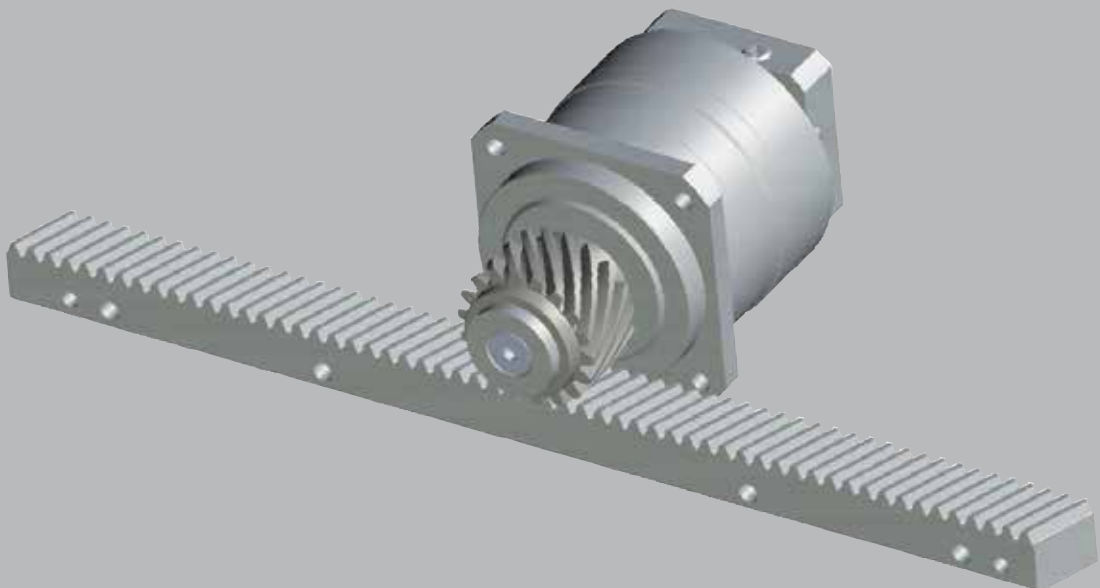


RACK & PINION

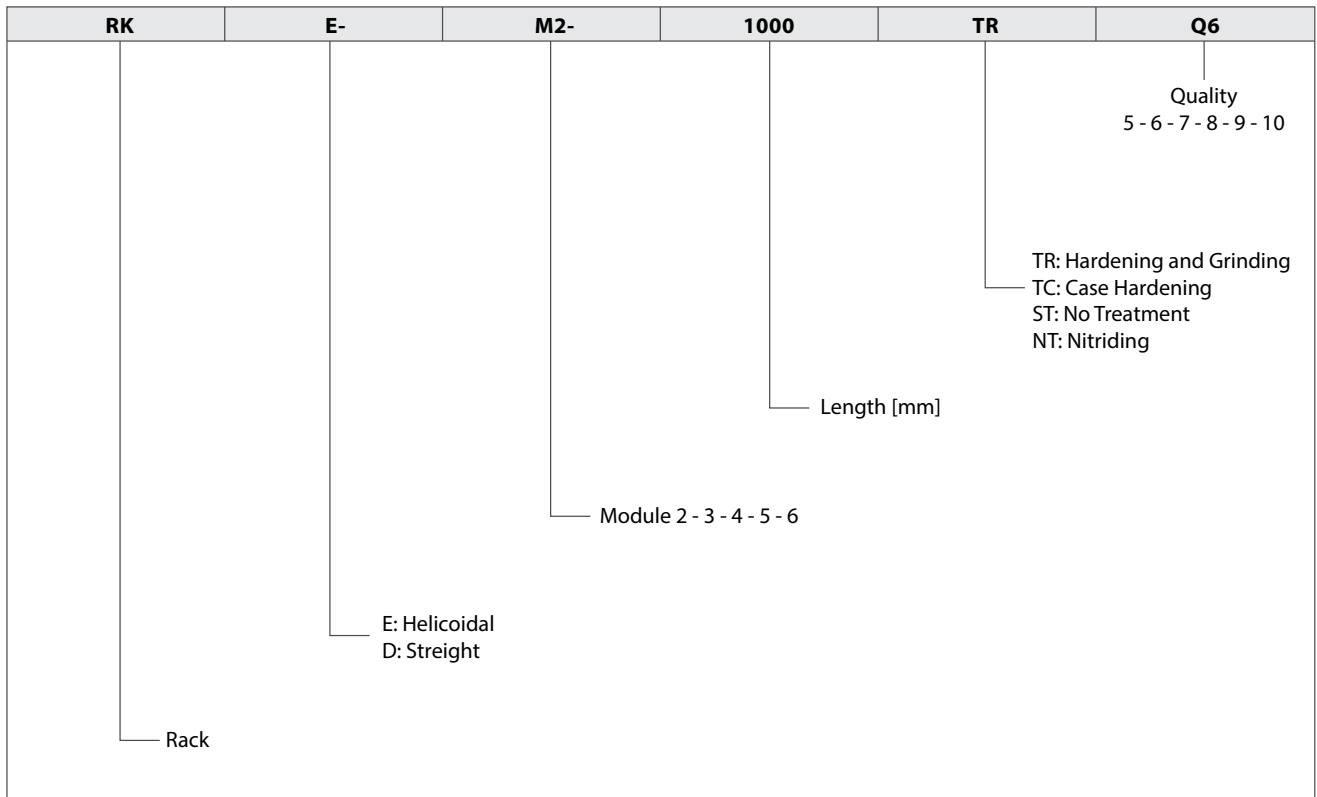
By shrinking the pinion with helical teeth, hardened and ground, through advanced technologies, or with SIT-LOCK® locking device, we are able to propose a system of power transmission compact and quiet.

Thanks to precise mating pinion racks with helical teeth hardened and ground, made in different materials and heat treatments designed for every need technical application, we are able to meet the increasingly high demands in terms of dynamics and precision.

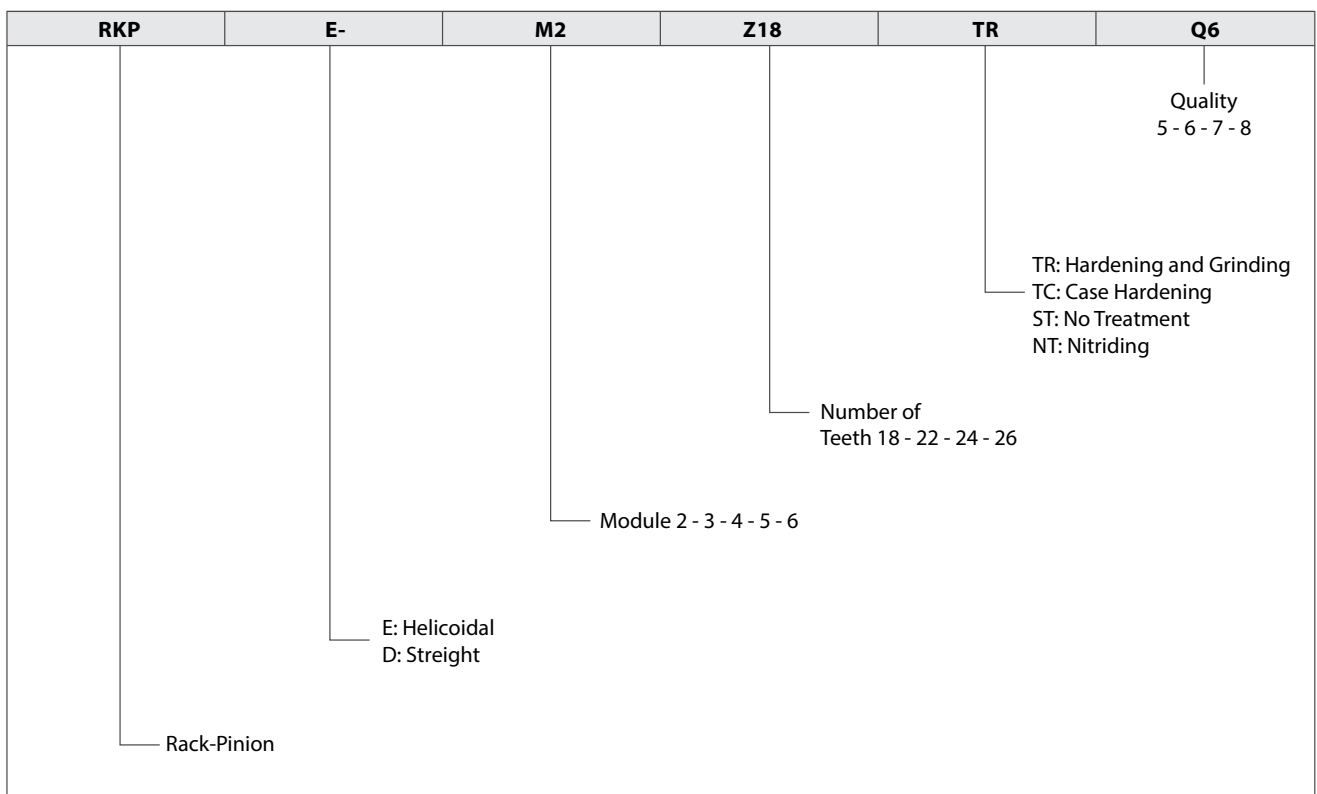


Rack & Pinion

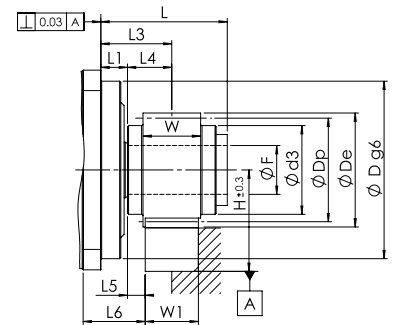
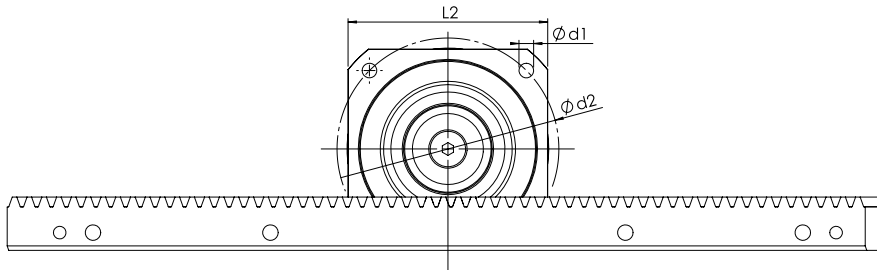
Rack – Model Code



Rack & Pinion – Model Code



Rack & Pinion transmission system precise and compact

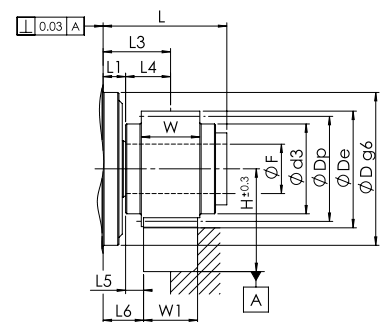
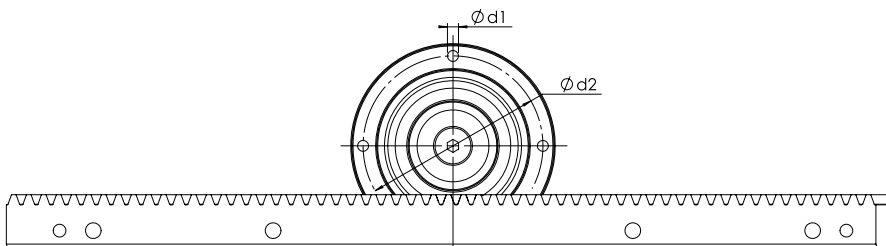


VRB Series

Size	M	z	H* [mm]	W [mm]	W1 [mm]	De [mm]	Dp [mm]	x [mm]	D g6 [mm]	d1 [mm]	d2 [mm]	d3 [mm]	L1 [mm]	L2 [mm]	L [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	ØF [mm]	Pinion Weight [Kg]
VRB060B	2	18	41,89	26	24	43,7	38,197	0,4	50	5,5	70	30	9	60	43	28	19	7	16	16	0,2
VRB090B	2	22	45,73	26	24	51,4	46,686	0,2	80	6,6	100	40	12	90	55	32	20	8	20	22	0,4
VRB115B	2	26	49,58	26	24	59,1	55,174	0	110	9	130	45	7	115	74	28	21	9	16	32	0,5
VRB140B	3	24	64,19	31	29	82,3	76,395	0	130	11	165	58	15	140	107	50,5	35,5	21	36	40	1,2

VRS Series

Size	M	z	H [mm]	W [mm]	W1 [mm]	De [mm]	Dp [mm]	x [mm]	D g6 [mm]	d1 [mm]	d2 [mm]	d3 [mm]	L1 [mm]	L2 [mm]	L [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	ØF [mm]	Pinion Weight [Kg]
VRS060B	2	18	41,89	26	24	43,7	38,197	0,4	60	5,5	68	30	20	60	54	39	19	7	27	16	0,2
VRS075B	2	22	45,73	26	24	51,4	46,686	0,2	70	6,6	85	40	20	75	63	40	20	8	28	22	0,4
VRS100B	2	26	49,58	26	24	59,1	55,174	0	90	9	120	45	30	100	97	51	21	9	39	32	0,5
VRS140B	3	24	64,19	31	29	82,3	76,395	0	130	11	165	58	30	140	122	65,5	35,5	21	51	40	1,2



VRL Series

Size	M	z	H* [mm]	W [mm]	W1 [mm]	De [mm]	Dp [mm]	x [mm]	D g6 [mm]	d1 [mm]	d2 [mm]	d3 [mm]	L1 [mm]	L [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	ØF [mm]	Pinion Weight [Kg]
VRL070B	2	18	41,89	26	24	43,7	38,197	0,4	52	M5	62	30	8	42	27	19	7	15	16	0,2
VRL090B	2	22	45,73	26	24	51,4	46,686	0,2	68	M6	80	40	10	53	30	20	8	18	22	0,4
VRL120B	2	26	49,58	26	24	59,1	55,174	0	90	M8	108	45	12	79	33	21	9	21	32	0,5
VRL155B	3	24	64,19	31	29	82,3	76,395	0	120	M10	140	58	15	107	50,5	35,5	21	36	40	1,2

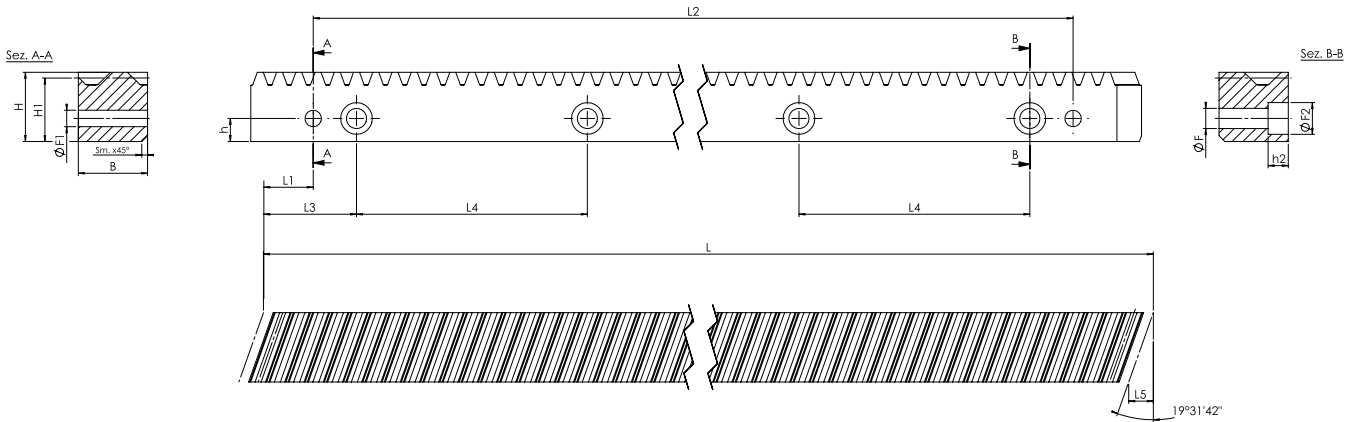
z: Number of teeth
 De: External diameter
 D: Primitive diameter
 x: Correction profile

* We recommend the use of alignment device (tolerance ± 0.3 mm)
 Pressure angle $\alpha = 20^\circ$
 Helical inclination $\beta = 19^\circ 31' 42''$ left

Model frame size	M	Z	Ø Hole [mm]	Motor speed [min ⁻¹]	Ratio	Moving force [N]	Torque [Nm]	Speed [m/min.]	Weight [kg]
VRS060B VRL070B VRB060B	2	18	16	6000	3	950	18	240	0,2
VRS075B VRL090B VRB090B	2	22	22	6000	3	2150	50	293	0,4
VRS100B VRL120B VRB115B	2	26	32	6000	3	4350	120	346	0,5
VRS140B VRL155B VRB140B	3	24	40	6000	3	6300	240	320	1,2

Material	Heat treatment	HRC	Quality	Surface
16 Ni Cr Mo 5	Case hardening and induction hardening	60	Q5- Q6-Q7	Grinding
18 Ni Cr Mo 5	Case hardening and induction hardening	60	Q5-Q6-Q7	Grinding
C 45	Induction hardening	55-57	Q6-Q7	Grinding
31 Cr Mo 12	Nitriding	55	Q8	Milling

Precision helicoidal teeth



M	Pt [mm]	Single step error [mm]	Total step error [mm]	L [mm]	Z	L ₁ * [mm]	L ₂ [mm]	B [mm]	F [mm]	F ₁ [mm]	F ₂ [mm]	Sm. ^{+0.5} [mm]	H1 [mm]	h [mm]	h ₂ [mm]	H [mm]	L ₃ [mm]	L ₄ [mm]	L ₅ [mm]	Weight [Kg]
2	6,67	0,008	0,035	1000	150	31,7	936,6	24	7	5,7	11	2	22	8	7	24	62,5	125	8,5	4
3	10	0,009	0,035	1000	100	35	930	29	10	7,7	15	2	26	9	9	29	62,5	125	10,3	5,6
4	13,33	0,009	0,035	1000	75	33,3	933,4	39	10	7,7	15	3	35	12	9	39	62,5	125	13,8	10,3
5	16,67	0,01	0,040	1000	60	37,5	925	49	14	11,7	20	3	34	12	13	39	62,5	125	17,4	12,2
6	20	0,01	0,040	1000	50	37,5	925	59	18	15,7	26	3	43	16	17	49	62,5	125	20,9	18,3

* The installation of more racks determines the presence of gaps between the segments

Pt: Transverse Pitch

Material	Heat treatment	HRC	Quality	Surface
16 Mn Cr 5	Case hardening and induction hardening	58-60	Q5- Q6	Grinding
C 45	Induction hardening	55-57	Q6-Q7	Grinding
C 45	Induction hardening	55-57	Q8	Milling
42 Cr Mo 4	No treatment	-	Q8	Milling
31 Cr Mo 12	Nitriding	55	Q8	Milling
C 45	No treatment	-	Q9-Q10	Milling