

**BOLTS WITH HEXAGONAL HEAD**  
**PRODUCT GRADE B**

**Constructions and dimensions**

**GOST 7798-70**

**Extract**

**CONTRACT**

**№ PB/835606213601**

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**BOLTS WITH HEXAGONAL HEADS  
PRODUCT GRADE B  
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**GOST  
7798-70**

**EXTRACT**

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1. Present standard deals with bolts with hexagonal heads of product grade B with thread diameter ranging from 6 to 48 mm.
2. Design and dimensions of bolts should correspond to those specified in drawing and in table 1 and 2.
3. Thread – as per GOST 24705-81. Run-out and undercut of threads – as per GOST 27148-86. Ends of bolts – as per GOST 12414-86.
4. Radius under the head – as per GOST 24760-81.
5. Tolerances for dimensions, deviation of shapes and location of surfaces and methods of checking, not established by present standard, are as per GOST 1759.1-82.
6. Permissible surface defects of bolts and methods of checking are as per GOST 1759.2-82.
7. Alternate make of bolt, is set by manufacturer.
8. Bolts with diameter of smooth part of shank  $d_1$  approximately equal to pitch diameter of thread, may be manufactured.
9. Bolts of make 1 and 2 with rises on end surface of head with dimensions, not reducing the strength of heads, may be manufactured for applying the marking symbols, during this depth of rises should not exceed 0.4 k.
10. Technical requirements are as per GOST 1759.0-87.

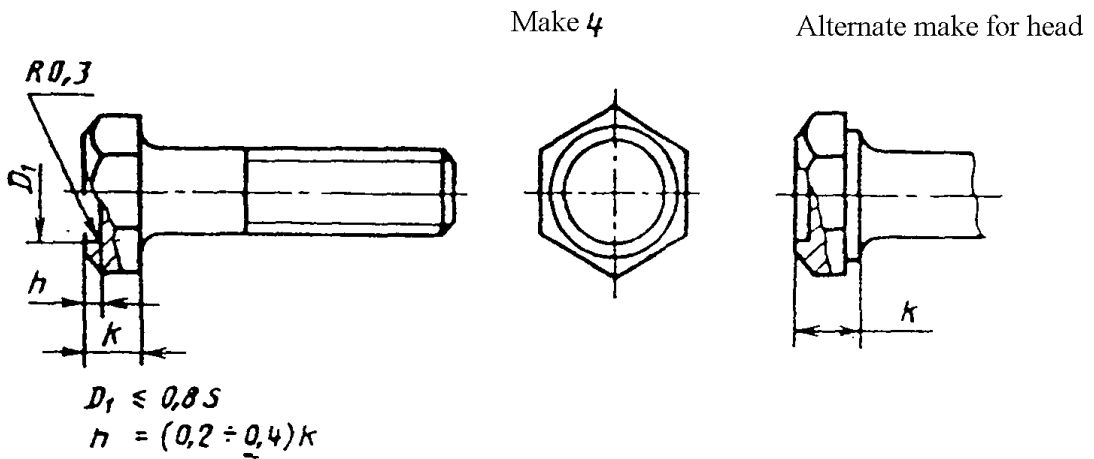
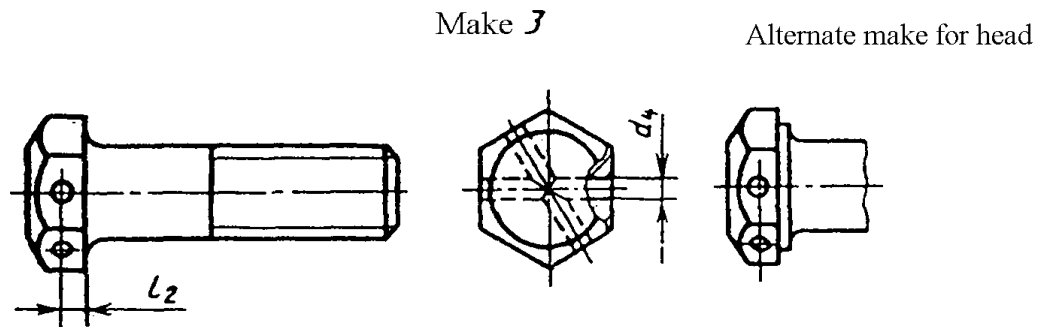
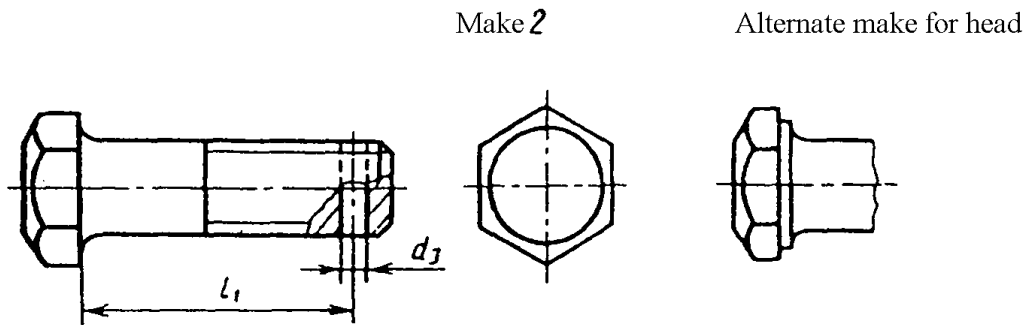
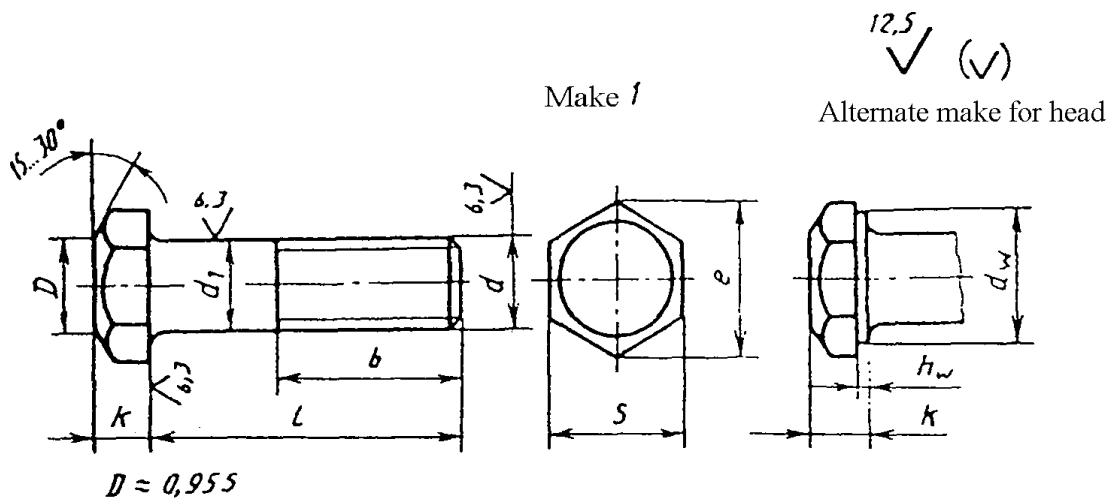


Table 1

mm

Nominal diameter of threads, $d$		0	8	10	12	(14)	16	(18)	20	(22)	24	(27 )	30	36	42	48
Thread pitch	Coarse	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3	3	3.5	4	4.5	5
	Fine	-	1	1.25	1.25	1.5	1.5	1.5	1.5	1.5	2	2	2	3	3	3
Diameter of shank, $d_1$		6	8	10	12	14	16	18	20	22	24	27	30	36	42	48
Width across flat, $S$		10	13	17	10	22	24	27	30	32	36	41	46	55	65	75
Height of head, $k$		4.0	5.3	6.4	7.5	8.8	10.0	12.0	12.5	14.0	15.0	17.0	18.7	22.5	26.0	30.0
Diameter of circumscribed circle, $e$ , not less than		10.9	14.2	18.7	20.9	21.0	26.2	29.6	33.0	35.0	39.6	45.2	50.9	60.8	71.3	82.6
$d_w$ , not less than		87	11.5	15.5	17.2	21.1	22.0	24.8	27.7	29.5	33.2	38.0	42.7	51.1	59.9	69.4
$h_w$	not less than	0.15					0.20						0.25			
	not more than	0.6					0.8									
Diameter of hole in shank, $d_3$		1.6	2.0	2.5	3.2		4.0		5.0			6.3		8.0		
Diameter of hole in head, $d_4$ (deviation limit H15)		2.0	2.5	3.2			4.0						5.0			
Distance from supporting surface to the axis of hole in head, $l_2$ (deviation limit js15)		2.0	2.8	3.5	4.0	4.5	5.0	6.0	6.5	7.0	7.5	8.5	9.5	11.5	13.0	15.0

**Note.** Dimensions of bolts, specified in brackets, are not recommended to use.

Dimensions in mm

Table 2

Length of bolts, $l$	Length of thread $b$ and distance from supporting surface of head to the axis of hole in shank $l_1$ during nominal diameter of thread $d$ (bolts with thread along the entire length of shank are marked with symbol X)																													
	6		8		10		12		(14)		16		18		20		(22)		24		(27)		30		36		42		48	
	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$
8	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10	—	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12	—	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
14	10	X	—	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
16	12	X	12	X	—	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(18)	14	X	14	X	14	X	—	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
20	16	X	16	X	16	X	15	X	—	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(22)	18	18	18	X	18	X	17	X	17	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
25	21	18	21	X	21	X	20	X	20	X	19	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	
(28)	24	18	24	22	24	X	23	X	23	X	22	X	22	X	—	X	—	X	—	—	—	—	—	—	—	—	—	—	—	
30	26	18	26	22	26	X	25	X	25	X	24	X	24	X	24	X	—	X	—	—	—	—	—	—	—	—	—	—	—	
(32)	28	18	28	22	28	26	27	X	27	X	26	X	26	X	26	X	25	X	—	X	—	—	—	—	—	—	—	—	—	
35	31	18	31	22	31	26	30	30	30	X	29	X	29	X	29	X	28	X	28	X	—	X	—	—	—	—	—	—	—	
(38)	34	18	34	22	34	26	33	30	33	X	32	X	32	X	32	X	31	X	31	X	—	X	—	—	—	—	—	—	—	
40	36	18	36	22	36	26	35	30	35	34	34	X	34	X	34	X	33	X	33	X	32	X	—	X	—	—	—	—	—	
45	41	18	41	22	41	26	40	30	40	34	39	38	39	X	39	X	38	X	38	X	37	X	36	X	—	—	—	—	—	
50	46	18	46	22	46	26	45	30	45	34	44	38	44	42	44	X	43	X	43	X	42	X	41	X	40	X	—	—	—	—
55	51	18	51	22	51	26	50	30	50	34	49	38	49	42	49	46	48	X	48	X	47	X	46	X	45	X	—	X	—	—
60	56	18	56	22	56	26	55	30	55	34	54	38	54	42	54	46	53	50	53	X	52	X	51	X	50	X	48	X	—	—
65	61	18	61	22	61	26	60	30	60	34	59	38	59	42	59	46	58	50	58	54	57	X	56	X	55	X	53	X	—	X
70	66	18	66	22	66	26	65	30	65	34	64	38	64	42	64	46	63	50	63	54	62	60	61	X	60	X	58	X	58	X
75	71	18	71	22	71	26	70	30	70	34	69	38	69	42	69	46	68	50	68	54	67	60	66	66	65	X	63	X	63	X
80	76	18	76	22	76	26	75	30	75	34	74	38	74	42	74	46	73	50	73	54	72	60	71	66	70	X	68	X	68	X
(85)	81	18	81	22	81	26	80	30	80	34	79	38	79	42	79	46	78	50	78	54	77	60	76	66	75	X	73	X	73	X
90	86	18	86	22	86	26	85	30	85	34	84	38	84	42	84	46	83	50	83	54	82	60	81	66	80	78	78	X	78	X
(95)	—	—	91	22	91	26	90	30	90	34	89	38	89	42	89	46	88	50	88	54	87	60	86	66	85	78	83	X	83	X
100	—	—	96	22	96	26	95	30	95	34	94	38	94	42	94	46	93	50	93	54	92	60	91	66	90	78	88	X	88	X
(105)	—	—	—	—	101	26	100	30	100	34	99	38	99	42	99	46	98	50	98	54	97	60	96	66	95	78	93	90	93	X

Dimensions in mm

Continuation of table 2

Length of bolts, $l$	Length of thread $b$ and distance from supporting surface of head to the axis of hole in shank $l_1$ during nominal diameter of thread $d$ (bolts with thread along the entire length of shank are marked with symbol X)																													
	6		8		10		12		(14)		16		(18)		20		(22)		24		(27)		30		36		42		48	
	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$	$l_1$	$b$
110	—	—	—	—	106	26	105	30	105	34	104	38	104	42	104	46	103	50	103	54	102	60	101	66	100	78	98	90	98	X
(115)	—	—	—	—	111	26	110	30	110	34	109	38	109	42	109	46	108	50	108	54	107	60	106	66	105	78	103	90	103	102
120	—	—	—	—	116	26	115	30	115	34	114	38	114	42	114	46	113	50	113	54	112	60	111	66	110	78	108	90	108	102
(125)	—	—	—	—	121	26	120	30	120	34	119	38	119	42	119	46	118	50	118	54	117	60	116	66	115	78	113	90	113	102
130	—	—	—	—	126	32	125	36	125	40	124	44	124	48	124	52	123	56	123	60	122	66	121	72	120	84	118	96	118	108
140	—	—	—	—	136	32	135	36	135	40	134	44	134	48	134	52	133	56	133	60	132	66	131	72	130	84	128	96	128	108
150	—	—	—	—	146	32	145	36	145	40	144	44	144	48	144	52	143	56	143	60	142	66	141	72	140	84	138	96	138	108
160	—	—	—	—	156	32	155	36	155	40	154	44	154	48	154	52	153	56	153	60	152	66	151	72	150	84	148	96	148	108
170	—	—	—	—	166	32	165	36	165	40	164	44	164	48	164	52	163	56	163	60	162	66	161	72	160	84	158	96	158	108
180	—	—	—	—	176	32	175	36	175	40	174	44	174	48	174	52	173	56	173	60	172	66	171	72	170	84	168	96	168	108
190	—	—	—	—	186	32	185	36	185	40	184	44	184	48	184	52	183	56	183	60	182	66	181	72	180	84	178	96	178	108
200	—	—	—	—	196	32	195	36	195	40	194	44	194	48	194	52	193	56	193	60	192	66	191	72	190	84	188	96	188	108
220	—	—	—	—	—	—	215	49	215	53	214	57	214	61	214	65	213	69	213	73	212	79	211	85	210	97	208	109	208	121
240	—	—	—	—	—	—	235	49	235	53	234	57	234	61	234	65	233	69	233	73	232	79	231	85	230	97	228	109	228	121
260	—	—	—	—	—	—	255	49	255	53	254	57	254	61	254	65	253	69	253	73	252	79	251	85	250	97	248	109	248	121
280	—	—	—	—	—	—	—	—	275	53	274	57	274	61	274	65	273	69	273	73	272	79	271	85	270	97	268	109	268	121
300	—	—	—	—	—	—	—	—	295	53	294	57	294	61	294	65	293	69	293	73	292	79	291	85	290	97	288	109	288	121

1. Bolts with dimension of length, specified in brackets, are not recommended to use.
2. Bolts, for which value  $b$  is located above the thick line, may be manufactured with thread length up to head.

Example of conventional designation of bolt of make 1, with thread diameter  $d=12$  mm, with length  $l=60$  mm, with coarse thread pitch with tolerance field 6 g, strength class 5.8, with out coating:

*Bolt M12-6g x 60.58 GOST 7798-70*

Also, make 2, with fine thread pitch with tolerance range 6g, strength class 10.9 made from steel of grade 40X, with coating 01 with thickness 6 microns:

*Bolt 2M12x1.25-6g x 60.10.9.40X.016 GOST 7798-70*