



STANDARDIZATION

Introduction



The commonly used commercial fasteners are mainly standardized. The standards offer extensive technical information to the supplier as well as to the user and make a vital link in the mutual commercial trade.

This general introduction aims to give an overall picture to those not familiar with the rather complicated situation of the international and national standardization of fasteners and screw thread.

= ISO =

The *ISO (International Organisation for Standardization)* operates as a worldwide coordinating body. Its aim is to produce order or unity in the divergences of the national standards. The ISO is trying to create an absolute interchangeability of products all over the world by issuing ISO-standards.

Within this organisation the Technical Committees ISO/TC 1 "Screw Threads" and ISO/TC 2 "Fasteners" - in the latter 28 countries are active and 22 countries passive members - are responsible for these two specialized areas.

In the mean time already more than 100 ISO-standards are published in the English and French language and it may be expected that in the near future this number will increase very rapidly as a consequence of the intensified activities of ISO TC2.

In 1984 for the first time these standards have been collected in the ISO-Standards Handbook 18 "Fasteners and Screw Threads", and in the French edition Recueil de Normes ISO 18 "Elements de fixation et filetages".

= DIN =

The national German *DIN (Deutsches Institut für Normung)* and the international DIN-ISO standards are very popular, leading standards in Europe. In some countries like the Netherlands, Switzerland and Austria new national standards are no longer issued, the existing ones being gradually withdrawn and in place of these the use of DIN and DIN-ISO standards are recommended.

These countries participate as active members in the DIN-Committees "Mechanische Verbindungselemente FMV" and "Gewinde", however they maintain their national authority in ISO/TC 1 and ISO/TC 2.

At the moment DIN has published more than 400 standards on fasteners and about 100 standards on screw thread. These have been collected in the following 7 handbooks:

- DIN Handbook 10 • Fasteners 1. Dimensional standards for bolts and screws (also available in English).
- DIN Handbook 43 • Fasteners 2. Standards for bolts, pins, rivets, wedges, adjusting rings, retaining rings.
- DIN Handbook 55 • Fasteners 3. Technical delivery conditions for bolts, screws and nuts.
- DIN Handbook 140 • Fasteners 4. Dimensional standards for nuts and accessories for screwed connections (also available in English).
- DIN Handbook 193 • Fasteners 5. Basic standards.
- DIN Handbook 252 • Fasteners 6. DIN ISO standards. Bolts and nuts. Technical delivery conditions.
- DIN Handbook 45 • Screw thread. Standards.

The adoption of the ISO-standards in the German standardization and their actual application in practice, has not been easy so far. To improve this situation the decision has been taken to adopt ISO standards only when they have been accepted as German standards and the existing DIN standard shall be withdrawn in favour of the DIN-ISO standard after a certain period of transition.

= CEN =

In 1992 the borders between the countries within the E.E.C. shall be removed for the benefit of free trade without restrictions for all products meeting the harmonized European requirements. The common European Standardization Institute *CEN (Comité Européen de Normalisation)* has meanwhile already started drafting CEN-specifications according to the guidelines of Article 100 of the E.E.C. convention.

For fasteners, a Technical Committee CEN/TC 185 has been formed to make CEN-standards, preferably being identical to the existing ISO-standards. Products, for which no ISO-standard is issued, will get their own new CEN-standard. The first series of CEN (ISO) standards - priority 1 - were to be published as early as 1990.

= INDEX OF STANDARDS =

On the next pages an outline is given of mutually comparative standards. Comparative does not mean that all standards are completely identical. So the degree of correspondance between the DIN and ISO-standards is indicated with a code signifying:

- E The DIN-standard is completely identical to the ISO-standard (Equivalent and related).
- R The ISO-standard has been accepted, but with DIN-modifications (Related but not equivalent).
- N There is no relation at all between the DIN and ISO-standard (Not related).
- ISO/DIS Draft International Standard.
- ISO/R ISO-Recommendation.

In the index "DIN-ISO" for every DIN NR. see to the corresponding section(s) of the catalogue.



STANDARDIZATION

Index DIN - ISO

STANDARD							
DIN : 918/202 ISO : - ANSI : -							
DIN	DESIGNATION	ISO	1) Correspondance DIN/ISO	SECTION			
				STEEL	STAINLESS STEEL	NON- FERROUS	OTHERS
1	Taper pins	2339	R	8	9	-	-
7	Parallel pins, dowel pins	2338	R	8	9	-	-
11 (withdrawn)	Whitworth screw threads	-	-	-	-	-	15
13 - T- 13	ISO metric screw threads; selected sizes for screws, bolts and nuts from 1 to 52 mm	262	R	-	-	-	15
- T- 20	ISO metric coarse threads from 1 to 68 mm diameter; limits	965/2	R	-	-	-	15
- T- 21	ISO metric fine threads from 1 to 110 mm; limits	965/2	R	-	-	-	15
- T- 22							
- T- 23							
- T- 51							
14 - T- 1/2/3/4	ISO metric screw thread; screw threads below 1 mm diameter	R 1501	R	-	-	-	-
63	Slotted countersunk head screws (with small head)	-	-	-	-	-	-
66	Countersinks for countersunk head screws with com. head style to DIN ISO 7721	-	-	-	-	-	-
74 - T- 1	Countersinks for countersunk head screws	-	-	-	-	-	-
- T- 2	Counterbores for hexagon socket head screws and slotted cheese head screws	-	-	-	-	-	-
- T- 3	Counterbores for hexagon bolts and nuts	-	-	-	-	-	-
76 - T- 1	Run out and undercut for metric ISO threads	3508/4755	R	-	-	-	15
- T- 2	Run out and undercut for Whitworth pipe screw thread	-	-	-	-	-	15
78	Thread ends and length of projection of bolt ends	4753	R	-	-	-	15
84	Slotted cheese head screws	1207	R	6	9	10	-
85	Slotted pan head screws	1580	R	6-14	9	10	-
93	Tab washers with long tab	-	-	7	9	-	-
94	Split pins	1234	R	8	9	10	-
95	Slotted raised countersunk (oval) head wood screws	-	-	-	9	10	-
96	Slotted round head wood screws	-	-	6	9	10	-
97	Slotted countersunk (flat) head wood screws	-	-	6	9	10	-
101	Rivets; technical specifications	R 1051	R	-	-	-	-
103 - T- 5/7	ISO metric trapezoidal screw threads; limits	2903	E	-	-	-	15
124	Round head rivets	R 1051	R	-	-	-	-
125 - T- 1	Washers, product grade A, up to hardness 250 HV, primarily for hexagon bolts and nuts	7089/90	R	7	9	10	-
125 - T- 2	Washers, product grade A, from hardness 300 HV, primarily for hexagon bolts and nuts	7089/90	R	-	-	-	-
126	Washers; product grade C; primarily for hexagon bolts and nuts	7091	R	7	-	-	-
127	Spring lock washers	-	-	7	9	-	-
128	Curved or waved spring lock washers	-	-	7	9	10	-
137	Curved or waved spring washers	-	-	7	9	-	-
158	Metric tapered external screw threads	-	-	-	-	-	15
186	T-head bolts with square neck	-	-	4	9	-	-
188	T-head bolts with double nib	-	-	-	-	-	-
202	Screw threads (general plan)	-	-	-	-	-	15
225*	Symbols and designations of dimensions	225**	E	-	-	-	-
228*	Pipe threads, Whitworth cylindrical	228	E	-	-	-	15
258	Taper pins with thread and constant taper length	8737	R	-	-	-	-
261	T-head bolts	-	-	-	-	-	-
267 - T- 1	General requirements	8992	R	-	-	-	15
- T- 2	Finishes and tolerances	4759/1	R	-	-	-	15
- T- 3	Property classes for bolts and screws	898/1**	-	-	-	-	15
- T- 4	Property classes of nuts (previous classes)	898/2**	R	-	-	-	15
- T- 5	Acceptance inspection	3269	R	-	-	-	15
- T- 6	Finishes and tolerances for product grade F	4759/2	R	-	-	-	-
- T- 9	Electroplated coatings	4042*	R	-	-	-	15
- T- 10	Hot dip galvanized parts	1461	R	-	-	-	15
- T- 11	Corrosion-resistant stainless steel fasteners	3506	R	-	-	-	15
- T- 12	Tapping screws	2702	R	-	-	-	-
- T- 13	Parts for bolted connections for low and high temperature applications	-	-	-	-	-	-
- T- 15	Prevailing torque type nuts	2320	R	-	-	-	-
- T- 18	Parts made of non-ferrous metals	8839**	R	-	-	-	15
- T- 19	Surface discontinuities on bolts screws and studs	6157/1/3**	R	-	-	-	15
- T- 20	Surface discontinuities on nuts	DIS 6157/2	R	-	-	-	15
- T- 21	Widening test for nuts	DIS 6157/2	R	-	-	-	-

* DIN/ISO standard

** This ISO-standard is also an European EN-standard. The number of the EN-standard is the ISO number increased by 20.000 f.i. ISO 225 = EN 20225.

1) See page 15-65-1 for explanation of the correspondance code.



STANDARD	STANDARDIZATION
DIN : 918/202 ISO : - ANSI : -	Index DIN - ISO

DIN	DESIGNATION	ISO	1) Correspondance DIN/ISO	SECTION			
				STEEL	STAINLESS STEEL	NON- FERROUS	OTHERS
- T- 24	Property classes of nuts; hardness classes	-	-	-	-	-	15
- T- 25	Torque test for bolts and screws M1 to M10	898/7	R	-	-	-	15
- T- 26	Technical specifications for elements made of spring steel for bolted connections	-	-	-	-	-	-
- T- 27	Steel screws, bolts and studs with an adhesive coating (MK)	-	-	-	-	-	-
- T- 28	Steel screws, bolts and studs with locking coatings (KL)	-	-	-	-	-	-
268	Tangent keys and keyways for alternating shock loads	3117	R	-	-	-	-
271	Tangent keys and keyways for constant loads	3117	R	-	-	-	-
272*	Widths across flats, external	272	E	-	-	-	-
273*	Clearance holes for bolts and screws	273**	E	-	-	-	15
302	Countersunk head rivets	R 1051	R	-	-	-	-
315	Wing nuts	-	-	3-11	-	10-11	-
316	Wing screws	-	-	4	-	10	-
319	Ball knobs	-	-	-	-	10	-
388 - T- 1/2	Hand-wheels of plastic	-	-	-	-	10	-
404	Capstan screws	-	-	-	-	-	-
417	Slotted set screws with long dog point	7435	R	-	-	-	-
427	Slotted headless screws with chamfered end	2342	R	-	-	-	-
431	Pipe nuts with thread according to DIN ISO 228 Part 1	-	-	-	-	-	-
432	External tab washers	-	-	7	-	-	-
433 - T- 1	Washers product grade A, up to hardness 250 HV, primarily for cheese head screws	7092	R	7	9	10	-
- T- 2	Washers, product grade A, from hardness 300 HV, primarily for cheese head screws	7092	R	-	-	-	-
434	Square taper washers for U-sections 8%	-	-	7	9	-	-
435	Square taper washers for I-sections 14%	-	-	7	9	-	-
436	Square washers; especially for wood constructions	-	-	7	9	-	-
438	Slotted set screws with cup point	7436	R	5	9	-	-
439 - T- 1	Hexagon thin nuts; unchamfered; product grade B	4036**	R	-	-	-	-
- T- 2	Hexagon thin nuts; product grade A and B; chamfered	4035/8675**	R	3-11	9	-	-
440	Washers, especially for wood constructions	7094	R	7	9	-	-
443	Sealing push-in caps	-	-	12	-	-	-
444	Eye bolts	-	-	4	9	-	-
462	Internal tab washers for slotted round nuts acc. to DIN 1804	-	-	-	-	-	-
463	Tab washers with long and short tab at right angles	-	-	7	9	-	-
464	Knurled thumb screws, high type	-	-	4	9	10	-
466	Knurled thumb nuts, high type	-	-	3	9	10	-
467	Knurled thumb nuts, thin type,	-	-	3	9	10	-
470	Sealing washers	-	-	12	-	-	-
471	Retaining rings for shafts	-	-	7	9	-	-
472	Retaining rings for bores	-	-	7	9	-	-
475 - T- 1	Widths across flats for bolts, screws, nuts, armatures and fittings	-	-	-	-	-	-
- T- 2	Openings for spanners and sockets	691	-	-	-	-	-
- T- 3	Size pairing of double ended wrenches	1085	-	-	-	-	-
478	Square head bolts with collar	-	-	-	-	-	-
479	Square head bolts with short dog point	-	-	1	-	-	-
480	Square head bolts with collar and short dog point with rounded end	-	-	-	-	-	-
493	Surface discontinuities on nuts	DIS 6157/2	R	-	-	-	-
508	Nuts for T-slots	299	R	-	-	-	-
522	Washers of metallic materials, technical specifications	4759/3	-	-	-	-	-
525	Studs for welding	-	-	-	-	-	-
526	Safety cups for cheese head screws according to DIN 84	-	-	-	-	-	-
529	Masonry bolts	-	-	5	-	-	-
546	Slotted round nuts	-	-	3	-	10	-
547	Round nuts with drilled holes in one face	-	-	-	-	-	-
548	Round nuts with set pin hole in side	-	R	-	-	-	-
551	Slotted set screws with flat point	4766	R	5	9	-	-
553	Slotted set screws with cone point	7434	R	5	9	-	-
555	Hexagon nuts; product grade C	4034**	-	1-3-11	-	10	-
557	Square nuts, product grade C	-	R	3	-	-	-
558	Hexagon head screws; product grade C	4018**	-	1	-	-	-
561	Hexagon head set screws with small hexagon and full dog point	-	-	1	-	-	-
562	Square thin nuts; product grade B	-	-	3	9	-	-
564	Hexagon head screws with small hexagon and half dog flat cone point	-	-	-	-	-	-

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571	Hexagon head wood screws	-	-	1	9	-	-
580	Lifting eye bolts	3266	R	4-11	9	-	-
582	Lifting eye nuts	-	-	4-11	9	-	-
601	Hexagon head bolts, product grade C	4016**	R	1	-	-	-
603	Mushroom head square neck bolts	8677	R	1	9	10	-
604	Flat countersunk nib bolts	-	-	1	-	-	-
605	Flat countersunk square neck bolts	-	-	1	-	-	-
607	Cup head nib bolts	-	-	-	-	-	-
608	Flat countersunk square neck bolts	-	-	-	-	-	-
609	Hexagon fit bolts with long threaded portion	-	-	1	-	-	-
610	Hexagon fit bolts with short threaded portion	-	-	-	-	-	-
649	T-slots for T-head bolts	-	-	-	-	-	-
653	Knurled thumb screws, thin type	-	-	4	-	10	-
660	Round head rivets	R 1051	R	8	9	10	-
661	Countersunk head rivets	R 1051	R	8	9	10	-
662	Mushroom head rivets	R 1051	R	8	-	10	-
674	Flat round head rivets	R 1051	R	-	-	-	-
675	Flat countersunk head rivets	R 1051	R	-	-	-	-
705	Adjusting rings	-	-	7	9	-	-
741 (withdrawn)	Wire rope clips, U-bolts, clamps	-	-	4	-	-	-
787	Bolts and screws for T-slots	299	-	-	-	-	-
792	Cylindrical countersunk screws	-	-	-	-	-	-
797	Special foundation bolts	-	-	-	-	-	-
798	Special foundation nuts	-	-	-	-	-	-
835	Studs, metal end ≈ 2 d	-	-	-	-	-	-
898 - T- 1*	Mechanical properties of fasteners. Part 1: Bolts, screws and studs	898/1**	E	-	-	-	15
- T- 2*	Mechanical properties of fasteners. Part 2: Nuts with specified proof load values	898/2**	E	-	-	-	15
- T- 5*	Mechanical properties of fasteners.	-	-	-	-	-	-
- T- 6*	Part 5: Set screws and similar threaded fasteners	898/5	E	-	-	-	15
	Part 6: Nuts with specified proof load values, fine pitch thread	898/6	E	-	-	-	15
899	Hand operated wrenches and sockets	1711	R	-	-	-	-
906	Hexagon socket pipe plugs, conical thread	-	-	2	-	-	-
907	Core plugs, cylindrical thread	-	-	-	-	-	-
908	Hexagon socket screw plugs, cylindrical thread	-	-	2	-	-	-
909	Hexagon head screw plugs, conical thread	-	-	-	-	-	-
910 - T- 1	Hexagon head screw plugs, heavy type, cylindrical thread	-	-	2	9	-	-
- T- 2	Hexagon head pipe plugs with vent	-	-	-	-	-	-
911	Hexagon socket screw keys	2936	-	2	-	-	-
912	Hexagon socket head cap screws	4762	R	2-14	9	10-11	-
913	Hexagon socket set screws with flat point	4026	R	2	9	-	-
914	Hexagon socket set screws with cone point	4027	R	2	9	-	-
915	Hexagon socket set screws with dog point	4028	R	2	9	-	-
916	Hexagon socket set screws with cup point	4029	R	2	9	-	-
917	Hexagon cap nuts	-	-	3	9	10	-
918	Terminology and nomenclature, definitions, abbreviations	-	-	-	-	-	15
-Beiblatt 1	Figures and names	1891*	R	-	-	-	-
-Beiblatt 2	ISO- and DIN standards survey	-	-	-	-	-	-
920	Slotted pan head screws with small head	-	-	-	-	-	-
921	Slotted pan head screws with large head	-	-	-	-	-	-
922	Slotted pan head screws with small head and full dog point	-	-	-	-	-	-
923	Slotted pan head screws with shoulder	-	-	-	-	-	-
924	Slotted raised countersunk head screws with dog point	-	-	-	-	-	-
925	Slotted countersunk head screws with full dog point	-	-	-	-	-	-
926	Slotted set screws with dog point	-	-	-	-	-	-
927	Slotted shoulder screws	-	-	-	-	-	-
928	Square weld nuts	-	-	3	9	-	-
929	Hexagon weld nuts	-	-	3	9	-	-
931 T1/T2	Hexagon head bolts, product grades A and B	4014**	R	1-11	9	10-11	-
931 Beiblatt 1	Hexagon head bolts with shank, weights	-	-	-	-	-	-
933	Hexagon head screws, product grades A and B	4017**	R	1-11	9	10-11	-
934	Hexagon nuts, metric coarse and fine pitch thread, product grades A and B	4032**	R	1-3-11	9	10-11	-
935 - T- 1	Hexagon slotted and castle nuts, product grades A and B	-	-	3-11	9	-	-
- T- 3	Hexagon slotted nuts, product grade C	-	-	-	-	-	-

* DIN/ISO standard

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DIN	DESIGNATION	ISO	1) Correspondance DIN/ISO	SECTION			
				STEEL	STAINLESS STEEL	NON- FERROUS	OTHERS
936	Hexagon thin nuts	-	-	-	-	-	-
937	Hexagon thin slotted and castle nuts (old type)	-	-	-	-	-	-
938	Studs, metal end ≈ 1d	-	-	5	9	-	-
939	Studs, metal end ≈ 1,25d	-	-	5-11	9	-	-
940	Studs, metal end ≈ 2,5d	-	-	-	-	-	-
946	Determination of coefficients of friction	-	-	-	-	-	-
950	Handwheels, offset arm type, hole of hub round	-	-	-	-	10	-
960	Hexagon head bolts, metric fine pitch, product grades A and B	8765**	R	1	-	-	-
961	Hexagon head screws, metric fine pitch, product grades A and B	8676**	R	1	-	-	-
962	Bolts, screws, studs, nuts, designations, types and finishes	7378/8991	R	-	-	-	-
963	Slotted countersunk (flat) head screws	2009	R	6-14	9	10	-
964	Slotted raised countersunk head screws	2010	R	6	9	10	-
965	Cross recessed countersunk (flat) head screws	7046	R	6	9	-	-
966	Cross recessed raised countersunk head screws	7047	R	6	9	10	-
971 - T-1	Hexagon nuts, style 1, metric fine pitch thread, property classes 6 and 8	8673**	R	-	-	-	-
- T-2	Hexagon nuts, style 2, metric fine pitch thread, property classes 10 and 12	8674**	R	-	-	-	-
974 - T-1	Diameters of counterbores for hexagon socket head cap screws and screws with cheese- or panhead	-	-	-	-	-	-
- T-2	Diameters of counterbores for hexagon bolts, screws and nuts	-	-	-	-	-	-
975	Threaded rods	-	-	5-11	9	10-11	-
976	Threaded pins	-	-	5	9	-	-
979	Hexagon thin slotted and castle nuts, product grades A and B	-	-	3	-	-	-
980	Prevailing torque type hexagon nuts, all-metal nuts	7042	-	3	9	-	-
981	Rolling bearings accessories; locknuts	-	-	-	-	-	-
982	Prevailing torque type hexagon nuts with non-metallic insert, high type	-	-	3	9	-	-
983	Retaining rings with lugs for shafts	-	-	-	-	-	-
984	Retaining rings with lugs for bores	-	-	-	-	-	-
985	Prevailing torque type hexagon nuts with non-metallic insert; low type	-	-	3	9	-	-
986	Prevailing torque type hexagon domed cap nuts with non metallic insert	-	-	3	9	-	-
987	Self-locking plate nuts	-	-	-	-	-	-
988	Shim rings and supporting rings	-	-	7	-	-	-
1142	Wire rope grips	-	-	-	-	-	-
1433	Pins without head, type m	-	-	-	-	-	-
1434	Pins with small head, type m	-	-	-	-	-	-
1435	Pins with small head, type mg	-	-	-	-	-	-
1436	Pins with large head, type mg	-	-	-	-	-	-
1440	Washers, type medium for clevis pins	8738	R	7	-	-	-
1441	Washers, type coarse for clevis pins	-	-	-	-	-	-
1443	Clevis pins without head (ISO)	2340	-	-	-	-	-
1444	Clevis pins with head (ISO)	2341	R	-	-	-	-
1445	Clevis pins with head and threaded portion	-	-	-	-	-	-
1469	Grooved pins, half length grooved with gorge	-	-	-	-	-	-
1470	Grooved pins full length parallel grooved with pilot	8739	R	8	-	-	-
1471	Grooved pins full length taper grooved	8744	R	8	-	-	-
1472	Grooved pins half length taper grooved	8745	R	8	-	-	-
1473	Grooved pins full length parallel grooved with chamfer	8740	R	8	-	-	-
1474	Grooved pins half length reverse grooved	8741	R	8	-	-	-
1475	Grooved pins third length centre grooved	8742/43	R	8	-	-	-
1476	Round head grooved pins	8746	R	8	-	-	-
1477	Countersunk head grooved pins	8747	R	-	-	-	-
1478	Turnbuckles made from tubes or bars	-	-	-	-	-	-
1479	Turnbuckles made from hexagon bars	-	-	-	-	-	-
1479*	Hexagon head tapping screws	1479	E	-	-	-	-
1480	Turnbuckles, forged (open type)	-	-	4	-	-	-
1481	Spring type straight pins slotted heavy type	8752	R	8	9	-	-
1481*	Slotted pan head tapping screws	1481	E	-	-	-	-
1482*	Slotted countersunk (flat) head tapping screws (common head style)	1482	E	-	-	-	-
1483*	Slotted raised countersunk (oval) head tapping screws (common head style)	1483	E	-	-	-	-
1580*	Slotted pan head screws, product grade A	1580	E	-	-	-	-
1587	Hexagon domed cap nuts	-	-	3	9	10	-
1651	Free cutting steels	683/9	R	-	-	-	15
1654 - T-1	Cold heading and cold extruding steels	4954	R	-	-	-	15
- T-2	Cold heading and cold extruding steels for killed unalloyed steels not intended for heat treatment	-	-	-	-	-	15
- T-3	Cold heading and cold extruding steels for case hardening steels	-	-	-	-	-	15
- T-4	Cold heading and cold extruding steels for quenching and tempering	-	-	-	-	-	15
- T-5	Cold heading and cold extruding steels for stainless steels	-	-	-	-	-	15

* DIN/ISO standard

** This ISO-standard is also an European EN-standard. The number of the EN-standard is the ISO number increased by 20.000 f.i. ISO 225 = EN 20225.

1) See page 15-65-1 for explanation of the correspondance code.



STANDARDIZATION

Index DIN - ISO

STANDARD							
DIN : 918/202 ISO : - ANSI : -							
DIN	DESIGNATION	ISO	1) Correspondance DIN/ISO	SECTION			
				STEEL	STAINLESS STEEL	NON- FERROUS	OTHERS
1804	Slotted round nuts for hook spanner	-	-	3	-	-	-
1816	Round nuts with set pin holes inside	-	-	-	-	-	-
1891*	Terminology and nomenclature	1891	E	-	-	-	-
2009*	Slotted countersunk head screws (common style), product grade A	2009	E	-	-	-	-
2010*	Slotted raised countersunk head screws (common style) product grade A	2010	E	-	-	-	-
2082 - T-1	Nuts for milling machine arbors	839/2	R	-	-	-	-
2092	Disc springs; calculation	-	-	-	-	-	-
2093	Disc springs; dimensions and quality specifications	-	-	7	9	-	-
2095	Compression springs	-	-	12	-	-	-
2097	Tension springs	-	-	12	-	-	-
2244	Screw threads, terms and definitions	1504	R	-	-	-	-
2507	Bolts and nuts for piping work	-	-	-	-	-	-
2509	Double end studs	-	-	-	-	-	-
2510 - T-1 3/8	Bolted connections with reduced shank	-	-	5	-	-	-
2510 - T-2	Metric thread with large clearance	-	-	-	-	-	15
2510 - T-3	Bolted connections with reduced shank; bolts	-	-	-	-	-	-
3017	Hose-clamps	-	-	-	-	-	-
3126	Drive ends for screwdriver bits	1173	R	14	-	-	-
3127	Screwdriver bits for slotted head screws	2380	R	14	-	-	-
3800 - T-1*	Axial load fatigue testing	-	-	-	-	-	-
3858	Whitworth pipe threads	-	-	-	-	-	15
4000	Tabular layouts of article characteristics	-	-	-	-	-	-
4014*	Hexagon bolts, product grades A and B	4014**	E	-	-	-	-
4016*	Hexagon bolts, product grade C	4016**	E	-	-	-	-
4017*	Hexagon head screws, product grades A and B	4017**	E	-	-	-	-
4018*	Hexagon head screws, product grade C	4018**	E	-	-	-	-
4032*	Hexagon nuts, style 1, product grades A and B	4032**	E	-	-	-	-
4034*	Hexagon nuts, style 1, product grade C	4034**	E	-	-	-	-
4035*	Hexagon thin nuts, product grades A and B (chamfered)	4035**	E	-	-	-	-
4036*	Hexagon thin nuts, product grade B (unchamfered)	4036**	R	-	-	-	-
4626	Center bolts for laminated leaf springs	-	-	12	-	-	-
4759*	Tolerances for fasteners	4759	E	-	-	-	-
5903	Fish bolts	-	-	-	-	-	-
5914	Baseplate screws with rectangular head	-	-	-	-	-	-
5917	Coupling screws	-	-	-	-	-	-
6303	Knurled nuts	-	-	-	-	-	-
6319	Spherical washers; conical seats	-	-	4	-	-	-
6325	Parallel pins, hardened; tolerance zone m 6	8734	R	8	-	-	-
6330	Thick hexagon nuts	-	-	4	9	-	-
6331	Thick hexagon nuts 1,5 d, with collar	-	-	4	9	-	-
6332	Grub screws with thrust point	-	-	-	-	-	-
6336	Star grips	-	-	-	-	10	-
6340	Washers for clamping devices	-	-	-	-	-	-
6378	Clip bolts	-	-	-	-	-	-
6379	Studs for T-nuts	-	-	4	-	-	-
6791	Semi-tubular pan head rivets	R 1051	R	-	-	-	-
6792	Semi-tubular countersunk head rivets	R 1051	R	-	-	-	-
6796	Conical spring washers	-	-	-	-	-	-
6797	Toothed lock washers	-	-	7	9	-	-
6798	Serrated lock washers	-	-	7	9	10	-
6799	Retaining washers for shafts	-	-	7	9	-	-
6880	Bright key steel	-	-	8	9	-	-
6881	Saddle keys	-	-	-	-	-	-
6883	Taper keys	2492	R	-	-	-	-
6884	Gib-head parallel keys	2492	R	-	-	-	-
6885 - T-1	Parallel keys	R 773	R	8	9	-	-
6886	Taper keys	R 774	R	-	-	-	-
6887	Taper keys with gip head	R 774	R	8	-	-	-
6888	Woodruff keys	3912	R	8	-	-	-
6889	Gib-head saddle keys	-	-	-	-	-	-
6900	Screw and washer assemblies	-	-	6	-	-	-
6901	Tapping screw assemblies	-	-	-	-	-	-

* DIN/ISO standard

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1) See page 15-65-1 for explanation of the correspondance code.



STANDARD	STANDARDIZATION
DIN : 918/202 ISO : - ANSI : -	Index DIN - ISO

DIN	DESIGNATION	ISO	1) Correspondance DIN/ISO	SECTION			
				STEEL	STAINLESS STEEL	NON- FERROUS	OTHERS
6902	Washers for screw assemblies	-	-	-	-	-	-
6903	Washers for tapping screw assemblies	-	-	-	-	-	-
6904	Curved spring washers for screw assemblies	-	-	-	-	-	-
6905	Spring washers for screw assemblies	-	-	-	-	-	-
6906	Lock washers for screw assemblies	-	-	-	-	-	-
6907	Serrated lock washers for screw assemblies	-	-	-	-	-	-
6908	Conical spring washers for screw assemblies	-	-	-	-	-	-
6911	Hexagon socket screw keys with pilot	-	-	2	-	-	-
6912	Hexagon socket head cap screws with centre hole and low head	-	-	2	9	-	-
6913	Spring lock washers with safety rings	-	-	-	-	-	-
6914	Hexagon bolts with large widths across flats for high tensile structural bolting	7412	R	1	-	-	-
6915	Hexagon nuts with large widths across flats for high tensile structural bolting	7414	R	1	-	-	-
6916	Round washers for high-tensile structural bolting	7416	R	1	-	-	-
6917	Square taper washers for I-sections for high-tensile structural bolting	-	-	1	-	-	-
6918	Square washers for U-sections for high-tensile structural bolting	-	-	1	-	-	-
6921	Hexagon flange bolts	DIS 8102/04	R	1	-	-	-
6922	Hexagon flange bolts with reduced shank	DIS 8100/14	R	-	-	-	-
6923	Hexagon flange nuts	4161	R	3	9	-	-
6924	Prevailing torque type hexagon nuts, non-metallic insert	7040	R	-	-	-	-
6925	Prevailing torque type hexagon nuts; all metal nuts	7042	R	-	-	-	-
6926	Prevailing torque type hexagon flange nuts; non-metallic insert	7043	R	-	-	-	-
6927	Prevailing torque type hexagon flange nuts; all metal nuts	7044	R	-	-	-	-
6928	Hexagon washer head tapping screws	7053	-	-	-	-	-
7045*	Cross recessed pan head screws, product grade A	7045	E	-	-	-	-
7046*	Cross recessed countersunk flat head screws (common head style), product grade A	7046	E	-	-	-	-
7047*	Cross recessed raised countersunk head screws (common head style), product grade A	7047	E	-	-	-	-
7049*	Cross recessed pan head tapping screws	7049	E	-	-	-	-
7050*	Cross recessed countersunk (flat) head tapping screws (common head style)	7050	E	-	-	-	-
7051*	Cross recessed raised countersunk (oval) head tapping screws	7051	E	-	-	-	-
7160	ISO-Deviations for shafts	286	-	-	-	-	15
7161	ISO-Deviations for holes	286	-	-	-	-	15
7274	Steel canisters	-	-	-	-	-	-
7331	Compression rivets	-	-	-	-	-	-
7337	Blind rivets; with break mandrel	-	-	8	-	-	-
7338	Rivets for break and clutch linings	-	-	-	-	-	-
7339	Tubular rivets (one piece)	-	-	-	-	-	-
7340	Tubular rivets cut from the tube	-	-	-	-	-	-
7341	Rivet pins	R 1051	R	-	-	-	-
7343	Spirol pins; medium duty	8750/51	R	8	9	-	-
7344	Spirol pins; heavy duty	8748	R	8	-	-	-
7346	Spring type straight pins; slotted; slight type	-	-	-	-	-	-
7349	Washers for bolts with heavy type spring pins	-	-	7	9	-	-
7426	Hexagon insert bits for hexagon socket screws	1173	R	14	-	-	-
7500	Thread rolling screws and bolts	-	-	6	-	-	15
7504	Self drilling screws and bolts	-	-	6	6	6	-
7513	Thread cutting screws; hexagon screws and slotted head screws	-	-	6	-	-	-
7516	Thread cutting screws; cross recessed head screws	-	-	6	-	-	-
7603	Sealing rings for pipe unions and screw plugs	-	-	-	-	10	-
7604	Hexagon head screw plugs light type cylindrical thread	-	-	-	-	-	-
7708	Plastics; moulding materials;	-	-	-	-	-	15
7721*	Countersunk head screws, head configuration and gauging	7721**	E	-	-	-	-
7952	Sheet metal anchorage with threads	-	-	-	-	-	-
7962	Cross recesses for screws	4757	R	-	-	-	-
7964	Bolts and screws with coarse thread and reduced shank	-	-	-	-	-	-
7965	Screwed inserts	-	-	3	-	-	-
7967	Self locking counter nuts	-	-	3	9	-	-
7968	Hexagon fit bolts	-	-	-	-	-	-
7969	Slotted countersunk head bolts for steel structures	-	-	-	-	-	-
7970	Tapping screw thread	1478	R	-	-	-	15
7971	Slotted pan head tapping screws	1481	R	6-14	9-14	10	-
7972	Slotted countersunk head tapping screws	1482	R	6	9	-	-
7973	Slotted raised countersunk head tapping screws	1483	R	6	9	-	-
7975	Core hole diameters for tapping screws	-	-	-	-	-	15
7976	Hexagon head tapping screws	1479	R	6	-	-	-
7977	Taper pins with thread ends and constant point lengths	8737	R	8	-	-	-
7978	Taper pins with internal thread	8736	R	8	-	-	-

* DIN/ISO standard

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STANDARDIZATION

Index DIN - ISO

STANDARD							
DIN : 918/202 ISO : - ANSI : -							
DIN	DESIGNATION	ISO	1) Correspondance DIN/ISO	SECTION			
				STEEL	STAINLESS STEEL	NON- FERROUS	OTHERS
7979	Parallel pins with internal thread	8733/35	R	8	-	-	-
7980	Spring lock washers for screws with cylindrical heads	-	-	7	9	-	-
7981	Cross recessed pan head tapping screws	7049	R	6	9	10	-
7982	Cross recessed countersunk head tapping screws	7050	R	6	9	-	-
7983	Cross recessed raised countersunk head tapping screws	7051	R	6	9	-	-
7984	Hexagon socket head cap screws with low head	-	-	2	9	-	-
7985	Cross recessed raised cheese head screws	7045	R	6	9	-	-
7988	Cross recessed raised countersunk (oval) head screws	-	-	-	-	-	-
7989	Washers for steel constructions	-	-	7	-	-	-
7990	Hexagon bolts and nuts for steel structures	-	-	1	-	-	-
7991	Hexagon socket countersunk head screws	-	-	2	9	-	-
7992	Tee-head bolts with large heads	-	-	-	-	-	-
7993	Snap rings	-	-	-	-	-	-
7995	Cross recessed raised countersunk head wood screws	-	-	-	-	-	-
7996	Cross recessed round head wood screws	-	-	6	-	-	-
7997	Cross recessed countersunk head wood screws	-	-	-	-	-	-
7998	Threads for wood screws	-	-	-	-	-	-
7999	High tensile strength hexagon fit bolts with large width across flats for structural bolting	-	-	-	-	-	-
8140	Wire thread inserts	-	-	-	14	-	-
8673*	Hexagon nuts, style 1, fine pitch product grades A and B	8673**	E	-	-	-	-
8674*	Hexagon nuts, style 2, fine pitch, product grades A and B	8674**	E	-	-	-	-
8675*	Hexagon thin nuts, fine pitch, product grades A and B	8675**	E	-	-	-	-
8676*	Hexagon head screws, fine pitch, product grades A and B	8676**	E	-	-	-	-
8748*	Spring type straight slotted pins, coiled, heavy duty	8748	E	8	-	-	-
8749*	Pins and grooved pins, shear test	8749	E	-	9	-	-
8750*	Spring type straight pins, coiled standard duty	8750	E	-	-	-	-
8765*	Hexagon head bolts, fine pitch, product grades A and B	8765**	E	-	-	-	-
9021	Washers with outside diameter ≈ x 3 nominal thread diameter	7093	R	7	9	10	-
9045	Snap rings	-	-	-	-	-	-
9841	Hexagon socket head shoulder screw	7379	R	-	-	-	-
11014	Countersunk double-nip bolts	-	-	-	-	-	-
11023	Linch pins	-	-	-	-	-	-
11024	Spring cotter of a bolt	-	-	8	-	-	-
15237	Seating screws and cupped washers for the attachment of components to belts	-	-	-	9	-	-
16903	Inserts nuts for plastic mouldings	-	-	-	-	-	-
21346	Square head bolts for shaft guides	-	-	-	-	-	-
22424	Triangle head bolts	-	-	-	-	-	-
22425	Triangle nuts	-	-	-	-	-	-
24536	Graphical symbols for stone bolts and hammer head bolts	-	-	-	-	-	-
25192	Hammer head bolts	-	-	-	-	-	-
25193	Mushroom head anchor screws	-	-	-	-	-	-
25195	Countersunk bolts with double nip	-	-	-	-	-	-
25197	Cap bolts	-	-	-	-	-	-
25200	Screws, bolts and nuts for rail vehicles	-	-	-	-	-	-
28129	Lifting nut; for covers	-	-	-	-	-	-
30386	Hexagonal nuts; rounded acme thread	-	-	-	-	-	-
30387	Shouldered nuts; metric fine thread rounded acme thread	-	-	-	-	-	-
30389	Hexagon and castle nuts with knuckle thread	-	-	-	-	-	-
43699 (withdrawn)	Contact spring lock washers	-	-	7	-	-	-
50049***	Documents on materials testing	-	-	-	-	-	15
50049 BBL1	Suggestions for the configuration of documents	-	-	-	-	-	15
50150	Hardness conversion tables	4964	R	-	-	-	15
50914	Testing the resistance of stainless steels to intergranular corrosion	3651	R	-	-	-	15
71412	Lubricating nipples; cone type	3799	R	12	12	-	-
71752	Fork joints; yokes	-	-	4	-	-	-
71802	Ball stud and tie rod sockets with spring lock	-	-	4	-	-	-
74361 - T-2	Conical spring washers for wheel bolts	-	-	12	-	-	-
82101	Shackles	-	-	4	9	-	-

* DIN/ISO standard

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*** This DIN standard is equal to the European standard EN 10204

1) See page 15-65-1 for explanation of the correspondance code.



STANDARDIZATION

Index ISO - DIN - ANSI

STANDARD

DIN : 918
ISO : -
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1) correspondance				1) correspondance			
ISO	DIN	ISO/DIN	ANSI	ISO	DIN	ISO/DIN	ANSI
225**	225*	E	-	3800/1	Teil 1 - 3800*	E	-
228**	228*	E	-	3912	6888	R	-
262	13 - Teil 13	R	-	4014**	4014*	E	B 18.2.3.1 M
272	272*	E	-	4015**	-	-	B 18.2.3.2 M
273**	273*	E	-	4016**	4016*	E	B 18.2.3.5 M
286	7160	R	-	4017**	4017*	E	B 18.2.3.1 M
299	787	-	B 5.1	4018**	4018*	E	B 18.2.3.5 M
299	508	-	-	4026	913	R	B 18.3.6 M
638/9	1651	-	-	4027	914	R	B 18.3.6 M
691	475 - Teil 2	R	-	4028	915	R	B 18.3.6 M
R 773	6885 - Teil 1	R	-	4029	916	R	B 18.3.6 M
R 774	6886/6887	R	-	4032**	4032*	E/R	B 18.2.4.1 M
839/2	2082 - Teil 1	R	-	4033**	-	-	B 18.2.4.2 M
885	-	-	-	4034**	4034*	E	-
887	-	-	-	4035**	4035*	E	B 18.2.4.5 M
888	-	-	-	4036**	4036*	E	-
898/1**	898 - Teil 1*	E	-	4042	267 - Teil 9	R	-
898/2**	898 - Teil 2*	E	-	4154	-	-	-
898/5	898 - Teil 5*	E	-	DIS 4155	-	-	-
898/6	898 - Teil 6*	E	-	4161	6923	R	B 18.2.4.4 M
898/7	267 Teil 25	R	-	4162	-	-	-
965/2	13 - Teil 20 to 23	R	B 1.13 M	4166	-	-	-
1085	475 - Teil 3	R	-	4753	78	R	-
1173	3126	R	-	4755	76 - Teil 1	R	-
1207	84	R	B 18.6.7 M	4757	7962	R	-
1234	94	R	-	4759/1	4759 - Teil 1*	E	-
1461	267 - Teil 10	R	-	4759/2	267 - Teil 6	R	-
1478	7970	R	B 18.6.5 M	4759/3	522	R	-
1479	1479*	E	B 18.6.5 M	4762	912	R	B 18.3.1 M
1481	1481*	E	B 18.6.5 M	4766	551	R	-
1482	1482*	E	B 18.6.5 M	4775	-	-	-
1483	1483*	E	B 18.6.5 M	4954	1654	R	-
R 1501	14 - Teil 1 to 4	R	-	4964	50150	R	-
1504	2244	R	-	5864	-	-	B 1.1
1580	1580*	E	B 18.6.7 M	6157/1**	267 - Teil 19	R	-
1711	899	R	-	DIS 6157/2	DIN EN 493	R	-
1891	1891*	E	B 18.12	6157/3**	267 - Teil 19	R	B 18.16.3 M
2009	2009*	E	B 18.6.7 M	7040	6924	R	B 18.16.3 M
2010	2010*	E	B 18.6.7 M	7041	-	-	B 18.16.3 M
2320	267 - Teil 15	R	B 18.16.1 M	7042	6925	R	-
2338	7	R	-	7043	6926	R	B 18.16.3 M
2339	1	R	-	7044	6927	R	B 18.16.3 M
2340	1443	R	-	7045	7045*	R	B 18.16.7 M
2341	1444	R	-	7046	7046*	R	-
2342	427	R	-	7047	7047*	R	-
2380	3127	R	-	7049	7049*	R	-
2491	6885 - Teil 3	R	-	7050	7050*	R	-
2492	6883/84	R	-	7051	7051*	R	-
2702	267 - Teil 12	R	-	7053	6928	R	-
2770	-	-	-	7089	125 A	R	B 18.22 M
2903	103 - Teil 5 and 7	E	-	7090	125 B	R	-
2936	911	-	B 18.3.2 M	7091	126	R	B 18.22 M
3117	268	R	-	7092	433	R	-
3117	271	R	-	7093	9021	R	-
3266	580	R	-	7094	440	R	-
3269	267 - Teil 5	R	-	7378	962	R	-
3506	267 - Teil 11	R	-	7379	9841	R	B 18.3.3 M
3508	76 - Teil 1	R	-	7380	-	R	B 18.3.4 M
3651	50914	R	-	7411	-	R	B 14.3.4 M
3799	71412	R	-	7412	6914	R	B 18.2.3.7 M

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1) See page 15-65-1 for an explanation of the code letters.



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STANDARD

DIN : 918
ISO : -
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ISO	DIN	1) correspondance		ISO	DIN	1) correspondance	
		ISO/DIN	ANSI			ISO/DIN	ANSI
7413	-	-	-				
7414	6915	R	-				
7415	-	-	-				
7416	6916	R	-				
7417	-	-	-				
7434	553	R	-				
7435	417	R	-				
7436	438	R	-				
7719	-	-	B 18.16.3 M				
7720	-	-	B 18.16.3 M				
7721**	7721*	E	-				
DIS 8102	6921/22	R	B 18.2.3.4 M				
DIS 8104	6921/22	R	-				
8673**	8673*	E	-				
8674**	8674*	E	-				
8675**	8675*	E	-				
8676**	8676*/961	E/R	-				
8677	603	R	-				
8733	7979	R	-				
8734	6325	R	-				
8735	7979	R	-				
8736	7978	R	-				
8737	7977	R	-				
8738	1440	R	-				
8739	1470	R	-				
8740	1473	R	-				
8741	1474	R	-				
8742	1475	R	-				
8743	1475	R	-				
8744	1471	R	-				
8745	1472	R	-				
8746	1476	R	-				
8747	1477	R	-				
8748	8748*	E	-				
8749	8749*	E	-				
8750	8750*	E	-				
8751	7343	R	-				
8752	1481	R	-				
8765**	8765*/960	E/R	-				
8839**	267 - Teil 18	R	-				
8991	962	R	-				
8992	267 - Teil1	R	-				
10509	-	-	-				

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PROFESSIONAL LITERATURE

on fasteners technology



STANDARDS - HANDBOOKS

- **Worldwide**
ISO Standards Handbook 18. Fasteners and screw threads.
Recueil de normes ISO 18 • Elements de fixation et filetages.
- **Germany**
DIN - Taschenbuch 10*. Mechanische Verbindungselemente 1, Schrauben, Massnormen
DIN - Taschenbuch 43. Mechanische Verbindungselemente 2, Bolzen, Stifte, Niete, Keile, Stell- und Sicherungsringe.
DIN - Taschenbuch 55. Mechanische Verbindungselemente 3, Technische Lieferbedingungen, Schrauben und Muttern.
DIN - Taschenbuch 140*. Mechanische Verbindungselemente 4, Muttern, Zubehörteile, Massnormen.
DIN - Taschenbuch 193. Mechanische Verbindungselemente 5, Grundnormen.
DIN - Taschenbuch 252. Mechanische Verbindungselemente 6, DIN ISO Normen-Schrauben, Muttern. Technische Lieferbedingungen.
DIN - Taschenbuch 41. Schraubwerkzeuge.
DIN - Taschenbuch 45. Gewinde.
DIN - Taschenbuch 197. Längenprüftechnik 2. Lehren.
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