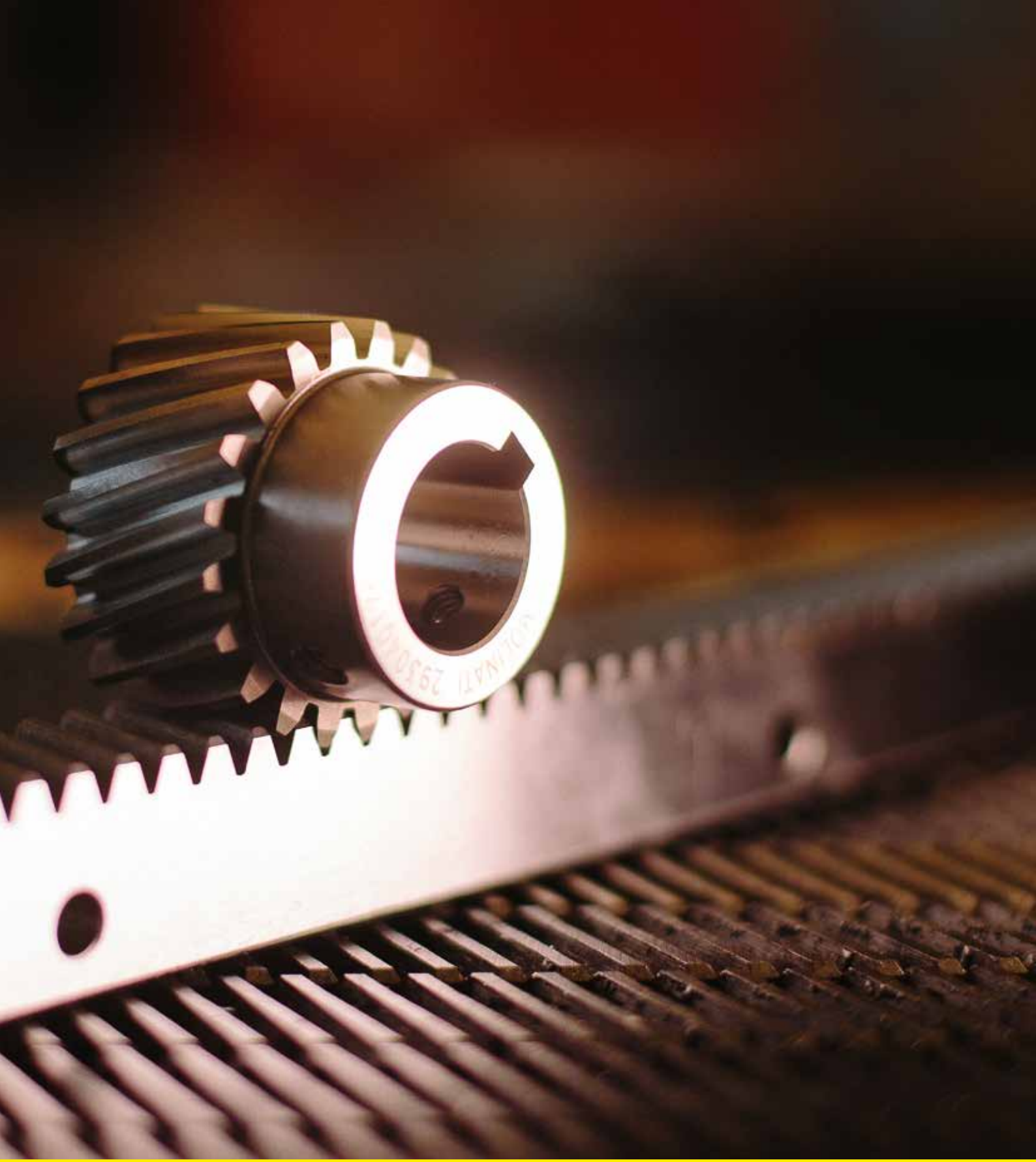
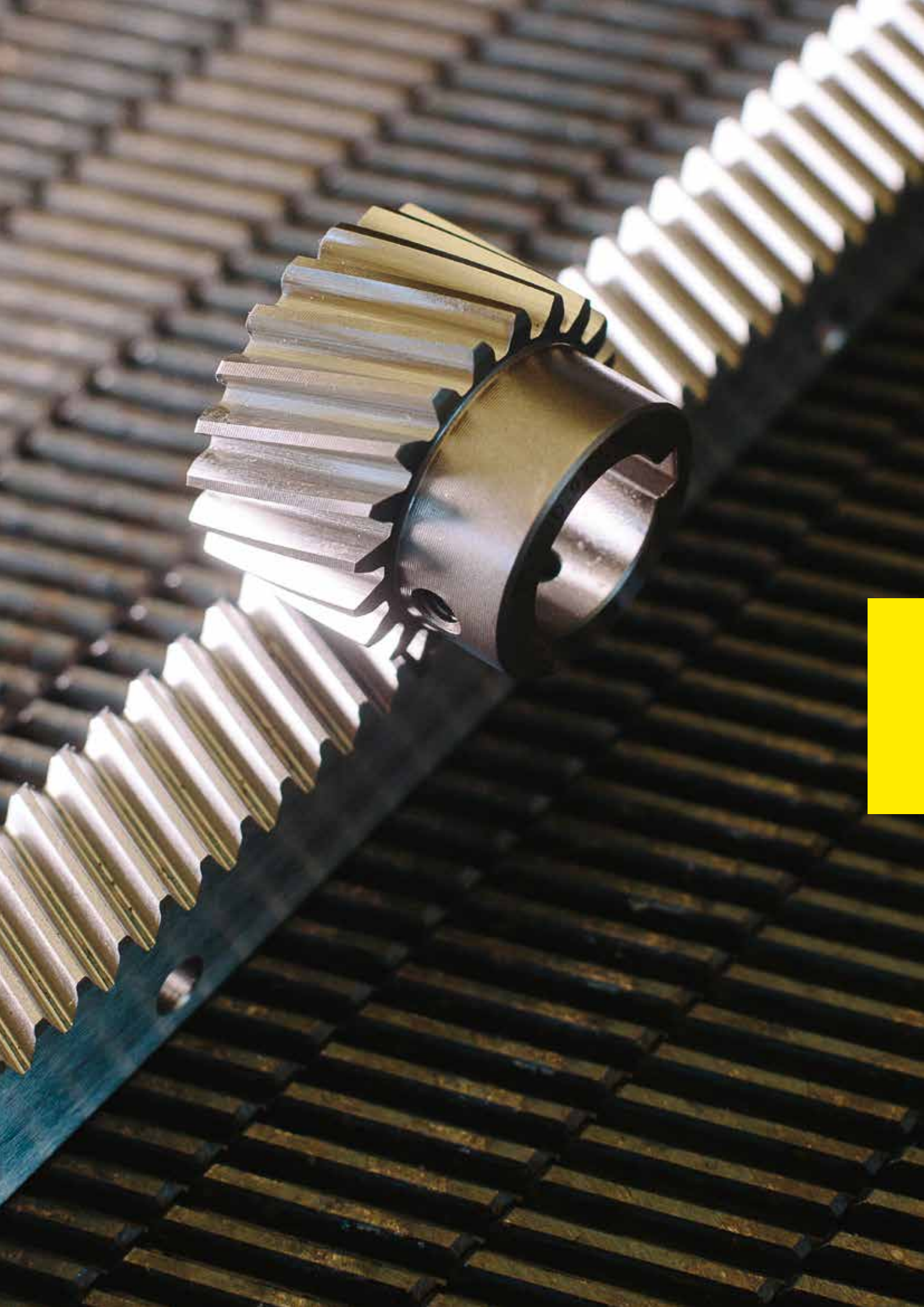


MOLINATI
ORLANDO SRL



About the company and its history

Since 1968, MOLINATI ORLANDO s.r.l. produces tools for cutting straight and helical teeth in bevel gears and tools with reciprocating motion to cut teeth in spur gears.
In 1982 it also specialized in the fabrication of thoroughly ground precision rack and pinion transmissions.
All processes for manufacturing ground precision gear racks are carried out internally with the most advanced production systems and controlled through CNC machines.
All productive activities take place in two plants located in the province of Bologna, covering a floor area of approximately 3.500 m2 in total.
Our precision gear rack transmission systems find application in several industry sectors: steering units, motion mechanisms for automated packing and packaging machines, tooling machines, machines for processing wood, aluminium, glass, marble and plastic material, robotics and automation.

MOLINATI ORLANDO s.r.l. entirely produces precision gear racks with the most advanced manufacturing and CNC control systems: this guarantees top manufacturing quality and precision.

Our production

MOLINATI ORLANDO s.r.l. can produce precision gear racks in several combinations of materials and accuracy classes, thus satisfying our clients' needs and applications.
We manufacture precision gear racks with straight and helical teeth ranging from module 0,50 to module 22, with lengths up to 3000 mm and accuracy classes between Q6 and Q11.
Several materials can be employed: construction steels, which do not require further treatment, or steels suitable for subsequent surface treatments such as induction hardening, case-hardening or nitriding.
Upon request, we can also provide self-lubricating treatments, which reduce friction, or others which protect from oxidation.
We carry out all manufacturing and control phases internally, following specific procedures.
The whole production and inspection process for each precision gear rack is tracked to certify maximum quality to our clients.

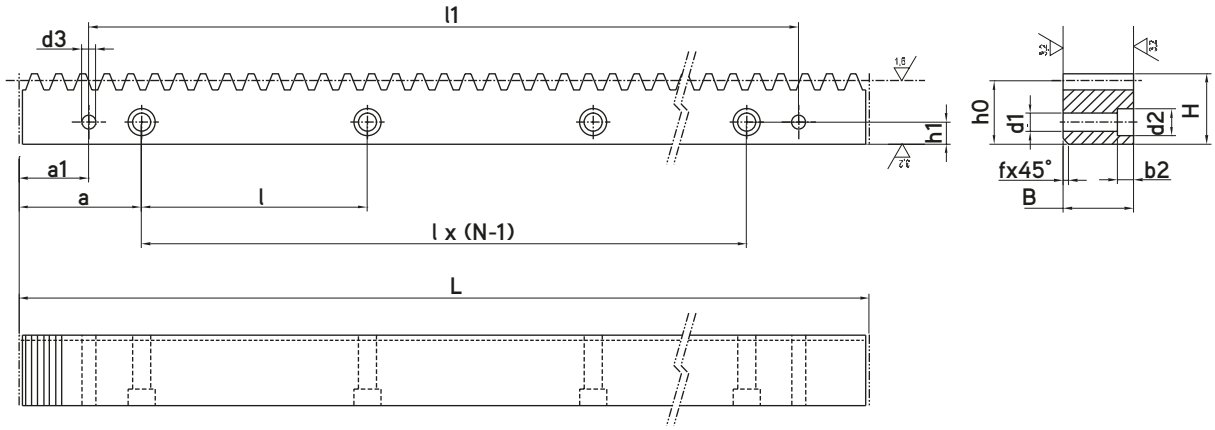
The whole production and inspection process for each precision gear rack is tracked to certify maximum quality to our clients.

Gear rack with modular pitch **Q9**

precision milled straight toothing

Quality: 9e27 DIN 3962/63/67
Material: C45 UNI EN 10027-1; Rm≈650N/mm²
Toothing execution: toothing finished with tooling.
Toothing specifications: pressure angle α=20°;
Helix angle ß=0°
Helix direction= /

Fp total pitch error: depending on rack length (see table)



SERIES NSF

All amounts are expressed in [mm]

Code	mod.	p_t	L	Z	B	H	h0	f	a	l	N	h1	d2	d1	b2	a1	l1	d3	Fp	kg
C150106NSF	1,50	4,712	499,5	106	20	19	17,5	2	62,44	124,88	4	8	11,0	7,0	7	29,00	441,5	5,7	0,100	1,4
C150212NSF	1,50	4,712	999	212	20	19	17,5	2	62,44	124,88	8	8	11,0	7,0	7	29,00	941,0	5,7	0,150	2,7
C200080NSF	2,00	6,283	502,6	80	25	24	22,0	2	62,83	125,66	4	8	11,0	7,0	7	31,30	440,1	5,7	0,100	2,2
C200160NSF	2,00	6,283	1005,3	160	25	24	22,0	2	62,83	125,66	8	8	11,0	7,0	7	31,30	942,7	5,7	0,150	4,3
C250064NSF	2,50	7,854	502,6	64	25	24	21,5	2	62,83	125,66	4	9	11,0	7,0	7	31,30	440,1	5,7	0,100	2,1
C250128NSF	2,50	7,854	1005,3	128	25	24	21,5	2	62,83	125,66	8	9	11,0	7,0	7	31,30	942,7	5,7	0,150	4,2
C300054NSF	3,00	9,425	508,9	54	30	29	26,0	2	63,62	127,23	4	9	14,0	9,0	9	34,40	440,1	7,7	0,100	3,1
C300108NSF	3,00	9,425	1017,8	108	30	29	26,0	2	63,62	127,23	8	9	14,0	9,0	9	34,40	949,1	7,7	0,150	6,2
C400040NSF	4,00	12,566	502,6	40	40	39	35,0	2	62,83	125,66	4	12	14,0	9,0	9	37,50	427,7	7,7	0,100	5,5
C400080NSF	4,00	12,566	1005,3	80	40	39	35,0	2	62,83	125,55	8	12	14,0	9,0	9	37,50	930,3	7,7	0,150	11,1
C500032NSF	5,00	15,708	502,6	32	50	39	34,0	3	62,83	125,66	4	12	20,0	14,0	13	30,20	442,3	11,7	0,100	6,7
C500064NSF	5,00	15,708	1005,3	64	50	39	34,0	3	62,83	125,66	8	12	20,0	14,0	13	30,20	944,9	11,7	0,150	13,4
C600027NSF	6,00	18,850	508,9	27	60	49	43,0	3	63,62	127,23	4	16	26,0	18,0	17	31,40	446,1	15,7	0,100	10,3
C600054NSF	6,00	18,850	1017,8	54	60	49	43,0	3	63,62	127,23	8	16	26,0	18,0	17	31,40	955,0	15,7	0,150	20,6

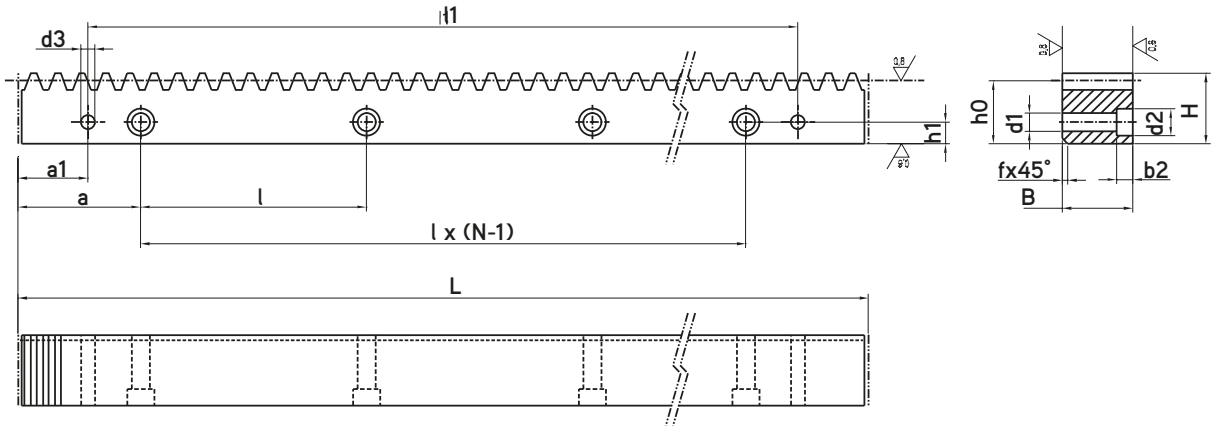
p^t: tangent pitch Z: number of teeth N: number of holes d_3: predrilled holes for pin

please note: An assembly rack (available separately) is required upon installation to enable correct positioning of two consecutive gear racks. – The pinion can be provided upon request.

Gear rack with modular pitch **Q6**

hardened and ground straight toothing

Quality:	6h23 DIN 3962/63/67
Material:	C45 UNI EN 10027-1
Toothing execution:	induction hardening and ground HRC 54-58
Toothing specifications:	pressure angle α=20°; Helix angle ß=0° Helix direction= /
f_p single pitch error:	module ≤ 3,0: 0,006 /module ≥ 3,0: 0,008
Fp total pitch error:	depending on rack length (see table)



SERIES NST

All amounts are expressed in [mm]

Code	mod.	p_t	L	Z	B	H	h0	f	a	l	N	h1	d2	d1	b2	a1	l1	d3	Fp	kg
C150106NST	1,50	4,712	499,5	106	19	19	17,5	2	62,44	124,88	4	8	11,0	7,0	7	29,00	441,5	5,7	0,024	1,3
C150212NST	1,50	4,712	999	212	19	19	17,5	2	62,44	124,88	8	8	11,0	7,0	7	29,00	941,0	5,7	0,036	2,6
C200080NST	2,00	6,283	502,6	80	24	24	22,0	2	62,83	125,66	4	8	11,0	7,0	7	31,30	440,1	5,7	0,026	2,1
C200160NST	2,00	6,283	1005,3	160	24	24	22,0	2	62,83	125,66	8	8	11,0	7,0	7	31,30	942,7	5,7	0,036	4,2
C250064NST	2,50	7,854	502,6	64	24	24	21,5	2	62,83	125,66	4	9	11,0	7,0	7	31,30	440,1	5,7	0,024	2,0
C250128NST	2,50	7,854	1005,3	128	24	24	21,5	2	62,83	125,66	8	9	11,0	7,0	7	31,30	942,7	5,7	0,036	4,1
C300054NST	3,00	9,425	508,9	54	29	29	26,0	2	63,62	127,23	4	9	14,0	9,0	9	34,40	440,1	7,7	0,030	3,0
C300108NST	3,00	9,425	1017,8	108	29	29	26,0	2	63,62	127,23	8	9	14,0	9,0	9	34,40	949,1	7,7	0,038	6,0
C400040NST	4,00	12,566	502,6	40	39	39	35,0	2	62,83	125,66	4	12	14,0	9,0	9	37,50	427,7	7,7	0,029	5,4
C400080NST	4,00	12,566	1005,3	80	39	39	35,0	2	62,83	125,55	8	12	14,0	9,0	9	37,50	930,3	7,7	0,038	10,8
C500032NST	5,00	15,708	502,6	32	49	39	34,0	3	62,83	125,66	4	12	20,0	14,0	13	30,20	442,3	11,7	0,029	6,6
C500064NST	5,00	15,708	1005,3	64	49	39	34,0	3	62,83	125,66	8	12	20,0	14,0	13	30,20	944,9	11,7	0,038	13,2
C600027NST	6,00	18,850	508,9	27	59	49	43,0	3	63,62	127,23	4	16	26,0	18,0	17	31,40	446,1	15,7	0,032	10,1
C600054NST	6,00	18,850	1017,8	54	59	49	43,0	3	63,62	127,23	8	16	26,0	18,0	17	31,40	955,0	15,7	0,041	20,3

p^t: tangent pitch Z: number of teeth N: number of holes d_3: predrilled holes for pin

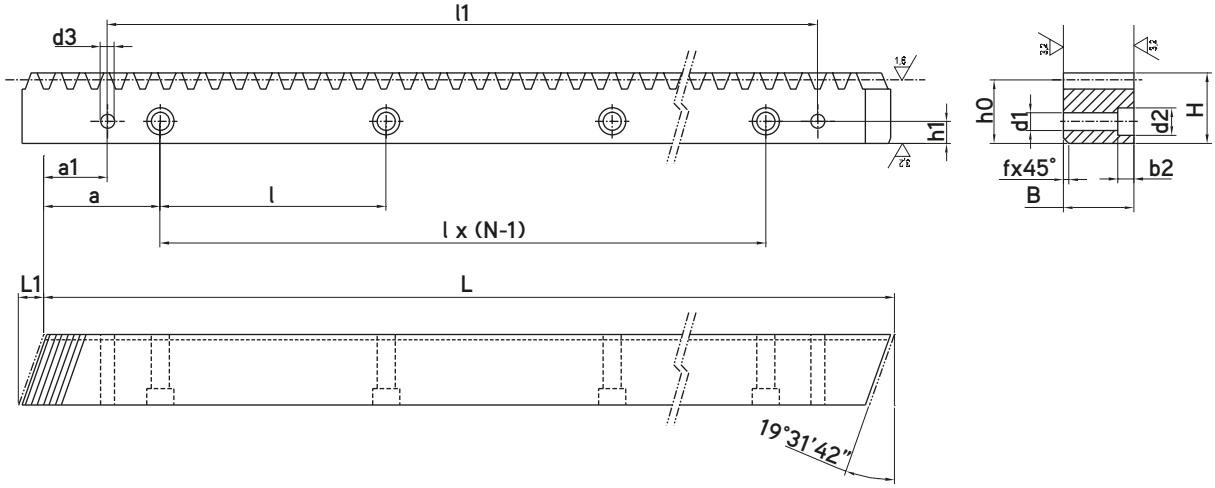
please note: An assembly rack (available separately) is required upon installation to enable correct positioning of two consecutive gear racks. – The pinion can be provided upon request.

Gear racks with modular pitch precision milled helical toothing — Q9

SERIES DSF

Quality: 9e27 DIN 3962/63/67
Material: C45 UNI EN 10027-1; Rm≈650N/mm²
Toothing execution: toothing finished with tooling.
Toothing specifications: pressure angle α=20°;
Helix angle ß=19,528°
Helix direction= RIGHT

Fp total pitch error: depending on rack length (see table)



All amounts are expressed in [mm]

Code	mod.	p_t	L	L1	Z	B	H	h0	f	a	l	N	h1	d2	d1	b2	a1	l1	d3	Fp	kg
C150100DSF	1,50	5,000	500	7,1	100	20	19	17,5	2	62,5	125	4	8	11,0	7,0	7	31,7	436,6	5,7	0,100	1,4
C150200DSF	1,50	5,000	1000	7,1	200	20	19	17,5	2	62,5	125	8	8	11,0	7,0	7	31,7	936,6	5,7	0,150	2,8
C200075DSF	2,00	6,667	500	8,9	75	25	24	22,0	2	62,5	125	4	8	11,0	7,0	7	31,7	436,6	5,7	0,100	2,2
C200150DSF	2,00	6,667	1000	8,9	150	25	24	22,0	2	62,5	125	8	8	11,0	7,0	7	31,7	936,6	5,7	0,150	4,3
C250060DSF	2,50	8,333	500	8,9	60	25	24	21,5	2	62,5	125	4	9	11,0	7,0	7	31,7	436,6	5,7	0,100	2,1
C250120DSF	2,50	8,333	1000	8,9	120	25	24	21,5	2	62,5	125	8	9	11,0	7,0	7	31,7	936,6	5,7	0,150	4,2
C300050DSF	3,00	10,000	500	10,7	50	30	29	26,0	2	62,5	125	4	9	14,0	9,0	9	35,0	430,0	7,7	0,100	3,1
C300100DSF	3,00	10,000	1000	10,7	100	30	29	26,0	2	62,5	125	8	9	14,0	9,0	9	35,0	930,0	7,7	0,150	6,1
C400038DSF	4,00	13,333	506,6	14,2	38	40	39	35,0	3	62,5	125	4	12	14,0	9,0	9	33,3	433,0	7,7	0,100	5,6
C400075DSF	4,00	13,333	1000	14,2	75	40	39	35,0	3	62,5	125	8	12	14,0	9,0	9	33,3	933,4	7,7	0,150	11,0
C500030DSF	5,00	16,667	500	17,8	30	50	39	34,0	3	62,5	125	4	12	20,0	14,0	13	37,5	425,0	11,7	0,100	6,7
C500060DSF	5,00	16,667	1000	17,8	60	50	39	34,0	3	62,5	125	8	12	20,0	14,0	13	37,5	925,0	11,7	0,150	13,4
C600025DSF	6,00	20,000	500	21,3	25	60	49	43,0	3	62,5	125	4	16	26,0	18,0	17	37,5	425,0	15,7	0,100	10,1
C600050DSF	6,00	20,000	1000	21,3	50	60	49	43,0	3	62,5	125	8	16	26,0	18,0	17	37,5	925,0	15,7	0,150	20,3

p^t: tangent pitch Z: number of teeth N: number of holes d_3: predrilled holes for pin

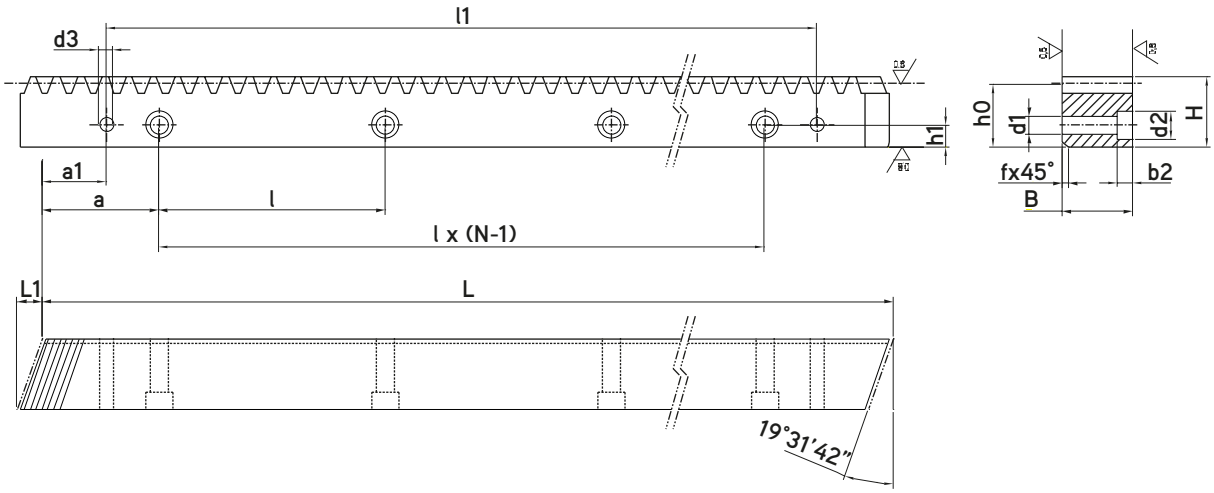
please note: An assembly rack (available separately) is required upon installation to enable correct positioning of two consecutive gear racks. – The pinion can be provided upon request.

Gear racks with modular pitch **Q6**

hardened and ground helical toothing

Quality: 6h23 DIN 3962/63/67
Material: C45 UNI EN 10027-1
Toothing execution: induction hardening and ground HRC 54-58
Toothing specifications: pressure angle α=20°;
Helix angle ß=19,528°
Helix direction= RIGHT

f_p single pitch error: module ≤ 3,0: 0,006 /module ≥ 3,0: 0,008
Fp total pitch error: depending on rack length (see table)



SERIES DSC246

All amounts are expressed in [mm]

Code	mod.	p_t	L	L1	Z	B	H	h0	f	a	l	N	h1	d2	d1	b2	a1	l1	d3	Fp	kg
C150100DSC246	1,50	5,000	500	6,7	100	19	19	17,5	2	62,5	125	4	8	11,0	7,0	7	31,7	436,6	5,7	0,024	1,3
C150200DSC246	1,50	5,000	1000	6,7	200	19	19	17,5	2	62,5	125	8	8	11,0	7,0	7	31,7	936,6	5,7	0,036	2,6
C200075DSC246	2,00	6,667	500	8,5	75	24	24	22,0	2	62,5	125	4	8	11,0	7,0	7	31,7	436,6	5,7	0,026	2,1
C200150DSC246	2,00	6,667	1000	8,5	150	24	24	22,0	2	62,5	125	8	8	11,0	7,0	7	31,7	936,6	5,7	0,036	4,2
C250060DSC246	2,50	8,333	500	8,5	60	24	24	21,5	2	62,5	125	4	9	11,0	7,0	7	31,7	436,6	5,7	0,024	2,0
C250120DSC246	2,50	8,333	1000	8,5	120	24	24	21,5	2	62,5	125	8	9	11,0	7,0	7	31,7	936,6	5,7	0,036	4,1
C300050DSC246	3,00	10,000	500	10,3	50	29	29	26,0	2	62,5	125	4	9	14,0	9,0	9	35,0	430,0	7,7	0,030	3,0
C300100DSC246	3,00	10,000	1000	10,3	100	29	29	26,0	2	62,5	125	8	9	14,0	9,0	9	35,0	930,0	7,7	0,038	5,9
C400038DSC246	4,00	13,333	506,6	13,8	38	39	39	35,0	3	62,5	125	4	12	14,0	9,0	9	33,3	433,0	7,7	0,029	5,4
C400075DSC246	4,00	13,333	1000	13,8	75	39	39	35,0	3	62,5	125	8	12	14,0	9,0	9	33,3	933,4	7,7	0,038	10,7
C500030DSC246	5,00	16,667	500	17,4	30	49	39	34,0	3	62,5	125	4	12	20,0	14,0	13	37,5	425,0	11,7	0,029	6,5
C500060DSC246	5,00	16,667	1000	17,4	60	49	39	34,0	3	62,5	125	8	12	20,0	14,0	13	37,5	925,0	11,7	0,038	13,1
C600025DSC246	6,00	20,000	500	20,9	25	59	49	43,0	3	62,5	125	4	16	26,0	18,0	17	37,5	425,0	15,7	0,032	10,0
C600050DSC246	6,00	20,000	1000	20,9	50	59	49	43,0	3	62,5	125	8	16	26,0	18,0	17	37,5	925,0	15,7	0,041	19,9

p^t: tangent pitch Z: number of teeth N: number of holes d_3: predrilled holes for pin

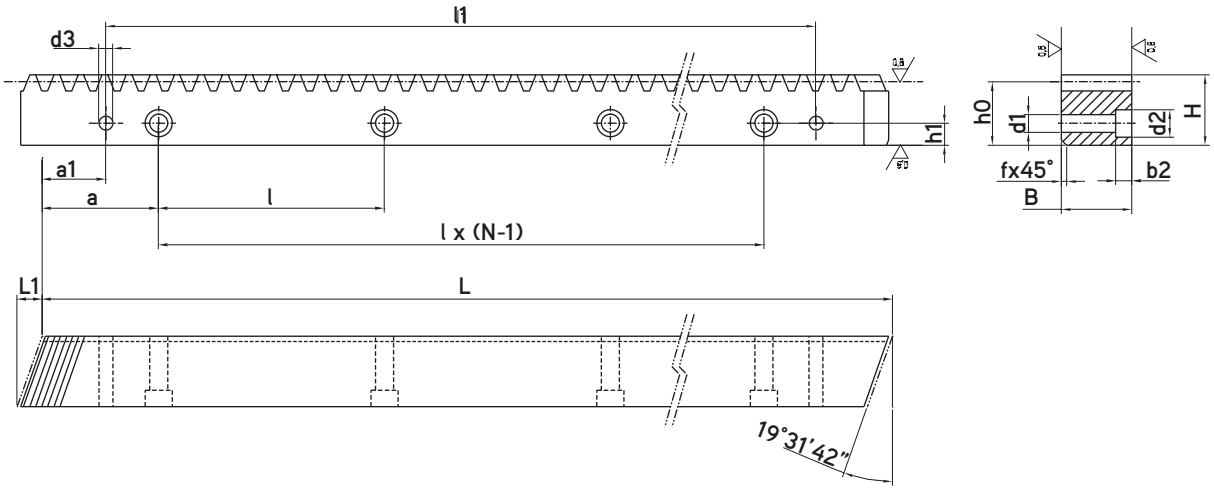
please note: An assembly rack (available separately) is required upon installation to enable correct positioning of two consecutive gear racks. – The pinion can be provided upon request.

Gear racks with modular pitch **Q6**

hardened and ground helical toothing

Quality: 6h23 DIN 3962/63/67
Material: C45 UNI EN 10027-1
Toothing execution: induction hardening and ground HRC 54-58
Toothing specifications: pressure angle α=20°;
Helix angle ß=19,528°
Helix direction= RIGHT

f_p single pitch error: module ≤ 3,0: 0,006 /module ≥ 3,0: 0,008
Fp total pitch error: depending on rack length (see table)



SERIES DST

All amounts are expressed in [mm]

Code	mod.	p_t	L	L1	Z	B	H	h0	f	a	l	N	h1	d2	d1	b2	a1	l1	d3	Fp	kg
C150080DST	1,50	5,000	400	8,5	80	24	24	22,5	2	20,0	120	4	8	11,0	7,0	7	/	/	/	0,024	1,7
C150128DST	1,50	5,000	640	8,5	128	24	24	22,5	2	20,0	120	6	8	11,0	7,0	7	/	/	/	0,029	2,7
C150200DST	1,50	5,000	1000	8,5	200	24	24	22,5	2	20,0	120	9	8	11,0	7,0	7	/	/	/	0,036	4,2
C200060DST	2,00	6,667	400	8,5	60	24	24	22,0	2	20,0	120	4	8	11,0	7,0	7	/	/	/	0,024	1,7
C200075DST	2,00	6,667	500	8,5	75	24	24	22,0	2	62,5	125	4	8	11,0	7,0	7	31,7	436,6	5,7	0,026	2,1
C200096DST	2,00	6,667	640	8,5	96	24	24	22,0	2	20,0	120	6	8	11,0	7,0	7	/	/	/	0,029	2,7
C200150DST	2,00	6,667	1000	8,5	150	24	24	22,0	2	20,0	120	9	8	11,0	7,0	7	/	/	/	0,036	4,2
C250048DST	2,50	8,333	400	10,3	48	29	29	26,5	2	20,0	120	4	9	14,0	9,0	9	/	/	/	0,024	2,4
C250120DST	2,50	8,333	1000	10,3	120	29	29	26,5	2	20,0	120	9	9	14,0	9,0	9	/	/	/	0,036	6,0
C300040DST	3,00	10,000	400	10,3	40	29	29	26,0	2	20,0	120	4	9	14,0	9,0	9	/	/	/	0,026	2,4
C300064DST	3,00	10,000	640	10,3	64	29	29	26,0	2	20,0	120	6	9	14,0	9,0	9	/	/	/	0,030	3,8
C300100DST	3,00	10,000	1000	10,3	100	29	29	26,0	2	20,0	120	9	9	14,0	9,0	9	/	/	/	0,038	5,9
C400048DST	4,00	13,333	640	13,8	48	39	39	35,0	3	20,0	120	6	12	14,0	9,0	9	/	/	/	0,029	6,9
C400075DST	4,00	13,333	1000	13,8	75	39	39	35,0	3	20,0	120	9	12	14,0	9,0	9	/	/	/	0,038	10,7
C500039DST	5,00	16,667	650	17,4	39	49	39	34,0	3	40,0	115	6	12	20,0	14,0	13	/	/	/	0,029	8,5
C500060DST	5,00	16,667	1000	17,4	60	49	39	34,0	3	40,0	115	9	12	20,0	14,0	13	/	/	/	0,038	13,1
C600032DST	6,00	20,000	640	20,9	32	59	49	43,0	3	40,0	115	6	16	26,0	18,0	17	/	/	/	0,032	12,8
C600050DST	6,00	20,000	1000	20,9	50	59	49	43,0	3	40,0	115	9	16	26,0	18,0	17	/	/	/	0,041	19,9

p^t: tangent pitch Z: number of teeth N: number of holes d_3: predrilled holes for pin

please note: An assembly rack (available separately) is required upon installation to enable correct positioning of two consecutive gear racks. – The pinion can be provided upon request.

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