

HQ 2 lift transverse units

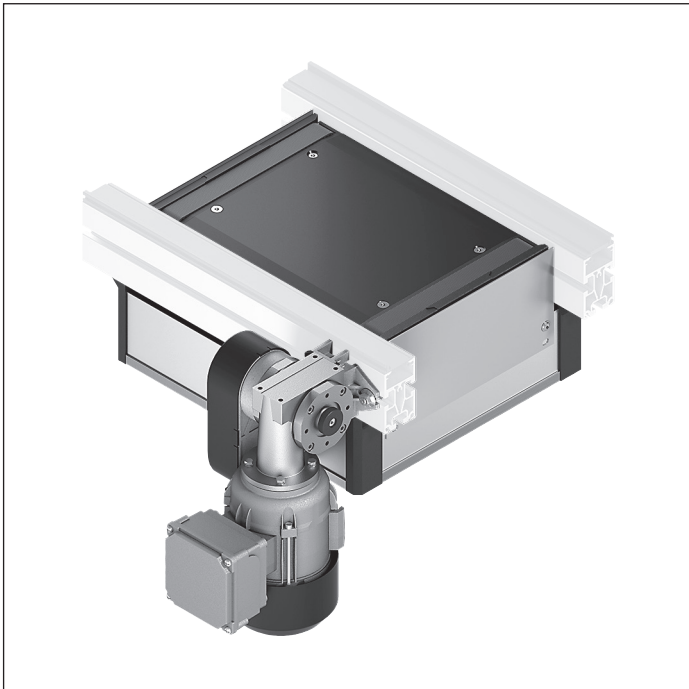
The lift transverse units have to:

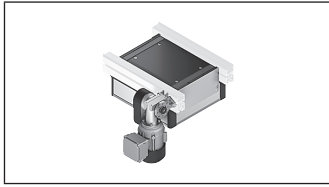
- ▶ Move the workpiece pallets from a longitudinal section to a transverse section
- ▶ Move the workpiece pallets from a transverse section onto a longitudinal section

Lift transverse units for overall workpiece pallet weights up to 240 kg are available for the TS *2plus* transfer system.

All lift transverse units have one thing in common – vertical pneumatic movement and horizontal transportation action. Vertical movement can be set in three positions:

- ▶ Spring-centered middle position (basic position, 4 mm below transport level). It serves as the transport position when the lug cam is lowered and as the locked position when the lug cam is raised
- ▶ Transverse conveying position (10 mm above transport level of longitudinal conveyor)
- ▶ Lower transport position (11 mm below conveying level). In this low position a workpiece pallet is also released onto a longitudinal conveyor section when the lug cam is raised

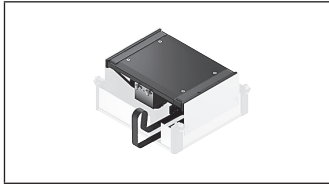




HQ 2/S lift transverse units
160 x 160 ... 800 x 480



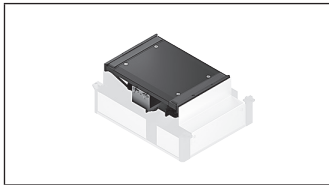
5-28



HQ 2/O lift transverse units
160 x 160 ... 800 x 480



5-33



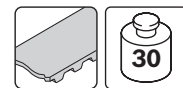
HQ 2/T lift transverse units
160 x 160 ... 800 x 480



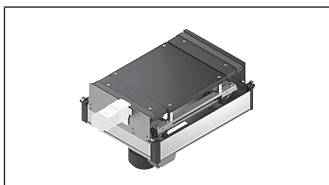
5-48



HQ 2/U lift transverse units
160 x 160 ... 400 x 400; 480 x 320



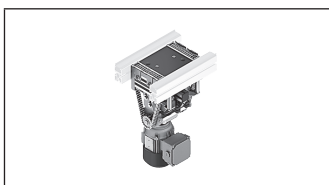
5-56



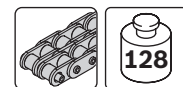
HQ 2/U2 lift transverse units
400 x 400 ... 800 x 640



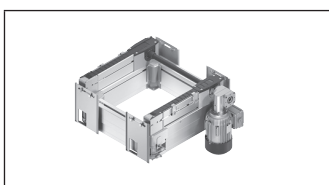
5-60



HQ 2/U-H lift transverse units
240 x 240 ... 640 x 640



5-64

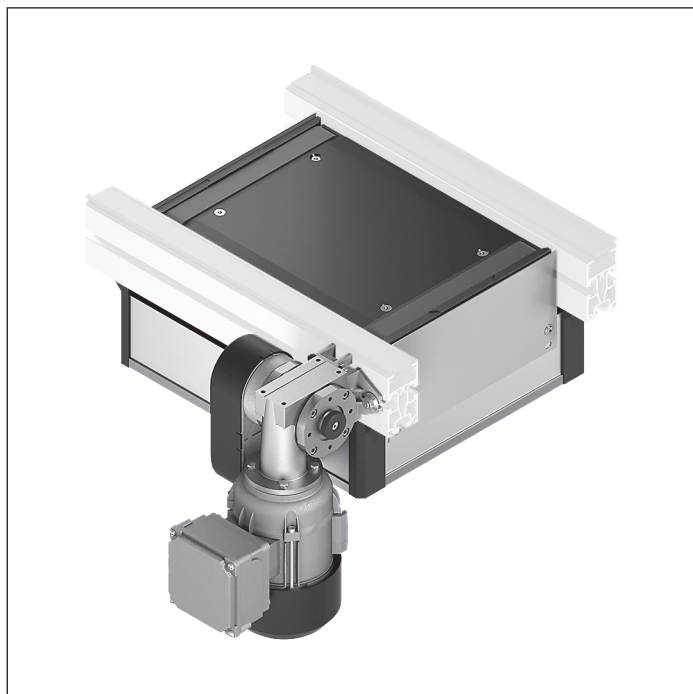


HQ 2/C-H lift transverse units
480 x 640 ... 1200 x 1200



5-71

HQ 2/S lift transverse unit



- ▶ Lift transverse unit for feeding out from a longitudinal section into a transverse section and vice versa
- ▶ Low height with motor mounted on side. It is therefore suitable for the operation of double-deck conveyor sections
- ▶ In two sizes with one or two lifting cylinders
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- ▶ Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ Can be combined with WT 2/E, WT 2 and WT 2/F

Note: Reversible operation possible

Vertical movement is delivered by pneumatic cylinders. Two sizes are available:

Size 1 (BG 1) for total weights (workpiece pallet + load) up to 30 kg by one lifting cylinder.

Accessories

Required accessories

- ▶ 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110
- ▶ SK 2. protective housing, see p. 5-40

Delivery notes

Scope of delivery

- ▶ Incl. fastening material
- ▶ Pneumatic equipment for two or three positions
- ▶ Kit for electric position sensing

Size 2 (BG 2) for total weights (workpiece pallet + load) up to 50 kg by two lifting cylinder for workpiece pallet dimensions from 400 x 480 mm.

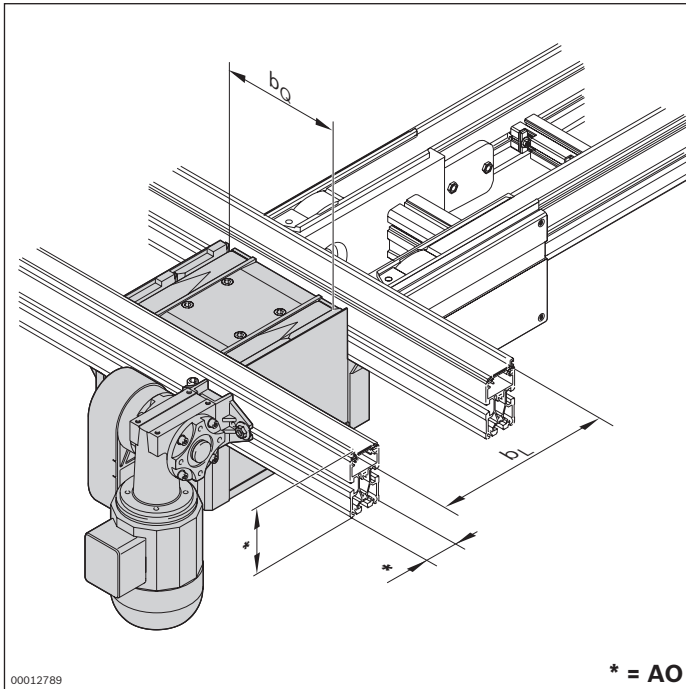
Recommended accessories

- ▶ DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- ▶ WI 2/... rockers (see p. 8-139ff), WI/M (see p. 8-133) DA 2/60 (see p. 8-62), DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding the workpiece pallet

Condition on delivery

- ▶ Pre-assembled in modular units
- ▶ Protective housing, not assembled

Ordering information



Material number		3842999888
b _Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b _L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b _Q x b _L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320 BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2 ¹ ; 3 ²
v _N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

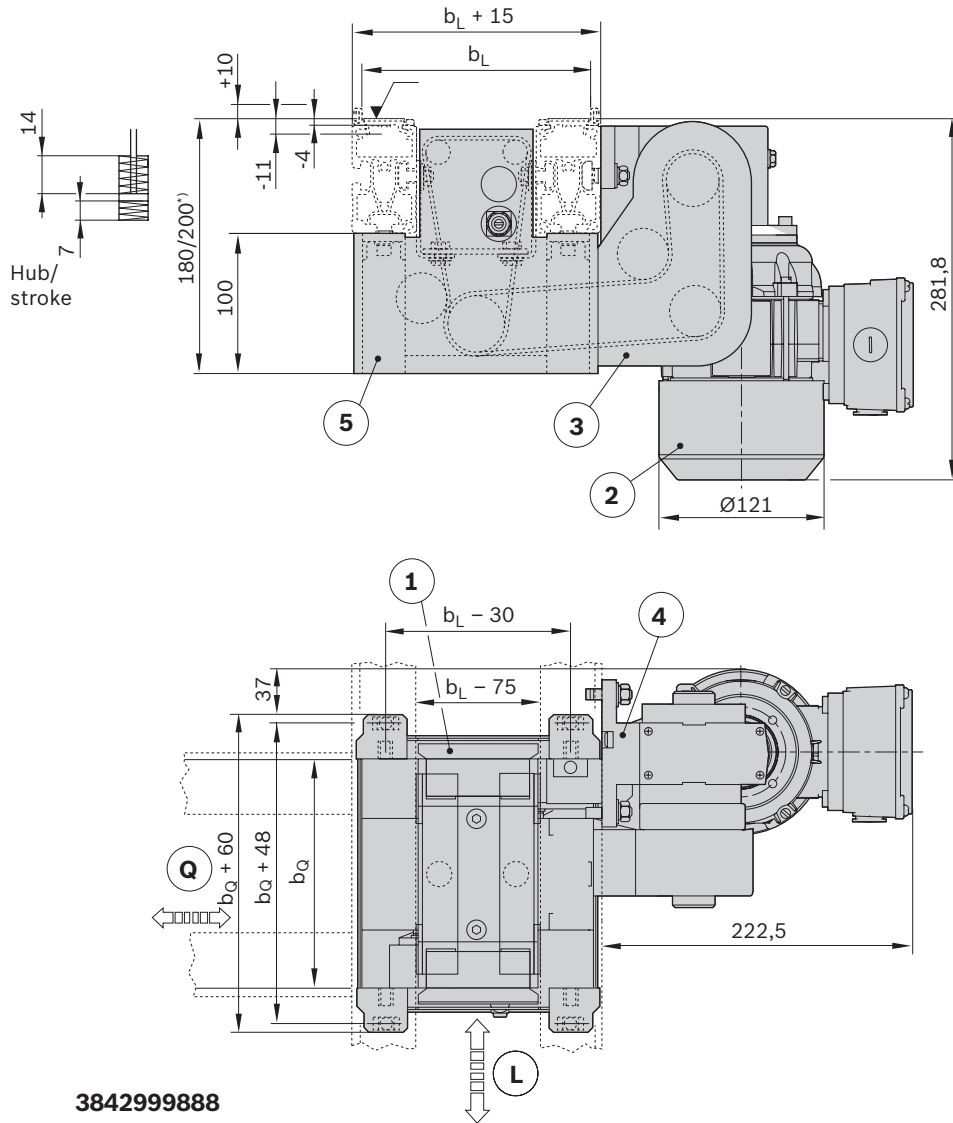
¹ PN = 2: Upper and middle lift position

² PN = 3: Upper, middle and lower lift position

Technical data

Material number		3842999888
Load		
Max. total weight of workpiece pallet	m _G	kg
		BG 1: 30 BG 2: 50
Features		
ESD		Yes
Design		
Size	BG	BG 1; BG 2
Additional information		
Required compressed air connection	p	bar
		4 ... 6
Pneumatic connector	∅	mm
		6

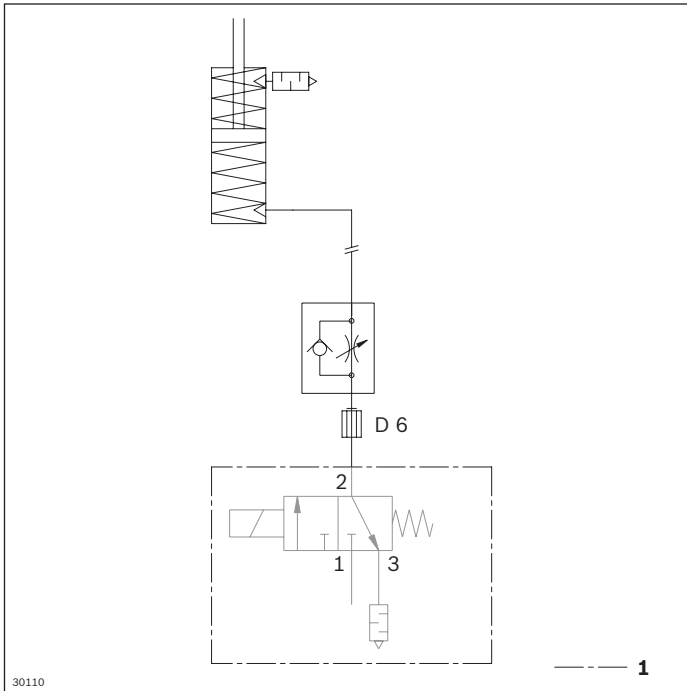
Dimensions



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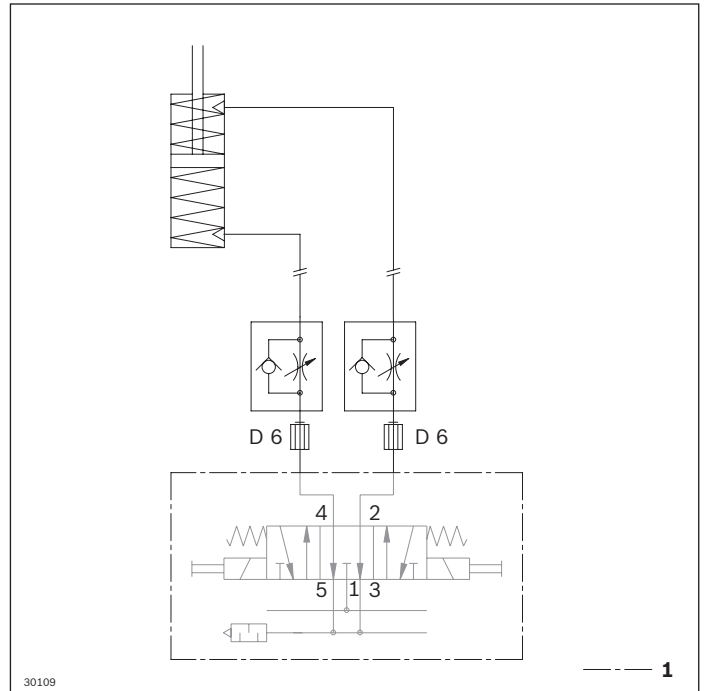
- L Transport direction of longitudinal conveyor section
 - Q Transport direction of transverse conveyor section
 - 1 HQ 2/S lift transverse unit
 - 2 Drive motor
 - 3 Connecting kit
 - 4 Motor mounting kit
 - 5 Housing element
- * 180 mm for 80 mm profile height, 200 mm for 100 mm profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1



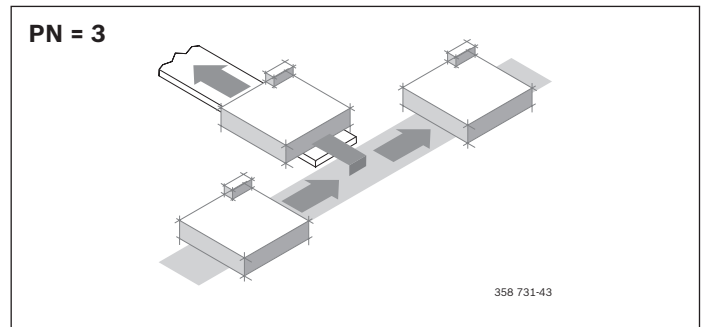
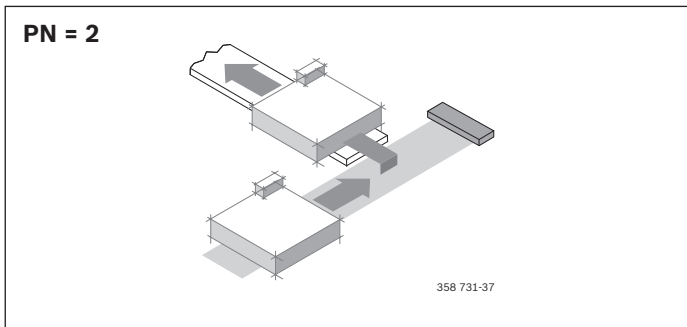
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1

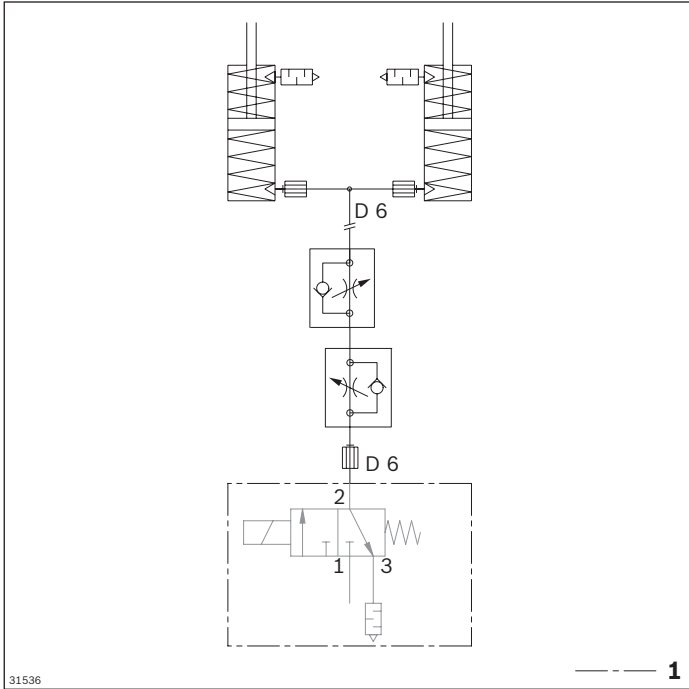


1 Not included in delivery

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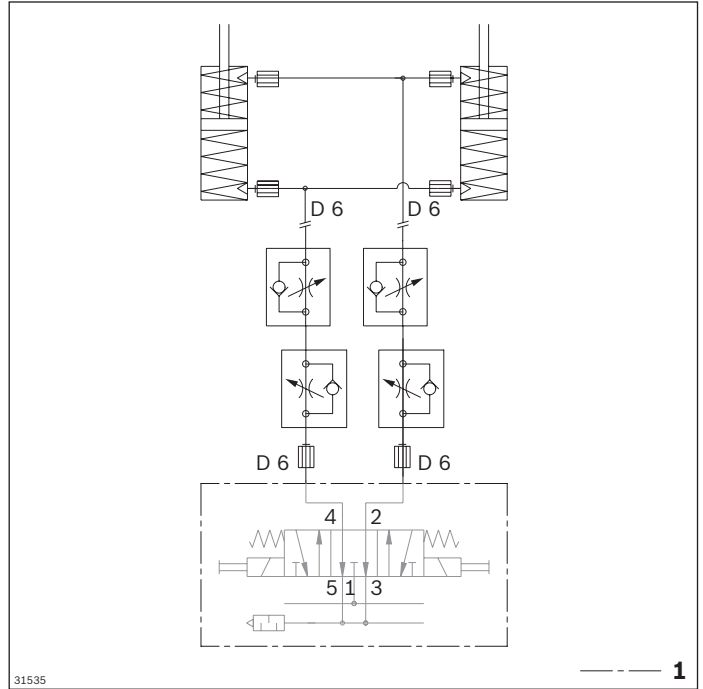


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



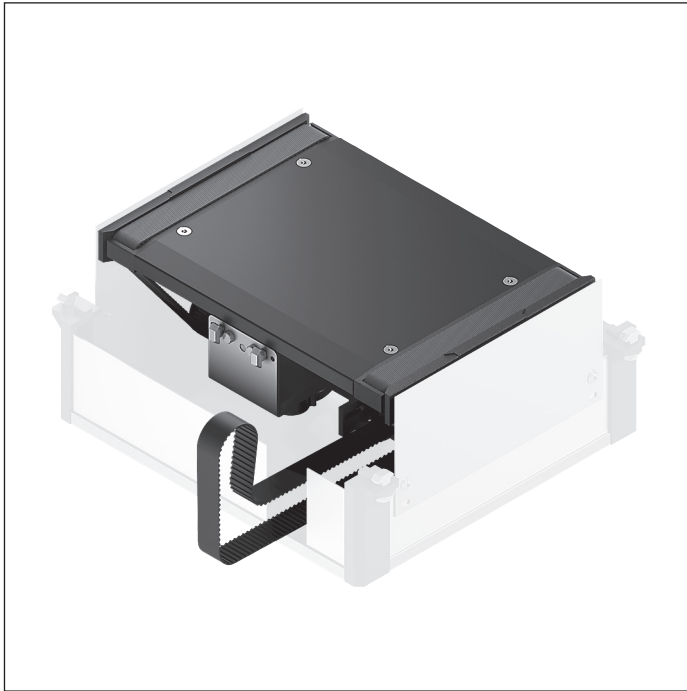
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

HQ 2/O lift transverse unit



The HQ 2/O does not have a built-in drive. Driven by a toothed belt coupled with a BS 2/T, BS 2/TE belt section or by a separate drive motor. It is a part of all EQ 2 electric transverse conveyors and can also be used in special system designs. Vertical movement is delivered by pneumatic cylinders.

Accessories

Required accessories

- ▶ 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110
- ▶ BS 2/T belt section (see p. 5-42), BS 2/TE belt section (see p. 5-45) for driving
- ▶ HQ 2/T (see p. 5-48) in the tandem version
- ▶ Connection belt set for HQ 2/O drive (see p. 5-38) via a belt section
- ▶ SK 2/B protective housing, see p. 5-54

Delivery notes

Scope of delivery

- ▶ Incl. fastening material
- ▶ Pneumatic equipment for two or three positions
- ▶ Kit for electric position sensing

- ▶ Lift transverse unit without built-in drive for outfeeding from a longitudinal section into a transverse section and vice versa
- ▶ Drive by toothed belt coupling
- ▶ The low height is suitable for the operation of double-deck conveyor sections
- ▶ Suitable for use in special designs
- ▶ In two sizes with one or two lifting cylinders
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- ▶ Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ Can be combined with WT 2 and WT 2/F

Note: Reversible operation possible

Two sizes are available:

Size 1 (BG 1) for total weights (workpiece pallet + load) up to 30 kg by one lifting cylinder.

Size 2 (BG 2) for total weights (workpiece pallet + load) up to 50 kg by two lifting cylinder for workpiece pallet dimensions from 400 x 480 mm.

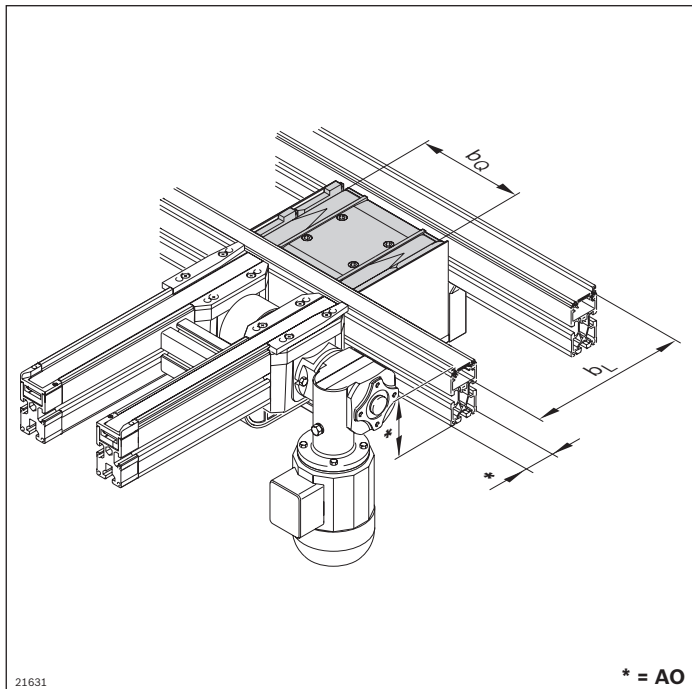
Recommended accessories

- ▶ DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- ▶ WI 2 (see p. 8-139ff) or WI/M (see p. 8-133) rocker and DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding workpiece pallets

Condition on delivery

- ▶ Fully assembled

Ordering information



Material number		3842998113
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
$b_Q \times b_L$ (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320 BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2 ¹ ; 3 ²

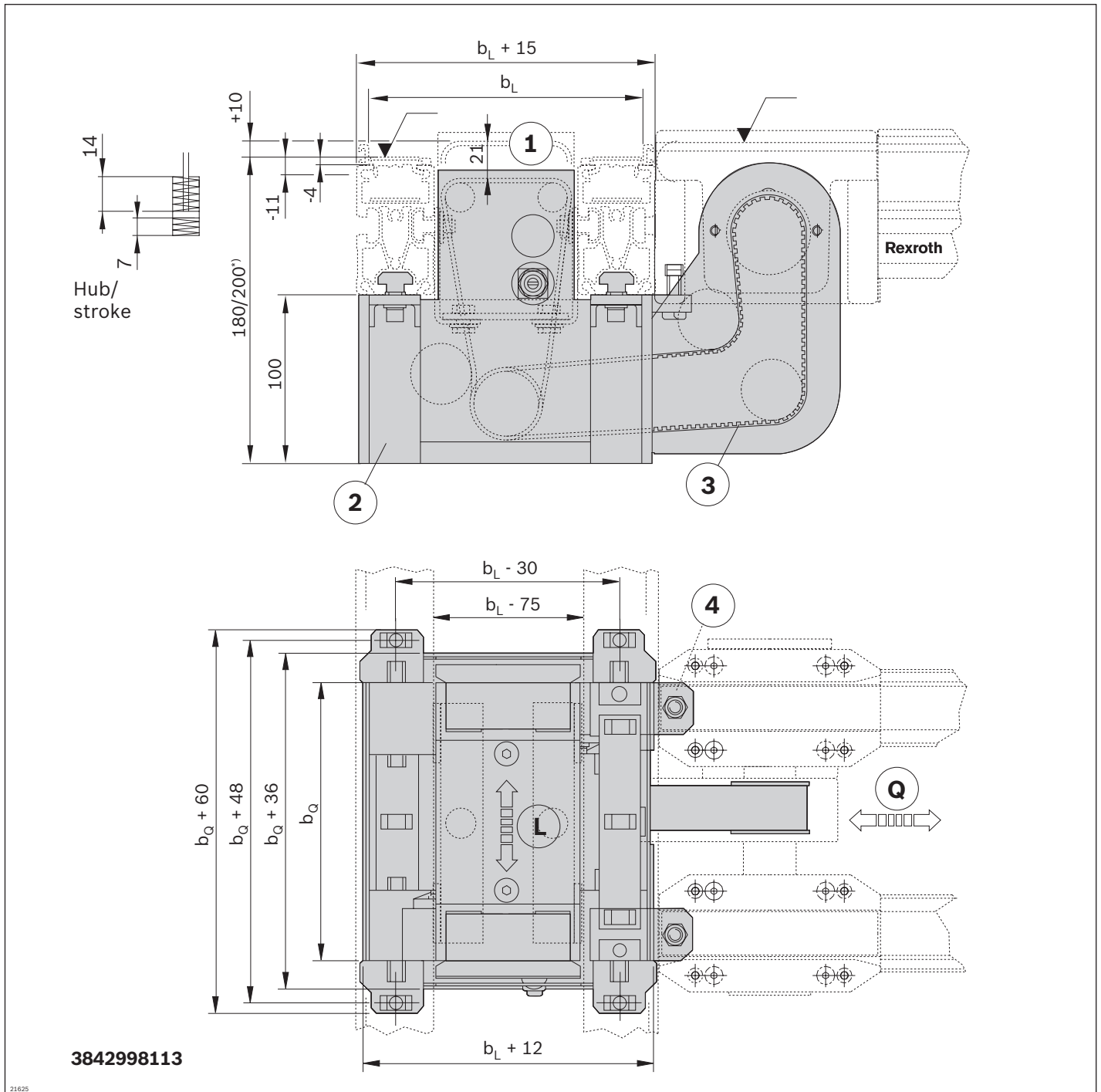
¹ PN = 2: Upper and middle lift position

² PN = 3: Upper, middle and lower lift position

Technical data

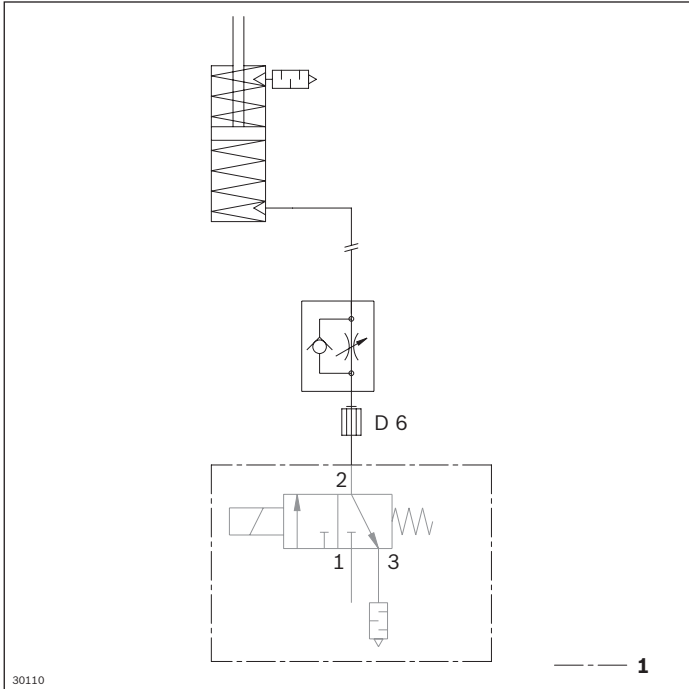
Material number		3842998113
Load		
Max. total weight of workpiece pallet	m_G	kg
		BG 1: 30 BG 2: 50
Features		
ESD		Yes
Design		
Size	BG	BG 1; BG 2
Additional information		
Required compressed air connection	p	bar
		4 ... 6
Pneumatic connector	\varnothing	mm
		6

Dimensions



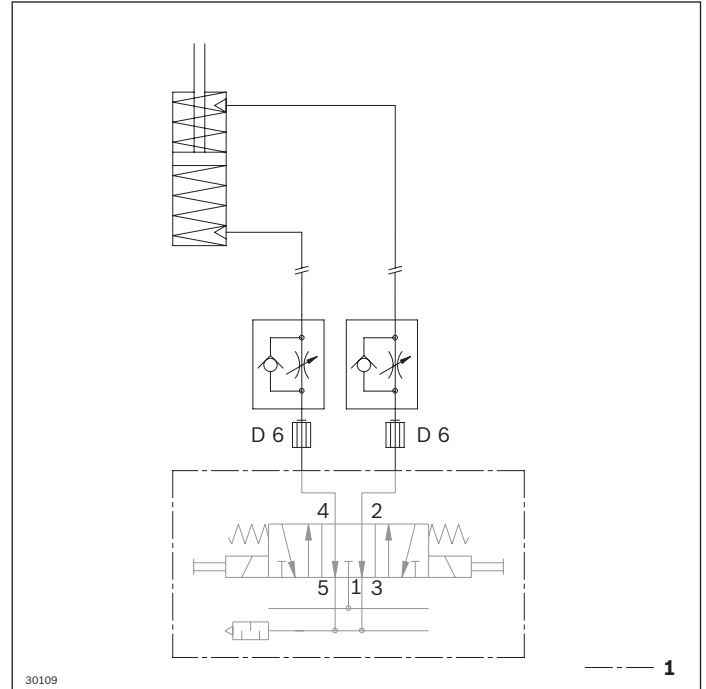
- L Transport direction of longitudinal conveyor section
- Q Transport direction of transverse conveyor section
- 1 Stroke
- 2 Housing element
- 3 Toothed belt for drive
- 4 Attachment for BS 2/T
- * 180 mm for 80 mm profile height, 200 mm for 100 mm profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1

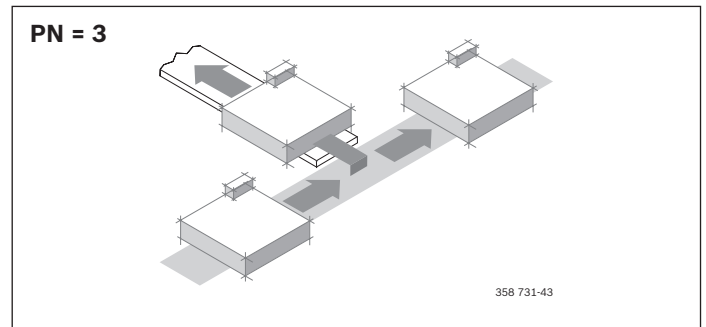
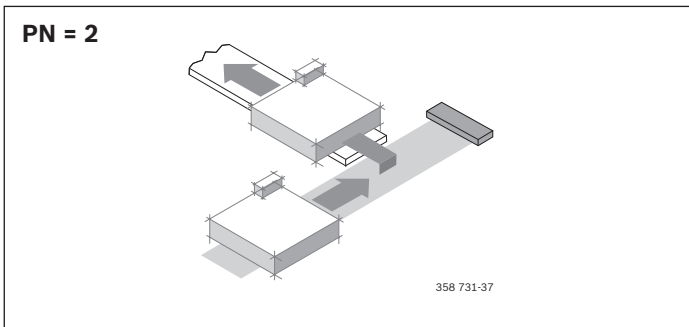


1 Not included in delivery

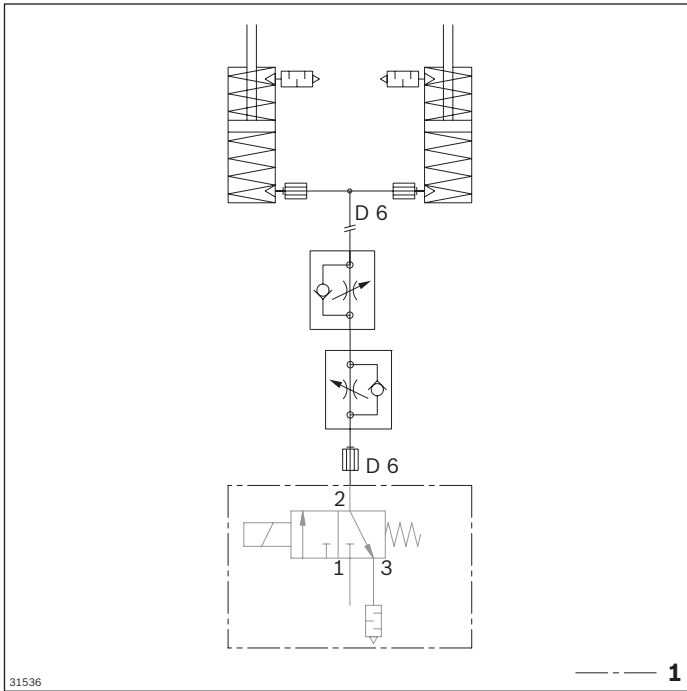
Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1



1 Not included in delivery

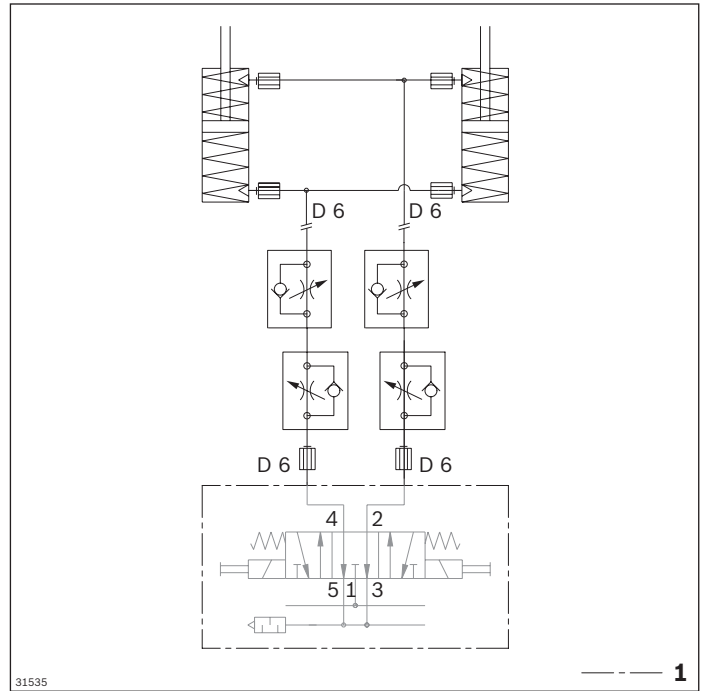


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



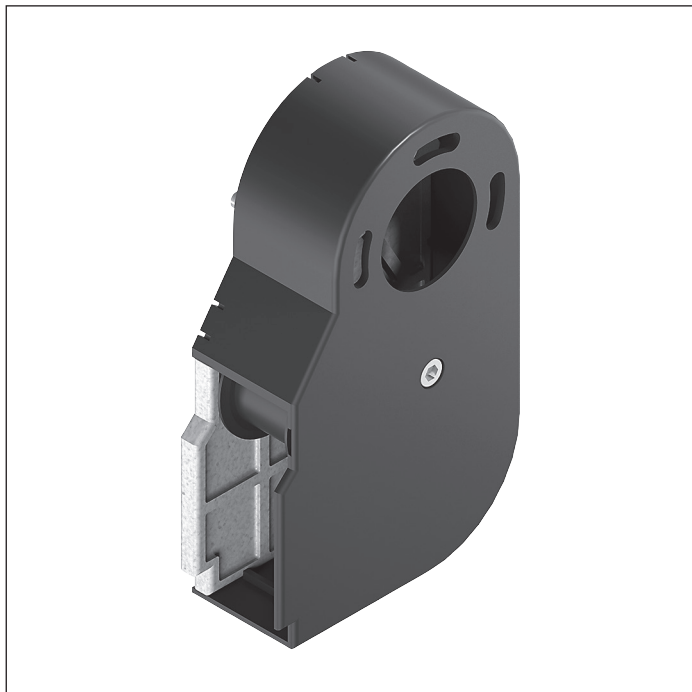
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

Connection belt for HQ 2/O



If the HQ 2/O lift transverse unit is driven via a belt section, a connection belt set is required.

The HQ 2/O (BG 1 or BG 2) can be combined with BS 2/TE

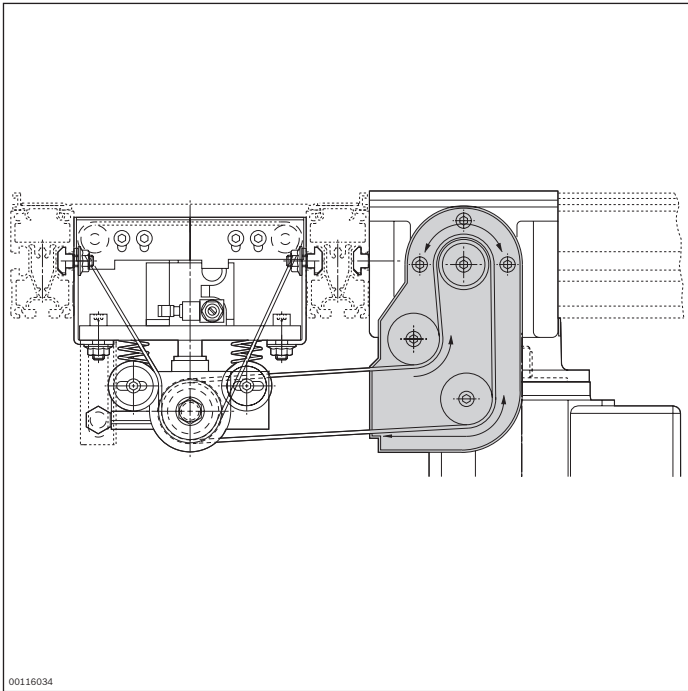
or BS 2/T using the connection belt set. The b_Q and b_L parameters are decisive for selection of the connection belt set.

Ordering information

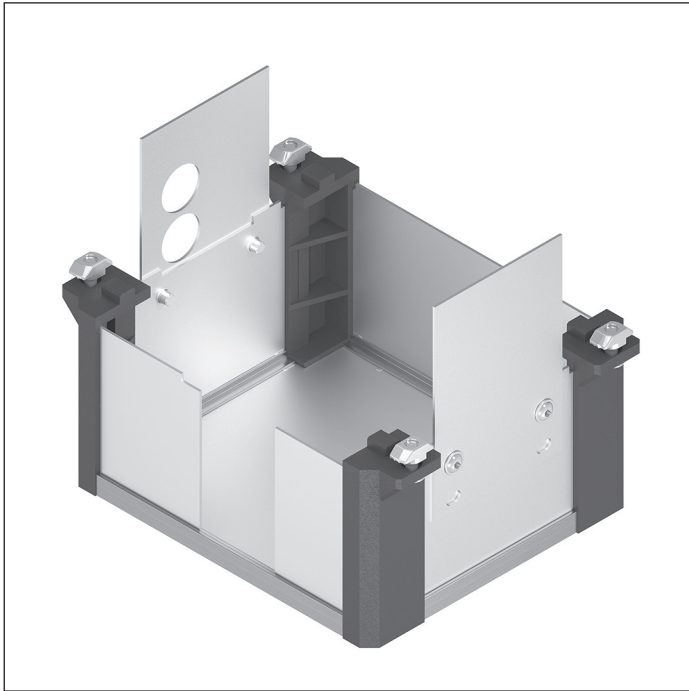
Material number		3842328196	3842328197
$b_Q \times b_L$ (mm x mm)	HQ 2/O combination possibilities	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320	BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480

Technical data

Material number		3842328196	3842328197
Design			
Size	BG	BG 1	BG 2



SK 2/B housing element



► Housing element for HQ 2/O and HQ 2/S

Ordering information

Product designation	b ₀ x b _L (mm)	Material number
SK 2/B housing element	160 x 160	3842338750
SK 2/B housing element	160 x 240	3842338755
SK 2/B housing element	160 x 320	3842338760
SK 2/B housing element	240 x 160	3842338751
SK 2/B housing element	240 x 240	3842338756
SK 2/B housing element	240 x 320	3842338761
SK 2/B housing element	240 x 400	3842338766
SK 2/B housing element	320 x 160	3842338752
SK 2/B housing element	320 x 240	3842338757
SK 2/B housing element	320 x 320	3842338762
SK 2/B housing element	320 x 400	3842338767
SK 2/B housing element	400 x 240	3842338758
SK 2/B housing element	400 x 320	3842338763
SK 2/B housing element	400 x 400	3842338768
SK 2/B housing element	400 x 480	3842338776
SK 2/B housing element	480 x 320	3842338764
SK 2/B housing element	480 x 400	3842338771
SK 2/B housing element	480 x 480	3842338777
SK 2/B housing element	640 x 400	3842338773
SK 2/B housing element	640 x 480	3842338779
SK 2/B housing element	800 x 400	3842338775
SK 2/B housing element	800 x 480	3842338781

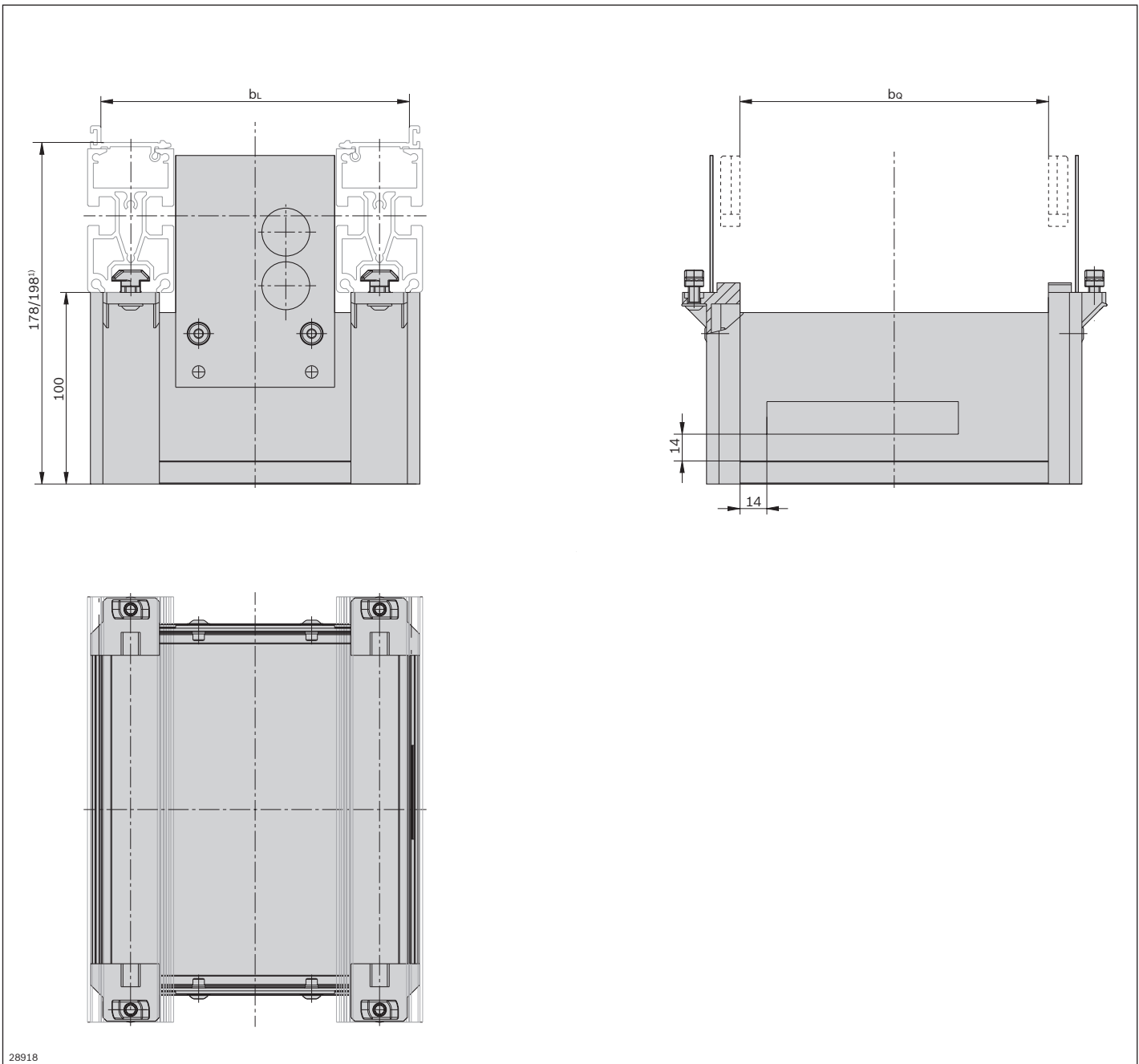
Technical data

Material number	3842338750	3842338757	3842338763	3842338768	3842338776
	3842338751	3842338758	3842338764	3842338771	3842338777
	3842338752	3842338760	3842338766	3842338773	3842338779
	3842338755	3842338761	3842338767	3842338775	3842338781
	3842338756	3842338762			

Features

Material specification	Aluminum; anodized PA66; black
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Dimensions



28918

¹ 178 mm for 80 mm profile height, 198 mm for 100 mm profile height

BS 2/T belt section



- ▶ Ready-to-use conveyor section with drive for transverse conveyance between parallel conveyor sections
- ▶ Additional toothed gears to drive an HQ 2/Q lift transverse unit each on both ends
- ▶ Reversible operation possible
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

Additional toothed gears to drive an HQ 2/Q lift transverse unit each on both ends.

Position of the gears depends on the size of the HQ 2/O.

Accessories

Recommended accessories

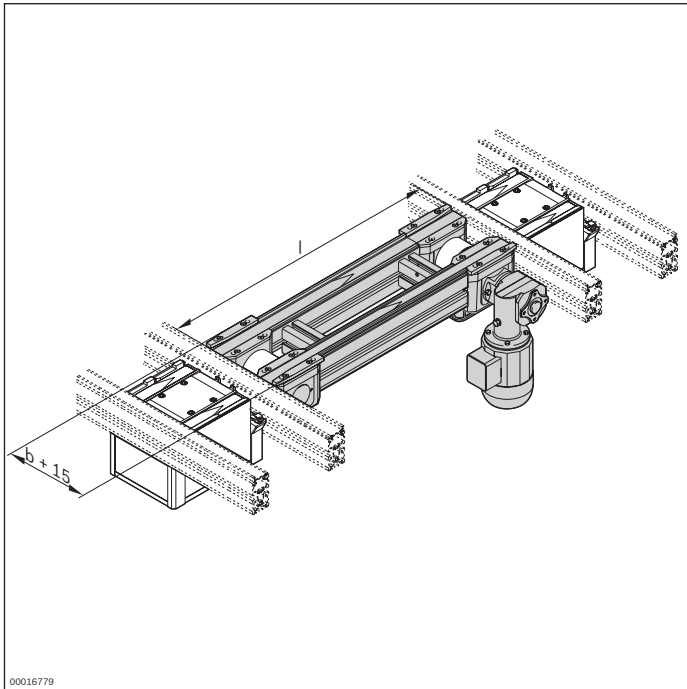
- ▶ Connection kit (3842525110, see p. 3-237) for installing the belt section between the ST 2 conveyor sections
- ▶ SZ 2 leg sets/..., see p. 6-2
- ▶ HQ 2/O lift transverse unit, see p. 5-33

Delivery notes

Condition on delivery

- ▶ Fully assembled

Ordering information



Material number		3842999722
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l (mm)	Length	320 ... 6000
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M ²
UB ¹	Connection belt UB = 1 UB = 2	1; 2

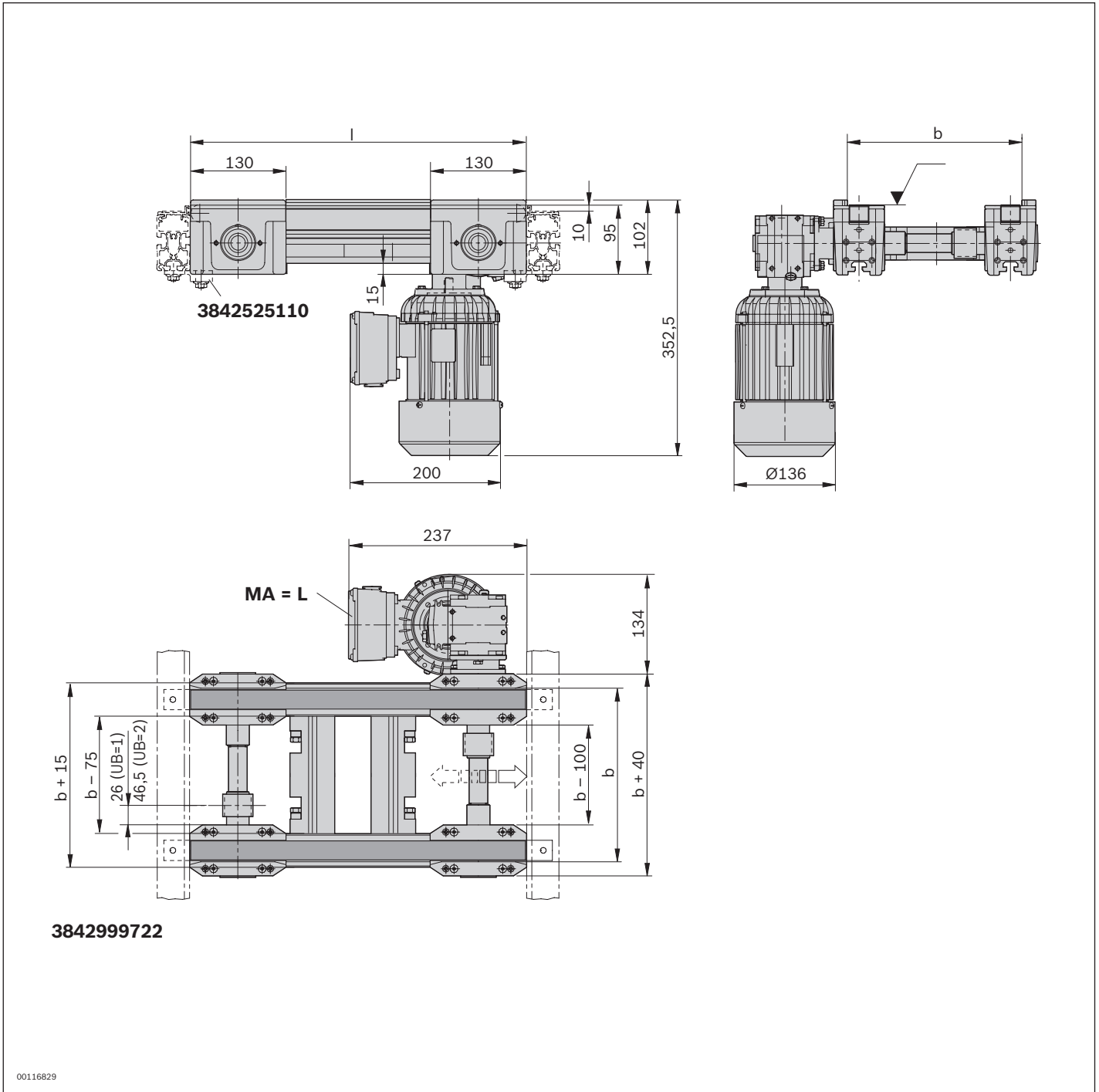
¹ UB: Connection belt for Size BG 1 ($b_O \times b_L \leq 480 \times 320$ mm) or BG 2 HQ 2/O ($b_O \times b_L \geq 400 \times 480$ mm)

² MA = M when $b_O \geq 320$ mm

Technical data

Material number		3842999722
Load		
Max. section load in accumulation operation	kg	60
Features		
ESD		Yes

Dimensions



BS 2/TE belt section



- ▶ Ready-to-use conveyor section with drive for transverse conveyance into a dead end
- ▶ Additional toothed gear to drive an HQ 2/O lift transverse unit
- ▶ Reversible operation possible
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

5

Accessories

Recommended accessories

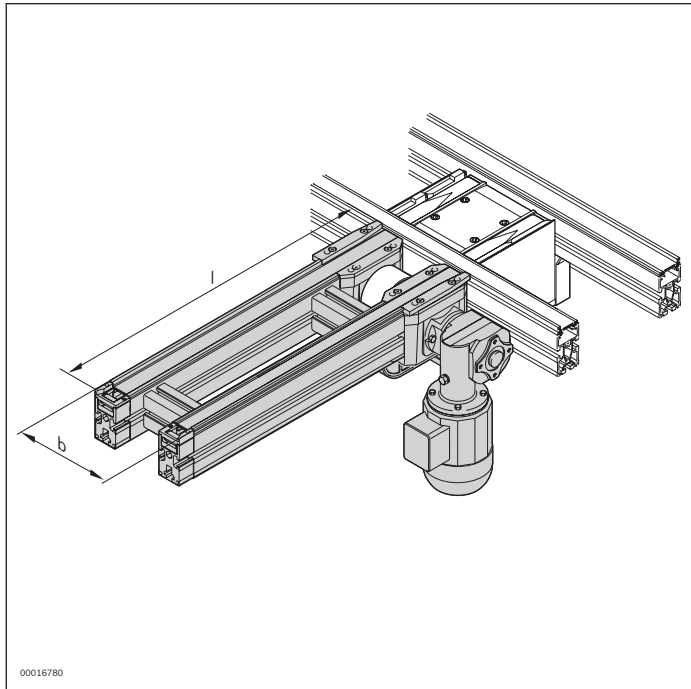
- ▶ Connection kit (3842525110, see p. 3-237) for installing the belt section between the ST 2 conveyor sections
- ▶ SZ 2 leg sets, see p. 6-2

Delivery notes

Condition on delivery

- ▶ Fully assembled

Ordering information



Material number		3842999723
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l (mm)	Length	240 ... 6000
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M ²
UB ¹	Connection belt UB = 1 UB = 2	1; 2

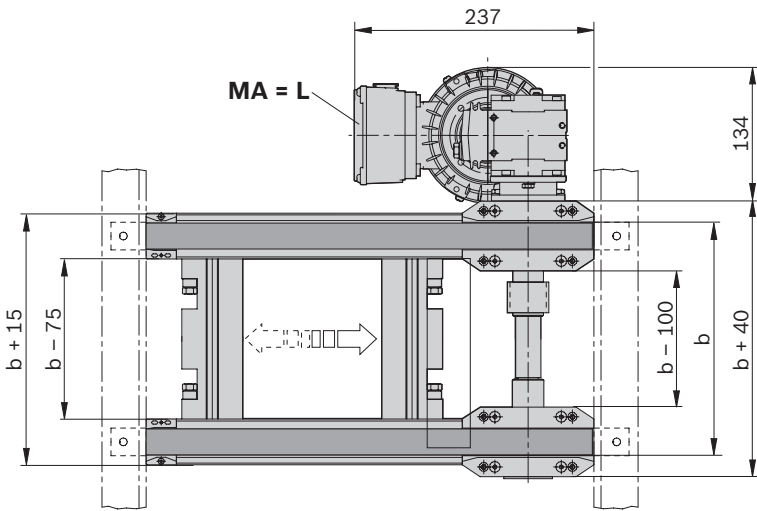
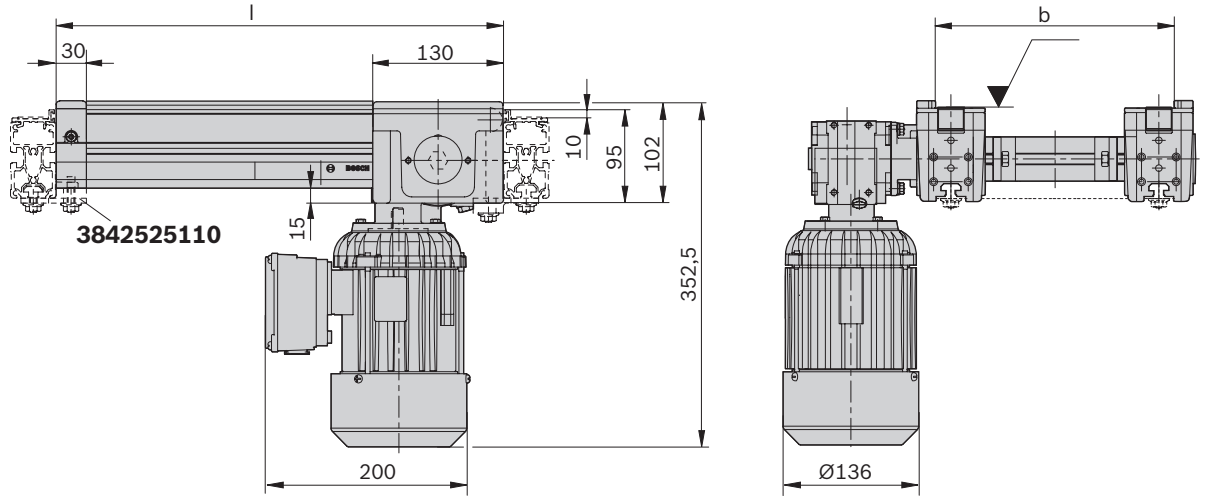
¹ UB: Connection belt for Size BG 1 ($b_o \times b_L \leq 480 \times 320$ mm) or BG 2 HQ 2/O ($b_o \times b_L \geq 400 \times 480$ mm)

² MA = M when $b_o \geq 320$ mm

Technical data

Material number		3842999723
Load		
Max. section load in accumulation operation	kg	60
Features		
ESD		Yes

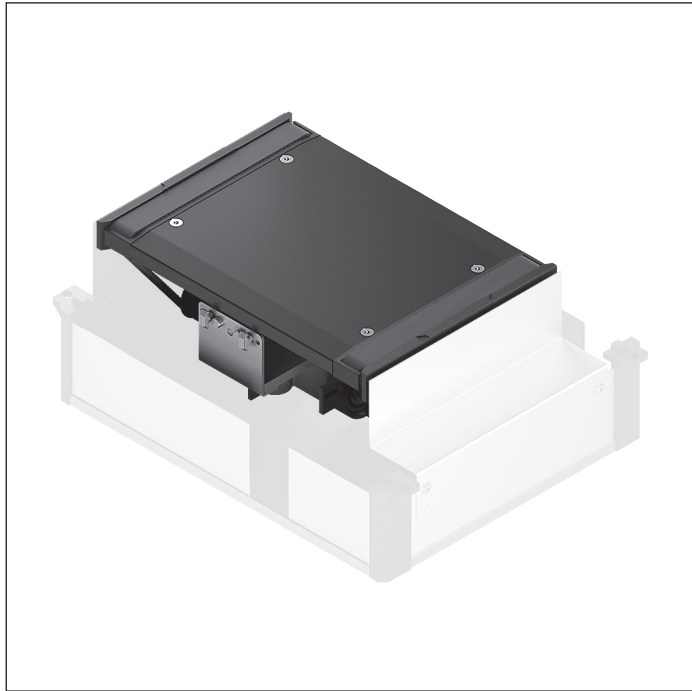
Dimensions



3842999723

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HQ 2/T lift transverse unit



- ▶ Lift transverse unit without built-in drive for outfeeding from a longitudinal section into a transverse section with a roller section and vice versa
- ▶ Used in tandem with the HQ 2/O
- ▶ Drive by toothed belt coupling
- ▶ Suitable for use in special designs
- ▶ In two sizes with one or two lifting cylinders
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- ▶ Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ Can be combined with WT 2/E, WT 2 and WT 2/F

Note: Reversible operation possible

Vertical movement is delivered by pneumatic cylinders. Two sizes are available:

Size 1 (BG 1) for total weights (workpiece pallet + load) up to 30 kg by one lifting cylinder.

Size 2 (BG 2) for total weights (workpiece pallet + load) up to 50 kg by two lifting cylinder for workpiece pallet dimensions from 400 x 480 mm.

Accessories

Required accessories

- ▶ 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110
- ▶ SK 2 protective housing, see p. 5-54

Recommended accessories

- ▶ DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- ▶ WI 2 (see p. 8-131ff) or WI/M (see p. 8-133) rocker and DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding workpiece pallets

Delivery notes

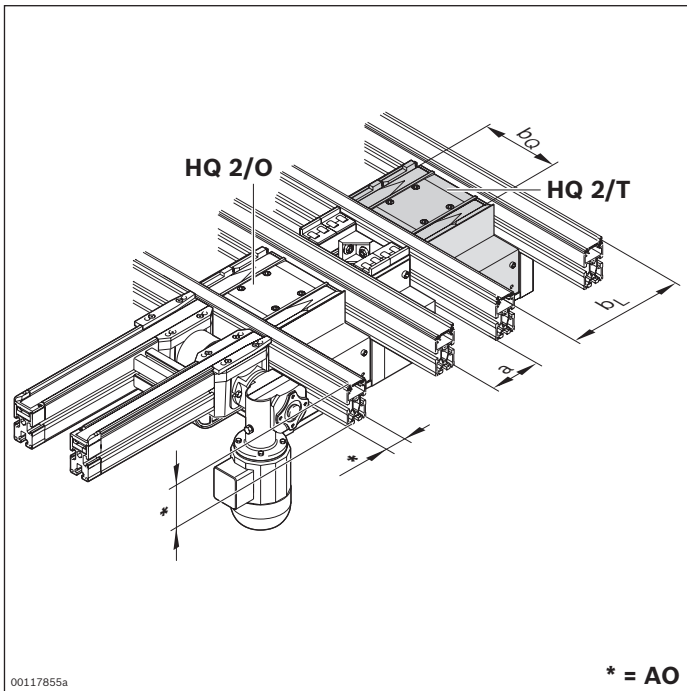
Scope of delivery

- ▶ Incl. fastening material
- ▶ Pneumatic equipment for two or three positions
- ▶ Kit for electric position sensing
- ▶ Incl. drive kit (required to drive an HQ 2/T)

Condition on delivery

- ▶ Fully assembled

Ordering information



Material number		3842998114
b _Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b _L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b _Q x b _L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320 BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2 ¹ ; 3 ²

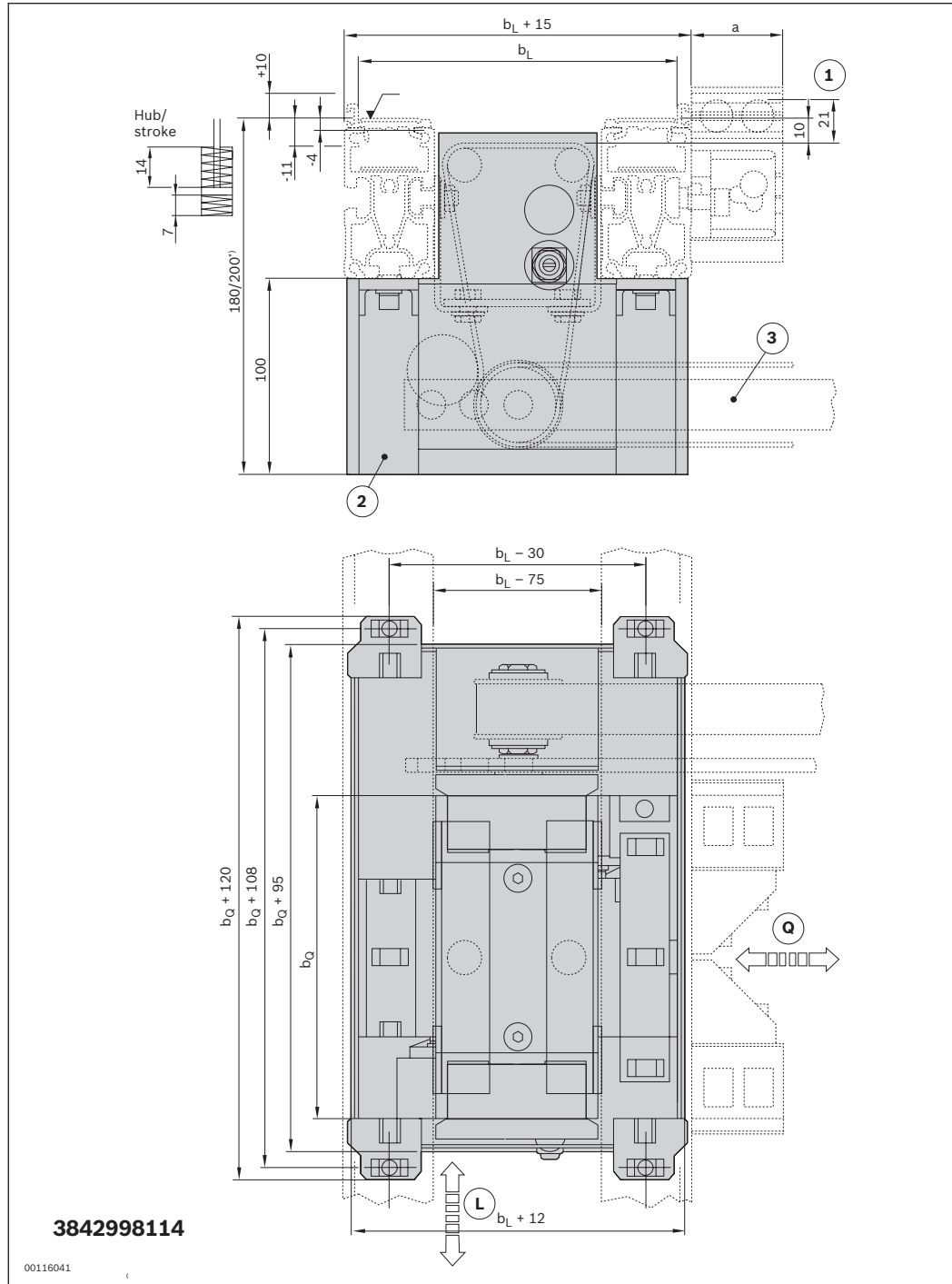
¹ PN = 2: Upper and middle lift position

² PN = 3: Upper, middle and lower lift position

Technical data

Material number		3842998114
Load		
Max. total weight of workpiece pallet	m _G	kg
		BG 1: 30 BG 2: 50
Features		
ESD		Yes
Design		
Size	BG	BG 1; BG 2
Additional information		
Required compressed air connection	p	bar
		4 ... 6
Pneumatic connector	Ø	mm
		6

Dimensions



L Transport direction of longitudinal conveyor section

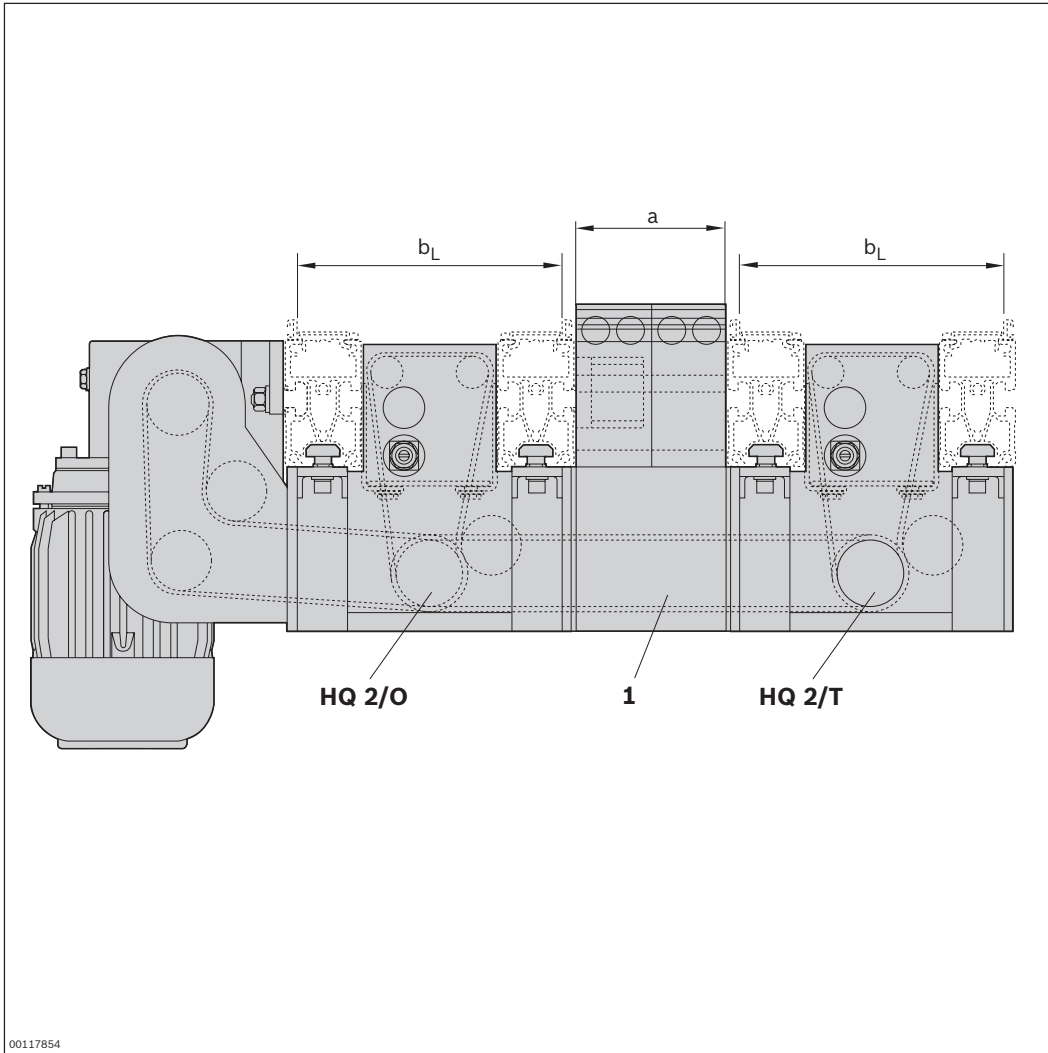
Q Transport direction of transverse conveyor section

1 Stroke

2 Housing element

3 Drive kit for HQ 2/O-HQ 2/T

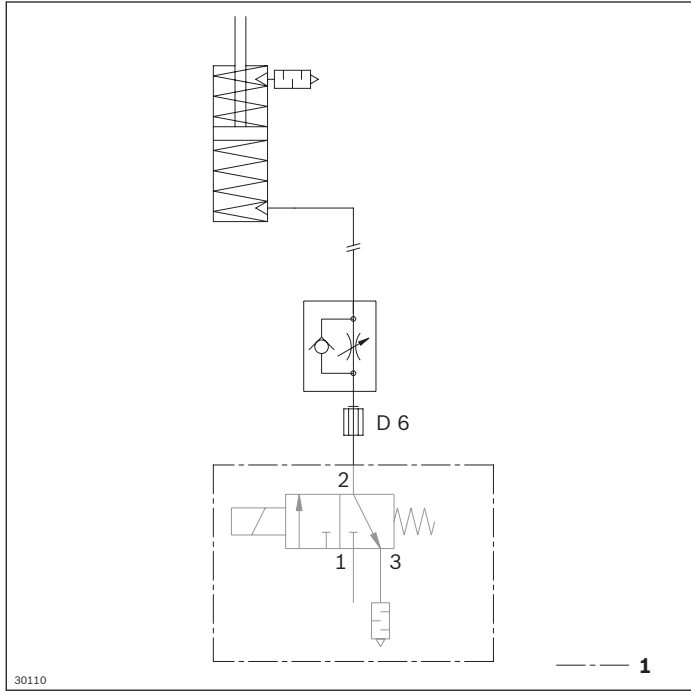
* 180 mm for 80 mm profile height, 200 mm for 100 mm profile height



00117854

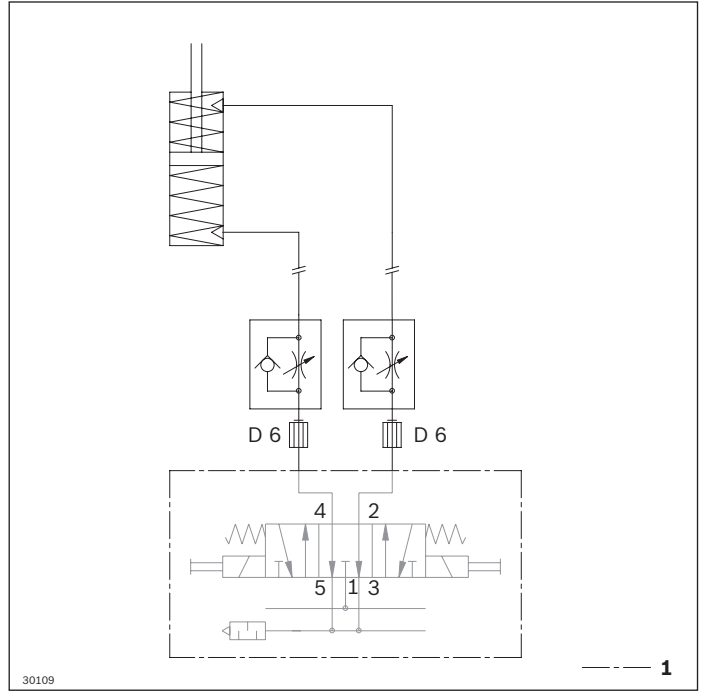
1 Drive kit

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1

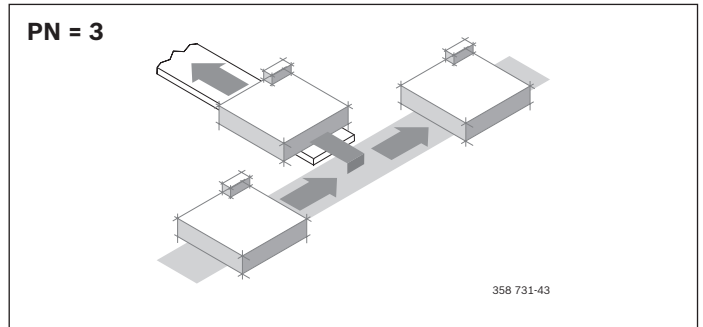
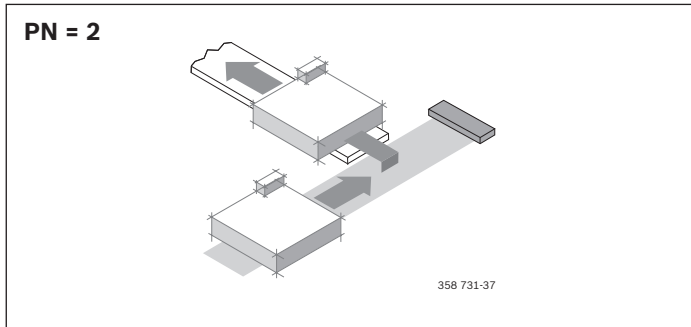


1 Not included in delivery

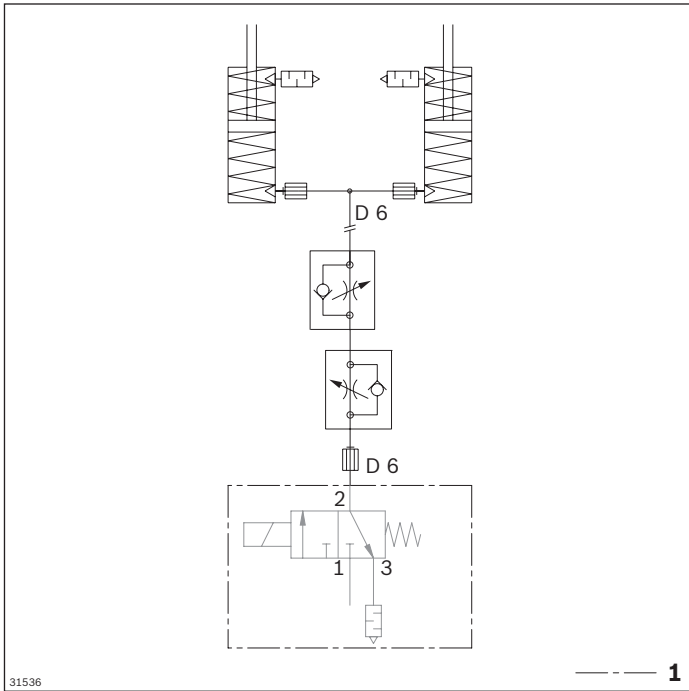
Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1



1 Not included in delivery

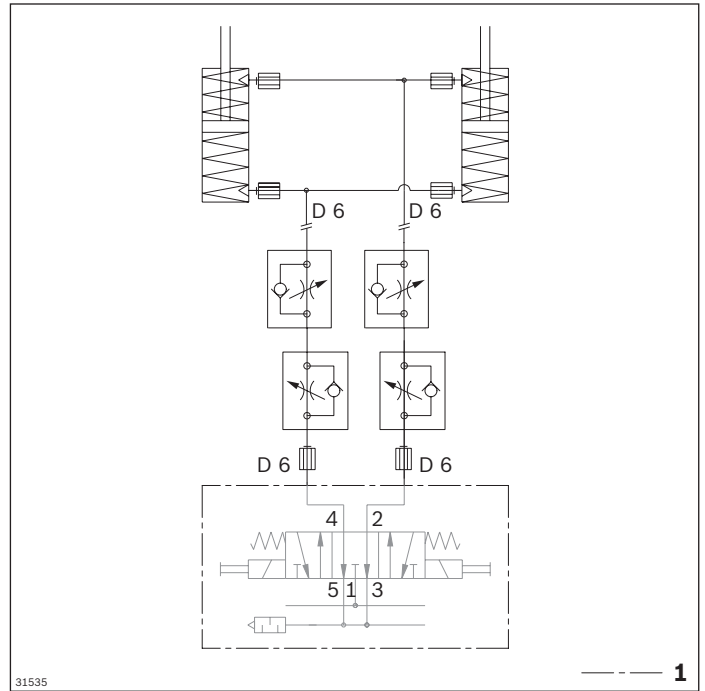


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



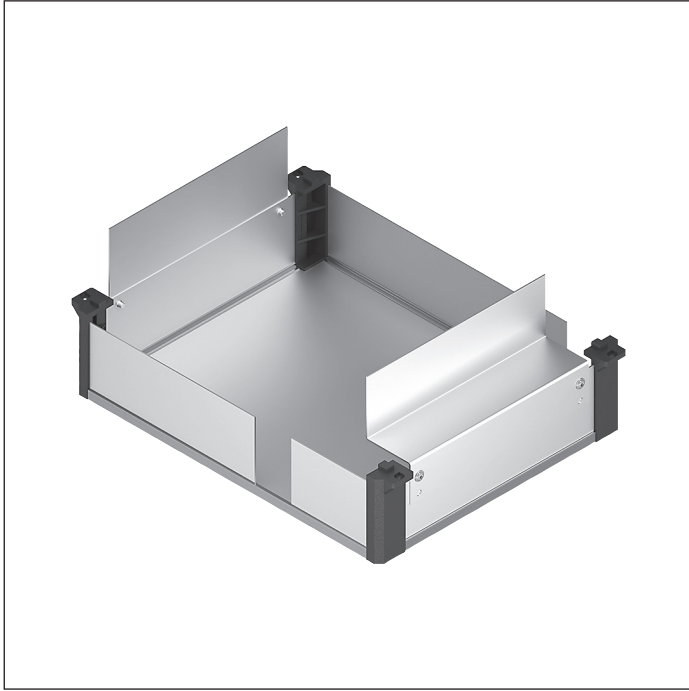
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

SK 2 housing element



► Housing element for HQ 2/T

Ordering information

Product designation	$b_Q \times b_L$ (mm)	Material number
SK 2 housing element	160 x 160	3842345100
SK 2 housing element	160 x 240	3842345105
SK 2 housing element	160 x 320	3842345110
SK 2 housing element	240 x 160	3842345101
SK 2 housing element	240 x 240	3842345106
SK 2 housing element	240 x 320	3842345111
SK 2 housing element	240 x 400	3842345116
SK 2 housing element	320 x 160	3842345102
SK 2 housing element	320 x 240	3842345107
SK 2 housing element	320 x 320	3842345112
SK 2 housing element	320 x 400	3842345117
SK 2 housing element	400 x 240	3842345108
SK 2 housing element	400 x 320	3842345113
SK 2 housing element	400 x 400	3842345118
SK 2 housing element	400 x 480	3842345126
SK 2 housing element	480 x 320	3842345114
SK 2 housing element	480 x 400	3842345121
SK 2 housing element	480 x 480	3842345127
SK 2 housing element	640 x 400	3842345123
SK 2 housing element	640 x 480	3842345129
SK 2 housing element	800 x 400	3842345125
SK 2 housing element	800 x 480	3842345131

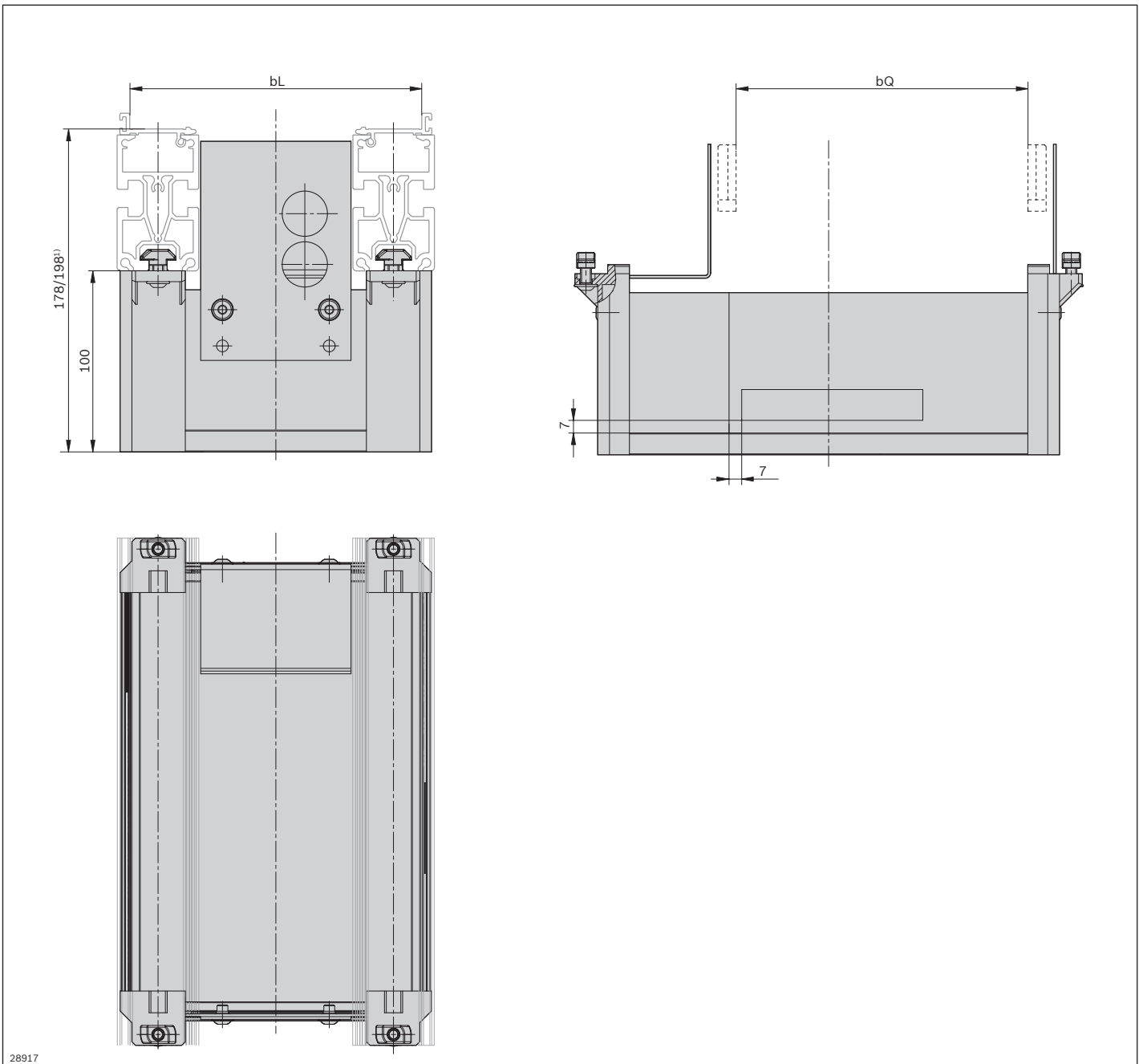
Technical data

Material number	3842345100	3842345107	3842345113	3842345118	3842345126
	3842345101	3842345108	3842345114	3842345121	3842345127
	3842345102	3842345110	3842345116	3842345123	3842345129
	3842345105	3842345111	3842345117	3842345125	3842345131
	3842345106	3842345112			

Features

Material specification	Aluminum; anodized PA 66; black
------------------------	------------------------------------

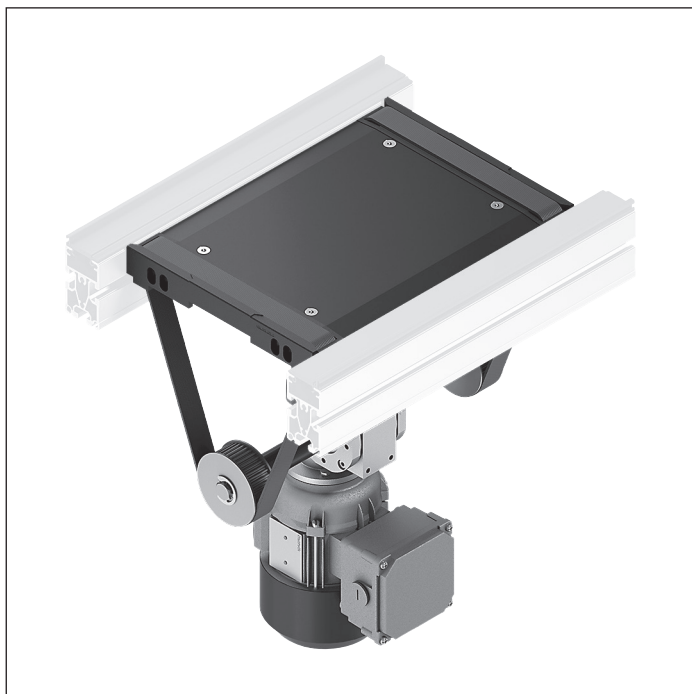
Dimensions



28917

¹ 178 mm for 80 mm profile height, 198 mm for 100 mm profile height

HQ 2/U lift transverse unit



- ▶ Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- ▶ Use in tight spaces by means of suspended drive motor (outside dimensions must be no wider than the section)
- ▶ Drive by toothed belt coupling is not possible because of the compact design
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- ▶ Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ Can be combined with WT 2/E, WT 2 and WT 2/F

Note: Reversible operation possible

Accessories

Required accessories

- ▶ 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110

Delivery notes

Scope of delivery

- ▶ Incl. fastening material
- ▶ Pneumatic equipment for two or three positions
- ▶ Kit for electric position sensing
- ▶ Housing element

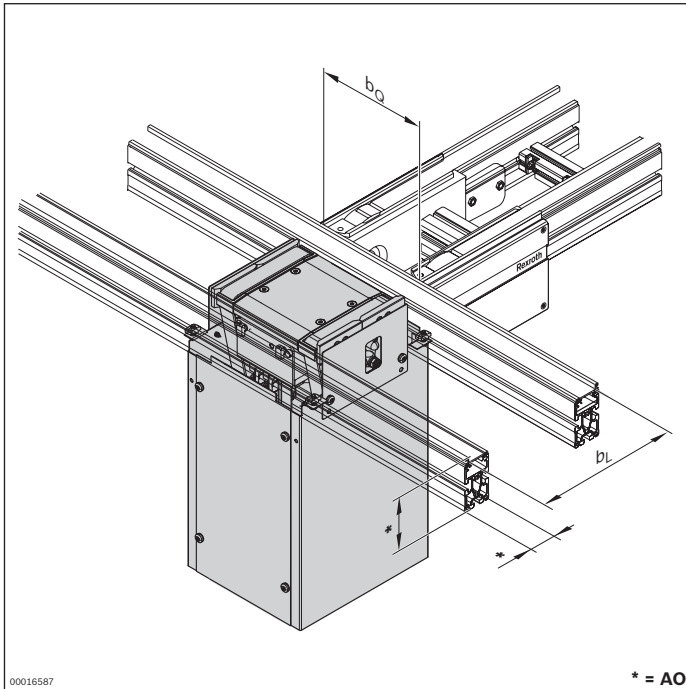
Recommended accessories

- ▶ DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- ▶ WI 2 (see p. 8-139ff) or WI/M (see p. 8-133) rocker and DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-71) for infeding workpiece pallets

Condition on delivery

- ▶ Fully assembled
- ▶ Kit for electric position sensing included

Ordering information



Material number		3842999903
b _Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480
b _L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400
b _Q x b _L (mm x mm)	Combination options	160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2 ¹ ; 3 ²
v _N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

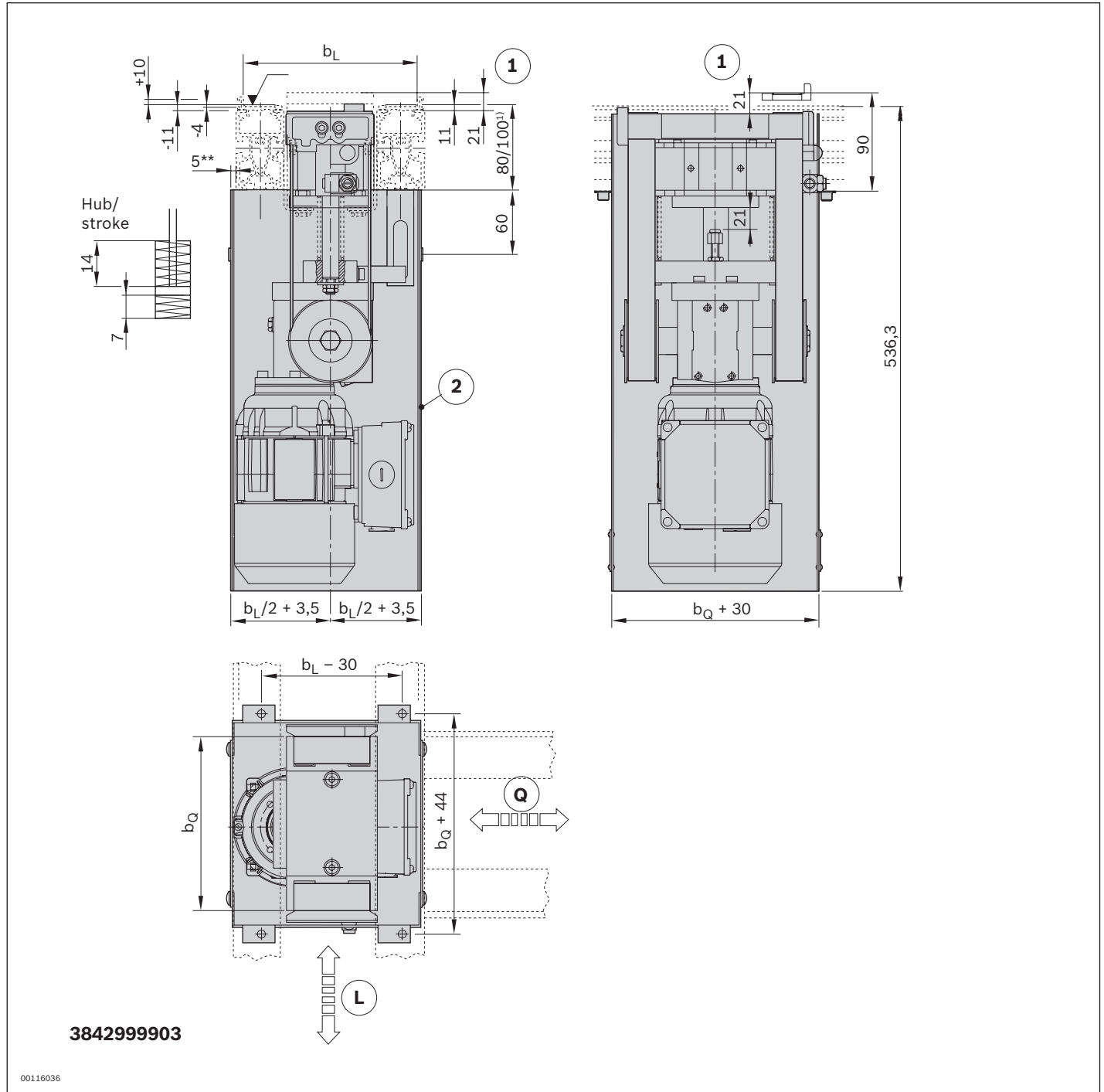
¹ PN = 2: Upper and middle lift position

² PN = 3: Upper, middle and lower lift position

Technical data

Material number		3842999903	
Load			
Max. total weight of workpiece pallet	m _G	kg	30
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions



L Transport direction of longitudinal conveyor section

Q Transport direction of transverse conveyor section

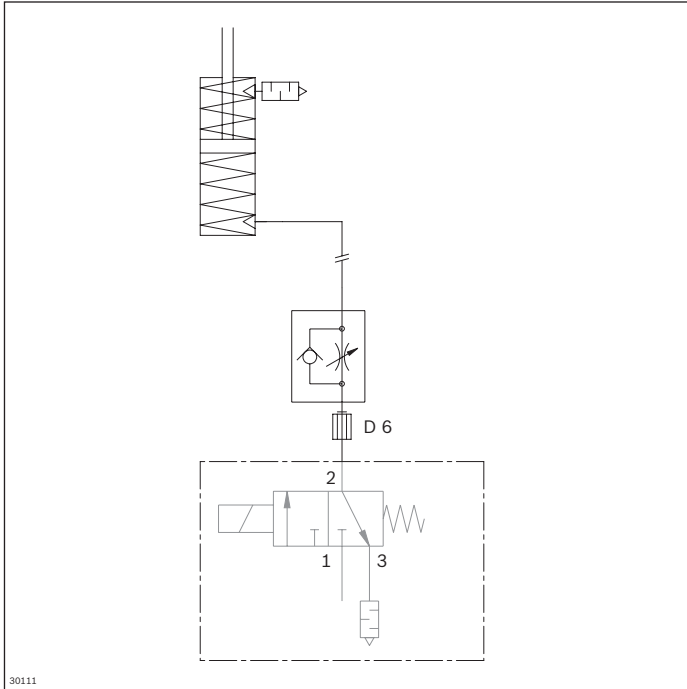
1 Stroke

2 Housing element

** Only for $b_L = 160$ mm

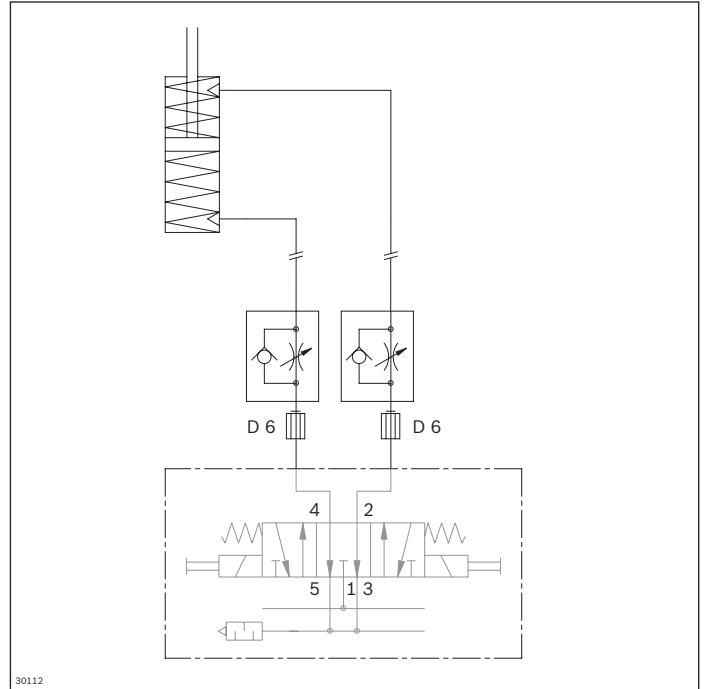
¹ Profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2)



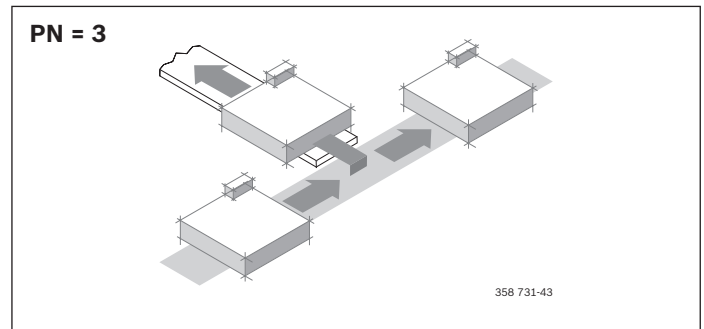
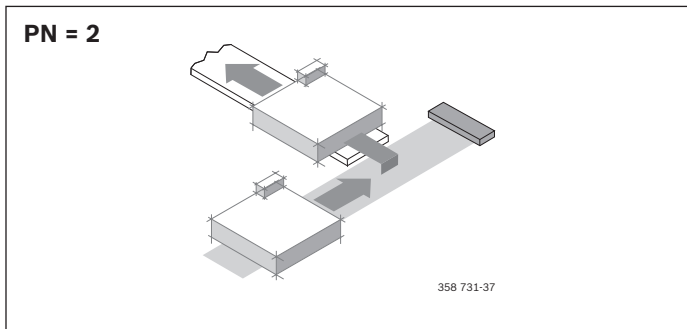
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3)

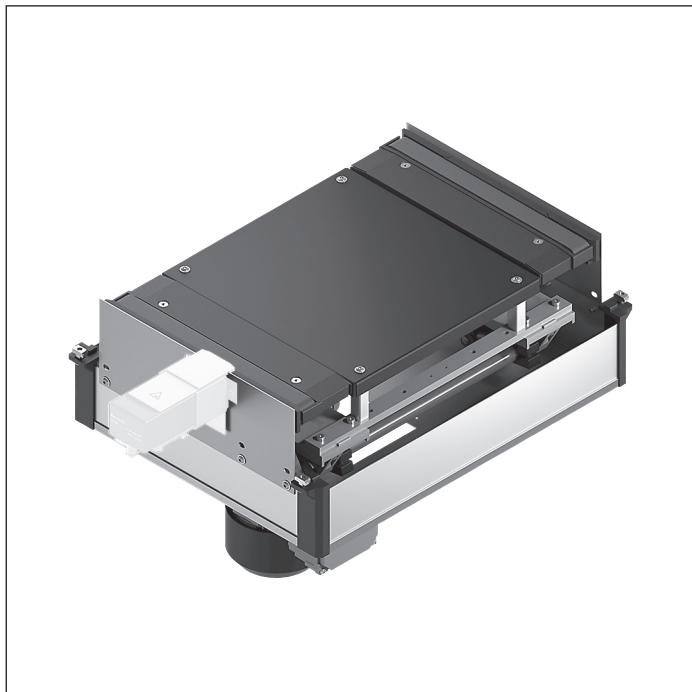


1 Not included in delivery

5



HQ 2/U2 lift transverse unit



- ▶ Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- ▶ Use in tight spaces by means of suspended drive motor (outside dimensions must be no wider than the section)
- ▶ Reinforced version of HQ 2/U with two lift cylinders for large workpiece pallet dimensions
- ▶ Drive by toothed belt coupling is not possible because of the compact design
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- ▶ Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note: Reversible operation possible

Accessories

Required accessories

- ▶ 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110

Delivery notes

Scope of delivery

- ▶ Incl. fastening material
- ▶ Pneumatic equipment for two or three positions
- ▶ Kit for electric position sensing
- ▶ Housing element

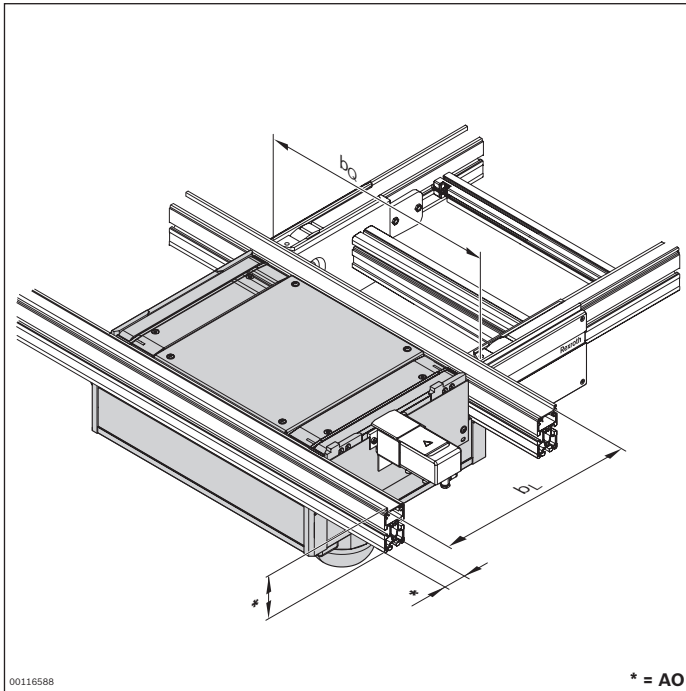
Recommended accessories

- ▶ DA 2/100-B (see p. 8-67) damper for outfeeding WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets, required when $v_N > 12$ m/min or total weight of the workpiece pallet ≥ 30 kg
- ▶ WI 2 (see p. 8-139) or WI/M (see p. 8-133) rocker and DA 2/100-C damper (see p. 8-71) for infeeding WT 2 and WT 2/F workpiece pallets

Condition on delivery

- ▶ Fully assembled
- ▶ Kit for electric position sensing included
- ▶ Kit for housing element included

Ordering information



Material number		3842999843
b_Q (mm)	Track width in the transverse conveyor	400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	400; 480; 640
$b_Q \times b_L$ (mm x mm)	Combination options	400 x 400; 480; 640 480 x 400; 480; 640 640 x 400; 480; 640 800 x 400; 480; 640
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2 ¹ ; 3 ²
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

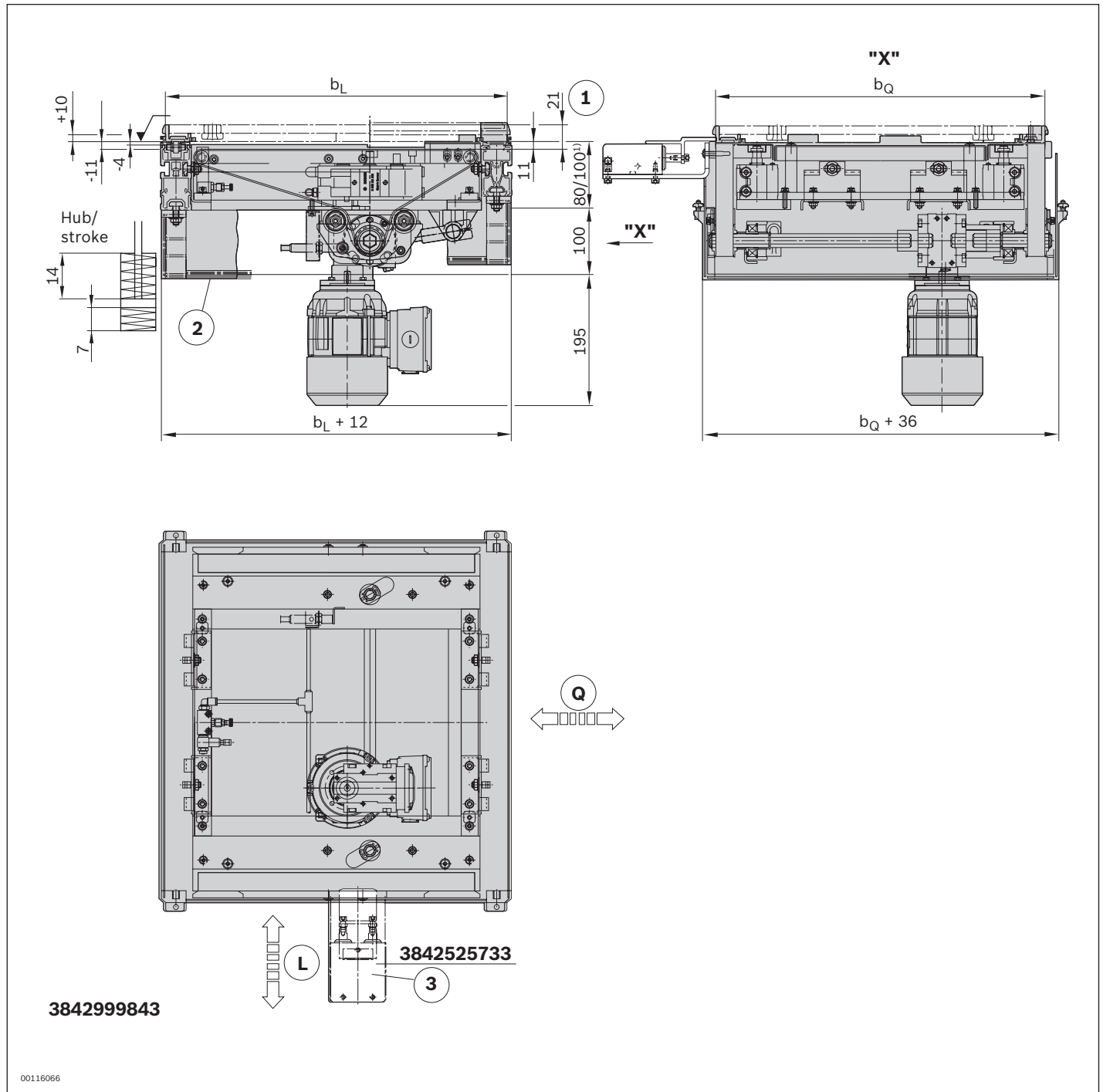
¹ PN = 2: Upper and middle lift position

² PN = 3: Upper, middle and lower lift position

Technical data

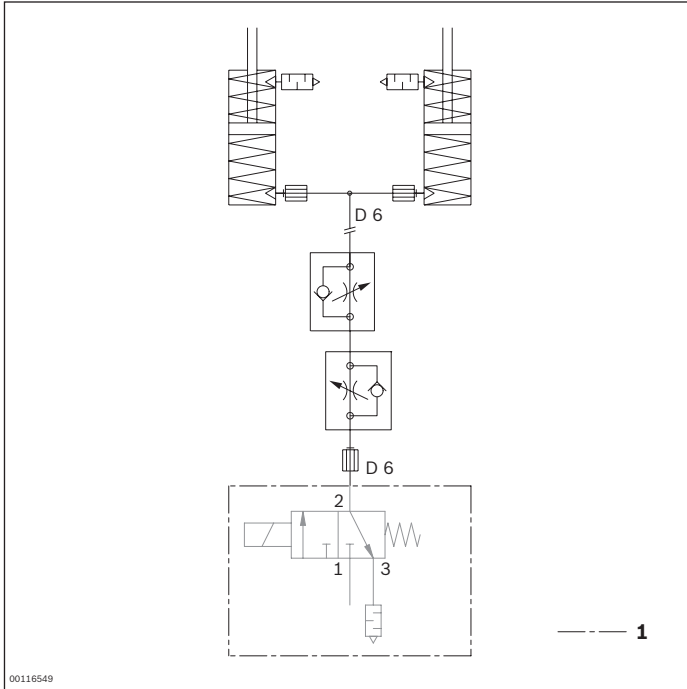
Material number		3842999843	
Load			
Max. total weight of workpiece pallet	m_G	kg	50
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	\emptyset	mm	6

Dimensions



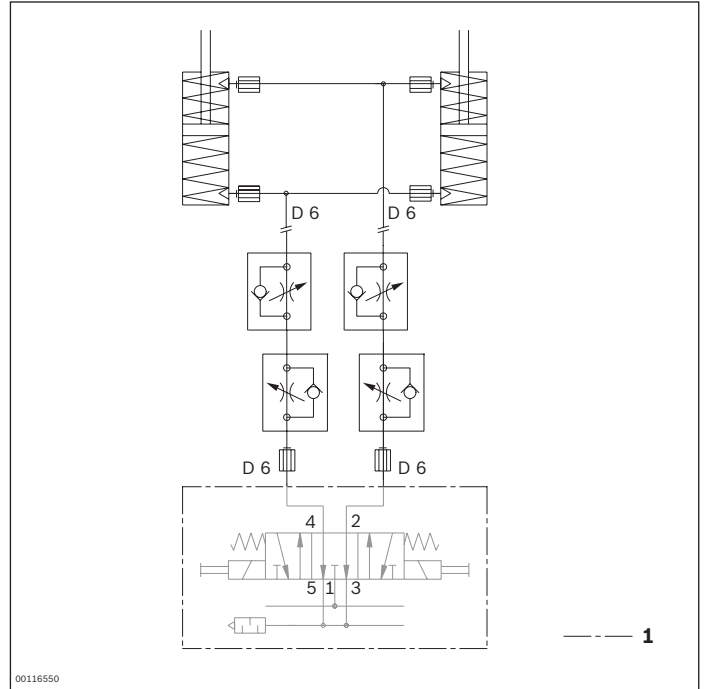
- L Transport direction of longitudinal conveyor section
- Q Transport direction of transverse conveyor section
- 1 Stroke
- 2 Housing element
- 3 Damped stop
- ¹ Profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2)



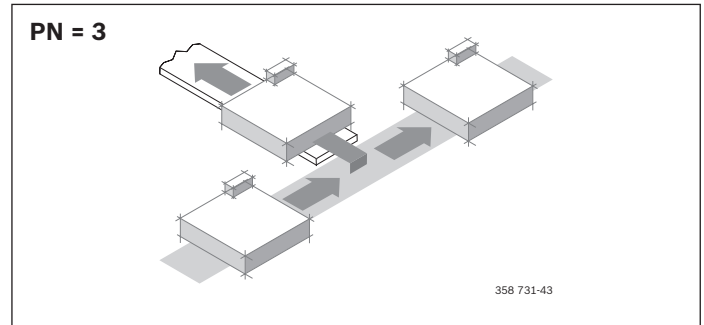
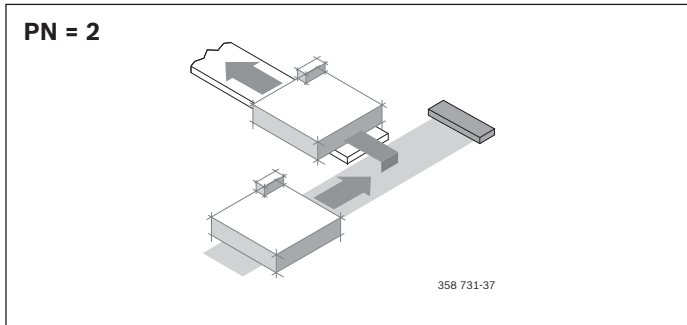
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3)

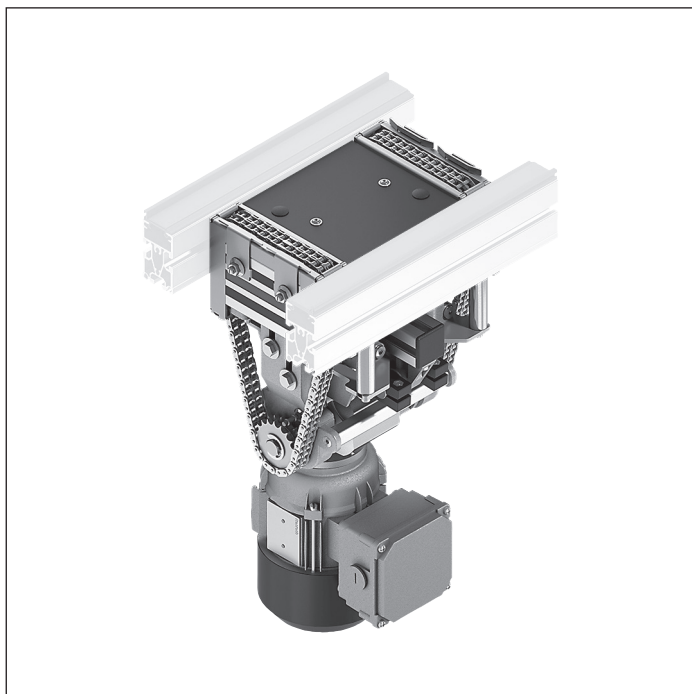


1 Not included in delivery

5



HQ 2/U-H lift transverse unit



In combination with HQ 2/U-H, only PE wear pads are recommended for use on the workpiece pallets.

Accessories

Required accessories

- ▶ 1x M12x1 sensor with rated sensing range $S_N = 4$ mm for each (top/bottom) position sensing location, see p. 8-108/8-110
- ▶ Adapter plate (available on request) required to mount a VA 2/D-130 perpendicular to the main direction of transport

Delivery notes

Scope of delivery

- ▶ Incl. fastening material
- ▶ Pneumatic equipment for two or three positions
- ▶ Kit for electric position sensing
- ▶ Housing element

- ▶ Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- ▶ Use for high total weights up to 2 kg/cm on the smallest side of the workpiece pallet
- ▶ Sensor mounting for speed control during infeeding possible
- ▶ Lifting movements through two to four block cylinders according to size
- ▶ Conveyor medium: Duplex chain (suitable for use in an EPA)
- ▶ Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- ▶ Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ The lateral guides can be mounted on either the left or the right depending on the conveying situation
- ▶ Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note:

- ▶ Reversible operation possible
- ▶ Lateral guides of different heights allow for a fixed stop when outfeeding on the HQ

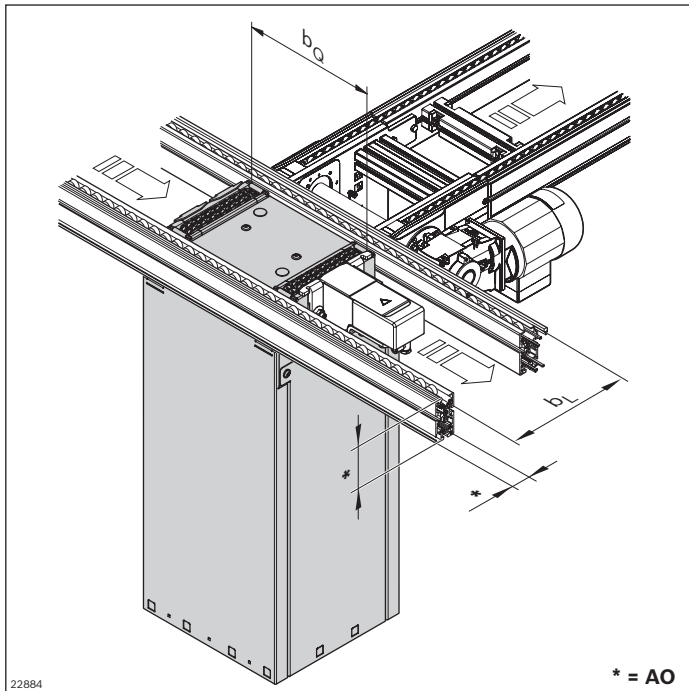
Recommended accessories

- ▶ DA 2/150-E (see p. 45 mm8-79)) or DA 2/100-E (see p. 8-75) damper for outfeeding WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets; required when $v_N > 9$ m/min or total weight of the workpiece pallet > 30 kg/cm
- ▶ WI 2/... (see p. 8-139ff) or WI/M (see p. 8-133) rockers and DA 2/100-C (see p. 8-71) damper for infeeding WT 2 and WT 2/F workpiece pallets

Condition on delivery

- ▶ Pre-assembled incl. pneumatic equipment
- ▶ Protective housing, not assembled

Ordering information



Material number		3842998750
b_Q (mm)	Track width in the transverse conveyor	240; 320; 400; 480; 640
b_L (mm)	Track width in the longitudinal conveyor	240; 320; 400; 480; 640
$b_Q \times b_L$ (mm x mm)	Combination options	BG 1: 240 x 240; 320; 400 320 x 240; 320; 400; 480; 400 x 240 BG 2: 400 x 320; 400; 480; 640; 480 x 320; 400 640 x 400 BG 3: 480 x 480; 640 640 x 480; 640
AO ¹	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2 ² ; 3 ³
v_N (m/min)	Nominal speed	6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

¹ Only required when $b_Q = 240$ mm

² PN = 2: Upper and middle lift position

³ PN = 3: Upper, middle and lower lift position

Technical data

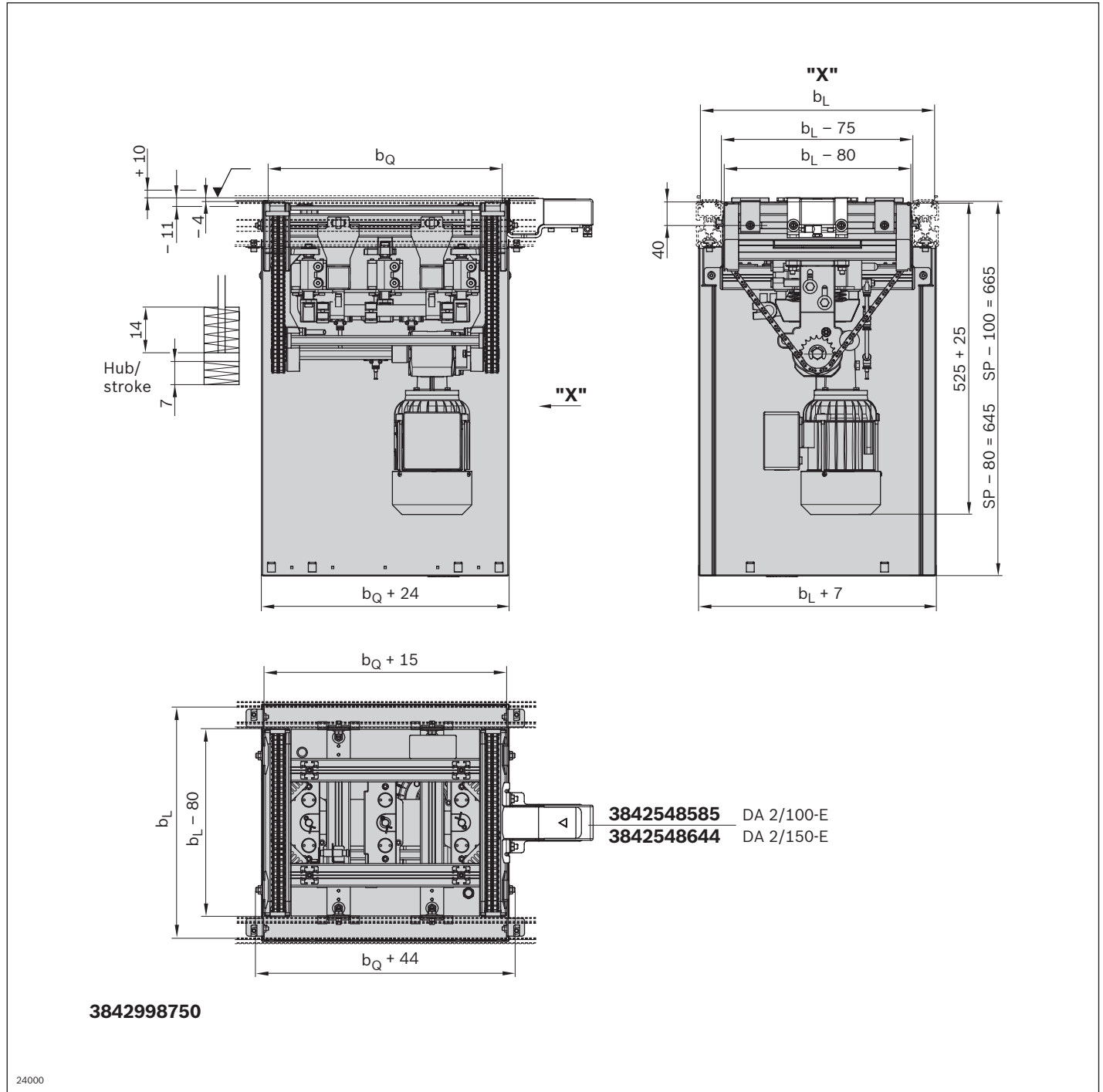
Material number		3842998750	
Load			
Max. total weight of workpiece pallet	m_G	kg	128
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	\emptyset	mm	BG 1, 2, 3; 6
Number of lifting cylinders ¹			BG 1: 2 BG 2: 3 BG 3: 4

¹ See also p. 5-67

Note:

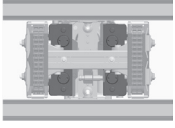
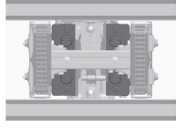
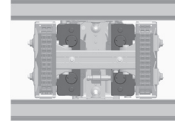
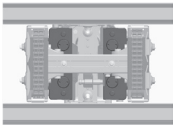
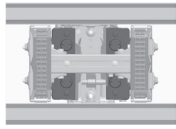
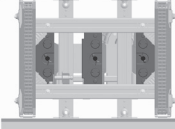
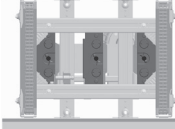
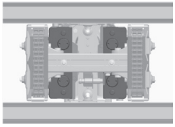
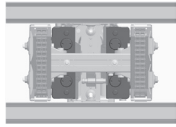
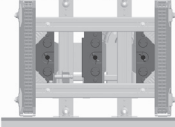
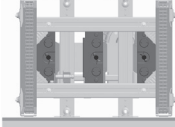
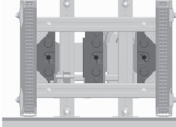
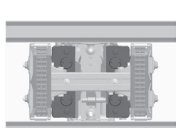
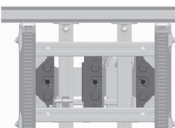
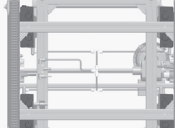

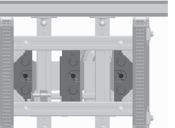

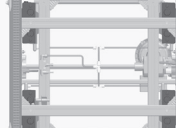
Adapter plate for mounting a VA 2/D-130 slide stop on the HQ 2/U-H perpendicular to the main direction of transport available on request.

Dimensions

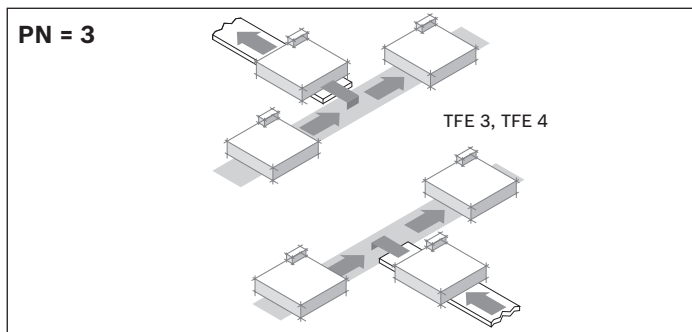
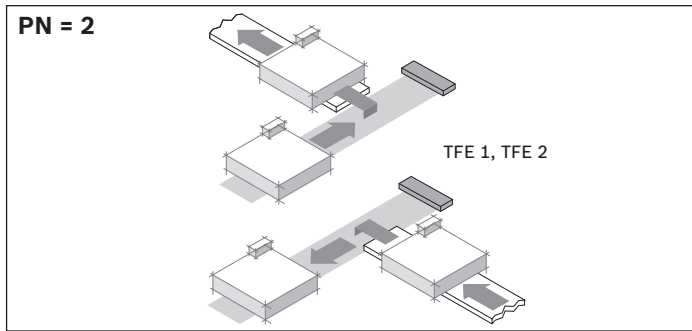


Cylinder arrangement

Schematic of the cylinder arrangement according to size

	b_q 240	b_q 320	b_q 400	b_q 480	b_q 640
					
b_L 240	2 cylinders	2 cylinders	2 cylinders		
Load	48	48	48		
					
b_L 320	2 cylinders	2 cylinders	3 cylinders	3 cylinders	
Load	48	64	64	64	
					
b_L 400	2 cylinders	2 cylinders	3 cylinders	3 cylinders	3 cylinders
Load	48	64	80	96	96
					
b_L 480		2 cylinders	3 cylinders	4 cylinders	4 cylinders
Load		64	80	96	96
					
b_L 640			3 cylinders	4 cylinders	4 cylinders
Load			80	96	128

Pneumatic diagram



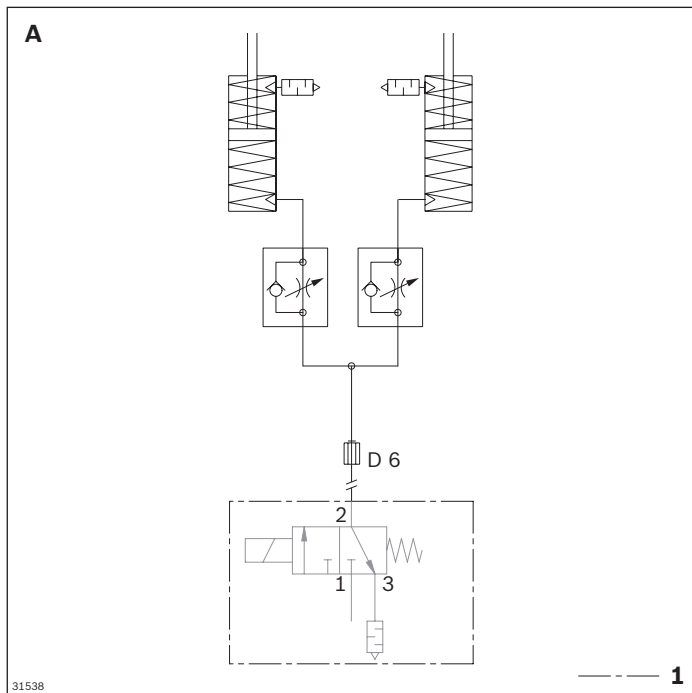
Use pneumatic diagram:

A (for pneumatic equipment PN = 2) if you want to transfer the WT from the longitudinal section to the transverse section (TFE 1) or from the transverse section to the longitudinal section (TFE 2).

B (for pneumatic equipment PN = 3), if you want to outfeed the WT from the longitudinal section to the transverse section (TFE 3) or infeed from the transverse section to the longitudinal section (TFE 4).

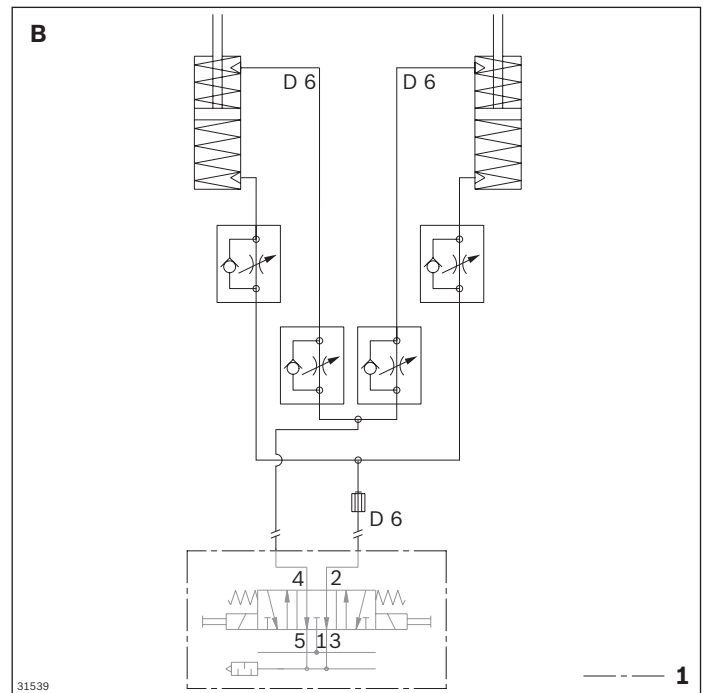
Pneumatic diagrams, BG 1, 2 cylinders

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1, $b_L < 320$ mm



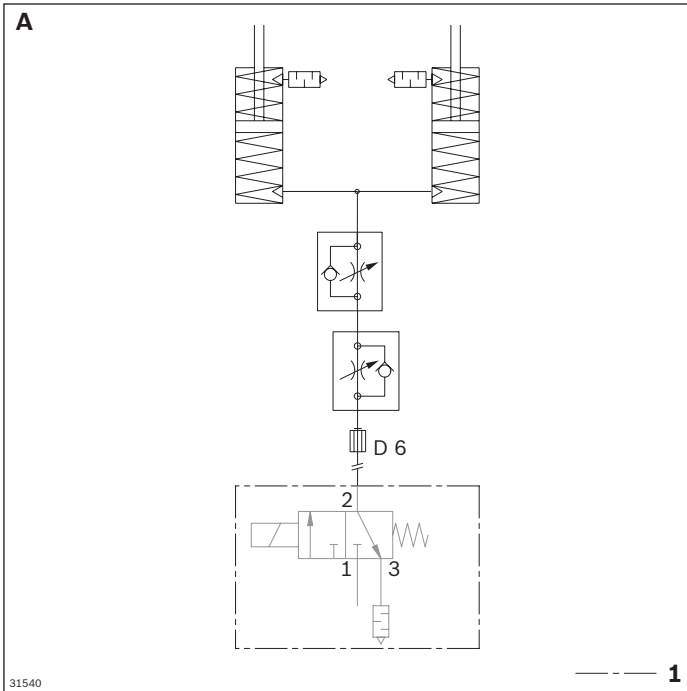
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1, $b_L < 320$ mm



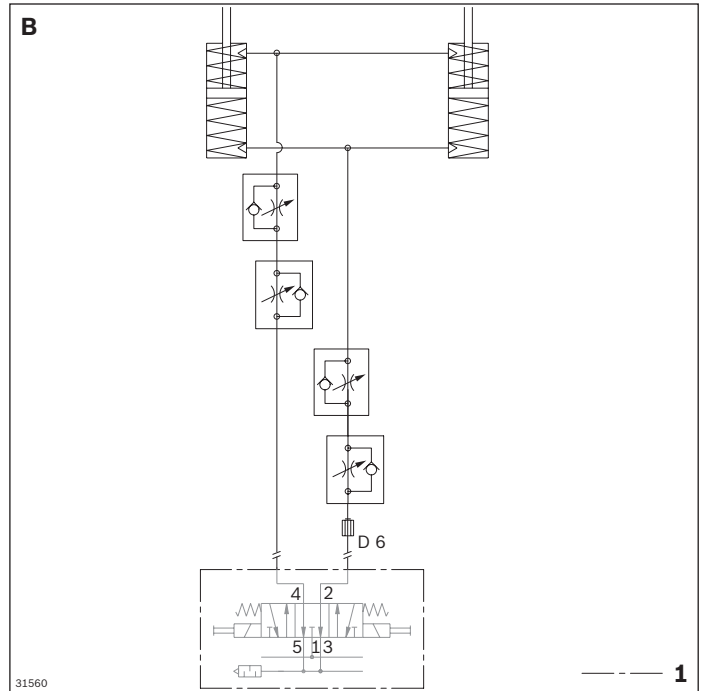
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1, $b_L \geq 320$



1 Not included in delivery

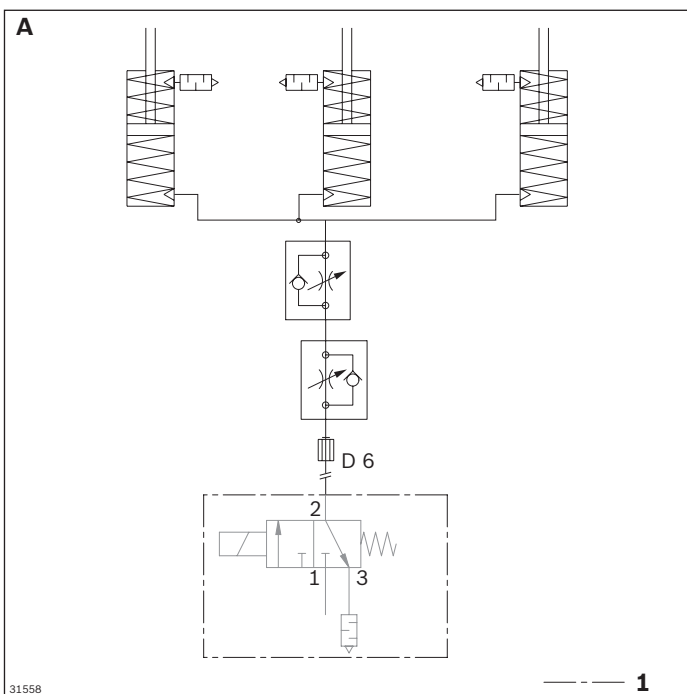
Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1, $b_L \geq 320$



1 Not included in delivery

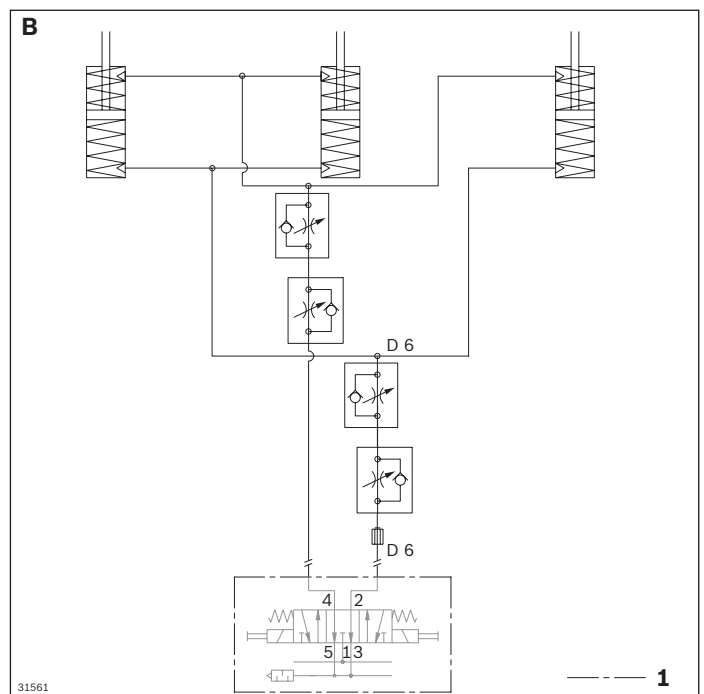
Pneumatic diagrams, BG 2, 3 cylinders

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



1 Not included in delivery

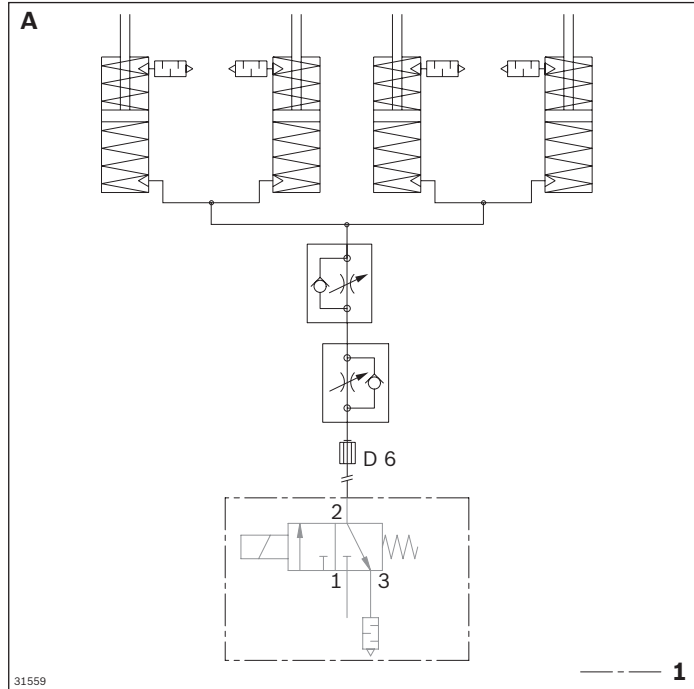
Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

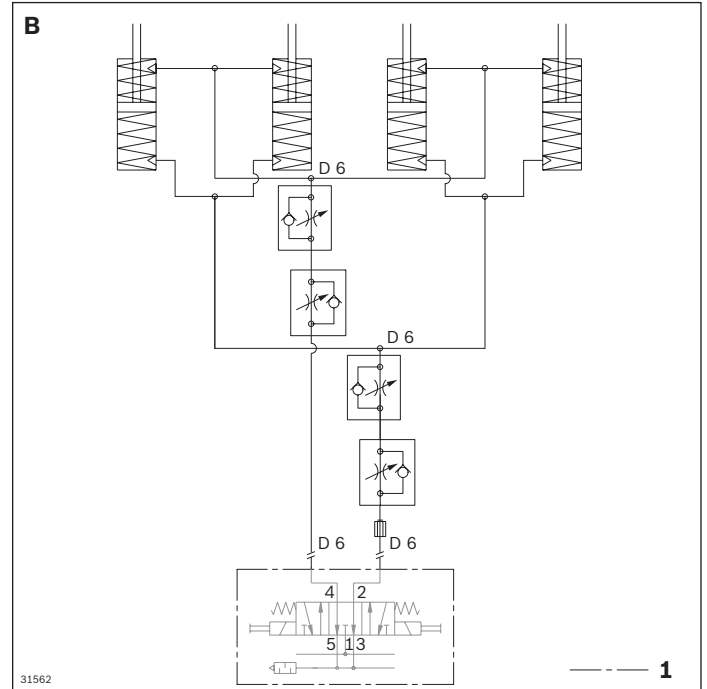
Pneumatic diagrams, BG 3, 4 cylinders

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



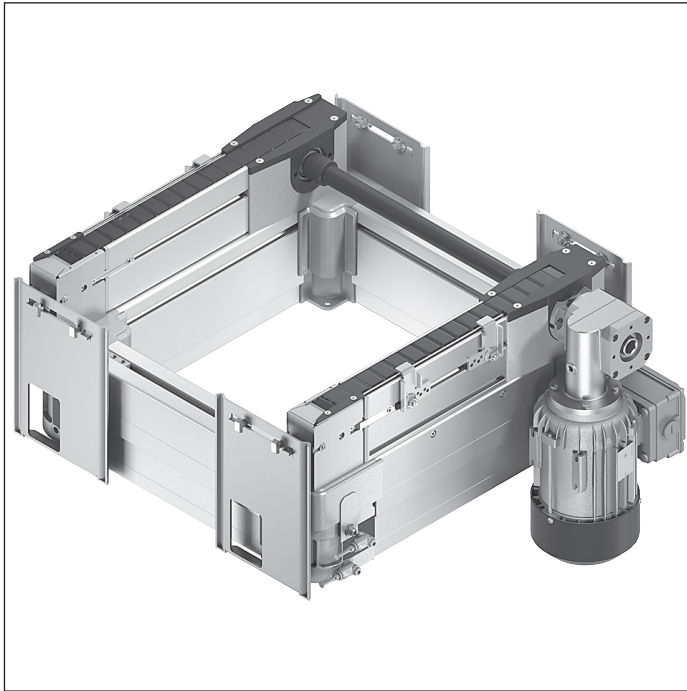
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 3



1 Not included in delivery

HQ 2/C-H lift transverse unit



- ▶ Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- ▶ Use for high total weights up to 2 kg/cm on the smallest side of the workpiece pallet and up to 240 kg
- ▶ Flat design permits system layouts on several levels
- ▶ Synchronized lifting movement of the four block cylinders for uniform and parallel lifting movement
- ▶ Conveyor medium: Flat top chain
- ▶ Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ Depending on the installation, height-adjustable lateral guides can be used as a fixed stop for exporting or as a lateral guide when changing workpiece pallets
- ▶ Fixed stops in the form of adjustable/movable lateral guides made of strip steel
- ▶ Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

5

Accessories

Required accessories

- ▶ M12x1 sensor for position sensing, see p. 8-108/8-110
- ▶ Dampers for outfeeding and infeeding workpiece pallets, see p. 8-60

Recommended accessories

- ▶ DA 2/100-E (see p. 8-75) and DA 2/150-E (see p. 8-79) dampers or a fixed stop (included in delivery) can be used for outfeeding WT 2, WT 2/F, WT 2/H and WT 2/F-H workpiece pallets. The DA 2/100-C (see p. 8-71) damper can be used at the belt end for outfeeding a WT 2 or WT 2/F workpiece pallet.
- ▶ DA 2/100-H (see p. 8-82) or DA 2/250-H (see p. 8-85) damper for outfeeding a WT 2/H or WT 2/F-H workpiece pallet
- ▶ A fixed stop (included in delivery) or a DA 2/100-C damper can be used for infeeding WT 2 and WT 2/F workpiece pallets. This is also possible in combination with a WI 2 rocker (see p. 8-139), WI 2/X rocker (see p. 8-143), WI 2/D rocker (see p. 8-145) or a WI 2/M rocker (see p. 8-133).
- ▶ DA 2/100-H and DA 2/250-H dampers can be used for infeeding WT 2/H and WT 2/F-H workpiece pallets.

Delivery notes

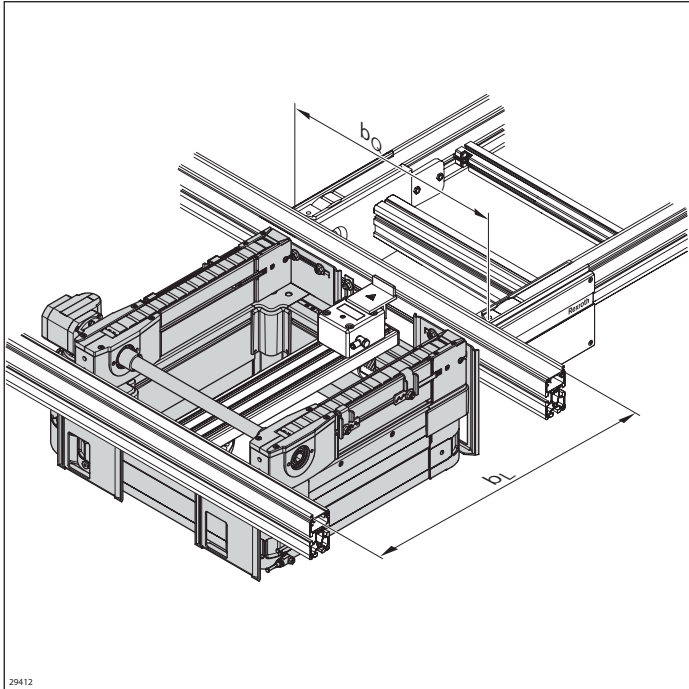
Scope of delivery

- ▶ Incl. fastening material
- ▶ Switch holder for 12 mm sensor for position sensing
- ▶ Kit for electric position sensing
- ▶ Lateral guide kit for $b_1 \leq 640$ mm (3842549567) or for $b_1 > 640$ mm (3842549568)

Condition on delivery

- ▶ Fully assembled
- ▶ Kits for lateral guides included

Ordering information



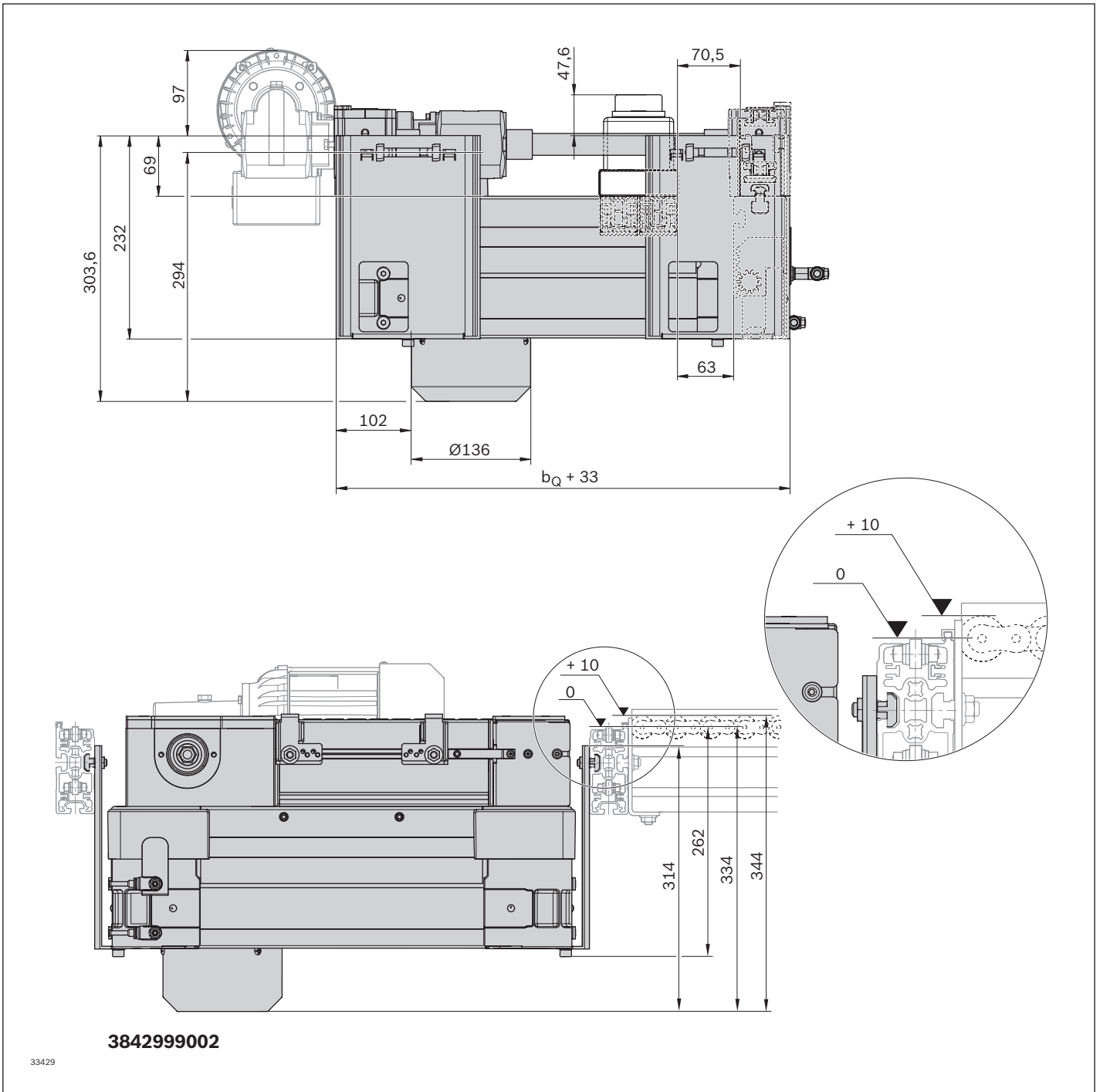
Material number		3842999002
b_Q (mm)	Track width in the transverse conveyor	480; 640; 800; 1040; 1200 480 ... 1200 ¹⁾
b_L (mm)	Track width in the longitudinal conveyor	640; 800; 1040; 1200 640 ... 1200 ¹⁾
$b_Q \times b_L$ (mm x mm)	Combination options	480 ... 1200 x 640 ... 1200
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M

¹⁾ Individual width variants available

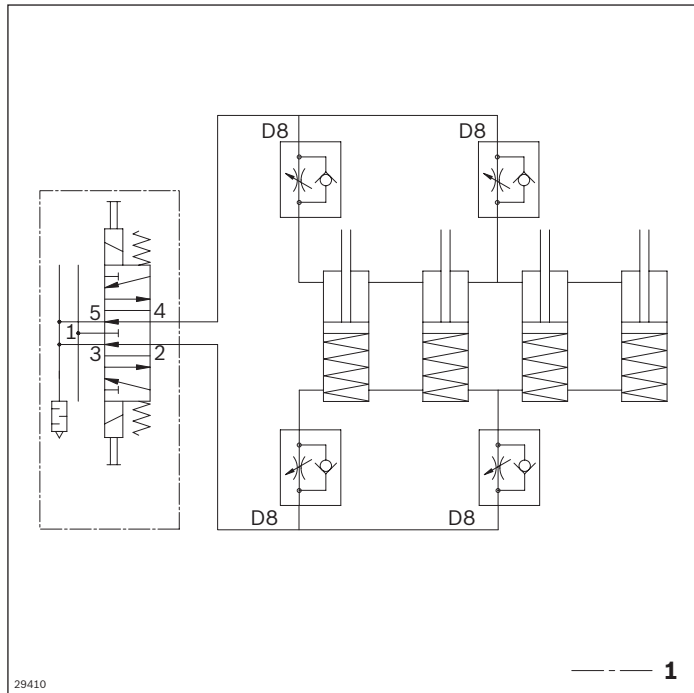
Technical data

Material number		3842999002	
Load			
Max. total weight of workpiece pallet	m_G	kg	240
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	\varnothing	mm	8

Dimensions



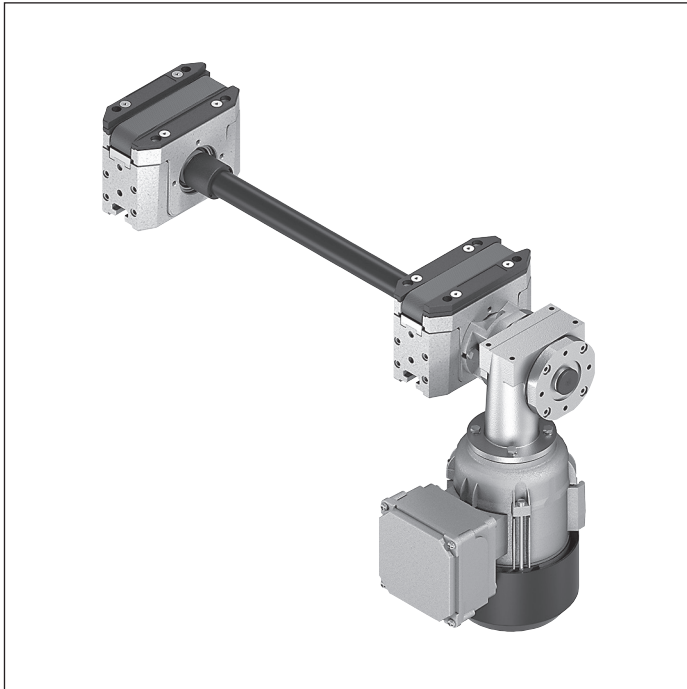
Circuit diagram



29410

1 Not included in delivery

BS 2/130 belt section



- ▶ Fully mounted belt section for transverse workpiece pallet conveyance between parallel conveyor sections at a distance of $a = 135$ mm
- ▶ With built-in drive
- ▶ Use with two HQ 2 lift transverse units
- ▶ Conveyor medium: Toothed belt (suitable for use in an EPA)
- ▶ Reversible operation possible
- ▶ Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- ▶ Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

5

Accessories

Recommended accessories

- ▶ 2x HQ 2 for transverse conveyance, see p. 5-26

Delivery notes

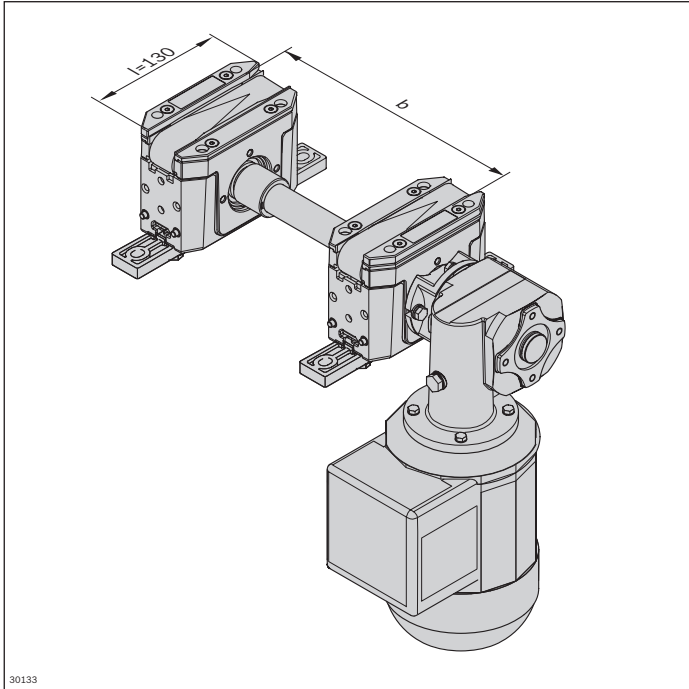
Scope of delivery

- ▶ Incl. fastening material

Condition on delivery

- ▶ Fully assembled

Ordering information



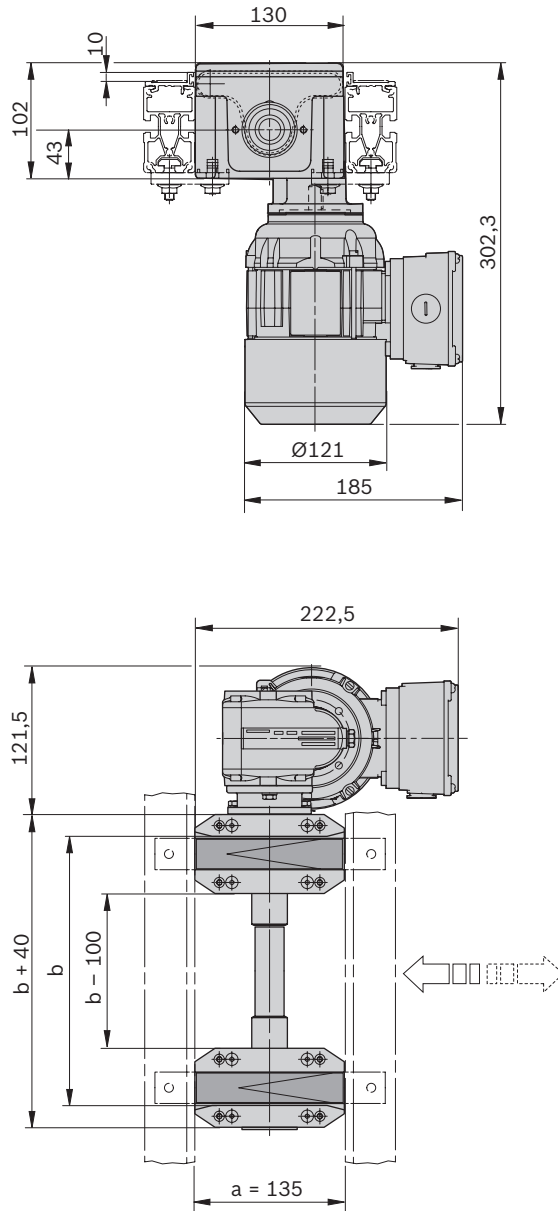
Material number		3842999743
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
b (mm)	Track width in direction of transport	160 ... 1200
v _N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left	R; L

v_N = 0: without motor or gear

Technical data

Material number		3842999743
Load		
Max. section load in accumulation operation	kg	30
Features		
ESD		Yes
Dimensions		
Length	l	mm 130

Dimensions

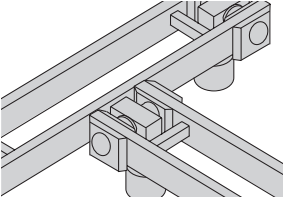


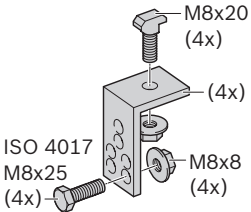
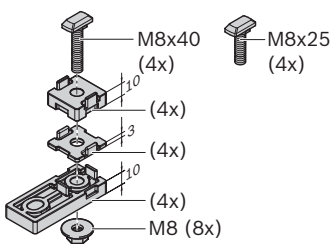
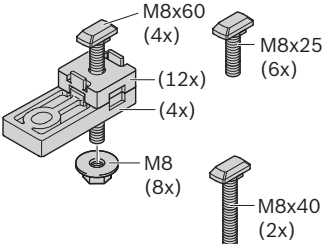
3842999743

00117866

Connection kits for transverse conveyors

Use: To connect the TS 2plus module on a transverse conveyor laterally (end-to-section), the following are also required: Lift transverse unit

	Longitudinal conveyor ST 2/B SP 2/B ST 2/B-100 ST 2/C-100 ST 2/R-100	ST 2/C-H ST 2/R-H ST 2/R-V
Transverse conveyor		
AS 2/B-150, AS 2/B-250	3842518828	-
AS 2/C-100, AS 2/C-250	3842528192	3842528192
AS 2/C-400, AS 2/C-700	3842518828	3842518828
AS 2/R-300, AS 2/R-700	3842528 192	3842528192
AS 2/R-1200, AS 2/R-2200	3842518828	3842518828
UM 2/B	3842518828	-
UM 2/C-60, UM 2/C-170, UM 2/R-60, UM 2/R-170,	3842528192	3842528192
BS 2	3842525110	-
BS 2/C (drive side and return side) BS 2/R (drive side and return side)	3842528192	3842528192
BS 2/C-H (drive side) BS 2/R-H (drive side)	3842518828	3842518828
BS 2/C-H (return side) BS 2/R-H (return side)	3842528192	3842528192
KU 2 (drive side and return side)	3842528192	3842528192

<p>3842518828</p>  <p>ISO 4017 M8x25 (4x) M8x8 (4x)</p> <p>M8x20 (4x)</p> <p>21448</p>	<p>3842528192</p>  <p>M8x40 (4x)</p> <p>M8x25 (4x)</p> <p>M8x10 (4x)</p> <p>M8x3 (4x)</p> <p>M8x10 (4x)</p> <p>M8 (8x)</p> <p>21453</p>	<p>3842525110</p>  <p>M8x60 (4x)</p> <p>M8x25 (6x)</p> <p>M8 (12x)</p> <p>M8 (4x)</p> <p>M8 (8x)</p> <p>M8x40 (2x)</p> <p>21449</p>
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