

**FS Solutions**

FLEXIBLE INTRALOGISTIC SYSTEMS



# STRETCH\_LINE

OVERVIEW CONVEYOR SYSTEMS,  
TECHNICAL INFORMATION,  
MAINTENANCE & PERFORMANCE





<b>ICON OVERVIEW</b>	<b>PAGE 5</b>
.....	
<b>CS OVERVIEW</b>	
<b>FS CS065SL, FS CS090SL, FS CS200SL</b>	<b>PAGE 7</b>
Conveyor systems with "STRETCH_LINE" effect – 65, 90 and 200 mm wide	
.....	
<b>FS CS065SL</b>	<b>PAGE 17</b>
Conveyor systems with "STRETCH_LINE" effect – 65 mm wide	
.....	
<b>FS CS090SL</b>	<b>PAGE 41</b>
Conveyor systems with "STRETCH_LINE" effect – 90 mm wide	
.....	
<b>FS CS090SL CLOSED SYSTEM</b>	<b>PAGE 68</b>
Conveyor system	
.....	
<b>FS CS200SL</b>	<b>PAGE 81</b>
Conveyor systems with "STRETCH_LINE" effect – 200 mm wide	
.....	
<b>CS RAILING OVERVIEW</b>	<b>PAGE 111</b>
For all Conveyor systems	
.....	
<b>CS LEG SETS OVERVIEW</b>	<b>PAGE 141</b>
For all Conveyor systems	
.....	
<b>CS ACCESSORIES</b>	<b>PAGE 161</b>
For all Conveyor systems	
.....	
<b>OTHER FS SOLUTIONS CONVEYOR SYSTEMS</b>	<b>PAGE 167</b>
Also standard components, application solutions and aluminium profile system	
.....	
<b>BASIC TECHNICAL INFORMATION</b>	<b>PAGE 173</b>
For all Conveyor systems	
.....	
<b>CS ENERGY EFFICIENCY</b>	<b>PAGE 103</b>
In Conveyor systems	
.....	
<b>INDEX</b>	<b>PAGE 184</b>
For all Conveyor systems	



## STRETCH\_LINE

---

### FS Solutions brings STRETCH\_LINE to the next level

From 01.01.2019 FS Solutions has taken over the STRETCH\_LINE Transportsystem from MS Plus Automation/Schüco.

This proven transport system is an ideal addition to the modular transport systems of FS Solutions. Customers are ensured with a unique range and extensive application know-how for the STRETCH-LINE system.

FS Solutions is a provider of turnkey solutions, components as well as assembly kits for process automation and internal transport.

Since the start in 2005, FS Solutions has built up an impressive reference list in manufacturing high-end transportsystems and production automation for various industries, such as: Logistics, Food, Consumer goods (FMCG), Tobacco and Pharma.

*“With over 10 years of experience and know-how, FS Solutions is guaranteed to find you a high-end solution.”*

Our motivated and enthusiastic team always strives to provide a fast and adequate response. As FS Solutions uses high-quality, modular elements, each system can be compiled to requirement. Our extensive service does not end on delivery.

The contents of this publication are the copyright of the publishers and may not be reproduced (even extracts) unless permission is granted. Every care has been taken to ensure the accuracy of the information but no liability can be accepted for any errors or omissions. The right is reserved to make design modifications.

#### PATENTS

Parts of the FS Solutions product range are protected by patents and design regulations. Drawings are made to European standards.

© FS Solutions 2020



# ICON OVERVIEW

## GENERAL



Note Caution



Weight



Fabrication



Packaging unit



Tools



Mounting



Material



Cutting profile to length



Energy Efficiency



Colour



Left-hand version LS/  
right-hand version RS



Surface



Type/Version

## SYSTEM RELATED



Chain Type



Drive motor



Effective chain length



Maximum permissible  
chain pulling force



Conveyor chain material



Effective chain length -  
inside curve



Maximum conveying speed



Profile series



Effective chain length -  
outside curve



Maximum permissible  
line length

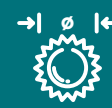
## DIMENSIONS



Sizes, dimensions



Thread



Drive pitch diameter



Width



Idler radius



Length



Idler angle

# CONVEYOR SYSTEMS | APPLICATIONS FROM EVERYDAY PRACTICE

The innovative solutions provided by CS Conveyor systems guarantee a rational flow of materials in production – also where high demands are placed on speed, noise emissions, servicing and maintenance.

Take advantage of our expertise that has grown over many years. We are your innovative developer and reliable supplier of standardised and customised applications.

CONVEYOR SYSTEMS

Chemical industry: Filling, FS CS090SL



Cosmetics industry: Filling, FS CS065SL



Beverage industry: Filling, FS CS065/FS CS090SL



Food industry: Packaging, FS CS090SL



Food industry: FS CS090SL



Consumer goods industry: Packaging, FS CS065SL

STRETCH\_LINE

# CS SL OVERVIEW | CS SL - THE CHAIN CONVEYOR SYSTEM FOR MAXIMUM LINE AVAILABILITY

The new CS SL (Conveyor System STRETCH\_LINE) chain conveyor system is the innovative solution for conveying unit loads, such as bottles, cans, cardboard boxes and machine parts.

The unique designed conveyor chain produces the "STRETCH\_LINE" effect which compensates for operation-related chain elongation. This obviates the need for the work-intensive process of shortening the chain. Result: Greater production-

line availability and reliability, increasing overall productivity. Conveyor efficiency is additionally enhanced as a result of reduced friction losses in the run of the line.

The patented chain design principle also permits very high conveying speeds with minimum noise emission.

Upshot: CS SL – the conveyor system of the future.



## CUSTOMER BENEFITS BY CHOOSING STRETCH\_LINE CONVEYOR:

- FS Solutions uses high-quality, modular elements, each system can be compiled to requirement.
- Proven in thousands applications and various industries.
- Overall widths of 65, 90 and 200 mm - for selection to suit application.
- Variable line configuration - to serve any point in the room.
- Small idler radius - minimising space required in production.
- The conveyor chain's patented design compensates for operation-related elongation, reducing down times to the minimum.
- High operational reliability: reduced risk of crushing injury as a result of closed chains with very narrow gaps in drives and idlers.
- Clip-on sliding strips ensure quiet, low-friction operation, even at full load.
- High chain pulling forces - load loading capacity of up to 200 kg.
- High guide profile rigidity - wide support intervals.
- Conveying speed up to 80 m/min.
- Recommended temperature range from -20 to +80°C.
- Maintenance work kept to a minimum:
  - no need to lubricate the chain.
  - wear parts can be changed with ease.
- Good resistance to chemicals as well as to liquids with a pH value of 4.5 to 9 (list on request).
- small chain pitch

**FS CS065SL**



**FS CS090SL**



**FS CS200SL**



**CS RAILING**



**CS LEG PROFILES**








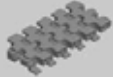







## FS SOLUTIONS WILL SUPPORT IN DESIGNING YOUR INDIVIDUAL CONVEYOR SOLUTION



			FS CS065SL	FS CS090SL	FS CS200SL
Technical specifications	Overall width/Chain width	mm	65 / 62	90 / 87	200 / 194
	Product width	mm	15 - 140	20 - 200	100 - 400
	Max. product weight horizontal/vertical conveyance	kg	10 / 5	10 / 5	15 / 5
	Maximum load Conveyor system/Chain links	kg	150 / 1,5	150 / 1,5	200 / 1,5
	Max. conveying speed	m/min	120	120	90
	Max. conveyor length	m	30	30	30

# CS SL OVERVIEW | CHAIN TYPES CS SL

		FS CS065SL	FS CS090SL	FS CS200SL
	Standard chain	●	●	●
	Chain with reinforced tab	○	●	○
	Catch-plate chain	●	●	●
	Chain with round product support	●	○	○
	Chain with friction lining	●	●	●
	Antistatic chain	●	●	●
	Chain with flocked surface	●	●	●
	Universal chain	●	●	●
	Universal chain with catch roller	●	●	●
	Accumulating-roller chain	●	●	○
	Gripper chain	●	●	○



# CS SL GENERAL INFORMATION

## | GENERAL OPERATING CONDITIONS

### DESCRIPTION

The conveyor system is a chain conveyor for handling unit loads. The aluminium guide profile accommodates a curve-going conveyor chain made of plastic. Clip-on sliding strips minimise sliding friction between chain and profile.

### PLASTIC CHAINS

The plastic chains required for operation are made of POM or PA. The chains exhibit a good level of resistance to chemicals as well as liquids with a pH value of 4.5 to 9 (list on request).

### AMBIENT CONDITIONS

Permissible operating temperature range from -20 to +80°C.

### CONVEYOR CHAIN LUBRICATION

Conveyor systems can in general be operated without lubrication. This is made possible by the excellent material properties of the sliding strip. If permitted by the particular application, the conveyor system should be lubricated in order to reduce noise emission and wear.

## | GENERAL TECHNICAL CONDITIONS

### LINE LENGTH

Maximum line length is governed by line configuration, power of the drive unit and weight carried by the conveyor system.

### CONVEYING SPEED

Maximum conveying speed is governed by line configuration, power of the drive unit and weight carried by the conveyor system.

### WIDTH OF CONVEYED ITEM

The maximum width of conveyed items is governed by their shape and the position of their gravitational centre.

### WEIGHT OF CONVEYED ITEM

#### Horizontal conveyance:

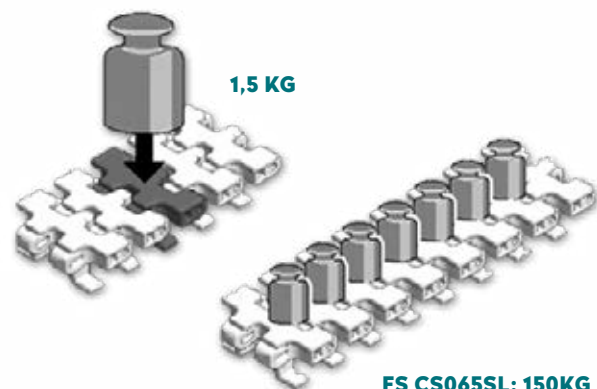
The maximum weight of individual conveyed items is limited by sliding-strip wear and chain pulling force.

#### Vertical conveyance:

The maximum weight of individual conveyed items is governed by the strength of the catch plates.

### MAXIMUM CONVEYOR SYSTEM LOAD

The conveyor's maximum loading capacity is governed by the power of the drive unit and pulling force in the chain. The maximum load per chain link is 1.5 kg.



**FS CS065SL: 150KG**  
**FS CS090SL: 150KG**  
**FS CS200SL: 200KG**

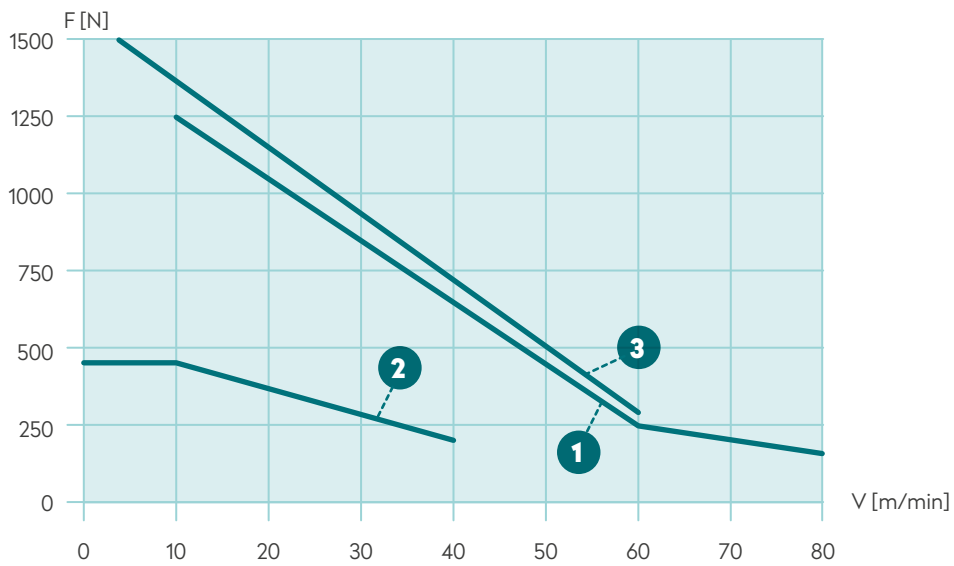


# CS SL GENERAL INFORMATION | CHAIN PULLING FORCE

The maximum permissible chain tension depends on conveying speed and line length. Values can be read from the diagrams on the right. The lower value is authoritative. FS Solutions engineers will support you in choosing the best matching conveyor.

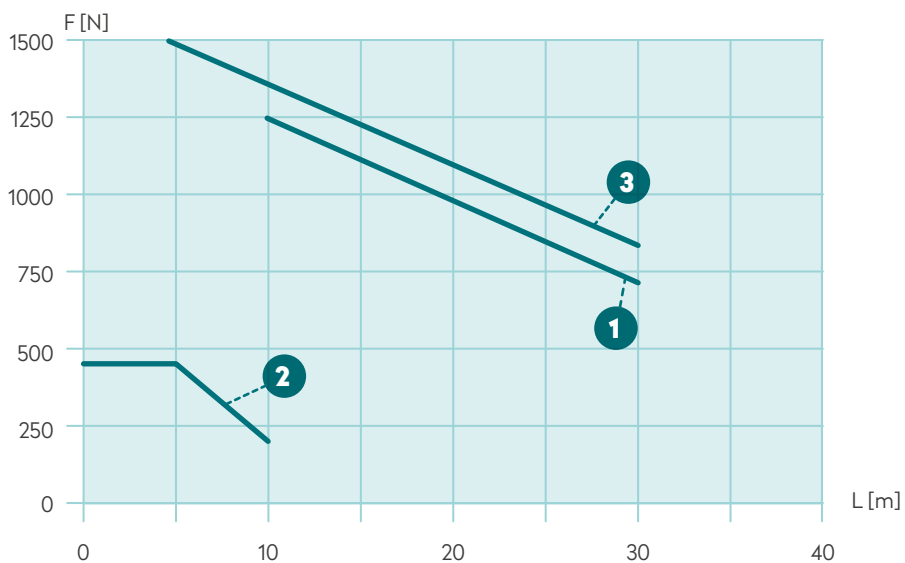
- If the calculated chain tension is too high, you may select one of the following options:
- Divide up system into shorter sections.
  - Replace horizontal sliding curves with horizontal curves with disk.

**PERMISSIBLE CHAIN TENSION F AS A FUNCTION OF CONVEYING SPEED V**



1 FS CS065/FS CS090SL (without centre drives) 2 FS CS090SL centre drives 3 FS CS200SL

**PERMISSIBLE CHAIN TENSION F AS A FUNCTION OF CONVEYOR LINE LENGTH L**



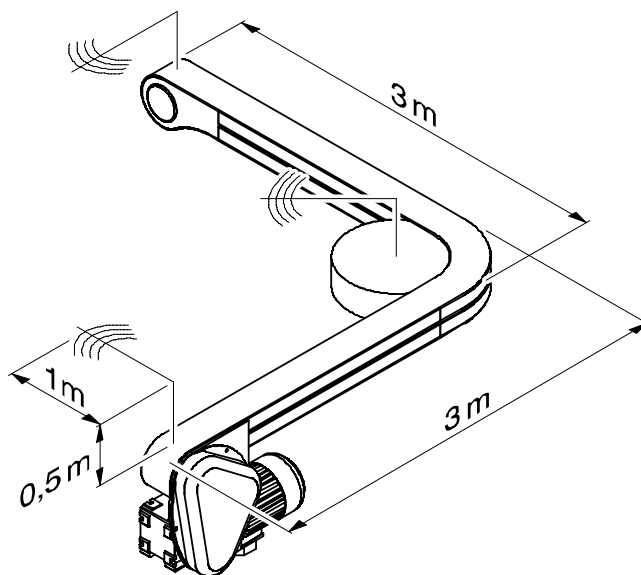
1 FS CS065/FS CS090SL (without centre drives) 2 FS CS090SL centre drives 3 FS CS200SL

Under applicable regulations on health and work safety as well as environmental protection, the noise emitted from a conveyor system must not exceed a maximum level of 75 dB(A).

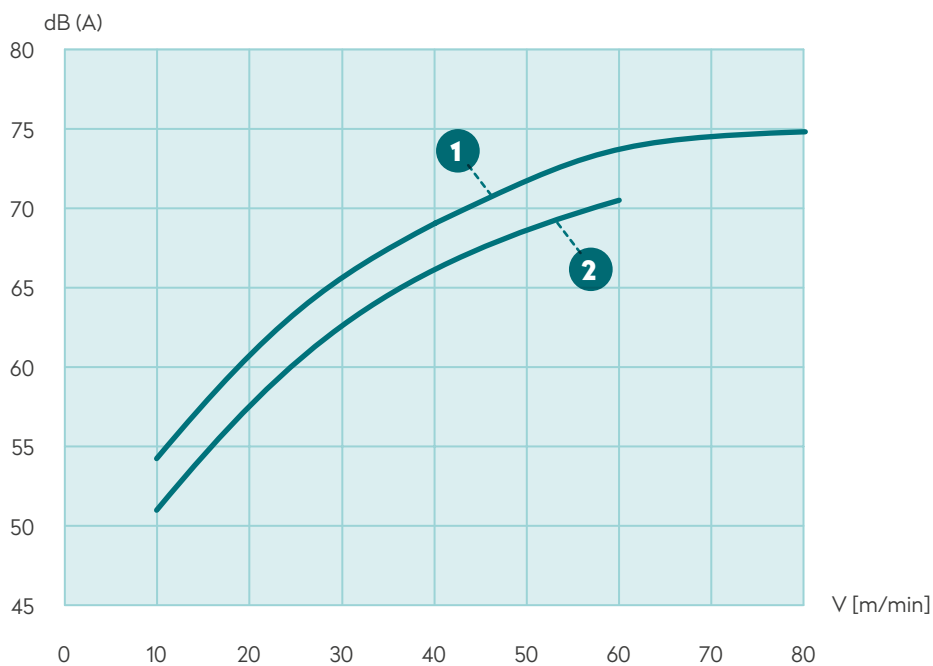
The reference line is set up at a height of 1.0 m above the floor. The measuring points for drive, curve and idler are positioned at:

- 0.5 m above and
- 1.0 m to the side of the line.

## REFERENCE LINE SET-UP

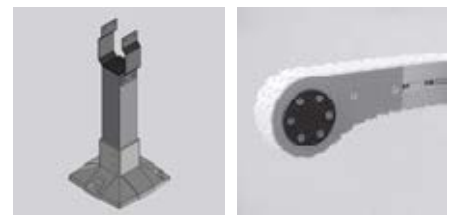
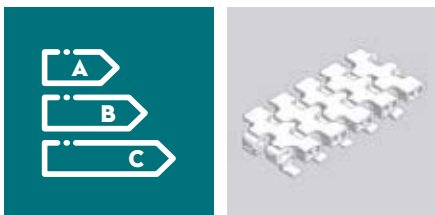
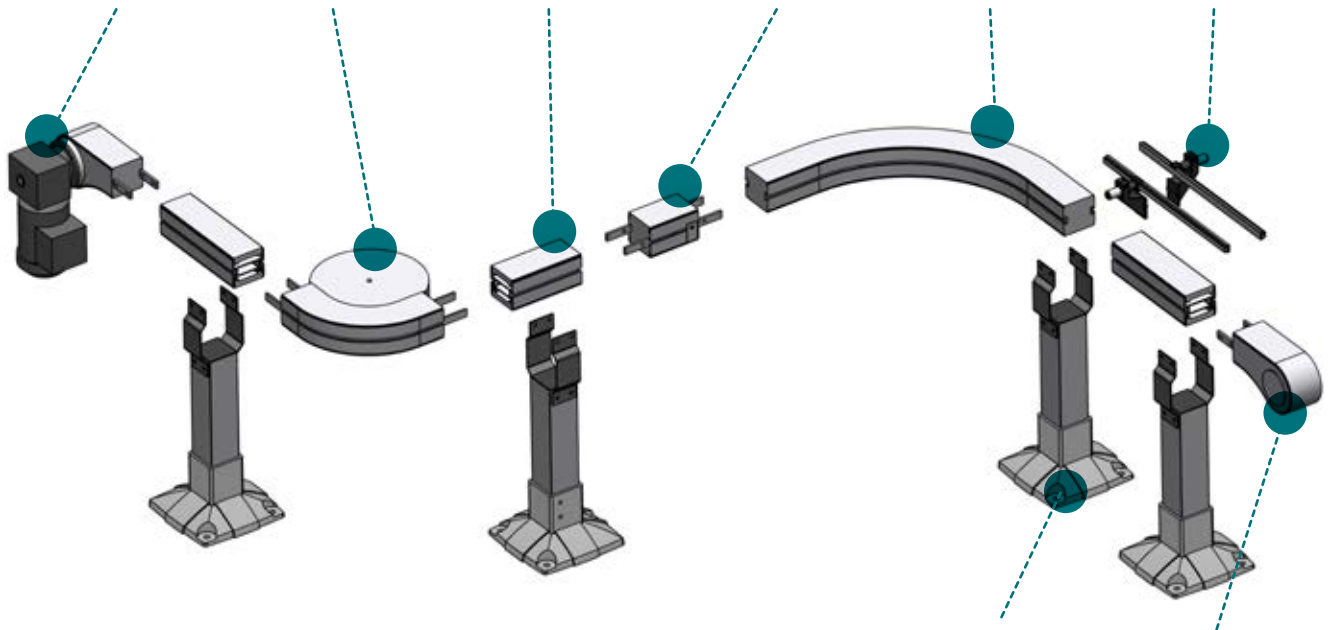
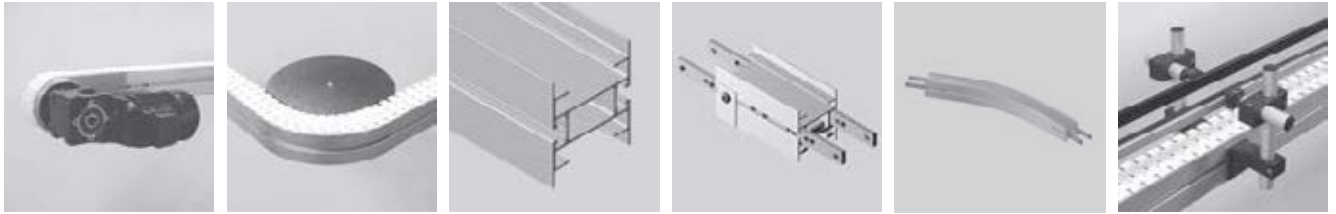


## NOISE EMISSION IN DB (A) AS A FUNCTION OF CONVEYING SPEED V



1 FS CS065/FS CS090SL 2 FS CS200SL

# CS SL COMPONENTS | LINE WITH HORIZONTAL CURVES



CS SL COMPONENTS

## CUSTOMISED DESIGNS:

All of the components described below are available in customised designs.

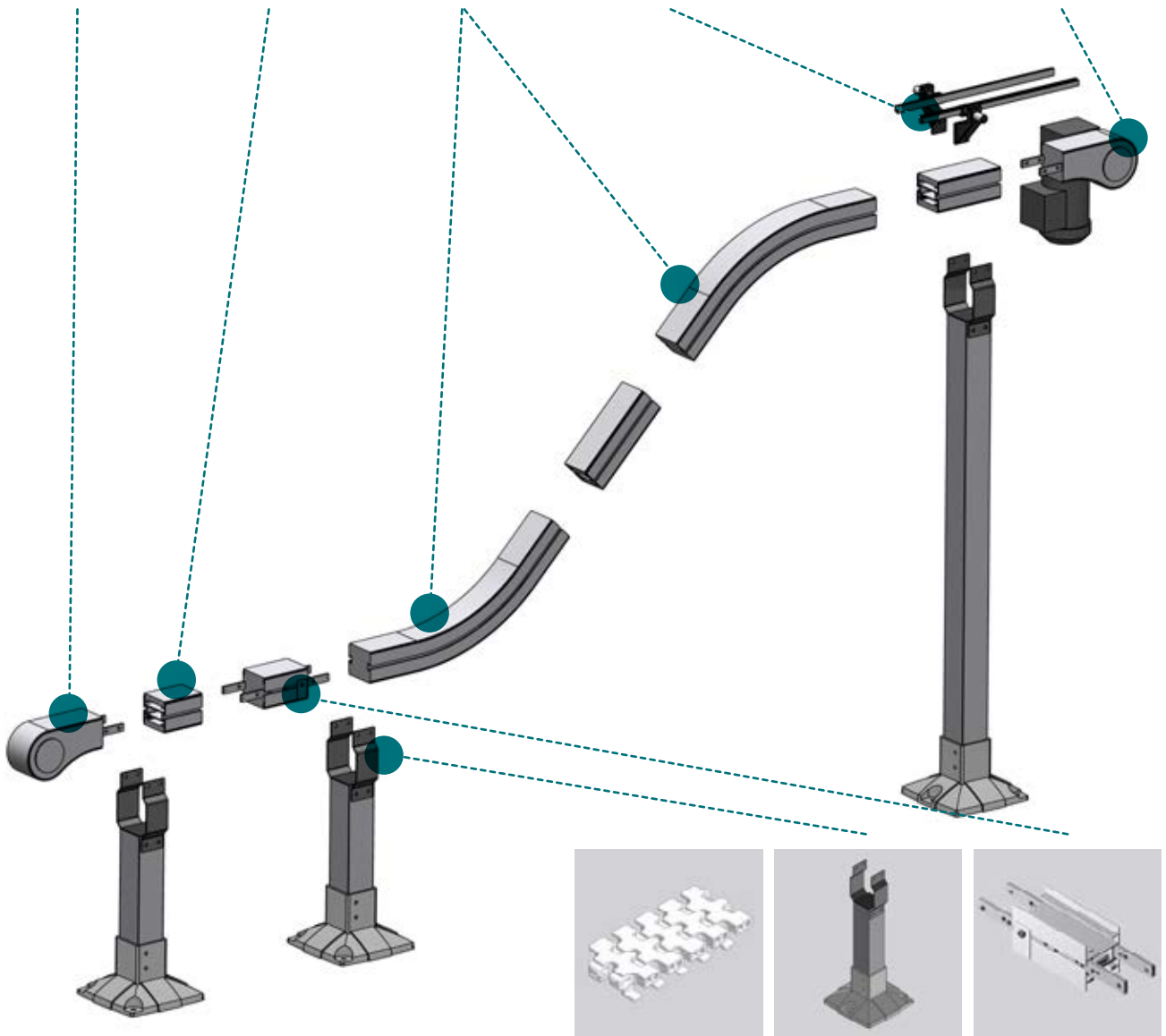
STRETCH\_LINE



# CS SL COMPONENTS | LINE WITH VERTICAL CURVES



CS SL COMPONENTS



STRETCH\_LINE







FS CS065SL

STRETCH\_LINE

# FS CS065SL

Conveyor system

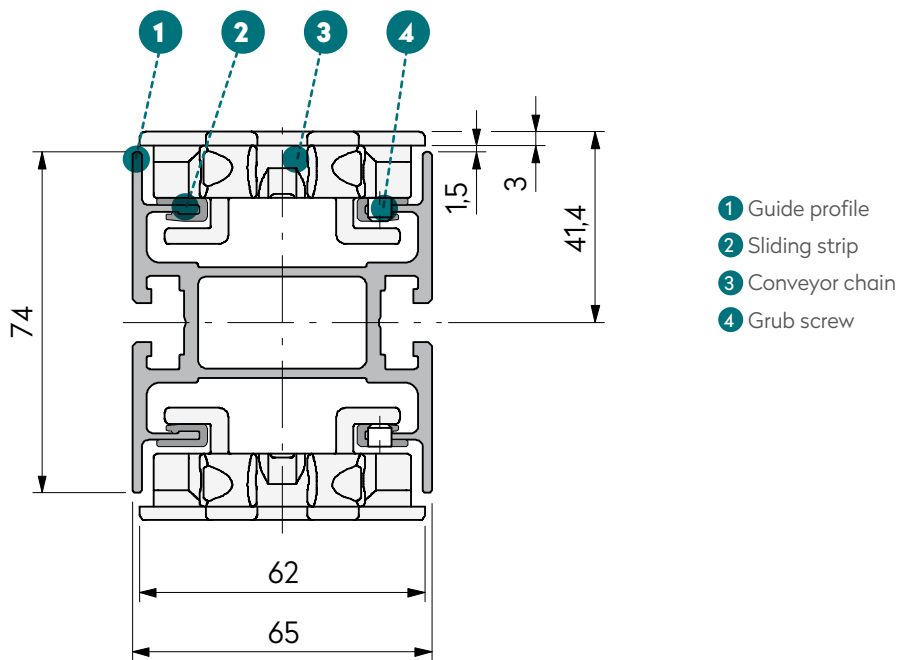
# FS CS065SL OVERVIEW



## Feeding, filling, packaging individual items

- Overall width 65 mm
- Chain width 62 mm
- Product width 15 - 140 mm
- Max. product weight for conveying direction:
  - Horizontal 10 kg
  - Vertical 5 kg
- Maximum load:
  - Conveyor system 150 kg
  - Chain link 1.5 kg
- Max. conveying length 30 m (8 m for vertical clamp conveyors)
- Max. conveying speed 120 m/min
- Available drives:
  - Vertical drives
  - Direct drives
  - Centre drives
  - Vertical centre drives
  - Direct centre drives
- Compatible with railing system:
  - Variable guide width 15 - 200 mm
  - Variable guide height 15 - 350 mm

FS CS065SL OVERVIEW

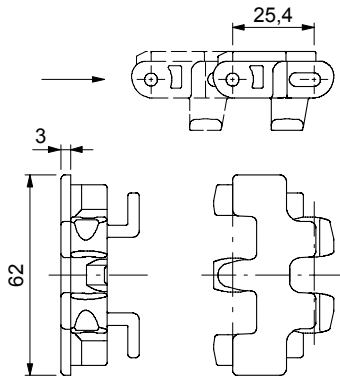


STRETCH\_LINE

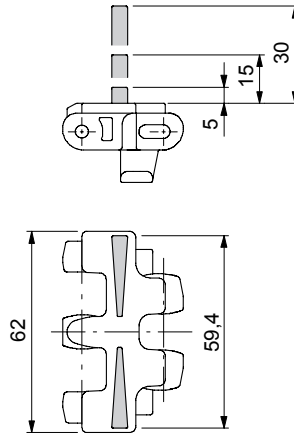


# FS CS065SL LINE COMPONENTS | CHAINS FS CS065SL

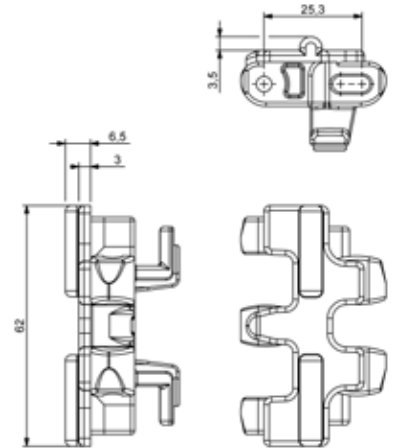
**FS CS065SL STANDARD CHAIN**



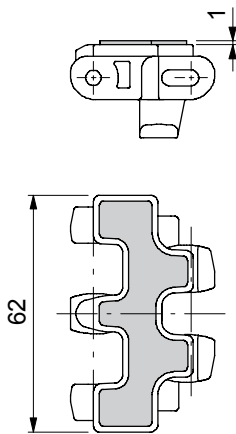
**FS CS065SL CHAIN WITH CATCH PLATES**



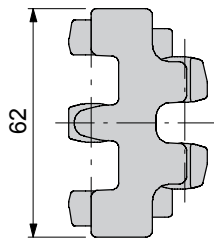
**FS CS065SL CHAIN WITH ROUND PRODUCT SUPPORT (R2,5MM)**



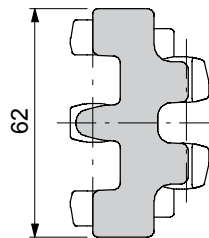
**FS CS065SL CHAIN WITH FRICTION LINING**



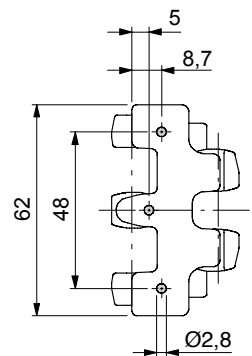
**FS CS065SL ANTISTATIC CHAIN**



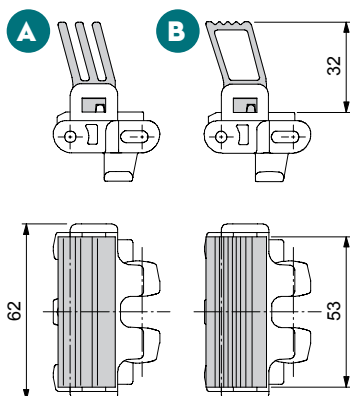
**FS CS065SL CHAIN WITH FLOCKED SURFACE**



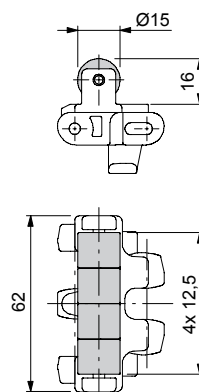
**FS CS065SL UNIVERSAL CHAIN**



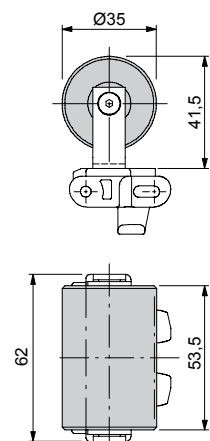
**FS CS065SL CHAIN WITH GRIPPER**



**FS CS065SL CHAIN WITH ACCUMULATING ROLLERS**



**FS CS065SL CHAIN WITH CATCH ROLLER**



FS CS065SL LINE COMPONENTS

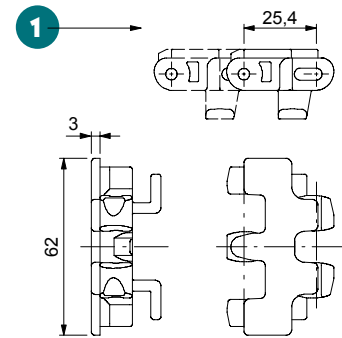
STRETCH\_LINE

# FS CS065SL LINE COMPONENTS



## | CHAIN CS065SL STANDARD

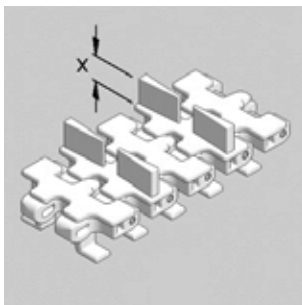
- Standard chain for horizontal conveyance.
- Suitable for accumulating conveyor mode.
- Pin-hinged chain links.



1 Direction of travel

	PROD.NO.						
Chain CS065SL, standard	J534 550	4,0 m	POM	white	1,0 kg/m		1250 N
Chain link, individual	J534 567	10	POM	white			1250 N
Chain pin, individual	J534 011	100	Stainless steel	grey		J537 131 Split-pin driver	

FS CS065SL LINE COMPONENTS



## | CHAIN FS CS065SL WITH CATCH PLATES

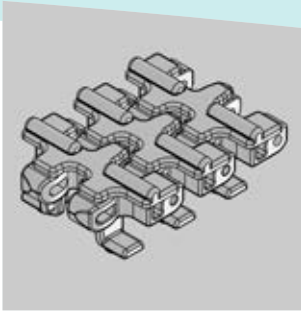
- Chain for vertical conveyance.
- Chain links with catch plates are inserted in the standard chain at recurrent intervals.
- Catch plate heights of 5, 15 and 30 mm.

	PROD.NO.						
Chain link, individual, catch plate height 5mm	J534 013	10	POM	white	1,1 kg/m*		1250 N
Chain link, individual, catch plate height 15 mm	J534 014	10	POM	white	1,1 kg/m*		1250 N
Chain link, individual, catch plate height 30 mm	J534 015	10	POM	white	1,1 kg/m*		1250 N
Chain pin, individual	J534 011	100	Stainless steel	grey		J537 131 split-pin driver	

\* catch plate every 10th chain link

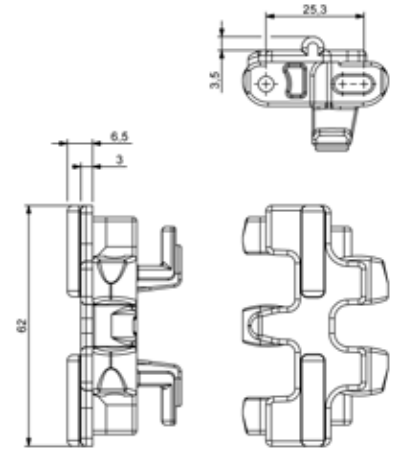
STRETCH\_LINE







# FS CS065SL LINE COMPONENTS

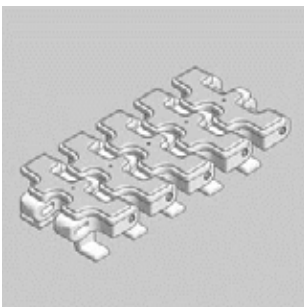


## | CHAIN CS065SL WITH ROUND PRODUCT SUPPORT

- Chain with round halfmoon product support R=2,5mm









	PROD.NO.						
Chain CS065SL, with round product support	J400013	4,0m	POM	white	1,0 kg/m		1250 N

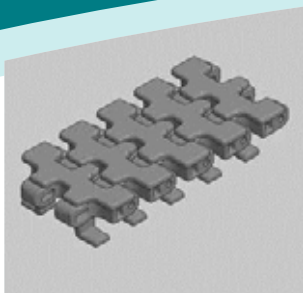


## | CHAIN FS CS065SL WITH FRICTION LINING

- Chain with anti-slip coating to increase adhesion on inclines.
- Well suited for conveying smooth-surfaced items.
- Friction lining in wear-resistant rubber.
- Not suitable for accumulating conveyors.







	PROD.NO.						
Chain CS065SL, with friction lining	J534 553	4,0 m	PA	white	0,9 kg/m		500 N
Chain link, individual	J534 053	10	PA	white			500 N
Chain pin, individual	J534 011	100	stainless steel	grey		J537 131 Split-pin driver	

# FS CS065SL LINE COMPONENTS

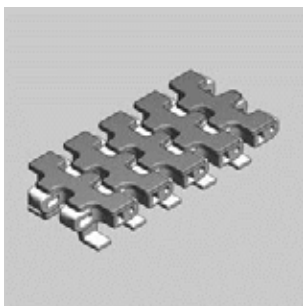


## | CHAIN FS CS065SL ANTISTATIC

- Standard chain in antistatic finish.
- For use only in conjunction with antistatic sliding strip and drive unit.







	PROD.NO.						
Chain CS065SL, antistatic	J534 551	4,0 m	POM	black	1,0 kg/m		950 N
Chain link, individual	J534 568	10	POM	black			950 N
Chain pin, individual	J534 011	100	Stainless steel	grey		J537 131 Split-pin driver	

FS CS065SL LINE COMPONENTS



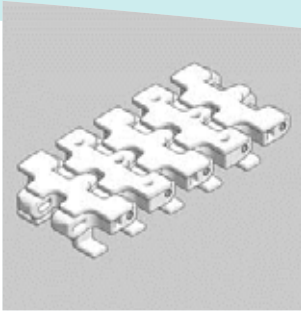
## | CHAIN FS CS065SL WITH FLOCKED SURFACE

- Standard chain with grey flocked surface.
- The soft surface protects the items being conveyed.

	PROD.NO.						
Chain CS065SL, with flocked surface	J400 038	4,0 m	POM	white	1,0 kg/m		1250 N
Chain pin, individual	J534 011	100	Stainless steel	grey		J537 131 Split-pin driver	







STRETCH\_LINE

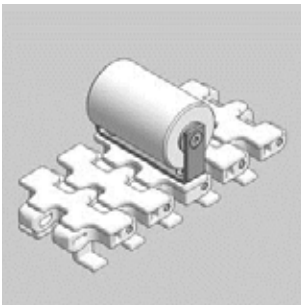
# FS CS065SL LINE COMPONENTS



## | CHAIN FS CS065SL UNIVERSAL







- Universal chain links are inserted in the standard chain at recurrent intervals.
- Chain for universal application with drill holes in the base plate.
- Capability of fitting various conveyor components (e.g. catch plates, rollers) using Ø3.9 mm self-tapping bolts.

	PROD.NO.						
Chain link, individual	J534 059	10	POM	white	1,0 kg/m		1250 N
Chain pin, individual	J534 011	100	stainless steel	grey		J537 131	



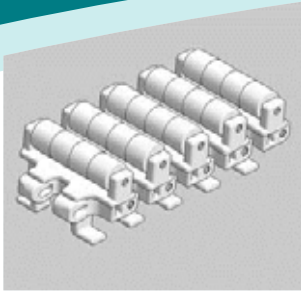
## | CHAIN FS CS065SL WITH CATCH ROLLERS

- Chain links with catch rollers are inserted in the standard chain at recurrent intervals.
- At least one standard link must be inserted between two catch rollers.

	PROD.NO.						
Chain link, individual	J534 060	10	POM	white	1,4 kg/m*		1250 N
Chain pin, individual	J534 011	100	stainless steel	grey		J537 131 split-pin driver	



# FS CS065SL LINE COMPONENTS



## | CHAIN FS CS065SL WITH ACCUMULATING ROLLERS

- Chain with rollers to minimise friction in accumulating conveyor mode.

	PROD.NO.						
Chain CS065SL, with accumulating rollers	J534 558	2,0 m	POM	white	1,7 kg/m		1250 N
Chain link, individual	J534 056	10	POM	white			1250 N
Chain pin, individual	J534 011	100	Stainless steel	grey		J537 131 Split-pin driver	

FS CS065SL LINE COMPONENTS



## | CHAIN FS CS065SL WITH GRIPPER

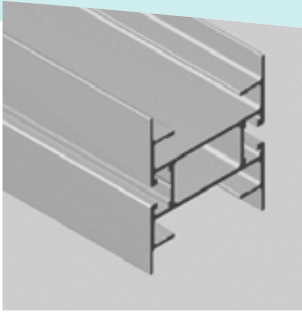
- Chain with surface-mounted gripper element (flexible catches).
- Used in vertical clamp conveyors.
- Gripper element in EPDM.
- Use shape A:
  - small lightweight unit loads
  - products with irregular surface.
- Use shape B:
  - larger-type unit loads
  - item weight up to 10 kg.



		PROD.NO.						
Chain CS065SL, with gripper	A	J534 588	2,0 m	POM	white	1,6 kg/m		750 N
	B	J534 557	2,0 m			1,5 kg/m		
Chain link, individual	A	J534 589	10	POM	white			750 N
	B	J534 054	10					
Gripper element, individual	A	J534 268	10	EPDM	grey			
	B	J400 001	10					
Chain pin, individual		J534 011	100	Stainless steel	grey		J537 131 Split-pin driver	

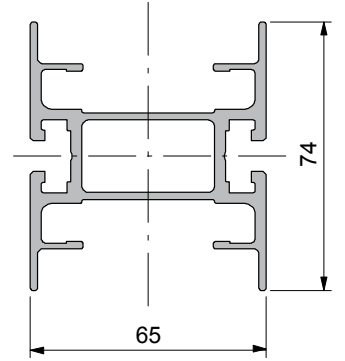
STRETCH\_LINE

# FS CS065SL LINE COMPONENTS






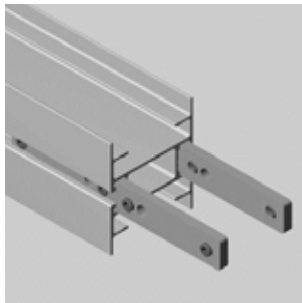
## | GUIDE PROFILE FS CS065SL

- Line lengths over 6000 mm can be produced by using joints.



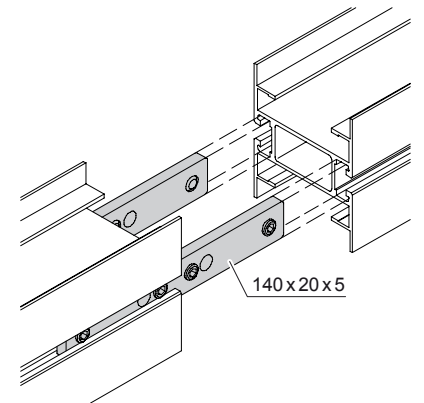
CROSS SECTION




	PROD.NO.			
Guide profile CS065SL	J924 172	6,0 m	EN AW-6063 T66	E6/EV1 anodised finish
Cutting to length	J924 969	1		



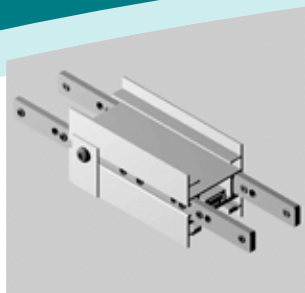
## | LINE JOINT CS SL

- Joints are pushed into the profile groove and fixed in place with the premounted inserts.
- No additional work to the profile is necessary.



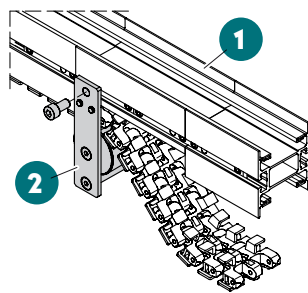
	PROD.NO.			
Line joint	J927 803	2	steel	galvanised

# FS CS065SL LINE COMPONENTS | CHAIN FS CS065SL ASSEMBLY UNIT

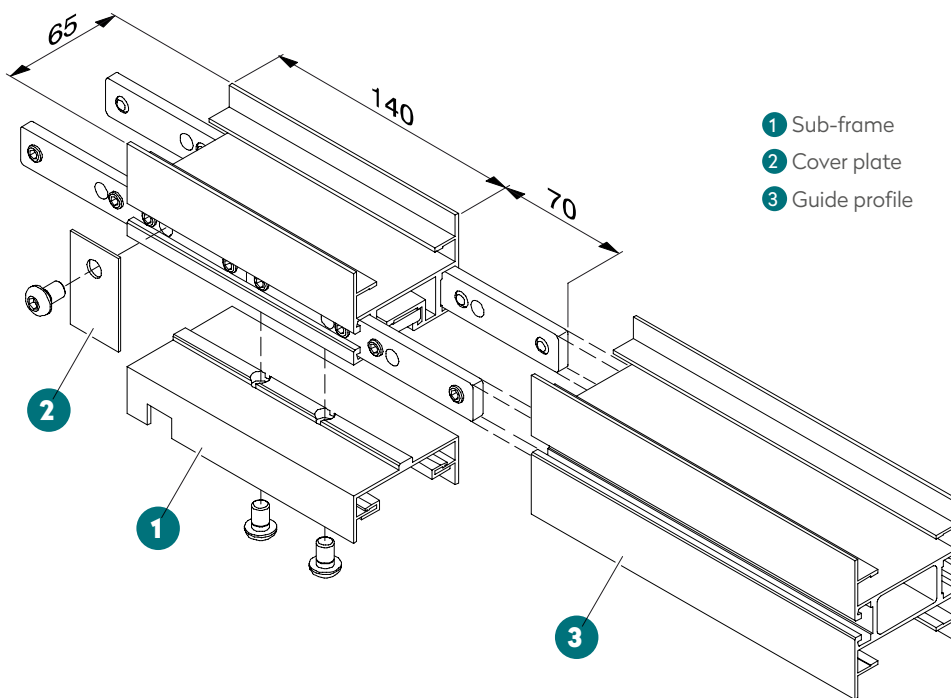


- The chain assembly unit allows to feed the chain into the assembled line.
- Can be fitted at any point within the line.
- Line joints are included.
- The sub-frame must be removed for feeding the conveyor chain into the line.
- After fitting the chain pin, the opening in the sub-frame must be closed off with the cover plate.
- The optional chain assembly aid facilitates feeding the conveyor chain into the line. It is attached to the lower side of the assembly unit after removing the cover plates and the sub-frame.

## USING THE CHAIN ASSEMBLY AID




- 1 Assembly unit
- 2 Assembly aid

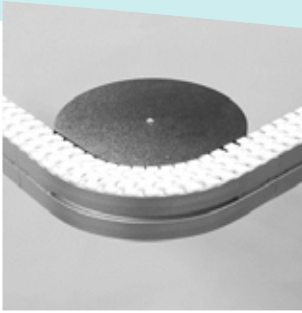


FS CS065SL LINE COMPONENTS

STRETCH\_LINE

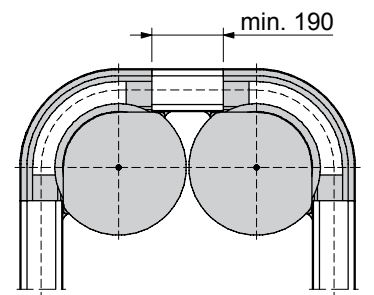
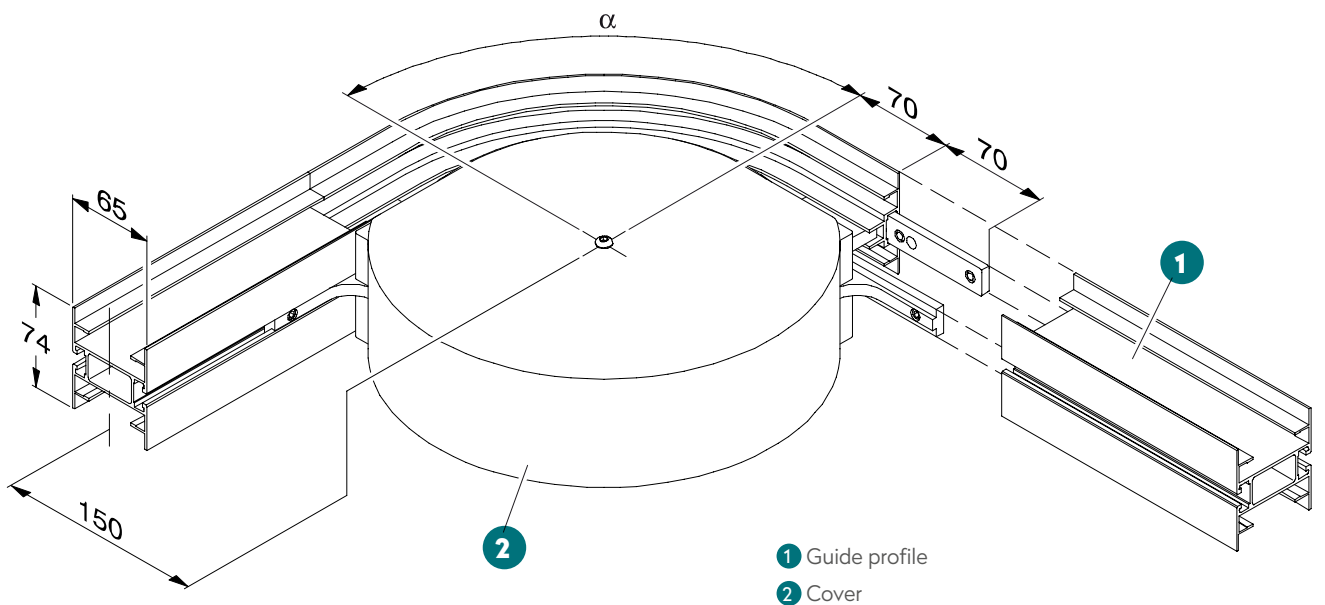
	PROD.NO.	
Chain assembly unit CS065SL	J927 702	1
Assembly aid	J927 823	1
Split-pin driver	J537 131	1

# FS CS065SL LINE COMPONENTS | HORIZONTAL CURVES WITH DISK FS CS065SL



- Small idler radius: 150 mm.
- The idler radius is based on the line centre.
- It is installed in the conveyor line without the need for any work to the joints.
- Antistatic version on request.

## HORIZONTAL CURVE WITH DISK FS CS065SL, R150/90°



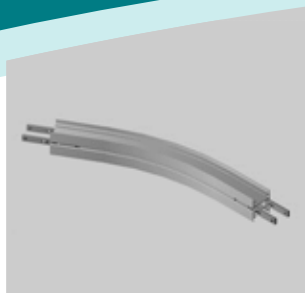
### NOTE

When installing two horizontal curves with disk, they must be separated by a straight line section of at least 190 mm in length.

			PROD. NO.		
Horizontal curve with disk	150 mm	45°	J927 788	1	2x 0,27 m
		60°	J927 769		2x 0,31 m
		90°	J927 720		2x 0,40 m
		180°	J927 721		2x 0,67 m

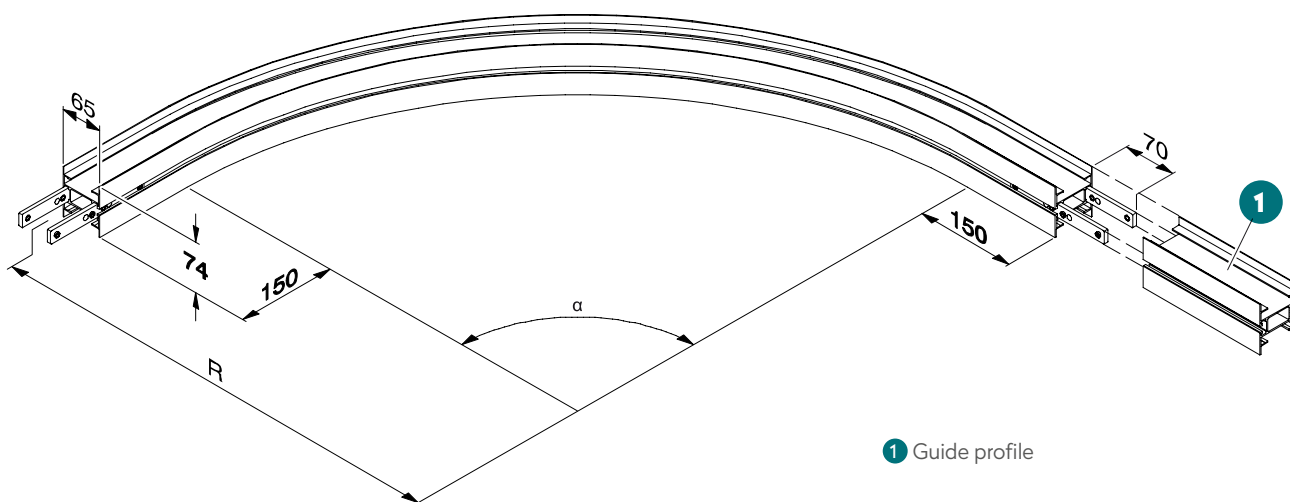
Different angles on request

# FS CS065SL LINE COMPONENTS | HORIZONTAL SLIDING CURVES FS CS065SL



- Horizontal sliding curve.
- Various angles available. The radius is based on the line centre.
- Min. radius: 250 mm.

## HORIZONTAL SLIDING CURVE FS CS065SL, R700/90°



FS CS065SL LINE COMPONENTS

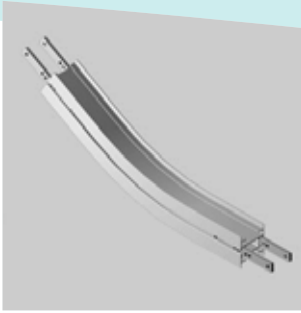
			PROD.NO.		
Horizontal sliding curve	400 mm	15°	J927 842	1	2x 0,41 m
		30°	J927 805		2x 0,52 m
		45°	J927 806		2x 0,63 m
		60°	J927 807		2x 0,74 m
		90°	J927 808		2x 0,96 m
	700 mm	30°	J927 722	1	2x 0,68 m
		45°	J927 723		2x 0,87 m
		60°	J927 724		2x 1,05 m
		90°	J927 725		2x 1,43 m

Different radius or angles on request

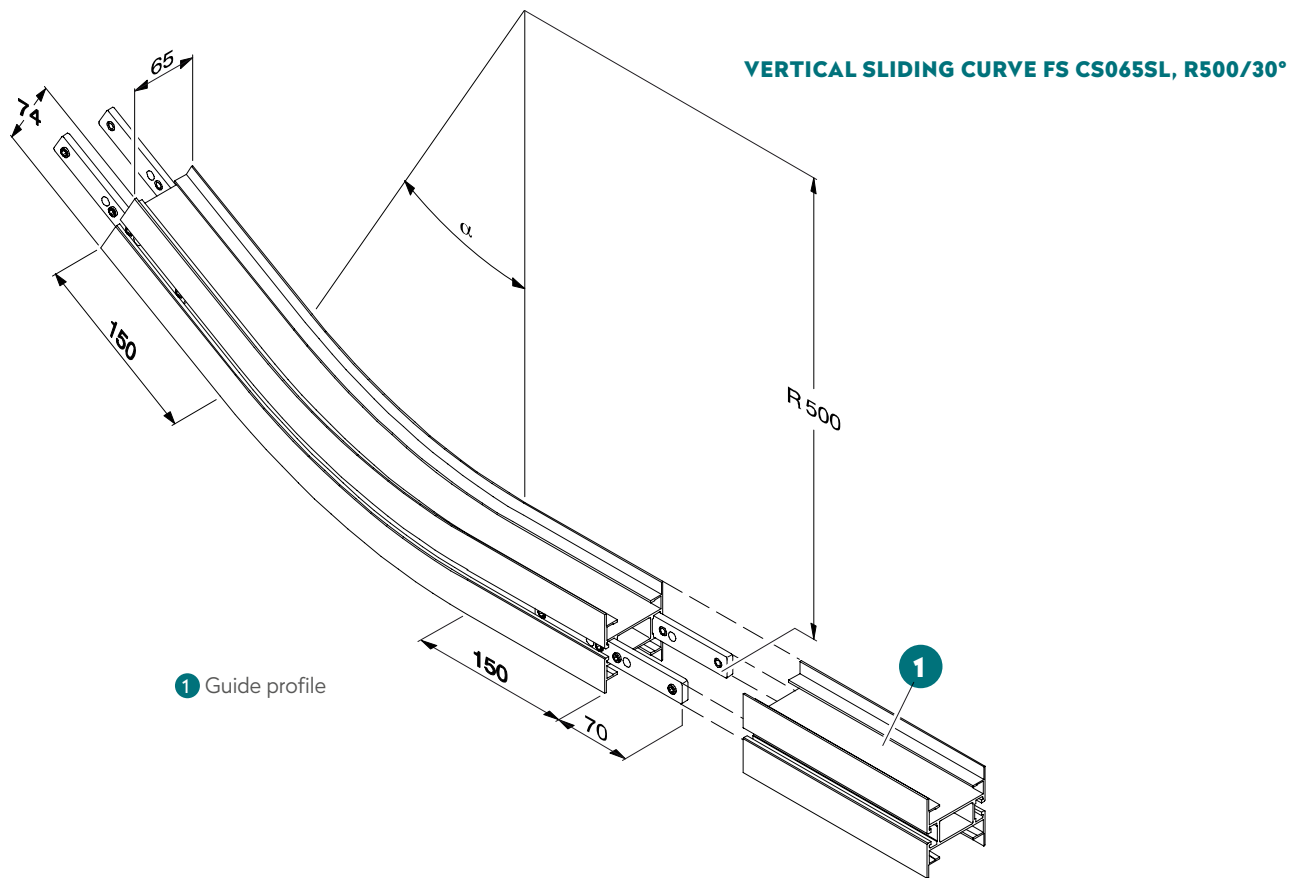
STRETCH\_LINE



# FS CS065SL LINE COMPONENTS | VERTICAL SLIDING CURVES FS CS065SL



- Vertical sliding curves for conveyor lines with inclines.
- Various angles available. The radius is based on the line centre.
- Min. radius: 500 mm.
- Can be used as outside and inside curve.



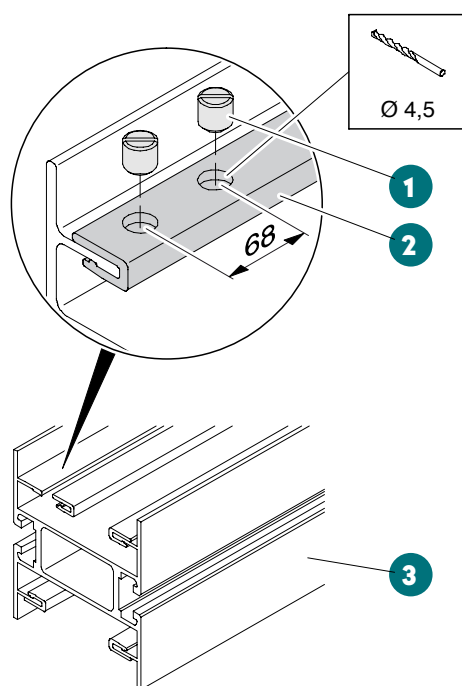
			PROD.NO.				
Vertical sliding curve	500 mm	5°	J927 726	1	0,34 m	0,35 m	0,69 m
		7°	J927 727		0,36 m	0,37 m	0,73 m
		10°	J927 728		0,38 m	0,39 m	0,77 m
		15°	J927 729		0,42 m	0,44 m	0,86 m
		20°	J927 730		0,46 m	0,49 m	0,95 m
		30°	J927 731		0,54 m	0,58 m	1,12 m
		45°	J927 732		0,67 m	0,72 m	1,39 m
		60°	J927 733		0,79 m	0,86 m	1,65 m
		90°	J927 734		1,03 m	1,14 m	2,17 m

Different radius or angles on request

# FS CS065SL LINE COMPONENTS | SLIDING STRIP CS SL






- Sliding strip for minimising friction between chain and profile.
- Properties:
  - Outstanding sliding behaviour
  - Extremely hard surface for minimum wear
  - Suitable for high conveyor speeds.
- The sliding strip is clipped on and fixed in place after assembling the line. Joints in the guide profile should not coincide with joints in the sliding strip.
- Worn sliding strips are easy to remove and renew.



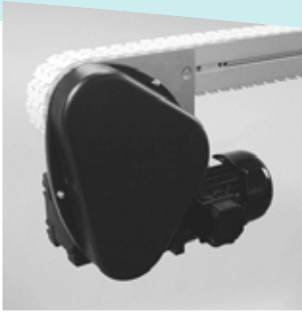
- 1 Grub screw
- 2 Sliding strip
- 3 Guide profile

FS CS065SL LINE COMPONENTS

STRETCH\_LINE

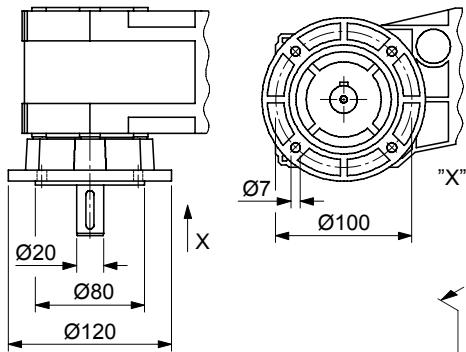
	PROD.NO.			
Sliding strip, standard	J537 015	25,0 m	PA-modified	grey
Sliding strip, antistatic	J537 016	25,0 m	PE 500	black
Sliding strip	J537 017	25,0 m	PA-modified	blue
Sliding strip, ultra low friction	J537 020	25,0 m	LubX CV	Naturel
Grub screw M5 x 5	J535 380	25	POM	white
Drilling jig	J927 786	1		
Assembly mandrel	J537 135	1		

# FS CS065SL DRIVES | VERTICAL DRIVES FS CS065SL

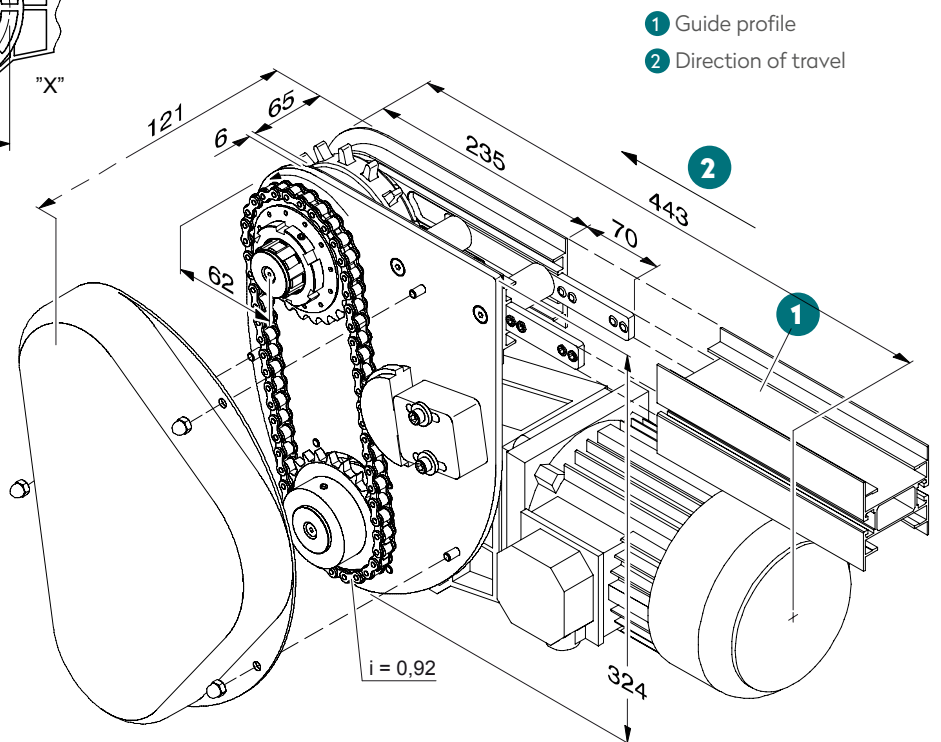


- The drive motor is suspended below the guide profile.
- Left-hand or right-hand version, either with or without motor.
- Slip clutch is included.
- Chain transmission ratio  $i = 0.92$ .
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR



## VERTICAL DRIVE FS CS065SL, LEFT-HAND VERSION



**NOTE**  
Observe rating and servicing details in "Basic technical information".

	RS LS		 V <sub>MAX</sub>	PROD.NO.		 m	 N	 mm	 m
Vertical drive	LS	○	60	J927 706	1	30	800	118,5	0,55
		●		■ on request					
	RS	○		J927 719					
		●		■ on request					

LS/RS left-hand/right-hand version

● / ○ with/without motor

■ specify conveyor speed

# FS CS065SL DRIVES | DIRECT DRIVES FS CS065SL

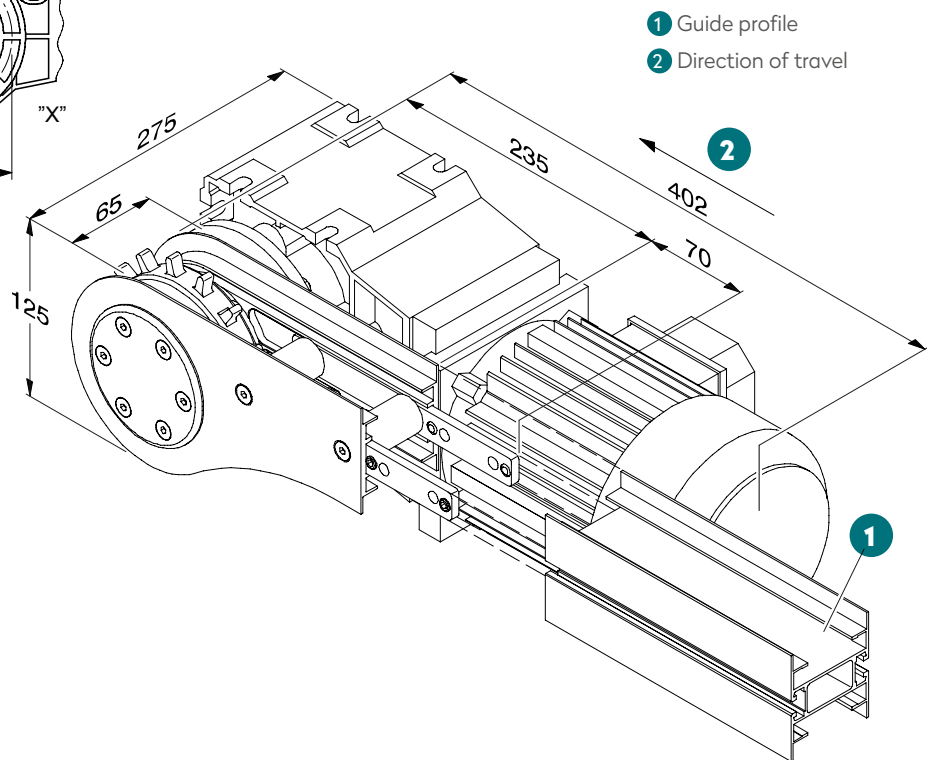
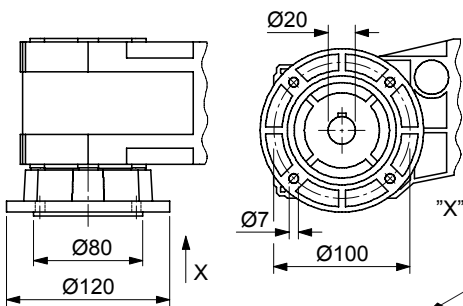


- Compact design.
- The drive motor is positioned at the side of the guide profile - left or right.
- Either with or without motor.
- Antistatic version on request.



## CONNECTING DIMENSIONS FOR MOTOR

## DIRECT DRIVE FS CS065SL, RIGHT-HAND DRIVE MOTOR



- 1 Guide profile
- 2 Direction of travel

FS CS065SL DRIVES



### NOTE

Observe rating and servicing details in "Basic technical information".

	RS LS		PROD.NO.						
					m	N	m/min	mm	m
Vertical drive	LS	○	J927 715	1	30	1250	80	118,5	0,55
		●	■ on request						
	RS	○	J927 717						
		●	■ on request						

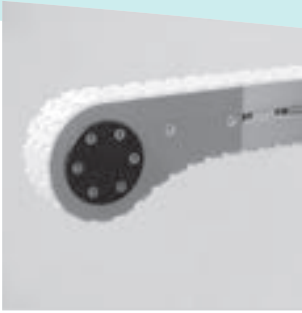
LS/RS left-hand/right-hand version

●/○ with/without motor

■ specify conveyor speed

STRETCH\_LINE

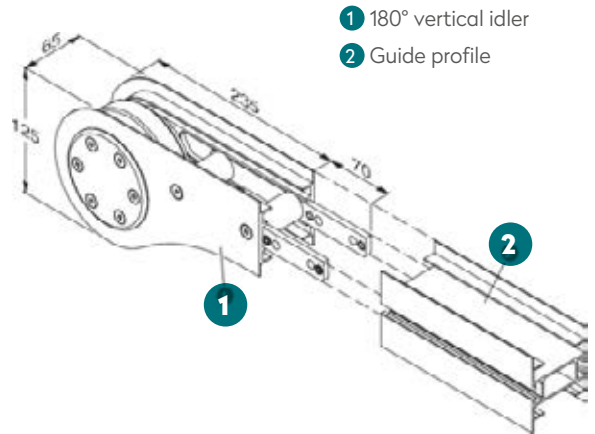
# FS CS065SL IDLERS



## | VERTICAL IDLER FS CS065SL, 180°

- 180° vertical idler is installed at the end of the conveyor for return of the chain.

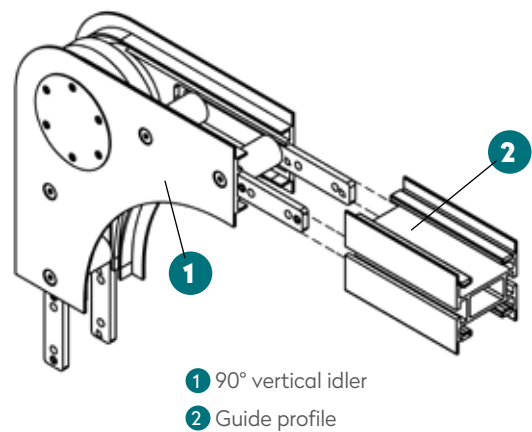
		PROD.NO.		
Vertical idler CS065SL, 180	180°	J927 804	1	0,55 m



## | VERTICAL IDLER FS CS065SL, 90°

- 90° vertical idler is installed at the end of the conveyor for return of the chain.

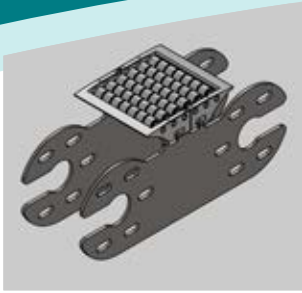
		PROD.NO.		
Vertical idler CS065SL, 90	90°	J927 791	1	0,55 m



- 1 90° vertical idler
- 2 Guide profile

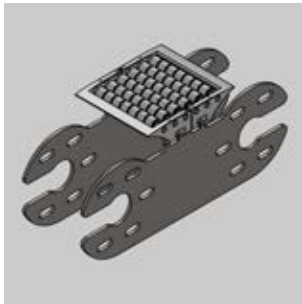


# FS CS065 SL ACCESSORIES | NON-DRIVEN ROLL TRANSFER CS SL

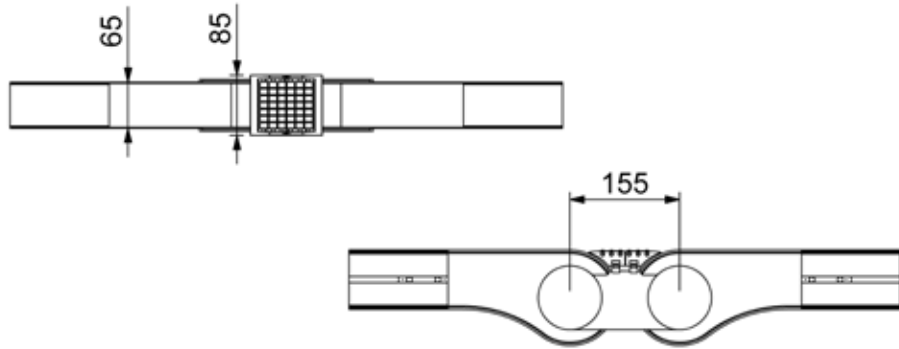


- Passive roll transfer
- Assembly accessories for 90° and 180° line transitions
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers
- Ø11 mm Rollers at a 12,6mm pitch

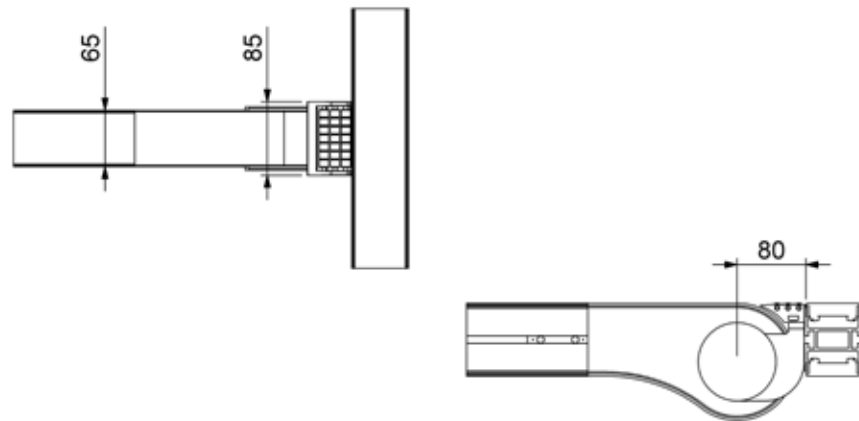
FS CS065 SL ACCESSORIES



## 180° LINE TRANSITION






## 90° LINE TRANSITION



### CAUTION!

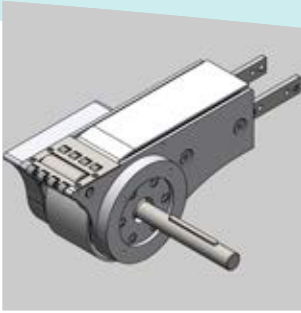
Short conveyed items can be left behind at the point of transfer

			PROD.NO.		
Non-driven roll transfer incl. assembly accessories	FS CS065SL	90 °	883833-900	1	stainless steel/ plastic
		180°	883833-910		

other non-driven roll transfer on request

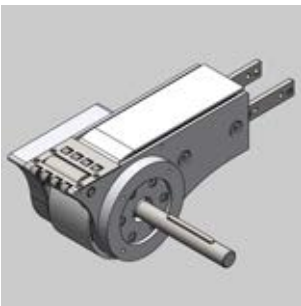
STRETCH\_LINE

# FS CS065 SL ACCESSORIES | DRIVEN ROLL TRANSFER CS SL

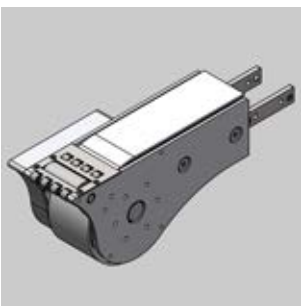
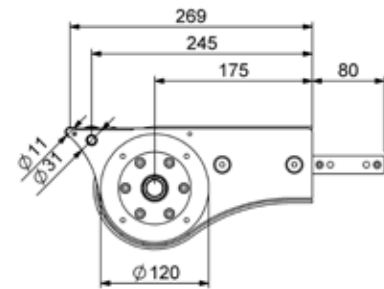
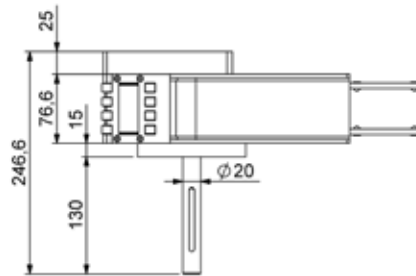


- Driven roll transfer. Available as left and right hand version
- Including assembly accessories for 180° line transitions
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers
- Transmission by multiple round belts to minimize maintenance and production stops

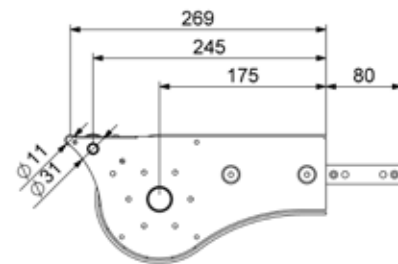
## 180° LINE TRANSITION



**DRIVE SECTION**



**IDLER UNIT**



		RS LS 	PROD.NO.			
Driven roll transfer - drive section	FS CS065SL	LS	880130-001	1	stainless steel/ aluminium	0,55m
		RS	880130-002			
Driven roll transfer - idler section		LS	880130-003			
		RS	880130-004			

Rubberized drive roller on request


LS/RS left-hand/right-hand version

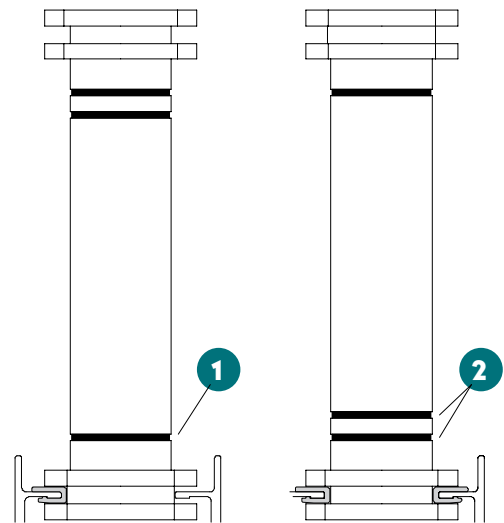
# FS CS065SL TOOLS



## | ASSEMBLY MANDREL

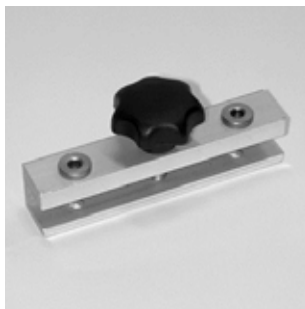
- Assembly tool for clipping the sliding strip on.
- Installing 1st sliding strip: Use the side of assembly mandrel marked with one ring.
- Installing 2nd sliding strip: Use the side of assembly mandrel marked with two rings.

		PROD.NO.	
Assembly mandrel	FS CS065SL	J537 135	1




- 1 Installing 1st sliding strip
- 2 Installing 2nd sliding strip

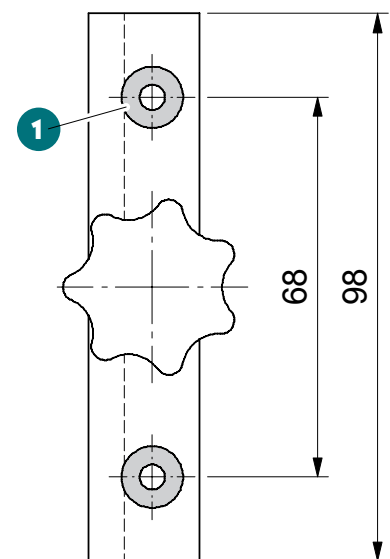
FS CS065SL TOOLS



## | DRILLING JIG

- The sliding strips are fixed to the guide profile with plastic grub screws to absorb axial displacement forces.
- The drilling jig serves as an aid for drilling the holes required.

	PROD.NO.	
Drilling jig	J927 786	1



- 1 4.5 mm dia. drilling bush

STRETCH\_LINE

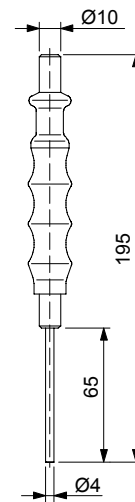
# FS CS065SL TOOLS



## | SPLIT-PIN DRIVER, 4 MM DIA.

- Tool for removing pin out of chain.
- Systems: FS CS065SL / FS CS090SL
- Cushioned safety grip.
- Material: hardened steel.

	PROD.NO.	
Split-pin driver	J537 131	1



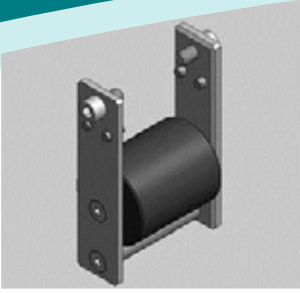
## | CUTTING PLIERS

- For precise cutting of sliding strips

	PROD.NO.	
Cutting pliers	J537 130	1



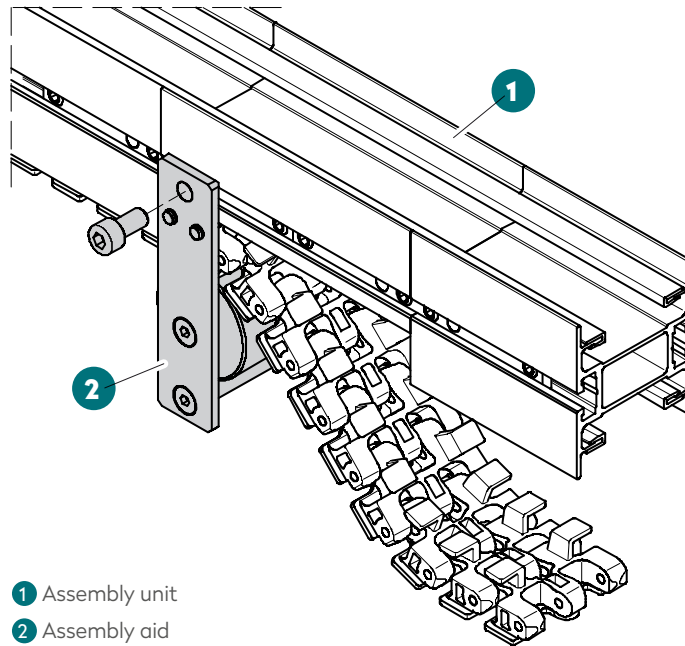
# FS CS065SL TOOLS



## | CHAIN ASSEMBLY AID

- Facilitates feeding the conveyor chain into the line.
- It is attached to the lower side of the chain assembly unit after removing the cover plate and sub-frame.
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers.

		PROD.NO.	
Assembly aid	FS CS065SL	J927 823	1



- ① Assembly unit
- ② Assembly aid



FS CS090SL

STRETCH\_LINE





# FS CS090SL

Conveyor system

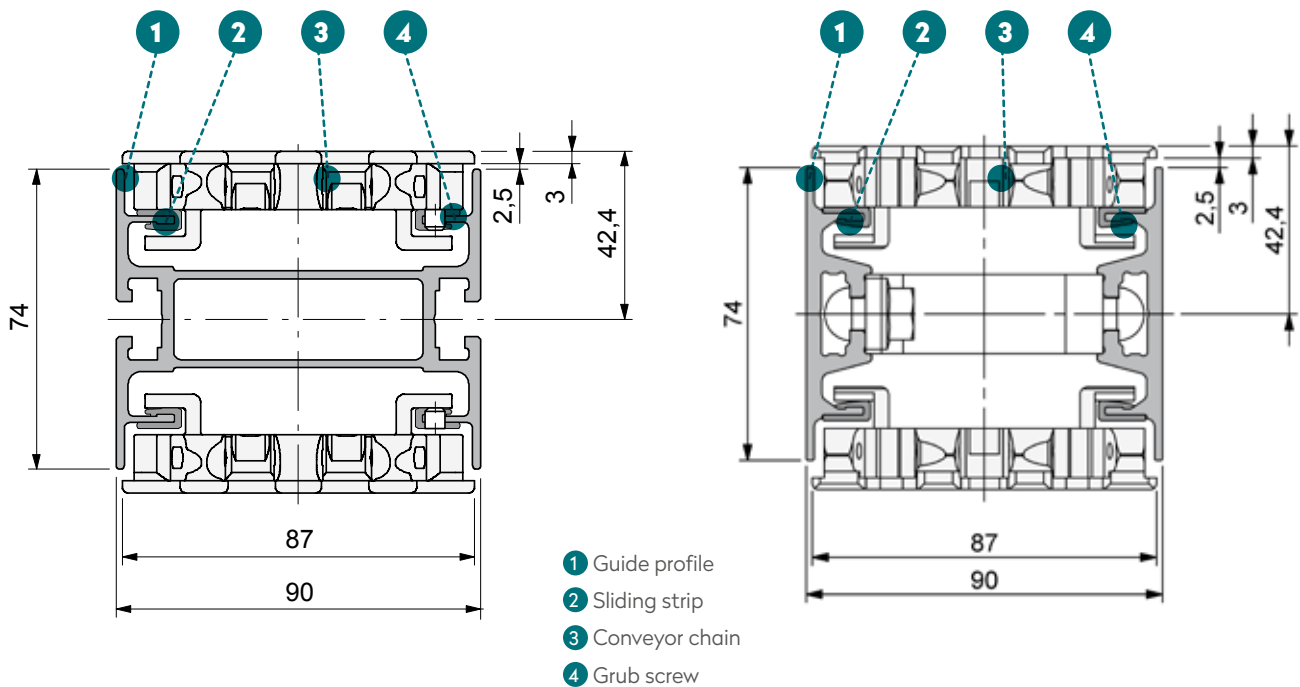
# FS CS090SL OVERVIEW



## Feeding, filling, packaging individual items

- Overall width 90 mm
- Chain width 87 mm
- Product width 20 - 200 mm
- Max. product weight for conveying direction:
  - Horizontal 10 kg
  - Vertical 5 kg
- Maximum load:
  - Conveyor system 150 kg
  - Chain link 1.5 kg
- Max. conveying length 30 m (8 m for vertical clamp conveyors)
- Max. conveying speed 120 m/min
- Available drives:
  - Vertical drives
  - Direct drives
  - Centre drives
  - Vertical centre drives
  - Direct centre drives
- Compatible with railing system:
  - Variable guide width 20 - 250 mm
  - Variable guide height 15 - 350 mm
- Available for open and closed system

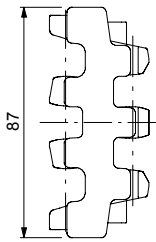
FS CS090SL OVERVIEW



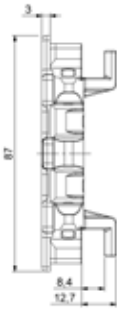
STRETCH\_LINE

# FS CS090SL LINE COMPONENTS | CHAINS FS CS090SL

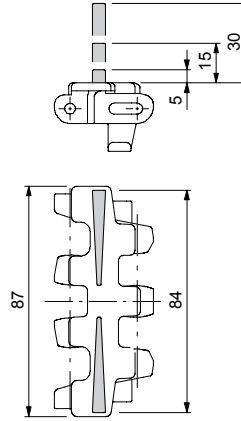
**FS CS090SL  
STANDARD CHAIN**



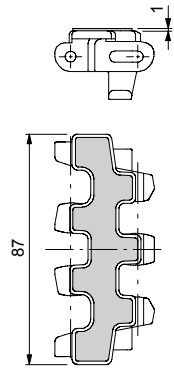
**FS CS090SL CHAIN WITH  
REINFORCED TAB**



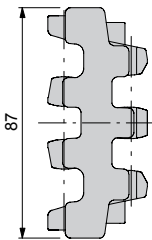
**FS CS090SL CHAIN  
WITH CATCH PLATES**



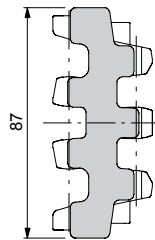
**FS CS090SL CHAIN WITH  
FRICTION LINING**



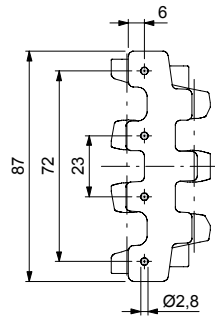
**FS CS090SL ANTISTATIC CHAIN**



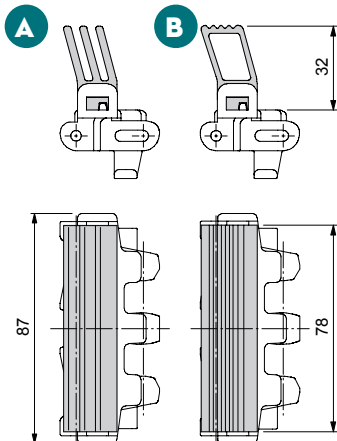
**FS CS090SL CHAIN WITH  
FLOCKED SURFACE**



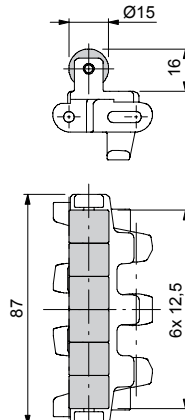
**FS CS090SL UNIVERSAL CHAIN**



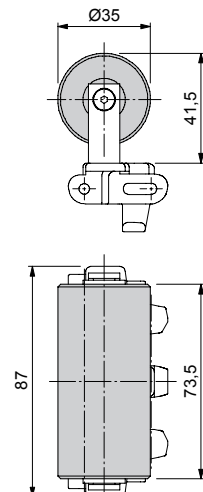
**FS CS090SL CHAIN WITH GRIPPER**



**FS CS090SL CHAIN WITH  
ACCUMULATING ROLLERS**



**FS CS090SL CHAIN WITH  
CATCH ROLLER**



FS CS090SL LINE COMPONENTS

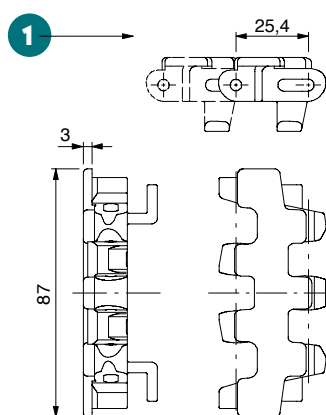
STRETCH\_LINE

# FS CS090SL LINE COMPONENTS







## | CHAIN FS CS090SL STANDARD

- Standard chain for horizontal conveyance.
- Suitable for accumulating conveyor mode.
- Pin-hinged chain links.



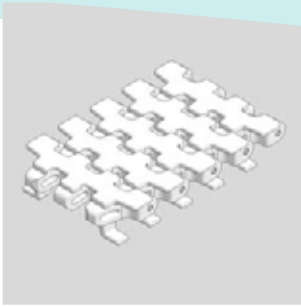
1 Direction of travel

FS CS090SL LINE COMPONENTS

	PROD.NO.						
Chain CS090SL, standard	J534 068	4,0 m	POM	white	1,4 kg/m		1250 N
Chain CS090SL, standard blue	J534 068.101	4,0 m	POM	blue	1,4 kg/m		1250 N
Chain link, individual	J534 069	10	POM	white			1250 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	

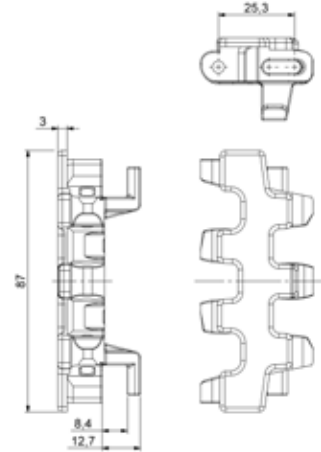
STRETCH\_LINE

# FS CS090SL LINE COMPONENTS



## | CHAIN FS CS090SL WITH REINFORCED TAB

- Chain especially for abrasive environment
- Suitable for e.g. tobacco industry
- The tab has more thickness for longer lifetime



### NOTE

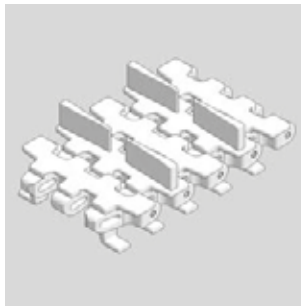
This chain can only be used in combination with sliding strip J537 397



### NOTE

Please be aware that if you want to use the reinforced chain and sliding strip; you have to order the special drive- and idler unit.

	PROD.NO.						
Chain CS090SL, with reinforced tab	J537398	4,0m	PBT	natural	1,4 kg/m		1250 N



## | CHAIN FS CS090SL WITH CATCH PLATES

- Chain for vertical conveyance.
- Chain links with catch plates are inserted in the standard chain at recurrent intervals.
- Catch plate heights of 5, 15 and 30 mm.







	PROD.NO.						
Chain link, individual, catch plate height 5 mm	J534 076	10	POM	white	1,5 kg/m		1250 N
Chain link, individual, catch plate height 15 mm	J534 078	10	POM	white	1,5 kg/m		1250 N
Chain link, individual, catch plate height 30 mm	J534 079	10	POM	white	1,5 kg/m		1250 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	

# FS CS090SL LINE COMPONENTS



## | CHAIN FS CS090SL WITH FRICTION LINING

- Chain with anti-slip coating to increase adhesion on inclines.
- Well suited to conveying smooth-surfaced items.
- Friction lining in wear-resistant rubber.
- Not suitable for accumulating conveyor.







	PROD.NO.						
Chain CS090SL, with friction lining	J400 014	4,0 m	POM	white	1,4 kg/m		1250 N
Chain link, individual	J400 015	10	POM	white			1250 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	

FS CS090SL LINE COMPONENTS



## | CHAIN FS CS090SL ANTISTATIC

- Standard chain with antistatic finish.
- For use only in conjunction with antistatic sliding strip and drive unit.

	PROD.NO.						
Chain CS090SL, antistatic	J534 072	4,0 m	POM	black	1,4 kg/m		950 N
Chain link, individual	J534 073	10	POM	black			950 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	







STRETCH\_LINE

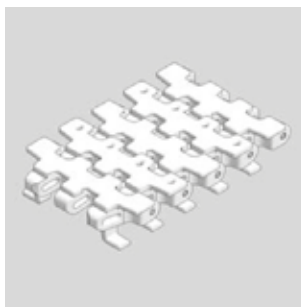
# FS CS090SL LINE COMPONENTS



## | CHAIN FS CS090SL WITH FLOCKED SURFACE







- Standard chain with grey flocked surface.
- The soft surface protects the items being conveyed.

	PROD.NO.						
Chain CS090SL, with flocked surface	J400 008	4,0 m	POM	white	1,4 kg/m		1250 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	



## | CHAIN FS CS090SL UNIVERSAL

- Universal chain links are inserted in the standard chain at recurrent intervals.
- Chain for universal application with drill holes in the base plate.
- Capability of fitting various conveyor components (e.g. catch plates, rollers) using Ø3.9 mm self-tapping bolts.

	PROD.NO.						
Chain link, individual	J534 088	10	POM	white	1,4 kg/m		1250 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	









# FS CS090SL LINE COMPONENTS

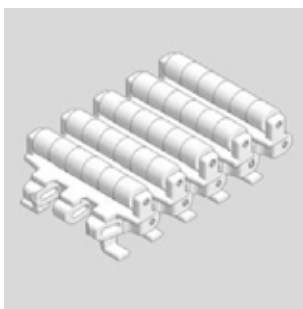


## | CHAIN FS CS090SL WITH CATCH ROLLERS

- Chain links with catch rollers are inserted in the standard chain at recurrent intervals.
- At least one standard link must be inserted between two catch rollers.







	PROD.NO.						
Chain link, individual	J534 089	10	POM	white			1250 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	

FS CS090SL LINE COMPONENTS



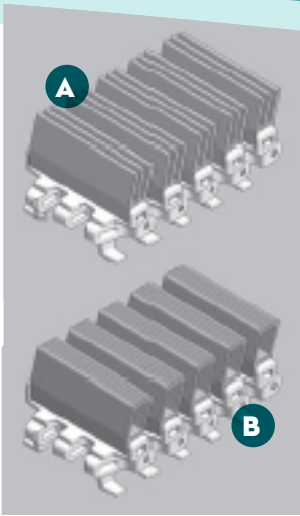
## | CHAIN FS CS090SL WITH ACCUMULATING ROLLERS

- Chain with rollers to minimise friction in accumulating conveyors.

	PROD.NO.						
Chain CS090SL, with accumulating rollers	J534 085	2,0 m	POM	white	2,2 kg/m		1250 N
Chain link, individual	J534 086	10	POM	white			1250 N
Chain pin, individual	J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	

STRETCH\_LINE

# FS CS090SL LINE COMPONENTS









## CHAIN FS CS090SL WITH GRIPPER

- Chain with surface-mounted gripper element (flexible catches).
- Used in vertical clamp conveyors.
- Gripper element in EPDM.
- Use shape A:
  - small lightweight unit loads
  - products with irregular surface.
- Use shape B:
  - larger-type unit loads
  - item weight up to 10 kg.

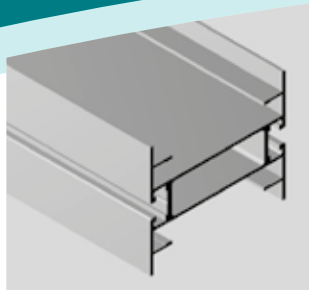


FS CS090SL LINE COMPONENTS

		PROD.NO.						
Chain CS090SL, with gripper	A	J534 590	2,0 m	POM	white	2,3 kg/m		750 N
	B	J534 081	2,0 m			2,2 kg/m		
Chain link, individual	A	J534 591	10	POM	white			750 N
	B	J534 082	10					
Gripper element, individual	A	J400 002	10	EPDM	grey			
	B	J534 083	10					
Chain pin, individual		J534 071	100	Stainless steel	grey		J537 131 Split-pin driver	

STRETCH\_LINE

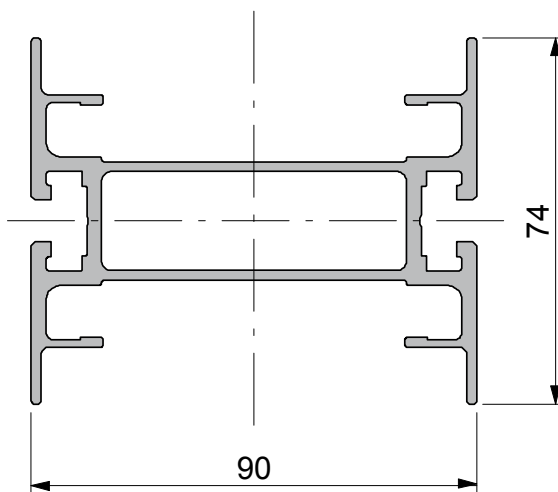
# FS CS090SL LINE COMPONENTS






## GUIDE PROFILE FS CS090SL

- Line lengths over 6000 mm can be produced by using joints.

### CROSSED SECTION

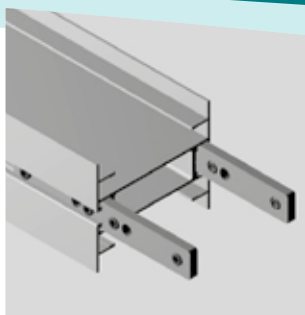


FS CS090SL LINE COMPONENTS

	PROD.NO.			
Guide profile CS090SL	J924 173	6,0 m	EN AW-6063 T66	E6/EV1 anodised finish
Cutting to length	J924 969	1		

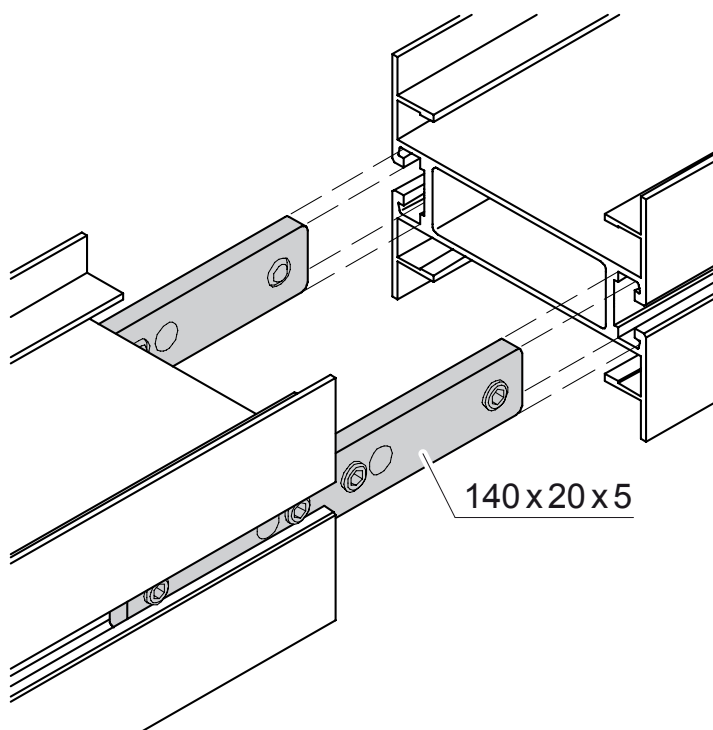
STRETCH\_LINE




# FS CS090SL LINE COMPONENTS



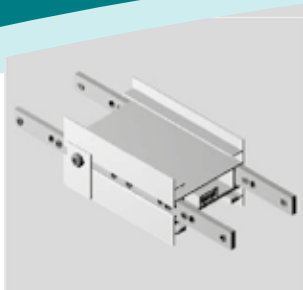
## | LINE JOINT CS SL

- Joints are pushed into the profile groove and fixed in place with the pre-mounted grub screws.
- No additional work to the profile is necessary.



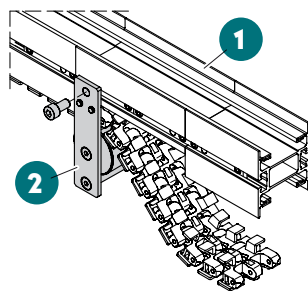
	PROD.NO.			
Line joint	J927 803	2	steel	galvanised

# FS CS090SL LINE COMPONENTS | CHAIN ASSEMBLY UNIT FS CS090SL

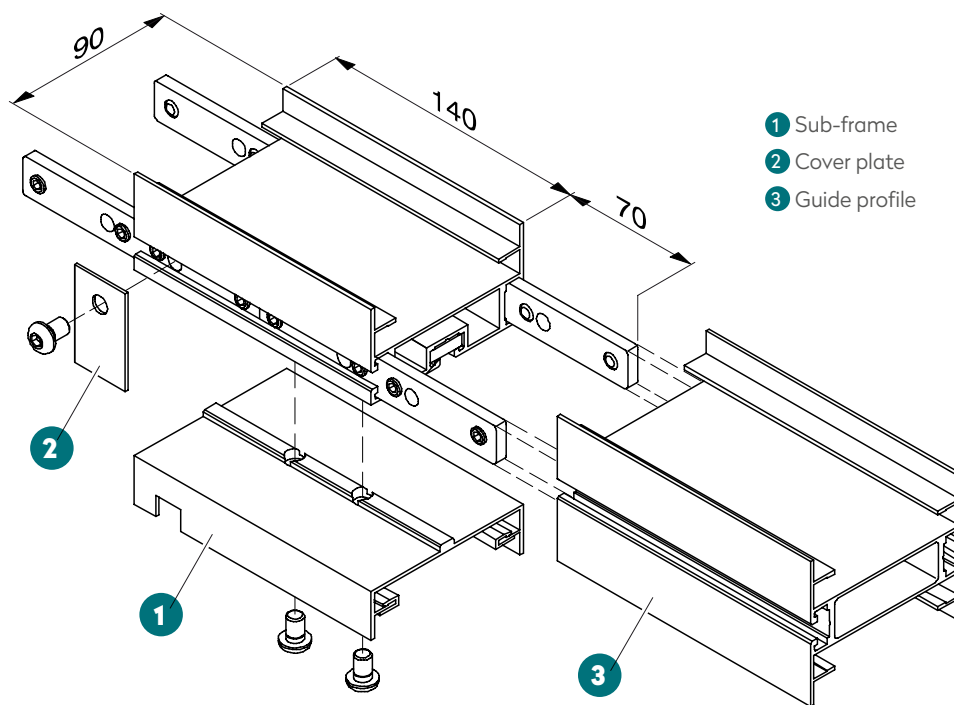


- The chain assembly unit allows you to feed the chain into the assembled line.
- Can be fitted at any point within the line.
- Line joints are included.
- The sub-frame must be removed for feeding the conveyor chain into the line.
- After fitting the chain pin, the opening in the sub-frame must be closed off with the cover plate.
- The optional chain assembly aid facilitates feeding the conveyor chain into the line. It is attached to the lower side of the assembly unit after removing cover plates and sub-frames.


## USING THE CHAIN ASSEMBLY AID



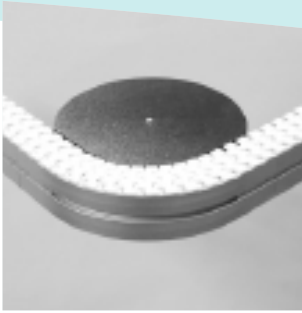
- 1 Assembly unit
- 2 Assembly aid



- 1 Sub-frame
- 2 Cover plate
- 3 Guide profile

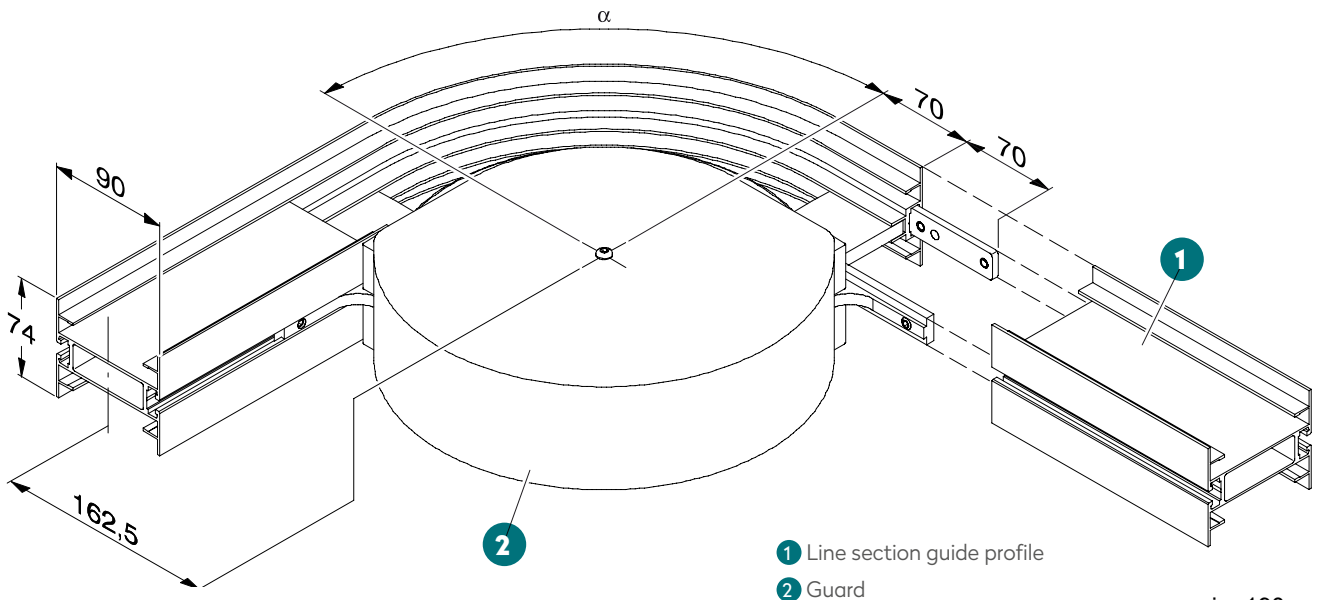
	PROD.NO.	
Chain assembly unit CS090SL	J927 768	1
Assembly aid	J927 824	1
Split-pin driver	J537 131	1

# FS CS090SL LINE COMPONENTS | HORIZONTAL CURVES WITH DISK FS CS090SL

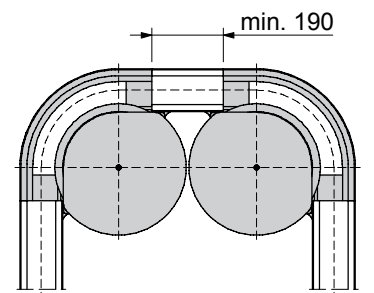


- Small idler radius: 162.5 mm.
- The idler radius is based on the line centre.
- It is installed in the conveyor line without the need for any work to the joints.
- Antistatic version on request.

## HORIZONTAL CURVE WITH DISK FS CS090SL, R162.5/90°



- 1 Line section guide profile
- 2 Guard



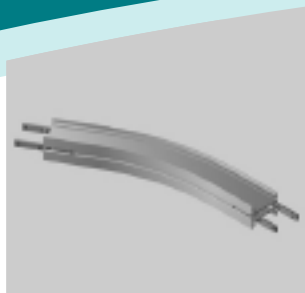
### NOTE

When installing two horizontal curves with disk, they must be separated by a straight line section of at least 190 mm in length.

	PROD.NO.				
Horizontal curve with disk CS090SL	162,5 mm	45°	J927 770	1	2x 0,28 m
		60°	J927 771		2x 0,34 m
		90°	J927 751		2x 0,44 m
		180°	J927 752		2x 0,74 m

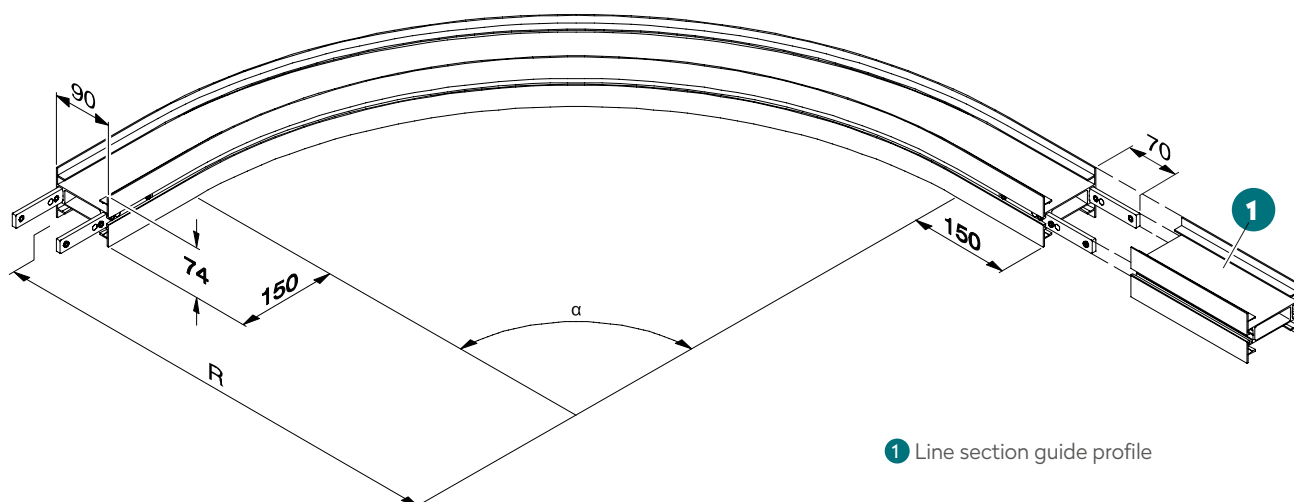
Different angles on request

# FS CS090SL LINE COMPONENTS | HORIZONTAL SLIDING CURVES FS CS090SL



- Horizontal sliding curve.
- Various angles available. The radius specified is based on the line centre.
- Min. radius: 250 mm.

## HORIZONTAL SLIDING CURVE FS CS090SL, R700/90°



1 Line section guide profile

FS CS090SL LINE COMPONENTS

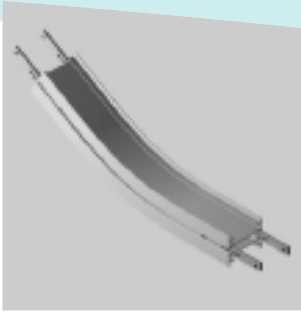
			PROD.NO.		
Horizontal sliding curve	400 mm	15°	J927 818	1	2x 0,41 m
		30°	J927 809		2x 0,52 m
		45°	J927 810		2x 0,64 m
		60°	J927 811		2x 0,75 m
		90°	J927 812		2x 0,97 m
	700 mm	30°	J927 753	1	2x 0,68 m
		45°	J927 754		2x 0,87 m
		60°	J927 755		2x 1,06 m
		90°	J927 756		2x 1,44 m

Different radius or angles on request

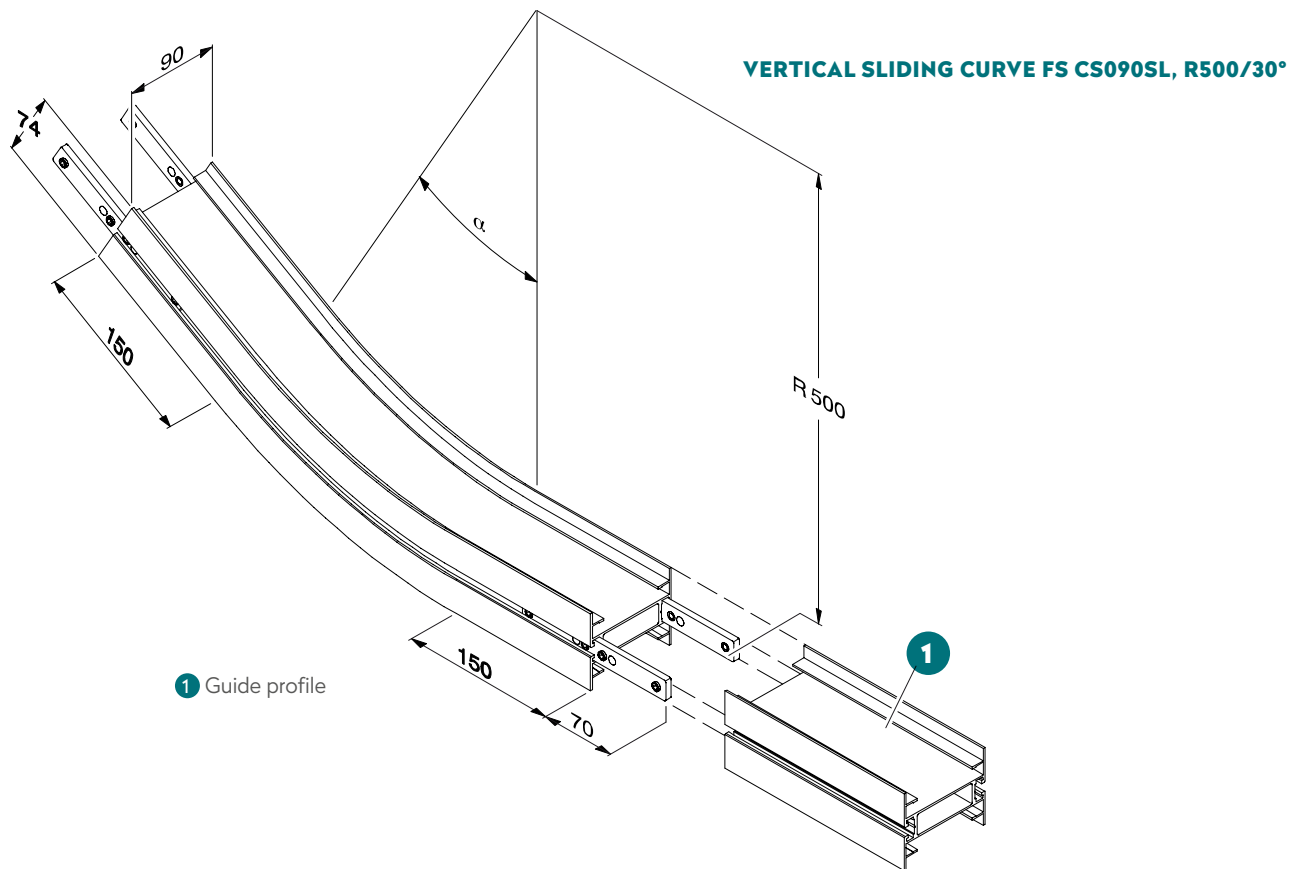
STRETCH\_LINE



# FS CS090SL LINE COMPONENTS | VERTICAL SLIDING CURVES FS CS090 SL



- Vertical sliding curves for conveyor lines with inclines.
- Various angles available. The radius specified is based on the line centre.
- Min. radius: 500 mm.
- Can be used as outside and inside curve.



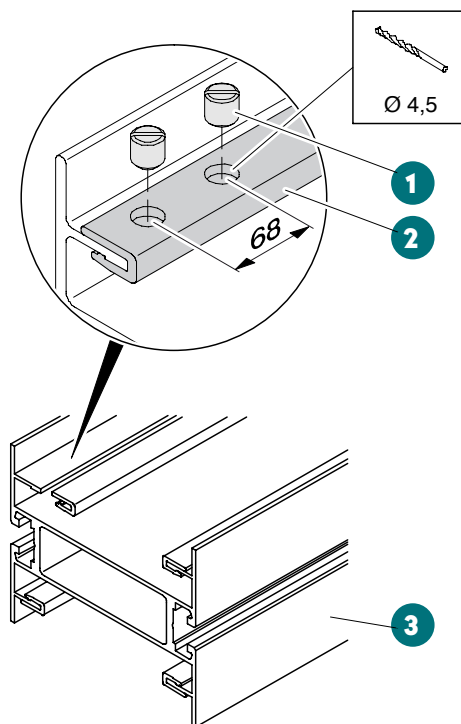
			PROD.NO.				
Vertical sliding curve	500 mm	5°	J927 757	1	0,34 m	0,35 m	0,69 m
		7°	J927 758		0,36 m	0,37 m	0,73 m
		10°	J927 759		0,38 m	0,39 m	0,77 m
		15°	J927 760		0,42 m	0,44 m	0,86 m
		20°	J927 761		0,46 m	0,49 m	0,95 m
		30°	J927 762		0,54 m	0,58 m	1,12 m
		45°	J927 763		0,67 m	0,72 m	1,39 m
		60°	J927 764		0,79 m	0,86 m	1,65 m
		90°	J927 765		1,03 m	1,14 m	2,17 m

Other radius or angles on request

# FS CS090SL LINE COMPONENTS | SLIDING STRIP CS SL






- Sliding strip for minimising friction between chain and profile.
- Properties:
  - Outstanding sliding behaviour
  - Extremely hard surface for minimum wear
  - Suitable for higher-type conveyor speeds.
- The sliding strip is clipped on and fixed in place after assembling the line. Joints in the guide profile should not coincide with joints in the sliding strip.
- Worn sliding strips are easy to remove and renew.



- 1 Grub screw
- 2 Sliding strip
- 3 Guide profile

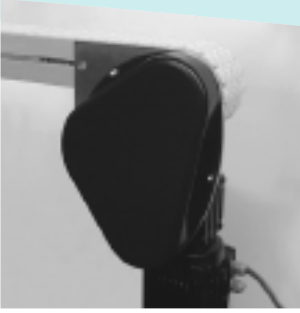
FS CS090SL LINE COMPONENTS

STRETCH\_LINE

	PROD.NO.			
Sliding strip, standard	J537 015	25,0 m	PA-modified	grey
Sliding strip, antistatic	J537 016	25,0 m	PE 500	black
Sliding strip, blue	J537017	25,0 m	PA-modified	blue
Sliding strip, ultra low friction	J537 020	25,0 m	LubX CV	Naturel
Sliding strip, reinforced*	J537397	25,0 m	PA-modified	white
Grub screw m5 x 5	J535 380	25	POM	white
Drilling jig	J927 786	1		
Assembly mandrel	J537 146	1		

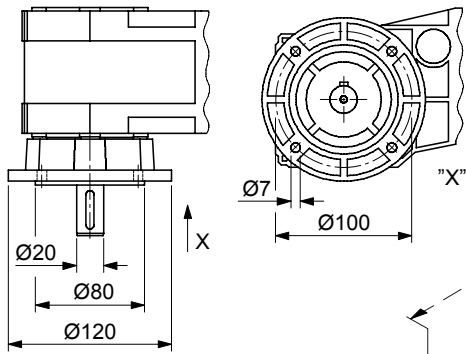
\*This sliding strips can only be used in combination with chain J537398

# FS CS090SL DRIVES | VERTICAL DRIVES FS CS090SL

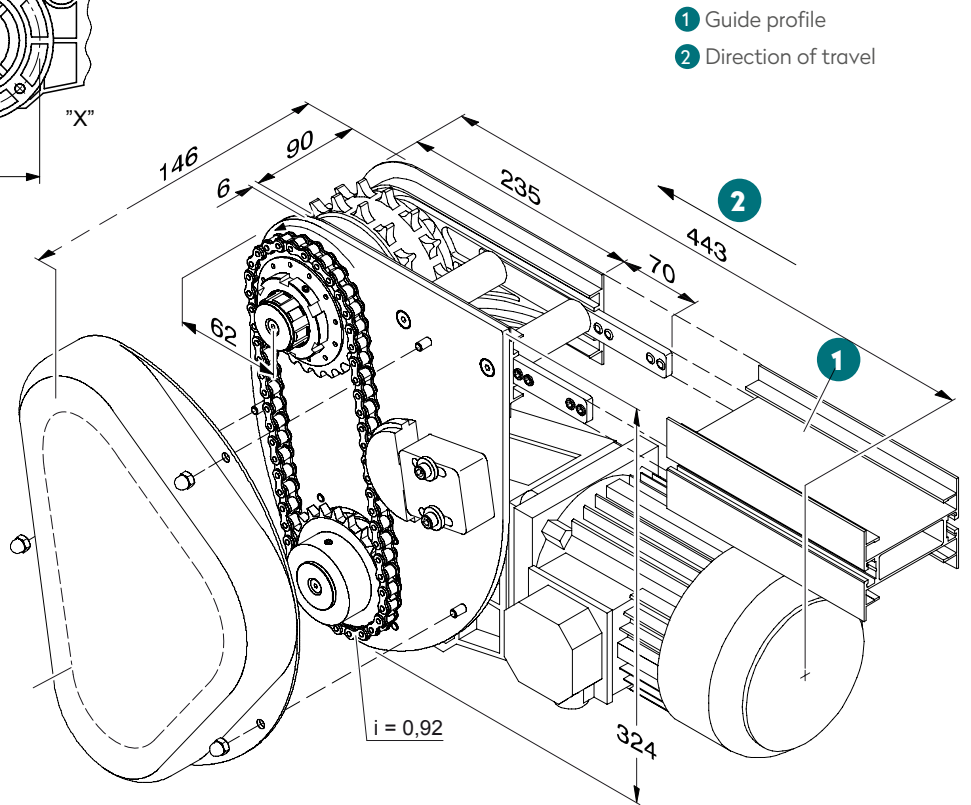


- The drive motor is suspended below the guide profile.
- Left-hand or right-hand version, either with or without motor.
- Slip clutch is included.
- Chain transmission ratio  $i = 0.92$ .
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR



## VERTICAL DRIVE FS CS090SL, LEFT-HAND VERSION



- 1 Guide profile
- 2 Direction of travel



### NOTE

Observe rating and servicing details in "Basic technical information".

	RS LS		 V <sub>MAX</sub>	PROD.NO.		 m	 N	 mm	 m
Vertical drive	LS	○	60	J927 736	1	30	800	118,5	0,55
		●		■ on request					
	RS	○		J927 738					
		●		■ on request					

LS/RS Left-hand/right-hand version

● / ○ With/without motor

■ Specify conveyor speed

# FS CS090SL DRIVES | FS CS090SL DIRECT DRIVES

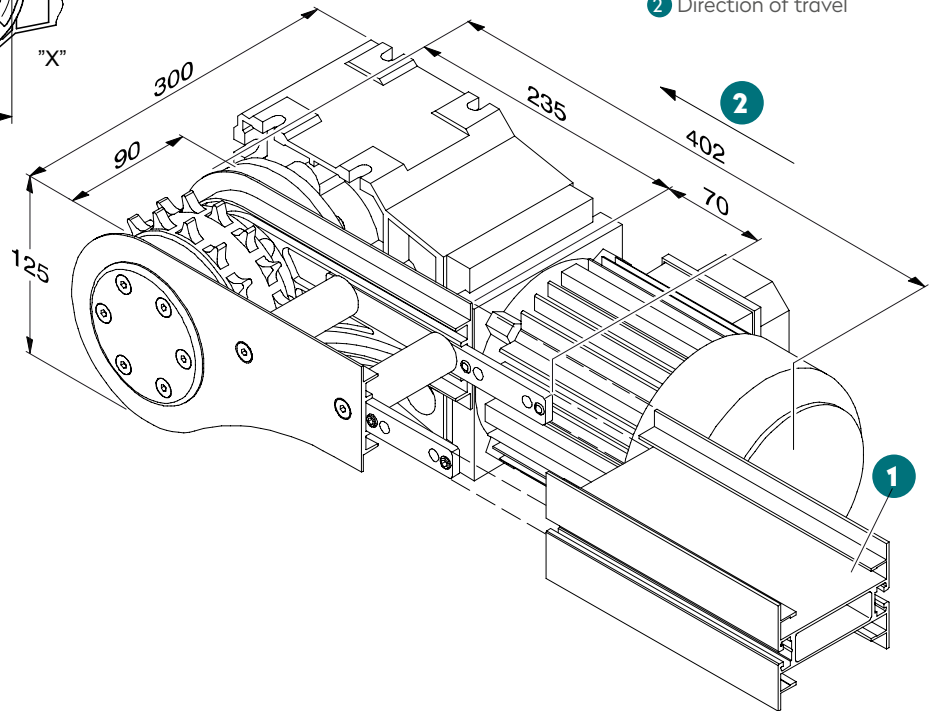
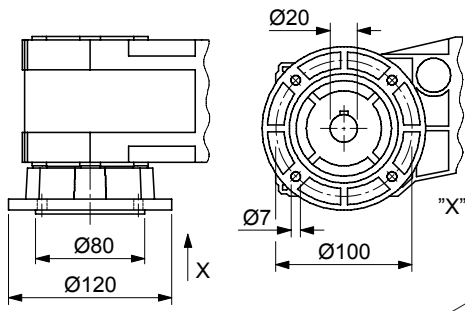


- Compact design.
- The drive motor is positioned at the side of the guide profile - left or right.
- Either with or without motor.
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR

## DIRECT DRIVE FS CS090SL, RIGHT-HAND DRIVE MOTOR

FS CS090SL DRIVES



- 1 Guide profile
- 2 Direction of travel



### NOTE

Observe rating and servicing details in "Basic technical information".

STRETCH\_LINE

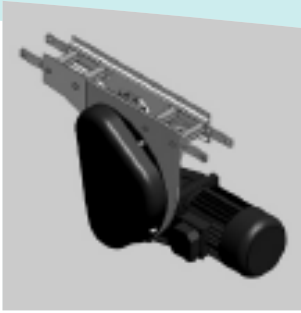
	RS LS		PROD.NO.						
					m	N	m/min	mm	m
Direct drive	LS	○	J927 740	1	30	1250	80	118,5	0,55
		●	■ on request						
	RS	○	J927 743						
		●	■ on request						

LS/RS Left-hand/right-hand version

● / ○ With/without motor

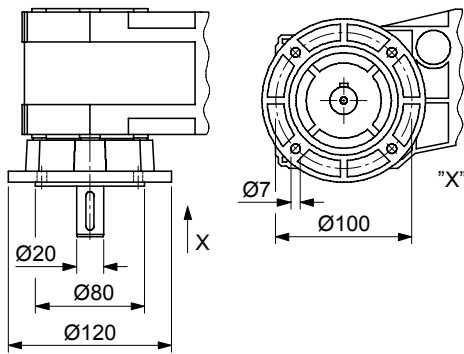
■ Specify conveyor speed

# FS CS090SL DRIVES | CENTRE DRIVES FS CS090SL, WITH CHAIN TRANSMISSION



- The transmission gear assembly can be positioned on the left or right.
- Slip clutch is included.
- Either with or without motor.
- Chain-gear transmission ratio  $i = 0.92$ .
- For smooth chain circulation and minimum wear, the drive should be positioned as close as possible to the idler at the end of the line.
- Antistatic version on request.

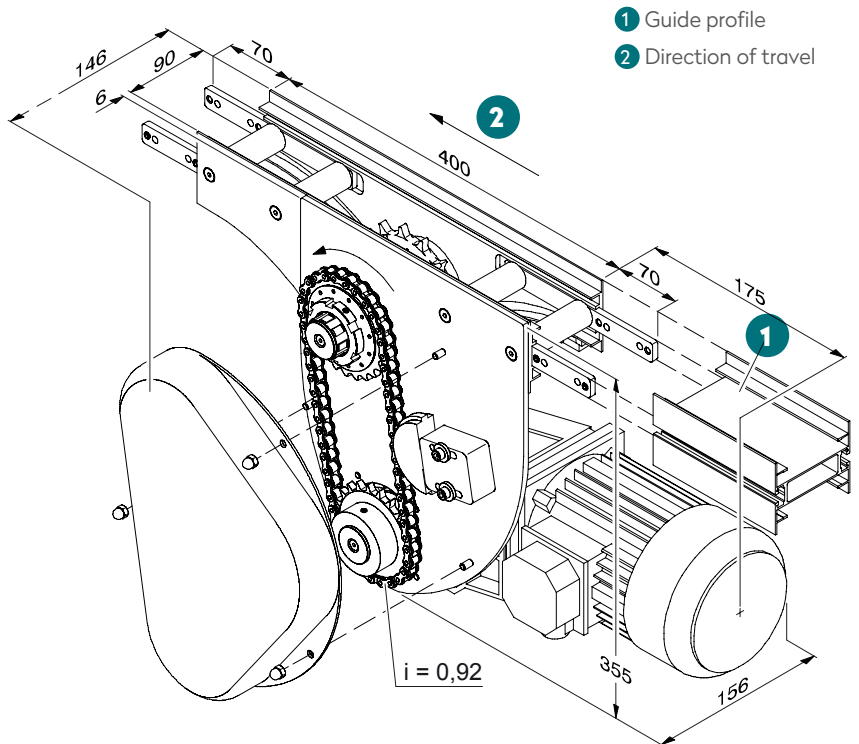
## CONNECTING DIMENSIONS FOR MOTOR



### NOTE

Observe rating and servicing details in "Basic technical information".

## CENTRE DRIVE FS CS090SL, LEFT-HAND VERSION



- 1 Guide profile
- 2 Direction of travel

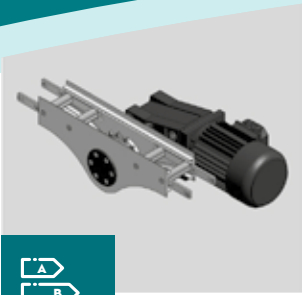
		RS LS		 m/min	PROD.NO.		 m	 N	 mm	 m
Direct drive	Standard	LS	○	40	J929 015	1	10	400	118,5	0,83
			●		■ on request					
		RS	○		J929 017					
			●		■ on request					
	Others	LS	○	40	J927 813	1	10	200	118,5	0,83
			●		■ on request					
		RS	○		J927 816					
			●		■ on request					

LS/RS Left-hand/right-hand version

●/○ With/without motor

■ Specify conveyor speed

# FS CS090SL DRIVES | DIRECT CENTRE DRIVES FS CS090SL

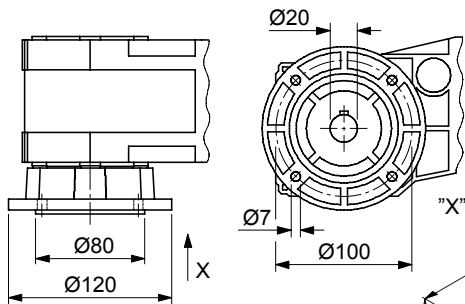


- Compact design.
- The drive motor is positioned at the side of the guide profile - left or right.
- For smooth chain circulation and minimum wear, the drive should be positioned as close as possible to the idler at the end of the line.
- Conveying direction can be reversed during operation.
- Antistatic version on request.

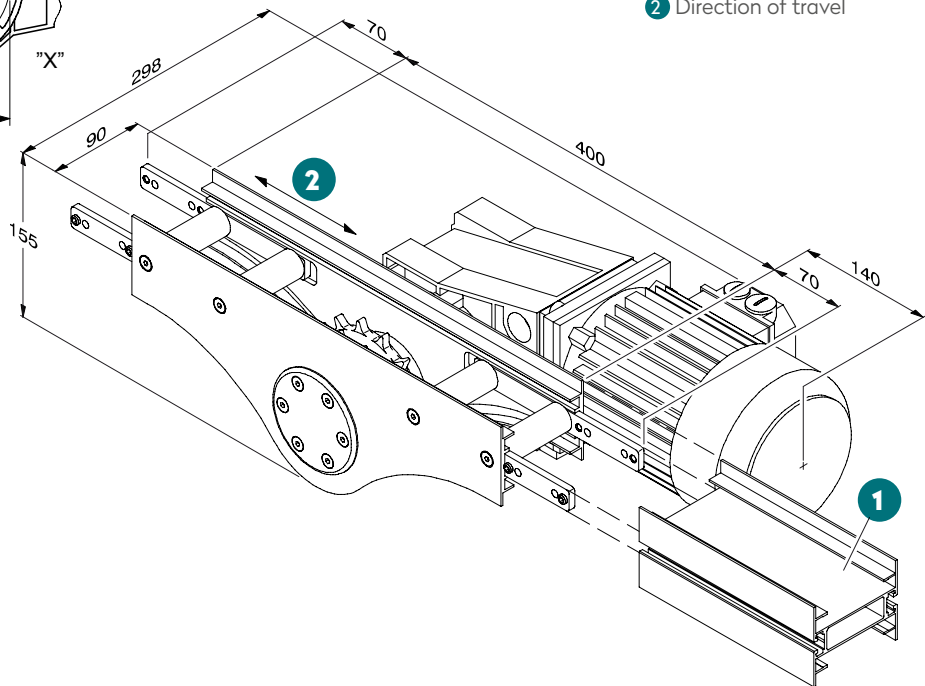
## CONNECTING DIMENSIONS FOR MOTOR

## DIRECT CENTRE DRIVE FS CS090SL

FS CS090SL DRIVES



- 1 Guide profile
- 2 Direction of travel



### NOTE

Observe rating and servicing details in "Basic technical information". The unit can be used as a left-hand version by turning it in the line.

STRETCH\_LINE

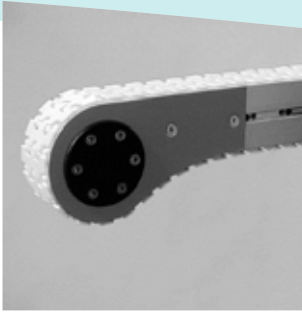
		RS LS		 V <sub>MAX</sub> m/min	PROD.NO.		 m	 N	 mm	 m
Direct centre drive	Standard	LS/RS	○	40	J929 019 ■ on request	1	10	400	118,5	0,83
	Others	LS/RS	○	40	J927 819 ■ on request	1	10	200	118,5	0,83

LS/RS Left-hand/right-hand version

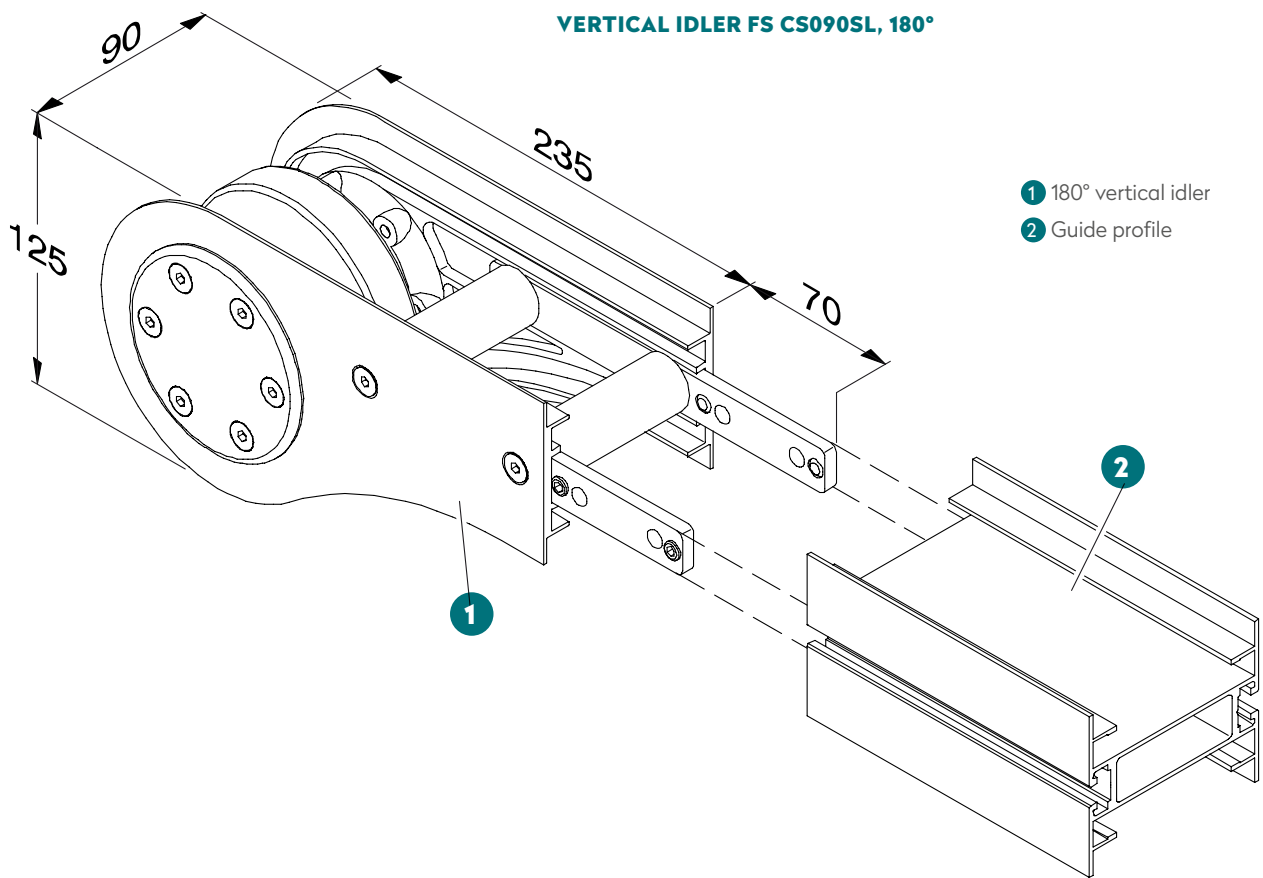
●/○ With/without motor




■ Specify conveyor speed

# FS CS090SL IDLERS | VERTICAL IDLER FS CS090SL



- 180° vertical idler is installed at the end of the conveyor line for return chain travel underneath the line.



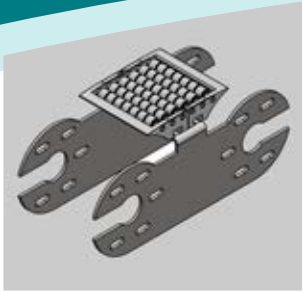
		PROD.NO.		
Vertical idler CS090SL, 180°	180°	J927 749	1	0,55m

FS CS090SL IDLERS

STRETCH\_LINE



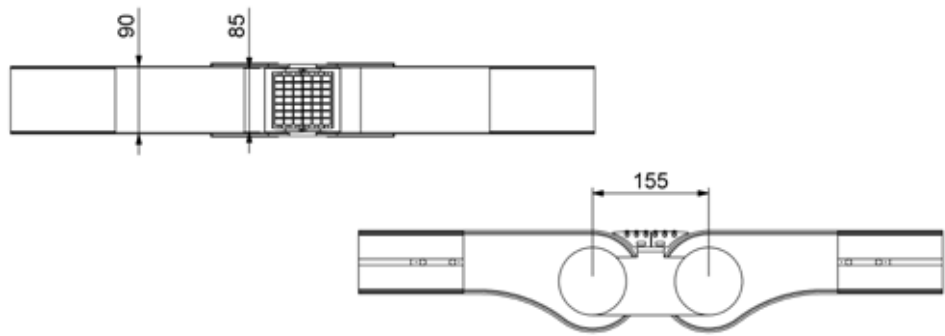
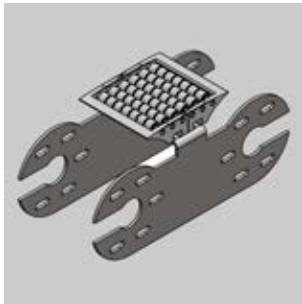
# FS CS090SL ACCESSORIES | NON DRIVEN ROLL TRANSFER CS SL



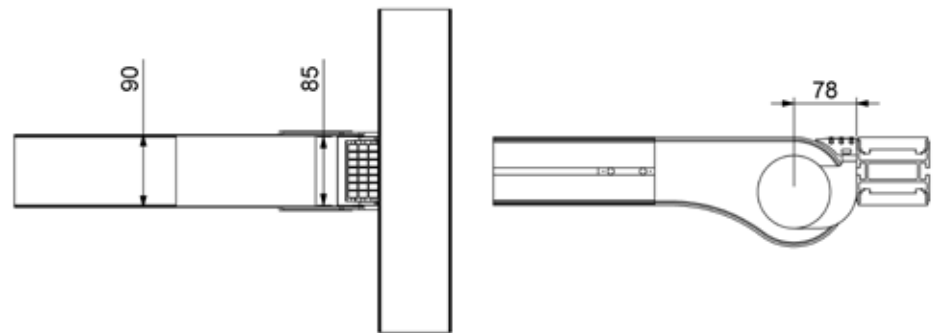
- Passive roll transfer
- Assembly accessories for 90° and 180° line transitions
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers
- Ø11 mm Rollers at a 12,6mm pitch

FS CS090SL ACCESSORIES

## 180° LINE TRANSITION






## 90° LINE TRANSITION



### CAUTION!

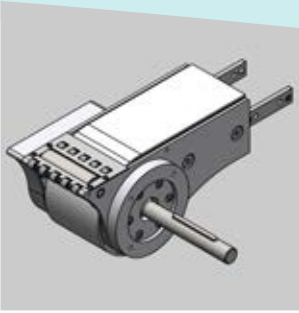
Short conveyed items can be left behind at the point of transfer

			PROD.NO.		
Non-driven roll transfer incl. assembly accessories	FS CS 090 SL	90 °	883610-900	1	stainless steel/plastic
		180 °	883610-910		

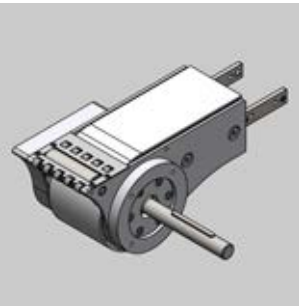
other non-driven roll transfer on request

STRETCH\_LINE

# FS CS090SL ACCESSORIES | DRIVEN ROLL TRANSFER CS SL



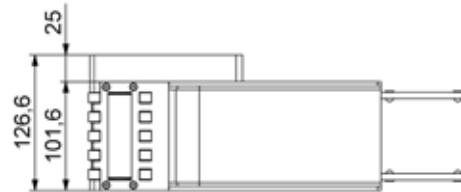
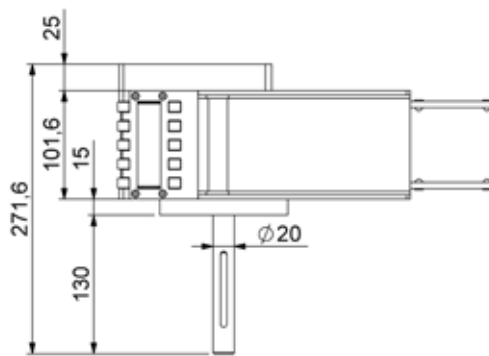
- Driven roll transfer. Available as left and right hand version
- Including assembly accessories for 180° line transitions
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers
- Transmission by multiple round belts to minimize maintenance and production stops



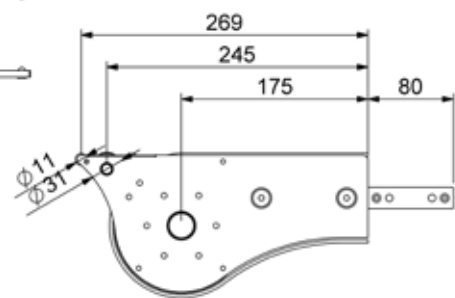
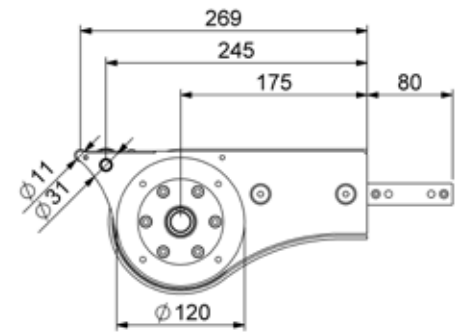
**DRIVE SECTION**



**IDLER UNIT**



## 180° LINE TRANSITION



FS CS090SL ACCESSORIES

STRETCH\_LINE

		RS LS 	PROD.NO.			
driven roll transfer - drive section	FS CS090SL	LS	880102-001	1	stainless steel/ aluminium	0,55m
		RS	880102-002			
driven roll transfer - idler unit		LS	880102-003			
		RS	880102-004			

Rubberized drive roller on request


LS/RS left-hand/right-hand version

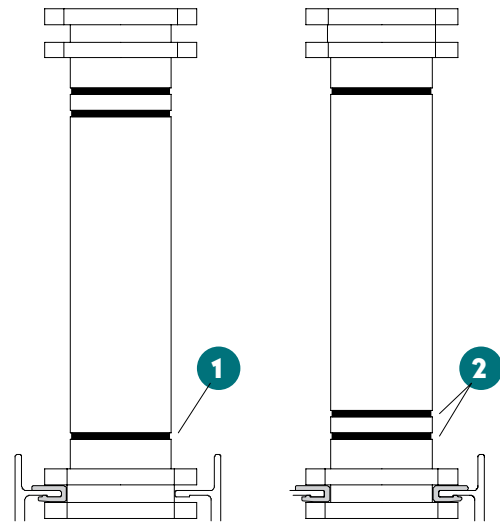
# FS CS090SL TOOLS



## | ASSEMBLY MANDREL

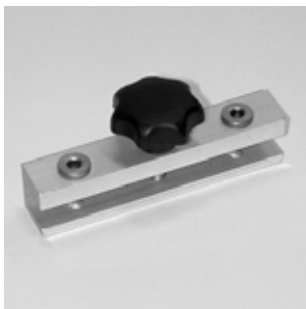
- Assembly tool for clipping the sliding strip on.
- Installing 1st sliding strip: Use the side of assembly mandrel marked with one ring.
- Installing 2nd sliding strip: Use the side of assembly mandrel marked with two rings.

		PROD.NO.	
Assembly mandrel	FS CS090SL	J537 146	1



- 1 Installing 1st sliding strip
- 2 Installing 2nd sliding strip

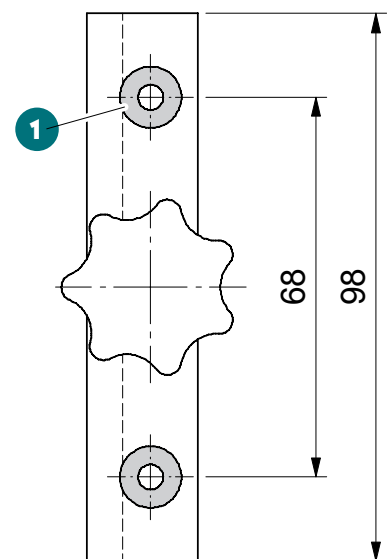
FS CS090SL TOOLS



## | DRILLING JIG

- The sliding strips are fixed to the guide profile with plastic grub screws to absorb axial displacement forces.
- The drilling jig serves as an aid for drilling the required holes.

	PROD.NO.	
Drilling jig	J927 786	1



- 1 4.5 mm dia. drilling bush

STRETCH\_LINE

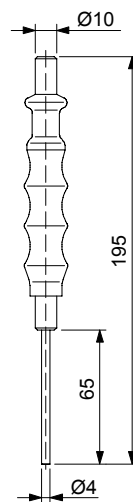
# FS CS090SL TOOLS



## | SPLIT-PIN DRIVER, 4 MM DIA.

- Tool for driving out the chain pen.
- Systems: FS CS065SL / FS CS090SL
- Cushioned safety grip.
- Material: hardened steel.

	PROD.NO.	
Split-pin driver	J537 131	1



FS CS090SL TOOLS



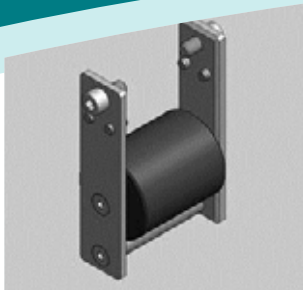
## | CUTTING PLIERS

- For precise cutting of the sliding strips

	PROD.NO.	
Cutting pliers	J537 130	1

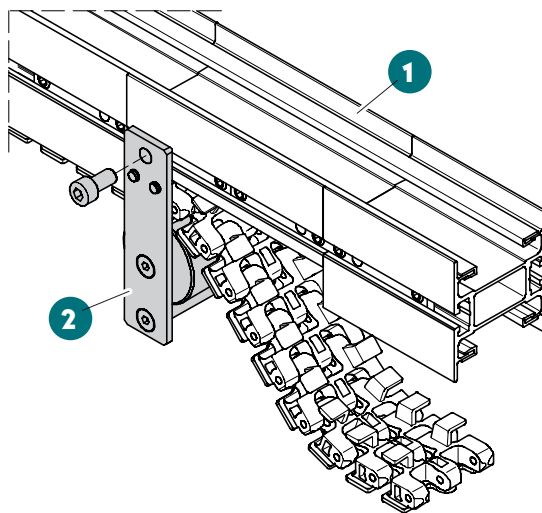


STRETCH\_LINE



## | CHAIN ASSEMBLY AID

- Facilitates feeding the conveyor chain into the line.
- It is attached to the lower side of the chain assembly unit after removing the cover plate.
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers.



- ① Assembly unit
- ② Assembly aid

		PROD.NO.	
Assembly aid	FS CS090SL	J927 824	1



FS CS090SL CLOSED SYSTEM

STRETCH\_LINE





# FS CS090SL CLOSED

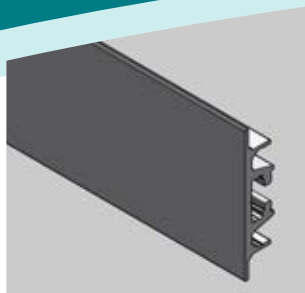
Conveyor system

FS CS090SL CLOSED SYSTEM

STRETCH\_LINE

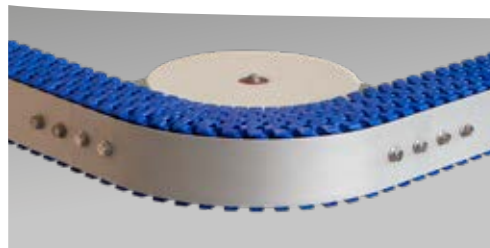





# FS CS090SL CLOSED SYSTEM

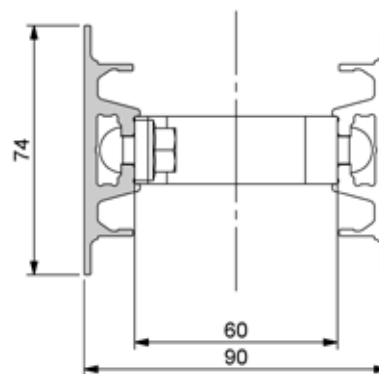


## | GUIDE PROFILE CLOSED

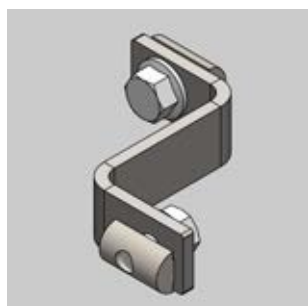
- Line lengths over 6000 mm can be produced by using joints



	PROD.NO.			
Guide profile closed	J924171	6,0 m	EN AW-6063 T66	E6/EV1 anodised finish
Cutting to length	J924969	1		





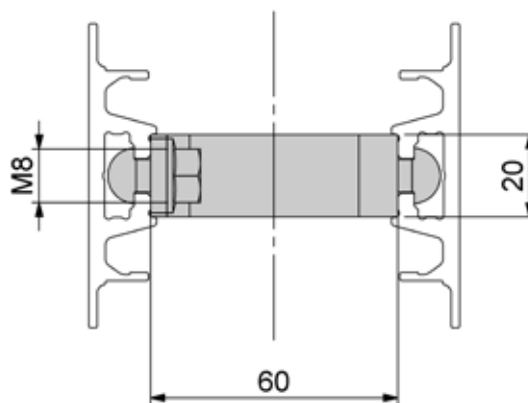
FS CS090SL CLOSED SYSTEM



## | DISTANCE JOINT

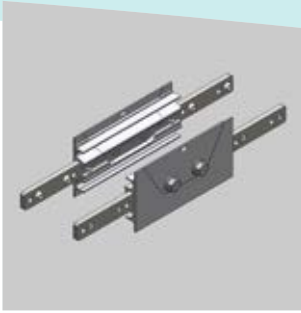
- For the assembly of straight line sections
- Installed in intervals of maximal 600 mm.
- Including fixing material

	PROD.NO.		
Spacer for CS090SL closed	J535934	1	Stainless steel



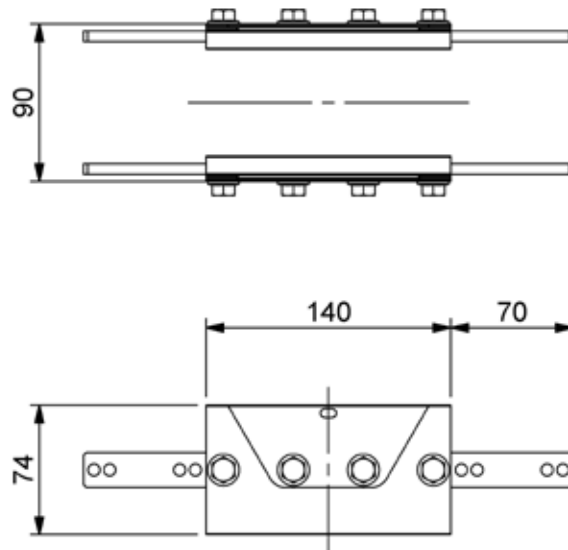
STRETCH\_LINE


# FS CS090SL CLOSED LINE COMPONENTS



## | CHAIN ASSEMBLY UNIT FS CS090SL-C

- The chain assembly unit allows you to feed the chain into the assembled line.
- Can be fitted at any point within the line.
- Line joints are included.
- The sub-frame must be removed for feeding the conveyor chain into the line.
- After fitting the chain pin, the opening in the sub-frame must be closed off with the cover plate.
- The optional chain assembly aid facilitates feeding the conveyor chain into the line. It is attached to the lower side of the assembly unit after removing cover plates and sub-frames.



	PROD.NO.	
Chain assembly unit, CS090SL-C	J927 968	1

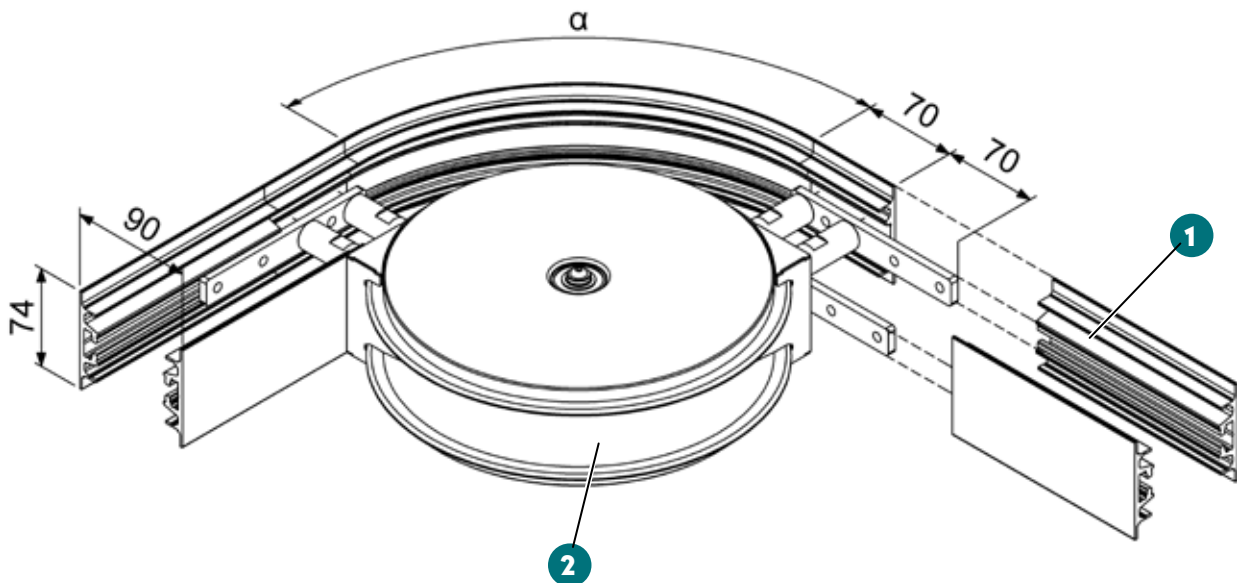
# FS CS090SL CLOSED LINE COMPONENTS



## | HORIZONTAL SLIDING CURVES WITH DISK FS CS090SL-C

- Small radius: 162.5 mm.
- The radius is based on the line centre.
- It is installed in the conveyor line without the need for any work to the joints.
- Completely assembled sliding curve with disk.

### HORIZONTAL SLIDING CURVE WITH DISK FS CS090SL-C, R162,5/90°



- ① Line section guide profile
- ② Hygienic disc (white)



#### NOTE

When installing two horizontal curves with disk, they must be separated by a straight line section of at least 190 mm in length.

	PROD.NO.				
Horizontal sliding curve	J927951	162,5 mm	90°	1	2x 0,44 m
	J927952		180°	1	2x 0,74 m

Other idler angles with multiple of 15° on request

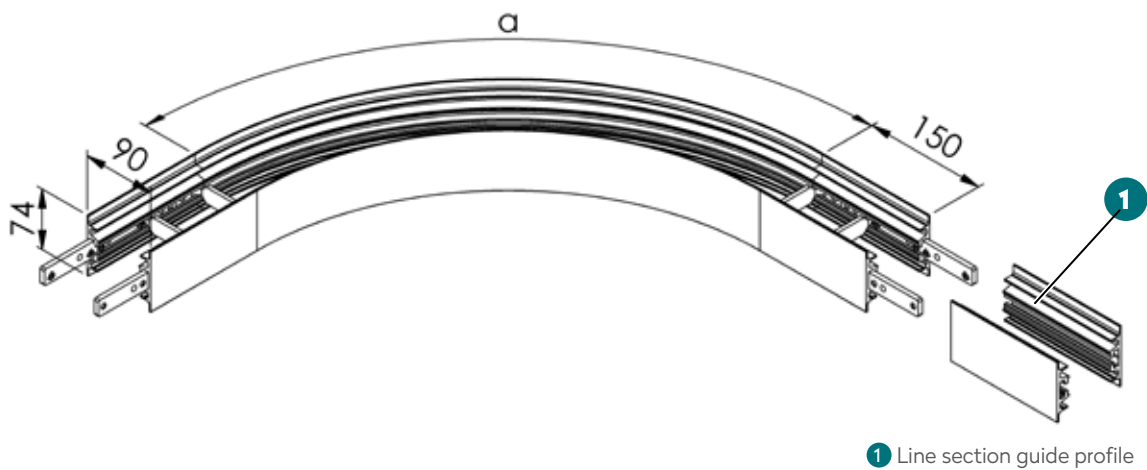
# FS CS090SL CLOSED LINE COMPONENTS



## | HORIZONTAL SLIDING CURVES FS CS090SL-C

- Horizontal sliding curve.
- Various angles available. The radius specified is based on the line centre.
- Min. radius: 250 mm.

### HORIZONTAL SLIDING CURVE FS CS090SL-C, R700/90°



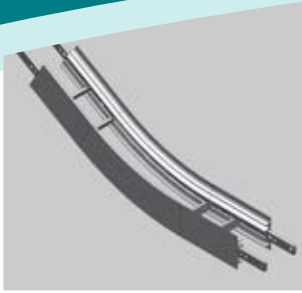
FS CS090SL CLOSED LINE COMPONENTS

			PROD.NO.		
Horizontal sliding curve	400 mm	15°	J927 918	1	2x 0,41 m
		30°	J927 909		2x 0,52 m
		45°	J927 910		2x 0,64 m
		60°	J927 911		2x 0,75 m
		90°	J927 912		2x 0,97 m
	700 mm	30°	J927 953	1	2x 0,68 m
		45°	J927 954		2x 0,87 m
		60°	J927 955		2x 1,06 m
		90°	J927 956		2x 1,44 m

Other idler angles on request

STRETCH\_LINE

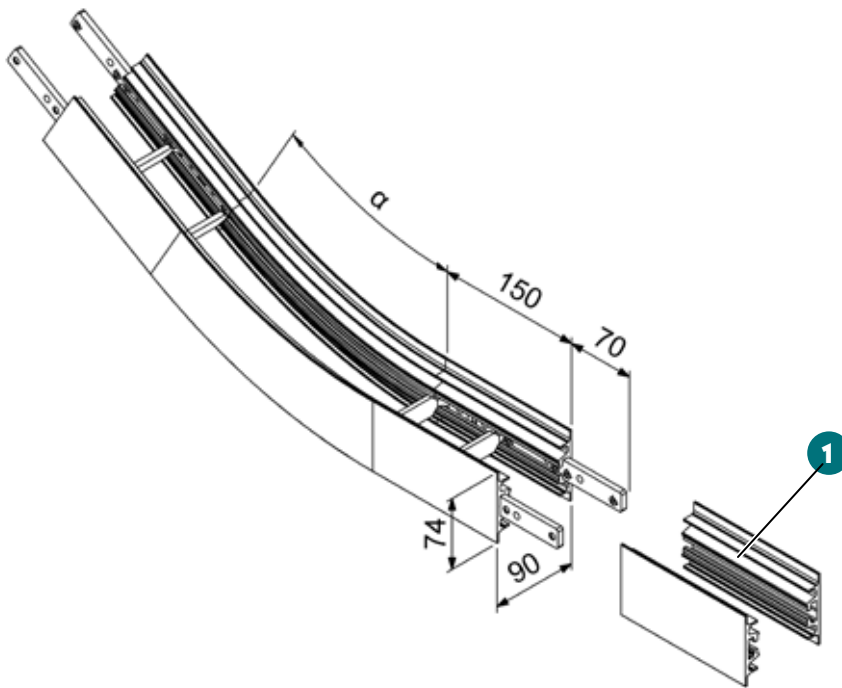
# FS CS090SL CLOSED LINE COMPONENTS



## | VERTICAL SLIDING CURVES FS CS090SL-C

- Vertical sliding curves for conveyor lines with inclines.
- Various angles available. The radius specified is based on the line centre.
- Min. radius: 500 mm.
- Can be used as outside and inside curve.

### VERTICAL SLIDING CURVE FS CS090SL-C, R500/30°



1 guide profile

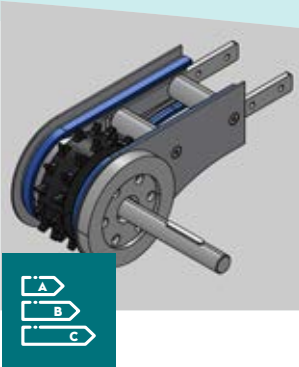
FS CS090SL CLOSED LINE COMPONENTS

STRETCH\_LINE

			PROD.NO.				
Vertical sliding curve	500 mm	5°	J927 957	1	0,34 m	0,35 m	0,69 m
		7°	J927 958		0,36 m	0,37 m	0,73 m
		10°	J927 959		0,38 m	0,39 m	0,77 m
		15°	J927 960		0,42 m	0,44 m	0,86 m
		20°	J927 961		0,46 m	0,49 m	0,95 m
		30°	J927 962		0,54 m	0,58 m	1,12 m
		45°	J927 963		0,67 m	0,72 m	1,39 m
		60°	J927 965		0,79 m	0,86 m	1,65 m

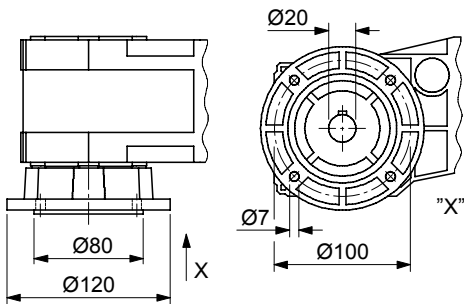
Other idler angles on request

# FS CS090SL CLOSED DRIVES | FS CS090SL CLOSED DIRECT DRIVE

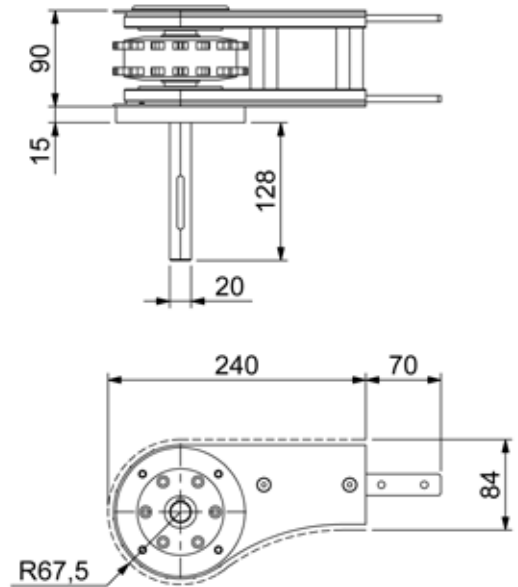


- Compact design
- The drive motor is positioned at the side of the guide profile - left or right.
- Either with or without motor
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR



## DIRECT DRIVE FS CS090SL, RIGHT-HAND DRIVE MOTOR



### NOTE

Observe rating and servicing details in "Basic technical information".

	RS LS		PROD.NO.						
					m	N	m/min	mm	m
Direct drive	LS	○	J927940	1	30	1250	80	118,5	0,55
		●	■ on request						
	RS	○	J927943						
		●	■ on request						

LS/RS Left-hand/right-hand version

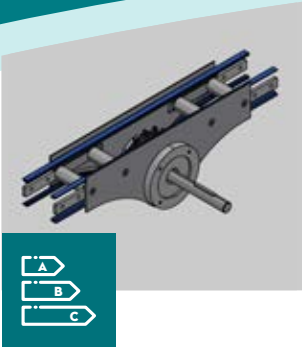
● / ○ With/without motor

■ Specify conveyor speed

FS CS090SL CLOSED DRIVES

STRETCH\_LINE

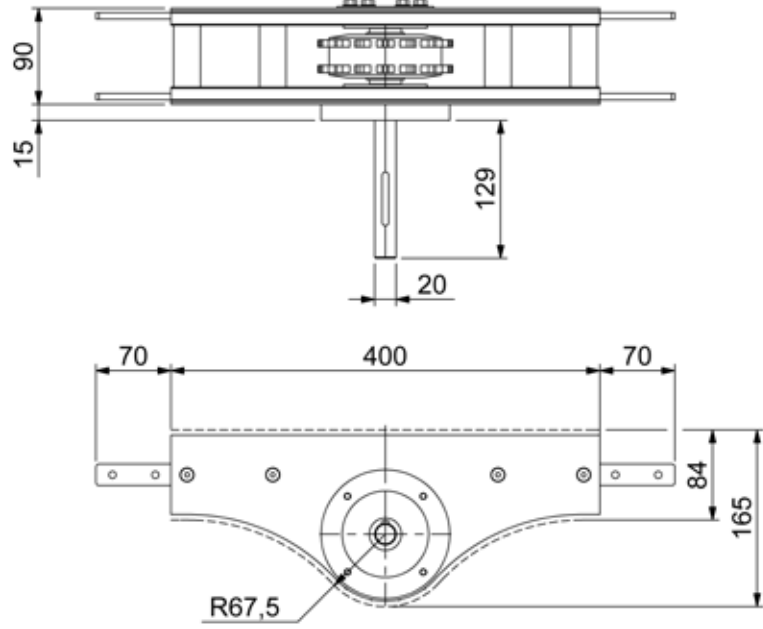
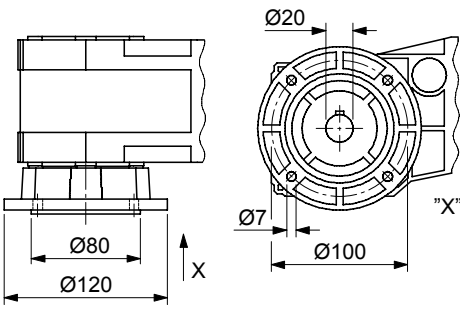
# FS CS090SL CLOSED DRIVES | FS CS090SL CLOSED CENTRE DRIVE



- The transmission gear assembly can be positioned on the left or right.
- Slip clutch is included
- Either with or without motor.
- Chain-gear transmission ratio  $i=0.92$ .
- For smooth chain circulation and minimum wear, the drive should be positioned as close as possible to the idler at the end of the line.
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR

## DIRECT CENTRE DRIVE FS CS090SL, RIGHT-HAND DRIVE MOTOR



FS CS090SL CLOSED DRIVES



### NOTE

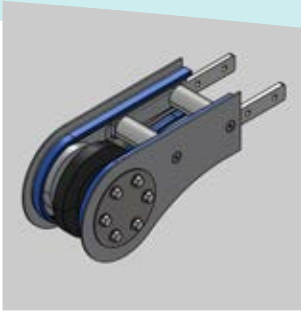
Observe rating and servicing details in "Basic technical information". The unit can be used as a left-hand version by turning it in the line.

STRETCH\_LINE

					PROD.NO.					
				m/min			m	N	mm	m
Direct centre drive	J534 068.101	LS/RS	<input type="radio"/>	40	J929 919 ■ on request	1	10	400	118,5	0,83
	Others	LS/RS	<input type="radio"/>	40	J929 920 ■ on request	1	10	200	118,5	0,83

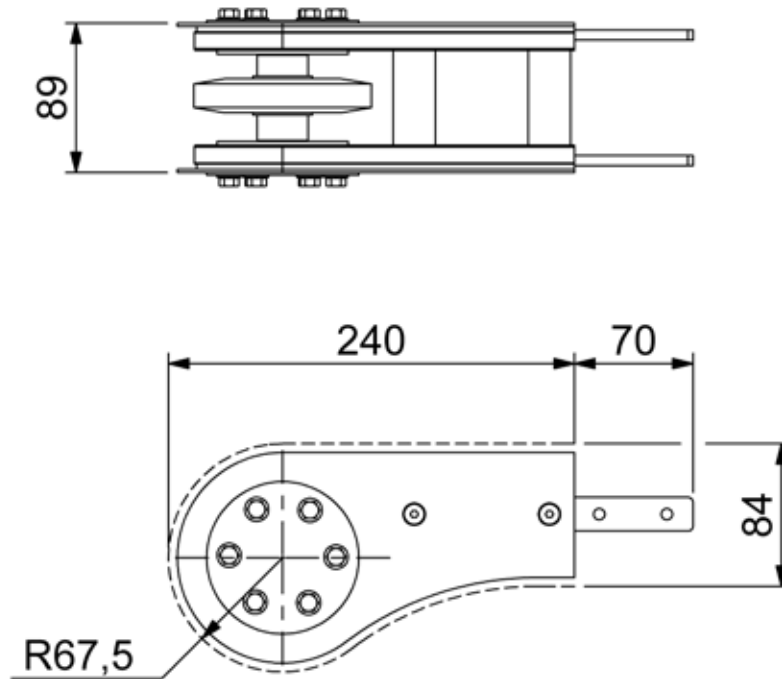
LS/RS Left-hand/right-hand version    ●/○ With/without motor    ■ Specify conveyor speed

# FS CS090SL CLOSED IDLERS | VERTICAL IDLER FS CS090SL CLOSED






- 180° vertical idler is installed at the end of the conveyor for return chain travel underneath the line.

## VERTICAL IDLER FS CS090SL CLOSED, 180°



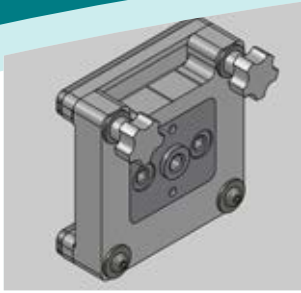
FS CS090SL CLOSED IDLERS

		PROD.NO.		
Vertical idler CS090SL Closed, 180°	180°	J927 949	1	0,55m

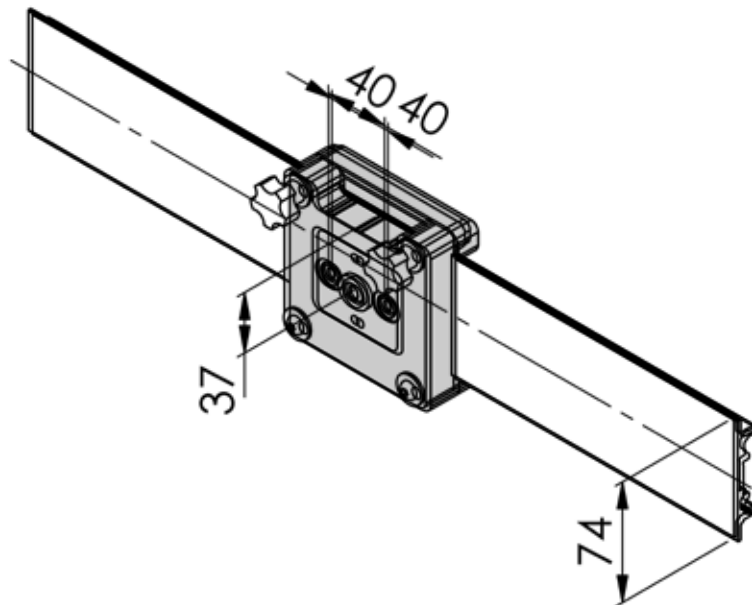
STRETCH\_LINE




# FS CS090SL CLOSED TOOLS | DRILLING JIG



- The drilling jig serves as an aid for drilling the holes required for legs and side guides in the center of the profile
- 2x Ø7mm, drilling bush
- 1x Ø8,5mm, drilling bush



	PROD.NO.	
Drilling jig Closed profile	J927 986	1



## NOTE

Drive- and idler section, chain and sliding strip are the same as the default CS090SL program



FS CS200SL

STRETCH\_LINE



# FS CS200SL

Conveyor system

FS CS200SL

STRETCH\_LINE

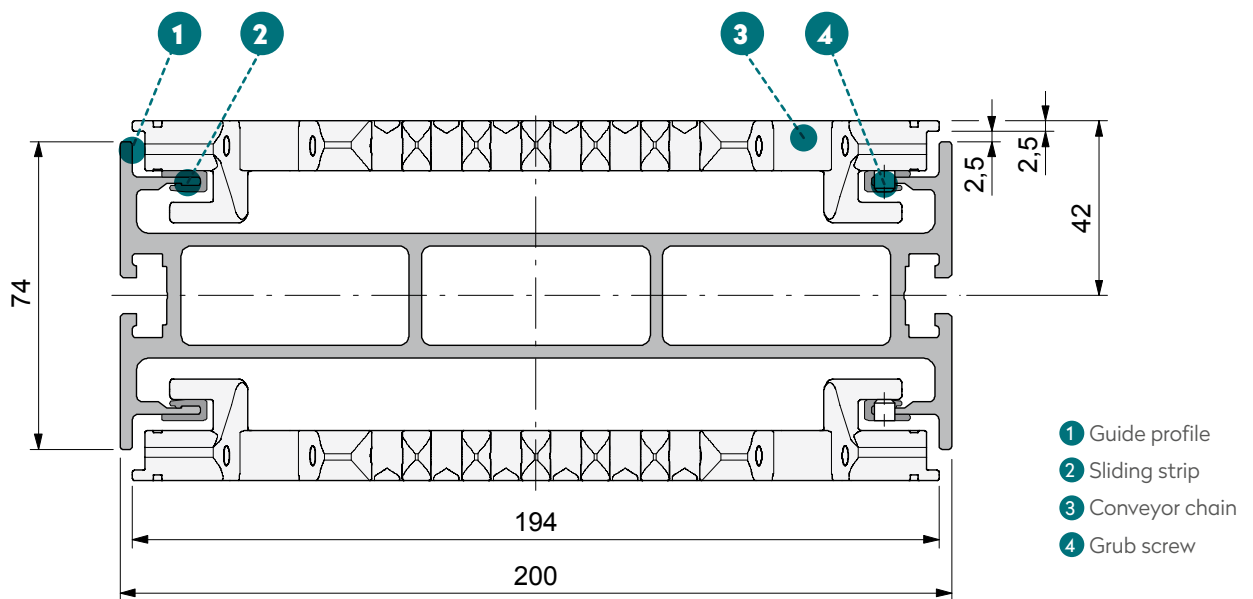
# FS CS200SL OVERVIEW



Feeding, filling, packaging individual items and onward conveyance in bulk containers, cardboard boxes etc.

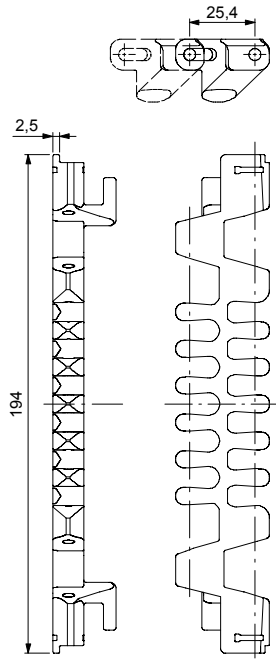
- Overall width 200 mm
- Chain width 194 mm
- Product/container width 100 - 400 mm
- Max. product weight 15 kg
- Maximum load 200 kg
- Max. conveying length 30 m
- Max. conveying speed 90 m/min
- Available drives:
  - Vertical drives
  - Direct drives
  - Center drives
- Compatible with railing system:
  - Variable guide width 100 - 450 mm
  - Variable guide height 15 - 400 mm

FS CS200SL OVERVIEW

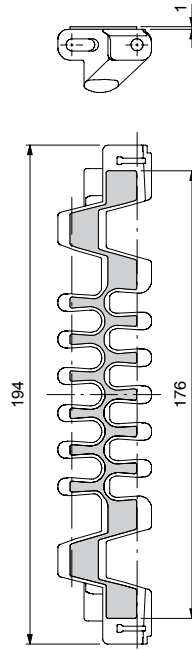


STRETCH\_LINE

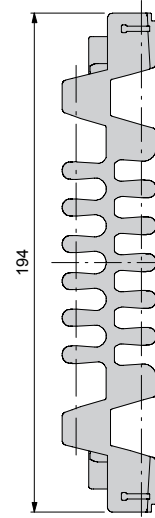
**FS CS200SL STANDARD CHAIN**



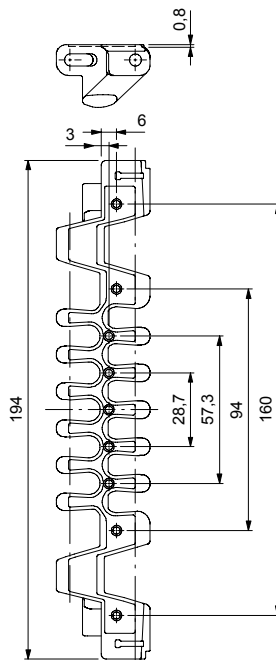
**FS CS200SL CHAIN WITH FRICTION LINING**



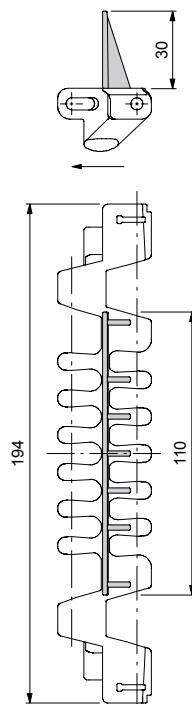
**FS CS200SL ANTISTATIC CHAIN**



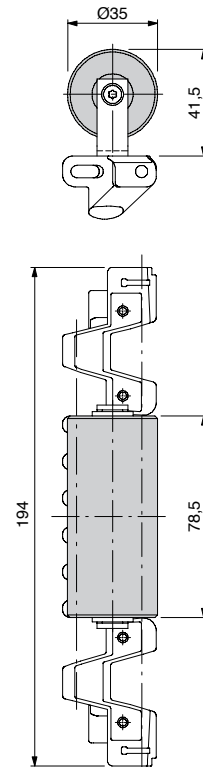
**FS CS200SL UNIVERSAL CHAIN**



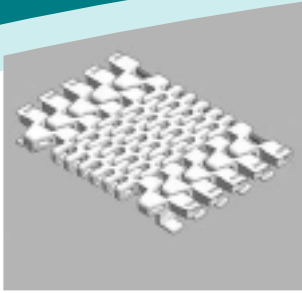
**FS CS200SL CHAIN WITH CATCH PLATE**



**FS CS200SL CHAIN WITH CATCH ROLLERS**

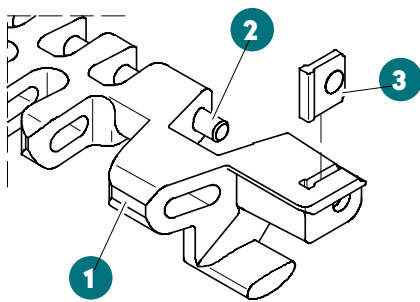


# FS CS200SL LINE COMPONENTS

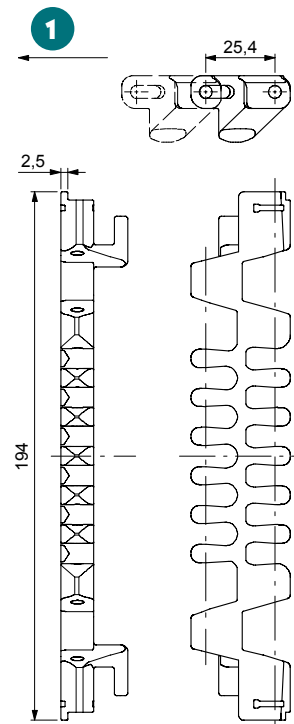


## | CHAIN FS CS200SL STANDARD

- Standard chain for horizontal conveyance.
- Suitable for accumulating conveyor mode.
- Pin-connected, articulating chain links.
- Lock for securing pin.



- 1 Chain link
- 2 Chain pin
- 3 Lock



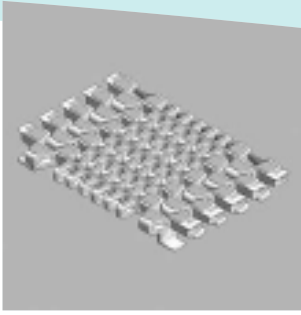
1 Direction of travel

FS CS200SL LINE COMPONENTS

	PROD.NO.					
Chain CS200SL, standard	J535 069	4,0 m	POM	white	3,0 kg/m	1500 N
Chain link, individual	J535 072	10	POM	white		1500 N
Chain pin, individual	J534 012	20	Stainless steel	grey		
Chain CS200SL, standard blue	J535069.101	4,0 m	POM	blue	3,0 kg/m	1500 N
Lock, individual	J535 071	40	POM	white		






STRETCH\_LINE

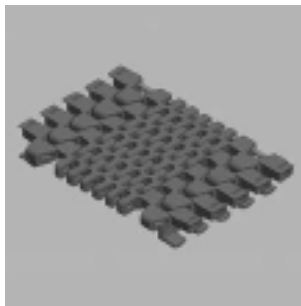
# FS CS200SL LINE COMPONENTS



## | CHAIN FS CS200SL WITH FRICTION LINING






- Chain with anti-slip coating to increase adhesion on inclines.
- Well suited to conveying smooth-surfaced items.
- Friction lining in wear-resistant rubber.
- Not suitable for accumulating conveyor mode.

	PROD.NO.					
Chain CS200SL, with friction lining	J535 074	4,0 m	PA	white	2,7 kg/m	750 N
Chain link, individual	J535 075	10	PA	white		750 N
Chain pin, individual	J534 012	20	Stainless steel	grey		
Lock, individual	J535 071	40	POM	white		



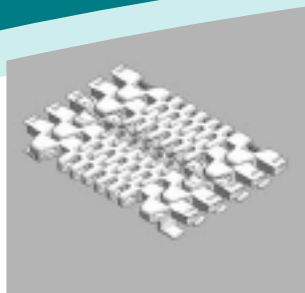
## | CHAIN FS CS200SL ANTISTATIC

- Standard chain in antistatic finish.
- For use only in conjunction with antistatic sliding strip and drive unit.

	PROD.NO.					
Chain CS200SL, antistatic	J535 079	4,0 m	POM	black	3 kg/m	1200 N
Chain link, individual	J535 090	10	POM	black		1200 N
Chain pin, individual	J534 012	20	Stainless steel	grey		
Lock, individual	J535 071	40	POM	black		



# FS CS200 SL LINE COMPONENTS

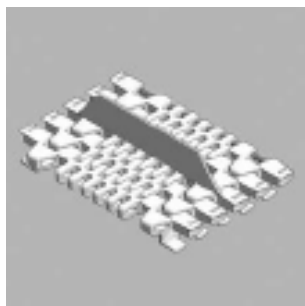


## | CHAIN CS200SL UNIVERSAL

- Universal chain links are inserted in the standard chain at recurrent intervals.
- Chain for universal application with drill holes in the base plate.
- Capability of fitting various conveyor components (e.g. catch plates, rollers) using Ø3.9 mm self-tapping bolts.

	PROD.NO.					
Chain link, individual	J535 076	10	POM	white	3,0kg/m	1000 N
Chain pin, individual	J534 012	20	Stainless steel	grey		
Lock, individual	J535 071	40	POM	white		

FS CS090SL LINE COMPONENTS



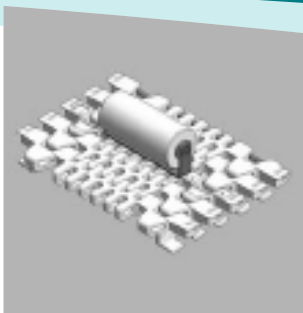
## | CHAIN CS200SL WITH CATCH PLATE

- Chain for vertical conveyance.
- Chain links with catch plates are inserted in the standard chain at recurrent intervals.
- Catch plate height 30 mm.

	PROD.NO.					
Chain link, individual	J535 073	10	POM	white	3,1kg/m *	1500 N
Chain pin, individual	J534 012	20	Stainless steel	grey		
Lock, individual	J535 071	40	POM	white		






STRETCH\_LINE

# FS CS200 SL LINE COMPONENTS

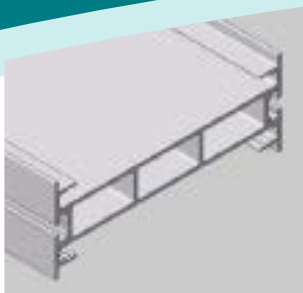


## | CHAIN FS CS200SL WITH CATCH ROLLERS

- Chain links with catch rollers are inserted in the standard chain at recurrent intervals.
- At least one standard link must be inserted between two catch rollers

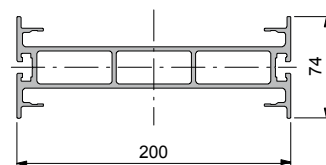
	PROD.NO.					
Chain link, individual	J535 077	10	POM	white	3,6kg/m *	1000 N
Chain pin, individual	J534 012	20	Stainless steel	grey		
Lock, individual	J535 071	40	POM	white		

# FS CS200SL LINE COMPONENTS






## | GUIDE PROFILE FS CS200SL

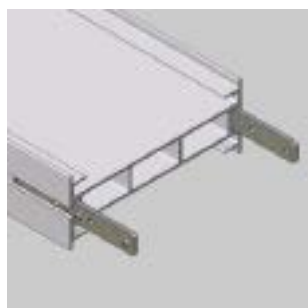
- Line lengths over 6000 mm can be produced by using joints.



CROSS SECTION

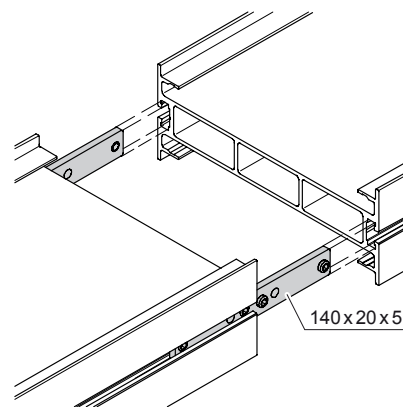
	PROD.NO.			
Guide profile CS200SL	J924 179	6,0 m	EN AW-6063 T66	E6/EV1 anodised finish
Cutting to length	J924 969	1		




FS CS200SL LINE COMPONENTS



## | LINE JOINT CS SL

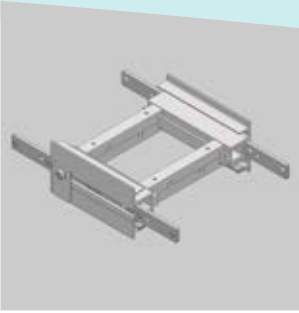
- Joints are pushed into the profile groove and fixed in place with the premounted grub screws.
- No additional work to the profile is necessary.



	PROD.NO.			
Line joint	J927 803	2	steel	galvanised

STRETCH\_LINE

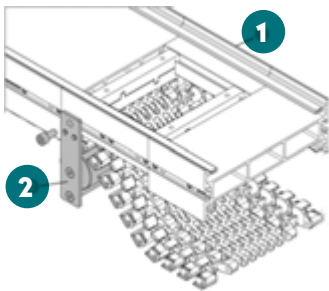
# FS CS200SL LINE COMPONENTS



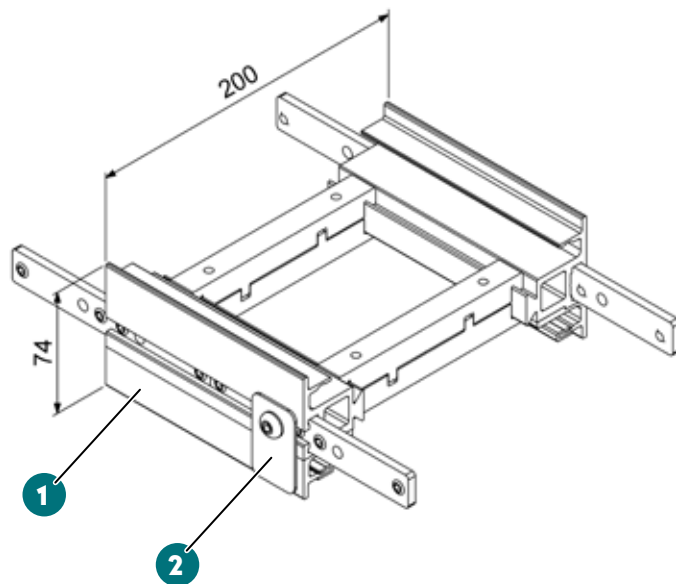
## | CHAIN ASSEMBLY UNIT FS CS200SL

- The chain assembly unit allows you to feed the chain into the assembled line.
- Can be fitted at any point within the line.
- Line joints are included in delivery.
- The sub-frames must be removed for feeding the conveyor chain into the line.
- After fitting the chain pin, the opening in the sub-frame must be closed off with the cover plate.
- The optional chain assembly aid facilitates feeding the conveyor chain into the line. It is attached to the lower side of the assembly unit after removing the cover plates and the sub-frames.


### USING THE CHAIN ASSEMBLY AID



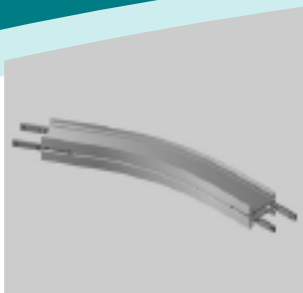
- 1 Assembly unit
- 2 Assembly aid



- 1 Sub-frame
- 2 Cover

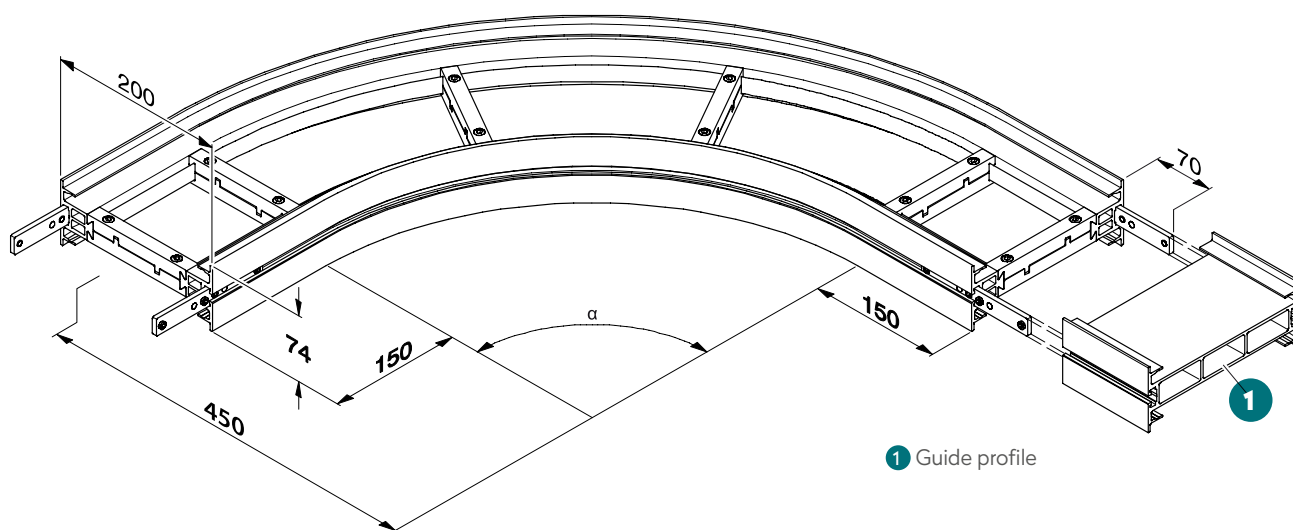
	PROD.NO.	
Chain assemblu unit CS200SL	J927 826	1
Assembly aid	J927 821	1

# FS CS200SL LINE COMPONENTS | HORIZONTAL SLIDING CURVES FS CS200SL



- Horizontal sliding curve.
- Various angles available. The radius specified is based on the line centre.
- Min. radius: 450 mm.

## HORIZONTAL SLIDING CURVE FS CS200SL, R450/90°



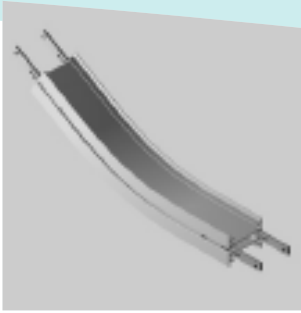
FS CS200SL LINE COMPONENTS

			PROD.NO.		
Horizontal sliding curve	450 mm	30°	J927 746	1	2x 0,57 m
		45°	J927 747		2x 0,70 m
		60°	J927 748		2x 0,84 m
		90°	J927 750		2x 1,10 m

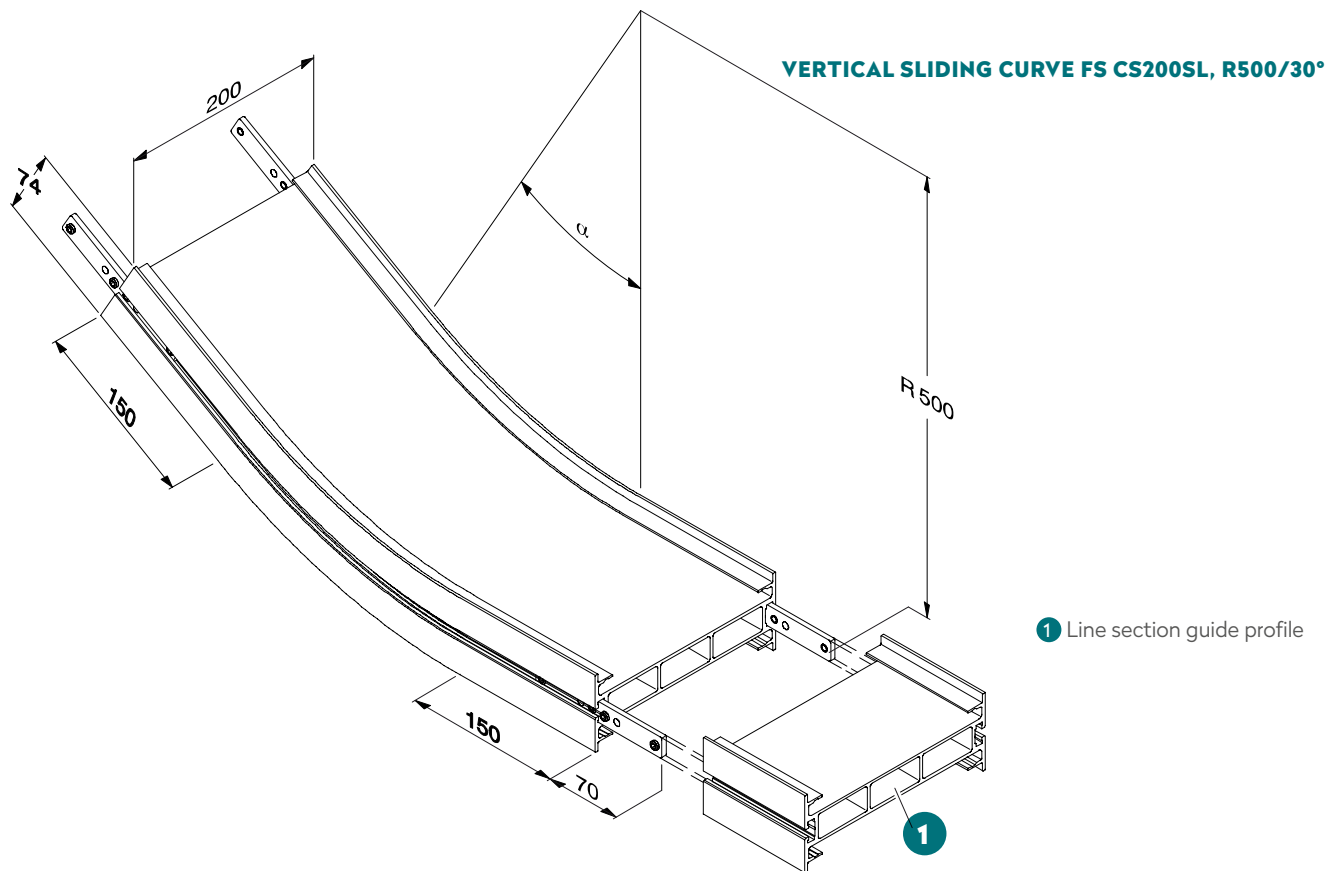
Other idler angles on request

STRETCH\_LINE

# FS CS200SL LINE COMPONENTS | VERTICAL SLIDING CURVES FS CS200SL



- Vertical sliding curves for conveyor lines with inclines.
- Various angles available. The radius specified is based on the line centre.
- Min. radius: 500 mm.
- Can be used as outside and inside curve.



1 Line section guide profile

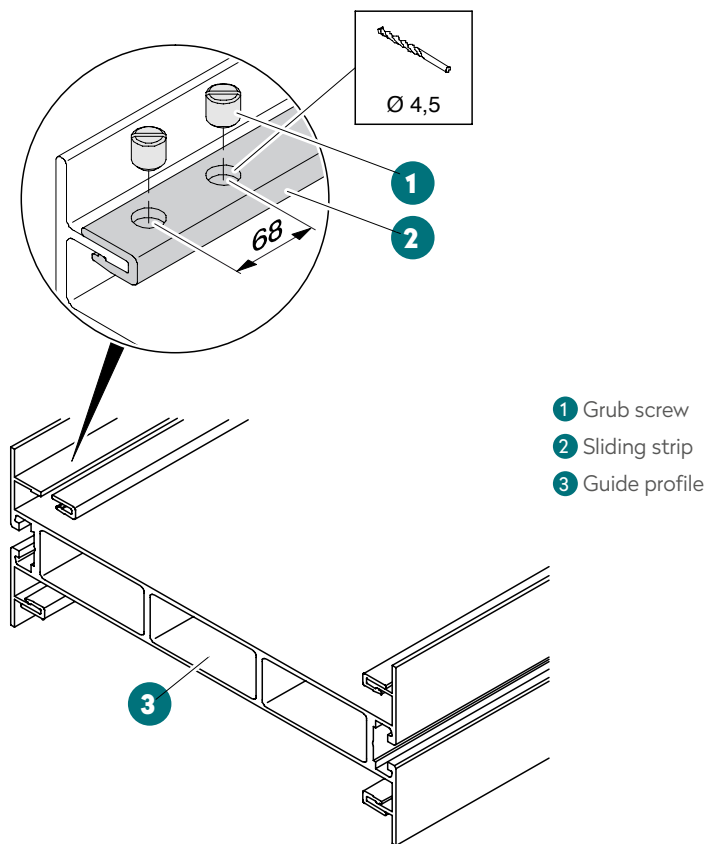
			PROD.NO.				
Vertical sliding curve	500 mm	5°	J927 745	1	0,34 m	0,35 m	0,69 m
		7°	J927 772		0,36 m	0,37 m	0,73 m
		10°	J927 773		0,38 m	0,39 m	0,77 m
		15°	J927 774		0,42 m	0,44 m	0,86 m
		20°	J927 775		0,46 m	0,49 m	0,95 m
		30°	J927 777		0,54 m	0,58 m	1,12 m
		45°	J927 784		0,67 m	0,72 m	1,39 m
		60°	J927 802		0,79 m	0,86 m	1,65 m
		90°	J927 828		1,03 m	1,14 m	2,17 m

Other idler angles on request

# FS CS200SL LINE COMPONENTS | SLIDING STRIP CS SL






- Sliding strip for minimising friction between chain and profile.
- Properties:
  - Outstanding sliding behaviour
  - Extremely hard surface for minimum wear
  - Suitable for higher conveyor speeds.
- The sliding strip is clipped on and fixed in place after assembling the line. Joints in the guide profile should not coincide with joints in the sliding strip.
- Worn sliding strips are easy to remove and renew.



FS CS200SL LINE COMPONENTS

STRETCH\_LINE

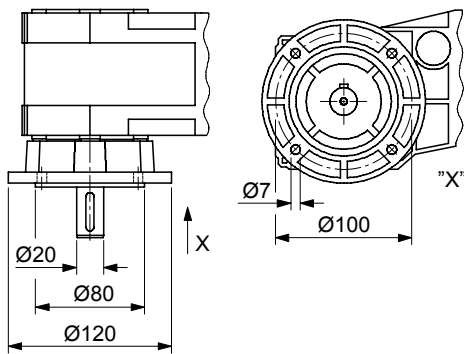
	PROD.NO.			
Sliding strip, standard	J537 015	25,0 m	PA-modified	grey
Sliding strip, antistatic	J537 016	25,0 m	PE 500	black
Sliding strip	J537 017	25,0 m	PA-modified	blue
Sliding strip, ultra low friction	J537 020	25,0 m	LubX CV	Naturel
Grub screw m5 x 5	J535 380	25	POM	white
Drilling jig	J927 786	1		

# FS CS200SL DRIVES | VERTICAL DRIVES FS CS200SL

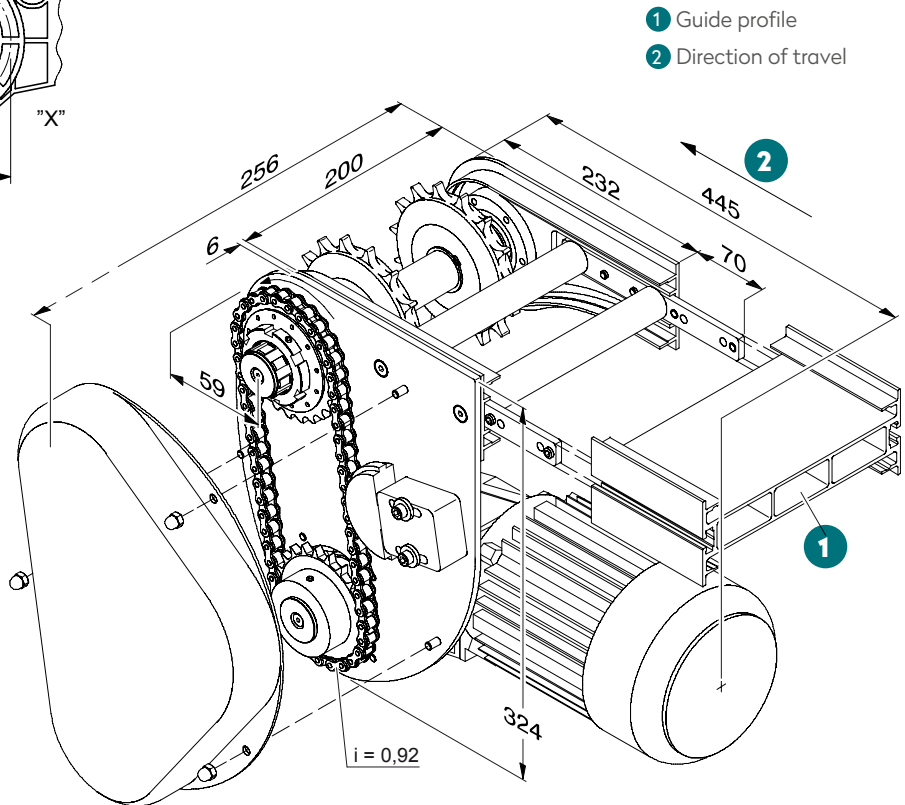


- The drive motor is suspended below the guide profile.
- Left-hand or right-hand version, either with or without motor.
- Slip clutch is included.
- Chain transmission ratio  $i = 0.92$ .
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR



## FS CS200SL VERTICAL DRIVE, LEFT-HAND VERSION



- 1 Guide profile
- 2 Direction of travel



### NOTE

Observe rating and servicing details in "Basic technical information".

	RS LS		PROD.NO.						
					m	N	m/min	mm	m
Vertical drive	LS	○	J927 797	1	30	800	60	118,5	0,55
	RS		J927 798						
	LS/RS		■ on request						

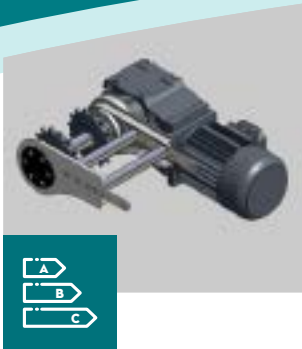
LS/RS Left-hand/right-hand version

●/○ With/without motor

■ Specify conveyor speed



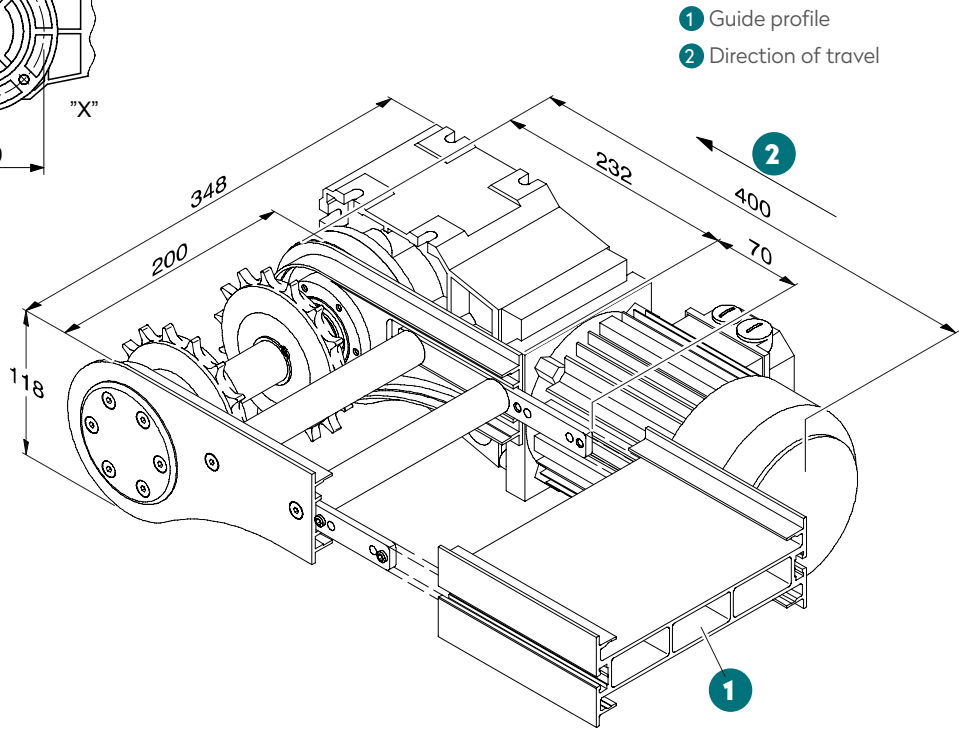
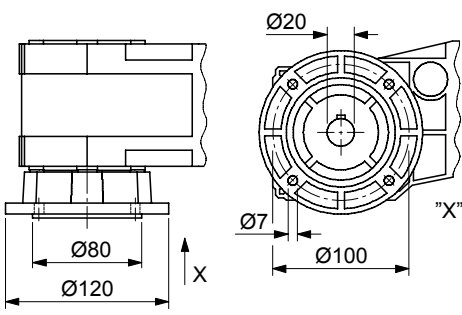
# FS CS200SL DRIVES | DIRECT DRIVES FS CS200SL



- Compact design.
- The drive motor is positioned at the side of the guide profile - left or right.
- Either with or without motor.
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR

## FS CS200SL DIRECT DRIVE, RIGHT-HAND DRIVE MOTOR



- 1 Guide profile
- 2 Direction of travel

FS CS200SL DRIVES



### NOTE

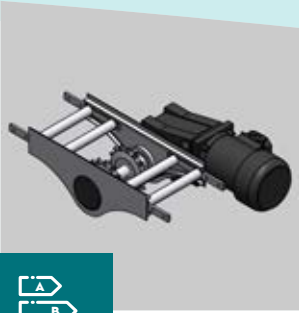
Observe rating and servicing details in "Basic technical information".

	RS LS		PROD.NO.						
					m	N	m/min	mm	m
Direct drive	LS	○	J927 799	1	30	1250	60	118,5	0,55
	RS	○	J927 801						
	LS/RS	●	■ on request						

LS/RS Left-hand/right-hand version    ● / ○ With/without motor    ■ Specify conveyor speed

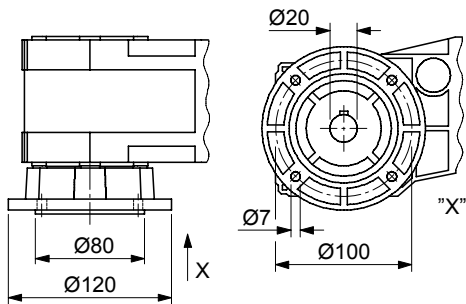
STRETCH\_LINE

# FS CS200SL DRIVES | DIRECT CENTRE DRIVES FS CS200SL

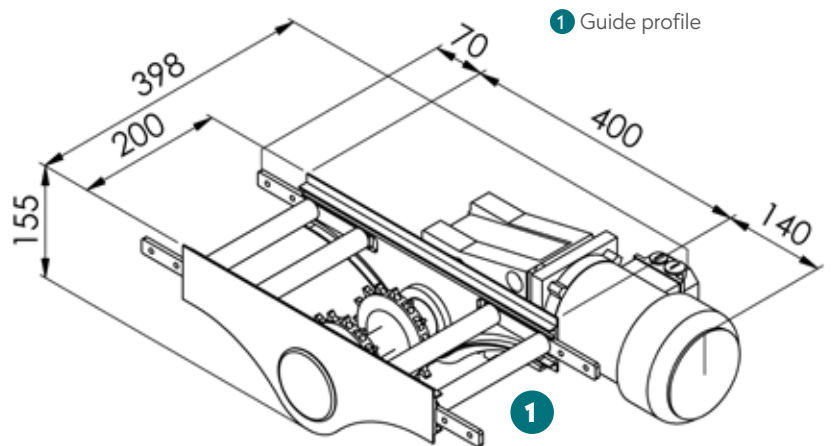


- Compact design.
- The drive motor is positioned at the side of the guide profile - left or right.
- For smooth chain circulation and minimum wear, the drive should be positioned as close as possible to the idler at the end of the line.
- Conveying direction can be reversed during operation.
- Antistatic version on request.

## CONNECTING DIMENSIONS FOR MOTOR



## DIRECT CENTRE DRIVE FS CS200SL, RIGHT-HAND DRIVE MOTOR



FS CS200SL DRIVES



### NOTE

Observe rating and servicing details in "Basic technical information". The unit can be used as a left-hand version by turning it in the line.

				PROD.NO.					
	LS/RS	○ / ●	m/min			m	N	mm	m
Direct centre drive	LS/RS	○	40	J927800	1	10	400	118,5	0,83
		●		■ On request					

LS/RS Left-hand/right-hand version

● / ○ With/without motor

■ Specify conveyor speed

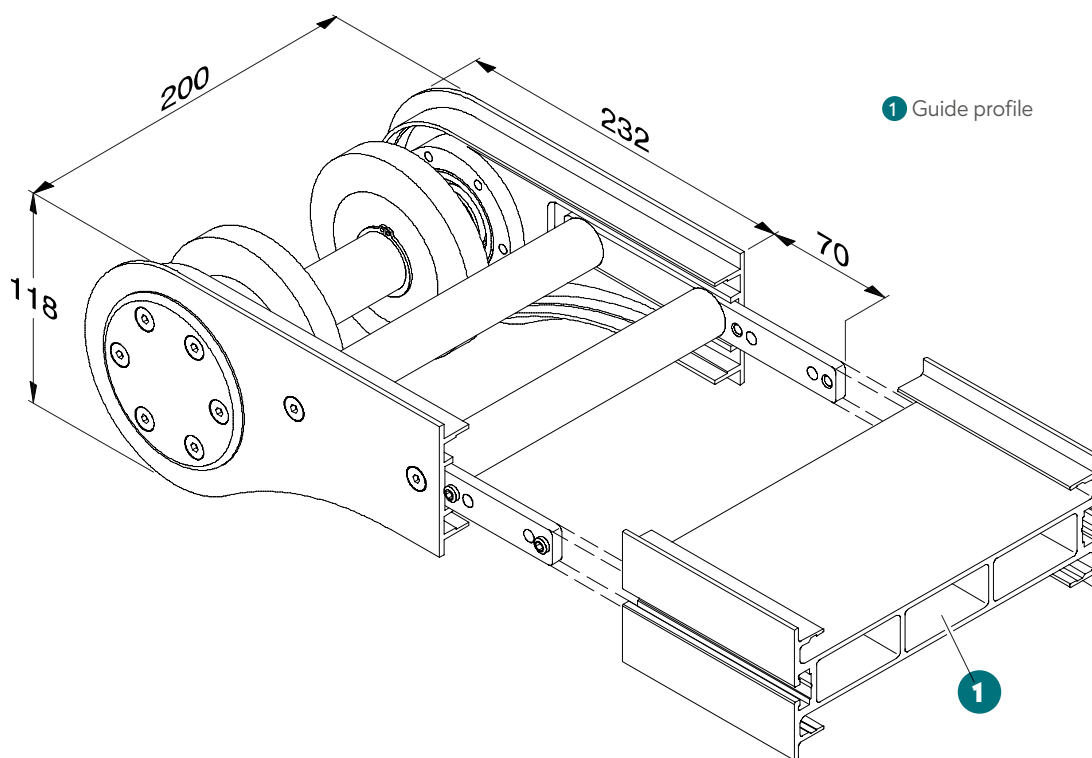
STRETCH\_LINE



# FS CS200SL IDLERS | VERTICAL IDLER FS CS200SL



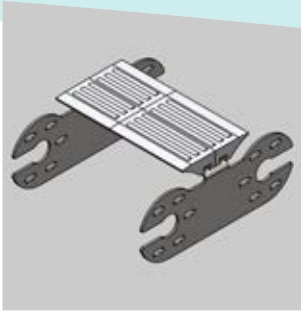
- Vertical idler for installing at the end of the conveyor line.
- Idler and guide profile are of equal width, line transitions can be created without a gap.

## FS CS200SL VERTICAL IDLER, 180°

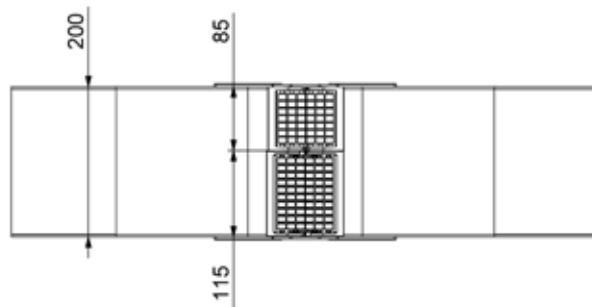


	RS LS	PROD.NO.		
Vertical idler CS200SL, 180 (grad)	180°	J927 827	1	0,55 m

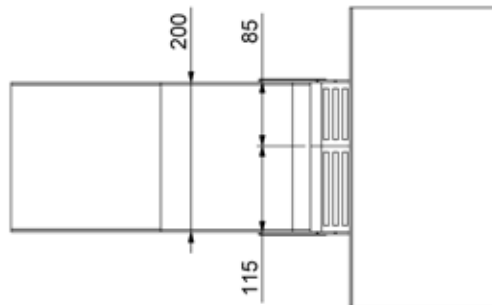
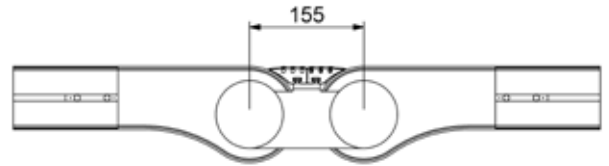
# FS CS200SL ACCESSORIES | NON-DRIVEN ROLL TRANSFER CS SL



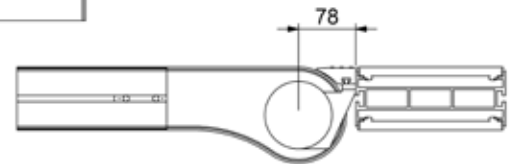
- Passive roll transfer
- Including assembly accessories for 90° and 180° line transitions
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers
- Ø11 mm Rollers at a 12,6mm pitch



180° LINE TRANSITION



90° LINE TRANSITION



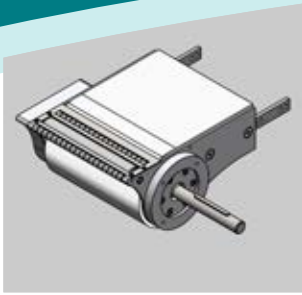
**CAUTION!**

Short conveyed items can be left behind at the point of transfer

			<b>PROD.NO.</b>		
Non driven transfer	FS CS200SL	90°	883603-900	1	stainless steel/ plastic
		180°	883603-910		

other non-driven roll transfer on request

# FS CS200SL ACCESSORIES | DRIVEN ROLL TRANSFER CS SL

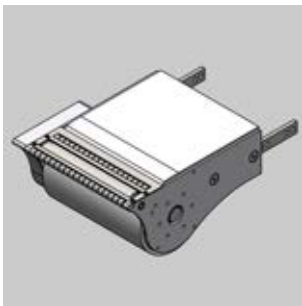
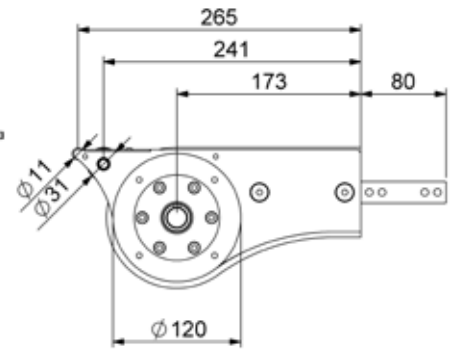
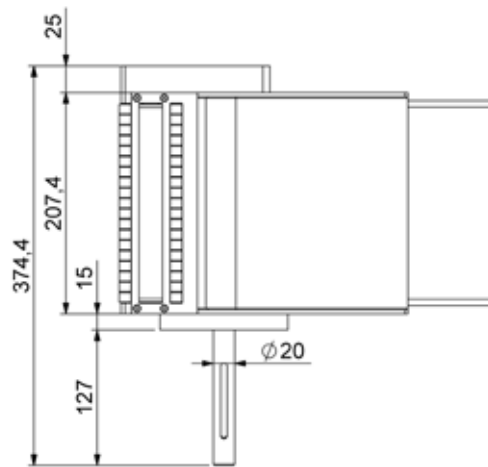


- Driven roll transfer. Available as left and right handed version
- Including assembly accessories for 180° line transitions
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers
- Transmission by multiple round belts to minimize maintenance and production stops

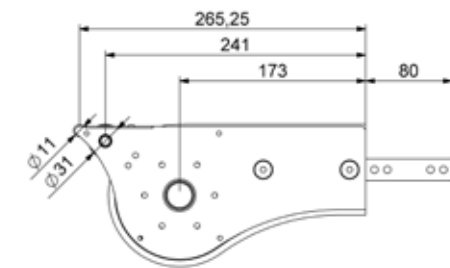
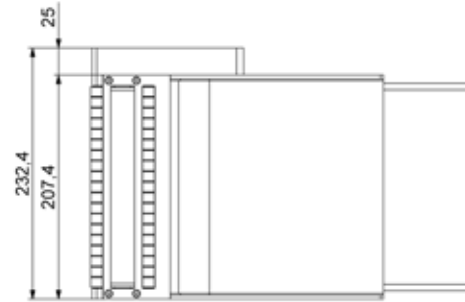
FS CS200SL ACCESSORIES







**DRIVE SECTION**



**IDLER UNIT**



		<div style="display: flex; justify-content: space-around;"> <span>RS</span> <span>LS</span> </div> 	PROD.NO.			
driven roll transfer - drive section	FS CS200SL	LS	880120-001	1	stainless steel/ aluminium	0,55m
		RS	880120-002			
driven roll transfer - idler unit		LS	880120-003			
		RS	880120-004			

Rubberized drive roller on request

LS/RS left-hand/right-hand version


STRETCH\_LINE

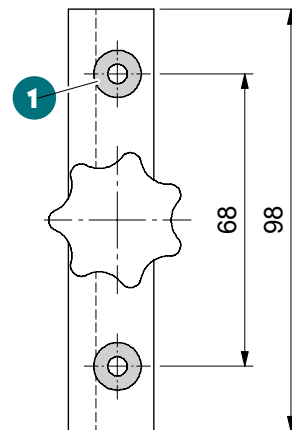
# FS CS200SL TOOLS



## | DRILLING JIG

- The sliding strips are fixed to the guide profile with plastic grub screws to absorb axial displacement forces.
- The drilling jig serves as an aid for drilling the holes required.

	PROD.NO.	
Drilling jig	J927 786	1



1 4.5 mm dia. drilling bush

FS CS200SL TOOLS



## | CUTTING PLIERS

- For cutting of sliding strips

	PROD.NO.	
Cutting pliers	J537 130	1



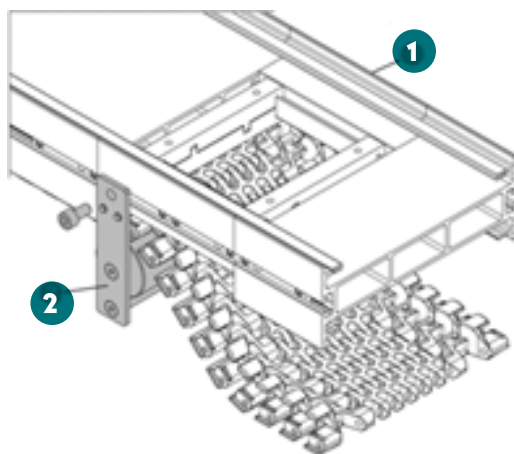
STRETCH\_LINE

# FS CS200SL TOOLS



## | CHAIN ASSEMBLY AID

- Facilitates feeding the conveyor chain into the line.
- It is attached to the lower side of the chain assembly unit after removing the cover plate.
- Not suitable for chains with catch plates, catch/accumulating rollers or grippers.



- ① Assembly unit
- ② Assembly aid

		PROD.NO.	
Assembly aid	FS CS200SL	J927 821	1









# CS Energy efficiency

## Saving energy from innovations

Energy costs are growing from year to year – the heating-oil bill or a visit to the filling station are constant reminders. Whether greenhouse effect, global warming or scarce resources: Everything suggests that the environmental aspect too will keep the price spiral turning – and no end is in sight.

These reasons make it necessary to reduce the consumption of resources by looking for alternative ways of generating energy and, at the same time, by using energy much more efficiently. Only this way will it be possible to reduce the impacts on the environment while maintaining the levels of production and prosperity that

have been reached. All industrialised nations have therefore set themselves ambitious targets for reducing CO<sub>2</sub> emission.

The energy balance of each and every individual will ultimately determine how long resources will last. This is why everyone should examine ways of adapting their production practices and consumption behaviour to comply with the changed conditions.

You will find further information on the Internet at [www.fssolutions.nl](http://www.fssolutions.nl)

# CS ENERGY EFFICIENCY | WAYS OF IMPROVING ENERGY EFFICIENCY IN CONVEYOR SYSTEMS



## FS SOLUTIONS CONVEYOR SYSTEMS WITH OPTIMISED ENERGY EFFICIENCY

The CS (Conveyor systems) range from FS Solutions is setting new standards in energy-saving material flows -- also in complex solutions. Developing our Conveyor systems, we focused our attention on the following goals:

- Reducing drive power
- Cutting friction
- Reducing wear
- Increasing useful life
- Cutting noise emission
- High level of reliability
- Maximising system availability.

## PROBLEMS IN CONVEYING

Today, the unwanted high level of friction in Conveyor systems leads to the following problems:

- the pulling medium (chain) is exposed to extreme levels of stress
- the sliding components build up high levels of heat.

This necessitates a high level of drive power.

The energy efficiency of the drive components is governed by:

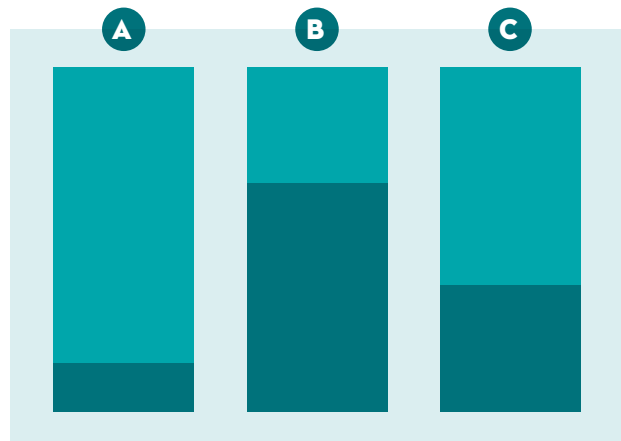
- the efficiency of the drive components
- the energy efficiency class of the motors used.

## ENERGY-EFFICIENT CONVEYOR SYSTEMS

There are many different parameters that determine the energy efficiency of Conveyor systems. The possible approaches to improving energy efficiency are equally as numerous. But not every measure produces a balanced trade-off between input and results. Only after analysing the mechanical process and the energy it demands is it possible to identify which measures make sense in each specific case.

## POTENTIAL OPTIONS FOR IMPROVING EFFICIENCY:

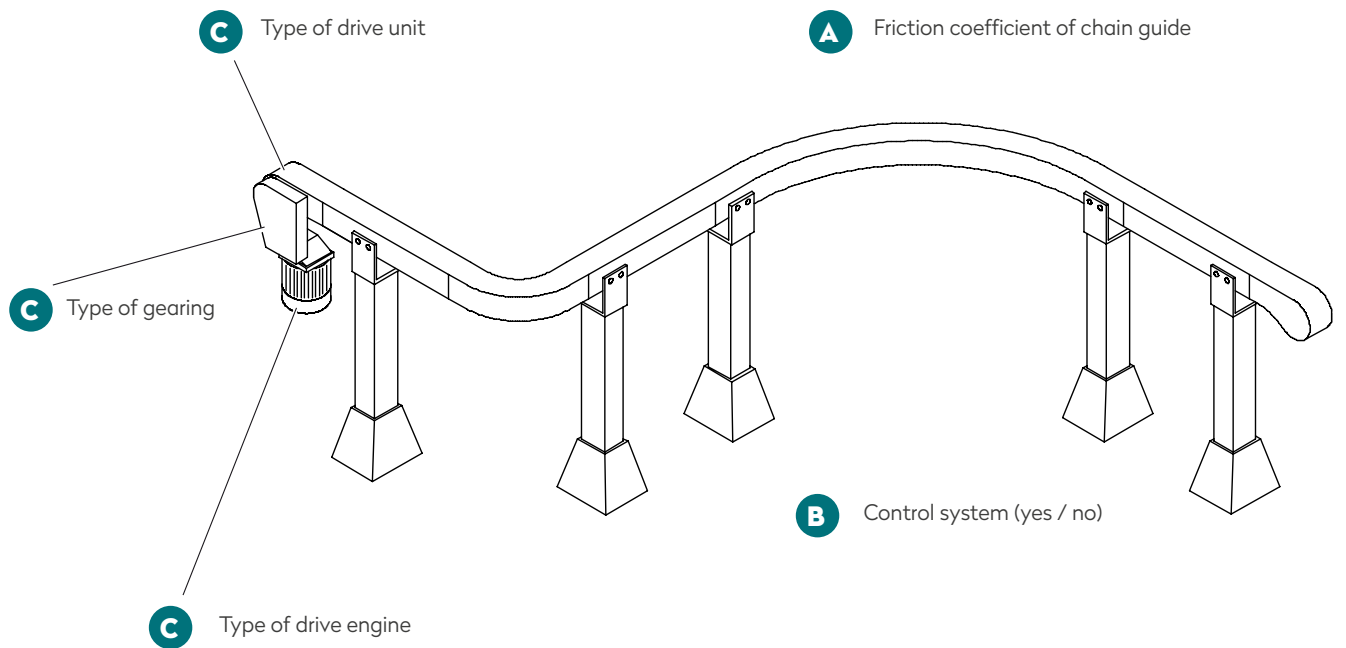
- A Optimise tribological properties
- B Use electrical energy intelligently
- C Convert energy with a high degree of efficiency



# CS ENERGY EFFICIENCY | WAYS OF IMPROVING ENERGY EFFICIENCY IN CONVEYOR SYSTEMS

## ANALYSIS OF THE OVERALL SYSTEM

The following example of a conveyor system demonstrates the potential savings.



CS ENERGY EFFICIENCY

### POTENTIAL OPTIONS FOR IMPROVING EFFICIENCY:

- A** Optimise tribological properties
- B** Use electrical energy intelligently
- C** Convert energy with a high degree of efficiency

STRETCH\_LINE

## TRIBOLOGICAL PROPERTIES OF THE SYSTEM

The coefficient of friction is influenced by the material properties of individual components.

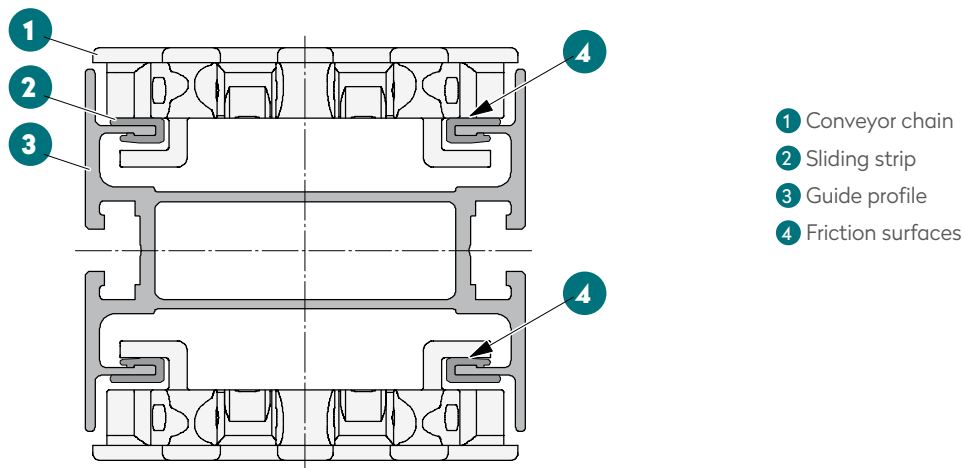
The friction generated between sliding strip and slat-band chain has a direct influence on the level of chain tension, thereby determining the amount of drive power a conveyor system needs.

## FRICITION-OPTIMISED MATERIALS

Working together with Universities of Technology and well-know testing institutes, FS Solutions has managed to continue optimising the tribological properties of individual components.

Using cutting-edge materials and production technologies, we now have slat-band chains and sliding strips with exceptionally good material properties. The friction coefficients achieved in this way provide an energy saving of about 15%.

This vastly reduces sliding friction. As a result, less chain pulling force is required, leading to a reduction on the number and size of motors required.



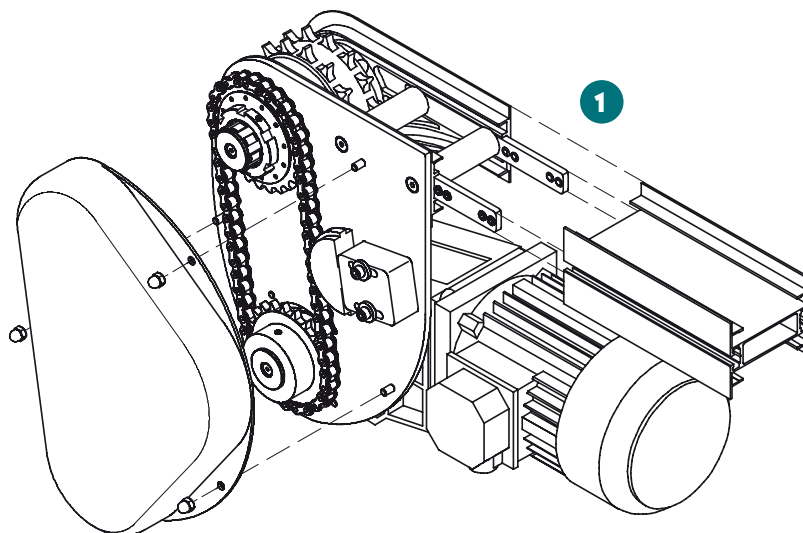
## EFFICIENCY OF GEAR UNITS

The energy required can only be used effectively if the drive components employed operate with a high level of efficiency.

Direct drives provide the highest level of efficiency as the drive motor works without any gear unit. However, drive units with chain gears are in many cases indispensable because a safety clutch is integrated in them.

## NEW DRIVE UNITS WITH BELT TRANSMISSION

FS Solutions satisfies these requirements exactly by using the new drive units with belt transmission. Developed specifically for this application in collaboration with a wellknown supplier of drive components, the flat toothed belt significantly enhances efficiency. The new drive units with belt transmission are also maintenance-free and considerably quieter than standard drive units with chain gear.

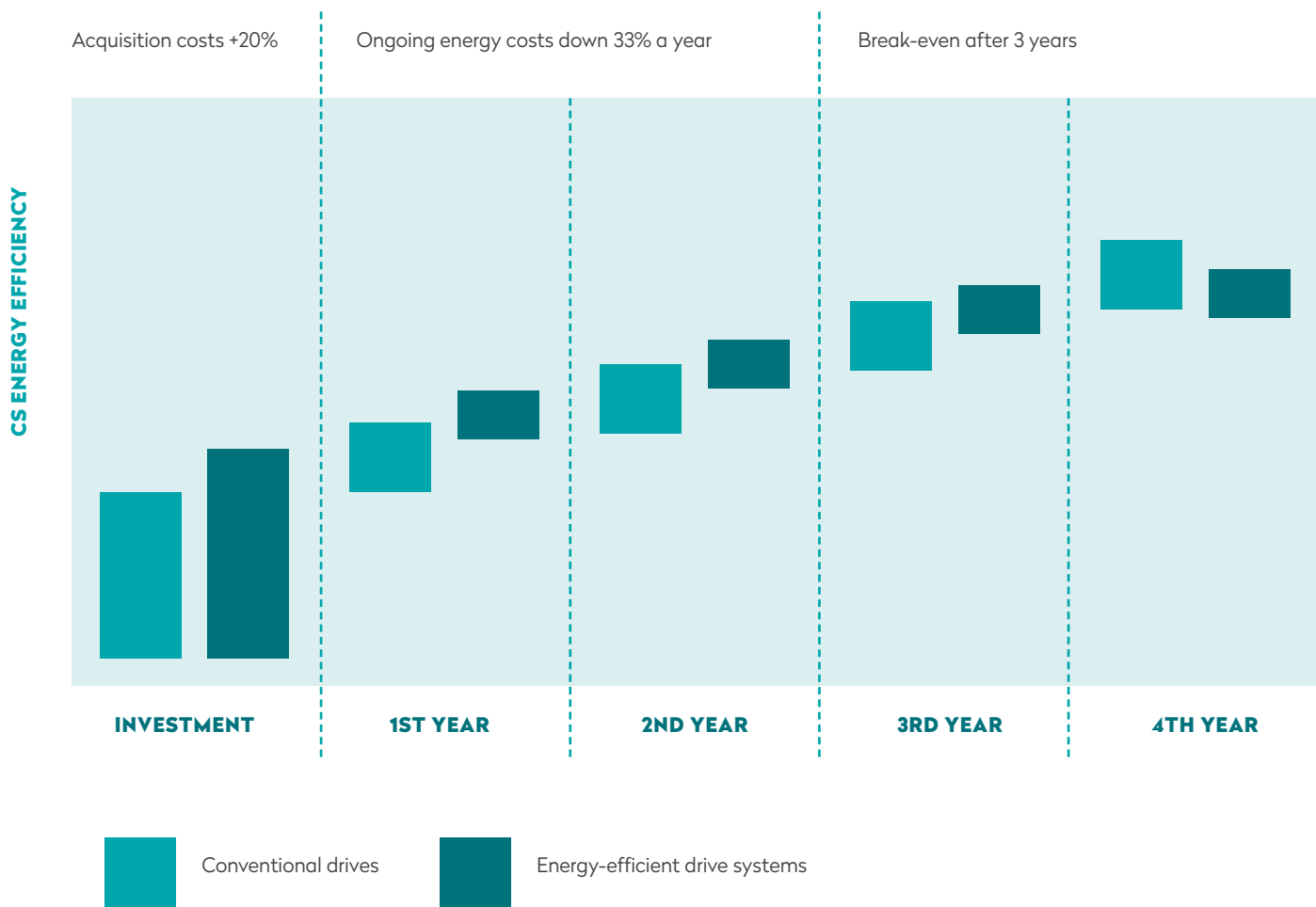


1 Drive unit with chain transmission

# CS ENERGY EFFICIENCY | ANALYSIS OF OVERALL COST-EFFICIENCY

In the case of drive systems, the energy costs are often as high as the acquisition costs after just a few years. Energy-efficient drive systems are often more expensive to buy than conventional drives. However, the extra costs are in most cases paid back in the space of a few years from the energy savings that are made.

Therefore, the cost efficiency of the drive system can only be assessed within the scope of life-cycle cost analysis (Life-Cycle Costs).



**CS ENERGY EFFICIENCY | WAYS OF IMPROVING ENERGY EFFICIENCY IN CONVEYOR SYSTEMS**

CS ENERGY EFFICIENCY

STRETCH\_LINE







# CS Railing Overview

## Made-to-measure railing systems

FS Solutions railing systems offer a high degree of flexibility which makes them suitable for many different applications.

### THE PRINCIPAL ADVANTAGES ARE:

- FS Solutions uses high-quality, modular elements, each system can be compiled to requirement.
- Compact design.
- Quick and easy to install - even without bending device.
- Flexible width and height adjustment.

### COMPONENTS

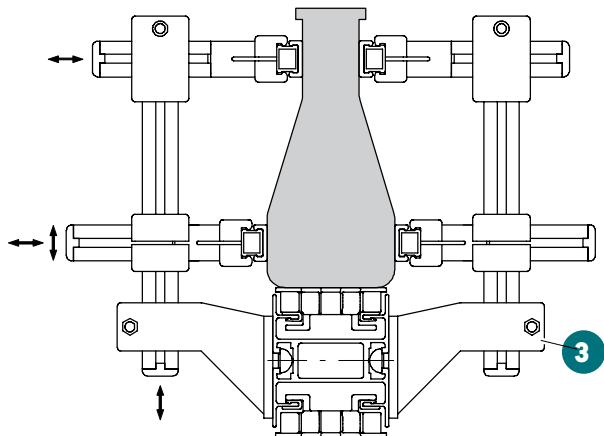
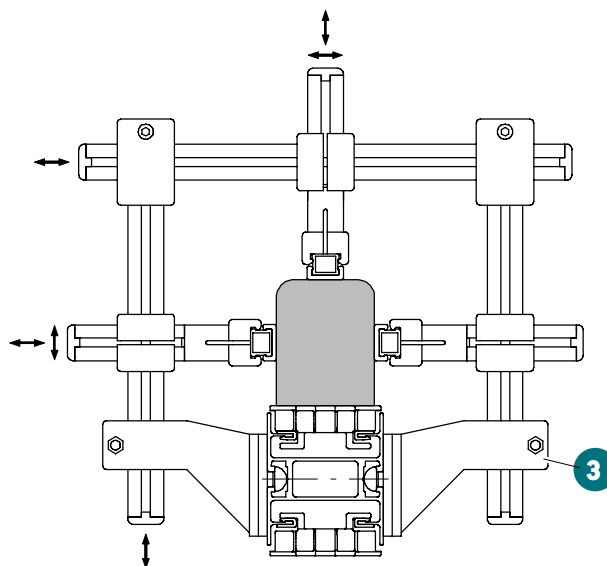
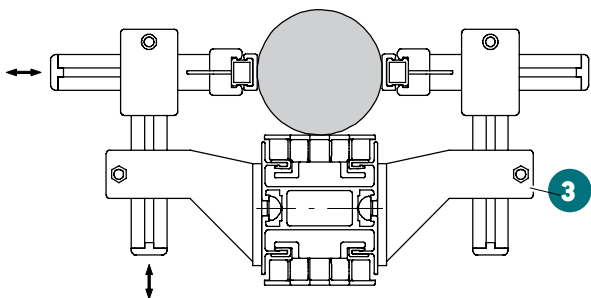
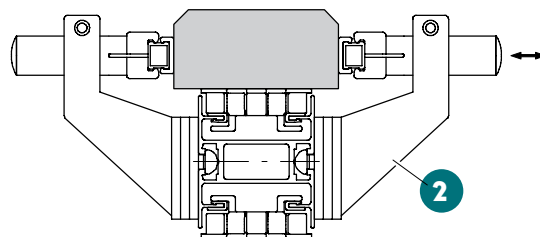
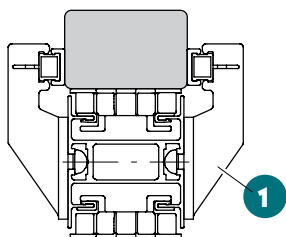
The selection ranges from simple metal guide plates to railing profiles in plastic or aluminium. Added to these are various holders, guide clamps, end and connecting plugs.

### SCOPE OF SYSTEM

The railing components illustrated provide the basis. If you require further components for your particular application, we can supply them on request.

# CS RAILING OVERVIEW | EXAMPLE APPLICATIONS

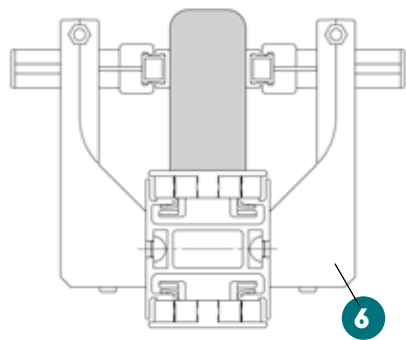
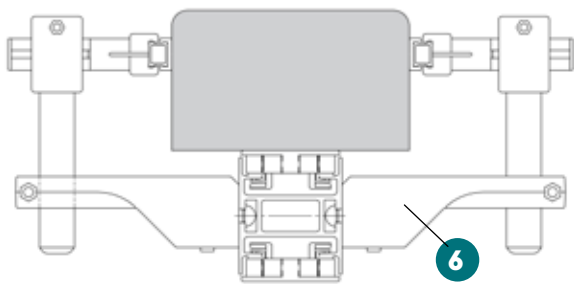
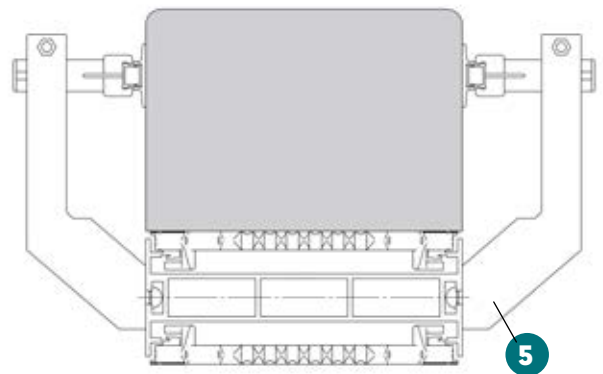
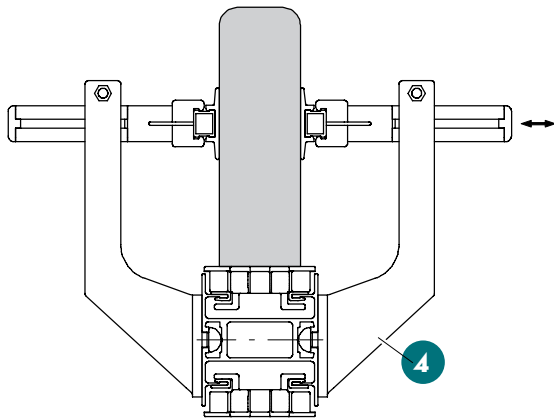
The diagrams show examples of the way in which different railing components can be combined. Arrow indicate adjustment capabilities.



- 1 Type 1 lateral holder
- 2 Type 2 lateral holder
- 3 Type 3 lateral holder

# CS RAILING OVERVIEW | EXAMPLE APPLICATIONS

The diagrams show examples of the way in which different railing components can be combined. Arrow indicate adjustment capabilities.

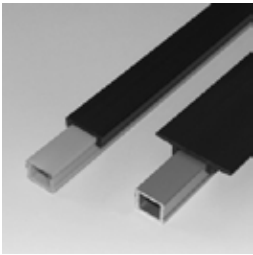


- 4 Type 4 lateral holder
- 5 Type 5 lateral holder
- 6 Type 6 lateral holder

# CS RAILING OVERVIEW | EXAMPLE APPLICATIONS

## RAILING PROFILES

Railing profiles

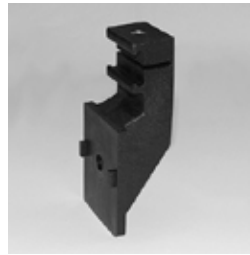


Joint

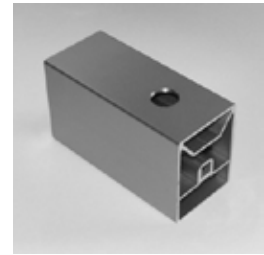


## LATERAL HOLDERS

Lateral holder



Profiles/accessories



## CLAMPS

Assembled profile clamps

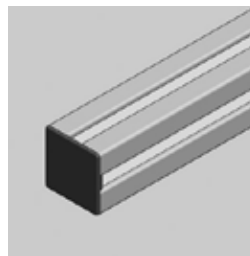


Head clamp

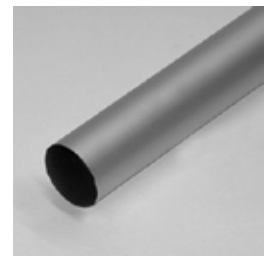


## PROFILES

MS 20+ L - 20x20 profile



Ø22x1.5 M5 profile



## ACCESSORIES

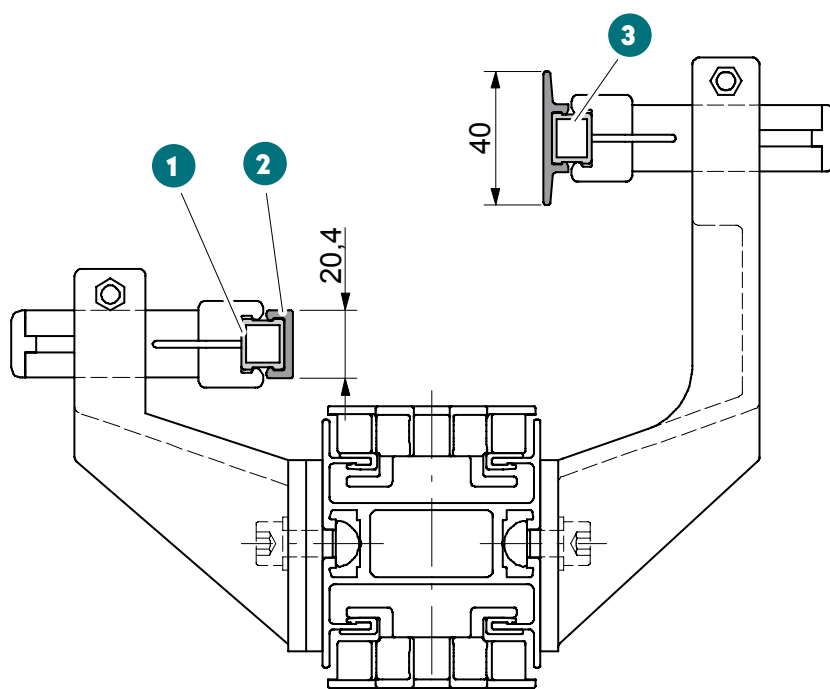
Clamping lever/star grip



# CS RAILING PROFILES | RAILING PROFILES






- Railing profiles for lateral guidance of the item being conveyed.
- Push-on strip in two widths for minimising friction between railing and item conveyed.
- Push on strips overlap the Aluminium railing profile.
- When accumulating products in horizontal curves we suggest round 22 Aluminium as bare minimum.



- 1 Railing profile
- 2 Push-on strip 20
- 3 Push-on strip 40

CS RAILING PROFILES

	PROD.NO.			
Railing profile, aluminium	J924 166	6,0	EN AW-6060 T68	E6/EV1 anodised finish
Railing profile, aluminium Ø22x1,5	794001	6,0	EN AW-6060 T68	E6/EV1 anodised finish
Railing profile, plastic	J650 008	6,0	PE 500	grey
Push-on strip 20, antistatic	J650 006	6,0	PE 500	black
Push-on strip 40, antistatic	J650 033	6,0	PE 500	black




STRETCH\_LINE

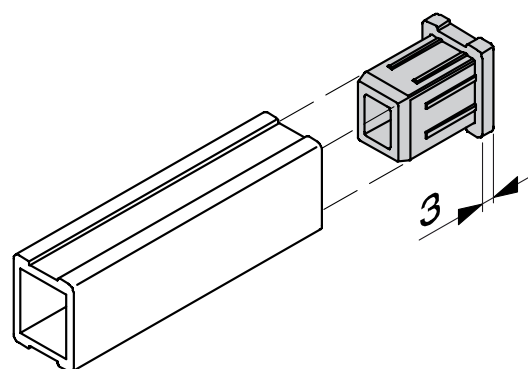
# CS RAILING PROFILES



## | COVER CAP

- Cover cap for standard square Aluminium and plastic railing profiles: J924166(alu) - J650008 (Plastic).

	PROD.NO.			
Square railing cover cap	J537 083	10	PP	black






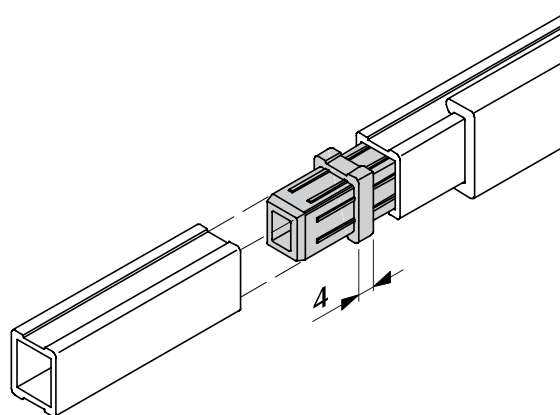
CS RAILING PROFILES



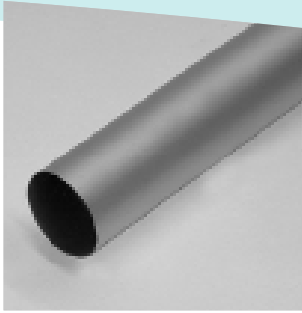
## | JOINT

- Connecting joint for square railing profiles.

	PROD.NO.			
Joint square railing profile	J537 115	10	PP	black






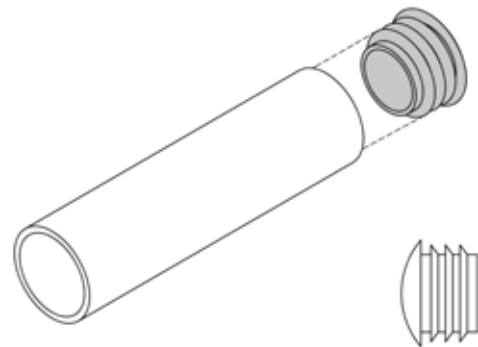
STRETCH\_LINE



## | COVER CAP




- Connecting joint for standard round 22 Aluminium railing profile 794001.

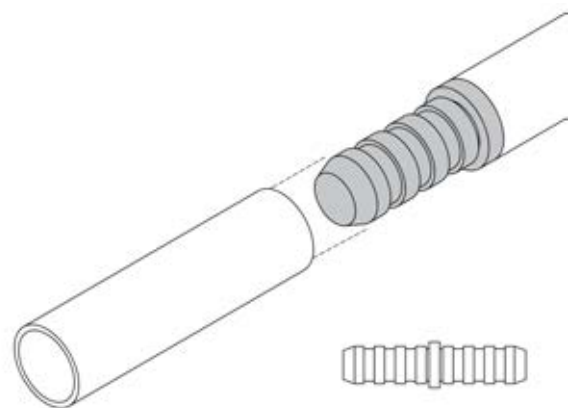
	PROD.NO.			
Cover cap Ø22	J927 785	20	PA-GF	black



## | CONNECTING JOINT FOR SQUARE RAILING PROFILES

- Connecting joint for standard round 22 Aluminium railing profiles.

	PROD.NO.			
Round 22 railing connector	793002	10	PP	black



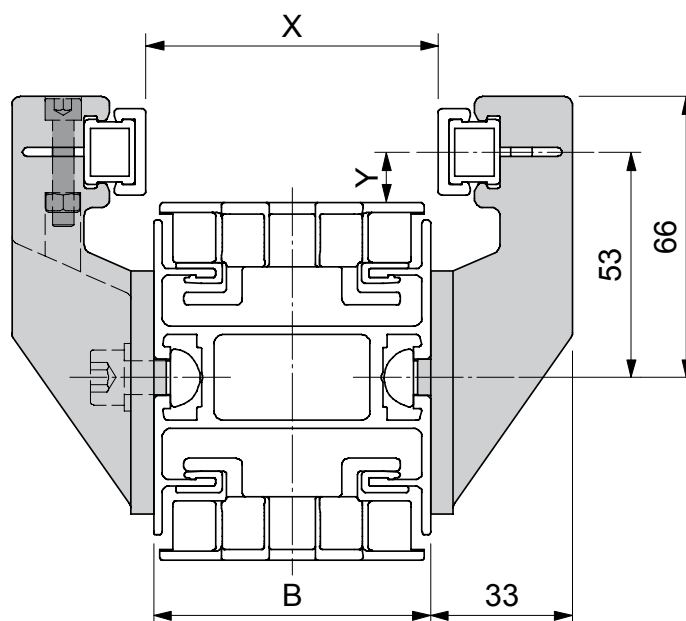


# CS RAILING LATERAL HOLDERS | TYPE 1



- Lateral holder with fixed guide width and height.
- Grooved pegs for simple alignment on guide profiles.
- Seating for square railing profiles.

CS RAILING LATERAL HOLDERS



	B [mm]	X [mm]	Y [mm]
FS CS065SL	65	64	12
FS CS090SL	90	89	11
FS CS200SL	200	199	11

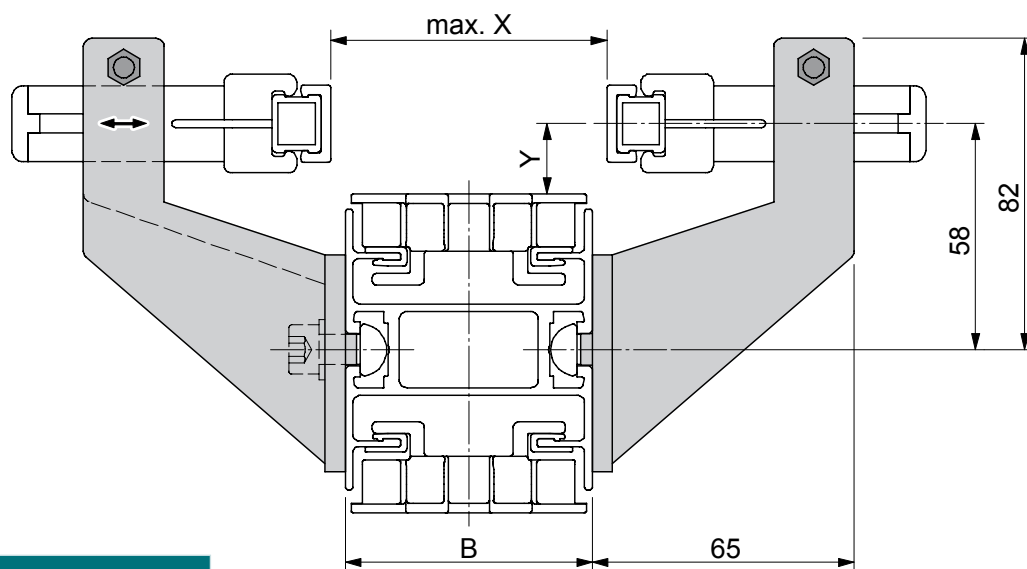
	PROD.NO.			
Lateral holder Type 1	J537 079	1	PA-GF	black

STRETCH\_LINE

# CS RAILING LATERAL HOLDERS | TYPE 2



- Lateral holder with variable guide width.
- Grooved pegs for simple alignment on guide profile.
- Seating for 20x20 mm square profile and Ø22 mm round profile.



CS RAILING LATERAL HOLDERS

	B [mm]	X [mm]	Y [mm]
FS CS065SL	65	106	17
FS CS090SL	90	131	16
FS CS200SL	200	241	16

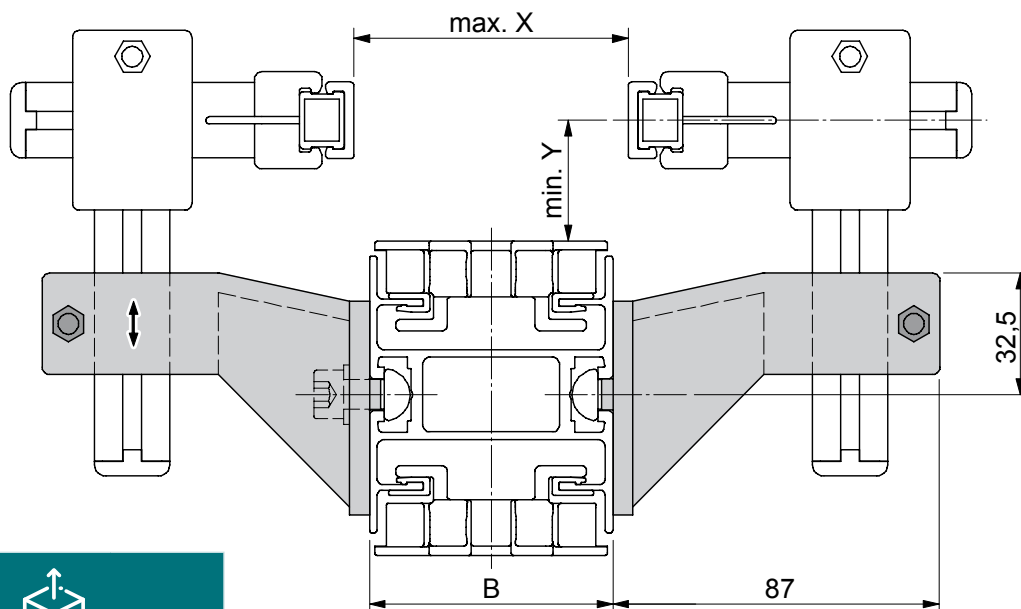
	PROD.NO.			
Lateral holder Type 2	J537 080	1	PA-GF	black

STRETCH\_LINE


# CS RAILING LATERAL HOLDERS | TYPE 3






- Lateral holder for variable guide height.
- Grooved pegs for simple alignment on guide profile.
- Seating for 20x20 mm square profile and Ø22 mm round profile.



CS RAILING LATERAL HOLDERS

			
	B [mm]	X [mm]	Y [mm]
FS CS065SL	65	102	15
FS CS090SL	90	127	14
FS CS200SL	200	237	15

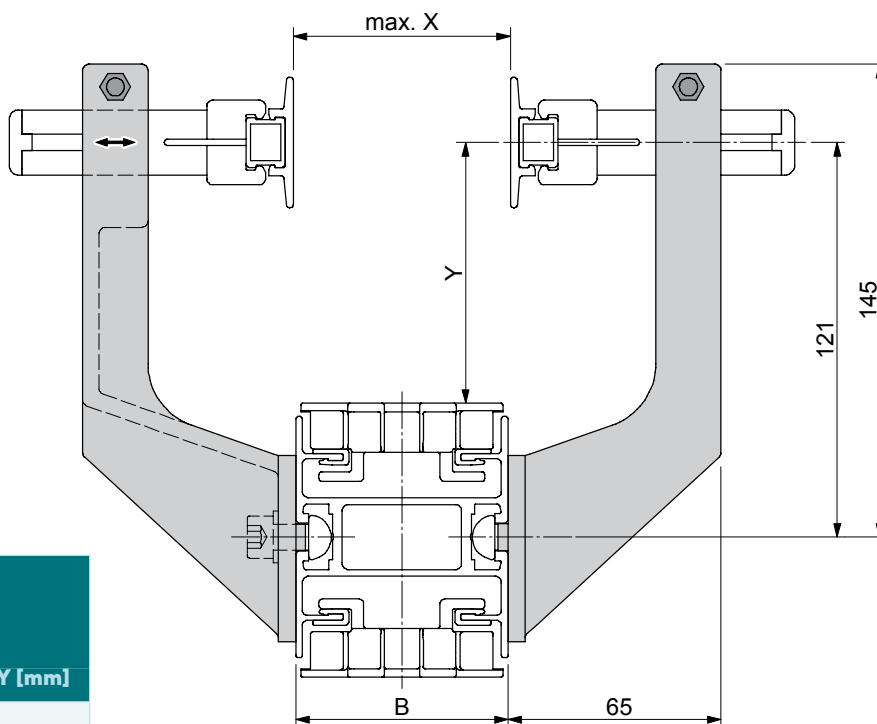
	PROD.NO.			
Lateral holder Type 3	J537 081	1	PA-GF	black

STRETCH\_LINE

# CS RAILING LATERAL HOLDERS | TYPE 4



- Lateral holder with variable guide height.
- Grooved pegs for simple alignment on guide profile.
- Seating for 20x20 mm square profile and Ø22 mm round profile.



CS RAILING LATERAL HOLDERS

	B [mm]	X [mm]	Y [mm]
FS CS065SL	65	102	80
FS CS090SL	90	127	79
FS CS200SL	200	237	79

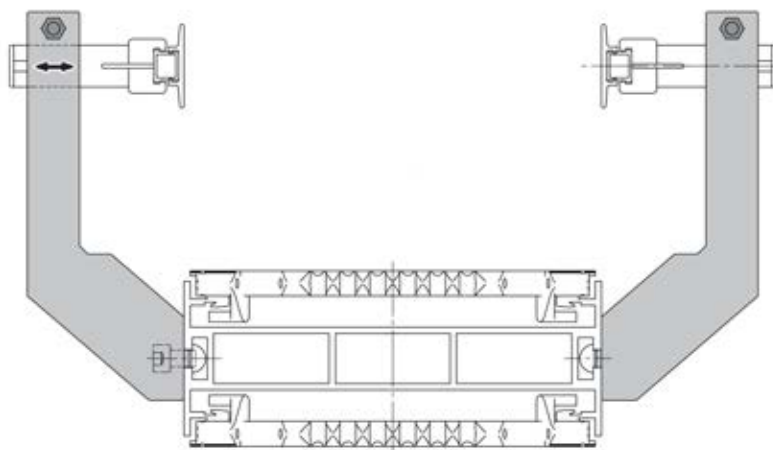
	PROD.NO.			
Lateral holder Type 4	J537 089	1	PA-GF	black

STRETCH\_LINE

# CS RAILING LATERAL HOLDERS | TYPE 5



- Lateral holder with variable guide height.
- Grooved pegs for simple alignment on guide profile.
- Suitable for 20x20 mm square profile and Ø22 mm round profile.
- Possibility to integrate photocell and reflector



CS RAILING LATERAL HOLDERS

	B [mm]	X [mm]	Y [mm]
FS CS065SL	65	112	99
FS CS090SL	90	137	99
FS CS200SL	200	247	99

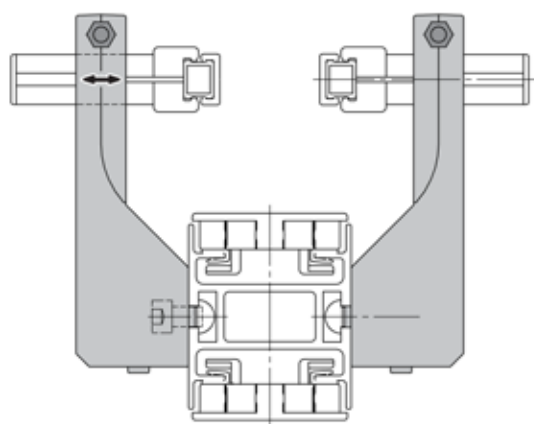
	PROD.NO.			
Lateral holder Type 5	791001	1	PA-GF	black

STRETCH\_LINE

# CS RAILING LATERAL HOLDERS | TYPE 6



- Lateral holder with variable guide height.
- Grooved pegs for simple alignment on guide profile.
- Suitable for 20x20 mm square profile and Ø22 mm round profile.
- Can be mounted horizontally as well as vertically

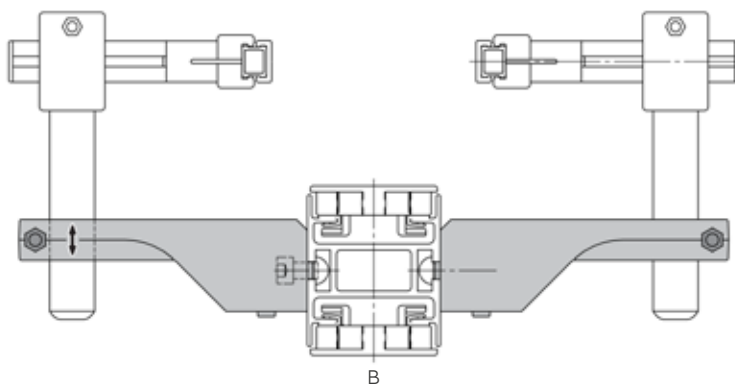


## VERTICAL

	B [mm]	X [mm]	Y [mm]
FS CS065SL	65	62	54
FS CS090SL	90	87	54
FS CS200SL	200	197	54

## HORIZONTAL

	B [mm]	X [mm]	Y [mm]
FS CS065SL	65	210	0
FS CS090SL	90	235	0
FS CS200SL	200	345	0



CS RAILING LATERAL HOLDERS

	PROD.NO.			
Lateral holder Type 6	791011	1	PA-GF	black

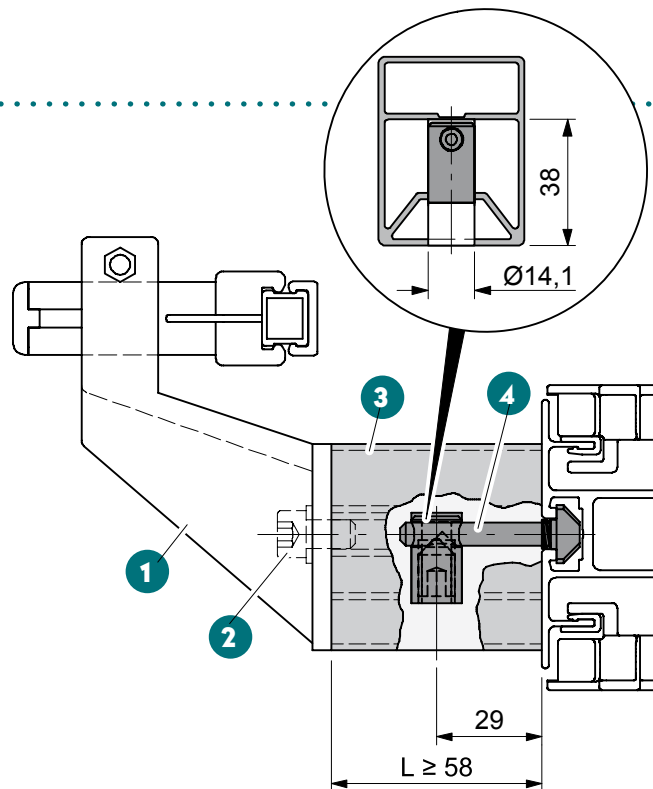
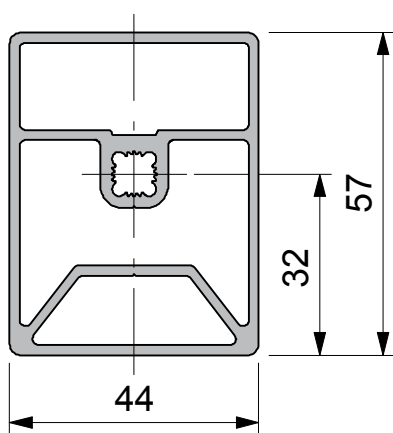
STRETCH\_LINE

# CS RAILING LATERAL HOLDERS | SPACER PROFILES



- Spacer profiles for expanding guide width.
- Suitable for lateral holders, type 1, 2, 3, 4. Other types use 40x40 L profile open/closed.
- Two fixed lengths or customised assembly from the profile.
- Mounted by means of fixing kit comprising (4 each):
  - M6x20 socket head cap bolts
  - M6 washer
  - central joint, outside joint

CS RAILING LATERAL HOLDERS



		PROD.NO.	
Spacer profile, fully assembled	58 mm	J927 416	1
	100 mm	J927 417	



### ATTENTION

Type 6 lateral holder has a 40x40L spacer profile

- 1 Lateral holder
- 2 Socket head cap bolt
- 3 Spacer profile
- 4 Central joint

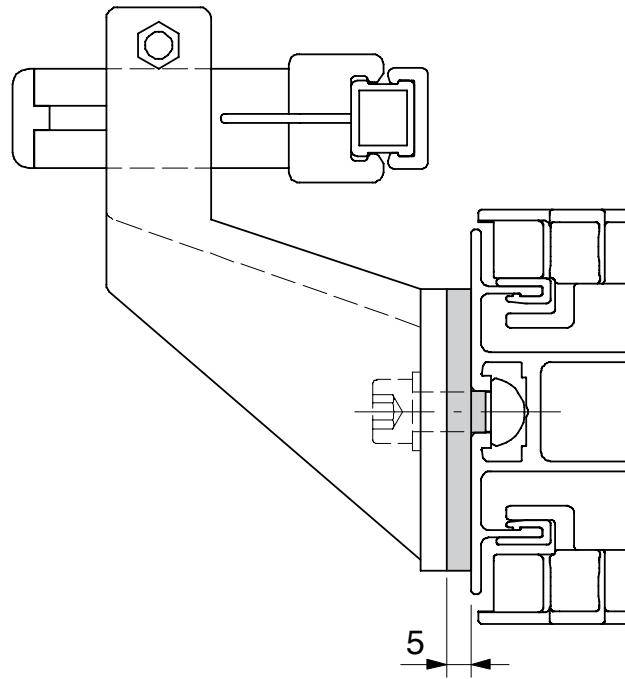
STRETCH\_LINE




	PROD.NO.			
Spacer profile	J924 178	6,0 m	EN AW-6060 T68	E6/EV1 anodised finish
Cutting to length	J924 968	1		
Fixing kit	J927 783	4	steel	galvanised

# CS RAILING LATERAL HOLDERS | SPACER



- Spacer for expanding guide width.
- Suitable for lateral holders type 1, 2, 3, 4 MS+.
- Grooved pegs for easy installation.
- Spacer plates can be stacked



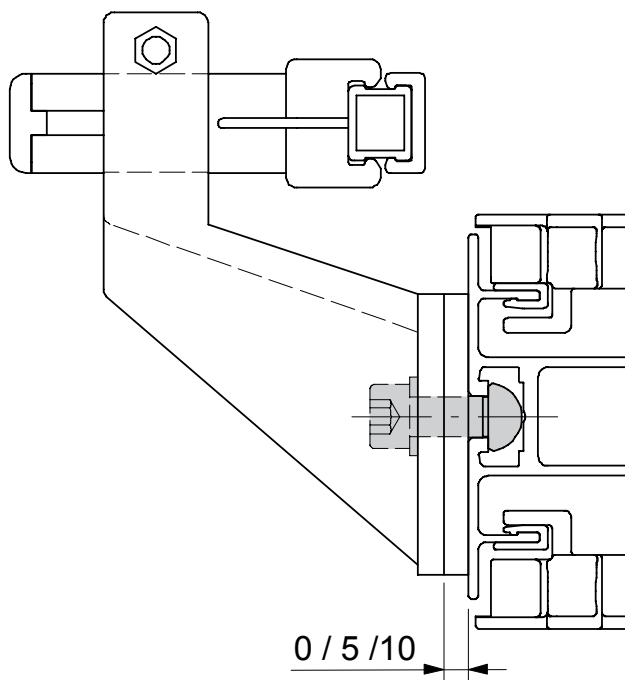
	PROD.NO.			
Spacer plate, 5 mm	J537 082	1	PA-GF	black






# CS RAILING LATERAL HOLDERS | FIXING KITS



- Fixing kit for mounting lateral holders to the guide profile.
- Select kit according to number of spacers used.
- Includes:
  - 10x M8 socket head cap bolts
  - 10x plain M8 washers
  - 10x M8 steel T-slot blocks



CS RAILING LATERAL HOLDERS

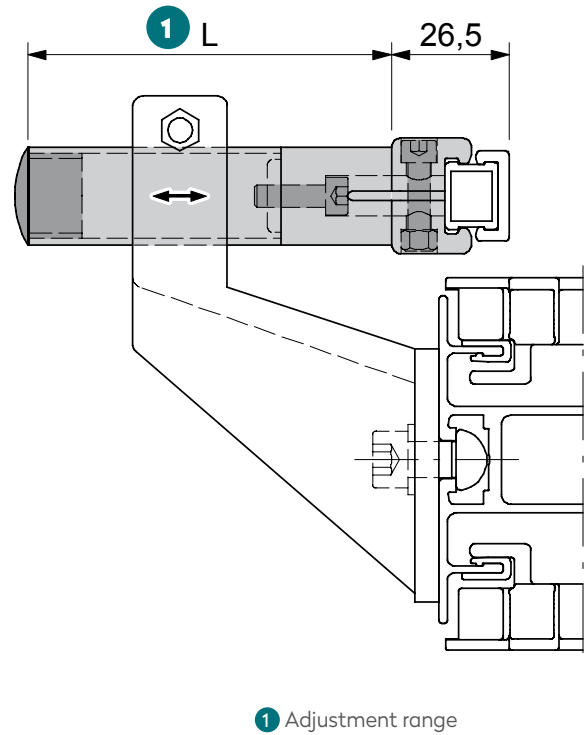
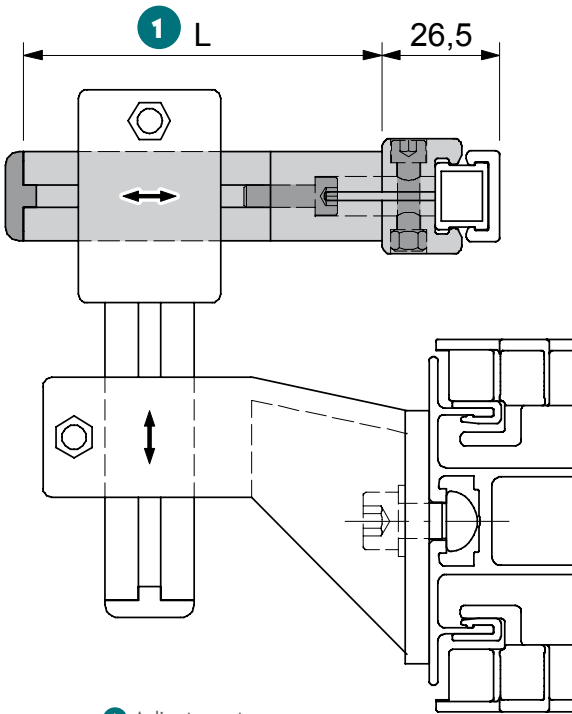
	PROD.NO.			
Fixing kit, standard (0 mm)	J927 780	10	steel	galvanised
Fixing kit, 5 mm	J927 781	10	steel	galvanised
Fixing kit, 10 mm	J927 782	10	steel	galvanised
M6 T-slot nut	TCAN 6 Q100	10	steel	galvanised
M8 T-slot nut	TCAN 8 Q100	10	steel	galvanised

STRETCH\_LINE

# CS RAILING CLAMPS | ASSEMBLED PROFILE CLAMPS



- Assembled profile clamp for the railing profile.
- Two types:
  - 20x20 mm square profile: System grooves provides the means to install accessories.
  - Ø22x1.5 mm round profile: Closed design reduces dirt accumulation.
- Adjustment range: 55, 100 or 150 mm.
- The components used to make up the assembled profile clamps are also available on their own.
- Including pre-mounted M5 fixing materials

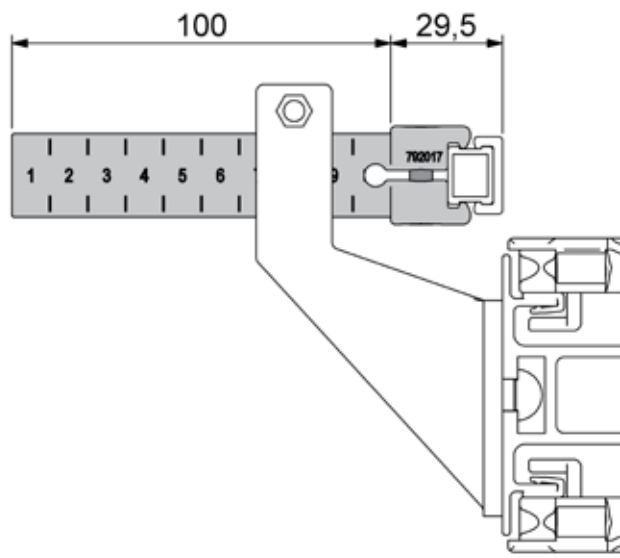


			PROD.NO.	
Profile clamp, fully assembled	20x20 square profile	55 mm	J927 686	2
		100 mm	J927 688	
		150 mm	J929 323	
	Ø22x1.5 round profile	55 mm	J927 689	2
		100 mm	J927 691	
		150 mm	J929 324	





# CS RAILING CLAMPS | ASSEMBLED PROFILE CLAMPS



- Solid profile clamp for the railing profile
- Including pre-mounted m6 fastening materials



CS RAILING CLAMPS

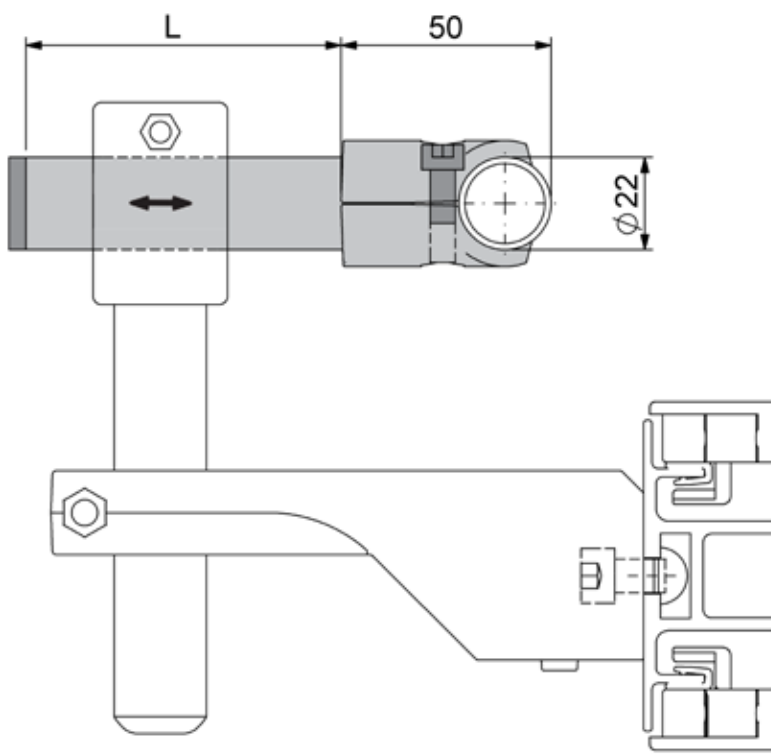
	PROD.NO.				
Profile clamp	792017	1	100 mm	PA-GF	black

STRETCH\_LINE

# CS RAILING CLAMPS | ASSEMBLED PROFILE CLAMPS



- Assembled profile clamp for the railing profile.
- Two types:
  - 20x20 mm square profile: System grooves provides the means to install accessories.
  - $\varnothing 22 \times 1.5$  mm round profile: Closed design reduces dirt accumulation.
- Adjustment range: 75, 100 or 125 mm.
- The components used to make up the assembled profile clamps are also available on their own.
- Including pre-mounted M5 fixing materials



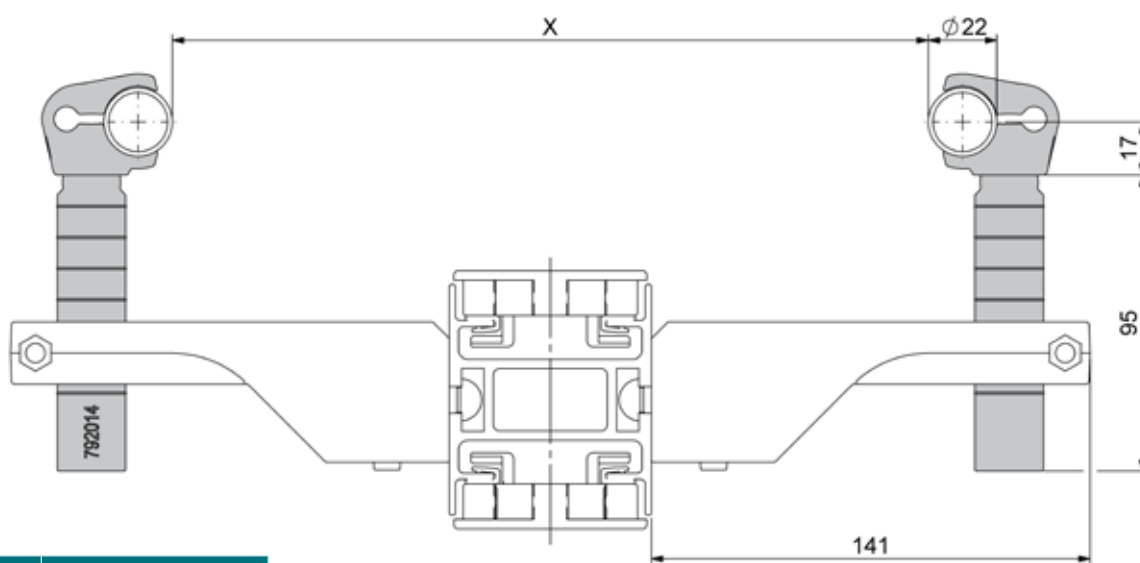
			PROD.NO.	
Profile clamp, fully assembled	$\varnothing 22 \times 1,5$	75 mm	792003	1
		100 mm	792004	
		125 mm	792005	

\* Custom lengths on request

# CS RAILING CLAMPS | ASSEMBLED PROFILE CLAMPS



- Solid profile clamp for round 22 Alu railing profile (794001)
- Ø22x1.5 mm round profile: Closed design reduces dirt accumulation.
- Including pre-mounted M6 fastening materials



CS RAILING CLAMPS

	B [mm]	X [mm]
FS CS065SL	65	243
FS CS090SL	90	268
FS CS200SL	200	378

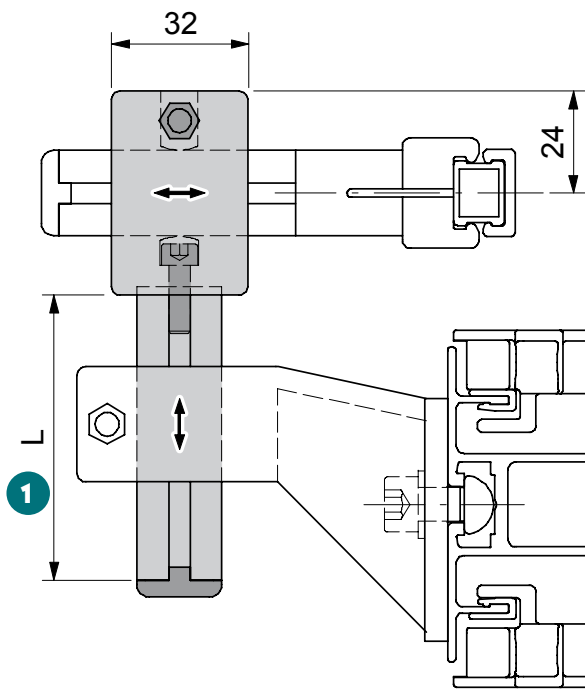
	PROD.NO.				
Profile clamp, Ø22	792014	1	95 mm	PA-GF	black

STRETCH\_LINE

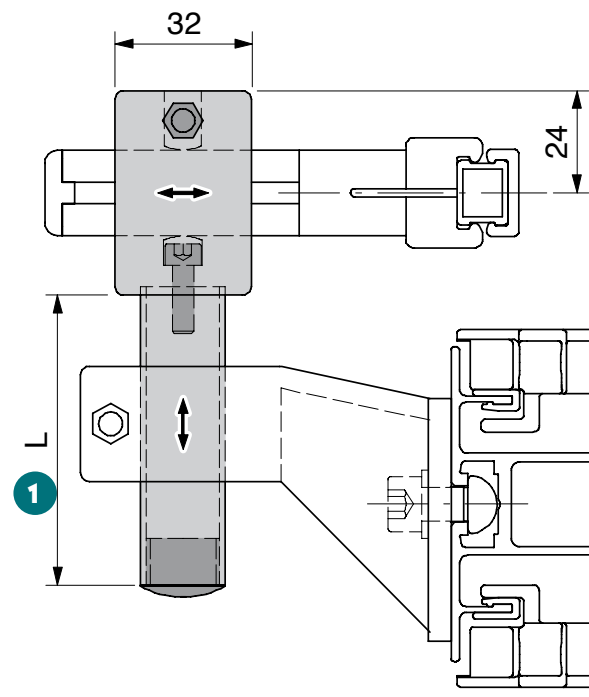
# CS RAILING CLAMPS | ASSEMBLED HEAD CLAMP



- Assembled profile clamp for the railing profile.
- Available types:
  - 20x20 mm square profile: System grooves provides the means to install accessories.
  - Ø22x1.5 mm round profile: Closed design reduces dirt accumulation.
- Adjustment range: 100 or 200 mm.
- The components used to make up the assembled profile clamps are also available individually.
- Including pre-mounted M5 fixing materials.



1 Adjustment range



1 Adjustment range

CS RAILING CLAMPS

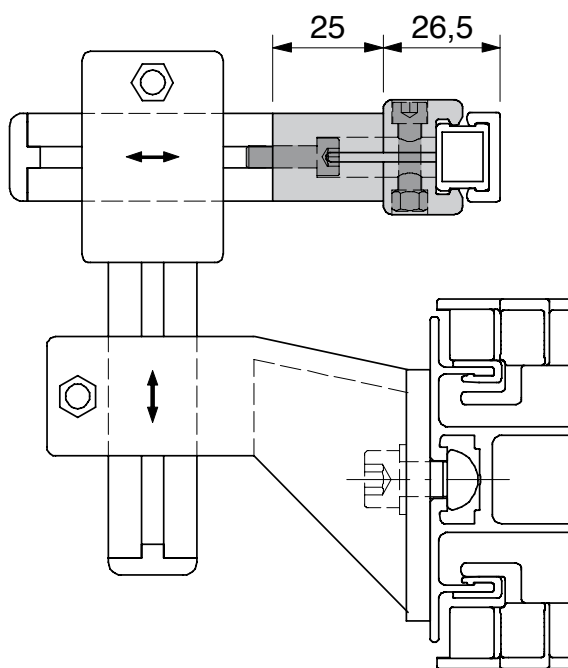
			PROD.NO.	
Head clamp, fully assembled	20x20 square profile	100 mm	J927 694	2
		200 mm	J927 695	
	Ø22x1.5 round profile	100 mm	J927 692	2
		200 mm	J927 693	

STRETCH\_LINE

# CS RAILING CLAMPS | PROFILE CLAMPS



- Profile clamp for the railing profile.
- Two types with seating for:
  - 20x20 mm square profile: System grooves provides the means to install accessories.
  - Ø22x1.5 mm round profile: Closed design reduces dirt accumulation.
- Clamp is fastened to the profile with pre-mounted M5 bolt.
- Grooved pegs prevent the clamp from turning.



CS RAILING CLAMPS

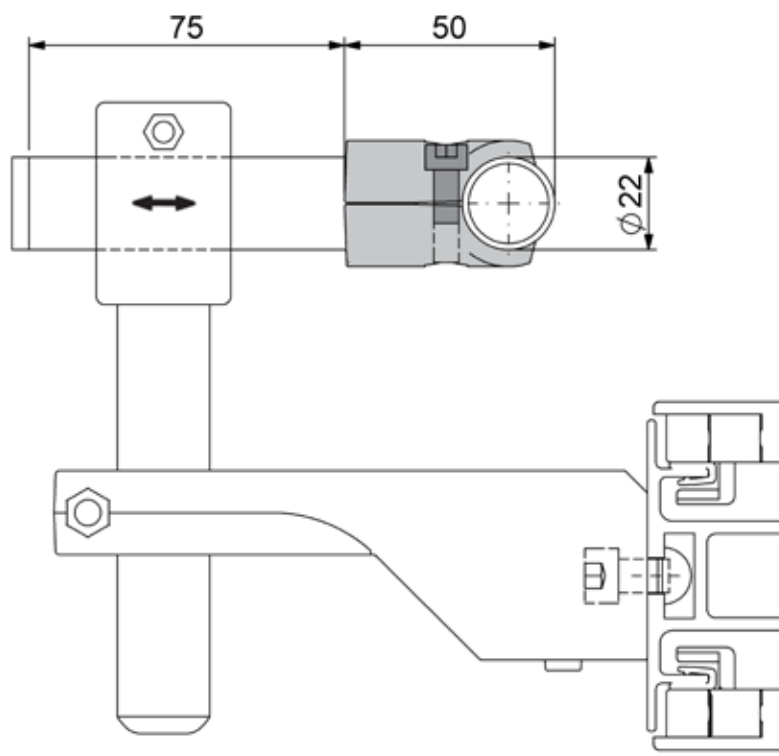
STRETCH\_LINE

	PROD.NO.				
Head clamp	J537076	20x20 square profile	1	PA-GF	black
	J537098	Ø22x1.5 round profile	1	PA-GF	black




# CS RAILING CLAMPS | PROFILE CLAMPS



- Profile clamp for the railing profile.
- Two types with seating for:
  - 20x20 mm square profile: System grooves provides the means to install accessories.
  - Ø22x1.5 mm round profile: Closed design reduces dirt accumulation.
- Clamp is fastened to the profile with the pre-mounted M5 bolt.
- Grooved pegs prevent clamp from turning.



CS RAILING CLAMPS

	PROD.NO.			
Head clamp	792 002	1	PA-GF	black

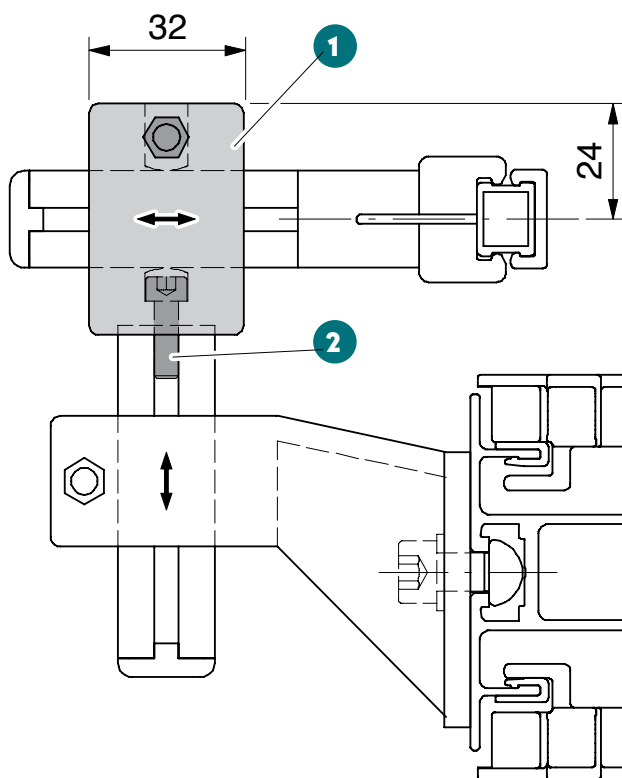
STRETCH\_LINE






# CS RAILING CLAMPS | PROFILE CLAMPS



- Assembled profile clamp for the railing profile.
- Available types:
  - 20x20 mm square profile: System grooves provides the means to install accessories.
  - Ø22x1.5 mm round profile: Closed design reduces dirt accumulation.
- Adjustment range: 100 or 200 mm.
- The components used to make up the assembled head clamps are also available individually.
- Including pre-mounted M5 fixing materials



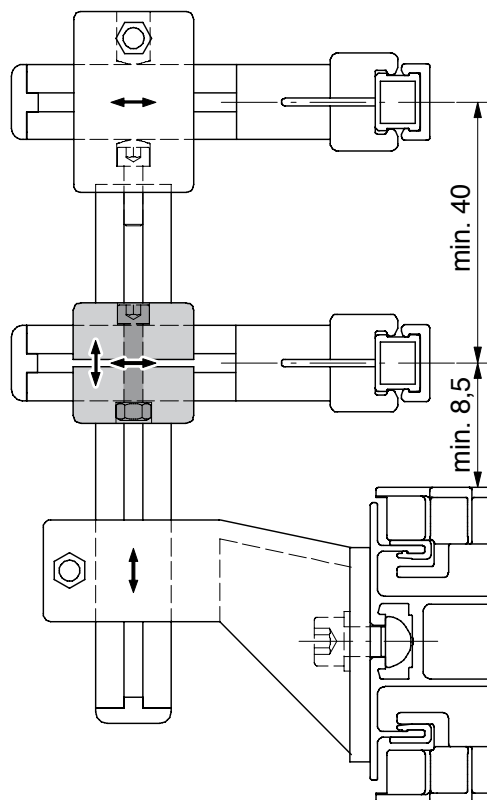
- 1 Head clamp
- 2 M5 bolt

	PROD.NO.			
Head clamp	J537 078	1	PA-GF	black

# CS RAILING CLAMPS | CROSS CLAMP






- Cross clamp create a second railing level.
- Suitable for 20x20 square profile or Ø22x1.5 round profile.
- Can be positioned at any point on the vertical profile (height adjustment).
- Width adjustment: the horizontal profile is adjusted and clamped in place.
- Including pre-mounted M5 fixing materials.

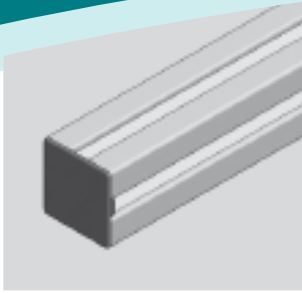


CS RAILING CLAMPS

STRETCH\_LINE

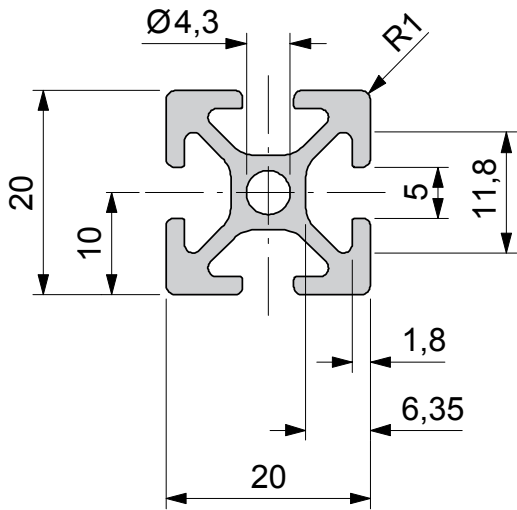
	PROD.NO.			
Cross clamp	J537 077	1	PA-GF	black

# CS RAILING CLAMP PROFILES | MS 20+ L - 20X20 PROFILE

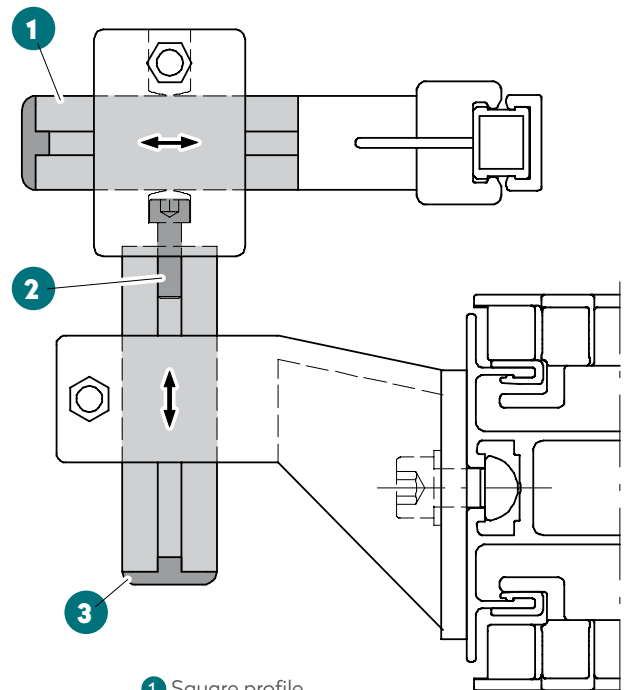


- Used for width and height adjustment.
- System grooves provides the means to install accessories.
- Profile is clamped in place or fastened to the clamp with the pre-mounted M5 bolt.
- Push-on cover cap, 2 mm high.

## CROSS SECTION



## EXAMPLE APPLICATION



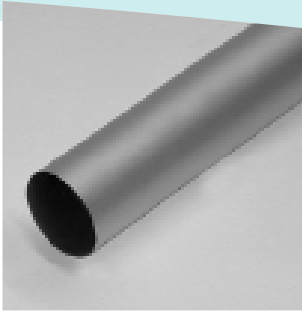
- 1 Square profile
- 2 M5 bolt
- 3 Cover cap

CS RAILING CLAMPS

STRETCH\_LINE

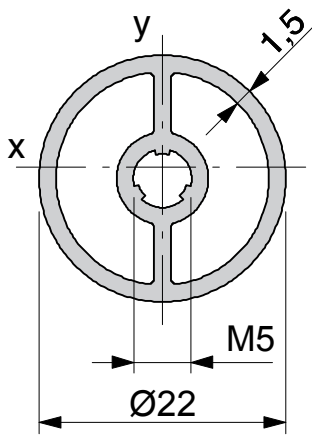
		PROD.NO.			
	Profile, MS 20+ L - 20 x 20	J924 017	6,0 m	EN AW-6060 T68	E6/EV1 anodised finish
	Cover cap, MS 20+ - 20 x 20	J537 416	10	PA6-GB30	black (similar to RAL 9005)
	Cutting to length	J924 968	1		

# CS RAILING CLAMP PROFILES | Ø22X1.5 M5 PROFILE

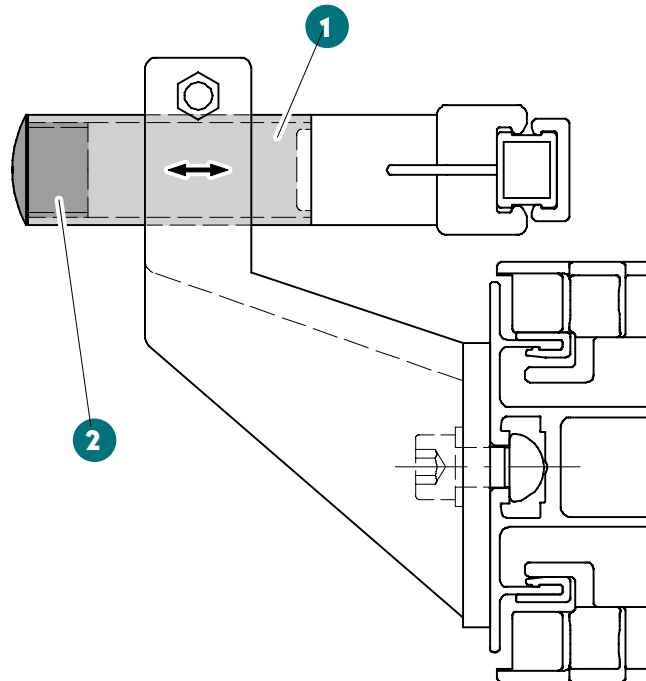


- Used for width and height adjustment.
- Closed design reduces dirt accumulation.
- Profile is clamped in place or fastened to the clamp with the pre-mounted M5 bolt.
- Push-on cover cap, 3 mm high.





## CROSS SECTION



## EXAMPLE APPLICATION



- 1 Round profile
- 2 Cover cap

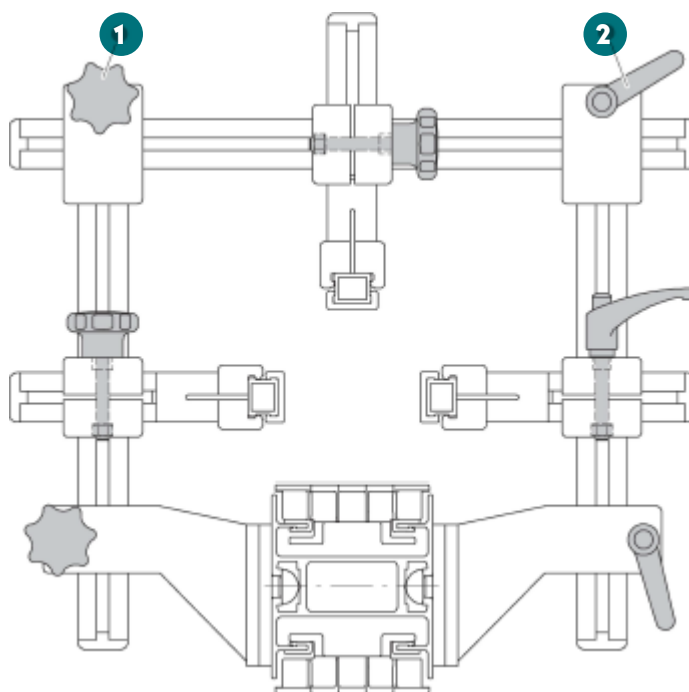
		PROD.NO.			
	Profile, Ø22 x 1.5	J924 176	6,0 m	EN AW-6060 T68	E6/EV1 anodised finish
	Cover cap, Ø22	J927 785	20	PA-GF	black
	Cutting to length	J924 968	1		

# ACCESSORIES




## | CLAMPING LEVER/STAR GRIP

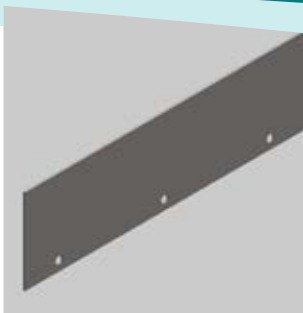
- Clamping lever and star grip for easy railing adjustment without the need for tools.
- Can be used for all lateral holders and clamps. Clamping lever not suitable for type 4 lateral holders.
- Mounting: the pre-mounted socket head cap bolt is simply exchanged for the clamping lever or star grip.



- ① Star grip
- ② Clamping lever

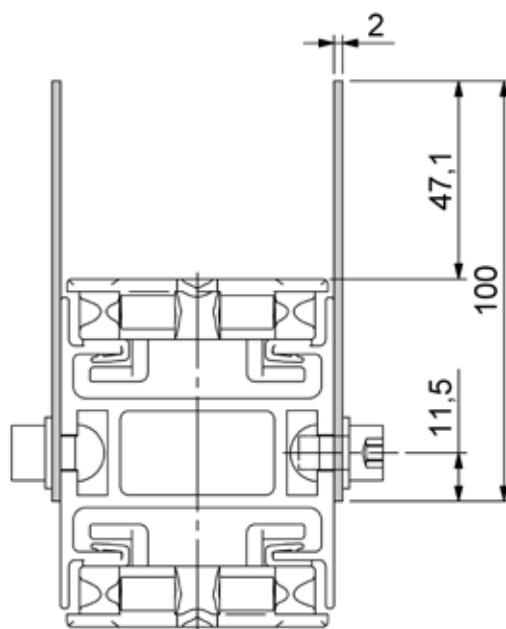
	PROD.NO.	
Clamping lever M5	J537 151	1
Star grip M5	J537 152	1




# CS RAILING OTHERS



## | SIDE GUIDE PLATES

- Low-cost guide option
- Fixing holes: Ø7 mm spaced apart at 100 mm intervals
- Mount to the guide profile through lateral profile groove using socket head cap screws and T-slot blocks
- Fastening material not included



	PROD.NO.			
Side guide plate	J924 859	4x 2,5 m	stainless steel	natural
M8 screwed joint, 12 mm	TCSJ 8 A	10	steel, galvanised	





# CS Leg sets overview

CS Leg sets – substructure for all conveyor systems

FS Solutions railing systems offer a high degree of flexibility which makes them suitable for many different applications – also beyond the limits of FS Solutions Conveyor systems.

#### THE PRINCIPAL ADVANTAGES ARE:

- Compact design.
- Quick and easy to install - even without bending device.
- Flexible width and height adjustment.

#### COMPONENTS

The selection ranges from simple metal guide plates to railing profiles in plastic or aluminium. Added to these are various holders, guide clamps, end and connecting plugs.

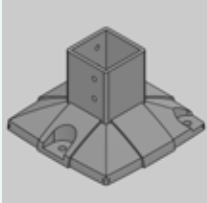
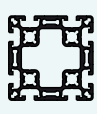




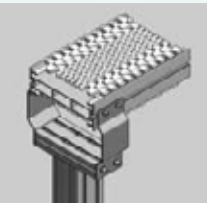


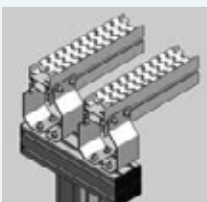
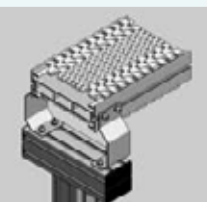
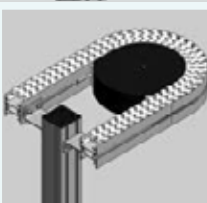
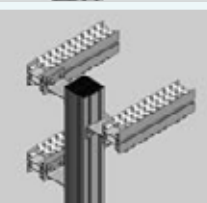
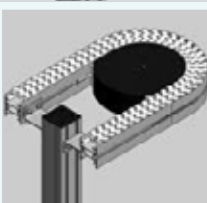
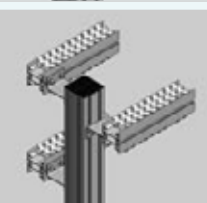
#### SCOPE OF SYSTEM

The railing components illustrated provide the basis. If you require further components for your particular application, we can supply them on request.



# CS LEG SETS OVERVIEW | LEG SETS FOR CS CONVEYOR SYSTEMS

CS LEG SETS OVERVIEW

					FS CS065SL	FS CS090SL	FS CS200SL
Feet / Profiles			80x80	Hygienic floor connection bracket	●	●	●
			40x80	Leg pair	○	○	●
			80x80		○	○	●
Leg joint				standard	●	●	●
				variable	●	●	●
				Horizontal strut	●	●	●
				Vertical strut	●	●	○
							

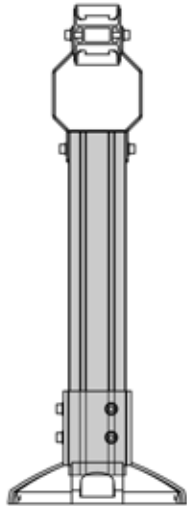
● / ○ applicable / not applicable

STRETCH\_LINE

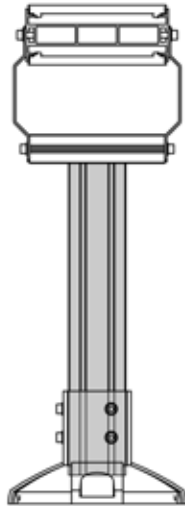
# CS LEG SETS OVERVIEW | OVERVIEW OF TYPES BY CONVEYOR SYSTEM

The pictures show the leg-mounted versions for various Conveyor systems.

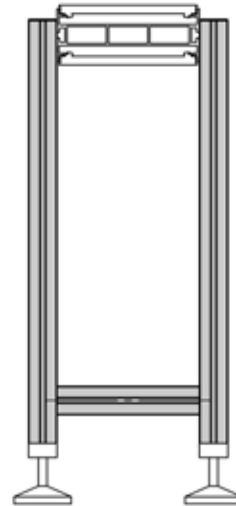
CS SL



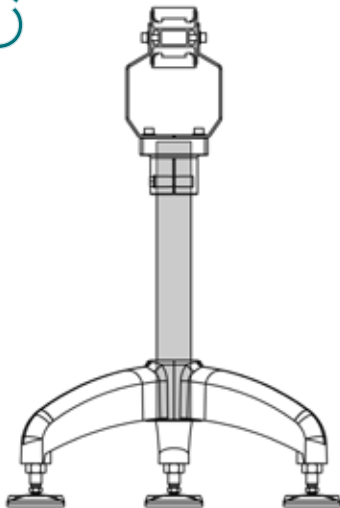
**FS CS065SL**  
**FS CS090SL**



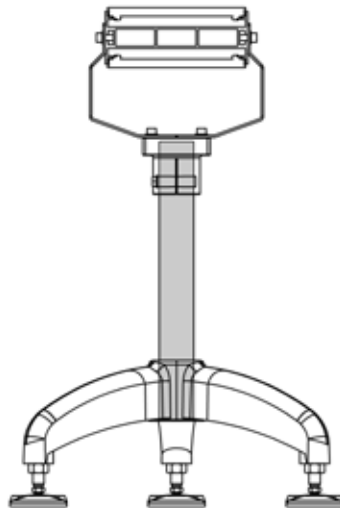
**FS CS200SL**



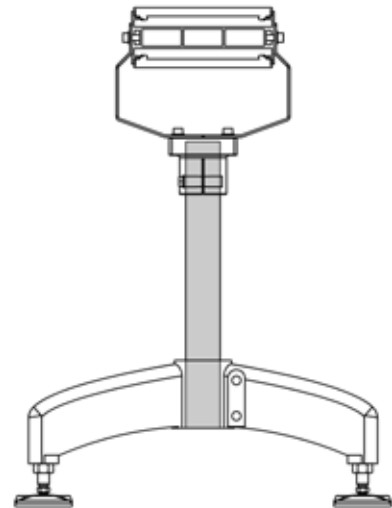
**FS CS200SL**



**FS CS065SL**  
**FS CS090SL**  
**FS CS200SL**



**FS CS065SL**  
**FS CS090SL**  
**FS CS200SL**

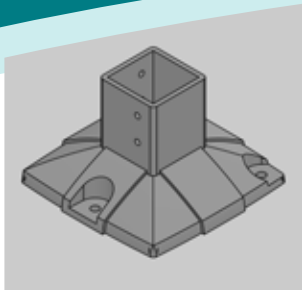


**FS CS065SL**  
**FS CS090SL**  
**FS CS200SL**

CS LEG SETS OVERVIEW

STRETCH\_LINE

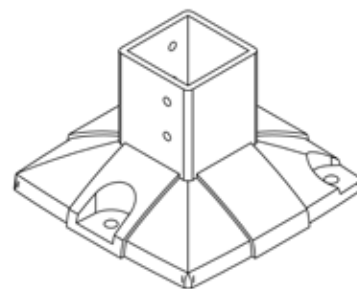
# CS LEG SETS FEETS



## | HYGIENIC FLOOR CONNECTION BRACKET

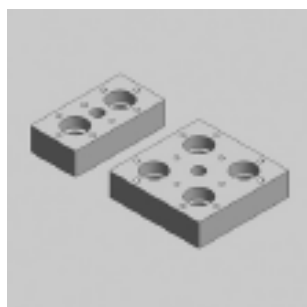
- Floor connection bracket for fixing profile 80 x 80 Basic to the floor.
- Suitable for high loads.
- Suitable for high vertical loads in conjunction with adjustable foot.
- Includes fastening material for mounting profiles.
- Please make a separate order for floormounting fixing material.
- Hole for floor connection round 13mm

- FS CS065SL
- FS CS090SL
- FS CS200SL



	PROD.NO.			
Floor connection bracket	TCFF 80x250	1	cast aluminium	silver

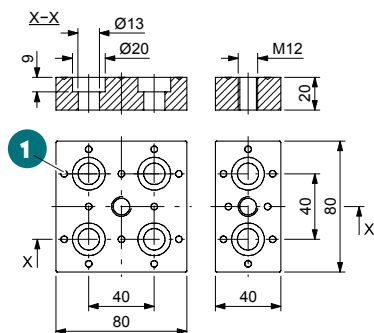
CS LEG SETS FEETS



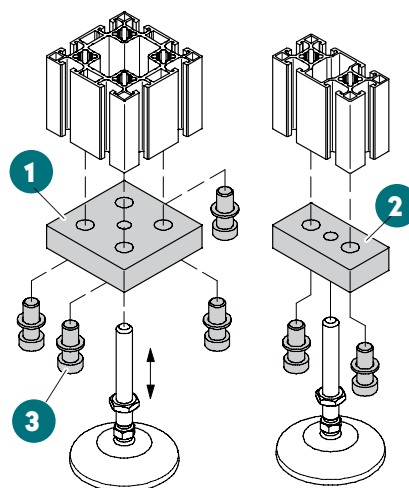
## | FIXING PLATES

- Floor connection bracket for fixing profile 80 x 80 Basic to the floor.
- Suitable for high loads.
- Suitable for high vertical loads in conjunction with adjustable foot.
- Includes fastening material for mounting profiles.
- Please make a separate order for floormounting fixing material.

1 Drill centring device for opening profile slot/ void



- 1 Fixing plate, 40x80 mm
- 2 Fixing plate, 80x80 mm
- 3 Socket head cap bolt, M12x30 / Washer M12



		PROD.NO.			
Fixing plate inc. fixing material	40x80	TCFE 40x80 M12	1	Aluminium	E6/EV1 anodised finish
	80x80	TCFE 80 M12	1		

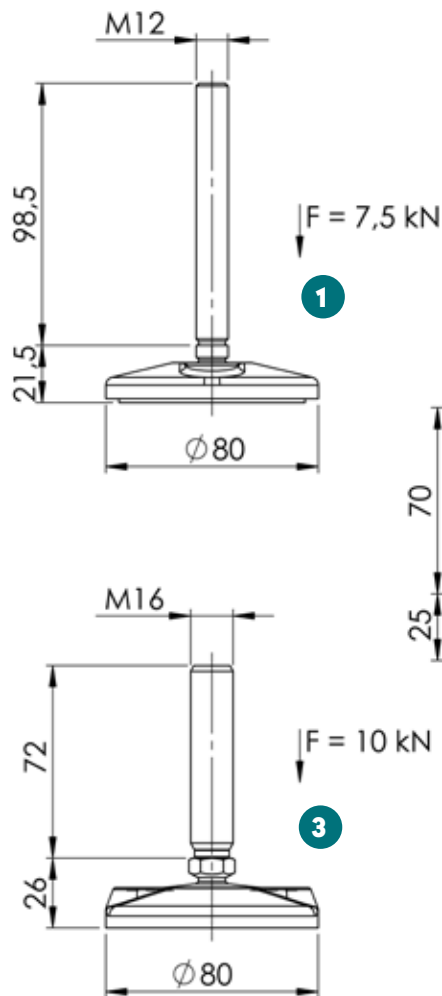
STRETCH\_LINE

# CS LEG SETS FEETS | ADJUSTABLE FEET MS 40



- FS CS065SL
- FS CS090SL
- FS CS200SL

- Adjustable feet, infinitely variable in height.
- Cost-effective, fast assembly directly in the profile using bolt channel or in combination with fixing plates.
- Moving foot plate with damper for stability on uneven surfaces.
- Accessories: Fixing plates and materials.



CS LEG SETS FEETS

STRETCH\_LINE

		PROD.NO.				
Adjustable foot, 80 mm dia., M12 x 100	1	J534890	M12	1	steel	galvanised
Adjustable foot, 80 mm dia., M12 x 70	2	J534891	M12	1	stainless steel	black (similar to RAL 9005)
Adjustable foot, 80 mm dia., M16 x 70	3	J534892	M16	1	stainless steel	

# CS LEG SETS FEETS | ANCHOR BOLT



- Anchor for fastening the floor connection bracket or clamping strap to the floor.
- Push-through assembly possible.
- Properties:
  - Thread size M12 for secondary fixings. Suitable for concrete, solid brick, thickwalled hollow brick.
  - Thread size M8 for fixing relevant to safety. Suitable for cracked and uncracked concrete, hard grey stone.

● FS CS065SL

● FS CS090SL

● FS CS200SL

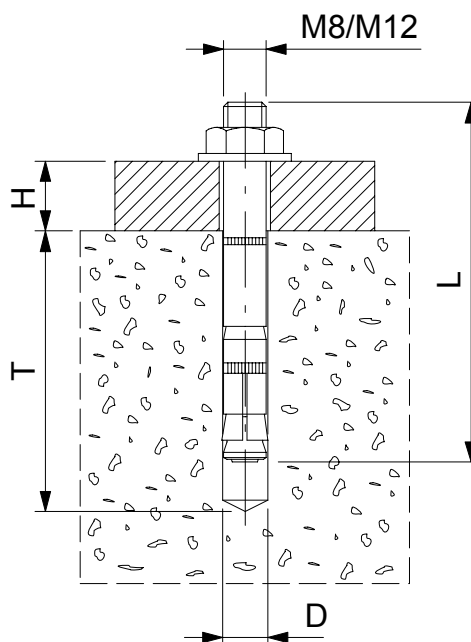


## NOTE




The fastening elements must be matched to the static requirements and structural situation (edge spacings).

CS LEG SETS FEETS

## DIMENSIONS

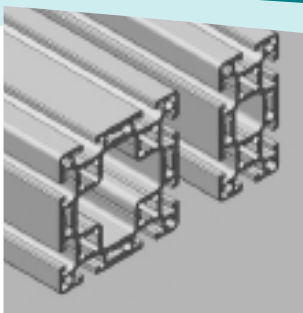


		M8	M12
Max. pulling force	F [kN ]	1,6	2
Tightening torque	M [Nm ]	25	40
Thread		M8	M12
Height	H [mm ]	30	62
Length	L [mm ]	95	110
Diameter	D [mm ]	8	12
Min. hole depth	T [mm ]	65	56

		PROD.NO.		
Anchor bolt	M8	J535 525	1	steel, galvanised
	M12	J535 526		

STRETCH\_LINE

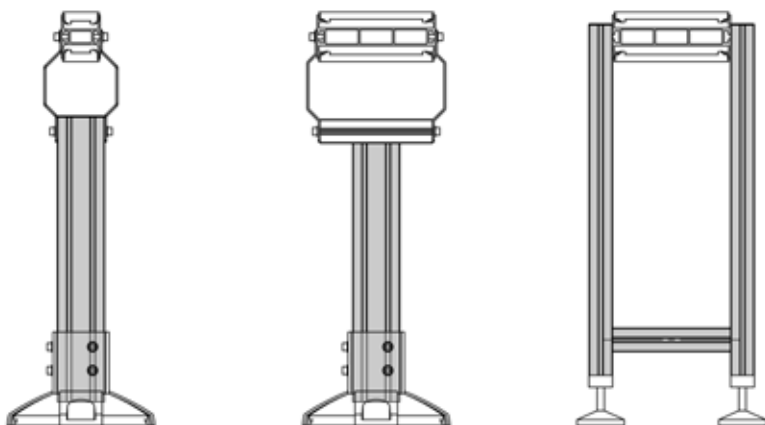
# CS LEG PROFILES | PROFILES FOR LEGS CS SL



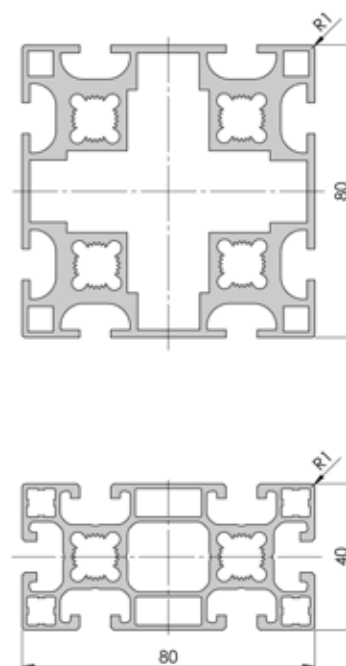
- System profiles for assembling legs.
- Self-forming M12 bolt channels.

- FS CS065SL
- FS CS090SL
- FS CS200SL





## DETERMINE CUTTING LENGTHS



## DIMENSIONS

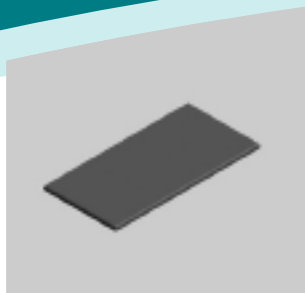


CS LEG PROFILES

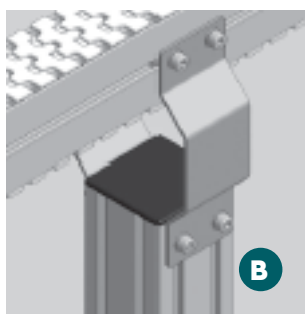
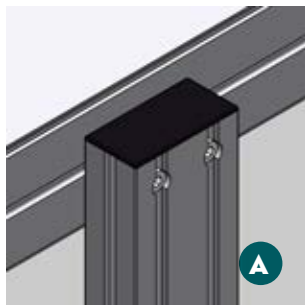
	PROD.NO.				
Profile B, 80x80	TCBB 6X80	6,0 m	EN AW-6060 T68	E6/EV1 anodised finish	J924 969
Profile Closed, 80x80	TCBB 6X80 C	6,0 m	EN AW-6060 T68	E6/EV1 anodised finish	J924 968
Profile L, 40x80	TCBL 6X40X80	24,0 m			
Profile Closed, 40x80	TCBB 6X40X80 C	108,0 m			

STRETCH\_LINE

# CS LEG PROFILES | COVER CAPS



- Cover caps:
  - close off profile end faces.
  - prevent ingress of dirt.
  - prevent cuts.
- Aesthetically pleasing design: Rounded cover caps in shallow, flat geometry.
- No need to debur cut surface.
- Caps press/ knock into the bolt channels



A

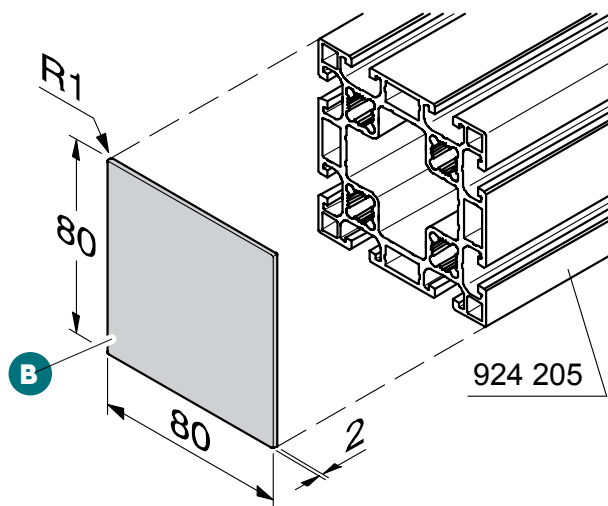
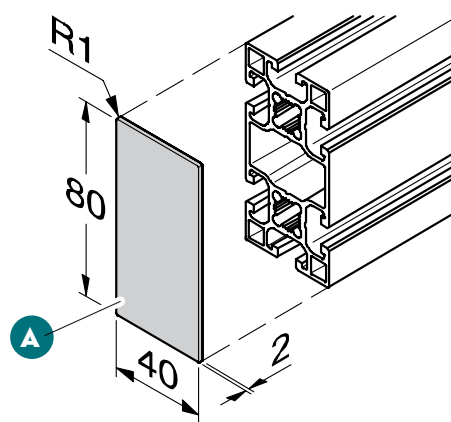
B

- FS CS065SL
- FS CS090SL
- FS CS200SL

## PARTS LIST





- A Cover cap, 40 x 80 mm Basic
- B Cover cap, 80 x 80 mm Basic

## DIMENSIONS

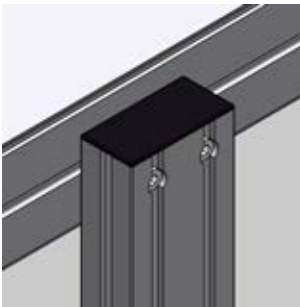
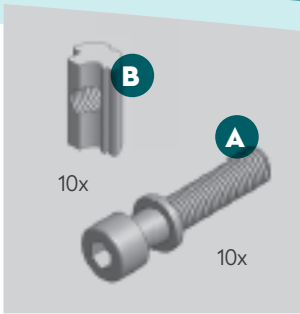


CS LEG PROFILES

STRETCH\_LINE

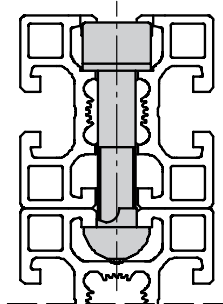
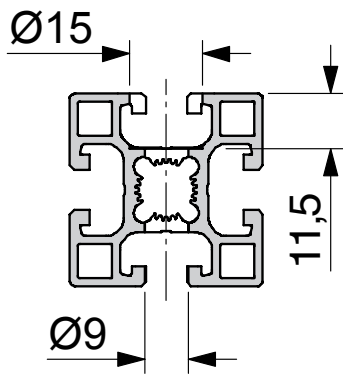
			PROD.NO.			
Cover cap	A	40 x 80	TCBE 40x80 G NLOGO	10	PA6-GB30	silver grey (similar to RAL 7001)
			TCBE 40x80 B NLOGO	10		black (similar to RAL 9005)
	B	80 x 80	TCBE 80 G NLOGO	10		silver grey (similar to RAL 7001)
			TCBE 80 B NLOGO	10		black (similar to RAL 9005)

# CS LEG PROFILES | M8 BOLT CONNECTION, WITH T-SLOT BLOCK



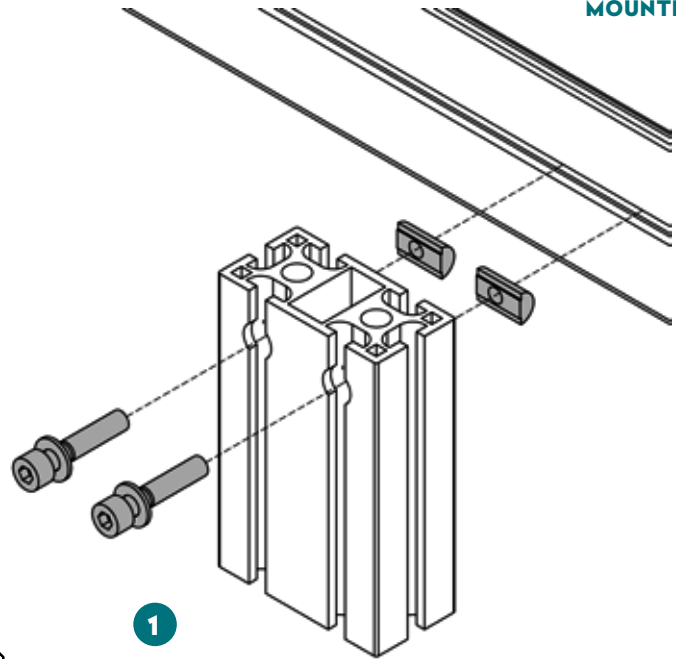
- FS CS065SL
- FS CS090SL
- FS CS200SL

## MACHINING








- For right-angled profile joints.
- Unilateral flexible positioning.
- Medium flexural strength.
- Profile machining necessary.

## MOUNTING



1 Socket head cap bolt, M8x40 / Washer M8

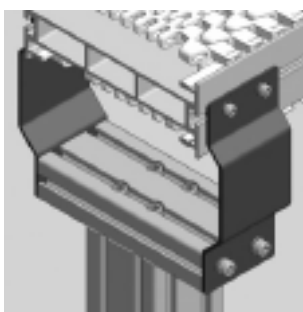
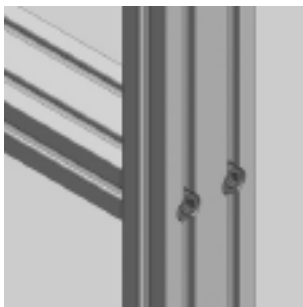
		 X [mm]	PROD.NO.		
	M8 bolted joint	40	TCSJ 8 E	10	steel, galvanised
		80	TCSJ 8 F	10	
	Drilling work	40	J924 976	1	
		80	J924 977	1	
	Drilling jig		J924 705	1	
	Step drill 9/15		TTCS 9x15	1	



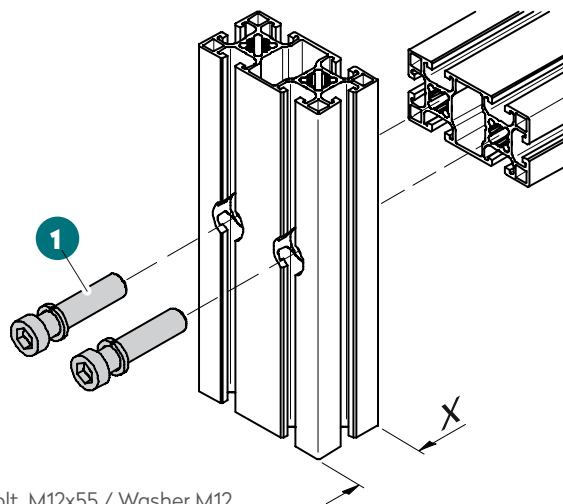
# CS LEG PROFILES | M12 BOLTED JOINT



- For right-angled profile joints.
- High flexural strength.
- Profile machining necessary.



## MOUNTING

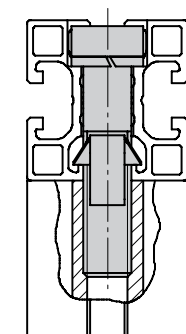
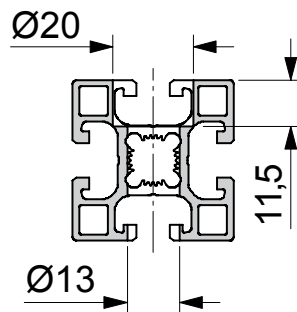








1 Socket head cap bolt, M12x55 / Washer M12

CS LEG PROFILES

- FS CS065SL
- FS CS090SL
- FS CS200SL

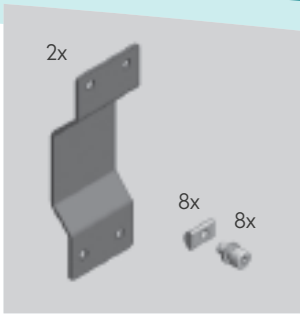
## MACHINING



		 X [mm]	PROD.NO.			
	M12 bolted joint	40	TCSJ 12X40	10	steel	galvanised
		80	TCSJ 12X80	10		
	Drilling work	40	J924 976	1		
		80	J924 977	1		
	Drilling jig		J924 705	1		
	Step drill 13/20		TTCS 13x20	1		

STRETCH\_LINE

# CS LEG JOINTS | FS CS065/FS CS090SL, STANDARD



- Leg joint for mounting the horizontal conveyor line on individual legs constructed from 80 x 80 mm system profile
- Material thickness 3 mm.
- Includes fixing material.

- FS CS065SL
- FS CS090SL
- FS CS200SL



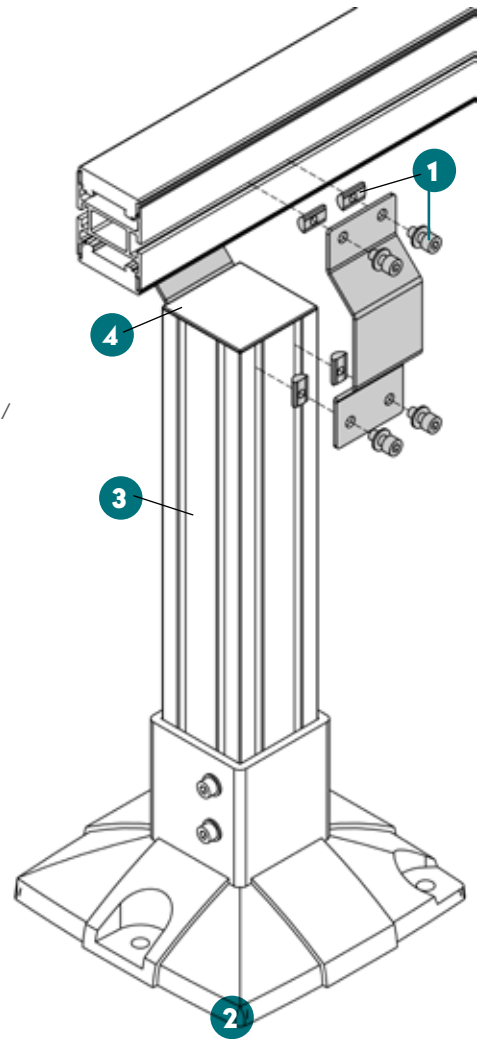
### NOTE

The fastening elements must be matched to the static requirements and structural situation (edge spacings).




### PARTS LIST

- 1 Leg joints / socket head cap bolt M8x14 / Washer M8 / steel T-slot block M8
- 2 Floor connection bracket
- 3 Profile, 80 x 80 B
- 4 Cover cap, 80 x 80 B

### MOUNTING

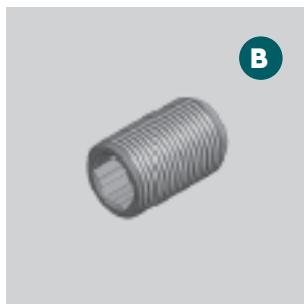
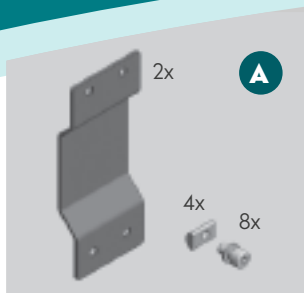


CS LEG JOINTS

		PROD.NO.			
Leg joint, standard	FS CS065SL	J927 735	2	steel	black
	FS CS090SL	J927 766	2		

STRETCH\_LINE

# CS LEG JOINTS | FS CS200SL, STANDARD



- FS CS065SL
- FS CS090SL
- FS CS200SL

- Leg joint for mounting the horizontal conveyor line on individual legs with cross beam constructed from 80x80mm and 40x80mm system profiles.
- Material thickness 3 mm.
- Includes fixing material.

CS LEG JOINTS



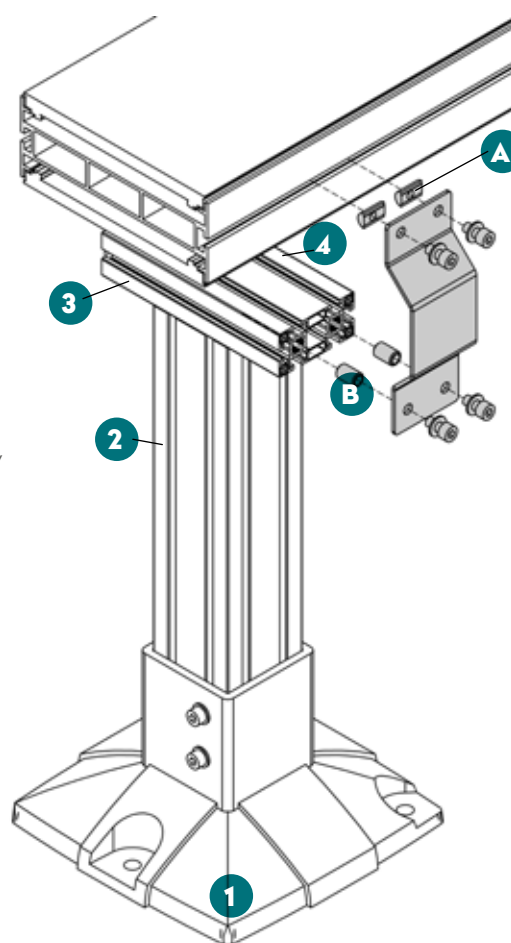
### NOTE

The fastening elements must be matched to the static requirements and structural situation (edge spacings).

### PARTS LIST

- A** Leg joints / socket head cap bolt M8x14 / Washer M8 / steel T-slot block M8
- B** M12/M8 reducing sleeve
- 1** Floor connection bracket
- 2** Profile, 80 x 80 B
- 3** Profile, 40 x 80 B
- 4** M12 bolted joint

### MOUNTING

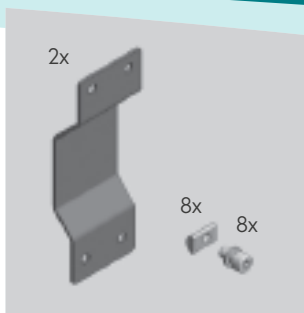


CS LEG PROFILES

		PROD.NO.			
Leg joint, standard	<b>A</b>	J927 831	2	steel	black
M12 / M8 reducing sleeve	<b>B</b>	J534 125	10	steel, galvanised	

STRETCH\_LINE

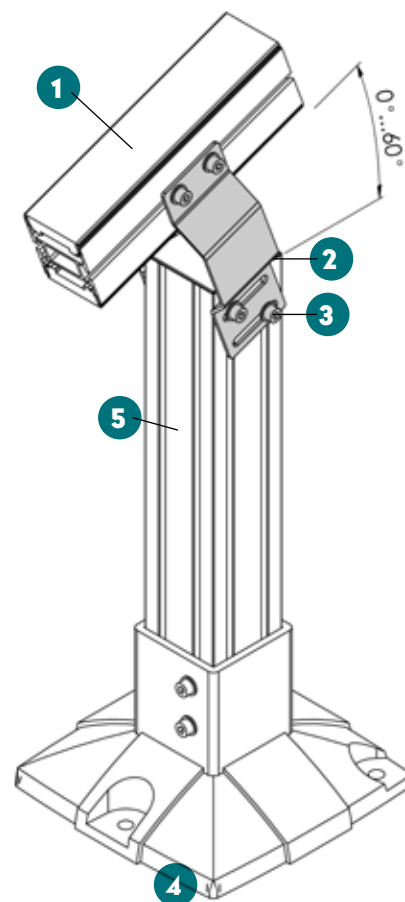
# CS LEG JOINTS | FS CS065/FS CS090SL, VARIABLE



- Leg joint for mounting the inclined conveyor line on individual legs constructed from 80 x 80 mm system profile.
- Material thickness 3 mm.
- Includes fixing material.

- FS CS065SL
- FS CS090SL
- FS CS200SL

## MOUNTING



CS LEG JOINTS






### NOTE

The fastening elements must be matched to the static requirements and structural situation (edge spacings).

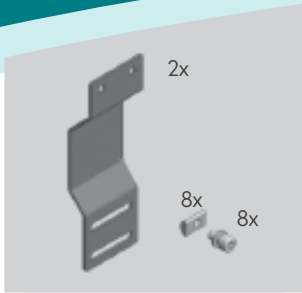
### PARTS LIST

- 1 Guide profile
- 2 Cover cap, 80 x 80 B
- 3 Leg joints / socket head cap bolt M8x14 / Washer M8 / steel T-slot block M8
- 4 Floor connection bracket
- 5 Profile, 80 x 80 B

		PROD.NO.			
Leg joint, variable	FS CS065SL	J927 776	2	steel	black
	FS CS090SL	J927 767	2		

STRETCH\_LINE

# CS LEG JOINTS | FS CS200SL, VARIABLE



- Leg joint for mounting the inclined conveyor line on a pair of legs constructed from 40 x 80 mm system profiles.
- Material thickness 3 m.
- Includes fixing material.

○ FS CS065SL

○ FS CS090SL

● FS CS200SL

CS LEG JOINTS



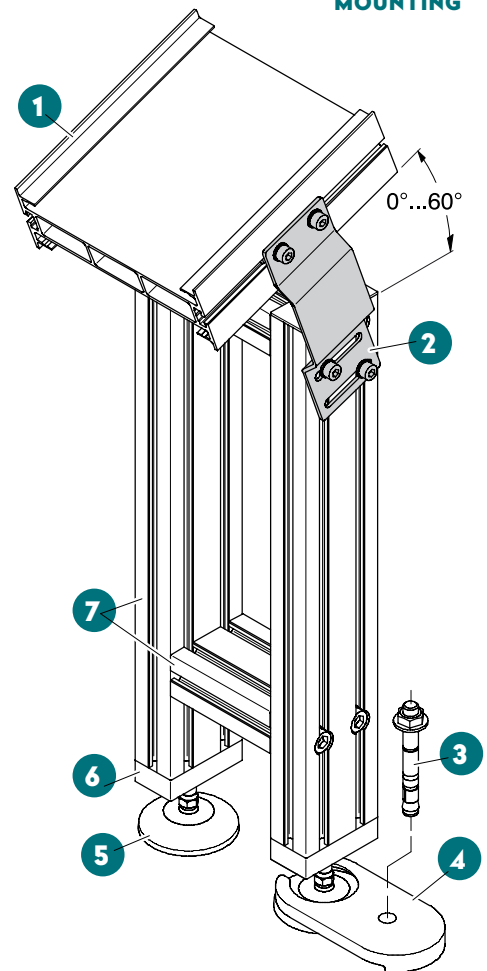
## NOTE




The fastening elements must be matched to the static requirements and structural situation (edge spacings).

## PARTS LIST

- 1 Guide profile
- 2 Leg joints / socket head cap bolt M8x14 / Washer M8 / steel T-slot block M8
- 3 Anchor bolt
- 4 Clamping strap
- 5 Adjustment foot
- 6 Fixing plate 40x80 mm / socket head cap bolt M12x30 / Washer M12
- 7 Profile, 40 x 80 B

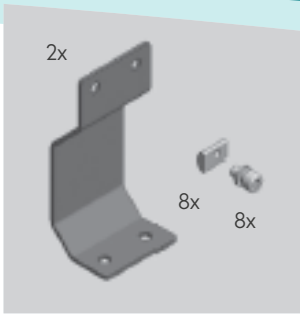
## MOUNTING



	PROD.NO.			
Leg joint, variable	J927 767	2	steel	black

STRETCH\_LINE

# CS LEG JOINTS | VERTICAL STRUT



- Leg joint for mounting several parallel conveyor lines common cross strut.
- Material thickness 3 m.
- Includes fixing material.

- FS CS065SL
- FS CS090SL
- FS CS200SL

	B [mm]	X [mm]
FS CS065SL	65	125
FS CS090SL	90	150
FS CS200SL	200	260



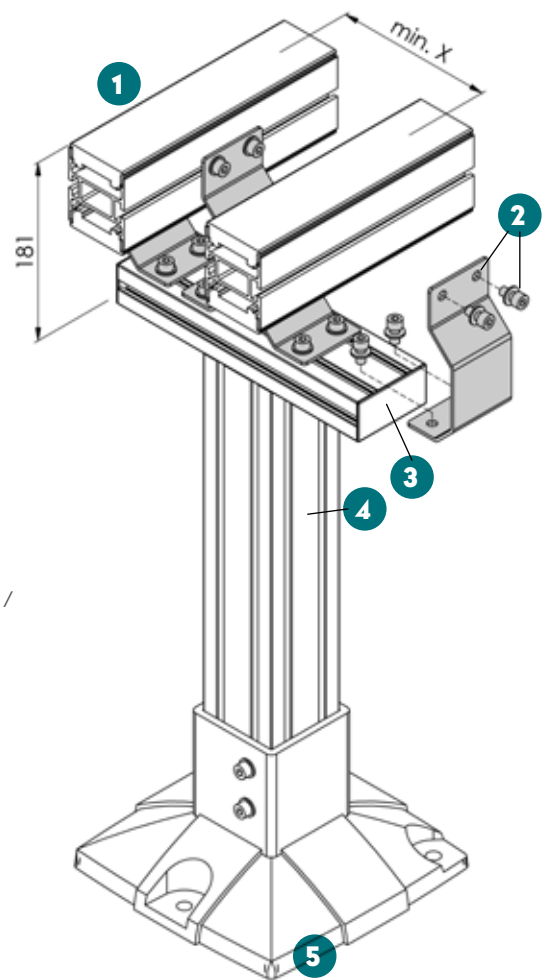
## NOTE

The fastening elements must be matched to the static requirements and structural situation (edge spacings).

## PARTS LIST

- 1 Guide profile
- 2 Leg joints / socket head cap bolt M8x14 / Washer M8 / steel T-slot block M8
- 3 Cover cap, 40 x 80 B
- 4 Profile, 80 x 80 B
- 5 Floor connection bracket

## MOUNTING

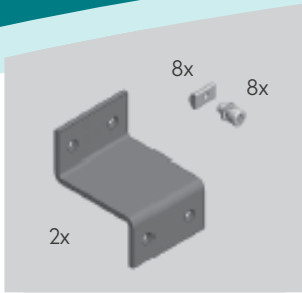


CS LEG PROFILES

STRETCH\_LINE

	PROD.NO.			
Leg joint, horizontal strut	J927 778	2	steel	black

# CS LEG JOINTS | VERTICAL STRUT



- Leg joint for configuring a spiral conveyor. Project can be planned by FS Solutions.
- FS CS065/FS CS090SL systems only: The 180° horizontal curve with disk can be used when mounted to a vertical strut made from 80 x 80 system profile.
- Material thickness 3 m.
- Includes fixing material.

● FS CS065SL

● FS CS090SL

○ FS CS200SL

CS LEG JOINTS

	B [mm]	X [mm]
FS CS065SL	65	300
FS CS090SL	90	325



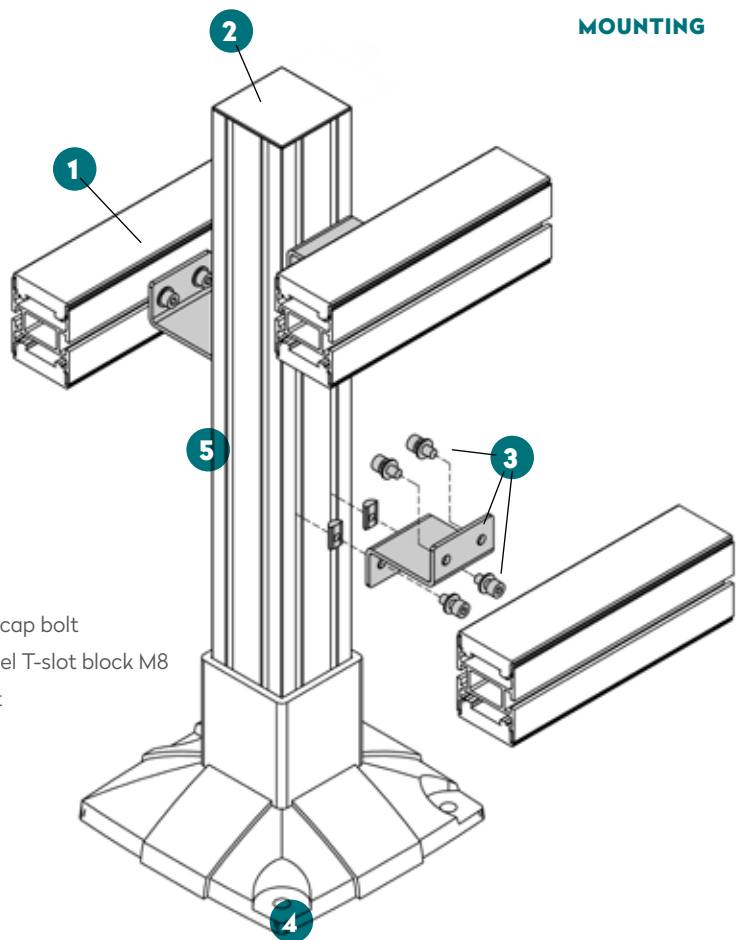
### NOTE

The fastening elements must be matched to the static requirements and structural situation (edge spacings).

### PARTS LIST

- 1 Guide profile
- 2 Cover cap, 80 x 80 B
- 3 Leg joints / socket head cap bolt  
M8x14 / Washer M8 / steel T-slot block M8
- 4 Floor connection bracket
- 5 Profile, 80 x 80 B

### MOUNTING



	PROD.NO.			
Leg joint, vertical strut	J927 779	2	steel	black





STRETCH\_LINE

# HYGIENIC TUBE LEGS



## | TUBE LEGS

- Legs for mounting on guide profile.
- Different versions:
  - Single tripod or bipod leg
  - Twin bipod leg and tubular connector.
- Leg joint for horizontal and inclined conveyor lines.
- Fixing material included.
- Adjustable foot with threaded rod from stainless steel, foot plate (plastic, black) with knock-out holes for floor mounting.

			PROD.NO.				
Tripod	<b>A</b>		J534 471	1	PA-GF	black (similar to RAL 9005)	
Bipod	<b>B</b>		J534 472	1			
Bipod for twin leg (with side connection)	<b>C</b>		J534 473	1			
J534 892 Adjustable foot, 80 mm dia., M16 x 70	<b>D</b>		J534 481	1	plastic		
Round tube 48.3 mm dia. x 1,6 mm	<b>E</b>		482420-483	6,0 m	stainless steel		J924 968
Leg joint, standard inc. assembly kit for round tube	<b>F</b>	FS CS065SL	J927580	1	steel / plastic	black	
		FS CS090SL	J927581				
		FS CS200SL	J927582				



# HYGIENIC TUBE LEGS

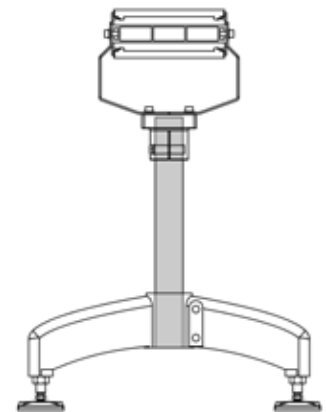
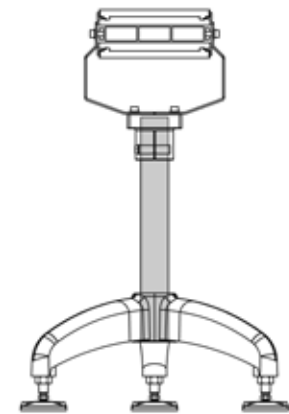
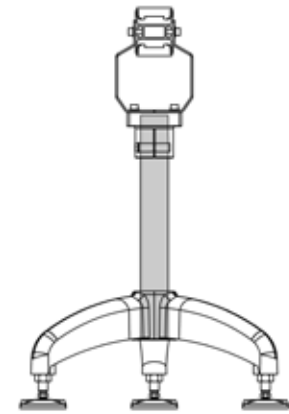
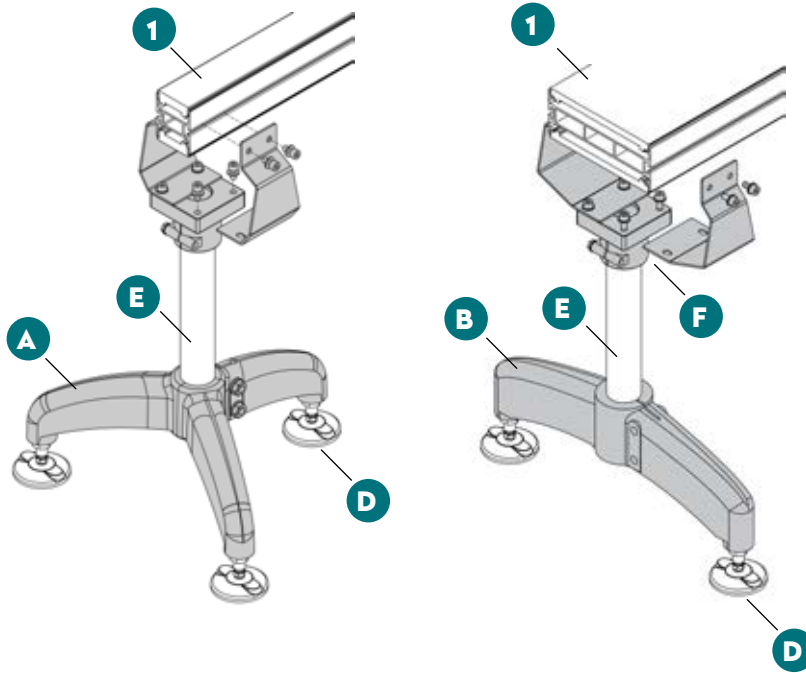
CS LEG JOINTS

STRETCH\_LINE

## FIGURES

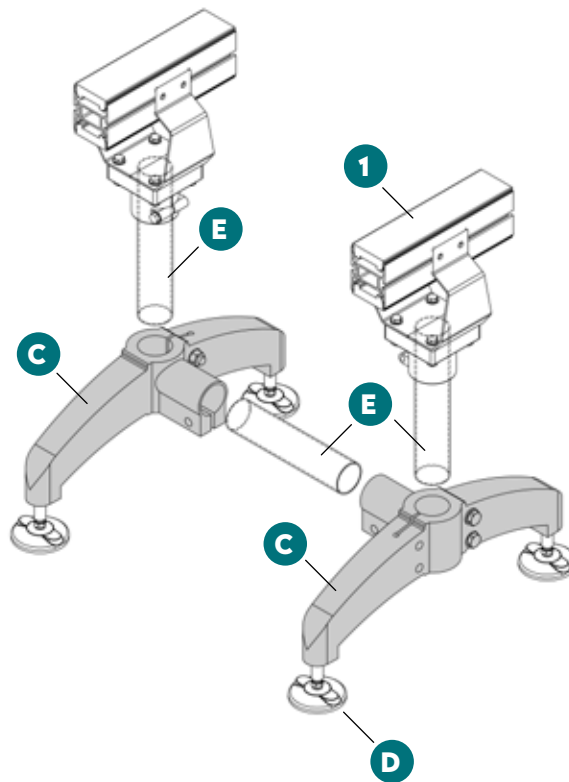
### ASSEMBLY

### DETERMINE CUTTING LENGTH



### PARTS LIST

- A Tripod
- B Bipod
- C Bipod for twin leg
- D Adjustable foot
- E Round tube
- F Leg joint, standard
- 1 Guide profile





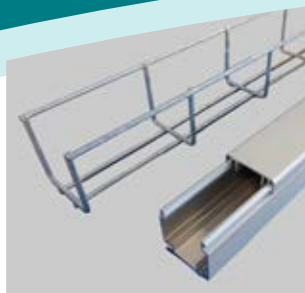









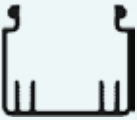

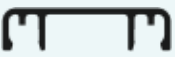



# CS Accessories

For all conveyor systems

# CS ACCESSORIES | WIRE TRAY

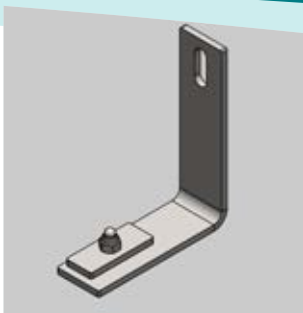


CS ACCESSORIES

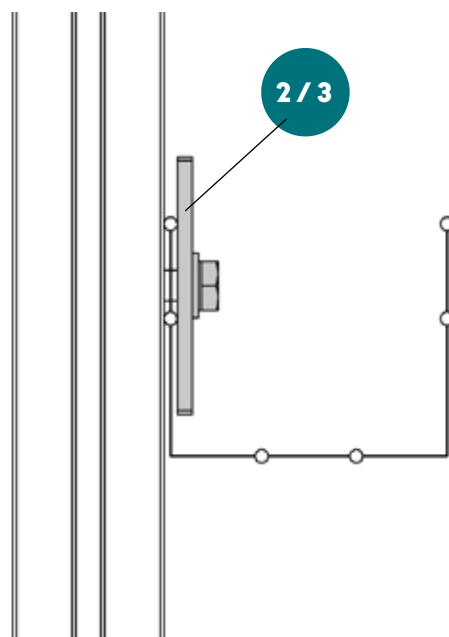
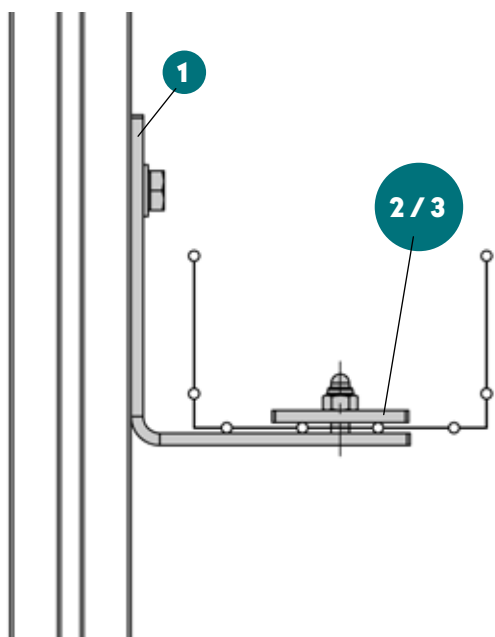
			PROD.NO.				
	Cable duct, closed profile 40x40	6	400 023	924 968	EN AW-6060 T68	E6/EV1 anodised finish	0,7
	Cable duct, closed profile 40x80	6	400 024	924 968	EN AW-6060 T68	E6/EV1 anodised finish	0,9
	Cable duct cover Profile 40x40	6	400 029	924 968	EN AW-6060 T68	E6/EV1 anodised finish	0,3
	Cable duct cover Profile 40x80	6	400 030	924 968	EN AW-6060 T68	E6/EV1 anodised finish	0,5
	Wire tray 54x70	3	400 040	924 968	steel	galvanised	0,5
	Wire tray 60x60	3	400 041	924 968	steel	galvanised	0,7

STRETCH\_LINE

# CS ACCESSORIES | WIRE TRAY MOUNTING MATERIALS






- Including fastening materials.
- Various types of brackets for different mounting situations.

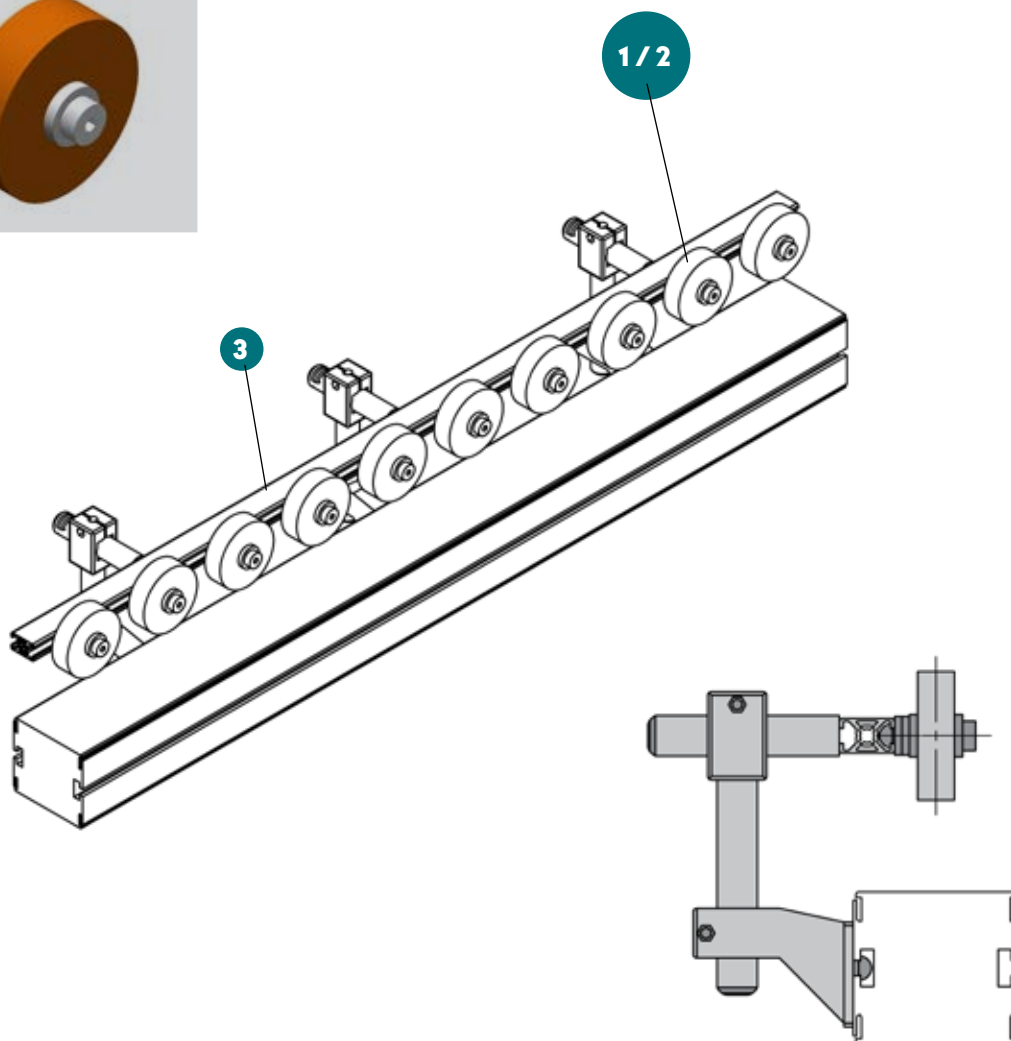


CS ACCESSORIES




STRETCH\_LINE

		PROD.NO.			
1	Wire tray mounting bracket	884480-011	1	-	stainless steel
2	Locking plate wire tray long	884480-013	1	55	stainless steel
3	Locking plate wire tray	884480-014	1	68	stainless steel
4	Wire tray universal connector	884480-021	1	-	stainless steel

# CS ACCESSORIES | TOP PRESSURE ROLLERS



CS ACCESSORIES

		PROD.NO.			
1	Sponge roller 'hard' foam set (incl mounting materials)	884220-103	1	black	hard foam
2	Sponge roller 'soft' foam set (incl. mounting materials)	884220-102	1	orange	soft foam
3*	Profile ALU 30x19	J924151	3m	anodised finish	EN AW-6063 T66 E6/EV1

\* For curve going conveyors, profile ALU 30x19 can be customly bended on request

STRETCH\_LINE









OTHER FS SOLUTIONS CONVEYOR SYSTEMS

# Other FS Solutions conveyor systems

Including standard components, application solutions  
and aluminium profile systems

STRETCH\_LINE

# OTHER FS SOLUTIONS CONVEYOR SYSTEMS

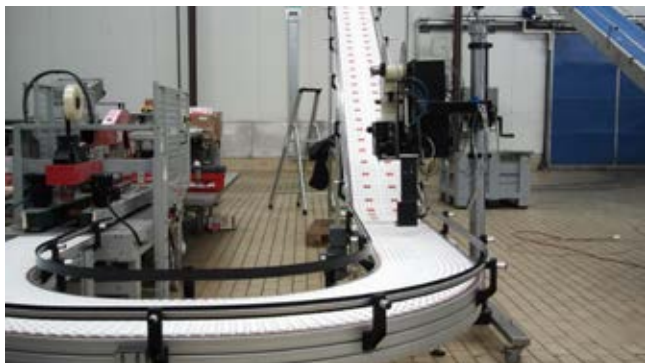
OTHER FS SOLUTIONS CONVEYOR SYSTEMS



## MAT-TOP CONVEYOR ALUMINIUM OR INOX, STRAIGHT TRANSPORT

- Chain widths from 160 up to 1200 mm
- Different designs: horizontal-, incline and/or decline Z-shaped
- Small chain pitch

.....



## MAT-TOP CONVEYOR ALUMINIUM OR INOX, STRAIGHT AND CURVED TRANSPORT

- Chain widths from 232 up to 631 mm
- 3-dimensional transport
- Low maintenance

.....



## STRETCH\_LINE CONVEYOR

- Chain widths from 65 up to 200 mm
- 3-dimensional transport
- Low maintenance

.....



## BELT CONVEYOR ALUMINIUM OR INOX, STRAIGHT TRANSPORT

- Belt widths from 80 up to 1200 mm
- Direct or center drive
- Drum- or drive motor

.....



## CHAIN CONVEYOR CS VC INOX

- Chain width 82 and 114 mm
- Direct- or center drive
- Suited for high hygiene requirements

STRETCH\_LINE



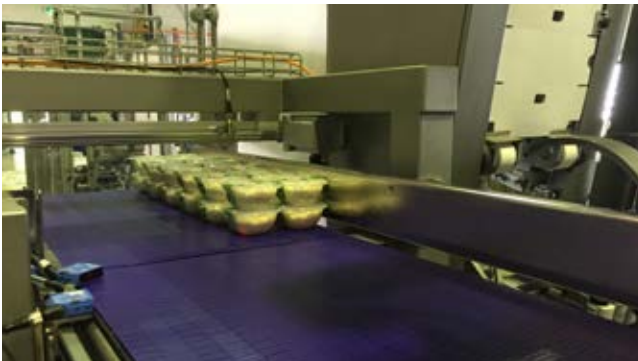


**HEAVY XLBP MAT-TOP CONVEYOR ALUMINIUM**

- Chain widths from 255 up to 765 mm
- Very low friction between chain and product (less damage to products)
- Low tension in the chain ensures a clear energy saving

**MAT-TOP CONVEYOR ALUMINIUM, STRAIGHT TRANSPORT NOSE BAR**

- Chain widths from 152 up to 1066 mm
- Small nose transition
- Transition band: easy to deploy between 2 systems
- Chain pitch 8 mm



**STANDARD COMPONENTS**

- Pusher, cross-over, divider
- Transitions between conveyors
- Puck handling, shielding etc.



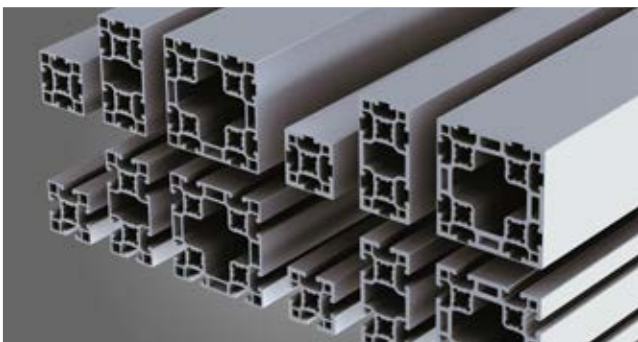
**APPLICATION SOLUTIONS**

- Buffer tables
- Vertical transport systems, gripper systems
- Sorter systems, Flow Splitters etc.



**ALUMINIUM PROFILE SYSTEM**

- Wide assortment
- Robust and corrosion resistant
- Simple and flexible assembly



# CONVEYOR SYSTEMS | APPLICATIONS FROM EVERYDAY PRACTICE

The innovative solutions provided by CS Conveyor systems guarantee a rational flow of materials in production – also where high demands are placed on speed, noise emissions, servicing and maintenance.

Take advantage of our expertise that has grown over many years. We are your innovative developer and reliable supplier of standardised and customised applications.

CONVEYOR SYSTEMS

Automotive industry, FS CS065SL



Food industry, FS CS090SL



Cosmetics industry, FS CS090SL

STRETCH\_LINE



# CONVEYOR SYSTEMS | APPLICATIONS FROM EVERYDAY PRACTICE



Automotive industry, FS CS200SL



Pharma industry, FS CS065SL



Food industry, FS CS200SL





# Basic technical information

Rating principles

Maintenance, cleaning and servicing

Safety precautions

Information on curved profiles



# CHAIN PULLING FORCE

## FIELD OF APPLICATION

The method described below for calculating chain pulling force can be applied to the CS SL Conveyor systems.

## ACCUMULATION MODE

The accumulation of conveyed items exerts heavy strain on the chain. Steel-lined chains should be used if the items being conveyed have a rough surface and sharp edges. Avoid item accumulation before and inside curves.

## SUM OF IDLER ANGLES

The multiple use of horizontal and vertical sliding curves in a line run increases strain on the chain.

The sum of idler angles  $\vartheta$  for horizontal and vertical sliding curves in a line run must not exceed the maximum values given in Table 1. If you reach higher values when planning your line, FS Solutions can check your line layout for you.

Table 1: Sum of idler angles  $\vartheta$  of sliding curves per line section

	MAX. $\Sigma$ OF IDLER ANGLES $\vartheta$ (HORIZONTAL/VERTICAL)
FS CS065SL	360°
FS CS090SL	360°
FS CS200SL	270°

## RATING PRINCIPLES

Chain pulling force F is the sum of all frictional resistances that occur. Calculation is performed as follows:

- Divide systems into several sections (straights, horizontal and vertical curves).
- Determine the pulling force required for each section. Start with the section furthest away from the drive.
- Horizontal/vertical sliding curves: the pulling forces for the previous sections are added to the sliding curve section and then multiplied by the curve factor (see calculation examples).
- The force resulting from individual line sections corresponds to the total pulling force that the system's drive unit is required to deliver.
- The total pulling force calculated must not exceed the chain's maximum permissible pulling force. The maximum chain pulling force is governed by the conveying system selected, chain type, conveying speed, line length, ambient temperature and number of starting events per hour.

# CHAIN PULLING FORCE

## CALCULATION FORMULAE

Horizontal straight sections without accumulation

$$F = L \cdot (mg + 2 \cdot mk) \cdot \mu_1 \cdot g$$

Horizontal straight sections with accumulation

$$F = \{ L \cdot (mg + 2 \cdot mk) \cdot \mu_1 + LS \cdot mg \cdot \mu_2 \} \cdot g$$

Curve sections without accumulation

$$F = LB \cdot (mg + 2 \cdot mk) \cdot \mu_1 \cdot g \cdot CK$$

Curve sections with accumulation

$$F = \{ LB \cdot (mg + 2 \cdot mk) \cdot \mu_1 + LS \cdot mg \cdot \mu_2 \} \cdot g \cdot CK$$

Straight sections with ascending +/-descending gradient (-) without accumulation

$$F = L \cdot (mg + 2 \cdot mk) \cdot (\mu_1 \cdot \cos \vartheta \pm \sin \vartheta) \cdot g$$

Straight sections with ascending +/-descending gradient (-) with accumulation

$$F = \{ L \cdot (mg + 2 \cdot mk) \cdot (\mu_1 \cdot \cos \vartheta \pm \sin \vartheta) + LS \cdot mg \cdot (\mu_2 \cdot \cos \vartheta \pm \sin \vartheta) \} \cdot g$$

Permissible chain pulling force

$$F_{zul} = F \cdot CB \cdot CT$$

## THE PERMISSIBLE CHAIN PULLING FORCE CAN BE DETERMINED USING THE TABLES BELOW

F	[ N ]	Chain pulling force
Fzul	[ N ]	Permissible chain pulling force
L	[ m ]	Length of line section
LB	[ m ]	Curve length in section
LS	[ m ]	Accumulation length in section
mg	[ kg/m ]	Weight of conveyed items per metre
mk	[ kg/m ]	Chain weight per metre
$\mu_1$	[ - ]	Coefficient of sliding friction for chain/sliding strip
$\mu_2$	[ - ]	Coefficient of sliding friction for chain/conveyed items
$\vartheta$	[ ° ]	Idler angle
g	[ m/s <sup>2</sup> ]	Acceleration due to gravity
CK	[ - ]	Curve factor
CB	[ - ]	Operating factor
CT	[ - ]	Temperature factor (for plastic chains only)

# CHAIN PULLING FORCE

## COEFFICIENT OF SLIDING FRICTION BETWEEN SLIDING STRIP AND CHAIN

The coefficient of sliding friction is heavily dependent on the condition of the chain. It increases with running time. The figure shown are average values.

Regular chain lubrication can significantly reduce frictional resistance.

**Table 2: Coefficient of sliding friction  $\mu_1$  between chain and sliding strip**

	LUBRICANT	$\mu_1$
POM	niet	0,28
PA	niet	0,35
antistatic (POM)	niet	0,35
stainless steel	niet	0,25
stainless steel	wel	0,22

## COEFFICIENT OF SLIDING FRICTION BETWEEN CHAIN AND CONVEYED ITEMS

The coefficient of sliding friction is largely governed by the surface of the items being conveyed. Product-specific figures for an exact rating must be determined by trial and error.

**Table 3: Coefficient of sliding friction  $\mu_2$  between chain and conveyed item**

CHAIN MATERIAL	LUBRICANT	$\mu_2$			
		CONVEYED ITEM MATERIAL			
		GLASS	METAL	PLASTIC	CARDBOARD
POM	niet	0,18	0,24	0,22	0,27
stainless steel	niet	0,2	0,2	0,16	-
stainless steel	wel	0,15	0,15	0,1	-

# CHAIN PULLING FORCE

## OPERATING FACTOR

The permissible chain pulling force is governed by the number of starting events per hour. In the intermittent mode, the chain is subject to much higher levels of strain than in the continuous mode. Strain can be reduced by using a motor control system (e.g., frequency converter) for gentle start-up and deceleration. We always recommend the use of a motor control unit as from a speed of 60 m/min.

For gentle start-up and deceleration in line runs with many curves and/or heavy loads, a motor control system may also be advisable at speeds below 60 m/min.

**Table 4: Operating factor CB**

	STARTING EVENTS/H	CB
≤ 60 m/min	0 – 1	1,0
≤ 60 m/min	2 – 10	0,83
≤ 60 m/min	11 – 30	0,71
> 60 m/min	> 30	0,62

## TEMPERATURE FACTOR

The strength of the plastic chain made of POM or PA depends on ambient temperature. The permissible operating temperature ranges from -20 to +80°C.

The material's visco-elastic behaviour is covered by the temperature factor. The temperature factor must only be used for conveyor lines with curves or with conveyed-item accumulation.

**Table 6: Temperature factor CT**

	CT
-20°	on request
0°	1
20°	1
40°	0,96
60°	0,94
80°	on request

## CURVE FACTOR

Sliding curves in the line run increases strain on the chain. The frictional forces occurring are dependent on idle angle and are covered by the curve factor.

The multiple use of horizontal and vertical sliding curves in a line run should be avoided wherever possible. If possible, use horizontal curves with disk. The sum of idler angles  $\vartheta$  for horizontal and vertical sliding curves in a line run must not exceed the maximum values given in Table 1.

**Table 5: Curve factor CK**

	CK
5°	1,05
15°	1,1
30°	1,2
45°	1,3
60°	1,4
90°	1,6

## EXAMPLE CALCULATIONS

The example calculations at the end of this section are approximations only.

To obtain values of a more accurate nature, allowance must also be made for the effect of chain return underneath the guide profile. This effect can be neglected in most cases.

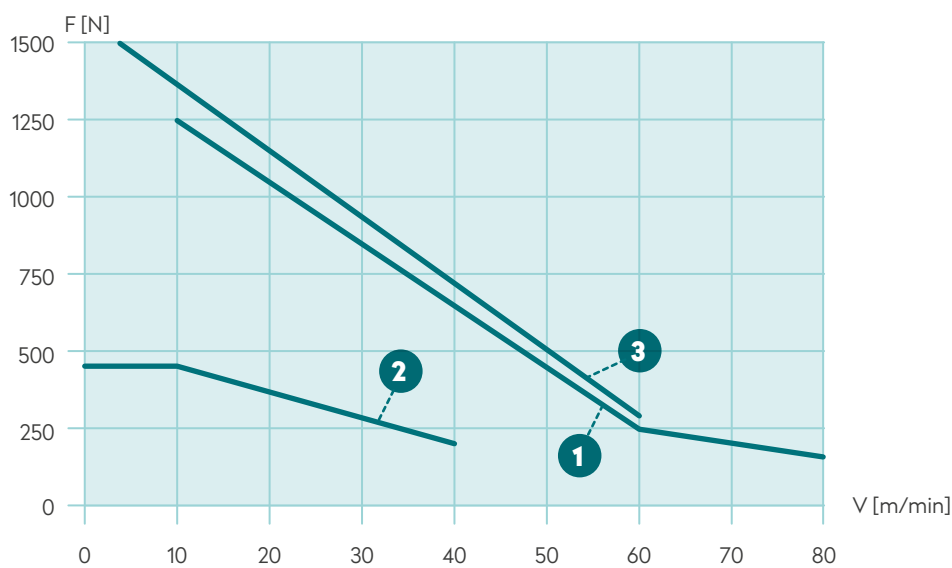
Full calculation is only necessary if the conveyor is configured with several sliding curves. When conducting a full calculation, please start at the underside of the drive unit.

# CHAIN PULLING FORCE

## PERMISSIBLE CHAIN PULLING FORCE

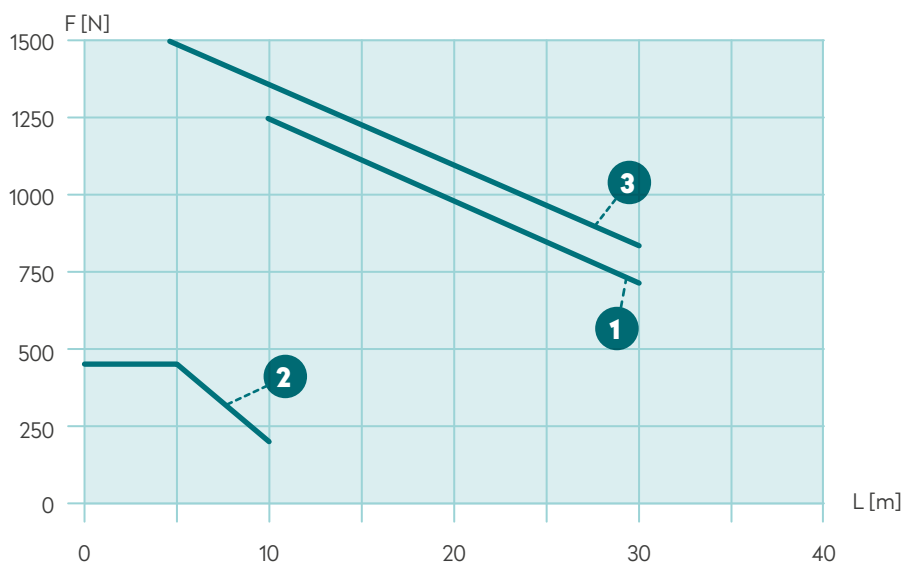
The maximum permissible chain pulling force depends on conveying speed and line length. Values can be read from the diagrams on the right. The lower value is authoritative.

**Table 7: Permissible chain pulling force F as a function of conveying speed v**



① FS CS065/FS CS090SL (without centre drives) ② FS CS090SL centre drives ③ FS CS200SL

**Table 8: Permissible chain pulling force F as a function of line length L**



① FS CS065/FS CS090SL (without centre drives) ② FS CS090SL centre drives ③ FS CS200SL

# CHAIN PULLING FORCE

## CHAIN WEIGHT PER METRE

The table shows the weight of the chain per metre for the different chain types.

**Table 9: Chain weight mk**

	 <b>KG/M</b>		
	<b>CS 065 SL</b>	<b>CS 090 SL</b>	<b>FS CS200SL</b>
Standard chain	1	1,4	3
Catch-plate chain	1,1	1,5	3,1
Chain with friction lining	0,9	1,4	2,7
Antistatic chain finish	1	1,4	3
Chain with flocked surface	1	1,4	-
Universal chain	1	1,4	3
Steel-lined chain	1,6	2,1	-
Universal chain with catch roller	1,4	2	3,6
Accumulating-roller chain	1,7	2,2	-
Gripper chain	1,5	2,2	-

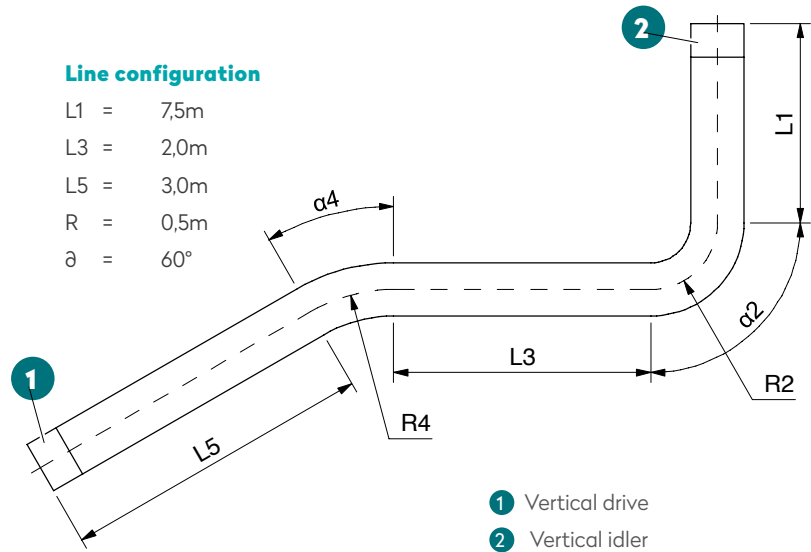
# EXAMPLE CALCULATIONS | LINE WITH HORIZONTAL CURVES

## SPECIFICATIONS

- System CS 065 SL
- Standard chain CS 065 SL (POM)
- Chain is dry-running
- Continuous operation
- Accumulation in section 5
- Temperature +20°C
- Conveyed items: Glass bottles,  $mg = 10 \text{ kg/m}$
- Conveying speed  $v = 50 \text{ m/min}$

## Line configuration

- $L1 = 7,5\text{m}$
- $L3 = 2,0\text{m}$
- $L5 = 3,0\text{m}$
- $R = 0,5\text{m}$
- $\vartheta = 60^\circ$



- 1 Vertical drive
- 2 Vertical idler

EXAMPLE CALCULATIONS

## TABLE VALUES

- Friction factor  
 $\mu1 = 0,28$  (Tab. 2)  
 $\mu2 = 0,18$  (Tab. 3)
- Operating factor  
 $CB = 1,0$  (Tab. 4)
- Curve factor  
 $CK2 = 1,6$  (Tab. 5)  
 $CK4 = 1,2$  (Tab. 5)
- Temperature factor  
 $CT = 1,0$  (Tab. 6)
- Perm. chain pulling force  
 $L = \sum Li = 7,65 \text{ m}$   
 $F(v) = 450 \text{ N}$  (Tab. 7)  
 $F(L) = 1250 \text{ N}$  (Tab. 8)  
 $F_{zul} = F \cdot CB \cdot CT$   
 $F_{zul} = 450 \cdot 1,0 \cdot 1,0 = 450 \text{ N}$
- Chain weight  
 $mk = 1,0 \text{ kg/m}$  (Tab. 9)

## DETERMINING CHAIN FORCE

$$F1 = L1 \cdot (mg + 2 \cdot mk) \cdot \mu1 \cdot g$$

$$F1 = 0,6 \cdot (10 + 2 \cdot 1) \cdot 0,28 \cdot 9,81 = 19,8 \text{ N}$$

$$F2 = [F1 + LB2 \cdot (mg + 2 \cdot mk) \cdot \mu1 \cdot g] \cdot CK2$$

$$F2 = [19,8 + 0,785 \cdot (10 + 2 \cdot 1) \cdot 0,28 \cdot 9,81] \cdot 1,6 = 73,1 \text{ N}$$

$$F3 = F2 + L3 \cdot (mg + 2 \cdot mk) \cdot \mu1 \cdot g$$

$$F3 = 73,1 + 2,0 \cdot (10 + 2 \cdot 1) \cdot 0,28 \cdot 9,81 = 139,1 \text{ N}$$

$$F4 = [F3 + LB4 \cdot (mg + 2 \cdot mk) \cdot \mu1 \cdot g] \cdot CK4$$

$$F4 = [139,1 + 0,262 \cdot (10 + 2 \cdot 1) \cdot 0,28 \cdot 9,81] \cdot 1,2 = 177,3 \text{ N}$$

$$F5 = F4 + [L5 \cdot (mg + 2 \cdot mk) \cdot \mu1 + LS5 \cdot mg \cdot \mu2] \cdot g$$

$$F5 = 177,3 + [4,0 \cdot (10 + 2 \cdot 1) \cdot 0,28 + 4,0 \cdot 10 \cdot 0,18] \cdot 9,81 = 379,8 \text{ N}$$

## CHECKING PERM. CHAIN PULLING FORCE

$$F5 < F_{zul} \rightarrow 379,8 \text{ N} < 450 \text{ N}$$

## CALCULATING CURVE LENGTH

$$LB = \frac{\pi \cdot R \cdot \vartheta}{180^\circ}$$

$$LB2 = \frac{\pi \cdot 0,5 \text{ m} \cdot 90^\circ}{180^\circ} = 0,785 \text{ m}$$

$$LB4 = \frac{\pi \cdot 0,5 \text{ m} \cdot 30^\circ}{180^\circ} = 0,262 \text{ m}$$

STRETCH\_LINE

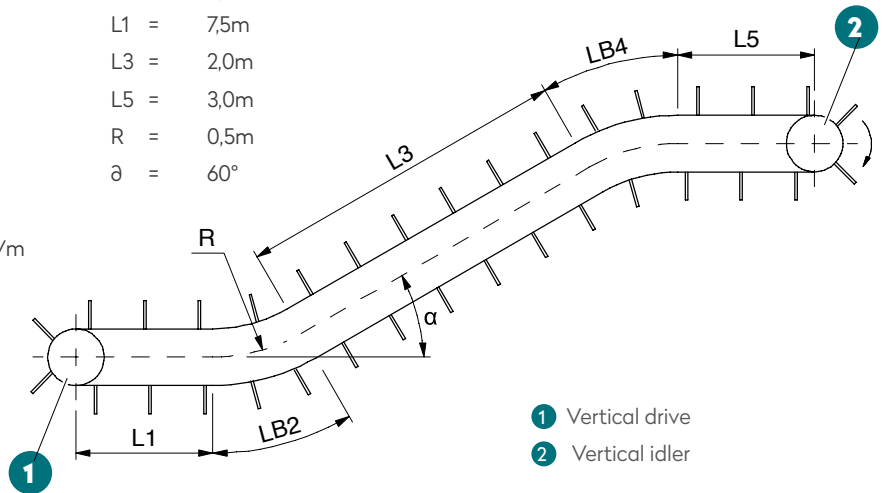
# EXAMPLE CALCULATIONS | LINE WITH VERTICAL CURVES

## SPECIFICATIONS

- System FS CS200SL
- Chain FS CS200SL with catch plates (POM)
- Chain is dry-running
- Up to 20 starting events/h
- No accumulation
- Temperature +40°C
- Conveyed items: Metal enclosures,  $mg = 6 \text{ kg/m}$
- Conveying speed  $v = 20 \text{ m/min}$

## Line configuration

- $L1 = 7,5\text{m}$
- $L3 = 2,0\text{m}$
- $L5 = 3,0\text{m}$
- $R = 0,5\text{m}$
- $\alpha = 60^\circ$



- 1 Vertical drive
- 2 Vertical idler

## TABLE VALUES

- |  |  |   |  |
|--|--|---|--|
| • Friction factor<br>$\mu_1 = 0,28$ (Tab. 2) | • Curve factor<br>$CK = 1,4$ (Tab. 5)        | • Perm. chain pulling force<br>$F(v) = 1160 \text{ N}$ (Tab. 7)<br>$F(L) = 1280 \text{ N}$ (Tab. 8) | • Chain weight<br>$mk = 3,1 \text{ kg/m}$ (Tab. 9) |
| • Operating factor<br>$CB = 0,71$ (Tab. 4)   | • Temperature factor<br>$CT = 0,96$ (Tab. 6) | $F_{zul} = F \cdot CB \cdot CT$<br>$F_{zul} = 1160 \cdot 0,71 \cdot 0,96 = 790 \text{ N}$           |  |

## DETERMINING CHAIN FORCE

$$F1 = L1 \cdot (mg + 2 \cdot mk) \cdot \mu_1 \cdot g$$

$$F1 = 7,5 \cdot (6 + 2 \cdot 3,1) \cdot 0,28 \cdot 9,81 = 251,3 \text{ N}$$

$$F2 = [F1 + LB2 \cdot (mg + 2 \cdot mk) \cdot \mu_1 \cdot g] \cdot CK$$

$$F2 = [251,3 + 0,524 \cdot (6 + 2 \cdot 3,1) \cdot 0,28 \cdot 9,81] \cdot 1,4 = 376,4 \text{ N}$$

$$F3 = F2 + L3 \cdot (mg + 2 \cdot mk) \cdot \mu_1 \cdot g$$

$$F3 = 376,4 + 2,0 \cdot (6 + 2 \cdot 3,1) \cdot 0,28 \cdot 9,81 = 443,4 \text{ N}$$

$$F4 = [F3 + LB4 \cdot (mg + 2 \cdot mk) \cdot \mu_1 \cdot g] \cdot CK$$

$$F4 = [443,4 + 0,524 \cdot (6 + 2 \cdot 3,1) \cdot 0,28 \cdot 9,81] \cdot 1,4 = 645,3 \text{ N}$$

$$F5 = F4 + [L5 \cdot (mg + 2 \cdot mk) \cdot \mu_1 \cdot g]$$

$$F5 = 645,3 + [3,0 \cdot (6 + 2 \cdot 3,1) \cdot 0,28 \cdot 9,81] = 745,8 \text{ N}$$

## CHECKING PERM. CHAIN PULLING FORCE

$$F5 < F_{zul} \rightarrow 745,8 \text{ N} < 790 \text{ N}$$

## CALCULATING CURVE LENGTH

$$LB = \frac{\pi \cdot R \cdot \alpha}{180^\circ}$$

$$LB2 = LB4 = \frac{\pi \cdot 0,5 \text{ m} \cdot 90^\circ}{180^\circ} = 0,524 \text{ m}$$



## GENERAL INFORMATION

The entire conveyor system must be checked at regular intervals to ensure trouble-free, quiet operation. The servicing and maintenance work listed below is intended to contribute towards extending the system's useful life under high-capacity use and help prevent accidents.



### ATTENTION!

Only perform this work if you are qualified to do so. Before commencing this servicing and maintenance work, read the "Safety precautions" section in the operating instructions supplied with each conveyor system.

## SYSTEM-RELATED INFORMATION

### Slat band chain conveyor

Depending on the length of conveyor run and loads carried by the conveyor system, servicing must be carried out at intervals of 250 to a maximum of 500 operating hours.

### The following work must be carried out at regular intervals:

- The entire conveyor system must be protected from dirt.
- In particular, keep chain and sliding strips free from dirt, broken glass, sand etc.
- Regularly clean off dirt with steam, water or soapy water. Cleaning agents may be used with a pH value of between 4.5 and 9.0. Due to their caustic effect, cleaners containing solvent must not be used on chain and sliding strips.
- Irregularities on guides and sliding strips must be eliminated to ensure that the chain runs smoothly.
- Lubricants may be used for reducing friction between chain and sliding strip (in particular prod. no. 180 003).
- Check conveyor chain for damage, wear and stretching.
- Check the points at which the sliding strips are bolted down.
- Lubricate roller chain on the drive units (with chain transmission gear assembly): On fast-running Conveyor systems (conveying at speeds over 60 m/min), the drive-unit roller chain must be lubricated with a suitable lubricant (prod. no. 180 003) at intervals of no more than 250 hours of operation. High-performance drives with longer servicing intervals are available if required.
- Check all wear parts (conveyor chain, chain wheels, chain guides, bearings, idler wheels etc.) for proper working order.

# SAFETY PRECAUTIONS



## ATTENTION!

Before starting up a conveyor system, it is imperative to ensure that the overall system containing components supplied by FS Solutions conforms to the provisions of EC Machine Directive 2006/42/EC and the statutory provisions translated into national law.

## GUARDS

All areas of the conveyor system presenting a hazard to persons must be secured by means of suitable guards.

Applicable international standards as well as national regulations on safety and accident prevention must be met.

### This can be done in the following ways:

- Potential hazard zones must be separated off by guards and made inaccessible to persons. Protective fences can be installed around the system or protective enclosures can be fitted directly at the point of danger.
- If hazard zones cannot be separated off by guards, points of danger must be marked with warning signs.



## ATTENTION!

Before starting up a conveyor system, it is imperative to ensure that the overall system containing components supplied by FS Solutions conforms to the provisions of EC Machine Directive 2006/42/EC and the statutory provisions translated into national law.

## OVERHEAD INSTALLATION

If conveyor systems are installed above a headroom height of approx. 1.8 m (overhead installation), the danger zone below the conveyor must be marked and, if necessary, segregated by means of suitable guards.

Loads could fall from the conveyor. If traffic routes cross the danger zone, safe passages must be created on site by the owner.

While an overhead conveyor is in operation, keep obstacles out of the area below the conveyor so as to avoid collisions.



## ATTENTION!

The safety clutch does not protect persons from crushing or shearing hazards.

## DRIVES

The safety clutch on drive units with chain gear is a slip clutch that protects the conveyor system from damage by limiting the level of drive torque transferred.



PROD.NO.	DESCRIPTION	CHAPTER	PAGE
400023	Cable duct 40x40	CS Accessories	162
400024	Cable duct 40x80	CS Accessories	162
400029	Cable duct cover, 40 mm	CS Accessories	162
400030	Cable duct cover, 80 mm	CS Accessories	162
400040	Wire tray 54x70	CS Accessories	162
400041	Wire tray 60x60	CS Accessories	162
791001	Lateral holder type 5	CS Railing	122
791011	Lateral holder type 6	CS Railing	123
792002	Profile clamp for guiding Ø22	CS Railing	133
792003	Assembled profile clamp railing Ø22x1.5 round profile, 75mm	CS Railing	129
792004	Assembled profile clamp railing Ø22x1.5 round profile, 100mm	CS Railing	129
792005	Assembled profile clamp railing Ø22x1.5 round profile, 125mm	CS Railing	129
792014	Assembled profile clamp railing Ø22x1.5 round profile, 95mm	CS Railing	130
792017	Profile clamp	CS Railing	128
793002	Joint for railing profile Ø22	CS Railing	117
794001	Railing profile, aluminium Ø22	CS Railing	115
482420-483	Round tube 48.3mm dia x 1,6mm	CS Leg sets	157
880102-001	Driven roll transfer CS 090 SL, drive section, left-hand version	CS 090 SL Accessories	63
880102-002	Driven roll transfer CS 090 SL, drive section, right-hand version	CS 090 SL Accessories	63
880102-003	Driven roll transfer CS 090 SL, idler section, left-hand version	CS 090 SL Accessories	63
880102-004	Driven roll transfer CS 090 SL, idler section, right-hand version	CS 090 SL Accessories	63
880120-001	Driven roll transfer CS 200 SL, drive section, left-hand version	CS 200 SL Accessories	98
880120-002	Driven roll transfer CS 200 SL, drive section, right-hand version	CS 200 SL Accessories	98
880120-003	Driven roll transfer CS 200 SL, idler section, left-hand version	CS 200 SL Accessories	98
880120-004	Driven roll transfer CS 200 SL, idler section, right-hand version	CS 200 SL Accessories	98
880130-001	Driven roll transfer CS 065 SL, drive section, left-hand version	CS 065 SL Accessories	35
880130-002	Driven roll transfer CS 065 SL, drive section, right-hand version	CS 065 SL Accessories	35
880130-003	Driven roll transfer CS 065 SL, idler section, left-hand version	CS 065 SL Accessories	35
880130-004	Driven roll transfer CS 065 SL, idler section, right-hand version	CS 065 SL Accessories	35
883603-900	Non driven transfer CS 200 SL, 90°	CS 200 SL Accessories	97
883603-910	Non driven transfer CS 200 SL, 180°	CS 200 SL Accessories	97
883610-900	Non-driven roll transfer CS 090 SL, 90°	CS 090 SL Accessories	62
883610-910	Non-driven roll transfer CS 090 SL, 180°	CS 090 SL Accessories	62
883833-900	Non-driven roll transfer CS 065 SL, 90°	CS 065 SL Accessories	34
883833-910	Non-driven roll transfer CS 065 SL, 180°	CS 065 SL Accessories	34
884220-102	Sponge roller 'soft' foam set ( incl mounting materials)		164
884220-103	Sponge roller 'hard' foam set ( incl mounting materials)		164
884480-011	Wire tray mounting bracket	CS Accessories	163
884480-013	Locking plate wire tray long	CS Accessories	163
884480-014	Locking plate wire tray	CS Accessories	163

# INDEX



PROD.NO.	DESCRIPTION	CHAPTER	PAGE
884480-021	Wire tray universal connector	CS Accessories	163
J400001	Gripper element, CS 065 SL, B shape	CS 065 SL	24
J400002	Gripper element, CS 090 SL, A shape	CS 090 SL	49
J400008	Conveyor chain CS 090 SL, with flocked surface, chain mounted	CS 090 SL	47
J400013	Conveyor chain CS 065 SL, with round product support, chain mounted	CS 065 SL	20, 21
J400014	Conveyor chain CS 090 SL, with friction lining, chain mounted	CS 090 SL	46
J400015	Conveyor chain CS 090 SL, with friction lining, chain links without pins	CS 090 SL	46
J400038	Conveyor chain CS 065 SL, with flocked surface, chain mounted	CS 065 SL	22
J534011	Chain pins CS 065 SL, stainless steel	CS 065 SL	20-24
J534012	Chain pins CS 200 SL, stainless steel	CS 065 SL	84 - 87
J534013	Conveyor chain CS 065 SL, with catch plates 5 mm, chain links without pins	CS 200 SL	20
J534014	Conveyor chain CS 065 SL, with catch plates 15 mm, chain links without pins	CS 200 SL	20
J534015	Conveyor chain CS 065 SL, with catch plates 30 mm, chain links without pins	CS 065 SL	20
J534053	Conveyor chain CS 065 SL, with friction lining, chain links without pins	CS 065 SL	21
J534054	Conveyor chain CS 065 SL, with gripper, B shape, chain links without pins	CS 065 SL	24
J534056	Conveyor chain CS 065 SL, with accumulating rollers, chain links without pins	CS 065 SL	24
J534059	Conveyor chain CS 065 SL, universal, chain links without pins	CS 065 SL	23
J534060	Conveyor chain CS 065 SL, with catch rollers, chain links without pins	CS 065 SL	23
J534068	Conveyor chain CS 090 SL, standard, chain mounted, white	CS 090 SL	44
J534068.101	Conveyor chain CS 090 SL, standard, chain mounted, blue	CS 090 SL	44
J534069	Conveyor chain CS 090 SL, standard, chain links without pins	CS 090 SL	44
J534071	Chain pins CS 090 SL, stainless steel	CS 090 SL	44-49
J534072	Conveyor chain CS 090 SL, antistatic, chain mounted	CS 090 SL	46
J534073	Conveyor chain CS 090 SL, antistatic, chain links without pins	CS 090 SL	46
J534076	Conveyor chain CS 090 SL, with catch plates 5 mm, chain links without pins	CS 090 SL	45
J534078	Conveyor chain CS 090 SL, with catch plates 15 mm, chain links without pins	CS 090 SL	45
J534079	Conveyor chain CS 090 SL, with catch plates 30 mm, chain links without pins	CS 090 SL	45
J534081	Conveyor chain CS 090 SL, with gripper, B shape, chain mounted	CS 090 SL	49
J534082	Conveyor chain CS 090 SL, with gripper, B shape, chain links without pins	CS 090 SL	49
J534083	Gripper element, CS 065 SL, B shape	CS 090 SL	49
J534085	Conveyor chain CS 090 SL, with accumulating rollers, chain mounted	CS 090 SL	48
J534086	Conveyor chain CS 090 SL, with accumulating rollers, chain links without pins	CS 090 SL	48
J534088	Conveyor chain CS 090 SL, universal, chain links without pins	CS 090 SL	47
J534089	Chain CS 090 SL, with catch rollers, chain links without pins	CS 090 SL	48
J534125	Reducing sleeve, M12/M8x19	CS Leg sets	152
J534268	Gripper element, CS 065 SL, A shape	CS 065 SL	24
J534471	Tripod	CS Leg sets	157
J534472	Bipod	CS Leg sets	157
J534473	Bipod for twin leg (with side connection)	CS Leg sets	157
J534481	Adjustable foot, 80 mm dia., M16 x 66	CS Leg sets	157



PROD.NO.	DESCRIPTION	CHAPTER	PAGE
J534550	Conveyor chain CS 065 SL, standard, chain mounted	CS 065 SL	20
J534551	Conveyor chain CS 065 SL, antistatic, chain mounted	CS 065 SL	22
J534553	Conveyor chain CS065SL, with friction lining, chain mounted	CS 065 SL	21
J534557	Conveyor chain CS065SL, with gripper, B shape, chain mounted	CS 065 SL	24
J534558	Conveyor chain CS065SL, with accumulat rollers,chain mounted	CS 065 SL	24
J534567	Conveyor chain CS 065 SL, standard, chain links without pins	CS 065 SL	20
J534568	Conveyor chain CS065SL, antistatic, chain links without pins	CS 065 SL	22
J534588	Conveyor chain CS065SL, with gripper, A shape, chain mounted	CS 065 SL	24
J534589	Chain CS 065 SL, with gripper, A shape, chain links no pins	CS 065 SL	24
J534590	Conveyor chain CS090SL, with gripper, A shape, chain mounted	CS 090 SL	49
J534591	Chain CS 090 SL, with gripper, A shape, chain links no pins	CS 090 SL	49
J534890	Adjustable foot, 80 mm dia., M12 x 100	CS Leg sets	145
J534891	Adjustable foot, 80 mm dia., M12 x 70	CS Leg sets	145
J534892	Adjustable foot, 80 mm dia., M16 x 70	CS Leg sets	145
J535069	Conveyor chain CS 200 SL, standard, chain mounted	CS 200 SL	84
J535069.101	Conveyor chain CS 200 SL, standard, chain mounted Blue	CS 200 SL	84
J535071	Lock CS 200 SL	CS 200 SL	84 - 87
J535072	Conveyor chain CS 200 SL, standard, chain links without pins	CS 200 SL	84
J535073	Chain CS200SL,with catch plates 30mm,chain links without pin	CS 200 SL	86
J535074	Conveyor chain CS 200 SL,with friction lining, chain mounted	CS 200 SL	85
J535075	Chain CS 200 SL, with friction lining, chain links no pins	CS 200 SL	85
J535076	Conveyor chain CS 200 SL,universal, chain links without pins	CS 200 SL	86
J535077	Chain CS 200 SL,with catch rollers, chain links without pins	CS 200 SL	86
J535079	Conveyor chain CS 200 SL, antistatic, chain mounted	CS 200 SL	85
J535090	Conveyor chain CS200SL, antistatic, chain links without pins	CS 200 SL	85
J535380	Plastic grub screw M5x5-DIN 551	CS 065 SL / CS 090 SL / CS 200 SL	30, 56, 86, 92
J535525	Anchor bolt, HST M8/30	CS Leg sets	146
J535526	Anchor bolt HLC 12x100	CS Leg sets	146
J535934	Spacer for CS090SL Closed	CS 090 SL Closed	70
J537015	Sliding strip CS SL, standard, grey	CS 065 SL / CS 090 SL / CS 200 SL	30, 56, 86, 92
J537016	Sliding strip CS SL, antistatic, black	CS 065 SL / CS 090 SL / CS 200 SL	30, 56, 86, 92
J537017	Sliding strip CS SL, blue	CS 065 SL / CS 090 SL / CS 200 SL	30, 56
J537020	Sliding strip CS SL, Ultra low friction Lub X CV , Naturel	CS 065 SL / CS 090 SL / CS 200 SL	30, 56
J537076	Profile clamp railing, holder for 20x20 mm square profile	CS Railing	132
J537077	Cross clamp for 20x20 / Ø22 mm	CS Railing	135
J537078	Head clamp	CS Railing	134
J537079	Lateral holder type 1	CS Railing	118
J537080	Lateral holder type 2	CS Railing	119
J537081	Lateral holder type 3	CS Railing	120
J537082	Spacer plate for lateral holder, 5 mm	CS Railing	125

# INDEX



clickable page numbers to go directly to the correct page

PROD.NO.	DESCRIPTION	CHAPTER	PAGE
J537083	Cover cap, railing profile	CS Railing	116
J537089	Lateral holder type 4	CS Railing	121
J537098	Profile clamp railing, holder for round profile Ø22x1.5	CS Railing	132
J537115	Joint, railing profile	CS Railing	116
J537130	Cutting pliers	CS Tools	37, 65, 93, 99
J537131	Split-pin driver, 4 mm dia.	CS 065 SL / CS 090 SL	26, 37, 52, 65
J537135	Assembly mandrel, sliding strip CS 065 SL	CS 065 SL / CS 090 SL	30, 36
J537146	Assembly mandrel, sliding strip CS 090 SL	CS 065 SL / CS 090 SL	56, 64
J537151	Clamping lever	Accessories	138
J537152	Star grip	Accessories	138
J537397	Sliding strip CS SL, reinforced, white	CS 090 SL	56
J537398	Chain CS090SL with reinforced tab	CS 090 SL	45
J537416	Cover cap, 20x20+, basic, plastic, black	CS Railing	136
J650006	Push-on strip 20, railing profile	CS Railing	115
J650008	Railing profile, plastic	CS Railing	115
J650033	Push-on strip 40, railing profile	CS Railing	115
J924017	Profile, L - 20x20	CS Railing	136
J924151	Profile ALU 30x19	CS Accessories	164
J924166	Railing profile, aluminium	CS Railing	115
J924171	Guide profile Closed system	CS 090 SL Closed	70
J924172	Guide profile CS 065 SL	CS 065 SL	25
J924173	Guide profile CS 090 SL	CS 090 SL	50
J924176	Round profile Ø22x1.5 M5	CS Railing	137
J924178	Spacer profile, railing	CS Railing	124
J924179	Guide profile CS 200 SL	CS 200 SL	88
J924705	Drilling jig, MS 40+, M8/M12 screwed/clamped joint, central joint	CS Leg sets	149, 150
J924859	Side guide plate	CS Railing	139
J924968	Profile cut, price group 1	CS Railing / CS Leg sets	124, 136
J924969	Profile cut, price group 2	CS 065 SL / CS 090 SL	
		CS 200 SL / CS Leg Sets	25, 50, 70, 88
J924976	Drilling work, M6/M8/M12, depth to 40 mm	CS Leg sets	149, 150
J924977	Drilling work, M6/M8/M12, depth to 80 mm	CS Leg sets	149, 150
J927580	Leg joint, standard incl. assembly kit for round tube FS CS065SL	CS Leg sets	157
J927581	Leg joint, standard incl. assembly kit for round tube FS CS090SL	CS Leg sets	157
J927582	Leg joint, standard incl. assembly kit for round tube FS CS200SL	CS Leg sets	157
J927686	Assembled profile clamp railing 20x20 square profile, 55mm	CS Railing	127
J927688	Assembled profile clamp railing 20x20 square profile, 100mm	CS Railing	127
J927689	Assembled profile clamp railing Ø22x1.5 round profile, 55mm	CS Railing	127
J927691	Assembled profile clamp railing Ø22x1.5 round profile, 100mm	CS Railing	127
J927692	Assembled head clamp railing with Ø22x1.5 round profil,100mm	CS Railing	127



PROD.NO.	DESCRIPTION	CHAPTER	PAGE
J927693	Assembled head clamp railing with Ø22x1.5 round profil,200mm	CS Railing	127
J927694	Assembled head railing clamp, 20x20 square profile, 100 mm	CS Railing	131
J927695	Assembled head clamp railing, 20x20 square profile, 200 mm	CS Railing	131
J927702	Chain assembly unit CS 065 SL	CS 065 SL	26
J927706	Vertical drive CS 065 SL, left-hand version, without motor	CS 065 SL	31
J927715	Direct drive CS065SL, left-hand motor flange, without motor	CS 065 SL	32
J927717	Direct drive CS065SL, right-hand motor flange, without motor	CS 065 SL	32
J927719	Vertical drive CS 065 SL, right-hand version, without motor	CS 065 SL	31
J927720	Horizontal curve with disk, R150/90°, CS 065 SL	CS 065 SL	27
J927721	Horizontal curve with disk, R150/180°, CS 065 SL	CS 065 SL	27
J927722	Horizontal sliding curve, R700/30°, CS 065 SL	CS 065 SL	28
J927723	Horizontal sliding curve, R700/45°, CS 065 SL	CS 065 SL	28
J927724	Horizontal sliding curve, R700/60°, CS 065 SL	CS 065 SL	28
J927725	Horizontal sliding curve, R700/90°, CS 065 SL	CS 065 SL	28
J927726	Vertical sliding curve, R500/5°, CS 065 SL	CS 065 SL	29
J927727	Vertical sliding curve, R500/7°, CS 065 SL	CS 065 SL	29
J927728	Vertical sliding curve, R500/10°, CS 065 SL	CS 065 SL	29
J927729	Vertical sliding curve, R500/15°, CS 065 SL	CS 065 SL	29
J927730	Vertical sliding curve, R500/20°, CS 065 SL	CS 065 SL	29
J927731	Vertical sliding curve, R500/30°, CS 065 SL	CS 065 SL	29
J927732	Vertical sliding curve, R500/45°, CS 065 SL	CS 065 SL	29
J927733	Vertical sliding curve, R500/60°, CS 065 SL	CS 065 SL	29
J927734	Vertical sliding curve, R500/90°, CS 065 SL	CS 065 SL	29
J927735	Leg joint, CS 065 SL, standard	CS Leg sets	151
J927736	Vertical drive CS 090 SL, left-hand version, without motor	CS 090 SL	57
J927738	Vertical drive CS 090 SL, right-hand version, without motor	CS 090 SL	57
J927740	Direct drive CS090SL, left-hand motor flange, without motor	CS 090 SL	58
J927743	Direct drive CS090SL, right-hand motor flange, without motor	CS 090 SL	58
J927745	Vertical sliding curve, R500/5°, CS 200 SL	CS 200 SL	91
J927746	Horizontal sliding curve, R450/30°, CS 200 SL	CS 200 SL	90
J927747	Horizontal sliding curve, R450/45°, CS 200 SL	CS 200 SL	90
J927748	Horizontal sliding curve, R450/60°, CS 200 SL	CS 200 SL	90
J927749	Vertical idler CS 090 SL, 180°	CS 090 SL	61
J927750	Horizontal sliding curve, R450/90°, CS 200 SL	CS 200 SL	90
J927751	Horizontal curve with disk, R162.5/90°, CS 090 SL	CS 090 SL	53
J927752	Horizontal curve with disk, R162.5/180°, CS 090 SL	CS 090 SL	53
J927753	Horizontal sliding curve, R700/30°, CS 090 SL	CS 090 SL	54
J927754	Horizontal sliding curve, R700/45°, CS 090 SL	CS 090 SL	54
J927755	Horizontal sliding curve, R700/60°, CS 090 SL	CS 090 SL	54
J927756	Horizontal sliding curve, R700/90°, CS 090 SL	CS 090 SL	54

# INDEX



clickable page numbers to go directly to the correct page

PROD.NO.	DESCRIPTION	CHAPTER	PAGE
J927757	Vertical sliding curve, R500/5°, CS 090 SL	CS 090 SL	55
J927758	Vertical sliding curve, R500/7°, CS 090 SL	CS 090 SL	55
J927759	Vertical sliding curve, R500/10°, CS 090 SL	CS 090 SL	55
J927760	Vertical sliding curve, R500/15°, CS 090 SL	CS 090 SL	55
J927761	Vertical sliding curve, R500/20°, CS 090 SL	CS 090 SL	55
J927762	Vertical sliding curve, R500/30°, CS 090 SL	CS 090 SL	55
J927763	Vertical sliding curve, R500/45°, CS 090 SL	CS 090 SL	55
J927764	Vertical sliding curve, R500/60°, CS 090 SL	CS 090 SL	55
J927765	Vertical sliding curve, R500/90°, CS 090 SL	CS 090 SL	55
J927766	Leg joint, CS 090 SL, standard	CS Leg sets	151
J927767	Leg joint, CS 090, 200 SL, variable	CS Leg sets	153, 154
J927768	Chain assembly unit CS 090 SL	CS 090 SL	52, 86
J927769	Horizontal curve with disk, R150/60°, CS 065 SL	CS 065 SL	27
J927770	Horizontal curve with disk, R162.5/45°, CS 090 SL	CS 090 SL	53
J927771	Horizontal curve with disk, R162.5/60°, CS 090 SL	CS 090 SL	53
J927772	Vertical sliding curve, R500/7°, CS 200 SL	CS 200 SL	91
J927773	Vertical sliding curve, R500/10°, CS 200 SL	CS 200 SL	91
J927774	Vertical sliding curve, R500/15°, CS 200 SL	CS 200 SL	91
J927775	Vertical sliding curve, R500/20°, CS 200 SL	CS 200 SL	91
J927776	Leg joint, CS 065 SL, variable	CS Leg sets	153
J927777	Vertical sliding curve, R500/30°, CS 200 SL	CS 200 SL	91
J927778	Leg joint, CS, horizontal strut	CS Leg sets	155
J927779	Leg joint, CS, vertical strut	CS Leg sets	156
J927780	Fixing kit for railing, standard	CS Railing	126
J927781	Fixing kit for railing, spacing 5 mm	CS Railing	126
J927782	Fixing kit for railing, spacing 10 mm	CS Railing	126
J927783	Fixing kit, spacer profile, railing	CS Railing	124
J927784	Vertical sliding curve, R500/45°, CS 200 SL	CS 200 SL	91
J927785	Cover cap round profile Ø22x1.5	CS Railing	117, 137
J927786	Drilling jig, sliding strip CS SL	CS 065 SL / CS 090 SL	
		CS 200 SL	30, 36, 56, 64, 92, 99
J927788	Horizontal curve with disk, R150/45°, CS 065 SL	CS 065 SL	27
J927791	Vertical idler CS 065 SL, 90°	CS 065 SL	33
J927797	Vertical drive CS 200 SL, left-hand version, without motor	CS 200 SL	93
J927798	Vertical drive CS 200 SL, right-hand version, without motor	CS 200 SL	93
J927799	Direct drive CS200SL, left-hand motor flange, without motor	CS 200 SL	94
J927800	Direct centre drive CS200SL, left-hand version, without motor	CS 200 SL	95
J927801	Direct drive CS200SL, right-hand motor flange, without motor	CS 200 SL	94
J927802	Vertical sliding curve, R500/60°, CS 200 SL	CS 200 SL	91
J927803	Line joint CS SL	CS 065 SL / CS 090 SL / CS 200 SL	25, 51, 88





PROD.NO.	DESCRIPTION	CHAPTER	PAGE
J927804	Vertical idler CS 065 SL, 180°	CS 065 SL	33
J927805	Horizontal sliding curve, R400/30°, CS 065 SL	CS 065 SL	28
J927806	Horizontal sliding curve, R400/45°, CS 065 SL	CS 065 SL	28
J927807	Horizontal sliding curve, R400/60°, CS 065 SL	CS 065 SL	28
J927808	Horizontal sliding curve, R400/90°, CS 065 SL	CS 065 SL	28
J927809	Horizontal sliding curve, R400/30°, CS 090 SL	CS 090 SL	54
J927810	Horizontal sliding curve, R400/45°, CS 090 SL	CS 090 SL	54
J927811	Horizontal sliding curve, R400/60°, CS 090 SL	CS 090 SL	54
J927812	Horizontal sliding curve, R400/90°, CS 090 SL	CS 090 SL	54
J927813	Centre drive CS 090 SL, left-hand version, without motor	CS 090 SL	59
J927816	Centre drive CS 090 SL, right-hand version, without motor	CS 090 SL	59
J927818	Horizontal sliding curve, R400/15°, CS 090 SL	CS 090 SL	54
J927819	Direct centre drive CS090SL, left-hand version,without motor	CS 090 SL	60
J927821	Chain assembly aid CS 200 SL	CS 065 SL / CS 090 SL / CS 200 SL	100
J927823	Chain assembly aid CS 065 SL	CS 065 SL / CS 090 SL / CS 200 SL	26, 38
J927824	Chain assembly aid CS 090 SL	CS 065 SL / CS 090 SL / CS 200 SL	52, 66
J927826	Chain assembly unit CS 200 SL	CS 200 SL	89
J927827	Vertical idler CS 200 SL, 180°	CS 200 SL	96
J927828	Vertical sliding curve, R500/90°, CS 200 SL	CS 200 SL	91
J927831	Leg joint, CS 200 SL, standard	CS Leg sets	152
J927842	Horizontal sliding curve, R400/15°, CS 065 SL	CS 065 SL	28
J927909	Horizontal sliding curve, R400/30°, Closed system	CS 090 SL Closed system	73
J927910	Horizontal sliding curve, R400/45°, Closed system	CS 090 SL Closed system	73
J927911	Horizontal sliding curve, R400/60°, Closed system	CS 090 SL Closed system	73
J927912	Horizontal sliding curve, R400/90°, Closed system	CS 090 SL Closed system	73
J927918	Horizontal sliding curve, R400/15°, Closed system	CS 090 SL Closed system	73
J927940	Direct drive CS090SL Closed, left-hand motor flange, without motor	CS 090 SL Closed system	75
J927943	Direct drive CS090SL Closed, right-hand motor flange, without motor	CS 090 SL Closed system	75
J927949	Vertical idler CS090SL Closed, 180°	CS 090 SL Closed system	77
J927951	Horizontal sliding curve, R162,5/90°, Closed system	CS 090 SL Closed system	72
J927952	Horizontal sliding curve, R162,5/180°, Closed system	CS 090 SL Closed system	72
J927953	Horizontal sliding curve, R700/30°, Closed system	CS 090 SL Closed system	73
J927954	Horizontal sliding curve, R700/45°, Closed system	CS 090 SL Closed system	73
J927955	Horizontal sliding curve, R700/60°, Closed system	CS 090 SL Closed system	73
J927956	Horizontal sliding curve, R700/90°, Closed system	CS 090 SL Closed system	73
J927957	Vertical sliding curve, R500/5°, Closed system	CS 090 SL Closed system	74
J927958	Vertical sliding curve, R500/7°, Closed system	CS 090 SL Closed system	74
J927959	Vertical sliding curve, R500/10°, Closed system	CS 090 SL Closed system	74
J927960	Vertical sliding curve, R500/15°, Closed system	CS 090 SL Closed system	74
J927961	Vertical sliding curve, R500/20°, Closed system	CS 090 SL Closed system	74

# INDEX



PROD.NO.	DESCRIPTION	CHAPTER	PAGE
J927962	Vertical sliding curve, R500/30°, Closed system	CS 090 SL Closed system	74
J927963	Vertical sliding curve, R500/45°, Closed system	CS 090 SL Closed system	74
J927965	Vertical sliding curve, R500/60°, Closed system	CS 090 SL Closed system	74
J927968	Chain assembly unit, Closed system	CS 090 SL Closed system	71
J927986	Drilling Jig, Closed profile	CS 090 SL Closed system	78
J929015	Centre drive CS 090 SL, left-hand version, without motor	CS 090 SL	59
J929017	Centre drive CS 090 SL, right-hand version, without motor	CS 090 SL	59
J929019	Direct centre drive CS090SL, left-hand version,without motor	CS 090 SL	60
J929323	Assembled profile clamp railing Ø22x1.5 square profile, 150mm	CS Railing	127
J929324	Assembled profile clamp railing Ø22x1.5 round profile, 150mm	CS Railing	127
J929919	Direct centre drive, Blue Chain (Standard)	CS 090 SL Closed system	76
J929920	Direct centre drive, Other Chains	CS 090 SL Closed system	76
TCAN 6 Q100	M6 T-slot nut	CS Railing	126
TCAN 8 Q100	M8 T-slot nut	CS Railing	126
TCBB 6c40c80 C	Profile Closed 40x80		147
TCBB 6x80	Profile B 80x80		147
TCBB 6x80 C	Profile Closed 80x80		147
TCBE 40x80 B NLOGO	Cover cap 40x80		148
TCBE 40x80 G NLOGO	Cover cap 40x80		148
TCBE 80 B NLOGO	Cover cap 80		148
TCBE 80 G NLOGO	Cover cap 80		148
TCBL 6x40x80	Profile L 40x80		147
TCFE 40x80 M12	Fixing plate incl. fixing material	CS Leg sets	144
TCFE 80 M12	Fixing plate incl. fixing material	CS Leg sets	144
TCFF 80x250	Floor connection bracket	CS Leg sets	144
TCSJ 12x40	M12 bolted joint 40		150
TCSJ 12x80	M12 bolted joint 80		150
TCSJ 8 A	M8 screwed joint, 12mm	CS Railing	139
TCSJ 8 E	M8 bolted joint 40		149
TCSJ 8 F	M8 bolted joint 80		149
TTCS 13x20	Step drill 13/20		150
TTCS 9x15	Step drill 9/15		149



Litex AB  
Sporregatan 25  
SE-21377 Malmö  
040-214120  
[info@litex.se](mailto:info@litex.se)  
[www.litex.se](http://www.litex.se)

**VERSION 2020/11**