



Class	ATLANTA Quality	Module	Total Pitch Error <sup>1)</sup> (± μm/m)	Tooth Thickness Tolerance (μm)	Max. Length (mm)	Max. Feed Force per Pinion Contact <sup>2)</sup> (kN)	Applications (Examples)	
<b>UHPR</b>  Ultra High Precision Rack	3	5	12	-13	1000	76.5	<b>High Precision Machine Tools with Electrical Preload</b>	
		6	12	-13	1000	109.0		
		8	12	-13	960	191.0		
		10	12	-13	1000	287.5		
		12	12	-13	1000	409.0		
<b>HPR</b>  High Precision Rack	5	3	26	-15	1000	31.0	<b>Machine Tools, Lifting Axis, Multiple Pinion Contact</b>	
		4	26	-15	1000	60.0		
		5	26	-15	1000	92.0		
	6	2	36	-37	2000	19.5	<b>Wood, Plastic, Composite, Aluminium Working Machines</b>	
		3	36	-37	2000	31.0		
		4	36	-37	2000	60.0		
		1.5	2	36	-37	1000	9.0	<b>Machine Tools, Integratable Racks, Water Cutting Machines, Tube Bending Systems, Plasma Cutting Machines</b>
			3	36	-37	2000	15.5	
			4	36	-37	2000	28.5	
			5	36	-22	2000	51.5	
			6	36	-22	2000	76.0	
			8	36	-22	1920	109.0	
7	2	52	-51	2000	15.5	<b>Woodworking Machines, Linear Axis with High Requirement for a Smooth Running</b>		
	3	52	-51	2000	28.5			
	4	52	-51	2000	51.5			
	5	52	-37	2000	76.0			
	6	52	-37	2000	109.0			
8	2	60	-59	1000	13.5	<b>Portals, Handling Linear Axis</b>		
	3	60	-59	1000	24.5			
	4	60	-59	1000	44.0			
	5	60	-59	1000	64.5			
	8	2	100	-110	2000		8.0	<b>Linear Axis</b>
3		100	-110	2000	14.0			
4		100	-110	2000	27.0			
<b>BR</b>  Basic Rack	9	1.5	150	-110	2000	1.5	<b>Linear Axis with Low Load Feed Units for Adjustment</b>	
		2	150	-110	2000	4.0		
		3	150	-110	2000	7.0		
		4	150	-110	2000	13.5		
		5	150	-110	2000	16.0		
	10	1.5	200	-110	1000	3.5	<b>Lifting Axis, Handling, Welding Robots</b>	
		2	200	-110	2000	9.5		
		3	200	-110	2000	17.5		
		4	200	-110	2000	32.0		
		5	200	-110	2000	49.0		
6	200	-110	2000	67.5				
	8	200	-110	1920	118.5			
	10	200	-110	1000	178.5			
12	200	-110	1000	252.5				







<sup>1)</sup> Values available for 1000 mm. Other total pitch errors for other length, see detailed description.

<sup>2)</sup> Values are only valid for special steel according to ATLANTA-Standard.










When using the maximum capacity of the teeth, or multiple pinions in contact, the mounting screw loads must be checked separately! Please ask ATLANTA for advice!



Class	Series	Module	ATLANTA-Quality	Page
<b>UHPR</b>	48 .. ...	5, 6, 8, 10, 12	3	ZA-4
	29 .. ...	3, 4, 5, 6	5	ZA-5
<b>HPR</b>	29 .. ...	2, 3, 4	6	ZA-6
	29 .. ...	1.5, 2, 3, 4, 5, 6, 8, 10, 12	6	ZA-7
	29 .. ...	2, 3, 4, 5, 6, 8, 10	7	ZA-8
<b>PR</b>	39 .. ...	2, 3, 4, 5	8	ZA-9
	38 .. ...	2, 3, 4	8	ZA-10
<b>BR</b>	47 .. ...	1.5, 2, 3, 4, 5, 6, 8, 10	9	ZA-11
	39 .. ...	1.5, 2, 3, 4, 5, 6, 8, 10, 12	10	ZA-12-13
	Selection and Load Tables			ZA-30-38
	Electronically Controlled Lubricators, Sliding-Type Lubricating Brushes and Hose-Connection Sets			ZE-2-6
	Felt Gear and Mounting Shaft			ZE-7-8
	Mounting			ZF-9

<sup>1)</sup> All our helical racks are right hand, except the companion racks, which are left hand!



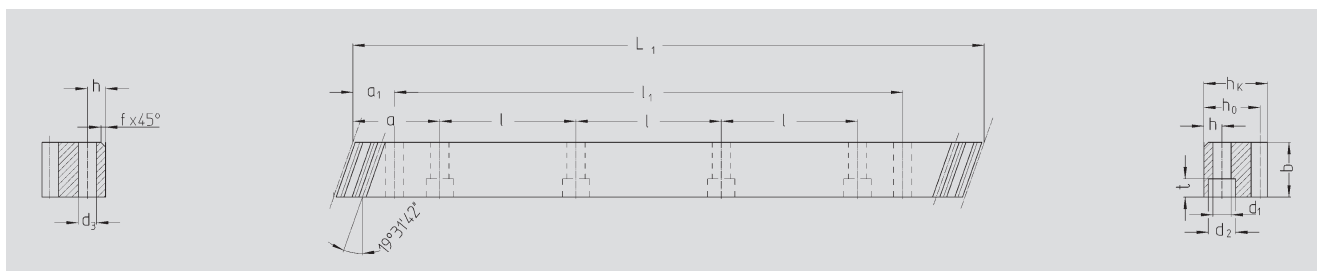
	Series	Module	Heat-Treatment of Teeth	Tolerance of Teeth	Page
	78 .. ...	2, 3, 4, 5, 6	Case-Hardened	≤ 5	ZA-14–18
	78 .. 5..	2, 3, 4, 5	Case-Hardened	5 e 24	ZA-19–22
	79 .. ...	1.5, 2, 3, 4	Case-Hardened	5 e 24	ZA-23
	24 .. ...	1.5, 2, 3, 4, 5, 6, 8, 10	Case-Hardened	7 e 25	ZA-24–26
	24 .. ...	2, 3, 4, 5, 6, 8	Induction Hardened	6 e 25	ZA-27
	21 .. 5..	1.5, 2, 3, 4, 5, 6, 8, 10, 12	Soft	8 e 25	ZA-28–29
	Short Description TR-Pinion, Mounting Instructions				ZF-11–13
	Selection and Load Tables for Rack Drives				ZH-2–6
	Electronically Controlled Lubricators, Sliding-Type Lubricating Brushes and Hose-Connection Sets				ZE-2–6


<sup>1)</sup> All our helical pinions are left hand!





**ATLANTA-Quality 3**



Order Code	Module	L <sub>1</sub>	N° of teeth	b <sup>+0.4</sup>	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	
48 50 105	5	1000.00	60	49	39	34	2.5	62.5	125	8	12	13.5	20	13	37.5	925	11.7	12.15
48 60 105	6	1000.00	50	59	49	43	2.5	62.5	125	8	16	17.5	26	17	37.5	925	15.7	18.10
48 80 105	8	960.00	36	79	79	71	2.5	60.0	120	8	25	22.0	33	21	120.0	720	19.7	42.50
48 10 105	10	1000.00	30	99	99	89	2.5	62.5	125	8	32	33.0	48	32	125.0	750	19.7	68.70
48 12 105	12	1000.00	25	120	120	108	2.5	40.0	125	8	40	39.0	58	38	102.5	750	19.7	111.00

**Total pitch error**  $GT_f/1000 \leq 0.012 \text{ mm}$

- Teeth hardened with the ATLANTA high performance hardening process and ground
- Heat-treatable steel according to ATLANTA-Standard
- Ground on all sides after hardening
- Signed with effective total pitch error (20°C)

Inspection measurement data available as an option.

To achieve precision rack joints, we recommend our patented rack assembly kit, see page ZF-4.

For lubrication of racks & pinions, we recommend our automatic lubrication systems, see page ZE-1.

For the calculation and selection of the rack & pinion drive, see page ZD-1.

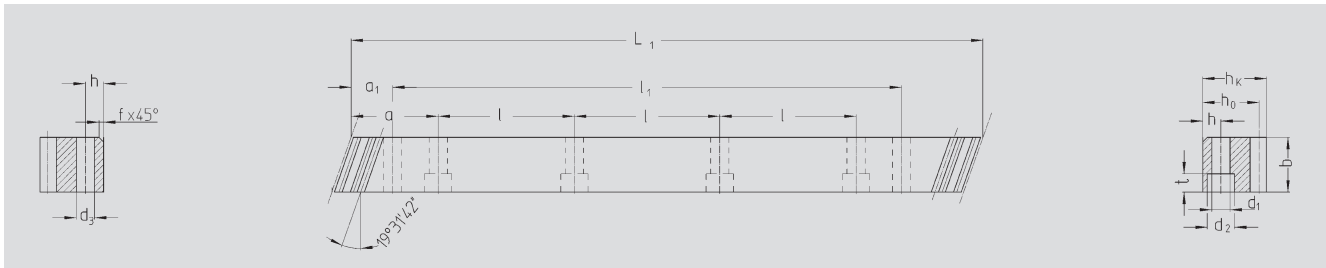
Screws for rack mounting, see page ZF-3.






**ATLANTA-Quality 5**

**StrongLine**



Order Code	Module	L <sub>1</sub>	N° of teeth	b <sup>+0.4</sup>	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	
29 35 100	3	1000.00	100	29	29	26	2.0	62.5	125	8	10	12	17.5	11	27.5	945	11.7	5.9
29 45 100	4	1000.00	75	39	39	35	2.0	62.5	125	8	13	16	23.0	15	30.0	940	15.7	10.7
29 55 100	5	1000.00	60	49	49	44	2.5	62.5	125	8	15	18	26.0	17	34.5	931	15.7	16.3
29 65 100	6	1000.00	50	59	59	53	2.5	62.5	125	8	20	22	33.0	21	97.5	805	19.7	24.5

**Total pitch error**  $GT_f/1000 \leq 0.026 \text{ mm}$

- Teeth case hardened and ground
- Case hardening steel according to ATLANTA-Standard
- Ground on all sides after hardening
- Signed with effective total pitch error (20°C)

Inspection measurement data available as an option.

Mounting racks, see page ZF-2.

To achieve precision rack joints, we recommend our patented rack assembly kit, see page ZF-4.



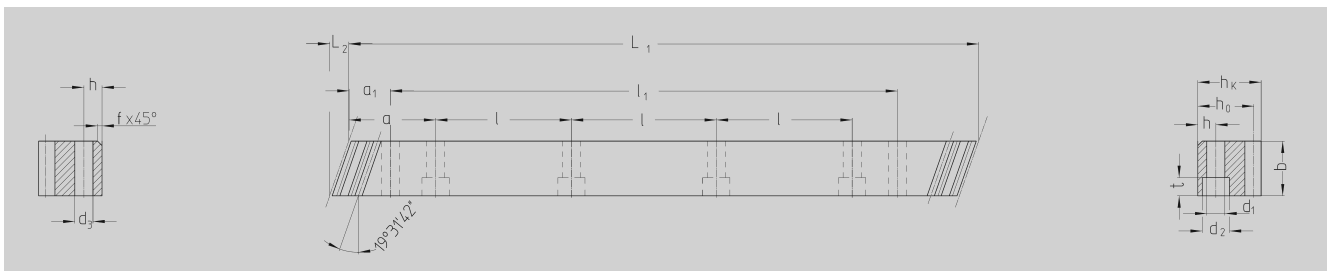
For lubrication of racks & pinions, we recommend our automatic lubrication systems, see page ZE-1.

For the calculation and selection of the rack & pinion drive, see page ZD-1.

Screws for rack mounting, see page ZF-3.



**Quality 6**



Order Code	Module	L <sub>1</sub>	L <sub>2</sub>	N° of Teeth	b	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of Holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg
29 20 050 <sup>2)</sup>	2	500.00	8.5	75	24	24	22	2	62.5	125	4	8	7	11	7	31.7	436.6	5.7	2.10
29 21 050	2	500.00	8.5	75	24	24	22	2	62.5	125	4	without Mounting Holes							2.10
29 20 100	2	1000.00	8.5	150	24	24	22	2	62.5	125	8	8	7	11	7	31.7	936.6	5.7	4.10
29 21 100	2	1000.00	8.5	150	24	24	22	2	62.5	125	8	without Mounting Holes							4.10
29 20 150	2	1500.00	8.5	225	24	24	22	2	62.5	125	12	8	7	11	7	31.7	1436.6	5.7	6.15
29 21 150	2	1500.00	8.5	225	24	24	22	2	62.5	125	12	without Mounting Holes							6.15
29 20 200	2	2000.00	8.5	300	24	24	22	2	62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.20
29 21 200	2	2000.00	8.5	300	24	24	22	2	62.5	125	16	without Mounting Holes							8.20
29 30 050 <sup>2)</sup>	3	500.00	10.3	50	29	29	26	2	62.5	125	4	9	10	15	9	35.0	430.0	7.7	2.90
29 31 050	3	500.00	10.3	50	29	29	26	2	62.5	125	4	without Mounting Holes							2.90
29 30 100	3	1000.00	10.3	100	29	29	26	2	62.5	125	8	9	10	15	9	35.0	930.0	7.7	5.90
29 31 100	3	1000.00	10.3	100	29	29	26	2	62.5	125	8	without Mounting Holes							5.90
29 30 150	3	1500.00	10.3	150	29	29	26	2	62.5	125	12	9	10	15	9	35.0	1430.0	7.7	8.85
29 31 150	3	1500.00	10.3	150	29	29	26	2	62.5	125	12	without Mounting Holes							8.85
29 30 200	3	2000.00	10.3	200	29	29	26	2	62.5	125	16	9	10	15	9	35.0	1930.0	7.7	11.80
29 31 200	3	2000.00	10.3	200	29	29	26	2	62.5	125	16	without Mounting Holes							11.80
29 40 050 <sup>1)2)</sup>	4	506.67	13.8	38	39	39	35	2	62.5	125	4	12	10	15	9	33.3	433.0	7.7	5.40
29 41 050	4	506.67	13.8	38	39	39	35	2	62.5	125	4	without Mounting Holes							5.40
29 40 100 <sup>2)</sup>	4	1000.00	13.8	75	39	39	35	2	62.5	125	8	12	10	15	9	33.3	933.4	7.7	10.70
29 41 100	4	1000.00	13.8	75	39	39	35	2	62.5	125	8	without Mounting Holes							10.70
29 42 100	4	1000.00	13.8	75	39	39	35	2	62.5	125	8	12	14	20	13	33.3	933.4	11.7	10.70
29 41 150	4	1506.67	13.8	113	39	39	35	2	62.5	125	12	without Mounting Holes							16.00
29 42 150 <sup>1)</sup>	4	1506.67	13.8	113	39	39	35	2	62.5	125	12	12	14	20	13	33.3	1433.4	11.7	16.00
29 41 200	4	2000.00	13.8	150	39	39	35	2	62.5	125	16	without Mounting Holes							21.40
29 42 200	4	2000.00	13.8	150	39	39	35	2	62.5	125	16	12	14	20	13	33.3	1933.4	11.7	21.40

- 1) This racks should be used for continuous linking only with the left side (see sketch).
- 2) The screw joint limits the feed force.

**Total pitch error:**

$GT_f/1000 \leq 0.036 \text{ mm}$   
 $GT_f/1500 \leq 0.043 \text{ mm } (\leq 0.029/1000 \text{ mm})$   
 $GT_f/2000 \leq 0.047 \text{ mm } (\leq 0.024/1000 \text{ mm})$

- Teeth induction-hardened and ground
- Material 16MnCr5, carburized
- Ground on all sides after hardening

**Mounting racks, see page ZF-2.**

**To achieve precision rack joints, we recommend our patented rack assembly kit, see page ZF-4.**

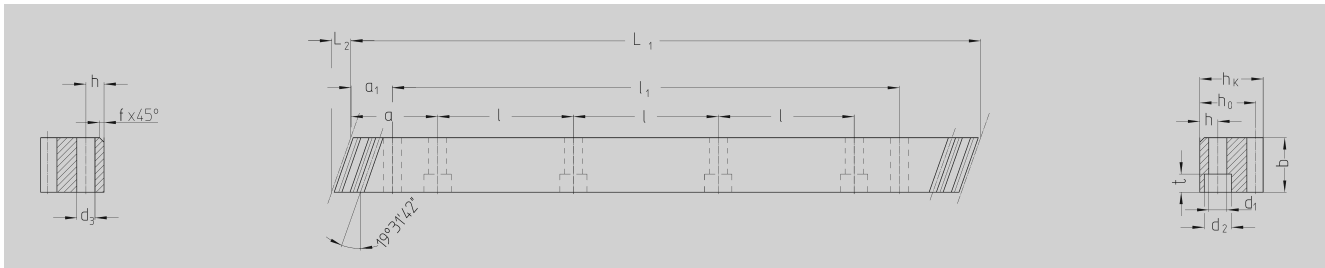
**For lubrication of racks & pinions, we recommend our automatic lubrication systems, see page ZE-1.**

**For the calculation and selection of the rack & pinion drive, see page ZD-1.**

**Screws for rack mounting, see page ZF-3.**



**Quality 6**



Order Code	Module	L <sub>1</sub>	L <sub>2</sub>	N° of Teeth	b	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of Holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg	
29 15 055 <sup>2)</sup>	1.5	500.00	6.74	100	19	19	17.5	2	62.5	125	4	8	7	11	7	31.7	436.6	5.7	1.30	
29 16 055	1.5	500.00	6.74	100	19	19	17.5	2	62.5	125	4	without Mounting Holes								1.30
29 15 105	1.5	1000.00	6.74	200	19	19	17.5	2	62.5	125	8	8	7	11	7	31.7	936.6	5.7	2.60	
29 16 105	1.5	1000.00	6.74	200	19	19	17.5	2	without Mounting Holes											2.60
29 20 105	2	1000.00	8.50	150	24	24	22	2	62.5	125	8	8	7	11	7	31.7	936.6	5.7	4.10	
29 21 105	2	1000.00	8.50	150	24	24	22	2	without Mounting Holes											4.10
29 20 155	2	1500.00	8.50	225	24	24	22	2	62.5	125	12	8	7	11	7	31.7	1436.6	5.7	6.15	
29 21 155	2	1500.00	8.50	225	24	24	22	2	without Mounting Holes											6.15
29 20 205	2	2000.00	8.50	300	24	24	22	2	62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.20	
29 21 205	2	2000.00	8.50	300	24	24	22	2	without Mounting Holes											8.20
29 30 105	3	1000.00	10.30	100	29	29	26	2	62.5	125	8	9	10	15	9	35.0	930.0	7.7	5.90	
29 31 105	3	1000.00	10.30	100	29	29	26	2	without Mounting Holes											5.90
29 30 155	3	1500.00	10.30	150	29	29	26	2	62.5	125	12	9	10	15	9	35.0	1430.0	7.7	8.85	
29 31 155	3	1500.00	10.30	150	29	29	26	2	without Mounting Holes											8.85
29 30 205	3	2000.00	10.30	200	29	29	26	2	62.5	125	16	9	10	15	9	35.0	1930.0	7.7	11.80	
29 31 205	3	2000.00	10.30	200	29	29	26	2	without Mounting Holes											11.80
29 40 105 <sup>2)</sup>	4	1000.00	13.80	75	39	39	35	2	62.5	125	8	12	10	15	9	33.3	933.4	7.7	10.70	
29 41 105	4	1000.00	13.80	75	39	39	35	2	without Mounting Holes											10.70
29 42 105	4	1000.00	13.80	75	39	39	35	2	62.5	125	8	12	14	20	13	33.3	939.4	11.7	13.00	
29 42 155 <sup>1)</sup>	4	1506.67	13.80	113	39	39	35	2	62.5	125	12	12	14	20	13	33.3	1433.4	11.7	19.50	
29 40 205	4	2000.00	13.80	150	39	39	35	2	62.5	125	16	12	10	15	9	33.3	1933.4	7.7	21.40	
29 41 205	4	2000.00	13.80	150	39	39	35	2	without Mounting Holes											21.40
29 42 205	4	2000.00	13.80	150	39	39	35	2	62.5	125	16	12	14	20	13	33.3	1933.4	11.7	21.40	
29 50 055 <sup>2)</sup>	5	500.00	17.40	30	49	49	34	2.5	62.5	125	4	12	14	20	13	37.5	425.0	11.7	6.50	
29 51 055	5	500.00	17.40	30	49	49	34	2.5	without Mounting Holes											6.50
29 50 105	5	1000.00	17.40	60	49	49	34	2.5	62.5	125	8	12	14	20	13	37.5	925.0	11.7	13.00	
29 51 105	5	1000.00	17.40	60	49	49	34	2.5	without Mounting Holes											13.00
29 50 155	5	1500.00	17.40	90	49	49	34	2.5	62.5	125	12	12	14	20	13	37.5	1425.0	11.7	19.50	
29 51 155	5	1500.00	17.40	90	49	49	34	2.5	without Mounting Holes											19.50
29 50 205	5	2000.00	17.40	120	49	49	34	2.5	62.5	125	16	12	14	20	13	37.5	1925.0	11.7	26.00	
29 51 205	5	2000.00	17.40	120	49	49	34	2.5	without Mounting Holes											26.00
29 60 055 <sup>2)</sup>	6	500.00	20.90	25	59	59	43	2.5	62.5	125	4	16	18	26	17	37.5	425.0	15.7	9.90	
29 61 055	6	500.00	20.90	25	59	59	43	2.5	without Mounting Holes											9.90
29 60 105	6	1000.00	20.90	50	59	59	43	2.5	62.5	125	8	16	18	26	17	37.5	925.0	15.7	18.10	
29 61 105	6	1000.00	20.90	50	59	59	43	2.5	without Mounting Holes											18.10
29 60 155	6	1500.00	20.90	75	59	59	43	2.5	62.5	125	12	16	18	26	17	37.5	1425.0	15.7	27.10	
29 61 155	6	1500.00	20.90	75	59	59	43	2.5	without Mounting Holes											27.10
29 60 205	6	2000.00	20.90	100	59	59	43	2.5	62.5	125	16	16	18	26	17	37.5	1925.0	15.7	36.20	
29 61 205	6	2000.00	20.90	100	59	59	43	2.5	without Mounting Holes											36.20
29 80 055 <sup>2)</sup>	8	480.00	28.00	18	79	79	71	2.5	60.0	120	4	25	22	33	21	120.0	240.0	19.7	21.00	
29 81 055	8	480.00	28.00	18	79	79	71	2.5	without Mounting Holes											21.00
29 80 105	8	960.00	28.00	36	79	79	71	2.5	60.0	120	8	25	22	33	21	120.0	720.0	19.7	42.50	
29 81 105	8	960.00	28.00	36	79	79	71	2.5	without Mounting Holes											42.50
29 80 205	8	1920.00	28.00	72	79	79	71	2.5	60.0	120	16	25	22	33	21	120.0	1680.0	19.7	85.00	
29 81 205	8	1920.00	28.00	72	79	79	71	2.5	without Mounting Holes											85.00
29 10 105	10	1000.00	35.11	30	99	99	89	2.5	62.5	125	8	32	33	48	32	125.0	750.0	19.7	68.72	
29 11 105	10	1000.00	35.11	30	99	99	89	2.5	without Mounting Holes											68.72
29 10 155	10	1500.00	35.11	45	99	99	89	2.5	62.5	125	12	32	33	48	32	125	1250.0	19.7	103.00	
29 11 155	10	1500.00	35.11	45	99	99	89	2.5	without Mounting Holes											103.00
29 12 105	12	1000.00	42.56	25	120	120	108	2.5	40.0	125	8	40	39	58	38	125.0	750.0	19.7	111.00	
29 13 105	12	1000.00	42.56	25	120	120	108	2.5	without Mounting Holes											111.00



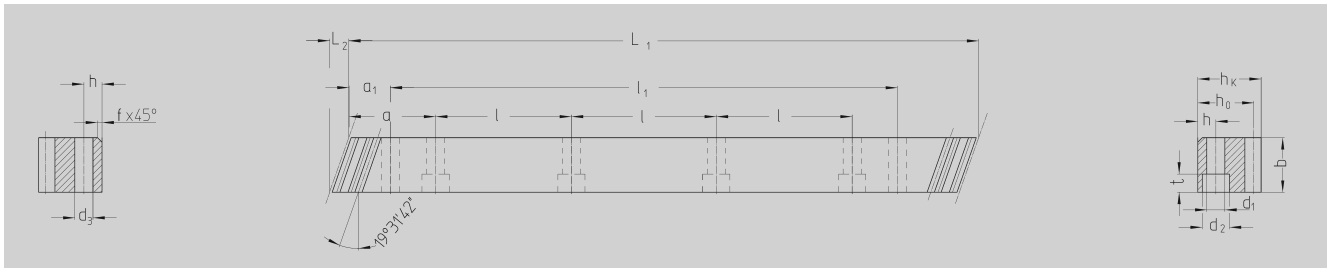
1) These racks should be used for continuous linking only with the left side (see sketch).  
 2) The screw joint limits the feed force.

**Total pitch error:  $GT_f/1000 \leq 0.036 \text{ mm}$ ,  $GT_f/1500 \leq 0.043 \text{ mm}$  ( $\leq 0.029/1000 \text{ mm}$ )**  
 $GT_f/2000 \leq 0.047 \text{ mm}$  ( $\leq 0.024/1000 \text{ mm}$ )

• Further information see next page.



**Quality 7**



Order Code	Module	L <sub>1</sub>	L <sub>2</sub>	N° of Teeth	b	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of Holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg
29 20 107	2	1000.00	8.5	150	24	24	22	2	62.5	125	8	8	7	11	7	31.7	936.6	5.7	4.10
29 20 157	2	1500.00	8.5	225	24	24	22	2	62.5	125	12	8	7	11	7	31.7	1436.6	5.7	6.15
29 20 207	2	2000.00	8.5	300	24	24	22	2	62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.20
29 30 107	3	1000.00	10.3	100	29	29	26	2	62.5	125	8	9	10	15	9	35.0	930.0	7.7	5.90
29 30 157	3	1500.00	10.3	150	29	29	26	2	62.5	125	12	9	10	15	9	35.0	1430.0	7.7	8.85
29 30 207	3	2000.00	10.3	200	29	29	26	2	62.5	125	16	9	10	15	9	35.0	1930.0	7.7	11.80
29 40 107	4	1000.00	13.8	75	39	39	35	2	62.5	125	8	12	14	20	13	33.3	933.4	11.7	10.70
29 40 157 <sup>1)</sup>	4	1506.67	13.8	113	39	39	35	2	62.5	125	12	12	14	20	13	33.3	1433.4	11.7	16.00
29 40 207	4	2000.00	13.8	150	39	39	35	2	62.5	125	16	12	14	20	13	33.3	1933.4	11.7	21.40
29 50 107	5	1000.00	17.4	60	49	39	34	2.5	62.5	125	8	12	14	20	13	37.5	925.0	11.7	13.00
29 50 157	5	1500.00	17.4	90	49	39	34	2.5	62.5	125	12	12	14	20	13	37.5	1425.0	11.7	19.50
29 50 207	5	2000.00	17.4	120	49	39	34	2.5	62.5	125	16	12	14	20	13	37.5	1925.0	11.7	26.00
29 60 107	6	1000.00	20.9	50	59	49	43	2.5	62.5	125	8	16	18	26	17	37.5	925.0	15.7	18.10
29 60 157	6	1500.00	20.9	75	59	49	43	2.5	62.5	125	12	16	18	26	17	37.5	1425.0	15.7	27.10
29 60 207	6	2000.00	20.9	100	59	49	43	2.5	62.5	125	16	16	18	26	17	37.5	1925.0	15.7	36.20
29 80 107	8	960.00	28.0	36	79	79	71	2.5	60.0	120	8	25	22	33	21	120.0	720.0	19.7	42.50
29 80 157	8	1440.00	28.0	54	79	79	71	2.5	60.0	120	12	25	22	33	21	120.0	1200.0	19.7	65.00
29 80 207	8	1920.00	28.0	72	79	79	71	2.5	60.0	120	16	25	22	33	21	120.0	1680.0	19.7	85.00
29 10 107	10	1000.00	35.11	30	99	99	89	2.5	62.5	125	8	32	33	48	32	125.0	750.0	19.7	68.72
29 10 157	10	1500.00	35.11	45	99	99	89	2.5	62.5	125	12	32	33	48	32	125.0	1425.0	19.7	104.00

1) These racks should be used for continuous linking only with the left side (see sketch).



**Total pitch error:**

- GT<sub>f</sub>/1000 ≤ 0.052 mm
- GT<sub>f</sub>/1500 ≤ 0.062 mm (≤ 0.041/1000 mm)
- GT<sub>f</sub>/2000 ≤ 0.068 mm (≤ 0.034/1000 mm)

- Teeth induction-hardened and ground
- Material C45
- Ground on all sides after hardening

**Mounting racks, see page ZF-2.**

**To achieve precision rack joints, we recommend our patented rack assembly kit, see page ZF-4.**

**For lubrication of racks & pinions, we recommend our automatic lubrication systems, see page ZE-1.**

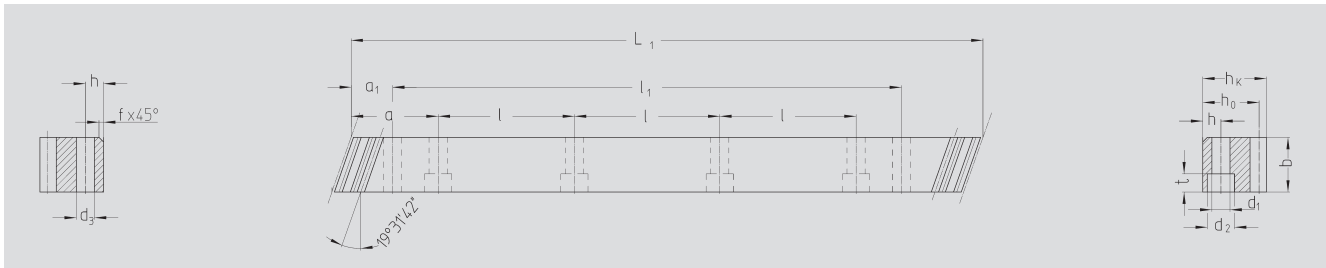
**For the calculation and selection of the rack & pinion drive, see page ZD-1.**

**Screws for rack mounting, see page ZF-3.**





**ATLANTA-Quality 8**



Order Code	Module	L <sub>1</sub>	N° of teeth	b <sup>+0,4</sup>	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg
39 20 108	2	1000.00	150	25	24	22	2	62.5	125	8	8	7	11	7	31.7	936.6	5.7	4.10
39 20 208	2	2000.00	300	25	24	22	2	62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.40
39 30 108	3	1000.00	100	30	29	26	2	62.5	125	8	9	10	15	9	35.0	930.0	7.7	5.90
39 30 208	3	2000.00	200	30	29	26	2	62.5	125	16	9	10	15	9	35.0	1930.0	7.7	12.00
39 40 108	4	1000.00	75	40	39	35	2	62.5	125	8	12	14	20	13	33.3	933.4	11.7	10.70
39 40 208	4	2000.00	150	40	39	35	2	62.5	125	16	12	14	20	13	33.3	1933.4	11.7	21.00
39 50 108	5	1000.00	60	50	39	34	2.5	62.5	125	8	12	14	20	13	37.5	925.0	11.7	13.00
39 50 208	5	2000.00	120	50	39	34	2.5	62.5	125	16	12	14	20	13	37.5	1925.0	11.7	26.00

**500 mm and other length on request.  
Without bores on request.**

**Total pitch error:**

$$GT_f / 1000 \leq 0.060 \text{ mm}$$

$$GT_f / 2000 \leq 0.078 \text{ mm } (\leq 0.039 \text{ mm}/1000)$$

- Teeth hardened with the ATLANTA high performance hardening process and ground
- Heat-treatable, bright steel according to ATLANTA-Standard

**Mounting racks, see page ZF-2.**

**To achieve precision rack joints, we recommend our patented rack assembly kit, see page ZF-4.**

**For lubrication of racks & pinions, we recommend our automatic lubrication systems, see page ZE-1.**

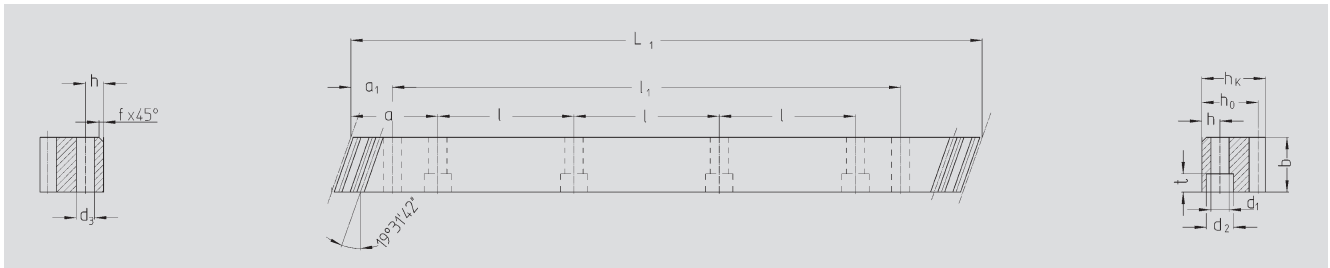
**For the calculation and selection of the rack & pinion drive, see page ZD-1.**

**Screws for rack mounting, see page ZF-3.**





**ATLANTA-Quality 8**



Order Code	Module	L <sub>1</sub>	N° of teeth	b <sub>0.5</sub>	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg
<b>38 21 100</b>	2	1000.00	150	25	24	22	2	62.5	125	8	8	7	11	7	31.7	936.6	5.7	4.30
<b>38 20 100</b>	2	1000.00	150	25	24	22	2	62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.60
<b>38 21 200</b>	2	2000.00	300	25	24	22	2	62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.60
<b>38 20 200</b>	2	2000.00	300	25	24	22	2	62.5	125	8	9	10	15	9	35.0	930.0	7.7	6.10
<b>38 31 100</b>	3	1000.00	100	30	29	26	2	62.5	125	8	9	10	15	9	35.0	930.0	7.7	6.10
<b>38 30 100</b>	3	1000.00	100	30	29	26	2	62.5	125	16	9	10	15	9	35.0	1930.0	7.7	12.20
<b>38 31 200</b>	3	2000.00	200	30	29	26	2	62.5	125	16	12	10	15	9	33.3	933.4	7.7	10.90
<b>38 30 200</b>	3	2000.00	200	30	29	26	2	62.5	125	8	12	10	15	9	33.3	1933.4	7.7	21.80
<b>38 41 100</b>	4	1000.00	75	40	39	35	2	62.5	125	16	12	10	15	9	33.3	1933.4	7.7	21.80
<b>38 40 100</b>	4	1000.00	75	40	39	35	2	62.5	125	8	12	10	15	9	33.3	1933.4	7.7	21.80
<b>38 41 200</b>	4	2000.00	150	40	39	35	2	62.5	125	16	12	10	15	9	33.3	1933.4	7.7	21.80
<b>38 40 200</b>	4	2000.00	150	40	39	35	2	62.5	125	8	12	10	15	9	33.3	1933.4	7.7	21.80

500 mm and other length on request.

**Total pitch error**

$$GT_f/1000 \leq 0.100 \text{ mm}$$

$$GT_f/2000 \leq 0.200 \text{ mm}$$

- Milled teeth, quenched and tempered
- Heat-treatable steel according to ATLANTA-Standard
- Bright steel, backside machined



Mounting racks, see page ZF-2.

To achieve precision rack joints, we recommend our patented rack assembly kit, see page ZF-4.

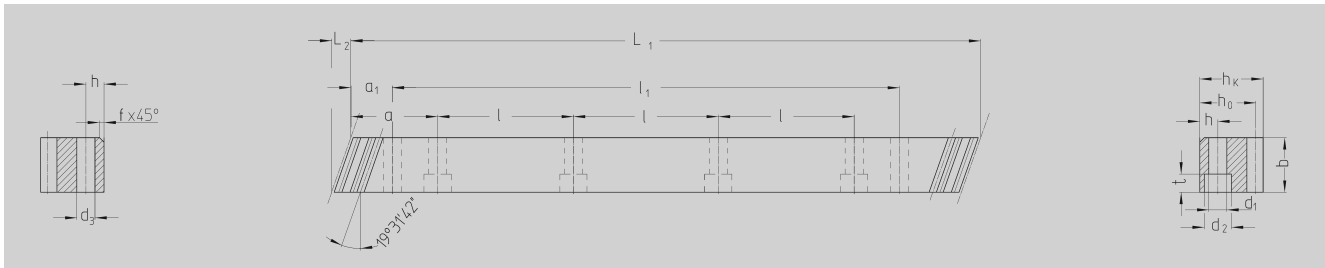
For lubrication of racks & pinions, we recommend our automatic lubrication systems, see page ZE-1.

For the calculation and selection of the rack & pinion drive, see page ZD-1.

Screws for rack mounting, see page ZF-3.



### Quality 9



Order Code	Module	L <sub>1</sub>	L <sub>2</sub>	N° of Teeth	b	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of Holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg
47 15 100	1.5	1000.00	6.0	200	17	17	15.5		62.5	125	8	6	6	10	6	31.7	936.6	5.7	1.30
47 16 100	1.5	1000.00	6.0	200	17	17	15.5		62.5	125	12	6	6	10	6	31.7	1436.6	5.7	1.30
47 15 150	1.5	1500.00	6.0	300	17	17	15.5		62.5	125	12	6	6	10	6	31.7	1436.6	5.7	1.95
47 16 150	1.5	1500.00	6.0	300	17	17	15.5		62.5	125	16	6	6	10	6	31.7	1936.6	5.7	1.95
47 15 200	1.5	2000.00	6.0	400	17	17	15.5		62.5	125	16	6	6	10	6	31.7	1936.6	5.7	2.60
47 16 200	1.5	2000.00	6.0	400	17	17	15.5		62.5	125	16	6	6	10	6	31.7	1936.6	5.7	2.60
47 20 050	2	500.00	9.2	75	26	24	22		62.5	125	4	8	7	11	7	31.7	436.6	5.7	2.20
47 21 050	2	500.00	9.2	75	26	24	22		62.5	125	8	8	7	11	7	31.7	936.6	5.7	2.20
47 20 100	2	1000.00	9.2	150	26	24	22		62.5	125	8	8	7	11	7	31.7	936.6	5.7	4.40
47 21 100	2	1000.00	9.2	150	26	24	22		62.5	125	16	8	7	11	7	31.7	1936.6	5.7	4.40
47 20 200	2	2000.00	9.2	300	26	24	22		62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.80
47 21 200	2	2000.00	9.2	300	26	24	22		62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.80
47 30 050	3	500.00	11.0	50	31	29	26		62.5	125	4	9	10	15	9	35.0	430.0	7.7	3.10
47 31 050	3	500.00	11.0	50	31	29	26		62.5	125	8	9	10	15	9	35.0	930.0	7.7	3.10
47 30 100	3	1000.00	11.0	100	31	29	26		62.5	125	8	9	10	15	9	35.0	930.0	7.7	6.20
47 31 100	3	1000.00	11.0	100	31	29	26		62.5	125	16	9	10	15	9	35.0	1930.0	7.7	6.20
47 30 200	3	2000.00	11.0	200	31	29	26		62.5	125	16	9	10	15	9	35.0	1930.0	7.7	12.50
47 31 200	3	2000.00	11.0	200	31	29	26		62.5	125	24	9	10	15	9	35.0	2930.0	7.7	12.50
47 30 300	3	3000.00	11.0	300	31	29	26		62.5	125	24	9	10	15	9	35.0	2930.0	7.7	18.60
47 31 300	3	3000.00	11.0	300	31	29	26		62.5	125	24	9	10	15	9	35.0	2930.0	7.7	18.60
47 40 050 <sup>1)</sup>	4	506.67	14.5	38	41	39	35		62.5	125	4	12	10	15	9	33.3	433.0	7.7	5.60
47 41 050	4	506.67	14.5	38	41	39	35		62.5	125	8	12	10	15	9	33.3	933.4	7.7	5.60
47 40 100	4	1000.00	14.5	75	41	39	35		62.5	125	8	12	10	15	9	33.3	933.4	7.7	11.10
47 41 100	4	1000.00	14.5	75	41	39	35		62.5	125	16	12	10	15	9	33.3	1933.4	7.7	11.10
47 40 200	4	2000.00	14.5	150	41	39	35		62.5	125	16	12	10	15	9	33.3	1933.4	7.7	22.20
47 41 200	4	2000.00	14.5	150	41	39	35		62.5	125	16	12	10	15	9	33.3	1933.4	7.7	22.20
47 50 100	5	1000.00	17.7	60	50	39	34		62.5	125	8	12	14	20	13	37.5	925.0	11.7	13.26
47 51 100	5	1000.00	17.7	60	50	39	34		62.5	125	16	12	14	20	13	37.5	1925.0	11.7	13.26
47 50 200	5	2000.00	17.7	120	50	39	34		62.5	125	16	12	14	20	13	37.5	1925.0	11.7	26.52
47 51 200	5	2000.00	17.7	120	50	39	34		62.5	125	16	12	14	20	13	37.5	1925.0	11.7	26.52
47 60 100	6	1000.00	21.3	50	60	49	43		62.5	125	8	16	18	26	17	37.5	925.0	15.7	20.12
47 61 100	6	1000.00	21.3	50	60	49	43		62.5	125	16	16	18	26	17	37.5	1925.0	15.7	20.12
47 60 200	6	2000.00	21.3	100	60	49	43		62.5	125	16	16	18	26	17	37.5	1925.0	15.7	40.24
47 61 200	6	2000.00	21.3	100	60	49	43		62.5	125	16	16	18	26	17	37.5	1925.0	15.7	40.24
47 80 100	8	960.00	28.7	36	81	79	71		60.0	120	8	25	22	33	21	120.0	720.0	19.7	44.85
47 81 100	8	960.00	28.7	36	81	79	71		60.0	120	16	25	22	33	21	120.0	1680.0	19.7	44.85
47 80 200	8	1920.00	28.7	72	81	79	71		60.0	120	16	25	22	33	21	120.0	1680.0	19.7	89.71
47 81 200	8	1920.00	28.7	72	81	79	71		60.0	120	16	25	22	33	21	120.0	1680.0	19.7	89.71
47 10 100	10	1000.00	35.5	30	100	99	89		62.5	125	8	32	33	48	32	125	750	19.7	69.80
47 11 100	10	1000.00	35.5	30	100	99	89		62.5	125	8	32	33	48	32	125	750	19.7	69.80

1) These racks should be used for continuous linking only with the left side (see sketch).

**Total pitch error  $GT_f/1000 \leq 0.150$  mm.**

- Milled teeth
- Material C45
- Bright Steel

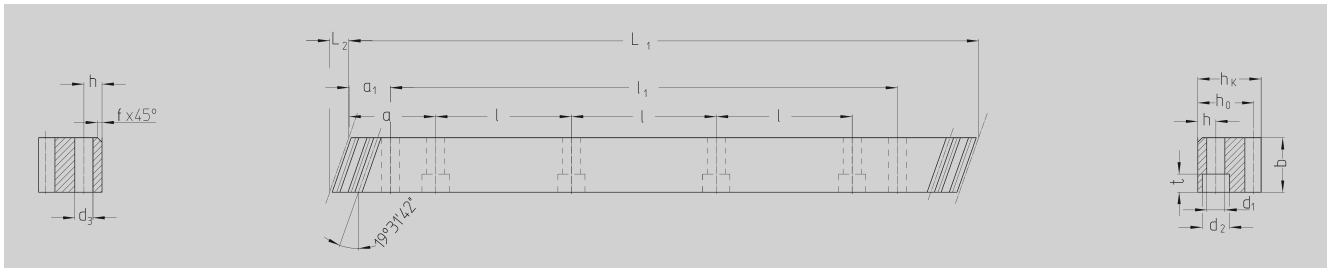
**Mounting racks, see page ZF-2.**

**Further information see page ZA-10.**





**Quality 10**



Order Code	Module	L <sub>1</sub>	L <sub>2</sub>	N° of Teeth	b	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of Holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg	
39 15 050 <sup>2)</sup>	1.5	500.00	6.02	100	17	17	15.5	2	62.5	125	4	6	6	10	6	31.7	436.6	5.7	1.30	
39 16 050	1.5	500.00	6.02	100	17	17	15.5	2				without Mounting Holes								1.30
39 15 100	1.5	1000.00	6.02	200	17	17	15.5	2	62.5	125	8	6	6	10	6	31.7	936.6	5.7	2.60	
39 16 100	1.5	1000.00	6.02	200	17	17	15.5	2				without Mounting Holes								2.60
39 20 050 <sup>2)</sup>	2	500.00	8.87	75	25	24	22	2	62.5	125	4	8	7	11	7	31.7	436.6	5.7	2.10	
39 21 050	2	500.00	8.87	75	25	24	22	2				without Mounting Holes								2.10
39 20 100	2	1000.00	8.87	150	25	24	22	2	62.5	125	8	8	7	11	7	31.7	936.6	5.7	4.20	
39 21 100	2	1000.00	8.87	150	25	24	22	2				without Mounting Holes								4.20
39 20 200	2	2000.00	8.87	300	25	24	22	2	62.5	125	16	8	7	11	7	31.7	1936.6	5.7	8.40	
39 21 200	2	2000.00	8.87	300	25	24	22	2				without Mounting Holes								8.40
39 30 050 <sup>2)</sup>	3	500.00	10.64	50	30	29	26	2	62.5	125	4	9	10	15	9	35.0	430.0	7.7	3.00	
39 31 050	3	500.00	10.64	50	30	29	26	2				without Mounting Holes								3.00
39 30 100	3	1000.00	10.64	100	30	29	26	2	62.5	125	8	9	10	15	9	35.0	930.0	7.7	6.00	
39 31 100	3	1000.00	10.64	100	30	29	26	2				without Mounting Holes								6.00
39 30 200	3	2000.00	10.64	200	30	29	26	2	62.5	125	16	9	10	15	9	35.0	1930.0	7.7	12.00	
39 31 200	3	2000.00	10.64	200	30	29	26	2				without Mounting Holes								12.00
39 40 050 <sup>1)2)</sup>	4	506.67	14.2	38	40	39	35	2	62.5	125	4	12	10	15	9	33.3	433.0	7.7	5.30	
39 41 050	4	506.67	14.2	38	40	39	35	2				without Mounting Holes								5.30
39 40 100 <sup>2)</sup>	4	1000.00	14.2	75	40	39	35	2	62.5	125	8	12	10	15	9	33.3	933.4	7.7	10.50	
39 41 100	4	1000.00	14.2	75	40	39	35	2				without Mounting Holes								10.50
39 42 100	4	1000.00	14.2	75	40	39	35	2	62.5	125	8	12	14	20	13	33.3	933.4	11.7	10.50	
39 42 150 <sup>1)</sup>	4	1506.67	14.2	113	40	39	35	2	62.5	125	12	12	14	20	13	33.3	1433.4	11.7	15.75	
39 40 200	4	2000.00	14.2	150	40	39	35	2	62.5	125	16	12	10	15	9	33.3	1933.4	7.7	21.00	
39 41 200	4	2000.00	14.2	150	40	39	35	2				without Mounting Holes								21.00
39 42 200	4	2000.00	14.2	150	40	39	35	2	62.5	125	16	12	14	20	13	33.3	1933.4	11.7	21.00	
39 50 050 <sup>2)</sup>	5	500.00	17.7	30	50	39	34	2.5	62.5	125	4	12	14	20	13	37.5	425.0	11.7	6.50	
39 51 050	5	500.00	17.7	30	50	39	34	2.5				without Mounting Holes								6.50
39 50 100	5	1000.00	17.7	60	50	39	34	2.5	62.5	125	8	12	14	20	13	37.5	925.0	11.7	13.00	
39 51 100	5	1000.00	17.7	60	50	39	34	2.5				without Mounting Holes								13.00
39 50 200	5	2000.00	17.7	120	50	39	34	2.5	62.5	125	16	12	14	20	13	37.5	1925.0	11.7	26.00	
39 51 200	5	2000.00	17.7	120	50	39	34	2.5				without Mounting Holes								26.00
39 60 050 <sup>2)</sup>	6	500.00	21.4	25	60	49	43	2.5	62.5	125	4	16	18	26	17	37.5	425.0	15.7	9.90	
39 61 050	6	500.00	21.4	25	60	49	43	2.5				without Mounting Holes								9.90
39 60 100	6	1000.00	21.4	50	60	49	43	2.5	62.5	125	8	16	18	26	17	37.5	925.0	15.7	19.80	
39 61 100	6	1000.00	21.4	50	60	49	43	2.5				without Mounting Holes								19.80
39 60 200	6	2000.00	21.4	100	60	49	43	2.5	62.5	125	16	16	18	26	17	37.5	1925.0	15.7	39.60	
39 61 200	6	2000.00	21.4	100	60	49	43	2.5				without Mounting Holes								39.60

- 1) These racks should be used for continuous linking only with the left side (see sketch).
- 2) The screw joint limits the feed force.

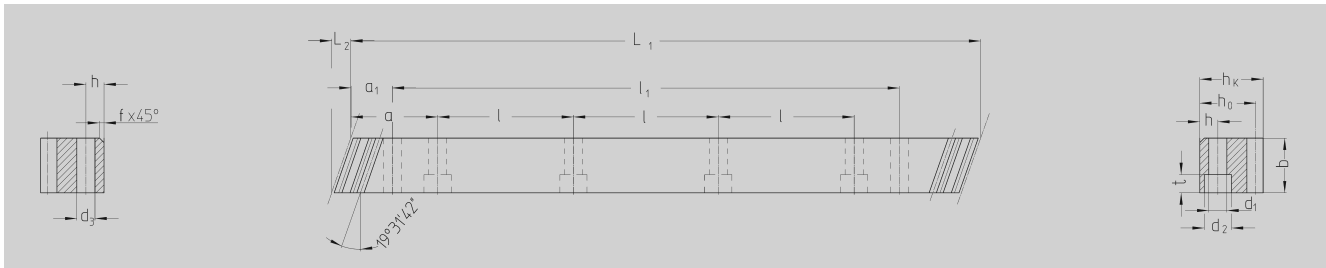
**Total pitch error  $GT_f/1000 \leq 0.200$  mm.**

- Milled teeth and induction hardened
- Material C45
- Backside machined, profile blasted

**Further information see page ZA-13.**



**Quality 10**



Order Code	Module	L <sub>1</sub>	L <sub>2</sub>	N° of Teeth	b	h <sub>k</sub>	h <sub>0</sub>	f	a	l	N° of Holes	h	d <sub>1</sub>	d <sub>2</sub>	t	a <sub>1</sub>	l <sub>1</sub>	d <sub>3</sub>	kg
<b>39 80 050</b> <sup>2)</sup>	8	480.00	28.4	18	80	79	71	2.5	60.0	120	4	25	22	33	21	120.0	240	19.7	21.00
<b>39 81 050</b>	8	480.00	28.4	18	80	79	71	2.5	without Mounting Holes										21.00
<b>39 80 100</b>	8	960.00	28.4	36	80	79	71	2.5	60.0	120	8	25	22	33	21	120.0	720	19.7	42.50
<b>39 81 100</b>	8	960.00	28.4	36	80	79	71	2.5	without Mounting Holes										42.50
<b>39 80 200</b>	8	1920.00	28.4	72	80	79	71	2.5	60.0	120	16	25	22	33	21	120.0	1680	19.7	85.00
<b>39 81 200</b>	8	1920.00	28.4	72	80	79	71	2.5	without Mounting Holes										85.00
<b>39 10 100</b>	10	1000.00	35.46	30	100	99	89	2.5	62.5	125	8	32	33	48	32	125.0	750	19.7	68.72
<b>39 11 100</b>	10	1000.00	35.46	30	100	99	89	2.5	without Mounting Holes										68.72
<b>39 12 100</b>	12	1000.00	42.56	25	120	120	108	2.5	40.0	125	8	40	39	58	38	102.5	750	19.7	120.00
<b>39 13 100</b>	12	1000.00	42.56	25	120	120	108	2.5	without Mounting Holes										120.00

- 1) These racks should be used for continuous linking only with the left side (see sketch).
- 2) The screw joint limits the feed force.

**Total pitch error  $GT_f / 1000 \leq 0.200$  mm.**

- Milled teeth and induction hardened
- Material C45
- Backside machined, profile blasted

**Mounting racks, see page ZF-2.**



**To achieve precision rack joints, we recommend our patented rack assembly kit, see page ZF-4.**

**For lubrication of racks & pinions, we recommend our automatic lubrication systems, see page ZE-1.**

**For the calculation and selection of the rack & pinion drive, see page ZD-1.**

**Screws for rack mounting, see page ZF-3.**