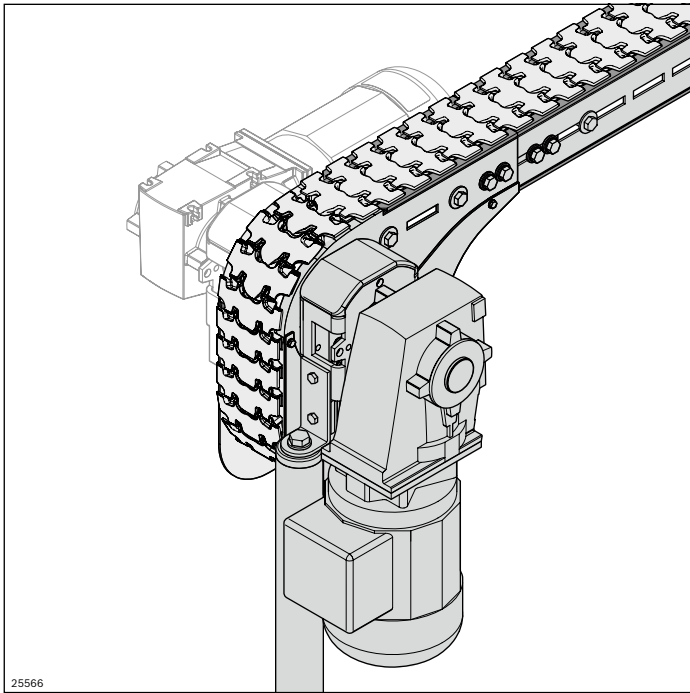












Drive and return unit STS

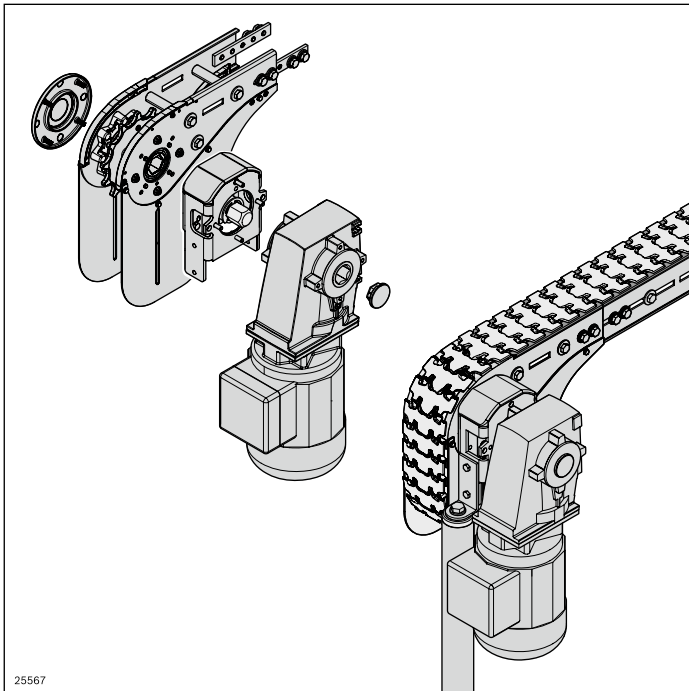


- ▶ Basic units with interfaces on both sides for drive kit and transmission (active bridge)
- ▶ Free selection of the motor mounting position on site
- ▶ Configurable drive kit (standard gear motor or round shaft)
- ▶ Multi-track systems with standard components possible
- ▶ Continuous slide rail to reduce noise and wear
- ▶ In-stock, standardized components
- ▶ Side elements with slots for accommodating holders

High flexibility and short delivery times thanks to a novel drive concept

	STS basic unit Head drive direct	146
	STS basic unit Connection drive	148
	Basic unit with center drive	150
	Return unit STS Closed head drive STS	152
	90° return unit	154
	Drive kit	156
	Frequency converter motec 8400	158
	Manual control unit Switch/potentiometer unit	161
	Connection kit active (A) bridge Connection kit passive (B) bridge	162
	Connection kit Synchronous drive, external motor/internal motor	164

Innovative drive concept



STS basic unit
(head drive direct, center
or connection drive)

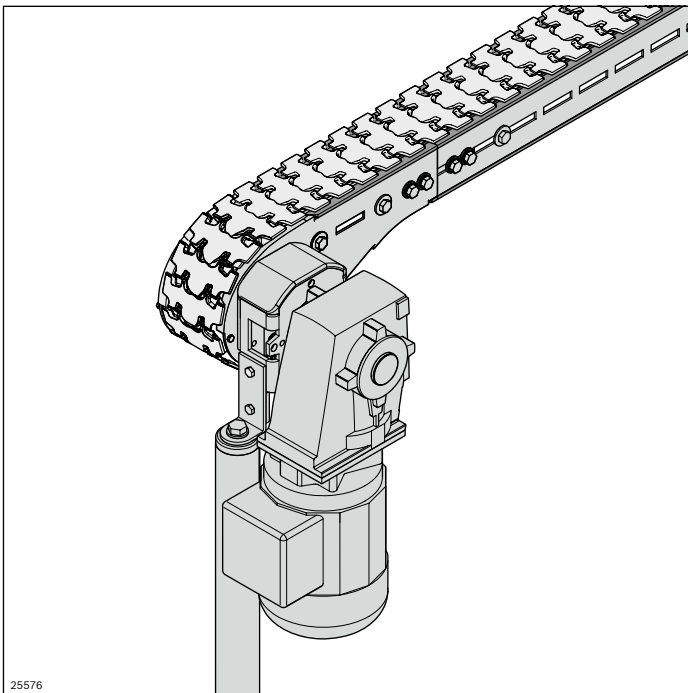
or return unit

+

Configurable drive kit
(standard gear motor or round shaft)

=

complete drive



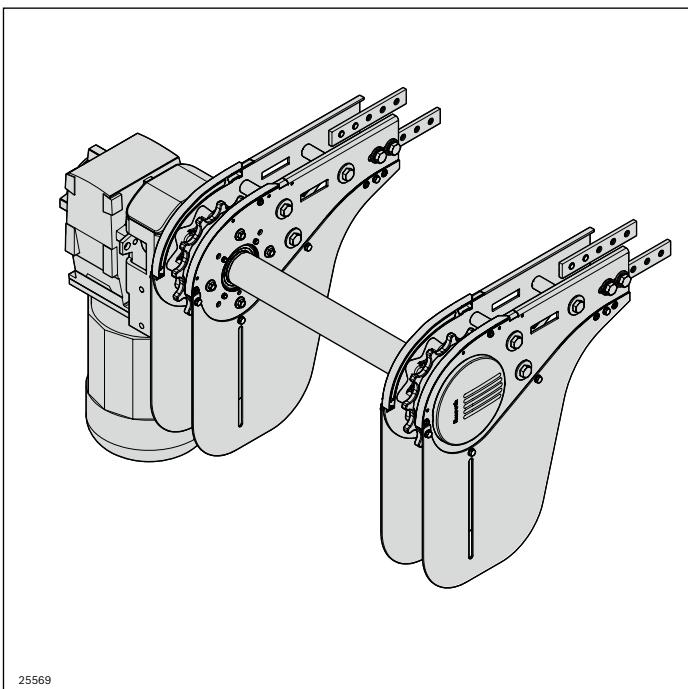
The well thought-out drive solution enables high flexibility and planning freedom

The in-stock, standardized basic units

- Are quickly and easily combined with the configurable drive kit (standard gear motor or customer-specific interface) into a complete drive
- Guarantee fast availability of the few modular elements/ spare parts

The hollow shaft on both sides in the basic unit and return unit

- Enables a free selection of the motor mounting position on-site
- Offers other interfaces for transmissions (active bridge)

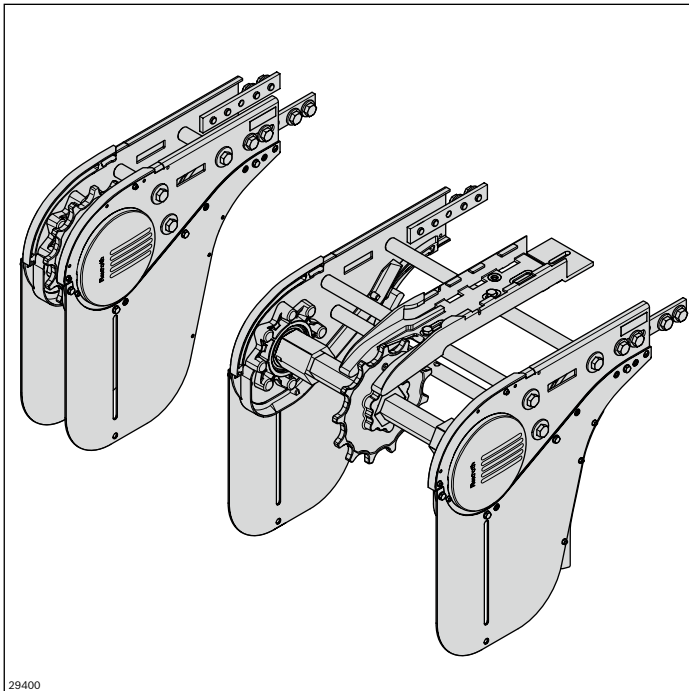


The standard drives are easy to couple and enable straightforward implementation of multi-track systems.

For attachment options, see the matrix on page 289

Note: High-pressure cleaning of the ball bearing areas is not permitted.

STS basic unit Head drive direct



The basic unit is quickly turned into a head drive with variable mounting position by adding a drive kit. With the double-sided hexagonal hollow shaft, other components can be easily driven using a transmission (active bridge).

- Size: all track widths
- Suitable chain types: all
- Permissible chain tensile force: $F_{\max} = 1250 \text{ N}$
- Section length: $L \leq 30 \text{ m}$
- Conveying speed: $v_N = 2 \dots 60 \text{ m/min}$, other speeds available on request
- Chain bag to compensate for chain elongation during service life
- Not suitable for reversible operation

Note: A chain sprocket must be used to limit the chain slipping back on inclined sections.

- ▶ Reduced noise emission due to slide rails guided in the head drive
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard

- ▶ Stainless steel ball bearings, with sealing on both sides and FDA-compliant lubrication
- ▶ Side elements with mounting option for attaching holders for lateral guides, or similar

Required accessories:

- Drive kit, see page 156
- Slide rail: Length calculation, see page 278
- Motor leg sets, see page 169

Condition on delivery:

- Fully assembled
- Connector and protective chain cover enclosed

Optional accessories:

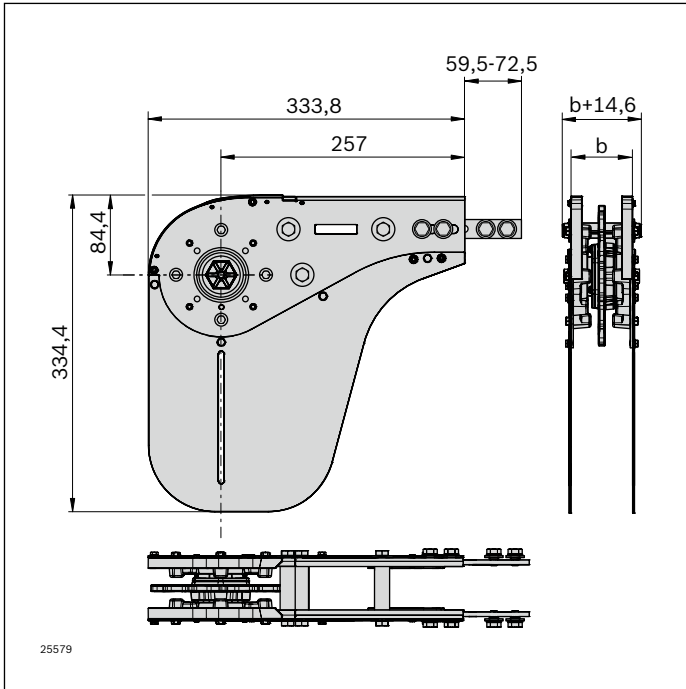
- Active or passive bridge connection kits, see page 162
- Synchronous drive connection kit, see page 164
- Chain sprocket for inclined sections, see page 147

Material:

- Housing: Stainless steel
- Chain wheel: PA
- Chain guide: PA
- Connector: Stainless steel
- Hexagonal shaft
 - up to size 160: PA
 - from size 160: Stainless steel + PA
- Ball bearings: Stainless steel/ FDA

Scope of delivery:

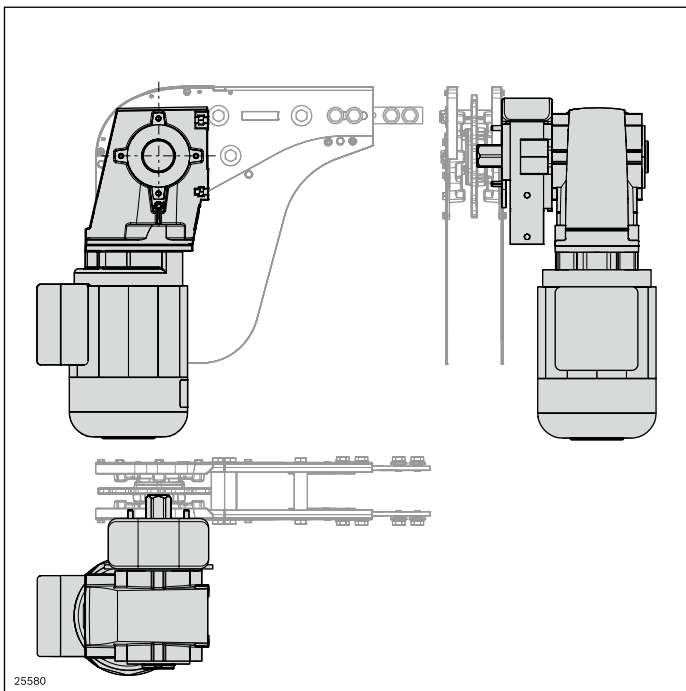
Incl. fastening material



STS basic unit	No.
VFplus 65 direct	3 842 547 522
VFplus 90 direct	3 842 547 523
VFplus 120 direct	3 842 547 524
VFplus 160 direct	3 842 547 525
VFplus 240 direct	3 842 547 526
VFplus 320 direct	3 842 547 527

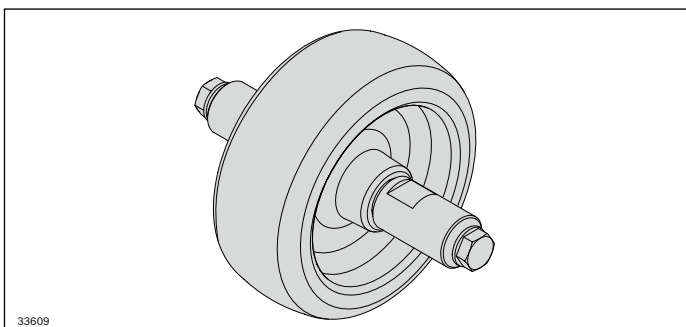
Order the drive kit in addition to the STS basic unit (see page 156), to complete your drive.

4



Drive kit VFplus	No.
	3 842 998 291

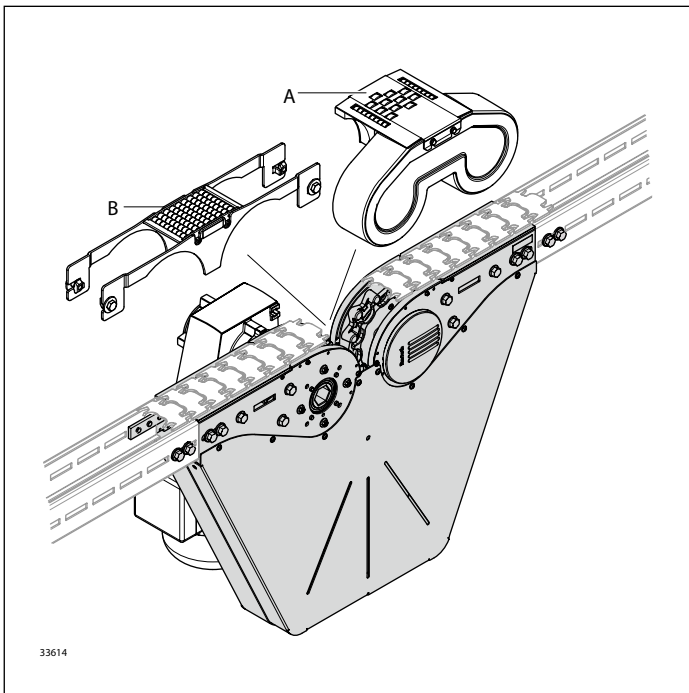
See page 156



Chain sprocket	No.
VFplus 65	3 842 553 047
VFplus 90	3 842 553 048
VFplus 120	3 842 553 049
VFplus 160	3 842 553 057
VFplus 240	3 842 553 058
VFplus 320	3 842 553 059

STS basic unit

Connection drive



Note: The selection of the parameter SP = STS for the drive kit 3 842 998 291 is imperative

- ▶ Reduced noise emission due to slide rails guided in the connection drive
- ▶ Drive kit (motor, coupling, flange) can be mounted right / left
- ▶ Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard
- ▶ Stainless steel ball bearings, with sealing on both sides and FDA-compliant lubrication
- ▶ Side elements with slot for attaching holders for lateral guides, or similar

Required accessories:

- Drive kit, see page 156
- Active bridge **(A)** or passive bridge **(B)**, see page 162
- Slide rail: Length calculation, see page 278

The connection drive is used for driving the conveyor chain in circuit systems with a top-running chain. The basic unit is quickly turned into a connection drive with variable mounting position by adding a drive kit. An active **(A)** or passive **(B)** bridge must be added for transferring the material being transported. The active bridge **(A)** is driven by a transmission from the connection drive

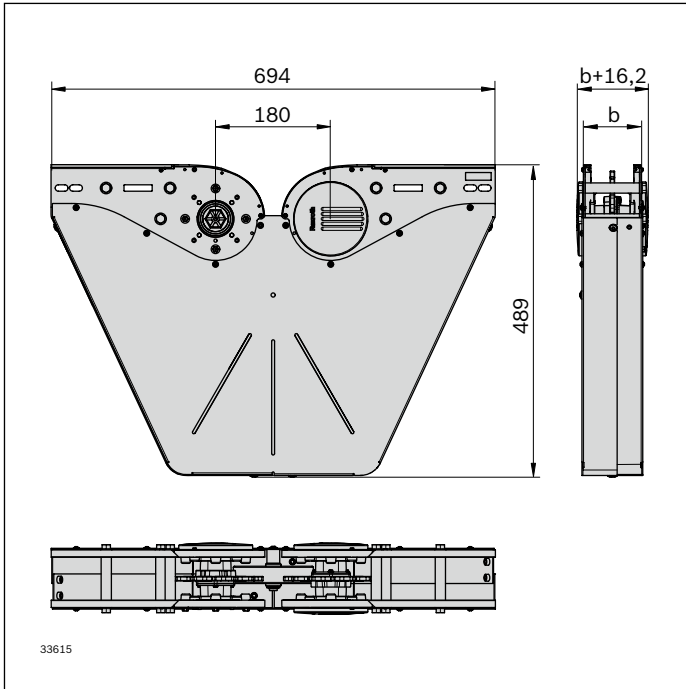
- Size: 65, 90
- Suitable chain types: flat conveyor chain, static friction chain
- Permissible chain tensile force: $F_{\max} = 1250 \text{ N}$
- Section length: $L \leq 30 \text{ m}$
- Conveying speed: $v_N = 2 \dots 25 \text{ m/min}$, other speeds available on request
- Chain bag to compensate for chain elongation during service life
- Recommendation: No accumulation operation up to 1500 mm after the connection drive
- When using the STS section profile (open) in conveyor systems without a returning chain, a cover must be placed over the lower run by the customer to ensure personal safety.
- Not suitable for reversible operation
- Use in ESD applications with accompanying adapter kit and closed AL section profiles (bridges not conductive!)

Scope of delivery: Incl. fastening material

Condition on delivery: Fully assembled

Material:

- Housing: Stainless steel
- Sprocket, chain guide, hexagonal shaft: PA
- Connector + chain fender: Non-rusting steel 1.4301
- Ball bearings: Stainless steel/ FDA



Basic unit connection drive STS	No.
VFplus 65 direct	3 842 553 914
VFplus 90 direct	3 842 553 915

Note: When using the section profile STS Clean with the basic units (head drive, return unit, connection drive) the enclosed profile connector (H = 20 mm) must be replaced with the profile connector STS Clean section (H = 17 mm) 3 842 552 927.

4

Drive kit VFplus	No.
	3 842 998 291

SP = STS; See page 156

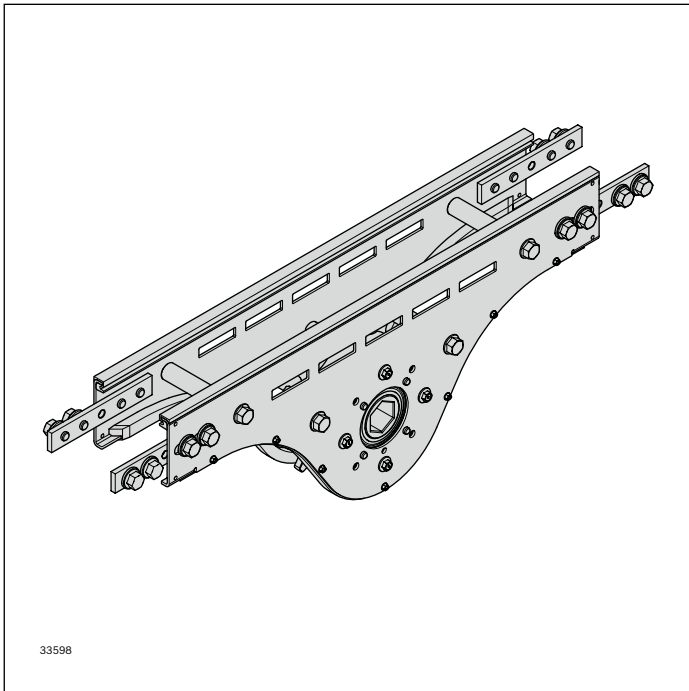
Connection kit active bridge	No.
VFplus 65	3 842 555 820
VFplus 90	3 842 555 821

See page 162

Passive bridge connection kit	No.
VFplus 65	3 842 549 015
VFplus 90	3 842 549 016

See page 162

Basic unit with center drive



The center drive basic unit is used if the available space is limited at the ends of the sections.

It is quickly turned into a center drive with variable motor mounting position by adding the drive kit

- Size: 65-120
- Chain return on the underside of the profile
- Conveying speed: $v_N = 2 \dots 60$ m/min, other speeds available on request
- Permissible chain tensile force: $F_{max} = 600$ N
- Max. conveying length: 7 m
- Because no length compensation (chain bag) is present, the chain length must be checked regularly and shortened if necessary
- Recommendation: No accumulation up to 1000 mm after the return unit
- An assembly module is required for assembling the chain

- ▶ Reduced noise emission due to slide rails guided in the center drive
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section using a hexagonal hollow shaft integrated as standard

- ▶ Stainless steel ball bearings, with sealing on both sides and FDA-compliant lubrication
- ▶ Side elements with slot for attaching holders for lateral guides, or similar

Required accessories:

- Drive kit, see page 151
- Slide rail, see page 128
- Motor leg sets, see page 169
- Assembly module, see page 133

Optional accessories:

- Synchronous drive connection kit, see page 164
- Frequency converter, see page 158

Scope of delivery:

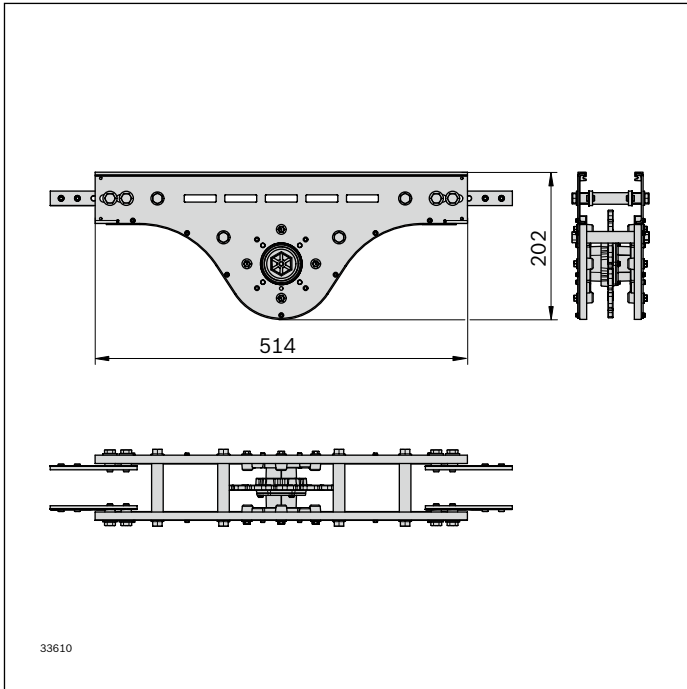
Incl. fastening material

Condition on delivery:

Assembled, (profile connector enclosed)

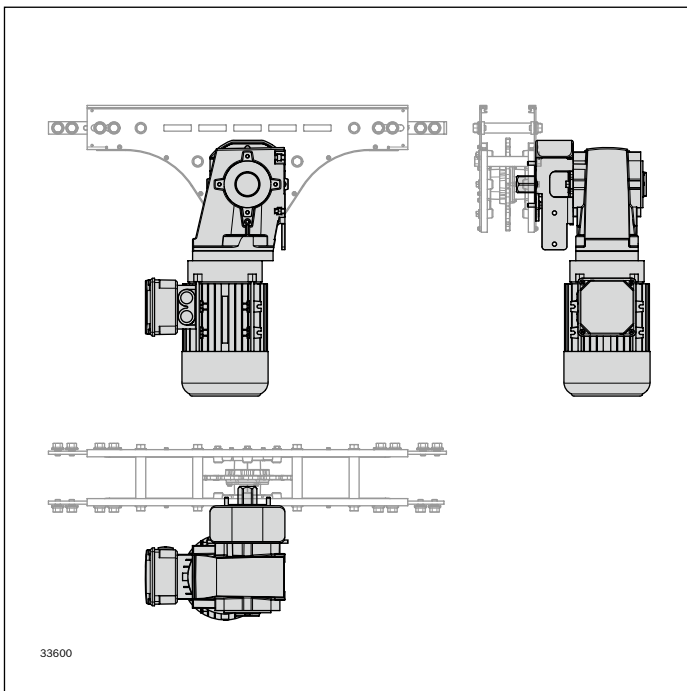
Material:

- Housing: Stainless steel
- Chain wheel: PA
- Chain guide: PA
- Connector: Stainless steel
- Hexagonal shaft: PA
- Ball bearings: Stainless steel/ FDA



Basic unit with center drive	No.
<i>VFplus</i> 65	3 842 552 940
<i>VFplus</i> 90	3 842 552 941
<i>VFplus</i> 120	3 842 552 942

4

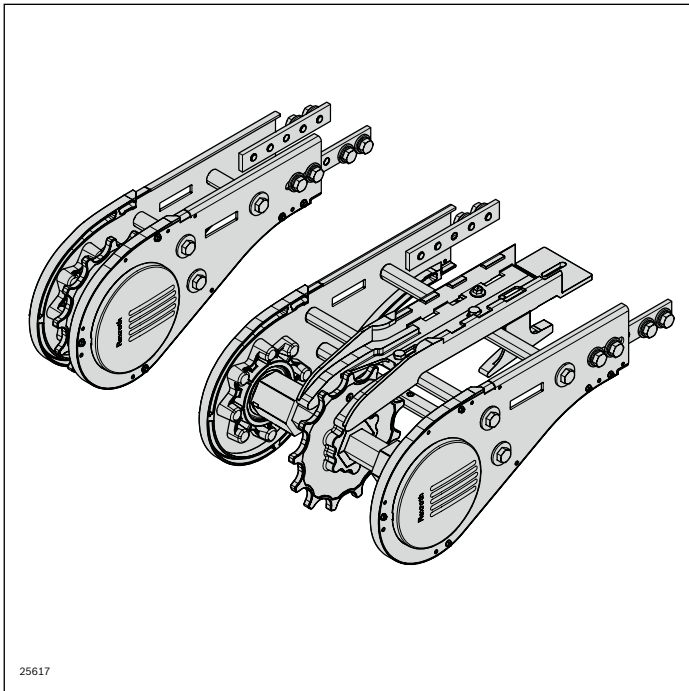


Drive kit <i>VFplus</i>	No.
<i>VFplus</i> 65	3 842 998 291

See page 156

Return unit STS

Closed head drive STS



Thanks to the innovative drive concept, the return unit can be operated simply by itself or supplemented with a drive kit to be operated as a head drive without chain bag.

The section length is limited to a maximum of 7 m.

- Size: all track widths
- Suitable chain types: all
- Permissible chain tensile force
 - Return unit function: $F_{max} = 1250 \text{ N}$
 - Head drive without chain bag function: $F_{max} = 600 \text{ N}$
- With shortened maintenance interval, due to chain elongation
- Section length for return unit function: $L \leq 30 \text{ m}$
- Section length for function as drive: $L \leq 7 \text{ m}$
- Conveying speed: $v_N = 2 \dots 60 \text{ m/min}$, other speeds available on request
- Use as a drive for wedge conveyors, when combined with a drive kit
- Not suitable for reversible operation

- ▶ Reduced noise emission due to slide rails guided in the return unit
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard

- ▶ Stainless steel ball bearings, with sealing on both sides and FDA-compliant lubrication
- ▶ Implementation of parallel sections possible through a pluggable shaft
- ▶ Side elements with mounting option for attaching holders for lateral guides, or similar

Required accessories:

- Slide rail: Length calculation, see page 278

For use as a drive:

- Assembly module, see page 133
- Drive kit, see page 156
- Motor leg sets, see page 169

Scope of delivery:

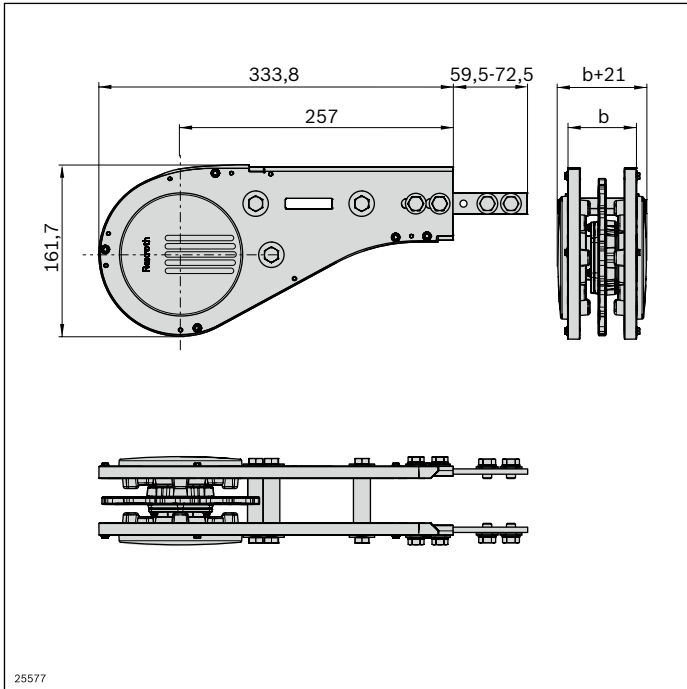
Incl. fastening material

Condition on delivery:

Assembled, connector enclosed

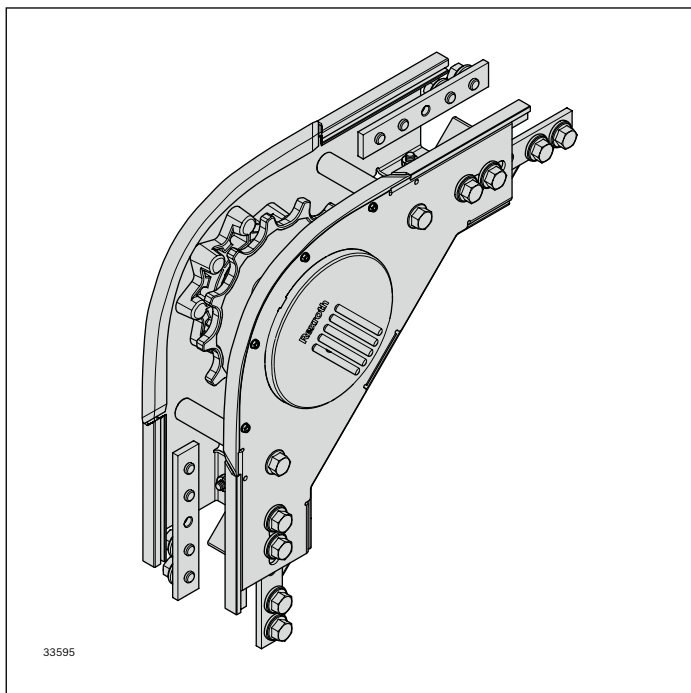
Material:

- Housing: Stainless steel
- Chain wheel: PA
- Chain guide: PA
- Connector: Stainless steel
- Hexagonal shaft
 - up to size 160: PA
 - from size 160: Stainless steel + PA
- Ball bearings: Stainless steel/ FDA



STS return unit	No.
VFplus 65	3 842 547 528
VFplus 90	3 842 547 529
VFplus 120	3 842 547 530
VFplus 160	3 842 547 531
VFplus 240	3 842 547 532
VFplus 320	3 842 547 533

90° return unit



For building alpine conveyors with chain running only on the upper side.

- Only for use with connection drive (AL and STS)
- Size: 65, 90
- Section length: $L_{\max} = 30$ m

Note: When using conveyor systems without a returning chain, a cover must be mounted by the customer to ensure personal safety.

Advantage over alpine conveyor with head drive:

- ▶ shorter chain return, so the required tensile force of the conveyor chain is lower and therefore the possible volume of the alpine conveyor is larger.

Scope of delivery:

Incl. fastening material

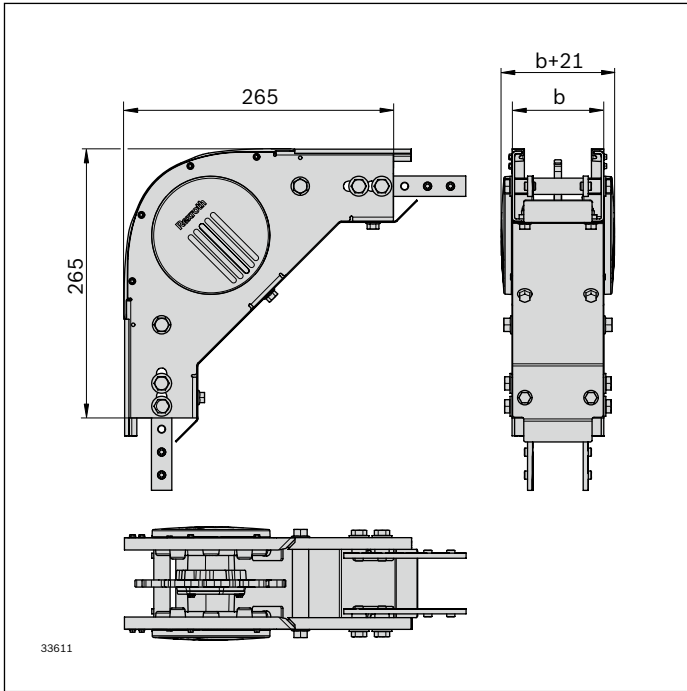
Condition on delivery:


Fully assembled

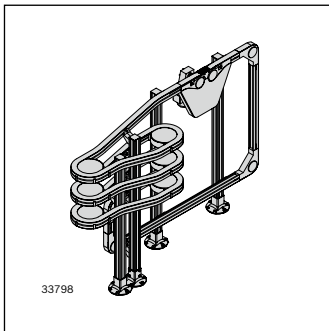
- ▶ No longer necessary to mount the slide rails required for the chain return on the bottom side of the profile
- ▶ The required conveyor chain is shorter

Material:

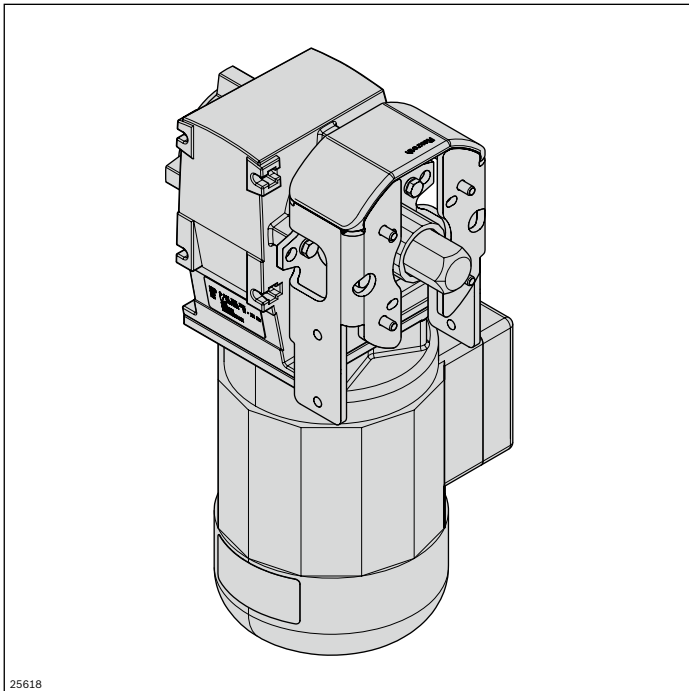
- Housing: Stainless steel
- Chain wheel: PA
- Chain guide: PA
- Connector: Stainless steel
- Hexagonal shaft, PA
- Ball bearings: Stainless steel/ FDA



90° return unit	 No.
VFplus 65	1 3 842 552 984
VFplus 90	1 3 842 552 985



Drive kit



The drive kit is designed to operate the basic head drive unit. It contains a flange for attaching the motor to the basic unit, a hexagonal shaft for transmission of force, as well as other optional equipment features.

- Versions in aluminum (SP = AL) or stainless steel (SP = STS)
- With Lenze gear motor (GM = 1) or with an interface for attaching an SEW SA47 gear motor (GM = 2).
An adaptation is required by the customer for attaching other gear motors (GM = 0)
- Fixed or adjustable speed (v_N). For an adjustable speed, gear motors must be retrofitted with an FU (frequency converter), see page 158
- Different voltages and supply frequencies (U/f)
- Connections are made using terminal boxes (AT = K) or plugs (AT = S)
- GM = 1 without surface and corrosion protection

Required accessories:

Motor leg sets, see page 168

Scope of delivery:

- Incl. fastening material
- Incl. flange, shaft and gear motor (GM = 1)

Material:

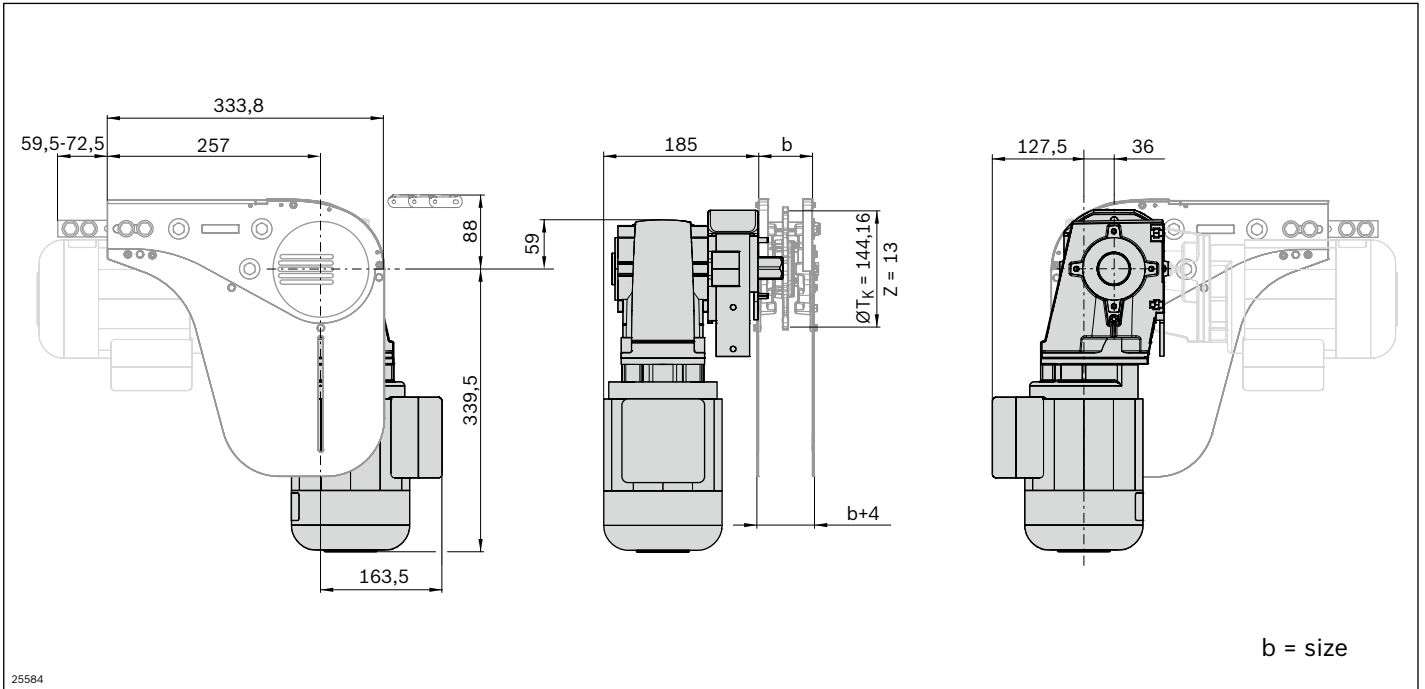
- Flange, shaft: Stainless steel
- Motor: Die-cast aluminum
- Cover tube: PE

Optional accessories:

Frequency converter, see page 158

Condition on delivery:

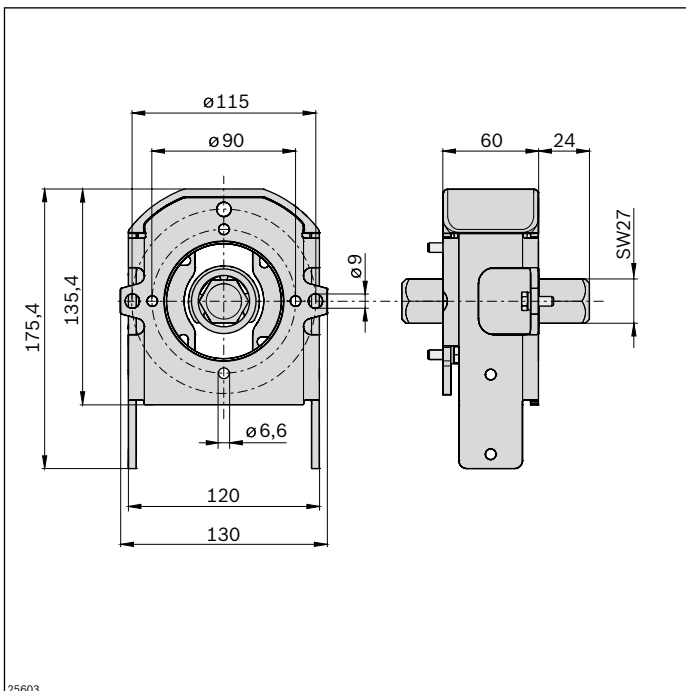
Assembly kit



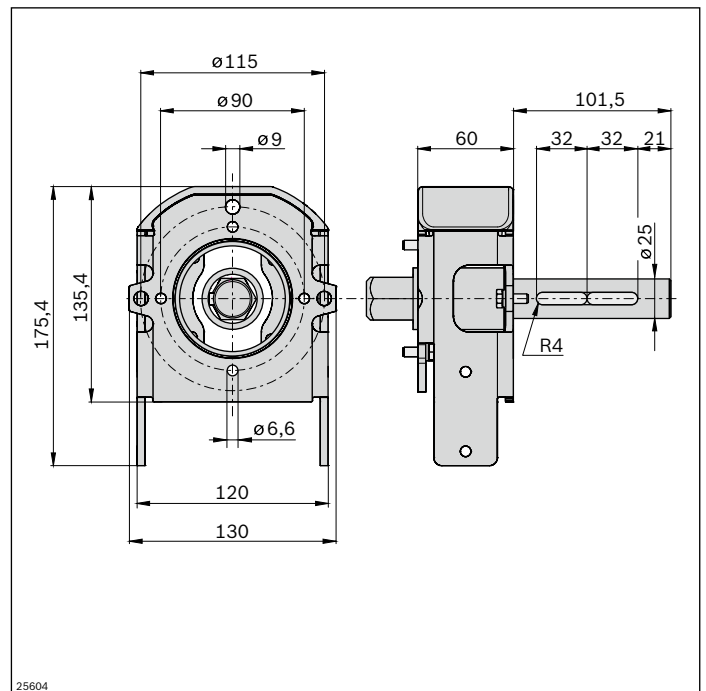
Drive kit VFplus	SP	GM	v_N (m/min)	U/f (V/Hz) See page 281	AT	No.
	STS; AL*	0: 1; 2	5, 10, 13, 16, 21, 27, 33, 40, 50		K; S	3 842 998 291 SP = ... GM = ... v_N = ... U/f = ... AT = ...

* AL version see page 92

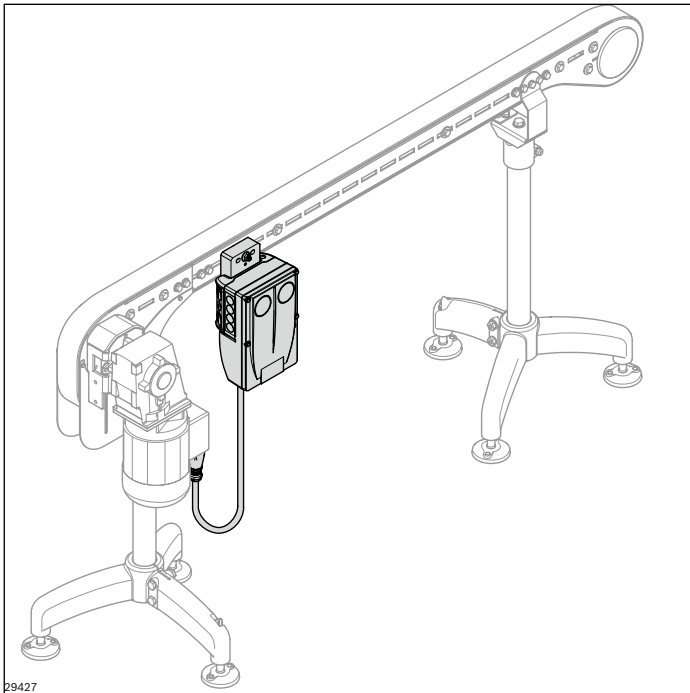
STS GM = 0



STS GM = 2

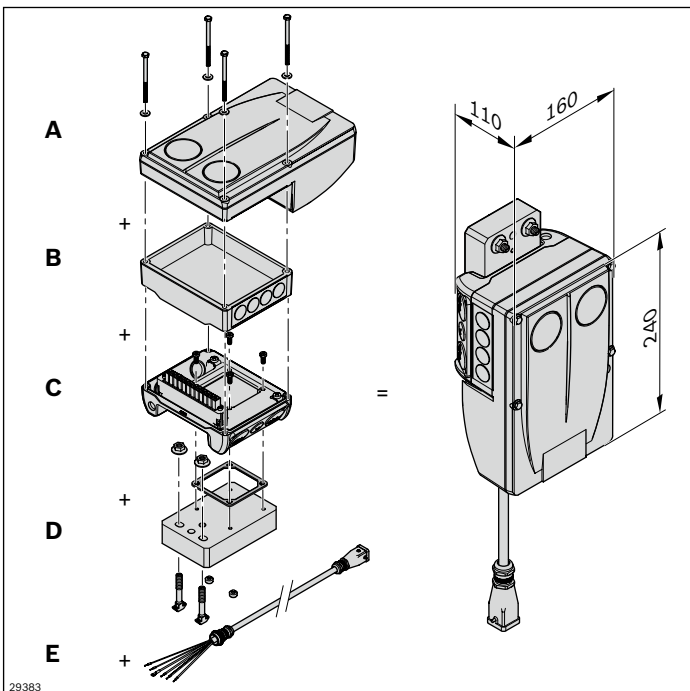


Frequency converter motec 8400



In order to operate a gear motor with adjustable speed, the motor needs to be retrofitted with a frequency converter (FU). The frequency converter has a modular design, whereby it can be easily mounted on a section and connected to the motor by cable.

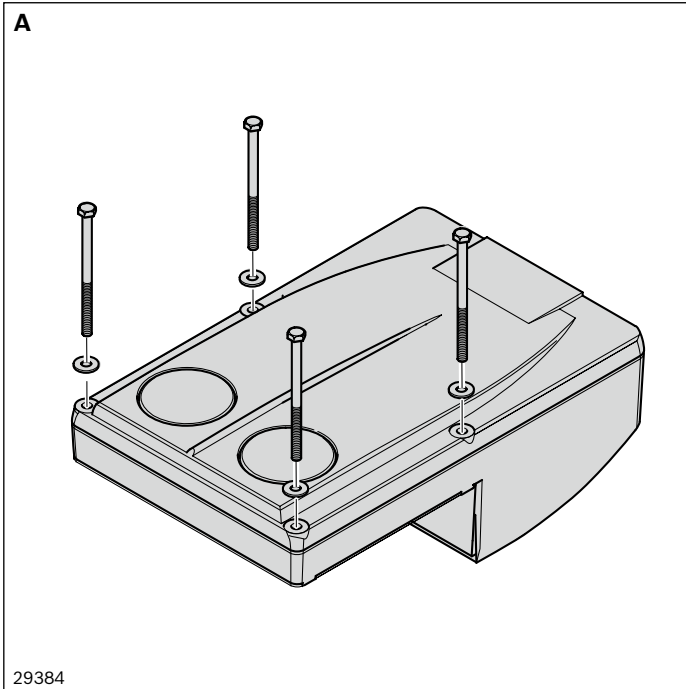
- Connection power: 0.55 kW (connection voltage: 400 V \pm 10% ... 460 V/480 V \pm 10%)
- Speed (v_N) depending on the base speed of the gear motor used



Complete frequency converter consisting of the modules

- Frequency converter power element (A)
- Communication module (B)
- Connection unit (C)
- Attachment kit (D)
- Optional: Connection cable (E) for the plug-in connection to the gear motor (AT = S)

The individual modules can be ordered separately and are easy to connect with the supplied screws. For the internal and external voltage supply, the modules must be wired by the user (see terminal box assignment, page 285).



Frequency converter (A)

Power unit: 0.55 kW

(400 V ± 10% ... 460 V/480 V ± 10%)

- Easy commissioning via hand-held terminal
- Easy to replace memory module
- Large LED as status display

Frequency converter	No.
Power element 0.55 kW	3 842 553 447

The speed range of the frequency converter *) is based on the base speed of the motor:

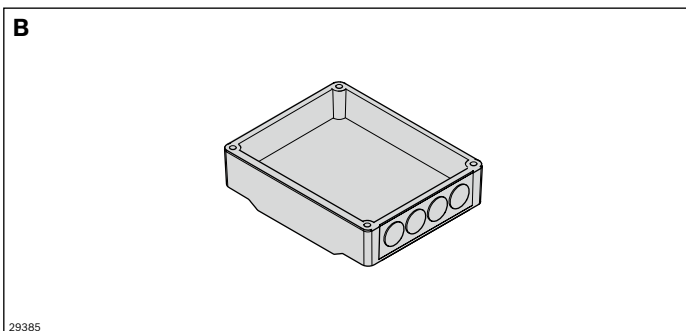
Base speed of motor (m/min) at 50 Hz	Min ¹⁾ (m/min)	Max ²⁾ (m/min)
5 ³⁾	2	6
10 ³⁾	4	12
13	5	15
16	6	19
21	7	25
27	9	32
33	11	39
40	13	48
50	16	60

*) By accepting a resulting loss of power, a higher bandwidth can be covered (see page 285)

¹⁾ Min corresponds to approx. 16 Hz supply frequency

²⁾ Max corresponds to approx. 60 Hz supply frequency

³⁾ At 460 V/60 Hz max (m/min) 20% higher



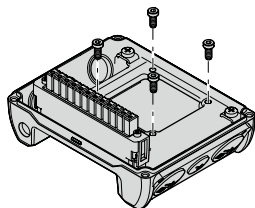
Communication module (B)

- Used to control the frequency converter
- Cable connection options

Depending on their function, the individual communication modules are provided with the corresponding connections.

Communication module	No.
Standard I/O	3 842 553 449
AS-i	3 842 553 453
CANopen	3 842 553 454
EtherNet/IP	3 842 553 451
EtherCAT	3 842 553 459
PROFIBUS	3 842 553 452
PROFINET	3 842 553 450

C



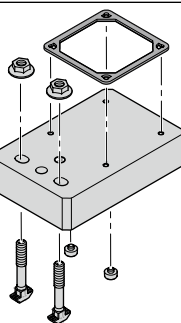
29386

Connection unit (C)

- Power grid connection options

Connection unit	No.
	3 842 553 445

D



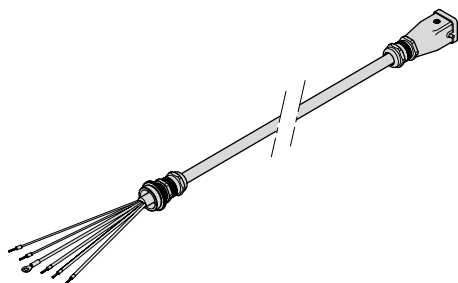
29387

Attachment kit (D)

- For the simple attachment of the frequency converter to the STS section

Attachment kit	No.
	3 842 553 457

E



29426

Connection cable (E)

- For connecting the gear motor with the frequency converter (length: 1 m)
- For the drive kit AT = S (direct wiring with AT = K)

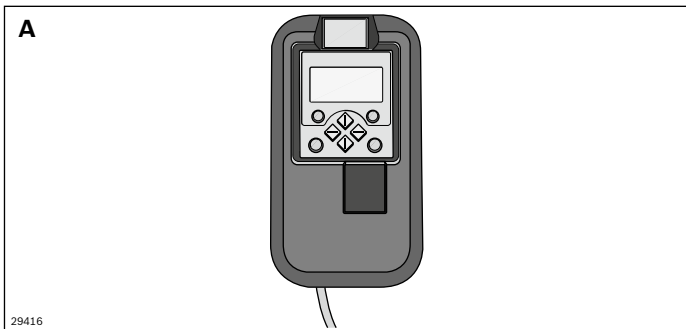
Connection cable	No.
	3 842 553 512

Manual control unit

Switch/potentiometer unit



4



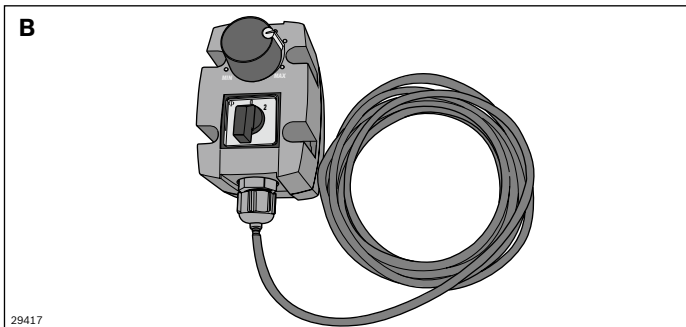
Manual control unit

The manual control unit is required for the parameterization of drives with frequency converters.

In addition, you can:

- Control (e.g. block and release)
- Display operating data
- Steplessly regulate the transport speed
- Transfer parameter sets to other basic devices

Manual control unit	No.
	3 842 552 821



Switch/potentiometer unit

The switch/potentiometer unit is used to fine tune the transport speed within a range that has been preset with the manual control unit. The switch/potentiometer unit is connected to the frequency converter by a cable. The drive can be started or stopped with the rotary switch.

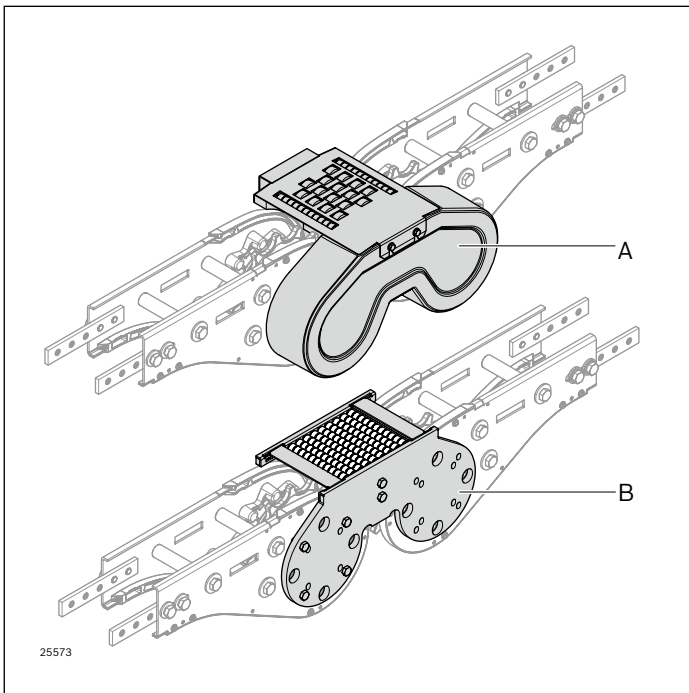
Note: It is imperative that the direction in which the chain conveyor is running is checked prior to commissioning.

Switch/potentiometer unit	No.
	3 842 553 184

Scope of delivery:

A, B: Incl. 2.5 m connection cable

Connection kit active (A) bridge Connection kit passive (B) bridge



The active and passive bridges are used as a transfer unit between the basic unit and return unit or with the connection drive to bridge the flat conveyor chain.

- Size: 65-160
- Only for flat conveyor chain and static friction chain
- For dimensionally stable products with an even transport surface
- Height adjustment: approx. 3 mm
- Additional versions (e.g. machine variants) available on request

A: The active bridge is driven by a transmission (on the drive or return unit side).

- Suitable for conveyed materials from approx. 100 mm in length (depending on the speed, position of the center of gravity, product friction, etc.)
- Freely selectable mounting position (L/R)
- Not permitted for wet operation or rough ambient conditions

B: The passive bridge serves to bridge the conveyor trench.

- The conveyed goods are transferred via passive rollers
- Suitable for goods from approx. 300 mm length

- ▶ **A:** Simple transmission of the drive force using hexagonal hollow shafts integrated into the basic unit or return unit as standard
- ▶ **A+B:** Can be retrofitted into a standard configuration at any time

Scope of delivery:

- **A+B:** Incl. fastening material
- **A:** Transmission and protective cover

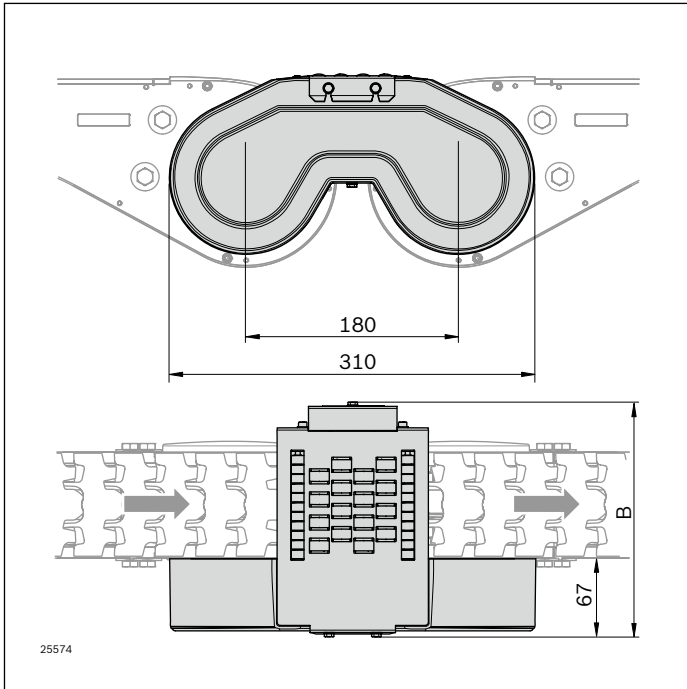
Material:

- Active bridge: Stainless steel/PA/POM/ABS/PUR
- Passive bridge: Stainless steel/POM

- ▶ **A+B:** Active and passive bridges can be used at section ends for product transfer

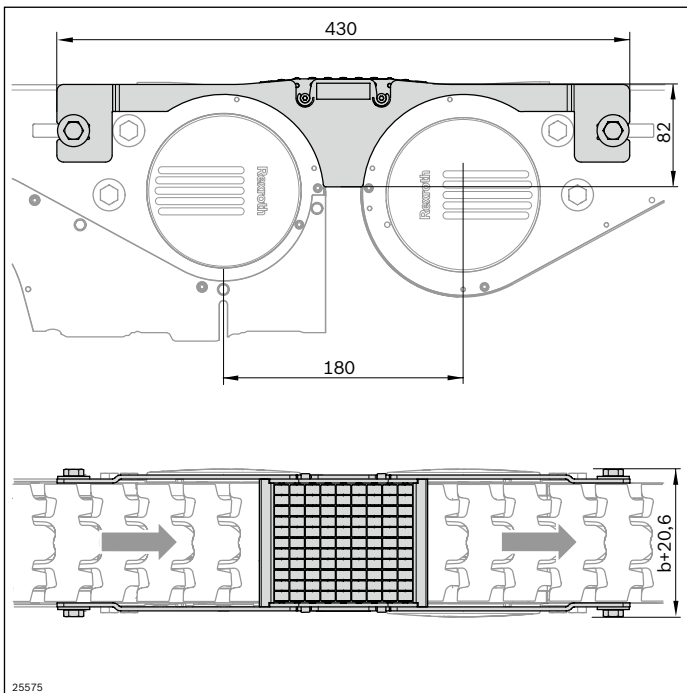
Condition on delivery:

Partially assembled



Connection kit active bridge	B	No.
VFplus 65	174	3 842 555 820
VFplus 90	199	3 842 555 821
VFplus 120	229	3 842 555 822
VFplus 160	269	3 842 555 823

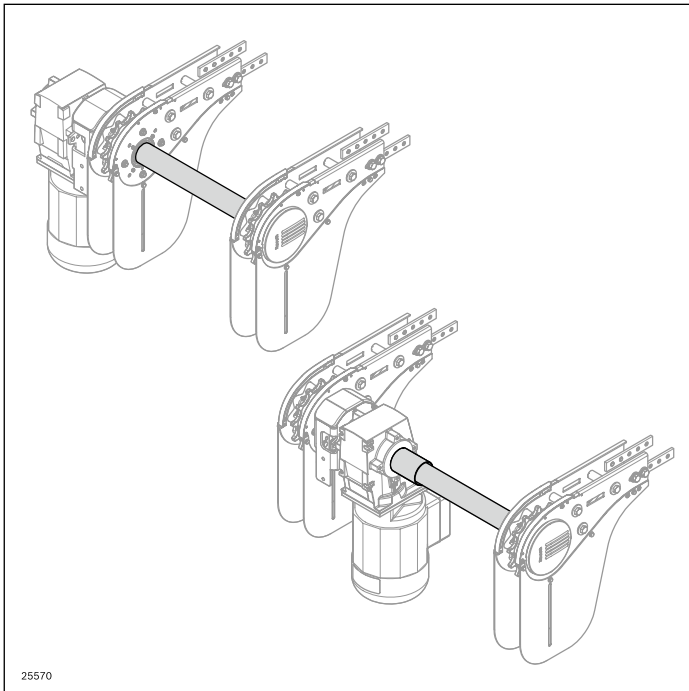
4



Passive bridge connection kit	No.
VFplus 65	3 842 549 015
VFplus 90	3 842 549 016
VFplus 120	3 842 549 017
VFplus 160	3 842 549 018

Connection kit

Synchronous drive, external motor/internal motor



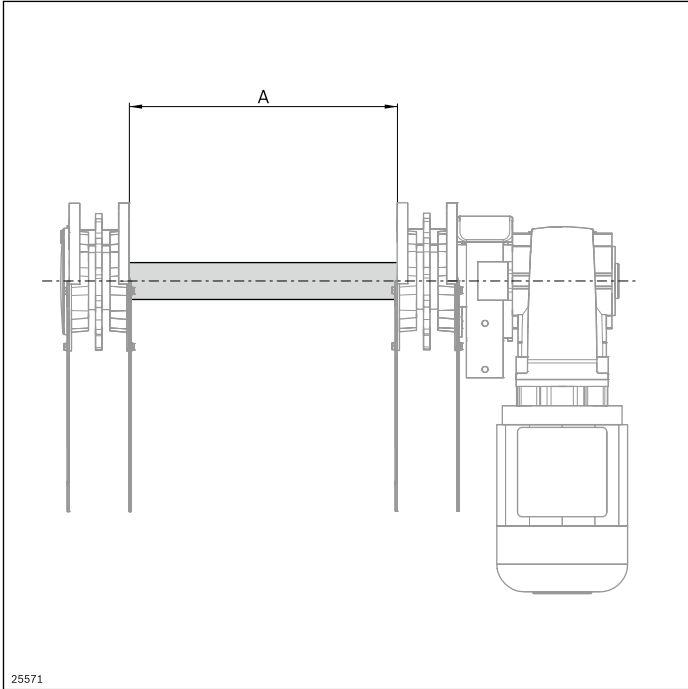
The synchronous drive connection kit is used to synchronously drive two conveyor sections with only one motor.

- External synchronous drive:
 - Motor mounting position outside the parallel sections
- Internal synchronous drive:
 - Motor mounting position between the parallel sections for drive kit GM = 1 (see page 156), customer check required for other motor types

Condition on delivery:
Not assembled

Material:

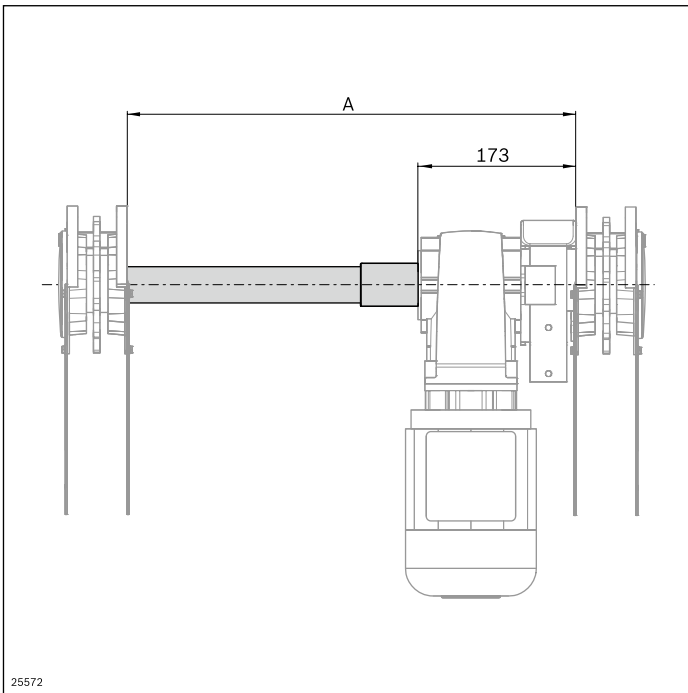
- Shaft: Stainless steel
- Coupling: PA



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Synchronous drive connection kit	A (mm)	No.
VFplus external motor	15 ... 2940	3 842 998 774

4



25572

Synchronous drive connection kit	A (mm)	No.
VFplus internal motor	240 ... 3160	3 842 998 775