

# **TECHNICAL INFORMATION**

## **CURVI LINE**

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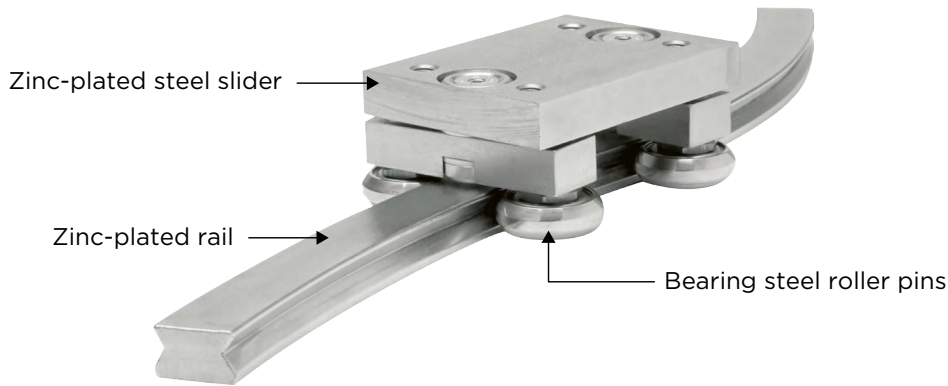
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# Index

<b>GENERAL INFORMATION</b> .....	<b>4</b>
Product overview .....	4
Characteristics .....	4
Application areas .....	4
Technical data .....	5
Constant and variable rails .....	5
<b>TECHNICAL INFORMATION</b> .....	<b>6</b>
Anticorrosive protection .....	6
Remarks .....	6
<b>INSTALLATION INSTRUCTIONS</b> .....	<b>7</b>
Setting the preload .....	7
Lubrication .....	7
<b>ORDER CODES</b> .....	<b>8</b>
Constant radius rail and slider system .....	8
Variable radius rail and slider system .....	8
Slider .....	9
Constant radius rails .....	9
Variable radius rails .....	9

## Product overview

### Linear rails for constant and variable radii



Curvi Line is a rail system with curved rails intended for all non-linear special movements. The system is customised for each specific application, resulting in a highly flexible and economical solution.

Curvi Line is available in two rail widths. Rails are made of zinc plated carbon steel. Stainless steel or carbon steel rails with tempered raceways are available as option. Rails can be ordered with constant or variable radius according to customer requirements. The use of standard radii is recommended. Rails are also available in straight version.

#### Constant radii

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

#### Variable radii

CVR curvilinear rail is a variable combination of various radii and straight partial pieces.

#### Slider

The slider 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.

### Characteristics

- Straight and curved sections in one continuous rail possible.
- Sliders with four rollers arranged in pairs maintain the preload over the entire rail length.
- Customised according to application requirements.
- Available in stainless steel.

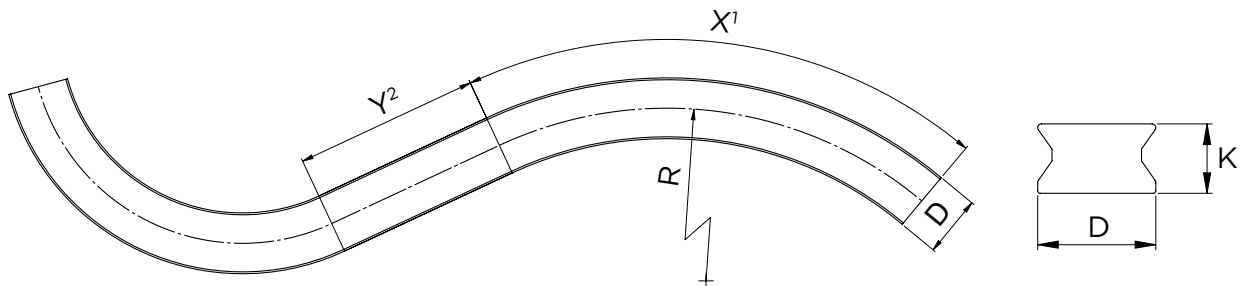
### Application areas

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

## Technical data

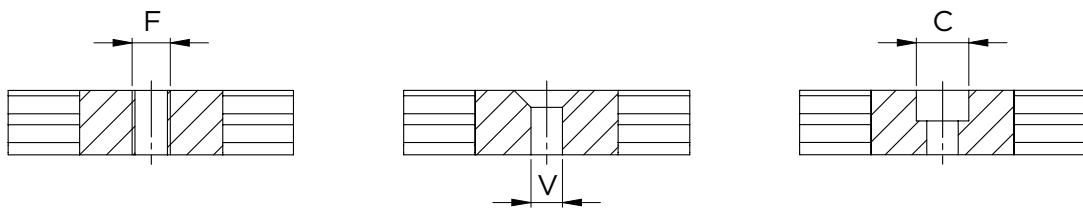
- Available rail widths for CKR01/CVR01: 16.5 mm. For CKR05/CVR05: 23 mm.
- Max. slider operating speed on the rail: 1.5 m/s (depending on application).
- Max. acceleration: 2 m/s<sup>2</sup> (depending on application).
- Max. effective length of the rail: 3,240 mm.
- Max. traverse for CCT08: 3,170 mm. For CCT11: 3,140 mm.
- Minimum radius for both sizes: 120 mm.  
Minimum radius for option with hardened raceways: 300 mm for size 01, 400 mm for size 05.  
For non-standard radii, please Rollco.
- Radius tolerance +/- 0.5 mm, angle tolerance +/- 1°.
- Temperature range: -30 °C to +80 °C
- Rails and runner electrolytic zinc-plated and passivated, increased anticorrosive protection on request.
- Rail material: C43. AISI316L for the stainless steel version.
- Slider body material: Fe360. AISI316L for the stainless steel version.
- Radial ball bearing material: 100Cr6. AISI440 for the stainless steel version.
- Rollers are lubricated for life.

## Constant and variable rails



<sup>1</sup> The max angle (X) is dependent on the radius.

<sup>2</sup> For curvilinear rails with variable radii, Y must be at least 70 mm.



Fixing holes (V) for countersunk head screws according to DIN 7991.

Fixing holes (C) for socket cap screws according to DIN 7984.

Treaded fixing holes (F).

Please indicate the precise rail layout and the desired hole pattern in a drawing. We recommend 80 mm 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 us.

**See website for dimensions and further information.**

## Anticorrosive protection

The Curvi Line product family comes standard with electrolytic zinc-plating with passivation for anticorrosive protection. If increased anticorrosive protection is required, application-specific surface treatments are available on request, e.g. as nickel-plated design with FDA approval for use in the food industry. The Curvi Line series is also available in stainless steel. For more information, please contact us.

## Remarks

- With a simple adjustment of the eccentric roller (markings on bottom of roller), the slider can be set with no clearance or with desired preload, including clearance.
- The recommended hole pitch is 80 mm on the extended length.
- Please indicate the precise rail shape 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 us.
- Resulting moment loads must be absorbed through the use of two sliders. For more information, please contact us.

## Setting the preload



Slider type	Tightening torque (Nm)
CCT08	7
CCT11	12

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 eventual 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 pin to be set.
- 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, while the flat key holds the angle adjustment of the pin. A special thread in the roller pin secures the set position.

## Lubrication

All rollers of the Curvi Line product family are lubricated for life. The guides must be lubricated before being put into 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 as a lubricant.

**Proper lubrication during normal conditions:**

- Reduces friction
- Reduces wear
- Reduces the load of the contact surfaces through elastic deformations
- Increases quiet running

Different lubricants for special applications are available upon request. Example: Lubricant with FDA approval for use in the food industry. For more information, please contact us.

## Constant radius rail and slider system

CKR01 - 85° - 600 - 890 - 2 - CCT08 - NIC - R

Rail type	
Angle	
Radius	
Rails extended length	
Number of sliders	
Slider type	
Expanded surface protection (if other than standard)	
Right or left version	

## Variable radius rail and slider system

CVR01 - 39° - 200 - 23° - 400 - 297 - 2 - CCT08 - NIC - R

Rail type	
Angle	
Radius	
Angle	
Radius	
Rails extended length	
Number of sliders	
Slider type	
Expanded surface protection (if other than standard)	
Right or left version	

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. 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

CCT08 - NIC

Slider type

Expanded surface protection (if other than standard)

# Constant radius rails

CKR01 - 120° - 600 - 1152 - NIC - R

Rail type

Angle

Radius

Rails extended length

Expanded surface protection (if other than standard)

Right or left version

# Variable radius rails

CVR01 - 39° - 200 - 23° - 400 - 297 - NIC - R

Rail type

Angle

Radius

Angle

Radius

Rails extended length

Expanded surface protection (if other than standard)

Right or left version

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. 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.

**ALWAYS THE RIGHT  
SOLUTION AT THE RIGHT TIME.**

With reliability, competence and commitment Rollco rapidly delivers the right solutions and components to create safe and cost-effective automation and linear movement.

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