

Chain Sections and Leg Sets

Section 4—Chain Sections and Leg Sets

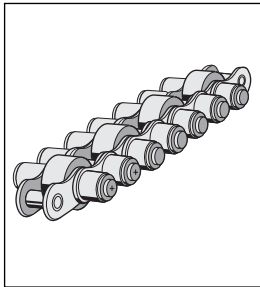
A key factor in the flexibility of the TS4plus system is the modular, T-slotted design of the conveyor sections, leg sets, and cross links.

By using aluminum conveyor section profiles, it is possible to build a system to meet whatever length requirements you may have. In addition, the profiles

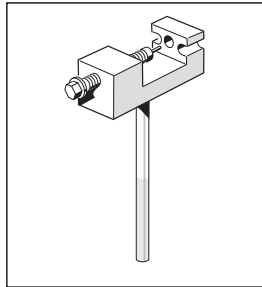
have 10mm T-slots that provide a mounting location for stops, control systems, proximity sensors, and other conveyor modules, as well as a wide variety of other components and accessories.

The roller chain provides a low friction transport medium with the ability to handle heavy loads and pallet accumulation.

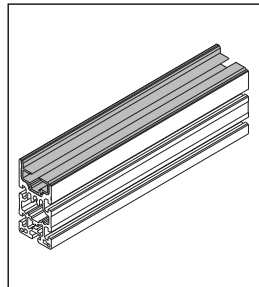
4



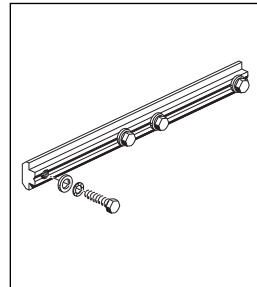
GT4/R
Roller Chain
4-1



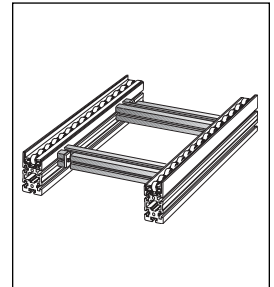
Roller Chain Disassembly Tool
4-1



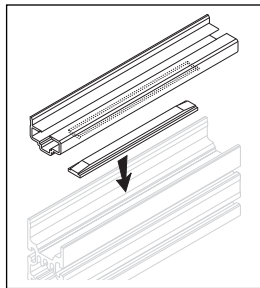
ST4-S/R
Chain Conveyor Sections
4-2 to 4-3



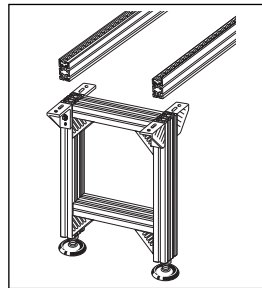
Connection Links
4-4



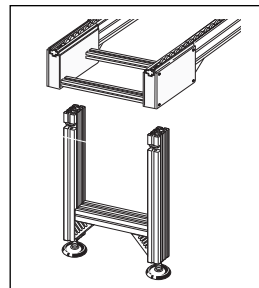
Cross Links
4-4



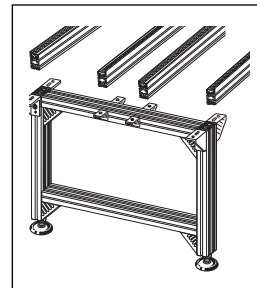
ST4/R
Pallet Accelerator Kit
4-5



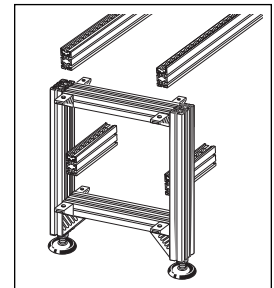
SZ4S/E
Single Leg Sets
4-6



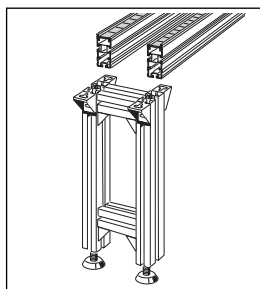
SZ4S/D
Drive/Return Leg Sets
4-6



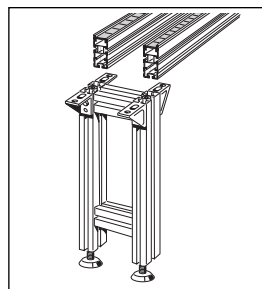
SZ4S/T
Parallel Leg Sets
4-7



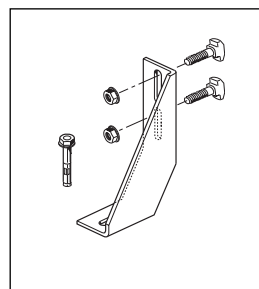
SZ4S/U
Over/Under Leg Sets
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SZ2
BS4 Leg Sets
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SZ2/H
BS4 Heavy Duty Leg Sets
4-8



Foundation Brackets
4-8

Chain Sections and Leg Sets

Roller Chain

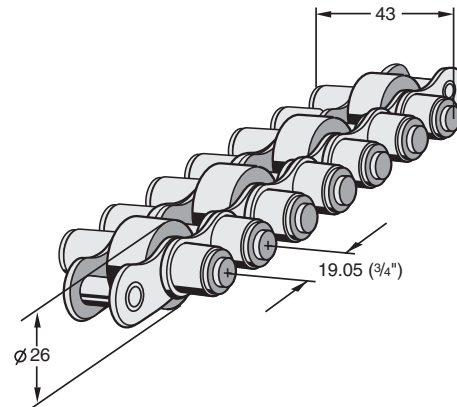
GT4/R

The TS4plus roller chain provides a low friction transport medium with the ability to handle heavy loads and pallet accumulation.

Roller chain is available in 5 meter rolls; each 5 meter roll includes one master link. The chain is installed by connecting one roll to the next with master links until one side of the conveyor is complete. Any remaining chain can then be used for installation on the other side of the conveyor. Additional master links can be ordered as needed.

To calculate the length of chain needed per side, use the formula in the box at right. When ordering chain, always round up to the next complete 5 meter roll.

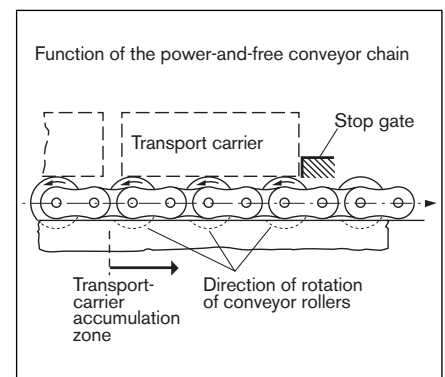
The chain will stretch over a period of time. Chain tensioners in the drive units compensate for this stretch. When the tensioner is extended to its maximum stroke, the chain must be serviced and the tensioner reset.



Roller chain required per side:

$$D + R + (2 \times L)$$

L = conveyor section length
 R = chain in return unit = 609 mm
 D = chain in drive unit = 1090 mm



Ordering Information for Roller Chain GT4/R

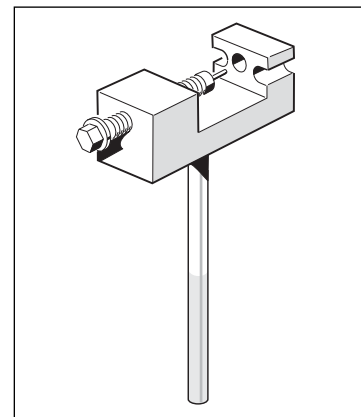
	Part Number
Roller Chain, 5 meter roll	8981 021 173
Master Link	8981 021 175

Roller Chain Disassembly Tool

This tool is used to simplify disassembly of the roller chain by pushing out the link pins, and can be used on any segment. Reconnecting the chain after removal of unnecessary links requires the use of a master link (see the "Roller Chain" section above).

Ordering Information for Roller Chain Disassembly Tool

	Part Number
Roller Chain disassembly tool	8981 020 124



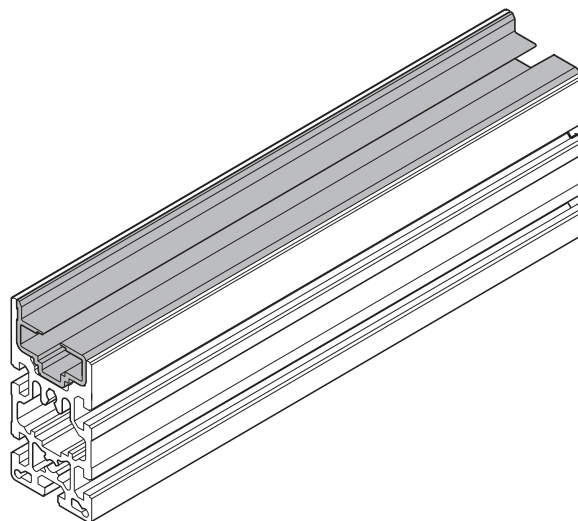
Chain Sections and Leg Sets

Chain Conveyor Sections

ST4/R

The TS4plus conveyor section is the structural element that supports and guides the workpiece pallet. Each section consists of two anodized aluminum chain section profiles and two polyamide guide profiles. The guide profiles serve as both wear strips and a support surface for the chain.

Chain conveyor sections are available in lengths between 200 mm and 6000 mm, and can be joined at the ends using connection links (see page 4-4) to create extended lengths. Cross-links and leg sets are required at intervals no greater than 2000 mm.



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Ordering Information for Chain Conveyor Section, Specify Length in mm: $200 \leq L \leq$

Description	Part Number/Length
Chain Conveyor Section ST4/R	3842 994 839/....

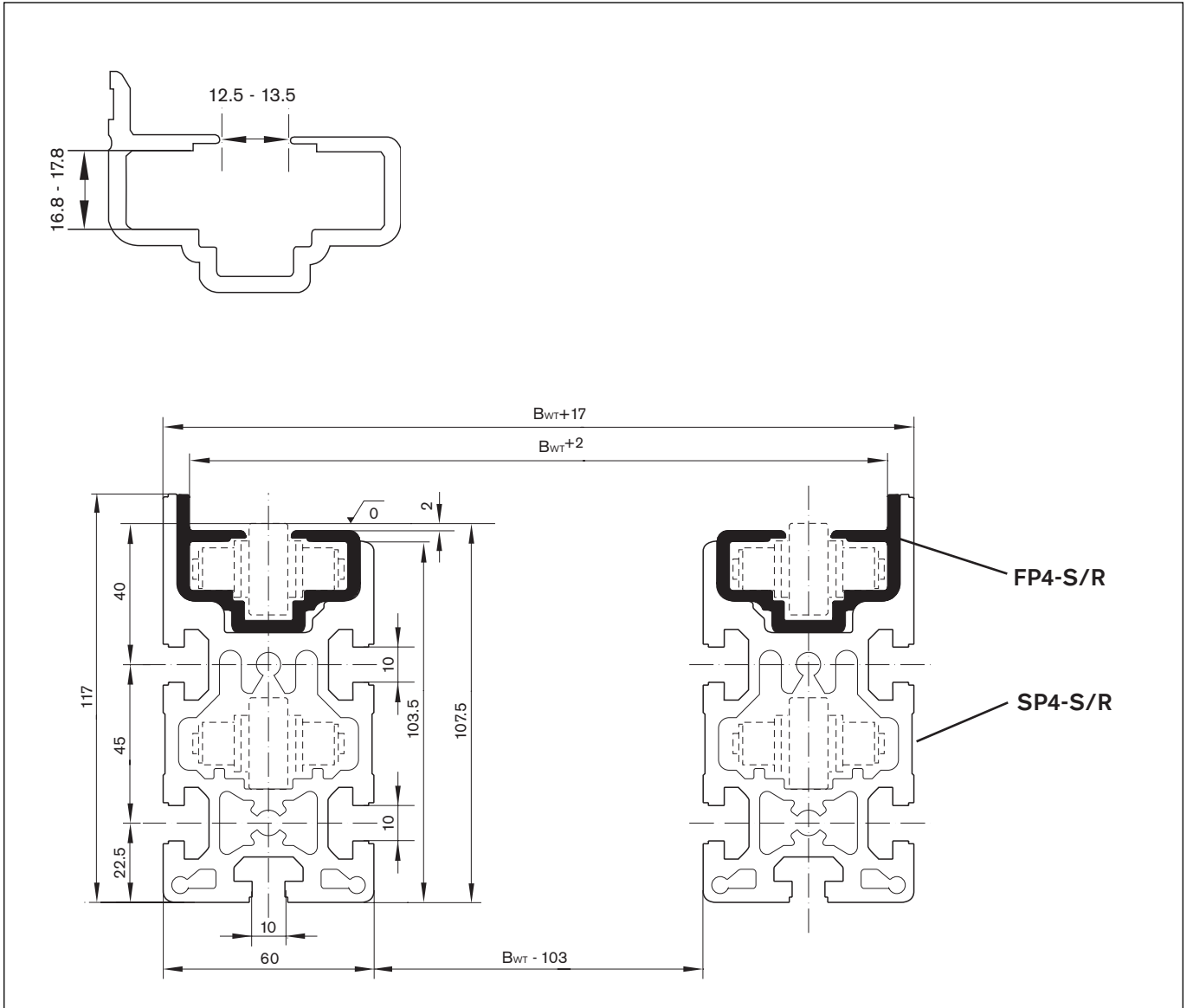
** To order conveyor sections 200-6000mm long, please specify desired length at the end of the part number.
For example, to order a 3560mm conveyor section, your part number should look like this: 3842 994

Ordering Information for Chain Profiles, uncut

Description	Part Number
Aluminum Chain Profile SP4-S/R, L=6000 mm	3842 532 703
Polyamide Chain Guide Profile FP4-S/R, L=6000mm	3842 532 704

Chain Sections and Leg Sets

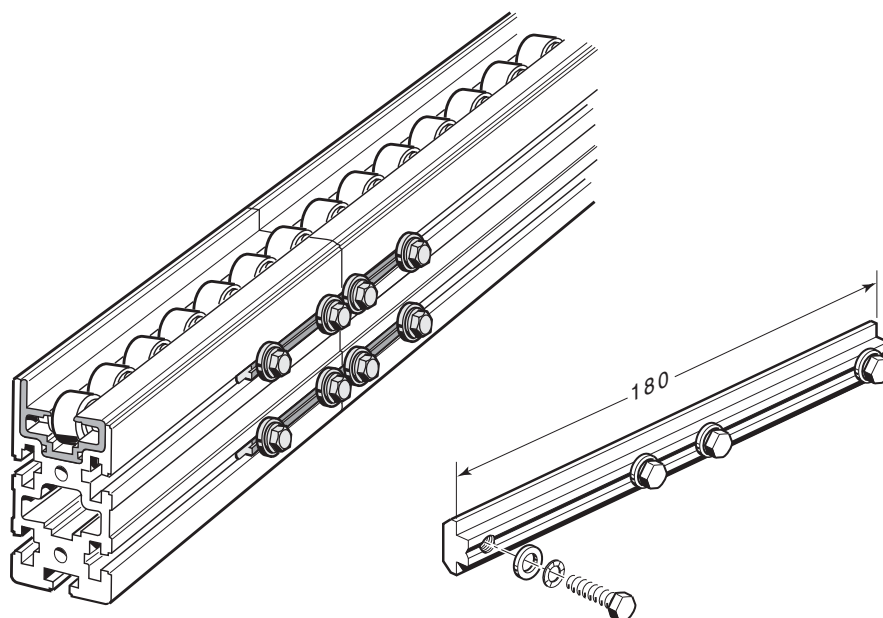
Dimensional Data for ST4/R



Chain Sections and Leg Sets

Connection Links

Connection links join conveyor sections end-to-end. Four connection links are required to join conveyor sections, two on each rail. They can be mounted either between the rails or on the outside of the rails, as the application permits. Connection links are made of steel for maximum strength and include all required fastening hardware.



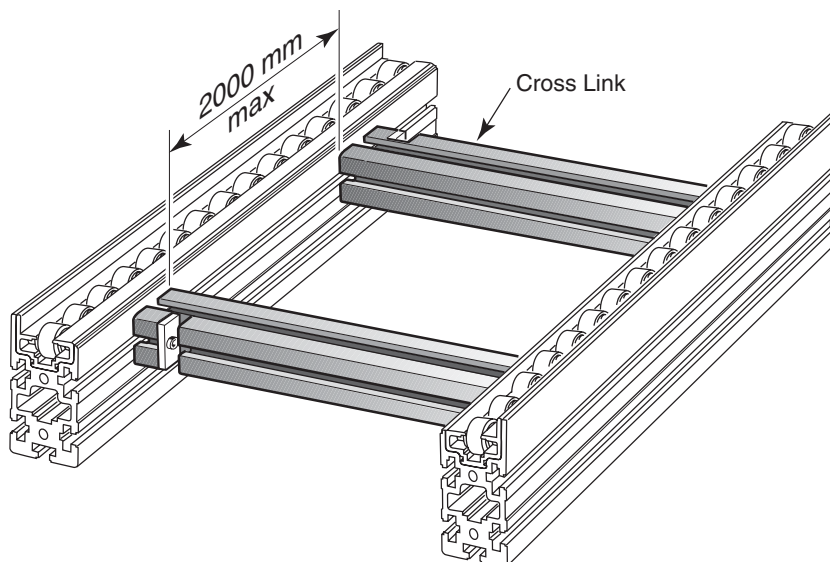
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Ordering Information for Connection Links

Description	Part Number
Connection link with hardware, one	3842 528 746

Cross Links

Cross links are used to maintain the proper width and alignment between conveyor section rails, and are made from aluminum profile. Cross-links must be installed along conveyor sections between leg sets at a maximum interval of 2000 mm. They are available for the five standard line widths and include all required mounting hardware.



Ordering Information for Cross Links

Description	Part Number
Cross link with mounting hardware, B = 443 mm	8981 020 055
Cross link with mounting hardware, B = 643 mm	8981 020 056
Cross link with mounting hardware, B = 843 mm	8981 020 057
Cross link with mounting hardware, B = 1043 mm	8981 020 058
Cross link with mounting hardware, B = 1243 mm	8981 020 059

Chain Sections and Leg Sets

Pallet Accelerator Kit

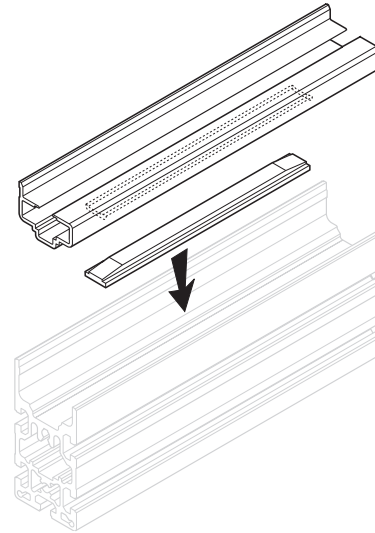
Model ST4/R

Due to roller chain's low coefficient of friction, workpiece pallets have a slight delay before reaching full speed once they have been stopped. The pallet accelerator, used in conjunction with accumulation roller chain and an ST4/R conveyor section, can shorten the time required for the workpiece pallet to reach drive speed.

How it works: In normal usage, a workpiece pallet rides on the 3/4" carry rollers, while the chain is driven by two smaller outboard rollers. The accelerator strip lifts the carry rollers so they are frictionally engaged between the accelerator element and the workpiece pallet, briefly accelerating the workpiece pallet to approximately twice the speed of the drive module depending on payload.

The accelerator strip is mounted in the upper guide profile section as shown in either of the two applications below. It is designed only for use with the ST4/R conveyor section and is not compatible with BS4 transverse conveyor sections. The kit includes two 500mm long guide profiles and two accelerator strips which are inserted into the notch inside the guide profile.

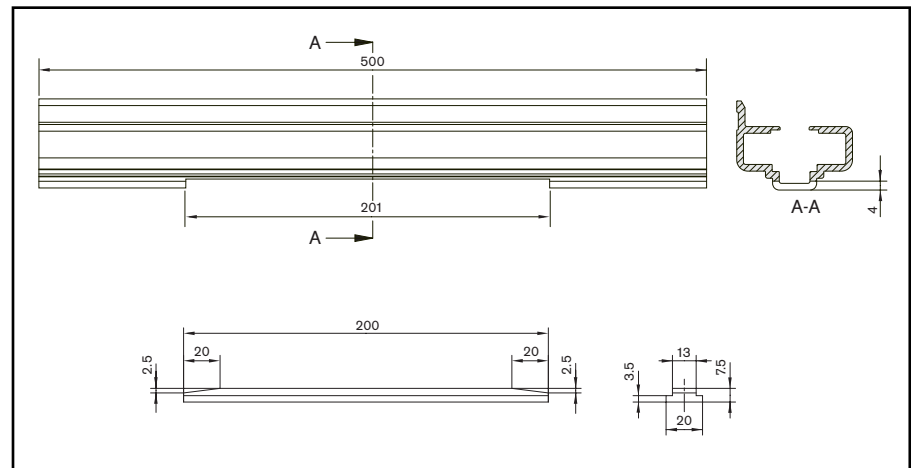
APPLICATION NOTE: Acceleration speed can be adversely affected by contaminants on the roller chain such as grease, dirt or foreign substances.



Ordering Information for Pallet Accelerator Element

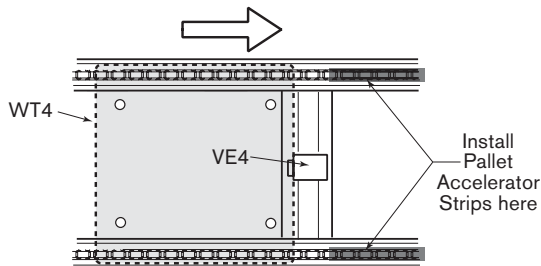
Description	Part Number
Pallet Accelerator Element	3842 531 115

Dimensional Data for ST4/R

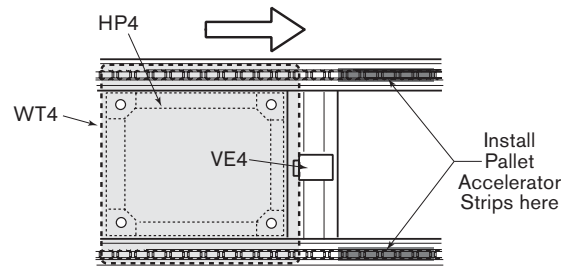


Pallet Accelerator application examples

Example 1: Downstream from a stop gate.



Example 2: Downstream from a lift-position unit and stop



NOTE:

- Allow line spacing to permit the pallet to decelerate to drive speed before it comes into contact with the next station in above applications.
- The stopping or queuing of pallets is NOT allowed behind the accelerator element.

Chain Sections and Leg Sets

Leg Sets (ST4 and BS4 mounting)

Model SZ4S/..., SZ2

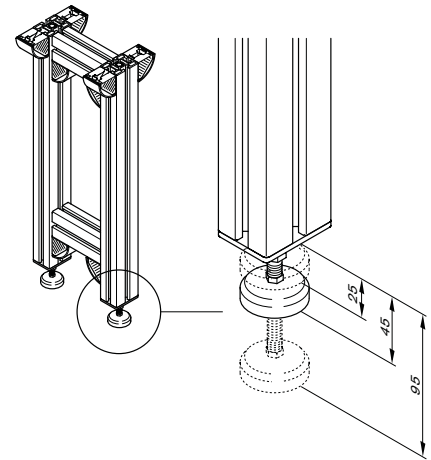
TS4plus leg sets are manufactured from extruded aluminum profiles and are specifically designed to be mounted to ST4 or BS4 conveyor sections. Six leg set types are available:

- SZ4S/E, Single
- SZ4S/D, Drive/Return
- SZ4S/T, Parallel
- SZ4S/U, Over/Under
- SZ2, BS4 Mounting
- SZ2/H, BS4 Heavy Duty Mounting

Each leg set is equipped with leveling feet and the connection hardware required to connect the leg set to the conveyor section or drive/return. Leveling feet are preset at the factory and allow line height to be adjusted down 15mm and up 45mm.

Foundation brackets and anchor bolts are required to secure leg sets to the floor and must be ordered separately (see page 4-8).

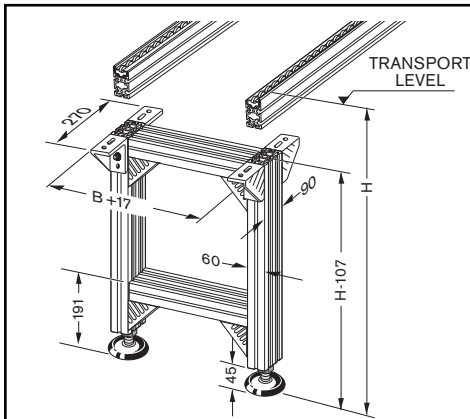
Leg set height is specified from the floor to the top of the conveyor chain. Leg set width is determined by line width.



Leg sets must be placed below chain section joints, at maximum conveyor spans of 2000mm and where additional support is needed.

NOTE: Remember to consider clearance for modules such as lift transfer units and lift position units when determining the minimum line height.

SZ4S/E Single Leg Sets

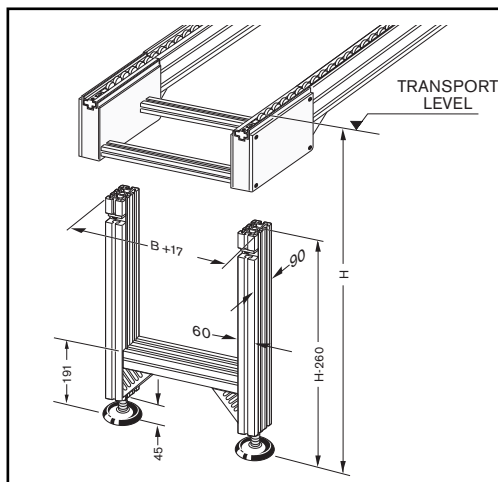


Ordering Information for SZ4S/E Leg Set

Specify part number, then select from the options below	Your Choices are:	Part Number 8981 999 240
		Your selection:
Line Width (B)	443, 643, 843, 1043, 1243	_____ mm
Transport Height (H)	300 - 1500 in 1 mm increments	_____ mm

Specify height to top of chain (H)

SZ4S/D Drive/Return Leg Sets



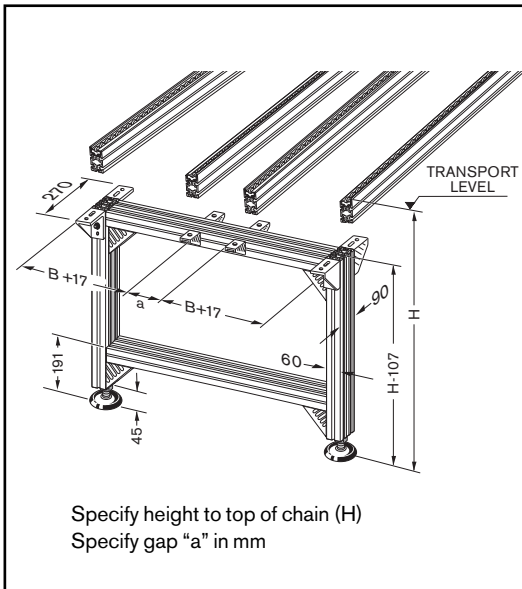
Ordering Information for SZ4S/D Leg Set

Specify part number, then select from the options below	Your Choices are:	Part Number 8981 999 241
		Your selection:
Line Width (B)	443, 643, 843, 1043, 1243	_____ mm
Transport Height (H)	300 - 1500 in 1 mm increments	_____ mm

Specify height to top of chain (H)

Chain Sections and Leg Sets

SZ4S/T Parallel Leg Sets



Parallel leg sets are similar to single leg sets, but are used to support two adjacent conveyor sections on a single leg set. To help prevent overloading, each section width (B_{WT}) is limited to 843mm.

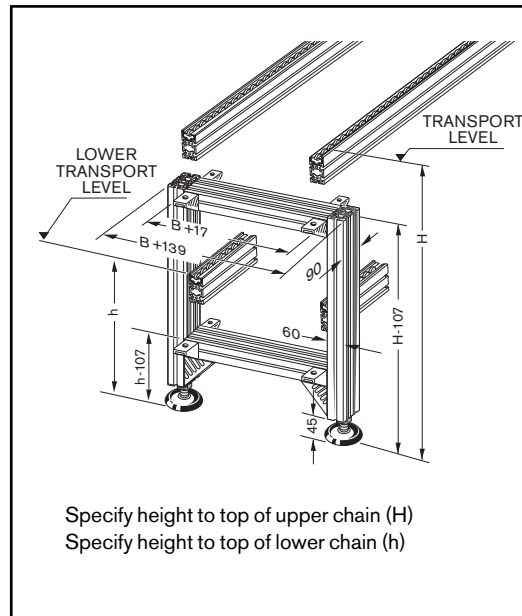
The gap between lanes, "a", is set at 90 or 290mm. For other gaps, contact your Bosch representative.

Ordering Information for SZ4S/T Leg Set

Specify part number, then select from the options below	Your Choices are:	Part Number 8981 999 242
		Your selection:
Line Width (B)	443, 643, 843,	_____ mm
Transport Height (H)	300 - 1500 in 1 mm increments	_____ mm
Gap "a"	90 or 290	_____ mm

* for 443 mm line width, use a=90 mm maximum gap.

SZ4S/U Over/Under Leg Sets



Over/Under leg sets are similar in design to single leg sets, but allow a second line to be installed below the main line, typically as a return line for empty pallets. The height to the top of the lower chain must be at least 300 mm, to allow clearance for drives and returns. Sufficient space must be left between the top and bottom heights to allow for pallet and fixture clearance.

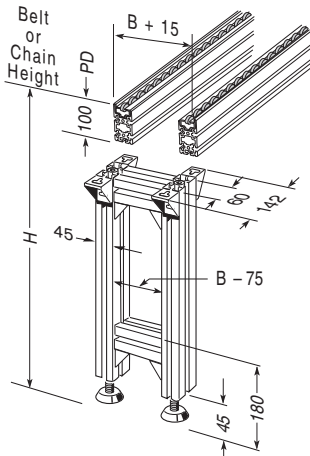
NOTE: When attaching a Drive or Return unit to an over/under leg set please call our Applications Engineering Department.

Ordering Information for SZ4S/U Leg Set

Specify part number, then select from the options below	Your Choices are:	Part Number 8981 999 243
		Your selection:
Line Width (B)	443, 643, 843, 1043, 1243	_____ mm
Transport Height (H)	800 - 2000 in 1 mm increments	_____ mm
Lower Height (h)	300 - 1500 in 1 mm increments	_____ mm

Chain Sections and Leg Sets

SZ2 Single Leg Sets (for mounting to BS4 Transverse Conveyors)



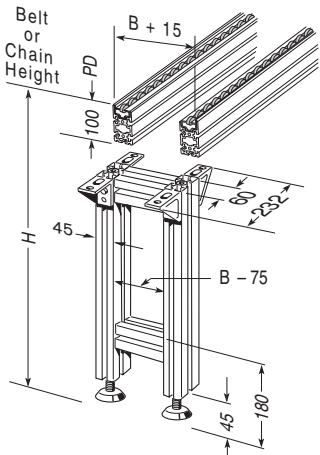
Ordering Information for SZ2 Leg Set

Specify part number, then select from the options below	Your Choices are:	Part Number 3842 999 816
		Your selection:
Line Width (B)	443, 643, 843, 1043, 1243	_____ mm
Profile Depth	100 mm	___ 100 ___ mm
Transport Height (H)	350 - 1500 in 1 mm increments	_____ mm

Specify height to top of chain (H)

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SZ2/H Heavy Duty Single Leg Sets (for mounting to BS4 Transverse Conveyors)



Ordering Information for SZ2/H Leg Set

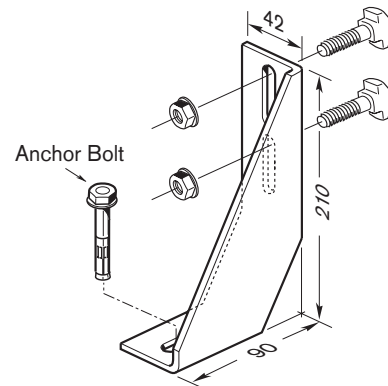
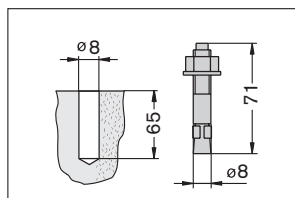
Specify part number, then select from the options below	Your Choices are:	Part Number 3842 999 705
		Your selection:
Line Width (B)	443, 643, 843, 1043, 1243	_____ mm
Profile Depth	100 mm	___ 100 ___ mm
Transport Height (H)	350 - 1500 in 1 mm increments	_____ mm

Specify height to top of chain (H)

Foundation Brackets and Anchor Bolts

The steel foundation bracket secures the leg set to the floor after the conveyor has been leveled and aligned. Two foundation brackets should be used for each leg set. Two T-bolt kits for fastening the foundation bracket to the leg set are included. Anchor bolts for securing the bracket to concrete floors are ordered separately.

Anchor Bolt Dimensions



Ordering Information for Foundation Brackets

Description	Part Number
Steel Foundation Bracket with two T-Bolt Kits	8981 003 224
Anchor Bolt, one (1)	3842 526 560