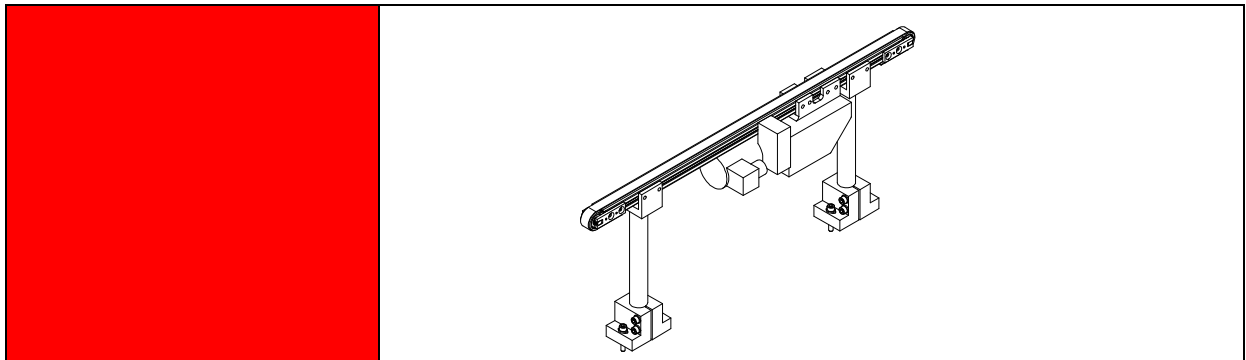


# Conveyor FB15



**Translation of original operating instruction**

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**This operation instruction applies to:**

Type		Order number
Conveyor	FB15	Project-specific

Version of Documentation: BA\_FB15\_R4.1\_E.docx

Release: 4.1

Date: 2010-01-28



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# 1 Declaration of incorporation for the incomplete machine

## Declaration of incorporation according to the EC-Machinery-Directive 2006/42/EC, Annex II B

The manufacturer: Afag Automation AG, Fiechtenstrasse 32, CH-4950 Huttwil  
[www.afag.com](http://www.afag.com) – Tel.:+41 (0)62 / 959 87 05

hereby declares, that the incomplete machine: **Conveyor**

Designation: **FB15**

Complies with the basic safety and health requirements of the Machinery Directive **2006. /42/EC Annex I.**

The incomplete machine also complies with the following:


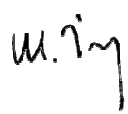
Relevant EC Directives:  Machinery-Directive 2006/42/EC  Low Voltage Directive 2006/95/EC  EMC- Directive 2004/108/EC  Applied harmonised standards:  EN ISO 12100-1; EN ISO 12100-2
--

The technical documentation for this incomplete machine was prepared in accordance with Annex VII, Part B. Upon request, the manufacturer undertakes to transmit these technical documents electronically to national authorities, if requested.

Authorised representative for the compilation of the technical documentation: Marc Zingg  
Afag Automation AG  
Product Manager  
CH-4950 Huttwil

**The start-up of the incomplete machine is prohibited until installed in a complete machine that complies with the regulations of the EC Machinery Directive and until the EC Declaration of Conformity according to Annex II A is available.**

City, Date: Huttwil, 2009-12-23  
Company: Afag Automation AG  
Address: Fiechtenstrasse 32  
CH-4950 Huttwil

Authorised representative (signature)  

Name	Dr. Ing. Martin Daniel	Marc Zingg
Position	Managing Director	Product Manager

## 2 Safety instructions



### 2.1 Notes on symbols and instructions


Symbols: Assembly and commissioning must be carried out by qualified personnel only and according to these operating instructions.

Please observe the meaning of the following symbols and notes. They are grouped into risk levels and classified according to ISO 3864-2.

 <b>DANGER</b>	
	<p>Indicates an immediate threatening danger.</p> <p>Non-compliance with this information can result in death or serious personal injuries (invalidity).</p>

 <b>WARNING</b>	
	<p>Indicates a possible dangerous situation.</p> <p>Non-compliance with this information can result in death or serious personal injuries (invalidity).</p>

 <b>CAUTION</b>	
	<p>Indicates a possibly dangerous situation.</p> <p>Non-compliance with this information can result in damage to property or light to medium personal injuries.</p>

<b>NOTE</b>	
	<p>Indicates general notes, useful operator tips and operating recommendations which don't affect safety and health of the personnel.</p>

## **2.2 Basic safety instructions**

This operating manual provides the basis for the safe use and operation of the conveyor belt. This operating manual and, in particular, the included safety instructions have to be observed by all individuals working with and on the conveyor belt. In addition, all rules and regulations regarding accident prevention that are applicable for the site of operation are to be complied with.

The operating manual must always be kept at the site of operation of the conveyor belt.

## **2.3 Appropriate use**

The conveyors are intended for transporting component parts.

The workpieces must meet the following requirements in order to ensure a problem-free operation:

- they must be free of oil, grease and burrs
- they must not be sticky
- they must not be statically charged
- they must not be magnetic (no self-magnetism)
- they must be free of dirt and not be mixed with foreign parts
- rubber parts can be powdered with talcum

## **2.4 Reasonably foreseeable misoperation**

The conveyor belt is exclusively designed for parts conveyance. Any other use or use exceeding this is considered as non-conforming and leads to the expiration of any guarantee claims.

The conveyor belt is not approved for explosion-hazardous areas.

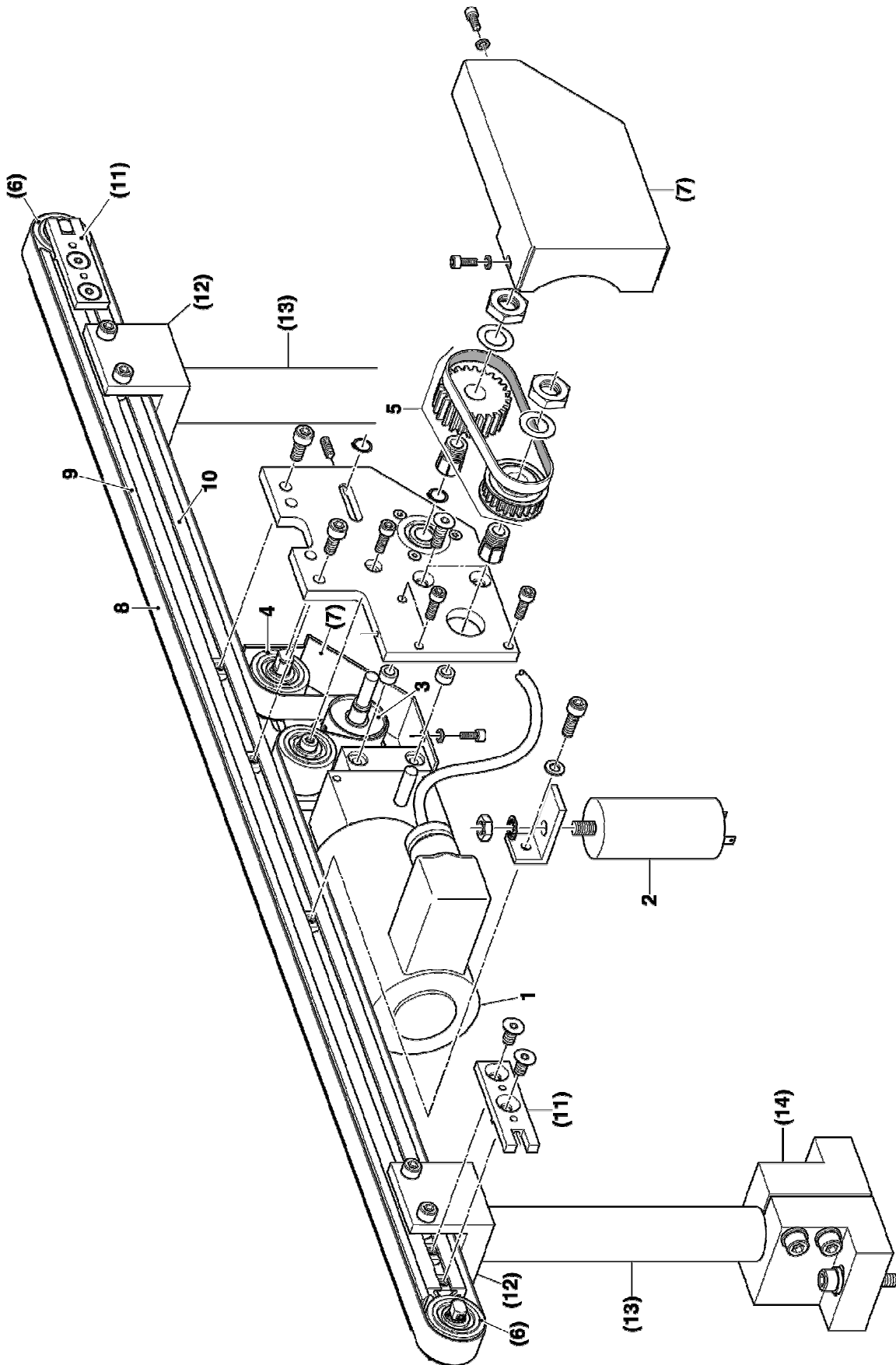


Fig. 1

### **3 Description of the device**

#### **3.1 General**

The conveyor FB 15 has been designed for the transportation of oriented small components

#### **3.2 Functional description**

The conveyor FB 15 has been designed for the transportation of oriented small components over a specific distance. The conveyor is executed in different lengths.

Min. length            450mm

Max. length            1500mm

The basic construction of a conveyor comprises the following elements.  
(See Fig. 1)

- 1     Drive
- 2     Condenser (only 230V)
- 3     Drive pulley
- 4     Tensioning pulley
- 5     Pulley set with timing belt
- 6     Deviation pulley with adjusting screw
- 7     Protection cover
- 8     Conveyor belt
- 9     Sliding profile
- 10    Conveyor belt profile
- 11    Pulley bracket
- 12    Bracket (optional accessory)
- 13    Column (optional accessory)
- 14    Single column support (optional accessory)

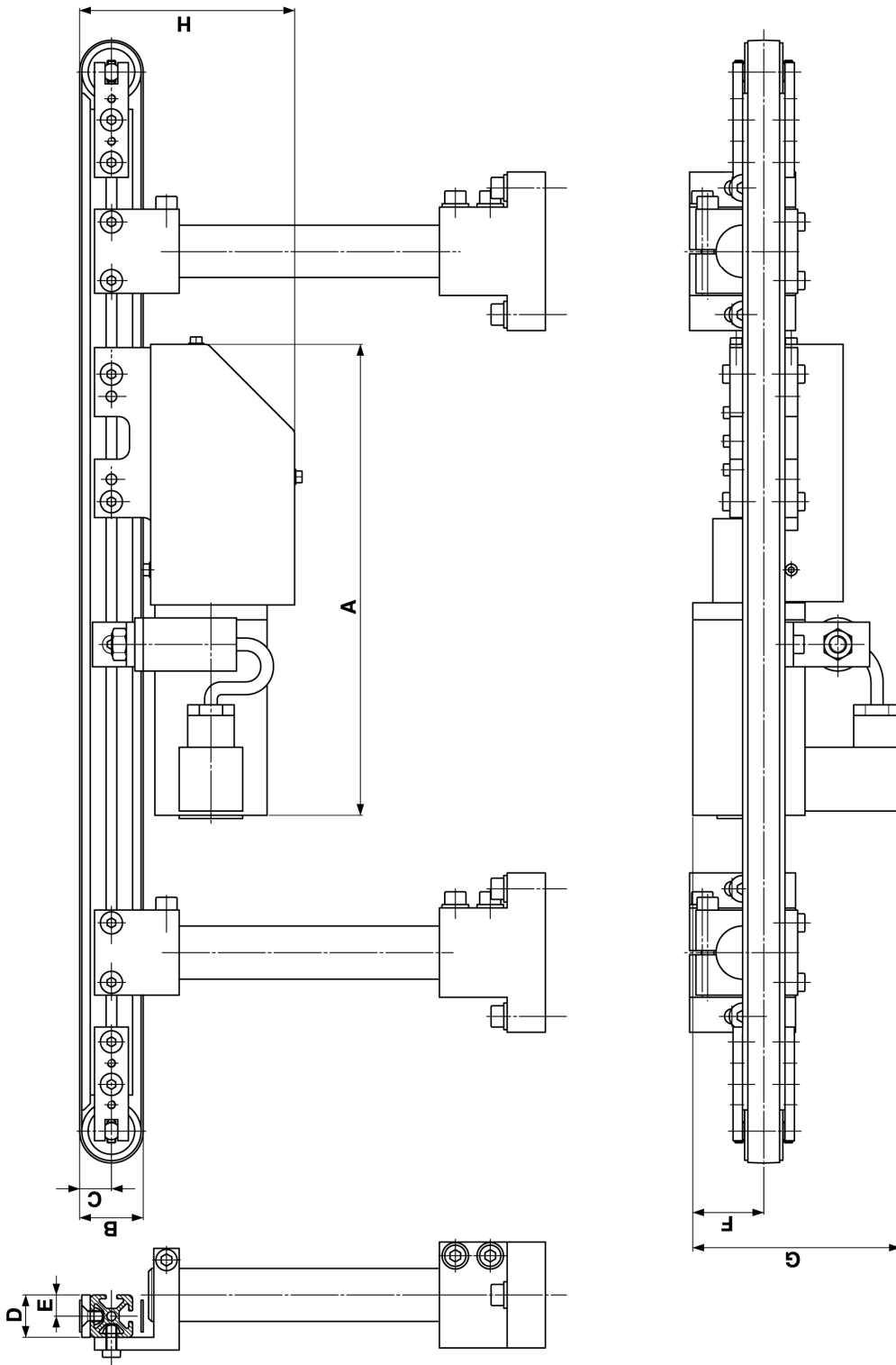


Fig.2

### 3.3 Technical data


(See Fig. 2)

Dimensions	[mm]	A=222
	[mm]	B=30
	[mm]	C=15
	[mm]	D=20
	[mm]	E=10
	[mm]	F=33.5
	[mm]	G=98
	[mm]	H=101.5
Operating voltage	[VAC]	230 / 400
Power frequency	[Hz]	50 (60)
Current consumption at 230VAC	[mA]	42
Current consumption at 400VAC	[mA]	42
Capacitor at 230VAC	[ $\mu$ F-450V]	1.5
Capacity at 230VAC	[W]	5.2
Capacity at 400VAC	[W]	5.2
Motor speed	[U/min]	1250
Torque at i=15	[Nm]	0.22
Torque at i=40	[Nm]	0.24
Protection class	[IP]	44
Environmental conditions operation: temperature range	[C°]	-10 to + 40
Relative humidity (without capacitor)	[%]	0 – 95
Environmental conditions storage: temperature range	[C°]	-25 to 60
Relative humidity (without capacitor)	[%]	0 – 95
Noise emission: Continuous noise pressure level (without transported material)	[dB]	<70
Measuring height/measuring distance	[m]	1,6 / 1
Measurement direction with respect to the noise source	[°]	90
Measurement method	-	A evaluation



## 4 Assembly instructions



### 4.1 Transport

 <b>WARNING</b>	
	<p>Improper use of transport means (industrial trucks, cranes, technical aids, sling gear etc.) may lead to bruises and other injuries.</p> <p>Required behaviour:</p> <ul style="list-style-type: none"><li>▪ Observe and follow the transport and maintenance instructions</li><li>▪ Proper use of transport means</li></ul>

### 4.2 Installing the unit

For the operation, the conveyor belt must always be mounted on a sufficiently dimensioned substructure. It has to be fastened with at least two supports and single legs.

### 4.3 Power supply

 <b>WARNING</b>	
	<p>Any work on the electrical supply may only be performed by trained, authorised, qualified personnel!</p>

 <b>WARNING</b>	
	<p>The power supply must be protected by an FI switch (provided by the customer).</p>

 <b>WARNING</b>	
	<p>The conveyor belt may only be operated with the power supply specified on the name plate.</p>

When operating at 400VAC, the conveyor belt is directly connected inside the control cabinet and switched on and off by a contactor. The conveyor belt must be protected against overload by means of a protective motor switch.

When operating at 230VAC, the capacitor 50000920 (1.5μF) must be used (see chapter 4.4).

When operating at 230VAC, the conveyor belt can be connected to the belt motor control SE621 (see figure 3).

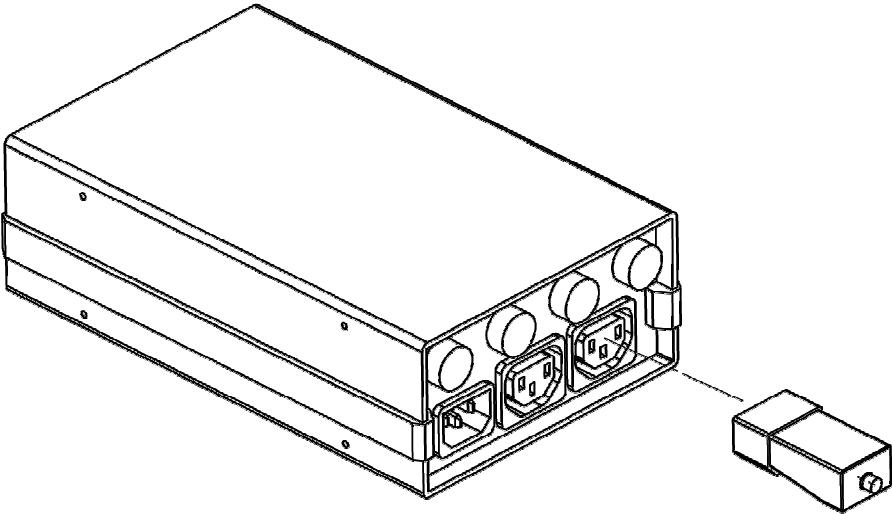


Fig.3

### 4.4 Wiring diagram

NOTE	
	<b>If the direction of rotation of the drive motor has to change, it is necessary to rotate the conveyor belt as well! (See Fig. 4)</b>

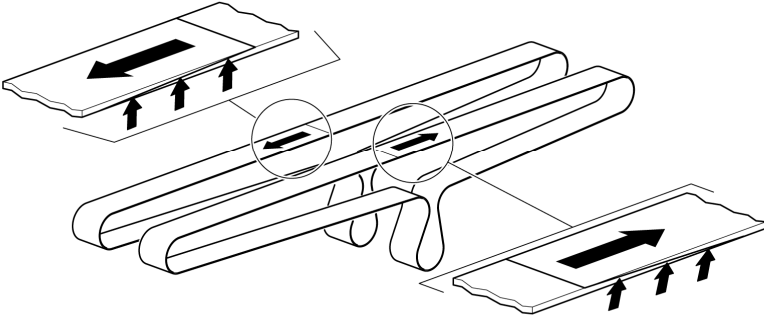


Fig.4



## 5 Operating instructions

### 5.1 Standard operation

No further settings are required for standard operation mode once the controller is switched on.

## 6 Maintenance instructions

### WARNING



Certain preventive checks should however be carried out: A damaged mains cable should be replaced immediately!

### NOTE



Check all visible screws are tightness!

### 6.1 Troubleshooting and fault repair

### WARNING



- Electrical work must only be carried out by trained personnel!
- Before removing the casing, unplug the power cable!

Interruptions caused by defective components must be repaired by replacing the defective component, only.

### NOTE



Defective components must only be replaced by Afag original spare parts.

**Conveyor does not operate after being switched on.**

**Troubleshooting:**

**Fault repair**

Transport belt slips on drive roll

Replace supply cable

Tension transport belt (see chapter 6.5)

Defective drive unit (worm gear motor)

Replace drive unit

**Strong noise emissions of the conveyor belt**

**Troubleshooting:**

**Fault repair**

Transport belt touches the side guides

Align transport belt (see chapter 6.5)

**6.2 Cleaning**

Conveyor belt

Detergent:

Cleaning method:

HNI-5P

Spirit

clean with a damp cloth, let it dry

F-0

Spirit

clean with a damp cloth, let it dry

CNB-5E

Spirit

clean with a damp cloth, let it dry

 **CAUTION**



If other cleaning agents or cleaning methods than those mentioned above are used, the components can get permanently damaged so that the proper function of the conveyor is no longer guaranteed.

 **WARNING**



The following requirements must be met during the cleaning :

- Wear safety goggles
- Provide sufficient ventilation when cleaning with volatile substances

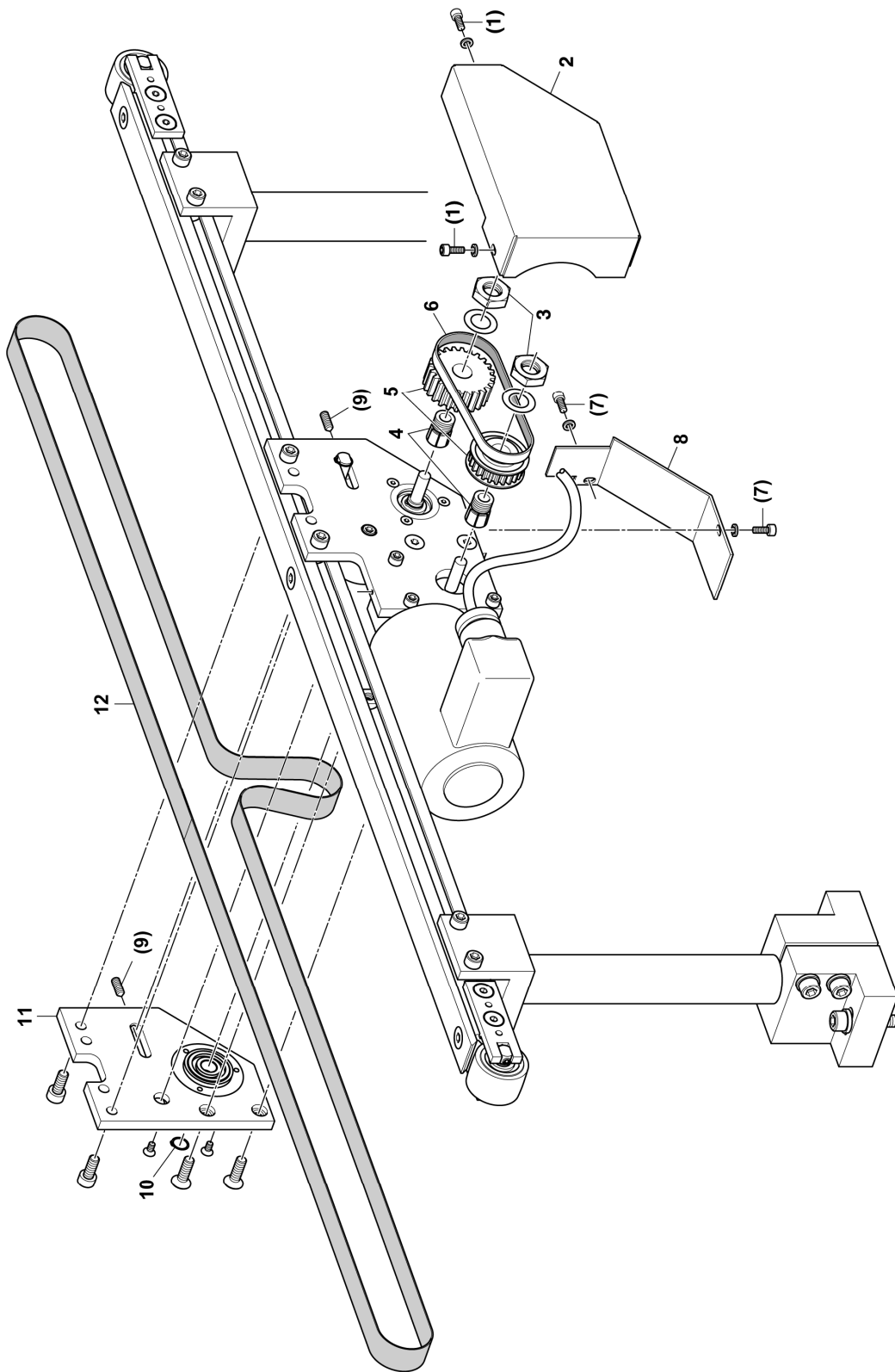


Fig. 6

### 6.3 Replacing the timing belt

(See Fig.6)

1. Dismantling the screws **(1)** and remove the protection cover **(2)**
2. Dismantling the screws **(3)** and remove the pulleys **(5)** from the bushes **(4)** and remove the timing belt **(6)**
3. Install the new timing belt and proceed with the reassembly of the components in opposite order

### 6.4 Replacing the conveyor belt

(See Fig.6)

1. Dismantling the screws **(7)** and remove the protection **(8)**
2. Dismantling and remove the tensioning screw **(9)** completely
3. Remove the circlip **(10)** and the plate **(11)**
4. Remove the conveyor belt **(12)**
5. Fit the new transport belt and mount the components in reverse order. Note the running direction of the transport belt (see Fig. 7).
6. Align transport belt (see chapter 6.5)

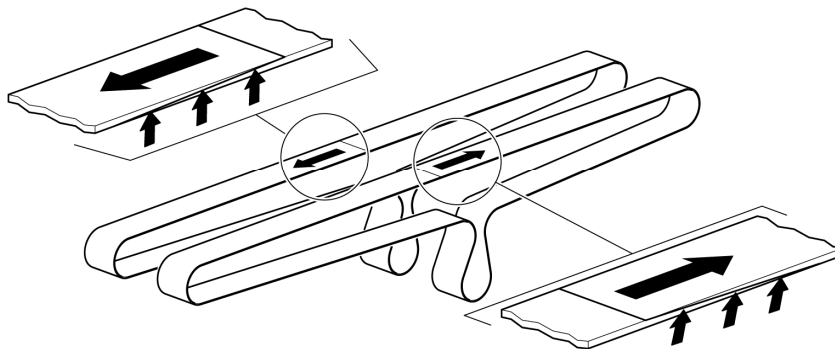


Fig.7



## 6.5 Aligning the transport belt

(See Fig.8)

The tension and the centric position of the conveyor belt are to be checked on a weekly basis. In case the tension of the belt is not sufficient or the belt is off-center, the tension and the centricity of the belt is then to be corrected by using the set-screws (**1** and **2**) at the inner and the two outer deflection rollers. It is important that the belt is not too tight as this may affect the service life of the bearings. A soiling of the conveyor belt is to be avoided by regular cleaning (see chapter 6.2). This will ensure a long service life of the overall system.

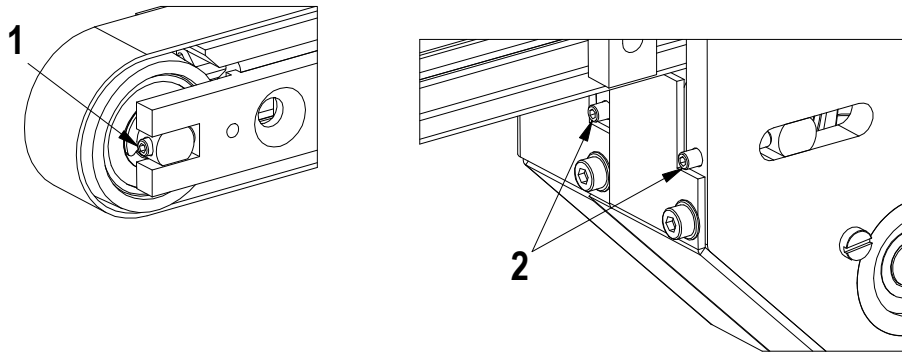


Fig.8

## 6.6 Drive unit

No maintenance is required for the worm gear motor.

## 6.7 Bearing

No maintenance is required for the bearings of the drive- and deflection rollers.

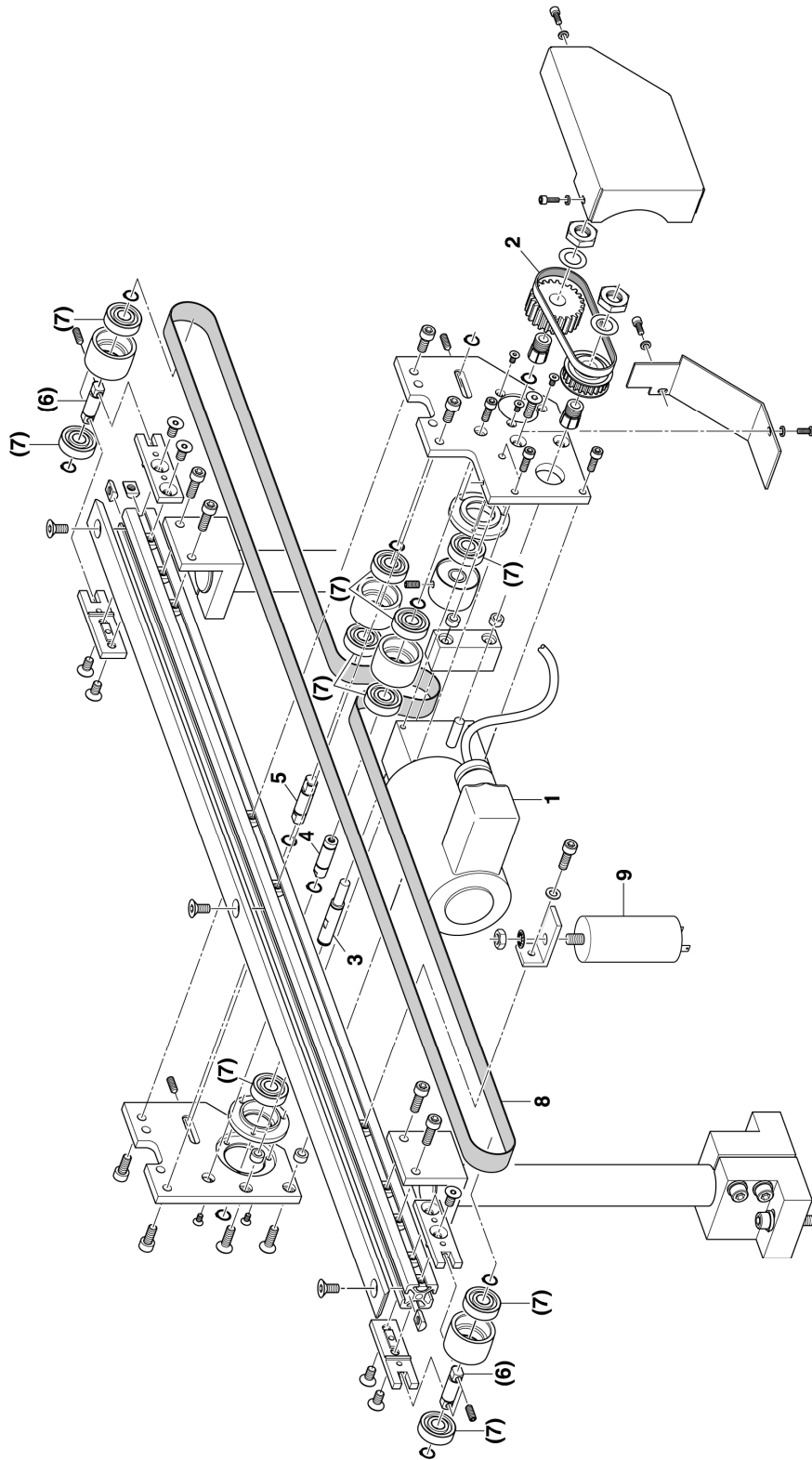


Fig.9

## 7 Accessories

### 7.1 Control device

Type	Power supply	AFAG Art.-Nr.
Belt motor control SE 621	230V/50Hz	50000396

### 7.2 Spare parts for FB15

(See fig.9)

Pos.	Spare parts	Dimensions	Qty.	AFAG Art.-Nr.
1	Drive motor i=15	230 / 400VAC	1	50118155
1	Drive motor i=40	230 / 400VAC	1	50118142
2	Timing belt	HTD-3M	1	11014577
	FB15 Pulley Set	30/30	1	11014670
	FB15 Pulley Set	27/33	1	11014671
	FB15 Pulley Set	24/36	1	11015770
3	Drive shaft FB15	Ø8h6x50	1	11014590
4	Axle FB15	Ø8h6x28.5	1	11014589
5	Shaft FB15	Ø8h6x34	1	11014591
6	Alignment axle FB15	Ø8h6x28.6	2	11014588
7	Ball bearing	60/-2RS	10	11014578
9	BETR-Condenser	ICAR 1.5µF	1	50000920



### 7.3 Address for orders

**Schweiz:**

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Zuführtechnik  
Fiechtenstrasse 32  
CH-4950 Huttwil  
Tel.:+41 (0)62 / 959 87 05  
Fax:+41 (0)62 / 959 87 76

sales@afag.com  
www.afag.com

**Deutschland:**

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D-92224 Amberg  
Tel.:+49 (0)96 21 / 65 0 27-0  
Fax:+49 (0)96 21 / 65 0 27-390

**Sales:**

Afag GmbH  
Hertichstrasse 70  
D-71229 Leonberg  
Tel.:+49(0)71 52 / 60 08-0  
Fax:+49 (0)71 52 / 60 08-10

## 8 Disposal

Conveyors that are no longer in use should not be disposed of as complete units but dismantled into separate materials and recycled. Non-recyclable components must be disposed of correctly.

