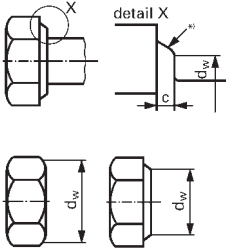
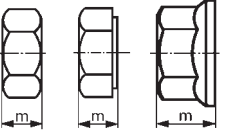
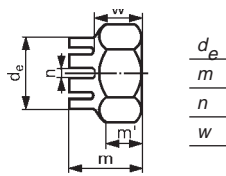


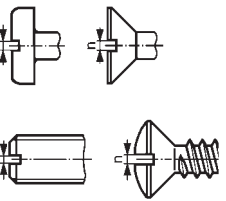
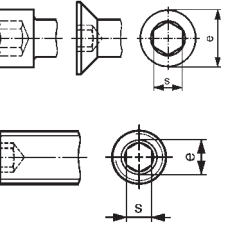
MARYLAND METRICS

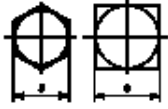


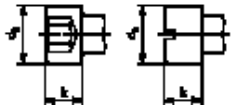
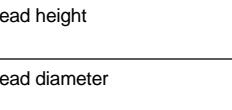
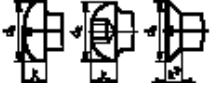
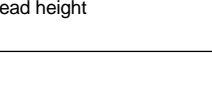
P.O.Box 261 Owings Mills, MD 21117 USA

(410)358-3130 (800)638-1830 Faxes: (410)358-3142 (800)872-9329
<http://mdmetric.com> techinfo@mdmetric.com

TECHNICAL INFORMATION and DATA

Feature	Tolerance for product grades			Notes																							
	A	B	C																								
Bearing area 	$d_w \text{ min.} = s \text{ min.} - IT 16$ for width across flats, 21 mm $d_w \text{ min.} = 0,95 s \text{ min.}$ for width across flats \perp 21 mm $d_w \text{ max.} = s \text{ actual}$			Flange bolts see product standards																							
<table border="1"> <thead> <tr> <th>thread diameter</th> <th>max.</th> <th>c</th> <th>min.</th> </tr> </thead> <tbody> <tr> <td>3 and 4</td> <td>0,4</td> <td></td> <td>0,15</td> </tr> <tr> <td>5 and 6</td> <td>0,5</td> <td></td> <td>0,15</td> </tr> <tr> <td>8 to 14</td> <td>0,6</td> <td></td> <td>0,15</td> </tr> <tr> <td>16 to 36</td> <td>0,8</td> <td></td> <td>0,2</td> </tr> <tr> <td>over 36</td> <td>1</td> <td></td> <td>0,3</td> </tr> </tbody> </table>	thread diameter	max.	c		min.	3 and 4	0,4		0,15	5 and 6	0,5		0,15	8 to 14	0,6		0,15	16 to 36	0,8		0,2	over 36	1		0,3		
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Height of nuts 	$\perp M 12 : h14$ $> M 12 \leq M 18 : h15$ $> M 18 : h16$			h17 Prevailing torque type nuts see product standards																							
Other features  <table border="1"> <tbody> <tr> <td>d_e</td> <td>h14</td> <td>h15</td> <td>h16</td> </tr> <tr> <td>m</td> <td>h14</td> <td>h15</td> <td>h17</td> </tr> <tr> <td>n</td> <td>H14</td> <td>H14</td> <td>H15</td> </tr> <tr> <td>w</td> <td>h14</td> <td>h14</td> <td>h15</td> </tr> </tbody> </table>	d_e	h14	h15	h16	m	h14	h15	h17	n	H14	H14	H15	w	h14	h14	h15											
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Hexagon sockets  <table border="1"> <thead> <tr> <th>s</th> <th>tolerance *)</th> <th>**)</th> </tr> </thead> <tbody> <tr> <td>0,7</td> <td>EF8</td> <td></td> </tr> <tr> <td>0,9</td> <td>JS9</td> <td></td> </tr> <tr> <td>1,3</td> <td>K9</td> <td></td> </tr> <tr> <td>1,5</td> <td>D 9</td> <td>D 10</td> </tr> <tr> <td>2</td> <td>D 10</td> <td>D 11</td> </tr> <tr> <td>2,5</td> <td>D 11</td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td>E 11</td> </tr> <tr> <td>5</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>E 11</td> <td>E 12</td> </tr> <tr> <td>10</td> <td></td> <td></td> </tr> <tr> <td>12</td> <td></td> <td></td> </tr> <tr> <td>14</td> <td></td> <td></td> </tr> <tr> <td>>14</td> <td>D 12</td> <td></td> </tr> </tbody> </table>	s	tolerance *)	**)	0,7	EF8		0,9	JS9		1,3	K9		1,5	D 9	D 10	2	D 10	D 11	2,5	D 11		3			4		E 11	5			6			8	E 11	E 12	10			12			14			>14	D 12				*) Tolerance fields for flat countersunk head screws, button head screws and socket head cap screw of property class 12.9, and socket set screws only. **) For all other products. $e \text{ min.} \perp 1,14 s \text{ min.}$ (values see product standards)
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Feature	Tolerance for product grades				Notes
	A		B		
Width across flats 	s ≤ 30 > 30	tolerance h13 h14	s ≤ 18 $> 18 \leq 60$ $> 60 \leq 180$ > 180	tolerance h14 h15 h16 h17	
Width across corners 	$e \text{ min. } \wedge 1,13 s \text{ min.}$ $e \text{ min. } \wedge 1,12 s \text{ min.}$ for flanged bolts and screws and other cold forged heads without trimming operation				
Head height 	js14	js15	k tolerance < 10 $\equiv 10$	tolerance js16 js17	1) For flanged hexagon bolts and screws k is defined only as a maximum.
Head diameter 	h13 *)	h14 **)	–	–	*) \pm IT 13 for knurled heads **) \pm IT 14 for knurled heads
Head height 	$\leq M 5$: h13 $> M 5$: h14	h14	–	–	
Head diameter 	h14	h14	–	–	Tapping screws are product grade B
Head height 	$\leq M 5$: h13 $> M 5$: h14	h14	–	–	1) For flat head screws k is defined only as a maximum.