

# Steel hexagon nuts with large width across flats for high-strength structural bolting

**DIN**  
**6915**

ICS 21.060.20

Supersedes  
October 1989 edition.

Sechskantmuttern mit großen Schlüsselweiten für Verbindungen mit HV-Schrauben in Stahlkonstruktionen

*In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.*

## Foreword

This standard has been prepared by Technical Committee *Schraubenverbindungen für den Stahlbau* of the *Normenausschuß Mechanische Verbindungselemente* (Fasteners Standards Committee).

## Amendments

This standard differs from the October 1989 edition in that the nut height is now to be 20 mm (instead of 19 mm) for M24 nuts and references have been updated.

## Previous editions

DIN 6915: 1962-08, 1971-01, 1979-03, 1989-10.

All dimensions are in millimetres.

## 1 Scope

This standard specifies dimensions and technical delivery conditions for steel hexagon nuts with large width across flats for use with DIN 6914 high-strength bolting in friction grip and shear bolt connections (cf. DIN 18800-1) in structural steelwork.

## 2 Normative references

This standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the titles of the publications are listed below. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

DIN 13-12	General purpose ISO metric screw threads – Coarse and fine pitch threads with diameters from 1 mm to 300 mm – Selected diameters and pitches
DIN 13-15	ISO metric screw threads – Fundamental deviations and tolerances for screw threads of 1 mm diameter and larger
DIN 267-02	Fasteners – Technical delivery conditions – Product grades and tolerances
DIN 267-10	Fasteners – Technical delivery conditions – Hot-dip galvanized components
DIN 4000-2	Tabular layouts of article characteristics for bolts, screws and nuts
DIN 6914	High-strength hexagon head bolts with large widths across flats for structural steel bolting
DIN 18800-1	Structural steelwork – Design and construction
DIN EN 493	Fasteners – Surface discontinuities – Nuts

Continued on pages 2 and 3.

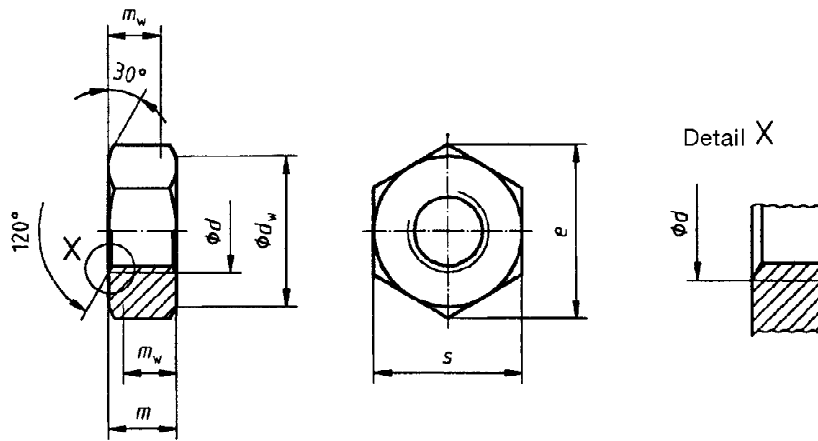
Translation by DIN-Sprachendienst.

In case of doubt, the German-language original should be consulted as the authoritative text.

- DIN EN 20898-2 Mechanical properties of fasteners – Part 2: Nuts with specified proof load values – Coarse thread
- DIN EN ISO 3269 Fasteners – Acceptance inspection (ISO/DIS 3269 : 1998)\*
- DIN EN ISO 4042 Fasteners – Electroplated coatings (ISO 4042 : 1999)
- DIN EN ISO 4759-1 Tolerances for fasteners – Part 1: Bolts, screws, studs and nuts – Product grades A, B and C (ISO/DIS 4759-1 : 1997)\*
- DIN EN ISO 10683 Fasteners – Non-electrically applied zinc flake coatings (ISO/DIS 10683 : 1999)\*
- ISO 8992 : 1986 Fasteners – General requirements for bolts, screws, studs and nuts

### 3 Dimensions

Nut dimensions shall be as given in figure 1 and table 1. The nuts shall be countersunk at an angle of 120° on both sides to diameter  $d$ .



$m_w$  = minimum wrenching height (equal to  $0,8 m_{min}$ ).

**Table 1: Nut dimensions**

Thread size ( $d$ )	M12	M16	M20	M22	M24	M27	M30	M36
$P$	1,75	2	2,5	2,5	3	3	3,5	4
$d_w^{1)}$ min.	20	25	30	34	39	43,5	47,5	57
$e$ min.	23,91	29,56	35,03	39,55	45,20	50,85	55,37	66,44
$m$ max. (nominal size)	10	13	16	18	20	22	24	29
$m$ min.	9,64	12,3	14,9	16,9	18,7	20,7	22,7	27,7
$m_w$ min.	7,71	9,84	11,92	13,52	14,96	16,56	18,16	22,16
$s$ max. (nominal size)	22	27	32	36	41	46	50	60
$s$ min.	21,16	26,16	31	35	40	45	49	58,8
Approximate mass (7,85 kg/dm <sup>3</sup> ) per 1 000 units, in kg	23,3	44,8	73,9	104	163	224	300	515

<sup>1)</sup> The maximum of  $d_w$  shall not exceed the actual width across flats.

\*) Currently at draft stage.

#### 4 Technical delivery conditions

Material		Steel
General requirements		As specified in ISO 8992.
Thread	Tolerance	6H
	As specified in	DIN 13-12 and DIN 13-15.
Mechanical properties <sup>1)</sup>	Property class	10
	As specified in	DIN EN 20898-2.
Limit deviations and geometrical tolerances	Product grade	B
	As specified in	DIN EN ISO 4759-1.
Surface finish		As processed. DIN EN ISO 4042 applies with regard to electroplating. DIN EN ISO 10683 applies with regard to zinc flake coatings. DIN 267-10 applies with regard to hot-dip galvanizing. DIN 267-2 applies with regard to surface roughness. DIN EN 493 applies with regard to the widening test and permissible surface discontinuities.
Acceptance inspection		DIN EN ISO 3269 applies with regard to acceptance inspection.
<sup>1)</sup> Steel bolt/nut assemblies using DIN 6914 bolts and DIN 6915 nuts are designed to comply with the requirement that if an adequately lubricated assembly fails due to overtightening, stripping of the thread occurs rather than fracture of the bolt.		

#### 5 Designation

Designation of an M20 steel hexagon nut with large width across flats, of property class 10:

Nut DIN 6915 – M20

The DIN 4000-2-7-1 tabular layout of article characteristics shall apply to nuts covered in this standard.

#### 6 Marking

Nuts shall be marked in accordance with DIN EN 20898-2, and the symbol HV imprinted on the side face.