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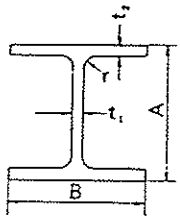
LAMPIRAN-LAMPIRAN

Lampiran 1.

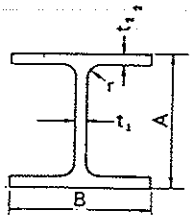


Wide Flange Shapes

(Metric Series)

Section Index	Weight	Depth of Section (A)	Flange Width (B)	Thickness		Corner Radius (r)	Sectional Area	Moment of Inertia		Radius of Gyration		Modulus of Section	
				Web (t_1)	Flange (t_2)			Jx	Jy	ix	iy	Zx	Zy
mm	kg/m	mm	mm	mm	mm	mm	cm²	cm⁴	cm⁴	cm	cm	cm³	cm³
900×300	286	912	302	18	34	28	364.0	498,000	15,700	37.0	6.56	10,900	1,040
	243	900	300	16	28	28	309.8	411,000	12,600	36.4	6.39	9,140	843
	213	890	299	15	23	28	270.9	345,000	10,300	35.7	6.16	7,760	688
800×300	241	808	302	16	30	28	307.6	339,000	13,800	33.2	6.70	8,400	915
	210	800	300	14	26	28	267.4	292,000	11,700	33.0	6.62	7,290	782
	191	792	300	14	22	28	243.4	254,000	9,930	32.3	6.39	6,410	662
700×300	215	708	302	15	28	28	273.6	237,000	12,900	29.4	6.86	6,700	853
	185	700	300	13	24	28	235.5	201,000	10,800	29.3	6.78	5,760	722
	166	692	300	13	20	28	211.5	172,000	9,020	28.6	6.53	4,980	602
600×300	175	594	302	14	23	28	222.4	137,000	10,600	24.9	6.90	4,620	701
	151	588	300	12	20	28	192.5	118,000	9,020	24.8	6.85	4,020	601
	137	582	300	12	17	28	174.5	103,000	7,670	24.3	6.63	3,530	511
600×200	134	612	202	13	23	22	107.7	103,000	3,180	24.6	4.31	3,380	314
	120	606	201	12	20	22	152.5	90,400	2,720	24.3	4.22	2,980	271
	106	600	200	11	17	22	134.4	77,600	2,280	24.0	4.12	2,590	228
	94.6	596	199	10	15	22	120.5	68,700	1,980	23.9	4.05	2,310	199
500×300	128	488	300	11	18	26	163.5	71,000	8,110	20.8	7.04	2,910	541
	114	482	300	11	15	26	145.5	60,400	6,760	20.4	6.82	2,500	451
500×200	103	506	201	11	19	20	131.3	56,500	2,580	20.7	4.43	2,230	257
	89.7	500	200	10	16	20	114.2	47,800	2,140	20.5	4.33	1,910	214
	79.5	496	199	9	14	20	101.3	41,900	1,840	20.3	4.27	1,690	185
450×300	124	440	300	11	18	24	157.4	56,100	8,110	18.9	7.18	2,550	541
	106	434	299	10	15	24	135.0	46,800	6,690	18.6	7.04	2,160	448
450×200	76.0	450	200	9	14	18	96.76	33,500	1,870	18.6	4.40	1,490	187
	66.2	446	199	8	12	18	84.30	28,700	1,580	18.5	4.33	1,290	159
400×400	605	498	432	45	70	22	770.1	298,000	94,400	19.7	11.1	12,000	4,370
	415	458	417	30	50	22	528.6	187,000	60,500	18.8	10.7	8,170	2,900
	283	428	407	20	35	22	360.7	119,000	39,400	18.2	10.4	5,570	1,930
	232	414	405	18	28	22	295.4	92,800	31,000	17.7	10.2	4,480	1,530

Lampiran 2

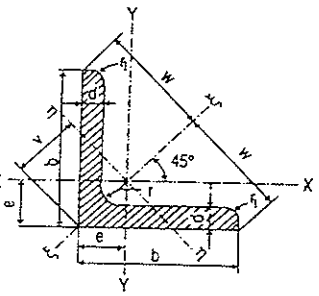


Wide Flange Shapes

(Metric Series)-Continued

Section Index	Weight	Depth of Section (A)	Flange Width (B)	Thickness		Corner Radius	Sectional Area	Moment of Inertia		Radius of Gyration		Modulus of Section	
				Web (t_1)	Flange (t_2)	(r)		Jx	Jy	ix	iy	Zx	Zy
mm	kg/m	mm	mm	mm	mm	mm	cm²	cm⁴	cm⁴	cm	cm	cm³	cm³
250×250	82.2	250	255	14	14	16	104.7	11,500	3,880	10.5	6.09	919	304
	72.4	250	250	9	14	16	92.18	10,800	3,650	10.8	6.29	867	292
	66.5	248	249	8	13	16	84.70	9,930	3,350	10.8	6.29	801	269
	64.4	244	252	11	11	16	82.06	8,790	2,940	10.3	5.98	720	233
250×175	44.1	244	175	7	11	16	56.24	6,120	984	10.4	4.18	502	113
250×125	29.6	250	125	6	9	12	37.66	4,050	294	10.4	2.79	324	47.0
	25.7	248	124	5	8	12	32.68	3,540	255	10.4	2.79	285	41.1
200×200	65.7	208	202	10	16	13	83.69	6,530	2,200	8.83	5.13	628	218
	56.2	200	204	12	12	13	71.53	4,980	1,700	8.35	4.88	498	167
	49.9	200	200	8	12	13	63.53	4,720	1,600	8.62	5.02	472	160
200×150	30.6	194	150	6	9	13	39.01	2,690	507	8.30	3.61	277	67.6
200×100	21.3	200	100	5.5	8	11	27.16	1,840	134	8.24	2.22	184	26.8
	18.2	198	99	4.5	7	11	23.18	1,580	114	8.26	2.21	160	23.0
175×175	40.2	175	175	7.5	11	12	51.21	2,880	984	7.50	4.38	330	112
175×125	23.3	169	125	5.5	8	12	29.65	1,530	261	7.18	2.97	181	41.8
175× 90	18.1	175	90	5	8	9	23.04	1,210	97.5	7.23	2.06	139	21.7
150×150	31.5	150	150	7	10	11	40.14	1,640	563	6.39	3.75	219	75.1
150×100	21.1	148	100	6	9	11	26.84	1,020	151	6.17	2.37	138	30.1
150× 75	14.0	150	75	5	7	8	17.85	666	49.5	6.11	1.66	88.8	13.2
125×125	23.8	125	125	6.5	9	10	30.31	847	293	5.29	3.11	136	47.0
125× 60	13.2	125	60	6	8	9	16.84	413	29.2	4.95	1.32	66.1	9.73
100×100	17.2	100	100	6	8	10	21.90	383	134	4.18	2.47	76.5	26.7
100× 50	9.30	100	50	5	7	8	11.85	187	14.8	3.98	1.12	37.5	5.91

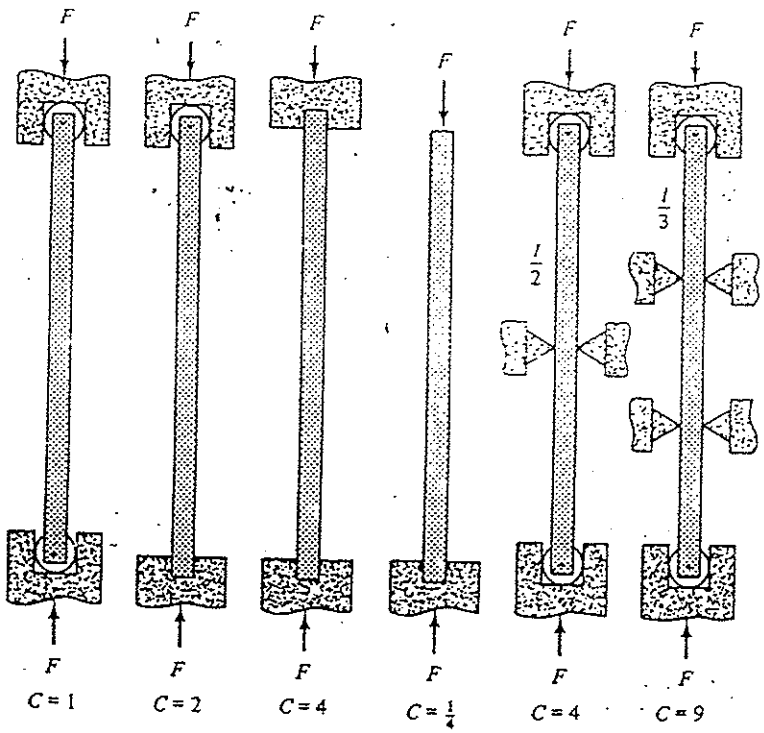
Lampiran 3



Lanjutan: baja siku-siku samakaki;
panjang biasa 3 ÷ 15 m

L	ukuran-ukuran dalam mm				F	berat	jarak titikberat-titikberat dalam cm			$I_x = I_y$	$W_x = W_y$	$i_x = i_y$	$k_x = k_y$
	b	d	r	r_1	cm^2	kg/m	e	w	v	cm^4	cm^3	cm	
80. 80. 8	80	8	10	5	12,3	9,66	2,26	5,66	3,20	72,3	12,6	2,42	2,09
80. 80.10		10			15,1	11,9	2,34		3,31	87,5	15,5	2,41	2,61
80. 80.12		12			17,9	14,1	2,41		3,41	102	18,2	2,39	3,14
80. 80.14		14			20,6	16,1	2,48		3,51	115	20,8	2,36	3,68
90. 90. 9	90	9	11	5,5	15,5	12,2	2,54	6,36	3,59	116	18,0	2,74	2,07
90. 90.11		11			18 7	14,7	2,62		3,70	138	21,6	2,72	2,54
90. 90.13		13			21,8	17,1	2,60		3,81	158	25,1	2,69	3,01
90. 90.16*		16			26.4	20,7	2,81		3,97	186	30,1	2,66	3,74
100.100.10	100	10	12	6	19,2	15,1	2,82	7,07	3,99	177	24,7	3,04	2,09
100.100.12		12			22,7	17,8	2.90		4,10	207	29,2	3,02	2,49
100.100.14		14			26,2	20,6	2,98		4,21	235	33,5	3,00	2,92
100.100.20*		20			36,2	28,4	3,20		4,54	311	45,8	2,93	4,20
110.110.10	110	10	12	6	21,2	16,6	3,07	7,78	4,34	239	30,1	3,36	1,88
110.110.12		12			25,1	19,7	3,15		4,45	280	35,7	3,34	2,25
110.110.14		14			29,0	22,8	3,21		4,54	319	41,0	3,32	2,63
120.120.11	120	11	13	6,5	25,4	19,9	3,36	8,49	4,75	341	39,5	3,66	1,89
120.120.13		13			29,7	23,3	3,44		4,86	394	46,0	3,64	2,24
120.120.15		15			33,9	26,6	3,51		4,96	446	52,5	3,63	2,58
120.120.20*		20			44,2	34,7	3,70		5,24	562	67,7	3,57	3,46
130.130.12	130	12	14	7	30,0	23,6	3,64	9,19	5,15	472	50,4	3,97	1,91
130.130.14		14			34,7	27,2	3,72		5,26	540	58,2	3,94	2,23
130.130.16		16			39,3	30,9	3,80		5,37	605	65,8	3,92	2,55
140.140.13	140	13	15	7,5	35,0	27,5	3,92	9,90	5,54	638	63,3	4,27	1,92
140.140.15		15			40,0	31,4	4,00		5,66	723	72,3	4,25	2,21
140.140.17		17			45,0	35,3	4,08		5,77	805	81,2	4,23	2,51
150.150.14	150	14	16	8	40,3	31,6	4,21	10,6	5,95	845	78,2	4,58	1,92
150.150.16		16			45,7	35,9	4,29		6,07	949	88,7	4,56	2,20
150.150.18		18			51,0	40,1	4,36		6,17	1050	99,3	4,54	2,48
160.160.15	160	15	17	8,5	46,1	36,2	4,49	11,3	6,35	1100	95,6	4,88	1,93
160.160.17		17			51,8	40,7	4,57		6,46	1230	108	4,86	2,20
160.160.19		19			57,5	45,1	4,65		6,58	1350	118	4,84	2,53
180.180.16	180	16	18	9	55,4	43,5	5,02	12,7	7,11	1680	130	5,51	1,84
180.180.18		18			61,9	48,6	5,10		7,22	1870	145	5,49	2,06
180.180.20		20			68,4	53,7	5,18		7,33	2040	160	5,47	2,29
200.200.16	200	16	18	9	61,8	48,5	5,52	14,1	7,80	2340	162	6,15	1,65
200.200.18		18			69,1	54,3	5,60		7,92	2600	181	6,13	1,83
200.200.20		20			76,4	59,9	5,68		8,04	2850	199	6,11	2,05

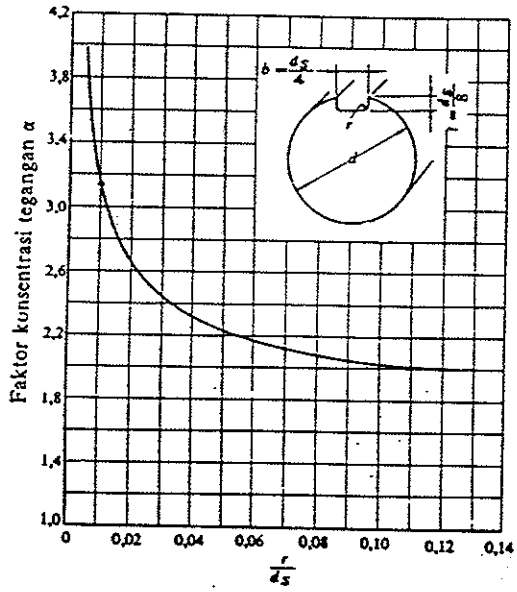
Lampiran 4



Nilai C untuk beberapa jenis pembebanan

Sumber: Irving J,1978, hal. 166

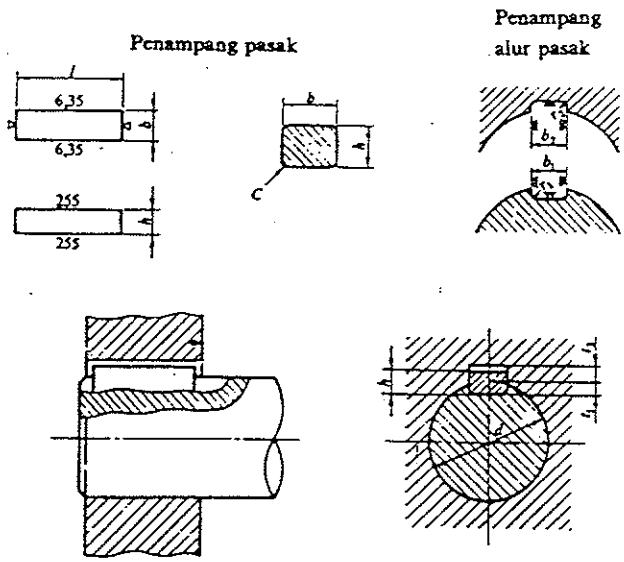
Lampiran 5.



Faktor konsentrasi tegangan α untuk pembebanan puntir statis dari suatu poros bulat dengan alur pasak persegi yang diberi filet.

Lampiran 5

Ukuran pasak dan alur pasak.

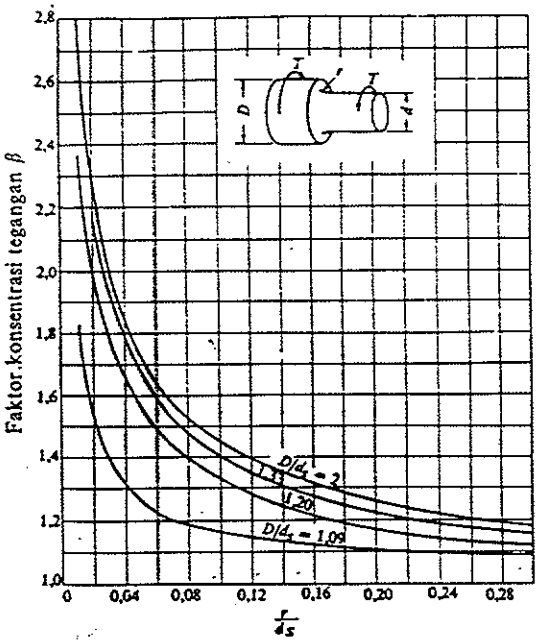


Ukuran-ukuran utama

(Satuan: mm)

Ukuran nominal pasak $b \times h$	Ukuran standar b, b_1, dan b_2	Ukuran standar h: Pasak prismatis / Pasak luncur	Ukuran standar h: Pasak tirus	C	l*	Ukuran Standar t_1	Ukuran standar t_2: Pasak prismatis	Ukuran standar t_2: Pasak luncur	Ukuran standar t_2: Pasak tirus	r_1 dan r_2	Referensi: Diameter poros yang dapat dipakai d**
2 × 2	2	2		0,16–0,25	6–20	1,2	1,0		0,5	0,08–0,16	Lebih dari 6–8
3 × 3	3	3			6–36	1,8	1,4		0,9		" 8–10
4 × 4	4	4			8–45	2,5	1,8		1,2		" 10–12
5 × 5	5	5			10–56	3,0	2,3		1,7	0,16–0,25	" 12–17
6 × 6	6	6		0,25–0,40	14–70	3,5	2,8		2,2		" 17–22
(7 × 7)	7	7	7,2		16–80	4,0	3,0	3,5	3,0		" 20–25
8 × 7	8	7			18–90	4,0	3,3		2,4		" 22–30
10 × 8	10	8		0,40–0,60	22–110	5,0	3,3		2,4	0,25–0,40	" 30–38
12 × 8	12	8			28–140	5,0	3,3		2,4		" 38–44
14 × 9	14	9			36–160	5,5	3,8		2,9		" 44–50
(15 × 10)	15	10	10,2		40–180	5,0	5,0	5,5	5,0		" 50–55
16 × 10	16	10			45–180	6,0	4,3		3,4		" 50–58
18 × 11	18	11			50–200	7,0	4,4		3,4		" 58–65
20 × 12	20	12		0,60–0,80	56–220	7,5	4,9		3,9	0,40–0,60	" 65–75
22 × 14	22	14			63–250	9,0	5,4		4,4		" 75–85
(24 × 16)	24	16	16,2		70–280	8,0	8,0	8,5	8,0		" 80–90
25 × 14	25	14			70–280	9,0	5,4		4,4		" 85–95
28 × 16	28	16			80–320	10,0	6,4		5,4		" 95–110
32 × 18	32	18			90–360	11,0	7,4		6,4		" 110–130

* l harus dipilih dari angka-angka berikut sesuai dengan daerah yang bersangkutan dalam tabel.
6, 8, 10, 12, 14, 16, 18, 20, 22, 25, 28, 32, 36, 40, 45, 50, 56, 63, 70, 80, 90, 100, 110, 125, 140, 160, 180, 200, 220, 250, 280, 320, 360, 400.



Faktor konsentrasi tegangan β untuk pembebanan puntir statis dari suatu poros bulat dengan pengecilan diameter yang diberi filet.

Lampiran 7.

Ukuran standar ulir kasar metris (JIS B 0205).

Ulir			Jarak bagi p	Tinggi kaitan H_1	Ulir dalam		
					Diameter luar D	Diameter efektif D_2	Diameter dalam D_1
1	2	3			Ulir luar		
					Diameter luar d	Diameter efektif d_2	Diameter inti d_1
M 6			1	0,541	6,000	5,350	4,917
		M 7	1	0,541	7,000	6,350	5,917
M 8			1,25	0,677	8,000	7,188	6,647
		M 9	1,25	0,677	9,000	8,188	7,647
M 10			1,5	0,812	10,000	9,026	8,376
		M 11	1,5	0,812	11,000	10,026	9,376
M 12			1,75	0,947	12,000	10,863	10,106
	M 14		2	1,083	14,000	12,701	11,835
M 16			2	1,083	16,000	14,701	13,835
	M 18		2,5	1,353	18,000	16,376	15,294
M 20			2,5	1,353	20,000	18,376	17,294
	M 22		2,5	1,353	22,000	20,376	19,294
M 24			3	1,624	24,000	22,051	20,752
	M 27		3	1,624	27,000	25,051	23,752
M 30			3,5	1,894	30,000	27,727	26,211
	M 33		3,5	1,894	33,000	30,727	29,211
M 36			4	2,165	36,000	34,402	31,670
	M 39		4	2,165	39,000	36,402	34,670
M 42			4,5	2,436	42,000	39,077	37,129
	M 45		4,5	2,436	45,000	42,077	40,129
M 48			5	2,706	48,000	44,752	42,587
	M 52		5	2,706	52,000	48,752	46,587
M 56			5,5	2,977	56,000	52,428	50,046
	M 60		5,5	2,977	60,000	56,428	54,046
M 64			6	3,248	64,000	60,103	57,505
	M 68		6	3,248	68,000	64,103	61,505

Catatan: (1) Kolom 1 merupakan pilihan utama. Kolom 2 atau kolom 3 hanya dipilih jika terpaksa.

Lampiran 8.

Tekanan permukaan yang diizinkan pada ulir.

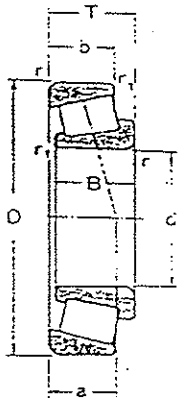
Bahan		Tekanan permukaan yang diizinkan q_a (kg/mm²)	
Ulir luar	Ulir dalam	Untuk pengikat	Untuk penggerak
Baja liat	Baja liat atau perunggu	3	1
Baja keras	Baja liat atau perunggu	4	1,3
Baja keras	Besi cor	1,5	0,5

Bahan		Kecepatan luncur	Tekanan permukaan yang diizinkan q_a (kg/mm²)
Baja	Perunggu	Kecepatan rendah	1,8–2,5
	Perunggu	3,0 m/min atau kurang	1,1–1,8
	Besi cor	3,4 m/min atau kurang	1,3–1,8
	Perunggu	6,0–12,0 m/min	0,6–1,0
	Besi cor		0,4–0,7
	Perunggu	15,0 m/min atau lebih	0,1–0,2

NTN Tapered Roller Bearings

Single row type

d 70–85 mm



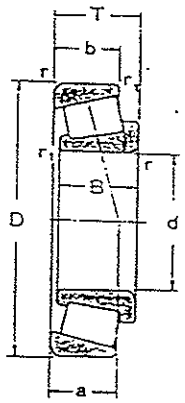
Boundary dimensions mm							Basic load ratings N		Limiting speeds rev/min		Bearing number	Abutment and fillet dimensions mm			
d	D	T	B	b	r	r_1	dynamic C_r	static C_{or}	grease	oil		D_s min	D_1 max	d_a max	r_a max
	110	25	25	19	2	0.8	94 000	97 500	3 200	4 200	32014XU	77	78	103	98
	110	31	31	25.5	2	0.8	114 000	124 000	3 200	4 200	33014U	77	78	103	99
	120	37	37	29	2.5	0.8	154 000	155 000	3 100	4 100	33114	78.5	79	111.5	104
	125	26.25	24	21	2.5	0.8	117 000	100 000	2 900	3 900	30214U	78.5	81	116.5	110
70	125	33.25	31	27	2.5	0.8	149 000	136 000	2 900	3 900	32214U	78.5	80	116.5	108
	125	41	41	32	2.5	0.8	181 000	176 000	2 900	3 900	33214	78.5	79	116.5	107
	150	38	35	30	3.5	1.2	205 000	172 000	2 600	3 500	30314U	82	89	138	130
	150	38	35	25	3.5	1.2	172 000	143 000	2 300	3 000	4T-30314D	82	84	138	118
	150	54	51	42	3.5	1.2	279 000	257 000	2 600	3 500	32314U	82	86	138	125
	115	25	25	19	2	0.8	95 500	101 000	3 000	4 000	32015XU	82	83	108	103
	115	31	31	25.5	2	0.8	119 000	134 000	3 000	4 000	33015U	82	83	108	104
	125	37	37	29	2.5	0.8	157 000	162 000	2 900	3 800	33115	83.5	84	116.5	109
	130	27.25	25	22	2.5	0.8	124 000	108 000	2 700	3 600	30215U	83.5	85	121.5	115
75	130	33.25	31	27	2.5	0.8	150 000	138 000	2 700	3 600	32215U	83.5	85	121.5	114
	130	41	41	31	2.5	0.8	187 000	185 000	2 700	3 600	33215	83.5	83	121.5	111
	160	40	37	31	3.5	1.2	228 000	192 000	2 400	3 200	30315U	87	95	148	139
	160	40	37	26	3.5	1.2	192 000	160 000	2 100	2 800	30315DU	87	91	148	127
	160	58	55	45	3.5	1.2	320 000	299 000	2 400	3 200	32315U	87	91	148	133
	125	29	29	22	2	0.8	124 000	131 000	2 800	3 700	32016XU	87	89	118	112
	125	36	36	29.5	2	0.8	155 000	173 000	2 800	3 700	33016U	87	90	118	112
	130	37	37	29	2.5	0.8	161 000	169 000	2 700	3 600	33116	88.5	89	121.5	114
	140	28.25	26	22	3	1	143 000	123 000	2 500	3 400	30216U	90	91	130	124
80	140	35.25	33	28	3	1	178 000	165 000	2 500	3 400	32216U	90	90	130	122
	140	46	46	35	3	1	225 000	228 000	2 500	3 400	33216	90	89	130	119
	170	42.5	39	33	3.5	1.2	261 000	223 000	2 300	3 000	30316U	92	102	158	148
	170	42.5	39	27	3.5	1.2	211 000	177 000	2 000	2 700	30316DU	92	97	158	134
	170	61.5	58	48	3.5	1.2	355 000	335 000	2 300	3 000	32316U	92	98	158	142
	130	29	29	22	2	0.8	127 000	135 000	2 600	3 500	32017XU	92	94	123	117
	130	36	36	29.5	2	0.8	162 000	187 000	2 600	3 500	33017U	92	94	123	118
	140	41	41	32	3	1	196 000	212 000	2 500	3 400	33117	95	95	130	122
	150	30.5	28	24	3	1	163 000	143 000	2 400	3 200	30217U	95	97	140	132
	150	38.5	36	30	3	1	201 000	187 000	2 400	3 200	32217U	95	96	140	130
85	150	49	49	37	3	1	256 000	261 000	2 400	3 200	33217	95	95	140	128
	180	44.5	41	34	4	1.5	273 000	231 000	2 100	2 900	*30317U	99	107	166	156
	180	44.5	41	34	4	1.5	229 000	185 000	2 100	2 900	30317	99	107	166	156
	180	44.5	41	28	4	1.5	221 000	183 000	1 900	2 500	*30317DU	99	103	166	143
	180	44.5	41	28	4	1.5	206 000	166 000	1 900	2 500	30317D	99	100	166	143
	180	63.5	60	49	4	1.5	365 000	335 000	2 100	2 900	32317U	99	102	166	150

Note: Consult **NTN** for availability of bearings with

NTN Tapered Roller Bearings

Single row type

d 220–320 mm

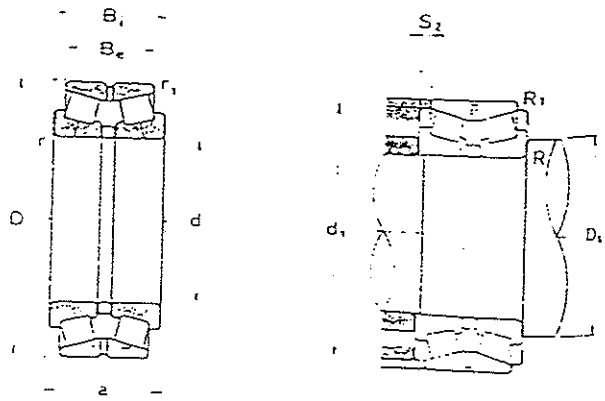


Boundary dimensions mm							Basic load ratings N		Limiting speeds rev/min		Bearing number	Abutment and fillet dimensions mm			
d	D	T	B	b	r	r_1	dynamic C_r	static C_{or}	grease	oil		D_s min	D_h max	r_s max	d_h min
220	300	51	48	41	3.5	1.2	310 000	400 000	1 000	1 400	32944	232	235	288	274
	340	76	76	57	4	1.5	830 000	1 030 000	960	1 300	32044XU	234	243	326	300
	400	72	65	54	5	2	730 000	750 000	840	1 100	30244	238	266	382	346
	400	114	108	90	5	2	1 250 000	1 490 000	840	1 100	32244	238	259	382	336
	460	97	88	73	6	2.5	1 130 000	1 060 000	770	1 000	30344	242	270	438	388
240	320	51	48	41	3.5	1.2	415 000	565 000	940	1 200	32948	252	255	308	292
	360	76	76	57	4	1.5	840 000	1 070 000	870	1 200	32048XU	254	261	346	318
	440	79	72	60	5	2	875 000	910 000	770	1 000	30248	258	288	422	380
	440	127	120	100	5	2	1 530 000	1 720 000	770	1 000	32248	258	285	422	368
	500	105	95	80	6	2.5	1 330 000	1 260 000	700	930	30348	262	295	478	422
260	360	63.5	60	52	3.5	1.2	540 000	760 000	860	1 100	32952	272	277	348	325
	400	87	87	65	5	2	1 080 000	1 380 000	800	1 100	32052XU	278	287	382	352
	480	89	80	67	6	2.5	1 050 000	1 120 000	700	930	30252	282	315	458	414
	480	137	130	106	6	2.5	1 700 000	2 060 000	700	930	32252	282	305	458	401
280	380	63.5	60	52	3.5	1.2	560 000	785 000	790	1 100	32956	292	297	368	345
	420	87	87	65	5	2	1 100 000	1 430 000	740	980	32056XU	298	305	402	370
	500	89	80	67	6	2.5	1 110 000	1 170 000	640	860	30256	302	339	478	434
	500	137	130	106	6	2.5	1 780 000	2 160 000	640	860	32256	302	323	478	421
300	420	76	72	63	4	1.5	730 000	1 070 000	720	970	32960	314	326	406	378
	460	100	100	74	5	2	1 350 000	1 730 000	680	910	32060XU	318	329	442	404
	540	96	85	71	6	2.5	1 280 000	1 360 000	590	790	30260	322	355	518	468
	540	149	140	115	6	2.5	2 080 000	2 550 000	590	790	32260	322	352	518	454
320	440	76	72	63	4	1.5	780 000	1 130 000	670	900	32964	334	345	426	398
	480	100	100	74	5	2	1 370 000	1 790 000	630	840	32064XU	338	350	462	424
	580	104	92	75	6	2.5	1 490 000	1 590 000	550	730	30264	342	381	558	502
	580	159	150	125	6	2.5	2 370 000	2 870 000	550	730	32264	342	372	558	490

NTN Tapered Roller Bearings

Double row , indirect type

d 105–130 mm



Boundary dimensions mm						Basic load ratings N		Limiting speeds rev/min		Bearing number	Abutment and fillet dimensions mm				
d	D	B_i	B_e	r	r_1	dynamic C_r	static C_{or}	grease	oil		D_s min	d_1 min	S_2 min	R max	R_1 max
	190	88	70	3.5	1.2	440 000	470 000	1 500	2 100	430221XU	117	178	9	2	0.8
	190	115	95	3.5	1.2	585 000	675 000	1 500	2 100	432221XU	117	180	10	2	0.8
105	225	116	91	4	1.5	670 000	675 000	1 400	1 900	* 430321XU	119	209	12.5	2.5	1
	225	116	91	4	1.5	555 000	530 000	1 400	1 900	430321X	119	209	12.5	2.5	1
	225	170	133	4	1.5	945 000	1 050 000	1 400	1 900	* 432321U	119	209	18.5	2.5	1
	225	170	133	4	1.5	850 000	940 000	1 400	1 900	432321	119	209	18.5	2.5	1
	180	56	50	3	1	202 000	205 000	1 600	2 200	413122	120	169	3	2	0.5
	180	70	56	3	1	266 000	293 000	1 600	2 200	423122A	120	166	7	2	0.5
	200	92	74	3.5	1.2	495 000	540 000	1 500	2 000	430222XU	122	188	9	2	0.8
110	200	121	101	3.5	1.2	645 000	755 000	1 500	2 000	432222XU	122	190	10	2	0.8
	240	118	93	4	1.5	735 000	745 000	1 400	1 800	* 430322U	124	222	12.5	2.5	1
	240	118	93	4	1.5	610 000	585 000	1 400	1 800	430322	124	222	12.5	2.5	1
	240	181	142	4	1.5	1 090 000	1 240 000	1 400	1 800	* 432322U	124	222	19.5	2.5	1
	240	181	142	4	1.5	960 000	1 060 000	1 400	1 800	432322	124	222	19.5	2.5	1
	180	46	41	3	1	170 000	176 000	1 500	2 100	413024	130	171	2.5	2	0.6
	180	58	46	3	1	204 000	223 000	1 500	2 100	423024	130	170	6	2	0.6
	200	62	55	3	1	234 000	250 000	1 500	2 000	413124A	130	184	3.5	2	0.6
	200	78	62	3	1	330 000	370 000	1 500	2 000	423124	130	188	8	2	0.6
	215	97	78	3.5	1.2	530 000	585 000	1 400	1 900	* 430224XU	132	203	9.5	2	0.8
120	215	97	78	3.5	1.2	475 000	500 000	1 400	1 900	430224X	132	203	9.5	2	0.8
	215	132	109	3.5	1.2	710 000	850 000	1 400	1 900	432224XU	132	204	11.5	2	0.8
	260	128	101	4	1.5	855 000	880 000	1 200	1 700	* 430324XU	134	239	13.5	2.5	1
	260	128	101	4	1.5	715 000	695 000	1 200	1 700	430324X	134	239	13.5	2.5	1
	260	188	145	4	1.5	1 260 000	1 450 000	1 200	1 700	* 432324U	134	239	21.5	2.5	1
	260	188	145	4	1.5	1 160 000	1 310 000	1 200	1 700	432324	134	239	21.5	2.5	1
	200	52	46	3	1	199 000	218 000	1 400	1 900	413026	140	186	3	2	0.6
	200	65	52	3	1	262 000	295 000	1 400	1 900	423026	140	189	6.5	2	0.6
	210	64	57	3	1	278 000	291 000	1 400	1 800	413126A	140	196	3.5	2	0.6
	210	80	64	3	1	365 000	410 000	1 400	1 800	423126	140	198	8	2	0.6
	230	98	78.5	4	1.5	575 000	625 000	1 300	1 700	* 430226XU	144	218	9.5	2.5	1
130	230	98	78.5	4	1.5	500 000	520 000	1 300	1 700	430226X	144	218	9.5	2.5	1
	230	145	117.5	4	1.5	820 000	1 010 000	1 300	1 700	432226XU	144	219	13.5	2.5	1
	280	137	107.5	5	2	920 000	960 000	1 200	1 500	430326XU	148	255	14.5	3	1
	280	137	107.5	5	2	810 000	790 000	1 200	1 500	430326X	148	255	14.5	3	1
	280	205	163.5	5	2	1 380 000	1 580 000	1 200	1 500	432326	148	263	20.5	3	1

Note: Consult NTN for availability of bearings with mark *.

Lampiran 12

Suaian untuk tujuan-tujuan umum.
Sistim lubang dasar

Lubang dasar	Lambang dan kwalitas untuk poros																
	Suaian longgar						Suaian pas				Suaian paksa						
	b	c	d	e	f	g	h	js	k	m	n	p	r	s	t	u	x
H 5						4	4	4	4	4							
H 6						5	5	5	5	5							
					6	6	6	6	6	6	6	6					
H 7				(6)	6	6	6	6	6	6	6	6	6	6	6	6	6
				7	7	(7)	7	7	(7)	(7)	(7)	(7)	(7)	(7)	(7)	(7)	(7)
H 8					7		7										
				8	8		8										
				9													
H 9				8			8										
		9	9	9			9										
H 10	9	9	9														

Sistim poros dasar

Poros dasar	Lambang dan kwalitas untuk lubang																
	Suaian longgar						Suaian pas				Suaian paksa						
	B	C	D	E	F	G	H	Js	K	M	N	P	R	S	T	U	X
h 4							5	5	5	5							
h 5							6	6	6	6	6	6					
h 6					6	6	6	6	6	6	6	6					
				(7)	7	7	7	7	7	7	7	7	7	7	7	7	7
h 7				7	7	(7)	7	(7)	(7)	(7)	(7)	(7)	(7)	(7)			
					8		8										
h 8			8	8	8		8										
			9	9			9										
h 9			8	8			8										
		9	9	9			9										
	10	10	10														

Lampiran 13.

1 JIS G 4051. Baja karbon untuk korstruksi mesin.

(a) Unsur kimia

Lambang	Unsur kimia (%)				
	C	Si	Mn	P	S
S 30 C	0,27–0,33	0,15–0,35	0,60–0,90	0,030	0,035
S 35 C	0,32–0,38				
S 40 C	0,37–0,43				
S 45 C	0,42–0,48				
S 50 C	0,47–0,53				
S 55 C	0,52–0,58				
S 15 CK	0,13–0,18	0,15–0,35	0,30–0,60	0,025	0,025

(b) Ukuran standar baja batang yang dirol panas (Ukuran dalam kurung sedapat mungkin dihindari pemakaiannya)

9 (10) 11 (12) 13 (14) (15) 16 (17) (18) 19 (20) 22 (24) 25 (26)
28 30 32 34 36 38 40 42 44 46 48 50 55 60 65 70
75 80 90 95 100 (105) 110 (115) 120 130 140 150 160 (170) 180 (190)
200

(c) Sifat-sifat mekanis standar

Lambang	Temperatur transformasi		Perlakuan panas			Sifat mekanis			
	A_1 (°C)	A_3 (°C)	Penormalan (N)	Celup dingin (H)	Temper (H)	Perla-kuan panas	Batas mulur (kg/mm²)	Kekuatan tarik (kg/mm²)	Kekerasan (H_B)
S30C	720–715	780–720	850–900 Pendinginan udara	850–900 Pendinginan air	550–650 Pendinginan cepat	N	29	48	137–197
						H	34	55	152–212
S35C	720–800	770–710	840–890 Pendinginan udara	850–900 Pendinginan air	550–650 Pendinginan cepat	N	31	52	149–207
						H	40	58	167–235
S40C	720–790	760–700	830–860 Pendinginan udara	830–880 Pendinginan air	550–650 Pendinginan cepat	N	33	55	156–217
						H	45	62	179–255