, qualora un obbligo contrattuale venga violato a causa di negligenza, saremo ritenuti responsabili solo per i danni medi che sono prevedibili, tipici e immediato, dato il tipo di contratto stipulato.

11.7. La limitazione di responsabilità sopra indicata non si applica a qualsiasi mancanza di qualità garantita, caratteristiche o attributi, se non e nella misura in cui lo scopo della garanzia è quello di prevenire eventuali danni al Compratore che si verificano in beni o servizi stessi. Se e nella misura in cui la responsabilità di INOX FASTENERS è esclusa o limitata, questa limitazione si applica anche alla responsabilità civile dei propri dipendenti, dei lavoratori, agenti e ausiliari. La limitazione della sopra indicata responsabilità si applica in ogni caso anche ai danni indiretti.

11.8. Nell'eventualità in cui i difetti riscontrati sui prodotti non risultino ascrivibili alla responsabilità di INOX FASTENERS le spese di riparazione e sostituzione dei prodotti saranno conteggiate e fatturate all'Acquirente. Diversamente INOX FASTENERS si farà carico di tutte le spese necessarie per rimuovere il difetto incluso ma non limitato a spese di trasporto, materiali etc. a patto che tali spese non siano aumentate perché la merce è stata portata in un luogo diverso da quello di consegna.

11.9. Qualora la merce sia predisposta da INOX FASTENERS su specifiche esigenze/richieste o su specifico disegno fornito dal cliente (e pertanto trattasi di merce non soggetta alla regolamentazione DIN), la merce si intende venduta "tale e quale". In tal caso, pertanto, ogni diritto a rimedi o risarcimenti in caso di difetti è espressamente rinunciato salvo alle specifiche espressamente pattuite.

12. Riserva di proprietà

12.1.INOX FASTENERS rimane proprietaria della merce consegnata fino a che il Compratore non abbia pagato interamente la merce in questione.

12.2.INOX FASTENERS inoltre rimane proprietaria della merce consegnata fino a che il Compratore non abbia pagato tutti gli altri importi eventualmente dovuti ad INOX FASTENERS.

12.3.Fintanto che la proprietà non viene trasferita, INOX FASTENERS ha il diritto di riprendere possesso della merce di cui essa ha la proprietà e di cui il Compratore sia in possesso o in controllo; ad INOX FASTENERS è quindi qui conferito il diritto di accedere a qualsiasi terreno od edificio in cui le merci in questione siano state immagazzinate, al fine di prenderne possesso e recuperarle.

12.4.Qualora il Compratore trasformi le merci non ancora pagate in un nuovo oggetto o le unisca con altre al fine di creare un nuovo oggetto, ad INOX FASTENERS è riconosciuto il diritto di proprietà sul nuovo oggetto, in proporzione al valore delle merci non pagate in esso corporate, fino a quando INOX FASTENERS. non avrà ricevuto il completo pagamento delle merci originariamente vendute.

12.5.Qualora il Compratore venda la merce non ancora pagata o i nuovi oggetti, il Compratore cede fin d'ora ad INOX FASTENERS una parte del proprio credito nei confronti del terzo acquirente, parte equivalente alle somme dovute per le merci non ancora pagate / i nuovi oggetti venduti.

12.6.Tutti i precedenti commi (da 1 a 5) avranno effetto quali clausole separate e pertanto, qualora una di tali clausole risultasse per una qualunque ragione inefficace, le restanti rimarranno pienamente efficaci ed applicabili.

13. Prezzi - Pagamenti

13.1.I prezzi dei prodotti si riferiscono ai prezzi in vigore al momento dell'accettazione dell'offerta di vendita da parte dell'Acquirente o all'emissione della conferma d'ordine da parte di INOX FASTENERS.

13.2.I prezzi dei prodotti s'intendono sempre Franco Vettore (FCA Incoterms 2010), fatti salvi diversi accordi scritti intercorsi tra le parti.

13.3.I pagamenti dovranno essere effettuati in conformità alle relative indicazioni contenute nell'offerta di vendita o nella conferma d'ordine. I pagamenti ed ogni altra somma dovuta a qualsiasi titolo a INOX FASTENERS devono essere effettuati al la sede legale della medesima. Eventuali pagamenti fatti ad agenti, rappresentanti o ausiliari di commercio di INOX FASTENERS non si intendono effettuati, e pertanto non liberano l'acquirente dalla sua obbligazione, finché le relative somme non pervengono alla medesima.

13.4.Salvo patto contrario, i pagamenti verranno effettuati in Euro.

13.5.I prezzi espressi in valuta diversa dall'Euro potranno subire variazioni in relazione alle fl uttuazioni del relativo tasso di cambio.

13.6.Qualsiasi ritardo o irregolarità nei pagamenti attribuisce a INOX FASTENERS il diritto di:

- a. sospendere le forniture in corso, anche se non relative al pagamento in questione;
- b. variare le modalità di pagamento e di sconto per le forniture successive, anche richiedendo il pagamento anticipato o l'emissione di ulteriori garanzie;
- c. richiedere, a decorrere dalla data di scadenza prevista per il pagamento e senza necessità di formale messa in mora, gli interessi moratori sulla somma ancora dovuta, nella misura del tasso previsto dalle norme di legge attualmente in vigore per le transazioni commerciali (in particolare il D.lgs. 231/2002e successive integrazioni), fatta salva in ogni caso la facoltà di INOX FASTENERS di chiedere il risarcimento del maggior danno subito.

13.7.Inoltre nei suddetti casi, ogni somma dovuta a qualsiasi titolo a INOX FASTENERS diventa immediatamente esigibile. L'Acquirente sarà tenuto al pagamento integrale dei prodotti anche nel caso in cui sorgano eccezioni, contestazioni o controversie che verranno defi nite solo successivamente alla corresponsione di quanto dovuto.

13.8.L'acquirente rinuncia preventivamente a chiedere la compensazione con eventuali crediti, comunque originatisi, nei confronti di INOX FASTENERS

14. Legge applicabile

Il Contratto è disciplinato dalla legge italiana.

15. Controversie

Tutte le controversie, divergenze o pretese derivanti dal Contratto, comprese quelle relative alla sua esecuzione, risoluzione od invalidità saranno definitivamente risolte secondo la giurisdizione Italiana nel Foro ove ha sede legale la società venditrice.

16. Limitazione generale di responsabilità

Ad eccezione di quanto espressamente stabilito nelle presenti Condizioni o di quanto altrimenti esplicitamente concordato, in nessun caso - ivi compresi i casi di responsabilità da prodotto - INOX FASTENERS sarà responsabile per qualunque perdita o danno incidentale, diretto, indiretto, conseguente o per lucro cessante, ivi compresi - ma non limitatamente a - perdite di guadagno, perdite di produzione, produzioni da scartare o reclami e pretese da parte dei clienti del Compratore. Tale limitazione, tuttavia, non si applica nel caso di dolo o colpa grave. INOX FASTENERS non sarà comunque mai responsabile per reclami e pretese che le siano state comunicate dopo che sia trascorso un anno dalla data in cui il rischio relativo alle merci è passato al Compratore.

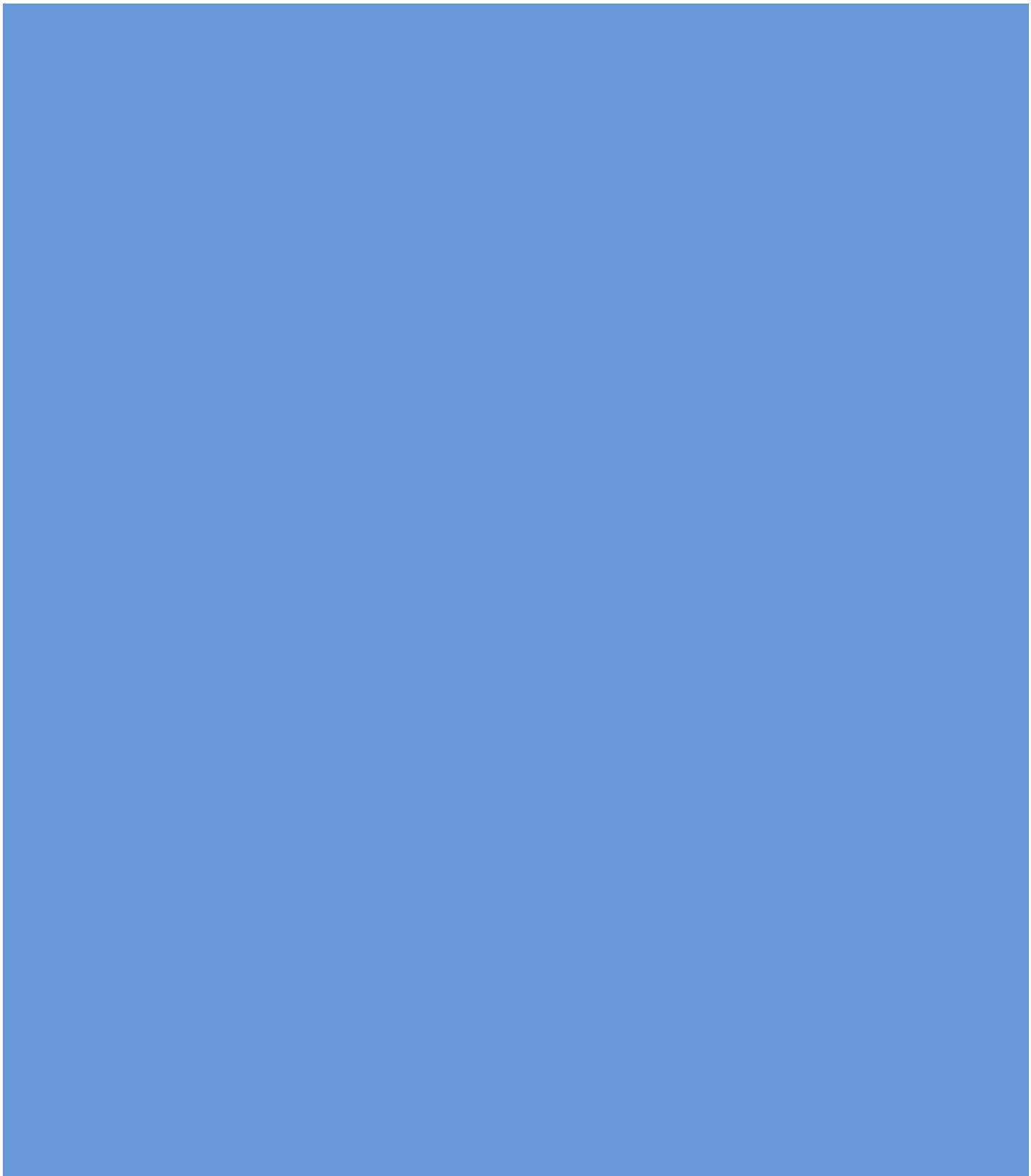
17. Tutela dei dati personali e riservatezza

Nell'esecuzione delle obbligazioni assunte con il presente contratto INOX FASTENERS in osservanza delle disposizioni in materia di tutela dei dati personali, contenute nel D.lgs. n. 196/2003, si obbliga a mantenere riservate le informazioni, tra cui eventuali dati personali suscettibili di tutela ai sensi della citata legge, relative all'attività del Cliente di cui INOX FASTENERS si obbliga ad impegnare il proprio personale o il personale incaricato affi nché mantenga riservate tali informazioni ed in particolare quelle contenenti dati personali oggetto di tutela. Il Cliente dichiara di aver preso visione e di ben conoscere l'informativa per il trattamento dei suoi dati personali rilasciata da INOX FASTENERS ai sensi del decreto legislativo n. 196/03. Il Cliente si impegna a fornire i propri dati personali in maniera corretta e veritiera e a comunicare tempestivamente eventuali variazioni degli stessi, assumendosi ogni responsabilità che sia connessa alla comunicazione di dati non esatti o non corretti. Per l'effetto, il Cliente si impegna a mallevare e tenere indenne INOX FASTENERS da ogni conseguenza pregiudizievole connessa o derivante dalla comunicazione di dati inesatti o non veritieri.

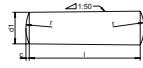
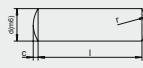
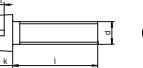
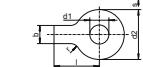
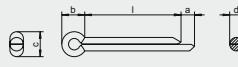
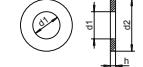
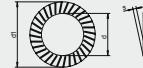
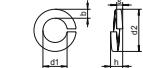
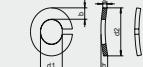
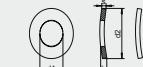
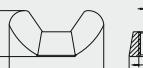
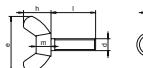
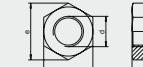
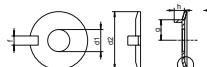
18. Clausole finali

Eventuali tolleranze, anche reiterate e prolungate di INOX FASTENERS verso violazioni ed inottemperanze del Cliente a clausole del presente contratto non costituiranno precedente e non potranno menomare la validità ed effi cacia. L'eventuale nullità, annullabilità o ineffi cacia di una o più clausole del presente accordo non si estenderà alle restanti clausole.

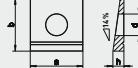
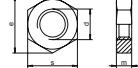
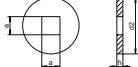
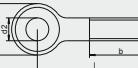
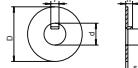
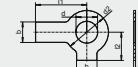
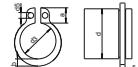
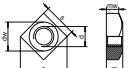
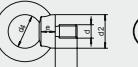
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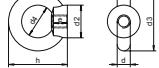
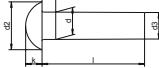
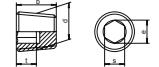
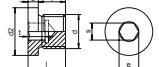
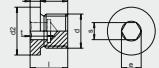
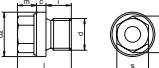
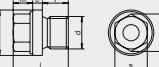
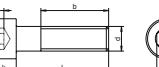
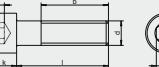
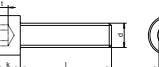
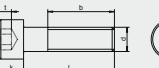
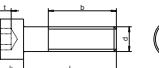
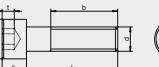
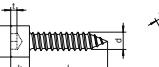
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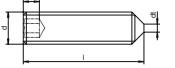
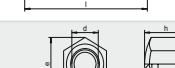
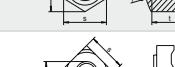
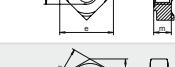
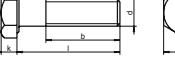
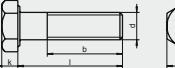
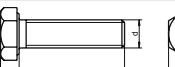
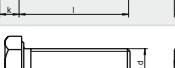
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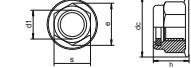
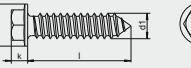
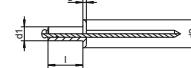
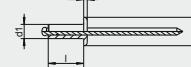
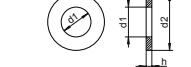
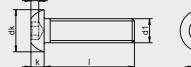
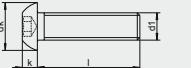
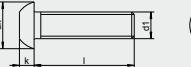
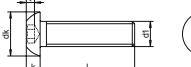
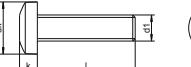
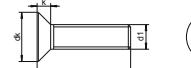
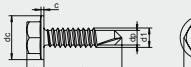
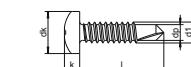
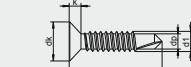
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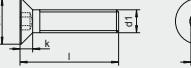
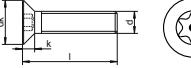
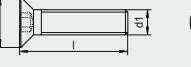
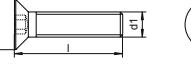
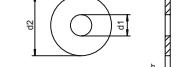
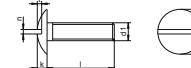
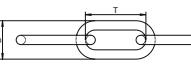
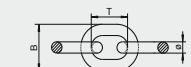
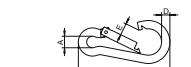
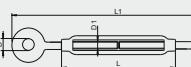
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DIN 6926			Prevailing torque type hexagon nuts with flange Dadi esagonali autobilaccanti con flangia		105
DIN 6928			Tapping screws hexagon head with flange, type C (with cone point) Viti autofilettanti testa esagonale flangiata		106
DIN 7337 type A Page 1 sim. ISO 15983			Blind rivets Rivetti a strappo		107
DIN 7337 type A Page 2 sim. ISO 15983			Blind rivets Rivetti a strappo		108
DIN 7349			Washers for bolts with heavy type spring pins Rondelle piane per spine elastiche		109
	ISO 7380		Hexagon socket button head screws Viti testa bombata cava esagonale		110
		sim. ISO 7380 F	Hexagon socket button head screws with flange Viti testa bombata cava esagonale con flangia		111
		ISO 7380 HEX+PIN	Socket button head with HEX and PIN Viti testa bombata cava esagonale + PIN		112
		ISO 7380 TX	Socket button head with TX Viti testa bombata esalobata		113
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DIN 7504 N			Self drilling screws pan head with cross recess H (Phillips) Z (Pozy) Viti autoforanti testa cilindrica croce		121
DIN 7504 P			Self drilling screws countersunk head with cross recess H (Phillips) Z (Pozy) Viti autoforanti testa svasata piana croce		122

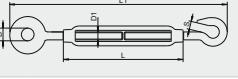
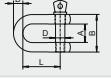
INDEX . Indice

DIN	ISO	ART	DESCRIPTION DESCRIZIONE	PICTURE DISEGNO	PAG.
		sim. DIN 7505 A - FT	Chipboard screws countersunk head with cross recess Z (Pozidrive) full thread Viti truciolari testa svassata piana croce tutto filetto		123
		sim. DIN 7505 A - HT	Chipboard screws countersunk head with cross recess Z (Pozidrive) partial thread Viti truciolari testa svassata piana croce parziale filetto		124
		sim. DIN 7505 A FT - TX	Chipboard screws countersunk head with TX full thread Viti truciolari testa svassata piana esalobata tutto filetto		125
		sim. DIN 7505 A HT - TX	Chipboard screws countersunk head with TX part thread Viti truciolari testa svassata piana esalobata parziale filetto		126
		sim. DIN 7505 B - FT	Chipboard screws pan head with cross recess Z (Pozidrive) full thread Viti truciolari testa cilindrica croce tutto filetto		127
		sim. DIN 7505 B FT - TX	Chipboard screws pan head with TX full thread Viti truciolari testa cilindrica esalobata tutto filetto		128
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		sim. DIN 7985 UNC	Pan head screws with cross recess H (Phillips) Viti metallo testa cilindrica croce		139
DIN 7989			Washers for steel constructions Rondelle piene per costruzioni metalliche		140

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DIN 7991 HEX + PIN			Hexagon socket countersunk head screws full thread + PIN Viti testa piana svasata cava esagonale tutto filetto + PIN		142
DIN 7991 TX + PIN "FT"			Countersunk head screws full thread with TX + PIN Viti testa piana svasata esalobata tutto filetto + PIN		143
		sim. DIN 7991 UNC	Hexagon socket countersunk head screws full thread Viti testa piana svasata cava esagonale tutto filetto		144
		sim. DIN 7991 UNC	Countersunk flat head screws with hexagon socket and full thread Viti testa piana svasata cava esagonale tutto filetto		145
DIN 9021			Plain washers with outside diameter ~ 3x nominal thread diameter Rondelle piane fascia larga 3D		146
		sim. DIN 9021	Plain washers with outside diameter ~ 3x nominal thread diameter Rondelle piane fascia larga 3D		147
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		ART. 25129	Slotted mushroom head screws Viti a metallo testa mezza tonda taglio		148
		ART. 25511 type Z - M - L	Serrated conical spring washers Rondelle coniche zigrinate		149
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		ART. 8000 sim. DIN 3053	Wire ropes, 1 X 19 rigid Fune 19 fili (rigida)		152
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		ART. 8248	Wire rope clamps Morsetti per cavo		158
		ART 8258	D - shackles straight Grilli dritti a "D"		159

The BOXES are indicative
Le confezioni sono puramente indicative

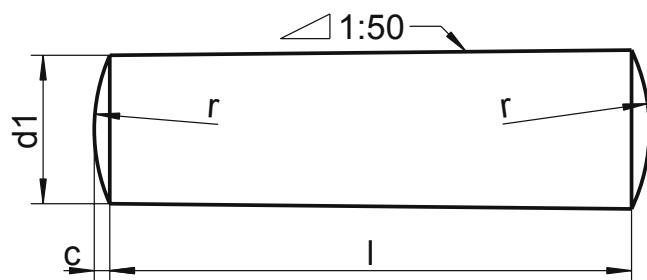
PRODUCT CATALOGUE

. Catalogo prodotti

DIN 1

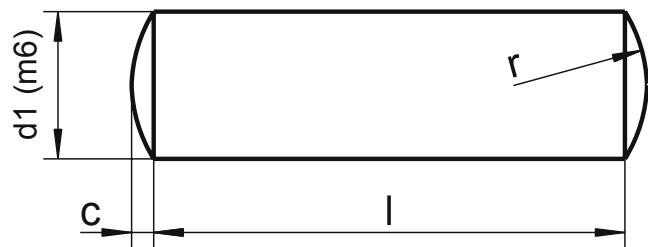
Taper pins

Spine coniche



c r	0,15 1,0	0,23 1,5	0,30 2,0	0,40 2,5	0,45 3,0	0,60 4,0	0,75 5,0	0,90 6,0	1,20 8,0	1,50 10,0
Length / Ø	1	1,5	2	2,5	3,0	4,0	5,0	6,0	8,0	10,0
10	★	★	★							
12	★	★	★							
14	★	★	★	★	★					
16	★	★	★	★	★	★	★			
18	★	★	★	★	★	★	★	★		
20	★	★	★	★	★	★	★	★		
22				★	★	★	★	★		
24				★	★	★	★	★	★	
26					★	★	★	★	★	
28					★	★	★	★	★	
30					★	★	★	★	★	
32					★	★	★	★	★	★
36					★	★	★	★	★	★
40					★	★	★	★	★	★
45					★	★	★	★	★	★
50					★	★	★	★	★	★
55						★	★	★	★	★
60						★	★	★	★	★
70							★	★	★	★
80								★	★	★
90									★	★
100									★	★
BOX	200	200	200	200	200	100	100	100	50	25

★A1 / ★A4



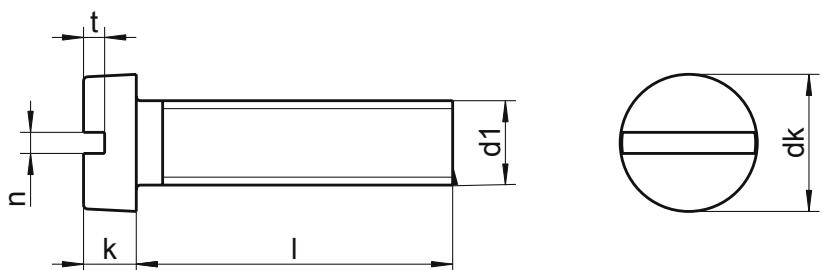
c r	0,15 1,0	0,23 1,5	0,30 2,0	0,40 2,5	0,45 3,0	0,60 4,0	0,75 5,0	0,90 6,0	1,20 8,0	1,50 10,0	1,80 12,0	2,50 16,0	3,00 20,0
Length /Ø	1	1,5	2	2,5	3	4	5	6	8	10	12	16	20
2	★★	★★											
3	★★	★★											
4	★★	★★	★★	★★	★★								
5	★★	★★	★★	★★	★★	★★	★★	★★					
6	★★	★★	★★	★★	★★	★★	★★	★★	★★				
8	★★	★★	★★	★★	★★	★★	★★	★★	★★				
10	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★			
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16	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★		
18	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★		
20	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	
24		★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	
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80							★★	★★	★★	★★	★★	★★	
90								★★	★★	★★	★★	★★	
100									★★	★★	★★	★★	
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★ A1 / ★ A4

DIN 84

Slotted cheese head screws

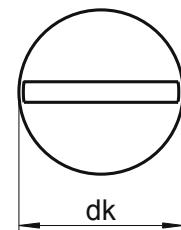
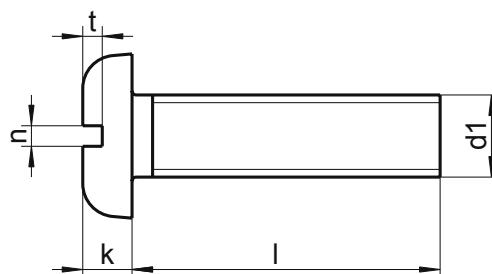
Viti a metallo testa cilindrica taglio



dk	3,0	3,8	4,5	5,5	6,0	7,0	8,5	10,0	13,0	16,0
k	1,0	1,3	1,6	2,0	2,4	2,6	3,3	3,9	5,0	6,0
n	0,40	0,50	0,60	0,80	1,00	1,20	1,20	1,60	2,00	2,50
t	0,45	0,60	0,70	0,85	1,00	1,10	1,30	1,60	2,00	2,40
Length /Ø	M1,6	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10
3	★ ★	★ ★	★ ★	★ ★						
4	★ ★	★ ★	★ ★	★ ★		★ ★				
5	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
18	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
22	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
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28	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
30	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
35		★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
40		★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45		★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50		★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
55		★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60		★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
65				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
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75				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
85				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
90				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
100				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
BOX	1000	1000	1000	1000 ≥ 25 200	1000 ≥ 25 500	1000 ≥ 25 500	500 ≥ 25 200	500 ≥ 25 200	100	100 ≥ 60 50

★ A1 / ★ A2 / ★ A4

M 1,2 and M 1,4 on request
M 1,2 e M 1,4 su richiesta



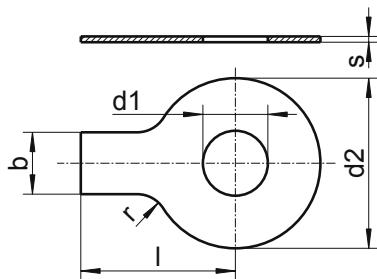
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n	0,5	0,6	0,8	1,0	1,2	1,2	1,6	2,0
t	0,4	0,5	0,7	0,8	1,0	1,2	1,4	1,9
Length / \varnothing	M2	M2,5	M3	M3,5	M4	M5	M6	M8
3	★☆	★☆	★☆	★☆				
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5	★☆	★☆	★☆	★☆	★☆			
6	★☆	★☆	★☆	★☆	★☆	★☆	★☆	
8	★☆	★☆	★☆	★☆	★☆	★☆	★☆	★☆
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80					★☆	★☆	★☆	★☆
90					★☆	★☆	★☆	★☆
100					★☆	★☆	★☆	★☆
BOX	1000	1000	500	500	500	500 ≥ 25 200	200 ≥ 35 100	100

★ A1 / ★ A2 / ★ A4

DIN 93

Tab washers with 1 tab

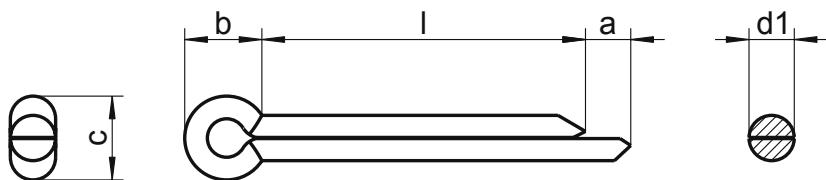
Rondelle di sicurezza con linguetta



d1	for	d2	s	l	r	b
4,3	M4	14	0,38	14	2,5	5
5,3	M5	17	0,50	16	2,5	6
6,4	M6	19	0,50	18	4,0	7
8,4	M8	22	0,75	20	4,0	8
10,5	M10	26	0,75	22	6,0	10
13,0	M12	30	1,00	28	10,0	12
15,0	M14	33	1,00	28	10,0	12
17,0	M16	36	1,00	32	10,0	15
19,0	M18	40	1,00	36	10,0	18
21,0	M20	42	1,00	36	10,0	18
23,0	M22	50	1,00	42	10,0	20
25,0	M24	50	1,00	42	10,0	20
28,0	M27	58	1,60	48	16,0	23
31,0	M30	63	1,60	52	16,0	26
34,0	M33	68	1,60	56	16,0	28
37,0	M36	75	1,60	60	16,0	30
40,0	M39	82	1,60	64	16,0	32

MAT.	BOX
★ ★	200
★ ★	200
★ ★	200
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	20
★ ★	20
★ ★	20

★ A1 / ★ A2 / ★ A4



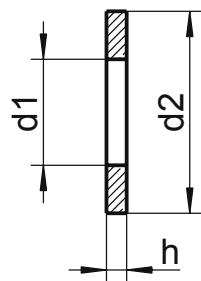
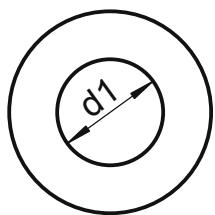
d max.	0,9	1,2	1,4	1,8	2,3	2,9	3,7	4,6	5,9	7,5	9,5
d min.	0,8	1,0	1,3	1,7	2,1	2,7	3,5	4,4	5,7	7,3	9,3
a max.	1,6	2,5	2,5	2,5	2,5	3,2	4,0	4,0	4,0	4,0	6,3
a min.	0,80	1,25	1,25	1,25	1,25	1,60	2,00	2,00	2,00	2,00	3,2
b approx	3,0	3,0	3,2	4,0	5,0	6,4	8,0	10,0	12,6	16,0	20,0
c max.	1,8	2,0	2,8	3,6	4,6	5,8	7,4	9,2	11,8	15,0	19,0
c min.	1,6	1,7	2,4	3,2	4,0	5,1	6,5	8,0	10,3	13,1	16,6
Length / Ø	1	1,2	1,6	2	2,5	3,2	4	5	6,3	8	10
6	★ ★	★ ★	★ ★	★ ★							
8	★ ★	★ ★	★ ★	★ ★							
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
18	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
22	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
25	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
28	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
32	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
36	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
40	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45	★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
56					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
63					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
71					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
90					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
100					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
112							★ ★	★ ★	★ ★	★ ★	★ ★
125							★ ★	★ ★	★ ★	★ ★	★ ★
140								★ ★	★ ★	★ ★	★ ★
BOX	500	500	500	500	500	500	200	200	100	100	100

★ A1 / ★ A2 / ★ A4

DIN 125 A

Plain washers - type A without chamfer

Rondelle plane

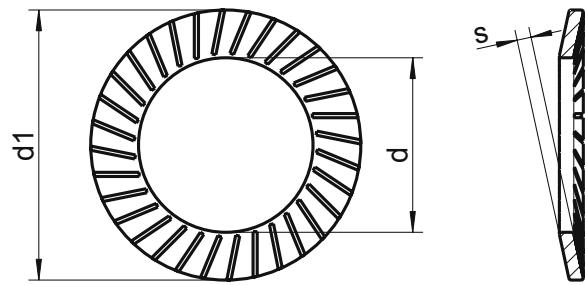


d1	for	d2	h
1,7	M1,6	4,0	0,3
2,2	M2	5,0	0,3
2,7	M2,5	6,5	0,5
3,2	M3	7,0	0,5
3,7	M3,5	8,0	0,5
4,3	M4	9,0	0,8
5,3	M5	10,0	1,0
6,4	M6	12,0	1,6
7,4	M7	14,0	1,6
8,4	M8	16,0	1,6
10,5	M10	20,0	2,0
13,0	M12	24,0	2,5
15,0	M14	28,0	2,5
17,0	M16	30,0	3,0
19,0	M18	34,0	3,0
21,0	M20	37,0	3,0
23,0	M22	39,0	3,0
25,0	M24	44,0	4,0
28,0	M27	50,0	4,0
31,0	M30	56,0	4,0
34,0	M33	60,0	5,0
37,0	M36	66,0	5,0
40,0	M39	72,0	6,0
43,0	M42	78,0	7,0
46,0	M45	85,0	7,0
50,0	M48	92,0	8,0
52,0	M50	92,0	8,0
54,0	M52	98,0	8,0
58,0	M56	105,0	9,0
62,0	M60	110,0	9,0
66,0	M64	115,0	9,0

MAT.	BOX
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	500
★ ★	500
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	100
★ ★	100
★ ★	50
★ ★	25
★ ★	25
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	10

★ A1 / ★ A2 / ★ A4

ART 125 "S"
 Locking washers "S"
 Rondelle di sicurezza tipo "S"



d	d1	s
2,2	4,0	0,35
2,7	4,8	0,45
3,2	5,5	0,45
3,7	6,0	0,45
4,3	7,0	0,50
5,3	9,0	0,60
6,4	10,0	0,70
8,4	13,0	0,80
10,5	16,0	1,00
13,0	18,0	1,10
15,0	22,0	1,20
17,0	24,0	1,30
19,0	27,0	1,50
21,0	30,0	1,50
25,0	36,0	1,80
28,6	39,0	2,00
31,6	45,0	2,00

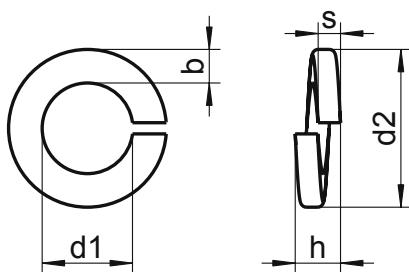
MAT	BOX
★	2000
★	2000
★	2000
★	2000
★	1000
★	1000
★	1000
★	1000
★	500
★	500
★	500
★	500
★	500
★	100
★	100
★	100
★	100
★	100

★ A1 / ★ A2 / ★ A4

DIN 127 B

Spring lock washers type B

Rondelle Grower



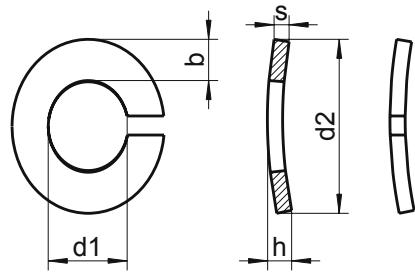
d1	for	d2	h min.	s	b
2,1	M2	4,4	1,0	0,5	0,9
2,6	M2,5	5,1	1,2	0,6	1,0
3,1	M3	6,2	1,6	0,8	1,3
3,6	M3,5	6,7	1,6	0,8	1,3
4,1	M4	7,6	1,8	0,9	1,5
5,1	M5	9,2	2,4	1,2	1,8
6,1	M6	11,8	3,2	1,6	2,5
7,1	M7	12,8	3,2	1,6	2,5
8,1	M8	14,8	4,0	2,0	3,0
10,2	M10	18,1	4,4	2,2	3,5
12,2	M12	21,1	5,0	2,5	4,0
14,2	M14	24,1	6,0	3,0	4,5
16,2	M16	27,4	7,0	3,5	5,0
18,2	M18	29,4	7,0	3,5	5,0
20,2	M20	33,6	8,0	4,0	6,0
22,5	M22	35,9	8,0	4,0	6,0
24,5	M24	40,0	10,0	5,0	7,0
27,5	M27	43,0	10,0	5,0	7,0
30,5	M30	48,2	12,0	6,0	8,0
33,5	M33	55,2	12,0	6,0	10,0
36,5	M36	58,2	12,0	6,0	10,0
39,5	M39	61,2	12,0	6,0	10,0
42,5	M42	68,2	14,0	7,0	12,0
45,5	M45	71,2	14,0	7,0	12,0
49,0	M48	75,0	14,0	7,0	12,0

MAT.	BOX
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	1000
1.4310 / ★	500
1.4310 / ★	500
1.4310 / ★	500
1.4310 / ★	200
1.4310 / ★	200
1.4310 / ★	100
1.4310 / ★	100
1.4310 / ★	50
1.4310 / ★	50
1.4310 / ★	50
1.4310 / ★	25
1.4310 / ★	25
1.4310 / ★	25
1.4310 / ★	25
1.4310 / ★	25

★ A1 / ★ A2 / ★ A4

DIN 128 A

Spring lock washers - type A, curved
Rondelle Grower curve



nominal size	d1 min.	d2 max.	h min.	h max.	s	b
2	2,1	4,4	0,70	0,90	0,5	0,9
2,3	2,4	4,9	0,90	1,10	0,6	0,9
2,5	2,6	5,1	0,90	1,10	0,6	1,0
2,6	2,7	5,2	0,90	1,10	0,6	1,0
3	3,1	6,2	1,10	1,30	0,7	1,3
3,5	3,6	6,7	1,10	1,30	0,7	1,3
4	4,1	7,6	1,20	1,40	0,8	1,5
5	5,1	9,2	1,50	1,70	1,0	1,8
6	6,1	11,8	2,00	2,20	1,3	2,5
8	8,2	14,8	2,45	2,75	1,6	3,0
10	10,2	18,1	2,85	3,15	1,8	3,5
12	12,2	21,1	3,35	3,65	2,1	4,0
14	14,2	24,1	3,90	4,30	2,4	4,5
16	16,2	27,4	4,50	5,10	2,8	5,0
18	18,2	29,4	4,50	5,10	2,8	5,0
20	20,2	33,6	5,10	5,90	3,2	6,0
22	22,5	35,9	5,10	5,90	3,2	6,0
24	24,5	40,0	6,50	7,50	4,0	7,0

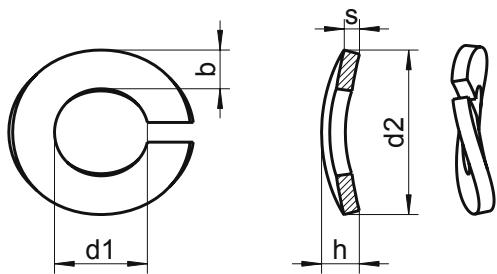
MAT.	BOX
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	1000
1.4310/ ★	100
1.4310/ ★	100

★ A1 / ★ A2 / ★ A4

DIN 128 B

Spring lock washers - type B, waved

Rondelle Grower ondulate



nominal size	d1 min.	d2 max.	h min.	h max.	s	b
5	5,1	9,2	1,50	1,70	1,0	1,8
6	6,1	11,8	2,00	2,20	1,3	2,5
8	8,1	14,8	2,45	2,75	1,6	3,0
10	10,2	18,1	2,85	3,15	1,8	3,5
12	12,2	21,1	3,35	3,65	2,1	4,0
16	16,2	27,4	4,50	5,10	2,8	5,0
20	20,2	33,6	5,10	5,90	3,2	6,0

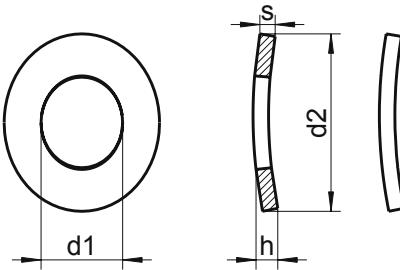
MAT.	BOX
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	500
1.4310	250
1.4310	250

★ A1 / ★ A2 / ★ A4

DIN 137 A

Spring lock washers - type A, curved

Rondelle elastiche curve



nominal size	d1	d2	h min.	h max.	s
1,4	1,5	3,0	0,40	0,80	0,25
1,6	1,8	4,0	0,45	0,90	0,25
1,7	1,8	4,0	0,45	0,90	0,25
2	2,2	4,5	0,50	1,00	0,30
2,3	2,5	5,0	0,50	1,00	0,30
2,5	2,6	5,5	0,55	1,10	0,30
2,6	2,8	5,5	0,55	1,10	0,30
3	3,2	6,0	0,65	1,30	0,40
3,5	3,7	7,0	0,70	1,40	0,40
4	4,3	8,0	0,80	1,60	0,50
5	5,3	10,0	0,90	1,80	0,50
6	6,4	11,0	1,10	2,20	0,50
7	7,4	12,0	1,20	2,40	0,50
8	8,4	15,0	1,70	3,40	0,50
10	10,5	18,0	2,00	4,00	0,80

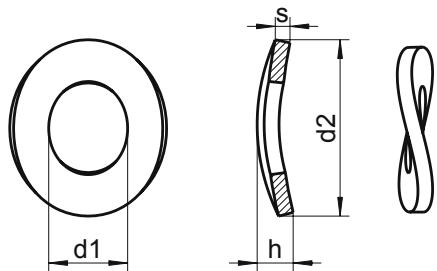
MAT.	BOX
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	500
1.4310	500
1.4310	500
1.4310	500

★ A1 / ★ A2 / ★ A4

DIN 137 B

Spring lock washers - type B, waved

Rondelle elastiche ondulate



nominal size	d1	d2	h min.	h max.	s
3	3,2	8	0,8	1,6	0,5
3,5	3,7	8	0,9	1,8	0,5
4	4,3	9	1,0	2,0	0,5
5	5,3	11	1,1	2,2	0,5
6	6,4	12	1,3	2,6	0,5
7	7,4	14	1,5	3,0	0,8
8	8,4	15	1,5	3,0	0,8
10	10,5	21	2,1	4,2	1,0
12	13,0	24	2,5	5,0	1,2
14	15,0	28	3,0	6,0	1,6
16	17,0	30	3,2	6,4	1,6
18	19,0	34	3,3	6,6	1,6
20	21,0	36	3,7	7,4	1,6
22	23,0	40	3,9	7,8	1,8
24	25,0	44	4,1	8,2	1,8
27	28,0	50	4,7	9,4	2,0

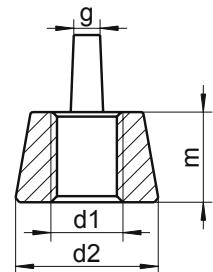
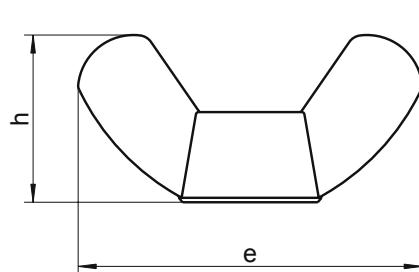
MAT.	BOX
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	1000
1.4310	500
1.4310	500
1.4310	500
1.4310	500
1.4310	500
1.4310	500
1.4310	200
1.4310	200
1.4310	100
1.4310	100
1.4310	100
1.4310	100
1.4310	100

★ A1 / ★ A2 / ★ A4

sim. DIN 315 AF

Wing nuts american type

Dadi ad alette



d1	m	h-max	e	d2	g
M3	2,4	8,8	15,3	6,8	1,2
M4	2,9	8,8	17,6	8,0	1,6
M5	4,1	10,5	22,5	10,3	2,1
M6	5,1	12,9	27,8	12,7	2,5
M8	5,6	14,8	30,3	13,8	2,8
M10	6,8	17,3	36,2	16,5	3,3
M12	9,0	22,3	49,4	22,5	4,5
M14	10,0	30,8	52,7	26,0	6,0
M16	10,7	30,8	58,3	26,6	6,3
M18	12,2	31,2	66,5	29,3	7,2
M20	12,2	31,2	66,5	29,3	7,2

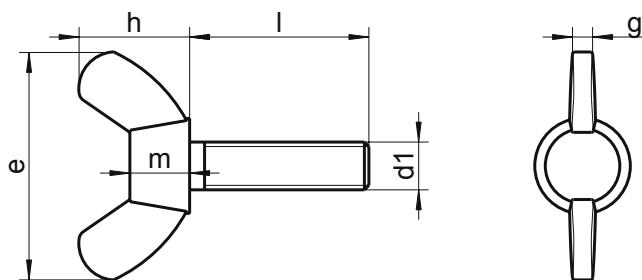
MAT.	BOX
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	20
★ ★	10
★ ★	10

★ A1 / ★ A2 / ★ A4

sim. DIN 316 AF

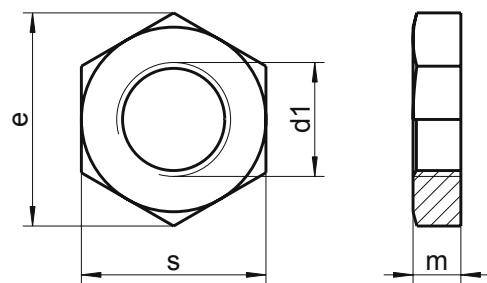
Wing screws american type

Viti ad alette



e	17,6	18,0	24,0	30,0	36,0	48,0	62,0
h	8,6	8,5	11,0	15,0	18,0	23,0	31,0
m	2,4	3,2	4,0	5,0	6,5	8,0	10,0
g	1,2	1,6	2,1	2,5	2,8	3,3	4,5
Length /Ø	M3	M4	M5	M6	M8	M10	M12
10	★ ★	★ ★	★ ★	★ ★	★ ★		
12	★ ★	★ ★	★ ★	★ ★	★ ★		
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
30	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
35		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
40		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45			★ ★	★ ★	★ ★	★ ★	★ ★
50			★ ★	★ ★	★ ★	★ ★	★ ★
55					★ ★	★ ★	★ ★
60					★ ★	★ ★	★ ★
BOX	100	100	50	50	50	25	25

★ A1 / ★ A2 / ★ A4



d1	m	s	e
G1/8	6	18	19,85
G1/8	6	19	19,85
G1/4	6	21	22,78
G1/4	6	22	22,78
G3/8	7	27	29,56
G1/2	8	32	37,29
G1/2	8	34	37,29
G5/8	8	32	37,29
G5/8	8	34	37,29
G3/4	9	36	39,55
G7/8	9	41	45,20
G1"	10	46	50,85
G1 1/8	10	50	55,37
G1 1/4	11	55	60,79
G1 1/2	12	60	66,44
G2"	13	75	82,60

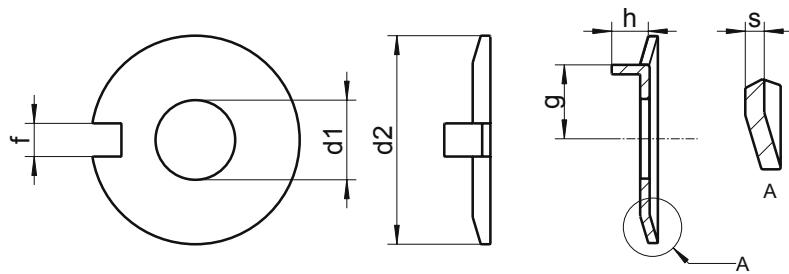
MAT.	BOX
★	100
★	100
★	100
★	100
★	50
★	50
★	50
★	25
★	25
★	25
★	10
★	10
★	5
★	5
★	5
★	5

★ A1 / ★ A2 / ★ A4

DIN 432

Locking washers with external tab

Rondelle di sicurezza con tacca esterna



d1	for	d2	h	s	f	g
4,3	M4	14	2,0	0,40	2,5	5,5
5,3	M5	17	2,5	0,75	3,5	7,0
6,4	M6	19	3,0	0,75	3,5	7,5
8,4	M8	22	4,0	1,00	3,5	8,5
10,5	M10	26	4,0	1,00	4,5	10,0
13,0	M12	30	4,5	1,20	4,5	12,0
15,0	M14	33	4,5	1,20	4,5	13,0
17,0	M16	36	4,5	1,20	5,5	15,0
19,0	M18	40	4,5	1,20	6,5	18,0
21,0	M20	42	4,5	1,60	6,5	18,0
23,0	M22	50	6,5	1,60	7,5	20,0
25,0	M24	50	6,5	1,60	7,5	21,0
28,0	M27	58	9,5	1,60	8,5	23,0
31,0	M30	63	9,5	1,60	8,5	25,0
34,0	M33	68	9,5	1,60	9,5	28,0
37,0	M36	75	9,5	2,00	11,0	31,0
40,0	M39	82	11,0	2,00	11,0	33,0

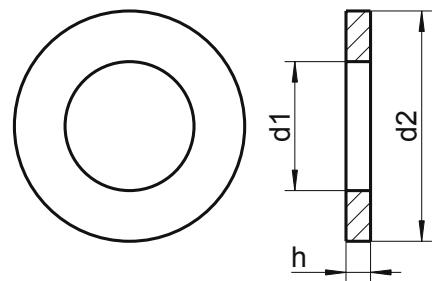
MAT.	BOX
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	20
★ ★	20
★ ★	10

★ A1 / ★ A2 / ★ A4

DIN 433

Washers for hexagon socket head cap screws

Rondelle piane per testa cilindrica



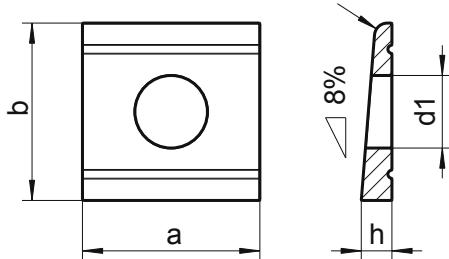
d1	for	d2	h
1,5	M1,4	3,0	0,3
1,7	M1,6	3,5	0,3
2,2	M2	4,5	0,3
2,7	M2,5	5,0	0,5
3,2	M3	6,0	0,5
3,7	M3,5	7,0	0,5
4,3	M4	8,0	0,5
5,3	M5	9,0	1,0
6,4	M6	11,0	1,6
8,4	M8	15,0	1,6
10,5	M10	18,0	1,6
13,0	M12	20,0	2,0
15,0	M14	24,0	2,5
17,0	M16	28,0	2,5
19,0	M18	30,0	2,5
21,0	M20	34,0	3,0

MAT.	BOX
★★	2000
★★	2000
★★	2000
★★	2000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	500
★★	500
★★	200
★★	200
★★	200
★★	100
★★	100

★ A1 / ★ A2 / ★ A4

DIN 434

Square taper washers for U-sections
Piastrine quadre di sicurezza per sezioni a "U"



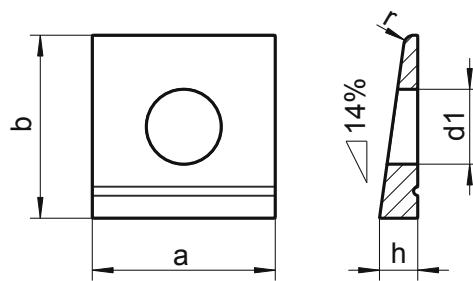
d1	for	a	b	h	r
9	M8	22	22	3,8	1,6
11	M10	22	22	3,8	1,6
13,5	M12	26	30	4,9	2,0
17,5	M16	32	36	5,9	2,4
22	M20	40	44	7,0	2,8
24	M22	44	50	8,0	3,2
26	M24	56	56	8,5	3,2

MAT.	BOX
★★	50
★★	50
★★	25
★★	25
★★	25
★★	10
★★	10

★ A1 ★ A2 / ★ A4

DIN 435

Square taper washers for L-section
Piastrine quadre di sicurezza per sezioni a "L"



d1	for	a	b	h	r
9	M8	22	22	4,6	1,2
11	M10	22	22	4,6	1,2
13,5	M12	26	30	6,2	1,6
17,5	M16	32	36	7,5	2,0
22	M20	40	44	9,2	2,4
24	M22	44	50	10,0	2,4
26	M24	56	56	10,8	2,4

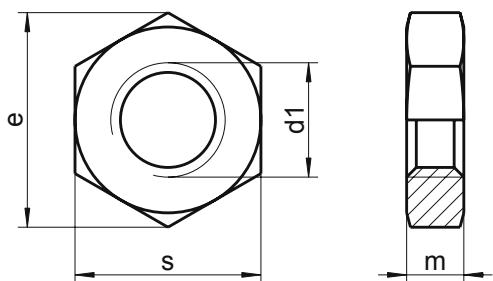
MAT.	BOX
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	25
★ ★	10
★ ★	10

★ A1 / ★ A2 / ★ A4

DIN 439

Hexagon nuts thin type B

Dadi esagonali bassi



d1	m min.	m max.	s	e
M1,6	0,75	1	3,2	3,48
M2	0,95	1,2	4	4,32
M2,3	0,95	1,20	4,5	5,20
M2,5	1,35	1,60	5	5,45
M2,6	1,35	1,60	5	5,80
M3	1,55	1,80	5,5	6,01
M4	1,95	2,20	7	7,66
M5	2,45	2,70	8	8,79
M6	2,90	3,20	10	11,05
M8	3,70	4,00	13	14,38
M10	4,70	5,00	17	18,90
M12	5,70	6,00	19	21,10
M14	6,42	7,00	22	24,49
M16	7,42	8,00	24	26,75
M18	8,42	9,00	27	29,56
M20	9,10	10,00	30	32,95
M22	9,90	11,00	32	35,03
M24	10,90	12,00	36	39,55
M27	12,40	13,50	41	45,20
M30	13,90	15,00	46	50,85
M33	15,40	16,50	50	55,37
M36	16,90	18,00	55	60,79
M39	18,20	19,50	60	66,44
M42	19,70	21,00	65	71,30
M45	21,20	22,50	70	76,95
M48	22,70	24,00	75	82,60
M56	26,70	28,00	85	93,56

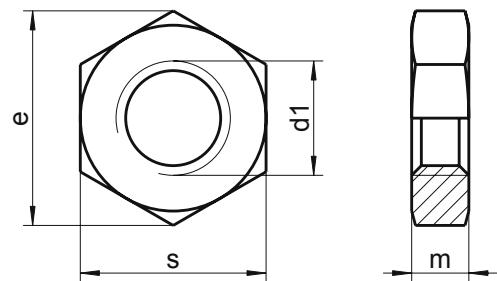
MAT.	BOX
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	5

★ A1 / ★ A2 / ★ A4

DIN 439 fine thread

Hexagon nuts thin type with fine thread, type B

Dadi esagonali bassi passo fine



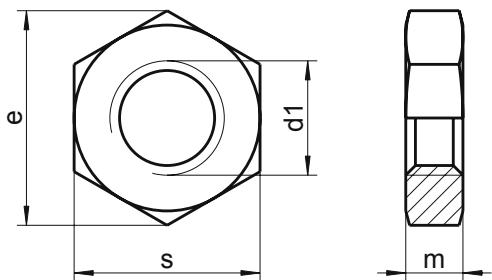
d1	m min.	m.max	s	e	MAT.	BOX
M8X0,75	3,70	4	13	14,38	★ ★	200
M8X1	3,70	4	13	14,38	★ ★	200
M10X1	4,70	5	17	18,90	★ ★	100
M10X1,25	4,70	5	17	18,90	★ ★	100
M12X1	5,70	6	19	21,10	★ ★	50
M12X1,25	5,70	6	19	21,10	★ ★	50
M12X1,5	5,70	6	19	21,10	★ ★	50
M14X1,5	6,42	7	22	24,49	★ ★	50
M16X1	7,42	8	24	26,75	★ ★	50
M16X1,5	7,42	8	24	26,75	★ ★	50
M18X1,5	8,42	9	27	29,56	★ ★	50
M20X1,5	9,10	10	30	32,95	★ ★	50
M20X2	9,10	10	30	32,95	★ ★	50
M22X1,5	9,90	11	32	35,03	★ ★	25
M24X1,5	10,90	12	36	39,55	★ ★	25
M24X2	10,90	12	36	39,55	★ ★	25
M27X1,5	12,40	13,50	41	45,20	★ ★	25
M27X2	12,40	13,50	41	45,20	★ ★	25
M30X1,5	13,90	15	46	50,85	★ ★	10
M30X2	13,90	15	46	50,85	★ ★	10
M33X1,5	15,40	16,50	50	55,37	★ ★	10
M33X2	15,40	16,50	50	55,37	★ ★	10
M36X1,5	16,90	18,00	55	60,79	★ ★	10
M36X2	16,90	18,00	55	60,79	★ ★	10

★ A1 / ★ A2 / ★ A4

DIN 439 left hand thread

Hexagon nuts thin type with left hand thread, type B

Dadi esagonali bassi sinistri



d1	m min.	m max.	s	e
M6	2,90	3,20	10	11,05
M8	3,70	4	13	14,38
M10	4,70	5	17	18,90
M12	5,70	6	19	21,10
M16	7,42	8	24	26,75
M20	9,10	10	30	32,95
M24	10,90	12	36	39,55
M30	13,90	15	46	50,85
M36	16,90	18	55	60,79

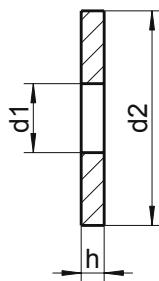
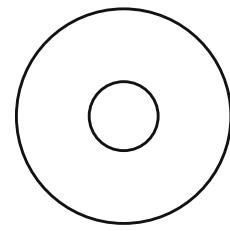
MAT.	BOX
★ ★	1000
★ ★	200
★ ★	200
★ ★	200
★ ★	100
★ ★	50
★ ★	25
★ ★	10
★ ★	10

★ A1 / ★ A2 / ★ A4

DIN 440 R

Washers for wood constructions type R with round hole

Rondelle per costruzioni legno foro tondo



d1	for	d2	h
5,5	M5	18	2
6,6	M6	22	2
9	M8	28	3
11	M10	34	3
13,5	M12	44	4
15,5	M14	50	4
17,5	M16	56	5
22	M20	72	6
24	M22	80	6
26	M24	85	6
30	M27	98	6

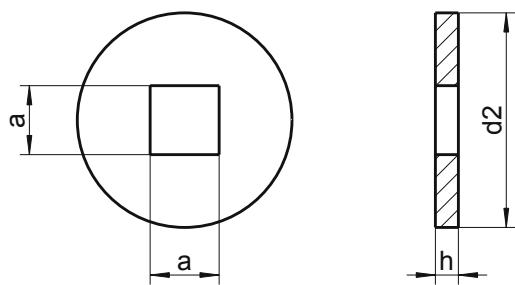
MAT.	BOX
★★	200
★★	200
★★	200
★★	100
★★	100
★★	100
★★	100
★★	50
★★	50
★★	50
★★	50

★ A1 / ★ A2 / ★ A4

DIN 440 V

Washers for wood constructions type V with square hole

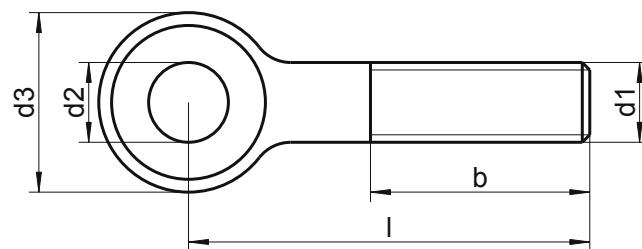
Rondelle per costruzioni legno foro quadro



a	for	d2	h
5,5	M5	18	2
6,6	M6	22	2
9	M8	28	3
11	M10	34	3
14	M12	44	4
18	M16	56	5
22	M20	72	6
26	M24	85	6

MAT.	BOX
★★	100
★★	100
★★	100
★★	50
★★	50
★★	50
★★	50
★★	50

★ A1 / ★ A2 / ★ A4



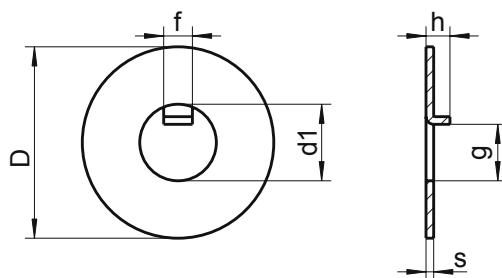
d_2	6	8	10	12	16	18	22
d_3	14	18	20	25	32	40	45
$b \leq 125$	18	22	26	30	38	46	54
$b > 125$	-	28	32	36	44	52	60
Lenght / Ø	M6	M8	M10	M12	M16	M20	M24
30	★☆	★☆					
35	★☆	★☆					
40	★☆	★☆	★☆	★☆			
45	★☆	★☆	★☆	★☆			
50	★☆	★☆	★☆	★☆			
55	★☆	★☆	★☆	★☆			
60	★☆	★☆	★☆	★☆	★☆		
65	★☆	★☆	★☆	★☆	★☆		
70	★☆	★☆	★☆	★☆	★☆	★☆	
75	★☆	★☆	★☆	★☆	★☆	★☆	
80		★☆	★☆	★☆	★☆	★☆	★☆
90		★☆	★☆	★☆	★☆	★☆	★☆
100		★☆	★☆	★☆	★☆	★☆	★☆
110		★☆	★☆	★☆	★☆	★☆	★☆
120		★☆	★☆	★☆	★☆	★☆	★☆
130				★☆	★☆	★☆	★☆
140				★☆	★☆	★☆	★☆
150				★☆	★☆	★☆	★☆
160						★☆	★☆
170						★☆	★☆
180						★☆	★☆
190						★☆	★☆
200						★☆	★☆
BOX	50	50	25	25	25	10	10
					25 ≥ 140 10		

★ A1 / ★ A2 / ★ A4

DIN 462

Internal tab washers for grooved nuts DIN 1804

Rondelle di sicurezza con tacca interna



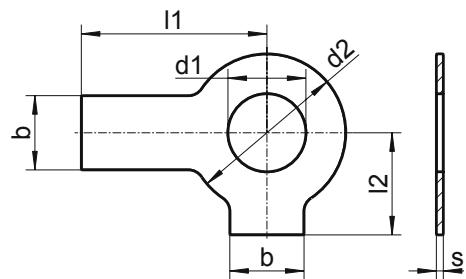
d1	D	h	s	f	g
6	16	2,5	0,8	3	3,9
8	20	2,5	0,8	3	5,9
10	25	3,0	0,8	4	7,4
12	28	3,0	0,8	5	9,3
14	30	3,0	0,8	5	11,4
16	32	3,0	1,0	5	13,5
18	34	4,0	1,0	6	15,4
20	36	4,0	1,0	6	17,5
22	40	4,0	1,0	6	19,5
24	42	4,0	1,0	6	21,6
26	45	5,0	1,0	7	23,5
28	50	5,0	1,0	7	25,5
30	50	5,0	1,2	7	27,5
32	52	5,0	1,2	7	29,6
35	55	5,0	1,2	7	32,6
38	58	5,0	1,2	8	35,3
40	62	5,0	1,2	8	37,3

MAT.	BOX
★★	100
★★	100
★★	100
★★	50
★★	50
★★	50
★★	50
★★	50
★★	50
★★	50
★★	25
★★	25
★★	25
★★	10
★★	10
★★	10
★★	10

★ A1 / ★ A2 / ★ A4

DIN 463

Tab washers with two tabs
Rondelle di sicurezza con due linguette



d1	for	d2	s	l1	l2	b
4,3	M4	9,0	0,38	14	6,5	5
5,3	M5	10,0	0,50	16	8,0	6
6,4	M6	12,5	0,50	18	9,0	7
8,4	M8	17,0	0,75	20	11,0	8
10,5	M10	21,0	0,75	22	13,0	10
13	M12	24,0	1,00	28	15,0	12
15	M14	28,0	1,00	28	16,0	12
17	M16	30,0	1,00	32	18,0	15
19	M18	34,0	1,00	36	20,0	18
21	M20	37,0	1,00	36	21,0	18
23	M22	39,0	1,00	42	23,0	20
25	M24	44,0	1,00	42	25,0	20
28	M27	50,0	1,60	48	29,0	23
31	M30	56,0	1,60	52	32,0	26
34	M33	60,0	1,60	56	34,0	28
37	M36	66,0	1,60	60	38,0	30
40	M39	72,0	1,60	64	41,0	32

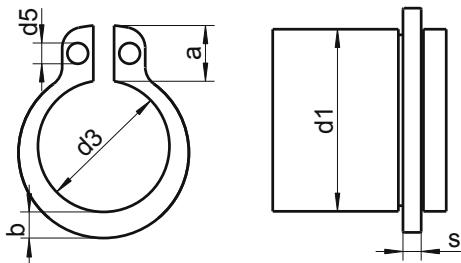
MAT.	BOX
★★	100
★★	100
★★	100
★★	100
★★	100
★★	100
★★	100
★★	50
★★	50
★★	50
★★	50
★★	25
★★	25
★★	20
★★	20
★★	20
★★	10

★ A1 / ★ A2 / ★ A4

DIN 471 - Page 1

Retaining rings for shafts

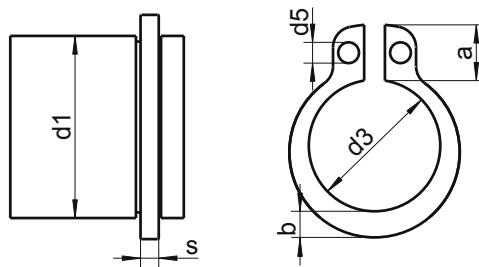
Anelli elasticici di sicurezza esterni (per alberi)



d1	d3	d5 min.	a max.	b~	s
3	2,7	1,0	1,9	0,8	0,40
4	3,7	1,0	2,2	0,9	0,40
5	4,7	1,0	2,5	1,1	0,60
6	5,6	1,2	2,7	1,3	0,70
7	6,5	1,2	3,1	1,4	0,80
8	7,4	1,2	3,2	1,5	0,80
9	8,4	1,2	3,3	1,7	1,00
10	9,3	1,5	3,3	1,8	1,00
11	10,2	1,5	3,3	1,8	1,00
12	11,0	1,7	3,3	1,8	1,00
13	11,9	1,7	3,4	1,9	1,00
14	12,9	1,7	3,5	2,1	1,00
15	13,8	1,7	3,6	2,2	1,00
16	14,7	1,7	3,7	2,2	1,00
17	15,7	1,7	3,8	2,3	1,00
18	16,5	2,0	3,9	2,5	1,20
19	17,5	2,0	3,9	2,5	1,20
20	18,5	2,0	4,0	2,6	1,20
21	19,5	2,0	4,1	2,7	1,20
22	20,5	2,0	4,2	2,8	1,20
23	21,4	2,0	4,3	2,9	1,20
24	22,2	2,0	4,4	3,0	1,20
25	23,2	2,0	4,4	3,0	1,20
26	24,2	2,0	4,5	3,1	1,20
27	25,1	2,0	4,6	3,1	1,20
28	25,9	2,0	4,7	3,2	1,50
29	26,9	2,0	4,8	3,4	1,50
30	27,9	2,0	5,0	3,5	1,50
32	29,6	2,5	5,2	3,6	1,50
34	31,5	2,5	5,4	3,8	1,50

MAT.	BOX
AISI420	200
AISI420	100
AISI420	50
AISI420	25
AISI420	25
AISI420	25

★ A1 / ★ A2 / ★ A4



d1	d3	d5 min.	a max.	b~	s
35	32,2	2,5	5,6	3,9	1,50
36	33,2	2,5	5,7	4,1	1,75
37	34,2	2,5	5,6	4,0	1,75
38	35,2	2,5	5,8	4,2	1,75
39	36,0	2,5	5,9	4,3	1,75
40	36,5	2,5	6,0	4,4	1,75
42	38,5	2,5	6,5	4,5	1,75
45	41,5	2,5	6,7	4,7	1,75
47	43,5	2,5	6,8	4,9	1,75
48	44,5	2,5	6,9	5,0	1,75
50	45,8	2,5	6,9	5,1	2,00
52	47,8	2,5	7,0	5,2	2,00
55	50,8	2,5	7,2	5,4	2,00
60	55,8	2,5	7,4	5,8	2,00
62	57,8	3,0	7,5	6,0	2,00
65	60,8	3,0	7,8	6,3	2,50
70	65,5	3,0	8,1	6,6	2,50
75	70,5	3,0	8,4	7,0	2,50
80	74,5	3,0	8,6	7,4	2,50
85	79,5	3,5	8,7	7,8	3,00
90	84,5	3,5	8,8	8,2	3,00
95	89,5	3,5	9,4	8,6	3,00
100	94,5	3,5	9,6	9,0	3,00
105	98,0	3,5	9,9	9,3	4,00
110	103,0	3,5	10,1	9,6	4,00
115	108,0	3,5	10,6	9,8	4,00
120	113,0	3,5	11,0	10,2	4,00
130	123,0	4,0	11,6	10,7	4,00
140	133,0	4,0	12,0	11,2	4,00
150	142,0	4,0	13,0	11,8	4,00
160	151,0	4,0	13,3	12,2	4,00

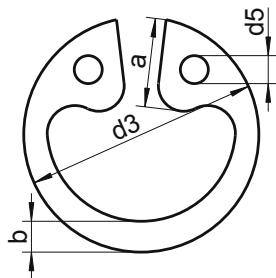
MAT.	BOX
AISI420	25
AISI420	10

★ A1 / ★ A2 / ★ A4

DIN 472 - Page 1

Retaining rings for bores

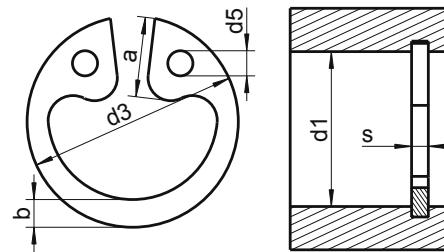
Anelli elastici di sicurezza interni (per motori)



d1	d3	d5 min.	a max.	b~	s
8	8,7	1,0	2,4	1,1	0,8
9	9,8	1,0	2,5	1,3	0,8
10	10,8	1,2	3,2	1,4	1,0
11	11,8	1,2	3,3	1,5	1,0
12	13,0	1,5	3,4	1,7	1,0
13	14,1	1,5	3,6	1,8	1,0
14	15,1	1,7	3,7	1,9	1,0
15	16,2	1,7	3,7	2,0	1,0
16	17,3	1,7	3,8	2,0	1,0
17	18,3	1,7	3,9	2,1	1,0
18	19,5	2,0	4,1	2,2	1,0
19	20,5	2,0	4,1	2,2	1,0
20	21,5	2,0	4,2	2,3	1,0
21	22,5	2,0	4,2	2,4	1,0
22	23,5	2,0	4,2	2,5	1,0
23	24,6	2,0	4,3	2,5	1,0
24	25,9	2,0	4,4	2,6	1,2
25	26,9	2,0	4,5	2,7	1,2
26	27,9	2,0	4,7	2,8	1,2
27	28,9	2,0	4,7	2,8	1,2
28	30,1	2,0	4,8	2,9	1,2
29	31,1	2,0	4,8	3,0	1,2
30	32,1	2,0	4,8	3,0	1,2
31	33,4	2,5	5,2	3,2	1,2
32	34,4	2,5	5,4	3,2	1,2
33	35,5	2,5	5,4	3,3	1,2
34	36,5	2,5	5,4	3,3	1,5
35	37,8	2,5	5,4	3,4	1,5
36	38,8	2,5	5,4	3,5	1,5
37	39,8	2,5	5,5	3,6	1,5
38	40,8	2,5	5,5	3,7	1,5

★ A1 / ★ A2 / ★ A4

MAT.	BOX
AISI420	200
AISI420	100
AISI420	50
AISI420	25



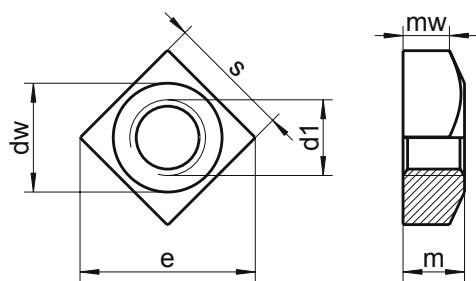
d1	d3	d5 min.	a max.	b~	s	MAT.	BOX
39	42,0	2,5	5,6	3,8	1,50	AISI420	25
40	43,5	2,5	5,8	3,9	1,75	AISI420	25
41	44,5	2,5	5,9	4,0	1,75	AISI420	25
42	45,5	2,5	5,9	4,1	1,75	AISI420	25
43	46,5	2,5	5,9	4,2	1,75	AISI420	25
44	47,5	2,5	6,0	4,2	1,75	AISI420	25
45	48,5	2,5	6,2	4,3	1,75	AISI420	25
47	50,5	2,5	6,4	4,4	1,75	AISI420	25
48	51,5	2,5	6,4	4,5	1,75	AISI420	25
50	54,2	2,5	6,5	4,6	2,0	AISI420	25
52	56,2	2,5	6,7	4,7	2,0	AISI420	25
55	59,2	2,5	6,8	5,0	2,0	AISI420	25
58	62,2	2,5	6,9	5,2	2,0	AISI420	25
60	64,2	2,5	7,3	5,4	2,0	AISI420	25
62	66,2	2,5	7,3	5,5	2,0	AISI420	10
65	69,2	3,0	7,6	5,8	2,5	AISI420	10
68	72,5	3,0	7,8	6,1	2,5	AISI420	10
70	74,5	3,0	7,8	6,2	2,5	AISI420	10
72	76,5	3,0	7,8	6,4	2,5	AISI420	10
75	79,5	3,0	7,8	6,6	2,5	AISI420	10
80	85,5	3,0	8,5	7,0	2,5	AISI420	10
85	90,5	3,5	8,6	7,2	3,0	AISI420	10
90	95,5	3,5	8,6	7,6	3,0	AISI420	10
92	97,5	3,5	8,7	7,8	3,0	AISI420	10
95	100,5	3,5	8,8	8,1	3,0	AISI420	10
100	105,5	3,5	9,2	8,4	3,0	AISI420	10
105	112,0	3,5	9,5	8,7	4,0	AISI420	10
110	117,0	3,5	10,4	9,0	4,0	AISI420	10
115	122,0	3,5	10,5	9,3	4,0	AISI420	10
120	127,0	3,5	11,0	9,7	4,0	AISI420	10
125	132,0	4,0	11,0	10,0	4,0	AISI420	10
130	137,0	4,0	11,0	10,2	4,0	AISI420	10
135	142,0	4,0	11,2	10,5	4,0	AISI420	10
140	147,0	4,0	11,2	10,7	4,0	AISI420	10
150	158,0	4,0	12,0	11,2	4,0	AISI420	10
165	174,5	4,0	13,0	11,8	4,0	AISI420	10
170	179,5	4,0	13,5	12,2	4,0	AISI420	10
180	189,5	4,0	14,2	13,2	4,0	AISI420	10
190	199,5	4,0	14,2	13,8	4,0	AISI420	10
200	209,5	4,0	14,2	14,0	4,0	AISI420	10
210	222,5	4,0	14,2	14,0	5,0	AISI420	10

★ A1 / ★ A2 / ★ A4

DIN 557

Square nuts

Dadi quadri



d1	m	mw	s	e	dw min.
M5	4,0	2,5	8	11,3	6,7
M6	5,0	3,2	10	14,1	8,7
M8	6,5	4,1	13	18,4	11,5
M10	8,0	5,2	17	24,0	14,5
M12	10,0	6,6	19	26,9	16,5
M16	13,0	8,6	24	33,9	22,0

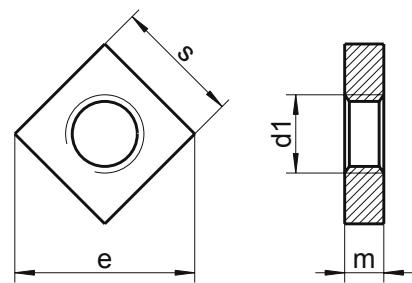
MAT.	BOX
★☆	200
★☆	200
★☆	200
★☆	100
★☆	100
★☆	100

★ A1 / ★ A2 / ☆ A4

DIN 562

Square thin nuts

Dadi quadri bassi



d1	m	s	e
M1,6	1,0	3,2	4,0
M2	1,2	4	5,0
M2,5	1,6	5	6,3
M3	1,8	5,5	7,0
M4	2,2	7	8,9
M5	2,7	8	10,2
M6	3,2	10	12,7
M8	4,0	13	16,5
M10	5,0	17	20,2

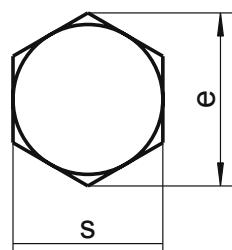
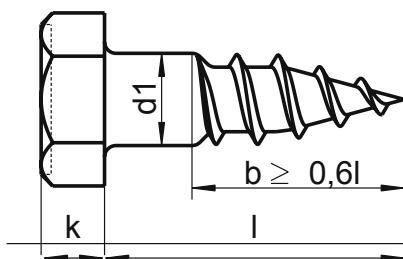
MAT.	BOX
★★	500
★★	500
★★	500
★★	500
★★	500
★★	500
★★	200
★★	200
★★	100

★ A1 / ★ A2 / ★ A4

DIN 571

Wood screws with hexagon head

Viti a legno testa esagonale

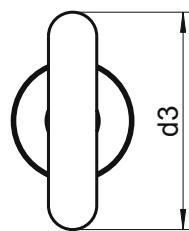
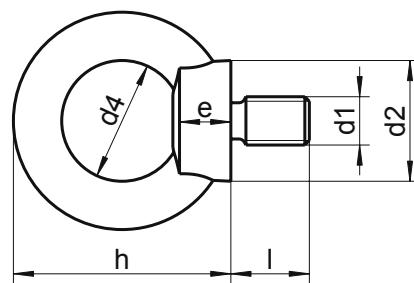


k s e min.	3,5	4,0	5,0	5,5	7,0	8,0	10,0
Length / Ø	5	6	7	8	10	12	16
20	★ ★		★ ★				
25	★ ★	★ ★	★ ★	★ ★			
30	★ ★	★ ★	★ ★	★ ★			
35	★ ★	★ ★	★ ★	★ ★			
40	★ ★	★ ★	★ ★	★ ★	★ ★		
45	★ ★	★ ★	★ ★	★ ★	★ ★		
50	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
55	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
65	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
70	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
90		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
100		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
110		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
120		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
130		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
140		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
150			★ ★	★ ★	★ ★	★ ★	★ ★
160			★ ★	★ ★	★ ★	★ ★	★ ★
170			★ ★	★ ★	★ ★	★ ★	★ ★
180				★ ★	★ ★	★ ★	★ ★
200				★ ★	★ ★	★ ★	★ ★
220						★ ★	
240						★ ★	
250						★ ★	
260						★ ★	
280						★ ★	
300						★ ★	
BOX	200	100	100	100 ≥ 120 50	100 ≥ 120 50	50 ≥ 110 25	25

★ A1 / ★ A2 / ★ A4

ART 580

Lifting eye bolts
Golfari maschio



d1	d2	d3	d4	h	e	l
M6	16	27	16	31	6	11,0
M8	20	36	20	36	6	13,0
M10	25	45	25	45	8	17,0
M12	30	54	30	53	10	20,5
M16	35	63	35	62	12	27,0
M20	40	72	40	71	14	30,0
M24	50	90	50	90	18	36,0
M27	65	108	60	109	22	45,0
M30	65	108	60	109	22	45,0
M36	75	126	70	128	26	54,0

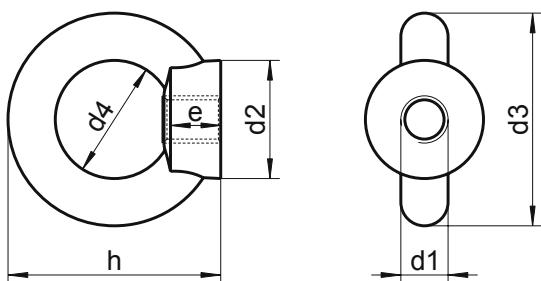
MAT.	BOX
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	1

★ A1 / ★ A2 / ★ A4

ART 582

Lifting eye nuts

Golfari femmina



d1	d2	d3	d4	h	e
M6	16	27	16	31	8,0
M8	20	36	20	36	8,5
M10	25	45	25	45	10,0
M12	30	54	30	53	11,0
M16	35	63	35	62	13,0
M20	40	72	40	71	16,0
M24	50	90	50	90	20,0
M27	65	108	60	109	22,0
M30	65	108	60	109	25,0
M36	75	126	70	128	30,0

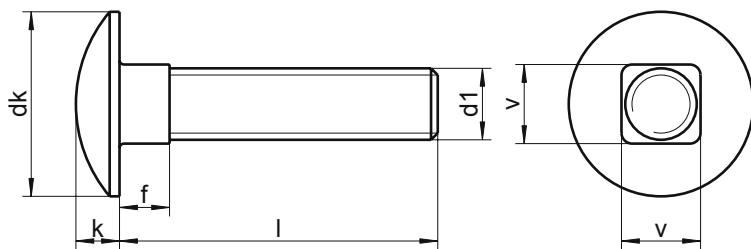
MAT.	BOX
★★	25
★★	25
★★	25
★★	25
★★	10
★★	10
★★	10
★★	1
★★	1
★★	1

★ A1 / ★ A2 / ★ A4

DIN 603 FT

Mushroom head square neck bolts with full thread

Viti testa tonda quadro sottotesta (tutto filetto)



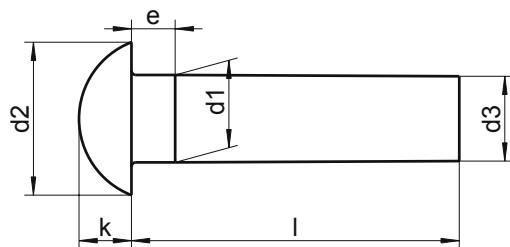
dk min/max.	12,45/13,55	15,45/16,55	19,35/20,65	23,35/24,65	29,35/30,65	37,20/38,88
f min/max.	2,90/4,10	3,40/4,60	4,40/5,60	5,40/6,60	7,25/8,75	11,10/12,90
k min/max.	2,70/3,30	3,12/3,88	4,12/4,88	4,62/5,38	6,05/6,95	8,05/8,95
v min.	4,52	5,52	7,42	9,42	11,30	15,30
Length /Ø	M5	M6	M8	M10	M12	M16
35	★ ★	★ ★				
40	★ ★	★ ★	★ ★			
45	★ ★	★ ★	★ ★	★ ★		
50	★ ★	★ ★	★ ★	★ ★		
55	★ ★	★ ★	★ ★	★ ★	★ ★	
60	★ ★	★ ★	★ ★	★ ★	★ ★	
65	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
70	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
75	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
90		★ ★	★ ★	★ ★	★ ★	★ ★
100		★ ★	★ ★	★ ★	★ ★	★ ★
110		★ ★	★ ★	★ ★	★ ★	★ ★
120		★ ★	★ ★	★ ★	★ ★	★ ★
130		★ ★	★ ★	★ ★	★ ★	★ ★
140		★ ★	★ ★	★ ★	★ ★	★ ★
150		★ ★	★ ★	★ ★	★ ★	★ ★
160		★ ★	★ ★	★ ★	★ ★	★ ★
170		★ ★	★ ★	★ ★	★ ★	★ ★
180		★ ★	★ ★	★ ★	★ ★	★ ★
200		★ ★	★ ★	★ ★	★ ★	★ ★
BOX	200	200 ≥ 60 100	100 ≥ 70 50	100 ≥ 50 50	50	25

★ A1 / ★ A2 / ★ A4

DIN 660

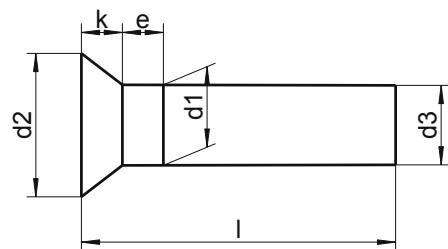
Round head rivets

Ribattini testa cilindrica



d2	3,5	5,2	7,0	8,8	10,5	14,0
d3 min.	1,87	2,87	3,87	4,82	5,82	7,76
e max.	1,0	1,5	2,0	2,5	3,0	4,0
k	1,2	1,8	2,4	3,0	3,6	4,8
Length /Ø	2	3	4	5	6	8
4	★ ★					
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
28			★ ★	★ ★	★ ★	★ ★
30			★ ★	★ ★	★ ★	★ ★
35			★ ★	★ ★	★ ★	★ ★
40				★ ★	★ ★	★ ★
45				★ ★	★ ★	★ ★
50					★ ★	★ ★
BOX	500	500	200	200	100	100

★ A1 / ★ A2 / ★ A4



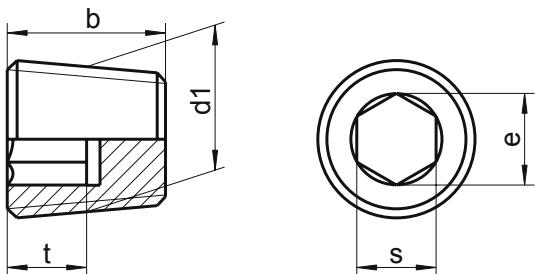
d_2	3,5	5,2	7,0	8,8	10,5	14,0
d_3 min.	1,87	2,87	3,87	4,82	5,82	7,76
e max.	1,0	1,5	2,0	2,5	3,0	4,0
Length /Ø	2	3	4	5	6	8
6	★ ★	★ ★	★ ★	★ ★	★ ★	
8	★ ★	★ ★	★ ★	★ ★	★ ★	
10	★ ★	★ ★	★ ★	★ ★	★ ★	
12	★ ★	★ ★	★ ★	★ ★	★ ★	
16	★ ★	★ ★	★ ★	★ ★	★ ★	
18		★ ★	★ ★	★ ★	★ ★	
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
28		★ ★	★ ★	★ ★	★ ★	★ ★
30			★ ★	★ ★	★ ★	★ ★
35				★ ★	★ ★	★ ★
40				★ ★	★ ★	★ ★
50				★ ★	★ ★	★ ★
BOX	500	500	200	200	100	100

★ A1 / ★ A2 / ★ A4

DIN 906 M

Hexagon socket pipe plugs with conical metric thread

Tappi conici esagono incassato passo fine



d1	s	e	b	t
M8X1	4	4,6	8	4,0
M10X1	5	5,7	8	4,0
M12X1,5	6	6,9	10	5,0
M14X1,5	7	8,0	10	5,0
M16X1,5	8	9,2	10	5,0
M18X1,5	8	9,2	10	5,0
M20X1,5	10	11,4	10	5,0
M22X1,5	10	11,4	10	5,0
M24X1,5	12	13,7	12	6,0
M26X1,5	12	13,7	12	6,0
M27X2	12	13,7	12	6,0
M30X1,5	17	19,4	12	6,0
M30X2,0	17	19,4	12	6,0
M36X1,5	19	21,7	15	7,5
M39X2,0	19	21,7	15	7,5

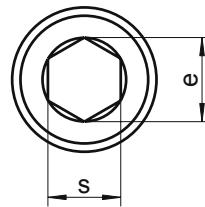
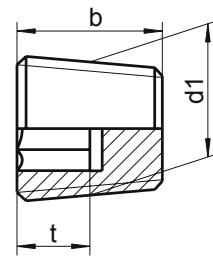
MAT.	BOX
★☆	50
★☆	50
★☆	50
★☆	50
★☆	50
★☆	50
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25
★☆	10
★☆	10
★☆	10
★☆	10

★ A1 / ★ A2 / ★ A4

DIN 906 G

Hexagon socket pipe plugs with conical pipe thread

Tappi conici esagono incassato GAS



d1	s	e	b	t
R1/8	5	5,7	8	4,0
R1/4	7	8,0	10	5,0
R3/8	8	9,2	10	5,0
R1/2	10	11,4	10	5,0
R3/4	12	13,7	12	6,0
R1"	17	19,4	12	6,0
R1 1/4	22	25,2	18	11,5
R1 1/2	24	27,4	20	11,5
R2"	32	35,6	22	17,0

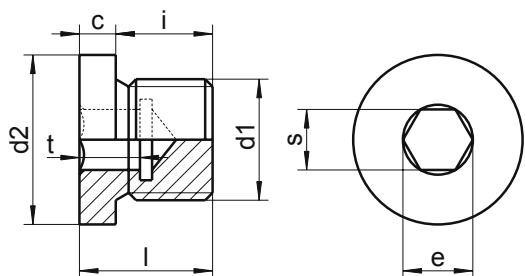
MAT.	BOX
★☆	50
★☆	50
★☆	50
★☆	25
★☆	25
★☆	10
★☆	5
★☆	5
★☆	5

★ A1 / ★ A2 / ☆ A4

DIN 908 M

Hexagon socket screw plugs with collar and cylindrical metric thread

Tappi cilindrici con spallamento esagono incassato passo fine



d1	d2	s	e	l	t	c	i
M10X1	14	5	5,7	11	5,0	3	8
M12X1,5	17	6	6,9	15	7,0	3	12
M14X1,5	19	6	6,9	15	7,0	3	12
M16X1,5	21	8	9,2	15	7,5	3	12
M18X1,5	23	8	9,2	16	7,5	4	12
M20X1,5	25	10	11,4	18	7,5	4	14
M22X1,5	27	10	11,4	18	7,5	4	14
M24X1,5	29	12	13,7	18	7,5	4	14
M26X1,5	31	12	13,7	20	9,0	4	16
M27X2	32	12	13,7	20	9,0	4	16
M30X2	36	17	19,4	20	9,0	4	16
M33X2	39	17	19,4	21	9,0	5	16
M36X1,5	42	19	21,7	21	10,5	5	16

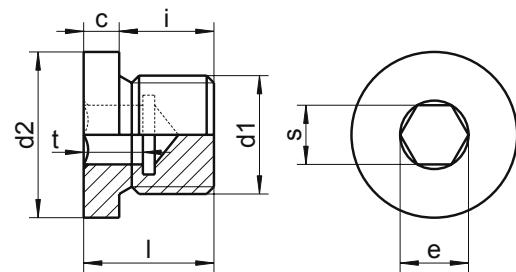
MAT.	BOX
★☆	50
★☆	50
★☆	50
★☆	50
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25
★☆	10
★☆	10
★☆	10

★ A1 / ★ A2 / ☆ A4

DIN 908 G

Hexagon socket screw plugs with collar and cylindrical pipe thread

Tappi cilindrici con spallamento esagono incassato GAS



d1	d2	s	e	l	t	c	i
G1/8	14	5	5,7	11	5,0	3	8
G1/4	18	6	6,9	15	7,0	3	12
G3/8	22	8	9,2	15	7,5	3	12
G1/2	26	10	11,4	18	7,5	4	14
G3/4	32	12	13,7	20	9,0	4	16
G1"	39	17	19,4	21	9,0	5	16
G1 1/4	49	22	25,2	21	10,5	5	16
G1 1/2	55	24	27,4	21	10,5	5	16
G1 1/8	44	19	21,7	21	10,5	5	16
G1 3/4	62	32	36,6	25	14,0	5	20
G2"	68	32	36,6	25	14,0	5	20

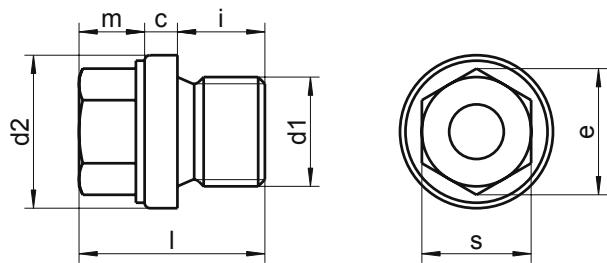
MAT.	BOX
★☆	50
★☆	50
★☆	25
★☆	50
★☆	25
★☆	10
★☆	5
★☆	5
★☆	5
★☆	5
★☆	5

★ A1 / ★ A2 / ☆ A4

DIN 910 M

Hexagon head screw plugs with collar and cylindrical thread, heavy type

Tappi cilindrici testa esagonale a passo fine con spallamento



d1	d2	l	s	e	m	c	i
M10X1	14	17	10	10,89	6	3	8
M12X1,5	17	21	13	14,20	6	3	12
M14X1,5	19	21	13	14,20	6	3	12
M16X1,5	21	21	17	18,72	6	3	12
M18X1,5	23	24	17	18,72	8	4	12
M20X1,5	25	26	19	20,88	8	4	14
M22X1,5	27	26	19	20,88	8	4	14
M24X1,5	29	27	22	23,91	9	4	14
M26X1,5	31	30	24	26,17	10	4	16
M27X2	32	30	24	26,17	10	4	16
M30X1,5	36	30	24	26,17	10	4	16
M30X2	36	30	24	26,17	10	4	16
M33X2	39	32	27	29,56	11	5	16

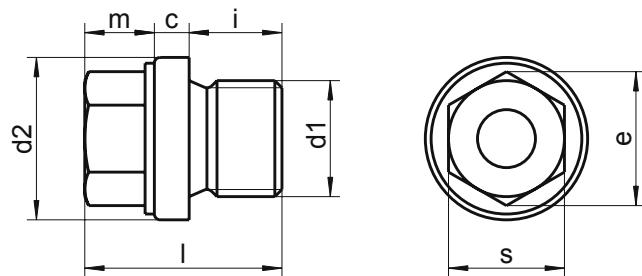
MAT.	BOX
★☆	50
★☆	50
★☆	50
★☆	50
★☆	50
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25
★☆	10
★☆	10
★☆	10

★ A1 / ★ A2 / ☆ A4

DIN 910 G

Hexagon head screw plugs with collar and cylindrical pipe thread, heavy type

Tappi cilindrici testa esagonale GAS con spallamento



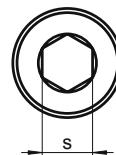
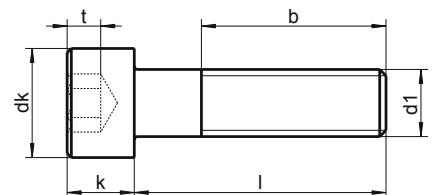
d1	d2	l	s	e	m	c	i
G1/8	14	17	10	10,89	6	3	8
G1/4	18	21	13	14,20	6	3	12
G3/8	22	21	19	18,72	6	3	12
G1/2	26	26	19	20,88	8	4	14
G5/8	28	26	19	21,90	8	4	14
G3/4	32	30	24	26,17	10	4	16
G1"	39	32	27	29,56	11	5	16
G1 1/8	44	32	27	29,56	11	5	16
G1 1/4	49	33	30	32,95	12	5	16
G1 1/2	55	33	30	32,95	12	5	16
G1 3/4	62	40	36	39,55	15	5	20
G2"	68	40	36	39,55	15	5	20

MAT.	BOX
★☆	50
★☆	50
★☆	50
★☆	25
★☆	25
★☆	25
★☆	10
★☆	5
★☆	5
★☆	5
★☆	5
★☆	5

★ A1 / ★ A2 / ☆ A4

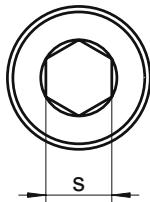
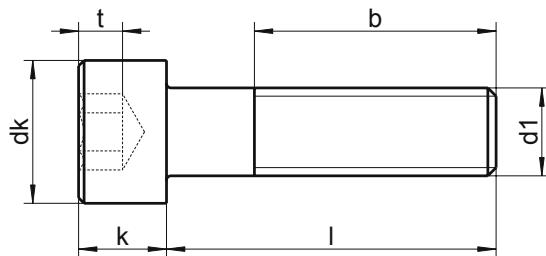
DIN 912 - Page 1

Hexagon socket head cap screws
Viti testa cilindrica cava esagonale



dk max.	3,0	3,8	4,5	5,5	7,0	8,5	10,0	13,0	16,0	18,0	21,0	24,0	27,0
k max.	1,6	2,0	2,5	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0
s	1,5	1,5	2	2,5	3	4	5	6	8	10	12	14	14
b	15	16	17	18	20	22	24	28	32	36	40	44	48
t	0,7	1,0	1,1	1,3	2,0	2,5	3,0	4,0	5,0	6,0	7,0	8,0	9,0
Length /Ø	M1,6	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18
3	★ ★	★ ★											
4	★ ★	★ ★	★ ★	★ ★									
5	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★							
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★				
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
18	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
22	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
25	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
30		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
35		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
40		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
45		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
50		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
55		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
60		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
65			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
70			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
75			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
80			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
90			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
100			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
110			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
120				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
130				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
140				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
150				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
160				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
170				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
180				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
190				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
200				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
210					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
220					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
230					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
240					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
250					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
260						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
270						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
280						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
300						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
BOX	1000	1000	1000	1000 ≥ 45 500	1000 ≥ 35 500	500 ≥ 45 200	500 ≥ 45 100	200 ≥ 45 100	100	100 ≥ 55 50	25	25	25

★ A1 / ★ A2 / ★ A4



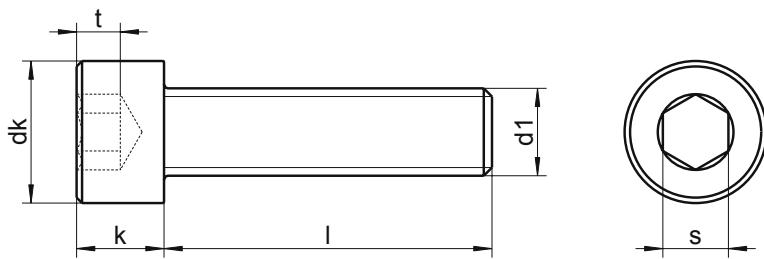
Length / Ø	M20	M22	M24	M27	M30	M33	M36
30	★ ★						
35	★ ★						
40	★ ★	★ ★	★ ★				
45	★ ★	★ ★	★ ★				
50	★ ★	★ ★	★ ★	★ ★	★ ★		
55	★ ★	★ ★	★ ★	★ ★	★ ★		
60	★ ★	★ ★	★ ★	★ ★	★ ★		
65	★ ★	★ ★	★ ★	★ ★	★ ★		
70	★ ★	★ ★	★ ★	★ ★	★ ★		★ ★
75	★ ★	★ ★	★ ★	★ ★	★ ★		
80	★ ★	★ ★	★ ★	★ ★	★ ★		★ ★
85	★ ★	★ ★	★ ★	★ ★	★ ★		
90	★ ★	★ ★	★ ★	★ ★	★ ★		★ ★
95	★ ★	★ ★	★ ★	★ ★	★ ★		
100	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
110	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
120	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
130	★ ★	★ ★	★ ★	★ ★	★ ★		
140	★ ★	★ ★	★ ★	★ ★	★ ★		
150	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
160	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
170	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
180	★ ★	★ ★	★ ★	★ ★	★ ★		
190	★ ★	★ ★	★ ★	★ ★	★ ★		
200	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
210	★ ★		★ ★				
220	★ ★		★ ★		★ ★		
230	★ ★		★ ★				
240	★ ★	★ ★	★ ★		★ ★		
250	★ ★		★ ★	★ ★		★ ★	★ ★
260			★ ★		★ ★		
270			★ ★				
280			★ ★		★ ★		
290			★ ★				
300	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
BOX	25 10	25 10	10 ≥ 140	5	5	5	5

★ A1 / ★ A2 / ★ A4

DIN 912 FT

Hexagon socket head cap screws with full thread

Viti testa cilindrica cava esagonale tutto filetto



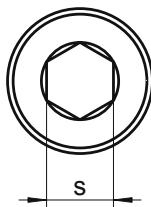
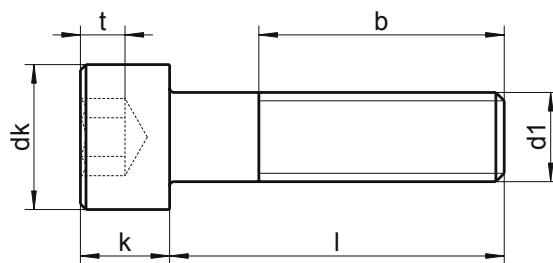
dk max.	8,5	10,0	13,0	16,0	18,0
k max.	5,0	6,0	8,0	10,0	12,0
s	4	5	6	8	10
t	2,5	3,0	4,0	5,0	6,0
Length / Ø	M5	M6	M8	M10	M12
30	★☆				
35	★☆				
40	★☆	★☆	★☆		
45	★☆	★☆	★☆		
50	★☆	★☆	★☆	★☆	
60		★☆	★☆	★☆	★☆
70		★☆	★☆	★☆	★☆
80		★☆	★☆	★☆	★☆
90		★☆	★☆	★☆	★☆
100		★☆	★☆	★☆	★☆
110			★☆		
120		★☆	★☆	★☆	★☆
BOX	500	500 ≥ 45 200 ≥ 70 100	100	50	50 ≥ 70 25

★ A1 / ★ A2 / ☆ A4

DIN 912 A4-80

Hexagon socket head cap screws with strength 80

Viti testa cilindrica cava esagonale classe A480



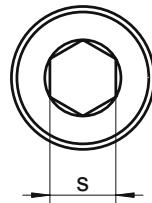
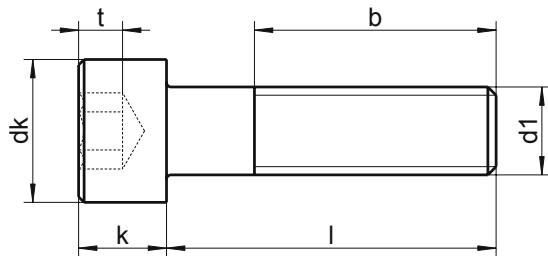
dk max.	7,0	8,5	10,0	13,0	16,0	18,0	21,0	24,0	30,0
k max.	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
s	3	4	5	6	8	10	12	14	17
b	20	22	24	28	32	36	40	44	52
t	2,0	2,5	3,0	4,0	5,0	6,0	7,0	8,0	10,0
Length /Ø	M4	M5	M6	M8	M10	M12	M14	M16	M20
8		★	★						
10		★	★	★					
12		★	★	★					
14	★	★	★	★					
16	★	★	★	★	★	★	★		
18	★	★	★	★	★	★	★		
20	★	★	★	★	★	★	★	★	
22	★	★	★	★	★	★	★	★	
25	★	★	★	★	★	★	★	★	
30	★	★	★	★	★	★	★	★	★
35	★	★	★	★	★	★	★	★	★
40	★	★	★	★	★	★	★	★	★
45		★	★	★	★	★	★	★	★
50		★	★	★	★	★	★	★	★
55		★	★	★	★	★	★	★	★
60		★	★	★	★	★	★	★	★
65			★	★	★	★	★	★	★
70			★	★	★	★	★	★	★
75			★	★	★	★	★	★	★
80			★	★	★	★	★	★	★
90			★	★	★	★		★	★
100			★	★	★	★		★	★
110			★	★	★	★		★	★
120			★	★	★	★		★	★
130				★	★			★	★
140					★	★		★	★
150					★	★		★	★
160					★	★		★	★
BOX	1000 ≥ 20 500	500 ≥ 30 200	500 ≥ 12 200 ≥ 45 100	200 ≥ 35 100	100 ≥ 65 50	50 ≥ 75 25	50 ≥ 75 25	25	25 ≥ 100 10

★ A1 / ★ A2 / ★ A4

DIN 912 UNC/UNF

Hexagon socket head cap screws

Viti testa cilindrica cava esagonale



dk	2,43	2,99	3,55	4,08	4,64	5,20	5,74	6,85	7,92
k	1,52	1,85	2,18	2,51	2,84	3,17	3,50	4,16	4,82
s	1,27	1,57	1,98	1,98	2,38	2,38	2,76	3,58	3,96
t	0,63	0,78	0,96	1,11	1,29	1,44	1,62	1,95	2,28
b min.	12,70	15,74	15,74	15,74	19,05	19,05	19,05	22,35	22,35
b max.	15,74	19,55	20,32	21,08	25,14	25,40	26,67	32,25	38,10

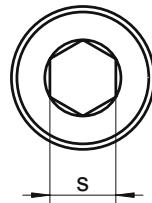
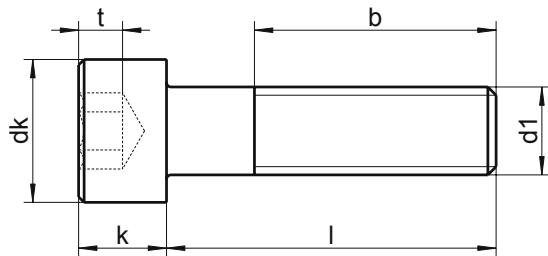
UNC	-	1-64	2-65	3-48	4-40	5-40	6-32	8-32	10-24
UNF	0-80	1-72	2-64	3-56	4-48	5-44	6-40	8-36	10-32
1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
5/16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
7/16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
9/16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
5/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3/4	★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
7/8				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 1/4					★ ★	★ ★	★ ★	★ ★	★ ★
1 1/2					★ ★	★ ★	★ ★	★ ★	★ ★
1 3/4						★ ★	★ ★	★ ★	★ ★
2						★ ★	★ ★	★ ★	★ ★
2 1/4						★ ★	★ ★	★ ★	★ ★
1 3/4						★ ★	★ ★	★ ★	★ ★
2						★ ★	★ ★	★ ★	★ ★
2 1/4						★ ★	★ ★	★ ★	★ ★
2 1/2						★ ★	★ ★	★ ★	★ ★
2 5/8								★ ★	
2 3/4								★ ★	
3								★ ★	

★ A1 / ★ A2 / ★ A4

DIN 912 UNC/UNF

Hexagon socket head cap screws

Viti testa cilindrica cava esagonale



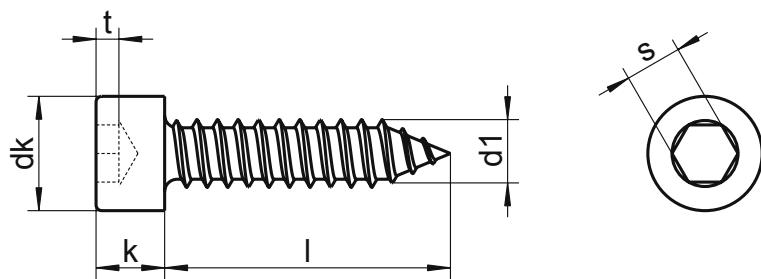
	9,52	11,91	14,27	16,66	19,0	23,82	28,57	33,32	38,10
dk	9,52	11,91	14,27	16,66	19,0	23,82	28,57	33,32	38,10
k	6,35	7,82	9,52	11,12	12,70	15,87	19,05	22,22	25,4
s	4,77	6,35	7,92	9,52	9,52	12,70	15,87	19,05	19,05
b min.	25,4	28,45	31,75	35,05	38,10	44,45	50,8	57,15	63,50
b max.	38,01	43,43	49,27	55,11	60,45	71,62	82,55	93,72	104,64
t	3,05	3,83	4,62	5,41	6,22	7,80	9,39	10,97	12,57
UNC	1/4-20	5/16-18	3/8-16	7/16-14	1/2-13	5/8-11	3/4-10	7/8-9	1-8
UNF	1/4-28	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	3/4-16	7/8-14	1-12
1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
5/16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
7/16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
9/16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
5/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
7/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 1/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
4 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
5	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
5 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
6 1/2					★ ★	★ ★	★ ★	★ ★	★ ★
7					★ ★	★ ★	★ ★	★ ★	★ ★

★ A1 / ★ A2 / ★ A4

sim. DIN 912 ST

Tapping screws with hexagon socket head similar DIN 912

Viti autofilettanti testa cilindrica esagono incassato



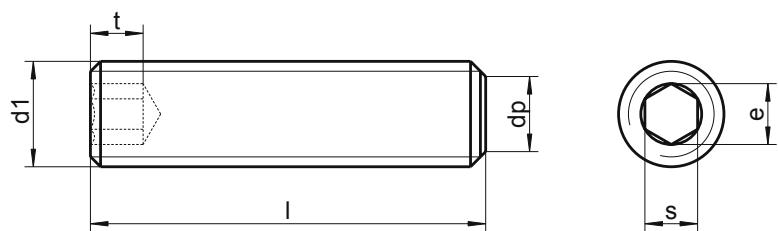
s dk k max t min.	4 8,5 5 2,5	5 10,0 6 3,0	5 10,0 6 3,0
Length /Ø	ST4,8	ST5,5	ST6,3
9,5 (3/8)	★ ★	★ ★	★ ★
13 (1/2)	★ ★	★ ★	★ ★
16 (5/8)	★ ★	★ ★	★ ★
19 (3/4)	★ ★	★ ★	★ ★
22 (7/8)	★ ★	★ ★	★ ★
25 (1")	★ ★	★ ★	★ ★
32 (1 1/4)	★ ★	★ ★	★ ★
38 (1 1/2)	★ ★	★ ★	★ ★
42 (1 5/8)	★ ★	★ ★	★ ★
45 (1 3/4)	★ ★	★ ★	★ ★
50 (2")	★ ★	★ ★	★ ★
55 (2 1/8)	★ ★	★ ★	★ ★
60 (2 3/8)	★ ★	★ ★	★ ★
70 (2 3/4)	★ ★	★ ★	★ ★
80	★ ★	★ ★	★ ★
90	★ ★	★ ★	★ ★
100	★ ★	★ ★	★ ★
BOX	500 ≥ 32 200	200 ≥ 38 100	200 ≥ 32 100

★ A1 / ★ A2 / ★ A4

DIN 913

Hexagon socket set screws with flat point

Grani cava esagonale punta piatta



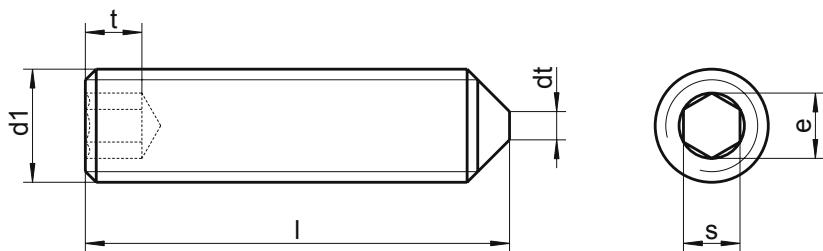
dp min/max	0,75/1	1,25/1,5	1,75/2	2,25/2,5	3,20/3,5	3,70/4	5,20/5,5	6,64/7	7/8,5	9,64/10	11,57/12	14,57/15	17,57
t min.	0,8	1,2	1,2	1,5	2,0	2,0	3,0	4,0	4,8	5,6	6,4	8,0	10
t max.	1,7	2,0	2,0	2,5	3,0	3,5	5,0	6,0	8,0	9,0	10,0	12,0	15
s	0,9	1,3	1,5	2	2,5	3	4	5	6	6	8	10	12
e	1,0	1,43	1,73	2,30	2,87	3,44	4,58	5,72	6,86	6,86	9,15	11,43	13,71
Length /Ø	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M24
2	★ ★												
3	★ ★	★ ★	★ ★	★ ★									
4	★ ★	★ ★	★ ★	★ ★	★ ★								
5	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★							
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★						
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★				
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★				
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★		
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
20		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
25		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
30		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
35			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
40			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
50				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
55					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
60					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
70					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
80					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
90						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
100						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
BOX	500	500	500 ≥ 30	500 ≥ 12	500 ≥ 12	200	200	200 ≥ 35	100	50	50	25	25

★ A1 / ★ A2 / ★ A4

DIN 914

Hexagon socket set screws with cone point

Grani cava esagonale punta conica



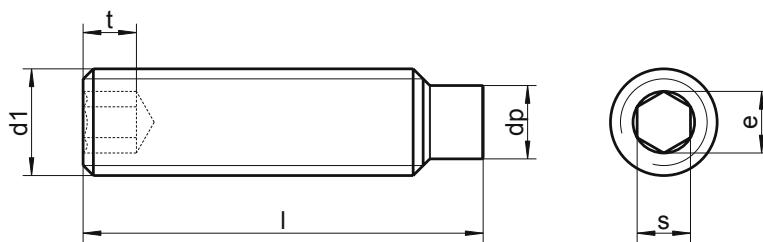
dt min/max	-	1,2/2,0	1,2/2,0	1,5/2,5	2,0/3,0	0,90/1,50 2,0/3,5	1,40/2 3,0/5,0	1,90/2,5 4,0/6,0	2,40/3 4,5/8,0	3,25/4 5,6/9	3,25/4 6,4/10,0	4,25/5 8,0/12,0
t	0,8/1,7	1,2/2,0	1,2/2,0	1,5/2,5	2,0/3,0	0,90/1,50 2,0/3,5	1,40/2 3,0/5,0	1,90/2,5 4,0/6,0	2,40/3 4,5/8,0	3,25/4 5,6/9	3,25/4 6,4/10,0	4,25/5 8,0/12,0
s	0,9	1,3	1,5	2	2,5	3	4	5	6	6	8	10
e	1,00	1,43	1,73	2,30	2,87	3,44	4,58	5,72	6,86	6,86	9,15	11,43
Length /Ø	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20
2	★★											
3	★★★	★★★	★★★	★★★								
4	★★★	★★★	★★★	★★★								
5	★★★	★★★	★★★	★★★	★★★	★★★						
6	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★				
8	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★				
10	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★			
12	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★		
14	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★		
16	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
20		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
25		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
30		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
35			★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
40			★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
45			★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
50			★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
55				★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
60				★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
70					★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
80						★★★	★★★	★★★		★★★	★★★	★★★
90							★★★	★★★		★★★	★★★	★★★
100										★★★	★★★	★★★
BOX	500	500	500	500 ≥ 12 200	500 ≥ 12 200	200	100	100	50	25	25	25

★ A1 / ★ A2 / ★ A4

DIN 915

Hexagon socket set screws with dog point

Grani cava esagonale punta cilindrica



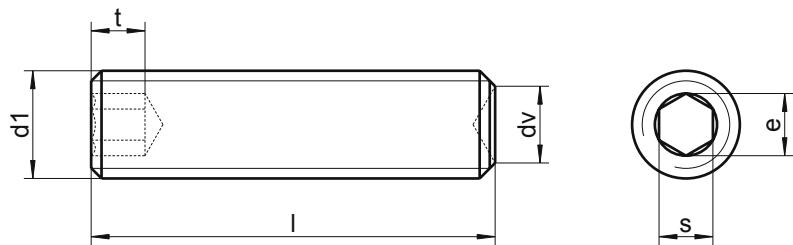
dp min/max	0,75/1,0	1,25/1,5	1,75/2,5	2,25/2,5	3,20/3,5	3,70/4,0	5,20/5,5	6,64/7	8,14/8,5	11,57/12	14,57/15
t min.	0,8	1,2	1,2	1,5	2,0	2,0	3,0	4,0	4,8	6,4	8,0
t max.	1,7	2,0	2,0	2,5	3,0	3,5	5,0	6,0	8,0	10,0	12,0
s	0,9	1,3	1,5	2	2,5	3	4	5	6	8	10
e	1,00	1,43	1,73	2,30	2,87	3,44	4,58	5,72	6,86	9,15	11,43
Length /Ø	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M16	M20
3	★ ★	★ ★	★ ★								
4	★ ★	★ ★	★ ★	★ ★							
5	★ ★	★ ★	★ ★	★ ★	★ ★						
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★				
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
20			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
30			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
35					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
40					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
70							★ ★	★ ★	★ ★	★ ★	★ ★
90									★ ★	★ ★	★ ★
100									★ ★	★ ★	★ ★
BOX	500	500	500 ≥ 30 200	200	200	200	100	100	50	25	25

★ A1 / ★ A2 / ★ A4

DIN 916

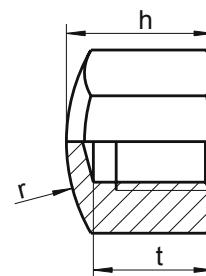
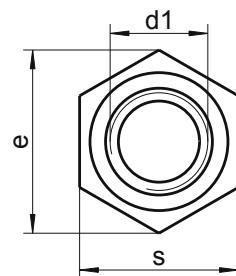
Hexagon socket set screws with cup point

Grani cava esagonale punta coppa



dv min/max	0,75/1	0,95/1,2	1,15/1,4	1,75/2	2,25/2,5	2,75/3	4,70/3	5,70/6	7,64/8	8,64/9	9,64/10	13,57/14
t min.	0,8	1,2	1,2	1,5	2,0	2,0	3,0	4,0	4,8	5,60/9	6,4	8,0
t max.	1,7	2,0	2,0	2,5	3,0	3,5	5,0	6,0	8,0	8,0	10,0	12,0
s	0,9	1,3	1,5	2	2,5	3	4	5	6	6	8	10
e	1,00	1,43	1,73	2,30	2,87	3,44	4,58	5,72	6,86	6,86	9,15	11,43
Length /Ø	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20
3	★ ★	★ ★	★ ★	★ ★								
4	★ ★	★ ★	★ ★	★ ★	★ ★							
5	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★						
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
20		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
25			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
30			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
35			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
40			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
45					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
50					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
55					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
60					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
70						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
80						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
90								★ ★	★ ★	★ ★	★ ★	
100										★ ★	★ ★	
BOX	500	500	500	500 ≥ 12 200	200	200	200 ≥ 20 100	100	50	25	25	25

★ A1 / ★ A2 / ★ A4



d1	h	s	e	r	t min.	t	t max.
M3	-	5,5	6,01	-	-	-	-
M4	5,5	7	7,66	8	4,16	4,4	4,64
M5	7,0	8	8,79	10	4,96	5,2	5,44
M6	9,0	10	11,05	12	6,71	7,0	7,29
M8	12,0	13	14,38	15	9,21	9,5	9,79
M10	14,0	17	17,77	20	10,65	11,0	11,35
M12	16,0	19	20,03	25	13,15	13,5	13,85
M14	18,0	22	23,35	28	14,65	15	15,35
M16	20,0	24	26,75	30	16,65	17	17,35
M18	22,0	27	29,56	32	18,58	19	19,42
M20	25,0	30	32,95	35	20,58	21	21,42
M22	28,0	32	37,29	35	21,58	22	22,42
M24	30,0	36	39,55	40	23,58	24	24,42
M27	32,0	41	45,20	50	25,58	26	26,42
M30	34,0	46	50,85	60	27,58	28	28,42

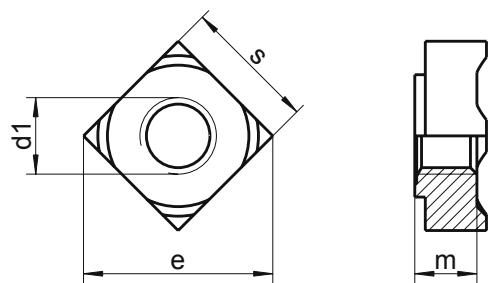
MAT.	BOX
★★	200
★★	200
★★	200
★★	200
★★	200
★★	100
★★	100
★★	50
★★	50
★★	50
★★	25
★★	25
★★	10
★★	10
★★	10

★ A1 / ★ A2 / ★ A4

DIN 928

Square weld nuts

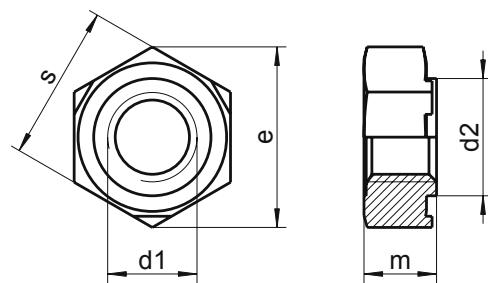
Dadi a saldare quadri



d1	m	s	e
M4	3,5	7	9
M5	4,2	9	12
M6	5,0	10	13
M8	6,5	14	18
M10	8,0	17	22

★ A1 / ★ A2 / ★ A4

MAT.	BOX
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	100



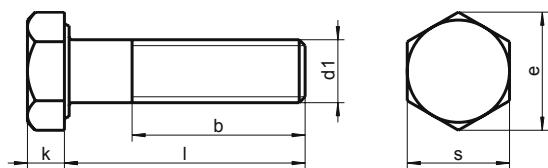
d1	m	s	e	d2
M3	3,0	7,5	8,15	4,5
M4	3,5	9	9,83	6,0
M5	4,0	10	10,95	7,0
M6	5,0	11	12,02	8,0
M8	6,5	14	15,38	10,5
M10	8,0	17	18,74	12,5
M12	10,0	19	20,91	14,8
M16	13,0	24	26,51	18,8

MAT.	BOX
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	100
★ ★	50
★ ★	50

★ A1 / ★ A2 / ★ A4

DIN 931

Hexagon head screws with shank
Viti testa esagonale parziale filetto



$b \leq 125$	16	18	22	26	30	34	38	42	46	50	54	60	66	72	78
$b > 125$	22	24	28	32	36	40	44	48	52	56	60	66	72	78	84
s	8	10	13	17	19	22	24	27	30	32	36	41	46	50	55
$k \text{ min.}$	3,35	3,85	5,15	6,22	7,32	8,62	9,82	11,28	12,28	13,78	14,78	16,65	18,28	20,58	22,08
e	8,79	11,05	14,38	18,90	21,10	24,49	26,75	30,14	33,53	35,72	39,98	45,2	50,85	55,37	60,79

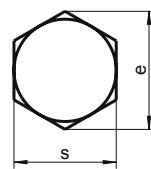
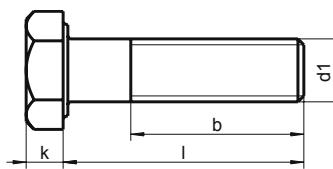
Length / Ø	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	
25	★ ★	★ ★														
30	★ ★	★ ★	★ ★													
35	★ ★	★ ★	★ ★	★ ★												
40	★ ★	★ ★	★ ★	★ ★	★ ★											
45	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★										
50	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★									
55	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★								
60	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★						
65	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
70	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★				
75	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
80	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
85	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
90	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
95	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
100	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
110		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
120		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
130		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
140		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
150		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
160		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
170		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
180		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
190		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
200		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
210			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
220			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
230			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
240			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
250				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
260				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
270				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
280				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
290				★ ★	★ ★	★ ★		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
300				★ ★	★ ★			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
BOX	500 ≥ 45 200	200 ≥ 45 100	200 ≥ 45 100	200 ≥ 45 100	50 ≥ 50 50	50 ≥ 100 25	50 ≥ 100 25	25 ≥ 150 10	25 ≥ 130 10	25 ≥ 130 10	25 ≥ 130 10	20 ≥ 80 10	10 ≥ 160 5	10 ≥ 160 5	10 ≥ 130 5	5

★ A1 / ★ A2 / ★ A4

DIN 931 UNC/UNF

Hexagon head screws with shank

Viti testa esagonale parziale filetto



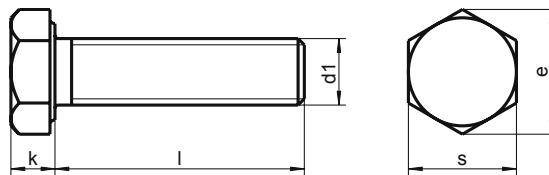
k max	4,77	5,96	6,80	8,02	9,24	9,42	11,27	13,31	15,34	17,78
s	11,12	12,07	14,27	15,87	19,05	20,62	23,82	28,57	33,32	38,10
e	12,82	14,65	16,51	18,33	21,99	23,82	27,50	32,99	38,50	43,99
b≤6	19,05	22,22	25,4	28,57	31,75	34,92	38,10	44,45	50,8	57,15
b>6	-	28,57	31,75	34,92	38,10	41,28	44,45	50,8	57,15	63,50
Length /Ø	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
1 1/8	★ ★									
1 1/4	★ ★									
1 3/8	★ ★	★ ★	★ ★							
1 1/2	★ ★	★ ★	★ ★							
1 5/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
1 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
2 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
2 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
2 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
4 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
5	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
5 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
6 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
7	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
7 1/2							★ ★	★ ★	★ ★	★ ★
8							★ ★	★ ★	★ ★	★ ★
8 1/2									★ ★	
9									★ ★	
UNC	20	18	16	14	13	12	11	10	9	8
UNF	28	24	24	20	20	18	18	16	16	14

★ A1 / ★ A2 / ★ A4

DIN 933 - Page 1

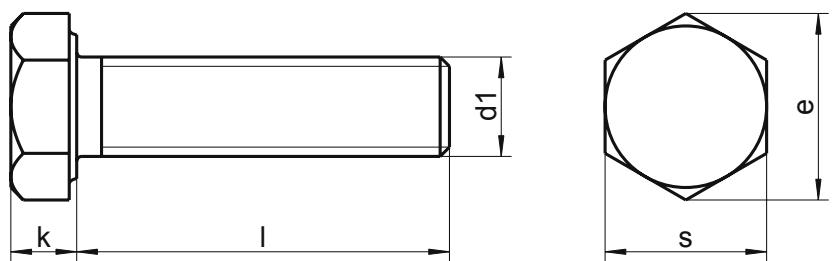
Hexagon head screws full thread

Viti testa esagonale tutto filetto



k max.	1,4	1,7	2,0	2,8	3,5	4,0	5,3	6,4	7,5	8,8	10,0	11,5	12,5	
s	4	5	5,5	7	8	10	13	17	19	22	24	27	30	
e	4,32	5,45	6,01	7,66	8,79	11,05	14,38	18,90	21,10	24,49	26,75	30,14	33,53	
Length /Ø	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	
3	★★★	★★★												
4	★★★	★★★												
5	★★★	★★★	★★★	★★★										
6	★★★	★★★	★★★	★★★	★★★	★★★								
8	★★★	★★★	★★★	★★★	★★★	★★★	★★★							
10	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★						
12	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★					
14	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★					
16	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★				
18	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★				
20	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★			
22		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★		
25		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
30		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
35		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
40		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
45		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
50		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
55		★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
60			★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
65			★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
70			★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
75				★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
80					★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
85						★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	
90							★★★	★★★	★★★	★★★	★★★	★★★	★★★	
95								★★★	★★★	★★★	★★★	★★★	★★★	
100									★★★	★★★	★★★	★★★	★★★	
110										★★★	★★★	★★★	★★★	
120										★★★	★★★	★★★	★★★	
130											★★★	★★★	★★★	
140											★★★	★★★	★★★	
150											★★★	★★★	★★★	
160											★★★	★★★	★★★	
170											★★★	★★★	★★★	
180											★★★	★★★	★★★	
190											★★★	★★★	★★★	
200											★★★	★★★	★★★	
250												★★★	★★★	
300												★★★	★★★	
BOX	1000	1000	1000 ≥ 25	1000 ≥ 25	500	500 ≥ 45	500 ≥ 14	200 ≥ 25	200 ≥ 50	100 ≥ 50	100 ≥ 50	25	25	25

★ A1 / ★ A2 / ★ A4



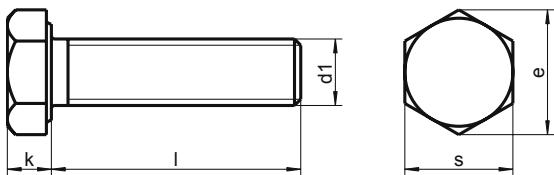
k max.	14,0	15,0	17,0	18,7	21,0	22,5
s	32	36	41	46	50	55
e	35,72	39,98	45,20	50,85	55,37	60,79
Length / Ø	M22	M24	M27	M30	M33	M36
30	★ ★	★ ★				
35	★ ★	★ ★				
40	★ ★	★ ★				
45	★ ★	★ ★				
50	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
55	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
65	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
70	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
75	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
85	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
90	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
95	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
100	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
110	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
120	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
130	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
140	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
150	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
160	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
170		★ ★				★ ★
180	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
190		★ ★				
200	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
250	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
300	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
BOX	25	10	10	10	5	5
	≥ 100	≥ 200	10	10		
	10	5				

★ A1 / ★ A2 / ★ A4

DIN 933 UNC/UNF

Hexagon head screws full thread

Viti testa esagonale tutto filetto



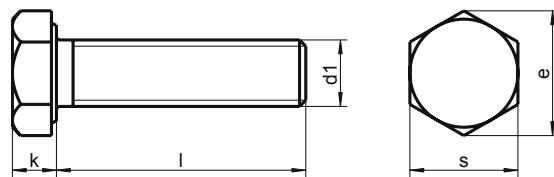
k max.	4,52	1,78	2,36	2,79	3,04	3,93
s	4,77	4,77	6,35	6,35	7,92	7,92
e	5,13	5,13	6,90	6,90	8,63	8,63
Length /ø	#4	#5	#6	#8	#10	#12
1/4						
5/16	★☆	★☆	★☆	★☆		
2/8	★☆	★☆	★☆	★☆	★☆	★☆
1/2	★☆	★☆	★☆	★☆	★☆	★☆
5/8	★☆	★☆	★☆	★☆	★☆	★☆
3/4	★☆	★☆	★☆	★☆	★☆	★☆
7/8	★☆	★☆	★☆	★☆	★☆	★☆
1	★☆	★☆	★☆	★☆	★☆	★☆
1 1/4	★☆	★☆	★☆	★☆	★☆	★☆
1 3/8	★☆	★☆	★☆	★☆	★☆	★☆
1 1/2	★☆	★☆	★☆	★☆	★☆	★☆
1 5/8	★☆	★☆	★☆	★☆	★☆	★☆
1 3/4			★☆	★☆	★☆	★☆
2			★☆	★☆	★☆	★☆
2 1/4			★☆	★☆	★☆	★☆
2 1/2			★☆	★☆	★☆	★☆
2 5/8			★☆	★☆	★☆	★☆
2 3/4				★☆	★☆	★☆
3				★☆	★☆	★☆
UNC	4-40	5-40	6-40	8-32	10-24	12-24
UNF	4-48	5-44	6-40	8-36	10-32	12-28

★ A1 / ★ A2 / ★ A4

DIN 933 UNC/UNF

Hexagon head screws full thread UNC

Viti testa esagonale tutto filetto UNC



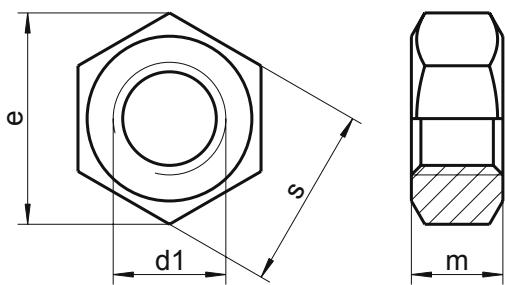
k max.	4,77	5,96	6,80	8,02	9,24	9,42	11,27	13,31	15,34	17,78
s	11,12	12,07	14,27	15,87	19,05	20,62	23,82	28,57	33,32	38,10
e	12,82	14,65	16,51	18,33	21,99	23,82	27,50	32,99	38,50	43,99
Length / \varnothing	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
3/8	★ ★	★ ★								
1/2	★ ★	★ ★	★ ★	★ ★						
5/8	★ ★	★ ★	★ ★	★ ★	★ ★					
3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
7/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
1	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
11/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
11/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
13/8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
11/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
13/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
2 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
2 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
2 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
3 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
4 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
4 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
4 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
5	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
5 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
UNC	20	18	16	14	13	12	11	10	9	8
UNF	28	24	24	20	20	18	18	16	14	12

★ A1 / ★ A2 / ★ A4

DIN 934

Hexagon nuts

Dadi esagonali



d	m min/max.	s	e
M1,4	0,95/1,20	3	3,28
M1,6	1,05/1,30	3,2	3,48
M1,7	1,15/1,40	3,5	3,82
M2	1,35/1,60	4	4,38
M2,3	1,55/1,80	4,5	4,88
M2,5	1,75/2	5	5,45
M2,6	1,75/2	5	5,45
M3	2,15/2,40	5,5	6,01
M3,5	2,55/2,80	6	6,58
M4	2,90/3,20	7	7,66
M5	3,70/4,00	8	8,79
M6	4,70/5	10	11,05
M7	5,20/5,5	11	12,12
M8	6,14/6,50	13	14,38
M10	7,64/8	17	18,90
M12	9,64/10	19	21,10
M14	10,30/11	22	24,49
M16	12,30/13	24	26,75
M18	14,30/15	27	29,56
M20	14,90/16	30	32,95
M22	16,90/18	32	35,03
M24	17,70/19	36	39,55
M27	20,70/22	41	45,20
M30	22,70/24	46	50,85
M33	24,70/26	50	55,37
M36	27,40/29	55	60,79
M39	29,40/31	60	66,44
M42	32,40/34	65	72,09
M45	34,40/36	70	76,95
M48	36,40/38	75	82,60
M52	40,40/42	80	88,25
M60	46,40/48	90	99,21
M64	49,10/51	95	104,86

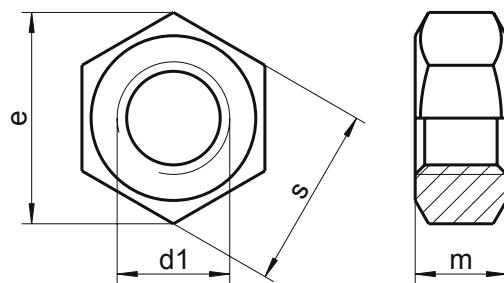
MAT.	BOX
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	1000
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★☆	50
★☆	200
★☆	100
★☆	100
★☆	100
★☆	100
★☆	50
★☆	50
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25
★☆	10
★☆	10
★☆	10
★☆	10
★☆	10
★☆	5
★☆	5
★☆	1
★☆	1
★☆	1

★ A1 / ★ A2 / ★ A4

DIN 934 fine thread

Hexagon nuts with fine thread

Dadi esagonali passo fine



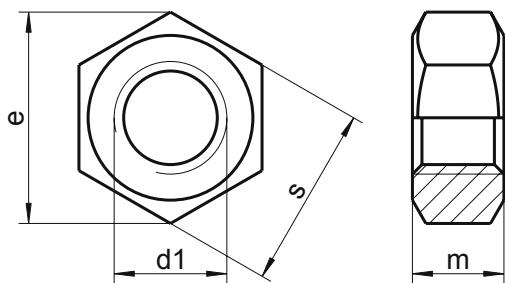
d1	m min/max.	s	e	MAT.	BOX
M8X1	6,14/6,50	13	14,38	★☆	200
M10X1	7,64/8	17	18,90	★☆	100
M10X1,25	7,64/8	17	18,90	★☆	100
M12X1,5	9,64/10	19	21,10	★☆	100
M12X1,25	9,64/10	19	21,10	★☆	100
M14X1,5	10,30/11	22	24,49	★☆	100
M16X1,5	12,30/13	24	26,75	★☆	50
M18X1,5	14,30/15	27	29,56	★☆	50
M20X1,5	14,90/16	30	32,95	★☆	50
M20X2	14,90/16	30	32,95	★☆	50
M22X1,5	16,90/18	32	35,03	★☆	25
M24X1,5	17,70/19	36	39,55	★☆	25
M24X2	17,70/19	36	39,55	★☆	25
M27X1,5	20,70/22	41	45,20	★☆	25
M27X2	20,70/22	41	45,20	★☆	25
M30X1,5	22,70/24	46	50,85	★☆	25
M30X2	22,70/24	46	50,85	★☆	25
M33X2	24,70/26	50	55,37	★☆	10
M36X1,5	27,40/29	55	60,79	★☆	10
M36X3	27,40/29	55	60,79	★☆	10
M39X3	29,4/31	60	66,44	★☆	10
M42X3	32,40/34	65	72,09	★☆	10

★ A1 / ★ A2 / ★ A4

DIN 934 left hand thread

Hexagon nuts with left hand thread

Dadi esagonali sinistri



d1	m min/max.	s	e
M3	2,15/2,40	5,5	6,01
M4	2,90/3,20	7	7,66
M5	3,70/4	8	8,79
M6	4,70/5	10	11,05
M8	6,14/6,50	13	14,38
M10	7,64/8	17	18,90
M12	9,64/10	19	21,10
M14	10,30/11	22	24,49
M16	12,30/13	24	26,75
M18	14,30/15	27	29,56
M20	14,90/16	30	32,95
M22	16,90/18	32	35,03
M24	17,70/19	36	39,55
M27	20,70/22	41	45,20
M30	22,70/24	46	50,85

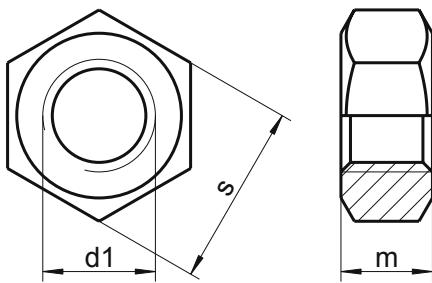
MAT.	BOX
★☆	100
★☆	100
★☆	100
★☆	100
★☆	100
★☆	100
★☆	50
★☆	50
★☆	25
★☆	25
★☆	25
★☆	25
★☆	10
★☆	10

★ A1 / ★ A2 / ★ A4

SIMILAR DIN 934 UNC/UNF

Hexagon nuts

Dadi esagonali



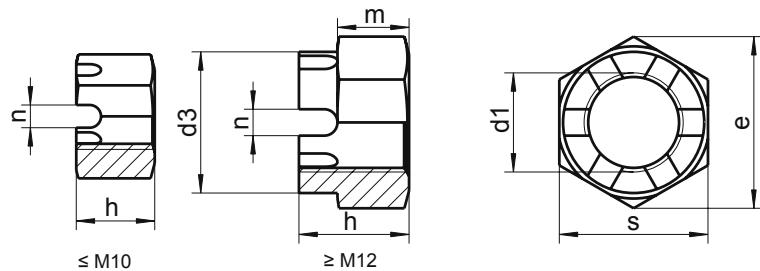
d1	m min.	m max.	s	UNC pitch	UNF pitch	MAT.	BOX
#0	0,47	0,47	4	64 UNC	80 UNF	★ ★	1000
#1	0,47	0,47	4	64 UNC	72 UNF	★ ★	1000
#2	1,58	1,58	5	56 UNC	64 UNF	★ ★	1000
#3	1,58	1,58	5	48 UNC	56 UNF	★ ★	1000
#4	2,3	2,3	5	40 UNC	48 UNF	★ ★	1000
#5	3	3	6	40 UNC	44 UNF	★ ★	1000
#6	3	3	7	32 UNC	40 UNF	★ ★	1000
#8	3,2	3,2	7	32 UNC	36 UNF	★ ★	1000
#10	4	4	8	24 UNC	32 UNF	★ ★	1000
#12	4,5	4,5	10	24 UNC	28 UNF	★ ★	1000
1/4	5,38	5,74	11	20 UNC	28 UNF	★ ★	500
5/16	6,55	6,93	13	18 UNC	24 UNF	★ ★	200
3/8	8,12	8,55	14	16 UNC	24 UNF	★ ★	100
7/16	9,27	9,27	17	14 UNC	20 UNF	★ ★	100
1/2	10,84	11,37	19	13 UNC	20 UNF	★ ★	50
9/16	12,01	12,59	22	12 UNC	18 UNF	★ ★	50
5/8	13,58	14,19	24	11 UNC	18 UNF	★ ★	25
3/4	15,67	16,89	28	10 UNC	16 UNF	★ ★	25
7/8	18,38	19,71	34	9 UNC	14 UNF	★ ★	25
1"	21,10	22,52	38	8 UNC	14 UNF	★ ★	25
1" 1/8	23,85	23,57	43	7 UNC	12 UNF	★ ★	25
1" 1/4	26,16	27,78	48	7 UNC	12 UNF	★ ★	25
1" 3/8	28,90	30,63	53	6 UNC	12 UNF	★ ★	25
1" 1/2	31,62	33,45	57	6 UNC	12 UNF	★ ★	25

★ A1 / ★ A2 / ★ A4

DIN 935

Hexagon castle nuts

Dadi a corona



d1	m	h	s	e	d3	n
M5	4,0	6,0	8	8,87	-	1,4
M6	5,0	7,5	10	11,05	-	2,0
M8	6,5	9,5	13	14,38	-	2,5
M10	8,0	12,0	17	18,90	-	2,8
M12	10,0	15,0	19	21,10	17	3,5
M14	11,0	16,0	22	24,49	19	3,5
M16	13,0	19,0	24	26,75	22	4,5
M18	15,0	21,0	27	30,14	25	4,5
M20	16,0	22,0	30	33,53	28	4,5
M22	18,0	26,0	32	35,72	30	5,5
M24	19,0	27,0	36	39,98	34	5,5
M27	22,0	30,0	41	45,63	38	5,5
M30	24,0	33,0	46	51,28	42	7,0
M36	29,0	38,0	55	61,31	50	7,0

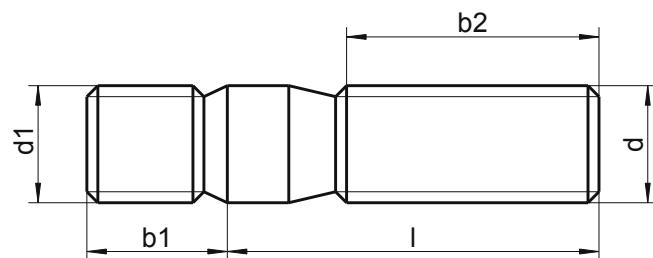
★ A1 / ★ A2 / ★ A4

MAT.	BOX
★ ★	100
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	10
★ ★	10
★ ★	10
★ ★	10
★ ★	10

DIN 938

Studs metal end ~ 1xd

Prigionieri radice corta



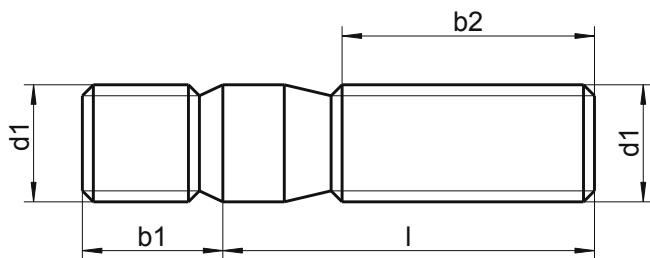
$b_2 \leq 125$	16	18	22	26	30	38	46	54	66
$b_2 > 125$	-	24	28	32	36	44	52	60	72
b_1	5	6	8	10	12	16	20	24	30
Length / Ø	M5	M6	M8	M10	M12	M16	M20	M24	M30
16	★	★	★						
20	★	★	★	★	★				
25	★	★	★	★	★				
30	★	★	★	★	★	★			
35	★	★	★	★	★	★	★		
40	★	★	★	★	★	★	★		
45	★	★	★	★	★	★	★		
50	★	★	★	★	★	★	★	★	★
55	★	★	★	★	★	★	★	★	★
60	★	★	★	★	★	★	★	★	★
65	★	★	★	★	★	★	★	★	★
70	★	★	★	★	★	★	★	★	★
75	★	★	★	★	★	★	★	★	★
80	★	★	★	★	★	★	★	★	★
85	★	★	★	★	★	★	★	★	★
90	★	★	★	★	★	★	★	★	★
95	★	★	★	★	★	★	★	★	★
100	★	★	★	★	★	★	★	★	★
110	★	★	★	★	★	★	★	★	★
120	★	★	★	★	★	★	★	★	★
130				★	★	★	★	★	★
BOX	100	100	100	100	100 ≥ 110 25	50 ≥ 120 25	50 ≥ 70 25	25 ≥ 100 10	10

★ A1 / ★ A2 / ★ A4

DIN 939

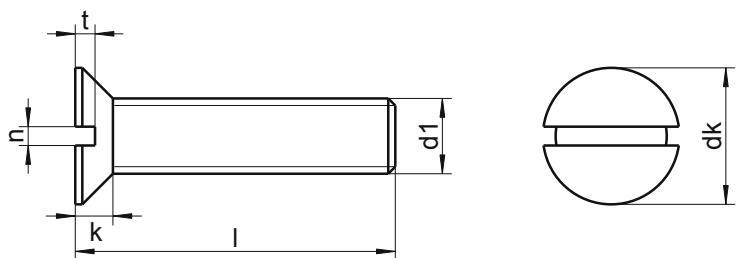
Studs metal end ~ 1,25xd

Prigionieri radice media



$b_2 \leq 125$	16	18	22	26	30	38	46	54	66
$b_2 > 125$	-	24	28	32	36	44	52	60	72
b_1	6,5	7,5	10	12	15	20	25	30	38
Length / Ø	M5	M6	M8	M10	M12	M16	M20	M24	M30
16	★	★							
20	★	★	★	★	★				
25	★	★	★	★	★				
30	★	★	★	★	★	★			
35	★	★	★	★	★	★	★		
40	★	★	★	★	★	★	★	★	
45	★	★	★	★	★	★	★	★	
50	★	★	★	★	★	★	★	★	
55	★	★	★	★	★	★	★	★	★
60	★	★	★	★	★	★	★	★	★
65	★	★	★	★	★	★	★	★	★
70	★	★	★	★	★	★	★	★	★
75	★	★	★	★	★	★	★	★	★
80	★	★	★	★	★	★	★	★	★
85	★	★	★	★	★	★	★	★	★
90	★	★	★	★	★	★	★	★	★
100	★	★	★	★	★	★	★	★	★
110	★	★	★	★	★	★	★	★	★
120	★	★	★	★	★	★	★	★	★
125		★	★	★	★	★	★	★	★
130		★	★	★	★	★	★	★	★
140						★	★	★	★
150						★	★	★	★
BOX	100	100	100	100	100 ≥ 110 50 ≥ 130 25	50 ≥ 120 25	50 ≥ 70 25	25 ≥ 100 10	10

★ A1 / ★ A2 / ★ A4



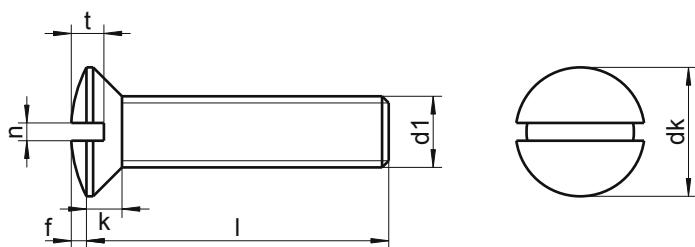
dk	3,0	3,8	4,7	5,6	6,5	7,5	9,2	11,0	14,5	18,0	22,0
k max.	0,96	1,20	1,50	1,65	1,93	2,20	2,50	3,00	4,00	5,00	6,00
n	0,4	0,5	0,6	0,8	0,8	1,0	1,2	1,6	2,0	2,5	3,0
t min	0,32	0,40	0,50	0,60	0,70	0,80	1,00	1,20	1,60	2,00	2,40
Length / \varnothing	M1,6	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10	M12
3	★★										
4	★★	★★	★★	★★							
5	★★	★★	★★	★★	★★	★★					
6	★★	★★	★★	★★	★★	★★	★★				
8	★★	★★	★★	★★	★★	★★	★★	★★			
10	★★	★★	★★	★★	★★	★★	★★	★★	★★		
12	★★	★★	★★	★★	★★	★★	★★	★★	★★		
14	★★	★★	★★	★★	★★	★★	★★	★★	★★		
16	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	
18		★★	★★	★★	★★	★★	★★	★★	★★	★★	
20		★★	★★	★★	★★	★★	★★	★★	★★	★★	★★
22		★★	★★	★★	★★	★★	★★	★★	★★	★★	★★
25		★★	★★	★★	★★	★★	★★	★★	★★	★★	★★
30		★★	★★	★★	★★	★★	★★	★★	★★	★★	★★
35			★★	★★	★★	★★	★★	★★	★★	★★	★★
40				★★		★★	★★	★★	★★	★★	★★
45				★★		★★	★★	★★	★★	★★	★★
50				★★		★★	★★	★★	★★	★★	★★
55				★★		★★	★★	★★	★★	★★	★★
60				★★		★★	★★	★★	★★	★★	★★
65					★★	★★	★★	★★	★★	★★	★★
70					★★	★★	★★	★★	★★	★★	★★
75					★★	★★	★★	★★	★★	★★	★★
80					★★	★★	★★	★★	★★	★★	★★
90						★★	★★	★★	★★	★★	★★
100						★★	★★	★★	★★	★★	★★
110							★★	★★	★★	★★	★★
120							★★	★★	★★	★★	★★
BOX	1000	1000	1000	1000 ≥ 18	1000 ≥ 14	1000 ≥ 14	500 ≥ 70	1000 ≥ 14	500 ≥ 22	200 ≥ 35	100 ≥ 70
				500	500	200	200	100	100	50	

★ A1 / ★ A2 / ★ A4

DIN 964

Slotted raised countersunk head screws

Viti a metallo testa svasata con calotta taglio



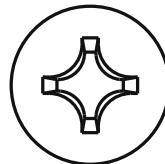
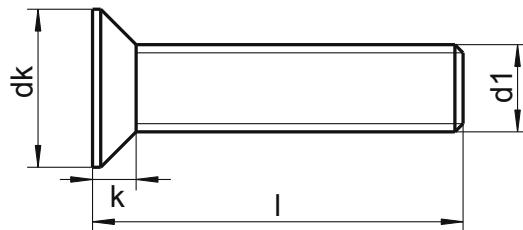
dk	3,8	4,7	5,6	7,5	9,2	11,0	14,5	18,0
f	0,50	0,60	0,75	1,00	1,25	1,50	2,00	2,50
k	1,20	1,50	1,65	2,20	2,50	3,00	4,00	5,00
n	0,5	0,6	0,8	1,0	1,2	1,6	2,0	2,5
t min	0,8	1,0	1,2	1,6	2,0	2,4	3,2	4,0
Length /Ø	M2	M2,5	M3	M4	M5	M6	M8	M10
4	★ ★							
5	★ ★	★ ★	★ ★	★ ★				
6	★ ★	★ ★	★ ★	★ ★	★ ★			
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
18	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
22			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
30	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
35			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
40			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
55			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
65			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
70			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
75			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
90				★ ★	★ ★	★ ★	★ ★	★ ★
95				★ ★	★ ★	★ ★	★ ★	★ ★
100				★ ★	★ ★	★ ★	★ ★	★ ★
BOX	1000	1000	500	500 ≥ 70 200	500 ≥ 25 200	P100	100	100

★ A1 / ★ A2 / ★ A4

DIN 965 H

Countersunk flat head screws with cross recess H (Phillips)

Viti a metallo testa piana svasata croce

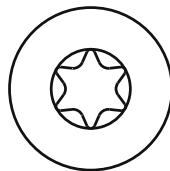
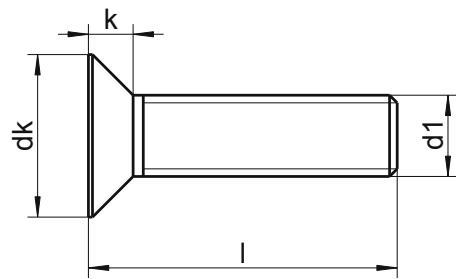


dk k max.	3,0 0,96	3,8 1,20	4,7 1,50	5,6 1,65	7,5 2,20	9,2 2,50	11,0 3,00	14,5 4,00
Length / \varnothing	M1,6	M2	M2,5	M3	M4	M5	M6	M8
3	★★	★★						
4	★★	★★	★★	★★				
5	★★	★★	★★	★★	★★			
6	★★	★★	★★	★★	★★	★★		
8	★★	★★	★★	★★	★★	★★	★★	
10	★★	★★	★★	★★	★★	★★	★★	★★
12	★★	★★	★★	★★	★★	★★	★★	★★
14	★★	★★	★★	★★	★★	★★	★★	★★
16	★★	★★	★★	★★	★★	★★	★★	★★
18		★★	★★	★★	★★	★★	★★	★★
20		★★	★★	★★	★★	★★	★★	★★
22				★★	★★	★★	★★	★★
25				★★	★★	★★	★★	★★
30				★★	★★	★★	★★	★★
35				★★	★★	★★	★★	★★
40				★★	★★	★★	★★	★★
45				★★	★★	★★	★★	★★
50				★★	★★	★★	★★	★★
55				★★	★★	★★	★★	★★
60				★★	★★	★★	★★	★★
65					★★	★★	★★	★★
70					★★	★★	★★	★★
75					★★	★★	★★	★★
80					★★	★★	★★	★★
85					★★	★★	★★	★★
90					★★	★★	★★	★★
95					★★	★★	★★	★★
100					★★	★★	★★	★★
SU	1000	1000	1000	1000	1000	500 ≥ 25 200	200 ≥ 35 100	100

★ A1 / ★ A2 / ★ A4

DIN 965

Countersunk head screws with TX
Viti metallo testa piana svasata esalobata



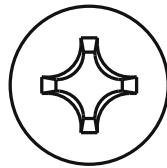
dk	3,8	4,7	5,6	7,5	9,2	11,0
k	1,20	1,50	1,65	2,20	2,50	3,00
tx	TX 6	TX 8	TX 10	TX 20	TX 25	TX 30
Length /Ø	M2	M2,5	M3	M4	M5	M6
4	★ ★	★ ★				
5	★ ★	★ ★	★ ★	★ ★		
6	★ ★	★ ★	★ ★	★ ★		
8	★ ★	★ ★	★ ★	★ ★	★ ★	
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25		★ ★	★ ★	★ ★	★ ★	★ ★
30			★ ★	★ ★	★ ★	★ ★
35				★ ★	★ ★	★ ★
40				★ ★	★ ★	★ ★
50					★ ★	
BOX	1000	1000	500	500	500	200

★ A1 / ★ A2 / ★ A4

sim. DIN 965 UNC

Countersunk flat head screws with cross recess H (Phillips)

Viti metallo testa piana svasata croce



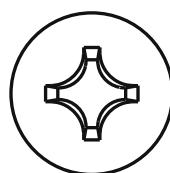
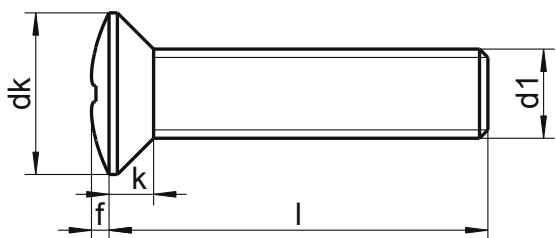
dk k max.	3,70 1,08	4,36 1,29	5,05 1,49	5,71 1,70	6,40 1,90	7,08 2,10	8,34 2,54	9,87 2,94	11,12 3,35	12,87 3,88	16,12 4,85	19,35 5,84	
UNC	-	1-64	2-56	3-48	4-40	5-40	6-32	8-32	10-24	12-24	1/4-20	5/16-18	3/8-14
UNF	0-80	1-72	2-64	3-56	4-48	5-44	6-40	8-36	10-32	12-28	1/4-28	5/16-24	3/8-24
1/8	★	★	★	★									
3/16	★	★	★	★									
1/4	★	★	★	★	★	★	★	★	★	★	★		
5/16	★	★	★	★	★	★	★	★	★	★	★		
3/8	★	★	★	★	★	★	★	★	★	★	★		
1/2	★	★	★	★	★	★	★	★	★	★	★	★	★
5/8	★	★	★	★	★	★	★	★	★	★	★	★	★
3/4	★	★	★	★	★	★	★	★	★	★	★	★	★
7/8	★	★	★	★	★	★	★	★	★	★	★	★	★
1	★	★	★	★	★	★	★	★	★	★	★	★	★
1 1/4				★	★	★	★	★	★	★	★	★	★
1 3/8				★	★	★	★	★	★	★	★	★	★
1 1/2			★	★	★	★	★	★	★	★	★	★	★
1 5/8					★	★	★	★	★	★	★	★	★
1 3/4					★	★	★	★	★	★	★	★	★
2						★	★	★	★	★	★	★	★
2 1/4										★	★	★	★
2 1/2										★	★	★	★
2 5/8										★	★	★	★
2 3/4										★	★	★	★
3										★	★	★	★

★ A1 / ★ A2 / ★ A4

DIN 966 H

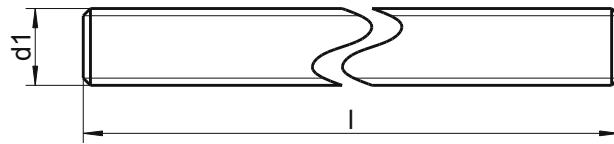
Raised countersunk head screws with cross recess H (Phillips)

Viti metallo testa svasata con calotta croce



dk	3,8	4,7	5,6	7,5	9,2	11,0	14,5
f	0,50	0,60	0,75	1,00	1,25	1,50	2,00
k	1,20	1,50	1,65	2,20	2,50	3,00	4,00
Length / \varnothing	M2,0	M2,5	M3	M4	M5	M6	M8
4	★★	★★	★★	★★			
5	★★	★★	★★	★★			
6	★★	★★	★★	★★	★★		
8	★★	★★	★★	★★	★★	★★	
10	★★	★★	★★	★★	★★	★★	★★
12	★★	★★	★★	★★	★★	★★	★★
14		★★	★★	★★	★★	★★	★★
16	★★	★★	★★	★★	★★	★★	★★
18		★★	★★	★★	★★	★★	★★
20	★★	★★	★★	★★	★★	★★	★★
22			★★	★★	★★	★★	★★
25		★★	★★	★★	★★	★★	★★
28		★★	★★	★★	★★	★★	★★
30		★★	★★	★★	★★	★★	★★
35		★★	★★	★★	★★	★★	★★
40		★★	★★	★★	★★	★★	★★
45		★★	★★	★★	★★	★★	★★
50		★★	★★	★★	★★	★★	★★
55			★★	★★	★★	★★	★★
60			★★	★★	★★	★★	★★
65			★★	★★	★★	★★	★★
70			★★	★★	★★	★★	★★
75				★★	★★	★★	★★
80				★★	★★	★★	★★
85				★★	★★	★★	★★
90				★★	★★	★★	★★
95				★★	★★	★★	★★
100				★★	★★	★★	★★
BOX	1000	1000 ≥ 25 500	1000 ≥ 25 500	500 ≥ 25 200	200 ≥ 35 100	100	100

★ A1 / ★ A2 / ★ A4



Length / Ø	M2	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
1.000	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2.000				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3.000				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
BOX	20	100	100	100	100	50	25	20	10	10	10	5	5	5

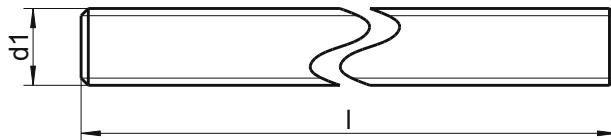
Length / Ø	M27	M30	M33	M36	M39	M42	M45	M48	M52
1.000	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2.000	★ ★	★ ★	★ ★	★ ★					
3.000	★ ★	★ ★	★ ★	★ ★					
BOX	5	5	1	1	1	1	1	1	1

★ A1 / ★ A2 / ★ A4

DIN 976 left hand thread

Threaded rods

Barre filettate sinistra



Length / Ø	M6	M8	M10	M12	M16	M20	M24
1.000	★	★	★	★	★	★	★
BOX	1	1	1	1	1	1	1

★ A1 / ★ A2 / ★ A4

sim. DIN 976 UNC

Threaded rods with UNC thread 1m

Barre filettate UNC



d	gears
1/4"-20	UNC
5/16"-18	UNC
3/8"-16	UNC
7/16"-14	UNC
1/2"-13	UNC
5/8"-11	UNC
3/4"-10	UNC
7/8"-9	UNC
1"-8	UNC

MAT.	BOX
★ ★	100
★ ★	50
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25

★ A1 / ★ A2 / ★ A4

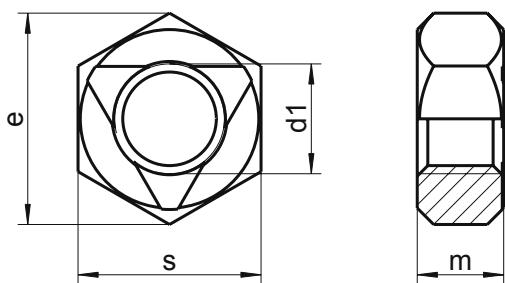
UNF on request

UNF su richiesta

similar DIN 980

Prevailing torque type hexagon nuts all metal basis DIN 934

Dadi esagonali autobloccanti metallici base DIN 934



d1	m min. / m max.	s	e
M3	2,15/2,40	5,5	6,01
M4	2,90/3,20	7	7,66
M5	3,70/4,00	8	8,79
M6	4,70/5	10	11,05
M8	6,14/6,50	13	14,38
M10	7,64/8	17	18,90
M12	9,64/10	19	21,10
M14	10,30/11	22	24,49
M16	12,30/13	24	26,75
M18	14,30/15	27	29,56
M20	14,90/16	30	32,95
M22	16,90/18	32	35,03
M24	17,70/19	36	39,55

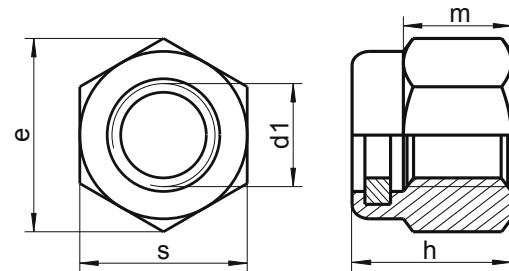
MAT.	BOX
★★	200
★★	200
★★	200
★★	200
★★	200
★★	100
★★	100
★★	50
★★	50
★★	50
★★	50
★★	50
★★	50

★ A1 / ★ A2 / ★ A4

DIN 982

Prevailing torque type hexagon nuts with non-metallic insert, high type

Dadi esagonali autobloccanti alti



d	m	h	s	e
M3	3,45	4,7	5,5	6,01
M4	3,60	6,0	7	7,66
M5	4,40	6,3	8	8,79
M6	4,90	8,0	10	11,05
M8	6,44	9,5	13	14,38
M10	8,04	11,5	17	18,90
M12	10,37	14,0	19	21,10
M14	12,10	16,0	22	24,49
M16	14,10	18,0	24	26,75
M20	16,90	22,0	30	32,95
M24	20,20	28,0	36	39,55
M27	21,60	31,0	41	45,20
M30	24,00	33,0	46	50,85

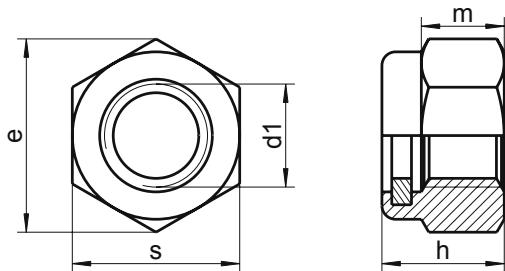
MAT.	BOX
★☆	200
★☆	200
★☆	200
★☆	200
★☆	200
★☆	100
★☆	50
★☆	50
★☆	50
★☆	25
★☆	10
★☆	10
★☆	10

★ A1 / ★ A2 / ☆ A4

DIN 985

Prevailing torque type hexagon nuts with non-metalic insert, thin type

Dadi esagonali autobloccanti bassi



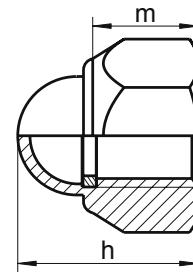
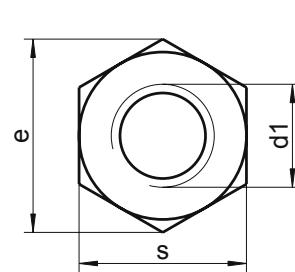
d1	m	h	s	e
M2,5	2,3	3,5	5	5,50
M3	2,4	4,0	5,5	6,01
M4	2,9	5,0	7	7,66
M5	3,2	5,0	8	8,79
M6	4,0	6,0	10	11,05
M8	5,5	8,0	13	14,38
M10	6,5	10,0	17	18,90
M12	8,0	12,0	19	21,10
M14	9,5	14,0	22	24,49
M16	10,5	16,0	24	26,75
M18	13,0	18,5	27	29,56
M20	14,0	20,0	30	32,95
M22	15,0	22,0	32	35,05
M24	15,0	24,0	36	39,55
M27	17,0	27,0	41	45,02
M30	19,0	30,0	46	50,85
M33	22,0	33,0	50	55,37
M36	25,0	36,0	55	60,79

MAT.	BOX
★☆	1000
★☆	1000
★☆	1000
★☆	1000
★☆	500
★☆	200
★☆	100
★☆	100
★☆	100
★☆	50
★☆	50
★☆	50
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25
★☆	25

★ A1 / ★ A2 / ★ A4

DIN 986

Prevailing torque type hexagon domed cap nuts with non-metallic insert
Dadi esagonali autobloccanti ciechi



d	m	h	s	e
M4	3,20	9,6	7	7,74
M5	4,00	10,5	8	8,87
M6	5,00	12,0	10	11,05
M8	6,40	14,0	13	14,38
M10	7,80	18,1	17	18,90
M12	9,60	22,5	19	21,10
M14	11,70	26,4	22	24,49
M16	12,50	27,5	24	26,75
M20	17,00	35,0	30	33,53

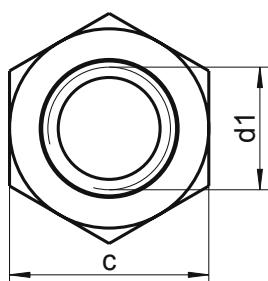
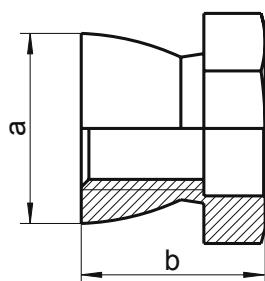
MAT.	BOX
★	200
★	200
★	200
★	100
★	100
★	100
★	100
★	50
★	50

★ A1 / ★ A2 / ★ A4

ART. 999

Shear nuts

Dadi antifurto



d1	a	b	c
M5	9,80	9,20	8
M6	9,80	9,50	10
M8	16,80	12,00	13
M8	16,80	12,00	17
M10	18,80	15,00	17
M10	18,80	15,00	19
M12	18,80	16,00	19
M12	18,80	16,00	22
M16	23,80	22,00	24

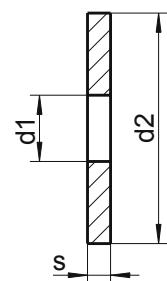
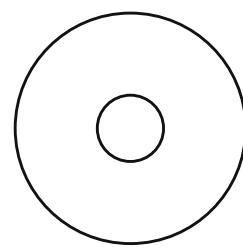
MAT.	BOX
★	500
★	500
★	200
★	200
★	100
★	100
★	100
★	100
★	50

★ A1 / ★ A2 / ★ A4

DIN 1052

Washers for wood constructions

Rondelle per costruzioni in legno



d1	for	d2	s
14	M12	58	6
18	M16	68	6
23	M20	80	8
25	M22	92	8
27	M24	105	8

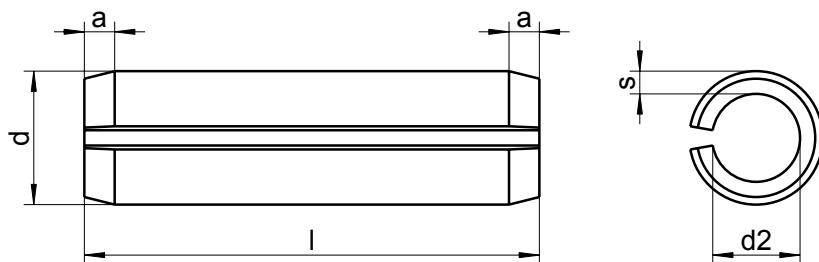
MAT.	BOX
★★	50
★★	50
★★	25
★★	25
★★	10

★ A1 / ★ A2 / ★ A4

DIN 1481 sim. ISO 8752

Spring-type straight pins slotted

Spine elastiche tipo pesante



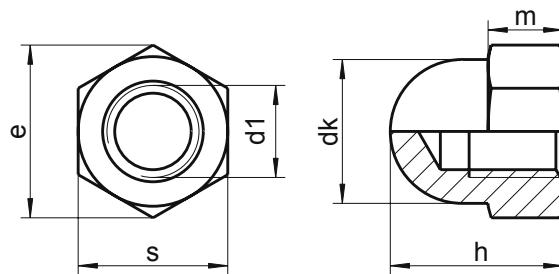
a min.	0,15	0,25	0,35	0,40	0,50	0,60	0,65	0,80	0,90	1,20	2,00	2,00	2,00	
d min.	1,2	1,7	2,3	2,8	3,3	3,8	4,4	4,9	5,4	6,4	8,5	10,5	12,5	
d2	0,8	1,1	1,5	1,8	2,1	2,3	2,8	2,9	3,4	3,9	5,5	6,5	7,5	
s	0,20	0,30	0,40	0,50	0,60	0,75	0,80	1,00	1,00	1,25	1,50	2,00	2,50	
Length /Ø	1	1,5	2	2,5	3	3,5	4	4,5	5	6	8	10	12	16
4	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310							
5	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310							
6	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310					
8	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310					
10	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310		
12	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310		
14	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310		
16	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310		
18	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310		
20	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310		
22			1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	
24				1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	
26					1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	
28						1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	
30							1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	
32								1.4310	1.4310	1.4310	1.4310	1.4310	1.4310	
36									1.4310	1.4310	1.4310	1.4310	1.4310	1.4310
40										1.4310	1.4310	1.4310	1.4310	1.4310
45											1.4310	1.4310	1.4310	1.4310
50												1.4310	1.4310	1.4310
55													1.4310	1.4310
60														1.4310
65														1.4310
70														1.4310
75														1.4310
80														1.4310
90														1.4310
100														1.4310
BOX	1000	1000	1000	1000	1000	1000	500	500	500	500	500	500	25	25

★ A1 / ★ A2 / ★ A4

DIN 1587

Hexagon domed cap nuts high type

Dadi esagonali ciechi a calotta



d1	m	h	s	e	dk
M3	2,4	7	5,5	6,01	5,5
M4	3,2	8	7,0	7,66	6,5
M5	4,0	10	8,0	8,79	7,5
M6	5,0	12	10,0	11,05	9,5
M8	6,5	15	13,0	14,38	12,5
M10	8,0	18	17,0	18,90	16,0
M12	10,0	22	19,0	21,10	18,0
M14	11,0	25	22,0	24,49	21,0
M16	13,0	28	24,0	26,75	23,0
M18	15,0	32	27,0	30,14	26,0
M20	16,0	34	30,0	33,53	28,0
M22	18,0	39	34,0	37,72	33,0
M24	19,0	42	36,0	39,98	34,0
M27	20,0	47	41,0	47,30	40,0
M30	24,0	52	46,0	52,00	42,0

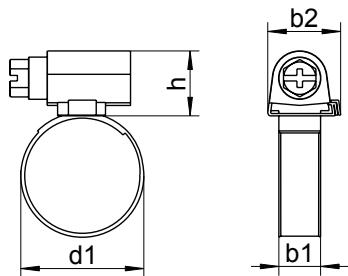
MAT.	BOX
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	500
★ ★	200
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	10
★ ★	10
★ ★	10
★ ★	10

★ A1 / ★ A2 / ★ A4

DIN 3017 type A

Hose clamps - W4 range 9 mm, with worm gear drive, type A, stainless W4

Fascette stringitubo



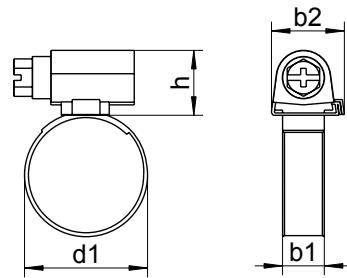
cl. range (d1)	b1	b2 max.	h max.
10 - 16	9	14	14
12 - 22	9	14	14
16 - 27	9	14	14
20 - 32	9	14	14
25 - 40	9	14	14
30 - 45	9	14	14
35 - 50	9	14	14
40 - 60	9	14	14
50 - 70	9	14	14

MAT.	BOX
★	100
★	100
★	100
★	100
★	100
★	100
★	100
★	100
★	100

★ A1 / ★ A2 / ★ A4

DIN 3017 type A

Hose clamps - W4 range 12 mm, with worm gear drive, type A, stainless W4
Fascette stringitubo



cl. range (d1)	b1	b2 max.	h max.
12 - 22	12	20	16
16 - 27	12	20	16
20 - 32	12	20	16
25 - 40	12	20	16
30 - 45	12	20	16
35 - 50	12	20	16
40 - 60	12	20	16
50 - 70	12	20	16
60 - 80	12	20	16
70 - 90	12	20	16
80 - 100	12	20	16
90 - 110	12	20	16
100 - 120	12	20	16
110 - 130	12	20	16
120 - 140	12	20	16
130 - 150	12	20	16
140 - 160	12	20	16

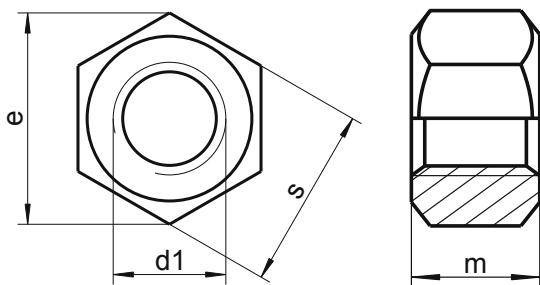
MAT.	BOX
★	100
★	100
★	100
★	100
★	100
★	100
★	100
★	100
★	75
★	60
★	60
★	50
★	30
★	30
★	25
★	20
★	20
★	20

★ A1 / ★ A2 / ★ A4

UNI 5587

Hexagon heavy nuts

Dadi esagonali alti



d1	m min/max.	s	e
M2	1,75/2,00	4	4,38
M2,5	1,75/2,00	5	5,45
M3	2,75/3,00	5,5	6,01
M4	3,70/4,00	7	7,66
M5	4,70/5,00	8	8,79
M6	5,70/6,00	10	11,05
M7	6,64/7,00	11	12,12
M8	7,64/8,00	13	14,38
M10	9,64/10,00	17	18,90
M12	11,57/12,00	19	21,10
M14	13,57/14,00	22	24,49
M16	15,57/16,00	24	26,75
M18	17,57/18,00	27	29,56
M20	19,48/20,00	30	32,95
M22	21,48/22,00	32	35,03
M24	23,48/24,00	36	39,55
M27	26,48/27,00	41	45,20
M30	29,48/30,00	46	50,85
M33	32,38/33,00	50	55,37
M36	35,38/36,00	55	60,79
M39	38,38/39,00	60	66,44
M42	41,38/42,00	65	72,09
M45	44,38/45,00	70	76,95

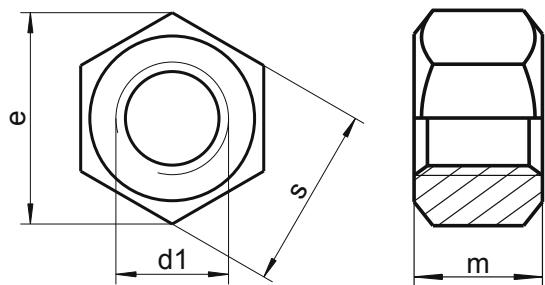
★ A1 / ★ A2 / ★ A4

MAT.	BOX
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	500
★★	500
★★	200
★★	100
★★	100
★★	100
★★	50
★★	50
★★	50
★★	25
★★	25
★★	25
★★	25
★★	10
★★	10
★★	10
★★	10
★★	5

sim. UNI 5587 UNC/UNF

Hexagon heavy nuts with UNC/UNF thread

Dadi esagonali alti UNC/UNF



d1	m min.	m. max	s	UNC pitch	UNF pitch	UN
1/4	5,53	6,35	13	20 UNC	28 UNF	-
5/16	7,11	7,97	14	18 UNC	24 UNF	-
3/8	8,66	8,57	17	16 UNC	24 UNF	-
7/16	10,23	11,20	19	14 UNC	20 UNF	-
1/2	11,87	12,80	22	13 UNC	20 UNF	-
9/16	13,36	14,42	24	12 UNC	18 UNF	-
5/8	14,90	16,02	27	11 UNC	18 UNF	-
3/4	18,03	19,25	32	10 UNC	16 UNF	-
7/8	21,15	22,47	36	9 UNC	14 UNF	-
1"	24,28	25,70	41	8 UNC	14 UNF	-
1 1/8	27,40	28,93	46	7 UNC	12 UNF	8
1 1/4	30,14	31,77	50	7 UNC	12 UNF	8
1 3/8	33,27	35,00	55	6 UNC	12 UNF	8
1 1/2	36,39	38,22	60	6 UNC	12 UNF	8
1 5/8	39,52	41,45	65	-	-	8
1 3/4	42,64	44,67	70	5 UNC	-	8
1 7/8	45,77	47,90	75	-	-	8
2"	48,89	51,13	80	4,5 UNC	-	8

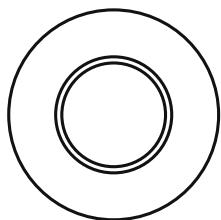
MAT.	BOX
★ ★	500
★ ★	200
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25

★ A1 / ★ A2 / ★ A4

DIN 6319 C

Spherical washers type C

Rondelle sferiche tipo C



d1	d3	h1	h2
6,4	12	0,3	2,3
8,4	17	0,5	3,2
10,5	21	0,5	4,0
13,0	24	0,5	4,6
17,0	30	0,5	5,3
21,0	36	0,5	6,3
25,0	44	0,8	8,2

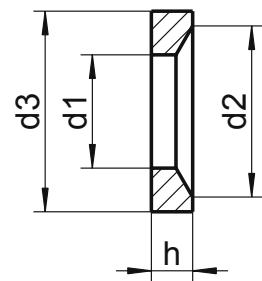
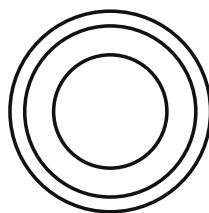
MAT.	BOX
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25

★ A1 ▶ ★ A2 / ★ A4

DIN 6319 D

Conical seats type D

Rondelle coniche tipo D



d1	d2	d3	h
7,1	11,0	12	2,8
9,6	14,5	17	3,5
12,0	18,5	21	4,2
14,2	20,0	24	5,0
19,0	26,0	30	6,2
23,2	31,0	36	7,5
28,0	37,0	44	9,5

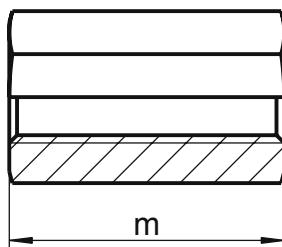
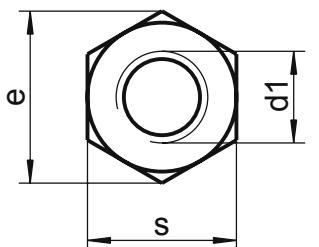
MAT.	BOX
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25
★ ★	25

★ A1 / ★ A2 / ★ A4

DIN 6334

Hexagon nuts m = 3xd

Manicotti esagonali



d1	m	s	e
M5	15	8	9,0
M6	18	10	11,1
M8	24	13	15,0
M10	30	17	19,6
M12	36	19	21,9
M14	42	22	24,5
M16	48	24	27,7
M20	60	30	34,6
M24	72	36	41,6
M30	90	46	53,1

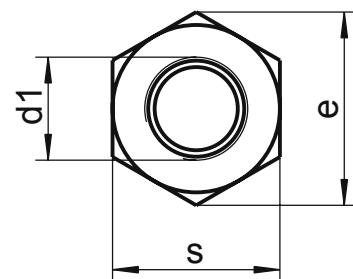
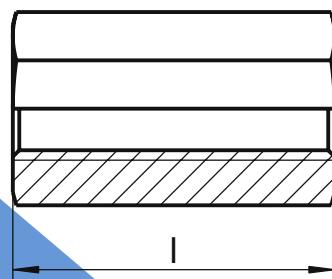
★ A1 / ★ A2 / ★ A4

MAT.	BOX
★★	100
★★	100
★★	100
★★	100
★★	50
★★	50
★★	10
★★	10
★★	10
★★	10

sim. DIN 6334

Hexagon coupler nuts similar DIN 6334

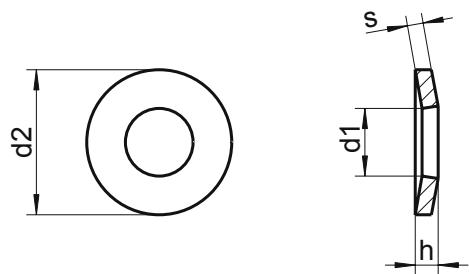
Manicotti esagonali



s e	10 11,1	13 15,0	17 19,6	19 21,9	24 27,7	30 34,6	36 41,6	46 53,1
Length / Ø	M6	M8	M10	M12	M16	M20	M24	M30
20	★★	★★	★★					
25	★★	★★	★★					
30	★★	★★	★★	★★				
35	★★	★★	★★	★★				
40	★★	★★	★★	★★	★★			
50		★★	★★		★★	★★	★★	
60			★★					★★

★ A1 / ★ A2 / ★ A4

DIN 6796
Conical spring washers
Rondelle elastiche coniche



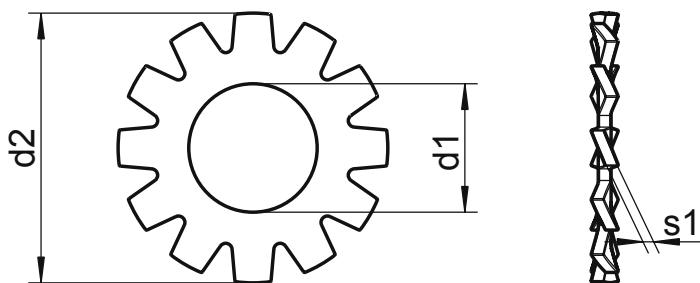
d1	for	d2	h min.	h max.	s
2,7	M2,5	6	0,61	0,72	0,5
3,2	M3	7	0,72	0,85	0,6
4,3	M4	9	1,12	1,30	1,0
5,3	M5	11	1,35	1,55	1,2
6,4	M6	14	1,70	2,00	1,5
8,4	M8	18	2,24	2,60	2,0
10,5	M10	23	2,80	3,20	2,5
13,0	M12	29	3,43	3,95	3,0
15,0	M14	35	4,04	4,65	3,5
17,0	M16	39	4,58	5,25	4,0
19,0	M18	42	5,08	5,80	4,5
21,0	M20	45	5,60	6,40	5,0
23,0	M22	49	6,15	7,05	5,5
25,0	M24	56	6,77	7,75	6,0

MAT.	BOX
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	200
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	100
★ ★	50
★ ★	50

★ A1 / ★ A2 / ★ A4

DIN 6797 AZ

Toothed lock washers type A
Rondelle elastiche dentellate esterne



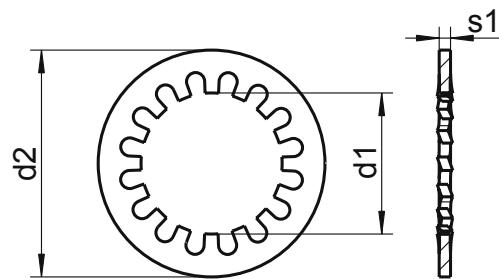
d1	for	d2	s1
2,2	M2	4,5	0,3
2,7	M2,5	5,5	0,4
3,2	M3	6,0	0,4
3,7	M3,5	7,0	0,5
4,3	M4	8,0	0,5
5,3	M5	10,0	0,6
6,4	M6	11,0	0,7
8,4	M8	15,0	0,8
10,5	M10	18,0	0,9
13,0	M12	20,5	1,0
15,0	M14	24,0	1,0
17,0	M16	26,0	1,2
19,0	M18	30,0	1,4
21,0	M20	33,0	1,4

MAT.	BOX
★	1000
★	1000
★	1000
★	1000
★	1000
★	1000
★	1000
★	500
★	500
★	500
★	200
★	200
★	200
★	100

★ A1 / ★ A2 / ★ A4

DIN 6797 J

Toothed lock washers type J
Rondelle elastiche dentellate interne



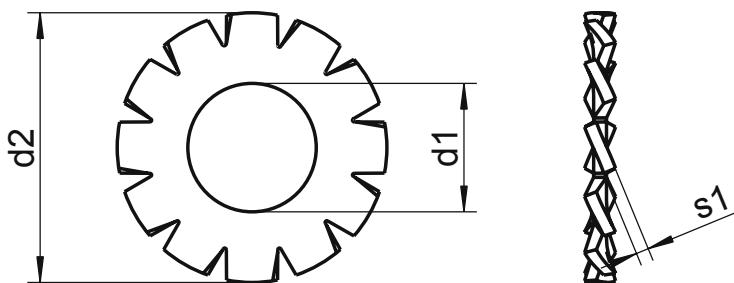
d1	for	d2	s1	MAT.	BOX
2,2	M2	4,5	0,3	★	1000
2,7	M2,5	5,5	0,4	★	1000
3,2	M3	6,0	0,4	★	1000
3,7	M3,5	7,0	0,5	★	1000
4,3	M4	8,0	0,5	★	1000
5,3	M5	10,0	0,6	★	1000
6,4	M6	11,0	0,7	★	1000
8,4	M8	15,0	0,8	★	500
10,5	M10	18,0	0,9	★	500
13,0	M12	20,5	1,0	★	500
15,0	M14	24,0	1,0	★	200
17,0	M16	26,0	1,2	★	200
19,0	M18	30,0	1,4	★	200
21,0	M20	33,0	1,4	★	100
23,0	M22	36,0	1,5	★	100

★ A1 / ★ A2 / ★ A4

DIN 6798 A

Serrated lock washers type A

Rondelle dentellate esterne

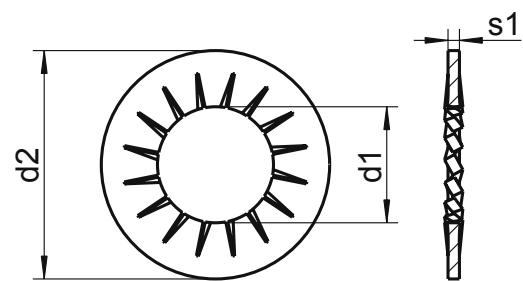


d1	for	d2	s1
2,2	M2	4,5	0,3
2,7	M2,5	5,5	0,4
3,2	M3	6,0	0,4
3,7	M3,5	7,0	0,5
4,3	M4	8,0	0,5
5,1	M5	9,0	0,5
5,3	M5	10,0	0,6
6,4	M6	11,0	0,7
7,4	M7	12,5	0,8
8,2	M8	14,0	0,8
8,4	M8	15,0	0,8
10,5	M10	18,0	0,9
13,0	M12	20,5	1,0
15,0	M14	24,0	1,0
17,0	M16	26,0	1,2
19,0	M18	30,0	1,4
21,0	M20	33,0	1,4
23,0	M22	36,0	1,5
25,0	M24	38,0	1,5
28,0	M27	44,0	1,6
31,0	M30	48,0	1,6

MAT.	BOX
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	500
★★	200
★★	200
★★	200
★★	100
★★	100
★★	100
★★	50
★★	50

★ A1 / ★ A2 / ★ A4

DIN 6798 J
 Serrated lock washers type J
 Rondelle dentellate interne



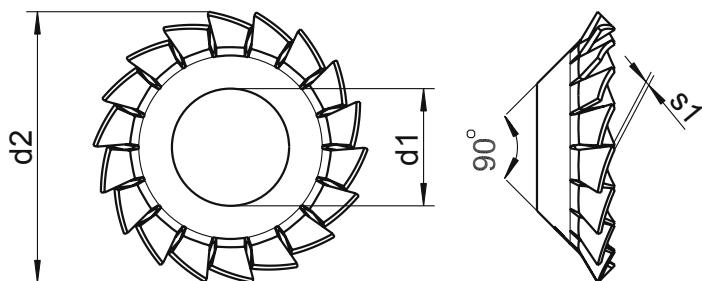
d1	for	d2	s1	MAT.	BOX
2,2	M2	4,5	0,3	★ ★	1000
2,7	M2,5	5,5	0,4	★ ★	1000
3,2	M3	6,0	0,4	★ ★	1000
3,7	M3,5	7,0	0,5	★ ★	1000
4,3	M4	8,0	0,5	★ ★	1000
5,3	M5	10,0	0,6	★ ★	1000
6,4	M6	11,0	0,7	★ ★	1000
7,4	M7	12,5	0,8	★ ★	1000
8,4	M8	15,0	0,8	★ ★	1000
10,5	M10	18,0	0,9	★ ★	1000
13,0	M12	20,5	1,0	★ ★	500
15,0	M14	24,0	1,0	★ ★	200
17,0	M16	26,0	1,2	★ ★	200
19,0	M18	30,0	1,4	★ ★	200
21,0	M20	33,0	1,4	★ ★	100
23,0	M22	36,0	1,5	★ ★	100
25,0	M24	38,0	1,5	★ ★	100
28,0	M27	44,0	1,6	★ ★	50
31,0	M30	48,0	1,6	★ ★	50

★ A1 / ★ A2 / ★ A4

DIN 6798 AZV

Serrated lock washers type V, for countersunk head screws

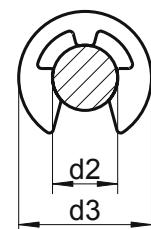
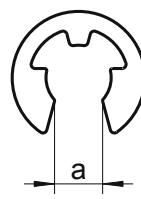
Rondelle dentellate coniche



d1	for	d2	s1
3,2	M3	6,0	0,20
3,7	M3,5	7,0	0,25
4,3	M4	8,0	0,25
5,3	M5	9,80	0,30
6,4	M6	11,80	0,40
8,4	M8	15,30	0,40
10,5	M10	19,00	0,50
13,0	M12	23,00	0,50
17,0	M16	30,2	0,60

MAT.	BOX
★	1000
★	1000
★	1000
★	1000
★	1000
★	500
★	500
★	500
★	500

★ A1 / ★ A2 / ★ A4



d2	for Ø	d3	s	a
1,2	1,4 - 2,0	3,25	0,30	1,01
1,5	2,0 - 2,5	4,25	0,40	1,28
1,9	2,5 - 3,0	4,80	0,50	1,61
2,3	3,0 - 4,0	6,30	0,60	1,94
3,2	4,0 - 5,0	7,30	0,60	2,70
4,0	5,0 - 7,0	9,30	0,70	3,34
5,0	6,0 - 8,0	11,30	0,70	4,11
6,0	7,0 - 9,0	12,30	0,70	5,26
7,0	8,0 - 11,0	14,30	0,90	5,84
8,0	9,0 - 12,0	16,30	1,00	6,52
9,0	10,0 - 14,0	18,80	1,10	7,63
10,0	11,0 - 15,0	20,40	1,20	8,32
12,0	13,0 - 18,0	23,40	1,30	10,45
15,0	16,0 - 24,0	29,40	1,50	12,61
19,0	20,0 - 31,0	37,60	1,75	15,92

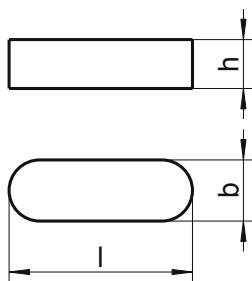
MAT.	BOX
AISI420 ★	500
AISI420 ★	100
AISI420 ★	100
AISI420 ★	50
AISI420 ★	50

★A1 / ★ A2 / ★ A4

DIN 6885 - 1.4571

Parallel keys type A

Chiavette ad incastro

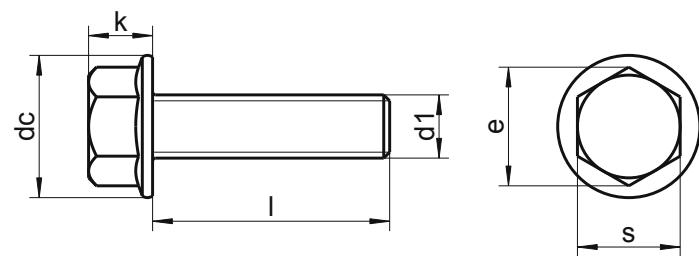


Length / b	4	5	6	7	8	8	9
h	4	5	6	8	10	12	14
8	★						
10	★	★	★				
12	★	★	★				
14	★	★	★				
16	★	★	★				
18	★	★	★				
20	★	★	★	★			
22		★	★	★			
25		★	★	★			
28		★	★	★			
30		★	★	★	★	★	★
32		★	★	★	★	★	★
35		★	★	★	★	★	★
36		★	★	★	★	★	★
40		★	★	★	★	★	★
45			★	★	★	★	★
50			★	★	★	★	★
56			★	★	★	★	★
60			★	★	★	★	★
70				★	★	★	★
75				★	★	★	★
80				★	★	★	★
90				★	★	★	★
100				★	★	★	★
110							★
BOX	100	100	100	100	100	50	50

★ A1 / ★ A2 / ★ A4 - W. nr. 1.4571

DIN 6921

Hexagon bolts with flange and flange serrated
Viti testa esagonale con flangia e flangia zigrinata

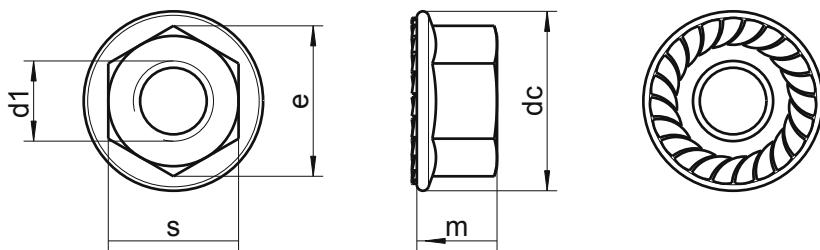


k max.	5,4	6,6	8,1	9,2
s	8	10	13	15
dc	11,8	14,2	18,0	22,3
e	8,71	10,95	14,26	16,50
Length /Ø	M5	M6	M8	M10
10	★	★		
12	★	★		
16	★	★	★	★
20	★	★	★	★
25	★	★	★	★
30	★	★	★	★
35	★	★	★	★
40	★	★	★	★
45		★	★	★
50		★	★	★
60		★	★	★
70				
BOX	200	200	200 ≥ 45 100	100

★ A1 / ★ A2 / ★ A4

DIN 6923

Hexagon nuts with flange serrated
Dadi esagonali con flangia zigrinata



d1	dc	m	s	e
M3	8,0	3,70	5,5	6,01
M4	10,0	4,65	7	7,66
M5	11,8	5	8	8,79
M6	14,2	6	11,05	10
M8	17,9	8	13	14,38
M10	21,8	10	15	17,77
M12	26,0	12	18	20,03

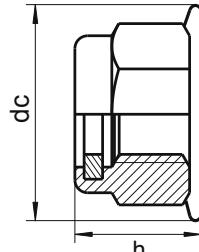
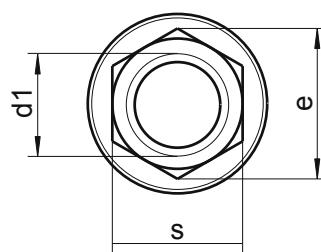
MAT.	BOX
★★	200
★★	200
★★	200
★★	200
★★	200
★★	100
★★	100

★ A1 / ★ A2 / ★ A4

Not serrated on request / flangia liscia su richiesta

DIN 6926

Prevailing torque type hexagon nuts with flange
Dadi esagonali autobloccanti con flangia



d1	dc	m	s	e
M4				
M5	11,80	7,10	8	8,79
M6	14,20	9,10	10	11,05
M8	17,90	11,10	13	14,38
M10	21,80	13,50	15	17,77

MAT.	BOX
★	200
★	200
★	200
★	200
★	100

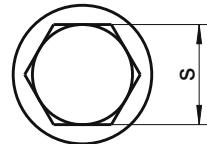
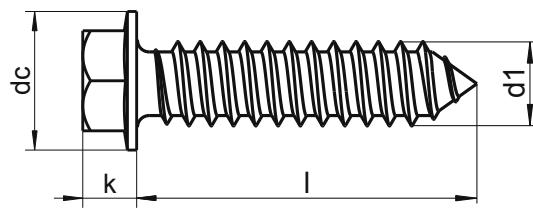
★ A1 / ★ A2 / ★ A4

Serrated on request / flangia zigrinata su richiesta

DIN 6928

Tapping screws hexagon head with flange, type C (with cone point)

Viti autofilettanti testa esagonale flangiata



k	4,10	4,30	5,40	5,90
s	7,00	8,00	8,00	10,00
dc	8,80	10,50	11,00	13,50
Length /Ø	ST 4,2	ST 4,8	ST 5,5	ST 6,3
13	★	★	★	★
16	★	★	★	★
19	★	★	★	★
22	★	★	★	★
25	★	★	★	★
32	★	★	★	★
38	★	★	★	★
45		★	★	★
50		★	★	★
60				★
70				★
80				★
90				★
100				★
120				★
130				★
140				★
150				★
BOX	1000	1000 ≥ 32 500	1000 ≥ 32 500	1000 ≥ 32 500

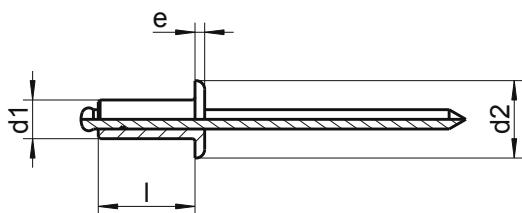
★ A2

DIN 7337 type A - Page 1

Blind rivets

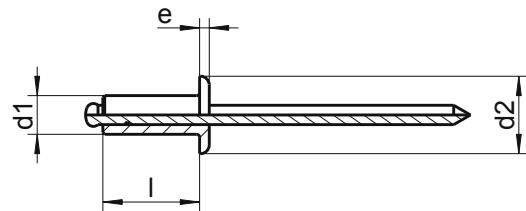
Rivetti a strappo

sim. ISO 15983



d1	d2	clamp. range	I	e
3,0	6,3	1,0 - 3,0	6	1,3
3,0	6,3	3,0 - 5,0	8	1,3
3,0	6,3	5,0 - 7,0	10	1,3
3,0	6,3	7,0 - 9,0	12	1,3
3,0	6,3	8,0 - 12,0	16	1,3
3,2	6,7	1,0 - 3,0	6	1,3
3,2	6,7	3,0 - 5,0	8	1,3
3,2	6,7	5,0 - 7,0	10	1,3
3,2	6,7	7,0 - 9,0	12	1,3
3,2	6,7	9,0 - 12,0	14	1,3
3,2	6,7	9,0 - 12,0	16	1,3
3,2	6,7	12,0 - 14,0	18	1,3
4,0	8,4	1,0 - 2,5	6	1,7
4,0	8,4	2,5 - 4,5	8	1,7
4,0	8,4	4,5 - 6,5	10	1,7
4,0	8,4	6,5 - 8,5	12	1,7
4,0	8,4	8,0 - 10,0	14	1,7
4,0	8,4	8,5 - 12,0	16	1,7
4,0	8,4	10,0 - 14,0	18	1,7
4,0	8,4	12,0 - 16,0	20	1,7
4,0	8,4	12,0 - 16,0	25	1,7
4,8	10,1	1,0 - 2,0	6	2,0
4,8	10,1	2,0 - 4,0	8	2,0
4,8	10,1	4,0 - 6,0	10	2,0
4,8	10,1	6,0 - 8,0	12	2,0
4,8	10,1	8,0 - 10,0	14	2,0
4,8	10,1	8,0 - 11,0	16	2,0
4,8	10,1	10,0 - 13,0	18	2,0
4,8	10,1	11,0 - 15,0	20	2,0
4,8	10,1	14,0 - 17,0	22	2,0
4,8	10,1	15,0 - 19,0	24	2,0
4,8	10,1	15,0 - 20,0	26	2,0
4,8	10,1	21,0 - 25,0	30	2,0

★ A1 / ★ A2 / ★ A4



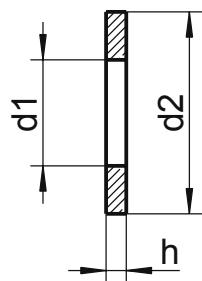
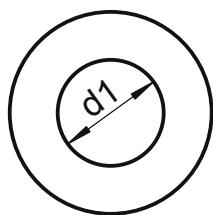
d1	d2	clamp. range	l	e	MAT.	BOX
5,0	10,5	2,5 - 4,0	8	2,1	★	500
5,0	10,5	4,0 - 6,0	10	2,1	★	500
5,0	10,5	6,0 - 8,0	12	2,1	★	500
5,0	10,5	7,0 - 9,0	14	2,1	★	500
5,0	10,5	8,0 - 11,0	16	2,1	★	500
5,0	10,5	10,0 - 13,0	18	2,1	★	500
5,0	10,5	11,0 - 15,0	20	2,1	★	500
5,0	10,5	13,0 - 17,0	22	2,1	★	500
5,0	10,5	14,0 - 19,0	24	2,1	★	500
5,0	10,5	15,0 - 20,0	25	2,1	★	500
5,0	10,5	16,0 - 21,0	26	2,1	★	500
5,0	10,5	20,0 - 25,0	30	2,1	★	500
5,0	10,5	25,0 - 30,0	35	2,1	★	500
5,0	10,5	30,0 - 34,0	40	2,1	★	500
6,4	13,0	2,0 - 4,0	10	2,6	★	500
6,4	13,0	4,0 - 6,0	12	2,6	★	500
6,4	13,0	6,0 - 8,0	14	2,6	★	500
6,4	13,0	7,0 - 10,0	16	2,6	★	500
6,4	13,0	9,0 - 13,0	18	2,6	★	500
6,4	13,0	13,0 - 16,0	20	2,6	★	500
6,4	13,0	14,0 - 17,0	22	2,6	★	500
6,4	13,0	15,0 - 19,0	25	2,6	★	500
6,4	13,0	19,0 - 23,0	30	2,6	★	500
6,4	13,0	23,0 - 28,0	35	2,6	★	500
6,4	13,0	28,0 - 33,0	40	2,6	★	500

★ A1 / ★ A2 / ★ A4

DIN 7349

Washers for bolts with heavy type spring pins

Rondelle piane per spine elastiche



d1	for	for spring pins DIN 1481	d2	h
3,2	M3	6	9	1,0
4,3	M4	8	12	1,6
5,3	M5	10	15	2,0
6,4	M6	12	17	3,0
8,4	M8	16	21	4,0
10,5	M10	18	25	4,0
13,0	M12	21	30	6,0
15,0	M14	25	36	6,0
17,0	M16	28	40	6,0
19,0	M18	32	44	8,0
21,0	M20	35	44	8,0
23,0	M22	38	50	8,0
25,0	M24	40	50	10,0
28,0	M27	45	60	10,0
31,0	M30	50	68	10,0

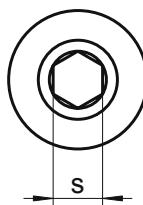
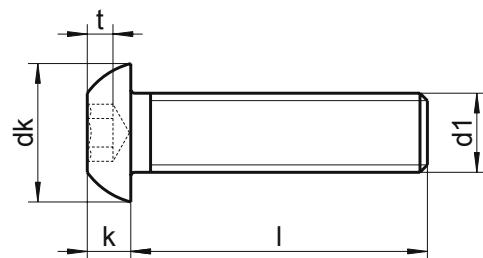
MAT.	BOX
★ ★	500
★ ★	500
★ ★	500
★ ★	500
★ ★	500
★ ★	500
★ ★	200
★ ★	100
★ ★	100
★ ★	100
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	25

★ A1 / ★ A2 / ★ A4

ISO 7380

Hexagon socket button head screws

Viti testa bombata cava esagonale



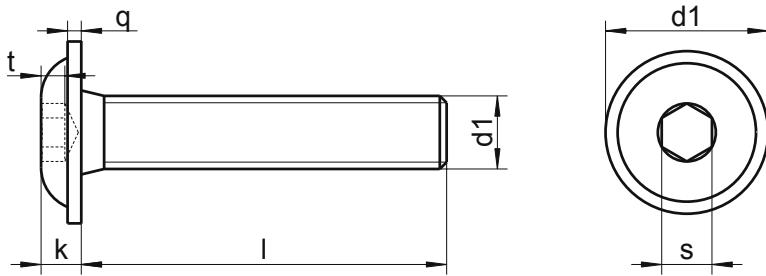
dk k max. s t	5,7 1,65 2	7,6 2,20 2,5	9,5 2,75 3	10,5 3,30 4	14,0 4,40 5	17,5 5,50 6	21,0 6,60 8
Length /Ø	M3	M4	M5	M6	M8	M10	M12
4	★ ★	★ ★					
5	★ ★	★ ★					
6	★ ★	★ ★	★ ★				
8	★ ★	★ ★	★ ★	★ ★	★ ★		
10	★ ★	★ ★	★ ★	★ ★	★ ★		
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
20	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
30	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
35	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
40	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
55			★ ★	★ ★	★ ★	★ ★	★ ★
60			★ ★	★ ★	★ ★	★ ★	★ ★
70				★ ★	★ ★	★ ★	★ ★
80				★ ★	★ ★	★ ★	★ ★
90					★ ★	★ ★	★ ★
100					★ ★	★ ★	★ ★
BOX	500	500 ≥ 45 200	500 ≥ 45 200	500 ≥ 25 200 ≥ 55 100	200 ≥ 55 100	100	100 ≥ 45 50

★ A1 / ★ A2 / ★ A4

sim. ISO 7380 F

Hexagon socket button head screws with flange

Viti testa bombata cava esagonale con flangia

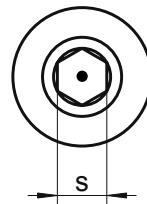
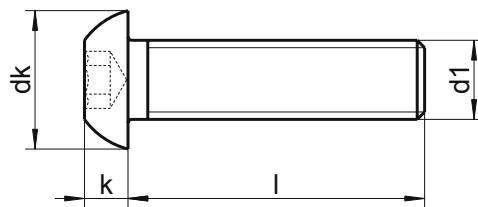


k max.	1,65	2,20	2,75	3,30	4,40
d1 max.	6,9	9,4	11,8	13,6	17,8
s	2	2,5	3	4	5
q	0,7	0,8	0,9	1,2	1,5
t	1,4	1,7	2,2	2,4	3,2
Length / Ø	M3	M4	M5	M6	M8
4	★	★			
5	★	★	★		
6	★	★	★	★	
8	★	★	★	★	★
10	★	★	★	★	★
12	★	★	★	★	★
16	★	★	★	★	★
18	★	★	★	★	★
20	★	★	★	★	★
25	★	★	★	★	★
30		★	★	★	★
35			★	★	★
40			★	★	★
50				★	★
55				★	★
60				★	★
70					★
BOX	500	500	500 ≥ 25 200	200	200

★ A1 / ★ A2 / ★ A4

ISO 7380 HEX+PIN

Socket button head with HEX and PIN
Viti testa bombata cava esagonale + PIN



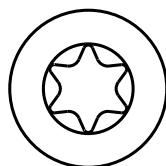
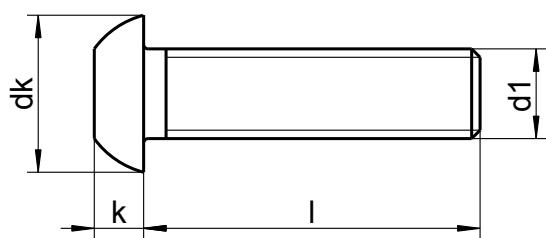
dk	5,7	7,6	9,5	10,5	14,0	17,5
k	1,7	2,20	2,75	3,30	4,40	5,50
s	2,0	2,5	3,0	4,0	5,0	6,0
Length /Ø	M3	M4	M5	M6	M8	M10
6	★	★				
8	★	★				
10	★	★	★	★	★	
12	★	★	★	★	★	
16	★	★	★	★	★	★
20	★	★	★	★	★	★
25	★	★	★	★	★	★
30	★	★	★	★	★	★
40	★	★	★	★	★	★
45			★	★	★	★
50					★	
55					★	
60					★	
70					★	
75					★	
80					★	
90					★	
BOX	100	100	100	100	100	100

★ A1 / ★ A2 / ★ A4

ISO 7380 TX

Socket button head with TX

Viti testa bombata esalobata

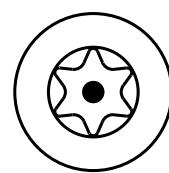
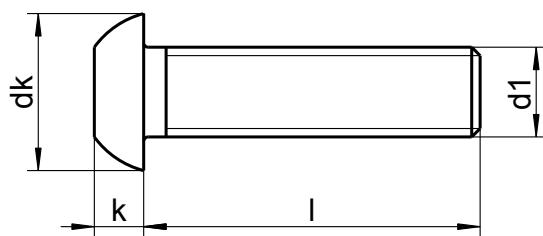


dk k tx	5,7 1,70 TX 10	7,6 2,20 TX 20	9,5 2,75 TX 25	10,5 3,30 TX 30	14,0 4,40 TX 40
Length /Ø	M3	M4	M5	M6	M8
6	★		★		
8	★	★		★	
10	★	★	★	★	
12	★	★	★	★	
16	★	★	★	★	★
20	★	★	★	★	★
25		★	★	★	★
30		★	★	★	★
35			★	★	★
40		★	★	★	★
50			★	★	★
60			★	★	★
BOX		100	100	100	100

★ A1 / ★ A2 / ★ A4

ISO 7380 TX+PIN

Socket button head with TX and PIN
Viti testa bombata cava esalobata + PIN



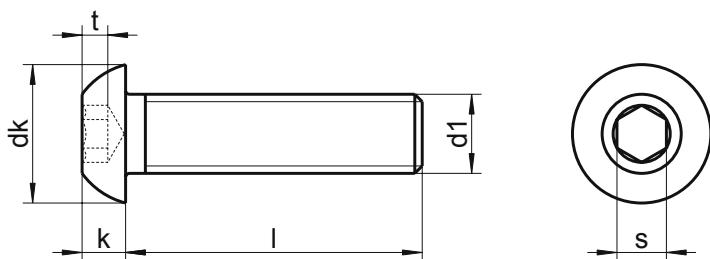
dk	5,7	7,6	9,5	10,5	14,0	17,5
k	1,70	2,20	2,75	3,30	4,40	5,50
tx	TX 10	TX 20	TX 25	TX 30	TX 40	TX 45
Length /Ø	M3	M4	M5	M6	M8	M10
6	★	★	★	★	★	★
8	★	★	★	★	★	★
10	★	★	★	★	★	★
12	★	★	★	★	★	★
16	★	★	★	★	★	★
20	★	★	★	★	★	★
25		★	★	★	★	★
30		★	★	★	★	★
40		★	★	★	★	★
50		★	★	★	★	★
60		★	★	★	★	★
70			★	★	★	★
BOX	100	100	100	100	100	100

★ A1 / ★ A2 / ★ A4

sim. ISO 7380 UNC

Hexagon socket button head screws

Viti testa bombata cava esagonale



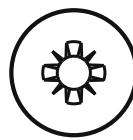
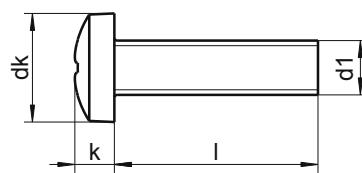
dk	4,77	5,41	6,04	6,65	7,92	9,16	11,09	13,89	16,66	22,22	25,04
k max.	1,32	1,49	1,67	1,60	2,21	2,56	3,35	4,21	5,05	6,73	8,40
s	1,57	1,57	1,98	1,98	2,38	3,17	3,96	4,77	5,56	7,92	9,52
t	0,89	0,89	1,11	1,11	1,32	1,77	2,21	2,66	3,09	4,44	5,33
Length / Ø	3-48	4-40	5-40	6-32	8-32	10-24	1/4	5/16	3/8	1/2	5/8
1/4	★	★	★	★	★	★					
5/16	★	★	★	★	★	★					
3/8	★	★	★	★	★	★	★				
1/2	★	★	★	★	★	★	★	★	★	★	
5/8		★	★	★	★	★	★	★	★	★	
3/4		★	★	★	★	★	★	★	★	★	
7/8		★	★	★	★	★	★	★	★	★	
1		★	★	★	★	★	★	★	★	★	★
1 1/4			★	★	★	★	★	★	★	★	★
1 3/8			★	★	★	★	★	★	★	★	★
1 1/2			★	★	★	★	★	★	★	★	★
1 5/8				★	★	★	★	★	★	★	★
1 3/4				★	★	★	★	★	★	★	★
2					★	★	★	★	★	★	★
2 1/4						★	★	★	★	★	★
2 1/2						★	★	★	★	★	★
2 5/8						★	★	★	★	★	★
2 3/4						★	★	★	★	★	★
3						★	★	★	★	★	★

★ A1 / ★ A2 / ★ A4

DIN 7500 "C" - Z

Thread rolling pan head screws - Z - (pozy drive)

Viti trilobate testa cilindrica croce - Z



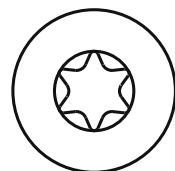
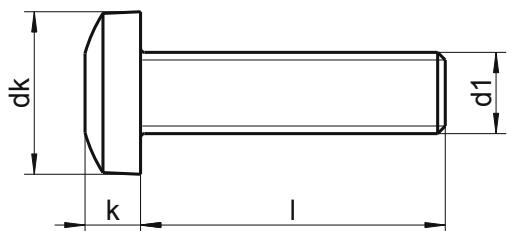
dk	5,0	6,0	8,0	10,0	12,0
k	2,0	2,4	3,1	3,8	4,6
Length / \varnothing	M2,5	M3	M4	M5	M6
3					
4		★			
5	★	★			
6	★	★	★		
8	★	★	★	★	
10	★	★	★	★	★
12		★	★	★	★
14					
16		★	★	★	★
18					
20		★	★	★	★
22					
25			★	★	★
28					
30				★	★
BOX	1000	1000	1000	1000 ≥ 45 500	1000 ≥ 25 500

★ A1 / ★ A2 / ★ A4

DIN 7500 "C" - TX

Thread rolling pan head screws with TX

Viti trilobate testa cilindrica esalobata



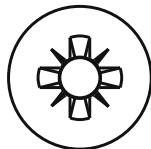
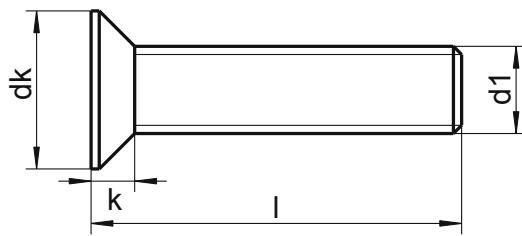
dk k tx	5 TX 8	6 TX 10	8 TX 20	10 TX 25	12 TX 30
Length / Ø	M2,5	M3	M4	M5	M6
3					
4	★				
5	★	★			
6	★	★	★		
8	★	★	★	★	★
10	★	★	★	★	★
12		★	★	★	★
16		★	★	★	★
20		★	★	★	★
25			★	★	★
BOX	1000	500	500	500 ≥ 25 200	200 ≥ 35 100

★ A1 / ★ A2 / ★ A4

DIN 7500 "M" - Z

Thread rolling countersunk head screws - Z - (pozy drive)

Viti trilobate testa piana svasata - Z



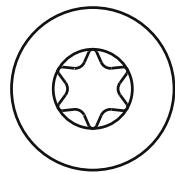
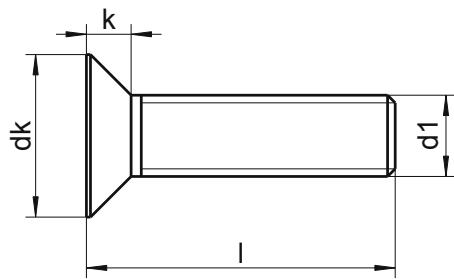
dk k	4,7 1,50	5,6 1,65	7,5 2,20	9,2 2,50	11,0 3,00
Length /Ø	M2,5	M3	M4	M5	M6
3					
4	★				
5	★				
6	★	★			
8	★	★	★		
10		★	★	★	★
12		★	★	★	★
14					
16		★	★	★	★
18					
20			★	★	★
22					
25				★	★
30				★	★
BOX	1000	1000	1000	1000	1000 ≥ 25 500 ≥ 70 200

★ A1 / ★ A2 / ★ A4

DIN 7500 "M" - TX

Thread rolling countersunk head screws with TX

Viti trilobate testa piana svasata esalobata



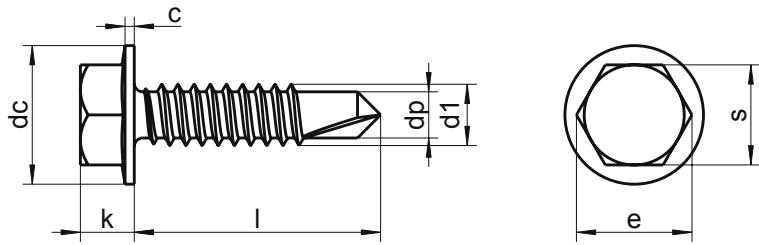
dk	4,7	5,6	7,5	9,2
k	1,50	1,65	2,20	2,50
tx	TX 8	TX 10	TX 20	TX 25
Length / Ø	M2,5	M3	M4	M5
5	★			
6	★	★		
8	★	★	★	
10	★	★	★	★
12	★	★	★	★
16			★	★
20			★	★
25				★
30				★
BOX	1000	500	500	500

★ A1 / ★ A2 / ★ A4

DIN 7504 K

Self drilling screws hexagon head with flange

Viti autoforanti testa esagonale con flangia



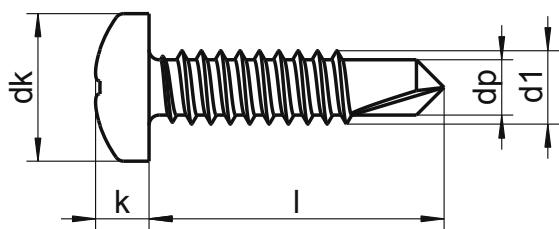
dp	2,8	3,1	3,6	4,1	4,8	5,8
s	5,5	5,5	7	8	8	10
c	0,6	0,6	0,8	0,9	1,0	1,0
k max.	3,45	3,45	4,10	4,30	5,45	5,90
dc max.	8,3	8,3	8,8	10,5	11,0	13,50
e min.	5,96	5,96	7,59	8,71	8,71	10,95
Length /Ø	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3
9,5 (3/8)	★	★	★	★	★	
13 (1/2)	★	★	★	★	★	
16 (5/8)	★	★	★	★	★	★
19 (3/4)	★	★	★	★	★	★
22 (7/8)	★	★	★	★	★	★
25 (1")	★	★	★	★	★	★
32 (1 1/4)		★	★	★	★	★
35 (1 3/8)		★	★	★	★	★
38 (1 1/2)		★	★	★	★	★
45 (1 3/4)				★	★	★
50 (2")				★	★	
60 (2 3/8)					★	★
70 (2 3/4)					★	★
80 (3 1/8)					★	★
90 (3 1/2)					★	★
100 (4")					★	★
110 (4 1/4)					★	★
120 (4 3/4)					★	★
125 (5")					★	★
130 (5 1/4)						★
BOX	1000	1000 ≥ 32 500	1000 ≥ 32 500	500 ≥ 32 200	200	200

★ A1 / ★ A2 / ★ A4

DIN 7504 N

Self drilling screws pan head with cross recess H (Phillips) Z (Pozy)

Viti autoforanti testa cilindrica croce



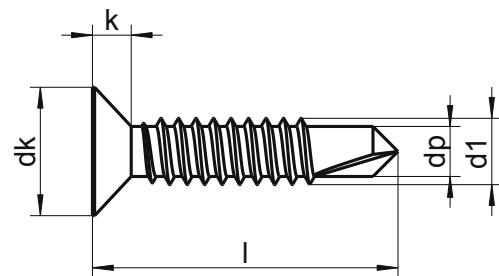
$d\varnothing$	2,3	2,8	3,1	3,6	4,1	4,8
dk max	5,6	6,9	7,5	8,2	9,5	10,80
k max.	2,2	2,6	2,8	3,05	3,55	3,95
Length $/\varnothing$	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5
9,5 (3/8)	★	★				
13 (1/2)	★	★	★	★	★	
16 (5/8)		★	★	★	★	
19 (3/4)		★	★	★	★	★
22 (7/8)		★	★	★	★	★
25 (1")		★	★	★	★	★
32 (1 1/4)			★	★	★	★
38 (1 1/2)			★	★	★	★
45 (1 3/4)					★	★
50 (2")					★	★
60 (2 3/8)					★	★
70 (2 3/4)					★	
BOX	1000	1000	1000	500	200	200

★ A1 / ★ A2 / ★ A4

DIN 7504 P

Self drilling screws countersunk head with cross recess H (Phillips) Z (Pozy)

Viti autoforanti testa svasata piana croce



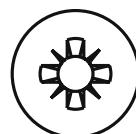
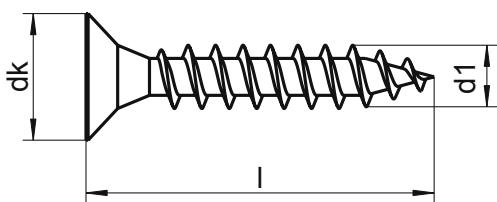
dp	3,1	3,1	3,6	4,1	4,80
dk max.	7,5	7,5	8,1	9,5	10,30
k max.	2,3	2,3	2,5	3,0	3,40
Length / Ø	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5
13 (1/2)	★	★	★	★	
16 (5/8)	★	★	★	★	
19 (3/4)	★	★	★	★	★
22 (7/8)	★	★	★	★	★
25 (1")	★	★	★	★	★
32 (1 1/4)		★	★	★	★
38 (1 1/2)		★	★	★	★
45 (1 3/4)		★	★	★	★
50 (2")		★	★	★	★
60 (2 3/8)			★	★	★
BOX	1000 ≥ 22 500	1000 ≥ 32 500	1000 ≥ 32 500	500 ≥ 32 200	500 ≥ 32 200

★ A1 / ★ A2 / ★ A4

sim. DIN 7505 A - FT

Chipboard screws countersunk head with cross recess Z (Pozidrive) full thread

Viti truciolari testa svasata piana croce tutto filetto



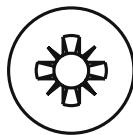
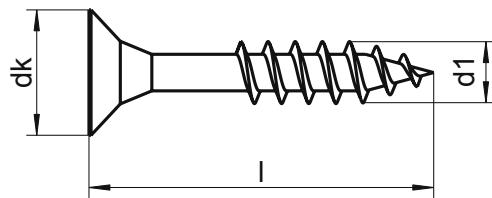
dk max. z	6 Z 1	7 Z 2	8 Z 2	9 Z 2	10 Z 2	12 Z 3
Length /Ø	3	3,5	4	4,5	5	6
12	★☆	★☆	★☆			
13	★☆	★☆	★☆			
14	★☆	★☆	★☆			
16	★☆	★☆	★☆	★☆	★☆	★☆
20	★☆	★☆	★☆	★☆	★☆	★☆
25	★☆	★☆	★☆	★☆	★☆	★☆
30	★☆	★☆	★☆	★☆	★☆	★☆
35	★☆	★☆	★☆	★☆	★☆	★☆
40	★☆	★☆	★☆	★☆	★☆	★☆
45	★☆	★☆	★☆	★☆	★☆	★☆
50	★☆	★☆	★☆	★☆	★☆	★☆
55			★☆	★☆	★☆	★☆
60			★☆	★☆	★☆	★☆
65			★☆	★☆	★☆	★☆
70			★☆	★☆	★☆	★☆
75			★☆	★☆	★☆	★☆
80		★☆	★☆	★☆	★☆	★☆
90					★☆	★☆
100					★☆	★☆
110					★☆	★☆
120					★☆	★☆
130					★☆	★☆
140					★☆	★☆
BOX	1000	1000	500	500 ≥ 40 200	500 ≥ 65 100	200 ≥ 70 100

★ A1 / ★ A2 / ★ A4

sim. DIN 7505 A - HT

Chipboard screws countersunk head with cross recess Z (Pozidrive) partial thread

Viti truciolari testa svasata piana croce parziale filetto



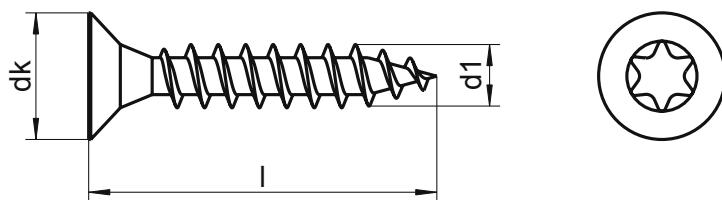
dk max. z	6 Z 1	7 Z 2	8 Z 2	9 Z 2	10 Z 2	12 Z 3
Length /Ø	3	3,5	4	4,5	5	6
25	★☆	★☆	★☆	★☆	★☆	
30	★☆	★☆	★☆	★☆	★☆	
35	★☆	★☆	★☆	★☆	★☆	
40	★☆	★☆	★☆	★☆	★☆	★☆
45		★☆	★☆	★☆	★☆	★☆
50		★☆	★☆	★☆	★☆	★☆
55			★☆	★☆	★☆	★☆
60			★☆	★☆	★☆	★☆
65			★☆	★☆	★☆	★☆
70			★☆	★☆	★☆	★☆
80			★☆	★☆	★☆	★☆
90				★☆	★☆	★☆
100				★☆	★☆	★☆
110					★☆	★☆
120					★☆	★☆
140						★☆
150						★☆
160						★☆
180						★☆
200						★☆
BOX	500	500	500	500 ≥ 40 200	200 ≥ 70 100	200 ≥ 70 100

★ A1 / ★ A2 / ☆ A4

sim. DIN 7505 A - FT - TX

Chipboard screws countersunk head with TX full thread

Viti truciolari testa svasata piana esalobata tutto filetto



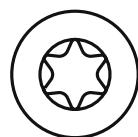
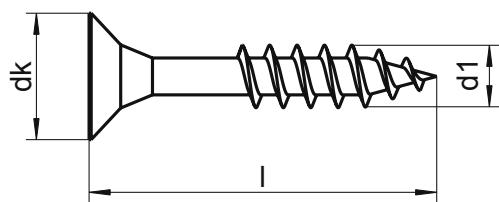
dk tx	6 TX 10	7 TX 10	8 TX 20	9 TX 20	10 TX 25	12 TX 25
Length /Ø	3	3,5	4	4,5	5	6
10	★☆					
13	★☆	★☆	★☆			
16	★☆	★☆	★☆			
20	★☆	★☆	★☆	★☆	★☆	
25	★☆	★☆	★☆	★☆	★☆	
30	★☆	★☆	★☆	★☆	★☆	★☆
35	★☆	★☆	★☆	★☆	★☆	★☆
40		★☆	★☆	★☆	★☆	★☆
45			★☆	★☆	★☆	★☆
50			★☆	★☆	★☆	★☆
55			★☆	★☆	★☆	★☆
60			★☆	★☆	★☆	★☆
70			★☆	★☆	★☆	★☆
80			★☆	★☆	★☆	★☆
90					★☆	★☆
100					★☆	★☆
BOX	1000	1000	500	500 ≥ 40 200	200 ≥ 70 100	200 ≥ 70 100

★ A1 / ★ A2 / ☆ A4

sim. DIN 7505 A - HT - TX

Chipboard screws countersunk head with TX part thread

Viti truciolari testa svasata piana esalobata parziale filetto



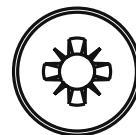
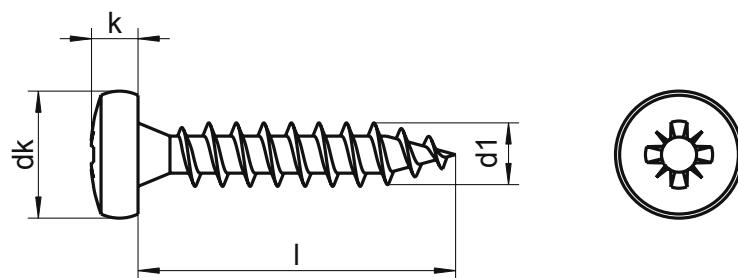
dk tx	6 TX 10	7 TX 10	8 TX 20	9 TX 20	10 TX 25	12 TX 25	14 TX 40
Length /Ø	3	3,5	4	4,5	5	6	8
25	★★	★★	★★	★★	★★		
30	★★	★★	★★	★★	★★		
35	★★	★★	★★	★★	★★		
40	★★	★★	★★	★★	★★	★★	★★
45		★★	★★	★★	★★	★★	★★
50		★★	★★	★★	★★	★★	★★
60		★★	★★	★★	★★	★★	★★
70		★★	★★	★★	★★	★★	★★
80				★★	★★	★★	★★
90				★★	★★	★★	★★
100				★★	★★	★★	★★
110						★★	★★
120						★★	★★
130						★★	★★
140						★★	★★
150						★★	★★
160						★★	★★
180						★★	★★
200						★★	★★
220						★★	★★
240						★★	★★
BOX	500	500	500	500 ≥ 40 200	500 ≥ 70 100	200 ≥ 70 100	100

★ A1 / ★ A2 / ★ A4

sim. DIN 7505 B - FT

Chipboard screws pan head with cross recess Z (Pozidrive) full thread

Viti truciolari testa cilindrica croce tutto filetto



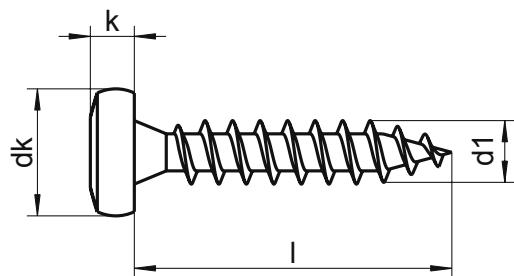
dk max.	6	7	8	9	10	12
k	1,60 Z1	1,80 Z2	2,10 Z2	2,90 Z2	3,30 Z2	3,80 Z3
Length / \varnothing	3	3,5	4	4,5	5	6
10	★☆					
12	★☆	★☆	★☆	★☆		
16	★☆	★☆	★☆	★☆		
20	★☆	★☆	★☆	★☆	★☆	★☆
25	★☆	★☆	★☆	★☆	★☆	★☆
30	★☆	★☆	★☆	★☆	★☆	★☆
35	★☆	★☆	★☆	★☆	★☆	★☆
40		★☆	★☆	★☆	★☆	★☆
45		★☆	★☆	★☆	★☆	★☆
50		★☆	★☆	★☆	★☆	★☆
55			★☆	★☆	★☆	★☆
60			★☆	★☆	★☆	★☆
65			★☆	★☆	★☆	★☆
70			★☆	★☆	★☆	★☆
75			★☆	★☆	★☆	★☆
80					★☆	★☆
90					★☆	★☆
100					★☆	★☆
110						★☆
120						★☆
BOX	1000	1000	500	500 ≥ 40 200	200 ≥ 70 100	200 ≥ 70 100

★ A1 / ★ A2 / ★ A4

sim. DIN 7505 B FT - TX

Chipboard screws pan head with TX full thread

Viti truciolari testa cilindrica esalobata tutto filetto



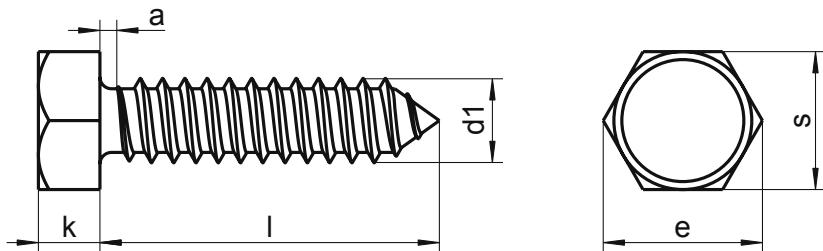
dk max.	6	7	8	9	10	12
k	1,6	1,8	2,1	2,9	3,3	3,8
tx	TX 10	TX 10	TX 20	TX 20	TX 25	TX 25
Length / Ø	3	3,5	4	4,5	5	6
10	★					
12	★	★	★			
16	★	★	★	★		
20	★	★	★	★	★	★
25	★	★	★	★	★	★
30	★	★	★	★	★	★
35	★	★	★	★	★	★
40	★		★	★	★	★
45		★	★	★	★	★
50		★	★	★	★	★
55			★	★	★	★
60			★	★	★	★
70			★	★	★	★
80					★	★
90					★	★
100					★	★
110						★
120						★
BOX	1000	1000	500	500 ≥ 40 200	200 ≥ 70 100	200 ≥ 70 100

★ A1 / ★ A2 / ★ A4

DIN 7976

Tapping screws hexagon head, type C (with cone point)

Viti autofilettanti testa esagonale



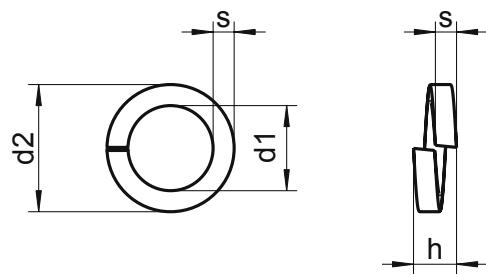
k	1,5	2,3	2,3	2,8	3,0	4,0	4,8	5,8
s	5	5,5	7	7	8	8	10	13
e	5,45	6,00	7,66	7,66	8,79	8,79	11,05	14,38
a	1,1	1,3	1,3	1,4	1,6	1,8	1,8	2,1
Length /Ø	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3	ST8
9,5 (3/8")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
13 (1/2")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
16 (5/8")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
19 (3/4")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
22 (7/8")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
25 (1")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
32 (1 1/4")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
38 (1 1/2")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
45 (1 3/4")		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
50 (2")		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★
55 (2 1/8")			★ ★	★ ★	★ ★	★ ★	★ ★	★
60 (2 3/8")			★ ★	★ ★	★ ★	★ ★	★ ★	★
70 (2 3/4")				★ ★	★ ★	★ ★	★ ★	★
80 (3 3/8")					★ ★	★ ★	★ ★	
90 (3 1/2")					★ ★	★ ★	★ ★	
100 (4")					★ ★	★ ★	★ ★	
110 (4 3/8")					★ ★	★ ★	★ ★	
120 (4 3/4")					★ ★	★ ★	★ ★	
BOX	1000	1000 ≥ 32 500	1000 ≥ 32 500	1000 ≥ 32 500	500 ≥ 32 200	200 ≥ 32 100	200 ≥ 32 100	200 ≥ 32 100

★ A1 / ★ A2 / ★ A4

DIN 7980

Spring lock washers for cylindrical head screws

Rondelle grower sezione quadra



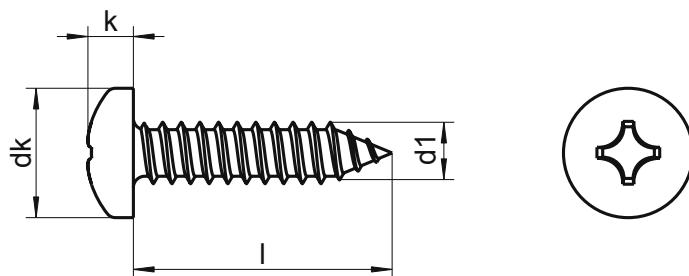
for	d	d2 max.	h min.	s	MAT.	BOX
M3	3,1	5,6	2,0	1,0	1.4310 ★	1000
M3,5	3,6	6,1	2,0	1,0	1.4310 ★	1000
M4	4,1	7,0	2,4	1,2	1.4310 ★	1000
M5	5,1	8,8	3,2	1,6	1.4310 ★	1000
M6	6,1	9,9	3,2	1,6	1.4310 ★	1000
M8	8,1	12,7	4,0	2,0	1.4310 ★	1000
M10	10,2	16,0	5,0	2,5	1.4310 ★	500
M12	12,2	18,0	5,0	2,5	1.4310 ★	500
M14	14,2	21,1	6,0	3,0	1.4310 ★	200
M16	16,2	24,4	7,0	3,5	1.4310 ★	200
M18	18,2	26,4	7,0	3,5	1.4310 ★	200
M20	20,2	30,6	9,0	4,5	1.4310 ★	100
M22	22,5	32,9	9,0	4,5	1.4310 ★	100
M24	24,5	35,9	10,0	5,0	1.4310 ★	100
M27	27,5	38,9	10,0	5,0	1.4310 ★	100
M30	30,5	44,1	12,0	6,0	1.4310 ★	100

★ A1 / ★ A2 / ★ A4

DIN 7981 H

Tapping screws pan head with cross recess H (Phillips), type C (with cone point)

Viti autofilettanti testa cilindrica croce

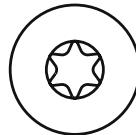
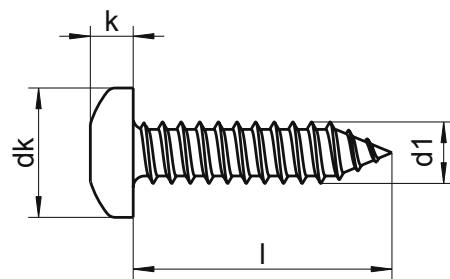


dk	4,2	5,6	6,9	7,5	8,2	9,5	10,8	12,5
k min.	1,55	1,95	2,35	2,55	2,75	3,25	3,65	4,25
k max.	1,80	2,20	2,60	2,80	3,05	3,55	3,95	4,55
Length / \emptyset	ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3
4,5 (1/6)	★ ★							
6,5 (1/4)	★ ★	★ ★	★ ★	★ ★	★ ★			
9,5 (3/8)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
13 (1/2)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
16 (5/8)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
19 (3/4)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
22 (7/8)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25 (1")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
32 (1 1/4)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
38 (1 1/2)		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45 (1 3/4)			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50 (2")			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
55 (2 1/8)			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60 (2 3/8)			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
70 (2 3/4)			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80 (3 1/8)				★ ★	★ ★	★ ★	★ ★	★ ★
90 (3 1/2)					★ ★	★ ★	★ ★	★ ★
100 (4")					★ ★	★ ★	★ ★	★ ★
120 (4 3/4)						★ ★	★ ★	★ ★
BOX	1000	1000	1000 ≥ 32 500	1000 ≥ 32 500	1000 ≥ 32 500 ≥ 50 200	1000 ≥ 22 500 ≥ 32 200	500 ≥ 32 100	200 ≥ 32 100

★ A1 / ★ A2 / ★ A4

DIN 7981 - TX

Tapping screws pan head with TX
Viti autofilettanti testa cilindrica esalobata



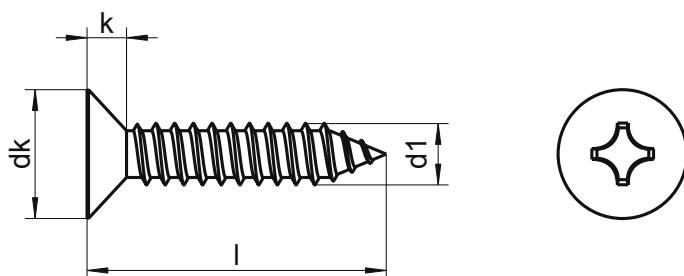
dk	5,6	6,9	7,5	8,2	9,5	10,8	12,5
k max.	2,20	2,60	2,80	3,05	3,55	3,95	4,55
h	TX 8	TX 10	TX 15	TX 20	TX 25	TX 25	TX 30
Length / \varnothing	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3
6,5 (1/4)	★☆						
9,5 (3/8)	★☆	★☆	★☆	★☆			
13 (1/2)	★☆	★☆	★☆	★☆	★☆	★☆	★☆
16 (5/8)	★☆	★☆	★☆	★☆	★☆	★☆	★☆
19 (3/4)	★☆	★☆	★☆	★☆	★☆	★☆	★☆
22 (7/8)	★☆	★☆	★☆	★☆	★☆	★☆	★☆
25 (1")	★☆	★☆	★☆	★☆	★☆	★☆	★☆
32 (1 1/4)	★☆	★☆	★☆	★☆	★☆	★☆	★☆
38 (1 1/2)	★☆	★☆	★☆	★☆	★☆	★☆	★☆
45 (1 3/4)		★☆	★☆	★☆	★☆	★☆	★☆
50 (2")		★☆	★☆	★☆	★☆	★☆	★☆
60 (2 3/8)			★☆	★☆	★☆	★☆	★☆
BOX	1000	1000	1000	500	500	200	200
		≥ 32	≥ 32	500	≥ 32	≥ 32	≥ 32
		500		500	200	100	100

★ A1 / ★ A2 / ☆ A4

DIN 7982 H

Tapping screws countersunk head with cross recess H (Phillips), type C (with cone point)

Viti autofilettanti testa piana svasata croce

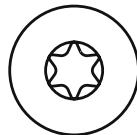
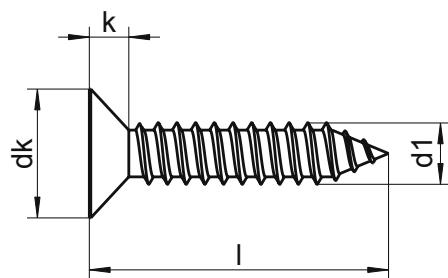


$\frac{dk}{k}$	4,3 1,3	5,5 1,7	6,8 2,1	7,5 2,3	8,1 2,5	9,5 3,0	10,8 3,4	12,4 3,8
Length / Ø	ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3
6,5 (1/4")	★ ★	★ ★	★ ★	★ ★				
9,5 (3/8")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
13 (1/2")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
16 (5/8")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
19 (3/4")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
22 (7/8")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25 (1")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
32 (1 1/4")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
38 (1 1/2")		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45 (1 3/4")			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50 (2")			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
55 (2 1/8")			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60 (2 3/8")			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
70 (2 3/4")			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
80 (3 1/8")				★ ★	★ ★	★ ★	★ ★	★ ★
90 (3 1/2")				★ ★	★ ★	★ ★	★ ★	★ ★
100 (4")				★ ★	★ ★	★ ★	★ ★	★ ★
120 (4 3/4")					★ ★	★ ★	★ ★	★ ★
BOX	1000	1000	1000 ≥ 32 500	1000 ≥ 32 500	1000 ≥ 32 500 ≥ 50 200	1000 ≥ 22 500 ≥ 32 200	200 ≥ 32 100	200 ≥ 32 100

★ A1 / ★ A2 / ★ A4

DIN 7982 TX

Tapping screws countersunk head with TX
Viti autofilettanti testa piana svasata esalobata



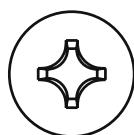
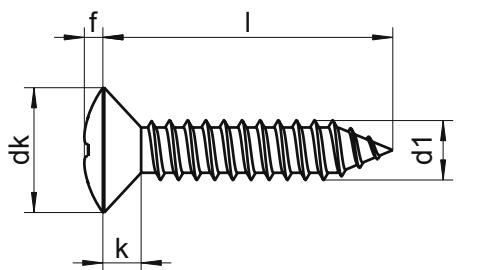
dk k max. tx	5,5 TX8	6,8 TX 10	7,5 TX 15	8,1 TX 20	9,5 TX 25	10,8 TX 25	12,4 TX 30
Length /Ø	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3
9,5 (3/8)	★ ★	★ ★	★ ★	★ ★			
13 (1/2)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
16 (5/8)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
19 (3/4)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
22 (7/8)	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25 (1")	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
32 (1 1/4)		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
38 (1 1/2)		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
45 (1 3/4)		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
50 (2")		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
60 (2 3/8)			★ ★	★ ★	★ ★	★ ★	★ ★
BOX	1000	1000	1000	500	500	200	200
		≥ 32	≥ 32	≥ 32	≥ 32	≥ 32	≥ 32
		500	500	500	200	100	100

★ A1 / ★ A2 / ★ A4

DIN 7983 H

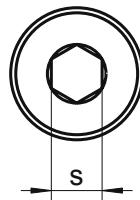
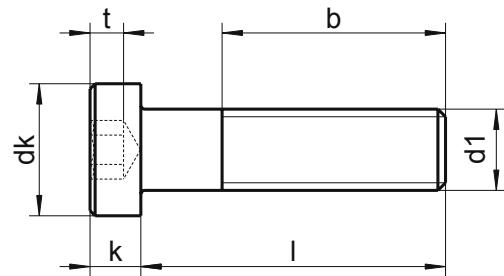
Tapping screws raised countersunk head with cross recess H (Phillips), type C (with cone point)

Viti autofilettanti testa svasata con calotta croce



dk	4,3	5,5	6,8	7,5	8,1	9,5	10,8	12,4
f	0,7	0,9	1,2	1,3	1,4	1,5	1,7	2,0
k	1,3	1,7	2,1	2,3	2,5	3,0	3,4	3,8
Length / \varnothing	ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3
6,5 (1/4")	★☆	★☆	★☆	★☆				
9,5 (3/8")	★☆	★☆	★☆	★☆	★☆			
13 (1/2")	★☆	★☆	★☆	★☆	★☆	★☆	★☆	★☆
16 (5/8")	★☆	★☆	★☆	★☆	★☆	★☆	★☆	★☆
19 (3/4")	★☆	★☆	★☆	★☆	★☆	★☆	★☆	★☆
22 (7/8")	★☆	★☆	★☆	★☆	★☆	★☆	★☆	★☆
25 (1")	★☆	★☆	★☆	★☆	★☆	★☆	★☆	★☆
32 (1 1/4")	★☆	★☆	★☆	★☆	★☆	★☆	★☆	★☆
38 (1 1/2")		★☆	★☆	★☆	★☆	★☆	★☆	★☆
45 (1 3/4")			★☆	★☆	★☆	★☆	★☆	★☆
50 (2")			★☆	★☆	★☆	★☆	★☆	★☆
60 (2 3/8")				★☆	★☆	★☆	★☆	★☆
70 (2 3/4")				★☆	★☆	★☆	★☆	★☆
80 (3 1/8")					★☆	★☆	★☆	★☆
90 (3 1/2")						★☆	★☆	★☆
100 (4")						★☆	★☆	★☆
BOX	1000	1000	1000 ≥ 32 500	1000 ≥ 32 500	1000 ≥ 32 500 ≥ 50 200	500 ≥ 32 200	200 ≥ 32 100	200 ≥ 32 100

★ A1 / ★ A2 / ★ A4



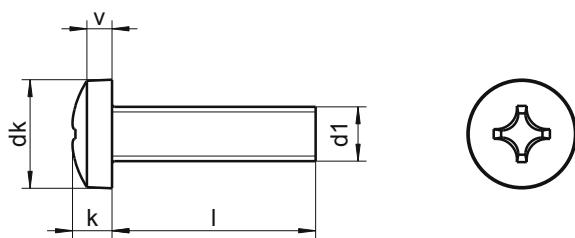
dk	5,5	7,0	8,5	10,0	13,0	16,0	18,0	24,0	30,0
k	2,0	2,8	3,5	4,0	5,0	6,0	7,0	9,0	11,0
s	2	2,5	3	4	5	7	8	12	14
b	12	14	16	18	22	26	30	38	46
Length /Ø	M3	M4	M5	M6	M8	M10	M12	M16	M20
5	★★								
6	★★	★★	★★						
8	★★	★★	★★		★★				
10	★★	★★	★★	★★		★★			
12	★★	★★	★★	★★		★★			
14	★★	★★	★★	★★		★★			
16	★★	★★	★★	★★		★★			
20	★★	★★	★★	★★		★★	★★		
25	★★	★★	★★	★★		★★	★★	★★	
30	★★	★★	★★	★★		★★	★★	★★	
35	★★	★★	★★	★★		★★	★★	★★	★★
40	★★	★★	★★	★★		★★	★★	★★	★★
45		★★	★★	★★		★★	★★	★★	★★
50		★★	★★	★★		★★	★★	★★	★★
55		★★	★★	★★		★★	★★	★★	★★
60		★★	★★	★★		★★	★★	★★	★★
70		★★	★★	★★		★★	★★	★★	★★
80				★★		★★	★★	★★	★★
90				★★		★★	★★	★★	★★
100				★★		★★	★★	★★	★★
110						★★		★★	★★
120							★★	★★	★★
130							★★	★★	★★
140							★★	★★	★★
150							★★	★★	★★
BOX	1000 ≥ 30 500	500	500 ≥ 45 200	500 ≥ 20 200 ≥ 50 100	200 ≥ 40 100 ≥ 50 50	100 ≥ 60 50	50	25	10

★ A1 / ★ A2 / ★ A4

DIN 7985 H

Pan head screws with cross recess H (Phillips)

Viti metallo testa cilindrica croce



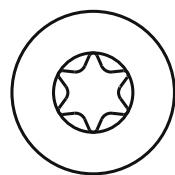
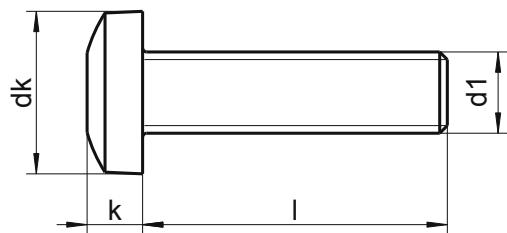
dk	3,2	4,0	5,0	6,0	8,0	10,0	12,0	16,0
k	1,3	1,6	2,0	2,4	3,1	3,8	4,6	6,0
v	0,8	1,1	1,3	1,6	2,0	2,5	3,0	3,7
Length /Ø	M1,6	M2	M2,5	M3	M4	M5	M6	M8
3	★ ★	★ ★	★ ★					
4	★ ★	★ ★	★ ★	★ ★	★ ★			
5	★ ★	★ ★	★ ★	★ ★	★ ★			
6	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
8	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
10	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
12	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
14	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
18	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
20		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
22			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
25			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
28			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
30			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
35				★ ★	★ ★	★ ★	★ ★	★ ★
40				★ ★	★ ★	★ ★	★ ★	★ ★
45				★ ★	★ ★	★ ★	★ ★	★ ★
50				★ ★	★ ★	★ ★	★ ★	★ ★
55				★ ★	★ ★	★ ★	★ ★	★ ★
60				★ ★	★ ★	★ ★	★ ★	★ ★
65					★ ★	★ ★	★ ★	★ ★
70					★ ★	★ ★	★ ★	★ ★
80					★ ★	★ ★	★ ★	★ ★
90					★ ★	★ ★	★ ★	★ ★
100					★ ★	★ ★	★ ★	★ ★
BOX	1000	1000	1000	1000 ≥ 45 500	1000 ≥ 25 500	500 ≥ 45 200	500 ≥ 22 200 ≥ 35 100	100

★ A1 / ★ A2 / ★ A4

DIN 7985 TX

Pan head screws with TX

Viti metallo testa cilindrica esalobata



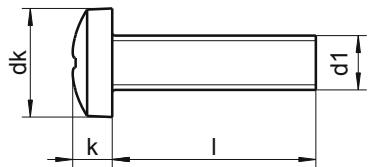
dk k tx	4 TX 6	5 TX 8	6 TX 10	8 TX 20	10 TX 25	12 TX 30
Length / Ø	M2	M2,5	M3	M4	M5	M6
3	★☆					
4	★☆	★☆				
5	★☆	★☆				
6	★☆	★☆	★☆			
8	★☆	★☆	★☆	★☆	★☆	★☆
10	★☆	★☆	★☆	★☆	★☆	★☆
12	★☆	★☆	★☆	★☆	★☆	★☆
16	★☆	★☆	★☆	★☆	★☆	★☆
20		★☆	★☆	★☆	★☆	★☆
25				★☆	★☆	★☆
30				★☆	★☆	★☆
35				★☆	★☆	★☆
40				★☆	★☆	★☆
50						★☆
BOX	1000	1000	500	500	500 ≥ 25 200	200 ≥ 35 100

★ A1 / ★ A2 / ★ A4

sim. DIN 7985 UNC

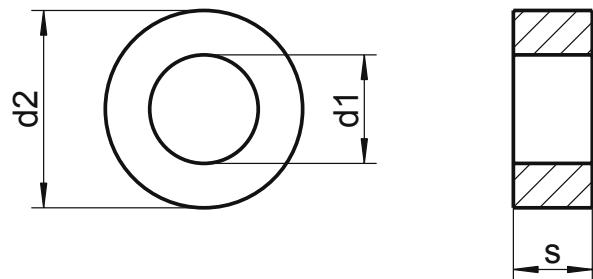
Pan head screws with cross recess H (Phillips)

Viti metallo testa cilindrica croce



$\frac{dk}{k}$	3,60 1,34	4,24 1,57	4,90 1,80	5,56 2,03	6,22 2,26	6,85 2,46	8,17 2,92	9,47 3,37	10,80 3,83	12,49 4,45	15,62 5,53	18,80 6,63
UNC	1-64	2-56	3-48	4-40	5-40	6-32	8-32	10-24	12-24	1/4	5/16	3/8
UNF	1-72	2-64	3-56	4-48	5-44	6-40	8-36	10-32	12-28	1/4-28	5/16-24	3/8-24
5-40	★	★	★	★								
10-24	★	★	★	★								
1/4	★	★	★	★	★	★	★	★	★	★	★	★
5/16	★	★	★	★	★	★	★	★	★	★	★	★
3/8	★	★	★	★	★	★	★	★	★	★	★	★
1/2	★	★	★	★	★	★	★	★	★	★	★	★
5/8	★	★	★	★	★	★	★	★	★	★	★	★
3/4	★	★	★	★	★	★	★	★	★	★	★	★
7/8	★	★	★	★	★	★	★	★	★	★	★	★
1"	★	★	★	★	★	★	★	★	★	★	★	★
1 1/4		★	★	★	★	★	★	★	★	★	★	★
1 3/8			★	★	★	★	★	★	★	★	★	★
1 1/2			★	★	★	★	★	★	★	★	★	★
1 5/8			★	★	★	★	★	★	★	★	★	★
1 3/4			★	★	★	★	★	★	★	★	★	★
2"			★	★	★	★	★	★	★	★	★	★
2 1/4			★	★	★	★	★	★	★	★	★	★
2 1/2			★	★	★	★	★	★	★	★	★	★
2 5/8					★	★	★	★	★	★	★	★
2 3/4					★	★	★	★	★	★	★	★
3"					★	★	★	★	★	★	★	★

★ A1 / ★ A2 / ★ A4



d1	for	d2	s
11	M10	21	8
14	M12	24	8
18	M16	30	8
22	M20	37	8
24	M22	39	8
26	M24	44	8
30	M27	50	8
33	M30	56	8
36	M33	60	8
39	M36	66	8

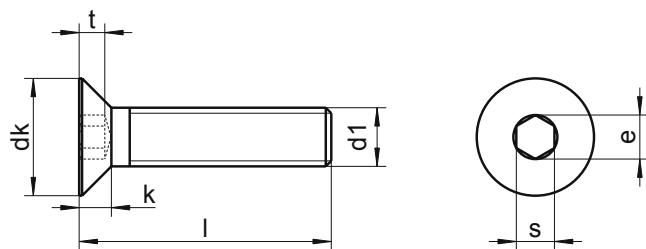
MAT.	BOX
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	50
★ ★	25
★ ★	25
★ ★	10
★ ★	10
★ ★	10

★ A1 / ★ A2 / ★ A4

DIN 7991 FT

Hexagon socket countersunk head screws full thread

Viti testa piana svasata cava esagonale tutto filetto



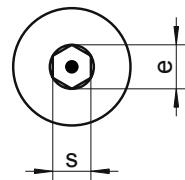
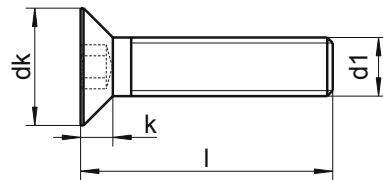
dk	6	8	10	12	16	20	24	27	30	36	39
k	1,7	2,3	2,8	3,3	4,4	5,5	6,5	7,0	7,5	8,5	14,0
s	2,0	2,5	3,0	4,0	5,0	6,0	8,0	10,0	10,0	12,0	14,0
t	1,2	1,8	2,3	2,5	3,5	4,4	4,6	4,8	5,3	5,9	10,3
e	2,30	2,87	3,44	4,58	5,72	6,86	9,15	11,43	11,43	13,72	16,00
Length / Ø	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M24
25	★ ★										
30	★ ★	★ ★									
35	★ ★	★ ★	★ ★								
40	★ ★	★ ★	★ ★	★ ★							
45	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★					
50		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★				
55	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
60	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★			
65		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
70	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
75		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
80		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
90		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
100			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
110				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
120					★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
130						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
140						★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
150							★ ★	★ ★	★ ★	★ ★	★ ★
160							★ ★	★ ★	★ ★	★ ★	★ ★
BOX	500	200	200 ≥ 90 100	200 ≥ 45 100	100 ≥ 70 50	100 ≥ 50 50	50 ≥ 80 25	25	25	25	25

★ A1 / ★ A2 / ★ A4

DIN 7991 HEX + PIN

Hexagon socket countersunk head screws full thread + PIN

Viti testa piana svasata cava esagonale tutto filetto + PIN



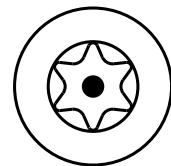
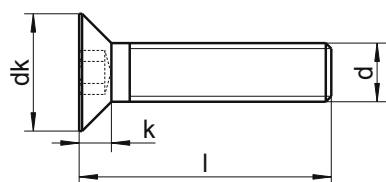
dk	6	8	10	12	16	20
k	1,7	2,3	2,8	3,3	4,4	5,5
s	2,0	2,5	3,0	4,0	5,0	6,0
Length /Ø	M3	M4	M5	M6	M8	M10
6	★					
8	★	★	★			
10	★	★	★	★	★	
12	★	★	★	★	★	
16	★	★	★	★	★	★
20	★	★	★	★	★	★
25		★	★	★	★	★
30		★	★	★	★	★
40		★	★	★	★	★
50			★	★	★	★
60			★	★	★	★
BOX	500	200	200 ≥ 90 100	200 ≥ 45 100	100 ≥ 70 50	100 ≥ 50 50

★ A1 / ★ A2 / ★ A4

DIN 7991 TX + PIN "FT"

Countersunk head screws full thread with TX + PIN

Viti testa piana svasata esalobata tutto filetto + PIN



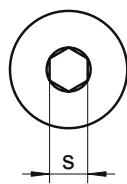
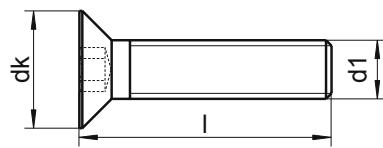
dk k tx PIN	6 tx 10	8 tx 20	10 tx 25	12 tx 30
Length / Ø	M3	M4	M5	M6
6	★	★		
8	★	★	★	
10	★	★	★	★
12	★	★	★	★
16	★	★	★	★
20	★	★	★	★
25		★	★	★
30		★	★	★
40		★	★	★
50		★	★	★
60			★	★
70			★	★
80			★	
BOX	500	200	200 ≥ 90 100	200 ≥ 45 100

★ A1 / ★ A2 / ★ A4

sim. DIN 7991 UNC

Hexagon socket countersunk head screws full thread

Viti testa piana svasata cava esagonale tutto filetto



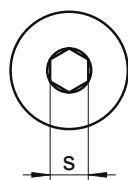
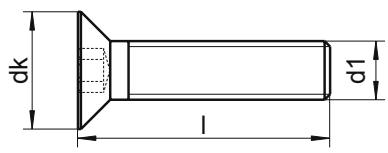
dk s	3,50 0,89	4,26 1,27	5,00 1,27	5,74 1,57	6,47 1,57	7,13 1,98	7,79 1,98	9,11 2,38	10,44 3,17
Length /Ø	#0	#1	#2	#3	#4	#5	#6	#8	#10
10-24	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
5/16	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3/8		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1/2		★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3/4			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
7/8			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1"			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 1/4			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 1/2			★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
1 3/4				★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2"					★ ★	★ ★	★ ★	★ ★	★ ★
UNC	-	1-64	2-56	3-48	4-40	5-40	6-32	8-32	10-24
UNF	0-80	1-72	2-64	3-56	4-48	5-44	6-40	8-36	10-32

★ A1 / ★ A2 / ★ A4

sim. DIN 7991 UNC

Countersunk flat head screws with hexagon socket and full thread

Viti testa piana svasata cava esagonale tutto filetto



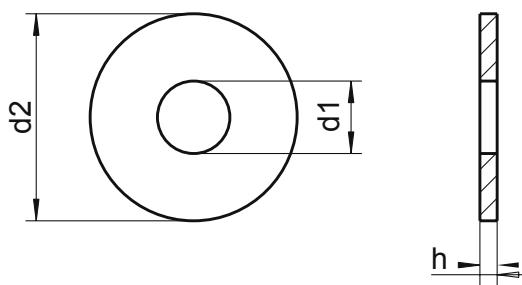
dk max.	13,48	16,66	19,83	21,43	23,82	30,17	36,52	42,87
s	3,96	4,77	5,56	6,35	7,92	9,52	12,70	14,27
Length / Ø	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8
3/8	★ ★							
1/2	★ ★	★ ★	★ ★					
5/8	★ ★	★ ★	★ ★					
3/4	★ ★	★ ★	★ ★	★ ★	★ ★			
1"	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
1 1/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★		
1 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
1 3/4	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	
2"	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
2 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3"	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
3 1/2	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
4"	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★	★ ★
4 1/2							★ ★	★ ★
5"							★ ★	★ ★
UNC	20	18	16	14	13	11	10	9
UNF	28	24	24	20	20	18	16	14

★ A1 / ★ A2 / ★ A4

sim. DIN 9021

Plain washers with outside diameter ~ 3x nominal thread diameter

Rondelle piane fascia larga 3D



d1	for	d2	h
10,5	M10	30	2,0
13,0	M12	36	2,0
15,0	M14	42	2,5
17,0	M16	48	2,5
20,0	M18	54	3,0
22,0	M20	60	3,0

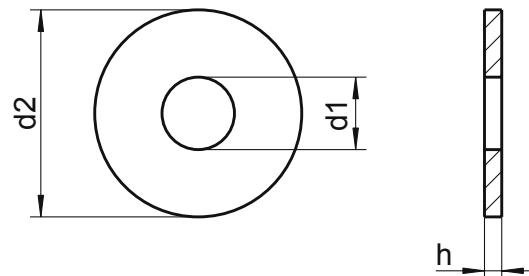
MAT	BOX
★ ★	200
★ ★	200
★ ★	200
★ ★	100
★ ★	100
★ ★	50

★ A1 / ★ A2 / ★ A4

sim. DIN 9021

Plain washers with outside diameter ~ 4x nominal thread diameter

Rondelle piane fascia larga - 4D



d1	for	d2	h
3,2	M3	12	0,8
4,3	M4	16	1,0
5,3	M5	20	1,2
6,4	M6	24	1,6
8,4	M8	32	2,0
10,5	M10	40	2,0
13,0	M12	48	2,5
15,0	M14	56	2,5
17,0	M16	64	2,5
20,0	M18	72	3,0
22,0	M20	80	3,0

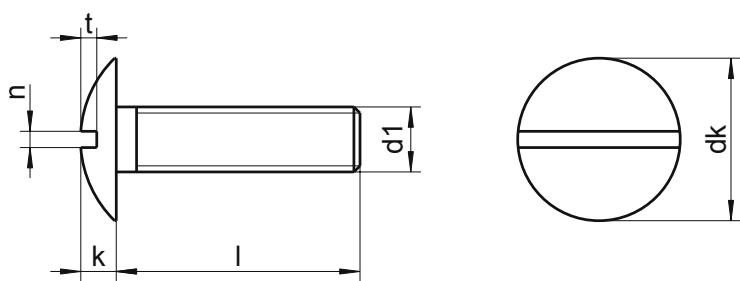
MAT	BOX
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	1000
★ ★	500
★ ★	200
★ ★	200
★ ★	200
★ ★	100
★ ★	100
★ ★	50

★ A1 / ★ A2 / ★ A4

ART. 25129

Slotted mushroom head screws

Viti a metallo testa mezza tonda taglio



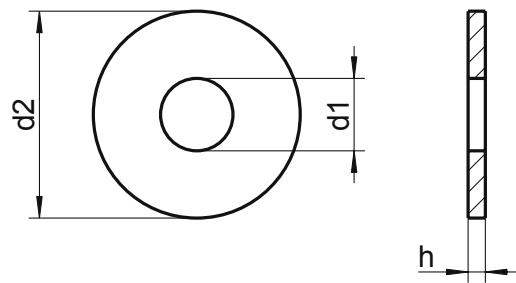
dk	7,3	10,0	12,5	15,0	20,0
k	2,0	2,2	2,7	3,3	4,4
n	0,8	1,2	1,2	1,6	2,0
t	0,95	1,00	1,20	1,50	2,00
Length / \varnothing	M3	M4	M5	M6	M8
5	★				
6	★				
8	★	★	★	★	★
10	★	★	★	★	★
12	★	★	★	★	★
16	★	★	★	★	★
20	★	★	★	★	★
25	★	★	★	★	★
30	★	★	★	★	★
35	★	★	★	★	★
40	★	★	★	★	★
45	★	★	★	★	★
50	★	★	★	★	★
60		★	★	★	★
70		★	★	★	★
80			★	★	★
90			★	★	★
100			★	★	★
120			★	★	★
BOX	100	100	100	100	100

★ A1 / ★ A2 / ★ A4

DIN 9021

Plain washers with outside diameter ~ 3x nominal thread diameter

Rondelle plane fascia larga 3D



d1	for	d2	h
2,2	M2	7	0,8
2,7	M2,5	8	0,8
3,2	M3	9	0,8
3,7	M3,5	11	0,8
4,3	M4	12	1,0
5,3	M5	15	1,2
6,4	M6	18	1,6
7,4	M7	22	2,0
8,4	M8	24	2,0
10,5	M10	30	2,5
13,0	M12	37	3,0
15,0	M14	44	3,0
17,0	M16	50	3,0
20,0	M18	56	4,0
22,0	M20	60	4,0
26,0	M24	72	5,0
33,0	M30	92	6,0
39,0	M36	110	8,0

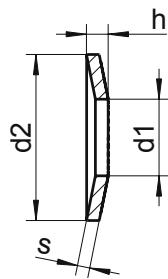
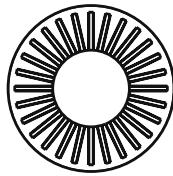
MAT.	BOX
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	1000
★★	500
★★	500
★★	500
★★	200
★★	100
★★	100
★★	100
★★	100
★★	50
★★	25
★★	10

★ A1 / ★ A2 / ★ A4

ART. 25511 type Z - M - L

Serrated conical spring washers

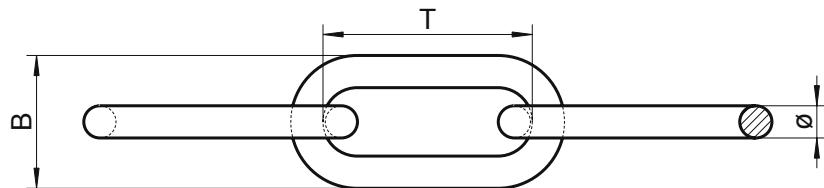
Rondelle coniche zigrinate



d1	for	d2 / s type Z	d2 / s type M	d2 / s type L	h min / max type Z	h min / max type M	h min / max type L	MAT	BOX
3,1	M3	6/0,5	8/0,6	10/0,6	0,7/0,9	0,8/1,0	0,95/1,2	★ ★	1000
4,1	M4	8/0,8	10/0,9	14/1,0	1,0/1,2	1,15/1,4	1,4/1,8	★ ★	1000
5,1	M5	10/1,0	12/1,1	16/1,2	1,25/1,50	1,45/1,8	1,7/2,10	★ ★	1000
6,1	M6	12/1,2	14/1,3	18/1,4	1,55/1,85	1,75/2,10	2,10/2,5	★ ★	1000
8,2	M8	16/1,4	18/1,4	22/1,6	1,8/2,2	1,9/2,35	2,2/2,7	★ ★	1000
10,2	M10	20/1,6	22/1,6	27/1,8	2,1/2,6	2,25/2,75	2,6/3,10	★ ★	1000
12,4	M12	24/1,8	27/1,8	32/2,0	2,4/2,9	2,6/3,1	3,10/3,6	★ ★	500
14,4	M14	-	30/2,4	-	-	3,2/3,7	-	★ ★	250
16,4	M16	-	32/2,8	-	-	3,6/4,1	-	★ ★	250
20,5	M20	-	40/3,2	-	-	4,3/4,9	-	★ ★	100

★ A1 / ★ A2 / ★ A4

DIN 763
Stainless steel chains long link
Catena a maglia lunga



Ø	B	T
2	8,0	22
3	12,0	26
4	16,8	32
5	21,0	35
6	25,2	42
8	33,6	52
10	42,0	65

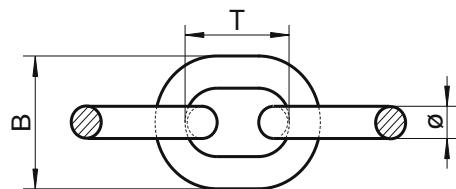
MAT	BOX
★	100
★	100
★	100
★	100
★	50/100
★	50/100
★	50/100

★ A1 / ★ A2 / ★ A4

DIN 766

Stainless steel chains short link

Catena a maglia corta



Ø	B mm	T mm
2	8,0	12,0
3	12,0	16,0
4	13,6	16,0
5	17,0	18,5
6	20,4	18,5
8	27,2	24,0
10	36,0	28,0

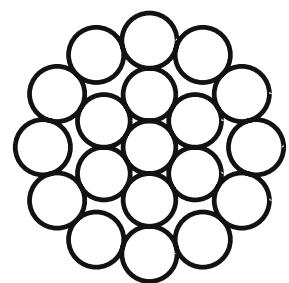
★ A1 / ★ A2 / ★ A4

MAT	BOX
★	100
★	100
★	100
★	100
★	50/100
★	50/100
★	50/100

ART. 8000 - sim. DIN 3053

Wire ropes, 1 X 19 rigid

Fune 19 fili (rigida)



d	math. breaking load kN	min. breaking load kN
1	0,94	0,83
1,5	2,11	1,86
2	3,75	3,30
2,5	5,86	5,15
3	8,43	7,42
4	15,00	13,20
5	23,40	20,60
6	33,70	29,70
8	60,00	52,80
10	93,70	82,50
12	135,00	119,00

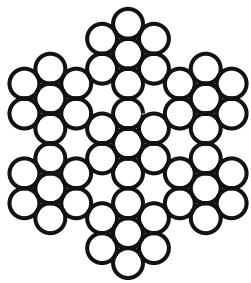
MAT	BOX
★	250
★	250
★	250
★	250
★	250
★	250
★	250
★	250
★	250
★	100
★	100
★	100

★ A1 / ★ A2 / ★ A4

ART. 8001 - sim. DIN 3055

Wire ropes, 7 X 7 soft

Fune 49 fili (morbida)



d	math. breaking load kN	min. breaking load kN
1	0,71	0,63
1,5	1,62	1,42
2	2,69	2,25
2,5	4,50	3,95
3	6,05	5,07
4	10,80	9,01
5	16,80	14,10
6	24,20	20,30
8	43,00	36,10
10	67,20	56,30

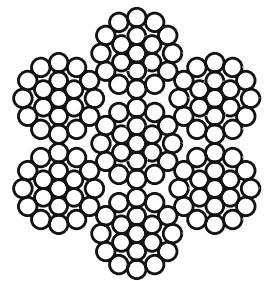
MAT	BOX
★	250
★	250
★	250
★	250
★	250
★	250
★	250
★	250
★	100
★	100

★ A1 / ★ A2 / ★ A4

ART. 8002 - sim. DIN 3060

Wire ropes, 7 X 19 flexible

Fune 133 fili (flessibile)



d1	math. breaking load kN	min. breaking load kN
1,5	1,46	1,17
2	2,65	2,33
2,5	4,17	3,66
3	5,86	4,69
4	10,40	8,34
5	16,30	13,00
6	23,40	18,80
7	31,90	25,50
8	41,70	33,30
10	65,10	52,10
12	93,70	75,00
14	128,00	102,00

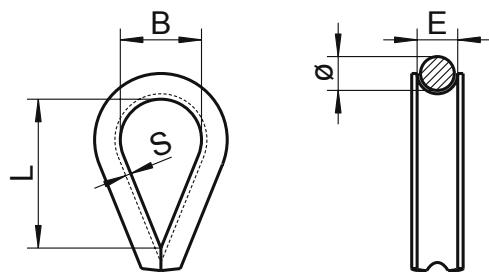
MAT	BOX
★	250
★	250
★	250
★	250
★	250
★	250
★	250
★	250
★	100
★	100
★	100
★	100

★ A1 / ★ A2 / ★ A4

ART. 8040

Thimbles

Redance



for rope Ø	E	B	L	S
2	2,5	7	10	1,0
2,5	3,0	8	14	1,0
3	3,5	10	17	1,0
4	4,5	11	18	1,0
5	5,6	13	20	1,2
6	6,5	15	25	1,2
8	9,0	18	33	1,5
10	11,0	23	41	2,0
12	14,0	27	48	2,0
14	15,0	34	53	2,5
16	17,0	36	57	3,0
18	19,0	40	67	3,0
20	22,0	45	75	4,0

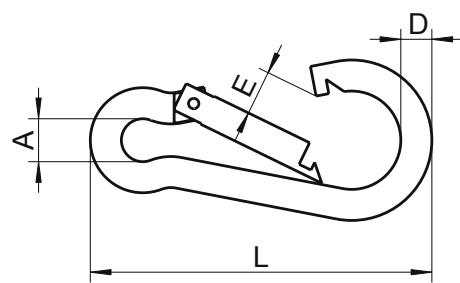
MAT	BOX
★	50
★	50
★	50
★	50
★	50
★	20
★	10
★	10
★	10
★	5
★	5
★	5
★	5

★ A1 / ★ A2 / ★ A4

ART. 8060

Spring hooks

Moschettoni



D	L	A	E
4	40	6	6
5	50	8	7
6	60	9	8
7	70	10	8
8	78	12	9
10	100	15	12
11	120	18	16
12	140	20	19

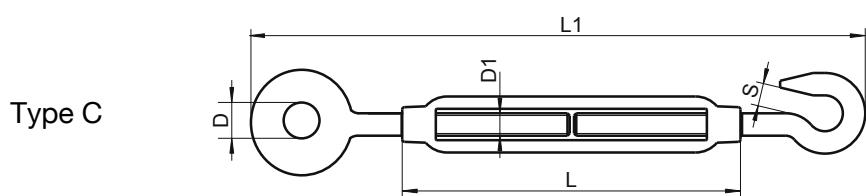
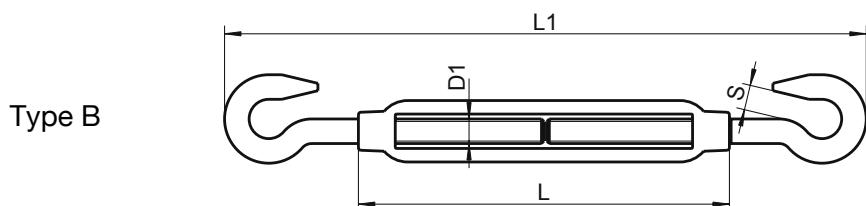
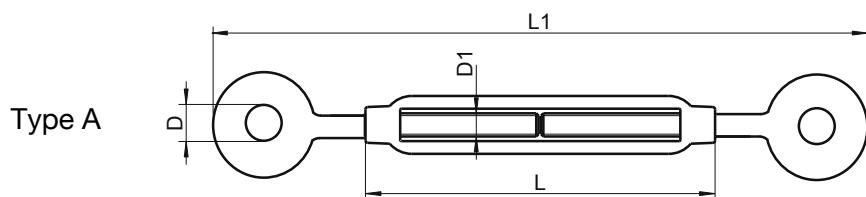
MAT	BOX
★	20
★	20
★	20
★	20
★	20
★	10
★	10
★	5

★ A1 / ★ A2 / ★ A4

ART. 8246

Turnbuckles

Tenditori



D1	L	L1	D	S
M 5	70	120	8	8
M 6	90	150	10	9
M 8	120	200	14	11
M 10	150	240	16	12
M 12	200	310	18	14
M 16	250	390	26	16
M 20	300	440	30	18

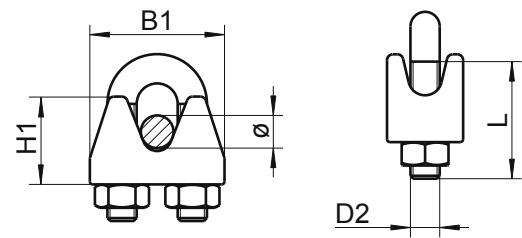
MAT	BOX
★	10
★	10
★	10
★	5
★	5
★	1
★	1

★ A1 / ★ A2 / ★ A4

ART. 8248

Wire rope clamps

Morsetti per cavo



for rope Ø	D2	H1	L	B1
2	M 3	10	11	16
3	M 3	11	11	18
4	M 4	13	12	21
5	M 5	15	15	25
6	M 6	17	18	28
8	M 6	20	18	31
10	M 8	23	22	38
13	M 10	25	30	47
16	M 10	32	34	54
19	M 12	38	36	62
22	M 12	43	40	64

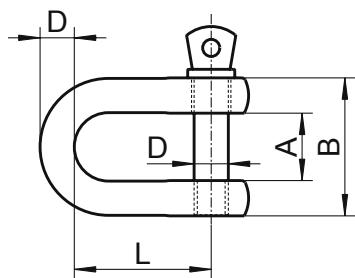
MAT	BOX
★	50
★	50
★	20
★	20
★	20
★	10
★	10
★	10
★	10
★	10
★	10

★ A1 / ★ A2 / ★ A4

ART 8258

D - shackles straight

Grilli dritti a "D"

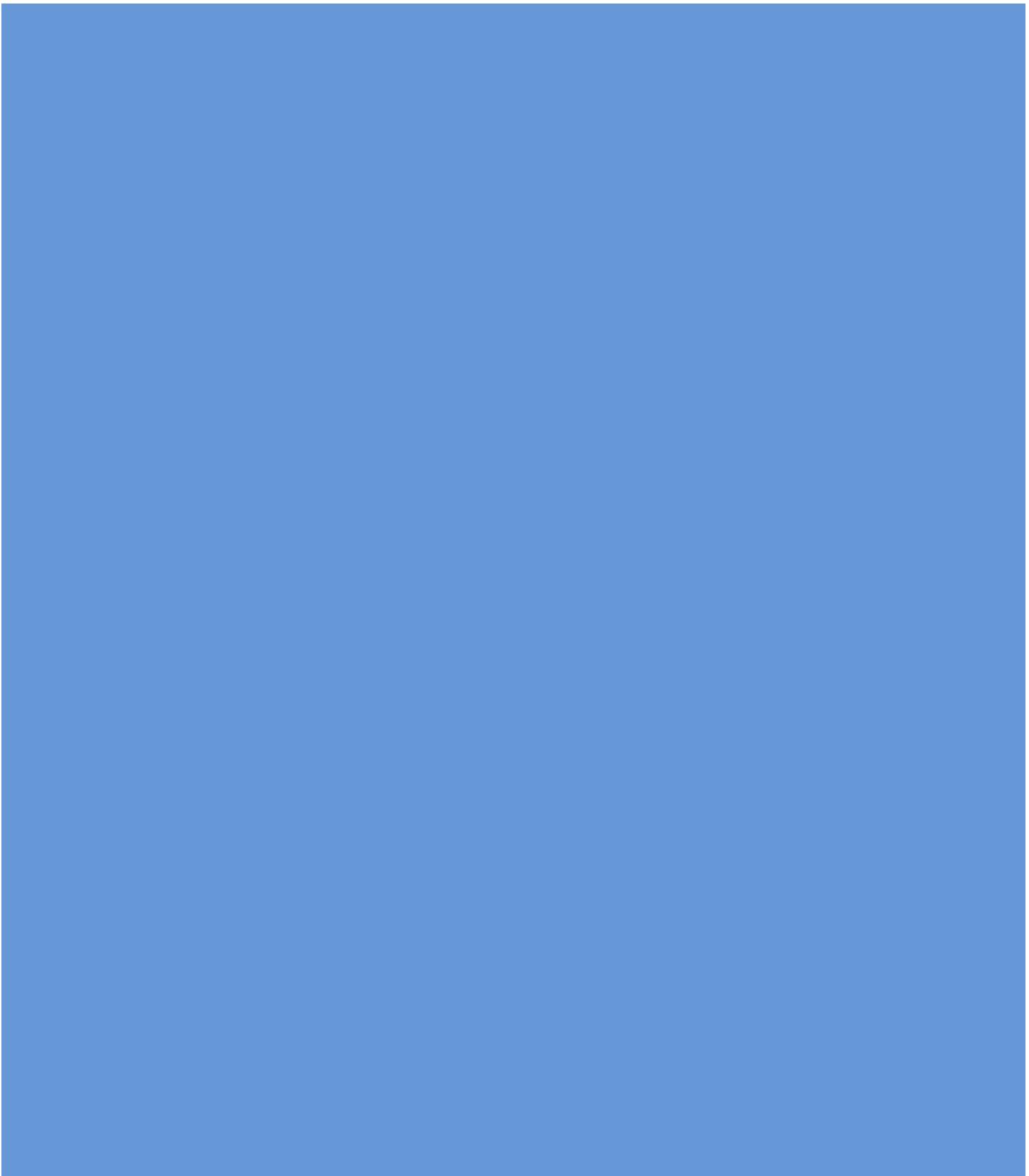


D	A	B	L
4	8	16	16
5	10	20	20
6	12	24	24
7	14	28	28
8	16	32	32
10	20	40	40
12	24	48	48
13	26	52	52
16	32	64	64
19	38	76	76
22	44	88	88
25	50	100	100

MAT	BOX
★	50
★	50
★	20
★	20
★	10
★	10
★	5
★	5
★	5
★	1
★	1
★	1

★ A1 / ★ A2 / ★ A4

STANDARDS . Norme



Standards . Introduction

Standards in transition.

Since the end of the 1980s, associations and institutes have been trying to achieve a smooth transition from the German DIN standard to European and international standards, the objective being to take account of the increasing globalisation of markets and the European internal market. This reform, however, is making it more difficult to deal with large numbers of articles, above all in the transitional phase – and not least because of the length of that phase.

Lederer is nevertheless supporting the standardization trends and taking them into consideration when it designs its product range. The best example of this is the classification by standards in this catalogue.

The supplementary explanations necessitated by the changeover in standards are presented in detail on the following pages.

If you require information that goes beyond these, we will be glad to help you at any time. Our specialists in the fields of standards, materials and technology will answer your inquiries in double-quick time.

Standards . Principles

Principles of the change in standards.

The completion of the common European market that is being striven for is leading to a harmonisation of the national standardization systems that exist across the continent. In many cases this means integrating the European norms/standards (EN), which are binding for every country, into the respective national body of regulations. In contrast to the ISO standards, EN standards must be adopted by all EU countries. Relevant national standards (in Germany DIN and DIN-ISO standards) must be withdrawn when the EN standards are announced.

In principle, existing ISO standards should (if possible) be adopted unchanged as EN standards. If no agreement at EN level is possible, a consensus at ISO level must be the first objective. If ISO standards are adopted unchanged, the product designation is ISO.

DIN standards will be largely replaced by European or international standards. In the future, DIN standards will apply only to products for which there are no ISO or EN standards.

Standards . Types of Standards

Types of standards.

At present there are seven valid standard types for mechanical fasteners (national, European and international). In this system it may well be the case that different products/services are standardized under the same numbers in the different types of standard (e.g. ISO 7380: countersunk screws with hexagon socket / DIN 7380: section rollers for beading machines).

Original standard	Description	Article designation with	
DIN	DIN standards will continue to exist for products and services for which there are no standards at ISO/EN level and for which no standardization is required.	DIN	
ISO	International standard (International Standardization Organisation)	ISO	
DIN ISO	National German issuance of an ISO standard that was adopted unchanged	ISO	
EN	European Norm (CEN = Comité Européen de Normalisation). Independent standard if it is not possible to adopt an existing ISO standard unchanged as an EN ISO standard. EN number divergent from ISO no.	EN	
DIN EN	National German issuance of an EN standard that was adopted unchanged.	EN	
EN ISO	European standard that was adopted unchanged from ISO. EN no. the same as ISO no.	ISO	
DIN EN ISO	National German issuance of an EN standard that was adopted unchanged from ISO.	ISO	

Standards . Comparative Overview

Comparative overview DIN - EN - ISO.

The following overview shows the current standards for all of the articles in the catalogue, including the original European and international standards and the most important changes in abbreviated form.

Where the changeover involves considerable deviations, detailed views of these are provided after this overview.

The standard numbers printed in bold face are currently valid in EU. In general, the individual application cases should be examined when standards are being changed.

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Taper pins	1		22339		2339	Length according to ISO incl. caps (according to DIN excl. caps), length tolerance and cap height changed	<i>largely interchangeable, gradual changeover of stocks from DIN to ISO (EN)</i>
Cylindrical pins	7	2338					
Slotted cheese head screws	84	1207			1207	head heights and base thickness changed; lapse of thread diameters M1, M1.2, M1.4, M1.8	<i>see detailed overview</i>
Slotted pan head screws	85	1580			1580	head diameters (M3 u. M5) and base thickness (M3.5, M5, M8) changed and/or newly defined	
Tabwashers with long tab	93					standard withdrawn	
Split pins	94	1234			1234	Length tolerance changed (for l = 4-18, 32-50, 90-112, 200-280)	<i>largely interchangeable</i>
Wood screws, raised countersunk head, slotted	95						
Wood screws, round head, slotted	96						<i>no new standard planned</i>
Wood screws, countersunk head, slotted	97						

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Plain washers type A (without chamfer)	125	7089			7089	Nominal sizes on the basis of the thread diameter (ISO) instead of the hole diameter (DIN), hardness classes changed	no alterations to measurements
Plain washers type B (with chamfer)	125	7090			7090		
Spring lock washers type B (plain pattern)	127						
Spring lock washers type A (curved)	128						
Plain washers	134					standard withdrawn	reference to DIN 125 and 9021, or ISO 7089, 7090, 7093
Wave spring washers type A (curved)	137						
Wave spring washers type B (crinkled)	137						
T-head bolts with square neck	186						
T-head bolts with double nib	188						
Wing nuts, american type (edged wings)	314						
Wing nuts, heavy type (rounded wings)	315						no new standard planned
Wing screws, heavy type (rounded wings)	316						
Wing screws, american type (edged wings)	318						
Capstan screws, slotted	404						
Slotted set screws with full dog point	417				27435	7435	no alterations to measurements, interchangeable

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Slotted headless screws with chamfered end	427	2342			2342	Slot depths changed; dimensions M1,4 and M10 or larger no longer normed	largely interchangeable
Pipe nuts type B (one-sided thread countersinking)	431					New key sizes according to ISO 272 for G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{1}{2}$ and G $\frac{5}{8}$.	
Washers with external tab	432					standard withdrawn	
Washers for hexagon socket head cap screws	433	7092			7092	Nominal sizes on the basis of the thread diameter (ISO) instead of the hole diameter (DIN); hardness classes changed, nominal sizes 1, 1,2, 1,4, 1,8 have lapsed, nominal sizes 22, 27, 33 have been added, nominal size 36 outer diameter changed, nominal diameter 18 washer thickness changed	largely interchangeable
Square taper washers for U-sections	434					Alterations to the hole widths for M 12 and 16	largely interchangeable
Square taper washers for I-sections	435						
Square washers for wood constructions	436						no alterations to measurements, interchangeable
Slotted set screws with cup point	438					7436	
Hexagon nuts (thin type, with chamfer)	439	4035	24035	4035	4035	New key sizes for M 10, 12, 14 and 22; in connection with this, also change in width across corners and bearing surface; actuation heights rounded up/down	largely interchangeable
Hexagon nuts (thin type, with chamfer and fine pitch)	439	8675	28675			8675	

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Washers for wood construction, type R (round hole)	440	7094			7094	Nominal sizes on the basis of the thread diameter (ISO), instead of the hole diameter (DIN), form V with square hole does not apply in ISO	interchangeable
Washers for wood construction, type V (square hole)	440						
Eye bolts type B (medium coarse)	444					no new standard planned	
Internal tab washers	462						
Tabwashers with two tabs	463					standard withdrawn	
Knurled thumb screws (high type)	464					Model with slit used as replacement for DIN 465	
Knurled thumb screws, slotted (high type)	465					no new standard planned	
Knurled thumb nuts (high type)	466					standard withdrawn	reference to DIN 464
Knurled thumb nuts (thin type)	467						
Retaining rings for shafts	471					no new standard planned	
Retaining rings for bores	472						
Slotted round nuts	546						
Slotted set screws with flat point	551				24766	4766	
Slotted set screws with cone point	553				27434	7434	M1 and M1.4 have lapsed no alterations to measurements, interchangeable

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Square nuts	557						
Square thin nuts	562						
Wood screws, hexagon head	571					<i>no new standard planned</i>	
Lifting eye screws	580						
Lifting eye nuts	582						
Mushroom head square neck bolts	603				8677		
Round head rivets	660						
Countersunk head rivets	661						
Bright set collars type A, with set screw	705						
Studs, metal end e ~ 2d	835					<i>no new standard planned</i>	
Hexagon socket pipe plugs	906						
Hexagon socket screw plugs	908						
Hexagon socket screw plugs, heavy type	910						
Hexagon socket head cap screws	912	4762				4762 <i>fine thread deleted; M14, M18, M22, M27, M33, ≥ M72 have lapsed</i>	<i>no alterations to measurements, interchangeable</i>
Hexagon socket set screws with flat point	913	4026				4026 <i>higher tolerances for the key sizes (ISO); M1.4, M1.8, M14, M18, M22 lapsed</i>	

Standards . Comparative Overview

Designation	DIN	DIN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
<i>Hexagon socket set screws with cone point</i>	914	4027			4027	higher tolerances for the key sizes (ISO); M1.4, M1.8, M14, M18, M22 lapsed; flattening of tip for M1.6 to M5 added	<i>no alterations to measurements, interchangeable</i>
<i>Hexagon socket set screws with dog point</i>	915	4028			4028	higher tolerances for the key sizes (ISO); M1.4, M1.8, M14, M18, M22 lapsed	
<i>Hexagon socket set screws with cup point</i>	916	4029			4029	New key sizes for M 10, 12, 14 and 22; in connection with this, also change in width across corners and bearing surface	<i>largely interchangeable</i>
<i>Hexagon cap nuts</i>	917						
<i>Slotted pan head screws with small head</i>	920					<i>no new standard planned</i>	
<i>Slotted pan head screws with large head</i>	921						
<i>Slotted pan head screws with shoulder</i>	923						
<i>Slotted set screws with full dog point</i>	926					<i>standard withdrawn</i>	
<i>Slotted shoulder screws</i>	927						
<i>Square weld nuts</i>	928					<i>no new standard planned</i>	<i>No new key sizes!</i>
<i>Hexagon weld nuts</i>	929						
<i>Hexagon head screws with shank</i>	931	4014	24014	4014	4014	New key sizes M 10, 12, 14 and 22; in connection with this, also change in width across corners and bearing surface DIN 931-2 still valid for dimensions M42-M160 (ISO 4014 to M64)	<i>largely interchangeable</i>

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
<i>Hexagon head screws, fully threaded</i>						New key sizes M 10, 12, 14 and 22; in connection with this, also change in width across corners and bearing surface; some very small changes in bearing surface, head height and actuation height	<i>largely interchangeable</i> , see detailed overview
Hexagon nuts	933	4017	24017	4017	4017		
	934	4032	24032	4032	4032	New key sizes for M 10, 12, 14, 22; in connection with this, also change in width across corners and bearing surface; and new height for nuts for M5-M39; in connection with this, also change in actuation heights; actuation heights were rounded up/down with the other diameters; M1, M1.2, M1.4 have lapsed	<i>largely interchangeable</i> , see detailed overview
<i>Hexagon nuts, fine pitch</i>							
	934	8673	28673	8673	8673		
Hexagon castle nuts	935					New key sizes for M 10, 12, 14 and 22	
Studs, metal end e ~ 1d	938					no new standard planned	
Studs, metal end e ~ 1,25d	939						
Countersunk flat head screws, slotted	963	2009		2009	2009	several head diameters and heights changed; thread lengths changed; dimensions < M1,6 and > M10 have lapsed	<i>largely interchangeable</i> , see detailed overview
Raised countersunk head screws, slotted	964	2010		2010	2010		

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Countersunk flat head screws, cross recessed	965	7046		7046	7046		
Raised countersunk head screws, cross recessed	966	7047		7047	7047	several head diameters and heights changed; thread lengths changed; dimension M1.6 for rust-free screws has lapsed; some changes in cross-recess penetration depths	largely interchangeable, see detailed overview
Thread rods	975					standard withdrawn	reference to DIN 976
Thread pins	976						replacement for DIN 975
Hexagon castle nuts, thin type	979						
Prevailing torque type hexagon nuts, all-metal	980	7042			7042	New key sizes for M 10, 12, 14 and 22; in connection with this, also change in width across corners and bearing surface; new height for nuts; in connection with this, also change in actuation heights; dimensions < M5, M18, M22, M27, M33 have lapsed	
Prevailing torque type hexagon nuts, all-metal, fine pitch	980	10513			10513		
Prevailing torque type hexagon nuts, non-metallic insert, high type	982	7040			7040		
Prevailing torque type hexagon nuts, non-metallic insert, high type, fine pitch	982	10512			10512	New key sizes for M10, 12 and 14; in connection with this, also change in width across corners and bearing surface; new height for nuts; in connection with this, also change in actuation heights; dimensions M7, M18, M22 have lapsed; dimensions M3, M4, M30, M36 have been added	

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Prevailing torque type hexagon nuts, non-metallic insert, thin type	985	10511				New key sizes for M 10, 12 and 14; in connection with this, also change in width across corners and bearing surface; new height for nuts; in connection with this, also change in actuation heights; dimensions M7, M18, M22, M27, M32, > M36 and fine thread have lapsed	largely interchangeable, see detailed overview
Prevailing torque type hexagon domed cap nuts, non-metallic insert	986						
Shim rings and supporting rings	988					no new standard planned	
Washers for wood constructions	1052						
Plain washers for clevis pins (medium)	1440	28738		8738		several alterations to the outside diameter and widths (8-20 and 24-100) and thickness (5, 45, 55, 60, 100); dimensions 13, 23, 25, 26, 28, 32, 35, 55, 75, 85, 95 have lapsed	largely interchangeable
Plain washers for clevis pins (coarse)	1441					no new standard planned	

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Grooved pins, full length parallel grooved with chamfer and pilot	1470	8739	28739		8739		
Grooved pins, full length taper grooved	1471	8744	28744		8744	Length according to ISO incl. caps (according to DIN excl. caps); length tolerance changed	
Grooved pins, half length taper grooved	1472	8745	28745		8745		
Grooved pins, full length parallel grooved with chamfer	1473	8740	28740		8740	Length according to ISO incl. caps (according to DIN excl. caps); length tolerance and chamfer height changed	
Grooved pins, half length reverse taper grooved	1474	8741	28741		8741		largely interchangeable
Grooved pins, third length taper grooved	1475	8742	28742		8742	Length according to ISO incl. caps (according to DIN excl. caps); length tolerance changed; length tolerance changed	
Grooved pins with round head	1476	8746	28746		8746	New form B (with pilot) in ISO, only form A (with chamfer) until now in DIN; changed length tolerances	
Spring-type straight pins, slotted (heavy type)	1481	8752	28752		8752	New form B (not interlocking) according to ISO, only form A (regular model) so far in DIN, two chamfers for diameter up to and including 10mm (ISO), previously up to 6mm (DIN); changed length tolerances	

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
<i>Hexagon domed cap nuts, high type</i>	1587						
<i>Disc springs</i>	2093						
<i>Hose clamps</i>	3017					<i>no new standard planned</i>	
<i>Spherical washers, conical seats</i>	6319						
<i>Hexagon nuts (height = 1.5d)</i>	6330						
<i>Hexagon nuts with collar (height = 1.5d)</i>	6331						
<i>Hexagon nuts (height = 3d)</i>	6334					<i>standard withdrawn</i>	
<i>Conical spring washers</i>	6796					<i>no new standard planned</i>	
<i>Toothed lock washers</i>	6797					<i>standard withdrawn</i>	
<i>Serrated lock washers</i>	6798						
<i>Retaining washers for shafts</i>	6799						
<i>Parallel keys, deep pattern</i>	6885					<i>no new standard planned</i>	
<i>Hexagon socket head cap screws</i>	6912						
<i>Hexagon screws with flange</i>	6921				1665		<i>Key sizes M10 to M20 enlarged, in connection with this, also change in width across corners; head heights (not for M6, M8) and actuation heights changed</i>

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
<i>Hexagon screws with flange</i>	6921		1662		15071	Key sizes M5 to M10 enlarged, in connection with this, also change in width across corners; head heights and actuation heights changed; max. flange diameter reduced; M20 has lapsed	<i>ISO 15071 corresponds to DIN EN 1662, but the key size is 15 for M12 (16 in EN 1662)</i>
<i>Hexagon screws with flange, fine pitch</i>	6921		14219		15072	Key sizes M8 to M10 enlarged, in connection with this, also change in width across corners; head heights and actuation heights changed; max. flange diameter reduced; M20x1.5 has lapsed	<i>ISO 15072 corresponds to DIN EN 14219, but the key size is 15 for M12 (16 in EN 14219)</i>
<i>Hexagon flange nuts</i>	6923		1661		4161	Key size for M 10 = 16 mm; in connection with this, also change in width across corners; fine thread lapsed	<i>largely interchangeable</i>
<i>Blind rivets, type A (pan head)</i>	7337		15983		15983	Slight alterations to the measurements	<i>Form B (countersunk head) DIN EN ISO 15984</i>
<i>Spring-type straight pins</i>	7343		8750		8750	Slight alterations to dimensions and tolerances	<i>largely interchangeable</i>
<i>Spring-type straight pins, slotted (light type)</i>	7346		13337			New form B (not interlocking) according to ISO, only form A (regular model) so far in DIN, two chamfers for diameter up to and including 10 mm (ISO), previously up to 7 mm (DIN); small changes in dimensions and tolerances (e.g., length tolerances)	<i>largely interchangeable</i>

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Washers for bolts with heavy type spring pins	7349						
Thread rolling screws	7500					no new standard planned	
Self drilling screws, hexagonal head with flange	7504	15480			15480	St3.9 has lapsed; form L (hexagon) head drilling screw with collar and slot) has lapsed; specification of drilling tip diameter has lapsed	mechanical and functional properties newly defined in DIN EN ISO 7095; authoritative standards remain in DIN 7500
Self drilling screws, pan head	7504	15481			15481		
Self drilling screws, countersunk head	7504	15482			15482		
Self locking counter nuts	7967					standard withdrawn	
Tapping screws, pan head, slotted	7971				1481	1481	Several head diameters and heights changed; slot depth changed; St3.9 has lapsed; St8 and St9.5 added
Tapping screws, countersunk head, slotted	7972				1482	1482	Several head diameters and heights changed; new countersinking angle 90° (ISO) instead of the previous 80° (DIN); slot depth changed; St3.9 has lapsed; St8 and St9.5 added
Tapping screws, raised countersunk head, slotted	7973				1483	1483	not interchangeable (due to countersinking angle), see detailed overview
Tapping screws, hexagon head	7976				1479	1479	Several head heights changed; St3.9 lapsed; St9.5 added
Spring lock washers for cheese head screws	7980					standard withdrawn	largely interchangeable, see detailed overview
Tapping screws, pan head, cross recessed	7981				7049	7049	Several head diameters and heights changed; St3.9 lapsed; St8 and St9.5 added
							largely interchangeable, see detailed overview

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Tapping screws, countersunk head, cross recessed	7982			7050	7050	Several head diameters and heights changed, new countersinking angle 90° (ISO) instead of the previous 80° (DIN); cross-recess penetration depth changed; St3.9 lapsed; St8 and St9.5 added	not interchangeable (due to countersinking angle), see detailed overview
Tapping screws, raised countersunk head, cross recessed	7983			7051	7051		
Hexagon socket head cap screws, low head	7984					no new standard planned	
Pan head screws, cross recessed	7985			7045	7045	Several head diameters and heights changed; cross-recess penetration depth changed; thread lengths changed	largely interchangeable, see detailed overview
Washers for steel constructions	7989					no new standard planned	
Countersunk flat head screws, hexagon socket	7991	10642		10642	10642	Several head diameters and heights changed, some changes in tolerance of the key size, depth of hexagon socket changed	largely interchangeable, see detailed overview
Wood screws, raised countersunk head, cross recessed	7995						
Wood screws, round head, cross recessed	7996						
Wood screws, countersunk head, cross recessed	7997						

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Plain washers, outside diameter ~ 3d						nominal sizes on the basis of the thread diameter (ISO) instead of the hole diameter (DIN), hardness classes changed; hardness categories changed; nominal sizes 2.5 and 7 haveapsed, nominal sizes 2.7 and 33 added, nominal size 5 washer thickness changed	largely interchangeable
Beltings bolts	15237					no new standard planned	
Hexagon socket button head screws		7380			7380		
Socket head cap screws		14579			14579	corresponds to ISO 4762 but with six lobe drive instead of hexagon socket	
Socket head cap screws (low head)		14580			14580	similar to ISO 1207 and DIN 7984 but with six lobe drive instead of hexagon socket and changed head height and in some cases thread length	
Countersunk socket screws		14581			14581	corresponds to ISO 7046 but with six lobe drive instead of cross-recess; similar to DIN 965 with six lobe drive	
Pan head screws, six lobe drive	14583				14583	corresponds to ISO 7045 but with six lobe drive instead of cross-recess; similar to DIN 7985 with six lobe drive	
Raised countersunk socket screws	14584				14584	corresponds to ISO 7047 and ISO 2010 but with six lobe drive instead of cross-recess and slot	

Standards . Comparative Overview

Designation	DIN	DIN EN ISO	DIN EN	DIN ISO	comparable ISO	The most important changes	Remarks
Tapping screws, pan head, six lobe drive			14585			corresponds to ISO 7049 but with six lobe drive instead of cross-recess and slot; similar to DIN 7981 with six lobe drive	
Tapping screws, countersunk head, six lobe drive			14586			corresponds to ISO 7050 and ISO 1482 but with six lobe drive instead of cross-recess and slot; similar to DIN 7982 with six lobe drive	
Countersunk-head socket tapping screws			14587			corresponds to ISO 7051 and ISO 1483 but with six lobe drive instead of cross-recess and slot	

Standards . Detailed Overview

Detailed overview.

The changes in dimensions caused by the changes in the standards are shown below. For the sake of clarity, the changed values are emphasized. All data in mm.

Hexagon head screws and nuts

New key sizes for

DIN 439, 557, 562, 917, 931, 933, 934, 935, 979, 980, 982, 985, 986, 1587, 6330, 6331, 6923

ISO 4014, 4017, 4032, 4035, 4161, 7040, 7042, 8673, 8675, 10511

EN 1661

	M1	M1,2	M1,4	M1,6	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
ISO	2,5	3	3	3,2	4	5	5,5	7	8	10	13	16	18	21	24	28	30	34	36	41	46	50	55
DIN												17	19	22				32					

The changed key sizes means that the corner width „e“ has also changed

	M1	M1,2	M1,4	M1,6	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
ISO	2,71	3,28	3,28	3,48	4,38	5,45	6,01	7,66	8,79	11,05	14,38	17,77	20,03	23,36	26,75	29,56	32,95	37,29	39,55	45,2	50,85	55,37	60,79
DIN												18,90	21,10	24,49				35,03					

nut height changes

Heagon thin nuts (regular thread) DIN 439 - ISO 4035: no alterations

Hexagon nuts DIN 934 - ISO 4032/8673

	M1	M1,2	M1,6	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10	M12	M14	M16	
max.	ISO	–	–	1,3	1,6	2	2,4	2,8	3,2	4,7	5,2	6,8	8,4	10,8	12,8	14,8
	DIN	0,8	1							4	5	6,5	8	10	11	13
min.	ISO	–	–	1,05	1,35	1,75	2,15	2,55	2,9	4,4	4,9	6,44	8,04	10,37	12,1	14,1
	DIN	0,55	0,75							3,7	4,7	6,14	7,64	9,64	10,3	12,3

	M18	M20	M22	M24	M27	M30	M33	M36	M39	M42	M45	M48	M52	M56	M64	
max.	ISO	15,8	18	19,4	21,5	23,8	25,6	28,7	31	33,4	34	36	38	42	45	51
	DIN	15	16	18	19	22	24	26	29	31						
min.	ISO	15,1	16,9	18,1	20,2	22,5	24,3	27,4	29,4	31,8	32,4	34,4	36,4	40,4	43,4	49,1
	DIN	14,3	14,9	16,9	17,7	20,7	22,7	24,7	27,4	29,4						

– = (dimensions not defined in relevant standard)

Standards . Detailed Overview

Prevailing torque type hexagon nuts DIN 980 - ISO 7042

		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
max.	ISO	-	-	5,1	6	8	10	12	14,1	16,4	-	20,3	-	23,9	-	30	-	36
	DIN	3,7	4,2						14	16	18	20	22	24	27		33	
min.	ISO	-	-	4,8	5,4	7,14	8,94	11,57	13,4	15,7	-	19	-	22,6	-	27,3	-	33,1
	DIN	3,4	3,9		5,7	7,5	9	11	12	14	16	18	20	22	25	28	31	34

Prevailing torque type hexagon nuts, non-metallic insert DIN 982 - ISO 7040

		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
max.	ISO	4,5	6	6,8	8	9,5	11,9	14,9	17	19,1	-	22,8	-	27,1	-	32,6	-	38,9
	DIN	-	-	6,3			11,5	14	16	18	20	22	25	28	-	30	-	36
min.	ISO	4,02	5,52	6,22	7,42	8,92	11,2	14,2	15,9	17,8	-	20,7	-	25	-	30,1	-	36,4
	DIN	-	-	6	7,7	9,14	11,14	13,64	15,3	17,3	19,16		23,7	26,7	-	28	-	34

Prevailing torque type hexagon nuts, low type DIN 985 - ISO 10511

		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	
max.	ISO	3,9		5	5	6	6,76	8,56	10,23	11,23	12,42	-	14,9	-	17,8	-	22,2	-	25,5
	DIN	4			8	10	12	14	16	18,5	20	22	24	27	30	33	36		
min.	ISO	3,42	4,52	4,52	5,52	6,18	7,98	9,53	10,22	11,32	-	13,1	-	16	-	20,1	-	23,4	
	DIN	3,7	4,7	4,7	5,7	7,64	9,64	11,57	13,3	15,3	17,66	18,7	20,7	22,7	25,7	28,7	31,4	34,4	

- = (dimensions not defined in relevant standard)

Metric and tapping screws Changed head dimensions for slotted cheese head screws ISO 1207 - DIN 84

		M1	M1,2	M1,4	M1,6	M1,8	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10
max. head diameter	ISO	-	-	-	3	-	3,8	4,5	5,5	6	7	8,5	10	13	16
	DIN	2	2,3	2,6		3,4									
max. head height	ISO	-	-	-	1,1	-	1,4	1,8	2	2,4	2,6	3,3	3,9	5	6
	DIN	0,7	0,8	0,9	1	1,2	1,3	1,6							

tappings screws with hexagon head ISO 1479 - DIN 7976

		ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3	ST8	ST9,5
max. head diameter	ISO	1,6	2,3	2,6	-	3	3,8	4,1	4,7	6	7,5
	DIN	1,42	1,62	2,42	2,42	2,92	3,12	4,15	4,95	5,95	-

- = (dimensions not defined in relevant standard)

Standards . Detailed Overview

slotted pan head screws
metric screws ISO 1580 - DIN 85

		M1,6	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10
<i>max. head diameter</i>	ISO	3,2	4	5	5,6		7	8	9,5		
	DIN	-	-	-	6				10	12	16
<i>max. head height</i>	ISO	1	1,3	1,5		1,8	2,1	2,4	3	3,6	4,8
	DIN	-	-	-						6	

tapping screws ISO 1481 - DIN 7971

		ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3	ST8	ST9,5
<i>max. head diameter</i>	ISO	4		7	-	8	9,5	11	12	16	20
	DIN	4,2		5,6	6,9	7,5	8,2	9,5	10,8	12,5	-
<i>max. head height</i>	ISO	1,3	1,8		2,1	-	2,4	3		3,6	4,8
	DIN	1,35	1,75		2,1	2,25	2,45	2,8	3,2	3,65	6

cross recessed pan head screws
metric screws ISO 7045, 14583 - DIN 7985

		M1,6	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10
<i>max. head diameter</i>	ISO				5,6			9,5			
	DIN	3,2	4	5	6			10	12	16	20
<i>max. head height</i>	ISO				2,1			3,7			
	DIN	1,3	1,6		2,4	2,6		3,1	4,6	6	7,5

tapping screws ISO 7049 - DIN 7981

		ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3	ST8	ST9,5
<i>max. head diameter</i>	ISO	4		7	-	8	9,5	11	12	16	20
	DIN	4,2		5,6	6,9	7,5	8,2	9,5	10,8	12,5	-
<i>max. head height</i>	ISO	1,6	2,4		2,6	-	3,1	3,7		4,6	7,5
	DIN	1,8	2,2		2,6	2,8	3,05	3,55	3,95	4,55	-

- = (dimensions not defined in relevant standard)

Standards . Detailed Overview

cross recessed and slotted pan head screws
 metric screws ISO 2009, 2010, 7046, 7047 - DIN 963, 964, 965, 966

		M1,6	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10
max. head diameter	ISO	3	3,8	4,7	5,5	7,3	8,4	9,3	11,3	15,8	18,3
	DIN				5,6	6,5	7,5	9,2	11	14,5	18
max. head height	ISO	1	1,2	1,5	1,65	2,35	2,7	2,7	3,3	4,65	5
	DIN	0,96			1,65	1,93	2,2	2,5	3	4	

tapping screws ISO 1482, 1483, 7050, 7051 - DIN 7972, 7973, 7982, 7983

		ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3	ST8	ST9,5
max. head diameter	ISO	3,8	5,5	7,3	-	8,4	9,3	10,3	11,3	15,8	18,3
	DIN	4,3		6,8	7,5	8,1	9,5	10,8	12,4	-	-
max. head height	ISO	1,1	1,7	2,35	-	2,6	2,8	3	3,15	4,65	5,25
	DIN	1,3		2,1	2,3	2,5	3	3,4	3,8	-	-
countersinking angle	ISO	90°									
	DIN	80°									

socket countersunk screws

countersunk screws ISO 10642 - DIN 7991

		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
max. head diameter	ISO	6,72	8,96	11,2	13,44	17,92	22,4	26,88	30,8	33,6	-	40,32	-	-
	DIN	6	8	10	12	16	20	24	27	30	33	36	36	39
max. head height	ISO	1,86	2,48	3,1	3,72	4,96	6,2	7,44	8,4	8,8	-	10,16	-	-
	DIN	1,7	2,3	2,8	3,3	4,4	5,5	6,5	7	7,5	8	8,5	13,1	14

- = (dimensions not defined in relevant standard)

Materials

. Overview

„May the steel be high-grade, rustproof and good“

Overview of the material.

The metal generally referred to as high-grade steel, stainless steel or (expressed academically) „rustproof and acid-resisting steel“ has been around for almost 100 years.

Its industrial use began in 1912 when the patent application was submitted for steels with “high resistance to corrosion”. These humble beginnings have led to the development – particularly since 1950 – of a materials group comprising more than 120 stainless steel types that are used in every segment worldwide.

Areas of application

- architecture and construction
- automobile technology and transport
- chemical plant construction
- offshore technology and shipbuilding
- environmental technology and water industry
- household and consumer goods
- food processing
- medicine and pharmaceuticals

This trend is also reflected in the production figures: between 1990 and 2000, annual production of stainless steel increased by almost 50% to approx. 18.4 million tons.

More and more steel users are coming to know and appreciate the advantages of the stainless steel materials.

Benefits

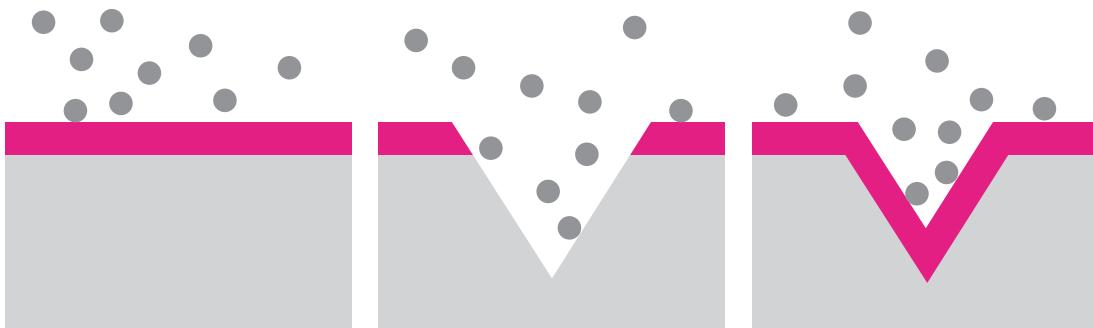
- corrosion-resistant
- high-tensile, wear-resistant
- weldable
- temperature-resistant
- hygienic
- conductive
- low-maintenance
- long-lasting
- efficient

Materials

. Overview

What makes stainless steel so resistant?

A common feature of all stainless steels is that their steel alloys contain a chromium element of at least 12%. The contact with the oxygen in the surrounding media (air, water, other substances) leads to the formation of a thin – only a few atom layers – transparent layer of chromium oxide (passivation) on the steel surface. This layer protects the steel beneath it from further chemical influences. If the surface is damaged this passive layer rebuilds itself autonomously under the influence of oxygen; for this reason we can justifiably call it a “self-healing” or “self-repairing mechanism”.



Understanding this process is important for, among other things, the use of stainless steel in low-oxygen or oxygen-free environments; here there can be no subsequent passivation of the surface and the material is exposed to the aggressive influences.

The addition of other alloying elements further improves the mechanical and chemical properties of stainless steel:

nickel increases the resistance to acid and is contained in all commonly used stainless steels; sulphur improves the machining qualities (A 1); titanium, niobium or tantalum stabilizes the material structure at higher temperatures (A 3 and A 5); manganese, molybdenum and copper are other commonly used alloying elements that increase the resistance to reducing acids and localized corrosion.

Once the right types of stainless steel for the individual application case have been chosen, nothing can stand in the way of a long lifespan and therefore a secure fastening element.

Materials . Designations

Designations.

The designation system for stainless steel types and property classes of screws and nuts is described in the following overview. The designation of the material consists of two blocks that are separated by a hyphen.

The first block designates the steel type as follows:

- A for austenitic nickel chromium steel with an alloying constituent of 15-20% chromium and 5-15% nickel. It cannot be hardened with heat treatment and is generally not magnetizable.
- C for martensitic steel, which can be strengthened by hardening and is magnetizable. It is less resistant to corrosion than austenitic steels.
- F for ferritic steel, which cannot normally be hardened. It is magnetizable and the environments in which it can be used include those with higher chloride content.

The letter is supplemented with a number that indicates the chemical composition within this steel group.

- A 1 The steel type A 1 is intended especially for processing by cutting (turning parts). Due to their high sulphur content, steels of this type are less resistant to corrosion than the other steel types.
- A 2 Steels of the type A 2 are the most frequently used. They are, however, unsuitable for use in non-oxidizing acids and media containing chloride (e.g. swimming pools, salt water). Suitable for temperatures down to -200°C.
- A 3 Same properties as A 2 steels, but stabilised with titanium, niobium or tantalum. These improve its resistance to corrosion in high temperatures.
- A 4 Same properties as A 2 steels, but alloyed with 2-3% molybdenum. This makes it substantially more resistant to corrosion and acids. Suitable for temperatures down to -60°C.
- A 5 Same properties as A 4 steels, but stabilised with titanium, niobium or tantalum. This also makes it resistant to high temperatures.

The second block denotes the property class, with the numbers indicating 1/10 of the minimum tensile strength of the fasteners (in N/mm²).

A 2-70 = austenitic steel, strain-hardened,
tensile strength at least 700 N/mm²

Notwithstanding the aforementioned regulation, the property class of thin nuts (height = 0.5 – 0.8d, e.g. DIN 439, ISO 4035) is indicated with three digits, with the 0 in front referring to the lower stability.

A 2-035= austenitic steel, strain-hardened,
testing stress up to at least 350 N/mm²

Stainless steel with a particularly low carbon content of no more than 0,03% may be designated additionally with the letter L (e.g. A 4L-80).

Materials . Designations

Steel group	steel type	Property classes, screws and nuts type 1					Nuts, thin type								
		A1	A2	A3	A4	A5	C1	C3	C4	F1	C3	C4	F1	030	020
Austenitic	Martensitic	50	70	80	50	70	110	50	70	80	45	60		cold worked	
Austenitic	Ferritic	025	035	040	025	035	055	025	035	040	040	040	020	malleable	
Austenitic	Martensitic													heat treated	
Austenitic	Ferritic													malleable	
Austenitic	Martensitic													heat treated	
Austenitic	Ferritic													malleable	
Austenitic	Martensitic													high tensile	
Austenitic	Ferritic													cold worked	
Austenitic	Martensitic													malleable	

Materials . Labelling

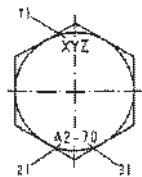
Labelling.

Fasteners may be labelled and/or described in accordance with the aforementioned designation system only when all of the requirements of the DIN EN ISO 3506-1 have been fulfilled.

Screws

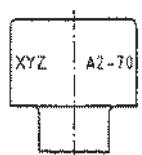
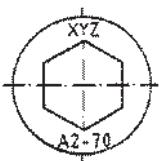
All hexagon head screws and cheese head screws with a hexagon socket or six lobe drive and a thread diameter ≥ 5 mm must be labelled as shown below. This labelling is mandatory and must contain the steel type, the property class and additionally the manufacturer reference. Other screws can be labelled in the same way wherever possible (but only on the screw head). Additional labels may be affixed if they do not cause confusion.

Certification of hexagon head screws



- 1) Manufacturer reference
- 2) Steel type
- 3) Property class

Certification of cheese head screws with hexagon socket or six lobe drive



Studs

Studs with a thread diameter ≥ 5 mm must also be labelled as shown below. The labels must be placed on the thread-free part of the stud and contain the stamp of origin, the steel type and the property class. Should labelling not be possible on the thread-free section, only the indication of the steel type on the cap at the end adjacent to the nut is permissible as labelling.

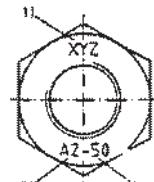
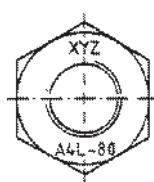


Materials . Labelling

Nuts

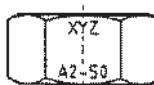
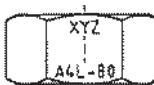
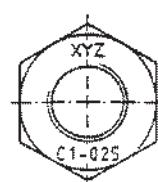
It is mandatory for nuts with a thread diameter ≥ 5 mm to be labelled with the stamp of origin, the steel type and the property class if this is technically possible. Labelling on the supporting surface is permissible; in this case it may be affixed only in sunken form. Labelling on the key surfaces is also permissible if this is preferred. If the nuts are labelled with grooves (for the materials) and the property class is not indicated, the property class 50 or 025 applies.

Nuts, high Type



- 1) Manufacturer reference
- 2) Steel type
- 3) Property class

Nuts, thin type



Alternative labelling with grooves
(only for steel groups A 2 and A 4)



Materials . Mechanical properties

Mechanical properties.

The mechanical properties of nuts and screws according to DIN EN ISO 3506 must correspond to the values indicated in tables 1 and 2 (nuts) or tables 3 and 4 (screws).

Tab. 1 Mechanical properties of nuts – austenitic steel

Steel group	Steel type	Property class		Diameter range d mm	Test signal S_p N/mm ² min.	
		nuts, high type $m \geq 0,8 d$	nuts, thin type $0,5 d \leq m < 0,8 d$		nuts, high type $m \geq 0,8 d$	nuts, thin type $0,5 d \leq m < 0,8 d$
Austenitic	A1, A2, A3, A4, A5	50	025	≤ 39	500	250
		70	035	≤ 24 ¹⁾	700	350
		80	040		800	400

1) For fasteners with a nominal thread diameter $d > 24$ mm, the mechanical properties must be agreed between the user and the manufacturer.
They must be indicated with the steel type and the property class in accordance with this table.

Tab.2 Mechanical properties of nuts – martensitic and ferritic steel

Steel group	Steel type	Property class		Test signal S_p N/mm ² min.		hardness		
		nuts, high type $m \geq 0,8 d$	nuts, thin type $0,5 d \leq m < 0,8 d$	nuts, high type $m \geq 0,8 d$	nuts, thin type $0,5 d \leq m < 0,8 d$	HB	HRC	HV
Martensitic	C1	50	025	500	250	147 bis 209	–	155 bis 220
		70	–	700	–	209 bis 314	20 bis 34	220 bis 330
		110 ²⁾	055 ²⁾	1100	550	–	36 bis 45	350 bis 440
	C3	80	040	800	400	228 bis 323	21 bis 35	240 bis 340
	C4	50	–	500	–	147 bis 209	–	155 bis 220
		70	035	700	350	209 bis 314	20 bis 34	220 bis 330
Ferritic	F1 ¹⁾	45	020	450	200	128 bis 209	–	135 bis 220
		60	030	600	300	171 bis 271	–	180 bis 285

1) Nominal thread diameter $d \leq 24$ mm.

2) Hardened at a tempering temperature of at least 275 °C.

Materials . Mechanical properties

Tab.3 Mechanical properties of screws – austenitic steel

Steel group	Steel type	Property class	Diameter range	Tensile strength R_m ¹⁾ N/mm ² min.	0,2% proof stress $R_{p,0,2}$ ¹⁾ N/mm ² min.	breaking elongation A ²⁾ mm min.
Austenitic	A1, A2, A3, A4, A5	50	≤ 39	500	210	0,6 d
		70	≤ 24 ³⁾	700	450	0,4 d
		80		800	600	0,3 d

1)The tensile stress is calculated in relation to the stressed cross section.

2)The breaking elongation must be established in accordance with the length of the respective screw and not turned type samples. d = nominal diameter

3)For fasteners with a nominal thread diameter $d > 24$ mm, the mechanical properties must be agreed between the user and the manufacturer.
They must be indicated with the steel type and the property class in accordance with this table.

Tab.4 Mechanical properties of screws – martensitic and ferritic steel

Steel group	Steel type	Property class	Tensile strength R_m ¹⁾ N/mm ² min.	0,2% proof stress $R_{p,0,2}$ ¹⁾ N/mm ² min.	breaking elongation A ²⁾ mm min.	hardness		
						HB	HRC	HV
Martensitic ⁵⁾	C1	50	500	250	0,2 d	147-209	–	155-220
		70	700	410		209-314	20-34	220-330
		110 ⁴⁾	1100	820		–	36-45	350-440
	C3	80	800	640		228-323	21-35	240-340
		50	500	250		147-209	–	155-220
	C4	70	700	410		209-314	20-34	220-330
Ferritic	F1 ³⁾	45	450	250		128-209	–	135-220
		60	600	410		171-271	–	180-285

1)The tensile stress is calculated in relation to the stressed cross section.

2)The breaking elongation must be established in accordance with the length of the respective screw and not turned type samples. d = nominal diameter.

3)Nominal thread diameter $d \leq 24$ mm.

4)Hardened at a tempering temperature of at least 275 °C

5)In the case of screws made from martensitic steel, the resistance under diagonal pressure may not be lower than the minimum values stipulated for tensile strength).

Materials . Chemical composition

Chemical composition.

The chemical composition of the stainless steels that are suitable for fasteners according to DIN EN ISO 3506 is indicated in the following table.

If nothing to the contrary was agreed between the customer and the manufacturer, the manufacturer is at liberty to choose the chemical composition within the agreed steel type.

In cases of application where there is a danger of intercrystalline corrosion, testing in accordance with DIN EN ISO 3651-1 (corrosion trial in nitric acid) or -2 (in sulphuric acid) is recommended. In these cases, the use of stabilized stainless steels A 3 and A 5 (or A 2 and A 4 steels with a carbon content of less than 0,03%) is recommended.

Stainless steels – Chemical composition

Steel group	Steel type	Chemical compound (percentage by mass) ¹⁾									Remarks	
		C	Si	Mn	P	S	Cr	Mo	Ni	Cu		
Austenitic	A1	0,12	1	2	6,5	0,2	0,15–0,35	16–19	0,7	5–10	1,75–2,25	2), 3), 4)
	A2	0,1			0,05	0,045	15–20	5)	8–19	4	6), 7), 8)	
	A3	0,08			17–19		9–12		6), 9)			
	A4				16–18,5		10–15		8), 10)	1		
	A5	0,08					10,5–14		9), 10)			
Martensitic	C1	0,09–0,15	1	1,5	0,05	0,04	11,5–14	–	1	10)		
	C3	0,17–0,25			0,04		16–18		1,5–2,5			
	C4	0,08–0,15			0,06	0,15–0,35	12–14	0,6	1	2), 10)		
Ferritic	F1	0,12			1	0,04	0,03	15–18	5)	11), 12)		

1) Maximum values, provided that no other figures have been given.

2) Sulphur may be replaced by selenium.

3) If the percentage of nickel by mass is below 8 %, the percentage of manganese by mass must be at least 5 %.

4) If the percentage of nickel by mass is higher than 8 %, there is no minimum level for the percentage of copper by mass.

5) Molybdenum is permissible if chosen by the manufacturer. Should a limit to the molybdenum content nevertheless be necessary for certain applications, this must be established by the customer when the order is placed.

6) Molybdenum is also permissible if chosen by the manufacturer.

7) If the percentage of chromium by mass is below 17 %, the percentage of nickel by mass must be at least 12 %.

8) In the case of austenitic steels with a percentage of carbon by mass of max. 0.03%, the maximum nitrogen content may be 0.22 %.

9) For stabilisation purposes, there must be a titanium content of $\geq 5 \times C$ up to max. 0.8 % or niobium and/or tantalum content $\geq 10 \times C$ up to max. 1.0 % and these must be indicated suitably in accordance with this table.

10) The carbon content may be higher if preferred by the manufacturer, provided that this is necessary to achieve the set mechanical properties where the diameters are larger, although this is not permitted in the case of austenitic steels.

11) May contain titanium $\geq 5 \times C$ up to max. 0.8 %.

12) May contain niobium and/or tantalum $\geq 10 \times C$ up to max. 1.0 %.

Materials . Chemical stability

Chemical stability.

Fasteners made from the most common stainless steel types A 2 and A 4 come into contact with all kinds of substances. Using them will be problematic if their chemical stability vis-à-vis some substance or other is restricted.

To make it easier to use fasteners made from these special steel types, we are showing you an extract from the stability list. Please note that the stability information can change in practice, since the substances seldom appear in their purest form. For safety reasons we would always recommend a test under operational conditions.

Extract from the chemical stability list (further information on request)

1 = stable (loss of volume < 0,1 g/m² x h)

2 = conditionally stable (loss of volume 0,1 - 1,0 g/m² x h)

3 = low stability (loss of volume 1,0 - 10 g/m² x h)

4 = unstable (loss of volume >10 g/m² x h)

Substance	Degree of stability	
	A2	A4
Acetate of copper	1	1
Acetic acid, cold	1	1
Acetone, all conc.	1	1
Alum (10 %), cold	1	1
saturated solution, boiling	2	1
Aluminium acetate	1	1
Aluminium sulphate (10 %), cold	1	1
saturated, cold	2	1
Ammonia solution	1	1
Ammonium carbonate	1	1
Ammonium nitrate	1	1
Ammonium sulphate, cold	1	1
Ammonium sulphite	1	1
Aniline	1	1
Beer	1	1
Benzine	1	1
Benzoic acid	1	1
Benzol	1	1

Substance	Degree of stability	
	A2	A4
Boric acid	1	1
Butyl acetate	1	1
Calcium bisulphite, cold	1	1
boiling	3	1
Calcium hydroxide (10–50 %), cold	1	1
Calcium nitrate	1	1
Camphor	1	1
Carbon bisulphide	1	1
Carbon dioxide	1	1
Carbon tetrachloride, anhydrous	1	1
Chlorine, dry	1	1
Chloroform, anhydrous	1	1
Chromic acid (10 %), cold	1	1
boiling	3	2
Citric acid 50 %, boiling	4	1
Citric acid, saturated, cold	1	1
Copper arsenite	1	1
Copper nitrate	1	1

Materials . Chemical stability

Substance	Degree of stability	
	A2	A4
Copper sulphate	1	1
Creosote	1	1
Developer (photo)	1	1
Ethyl acetate	1	1
Ethyl alcohol, all conc.	1	1
Ethyl ether, boiling	1	1
Fatty acid, 150 °C	1	1
Ferrous nitrate	1	1
Formalin	1	1
Formic acid, cold	1	1
Fruit juices	2	1
Glycerine	1	1
Hydrocyanic acid	1	1
Hydrogen sulphide	1	1
Hydrogen superoxide	1	1
Iron sulphate	1	1
Lactic acid, all conc., boiling	3	2
Lactic acid, cold	1	1
Latex	1	1
Linseed oil	1	1
Liquid gases (propane, butane)	1	1
Magnesium sulphate	1	1
Maleic acid	1	1
Mercury	1	1
Mercury amalgam	1	1
Mercury nitrate	1	1
Methyl alcohol	1	1
Milk of lime	1	1
Molasses	1	1
Nickel sulphate	1	1
Nitric acid up to 60 %, cold	1	1
Nitrous acid	2	1
Oils (lubricating and vegetable oils)	1	1
Oxalic acid, 5 % cold	1	1
Phenol, boiling	2	1
Phosphoric acid up to 70 % cold	1	1

Substance	Degree of stability	
	A2	A4
Phtalic acid	1	1
Potash	1	1
Potassium bichromate (25 %)	1	1
Potassium bitartrate	1	1
Potassium chlorate	1	1
Potassium cyanide	1	1
Potassium hydroxide	1	1
Potassium nitrate	1	1
Potassium permanganate	1	1
Potassium sulphate	1	1
Salicylic acid	1	1
Soap	1	1
Sodium aluminate	1	1
Sodium bisulphite, boiling	1	1
Sodium carbonate (soda)	1	1
Sodium disulphide, boiling	1	1
Sodium hydroxide, cold	1	1
Sodium nitrate	1	1
Sodium perchlorate	1	1
Sodium phosphate	1	1
Sodium sulfide	1	1
Sodium sulphate	1	1
Sodium sulphite	1	1
Sugar solution	1	1
Sulphur (molten)	1	1
Sulphur chloride, anhydrous	1	1
Sulphur dioxide	1	1
Sulphurous acid	1	1
Tannic acid	1	1
Tar	1	1
Tartaric acid	1	1
Trichlorethylene, anhydrous	1	1
Viscose	1	1
Water glass	1	1
Wine	1	1
Zinc sulphate	1	1

Materials . Fields of Application

Fields of Application.

Every material has certain corrosion and processing properties that are determined by its alloying elements. In cases of doubt, the Lederer application advisers will help you to choose the right material.

<i>Steel group</i>	<i>Material No.</i>	<i>Abbreviation</i>	<i>Properties and characteristic features</i>
13% chromium steels			
C1	1.4006	X12Cr13	<i>heat treatable stainless machine steel, smoothly polished, water and steam resistant Restricted weldability due to the possibility of increased hardness around the weld seam, hard and soft annealing possible, corresponds to DIN 17440.</i>
	1.4021	X20Cr13	<i>resistant to corrosion from water and steam in annealed condition, can be polished with mirror finish, corresponds to DIN 17440</i>
17% chromium and chromium molybdenum steels			
F1	1.4016	X12Cr17	<i>ferritic nickel chromium steel, can be polished to a mirror finish, resistant to water, steam, weak acids and caustic solutions and oxidizing acids such as nitric acid. After welding, no longer resistant to intercrystalline corrosion if not given subsequent heat treatment (2 hours at 650-800°C). Hard and soft soldering possible. Corresponds to DIN 17440.</i>
C3	1.4057	X19CrNi17-2	<i>heat treatable 17% chromium steel, resistant to water, steam, weak acids and caustic solutions and strong oxidizing acids such as nitric acid. Due to good operating characteristics and high wear resistance, can be used for highly stressed machine parts, e.g. shafts, axes, valves and pump parts. Corresponds to DIN 17440.</i>
C4	1.4104	X14CrMoS17	<i>stainless free cutting steel, good machining property due to sulphur content. As corrosion resistant as 13% chromium steel. This steel is not used for welding. Corresponds to DIN 17440.</i>
C-	1.4122	X39CrMo17-1	<i>heat treatable chromium steel, largely resistant to numerous organic and inorganic acids due to its molybdenum content. Relatively good resistance to salt water. Improved resistance to crevice corrosion. Can be polished with mirror finish, working temperature max. 450-500°C. Corresponds to SEW 400.</i>

Materials . Fields of Application

<i>Steel group</i>	<i>Material No.</i>	<i>Abbreviation</i>	<i>Properties and characteristic features</i>
Austenitische Chrom-Nickel-Stähle, Austenitic nickel chromium steels			
A2	1.4301	X4CrNi1 8-10	<i>Standard type of austenitic nickel chromium steel, highly corrosion resistant, can be used in pressure vessel manufacturing according to AD instructions W2 up to at least 300°C. Used in the food industry; resistant to intercrystalline corrosion up to a 6mm sheet thickness or a 40mm rod diameter; suitable for welding. Corresponds to DIN 17440 and VdT V 411.</i>
	1.4303	X4CrNi1 8-12	<i>Can be used as bar stock or wire for the production of screws, nuts and cold pressure flow parts, resistant to intercrystalline corrosion up to a 6mm sheet thickness or a 40mm rod diameter; suitable for welding.</i>
A1	1.4305	X 8CrNiS18-9	<i>Austenitic free cutting steel, better than normal austenitic free cutting steels due to the addition of sulphur, easy machining, especially suitable for swivel parts. Corresponds to DIN 17440.</i>
A -	1.4306	X2CrNi19-11	<i>Highly corrosion resistant, can be used in pressure vessel manufacturing according to AD instructions W2 up to at least 300°C. Resistant to intercrystalline corrosion in accordance with DIN 17440 and DIN 17441, suitable for welding.</i>
	1.4310	X12CrNi17-7	<i>Austenitic nickel chromium steel that is mostly used in cold-hammered or rolled condition for making into rustproof springs. Continuous operation only up to max. 250°C, otherwise reduction in firmness.</i>
A3	1.4541 1.4550	X6CrNiTi18-10 X6CrNiNb18-10	<i>Used for welded parts in chemical apparatus engineering, the foodstuffs, luxury foods, fat and soap industries and leather and sugar factories. Can be used in pressure vessel manufacturing according to AD instructions W2 up to at least 300°C. Cannot be polished to a mirror finish because of the titanium and/or niobium addition. Corresponds to DIN 17440 and VdT v 411.</i>
A -	1.4567	X3CrNiCu18-9 X3CrNiCu18-9-4	<i>Austenitic nickel chromium steel, highly corrosion resistant. Since it may contain up to 4% copper, it is particularly suitable for cold forming. According to DIN 24567 it belongs to the group of A2 materials.</i>

Materials . Fields of Application

Steel group	Material No.	Abbreviation	Properties and characteristic features
Austenitic nickel chromium molybdenum steels			
A4	1.4401	X5CrNiMo17 12 2 X4CrNiMo17-12-2	<i>This austenitic nickel chromium steel achieves a far higher level of corrosion resistance thanks to a molybdenum alloying element. Increased resistance to non-oxidizing acids and chlorous agents. The material can be used to a limited extent in the salt water sphere. Can be used in pressure vessel manufacturing according to AD instructions W2 up to at least 300°C. Corresponds to DIN 17440 and VdT v 411.</i>
	1.4404	X2CrNiMo17 13 2 X2CrNiMo 17-2-2 G X2CrNiMo18-14-3	<i>This austenitic nickel chromium steel achieves a far higher level of corrosion resistance thanks to a molybdenum alloying element. Increased resistance to non-oxidizing acids and chlorous agents. The material can be used to a limited extent in the salt water area. Can be used in pressure vessel manufacturing according to AD instructions W2 up to at least 400°C. Resistant to intercrystalline corrosion in accordance with DIN 17440 and DIN 17441, suitable for welding.</i>
A -	1.4438	X2CrNiMo18-16-4	<i>Due to the high molybdenum content of ≥ 3.0%, highly resistant to non-oxidizing acids and halogenated agents, can be polished to a mirror finish and has good plasticity. Can be used in pressure vessel manufacturing according to AD instructions W2 up to at least 300°C. Resistant to intercrystalline corrosion in accordance with DIN 17440 and DIN 17441, suitable for welding.</i>
	1.4439	X2CrNiMoN17-13-5	<i>Maximum corrosion resistance and high resistance to pitting and crevice corrosion, increased resistance to stress corrosion. Can be used in pressure vessel manufacturing according to AD instructions W2 up to at least 400°C. Also used in marine technology and the reactor industry. Resistant to intercrystalline corrosion in accordance with DIN 17440 and DIN 17441; suitable for welding. Corresponds to VdT V 411-451.</i>
A5	1.4571	X6CrNiMoTi17-2-2	<i>Molybdenum gives increased corrosion resistance, particularly to non-oxidizing acids and halogenated agents. Can be used in pressure vessel manufacturing according to AD instructions W2 up to 300°C. Cannot be polished to a mirror finish because of the stabilising element titanium. Corresponds to VdT V 411-451.</i>
Ferritic austenitic nickel chromium molybdenum steels			
F/A	1.4462	X2CrNiMoN22-5-3	<i>High resistance to stress corrosion, in chlorous agents, to local and also, in welded condition, to intercrystalline corrosion. General corrosion resistance to many organic and inorganic acids. Good hot and cold forming properties and highly suitable for welding. Can be used in pressure vessel manufacturing according to AD instructions W2 from -10°C to 280°C.</i>

Materials

. International steel key

International steel key.

The specific properties of the material depend on the composition of the alloying elements. These alloys, however, are designated differently in many countries. The following overview makes it easier to compare internationally common designations from Germany, France, the UK and the USA.

Material No.	Abbreviation	AISI (USA)	AFNOR (France)	B.S. (Great Britain)
13% chromium steels				
1.4005	X6CrS13	416	Z12CF13	416 S 21
1.4006		410 CA-15		410 C 21 / ANC 1A
1.4021		420		420 S 37
17% chromium and chromium molybdenum steels				
1.4016	X12Cr17	430	Z8C17	430 S 17
1.4057	X20CrNi17-2	431	Z15CN16-02	431 S 29
1.4104	X12CrMoS17	430F	Z13CF17	
1.4122	X35CrMo17			
Austenitic nickel chromium steels				
1.4301	X5CrNi18-10	304	Z4CN10-10FF	304 S 11/15/16/17
		304H	Z5CN17-08	LW21
			Z6CN18-09	LWCF 21
			Z7CN19-09	304 S 31
1.4303	X5CrNi18-12	305/308	Z5CNI 8-11FF	305 S I7/19
1.4305	X1 OCrNiS18-9	303	Z8CNF18-09	303 S 22
1.4306	X2CrNi19-11	304L	Z1CN18-12	304 S 11
			Z2CN18-10	LW20
			Z3CN19-10M	LWCF20
			Z3CN18-10	304 C 12
			Z3CN19-11	305 S 11
			Z3CN19-10FF	
1.4310	X12CrNi17 7	301	Z12C N17-07	
1.4541	X6CrNiTi18-10	321	Z6CNT18-10	321 S 31
				321 S 51
				LW24
				LWCF24
1.4550	X6CrNiNb18-10	347	Z6CNNb18-10	347 S 31
1.4567	X3CrNiCu18-9	304		

Materials . International steel key

Material No.	Abbreviation	AISI (USA)	AFNOR (France)	B.S. (Great Britain)
<i>Austenitic nickel chromium molybdenum steels</i>				
1.4401	X5CrNiMo17-12-2	316	Z3CND17-11-01	316 S 13
	X4CrNiMo17-12-2		Z6CND17-11	316 S 17
			Z6CND17-11-02FF	316 S 19
			Z7CND1711-02	316 S 31
			Z7CND17-12-02	316 S 33
1.4404	X2CrNiMo17-13-2	316L	Z2CND17-12	316 S 11
	X2CrNiMo17-12-2		Z2CND18-13	316 S 13
			Z3CND17-11-02	316 S 14
			Z3CND17-12-02FF	316 S 31
			Z3CND18-12-02	316 S 42
			Z3CND18-12-03	
			Z3CND18-14-03	
1.4435	X2CrNiMo18-14-3	316L	Z3CND17-12-03	316 S 11
			Z3CND18-14-03	316 S 13
				316 S 14
				316 S 31
				LW22
				LWCF22
1.4438	X2CrNiMo18-16-4	317L	Z2CND19-15	317 S 12
1.4439	X2CrNiMoN17-13-5	317LNM		
1.4571	X6CrNiMoTi17-12-2	316Ti	Z6CNDT17-12	320 S 18/31
<i>Ferritic austenitic nickel chromium molybdenum steels</i>				
1.4462	X2CrNiMoN22-5-3		Z3CND22-05-AZ	318 S 13
			Z2CND24-08-AZ	
			Z3CND25-06-03-AZ	
1.4713	X10CrAl7			
1.4828	X15CrNiSi20-12	309	Z19CN24-13	309 S 24
			Z17CNS20-12	
1.4841	X15CrNiSi25-20	314, 310	Z15CNS25-20	314 S 25
1.4980	X5NiCrTi26-15			
<i>Special austenitic materials</i>				
2.4360	(S-)NiCu30Fe			
2.4610	NiMo16Cr16Ti			
2.4816	NiCr15Fe			
3.7025	Ti2			

Assembly Aids . Special properties

Special properties of stainless steel.

We would like to do more than just provide its customers with information about the properties of screws, nuts and accessories. The company also wants to impart knowledge about their proper use. Below we provide important information about material properties, pilot-drill data, hole diameters, torques and securing elements. This information is designed to help you use the specified fasteners in a technically correct and efficient way. In cases of doubt, you should establish the values for specific application cases with experiments.

Hardenability

Stainless steels A 1 – A 5 cannot be hardened with heat treatment (the hardness is achieved solely via the mould pressures used in production). The reaction of fasteners made from these materials to being assembled/erected therefore differs from that of fasteners made from tempered steel. Improper assembly can lead to the failure of the properly created joint. In particular when similar matings of materials are screwed together, the danger of cold fretting ("eating away") exists.

Magnetic properties

Generally, fasteners made from austenitic steel (A 1 – A 5) are not magnetizable. Since the higher property classes 70 and 80 are reached with the mould pressures during cold forming, however, the material can become slightly magnetic as a result.

Temperature ranges

Stainless steels are resistant to the cold, which also makes them highly suitable for use at low temperatures: A 2 down to -200°C, A 4 down to -60°C.

Strength

The property class 70 generally applies to hexagon head, hexagon socket, six lobe drive, slotted, recessed screws and studs. If no agreement to the contrary is made when the order is placed, screws of this property class will be delivered

Assembly Aids . Pilot drilling values

Pilot-drilling values for thread rolling screws.

This standard establishes the hole diameter for thread rolling screws in accordance with DIN 7500 (part 1). The hole diameters have emerged from practical trials carried out by manufacturers and users. These are regarded as guidelines and are assigned to various materials and thread reaches. It is also advisable to examine the fixed hole diameters for the various types of thread rolling screws (whose rolling area is defined in the standard only by a maximum length) by conducting your own trials, particularly in mass production.

Processes that lead to a strengthening of the hole wall during the creation of the hole (e.g. punching) can require hole diameters that exceed those of the guidelines specified in the standard. The outer crust means that these can also apply for cast holes.

The standard does not take account of holes with special forms (triangular, octagonal, etc.).

Materials . Pilot drilling values

Material thickness or screw depth	Hole diameters d_h (range of tolerance H11)																				
	M 2,5			M 3			M 3,5			M 4			M 5			M 6			M 8		
	St	Al	Cu	St	Al	Cu	St	Al	Cu	St	Al	Cu	St	Al	Cu	St	Al	Cu	St	Al	Cu
0,8	2,25																				
0,9	2,25																				
1	2,25		2,7																		
1,2	2,25		2,7			3,15															
1,5	2,25		2,7			3,15			3,6			4,5									
1,6	2,25		2,7			3,2			3,6			4,5									
1,7	2,25		2,7			3,2			3,6			4,5									
1,8	2,25	2,75	2,7			3,2			3,6			4,5									
2	2,25	2,75	2,7			3,2			3,6			4,5			5,4						
2,2	2,25	2,75				3,2			3,6			4,5			5,4		7,25				
2,5	2,25	2,75				3,2	3,65	3,6				4,5			5,4		7,25	9,2			
3	2,3		2,75			3,2	3,65	3,6				4,5			5,45		7,25	9,2	9,15		
3,2	2,3		2,75			3,2	3,65	3,6	4,55	4,5				5,45		7,25	9,2	9,15			
3,5	2,3		2,75			3,2			3,65			4,55			5,45		7,25	9,2	9,15		
4	2,3		2,75			3,2			3,65			4,55		5,5	5,45		7,3	9,3	9,15		
5	2,3		2,75		3,2	3,25	3,7	3,65			4,6		5,5	5,45		7,4	7,3	9,3	9,2	9,25	
5,5			2,75		3,2	3,25	3,7	3,65			4,6		5,5		7,4	7,3	9,3	9,2	9,25		
6			2,75				3,7	3,65			4,6		5,5		7,4	7,3	9,3	9,2	9,25		
6,3																					
6,5									3,7		4,65		5,5		7,4	7,35	9,3	9,2	9,25		
7																					
7,5									3,7		4,65		5,5	5,5	7,5	7,4	9,4	9,3			
8 bis ≤ 10																					
> 10 bis ≤ 12																	7,5	9,5	9,4		
> 12 bis ≤ 15																					
> 15 bis ≤ 20																				9,5	

St = St 12, St 37-2

Al = Al99,5F13, AIMn F10

Cu = E-Cu57 F30, E-Cu58 F30, CuZn F38

All dimensions in mm.

Assembly aids . Drill hole diameter

Tapping screw threads according to DIN EN ISO 1478 / DIN 7970 screws made of stainless steel A 2 / A 4		Sheet thickness		Sheet material	
nominal diameter	No. according to ISO	from	to	Steel St. 37	Aluminium
2,9	No. 4	–	0,56	–	–
		0,57	0,63	2,30	2,40
		0,64	0,75		
		0,76	0,88		
		0,89	1,25		
		1,26	1,38		
		1,39	1,75		
		1,76	2,50		
		–	0,56	2,70	2,80
		0,57	0,75		
3,5	No. 6	0,76	0,88		
		1,01	1,25		
		1,26	1,38	2,80	2,90
		1,39	1,75		
		1,76	2,50		
		2,51	3,00	2,90	3,00
		3,01	6,00		
3,9	No. 7	–	0,50	3,00	3,10
		0,51	0,63		
		0,64	0,88		
		0,89	1,13		
		1,14	1,25		
		1,26	1,38		
		1,39	1,75		
		1,76	2,00		
		2,01	2,50	3,10	3,20
		2,51	3,50		
4,2	No. 8	–	0,50	3,20	3,30
		0,51	0,63		
		0,64	0,88		
		0,89	1,13		
		1,14	1,38		
		1,39	2,50	3,30	3,40
		2,51	3,00		
		3,01	3,50		
		3,51	10,00	3,40	3,50
		–	0,50		
4,8	No. 10	0,51	0,75	3,50–3,60	3,60–3,70
		0,76	1,13		
		1,14	1,38		
		1,39	1,75		
		1,76	2,50		
		2,51	3,00	3,70	3,90
		3,01	3,50		
		3,51	4,00		
		4,01	4,75	3,80	4,00
		4,76	10,00		
5,5	No. 12	–	1,13	4,00	4,10
		1,14	1,38		
		1,39	1,50		
		1,51	1,75		
		1,76	2,25		
		2,26	3,00	4,50	4,60
		3,01	3,50		
		3,51	4,00		
		4,01	4,75	4,60	4,70
		4,76	10,00		
6,3	No. 14	–	1,38	4,70–4,90	4,80–5,00
		1,39	1,75		
		1,76	2,00		
		2,01	3,00	5,30	5,40
		3,01	4,00		
		4,01	4,75	5,40	5,50
		4,76	5,00		
		5,01	10,00	5,60–5,70	5,70–5,80

Assembly aids . Permissible torques

Permissible torques for screws M 5 - M 30.

The following list of torques apply for screws according to DIN 931/933 resp. ISO 4014/4017 in hardness classes 50, 70 and 80 at room temperature.

These torques should be seen as approximate guidelines because variations in friction values may occur in practice. To determine the correct torque for each application, we recommend you carry out an relevant trial turning.

Please note that the torques listed in the tables for the classes 70 and 80 apply only for a screw length up to 8 x the thread nominal diameter.

A2-50 and A4-50 without length limits

Coefficient of friction	Permissible torque Nm												
	M 5	M 6	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30
0,12	1,7	3	7,1	14	24	39	59	81	114	153	198	287	393
0,14	2	3,4	8,2	16	28	44	67	93	131	175	226	330	450
0,16	2,2	3,8	9,2	18	31	50	76	105	148	198	255	372	508
0,18	2,5	4,2	10,2	20	35	55	84	116	164	220	284	415	566

A2-70 und A4- 70 for lengths up to 8 x nominal thread diameter

Coefficient of friction	Permissible torque Nm												
	M 5	M 6	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30
0,12	3,7	6,4	15,3	31	52	83	126	174	245	328	423	617	845
0,14	4,2	7,3	17,5	35	60	94	144	199	281	376	485	708	969
0,16	4,7	8,2	19,6	39	67	106	162	225	316	423	546	797	1092
0,18	5,3	9,1	21,8	44	75	118	180	250	352	471	607	886	1213

A2-80 und A4- 80 for lengths up to 8 x nominal thread diameter

Coefficient of friction	Permissible torque Nm								
	M 5	M 6	M 8	M 10	M 12	M 14	M 16	M 18	M 20
0,12	4,9	8,5	20,4	41	70	110	167	233	326
0,14	5,6	9,7	23,3	47	79	126	192	266	374
0,16	6,3	10,9	26,2	53	89	142	216	299	422
0,18	7	12,1	29,1	58	99	157	241	333	469

Assembly aids . Corrosion protection

Corrosion protection.

As a specialist in the field of fasteners for stainless steel, Wenaturally knows about the benefits of stainless screws, nuts and accessories. Their resistance to corrosion is usually the decisive argument when the material is being chosen.

Basic knowledge of corrosion protection and corrosion types is nevertheless important for the proper construction of modern and up-to-date mechanical linkages.

The basic term of corrosion according to DIN EN ISO 8044 (former DIN 50900):

"Corrosion is the reaction of a metallic material to its environment, which effects measurable change in the material and can lead to impairment of the function of a metal construction part or of an entire system. In most cases this reaction is of an electro-chemical nature; but sometimes it can be also be of a chemical or metal-physical nature".

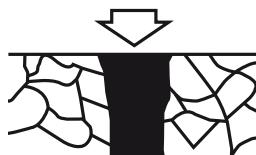
Surface corrosion

Evenly spread abrasion on the affected surfaces as a result of the surrounding medium. → general rust



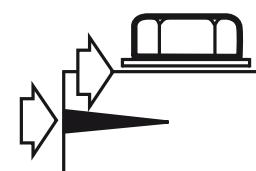
Localized corrosion

Restricted to one area, e.g. as a result of protective coatings being damaged by e.g. chlorine. → e.g. in swimming pools



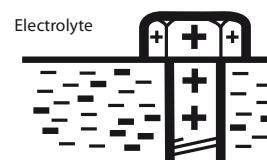
Crevise corrosion

In crevices in the material or between connected building components, resulting from aggressive media and too little oxygen for the restoration of passivation. → e.g. with gas hoods, digesters



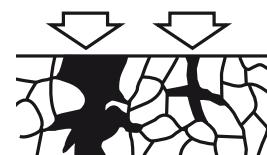
Contact corrosion

Electro-chemical process triggered by different metals coming into contact. → e.g. under screw heads



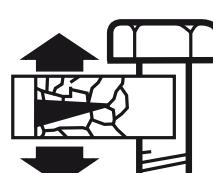
Intercrystalline/Transcrystalline corrosion

An increase in the temperature to 400 – 800°C leads to the elimination of chromium carbides at the grain boundaries of the metal structure. Washing out in acidic media then leads to the reduction of the chromium element in the alloy that is required for the passivation. → e.g. as a result of faulty welding fillers



Stress corrosion

Where there are simultaneous effects from a corrosion medium and mechanical stresses in the building component. → e.g. in bridge construction



Assembly aids . Corrosion protection

Measures to prevent corrosion.

There are four types of corrosion prevention measures, which can be differentiated in descending order of priority as follows:

The right choice of material (stainless steels and special materials, nonferrous metals such as copper, brass, bronze, aluminium or titanium and synthetic materials)

Subsequent surface coatings (lubrication, zinc coating, lacquering, phosphatizing, bronzing, chromizing, galvanizing)

Electro-chemical measures (cathodic protection)

Structural measures (insulation, avoidance of crevices, etc.)

We are the right contact when it comes to the choice of materials. We provide you with detailed advice and help you to choose the best article/material combination. Similarly, we can offer you all of the commonly used procedures for surface coating and carry them out for you.

Knowing the right matings of materials is certainly one of the relevant electro-chemical and structural measures. After all, the possibility of contact corrosion should always be considered when different metals are being used simultaneously in fastening elements and the elements earmarked for fastening.

The following overview provides reference values for suitable material matings as well as those that should be avoided.

Assembly aids . Corrosion protection

Material observed for contact corrosion		area ratio to*	Corrosion protection												
			Stainless steel	Copper	Tin	Lead	Chrome steel	Cast steel	Low alloy steel	Construction steel	Acid zinc coating	Aluminium alloy	Hot galvanized steel	Zinc	Magnesium alloy
Stainless steel	small			+	+			+	+		+	+	+	+	+
	large		+	o	o	o		+	+	+	+	+	o	+	+
Copper	small			-	o	o		+	+	+	+	+	+	+	+
	large	+		o	+		+	+	+	+	+	+	+	+	+
Tin	small				+	+		+	+	+	+	+	+	+	+
	large				+	o	+	+	+	+	+	+	+	+	+
Lead	small		+	+		+	+	+	+	+	+	+	+	+	+
	large	+		+		+	o	+	+	+	+	+	+	+	+
Chrome steel	small	-	-	o	o			+	+	+	+	+	+	+	+
	large	+		+	+			+	+	+	+	+	+	+	+
Cast steel	small	-	-	-	-	-		o	+	+	+	+	+	+	+
	large			+	+	+	+	+	+	+	+	+	+	+	+
Low alloy steel	small	-	-	-	-	-	+		+	+	+	+	+	+	+
	large	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Construction steel	small	-	-	-	-	-	-	o		+	+	+	+	+	+
	large	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Acid zinc coating	small	-	-	-	-	-	-	-	-	-	+	+	+	+	+
	large	+	+	+	+	+	+	+	+	+	+	o	+	o	o
Aluminium alloy	small	-	-		-		-		o	+		+	+	o	o
	large	o	-	-	-	o	o	o	+	+	+	o	o	+	+
Hot galvanized steel	small	-	-	-	-	-	-	-	-	o	o		+	o	o
	large	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Zinc	small	-	-	-	-	-	-	-	-	o	o	+		o	o
	large	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium alloy	small	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	large	-	-	-	-	-	-	-	-	o	o	o	o	o	o

*Relation of the surface of the material observed (column) to the surface of the second material (line)

- = heavy corrosion of the material observed

o = moderate corrosion of the material observed

+ = slight or no corrosion of the material observed

Source: Hot Galvanising Advisory Unit



CONTATTI

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