

Curviline



When you move. We move _____

Rollon S.p.A. was founded in 1975 as a manufacturer of linear motion components. Today Rollon group is a leading name in the design, production, and sale of linear rails, telescopic rails, and actuators, with headquarters based in Italy and offices and distributors located throughout the world. Rollon products are used in many industries, providing creative and efficient solutions in a wide variety of applications.

Rollon solutions for linear motion











Linear Rails

Rails with roller bearings Rails with caged ball bearings Rails with recirculating ball bearing



Telescopic Rails Rails with partial/total extension Heavy duty rails Rails for automated and manual applications



Actuators

Belt driven actuators Ball screw driven actuators Rack and pinion actuators

Solutions for industrial automation

Multi-axis for pick and place Telescopic actuators Seventh axis for robots Solutions for metal sheet handling

Core Competencies

- Full range of linear rails, telescopic rails and actuators
- Worldwide presence with branches and distributors
- Fast delivery all over the world
- Large technical know-how for applications



Standard solutions

Wide range of products and sizes Linear rails with roller and caged ball bearings Heavy duty telescopic rails Belt or ball screw driven linear actuators Multi-axis systems



Collaboration

International know-how in several industries Project consultancy Maximizing performance and cost optimization



Applications



Customization

Special products Research and development of new solutions Technologies dedicated to different sectors Optimal surface treatment

Aerospace

Medical



Railway



Specialty Vehicles





Robotics



Industrial Machines





Curviline

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Guides suitable for all applications

Technical features overview /

	Reference			Shape of	Hardened	Self-alignment	Slider		Anticorrosion
l	Family	Product		Tali	raceways		Balls	Rollers	
Compact Rail	Contraction of the second	TLC KLC ULC				+++		6	****
X-Rail		TEX TES UEX UES				+++		0	Available in stainless steel
Easyslide	and the second second	SN				++	~~~~~		****
		SNK			\checkmark	+	farmer f		****
Mono Pail		MR				-	farmer for the second s		
Mono han		MMR							• • ****
Curviline	and the second	CKR CVR CKRH CVRH CKRX CVRX			V	+		0	Available in stainless steel
Svs	and the second	SYS1				++		6	****
Joys		SYS2				++		6	• • ****
Prismatic Rail		Р				+++		0	

The information shown must be verified for the specific application.

For a complete view of technical data, please consult our catalogs on www.rollon.com

 * The maximum value is defined by the application.

 ** A longer stroke is available for jointed versions.

*** C 50

 **** For more information, please contact Rollon.

Size	Max. load per s [l	l capacity slider N]	Max. dynamic load capacity	Max. moment capacity [Nm]			Max. rail length	Max. Velocity*	Max. acceleration	Operating
	C₀ rad	C ₀ ax	נאן C 100	M _x	M _y	M _z	[mm]	[m/s]	[m/s²]	temperature
18-28-35 -43-63	15000	10000	36600	350	689	1830	4080**	9	20	-20°C/+120°C
20-30-45	1740	935	***				3120	1.5	2	-20°C/+100°C TEX-UEX -20°C/+120°C TES-UES
22-28-35 -43-63	122000	85400	122000	1120,7	8682	12403	1970	0,8		-20°C/+130°C
43	10858	7600	10858	105	182	261	2000**	1,5		-20°C/+70°C
15-20-25-30- 35-45-55	249	000	155000***	5800	6000	6000	4000**	3,5	20	-10°C/+60°C
7-9-12-15	83	85	5065	171,7	45,7	45,7	1000**	3	250	-20°C/+80°C
16,5-23	2475	1459	***				3240	1,5	2	-20°C/+80°C
50-100-130-180	3960	6317	-	548	950	668	7500**	5	20	0°C/+60°C
200	6320	6320	-	700	820	705	7500**	5	20	0°C/+60°C
28-35-55	15000	15000	-	-	-	-	7500**	7	20	-10°C/+80°C



Product explanation $\parallel \checkmark$

Curviline are curvilinear rails for constant and variable radii



Curviline is the name of the curvilinear rail product family that is used for all non-linear special movements. Rails with constant or variable radii may be specified according to customer requirements, resulting in a highly flexible, economical solution. Curviline is available in two rail widths.

The use of standard radii is recommended. All non-standard rail layouts and radii are possible as custom products, however extra lead time may result.

The most important characteristics:

- Straight and curved sections in one continuos rail is possible
- Sliders with four rollers arranged in pairs maintain the preload over the entire rail length
- Custom production according to customer requirements
- Also available in stainless steel

Preferred areas of application of the Curviline product family:

- Packaging machines
- Railway car interior doors
- Special extensions
- Shipbuilding (interior doors)
- Food industry

1 Product explanation

Constant radii

The layout of CKR guide rails corresponds to a partial section of a complete circle.



Variable radii

CVR curvilinear rail is a combination of variable radii and straight sections.



Fig. 3

Straight rail

The linear rail Curviline is also available in its straight version.



Fig. 4

Slider

The carriage maintains the desired preload over the entire rail layout. Pivoting roller mounts coupled with concentric and eccentric rollers allows for a smooth operation over complex rail layouts.





Technical data // 🔨



Performance characteristics:

- Available rail widths: CKR01/CVR01: 16.5 mm (0.65 in) and CKR05/CVR05: 23 mm (0.91 in)
- Max. slider operating speed on the rail: 1.5 m/s (59 in/s) (depending on application)
- Max. acceleration: 2 m/s² (78 in/s²) (depending on application)
- Max. effective length of the rail: 3,240 mm (127.56 in)
- Max. traverse: CCT08: 3,170 mm (124.8 in) and CCT11: 3,140 mm (123.62 in)
- Minimum radius for steel version and not hardened version: 120 mm
- Minimum radius for version with hardened raceways:
 300 mm for section 01, 400 mm for size 05
 For non-standard radii, please contact Rollon technical support.
- Radius tolerance +/- 0.5 mm (0.02 in), angle tolerance +/- 1°
- Temperature range: -20 °C to +80 °C (-4 °F to +176 °F)
- Rail and runner electrolytic zinc-plated and passivated (Rollon Aloy); increased anticorrosive protection on request (see pg. CL-10 Anticorrosive protection)
- Rail material: C43, AISI316L for the stainless steel version
- Slider body material: Fe360, AISI316L for the stainless steel version
- Radial ball bearing roller material: 100Cr6, AISI440 for the stainless steel version
- Rollers are lubricated for life

Remarks:

- With a simple adjustment of the eccentric roller (denoted with a marking on the bottom of the roller), the slider preload can be set to desired preload, including clearance.
- The recommended hole pitch is 80 mm (3.15 in) on the extended length
- Please indicate the precise rail layout and the desired hole pattern in a drawing
- Indicate if the design is a right or left version when ordering
- Joined rails are not recommended. For more information, please contact Rollon technical support.
- Resulting moment loads must be absorbed through the use of two sliders. For more information, please contact Rollon technical support.

С

L

Product dimensions

Rails with constant/variable radii with tempered raceways >



² For curvilinear rails with variable radii, Y must be at least 70 mm



² Fixing holes (C) for socket cap screws according to DIN 912

Туре	D [mm]	K [mm]	F	C²	V¹	X	Standard radii [mm]	Y [mm]	Weight [kg/m]
CKRH01 CVRH01	16,5	10	up to M6	up to M5	up to M5	dependent on	300* - 400 - 500 - 600 -	min. 70	1,2
CKRH05 CVRH05	23	13,5	up to M8	up to M6	up to M6	radius	700 - 800 - 900 - 1000		2,2
* Only for size ()1								Tah 1

Only for size 01

Please indicate the precise rail layout and the desired hole pattern in a drawing. We recommend 80 mm (3.15 in) on the extended length as a gage for the hole pattern.

Non-standard radii are possible as special products. For more information on rail layouts, radii and hole patterns, please contact Rollon Technical Support.

Slider



Туре	G [mm]	H (mm)	l [mm]	L (mm)	M [mm]	N [mm]	S [mm]	F	Weight [kg]
CCT08/CCT26	70	50	10	30	10	50	10	M5	0,45
CCT11/CCT27	100	80	12,5	55	10	80	10	M8	1,1
									Tab. 2

Mounted sliders and rails



Configuration	A [mm]	B [mm]	E [mm]
CKRH01-CCT08/CCT26 CVRH01-CCT08/CCT26	60	32,3	5,7
CKRH05-CCT11/CCT27 CVRH05-CCT11/CCT27	89,5	36,4	7,5
			Tab. 3

Load capacities



Slider type	Load ca	pacities
	C _{0ax} [N]	C _{Orad} [N]
CKRH01-CCT08/CCT26 CVRH01-CCT08/CCT26	592	980
CKRH05-CCT11/CCT27 CVRH05-CCT11/CCT27	1459	2475
Resulting moment loads must be absorb through the use of two sliders	ed	Tab. 4

Fig. 11

C L

Rails with constant/variable radii in carbon steel





Туре	D [mm]	K [mm]	F	C²	V ¹	X	Standard radii [mm]	Y [mm]	Weight [kg/m]
CKR01 CVR01	16,5	10	up to M6	up to M5	up to M5	dependent on	150 - 200 - 250 - 300 - 400 - 500 - 600 - 700 - 800 - 900 - 1000	min. 70	1,2
CKR05 CVR05	23	13,5	up to M8	up to M6	up to M6	radius			2,2

Tab. 5

Please indicate the precise rail layout and the desired hole pattern in a drawing. We recommend 80 mm (3.15 in) on the extended length as a gage for the hole pattern.

Non-standard radii are possible as special products. For more information on rail layouts, radii and hole patterns, please contact Rollon Technical Support.

Slider



Туре	G [mm]	H (mm)	l [mm]	L (mm)	M [mm]	N [mm]	S [mm]	F	Weight [kg]
CCT08/CCT26	70	50	10	30	10	50	10	M5	0,45
CCT11/CCT27	100	80	12,5	55	10	80	10	M8	1,1
									Tab. 6

Mounted sliders and rails



Configuration	A [mm]	B [mm]	E [mm]
CKR01-CCT08/CCT26 CVR01-CCT08/CCT26	60	32,3	5,7
CKR05-CCT11/CCT27 CVR05-CCT11/CCT27	89,5	36,4	7,5
			Tab. 7

C L

Load capacities



Slider type	Load ca	pacities
	C _{0ax} [N]	C _{0rad} [N]
CKR01-CCT08/CCT26 CVR01-CCT08/CCT26	400	570
CKR05-CCT11/CCT27 CVR05-CCT11/CCT27	1130	1615
Resulting moment loads must be absord	hed	Tab. 8

through the use of two sliders

Rails with constant/variable radii in stainless steel >





² Fixing holes (C) for socket cap screws according to DIN 912

Туре	D [mm]	K [mm]	F	C²	V1	x	Standard radii [mm]	Y [mm]	Weight [kg/m]
CKRX01 CVRX01	16,5	10	up to M6	up to M5	up to M5	dependent on	150 - 200 - 250 - 300	min. 70	1,2
CKRX05 CVRX05	23	13,5	up to M8	up to M6	up to M6	radius	- 400 - 500 - 600 - 700 - 800 - 900 - 1000		2,2

Tab. 9

Please indicate the precise rail layout and the desired hole pattern in a drawing. We recommend 80 mm (3.15 in) on the extended length as a gage for the hole pattern.

Non-standard radii are possible as special products. For more information on rail layouts, radii and hole patterns, please contact Rollon Technical Support.

Slider in stainless steel



Туре	G [mm]	H (mm)	l [mm]	L (mm)	M [mm]	N [mm]	S [mm]	F	Weight [kg]
CCTX08	70	50	10	30	10	50	10	M5	0,45
CCTX11	100	80	12,5	55	10	80	10	M8	1,1
									Tab. 10

Rail-slider package in stainless steel



Configuration	A [mm]	B [mm]	E [mm]
CKRX01-CCTX08 CVRX01-CCTX08	60	32,3	5,7
CKRX05-CCTX11 CVRX05-CCTX11	89,5	36,4	7,5
			Tab. 11

Load capacities



Slider type	Load capacities			
	C _{0ax} [N]	C _{0rad} [N]		
CKRX01-CCTX08 CVRX01-CCTX08	400	570		
CKRX05-CCTX11 CVRX05-CCTX11	1130	1615		
Resulting moment loads must be absorbed Tab. 1 through the use of two sliders				

Fig. 21

C L



Anticorrosive protection

The Curviline product family comes standard with electrolytic zinc plating with passivation (RolonAloy) for anitcorrosion protection. If increased anticorrosive protection is required, application-specific surface treatments

Lubrication

Roller lubrication

All rollers of the Curviline product family are lubricated for life.

Lubrication of the raceways

Rails must be lubricated before operation. Recommended lubrication intervals are heavily dependent upon the ambient conditions, speed and temperature. Under normal conditions, lubrication is recommended after 100 km operational performance or after an operating period of six months. In critical application cases the interval should be shorter. Please clean the raceways carefully before lubrication.

We recommend a roller bearing lubricant with a lithium base of average consistency.

Proper lubrication during normal conditions:

- reduces friction
- reduces wear
- reduces the load of the contact surfaces through elastic deformations
- reduces running noise

are available on request, e.g. as nickel-plated design with FDA approval for use in the food industry. The Curviline series is also available in stainless steel. For more information, please contact Rollon technical support.

Different lubricants are available by request for special applications:

- FDA-approved lubricant for use in the food industry
- specific lubricant for clean rooms
- specific lubricant for the marine technology sector
- specific lubricant for high and low temperatures

For specific information, contact Rollon technical support.

Setting the preload



Туре	Tightening torque [Nm]
CCT08	7
CCT11	12
	Tab. 13

If the curvilinear rails are delivered as a system, the sliders are already set with no clearance. In this case the fixing screws are secured with Loctite[®] at the factory.

If delivered separately, or if the sliders should be installed in another track, the eccentric roller pins must be readjusted. Important: The fixing screws must be additionally glued against loosening. The following points must also be observed:

- Wipe the raceways of any dirt and debris.
- Slightly loosen the fixing screws of the roller mounting. The eccentric roller pins are marked on the bottom.
- Position the slider(s) at the ends of the rail.
- The special flat key provided is inserted from the side onto the hexagonal of the roller to be set (see fig. 22).

- By turning the flat key clockwise the roller is pressed against the raceway and thus reduces the clearance. Observe that with increasing preload, the friction is also increased and thus the service life reduced.
- Hold the roller pin with the adjustment key in the desired position and carefully tighten the fixing screw. The exact tightening torque will be checked later.
- Move the slider on the rail and check the preload over the entire length of the rail. It should move easily and the slider should not have play at any location of the rail.
- Now tighten the fixing screws with the specified tightening torque (see tab. 13), while the flat key holds the angle adjustment of the pin. A special thread in the roller pin secures the set position.



Ordering example: CKR01-085°-0600-0890/2/CCT08-NIC-R

Note: Information for right and left side installation and for expanded surface protection is only necessary if required Notes on ordering: Rail lengths and radii always are indicated with four digits, angles always with three digits and a zero as prefix

Exact specifications (angle, radius, hole pattern, etc.) must be represented in a drawing

Variable radius rail / slider system



Ordering example: CVR01-039°-0200//023°-0400-0297/2/CCT08-NIC-R

Note: Data for angles and respective radii are in sequential order

Note: Information for right and left side installation and for expanded surface protection is only necessary if required

Notes on ordering: Rail lengths and radii always are indicated with four digits, angles always with three digits and a zero as prefix

Exact specifications (layout, angle, radius, hole pattern, etc.) must be represented in a drawing

≥ Constant radius rails

CKR01	120°	600	1152	NIC	R	
					Right or left	version
				Expanded su	urface protecti	on if deviation from Standard
				see pg. CL-12 Antico		on protection
			Rails extend	ed length		
		Radius	see pg. CL-6	, tab. 1		
	Angle					
Rail type	see pg. CL-	-6, tab. 1				

Ordering example: CKR01-120°-0600-1152-NIC-R

Note: Information for right and left side installation and for expanded surface protection is only necessary if required Notes on ordering: Rail lengths and radii always are indicated with four digits, angles always with three digits and a zero as prefix Exact specifications (angle, radius, hole pattern, etc.) must be represented in a drawing

Variable radius rails

CVR01	39°	200	0 //23° 400 297	297	NIC	R		
							Right or left	version
						Expanded su	urface protect	on if deviation from Standard
						see pg. CL-	12 Anticorros	ion protection
					Rails extend	ed length		
				Radius	see pg. CL-6,	, tab. 1		
			Angle					
		Radius	see pg. CL-6,	tab. 1				
	Angle							
Rail type	see pg. CL	-6, tab. 1						

Ordering example: CVR01-039°-0200//023°-0400-0297-NIC-R

Note: Data for various angles and respective radii are in sequential order

Note: Information for right and left side installation and for expanded surface protection is only necessary if required

Notes on ordering: Rail lengths and radii always are indicated with four digits, angles always with three digits and a zero as prefix Exact specifications (layout, angle, radius, hole pattern, etc.) must be represented in a drawing

Slider

ССТ08	NIC	
	Expanded surface protection if deviation from Standard	see pg. CL-12 Anticorrosion protection
Slider type	see pg. CL-7, tab. 3	

Ordering example: CCT08-NIC

Note: Information for expanded surface protection are only necessary when needed

CL

Guides suitable for all applications





















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