

Lift-Transfer Units

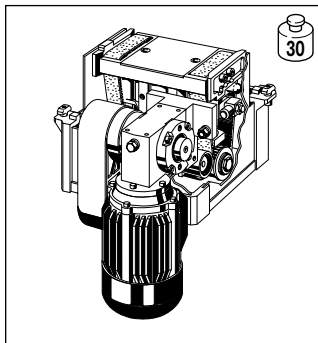
Section 11 – Lift-Transfer Units

TSplus lift-transfer units vertically lift and horizontally transfer workpiece pallets from one conveyor section to a receiving lift-transfer unit located at an adjacent conveyor section.

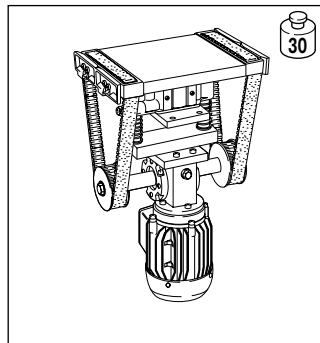
All four styles of lift-transfer units may be mounted to either 80 mm or 100 mm deep conveyor profiles. All units are reversible with no reduction in payload carrying capacity.

In all lift-transfer units, the vertical pneumatic movement has three positions in common:

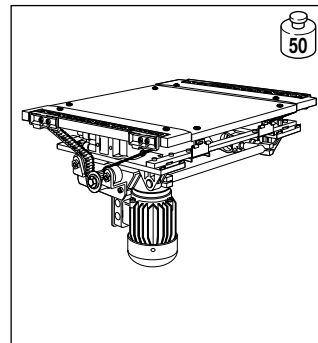
- The spring centered middle position in which the unit is 1 mm below the transport level of the main conveyor.
 - The transfer conveying position in which the unit is 10 mm above the transport level of the main conveyor.
 - The lower transport position in which the unit is 11 mm below the transport level of the main conveyor.
- The three vertical positions serve the following functions:
- Stops the pallet on the main conveyor.
 - Transfers the pallet off the main conveyor.
 - Allows the pallet to pass by on the main conveyor.



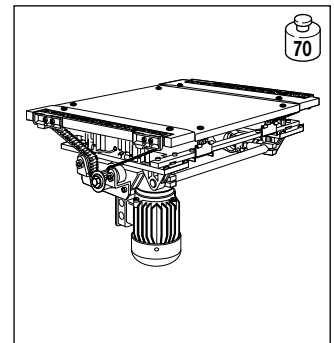
HQ2/S
Lift-Transfer Unit
11-2 to 11-3



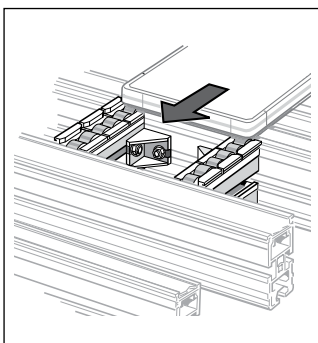
HQ2/U
Lift-Transfer Unit
11-4 to 11-5



HQ2/U2
Lift-Transfer Unit
11-5 to 11-6



HQ2/U3
Lift-Transfer Unit
11-7 to 11-8

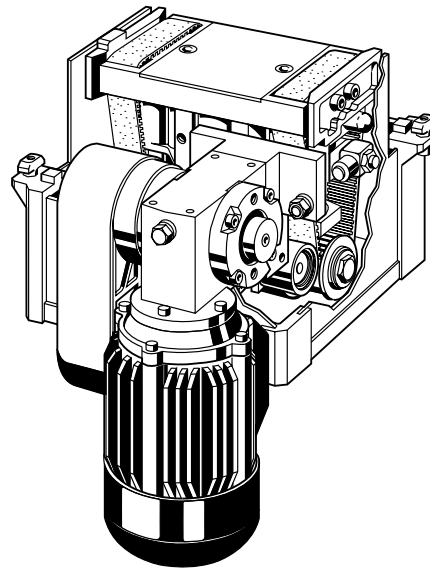


RS2/P
Track Rollers
11-10

Lift-Transfer Units

Lift Transfer Unit

Model HQ2/S



The HQ2/S Lift-Transfer Unit transfers workpiece pallets to or from conveyor sections at right angles. It is used in conjunction with standard control modules to manage workpiece pallet traffic through conveyor intersections. The lift-transfer unit stops the workpiece pallet and, on signal from a controller, lifts it from the conveyor section and transfers the workpiece pallet to an adjacent transverse conveyor. To complete the transfer, a second lift transfer unit receives the workpiece pallet and lowers it onto the receiving conveyor section. Transfer is accomplished with a toothed transfer belt which can be reversed. The HQ2/S includes a drive motor and all mounting hardware.

The HQ2/S has three vertical positions: Lift and lower movements are operated by double-acting, spring-centered pneumatic cylinders.

- Spring-centered position— HQ2 transfer belts positioned one millimeter below conveyor section belt height. Workpiece pallet stopped by unit's stop dog.
- Lift-transfer position—HQ2 transfer belts positioned ten millimeters above conveyor section belt height.

- Lower position—HQ2 transfer belts positioned 11 millimeters below conveyor section belt height. Workpiece pallets pass over the unit unobstructed.

The HQ2/S is shipped as five individual component assemblies as shown in the Dimensional information on page 11-3.

Size I units are 400 x 400 and smaller and use a single pneumatic lift cylinder.

Size II units are 400 x 480 and larger and use two mechanically coupled lift cylinders.

NOTE: The side mounted motor is especially suited for conveyors with minimal bottom clearance.

Ordering Information for Lift-transfer unit HQ2/S

Specify part number, then select from the options below.	Your Choices are:	Part Number 3842 999 888
		Your selection:
Belt version	Non-Antistatic (N) Antistatic (A)	_____
Lift Transfer unit length (B _L)	160, 240, 320, 400, 480	_____ mm
Lift Transfer unit widths (B _O)	160, 240, 320, 400, 480, 640, 800	_____ mm
Nominal belt speed (m/min)*	6, 9, 12, 15, 18	_____ m/min
Motor Voltage/frequency	See Table 11-1	_____ V _____ Hz
Conveyor profile mounting height**	80, 100 mm	_____ mm

* Full load conveyor speeds vary depending on motor frequency. See table 11-1

** For B_L = 160, please specify the height of the conveyor profile, 80 mm or 100 mm.

Lift-Transfer Units

Technical data for HQ2/S

Nominal belt speed	= see table 11-1
Load capacity	= 30 kg
Motor rated power	= .125 HP
Motor RPM @ 50 Hz	= 1400
Motor RPM @ 60 Hz	= 1700
Motor electrical specifications	= See table 11-1
Air pressure	= 4-6bar
Cylinder diameter	= 50 mm
Cylinder stroke	= 21 mm
Air fittings	= 8 mm (5/16") push-lock

Electrical data for HQ2/S

Nom. M/min	Actual Speed		HP	Full Load Amps @					
	50 Hz	60 Hz		208/60	240/60	380/50	415/50	480/60	575/60
6	6.1	5.8	.12	.58	.58	.43	.38	.35	.34
9	9.1	7.4	.12	.58	.58	.43	.38	.35	.34
12	12.1	11.1	.12	.58	.58	.43	.38	.35	.34
15	15.2	14.7	.12	.58	.58	.43	.38	.35	.34
18	18.2	18.4	.12	.58	.58	.43	.38	.35	.34

Note: Electrical Data for reference only. Refer to motor name plate for actual amperage ratings.

Table 11-1

Dimensional data for HQ2/S

Qty Description

- 1 Lift transfer base unit ①
- 1 Drive motor ②
- 1 Connecting kit ③
- 1 Motor mounting kit ④
- 1 Protective cover ⑤

SIZE I-Transfer Width, B_Q

Transfer Length, B _L	160	240	320	400	480
160	•	•	•	N/A	N/A
240	•	•	•	•	N/A
320	•	•	•	•	•
400	N/A	•	•	•	N/A
480	N/A	N/A	N/A	N/A	N/A

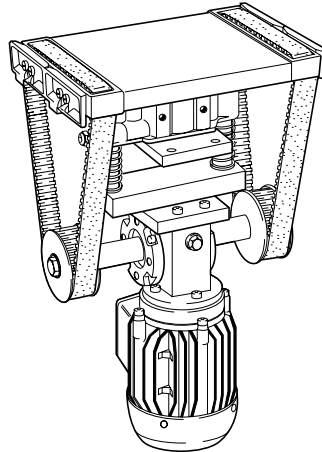
SIZE II-Transfer Width, B_Q

Transfer Length, B _L	400	480	640	800
160	N/A	N/A	N/A	N/A
240	N/A	N/A	N/A	N/A
320	N/A	N/A	N/A	N/A
400	N/A	•	•	•
480	•	•	•	•

Lift-Transfer Units

Lift-Transfer Unit

Model HQ2/U



The HQ2/U Lift-Transfer Unit (LTU) is used to transfer pallets perpendicularly off the conveyor. It is used primarily at corners and intersections, but can also be used for pallet routing changes.

The HQ2/U lift plate is powered up and down by a single lift cylinder. In the center, or rest position, the LTU belts are located 1 mm below the bottom of the pallet. A stop bar mounted to the lift plate may be used to stop pallets on the LTU, or inverted so pallets pass through freely.

The LTU is raised by applying air pressure to the bottom of the cylinder. This lifts the LTU to a position 10 mm above the nominal conveyor height. As the LTU rises, the LTU belts engage the pallet and directs (or accepts) the pallet.

The LTU may also be lowered 11 mm below the nominal conveyor height to release a pallet along the conveyor. This functionality enables the standard LTU to function as a simple corner or a complex decision point for multiple routing requirements.

The LTU may be used to direct pallets in either direction by reversing the drive motor.

NOTE: reversing the belt more frequently than every six seconds may cause reduced motor life.

LTUs may be used to direct or accept pallets to/from another LTU via track rollers, to a BS2 transverse conveyor, or to the transport level on a conveyor section.

For pallet sizes larger than 400 x 400 mm, the HQ2/U2 or HQ2/U3 Lift Transfer Unit (Page 11-6 to 11-9) must be used. These units have multiple lift cylinders mechanically linked together to provide accurate raising/lowering of the pallet.

The HQ2/U includes a drive motor to power the toothed belts, a spring centered 3-position lift cylinder, stop bar/guide bar, protective covers, pneumatic connections and mounting hardware.

A proximity switch mounting kit is also included. Due to the stroke, all three positions may not be sensed, as three proximity switches will not fit into the space available. It is recommended that the center "pallet stopping" position be sensed and the signal lost on the up and down strokes. The proximity switch mounting kit can also be ordered separately under part number: **3842 311 922**.

Please contact our applications engineering department for non-standard length, width, speed, or voltage.

Ordering Information for Lift-Transfer Unit HQ2/U

Specify part number, then select from the options below.	Your Choices are:	Part Number 3842 999 903
		Your selection:
Belt version	Non-Antistatic (N) Antistatic (A)	_____
Lift Transfer unit length (B _L)	160, 240, 320, 400	_____ mm
Lift Transfer unit widths (B _Q)	160, 240, 320, 400, 480	_____ mm
Nominal belt speed (m/min)*	6, 9, 12, 18	_____
Motor Voltage/frequency	See Table 11-2	_____ V _____ Hz
Conveyor profile mounting height**	80, 100 mm	_____ mm

* Full load conveyor speeds vary depending on motor frequency. See table 11-2
 ** For B_L = 160, please specify the height of the conveyor profile, 80 mm or 100 mm.

Lift-Transfer Units

Technical Data for HQ2/U

Nominal belt speed	= see Table 11-2
Load Capacity	= 30 kg
Motor rated power	= .12 HP
Motor RPM @ 50 Hz	= 1400
Motor RPM @ 60 Hz	= 1700
Motor electrical specifications	= see Table 11-2
Air pressure	= 4-8 bar
Cylinder diameter	= 50 mm
Cylinder stroke	= 21 mm
Air fittings	= 8 mm (5/16") push-lock

Electrical Data for HQ2/U

Nom. M/min	Actual Speed		HP	Full Load Amps @					
	50 Hz	60 Hz		208/60	240/60	380/50	415/50	480/60	575/60
6	5.6	6.8	.12	.58	.58	.43	.38	.25	.34
9	8.3	10.1	.12	.58	.58	.43	.38	.25	.34
12	10.5	12.7	.12	.58	.58	.43	.38	.25	.34
18	21.0	19.1	.12	.58	.58	.43	.38	.25	.34

Note: Electrical Data for reference only. Refer to motor name plate for actual amperage ratings.

Table 11-2

Dimensional Data for HQ2/U

The technical drawings include:

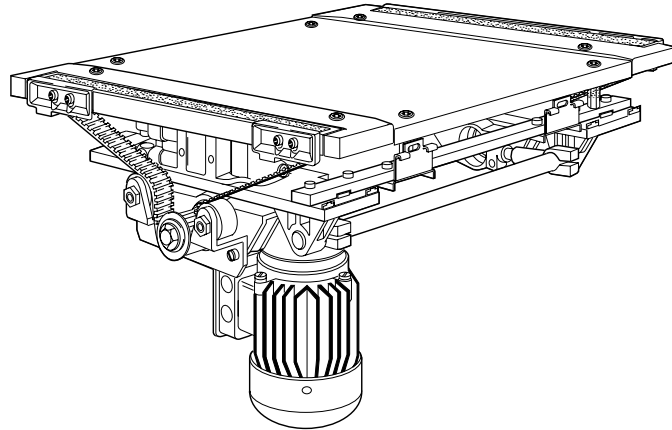
- Top View:** Shows the unit's footprint with dimensions $B_L - 30$ and $B_Q + 44$. It indicates 'Transverse conveyor transport direction' and 'Longitudinal conveyor transport direction' with arrows.
- Side View:** Shows the unit's profile with dimensions 21 Stroke , 7 , 5^* , 80 , and 60 . It labels 'Top of Transport media' and 'Protective cover'. The width is shown as B_L with sub-dimensions $2+12.5$ and B_L with $2+3.5$.
- Front View:** Shows the motor and cylinder assembly with dimensions 21 Stroke , 90 , and 450 . The width is labeled $B_Q + 30$.

Transfer Length, B_L	Transfer Width, B_Q				
	160	240	320	400	480
160	•	•	•	•	N/A
240	•	•	•	•	N/A
320	•	•	•	•	•
400	•	•	•	•	N/A

Lift-Transfer Units

Lift-Transfer Unit

Model HQ2/U2



The HQ2/U2 Lift-Transfer Unit (LTU) is used to transfer pallets perpendicularly off the conveyor. It is used primarily at corners and intersections, but can also be used for pallet routing changes.

The HQ2/U2 will transfer pallet sizes between 400 x 400 and 640 x 800 with payloads up to 50 Kg, using two lift cylinders. These cylinders are mechanically linked together to provide accurate raising/lowering of the pallet.

The LTU lift plate is powered up and down by the lift cylinders. In the center, or rest position, the LTU belts are located 1 mm below the bottom of the pallet. A stop bar mounted to the lift plate may be used to stop pallets on the LTU, or inverted so pallets pass through freely.

The LTU is raised by applying air pressure to the bottom of the cylinders. This lifts the LTU to a position 10 mm above the nominal conveyor height. As the LTU rises, the LTU belts engage the pallet and directs (or accepts) the pallet.

The LTU may also be lowered 11 mm below the nominal conveyor height to release a pallet along the conveyor. This functionality enables the standard LTU to function as a simple corner or a complex decision point for multiple routing requirements.

The LTU may be used to direct pallets in either direction by reversing the drive motor.

NOTE: reversing the belt more frequently than every six seconds may cause reduced motor life.

LTUs may be used to direct or accept pallets to/from another LTU via track rollers, to a BS2 transverse conveyor, or to the transport level on a conveyor section.

The HQ2/U2 includes a drive motor to power the toothed belts, two spring centered 3-position lift cylinders, stop bar/guide bar, protective covers, pneumatic connections and mounting hardware.

A proximity switch mounting kit is also included. Due to the stroke, all three positions may not be sensed, as three proximity switches will not fit into the

space available. It is recommended that the center "pallet stopping" position be sensed and the signal lost on the up and down strokes. The proximity switch mounting kit can also be ordered separately under part number: **3842 311 894**.

Please contact our applications engineering department for non-standard length, width, speed, or voltage.

Ordering Information for Lift-Transfer Unit HQ2/U2

Specify part number, then select from the options below.	Your Choices are:	Part Number 3842 999 843
		Your selection:
Belt version	Non-Antistatic(N) Antistatic (A)	_____
Lift Transfer unit length (B _L)	400, 480, 640	_____ mm
Lift Transfer unit width (B _O)	400, 480, 640, 800	_____ mm
Nominal belt speed (m/min)*	6, 9, 12, 15, 18	_____ m/min
Motor Voltage/frequency	See Table 11-3	_____ V _____ Hz

* Full load conveyor speeds vary depending on motor frequency. See table 11-3

Lift-Transfer Units

Technical Data for HQ2/U2

Nominal belt speed	= see Table 11-3
Load Capacity	= 50 kg
Motor rated power	= .125 HP
Motor RPM @ 50 Hz	= 1400
Motor RPM @ 60 Hz	= 1700
Motor electrical specifications	= see Table 11-3
Air pressure	= 4-8 bar
Cylinder diameter	= 50 mm
Cylinder stroke	= 21 mm
Air fittings	= 8 mm (5/16") push-lock

Electrical Data for HQ2/U2

Nom. M/min	Actual Speed		HP	Full Load Amps @					
	50 Hz	60 Hz		208/60	240/60	380/50	415/50	480/60	575/60
6	6.1	5.8	.12	.58	.58	.43	.38	.35	.34
9	9.1	7.4	.12	.58	.58	.43	.38	.35	.34
12	12.1	11.1	.12	.58	.58	.43	.38	.35	.34
15	15.2	14.7	.12	.58	.58	.43	.38	.35	.34
18	18.2	18.4	.12	.58	.58	.43	.38	.35	.34

Note: Electrical Data for reference only. Refer to motor name plate for actual amperage ratings.
Table 11-3

Dimensional Data for HQ2/U2

The diagrams illustrate the dimensions and components of the HQ2/U2 lift-transfer unit. The top view shows the main line conveyor transport direction and the transverse conveyor transport direction. The side view shows the motor, protective cover, and dimensions: 21 Stroke, 7, B_L , 80, 100, ca. 205, $B_L + 12$, B_Q , and $B_Q + 36$.

HQ2/U2 Available Sizes

Transfer Length, B_L	Transfer Width, B_Q			
	400	480	640	800
400	•	•	•	•
480	•	•	•	•
640	•	•	•	•

Cushioned Stop Application Chart*

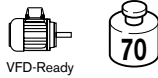
LTU Length B_L	VE2/DA10 3842 515 349	VE2/DA30 3842 515 351	VE2/DA100 3842 525 733
400	YES	YES	YES
480	YES	YES	YES
640	NO	NO	YES

*See Pg. 15-6 and 15-7 for cushioned stop gate information

Lift-Transfer Units

Lift-Transfer Unit

Model HQ2/U3



The Lift-Transfer Unit (LTU) is used to transfer pallets perpendicularly off the conveyor. It is used primarily at corners and intersections, but can also be used for pallet routing changes.

The HQ2/U3 will transfer pallet sizes between 640 x 640 and 1040 x 1040 with payloads up to 70 Kg, using four lift cylinders. These cylinders are mechanically linked together to provide accurate raising/lowering of the pallet.

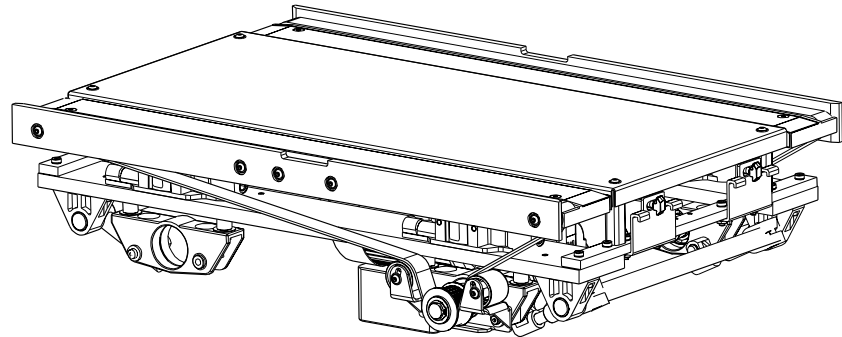
The LTU lift plate is powered up and down by the lift cylinders. In the center, or rest position, the LTU belts are located 1 mm below the bottom of the pallet. A stop bar mounted to the lift plate may be used to stop pallets on the LTU, or inverted so pallets pass through freely.

The LTU is raised by applying air pressure to the bottom of the cylinders. This lifts the LTU to a position 10 mm above the nominal conveyor height. As the LTU rises, the LTU belts engage the pallet and directs (or accepts) the pallet.

The LTU may also be lowered 11 mm below the nominal conveyor height to release a pallet along the conveyor. This functionality enables the standard LTU to function as a simple corner or a complex decision point for multiple routing requirements.

The LTU may be used to direct pallets in either direction by reversing the drive motor.

NOTE: reversing the belt more frequently than every six seconds may cause reduced motor life.



LTUs may be used to direct or accept pallets to/from another LTU via track rollers, to a BS2 transverse conveyor, or to the transport level on a conveyor section.

The HQ2/U3 includes a drive motor to power the toothed belts, four spring centered 3-position lift cylinders, stop bar/guide bar, protective covers, pneumatic connections and mounting hardware.

A proximity switch mounting kit is also included. Due to the stroke, all three positions may not be sensed, as three

proximity switches will not fit into the space available. It is recommended that the center "pallet stopping" position be sensed and the signal lost on the up and down strokes. The proximity switch mounting kit can also be ordered separately under part number: **3842 311 894**.

Please contact our applications engineering department for non-standard length, width, speed, or voltage.

Ordering Information for Lift-Transfer Unit HQ2/U3

Specify part number, then select from the options below.	Your Choices are:	Part Number 8981 999 251
		Your selection:
Belt version	Non-Antistatic (N) Antistatic (A)	_____
Lift Transfer unit length (B _L)	640, 800, 1040	_____ mm
Lift Transfer unit widths (B _O)	640, 800, 1040	_____ mm
Nominal belt speed (m/min)*	6, 9, 12, 15, 18	_____ m/min
Motor Voltage/frequency	See Table 11-4	_____ V _____ Hz

* Full load conveyor speeds vary depending on motor frequency. See table 11-4

** For B_L = 160, please specify the height of the conveyor profile, 80 mm or 100 mm.

Lift-Transfer Units

Technical Data for HQ2/U3

Nominal belt speed	= see Table 11-4
Load Capacity	= 70 kg
Motor rated power	= .125 HP
Motor RPM @ 50 Hz	= 1400
Motor RPM @ 60 Hz	= 1700
Motor electrical specifications	= see Table 11-4
Air pressure	= 4-8 bar
Cylinder diameter	= 50 mm
Cylinder stroke	= 21 mm
Air fittings	= 8 mm (5/16") push-lock

Electrical Data for HQ2/U3

Nom. M/min	Actual Speed		HP	Full Load Amps @					
	50 Hz	60 Hz		208/60	240/60	380/50	415/50	480/60	575/60
6	6.1	5.8	.28	1.6	1.3	.86	.72	.67	.55
9	9.1	7.4	.28	1.6	1.3	.86	.72	.67	.55
12	12.1	11.1	.28	1.6	1.3	.86	.72	.67	.55
15	15.2	14.7	.28	1.6	1.3	.86	.72	.67	.55
18	18.2	18.4	.28	1.6	1.3	.86	.72	.67	.55

Note: Electrical Data for reference only. Refer to motor name plate for actual amperage ratings.

Table 11-4

Dimensional Data for HQ2/U3

Use Cushioned Stop
VE2/DA100
3842 525 733
Page 15-6

10

153.5

$B_Q + 2$

$B_Q + 20$

$B_Q + 60$
Cover

217.1

100

100

101.6

$B_L + 12$

(Raised/Transfer Position)

HQ2/U3 Available Sizes			
Transfer Length, B_L	Transfer Width, B_Q		
	640	800	1040
640	•	•	•
800	•	•	•
1040	•	•	•

Lift-Transfer Units

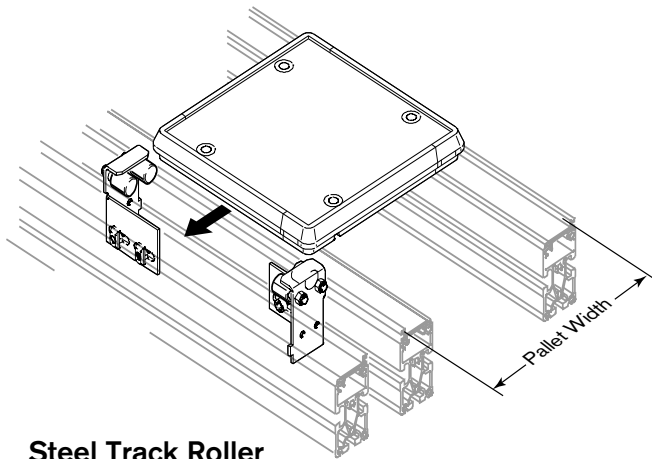
Track Roller

Model RS2/P

A track-roller is a non-powered means of transferring workpiece pallets between parallel conveyor sections. It consists of fixed rollers in a conveyor extrusion. Both the steel and standard track rollers are available in lengths of 45 mm, 90 mm and 135 mm and can be used with all other pallets as listed. All mounting hardware is included.

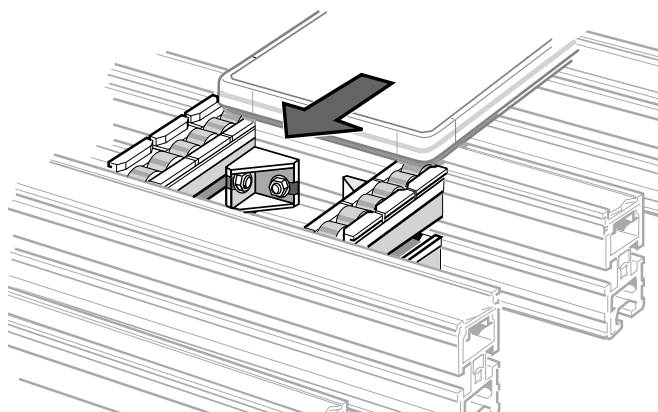
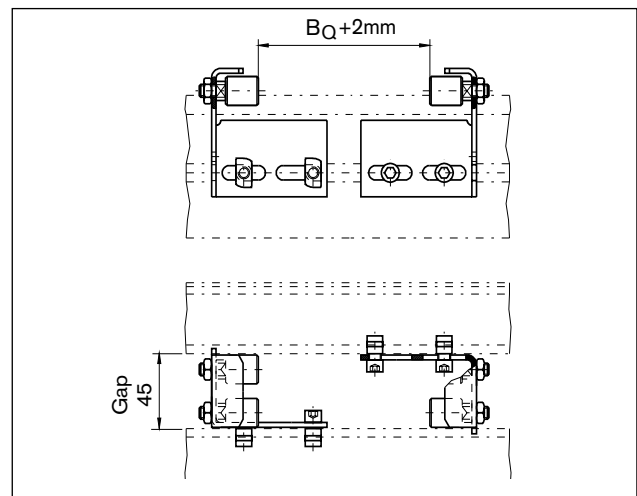
Ordering Information for Track Roller RS2/P

Roller Style	Gap in mm	Pallet Width mm	Part Number
Steel	45	160, bracket I.B.	0842 600 280
Steel	45	160, bracket O.B.	8981 019 163
Steel	90	240, bracket I.B.	0842 600 281
Steel	135	320, bracket I.B.	0842 600 282
Standard	45	240 minimum pallet width	8981 022 962
Standard	90	240 minimum pallet width	8981 022 963
Standard	135	320 minimum pallet width	8981 022 964



Steel Track Roller

Dimensional Data for Steel Track Roller



Standard Track Roller

Dimensional Data for Standard Track Roller

