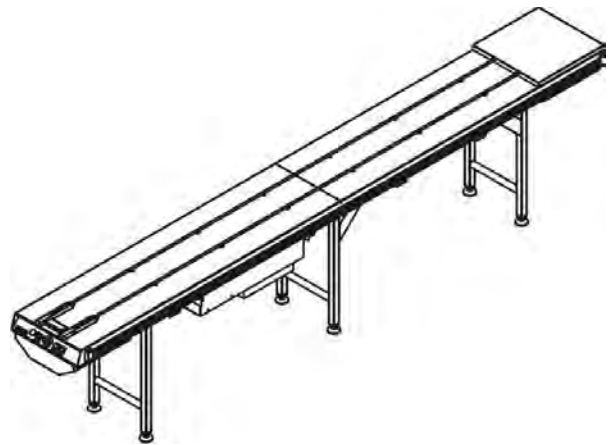
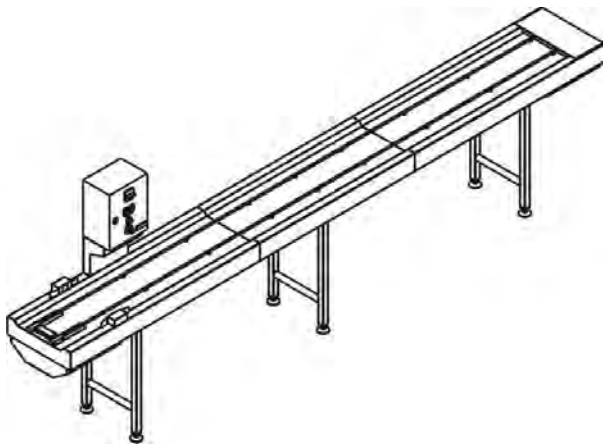


## Operating Instructions



**COMCATER**  
-foodservice equipment-



Distributed by  
**Comcater Pty Ltd**  
156 Swann Drive  
Derrimut VIC 3030  
Phone: (03) 8369 4600  
Fax: (03) 8369 4696  
[www.comcater.com.au](http://www.comcater.com.au)

## Round Belt Conveyor System SGR | SPV

# 1 Introduction

---

## 1.1 Appliance Information

---

Appliance designation	Round Belt Conveyor System
Appliance type/ -s	SGR   SPV
Manufacturer	HUPFER® Metallwerke GmbH & Co KG Dieselstraße 20 48653 Coesfeld  PO 1463 48634 Coesfeld  ☎ +49 2541 805-0 📠 +49 2541 805-111  <a href="http://www.hupfer.de">www.hupfer.de</a> <a href="mailto:info@hupfer.de">info@hupfer.de</a>

Read these operating instructions thoroughly and attentively to ensure safe operation and avoid any damages! Ensure that sources of danger and possible faulty operations have been pointed out to the operating staff.

### **Subject to modifications**

The products covered by these operating instructions have been developed taking into consideration the requirements of the market and the latest technology. HUPFER® reserves the right to modify the products and appertaining technical documentation in so far as the modifications are in the name of technological progress. The data and weights as well as the description of performance and functions assured in the order confirmation as binding are always decisive.

**This manual is an original edition.**

**Manual edition**  
4330054\_A2

## 1.2 Table of Contents

---

<b>1</b>	<b>Introduction</b>	<b>2</b>
1.1	Appliance Information	2
1.2	Table of Contents	3
1.3	List of Abbreviations	5
1.4	Definitions of Terms	6
1.5	Orientation Guide	6
1.6	Notes on Use of Manual	7
1.6.1	Notes on the manual structure	7
1.6.2	Notes and their illustrations used in the chapters	7
<b>2</b>	<b>Safety Instructions</b>	<b>8</b>
2.1	Introduction	8
2.2	Warning Symbols Used	8
2.3	Safety Instructions for Appliance Safety	8
2.3.1	Special safety instructions for mobile conveyor systems	9
2.4	Position of the Emergency Stop Button	9
2.5	Safety Instructions for Transport and Installation	10
2.6	Safety Instructions for Use and Operation	10
2.7	Safety Instructions for Maintenance and Care	10
2.8	Safety Instructions for Troubleshooting	11
2.9	Notes on Specific Hazards	11
<b>3</b>	<b>Description and Technical Data</b>	<b>12</b>
3.1	Performance Description	12
3.2	Intended Use	12
3.3	Improper Use	12
3.4	Appliance Description	13
3.4.1	View of the crockery return belt system (SGR)	13
3.4.2	View of the food distribution belt system (SPV)	14
3.4.3	Equipment and optional accessories	14
3.5	Technical Data	16
3.6	Rating Plate	17
<b>4</b>	<b>Transport, Assembly, Putting into Operation and Decommissioning</b>	<b>18</b>
4.1	Transport	18
4.2	Assembly	18
4.2.1	Assembling the segment	19
4.2.2	Assembling the round belt	20
4.3	Putting into Operation	23
4.3.1	Connecting the conveyor system	24
4.3.2	Measures for putting the appliance into operation	24
4.4	Decommissioning, Storage and Recycling	24

<b>5</b>	<b>Operation</b>	<b>26</b>
5.1	Arrangement and Function of the Operating Elements	26
5.2	Operation	27
5.3	Measures at the End of Operation	27
<b>6</b>	<b>Fault Detection and Troubleshooting</b>	<b>28</b>
6.1	Security Measures	28
6.2	Notes on Troubleshooting	28
6.3	Fault and Action Table	28
<b>7</b>	<b>Care and Maintenance</b>	<b>30</b>
7.1	Security Measures	30
7.2	Hygiene Measures	30
7.3	Notes on Care and Maintenance Measures	30
7.3.1	Maintenance	31
7.3.2	Re-tension the round belt	32
7.4	Special Care Instructions	32
<b>8</b>	<b>Spare Parts and Accessories</b>	<b>34</b>
8.1	Introduction	34
8.2	Spare Parts and Accessories List	34
<b>9</b>	<b>Annex</b>	<b>35</b>
9.1	EC Declaration of Conformity	35

## 1.3 List of Abbreviations

Abbreviation	Definition																																				
BGR	Rule of the Professional Association (Berufsgenossenschaftliche Regel)																																				
BGV	Regulation of the Professional Association (Berufsgenossenschaftliche Vorschrift)																																				
CE	Communauté EuropéenneEuropean Community																																				
DIN	German Institute for Standardisation (Deutsches Institut für Normung)German Institute for Standardisation, technical regulations and technical specifications																																				
EC	European Community European Community																																				
EN	European Standard (Europäische Norm) Harmonised standard for the EU market																																				
E/V	Spare and wearing part (Ersatz- bzw. Verschleißteil)																																				
EVU	Power supply company (Energieversorgungsunternehmen)																																				
IP	International Protection. The abbreviation IP and a further two-digit index specify the protection class of a housing. The first digit: Protection against ingress of solid foreign objects    The second digit: Protection against ingress of water <table border="1" data-bbox="608 875 1437 1630"> <tbody> <tr> <td>0</td> <td>No protection against contact, no protection against ingress of solid foreign objects</td> <td>0</td> <td>No protection against ingress of water</td> </tr> <tr> <td>1</td> <td>Protection against contact with any large surface of the body such as the hand, protection against ingress of foreign objects <math>\varnothing &gt; 50</math> mm</td> <td>1</td> <td>Protection against vertically falling water drops</td> </tr> <tr> <td>2</td> <td>Protection against contact with the fingers, protection against ingress of foreign objects <math>\varnothing &gt; 12</math> mm</td> <td>2</td> <td>Protection against dripping water (at any angle up to 15° from the vertical)</td> </tr> <tr> <td>3</td> <td>Protection against contact with tools, thick wires or similar objects of <math>\varnothing &gt; 2.5</math> mm, protection against foreign objects <math>\varnothing &gt; 2.5</math> mm</td> <td>3</td> <td>Protection against water drips at any angle up to 60° from the vertical</td> </tr> <tr> <td>4</td> <td>Protection against contact with tools, thick wires or similar objects of <math>\varnothing &gt; 1</math> mm, protection against foreign objects <math>\varnothing &gt; 1</math> mm</td> <td>4</td> <td>Protection against water splashing from any direction</td> </tr> <tr> <td>5</td> <td>Protection against contact, protection against dust deposits inside</td> <td>5</td> <td>Protection against water jets (projected by a nozzle) at any angle</td> </tr> <tr> <td>6</td> <td>Complete protection against contact, protection against ingress of dust</td> <td>6</td> <td>Protection against rough sea or strong water jets (flood protection)</td> </tr> <tr> <td></td> <td></td> <td>7</td> <td>Protection against ingress of water during temporary immersion</td> </tr> <tr> <td></td> <td></td> <td>8</td> <td>Protection against pressurised water during continuous immersion</td> </tr> </tbody> </table>	0	No protection against contact, no protection against ingress of solid foreign objects	0	No protection against ingress of water	1	Protection against contact with any large surface of the body such as the hand, protection against ingress of foreign objects $\varnothing > 50$ mm	1	Protection against vertically falling water drops	2	Protection against contact with the fingers, protection against ingress of foreign objects $\varnothing > 12$ mm	2	Protection against dripping water (at any angle up to 15° from the vertical)	3	Protection against contact with tools, thick wires or similar objects of $\varnothing > 2.5$ mm, protection against foreign objects $\varnothing > 2.5$ mm	3	Protection against water drips at any angle up to 60° from the vertical	4	Protection against contact with tools, thick wires or similar objects of $\varnothing > 1$ mm, protection against foreign objects $\varnothing > 1$ mm	4	Protection against water splashing from any direction	5	Protection against contact, protection against dust deposits inside	5	Protection against water jets (projected by a nozzle) at any angle	6	Complete protection against contact, protection against ingress of dust	6	Protection against rough sea or strong water jets (flood protection)			7	Protection against ingress of water during temporary immersion			8	Protection against pressurised water during continuous immersion
0	No protection against contact, no protection against ingress of solid foreign objects	0	No protection against ingress of water																																		
1	Protection against contact with any large surface of the body such as the hand, protection against ingress of foreign objects $\varnothing > 50$ mm	1	Protection against vertically falling water drops																																		
2	Protection against contact with the fingers, protection against ingress of foreign objects $\varnothing > 12$ mm	2	Protection against dripping water (at any angle up to 15° from the vertical)																																		
3	Protection against contact with tools, thick wires or similar objects of $\varnothing > 2.5$ mm, protection against foreign objects $\varnothing > 2.5$ mm	3	Protection against water drips at any angle up to 60° from the vertical																																		
4	Protection against contact with tools, thick wires or similar objects of $\varnothing > 1$ mm, protection against foreign objects $\varnothing > 1$ mm	4	Protection against water splashing from any direction																																		
5	Protection against contact, protection against dust deposits inside	5	Protection against water jets (projected by a nozzle) at any angle																																		
6	Complete protection against contact, protection against ingress of dust	6	Protection against rough sea or strong water jets (flood protection)																																		
		7	Protection against ingress of water during temporary immersion																																		
		8	Protection against pressurised water during continuous immersion																																		
LED	Light Emitting Diode Light diode																																				
RCD	Residual current device In the EU the English RCD (Residual Current Device) term is customary in standardisation matters.																																				

## 1.4 Definitions of Terms

Term	Definition
Authorised specialist	An authorised specialist is a specialist that has been trained by the manufacturer, an authorised service dealer or a company assigned by the manufacturer.
Cook&Chill-Kitchens	"Cook and Chill": Kitchens where warm food after being cooked is chilled as quickly as possible.
Cook&Serve-Kitchens	"Cook and Serve": Kitchens where warm food is served immediately after being cooked or kept warm until it is consumed.
Specialist	A specialist is a person who can evaluate work assigned and can individually recognise any possible dangers due to the professional training, specialist knowledge and experience as well as knowledge of the respective guidelines.
Gastronorm	Gastronorm is a measurement system applied worldwide, for instance, in food processing plants or large-scale kitchens and catering establishments. The use of standardised sizes makes possible to exchange food pans. The basic size of the gastronorm (GN) 1/1 is 12.8×20.9" (325×530mm). Items are available in different depths.
Control	Compare with certain conditions and/or characteristics such as damages, leaks, filling levels, heat.
Machine safety	The term of machine safety means all the measures used to avert injury to persons. The basis for this are national as well as EC-wide valid directives and laws for protecting users of technical devices and systems.
Passive layer	A non-metallic protective layer on a metallic material that prevents or slows down material corrosion.
Check	Compare with certain values such as weight, torque, content, temperature.
Qualified person, qualified staff	Qualified personnel are persons who due to their professional training, experience and instruction as well as their knowledge of the respective standards, guidelines, accident prevention regulations and operating conditions have been authorised by a person responsible for system safety to carry out required activities and can recognise and prevent any possible danger (definition of specialists according to IEC 364).
Schuko®	The abbreviation of the German term "Protective contact" that indicates a system of domestic plugs and sockets equipped with protective earthed contacts used in most of Europe.
Instructed persons	An instructed person is a person who has been instructed on the possible risks resulting from improper behaviour when carrying out the assigned task as well as on the necessary protective equipment and protective measures and trained for this task if necessary.

## 1.5 Orientation Guide

### The front

"The front" means the side where members of the staff place trays (beginning of the belt).

### The rear

"The rear" means the side where members of the staff remove trays from the belt. The operating elements of the conveyor system are fitted here (end of the belt).

### The right

The side named "the right" means the right side of the conveyor system in relation to the conveying direction.

### The left

The side named "the left" means the left side of the conveyor system in relation to the conveying direction.

## 1.6 Notes on Use of Manual




---

### 1.6.1 Notes on the manual structure

This manual is structured in functional and task orientated chapters.

### 1.6.2 Notes and their illustrations used in the chapters

The warnings and notes are separated from the other text and particularly marked by corresponding icons. The icon cannot, however, replace the text of the safety instructions. Therefore, always read thoroughly the full text of the safety instructions. The warnings and notes are separated in these operating instructions as follows and categorised by the following danger levels by means of various symbols.

<b>DANGER</b>	<b>Brief description of danger</b>
	<p>There is an imminent danger to life and limb of the user and / or third parties when the instructions are not followed precisely or the circumstances described are not taken into account.</p> <p>The type of danger is indicated by a symbol and explained in the accompanying text in more detail. In this example the general sign of danger is used.</p>
<b>WARNING</b>	<b>Brief description of danger</b>
	<p>There is an indirect danger to life and limb of the user and / or third parties when the instructions are not followed precisely or the circumstances described are not taken into account.</p> <p>The type of danger is indicated by a symbol and explained in the accompanying text in more detail. In this example the general sign of danger is used.</p>
<b>ATTENTION</b>	<b>Brief description of danger</b>
	<p>There is a potential risk of injury or damage to property when the instructions are not followed precisely or the circumstances described are not taken into account.</p> <p>The type of danger is indicated by a general sign and explained in the accompanying text in more detail. In this example the general sign of danger is used.</p>
<b>NOTE</b>	<b>Brief description of additional information</b>
	<p>Attention is pointed to special conditions or additional important information on the respective subject.</p>
<b>INFO</b>	<b>Short title</b>
	<p>Contains additional information on work assisting features or recommendations on the respective subject.</p>

## 2 Safety Instructions

### 2.1 Introduction

The chapter on safety instructions describes the risks associated with the appliance in terms of product liability (according to the EU Machinery Directive).








The safety instructions should warn of hazards and help to avoid damages to persons, the environment and property. Please make sure that you have read and understood all the safety instructions given in this chapter.

You must comply with the respectively valid national and international Safety at Work Regulations. The manager is responsible for the valid regulations he/she has to provide. He/she must acquaint himself/herself and the operator with the new regulations.

### 2.2 Warning Symbols Used

Symbols are used in these operating instructions to point out the dangers that can occur while operating or cleaning the appliance. In both cases, the symbol provides information on the type and circumstances of danger.

The following symbols can be used:

	General hazardous area
	Hazardous electrical voltage
	Risk of pulling in
	Risk of hand injuries
	Risk of crushing
	Risk of hot surfaces
	Wear hand protection

### 2.3 Safety Instructions for Appliance Safety

Safe operation of the appliance depends on appropriate and thorough use. Negligent handling of the appliance can lead to danger to life and limb of the user and / or third parties as well as hazards to the appliance itself and the other operator's property.

The following points are to be observed to ensure the appliance safety:

- The appliance may only be operated as intended, when it is in perfect condition with regards to technical standards, with awareness of safety and hazards and in accordance with the operating instructions.
- All the operating and actuating elements must be in a perfect and functionally reliable condition with regards to technical standards.
- Only operate the conveyor system when all the safety devices or emergency stop devices are available and function properly. There should be easy access to the emergency stop button. Do not remove safety devices.



- Comply with the safety instructions and hazard warnings on the conveyor system and make sure they are easy-to-read.
- The appliance must be checked for external visible damages and defects whenever it is put into operation. In case of damages, inform immediately the competent bodies and switch off the conveyor system.
- Setting up, assembly, dismantling, startup, operating, maintenance and overhaul are only to be carried out by trained operating staff.
- Modifications or retrofits of the equipment are only permitted in consultation with the manufacturer and on receipt of his written agreement.
- Stationary conveyor systems are designed for permanent installation.

### 2.3.1 Special safety instructions for mobile conveyor systems

- The conveyor systems are designed only for manual transport. Transport using any kind of devices is not permitted.
- Conveyor systems can start moving on their own and randomly if the casters are not applied.
- Switch off the conveyor system, pull out the mains plug and put it on the belt before transporting it.
- Never pull the mains plug out of the socket by the lead.
- Before moving the conveyor system release the locking brakes. Moving the appliance with the applied locking brakes can damage the chassis!
- Do not move the appliance over inclined surfaces or stairs. When approaching walls and moving round obstacles always pay attention to persons in the way.
- When transporting the conveyor system, do not move it faster than a walking pace. It is difficult to brake and steer heavily laden appliances. If necessary, ask for assistance when transporting the appliance.
- When moving the conveyor system make sure that the appliance will not tip over due to outside influences or inattention. If, nevertheless, it tips over never try to catch the conveyor system.
- Secure the conveyor system against rolling away before putting it into operation.
- Do not stop the appliance on sloping floors. Before placing the appliance in position make sure that the floors are level and even and the conveyor system is level.

## 2.4 Position of the Emergency Stop Button

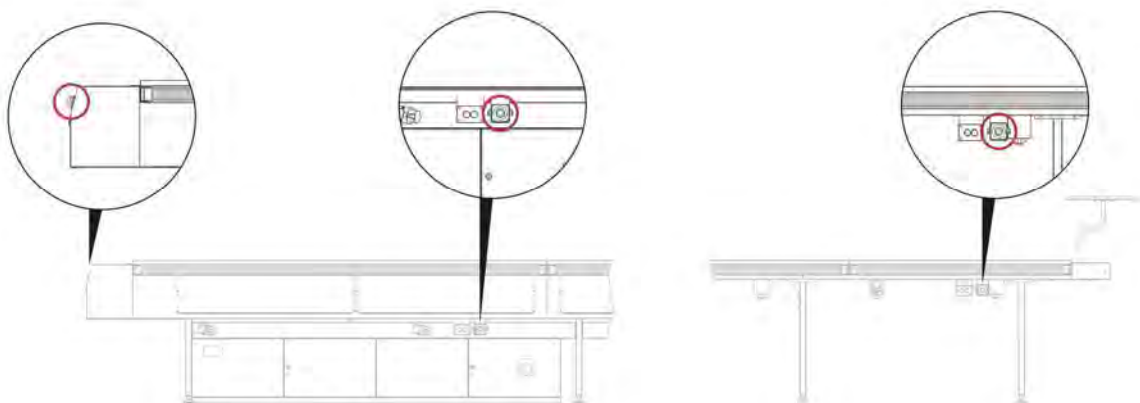


Figure 1 Position of the Emergency Stop button (option)

## 2.5 Safety Instructions for Transport and Installation

---

The following points are to be observed when transporting the conveyor system:

- When loading, use only hoists and load lifting devices approved for the weight of the parts to be lifted.
- On replacing heavy single components and major assemblies they are to be fixed and secured at hoists in such a way as to rule out any hazards from them.
- Securing sling gear at the lifting lugs of the conveyor system must be done in such a way as to rule out the risk of any falling loads.
- Use transport vehicles that are approved for the weight of the conveyor system.
- Parts that have possibly been dismantled prior transport must be fitted back and fastened before putting the appliance into operation.
- Even in case of a minor relocation switch off the conveyor system at the mains or disconnect it from any power supply.
- In no case put a defective appliance into operation and inform the supplier immediately.

## 2.6 Safety Instructions for Use and Operation

---

The following points shall be observed when using and operating the appliance:

- Staff are to be instructed in the use and operation of the conveyor system before it is started.
- Loose items of clothing (e.g. scarf or tie) and jewellery are not to be worn when working on the conveyor system. Otherwise there is the risk of being pulling in by rotating machinery parts.
- Unimpeded access to the EMERGENCY STOP button must be on hand at all times.
- Make sure that no-one is at risk from a startup up of the conveyor system before switching it on.

## 2.7 Safety Instructions for Maintenance and Care

---

The following points shall be observed when carrying out any maintenance operations:

- Take the conveyor system out of operation, switch it off and secure against unauthorised reactivation before performing maintaining or troubleshooting operations. When operating on the electrical installation, the appliance is to be switched off at the mains and secured against reactivation.
- Only persons with qualifications and knowledge of electrical engineering may perform maintenance and repair work on electrical devices.
- If it is required to maintain or repair live parts, you should in any case call in a second person.
- You have to meet the deadlines for maintenance and care specified in the operating instructions.
- Before proceeding with maintenance and repair work close the maintenance area and the access to the working area for unauthorised persons. If necessary place an indication sign that draws attention to the running maintenance and repair work.
- Observe the valid product safety regulations when handling oils, greases and other chemical substances.
- Lubricants must be compatible with foodstuffs (e.g. edible oil).
- Carry out all the checks and inspections of the appliance on a regular basis. Remedy immediately deficiencies, such as loose screw connections, melted or damaged leads.
- Fit the dismantled safety devices back to the appliance and check them for proper functionality after completing maintenance and repair work.
- For reasons of hygiene the cleaning instructions shall be strictly observed.
- Never clean the running conveyor system.
- Do not clean the conveyor system with steam-jet or high-pressure washers.

- Take the conveyor system out of operation and switch it off at the mains in any area where steam-jet or high-pressure washers are to be used.

## 2.8 Safety Instructions for Troubleshooting

---

The following points shall be observed when carrying out any trouble shooting operations:

- The local applicable Accident Prevention Regulations must be observed.
- Take the conveyor system out of operation, switch it off and secure against unauthorised reactivation before performing maintaining or troubleshooting operations. When operating on the electrical installation, the appliance is to be switched off at the mains and secured against reactivation.
- Observe the valid product safety regulations when handling oils, greases and other chemical substances.
- Wear suitable protective clothing when carrying out any repair work.
- Only authorised specialists may perform all repair work.
- Tighten the loosen screw connections and fit the safety devices back to the appliance if dismantled and check them for proper functionality after completing the repair work.
- Defective components should only be replaced with original parts.

## 2.9 Notes on Specific Hazards

---

### Electrical energy

- All work on the electrical installations should only be carried out by a certified electrician or by authorised specialists under supervision and monitoring of a certified electrician according to the certain electro-technical regulations.
- The appliances that inspection, maintenance and troubleshooting work is performed on must be switched voltage free on and secured against reactivation, when the voltage is not required for this kind of work. This must only be carried out by a certified electrician.

## 3 Description and Technical Data

---

### 3.1 Performance Description

---

The conveyor system is designed to convey trays loaded with crockery. The conveyor system conveys the trays to the following work step. Depending on the type used, the conveying system conveys either clean trays loaded with portioned meals or trays containing dirty crockery.

The crockery return belt system (SGR) is used mainly to hold up gastronorm and euronorm trays and to clear away continuously and quickly trays with dirty crockery, cutlery, glasses and napkins. Members of the operating staff clear away the trays loaded with dirty crockery items that are conveyed to the washing area.

The food distribution belt system (SPV) is used mainly to hold up gastronorm and euronorm trays and to load continuously and quickly trays with crockery, cutlery, glasses and napkins. Serving devices and operating staff that stays at the conveyor system load trays and serve portions on crockery items. To serve meals up to the guest area, you can use other peripheral devices at the end of the belt.

Owing to the modular design and the wide number of standard components, the conveyor system can be perfectly suited to any premises. You can use a lot of other peripheral devices and optional accessories with the conveyor system that will make your work processes significantly easier. Components suitable for use with foodstuffs and easy-to-clean construction ensure the highest hygienic standard.

### 3.2 Intended Use

---

The conveyor system is mainly designed to hold up gastronorm and euronorm trays. Any other use is not intended.

The crockery return belt system (SGR) is used to hold up and to convey trays with dirty crockery, cutlery, glasses and napkins.

The food distribution belt system (SPV) is used to hold up and to convey trays with portioned meals, clean crockery, cutlery, glasses and napkins.

The intended use means the predetermined procedures, compliance with the indicated specifications and use of the delivered or additionally available original accessories.

Any other use of the appliance is considered as unintended use.

### 3.3 Improper Use

---

Any other use, especially loading of the conveyor system with the other loads as given, is not permitted.

In particular, transport of materials hazardous to foodstuffs is considered as unintended use.

Do not transport heavy and sharp-edged items on the conveyor system. It is not permitted to convey stacked crockery items.

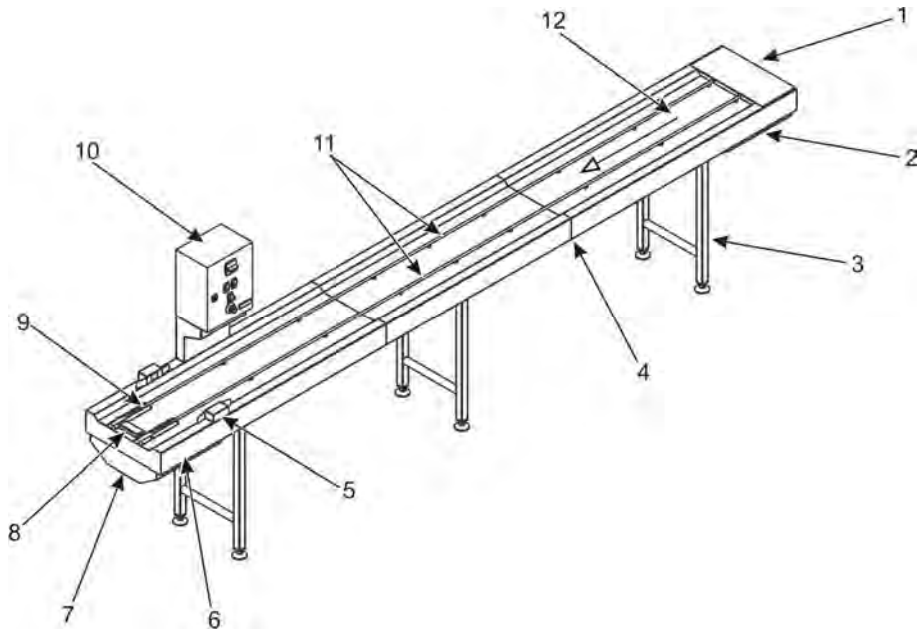
Do not allow people to sit or store objects on the conveyor system. Transport of people is not permitted.

It is not permitted to modify or retrofit the conveyor system. Such modifications can pose safety hazard and are considered as unintended.

The manufacturer and suppliers are not liable for any consequential damages resulting from an unintended use. No liability is assumed and no warranty claims can be submitted for damages caused by improper use.

## 3.4 Appliance Description

### 3.4.1 View of the crockery return belt system (SGR)



**Figure 2** View of the appliance SGR

- |   |   |    |                                 |
|---|---|----|---------------------------------|
| 1 | Beginning of the belt                   | 7  | End of the belt                 |
| 2 | Deflection element with conveyor roller | 8  | Limit switch                    |
| 3 | Belt system leg                         | 9  | Finger protection               |
| 4 | Connector                               | 10 | Control with operating elements |
| 5 | Light curtain                           | 11 | Round belt                      |
| 6 | Drive component                         | 12 | Conveying direction             |

### 3.4.2 View of the food distribution belt system (SPV)

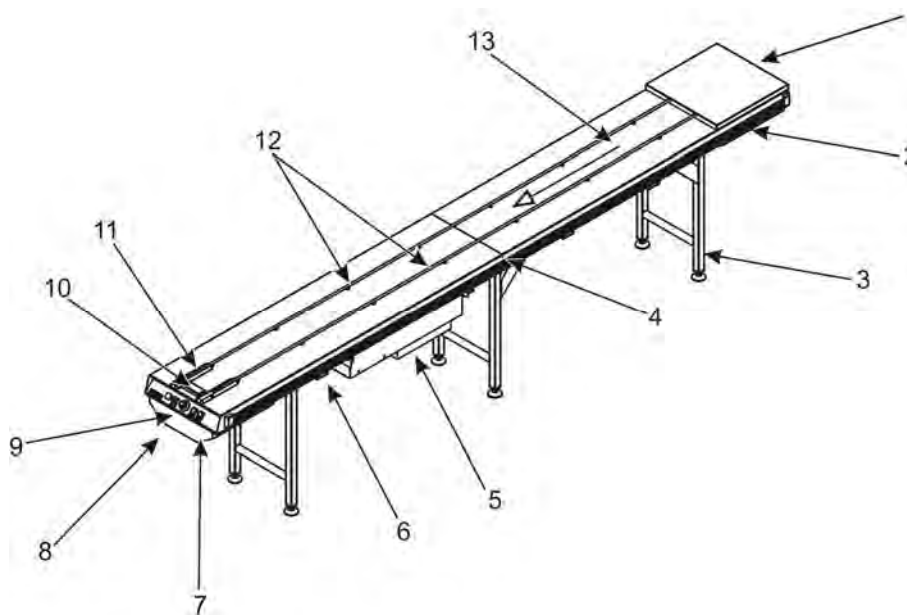


Figure 3 View of the appliance SPV

1	Beginning of the belt	8	End of the belt
2	Deflection element with conveyor roller	9	Operating elements
3	Belt system leg	10	Limit switch
4	Connector with holder	11	Finger protection
5	Control	12	Round belt
6	Emergency Stop button	13	Conveying direction
7	Drive component		

### 3.4.3 Equipment and optional accessories

You can install and fit the conveyor system with optional accessories in various ways:

- **Types of installation (SGR and SPV):**  
The standing alone model of the conveyor system is mounted on stands. A combination of wall and base installation is possible.  
A mobile model includes 2 swivel casters per belt system leg. All the swivel casters have total brakes for safety reason.
- **Plastic shelves in the base (SGR and SPV)**  
The plastic shelves are to be used as store place in the base. Put the elements on to the long rails fitted in the base of the conveyor system. The shelves can be used even at maximum load (up to 100 kg/m) for longer time at the temperature between -30 °C and +70 °C. The plastic shelves can be easily removed to clean the appliance.
- **Mechanical rocker limit switch (SGR and SPV)**  
The rocker limit switch is pivot-fitted on the frame surface between the finger-protection elements. Loads press down the rocker limit switch as a result of which an electrical signal is generated which stops the belt movements. The switch mechanism is protected on all sides against ingress of liquids and dirt particles. Cleaning is only to be done when the belt is switched off. The belt automatically starts to run again once the rocker limit switch is released.
- **Photo-electric limit switch (SGR and SPV)**  
The photo-electric limit switch is installed in the frame surface at the end of the belt between the round belts. The effect of a non-transparent part e.g. a tray moving across the photo cell is to trigger a signal which stops the belt movements. The belt automatically starts to run again once the photo cell is released.

- **Pneumatic foot switch (SPV only)**  
The foot switch allows to start and stop the conveyor belt. It is used in addition to the operating elements on the control panel.
- **Patient card drawer (SPV only)**  
The patient card drawer holds up patient cards and can be quickly and completely taken out without any tools. It is fitted under the conveyor belt at the beginning of the belt system. Do not exceed the maximum load of 25 kg.
- **Rotary table (SPV only)**  
Use the rotary table that is fitted on the beginning of the belt at about 250 mm from the front side to keep your records or other information. The rotary table and the support tube rotate independently of each other. Rotate the rotary table only when there are no objects on its surface and there are no people around it. Do not exceed the maximum load of about 5 kg. The rotary table is delivered disassembled. To assemble the rotary table, insert the support tube into the plastic part.
- **Hinged board (SPV only)**  
The hinged board is an additional storing shelf and is fitted flush at the end of the belt. You can fold up the board lifting it slightly up and raising it to an angle of 90°. There should be no objects on the board when folding it down. Do not exceed the maximum load of about 10 kg, otherwise there is a risk of damage to materials.
- **Curved elements (SGR)**  
Curved elements are for connecting straight segments. They are available in standard 45° and 90° angles. Acute angles in excess of 135° are provided with their own drive. These curved elements feature a single belt running centrally across guide rollers. Where the straight belt is continued, the trays are supported by plastic runners. Appropriately adapted stainless steel tray guiding rails undertake guidance at the sides.
- **Tray guiding rails for bends (only SGR)**  
Tray guiding rails are needed to correctly guide trays in curved sections. Transporting trays in bends without tray guiding rails will not work as they may get turned round, twisted and jammed. A set consists of plastic blocks, stainless steel tray guiding rails and fastening material. The plastic blocks are bolted with the structure and are for mounting the tray guiding rails. As the tray guiding rails are inserted in blocks, they ensure a high degree of stability. The tray guiding rails in the sets are appropriately bent to fit.
- **Light curtain (SGR only)**  
The light curtain prevents the further movement of loaded trays beyond the end of the belt. Place the light curtain at the middle, about 350 mm from the end of the belt.  
Light curtain and reflector are mounted at the end of the belt as a height restrictor (crockery detector) and fitted in stainless steel covers. They must be fastened opposite and flush on the pan edging bar. The optics are adjusted on the basis of consultation. The minimum and maximum height above the edge is 5 mm and 20 mm respectively.
- **Sorting bridge (SGR only)**  
The sorting bridge is used for a safe storage on the opposite belt casing. You can fold it up by lifting it slightly up and raising it to an angle of 90°. The unfolded sorting bridge is flush with the belt casing. The hinged model without a chute but with a sound absorbing panel attached at the bottom can be fitted on the belt upon agreement. The maximum load of the sorting bridge is 25 kg.
- **Tilt switch (SGR only)**  
The tilt switch prevents any further movement of loaded trays beyond the end of the belt. With automatic stacking, a tilt switch as a height restrictor or crockery detector is fitted at the end of the belt in the sorting area.  
The height restrictor can be universally adjusted to all the usual crockery heights. The overall height is 190 mm +/- 15 mm. Mounting of the tilt switch on the belt casing is such that the front edge is positioned 250 mm from the edge of the belt. This makes it possible to put the belt directly at the wall, thus saving space. The tilt switch is always to be positioned in front of the switch box. Otherwise, bottles on the tray would not be recognized in time and might collide with the underside of the switch box.
- **Magnetic cutlery pickup device (SGR only)**  
The magnetic cutlery pickup device lifts, transfers and ejects magnetically detectable cutlery items into the corresponding collecting carriages. The device with magnet and internal conveyor belt is horizontally mounted above the conveyor belt. Any other objects projecting above are not to be detected by the cutlery pickup device. They must be removed before lifting.
- **Queue-locked circuit (SGR only)**  
The queue-locked circuit is needed for continuous tray removal. The round belt conveyor runs at a

constant speed in the tray hand-in area of the guest room. Behind the hand-in section there is a band segment with separate motor and round belt. When a tray leaves the hand-in area, the belt moves on by a little over one tray length. The following belt (behind the hand-in area) is thus loaded with a tray in cycles. A photo-electric switch in the casing acts as the signaller. If required, the queue-clocked circuit can be switched off. With the standard operating elements, the selection switch is arranged on the switch box.

- Hand-in area with collecting pan trough (SGR only)  
The collecting trough collects any spilled liquids in the hand-in area, thus stopping the round strap belts being dirtied. No tool is needed to remove the perforated plates for cleaning the collecting pan.
- Intermediate segment (SGR only)  
The intermediate segment for the sorting area with one-sided structure taper, smooth casing surface and centre base is needed for more comfortable working. Thanks to the structure taper, work can be carried out right next to the belt casing and objects can be easily handed over to the other side.

### 3.5 Technical Data

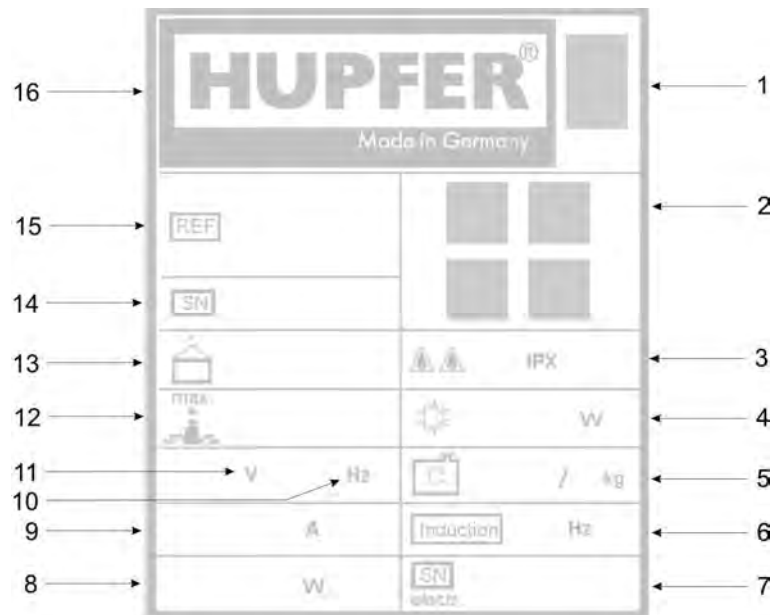
SGR   SPV	Value	Dimension	Note
Structure length (min/max)	3000 to 13000	mm	The length of the structure can be varied into 500 mm steps.
Conveying length (min/max)	2550 to 12550	mm	The real structure length is calculated from the structure length minus 250 mm at the input area and 250 mm at the output area.
Width	500	mm	
Total height	900	mm	+/- 25 mm
Weight	approx. 15	kg/m	plus 30 kg per conveyor system
Number of legs	3 to 6	Pc.	depending on the length of the conveyor system
Diameter of round belt	12	mm	
Distance between round belts	180	mm	
Motor power	0.12	kW	Bevelled gear drive motor with frequency converter fitted outside (FUG)
Protection class of motor	IP 55		Thermal class F, protect against overheating by thermal contact switch
Speed range	4 to 20	m/min	continuous setting
Protection class of switch cabinet	IP 65		
Electrical connection	400	V 3 PH N PE 50 Hz	
Basic design			without sockets. Basic equipment without FI (RCD) if need be, arrange upstream by the operator in keeping with the public EVU regulations
Types of sockets	230 230 400 400	V Schuko® V CEE V CEE 16 A V CEE 32 A	
Power consumption (without sockets)	0.12	kW	One motor plus power supply 0.4 kW. The total power of the belt systems without sockets depends on the type and number of consumers. Basically, 3,6 kW per socket, but depending on the cross section and the protection of the supply line taking into consideration the load diversity factor.
Operating and ambient conditions	+5 to +55	°C	

The corresponding test marks can be found on our home page at [www.hupfer.de](http://www.hupfer.de).



### 3.6 Rating Plate

The rating plate of the conveyor system is fitted on the inner side of the door of the switch cabinet arranged at the bottom of the conveyor system.



**Figure 4** Rating plate

- |   |                            |    |                            |
|---|----------------------------|----|----------------------------|
| 1 | Disposal of old appliances | 9  | Nominal current            |
| 2 | Test mark                  | 10 | Frequency                  |
| 3 | Protection class           | 11 | Nominal voltage            |
| 4 | Chilling capacity          | 12 | Payload                    |
| 5 | Coolant                    | 13 | Own weight                 |
| 6 | Induction frequency        | 14 | Serial number/Order number |
| 7 | Current serial number      | 15 | Item and brief description |
| 8 | Electric power             | 16 | Manufacturer               |

## 4 Transport, Assembly, Putting into Operation and Decommissioning

---

### 4.1 Transport

---

The delivered conveyor system with the length of up to 6 m is completely assembled, wired and set so that it is ready for operation.

Conveyor systems with the length of more than 6 m will be delivered segments that have to be assembled.

When loading, use only hoists and load lifting devices approved for the weight of the conveyor system. Only the transport vehicles may be used that are approved for the weight of the appliance.

According to the valid purchase contract, the scope of delivery is specified in the shipping documents attached to the delivery item.

### 4.2 Assembly

---

#### DANGER

#### Hazardous electrical voltage



The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries.

All work on electrical installations or operating materials should only be carried out by a certified electrician or by trained personnel under supervision and monitoring of a certified electrician according to the certain electro-technical regulations.

---

#### DANGER

#### Defective Emergency Stopper



An instance of fault e.g. from defective contactors may cause the drives to continue to run even after the emergency stopper has been pressed.

---

#### ATTENTION

#### Injury to persons



Only two people are to carry out mounting the segments and the round belts. Wear protective goggles and safety gloves when putting down and welding the round belt.

---

#### INFO

#### Conveyor systems in excess of 6m

The following section only applies to conveyor systems in excess of 6 m which need not be delivered and mounted as a unit.

---



Check the premises before setting up the conveyor system. Flaws can be detected and improved at an early stage. Observe the following points:

- The floors in the premises where the appliance is to be set up must be level and correspond to the required load-bearing capacity of 196 N/m<sup>2</sup> (20 kg/m<sup>2</sup>).
- There must be a possibility after consultation to connect the conveyor system to the mains.
- We do not recommend dowelling the conveyor system with the floor of the premises because of the moisture barrier layer existing in the most of cases.

The user of the conveyor system must take the following measures beforehand to ensure the safety of the operating staff:

- Specify the field of application and draw up corresponding safety instructions.
- Instruct the operating staff in safety.
- Give the operating staff training.
- Mark hazardous areas.


#### 4.2.1 Assembling the segment

<b>ATTENTION</b>	<b>Injury to persons and/or damage to property</b>
	Parts of the conveyor system may topple over during assembly and cause injuries and damage. The segments should always be mounted by 2 people. Get some help, if need be.
<b>ATTENTION</b>	<b>Damage to property</b>
	Do not place the segments onto the floor with the surface facing down, since they can get scratched or damaged. Use a suitable piece of material to place the segments.
<b>INFO</b>	<b>Disposal of packing material</b>
	The packing consists of recyclable materials and can be disposed of appropriately. Thereby, the different materials are to be separated and disposed in an environmentally compatible manner. In any case, the local bodies responsible for disposal are to be involved for this purpose.

Proceed as follows when mounting the segments of the conveyor system:

- Remove the segments from the transport packaging and arrange in the position envisaged.
- When assembling begin with the end of the belt. When doing this, place the first segment on the marked position.
- Screw the segment under the next part of the belt. When doing this, the first person holds the segment while the second person is pushing the next part of the belt on to the connector of the segment the first person is holding.
- Put together the edges of the segments so that they are flush and screw them together from below.
- Continue with the assembly as described above.
- Check again the inclination and align the conveyor system on the screw feet horizontally with the spirit level until it is level. Normally, the height is 900 mm.

#### 4.2.2 Assembling the round belt


<b>ATTENTION</b>	<b>Risk of injury from snapping round belts</b>
	<p>Tensioning may cause the round belt to snap and shoot upwards.</p> <p>Work together with another person. Hold the ends of the round belt as near as possible to the point of connection. Wear protective goggles and safety gloves during the entire assembly procedure.</p>
<b>NOTE</b>	<b>Required tools</b>
	<p>Fitting and welding the round belts is only to be done with the HUPFER® tool which is provided. The welding and tightening set from HUPFER® is included in delivery for assembly purposes.</p> <p>The welding and tightening set consists of the jockey for tightening the round belts, welding tongs for keeping the round belt ends together, the welding iron for welding together the round belts and the mitre cutter.</p>
<b>NOTE</b>	<b>Smooth round belts</b>
	<p>Only smoothly mounted round belts ensure that the trays are reliably and properly transported on the conveyor.</p> <p>Make sure that the round belts do not get twisted when carrying out the operation.</p>

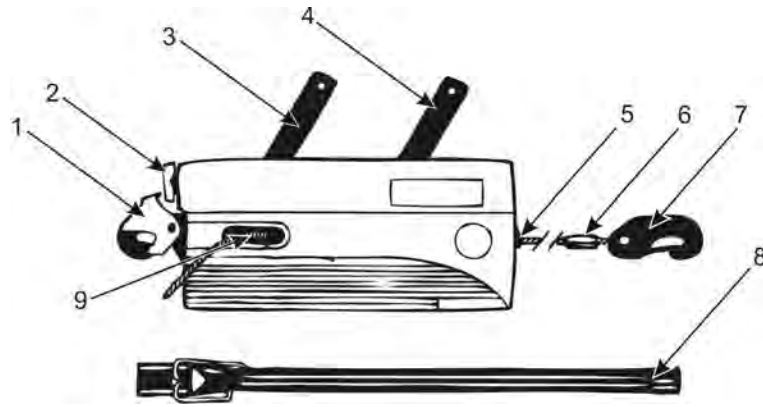
##### Step 1: Fitting the round belts

To fit the round belt, proceed as follows:

- Keep hold of one end of the round belt, unravel it from the drum and cut to the required length.
- Remove the cover plate at the beginning of the belt system and guide the round belt across the aluminium disk downwards through the belt casing and across the conveyor roller.
- Guide the round belt to the end of the belt system and upwards over the conveyor roller and aluminium disk through the belt casing. The two ends of the round belt are now now opposite each other on the surface of the structure.

##### Step 2: Stretching the round belt

<b>ATTENTION</b>	<b>Risk of injury from snapping round belts</b>
	<p>Tensioning may cause the round belt to snap and shoot upwards.</p> <p>Work together with another person. Hold the ends of the round belt as near as possible to the point of connection. Wear protective goggles and safety gloves during the entire assembly procedure.</p>
<b>NOTE</b>	<b>Operating instructions - Jockey</b>
	<p>The jockey is needed to tension the round belts. The operating instructions of Greifzug GmbH are enclosed with the jockey.</p> <p>Read through the operating instructions before beginning with the tensioning operation. Pay particular attention here to the sections on 'Safety instructions', 'Description of the appliance' and 'Appliance use'.</p>




**Figure 5** View of the appliance SPV

- |   |                                 |   |                                 |
|---|---------------------------------|---|---------------------------------|
| 1 | Appliance hook with safety flap | 6 | Traction cable                  |
| 2 | Releaser                        | 7 | Load hook with retaining spring |
| 3 | Feed lever                      | 8 | Lever bar                       |
| 4 | Return motion lever             | 9 | Cable outlet                    |
| 5 | Cable inlet                     |   |                                 |

To tension the round belt, proceed as follows:

- Take the jockey out of the package and place upright on the structure surface.
- Mount the enclosed traction cables at the appliance hook with safety flap (1) and at the load hook with retaining spring (7) of the jockey.
- Place the traction cables (6) onto the structure surface parallel to the round belt.
- Fix the round belt with the wire stretchers at the other ends of the traction cables. In so doing, compress the jaws to prevent any slipping out occurring.
- During the whole tensioning operation ensure that the round belt is held by the jaws of the wire stretchers.
- To tension the traction cable (6), attach the lever bar (8) onto the feed lever (3) so that the retaining spring snaps into place in the lever hole. Tension the traction cable by levering uniformly from stop to stop until the two ends of the round belt overlap by some 10 to 15 mm.

**Step 3: Heating the welding iron**

<b>WARNING</b>	<b>Hot surface</b>
	<p>To connect the two round belt ends, the material needs to be melted with the welding mirror of the welding iron. In so doing, the welding mirror can reach temperatures in excess of 250°C. There is a risk of scolding on coming into contact with the surface.</p> <p>Avoid any direct contact with the welding mirror during the operating period and the heating/cooling phases.</p>
<b>INFO</b>	<b>Heating the welding iron</b>
	<p>To cut down on the time needed for the work, heating-up can be done before tensioning.</p>

- Place the welding iron on a non-combustible base and heat up for some 8 minutes.

#### Step 4: Attach the welding tongs

<b>NOTE</b>	<b>Required tools</b>
	Welding tongs, with which the round belts can be precisely tensioned and properly installed, are needed for the rest of the work steps.

- Undo the limb screws of the welding tongs and open the limbs.
- Insert the round belts into the welding tongs. In doing so, see to it that there is a 2.5 to 3.0 mm gap between the two round belt ends to take up the welding mirror of the welding iron.
- Close the limbs of the welding tongs and fix with the 4 limb screws.
- Slightly press together the hand grips of the welding tongs and check whether the two round belt ends can be flush-closed.


#### Step 5: Welding the round belts

To weld the round belt, proceed as follows:

- Insert the hot welding mirror of the welding iron into the gap between the two round belt ends.
- Slight press together the hand grips of the welding tongs. The hot welding mirror causes the material to melt and a bead of liquefied plastic arises at the round belt ends.
- Move the welding iron slightly up and down. Release the hand grips of the welding tongs should bubbles clearly form on the bead.
- Open the welding tongs, remove the welding iron and place on a non-inflammable base.


<b>NOTE</b>	<b>Removing the welding iron</b>
	The liquefied plastic of the round belts (bead) is not to be extracted with the filler.

- Then firmly press together the hand grips on the welding tongs and screw down the side clamp screw. Follow this up by releasing the hand grips of the welding tongs.
- Leave the welding tongs in this condition for 5 to 8 minutes until the round belt has cooled.
- Check at the bead to see if the round belt has completely cooled down.

<b>ATTENTION</b>	<b>Risk of injury from snapping round belts</b>
	Welding which is not properly undertaken may result in the round belt snapping and shooting upwards. Slowly remove the welding tongs and jockey. Wear protective goggles and safety gloves during the entire operation.

- Undo the screws of the welding tongs and remove them.
- Slacken the wire stretchers and remove the jockey.

#### Step 5: Cleaning the welding iron

<b>WARNING</b>	<b>Hot surface</b>
	The welding mirror can reach temperatures in excess of 250°C during the operating and heating/cooling phases. There is a risk of scolding on coming into contact with the surface. Let the welding iron cool down for a time before starting any cleaning.

**NOTE**

**Cleaning the welding mirror**

To avoid any damage the welding mirror is to be cleaned when warm. Cleaning it when cold may result in damage to the coating.

- Disconnect the welding iron from the mains supply.
- Use a cloth to wipe the cooled yet still warm welding mirror until all contaminations have been removed.
- Then place the welding iron on a non-inflammable base to cool down completely.

**Step 6: Final work**

Further work on the round belt and an examination into its strength is called for following welding.

- Use a sharp knife to gently cut off the bead on the round belts.
- Check the weld as to stability by turning a number of times through 180°.
- Check the tension of the round belt.

**NOTE**

**Tensioning the round belts**

Insufficient tension may lead to an uneven speed of the conveyor belt, racing of the drive wheels and grinding noises. If this is the case, the round belts must be re-tensioned.

- Withdraw the protective sheet from the belt casing once the entire procedure is over.

Assembly of the conveyor system is now concluded.

## 4.3 Putting into Operation

**DANGER**

**Hazardous electrical voltage**



The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries.

All work on electrical installations or operating materials should only be carried out by a certified electrician or by trained personnel under supervision and monitoring of a certified electrician according to the certain electro-technical regulations.

**ATTENTION**

**Damage to property and injuries to persons**



Damaged machinery parts and safety equipment of the conveyor system may result in damage and injuries.

Before each and every operation, examine the conveyor system as to signs of any external damage and faults - particularly at the safety equipment. Any faults noted must be immediately reported to the quarters responsible. If need be, you might have to immobilize the conveyor system.

### 4.3.1 Connecting the conveyor system

Technical specifications of the mains in some countries deviate from those given in these operating instructions. Connection data of the conveyor system (details on the rating plate) must be compared with the connection conditions of the mains supply at the location involved.

The following points are to be observed when connecting the conveyor system:

- Have the power supply installed and the conveyor system earthed in a professional manner.

NOTE	Residual current circuit-breaker
	No residual current circuit-breakers F1 (RCD) for the possibly fitted sockets at the belt are installed as standard in the belt control system. However, the EVU regulations may make it necessary for the operator of a conveyor system to install residual current circuit-breakers FI (RCD).

- Connect the connecting lead with the distributor of the conveyor system.
- Connect control system/distribution
- Connect the three-phase motor so that it rotates in a specified direction.
- Protect power supply cables against exposure to moisture.
- In case of unintended reactivation, stop the appliance by using the control system.

### 4.3.2 Measures for putting the appliance into operation

There should be no loads on the system while putting it into operation.

The following putting-into-operation points must be examined to ensure safety at the conveyor system:

- All screw connections are fitted at the conveyor system and the protective equipment properly installed.
- No unusual running noises of the round belts or at the drive are present.
- There are no foreign objects at/on the conveyor system, light curtain or limit switches.
- The EMERGENCY STOP button is unlocked.
- The potentiometer is set.

In case of proper functionality you can put the conveyor system into operation.

## 4.4 Decommissioning, Storage and Recycling

To take the conveyor system out of operation, proceed as follows:

- Take the conveyor system out of operation and secure it against unauthorised reactivation.
- Switch off the conveyor system and the motor at the mains.

The conveyor system must be temporarily stored in a dry and frost-free environment. The conveyor system must be kept covered with a suitable covering material to be protected against dust ingress.

The appliance kept in the storage location must be checked for damages and corrosion every 6 months.

Before the appliance is taken back into operation it must be clean and dry.

NOTE	Condensed water formation
	Ensure that there is sufficient ventilation and no large temperature fluctuations in the storage location to avoid condensed water formation.



To dismantle the conveyor system, proceed as follows:

- Take the conveyor system out of operation and secure it against unauthorised reactivation.
- Switch off the conveyor system, the control and the motor at the mains.
- Disconnect the round belt with a knife or pliers and remove.
- Dismantle the control and operating elements.
- Unscrew the segments of the conveyor system beginning with first one at the beginning of the belt.
- Dismantle all segments up to the end of the belt system.
- Clean all the machine parts to remove used lubricants.
- Remove all seals from the bearings.
- Separate all the plastic, electronics and metal parts from each other

If the conveyor system is required to be recycled, all the operating and auxiliary materials must be disposed in an environmentally compatible manner. The recyclable materials must be properly separated and disposed in an environmentally compatible manner according to the local Waste Disposal Regulations. In any case, the local bodies responsible for disposal are to be involved for this purpose. Separate the reusable materials of the appliance (casters and plastic parts) before disposing or send the appliance to a recycling centre. Dispose the electronics at corresponding collection centres.

We offer our customers to dispose their waste appliances. Please contact us or one of our distribution partners.

Packaging and packing material can be sent to the recycling centre by indicating the waste disposal contract number. If you do not have the valid waste disposal contract number, you can ask for it at [HUPFER®](#) Customer Service.

#### NOTE

#### Disposal of electrical equipment



Electrical equipment is not a part of household refuse.

Please return the machine to the manufacturer for disposal purposes:

HUPFER® Metallwerke GmbH & Co. KG

Dieselstraße 20

48653 Coesfeld

☎ +49 2541 805-0

☎ +49 2541 805-111

[www.hupfer.de](http://www.hupfer.de)

[info@hupfer.de](mailto:info@hupfer.de)

## 5 Operation

### DANGER

#### Defective Emergency Stopper



An instance of fault e.g. from defective contactors may cause the drives to continue to run even after the emergency stopper has been pressed.

### ATTENTION

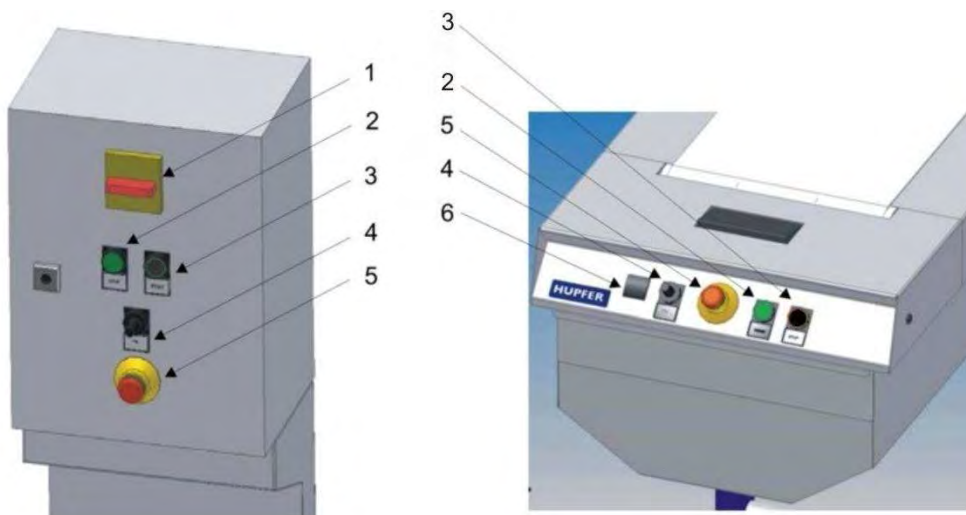
#### Rotating machine parts



There is a risk of crush injuries and injuries caused by being pulled into the appliance.

Never reach into the hazardous area of the conveyor system during operation. Before switching on the conveyor system make sure there no risk of reactivation of the belt.

### 5.1 Arrangement and Function of the Operating Elements



**Figure 6** Operating elements

- |   |                        |   |  |
|---|------------------------|---|--|
| 1 | Main switch (SGR only) | 4 | Potentiometer                              |
| 2 | Start button           | 5 | Emergency Stop button                      |
| 3 | Stop button            | 6 | Switch for reverse mode (option, SPV only) |

Position digit	Operating element	Function
1	Main switch (SGR only)	Switches the conveyor system on.
2	Start button	Starts the conveyor system.
3	Stop button	Stops the conveyor system if needed.
4	Potentiometer	Controls the speed of the belt: V min = 4m/min V max = 20m/min.
5	Emergency Stop button	Is used to switch off quickly the appliance in case of emergency. If you have pressed the Emergency Stop button, the power supply of the drives of the whole conveyor system will be disconnected.
6	Switch for reverse mode (option, SPV only)	Switches on the reverse mode of the round belt.

## 5.2 Operation

### ATTENTION

#### Rotating machine parts



There is the risk from the running round belt of crush-type injuries and being pulled into the appliance when the conveyor system is in operation.

Ensure when working at the conveyor system that one's fingers do not get caught under the round belts. Do not wear any loose-fitting clothing, such as scarves or ties, during operations.

Place the trays on the round belt uniformly to ensure smooth transportation.

The conveyor system keeps on running automatically. If required you can manually influence the conveying process by means of the operating console.

#### Switching on:

- Set the main switch (1) from the switch position 0 to the switch position 1. As a result, the conveyor system will switch on.
- Unlock the Emergency Stop button. The conveyor system is ready for operation.
- Set the belt speed on the potentiometer (4) to the value 1-2.
- Press the green start button (3) or the foot switch (option) to start the conveyor system.

#### Switching off / stop:

- The belt of the conveyor system will automatically stop moving, if the belt limit switch has been applied.
- Press the black stop button (2) or the foot switch (option) to stop the conveyor system if required.
- Set the main switch (1) from the switch position 1 to the switch position 0. As a result, the conveyor system will switch off.

## 5.3 Measures at the End of Operation

### ATTENTION

#### Rotating machine parts



There is a risk of crush injuries and injuries caused by being pulled into the appliance.


Wait until the belt comes to a standstill.


To take the conveyor system out of operation, proceed as follows:

- Do not put further trays onto the conveyor belt or make sure that the conveyor belt is cleared up.
- Switch off the conveyor system on the operating console.
- Disconnect the conveyor system from the mains with the main switch.

## 6 Fault Detection and Troubleshooting

### 6.1 Security Measures

<b>DANGER</b>	<b>Hazardous electrical voltage</b>
	The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries. Before looking for faults, take the conveyor system out of operation and secure it against unauthorised reactivation.

<b>DANGER</b>	<b>Defective Emergency Stopper</b>
	An instance of fault e.g. from defective contactors may cause the drives to continue to run even after the emergency stopper has been pressed.

### 6.2 Notes on Troubleshooting

Service work should only be carried out by authorised specialist staff.

Defective components should only be replaced with **HUPFER®** original parts. The modular design simplifies the replacement of individual components.

In the event of after-sales service and when ordering spare parts specify always the data given in the rating plate.

Regular inspections and maintenance of the appliance prevent disruptions to operation and ensure safety.

### 6.3 Fault and Action Table

Only a specialist staff authorised by HUPFER® may perform troubleshooting work.

Fault	Cause	Measures
The conveyor system does not run	Defective on site fuses	Have checked by an electrician
	Defective mains connecting lead or mains plug	Have interruption checked and repaired by an electrician
	Defective switch device	Have interruption checked and repaired by an electrician
	Emergency Stop button has been pressed (you can't see the green ring)	Unlock the Emergency Stop button (the green ring is visible)
	Main switch is not turned on	Turn on the main switch
	Final shut-down of the transportation system assigned	Clearing off the transportation system and keeping it clear
	Reflector dirty or faulty (if available)	Clean the reflector with a cloth or replace
	Dirty light curtain (if available)	Clean with a cloth
	Defective light curtain (if available)	Have the fault checked and repaired by an electrician
	Defective fine fuses	Have the fault checked and repaired by an electrician
Energy optimisation device switches on	Have the fault checked and repaired by an electrician	

Fault	Cause	Measures
	Mechanical rocker limit switch sticks (if available)	Clean and lubricate, if needed have the fault checked and repaired by an electrician
	Foot switch is not activated (if available)	Press the foot switch
You can't regulate the speed	Defective potentiometer or control unit	Have the fault checked and repaired by an electrician
Motor does not run	Fuse is blown	Have the fuses checked and replaced if required by an electrician
	Overload protection has been triggered	Switch on the overload protection and have the fault checked and repaired by an electrician
	Defective motor control unit (frequency converter)	Have the control unit checked and replaced if required by an electrician
	Defective motor	Have the motor checked and replaced if required by an electrician
The conveyor system does not convey	The conveyor belt is overloaded, the drive spins around	Take some loads from the conveyor belt and if needed check and re-stretch the round belt
The conveyor system conveys too quickly	Frequency converter setting is too high	The parameter should be set by an electrician
The conveyor systems does not switch off	Defective relay	Have the fault checked and repaired by an electrician
	Defective light curtain (if available)	Have the fault checked and repaired by an electrician
	Defective button	Have the fault checked and repaired by an electrician
	Defective control system	Have the fault checked and repaired by an electrician
Running noises	There is a lot of free space for the round belt or the round belt is stretched too much	Check and if needed re-stretch the belt
	Defective bearings in the rollers	Replace the casters
	Dirty or sticky surface	Clean with water
Conveyor belt run, one-sided	The round belt is stretched on one side	Check and if needed re-stretch the belt
	Drive and deflector rollers or structure are dirty	Clean with water and washing-up liquid
Round belt snaps	Round belt poorly welded or tangled	Re-tension round belt and weld
Tray does not run true	The tension is too low	Re-tension round belt and weld
Trays queue up in the bends	Distance between trays is not sufficient	Have a specialist set a greater distance at the frequency converter.

## 7 Care and Maintenance

---

### 7.1 Security Measures

---

**DANGER**

**Hazardous electrical voltage**



The electrical voltage may be considerably dangerous to limb and life of persons and lead to injuries.

Before performing cleaning and maintenance work, take the conveyor system out of operation and secure it against unauthorised reactivation.

---

**ATTENTION**

**Rotating machine parts**



There is a risk of crush injuries and injuries caused by being pulled into the appliance.

Before performing cleaning and maintenance work, take the conveyor system out of operation and secure it against unauthorised reactivation.

---

**ATTENTION**

**Risk of damages to property**



Due to poor maintenance there is a risk of injury and damages to property.

Meet the maintenance intervals and the specified deadlines for regular checks and inspections.

---

### 7.2 Hygiene Measures

---

The correct behaviour of the operating staff is decisive for optimal hygiene.

All persons must be informed about the locally valid hygiene regulations, observe them and comply with them.

Stick a waterproof plaster to cover wounds on the hands and arms.

Never sneeze or cough on clean trays.

### 7.3 Notes on Care and Maintenance Measures

---

**ATTENTION**

**Appliance damages**



Never use chloride-containing cleaning agents, abrasive cleaning powder or steel wool to clean the operating elements. Aggressive cleaning agents can destroy plastics and scratch the display.

Use lukewarm water and a soft cloth to clean the control panel.

---

The use of degreasing, chlorine-free agents (e.g. soapy water used normally in kitchens) and cleaning cloth is sufficient for cleaning. In no case clean the PVC surfaces with solvents and aggressive substances.

- Clean the round belt
- Clean the surface of the conveyor system
- Clean the dirty photo cell with a cloth and regularly clean the limit switch.
- Patient drawers are only to be cleaned when empty. The patient drawer must be pulled out. During wet cleaning ensure that the water deposits are removed.
- Regularly carry out a functional test on the light curtains and clean the optical equipment.
- Take out the perforated plate in order to clean the collecting basin.

Dry well the conveyor system after the wet and moist cleaning to avoid the development of mould and growth of germs and bacteria. Let the conveyor belt dry well after cleaning.

### 7.3.1 Maintenance

To ensure a long-lasting lifetime of the conveyor system, the regular maintenance is required. Appeared faults or damages must be immediately eliminated.

NOTE	Handling lubricants
When handling oils, greases and other chemical substances, follow the safety instructions which apply to them.	

Maintenance measures	Action	daily	weekly	monthly	interval
Visual inspection of the conveyor system for mechanical damages	perform		x		
Round belt as to correct tension	check				x <sup>1</sup>
Visual inspection of the electrical installation	perform				x <sup>1</sup>
Connecting lead and mains plug for mechanical damages	check				x <sup>1</sup>
Protective earth conductor and protection device	check				x <sup>1</sup>
Function of the main switch	check			x	
Function of the Emergency Stop button	check			x	
Engine box and deflection box	clean			x	
Function of the mechanical parts	check			x	
Round belt for damages and wear	check				x <sup>1</sup>
Bearing of the drive and deflection side	check			x	
Function of the limit switch	check			x	
Function of the conveyor rollers	check			x	

x<sup>1</sup> = every 6 months

### 7.3.2 Re-tension the round belt

#### ATTENTION



#### Risk of injury from snapping round belts

Tensioning may cause the round belt to snap and shoot upwards.  
Work together with another person. Hold the ends of the round belt as near as possible to the point of connection. Wear protective goggles and safety gloves during the entire assembly procedure.

#### NOTE

#### Shorten round belts

On the tension easing, the round belts must be shortened by approx. 1 cm per metre run.

Insufficient tension of the round belts may lead to an uneven speed of the conveyor belt, racing of the drive wheels and to running noises. The round belts must be separated and re-welded. Fracture or an incipient crack is also a reason for re-tensioning and welding the round belts.

- Before separation ensure that the round belt is fixed at the weld from both sides.
- Given a fracture, incipient crack or insufficient tension, accurately sever the round belt at the weld using a knife or scissors.
- Weld the round belts and at the same time follow the procedure laid down in Section 4.2.2 'Assembling the round belts'.

## 7.4 Special Care Instructions

The resistance to corrosion of stainless steels is based on a passive layer which is formed on the surface when oxygen is admitted. The oxygen in the air is sufficient for the formation of the passive layer, so that faults or damage to the passive layer can be remedied again automatically by mechanical action.

The passive layer develops or reforms more quickly when the steel comes into contact with flowing water containing oxygen. The passive layer can be chemically damaged or disrupted by agents having a reducing (oxygen-consuming) action when the steel comes into contact with them in concentrated form or at high temperatures.

Such aggressive substances are for example:

- substances containing salt and sulphur
- chlorides (salts)
- seasoning concentrates (e.g. mustard, vinegar essence, seasoning cubes, saline solutions)

Further damages can occur due to:

- extraneous rust (e.g. from other components, tools or rust film)
- iron particles (e.g. grinding dust)
- contact with non-ferrous metals (element formation)
- lack of oxygen (e.g. no admission of air, low-oxygen water).

General working principles for the handling of appliances made of "refined stainless steel":

- Always keep the surface of appliances made from stainless steel clean and accessible to the air.
- Use cleaning agents suitable for stainless steel. No bleaching and chloride-containing cleaning agents should be used.
- Remove layers of lime scale, grease, starch and egg-white daily by cleaning. Corrosion can occur underneath these layers due to lack of air admission.
- After each cleaning operation remove all cleaning agent residues by rinsing thoroughly with copious fresh water. Afterwards, the surface should be thoroughly dried.



- Do not bring parts made from stainless steel into contact with concentrated acids, seasonings, salts etc. for longer than is absolutely necessary. Acid fumes which generate during cleaning of tiles also promote the corrosion of "refined stainless steel".
- Avoid damaging the surface of the stainless steel, particularly by metals other than stainless steel.
- Residues of extraneous metals produce extremely small amounts of chemical elements which can cause corrosion. In any case, contact with iron and steel should be avoided because that leads to extraneous rust. If stainless steel comes into contact with iron (steel wool, steel particles from pipes, water containing iron), this can be a trigger for corrosion. Therefore, for mechanical cleaning use exclusively refined steel wool or brushes with natural, plastics or refined steel bristles. Steel wool or brushes with unalloyed steel lead to extraneous rust due to abrasion.

## 8 Spare Parts and Accessories

### 8.1 Introduction

Service work should only be carried out by authorised specialist staff.  
Defective components should only be replaced with **HUPFER®** original parts. That is the only way to guarantee a safe operation and long service life together with a high transport capacity.  
In the event of after-sales service and when ordering spare parts specify always the data and corresponding part number given in the rating plate.  
We must inform you that a perfect functionality of the appliance can only be ensured if you use recommended original parts by **HUPFER®**.  
Always stockpile a full set of replacement parts as a reserve or make a maintenance contract with a specialised dealer to avoid standstill times.

### 8.2 Spare Parts and Accessories List

#### SPV | SGR

Item No.	Item designation	Type	Q-ty
0191006153	Gear motor	0,12kw RR	1
015209203	Drive wheel	Al Mg3 Ø131/17/37	1
015223004	Pedestal bearing	UCP 203 127/60/38 shaft Ø17	3
0191043502	Shaft	Stainless steel Ø17/366	1
015223002	Caster	PE500 Ø40/30 sw	1
015210200	Axle of the deflection side	Ø17/434 kpl	1
015223001	Bearing	RK 6003.2RS stainless steel Ø35Ø17/10	1
015210203	Deflection wheel	Alu Ø131/22 mB27	1
015210202	Axle	Stainless steel Ø17/434 deflection side	1
015002098	Round belt guide	HDPE 25/15/19 sw	1
015002004	Round belt	TPU Ø 12 smooth gn	1
0191093370	Emergency Stop button	1S 1Ö kpl	2
0191034932	Press button	1S Ø22 XB5-AA3 "EIN" kpl	1
0191034944	Press button	1Ö Ø22 XB5-AA42 "AUS" kpl	1
0191028022	Potentiometer	77/41/30 kpl	1
015220511	Frequency converter	240V 0.25KW	1
015222001	Finger protection	PA6 262/50/13.5 sw	1
015222002	Compensator	PA6 59/125/17 sw	4
0191163394	Reed sensor	Magnetic opening contact for drilled hole Ø8	1
0191008557	Light curtain	E35-AR 31	2
015000187	Button	Leg pneum. 153/90/47 Schl Ø3 sw	1
015000412	Pressure switch	10A/250V sw f. pneum. Foot switch	1
015223000	Caster	Kst Ø40/283 mNut	1
0191015212	O ring	NBR Ø38/3,5 sw	1
0191100340	Floor fastening	Stainless steel 105/75/52 kpl	1

## 9 Annex

### 9.1 EC Declaration of Conformity

# CE Konformitätserklärung

Declaration of CE-Conformity | Déclaration de conformité CE

Gegenstand | Object | Objet

Geschirr-Rücklaufband | crockery return belt | Bande de retour de la vaisselle

Artikelgruppe | Article category | Groupe d'articles

SGR

Typ | Type | Type

Ohne Heizung/Kühlung | without heating/cooling | sans chauffage/refroidissement

Es wird bescheinigt, dass das/die zuvor näher beschriebene/n Produkt/e der/den im Folgenden aufgelisteten EU-Richtlinie/n entspricht/entsprechen:

98/37/EG, 2006/95/EWG, 2004/108/EG

Darüber hinaus wurden folgende harmonisierte Normen angewandt:

EN ISO 14121-1, EN ISO 12100-1, EN ISO 12100-2, EN 614-1, EN 1037, EN 349, EN ISO 13857, EN 60204-1, EN 61140, EN 61000-6-2, EN 61000-6-4

Im Übrigen wird bescheinigt, dass das/die Produkt/e weder Störungsquellen noch störungsanfällige Bauteile im Sinne der EMV-Richtlinie enthält/enthalten.

It is certified that the product/s described in detail before, conform/s to the requirements of the European Union directive/s listed in the following:

98/37/EC, 2006/95/EWG, 2004/108/EC

Furthermore, the following harmonised standards have been applied:

EN ISO 14121-1, EN ISO 12100-1, EN ISO 12100-2, EN 614-1, EN 1037, EN 349, EN ISO 13857, EN 60204-1, EN 61140, EN 61000-6-2, EN 61000-6-4

Incidentally, it is certified that the product/s contain/s neither sources of disturbance nor components liable to disturbances according to the EMC directive.

Il est certifié que le/s produit/s décrit/s en détail ci-dessus, correspond/ent aux directive/s de l'UE énuméré/es dans ce qui suit:

98/37/CE, 2006/95/EWG, 2004/108/CE

En outre, les normes harmonisées suivantes ont été appliquées:

EN ISO 14121-1, EN ISO 12100-1, EN ISO 12100-2, EN 614-1, EN 1037, EN 349, EN ISO 13857, EN 60204-1, EN 61140, EN 61000-6-2, EN 61000-6-4

Il est certifié aussi, que le/s produit/s ne contient/contiennent ni des sources de perturbation ni des éléments de construction exposés à des perturbations correspondant aux directives de l'AECM.

Coesfeld, 09.08.2010

Helmut Schumacher  
Vorname, Nachname

Geschäftsführung  
Position

Unterschrift

Jürgen Gottwald  
Vorname, Nachname

Leiter Normenstelle  
Position

Unterschrift

Dokumentationsbevollmächtigter  
Jürgen Gottwald

HUPFER® Metallwerke  
GmbH & Co. KG

info@hupfer.de

Diese Konformitätserklärung ist eine original Konformitätserklärung in deutscher Sprache und kann gleichlautende Übersetzungen in weiteren EU-Sprachen enthalten. This declaration of conformity is an original declaration of conformity in the German language and can contain identical translations in the other EU languages. Cette déclaration de conformité est une déclaration de conformité originale en langue allemande et peut contenir des traductions conformes en d'autres langues de l'UE.

HUPFER® Metallwerke GmbH & Co KG  
Dieselstraße 20 | 48653 Coesfeld | Deutschland | +49 2541 805-0 | info@hupfer.de



# CE Konformitätserklärung

Declaration of CE-Conformity | Déclaration de conformité CE

Gegenstand | Object | Objet

Speisenverteilerband | food distribution belt | Tapis de distribution des repas

Artikelgruppe | Article category | Groupe d'articles

SPV

Typ | Type | Type

Ohne Heizung/Kühlung | without heating/cooling | sans chauffage/refroidissement

Es wird bescheinigt, dass das/die zuvor näher beschriebene/n Produkt/e der/den im Folgenden aufgelisteten EU-Richtlinie/n entspricht/entsprechen:

2006/42/EG, 2006/95/EWG, 2004/108/EG

Darüber hinaus wurden folgende harmonisierte Normen angewandt:

EN ISO 14121-1, EN ISO 12100-1, EN ISO 12100-2, EN 614-1, EN 1037, EN 349, EN ISO 13857, EN 60204-1, EN 61140, EN 61000-6-2, EN 61000-6-4

Im Übrigen wird bescheinigt, dass das/die Produkt/e weder Störungsquellen noch störungsanfällige Bauteile im Sinne der EMV-Richtlinie enthält/enthalten.

It is certified that the product/s described in detail before, conform/s to the requirements of the European Union directive/s listed in the following:

2006/42/EG, 2006/95/EWG, 2004/108/EC

Furthermore, the following harmonised standards have been applied:

EN ISO 14121-1, EN ISO 12100-1, EN ISO 12100-2, EN 614-1, EN 1037, EN 349, EN ISO 13857, EN 60204-1, EN 61140, EN 61000-6-2, EN 61000-6-4

Incidentally, it is certified that the product/s contain/s neither sources of disturbance nor components liable to disturbances according to the EMC directive.

Il est certifié que le/s produit/s décrit/s en détail ci-dessus, correspond/ent aux directive/s de l'UE énuméré/es dans ce qui suit:

2006/42/CE, 2006/95/EWG, 2004/108/CE

En outre, les normes harmonisées suivantes ont été appliquées:

EN ISO 14121-1, EN ISO 12100-1, EN ISO 12100-2, EN 614-1, EN 1037, EN 349, EN ISO 13857, EN 60204-1, EN 61140, EN 61000-6-2, EN 61000-6-4

Il est certifié aussi, que le/s produit/s ne contient/contiennent ni des sources de perturbation ni des éléments de construction exposés à des perturbations correspondant aux directives de l'AECM.

Coesfeld, 09.08.2010

**Helmut Schumacher**  
Vorname, Nachname

**Geschäftsführung**  
Position

Unterschrift

**Jürgen Gottwald**  
Vorname, Nachname

**Leiter Normenstelle**  
Position

Unterschrift

**Dokumentationsbevollmächtigter**  
Jürgen Gottwald

HUPFER® Metallwerke  
GmbH & Co. KG

info@hupfer.de

Diese Konformitätserklärung ist eine original Konformitätserklärung in deutscher Sprache und kann gleichlautende Übersetzungen in weiteren EU-Sprachen enthalten. This declaration of conformity is an original declaration of conformity in the German language and can contain identical translations in the other EU languages. Cette déclaration de conformité est une déclaration de conformité originale en langue allemande et peut contenir des traductions conformes en d'autres langues de l'UE.

HUPFER® Metallwerke GmbH & Co KG  
Dieselstraße 20 | 48653 Coesfeld | Deutschland | +49 2541 805-0 | info@hupfer.de

