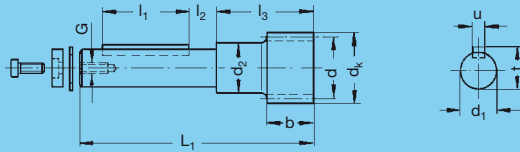




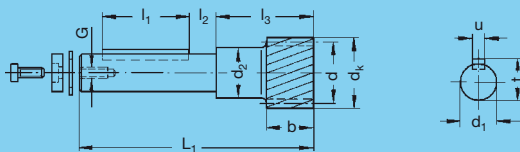
**gerade verzahnt, 20° EW, Verzahnung längsballig geschliffen, Toleranzen nach DIN 3962/63/67**  
**straight tooth system, 20° pressure angle, teeth are ground and crowned, tolerances acc. to DIN 3962/63/67**



16MnCr5, 1.7131  
 einsatzgehärtet  
 case-hardened  
 Verz.-Qual.  
 tooth. qual.  
**6 e 25**

Bestell-Nr. Order code	Getriebe- größe gearbox size	Modul module	Zähnez. no. of teeth	x	d	dk	b	d <sub>1h6</sub>	d <sub>2</sub>	L <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	u	t	G	kg
20 28 115	32	2	15	0,375	30	35,5	25	20	24	105,0	28	13,5	50,0	6	22,5	M 5	0,50
20 28 332	50	2	32	-	64	68,0	25	25	38	140,0	63	13,0	53,0	8	28,0	M 8	1,25
20 28 321	50	3	21	-	63	69,0	30	25	38	142,0	63	13,0	55,0	8	28,0	M 8	1,33
20 28 432	63	2	32	-	64	68,0	25	28	42	164,5	80	14,5	57,5	8	31,0	M 8	1,50
20 28 421	63	3	21	-	63	69,0	30	28	42	167,0	80	14,5	60,0	8	31,0	M 8	1,60
20 28 417	63	4	17	-	68	76,0	40	28	42	172,0	80	14,5	65,0	8	31,0	M 8	2,00
20 28 521	80	3	21	-	63	69,0	30	36	48	185,0	100	12,5	62,0	10	39,0	M 12	2,50
20 28 517	80	4	17	-	68	76,0	40	36	48	190,0	100	12,5	67,0	10	39,0	M 12	2,65
20 28 617	100	4	17	-	68	76,0	40	48	57	215,0	125	9,0	72,0	14	51,5	M 12	4,05
20 28 630	100	4	30	-	120	128,0	40	48	57	215,0	125	9,0	72,0	14	51,5	M 12	6,40
20 28 613	100	5	13	0,500	65	80,0	50	48	57	225,0	125	9,0	82,0	14	51,5	M 12	4,20
20 28 715	125	5	15	0,500	75	90,0	50	60	68	272,0	150	10,0	90,0	18	64,0	M 16	6,94
20 28 713	125	6	13	0,500	78	96,0	60	60	68	282,0	150	10,0	100,0	18	64,0	M 16	7,45

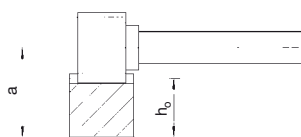
**schräg verzahnt, 19° 31' 42" links, 20° EW, Verzahnung längsballig geschliffen, Qual. 6 e 25 analog DIN 3962/63/67**  
**helical tooth system, 19°31'42" left, 20° pressure angle, teeth are ground and crowned, qual. 6 e 25 corresp. to DIN 3962/63/67**



16MnCr5, 1.7131  
 einsatzgehärtet  
 case-hardened  
 Verz.-Qual.  
 tooth. qual.  
**6 e 25**

Bestell-Nr. Order code	Getriebe- größe gearbox size	Modul module	Zähnez. no. of teeth	x	d	dk	b	d <sub>h6</sub>	d <sub>2</sub>	L <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	u	t	G	kg
20 29 115	32	2	15	0,4172	31,83	37,5	25	20	24	105,0	28	13,5	50,0	6	22,5	M 5	0,50
20 29 330	50	2	30	-	63,66	67,7	25	25	38	140,0	63	13,0	53,0	8	28,0	M 8	1,25
20 29 320	50	3	20	-	63,66	69,7	30	25	38	142,0	63	13,0	55,0	8	28,0	M 8	1,33
20 29 430	63	2	30	-	63,66	67,7	25	28	42	164,5	80	14,5	57,5	8	31,0	M 8	1,50
20 29 420	63	3	20	-	63,66	69,7	30	28	42	167,0	80	14,5	60,0	8	31,0	M 8	1,60
20 29 415	63	4	15	-	63,66	71,7	40	28	42	172,0	80	14,5	65,0	8	31,0	M 8	1,85
20 29 520	80	3	20	-	63,66	69,7	30	36	48	185,0	100	12,5	62,0	10	39,0	M 12	2,40
20 29 515	80	4	15	-	63,66	71,7	40	36	48	190,0	100	12,5	67,0	10	39,0	M 12	2,50
20 29 615	100	4	15	-	63,66	71,7	40	48	57	215,0	125	9,0	72,0	14	51,5	M 12	3,90
20 29 630	100	4	30	-	127,32	135,3	40	48	57	215,0	125	9,0	72,0	14	51,5	M 12	6,90
20 29 612	100	5	12	0,434	63,66	78,0	50	48	57	225,0	125	9,0	82,0	14	51,5	M 12	4,20
20 29 715	125	5	15	0,500	79,58	94,5	50	60	68	272,0	150	10,0	90,0	18	64,0	M 16	7,24
20 29 713	125	6	13	0,500	82,76	100,7	60	60	70	282,0	150	10,0	100,0	18	64,0	M 16	7,89

Berechnung des Achsabstandes a zwischen Ritzel und Zahnstange.  
 Calculation of centre distance a between pinion and rack.

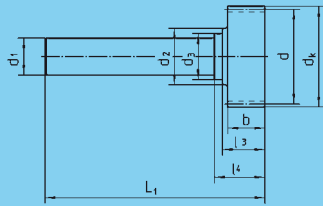


$$a = \frac{z \cdot m}{2 \cdot \cos\beta} + x \cdot m + h_0$$

- z = Zähnezahl / No. of teeth
- m = Modul / Module
- β = Schrägungswinkel / helix angle
- h<sub>0</sub> = Maß Zahnstangenrücken zur Teilebene / distance from the pitch line to the back face
- x = Profilverschiebungsfaktor / Profile modification factor



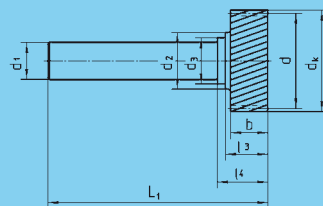
**gerade verzahnt, 20° EW, Verzahnung längsballig geschliffen, Toleranzen nach DIN 3962/63/67**  
**straight tooth system, 20° pressure angle, teeth are ground and crowned, tolerances acc. to DIN 3962/63/67**



16MnCr5, 1.7131  
 einsatzgehärtet  
 case-hardened  
 Verz.-Qual.  
 tooth. qual.  
**6 e 25**

Bestell-Nr. Order code	Getriebegröße Gearbox size HT HP;E;B	Modul module	Zähnez. no. of teeth	x	d	dk	b	d <sub>1h6</sub>	d <sub>2</sub>	d <sub>3</sub>	L <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
20 88 115	32	2	15	0,375	30	35,5	25	20	24	-	105	31,0	-	0,50
20 88 332	50	2	32	-	64	68,0	25	25	38	31	148	34,0	28,5	1,25
20 88 321	50	3	21	-	63	69,0	30	25	31	-	150	36,5	-	1,33
20 88 432	50 63	2	32	-	64	68,0	25	28	42	36	180	38,5	33,0	1,50
20 88 421	50 63	3	21	-	63	69,0	30	28	42	36	183	41,0	35,5	1,60
20 88 417	50 63	4	17	-	68	76,0	40	28	36	-	188	46,0	-	2,00
20 88 521	63 80	3	21	-	63	69,0	30	36	48	-	208	37,5	-	2,50
20 88 517	63 80	4	17	-	68	76,0	40	36	48	-	213	42,5	-	2,65
20 88 617	80 100	4	17	-	68	76,0	40	48	57	-	240	43,5	-	4,05
20 88 630	80 100	4	30	-	120	128,0	40	48	57	-	240	43,5	-	6,40
20 88 613	80 100	5	13	0,500	65	80,0	50	48	57	-	250	53,5	-	4,10
20 88 715	100 125	5	15	0,500	75	90,0	50	60	68	-	275	55,0	-	6,30
20 88 713	100 125	6	13	0,500	78	96,0	60	60	68	-	285	65,0	-	6,84

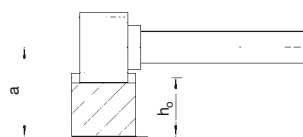
**schräg verzahnt, 19° 31' 42" links, 20° EW, Verzahnung längsballig geschliffen, Toleranzen nach DIN 3962/63/67**  
**helical tooth system, 19°31'42" left, 20° pressure angle, teeth are ground and crowned, qual. 6 e 25 corresp. to DIN 3962/63/67**



16MnCr5, 1.7131  
 einsatzgehärtet  
 case-hardened  
 Verz.-Qual.  
 tooth. qual.  
**6 e 25**

Bestell-Nr. Order code	Getriebegröße Gearbox size HT HP;E;B	Modul module	Zähnez. no. of teeth	x	d	dk	b	d <sub>1h6</sub>	d <sub>2</sub>	d <sub>3</sub>	L <sub>1</sub>	l <sub>3</sub>	l <sub>4</sub>	kg
20 89 115	32	2	15	0,4172	31,83	37,5	25	20	24	-	105	31,0	-	0,50
20 89 330	50	2	30	-	63,66	67,7	25	25	38	31	148	34,0	28,5	1,25
20 89 320	50	3	20	-	63,66	69,7	30	25	31	-	150	36,5	-	1,33
20 89 430	50 63	2	30	-	63,66	67,7	25	28	42	36	180	38,5	33,0	1,60
20 89 420	50 63	3	20	-	63,66	69,7	30	28	42	36	183	41,0	35,5	1,60
20 89 415	50 63	4	15	-	63,66	71,7	40	28	36	-	188	46,0	-	1,85
20 89 520	63 80	3	20	-	63,66	69,7	30	36	48	-	208	37,5	-	2,40
20 89 515	63 80	4	15	-	63,66	71,7	40	36	48	-	213	42,5	-	2,50
20 89 615	80 100	4	15	-	63,66	71,7	40	48	57	-	240	43,5	-	3,90
20 89 630	80 100	4	30	-	127,32	135,3	40	48	57	-	240	43,5	-	6,90
20 89 612	80 100	5	12	0,434	63,66	78,0	50	48	57	-	250	53,5	-	4,10
20 89 715	100 125	5	15	0,500	79,58	94,5	50	60	70	-	275	55,0	-	6,57
20 89 713	100 125	6	13	0,500	82,76	100,7	60	60	70	-	285	65,0	-	7,13

Berechnung des Achsabstandes a zwischen Ritzel und Zahnstange.  
 Calculation of centre distance a between pinion and rack.



$$a = \frac{z \cdot m}{2 \cdot \cos\beta} + x \cdot m + h_0$$

- z = Zähnezahl / No. of teeth
- m = Modul / Module
- β = Schrägungswinkel / helix angle
- h<sub>0</sub> = Maß Zahnstangenrücken zur Teilebene / distance from the pitch line to the back face
- x = Profilveränderungsfaktor / Profile modification factor