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TABEL 11.2. TABEL GAYA TANGENSIAL LOKAL & AKUMULASINYA

NO	SDT PUTAR EKL. PRIM DARI TMA	BNTLN** JALAN I ft	BNTLN DUDUK I ft	BNTLN JALAN 2 ft	BNTLN DUDUK III ft	BNTLN JALAN 3 ft	BNTLN DUDUK IV ft	BNTLN JALAN 4 ft	BNTLN DUDUK V ft	BNTLN JALAN 5 ft	BNTLN DUDUK VI ft	BNTLN JALAN 6 ft	BNTLN DUDUK VII ft
1	0	0	0	3.69789	3.69789	18.7999	22.49779	3.69789	26.19568	3.69789	29.89357	0	29.89357
2	30	-4.65642	-4.65642	4.48685	-0.16957	4.61172	4.44215	2.26632	6.70847	1.98685	8.69532	62.6491	71.34442
3	60	-2.79762	-2.79762	46.0474	43.24978	0	43.24978	0	43.24978	-2.79762	40.45216	75.3544	115.80656
4	90	1.98685	1.98685	62.3446	64.33145	2.26632	66.59777	2.26632	68.86439	-4.65642	64.20767	61.9869	126.19457
5	120	3.69789	3.69789	0	3.69789	3.69789	7.39578	3.69789	11.09367	0	11.09367	18.7999	29.89357
6	150	2.26632	2.26632	62.6491	64.91542	1.98685	66.90227	4.48685	71.38912	-4.65642	66.7327	4.61172	71.34442
7	180	0	0	75.3544	75.3544	-2.79762	72.55678	-2.79762	118.60418	118.60418	-2.79762	115.80656	115.80656
8	210	2.26632	2.26632	61.9869	64.25322	-4.65642	59.5968	62.3446	121.9414	1.98685	123.92825	2.26632	126.19457
9	240	3.69789	3.69789	18.7999	22.49779	0	22.49779	0	22.49779	3.69789	26.19568	3.69789	29.89357
10	270	4.48685	4.48685	4.61172	9.09857	-4.65642	4.44215	62.6491	67.09125	2.26632	69.35757	1.98685	71.34442
11	300	46.0474	46.0474	0	46.0474	-2.79762	43.24978	75.3544	118.60418	0	118.60418	-2.79762	115.80656
12	330	62.3446	62.3446	2.26632	64.61092	1.98685	66.59777	61.9869	128.58467	2.26632	130.85099	-4.65642	126.19457
13	360	0	0	3.69789	3.69789	3.69789	7.39578	18.7999	26.19568	3.69789	29.89357	0	29.89357
14	390	62.6491	62.6491	1.98685	64.63595	2.26632	66.90227	4.61172	71.51399	4.48685	76.00084	-4.65642	71.34442
15	420	75.3544	75.3544	-2.79762	72.55678	0	72.55678	0	72.55678	46.0474	118.60418	-2.79762	115.80656
16	450	61.9869	61.9869	-4.65642	57.33048	2.26632	59.5968	2.26632	61.86312	62.3446	124.20772	1.98685	126.19457
17	480	18.7999	18.7999	0	18.7999	3.69789	22.49779	3.69789	26.19568	0	26.19568	3.69789	29.89357
18	510	4.61172	4.61172	-4.65642	-0.0447	4.48685	4.44215	1.98685	6.429	62.6491	69.0781	2.26632	71.34442
19	540	0	0	-2.79762	-2.79762	46.0474	43.24978	-2.79762	40.45216	75.3544	115.80656	0	115.80656
20	570	2.26632	2.26632	1.98685	4.25317	62.3446	66.59777	-4.65642	61.94135	61.9869	123.92825	2.26632	126.19457
21	600	3.69789	3.69789	3.69789	7.39578	0	7.39578	0	7.39578	18.7999	26.19568	3.69789	29.89357
22	630	1.98685	1.98685	2.26632	4.25317	62.6491	66.90227	-4.65642	62.24585	4.61172	66.85757	4.48685	71.34442
23	660	-2.79762	-2.79762	0	-2.79762	75.3544	72.55678	-2.79762	69.75916	0	69.75916	46.0474	115.80656
24	690	-4.65642	-4.65642	2.26632	-2.3901	61.9869	59.5968	1.98685	61.58365	2.26632	63.84997	62.3446	126.19457
25	720	0	0	3.69789	3.69789	18.7999	22.49779	3.69789	26.19568	3.69789	29.89357	0	29.89357
nilai terbesar =		75.3544	75.3544		75.3544		72.55678		128.58467		130.85099		126.19457

keterangan : \* = sudut putar engkol pertama; \*\* = bantalan ; FO = 1,5,3,6,2,4



TABEL 12. 1. TABEL TINGGI ANGGAT; KECEPATAN ANGGAT & PERCEPATAN ANGGAT DARI PROFIL CAM

no.	sudut	sudut rad	hlmaks-mm	hlmav2 - mm	k	1-cosa	ht	cosa	sinA	-rad/det	VI-mm/s	Jl-m/s <sup>2</sup>
1	0	0	6	3	2.93877551	0	0	1	0	78.54	6168.532	159.8217
2	5	0.087266	6	3	2.93877551	0.0327051	0.098115	0.967295	0.253655	78.54	6168.532	175.6391
3	15	0.261799	6	3	2.93877551	0.2816506	0.844952	0.718349	0.695683	78.54	6168.532	481.7144
4	25	0.436332	6	3	2.93877551	0.7154724	2.146417	0.284528	0.958668	78.54	6168.532	663.8145
5	35	0.610865	6	3	2.93877551	1.2225209	3.667563	-0.222521	0.974928	78.54	6168.532	675.0735
6	45	0.785398	6	3	2.93877551	1.6723009	5.016903	-0.672301	0.740278	78.54	6168.532	512.5939
7	55	0.959931	6	3	2.93877551	1.9490557	5.847167	-0.949056	0.315108	78.54	6168.532	218.1917
8	65	1.134464	6	3	2.93877551	1.9815592	5.944677	-0.981559	-0.191159	78.54	6168.532	-132.3648
9	75	1.308997	6	3	2.93877551	1.761446	5.284338	-0.761446	-0.648228	78.54	6168.532	-448.8556
10	85	1.48353	6	3	2.93877551	1.3453651	4.036095	-0.345365	-0.938468	78.54	6168.532	-649.8277
11	95	1.658063	6	3	2.93877551	0.8404001	2.5212	0.1596	-0.987182	78.54	6168.532	-683.5585
12	105	1.832596	6	3	2.93877551	0.3765102	1.129531	0.62349	-0.781831	78.54	6168.532	-541.3669
13	115	2.007129	6	3	2.93877551	0.0730832	0.21925	0.926917	-0.375267	78.54	6168.532	-259.8477
14	122.5	2.138028	6	3	2.93877551	0	0	1	-4.36E-10	78.54	6168.532	-3.02E-07

L 6 : Tabel Bahan : 6L)

Grade (according to USSR Standard)	Mechanical properties			Brinell hardness $H_B$	Chemical	
	ultimate tensile strength $\sigma_t$	bending $\sigma_b$	compressive $\sigma_c$		Ctotal	Cbound
C421-40	21	40	75	170-229	3.1-3.4	0.5-0.7
C424-44	24	44	83	170-241	3.0-3.3	0.6-0.9
C428-28	28	48	90	170-241	3.0-3.3	0.7-1.0
C428-48	28	48	90	190-230	2.9-3.2	0.7-0.9
C432-52	32	52	100	200-240	2.9-3.2	0.8-1.0
C438-60 (inoculated cast iron)	38	60	120	197-252	2.7-3.0	apric. 3.9

Structural  
I. Iron

2. Structural

Group of steel	Grade (according to USSR Standard)	Mechanical properties					Brinell hardness, $H_B$
		Ultimate strength, $\sigma_u$	Yield point, $\sigma_s$	Elongation, per cent $\sigma_b$	Impact strength, $W_{imp}$		
High-grade carbon steel	30	45	22	18	3.5	<178	
	Ditto	35	52	30	18	4	<187
Ditto	45	60	34	15	3.5	170-210	
	Ditto	65T	65	35	17	4.5	192-228
Alloy steel	65T	130	110	5	—	—	
	15XA	60	40	15	6	179	

Materials  
Castings

SI	Mn	P	NI	Cr	V, Mo
1.5-2.0	0.6-0.8	0.1-0.3	—	—	—
1.3-1.6	0.8-1.0	0.1-0.3	0.4-0.8	0.3-0.4	—
1.2-1.6	0.8-1.0	0.1-0.3	0.4-0.8	0.3-0.5	—
0.9-1.5	0.8-1.0	0.1-0.3	0.6-1.2	0.3-0.5	—
0.9-1.3	0.8-1.0	0.1-0.3	1.25-1.5	<0.5	—
1.1-1.3	1.0-1.3	up to 0.2	—	—	—

Steels

C	Mn	Si	Cr	NI	Mo, V, W	S	
						S	P
0.25	0.5	0.17	—	—	—	0.045	0.045
0.35	0.8	0.37	—	—	—	0.045	0.045
0.30	0.5	0.17	—	—	—	0.045	0.045
0.40	0.8	0.37	—	—	—	0.045	0.045
0.40	0.5	0.17	—	—	—	0.045	0.045
0.50	0.8	0.37	—	—	—	0.040	0.040
0.60	0.9	0.17	—	—	—	0.040	0.040
0.70	1.2	0.37	—	—	—	0.030	0.035
0.12	0.3	0.17	1.0	—	—	0.030	0.035
0.20	0.6	0.37	—	—	—	0.030	0.035



6L) Op.cit, N.Petrovsky, hal. 546



Group of steel	Grade (according to USSR Standard)	Mechanical properties					Chemical composition, per cent							
		Ultimate strength, $\frac{kg}{mm^2}$ $\sigma_w$	Yield point $\frac{kg}{mm^2}$ $\sigma_s$	Elongation, per cent $\sigma_b$	Impact strength, $\frac{kg \cdot m}{cm^2}$ $W_{imp}$	Brinell hardness, $H_B$	C	Mn	Si	Cr	Ni	Mo, V, W	S	P
Alloy steel	30M	55	28	19	5	appr. 190	0.25	0.5	0.15	—	—	—	0.040	0.040
	45X	Creep-resistant up to 450°C 105	85	8	4	302-341	0.35	0.8	0.3	0.8	—	—	0.040	0.040
Ditto	30XMA	95	75	12	9	<269	0.4	0.5	0.17	1.1	—	—	0.03	0.035
	18XHMA or 18XHBA	115	90	11	11	321-387	0.25-0.35	0.4-0.7	0.17-0.37	0.8-1.1	—	Mo=0.15-0.25	0.03	0.035
Ditto	50XΦA	150	120	5	—	appr. 400	0.15-0.22	0.25-0.55	0.17-0.37	0.35-1.65	4.1-4.6	Mo=0.15-0.25 V=0.25-0.45 or W=0.8-1.2	0.03	0.035
	10X15	$H_B$ 170-207 after annealing $R_c$ 58-65 after hardening and tempering $H_B$ 207-255 after annealing $R_c$ 58-65 after hardening and tempering	70	10	3	255-340	0.45-0.55	0.30-0.60	0.15-0.30	0.75-1.1	—	V=0.15-0.25	0.03	0.035
Alloy tool steel	XBT	90 at $t=20^\circ C$	70	10	3	255-340	0.95-1.10	0.2-0.4	0.15-0.35	1.30-1.65	—	—	0.02	0.027
	X10CM (CX8M)	40 at $t=600^\circ C$ (short-time test)	40	35	10	150-210	0.90-1.05	0.8-1.1	0.15-0.35	0.9-1.2	—	W=1.2-1.6	0.03	0.03
Heat-resistant and heat-proof (up to 600-700°C) steel	X14H14B (2H69)	70 at $t=20^\circ C$ 25 at $t=800^\circ C$ (short-time test)	40	35	10	150-210	0.35-0.45	0.3-0.7	1.9-2.6	10-12	<0.6	0.7 0.9	—	—
	X18H125C (3H3C)	appr. 65 at $t=20^\circ C$ 20 at $t=800^\circ C$ (short-time test)	30	30	8	163-241	0.4-0.5	<0.7	0.3-0.8	13-15	13-15	0.25-0.40 W=2.0-2.8	—	—
Heat-resistant and heat-proof (up to 1000°C) steel	X18H125C (3H3C)	appr. 65 at $t=20^\circ C$ 20 at $t=800^\circ C$ (short-time test)	30	30	8	163-241	0.3-0.4	<2.0	2.0-3.0	16-20	—	23-27	—	—
	X18H125C (3H3C)	appr. 65 at $t=20^\circ C$ 20 at $t=800^\circ C$ (short-time test)	30	30	8	163-241	0.3-0.4	<2.0	2.0-3.0	16-20	—	23-27	—	—



Alloy group	Grade	Mechanical properties				
		$\sigma_{0.2}$ , kg/mm <sup>2</sup>	$\sigma_{1.0}$ , kg/mm <sup>2</sup>	$\delta$ , per cent	$H_B$	$V_{mp}$ , kg-m/cm <sup>2</sup>
Casting alloys	AT14 (special silumin)	26	20	4	70	—
Ditto	AT11 (aluminium-copper alloy)	30	26	0.3	130	—
Deformable alloys (forging, stamping, pressing)	AK2	42	28	13	110	—
	AK4	44	29	10	110	—

4. Copper-base Alloys

Grade (according to USSR Standard)	Mechanical properties		
	$\sigma_{0.2}$ , kg/mm <sup>2</sup>	$\delta$ , per cent	$H_B$
Bronze (type Car0) O $\Phi$ 6.5-0.25	50-60 60-70	10-5 3-2	130-160 160-200

5. Antifriction

Grade (according to USSR Standard)	Mechanical properties		
	$\sigma_{0.2}$ , kg/mm <sup>2</sup>	$\delta$ , per cent	$H_B$
Tin babbitt B83	76	5	30 ( $t=17^\circ C$ ) 13 ( $t=100^\circ C$ )
Lead bronze BP-C30	8.6	10.3	30
Aluminium alloy AH 2.5	10-14	25-30	appr. 10

Chemical composition, per cent (Al all the rest)					Specific weight
Si	Cu	Mg	Other components	Impurities	
9	—	0.25	Mn=0.4 Ni=2.0	Fe<0.6; Zn<0.3; Ti<0.15; Cu<0.3; Si<0.7; Fe<0.8; Zn<0.3	2.65
—	4	1.5	—	—	2.75
0.85	4.0 2.2	0.5 1.6	2.0 1.25	1.35	2.8 2.8

(bronze and brass)

Blank	Chemical composition, per cent
Blank	Sn=6-7; P=0.1-0.25; Cu—balance
Drawn blanks Cold forging (rolling)	Sn=6-7; P=0.1-0.25; Cu—balance

Bearing Alloys

Chemical composition, per cent	Melting point (lower and upper)	Heat conductivity, kcal/cm sec $^\circ C$	Specific weight
Sb=10-12; Cu=5.5-6.5; Sn—balance	240-350 $^\circ C$	0.11	7.38
Pb=27-31; P<0.1; Cu—balance	950 $^\circ C$	0.26 (at $t=20^\circ C$ ) 0.35 (at $t=200^\circ C$ )	9.4
Ni=2.5; admixtures—1 Al—balance	620-640 $^\circ C$	0.36	2.76