# INTERNATIONAL STANDARD

Third edition 2003-12-01

## Hexagon socket set screws with cup point

Vis sans tête à six pans creux, à bout cuvette

# iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO 4029:2003 https://standards.iteh.ai/catalog/standards/sist/34c78c75-7475-4d67-ad3acb975e9330ac/iso-4029-2003



Reference number ISO 4029:2003(E)

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### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 4029 was prepared by Technical Committee ISO/TC 2, Fasteners.

This third edition cancels and replaces the second edition (ISO 4029 1993), which has been technically revised.

## (standards.iteh.ai)

ISO 4029:2003 https://standards.iteh.ai/catalog/standards/sist/34c78c75-7475-4d67-ad3acb975e9330ac/iso-4029-2003

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<u>ISO 4029:2003</u> https://standards.iteh.ai/catalog/standards/sist/34c78c75-7475-4d67-ad3acb975e9330ac/iso-4029-2003

## Hexagon socket set screws with cup point

### 1 Scope

This International Standard specifies the characteristics of hexagon socket set screws with cup point and threads from M1,6 up to and including M24 and of product grade A.

If, in special cases, specifications other than those listed in this International Standard are required, they should be selected from existing International Standards, e.g. ISO 261, ISO 898-5, ISO 965-2, ISO 3506-3 and ISO 4759-1.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

iTeh STANDARD PREVIEW ISO 225, Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions (standards.iten.ai)

ISO 261, ISO general-purpose metric screw threads — General plan ISO 4029:2003

ISO 898-5, Mechanical properties of fasteners made of carbon steel and alloy steel — Part 5: Set screws and similar threaded fasteners not under tensile stresses -4029-2003

ISO 965-2, ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality

ISO 965-3, ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw threads

ISO 3269, Fasteners — Acceptance inspection

ISO 3506-3, Mechanical properties of corrosion-resistant stainless-steel fasteners — Part 3: Set screws and similar fasteners not under tensile stress

ISO 4042, Fasteners — Electroplated coatings

ISO 4759-1, Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C

ISO 6157-1, Fasteners — Surface discontinuities — Part 1: Bolts, screws and studs for general requirements

ISO 8839, Mechanical properties of fasteners — Bolts, screws, studs and nuts made of non-ferrous metals

ISO 8992, Fasteners — General requirements for bolts, screws, studs and nuts

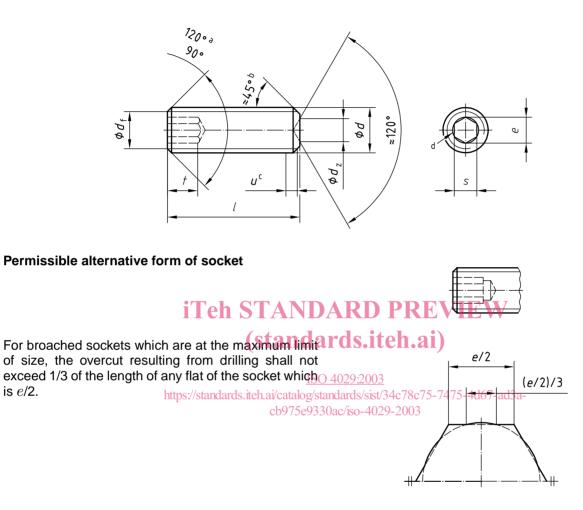
ISO 10683, Fasteners — Non-electrolytically applied zinc flake coatings

ISO 23429, Gauging of hexagon sockets

### 3 Dimensions

See Figure 1 and Table 1.

Symbols and designations of dimensions are specified in ISO 225.



- <sup>a</sup> The 120° angle is a requirement for short-length screws of nominal length, l, situated in the shaded areas in Table 1.
- <sup>b</sup> The 45<sup>°</sup> angle applies only to the portion of the point situated below the root diameter of the thread.
- <sup>c</sup> Incomplete thread u < 2P.
- <sup>d</sup> A slight rounding or countersink at the mouth of the socket is permissible.

#### Figure 1

#### Table 1 — Dimensions

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	max.         0.80         1.00         1.20         1.40         2.00         2.50         3.00         5.0         6.0         8.00         10.00         14.00         16.00           min.         0.55         0.75         0.95         1.15         1.75         2.25         2.75         4.7         5.7         7.64         9.64         13.57         15.57           min.         0.809         1.011         1.454         1.733         2.303         2.873         3.443         4.583         5.723         6.663         9.149         11.29         13.71           mom.         0.7         0.91         1.3         1.5         2         2.55         3.08         4.095         5.14         6.14         8.175         10.175         12.21           min.         0.710         0.887         1.275         1.52         2.02         2.55         3.05         5         6         8         10         12         15           min.         0.710         0.887         1.27         1.52         2         3         3.5         5         6         8         10         12         15           min.         min.         n.52         1.07	Thread (	d)		M1,6	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
$ \frac{I_{4}}{I_{4}} \\ min. 0,55 0,75 0,95 1,15 1,75 2,25 2,76 4,7 5,7 7,64 9,64 13,57 1 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, $	min.         0.55         0.75         0.96         1.15         1.75         2.26         2.75         4.7         5.7         7.64         9.64         13.57         15.57           min.         0.809         1.011         1.454         1.733         2.303         2.873         3.443         4.583         5.723         6.863         9.149         11.429         13.71           nom.         0.7         0.91         1.30         1.58         2.008         2.58         3.04         5         6         8         100         12           min.         0.710         0.887         1.275         1.52         2.02         2.52         3.02         4.020         5.02         6.02         8.025         10.025         12.03           min.         min.         0.77         0.88         1.2         1.52         2.02         2.52         3.05         5         6         8         100         12         15           min.         max.         nemax.         nemax.         nemax.         nemax.         nemax.         nemax.         nemax.           min.         max.         0.77         0.88         0.029         0.029         0.029         0.020	Pa			0,35	0,4	0,45	0,5	0,7	0,8	1	1,25	1,5	1,75	2	2,5	3
min.       0,55       0,75       0,95       1,15       1,75       2,25       2,75       4,7       7,57       7,64       9,64       13,57       1         b. c       min.       0,809       1,011       1,454       1,733       2,303       2,873       3,443       4,583       5,723       6,663       9,149       11,429       1         p. c       min.       0,770       0,9       1,3       1,5       2       2,5       3       4       5       6       8       100       1         g. d       0,710       0,887       1,275       1,52       2,022       2,52       3,024       4,025       5,14       6,14       8,175       10,075       1         min.       d       0,710       0,887       1,27       1,52       2,022       2,52       3,024       4,025       6,02       8,025       10,012       10       12       10       12       10       12       10       12       10       12       10       12       10       12       10       11       11       12       1,55       2,5       3       4       4,8       6,4       8       10,10       10       10       10       <	min. $\approx$ Minor thread diameter           min.         0.809         1.011         1.454         1.733         2.903         2.873         3.443         4.583         5.723         6.863         9.149         11.429         13.71           max.         0.724         0.913         1.300         1.58         2.08         2.58         3.08         4.095         5.14         6.14         8.175         10.175         12.21           max.         0.724         0.813         1.275         1.52         2.02         2.52         3.02         4.020         5.02         6.028         8.025         10.025         12.03           min. $\frac{d}{1.5}$ 1.77         2         2         2.5         3         3.5         5         6         8         10         12         15           l         min.         max.         nor5         0.025         0.037         0.063         1         1         1         15           2.3         2.7         0.026         0.037         0.063         1         1         1         1         1         1         1         1         1         1         1         1         1         1	1		max.	0,80	1,00	1,20	1,40	2,00	2,50	3,00	5,0	6,0	8,00	10,00	14,00	16,00
gb c         min.         0.809         1.011         1.454         1.733         2.303         2.873         3.443         4.583         5.723         6.863         9.149         11.429         1           sc         max.         0.72         0.91         1.300         1.58         2         2.5         3         4         5         6         8         10         1           max.         0.724         0.913         1.300         1.58         2.08         2.58         3.08         4.095         5.14         6.14         8.175         10.175         1           min.         0.71         0.887         1.275         1.52         2.02         2.52         3.02         4.020         5.02         6.028         10.025         1           t         min.         0.7         0.8         1.2         1.5         2         2         3         4         4.88         6.4         8         10         12         1         12         1         12         1         12         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1	min.         0.809         1.011         1.454         1.733         2.303         2.873         3.443         4.563         5.723         6.863         9.149         11.429         13.71           max.         0.724         0.913         1.300         1.58         2.08         2.58         3.08         4.095         5.14         6.14         8.175         10.175         12.21           max.         0.710         0.887         1.275         1.52         2.02         2.52         3.02         4.020         5.02         6.02         8.025         10.025         12.23           min.         0.710         0.887         1.27         1.52         2.02         2.5         3         3.5         6         8         10         12         15           min. $\frac{0.7}{0.8}$ 0.7         0.8         1.2         1.5         2         2         3         4         4.8         6.4         8         10         12         15           l         min.         max.         0.70         0.8         1.2         1.2         1.5         1.2         1.2         1.5         1.2         1.5         1.2         1.0         1.0         1.0	1 <sub>z</sub>		min.	0,55	0,75	0,95	1,15	1,75	2,25	2,75	4,7	5,7	7,64	9,64	13,57	15,57
$s^{c} \qquad \qquad$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	d <sub>f</sub>		min.		•				pprox Mine	or thread	l diamete	er				
se       max.       0.724       0.913       1.300       1.58       2.08       2.58       3.08       4.095       5.14       6.14       8.175       10.175       1         min.       0.710       0.887       1.275       1.52       2.02       2.52       3.02       4.020       5.02       6.02       8.025       10.025       1         min. $\frac{d}{e}$ 0.7       0.8       1.2       1.2       1.5       2       2       3       4       4.8       6.4       8       1         nom.       min. $\frac{d}{e}$ 1.5       1.7       2       2       2.5       3       3.5       5       6       8       10       12         nom.       min.       max.       Approximate mass, in kilograms per 1 000 pieces ( $\rho = 7.85  kg/dm^3$ ) (for information only)       1	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	<sub>e</sub> b, c		min.	0,809	1,011	1,454	1,733	2,303	2,873	3,443	4,583	5,723	6,863	9,149	11,429	13,71
min.       0,710       0,887       1,275       1,52       2,02       2,52       3,02       4,020       5,02       6,02       8,025       10,025       1         nm. $\frac{d}{e}$ 0,7       0,8       1,2       1,2       1,5       2       2       3       4       4,8       6,4       8       10       12         nm. $\frac{d}{e}$ 1,5       1,7       2       2       2,5       3       3,5       5       6       8       10       12         nom.       min.       max.       Approximate mass, in kilograms per 1 000 pieces ( $\rho = 7.85  kg/cm^3$ ) ( $br information only$ )         2       1,8       2,2       0,019       0.029        L <thl< th="">       L       L       <thl< <="" td=""><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td><td></td><td></td><td>nom.</td><td>0,7</td><td>0,9</td><td>1,3</td><td>1,5</td><td>2</td><td>2,5</td><td>3</td><td>4</td><td>5</td><td>6</td><td>8</td><td>10</td><td>12</td></thl<></thl<>	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			nom.	0,7	0,9	1,3	1,5	2	2,5	3	4	5	6	8	10	12
t       in       in       0.7       0.8       1.2       1.2       1.5       2       2       3       4       4.8       6.4       8         nom.       min.       max.       Approximate mass, in kilograms per 1 000 pieces ( $\rho = 7,85$ kg/dm <sup>3</sup> ) (for information only)         2       1.8       2.2       0.019       0.029       Image: constraint of the state	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3 <sup>C</sup>		max.	0,724	0,913	1,300	1,58	2,08	2,58	3,08	4,095	5,14	6,14	8,175	10,175	12,21
$ \frac{1}{10} + \frac{1}{10}$	min.         0.7         0.8         1.2         1.2         1.3         2         2         3         4         4.8         0.4         0         10           l         1.5         1.7         2         2         2.5         3         3.5         5         6         8         10         12         15           min.         max         Approximate mass, in kilograms per 1 000 pieces ( $\rho$ = 7,85 kg/dm <sup>3</sup> ) (for information only)         1         1         2.3         2.7         0.025         0.037         0.063			min.	0,710	0,887	1,275	1,52	2,02	2,52	3,02	4,020	5,02	6,02	8,025	10,025	12,03
l       l <thl>l       <thl>l</thl></thl>	l         l,j         l,j         l         l         l         l,j         l         l         l,j         l         l,j         l         l,j         l         l,j         l <thl> <thl> <thl></thl></thl></thl>	L			0,7	0,8	1,2	1,2	1,5	2	2	3	4	4,8	6,4	8	10
nom.         max.         Approximate mass, in kilograms per 1 000 pieces ( $\rho = 7.85 \text{ kg/dm}^3$ ) (for information only)           2         1.8         2.2         0.019         0.029         Image: Comparison only)           2,5         2.3         2.7         0.025         0.037         0.063         Image: Comparison only)           3         2.8         3.2         0.029         0.044         0.075         0.1         Image: Comparison only)         Image: Comparison only)           4         3.76         4.24         0.037         0.059         0.1         0.14         0.23         Image: Comparison only)         Image: Comparison only)           5         4.76         5.24         0.046         0.074         0.125         0.18         0.305         0.42         Image: Comparison only)         Image: Comparison only)           6         5.76         6.24         0.046         0.074         0.125         0.18         0.53         0.74         Image: Comparison only)         Image: Comparison only)           10         9.71         10.29         0.0148         0.29         0.46         0.83         1.26         1.79         3.14         4.73         6.7         Image: Comparison only)           110         9.71	min.         max.         Approximate mass, in kilograms per 1 000 pieces ( $\rho = 7.85 \text{ kg/dm}^3$ ) (for information only)           1.8         2.2         0.019         0.029	,		min. e	1,5	1,7	2	2	2,5	3	3,5	5	6	8	10	12	15
nom.       max.       max.         2       1,8       2,2       0,019       0,029       Imax       Imax <th< td=""><td>min.       max.         1.8       2.2       0.019       0.029      </td><td></td><td>l</td><td></td><td></td><td>A</td><td></td><td></td><td></td><td></td><td>00 =:</td><td></td><td>7.05</td><td>-l3) (f</td><td>. :</td><td>4:</td><td></td></th<>	min.       max.         1.8       2.2       0.019       0.029		l			A					00 =:		7.05	-l3) (f	. :	4:	
2,5       2,3       2,7       0,025       0,037       0,063       Image: constraint of the strength of the strengt of the strength of the strengt of the strengt of the s	2.3       2.7       0.025       0.037       0.063       Image: constraint of the second secon	nom.	min.	max.		Appro	ximate n	iass, in r	diograms	s per 1 u	uu piece	es ( $\rho =$	7,85 Kg/0	am <sup>2</sup> ) (101	rinforma	tion only)	
3       2.8       3.2       0.029       0.044       0.075       0.1       Image: constraint of the strength of the strengt of the strength of the strength of the strengt of the	2.8       3.2       0.029       0.044       0.075       0.1       Image: constraint of the strength of the strengt of the strength of the strengt of the strengt of the	2	1,8	2,2	0,019	0,029											
4       3,76       4,24       0,037       0,059       0,1       0,14       0,23   <	3,76       4,24       0,037       0,059       0,1       0,14       0,23  <	2,5	2,3	2,7	0,025	0,037	0,063										
5       4.76       5.24       0.046       0.074       0.125       0.18       0.305       0.42 <td>4,76       5,24       0,046       0,074       0,125       0,18       0,305       0,42</td> <td>3</td> <td>2,8</td> <td>3,2</td> <td>0,029</td> <td>0,044</td> <td>0,075</td> <td>0,1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	4,76       5,24       0,046       0,074       0,125       0,18       0,305       0,42	3	2,8	3,2	0,029	0,044	0,075	0,1									
6       5,76       6,24       0,054       0,089       0,15       0,22       0,38       0,54       0,74       ///r       //r	5,76       6,24       0,054       0,088       0.15       0.22       0.38       0.54       0.74       7.71       8,29       0,07       0,119       0,199       0,3       0,53       0,78       1,09       1,88       1       0,148       0,249       0,38       0,65       1,02       1       1       1       1       1       1       1       1       1       1       1       0,299       0,46       0,83       1,26       1,79       3,14       4,73       6,7       1	4	3,76	4,24	0,037	0,059	0,1	0,14	0,23								
8       7,71       8,29       0,07       0,119       0,199       0,3       0,53       0,78       1,09       1,88	7,71       8,29       0,07       0,119       0,199       0,3       0,53       0,78       1,09       1,88             9,71       10,29       0,148       0,249       0,38       0,68       1,02       1,144       2,51       3,72            11,65       12,35       0,299       0,46       0,83       1,26       1,79       3,14       4,73       6,7           15,65       16,35       0,62       41,182       0,174       2,49       4,4       6,73       9,5       15,7          19,58       20,421       ps://standards.ich.a/ca alogsta       0,45%       5,227       3,197       7,6,66       7,872       12,3       20,9       31,1         24,58       25,42       cb9       5933       (ac/so-2,2,62       4,07       7,24       11,2       15,8       27,4       41,4       55,2         29,58       30,42        4,94       8,81       13,7       19,3       33,9       51,7       70,3         34,5       35,5          12       18,7       26,2       46,9       72,3       100	5	4,76	5,24	0,046	0,074	0,125	0,18	0,305	0,42							
10       9,71       10,29       0,148       9249       0.38       0.68       1.02       1.144       2,51       3,72           12       11,65       12,35       0,299       0,46       0,83       1,26       1,79       3,14       4,73       6,7           16       15,65       16,35       0,620       41,182       01,74       2,49       4,4       6,73       9,5       15,7         20       19,58       20,421       ps://standards.it/n.ai/catalog/standards/sta2227       6,79       3,107       7,668       78,724       12,3       20,9       31,1         25       24,58       25,42        cb9       569/33       6,750       2,827       4,07       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42         4,94       8,81       13,7       19,3       33,9       51,7         35       34,5       35,5          10,4       16,2       22,7       40,4       62       40         40       39,5       40,5          10,4       16,2 <td>9,71       10,29       0,148       9249       0.38       0.68       1.02       .144       2,51       3,72          11,65       12,35       0,299       0,46       0,83       1,26       1,79       3,14       4,73       6,7          15,65       16,35       0,62       41,132       01,74       2,49       4,4       6,73       9,5       15,7         19,58       20,42       ps://standards.it.eh.ai/catalog/standards/states/sta</td> <td>6</td> <td>5,76</td> <td>6,24</td> <td>0,054</td> <td>0,089</td> <td>0,15</td> <td>0,22</td> <td>0,38</td> <td>0,54</td> <td>0,74</td> <td></td> <td>W</td> <td></td> <td></td> <td></td> <td></td>	9,71       10,29       0,148       9249       0.38       0.68       1.02       .144       2,51       3,72          11,65       12,35       0,299       0,46       0,83       1,26       1,79       3,14       4,73       6,7          15,65       16,35       0,62       41,132       01,74       2,49       4,4       6,73       9,5       15,7         19,58       20,42       ps://standards.it.eh.ai/catalog/standards/states/sta	6	5,76	6,24	0,054	0,089	0,15	0,22	0,38	0,54	0,74		W				
12       11,65       12,35       0,299       0,46       0,83       1,26       1,79       3,14       4,73       6,7       1         16       15,65       16,35       0,62       40,132       01,74       2,49       4,4       6,73       9,5       15,7       15,7         20       19,58       20,421       ps://stan dards.it ph.a/ca alog/stan dar/st/sts2,227       \$3,197       75,661       78,723       12,3       20,9       31,1         25       24,58       25,42       cb9       5c933       ac/iso - 0,2,82       0,407       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42        cb9       5c933       ac/iso - 0,2,82       0,407       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42         4,94       8,81       13,7       19,3       33,9       51,7       35         35       34,5       35,5          10,4       16,2       22,7       40,4       62       40         40       39,5       40,5          12       18,7       26,2       46,9	11,65       12,35       0,299       0,46       0,83       1,26       1,79       3,14       4,73       6,7       1         15,65       16,35       0,62       4(2,132)       0,1,74       2,49       4,4       6,73       9,5       15,7         19,58       20,42       ps://stal_dards.ich.ai/ca_alog/sta_dart/s/ss2,22       8,797       7,5,661       7,8,724       12,3       20,9       31,1         24,58       25,42       Cb9       56933       ac/iso       0,292       4,07       7,24       11,2       15,8       27,4       41,4       55,2         29,58       30,42        4,94       8,81       13,7       19,3       33,9       51,7       70,3         34,5       35,5         10,4       16,2       22,7       40,4       62       85,3         39,5       40,5         12       18,7       26,2       46,9       72,3       100         44,5       45,5          23,6       33,2       59,8       92,6       130         54,4       55,6            36,6       66,3       103	8	7,71	8,29	0,07	0,119	0,199	0,3	0,53	0,78	1,09	1,88	•				
16       15,65       16,35       0,62       41,132       01,74       2,49       4,4       6,73       9,5       15,7         20       19,58       20,42       ps://standards.it/h.ai/ca.alog/standar/s/s/s/2/2/2/78/3/197       75,661       78,72a       12,3       20,9       31,1         25       24,58       25,42       CD9       /56/33/0 aC/iso-4       2,82       4,07       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42       CD9       /56/33/0 aC/iso-4       2,82       4,07       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42       CD9       /56/33/0 aC/iso-4       2,82       4,94       8,81       13,7       19,3       33,9       51,7         35       34,5       35,5       C       C       4,94       8,81       13,7       19,3       33,9       51,7         40       39,5       40,5       C       C       10,4       16,2       22,7       40,4       62       44,5         44,5       45,5       C       C       C       23,6       33,2       59,8       92,6         55       54,4       55,6	15,65       16,35       0,62       41,132       01,74       2,49       4,4       6,73       9,5       15,7         19,58       20,42       ps://standards.ich.ai/calog/standar,4/s/sis2,22       3,197       75,661       78,922       12,3       20,9       31,1         24,58       25,42       cb9       5933       acriso       0,282       4,07       7,24       11,2       15,8       27,4       41,4       55,2         29,58       30,42       a       4,94       8,81       13,7       19,3       33,9       51,7       70,3         34,5       35,5       a       a       10,4       16,2       22,7       40,4       62       85,3         39,5       40,5       a       a       12       18,7       26,2       46,9       72,3       100         44,5       45,5       a       a       a       23,6       33,2       59,8       92,6       130         49,5       50,5       a       a       a       a       36,6       66,3       103       145         59,4       60,6       a       a       a       a       a       a       a       a       140,1       72,8	10	9,71	10,29		0,148	0,249	<b>10,38</b>	0,68	1,02	244	2,51	3,72				
20       19,58       20,42t       ps://standards.it ch.ai/cailalog/standards/sis/2;227       83,197       75,661       78,72a       12,3       20,9       31,1         25       24,58       25,42       cb9 / 5e933       ac/iso       02,82       4,07       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42       ac/iso       02,82       4,07       7,24       11,2       15,8       27,4       41,4       41,4         30       29,58       30,42       ac/iso       02,82       4,94       8,81       13,7       19,3       33,9       51,7       1         35       34,5       35,5       ac/iso       ac/iso       10,4       16,2       22,7       40,4       62       4         40       39,5       40,5       ac/iso       ac/iso       12       18,7       26,2       46,9       72,3       4         45       44,5       45,5       ac/iso       ac/iso       21,2       29,7       53,3       82,6       5         50       49,5       50,5       ac/iso       ac/iso       ac/iso       ac/iso       36,6       66,3       103       ac/iso       36,6 </td <td>19,58       20,42t       ps://standards.it bh.ai/ca       alog/standar,4s/s       s/2,22       78/3, f97       75,661       78,72a       12,3       20,9       31,1         24,58       25,42       cb9       5093.0 ac/iso-       02,82       4,07       7,24       11,2       15,8       27,4       41,4       55,2         29,58       30,42       alog/standar,3       4,94       8,81       13,7       19,3       33,9       51,7       70,3         34,5       35,5       alog/standar,3       10,4       16,2       22,7       40,4       62       85,3         39,5       40,5       alog/standar,3       alog/standar,3       alog/standar,4       alog/standar,4       standar,4       10,4       16,2       22,7       40,4       62       85,3         39,5       40,5       alog/standar,4       alog/standar,4       alog/standar,4       alog/standar,4       alog/standar,4       10,4       16,2       22,7       40,4       62       85,3         44,5       45,5       alog/standar,4       <t< td=""><td>12</td><td>11,65</td><td>12,35</td><td></td><td></td><td>0,299</td><td>0,46</td><td>0,83</td><td>1,26</td><td>1,79</td><td>3,14</td><td>4,73</td><td>6,7</td><td></td><td></td><td></td></t<></td>	19,58       20,42t       ps://standards.it bh.ai/ca       alog/standar,4s/s       s/2,22       78/3, f97       75,661       78,72a       12,3       20,9       31,1         24,58       25,42       cb9       5093.0 ac/iso-       02,82       4,07       7,24       11,2       15,8       27,4       41,4       55,2         29,58       30,42       alog/standar,3       4,94       8,81       13,7       19,3       33,9       51,7       70,3         34,5       35,5       alog/standar,3       10,4       16,2       22,7       40,4       62       85,3         39,5       40,5       alog/standar,3       alog/standar,3       alog/standar,4       alog/standar,4       standar,4       10,4       16,2       22,7       40,4       62       85,3         39,5       40,5       alog/standar,4       alog/standar,4       alog/standar,4       alog/standar,4       alog/standar,4       10,4       16,2       22,7       40,4       62       85,3         44,5       45,5       alog/standar,4       alog/standar,4 <t< td=""><td>12</td><td>11,65</td><td>12,35</td><td></td><td></td><td>0,299</td><td>0,46</td><td>0,83</td><td>1,26</td><td>1,79</td><td>3,14</td><td>4,73</td><td>6,7</td><td></td><td></td><td></td></t<>	12	11,65	12,35			0,299	0,46	0,83	1,26	1,79	3,14	4,73	6,7			
25       24,58       25,42       Cby 5ey33 (ac/iso-4)2,82       4,07       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42       0       0       2,82       4,07       7,24       11,2       15,8       27,4       41,4         30       29,58       30,42       0       0       4,94       8,81       13,7       19,3       33,9       51,7       1         35       34,5       35,5       0       0       10,4       16,2       22,7       40,4       62       1         40       39,5       40,5       0       0       12       18,7       26,2       46,9       72,3         45       44,5       45,5       0       0       0       12       18,7       26,2       46,9       72,3         50       49,5       50,5       0       0       0       23,6       33,2       59,8       92,6       55         54,4       55,6       0       0       0       0       0       0       40,1       72,8       114         NOTE       Commercial lengths are those between the bold stepped lines.       a       0       0       40,1 <td< td=""><td>10,00       20,12       1       2,12       0,10       0,10       0,12       11,0       20,0       0,11         24,58       25,42       CD9 / 56933 (ac/1so- <math>02,82</math>       4,07       7,24       11,2       15,8       27,4       41,4       55,2         29,58       30,42       Image: access of the second seco</td><td>16</td><td>15,65</td><td>16,35</td><td></td><td></td><td></td><td>0,62</td><td>4021320</td><td><u>0</u>3,74</td><td>2,49</td><td>4,4</td><td>6,73</td><td>9,5</td><td>15,7</td><td></td><td></td></td<>	10,00       20,12       1       2,12       0,10       0,10       0,12       11,0       20,0       0,11         24,58       25,42       CD9 / 56933 (ac/1so- $02,82$ 4,07       7,24       11,2       15,8       27,4       41,4       55,2         29,58       30,42       Image: access of the second seco	16	15,65	16,35				0,62	4021320	<u>0</u> 3,74	2,49	4,4	6,73	9,5	15,7		
23       24,36       25,42       1       1       2,02       4,07       7,24       11,2       13,6       27,4       41,4         30       29,58       30,42       1       4,94       8,81       13,7       19,3       33,9       51,7       1         35       34,5       35,5       1       1       10,4       16,2       22,7       40,4       62       1         40       39,5       40,5       1       10,4       16,2       22,7       40,4       62       1         45       44,5       45,5       1       1       12       18,7       26,2       46,9       72,3         45       44,5       45,5       1	24,36 $25,42$ $22,62$ $4,07$ $7,24$ $11,2$ $13,6$ $27,4$ $41,4$ $53,2$ $29,58$ $30,42$ $4,94$ $8,81$ $13,7$ $19,3$ $33,9$ $51,7$ $70,3$ $34,5$ $35,5$ $10,4$ $16,2$ $22,7$ $40,4$ $62$ $85,3$ $39,5$ $40,5$ $12$ $18,7$ $26,2$ $46,9$ $72,3$ $100$ $44,5$ $45,5$ $12$ $18,7$ $26,2$ $46,9$ $72,3$ $100$ $44,5$ $45,5$ $12$ $18,7$ $26,2$ $46,9$ $72,3$ $100$ $44,5$ $45,5$ $12$ $18,7$ $26,2$ $46,9$ $72,3$ $100$ $44,5$ $45,5$ $12$ $18,7$ $26,6$ $33,2$ $59,8$ $92,6$ $130$ $59,4$ $60,6$ $10$ $10$ $10$ $40,1$ $72,8$ $114$ $160$ Commercial lengths are those between the bold stepped lines.         the pitch of the thread.	20	19,58	20,4 <b>21</b>	tps://stai	ndards.it	eh.ai/cat	alog/sta	ndards/s	ist <u>2</u> 3227	8 <mark>9,</mark> 1974	75,6616	7-8, <del>7</del> 2a-	12,3	20,9	31,1	
35       34,5       35,5       10,4       16,2       22,7       40,4       62         40       39,5       40,5       12       18,7       26,2       46,9       72,3         45       44,5       45,5       21,2       29,7       53,3       82,6         50       49,5       50,5       23,6       33,2       59,8       92,6         55       54,4       55,6       23,6       36,6       66,3       103         60       59,4       60,6       24,1       72,8       114         NOTE Commercial lengths are those between the bold stepped lines.	$34,5$ $35,5$ 10,4 $16,2$ $22,7$ $40,4$ $62$ $85,5$ $39,5$ $40,5$ 12 $18,7$ $26,2$ $46,9$ $72,3$ $100$ $44,5$ $45,5$ 12 $18,7$ $26,2$ $46,9$ $72,3$ $100$ $49,5$ $50,5$ 1       1 $21,2$ $29,7$ $53,3$ $82,6$ $115$ $49,5$ $50,5$ 1       1 $23,6$ $33,2$ $59,8$ $92,6$ $130$ $54,4$ $55,6$ 1       1 $40,1$ $72,8$ $114$ $160$ Commercial lengths are those between the bold stepped lines.         the pitch of the thread.         = $1,14 \ s_{min}$ .	25	24,58	25,42			cb9	75e933(	ac/150-2	02 <u>9</u> -20 2,82	<sup>03</sup> 4,07	7,24	11,2	15,8	27,4	41,4	55,2
40       39,5       40,5       1       12       18,7       26,2       46,9       72,3         45       44,5       45,5       1       1       12       18,7       26,2       46,9       72,3         50       49,5       50,5       1       1       12       18,7       26,2       46,9       72,3         50       49,5       50,5       1       1       21,2       29,7       53,3       82,6         50       49,5       50,5       1       1       23,6       33,2       59,8       92,6         55       54,4       55,6       1       1       1       103       103         60       59,4       60,6       1       1       1       40,1       72,8       114         NOTE       Commercial lengths are those between the bold stepped lines.         a       P is the pitch of the thread.	$39,5$ $40,5$ 12 $18,7$ $26,2$ $46,9$ $72,3$ $100$ $44,5$ $45,5$ 21,2 $29,7$ $53,3$ $82,6$ $115$ $49,5$ $50,5$ 23,6 $33,2$ $59,8$ $92,6$ $130$ $54,4$ $55,6$ 36,6 $66,3$ $103$ $145$ $59,4$ $60,6$ 40,1 $72,8$ $114$ $160$ Commercial lengths are those between the bold stepped lines.         the pitch of the thread.         = 1,14 $s_{min}$ .	30	29,58	30,42							4,94	8,81	13,7	19,3	33,9	51,7	70,3
45       44,5       45,5       21,2       29,7       53,3       82,6         50       49,5       50,5       23,6       33,2       59,8       92,6         55       54,4       55,6       36,6       66,3       103         60       59,4       60,6       40,1       72,8       114         NOTE       Commercial lengths are those between the bold stepped lines.       P is the pitch of the thread.	$44,5$ $45,5$ 21,2 $29,7$ $53,3$ $82,6$ 115 $49,5$ $50,5$ 23,6 $33,2$ $59,8$ $92,6$ $130$ $54,4$ $55,6$ 36,6 $66,3$ $103$ $145$ $59,4$ $60,6$ 40,1 $72,8$ $114$ $160$ Commercial lengths are those between the bold stepped lines.         the pitch of the thread.         = 1,14 $s_{min}$ .	35	34,5	35,5								10,4	16,2	22,7	40,4	62	85,3
50       49,5       50,5       23,6       33,2       59,8       92,6         55       54,4       55,6       36,6       66,3       103         60       59,4       60,6       40,1       72,8       114         NOTE Commercial lengths are those between the bold stepped lines.         a       P is the pitch of the thread.	$49,5$ $50,5$ $23,6$ $33,2$ $59,8$ $92,6$ $130$ $54,4$ $55,6$ $36,6$ $66,3$ $103$ $145$ $59,4$ $60,6$ $40,1$ $72,8$ $114$ $160$ Commercial lengths are those between the bold stepped lines.         the pitch of the thread. $= 1,14 \ s_{min}$ .	40	39,5	40,5								12	18,7	26,2	46,9	72,3	100
55         54,4         55,6         36,6         66,3         103           60         59,4         60,6         40,1         72,8         114           NOTE         Commercial lengths are those between the bold stepped lines.         P is the pitch of the thread.         P is the pitch of the thread.	$54,4$ $55,6$ $36,6$ $66,3$ $103$ $145$ $59,4$ $60,6$ $40,1$ $72,8$ $114$ $160$ Commercial lengths are those between the bold stepped lines.         the pitch of the thread. $= 1,14 \ s_{min}.$	45	44,5	45,5									21,2	29,7	53,3	82,6	115
60       59,4       60,6       40,1       72,8       114         NOTE       Commercial lengths are those between the bold stepped lines.       40,1       72,8       114         a       P is the pitch of the thread.       40,1       72,8       114	59,4       60,6       40,1       72,8       114       160         Commercial lengths are those between the bold stepped lines.         the pitch of the thread. $=$ 1,14 $s_{min}$ .	50	49,5	50,5									23,6	33,2	59,8	92,6	130
NOTE Commercial lengths are those between the bold stepped lines. <sup>a</sup> <i>P</i> is the pitch of the thread.	Commercial lengths are those between the bold stepped lines. the pitch of the thread. = 1,14 $s_{min}$ .	55	54,4	55,6										36,6	66,3	103	145
<sup>a</sup> <i>P</i> is the pitch of the thread.	the pitch of the thread. = 1,14 $s_{min}$ .	60	59,4	60,6										40,1	72,8	114	160
	$=$ 1,14 $s_{min}$ .	NOTE (	Commerc	ial length		ose betw	een the	bold ste	oped line	es.				.0,1	,0		
$e_{\min} = 1,14 s_{\min}.$					ad.												
	bined gauging of cocket dimensions a and a see ISO 22420	' $e_{\min}$ =	= 1,14 $s_{\rm rr}$	nin•													

<sup>d</sup> For screws with nominal lengths in the shaded areas.

<sup>e</sup> For screws with nominal lengths below the shaded areas.

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### 4 Requirements and reference International Standards

See Table 2.

Material		Steel	Stainless steel	Non-ferrous metal			
General requirements	International Standard		ISO 8992	<b>L</b>			
Thread	Tolerance	6g					
Inreau	International Standards	ISO 261, ISO 965-2, ISO 965-3					
Mechanical properties	Property class	45H	A1-12H, A2-21H, A3-21H, A4-21H, A5-21H	As agreed			
	International Standards	ISO 898-5	ISO 3506-3	ISO 8839			
Tolerances	Product grade	A					
TOTERATICES	International Standard	ISO 4759-1					
Finish	iTeh STA (sta	As processed Requirements for electroplating are covered in ISO 4042. Requirements for non-electrolytically applied zinc flake coatings are covered in <b>CS</b> . It ISO 10683.	Plain PREVIEW eh.ai)	Plain Requirements for electroplating are covered in ISO 4042.			
Surface discontinuities	https://standards.iteh.ai/	Limits for surface discontinuities are covered in ards/sist/3 ISO 6157-1/iso-4029	4c78c75-74 <del>75</del> -4d67-ad3a -2003				
Acceptability		For acceptance procedure, see ISO 3269.					

### Table 2 — Specifications and reference International Standards

### 5 Designation

EXAMPLE A hexagon socket set screw with cup point, thread M6, nominal length l = 12 mm and of property class 45H, is designated as follows:

Hexagon socket set screw ISO 4029 - M6 $\times$ 12 - 45H

# iTeh STANDARD PREVIEW (standards.iteh.ai)

<u>ISO 4029:2003</u> https://standards.iteh.ai/catalog/standards/sist/34c78c75-7475-4d67-ad3acb975e9330ac/iso-4029-2003