

**Tab. 5 DIMENSIONS AND CLEAN TURNED SIZES FOR HOLLOW HOLLOW BAR FOR MACHINING HOT ROLLING**

Nom sizes			EXECUTION DIMENSIONS							
OD	ID	WT	OD	ID	WT	Oadmin	Odmax	Idmin	Idmax	Weight
70	55	7.5	71.3	51.3	10	70.8	71.8	48.3	52.0	15.117
70	50	10.0	71.3	46.7	12.3	70.8	71.8	43.1	47.0	17.897
70	45	12.5	71.3	41.1	15.1	70.8	71.8	37.6	42.0	20.928
70	40	15	71.3	35.7	17.8	70.8	71.8	31.6	37.0	23.485
75	60	7.5	76.3	56.3	10	75.7	76.9	53.2	57.0	16.351
75	55	10.0	76.3	51.7	12.3	75.7	76.9	48.1	52.0	19.414
75	50	12.5	76.3	46.1	15.1	75.7	76.9	42.5	47.0	22.790
75	45	15	76.3	40.8	17.8	75.7	76.9	36.6	42.0	25.680
80	60	10.0	81.5	57.7	11.9	80.9	82.1	54.1	57.0	20.426
80	55	12.5	81.5	52.5	14.5	80.9	82.1	48.3	52.0	23.959
80	50	15	81.5	47.1	17.2	80.9	82.1	43.0	47.0	27.275
80	45	17.5	81.5	42.3	19.6	80.9	82.1	37.8	42.0	29.920
80	40	20	81.5	36.9	22.3	80.9	82.1	31.8	37.0	32.557
85	70	7.5	86.5	66.5	10	85.9	87.2	63.4	67.0	18.866
85	65	10	86.5	62.7	11.9	85.9	87.2	59.1	62.0	21.893
85	60	12.5	86.5	57.5	14.5	85.9	87.2	53.2	57.0	25.747
85	55	15	86.5	52.1	17.2	85.9	87.2	48.0	52.0	23.396
85	50	17.5	86.5	47.3	19.6	85.9	87.2	42.7	47.0	32.337
85	45	20.0	86.5	41.9	22.3	85.9	87.2	36.8	42.0	35.303
90	75	7.5	91.5	71.5	10	90.8	92.2	68.3	72.0	20.099
90	70	10	91.5	67.7	11.9	90.8	92.2	64.0	67.0	23.360
90	65	12.5	91.5	62.5	14.5	90.8	92.2	58.2	62.0	27.535
90	60	15	91.5	57.1	17.2	90.8	92.2	53.0	57.0	31.516
90	55	17.5	91.5	51.9	19.8	90.8	92.2	47.3	52.0	35.011
90	50	20	91.5	46.9	22.3	90.8	92.2	41.8	47.0	38.057
95	80	7.5	96.5	76.5	10	95.8	97.2	73.3	77.0	21.332
95	75	10	96.5	72.7	11.9	95.8	97.2	69.0	72.0	24.828
95	70	12.5	96.5	67.5	14.5	95.8	97.2	63.2	67.0	29.323
95	65	15	96.5	62.1	17.2	95.8	97.2	57.9	62.0	33.637
95	60	17.5	96.5	57.4	19.6	95.8	97.2	52.7	57.0	37.171
95	55	20	96.5	51.9	22.3	95.8	97.2	46.7	52.0	40.806
95	50	22.5	96.5	46.7	24.9	95.8	97.2	41.0	47.0	40.968
100	85	7.5	101.6	81.6	10	100.9	102.4	78.4	82.0	22.590
100	80	10	101.6	77.8	11.9	100.9	102.4	74.2	77.0	26.324
100	75	12.5	101.6	72.6	14.5	100.9	102.4	68.3	72.0	31.146
100	70	15	101.6	67.2	17.2	100.9	102.4	63.1	67.0	35.801
100	65	17.5	101.6	62.2	19.7	100.9	102.4	57.6	62.0	39.790
100	60	20	101.6	57.0	22.3	100.9	102.4	51.9	57.0	43.611
100	55	22.2	101.6	51.8	24.9	100.9	102.4	46.2	52.0	47.099

Tab. 5 Hot rolling - table continued

Nom sizes			EXECUTION DIMENSIONS							
OD	ID	WT	OD	ID	WT	Oadmin	Odmax	Idmin	Idmax	Greutate
100	50	25	101.6	46.4	27.6	100.9	102.4	40.2	47.0	50.369
105	90	7.5	106.6	86.6	10	105.9	107.4	83.4	87.0	23.823
105	85	10	106.6	82.8	11.9	105.9	107.4	79.1	82.0	27.792
105	80	12.5	106.6	77.6	14.5	105.9	107.4	73.3	77.0	32.934
105	75	15	106.6	72.2	17.2	105.9	107.4	68.1	72.0	37.921
105	70	17.5	106.6	67.2	19.7	105.9	107.4	62.6	67.0	42.219
105	65	20	106.6	62.0	22.3	105.9	107.4	56.8	62.0	46.361
105	60	22.5	106.6	56.8	24.9	105.9	107.4	51.1	57.0	50.170
105	55	25	106.6	51.6	27.5	105.9	107.4	45.4	52.0	53.645
110	95	7.5	111.6	91.6	10	110.9	112.4	88.4	92.0	25.056
110	90	10	111.6	87.8	11.9	110.9	112.4	84.1	87.0	29.259
110	85	12.5	111.6	82.4	14.6	110.9	112.4	78.0	82.0	34.926
110	80	15	111.6	77.2	17.2	110.9	112.4	73.0	77.0	40.042
110	75	17.5	111.6	72.2	19.7	110.9	112.4	67.5	72.0	44.648
110	70	20	111.6	67.0	22.3	110.9	112.4	61.8	67.0	49.111
110	65	22.5	111.6	61.8	24.9	110.9	112.4	56.1	62.0	53.240
110	60	25	111.6	56.4	27.6	110.9	112.4	50.2	57.0	57.175
115	100	7.5	116.6	96.6	10	115.8	117.5	93.3	97.0	26.289
115	95	10	116.6	92.8	11.9	115.8	117.5	89.1	92.0	30.727
115	90	12.5	116.6	87.4	14.6	115.8	117.5	83.0	87.0	36.726
115	85	15	116.6	82.2	17.2	115.8	117.5	78.0	82.0	42.163
115	80	17.5	116.6	76.8	19.9	115.8	117.5	72.1	77.0	47.457
115	75	20	116.6	72.0	22.3	115.8	117.5	66.8	72.0	51.860
115	70	22.5	116.6	66.8	24.9	115.8	117.5	61.1	67.0	56.310
115	65	25	116.6	61.4	27.6	115.8	117.5	55.1	62.0	60.579
120	100	10	121.7	97.9	11.9	120.9	122.6	94.1	97.0	32.223
120	95	12.5	121.7	92.7	14.6	120.9	122.6	88.1	92.0	38.562
120	90	15	121.7	87.1	17.3	120.9	122.6	82.8	87.0	44.542
120	85	17.5	121.7	82.3	19.7	120.9	122.6	77.6	82.0	49.555
120	80	20	121.7	77.1	22.3	120.9	122.6	71.8	77.0	54.665
120	75	22.5	121.7	71.5	25	120.9	122.6	65.9	72.0	59.619
120	70	25	121.7	66.5	27.6	120.9	122.6	60.2	67.0	64.050
125	105	10	126.7	102.9	11.9	125.9	127.7	99.1	102.0	33.691
125	100	12.5	126.7	97.5	14.6	125.9	127.7	93.0	97.0	40.362
125	95	15	126.7	92.1	17.3	125.9	127.7	87.8	92.0	46.675
125	90	17.5	126.7	87.3	19.7	125.9	127.7	82.5	87.0	51.984
125	85	20	126.7	82.1	22.3	125.9	127.7	76.8	82.0	57.415
125	80	22.5	126.7	76.7	25	125.9	127.7	70.9	77.0	62.702
125	75	25	126.7	71.5	27.6	125.9	127.7	65.2	72.0	67.453
125	70	27.5	126.7	66.3	30.2	125.9	127.7	59.4	67.0	71.871

Tab. 5 Hot rolling - table continued

Nom. sizes			EXECUTION DIMENSIONS							
OD	ID	WT	OD	ID	WT	Oadmin	Odmax	ldmin	ldmax	Greutate
130	110	10	131.7	107.7	12	130.8	132.7	103.8	107.0	35.424
130	105	12.5	131.7	102.5	14.6	130.8	132.7	98.0	102.0	42.163
130	100	15	131.7	97.1	17.3	130.8	132.7	92.8	97.0	48.808
130	95	17.5	131.7	91.9	19.9	130.8	132.7	87.1	92.0	54.867
130	90	20	131.7	86.9	22.4	130.8	132.7	81.6	87.0	60.379
130	85	22.5	131.7	81.7	25	130.8	132.7	75.8	82.0	65.785
130	80	25	131.7	76.5	27.6	130.8	132.7	70.1	77.0	70.856
130	75	27.5	131.7	71.1	30.3	130.8	132.7	64.2	72.0	75.770
140	120	10	141.8	116.8	12.5	140.9	142.9	112.8	117.0	39.859
140	115	12.5	141.8	112.5	14.7	140.9	142.9	107.8	112.0	46.077
140	110	15	141.8	107.2	17.3	140.9	142.9	102.8	107.0	53.117
140	105	17.5	141.8	102.2	19.8	140.9	142.9	97.3	102.0	59.572
140	100	20	141.8	97.0	22.4	140.9	142.9	91.6	97.0	65.959
140	95	22.5	141.8	91.8	25.0	140.9	142.9	85.9	92.0	72.012
140	90	25	141.8	86.4	27.7	140.9	142.9	79.9	87.0	77.944
140	85	27.5	141.8	81.2	30.3	140.9	142.9	74.2	82.0	83.318
140	80	30	141.8	76.0	32.9	140.9	142.9	68.5	77.0	88.357
140	75	32.5	141.8	70.6	35.6	140.9	142.9	62.6	72.0	93.238
150	130	10	151.8	125.8	13.0	150.8	152.9	121.6	127.0	44.499
150	125	12.5	151.8	122.4	14.7	150.8	152.9	117.7	122.0	49.702
150	120	15	151.8	117.2	17.3	150.8	152.9	112.8	117.0	57.384
150	115	17.5	151.8	112.2	19.8	150.8	152.9	107.3	112.0	64.455
150	110	20	151.8	107.0	22.4	150.8	152.9	101.5	107.0	71.483
150	105	22.5	151.8	101.6	25.1	150.8	152.9	95.6	102.0	78.428
150	100	25	151.8	96.4	27.7	150.8	152.9	89.9	97.0	84.776
150	95	27.5	151.8	91.2	30.3	150.8	152.9	84.2	92.0	90.790
150	90	30	151.8	86.0	32.9	150.8	152.9	78.4	87.0	96.471
150	85	32.5	151.8	80.6	35.6	150.8	152.9	72.5	82.0	102.018
160	135	12.5	161.9	132.5	14.7	160.9	163.1	127.8	132.0	53.364
160	130	15	161.9	127.1	17.4	160.9	163.1	122.6	127.0	62.006
160	125	17.5	161.9	122.3	19.8	160.9	163.1	117.3	122.0	69.387
160	120	20	161.9	117.1	22.4	160.9	163.1	111.6	117.0	77.062
160	115	22.5	161.9	111.7	25.1	160.9	163.1	105.6	112.0	84.680
160	110	25	161.9	106.5	27.7	160.9	163.1	99.9	107.0	91.675
160	105	27.5	161.9	101.3	30.3	160.9	163.1	94.2	102.0	98.337
160	100	30	161.9	95.9	33	160.9	163.1	88.2	97.0	104.903
160	95	32.5	161.9	90.7	35.6	160.9	163.1	82.5	92.0	110.885
160	90	35	161.9	85.5	38.2	160.9	163.1	76.8	87.0	116.534
160	85	37.5	161.9	80.1	40.9	160.9	163.1	70.9	82.0	122.047
170	145	12.5	171.9	141.9	15	170.8	173.2	137.0	142.0	58.041

Tab. 5 Hot rolling - table continued

Nom sizes			EXECUTION DIMENSIONS							
OD	ID	WT	OD	ID	WT	Oadmin	Odmax	Idmin	Idmax	Greutate
170	140	15	171.9	137.1	17.4	170.8	173.2	132.5	137.0	66.298
170	135	17.5	171.9	132.3	19.8	170.8	173.2	127.2	132.0	74.270
170	130	20	171.9	126.9	22.5	170.8	173.2	121.3	127.0	82.900
170	125	22.5	171.9	121.7	25.1	170.8	173.2	115.6	122.2	90.870
170	120	25	171.9	116.5	27.7	170.8	173.2	109.8	117.0	98.506
170	115	27.5	171.9	111.1	30.4	170.8	173.2	103.9	112.1	106.084
170	110	30	171.9	105.9	33	170.8	173.2	98.2	107.0	113.041
170	105	32.5	171.9	100.7	35.6	170.8	173.2	92.5	102.0	119.665
170	100	35	171.9	95.3	38.3	170.8	173.2	86.5	97.0	126.190
170	95	37.5	171.9	90.1	40.9	170.8	173.2	80.8	92.0	132.134
170	90	40	171.9	84.9	43.5	170.8	173.2	75.1	87.0	137.744
170	85	42.5	171.9	79.5	46.2	170.8	173.2	69.1	82.0	143.218
180	155	12.5	181.9	149.9	16	180.7	183.3	144.7	152.0	65.461
180	150	15	181.9	147.1	17.4	180.7	183.3	141.6	147.0	70.589
180	145	17.5	181.9	142.3	19.8	180.7	183.3	136.2	142.0	79.153
180	140	20	181.9	136.9	22.5	180.7	183.3	130.1	137.0	88.448
180	135	22.5	181.9	131.7	25.1	180.7	183.3	124.2	132.0	97.060
180	130	25	181.9	126.5	27.7	180.7	183.3	118.4	127.0	105.338
180	125	27.5	181.9	121.1	30.4	180.7	183.3	113.8	122.0	113.581
180	120	30	181.9	115.9	33	180.7	183.3	108.1	117.0	121.179
180	115	32.5	181.9	110.7	35.6	180.7	183.3	102.4	112.0	128.444
180	110	35	181.9	105.3	38.3	180.7	183.3	96.5	107.0	135.635
180	105	37.5	181.9	100.1	40.9	180.7	183.3	90.7	102.0	142.220
180	100	40	181.9	94.9	43.5	180.7	183.3	85.0	97.0	148.472
180	95	42.5	181.9	89.5	46.2	180.7	183.3	79.1	92.0	154.611
180	90	45	181.9	84.3	48.8	180.7	183.3	73.4	87.0	160.183
190	165	12.5	192.4	162.4	15.0	191.2	194.3	157.4	162.0	65.624
190	160	15	192.4	157.0	17.7	191.2	194.3	151.3	157.0	76.258
190	155	17.5	192.4	152.2	20.1	191.2	194.3	145.9	152.0	85.408
190	150	20	192.4	146.8	22.8	191.2	194.3	139.8	147.0	95.363
190	145	22.5	192.4	141.6	25.4	191.2	194.3	134.0	142.0	104.609
190	140	25	192.4	136.4	28	191.2	194.3	128.1	137.0	113.522
190	135	27.5	192.4	131.2	30.6	191.2	194.3	123.8	132.0	122.101
190	130	30	192.4	125.8	33.3	191.2	194.3	117.9	127.0	130.657
190	125	32.5	192.4	120.6	35.9	191.2	194.3	112.2	122.0	138.557
190	120	35	192.4	115.4	38.5	191.2	194.3	106.4	117.0	146.123
190	115	37.5	192.4	110.0	41.2	191.2	194.3	100.5	112.0	153.627
190	110	40	192.4	104.8	43.8	191.2	194.3	94.8	107.0	160.514
190	105	42.5	192.4	99.6	46.4	191.2	194.3	89.1	102.0	167.067

Tab. 5 Hot rolling - table continued

Nom sizes			EXECUTION DIMENSIONS							
OD	ID	WT	OD	ID	WT	Oadmin	Odmax	Idmin	Idmax	Weight
190	100	45	192.4	94.2	49.1	191.2	194.3	83.1	97.0	173.519
200	175	12.5	202.5	172.3	15.1	201.2	204.5	167.2	172.0	69.786
200	170	15	202.5	167.1	17.7	201.2	204.5	161.4	167.0	80.667
200	165	17.5	202.5	162.1	20.2	201.2	204.5	155.7	162.0	90.815
200	160	20	202.5	156.9	22.8	201.2	204.5	149.9	157.0	101.042
200	155	22.5	202.5	151.7	25.4	201.2	204.5	144.0	152.0	110.936
200	150	25	202.5	146.3	28.1	201.2	204.5	138.0	147.0	120.857
200	145	27.5	202.5	141.1	30.7	201.2	204.5	133.6	142.0	130.071
200	140	30	202.5	135.9	33.3	201.2	204.5	127.9	137.0	138.952
200	135	32.5	202.5	130.7	35.9	201.2	204.5	122.2	132.0	147.499
200	130	35	202.5	125.3	38.6	201.2	204.5	116.3	127.0	156.022
200	125	37.5	202.5	120.1	41.2	201.2	204.5	110.5	122.0	163.889
200	120	40	202.5	114.9	43.8	201.2	204.5	104.8	117.0	171.424
200	115	42.5	202.5	109.5	46.5	201.2	204.5	98.9	112.0	178.895
200	110	45	202.5	104.3	49.1	201.2	204.5	93.2	107.0	185.749
200	105	47.5	202.5	99.1	51.7	201.2	204.5	87.4	102.0	192.270
210	185	12.5	214.1	178.9	17.6	212.7	216.2	173.1	182.0	85.289
210	180	15	214.1	173.3	20.4	212.7	216.2	168.8	177.0	97.449
210	175	17.5	214.1	167.7	23.2	212.7	216.2	160.5	172.0	109.223
210	170	20	214.1	162.3	25.9	212.7	216.2	154.4	167.0	120.210
210	165	22.5	214.1	156.7	28.7	212.7	216.2	148.1	162.0	131.223
210	160	25	214.1	151.1	31.5	212.7	216.2	143.7	157.0	141.850
210	155	27.5	214.1	145.5	34.3	212.7	216.2	137.2	152.0	152.091
210	150	30	214.1	140.1	37	212.7	216.2	131.3	147.0	161.599
210	145	32.5	214.1	134.5	39.8	212.7	216.2	125.1	142.0	171.080
210	140	35	214.1	128.9	42.6	212.7	216.2	119.0	137.0	180.174
210	135	37.5	214.1	123.3	45.4	212.7	216.2	112.8	132.0	188.882
210	130	40	214.1	117.7	48.2	212.7	216.2	106.7	127.0	197.203
210	125	42.5	214.1	112.3	50.9	212.7	216.2	100.7	122.0	204.860
220	180	20	222.7	172.3	25.2	221.3	224.9	164.6	177.0	122.740
220	170	25	222.7	161.3	30.7	221.3	224.9	153.7	167.0	145.365
220	160	30	222.7	150.1	36.3	221.3	224.9	141.4	157.0	166.868
220	155	32.5	222.7	144.5	39.1	221.3	224.9	135.2	152.0	177.039
220	150	35	222.7	139.1	41.8	221.3	224.9	129.3	147.0	186.481
220	145	37.5	222.7	133.5	44.6	221.3	224.9	123.1	142.0	195.893
220	140	40	222.7	127.9	47.4	221.3	224.9	117.0	137.0	204.219
220	135	42.5	222.7	122.3	50.2	221.3	224.9	110.8	132.0	213.556
220	130	45	222.7	116.7	53	221.3	224.9	104.7	127.0	221.808
220	125	47.5	222.7	111.1	55.8	221.3	224.9	98.5	122.0	229.673

**Tab. 5 Hot rolling - table continued**

Nom sizes			EXECUTION DIMENSIONS							
OD	ID	WT	OD	ID	WT	Oadmin	Odmax	Idmin	Idmax	Weight
230	190	20	234.9	182.1	26.4	233.4	237.3	174.0	187.0	135.739
230	180	25	234.9	170.9	32	233.4	237.3	161.4	177.0	160.112
230	170	30	234.9	159.9	37.5	233.4	237.3	149.0	167.0	182.564
230	160	35	234.9	148.7	43.1	233.4	237.3	138.6	157.0	203.854
230	155	37.5	234.9	143.1	45.9	233.4	237.3	132.4	152.0	213.928
230	150	40	234.9	137.5	48.7	233.4	237.3	126.2	147.0	223.615
230	145	42.5	234.9	132.1	51.4	233.4	237.3	120.3	142.0	132.591
230	140	45	234.9	126.5	54.2	233.4	237.3	114.1	137.0	241.520
230	135	47.5	234.9	120.9	57	233.4	237.3	108.0	132.0	250.060
230	130	50	234.9	115.3	59.8	233.4	237.3	101.8	127.0	258.214
250	190	30	252.9	179.9	36.5	251.3	255.4	169.1	187.0	194.779
250	180	35	252.9	168.7	42.1	251.3	255.4	158.6	177.0	218.850
250	170	40	252.9	157.7	47.6	251.3	255.4	146.5	167.0	240.984
250	160	45	252.9	146.5	53.2	251.3	255.4	134.2	157.0	261.989
250	155	47.5	252.9	140.9	56	251.3	255.4	128.1	152.0	271.911
250	150	50	252.9	135.3	58.8	251.3	255.4	121.9	147.0	281.447

Note: Nominal sizes are assured by machining with OD centring for a finished part length of maximum 3 x OD or maximum 200 mm (whichever is smaller).