

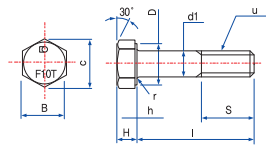
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제품규격

Production Progress

동아볼트(주)의 주요 제품규격입니다.

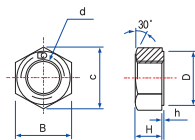
HIGH STRENGTH BOLT, NUT, 2WASHERS FOR STEEL STRUCTURE



(KS B1010/JIS B1186)

UNIT:mm

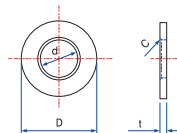
SIZE (d)	d1		H		B		C	D	r	h	S	
	basic	tol	basic	tol	basic	tol	ref	min			basic	tol
M12	12	+0.7	8	±0.8	22	0	25.4	20	0.8~1.6	0.4~0.8	25	+5
M16	16	-0.2	10	±0.9	27	-0.8	31.2	25	1.2~2.0		30	0
M20	20	+0.8 -0.4	13		32	0 -0.1	37	29			35	+6 0
M22	22		14		36		41.6	33	1.6~2.4		40	
M24	24		15		41		47.3	38			45	
M27	27		17		46		53.1	43			50	
M30	30		19	±1.0	50		57.7	47	2.0~2.8		55	



(KS B1010/JIS B1186)

UNIT:mm

SIZE (D)	H		B		C	D	h
	basic	tol	basic	tol			
M12	12	±0.35	22	0	25.4	20	0.4~0.8
M16	16		27	-0.8	31.2	25	
M20	20		32	0 -1	37	29	
M22	22	±0.4	36		41.6	33	
M24	24		41		47.3	38	
M27	27		46		53.1	43	
M30	30		50		57.7	47	



(KS B1010/JIS B1186)

UNIT:mm

SIZE (D)	d		D		t		C
	basic	tol	basic	tol	basic	tol	ref
M12	M13	+0.7 0	26	+0 -0.8	3.2	±0.4	1.5
M16	M17		32	0 -1.0	4.5	±0.5	
M20	M21	+0.8 0	40		6	±0.7	2
M22	M23		44				2.4
M24	M25		48	0 -1.2	8		
M27	M28	+1.0 0	56		2.8		
M30	M31		60				

TORQUE FOR KS B 1010, JIS B 1186

UNIT:kgf-m

Diameter		F 8 T				F 10 T				F 13 T			
		M16	M20	M22	M24	M16	M20	M22	M24	M16	M20	M22	M24
Coefficient		8.4	13.2	16.3	19.0	11.9	18.5	23	26.7	15.2	23.7	29.3	34.0
Gr.A	0.110	14.8	29.0	39.5	45.9	14.8	29.0	39.5	45.9	14.8	29.0	39.5	45.9
	0.115	15.5	30.3	41.3	48.0	15.5	30.3	41.3	48.0	15.5	30.3	41.3	48.0
	0.120	16.2	31.6	43.1	50.1	16.2	31.6	43.1	50.1	16.2	31.6	43.1	50.1
	0.125	16.9	32.9	44.9	52.2	16.9	32.9	44.9	52.2	16.9	32.9	44.9	52.2
	0.130	17.5	34.3	46.7	54.3	17.5	34.3	46.7	54.3	17.5	34.3	46.7	54.3
	0.135	18.2	35.6	48.5	56.3	18.2	35.6	48.5	56.3	18.2	35.6	48.5	56.3
	0.140	18.9	36.9	50.3	58.4	18.9	36.9	50.3	58.4	18.9	36.9	50.3	58.4
	0.145	19.6	38.2	52.1	60.5	19.6	38.2	52.1	60.5	19.6	38.2	52.1	60.5
Gr.B	0.150	20.2	39.5	53.9	62.6	20.2	39.5	53.9	62.6	20.2	39.5	53.9	62.6
	0.155	20.9	40.8	55.7	64.7	20.9	40.8	55.7	64.7	20.9	40.8	55.7	64.7
	0.160	21.6	42.2	57.5	66.8	21.6	42.2	57.5	66.8	21.6	42.2	57.5	66.8
	0.165	22.3	43.5	59.3	68.9	22.3	43.5	59.3	68.9	22.3	43.5	59.3	68.9
	0.170	22.9	44.8	61.1	70.9	22.9	44.8	61.1	70.9	22.9	44.8	61.1	70.9
	0.175	23.6	46.1	62.9	73.0	23.6	46.1	62.9	73.0	23.6	46.1	62.9	73.0
	0.180	24.3	47.4	64.7	75.1	24.3	47.4	64.7	75.1	24.3	47.4	64.7	75.1
	0.185	25.0	48.7	66.5	77.2	25.0	48.7	66.5	77.2	25.0	48.7	66.5	77.2
	0.190	25.6	50.1	68.3	79.3	25.6	50.1	68.3	79.3	25.6	50.1	68.3	79.3

WEIGHT OF KS B 1010 & JIS B 1186 H.T. BOLTS, NUTS WITH 2 WASHERS

UNIT:gr

Diameter	Length	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	NUT	WASHER
M12	SET	107	112	116	121	125	130	134	138	143	147	152	156	-	-	-	-	-	-	-	30	10
	BOLT	57	62	66	71	75	80	84	88	93	97	102	106	-	-	-	-	-	-	-		
M16	SET	202	210	217	225	233	241	249	257	265	273	281	289	296	312	328					57	20
	BOLT	105	113	120	128	136	144	152	160	168	176	184	192	199	215	231						
M20	SET	336	348	361	373	385	398	410	422	435	447	459	472	484	509	533	558	583			97	32
	BOLT	175	187	200	212	224	237	249	261	274	286	298	311	323	348	374	397	422				
M22	SET	-	481	496	510	525	540	555	570	585	600	615	630	645	674	704	734	764	794		137	52
	BOLT	-	240	255	269	284	299	314	329	344	359	374	389	404	433	464	493	523	553			
M24	SET	-	-	648	666	683	701	719	737	754	772	790	808	825	861	896	932	967	1003	1038	201	62
	BOLT	-	-	323	341	358	376	394	412	429	447	465	483	500	536	571	607	642	678	713		
M27	SET	-	-	-	-	-	976	999	1022	1045	1068	1091	1114	1137	1160	1183	1206	1229	1252	1275	263	93
	BOLT	-	-	-	-	-	527	550	573	596	619	642	665	688	734	780	826	872	918	964		
M30	SET	-	-	-	-	-	-	1319	1347	1375	1403	1431	1459	1487	1543	1599	1655	1711	1767	1823	340	134
	BOLT	-	-	-	-	-	-	711	739	767	795	823	851	879	935	991	1047	1103	1159	1215		

MECHANICAL PROPERTIES

UNIT:N/mm²

Item		Grade			KS B 1010 (JIS B 1186)		
		Metric			F8T		
Description		F8T			F10T		
BOLT	Tensile Strength	N/mm²			800-1000		
	Yield Strength	N/mm²			640Min		
	Elongation	[%]			16Min		
	Reduction of Area	[%]			45Min		
NUT		Haedness			HRC18 ~ HRC31		
WASHER		Haedness			HRC35 ~ HRC45		

AXIAL FORCE OF BOLT

UNIT:kN

볼트 등급	볼트의 축력 kN						
	나사의 호칭						
	M12	M16	M20	M22	M24	M27	M30
F 8 T	37.8-51.3	70.2-95.3	109.7-148.8	135.9-184.5	157.9-214.3	205.5-279.0	251.5-341.3
F 10 T	53.1-72.1	98.7-134.0	154.2-209.3	191.4-259.4	222.1-301.4	289.0-392.3	353.6-479.9
F 13 T	69.0-93.7	128.3-174.2	200.5-272.1	248.5-337.2	288.7-391.8	375.8-510.0	459.7-623.9