

User Manual

Nest "Relax"

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**Replaced by
99-94-0754**

EC Declaration of Conformity



Big Dutchman.

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In accordance with the EC Directive:

- Machinery 2006/42/EC, Annex II / Part 1 / Section A

Further applicable EC Directives:

- Electromagnetic Compatibility 2014/30/EU
- Low Voltage 2014/35/EU
- Ecodesign 2009/125/EC
- RoHS-Directive 2011/65/EU



The product below was developed, designed and manufactured in accordance with the above mentioned EC Directives and under sole responsibility of Big Dutchman.

Description:	Nest with automatic egg-collection
Type:	"Relax"
System no. and year of construction:	see customer order no.

The following harmonised standards apply:

- DIN EN ISO 12100:2011-03 Safety of machinery - General principles for design - Risk assessment and risk reduction
- EN 60204-1:2006/AC:2010 Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- DIN EN ISO 13850:2016-05 Safety of machinery - Emergency stop function - Principles for design

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Overview of changes / updates in the manual

Chapter name	Type of change / update	Product information / Editor's initials	Issue date	Page
8 "Spare parts"	New side rail, partition and curtain strips	01-0132 SSa	10/2017	misc.
8.6 "Manure pit with manure removal via belts (option)"	Chapter inserted	01-0112 SSa	10/2017	42
	83-11-1114 Plug w/screw nut acceptance and gasket for post Relax	SSa	02/2017	
	Spare parts lists updated.	SSa	02/2016	
	Chapter inserted	DLa	12/2014	



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1 Basic instructions

	Important: Please take care of these documents and keep them close to the system at all times for quick reference. All persons operating, maintaining and cleaning this system have to be familiar with the contents of these instructions. Observe these security instructions whenever any work is carried out on this system! Manuals can be reordered from Big Dutchman when necessary.
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One of the following information is required to reorder a manual:

- the 8-digit code number of your language version [99-97-xxxx] as stated on your manual's cover;
- the complete title of the manual including information on the type of instruction;
- if stated, the 8-digit universal code number [99-94-xxxx] including information on the required language version.

1.1 EC declaration of conformity

We hereby declare that the system described in this manual corresponds to the relevant health and safety requirements according to the EC directive because of its design and construction as introduced to the market by us.

The declaration of conformity can be found at the beginning of the manual.

The declaration of conformity can be found at the beginning of the manual.

1.2 Purpose of the BD manuals

Depending on the intended use, **Big Dutchman** provides the following documentation:

1. Assembly manual
2. User manual
3. Operation manual (assembly and use of the system)
4. Spare parts lists
5. "Local add-on manuals": (for products which differ from those of the original manual in specific countries).

The type of instruction of your manual can be found on the cover above the title.

1.3 Basics

The **Big Dutchman** system has been built with state-of-the-art technology and meets the recognized technical safety requirements. The system is reliable. Upon operation, however, dangers to life and limb of the user or third persons or impairments of the system or other material property are still possible.

The system may only be operated, maintained and repaired

- in accordance with its designated use;
- in an excellent state from the safety and technical point of view;
- by persons who are familiar with the safety regulations.

Should specific problems occur which are not described in detail in these documents, we recommend you contact us for your own safety.

1.4 Explanation of the symbols and structure of these instructions

1.4.1 Structure of the safety instructions in this manual

Basic structure:

Pictograph	Type of danger
	Possible consequence(s) of non-compliance
Signal word	Measure(s) against the danger

Meaning of the signal words:

Pictograph	Signal word	Meaning	Consequences of non-compliance
Possible personal injuries:			
possible safety symbols: see chapter 1.4.2	DANGER	directly dangerous situation	Will lead to death or severe injuries.
	WARNING	possibly dangerous situation	May lead to death or severe injuries.
	CAUTION	possibly dangerous situation	May lead to minor injuries.
Possible damage to property:			
	CAUTION		May lead to damage to property

1.4.1.1 Special safety symbols in the manual and on the system

These safety symbols (pictographs) illustrate remaining dangers when handling the system. They are used in the safety instructions of this manual (also refer to chapter 1.4.1) and on the system.

	Warning: general danger
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	Warning: dangerous electric tension
---	-------------------------------------



Warning: danger of entanglement due to gear wheels



Warning: danger of entanglement due to straps / transport belts



CAUTION

Safety symbols and instructions on the system must always be easily visible and undamaged.

- If they are soiled by dust, manure, feed remains, oil or grease, clean them with a water-detergent mixture.
- Damaged, lost, or unreadable safety symbols have to be replaced immediately.
- If a safety symbol or instruction is fixed to a part to be replaced, ensure that it will be fixed to the new part as well.

1.4.2 Structure of the general instructions in the manual



IMPORTANT!

This symbol indicates important information. There is no risk of personal injuries or damage to property.

1.5 Necessary qualifications of the persons working with the system

1.5.1 Employing external personnel

	IMPORTANT: The supervisor is responsible for the safety of external personnel.
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Maintenance and repair works are frequently carried out by external personnel not familiar with the circumstances specific for the system and the inherent dangers.

You as operator are to survey the personnel and to define responsibilities and powers. Inform these people in detail on the dangers of their area of work. Check their method of working and intervene as soon as possible.

1.5.2 Operation of the system

The system may only be operated by persons who are competent and can guarantee proper handling due to special training or knowledge and practical experience with the system. The system operator or owner has the sole power of decision.

1.5.3 Maintenance and repairs

Maintenance and repair works may only be carried out by persons who are competent and can guarantee proper handling due to special training or knowledge and practical experience with the system. The system operator or owner has the sole power of decision.

1.5.4 Installing the gas supply

All works relating to the gas supply of a device (e.g. laying gas pipes and connecting the device to the gas supply, etc.) may only be carried out by an expert according to the effective DIN standards, DVGW rules, safety regulations and the provisions of the local gas supplier or the applicable national regulations.

1.5.5 Electrical installation

Work on the electric components may only be carried out by technically skilled personnel and according to German Industry Standards, VDE regulations, safety instructions and electro-technical regulations of the power supply industry (EVU) and the applicable national regulations.

1.6 Ordering of spare parts

The exact description of the spare parts to be ordered can be found by means of the position no. in the spare parts list.

	Risk of injury and danger to life
	Operational safety is of paramount importance! Spare parts not released or recommended by Big Dutchman can cause severe injuries as their suitability for Big Dutchman systems cannot be assessed beforehand. • Only use spare parts released or recommended by Big Dutchman for your own safety.

Indicate the following when ordering spare parts:

- Code no. and description of the spare part or
Position no. including description and manual number in case of parts that are not encoded;
- Invoice number of the original delivery;
- Current supply, e.g. 230/400 V – 3 Ph – 50/60 Hz.

1.7 Obligations

Closely adhere to the instructions in this manual.

A basic condition for safe operation and trouble-free handling of this system is the knowledge of the basic safety instructions and regulations.

This manual, particularly the safety instructions, must be observed by all persons working on this system. Moreover, the regulations and instructions for the prevention of accidents valid at the respective place of use have to be observed.

The manufacturer is not responsible for any damage to the system resulting from changes not authorized by **Big Dutchman**.

1.8 Warranty and liability

Warranty and liability claims regarding personal injury or property damage are excluded if they result from one or several of the following causes:

- non-designated use of the system;
- improper operation of the system;
- operating the system with defective safety equipment or not duly fixed or not functioning safety and protective devices;
- non-compliance with the instructions in this manual regarding maintenance and upgrading of the system;
- unauthorized modifications to the system;
- improper repairs;
- disasters caused by foreign matter or force majeure.

1.9 Faults and power failures

We recommend the installation of alarm systems for a better control of your production units or the use of an automatic emergency battery system for supplying the system with power in case of a power failure. This will protect your animals and thus your own economic health.

To ensure that the control unit completes all started process steps correctly and shuts down properly in case of a power failure, we recommend the use of a UPS (uninterruptible power supply).

1.10 First aid

In the case of an accident, a first-aid kit must always be available at the place of work, unless otherwise specified. Material taken out and used is to be replaced immediately.

If you need help, describe the accident as follows:

- where it happened
- what happened
- the number of persons injured
- what type of injury
- who is reporting the accident.

1.11 Pollution abatement regulations

All works on and with the installation have to be carried out in compliance with the legal requirements concerning waste prevention and proper recycling / disposal of waste.

Special care has to be taken when carrying out installation, repair and maintenance works, as water pollutants like lubricating grease and oils as well as solvent-containing cleaning solutions may not pollute the soil or reach the canalisation! These materials have to be kept, transported, collected and disposed of in appropriate containers!

1.12 Waste disposal

After repairing the system, dispose of the packing material and remains which cannot be used further according to the legal provisions for recycling.

The same applies to the component parts after putting the installation out of service.

1.13 Notes for use

In the interest of further development, we reserve the right to modify the design and technical data.

No claims can therefore be derived from any information, illustration or drawing and description contained herein. Errors and omissions excepted!

Apart from the safety information in this manual and the obligatory accident prevention regulations applicable in the user's country, please heed the accepted technical rules (safe and expert working in accordance with UVV, VBG, VDE etc.).

1.14 Copyright

This manual is copyrighted. The information and drawings included in this manual shall not be copied without the manufacturer's consent, nor shall they be misused or be disclosed to third parties.

The contents of this manual can be altered without prior notice.

If you find mistakes or unclear information in this manual, please do not hesitate to let us know.

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2 Safety instructions

2.1 Instructions on accident prevention

Before the mounting, operating, cleaning, maintaining or disassembling this installation, the operator or person authorized by him is obliged to instruct any person carrying out any of these works on

- the remaining dangers when carrying out these tasks
- the applicable rules and regulations regarding accident prevention and to ensure they are complied with!

The basis for these are:

- the installation's technical documentation, specifically the included safety instructions,
- the applicable safety and health regulations applicable at the place of work.

2.2 General safety instructions

	Risk of injury
	Children in the area of the system are at risk of injury as they can often not be supervised sufficiently and are not able to recognize hazards.
WARNING	• Ensure that children do not use the system as a playground and are not left unsupervised in the vicinity of the system. Explain remaining dangers fully to the children.

The respective safety precautions and other generally accepted regulations regarding safety and operational health have to be observed.

Please check safety and function control devices to ensure safe and accurate operation:

- before putting into operation
- in adequate intervals (confer maintenance intervals)
- after modifications or repairs.

Check the proper functioning of the system after any kind of repair works. You may only take the device into operation when all protective systems have been put into place again.

Also observe the regulations of local water distribution and power supply companies.

2.3 Personal protective equipment and measures

	Risk of injury
WARNING	The following instructions apply to all works carried out on the system. • Wear close-fitting protective clothing and protective footwear. • Use protective gloves where there is a risk of hand injuries and safety goggles where there is a risk of eye injuries. • Do not wear any rings, necklaces, watches, scarves, ties or other items which could get caught in parts of the system. • Make sure that long hair is always tied back. Hair can get caught in powered or rotating working units or parts of the installation, resulting in severe injuries. • When working underneath the installation always wear a hard hat!

2.4 Use of electrical appliances

 	Risk of injury and danger to life
	Dangerous electric tension may be bare in the case of open control units and may cause severe injuries or lead to death! • Be aware of the danger and keep workers of other professions away from the danger zone. • Installations and works on electric components/building units may only be carried out by qualified persons according to electro-technical regulations (e.g. EN 60204, DIN VDE 0100/0113/0160).
WARNING	

	Corrosion caused by ammonia gas
	Ammonia gas may corrode control units. • Never install control units directly in the house but in the service room.
CAUTION	

- Only use the fuses indicated in the circuit diagram.
- Do not pull the plug from the socket at the flexible cable.
- For the respective connections please see the enclosed connecting plan of the system parts delivered.

2.5 Dangers resulting from non-compliance with the safety instructions

Lack of compliance with these instructions can cause severe danger to personal life and limb and damage the environment or the installation and may lead to the forfeiture of any damage claims. The non-compliance with these instructions can specifically lead to:

- failure of vital functions of the system,
- failure of prescribed maintenance methods,
- risk of injury due to electrical, mechanical and chemical influences.

2.6 Danger signs at the Relax nest

The Relax nest has been equipped with all mechanisms that guarantee a safe operation.

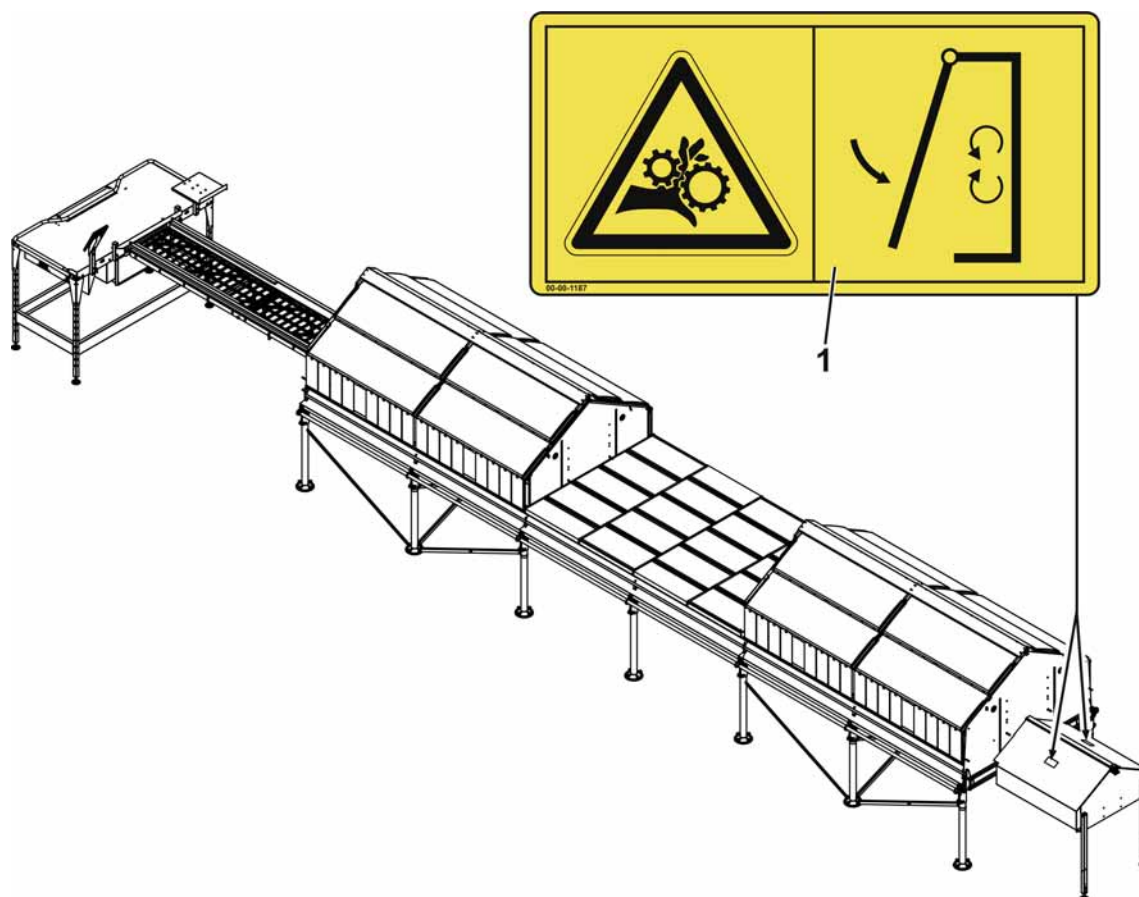
In places where the danger zone could not be safeguarded totally, in consideration of the operational reliability, safety signs have been placed. They indicate remaining technical dangers when handling the system and give information on how to avoid these dangers.

For your safety, the following safety symbols have been fixed to the installation. Please make yourself familiar with the signification of these symbols. The following explanatory notes will provide you with detailed information.

	RISK OF CRUSHING Always keep the protective covers closed! Never reach into the installation during operation!
---	--

 CAUTION	Safety symbols and instructions on the system must always be easily visible and undamaged.
	• If they are soiled by dust, manure, feed remains, oil or grease, clean them with a water-detergent mixture. • Damaged, lost, or unreadable safety symbols have to be replaced immediately. • If a safety symbol or instruction is fixed to a part to be replaced, ensure that it will be fixed to the new part as well.

For the exact position of the safety symbols at the installation: refer to the next page.



Pos.	Code no.	Description
1	00-00-1187	Pictograph: Crushing danger / protective equipment

2.7 Emergency shut-off at the unit

The emergency switch for the egg belt is located at the egg belt drive.

3 System description

3.1 Survey

The BD Relax nest system comprises the following areas:

- **The nest:**

The nest is designed so that the hens prefer this area for laying their eggs. The nest area is sloping towards the egg belt and has a perforated nest insert. The nest area can be closed automatically (for example for the night). For this purpose, the back panel of the nest is shifted towards the nest entrance by means of an electronic linear drive.

The individual nests are positioned on independent sub-constructions made of metal and plastic material.

The nest boxes are aligned forming a nest row usually positioned lengthwise at the centre of the entire house.

A tube is located on both sides of the nest row for connection to a manure pit.

- **The manure pit:**

The area of the manure pit is located directly in front of the entrance to the nest boxes. It consists of a sub-construction made of coated plywood and flat steel. Accessible plastic floorings are located on top.

On the side, the manure pit is reinforced by the flat steels on the nest. The other side is stabilized and closed by coated plywood.

- **The egg channel:**

The sector behind the nests has a conveyor belt (egg belt) for transporting the eggs laid in the nest that have rolled off. The egg belt is turned at the back end of the nest row and driven at the front end by an electrical drive unit. Upon transport, the loaded egg belt is always pulled towards the drive.

- **Passages (optional):**

Besides nest boxes there can also be passages within a nest row. These passages allow for birds as well as farm staff to pass through the nest rows. A passage is taking the place of a nest at that specific location.

3.2 Operation

A nest system combines three important processes in the house:

- The management by the farm staff
- Egg laying
- Egg transport

Therefore, the BD Relax nest has the following functions:

- The BD Relax nest can be closed automatically. For this purpose, the back panel of the nest is moved towards the nest entrance.
- The eggs are automatically transported towards the end of the nest where they are either directly picked up by the farm staff or conveyed to further conveying belts.
- The plug connection of the nest system significantly facilitates the assembly in contrast to comparable systems.
- The split plastic roof allows very easy checking on the nests.
- The perforated nest insert is largely self-cleaning.

3.3 Technical data

3.3.1 Dimensions

The standard dimensions of a BD Relax nest are shown in figure 3-1 .

In addition to the standard there are many additional versions available as it makes sense to adapt the nest height to the individual solution.

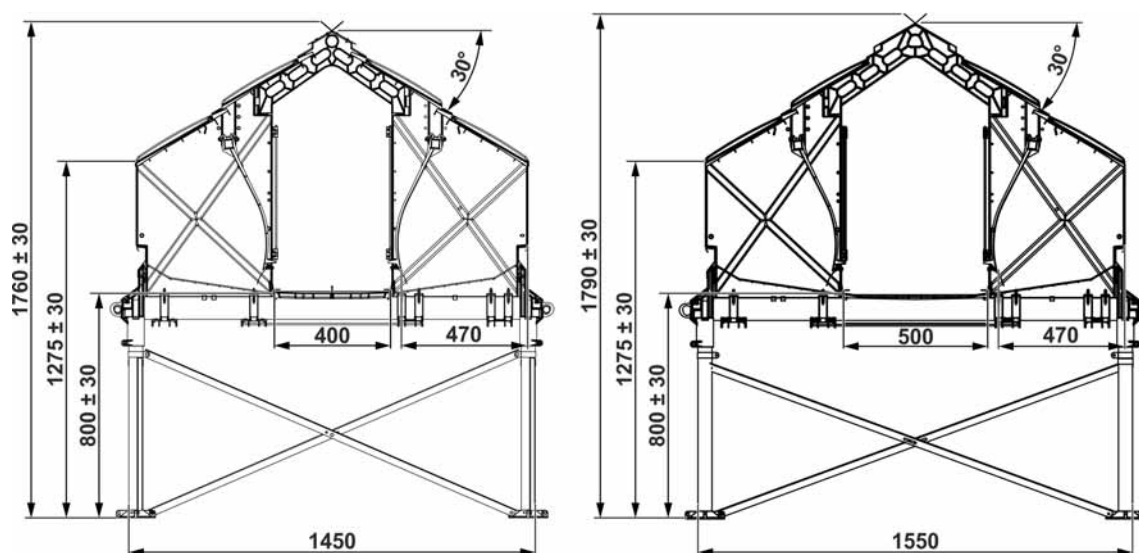


Figure 3-1: standard dimensions BD Relax nest E400 and E500

Besides the nest itself, the width of the manure pit is often playing an important role. **Big Dutchman** has a plastic flooring of 1.2 m x 0.6 m on offer as standard version. This results in standard widths of manure pit of 1.2 m, 2.4 m, 3.6 m

Moreover, it is possible to shorten the plastic flooring in steps of 30 cm and to build a manure pit in a length adapted to the house.

3.3.2 Production data, operating data



Particularly at the beginning of the laying period, the rate of floor eggs can increase significantly above 2 %. Especially in case of broiler breeders, farmers should have a well thought-out concept for reducing the number of floor eggs by and by. Concepts like these are described in the management manuals issued by the breeding companies. You can also ask your bird supplier for advice.

The following production data can be reached with a well balanced house concept and with sound management:

- number of floor eggs: below 2 %
- number of cracked eggs: below 2 %

The standard egg belt speed is 3 m/min (with old drives) and 2.6 m/min (with new drives). It is possible as an option that this speed is controlled infinitely variable by means of a "Vario Speed" control unit between 2 and 3.6 m/min.

3.4 Notes for layout and calculation

The respective guidelines or laws of the country where the nest is put up generally apply for the layout of a nest system. If there are no respective guidelines, ask the breeder for the respective breed.

For detailed notes on planning refer to the current **Big Dutchman** price list or ask your **Big Dutchman** contact person for such calculations.

3.5 Designated use

The BD Relax nest is used for the production of broiler hatching eggs. The nest is an essential component of the entire system / housing concept for broiler breeders in the laying period.

Besides the nest, this concept also comprises the following components:

- a feeding system (for example BD chain feeding, Repromatic or Augermatic)
- a drinking system (for example nipple drinkers or round cups)
- systems for climate control and management (intake and exhaust air systems, control units)

The **Big Dutchman** system may only be used according to its designated use.

Every other use is considered non-designated. The manufacturer does not accept liability for damages resulting from other uses, the user alone has to bear the risk. The designated use also includes the exact following of the operation, maintenance and repair conditions as prescribed by the manufacturer.

3.6 Prevention of reasonably predictable incorrect uses

The following uses of the **Big Dutchman** system are not permitted and qualify as misuse:

- Keeping animals other than broiler breeders and as an exception laying hens.
- The use outdoor, especially in areas that are susceptible to frost.
- Using the system where the temperature inside the house is below 0°C.
- Utilising the system with aggressive and/or corrosive materials in quantities that do not constitute good professional practise.
- A mechanical loading of the installation exceeding the loads normal for the keeping of broiler breeders / laying hens and expected for the installation.

A non-designated use will lead to a liability exclusion by **Big Dutchman**.

The operator of the system exclusively bears the risk resulting from misuse!

4 Notes for nest management

4.1 Operation of the table drive

The egg belts in the system can be run by means of a speed control unit with such an operating speed that the eggs can always be comfortably placed in the egg packs. At the end of the day, the Vario Speed control can increase the speed so that the remaining eggs can be collected more rapidly.

It is recommended to run the egg belt, controlled by means of a timer, before the hens start laying. For this, the egg belt runs a complete circuit every morning to remove rejects, dust or manure that might be lying on the belts. Make sure that the last egg-collection takes place late in the evening so that the egg gathering table can hold all remaining eggs the next morning during the cleaning-run.

4.2 Further suggestions to further reduce the number of floor eggs

- The most important measure for avoiding mislaid eggs is constant gathering of eggs and the resulting agitation in the house which in turn reduces the number of mislaid eggs.
- It is hence very important that the persons looking after the hens walk around in the scratching areas.



This should be done at least once per hour in the morning when the hens start laying and every two hours in the afternoon; on the whole six to seven times a day.

- Always walk along the outside walls so that the birds are driven in the direction of the laying nests. This is particularly important in the morning during the main laying phase. Collect the eggs from the floor. Always walk up and down the aisles so that the birds flee from you once to the end of the house and once to the front end.
- Collect floor eggs at least four to five times a day during the entire laying period and as early as possible in the morning at the beginning of the laying period.
- The recommended house temperature is 18°C. A warm house without draught is important to reduce the share of floor eggs.
- Hens will avoid certain areas of the house if ventilated inappropriately. Birds like fresh air in the house. Check the ventilation system regularly and seek immediate repair or adjustment of ventilation if required.

4.3 Cleanliness of the nest system

Cleanliness is the key to a productive and smoothly operating nest and egg collection system. Dirty nest inserts and egg belts increase the number of dirty eggs and lead to spreading diseases. Dust and rejects in the egg collection system can also have a negative influence on egg quality and might damage the system if they are not removed on a regular basis. It is important to draw up a cleaning schedule and to insist on it being carried out every day.

The egg collecting system has to be thoroughly cleaned every day after the eggs have been gathered. **The following groups have to be cleaned every day:**

- the brush in the longitudinal belt drive above the dirt collecting box
- the egg belt idler unit
- Empty the dirt collecting box and clean it with water and detergents
- Clean the egg gathering table and other surfaces with water and detergent.



Do not use any flammable chemicals for cleaning!

Carry out the following cleaning and maintenance work for the egg collecting system every week

- Clean the egg belt guide at the longitudinal drive.
- Vacuum or blow motor and drive units to prevent accumulation of dust and feathers on the motor ventilation system.
- Keep the chain well-lubricated with light oil.
- Check the egg belt for dirt accumulation at the point where it is **running back** into the first nest.

5 Operation of the system

Operating a nest during a batch basically means the following:

- **Adjusting the opening and closing times of the nest:**

Always take into consideration the respective light times in the house for adjustment. It is extremely important that the nest is open already 1 to 2 hours before lighting starts. It is also important that the nests are closed again at least 30 minutes before the lights go out.

We recommend to keep up this opening and closing procedure also during times of empty house so that the system does not jam.

- **Collecting the eggs from the egg belt:**

Eggs can be collected from the egg belt whenever it is suitable during the day. It is however important to collect eggs at least once a day. During egg collection the operation of the egg belt has to be checked regularly. If the egg belt does not run straight it has to be adjusted at the drive.

The egg belt is not like a V-belt and thus not tensioned. Therefore, the egg belt should only be slightly tensioned at the idler unit. An egg belt that is tensioned too strongly always drifts to one side and can no longer be adjusted!

Moreover it makes sense to keep the egg belt running every day for a short period of time when the hens are not yet laying so that they get used to the noise and do not get startled when the belt starts running for the first time.

- **Checking on nest boxes:**

During daily check-up walks pay attention to the following:

Especially in the evening when the nest is already closed you can only see by the position of the plastic back panels if there are dead birds in one of the nests. Immediately remove dead birds.

At least twice a week it is necessary to open and check every single nest box. If there is a lot of dirt or a dead bird in the nest, clean the nest insert.

6 Maintenance

6.1 Procedure

- The nest should be checked at regular intervals for technical deficiencies, preferably in combination with the daily check-up on birds. If you discover increased wear on the system, the respective components immediately have to be repaired.
- Check the egg belt every day upon egg collection for correct operation. If you discover drifting, the egg belt has to be readjusted at the drive unit. The idler roller at the back of the nest has to be checked for dirt at least twice a week. If there are feathers or manure in the roller, clean this while the egg belt is in standing position.
- The nest closing system is operated by linear drives. These drives are located inside the nest above the egg channel. Check the drives and their seats at the square tube at regular intervals (at least approx. once a week). The operation of the closing system has to be checked every day so that the hens do not have to wait in front of a closed nest in the morning.

6.2 Replacing wear parts

- **Nest insert:**

The nest insert is a wear part and has to be checked for damages at regular intervals. Especially pitting by rodents can lead to a bad roll-off behaviour of the eggs. To avoid egg losses due to bad inserts replace those with extremely worn bristles.

Usually, nest inserts have a service life of 3 to 5 years. If cleaned regularly, with consistent pest control and good nest management a nest insert can also last longer.

- **Plastic flooring:**

The plastic flooring on the manure pits can be damaged upon dismounting, cleaning or in case of non designated use. Larger holes in the floorings can lead to injuries on the birds' feet. In extreme cases, damaged floorings can loose their stability. Therefore, check the floorings for damages upon check-up walks and replace them if necessary.



6.3 Cleaning

For cleaning the nest system, first dismantle the manure pits at both sides of the nest and take them out of the house. The manure pit is usually cleaned separately outside of the house and mounted again only after the entire house has been cleaned.

After dismantling the manure pit, litter and manure has to be removed from the house. After rough mechanical cleaning, everything is cleaned again by high-pressure cleaner.

The nest system itself should be cleaned as gently as possible by means of a high-pressure cleaner. It is important that a minimum distance of at least 30 cm (depending on the power of the cleaner) is observed.

Electronic parts as for example the linear drive for the expel system should be handled with special care. The drive has protection class IP 55 and is therefore protected against splash water. Still we recommend dry cleaning with subsequent disinfection.

6.4 Information regarding silicon dioxide for the mite control

We would like to explain this topic briefly in order to avoid damages to the drive units in the future due to incorrect application of silicon dioxide. Amorphous silicon dioxide is a biocide for control of harmful insects, as e.g. red mites, in the poultry production. It is also marketed under the trade name M-Ex Profi 80. Effectiveness: Silicon dioxide destroys the wax layer which surrounds the mites. Through this the mites dry out. The white agent in powder form is mixed 1:6 with water to a suspension and can easily be sprayed on the house area and the equipment by means of conventional spray technique. This agent is easy to apply, very effective and relatively inexpensive. However, practice has shown that the rough surface of the applied suspension causes extreme wear on the moving parts from plastic and metal. Lubricants as oils and fats are destroyed by silicon dioxide.

**Important!**

Silicon dioxide must not be applied in drive areas (on bearings, chain drives and gear wheels). Therefore, you should cover the corresponding areas of the drives when spraying with silicon dioxide.



7 Fault clearance

Malfunction	Cause	Remedies
The nest does not open	Time switch is not adjusted correctly	Adjust time switch correctly.
	Linear drive is defective	Check the drive unit Replace defective drive unit if necessary.
Egg belt is drifting	Press-on rollers at table drive are not adjusted correctly	Adjust press-on rollers.
	Egg belt is tensioned too strongly	Relax egg belt at the rear end of the idler unit.

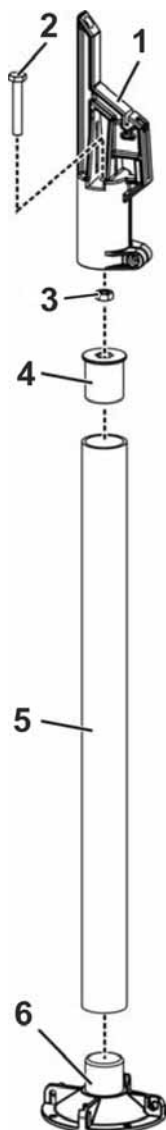


8 Spare parts

For this purpose, also see mounting instructions for "Relax nest".

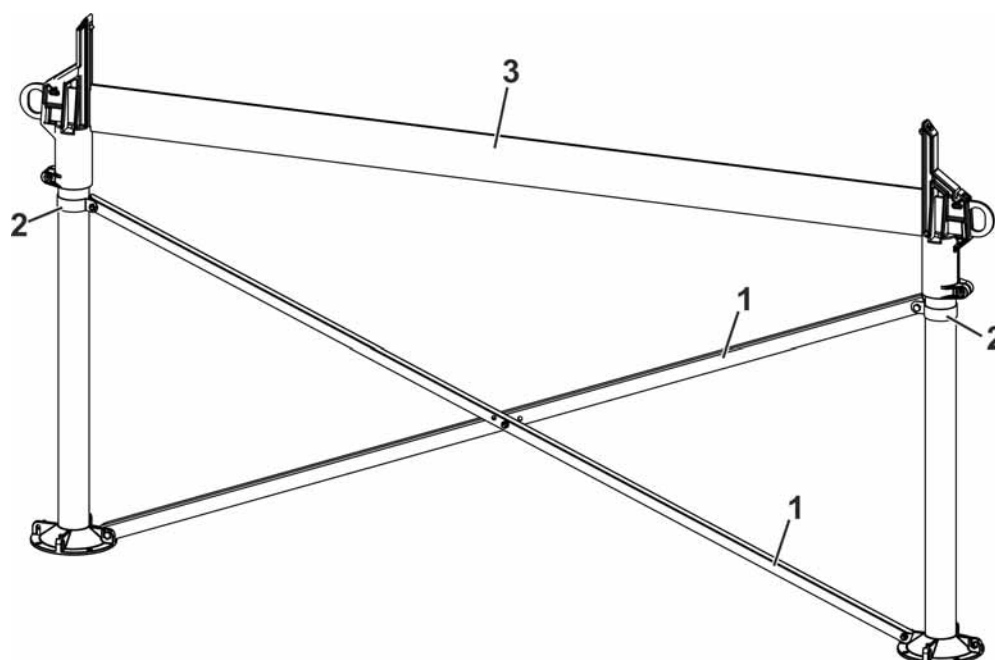
8.1 Nest

8.1.1 Posts



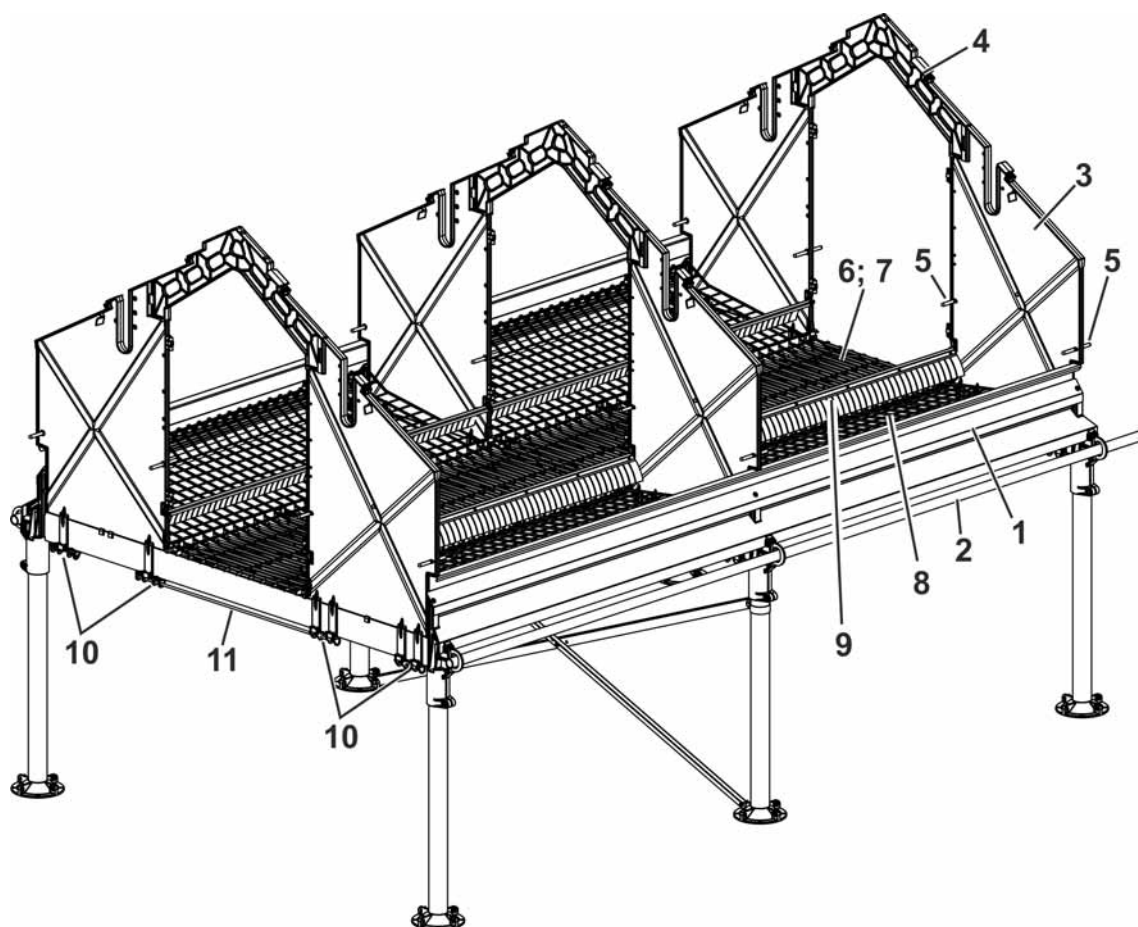
Pos.	Code no.	Description
1	83-10-0977	Coupling PA GF post BD-C Relax
2	99-10-1236	Hexagon head screw M 10x6 galv. DIN 933 8.8
3	99-20-1029	Hexagon nut M10 galv. DIN 934-8
4	83-11-1114	Plug w/screw nut acceptance and gasket for post Relax
5	83-10-0981	Foot tube 50x3.7-800 LB nest BD-C Relax
6	83-10-0958	Foot BD-C Relax

8.1.2 Stillages



Pos.	Qty.	Code no.	Description
1	2	83-10-1070	Cross brace SST below nest E500 BD-C Relax
	2	83-10-1032	Cross brace SST below nest E400 BD-C Relax
2	2	83-10-1043	Clamp 50mm for cross brace below nest BD-C Relax
3	1	83-10-1066	Cross member 80x5 E500 nest BD-C Relax
	1	83-10-1015	Cross member 80x5 E400 nest BD-C Relax

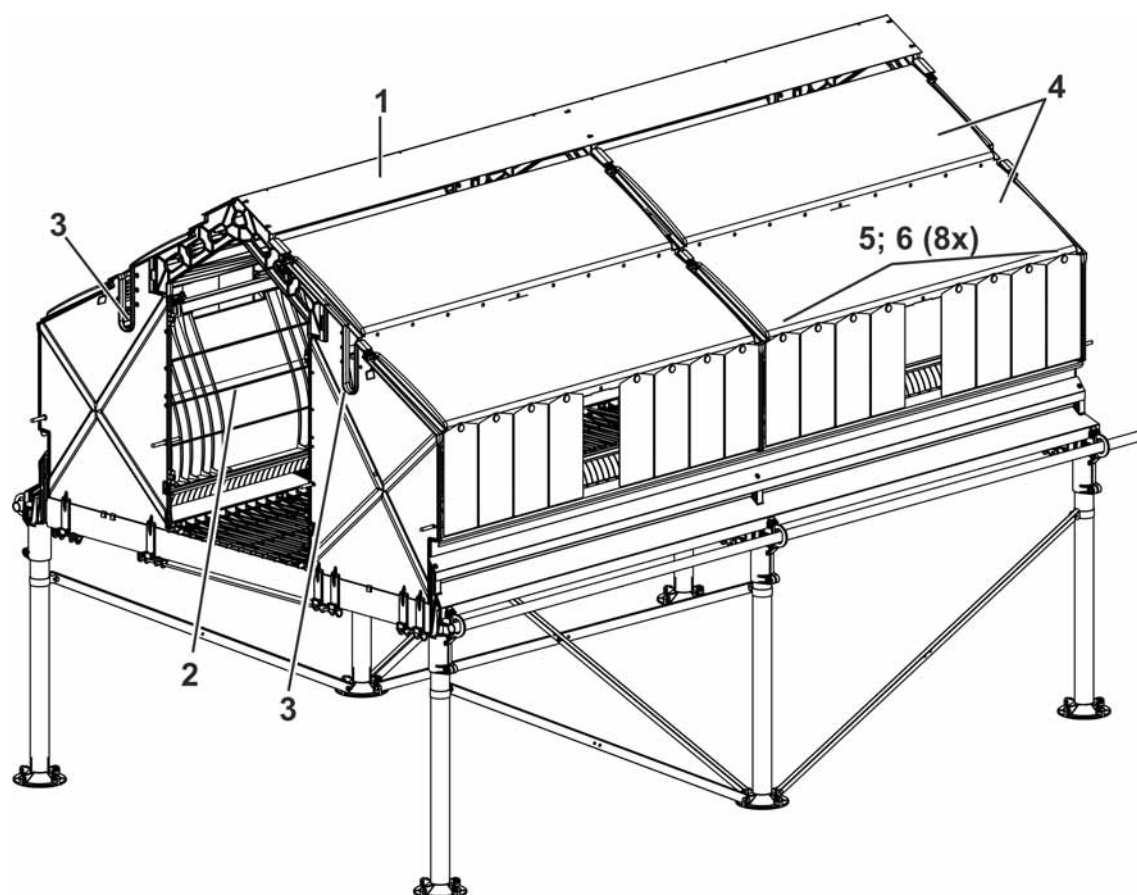
8.1.3 Skeleton frame:



The position numbers apply to both sides / each stillage of the nest

Pos.	Qty.	Code no.	Description
1	2	83-15-7798	Side rail 2412 nest Relax entrance height 135 mm
2		99-40-3812	Pipe 3/4" x 6000 galv. DIN 2440
3	6	83-16-2279	Partition ABS nest Relax entrance height 135 mm
4	3	83-10-0999	Gable pluggable E500 nest Relax
	3	83-10-0969	Gable pluggable E400 nest Relax
5	12	83-08-5074	Support/stop M 8 x 110 partly threaded for nests Colony
6	2	83-03-2842	Egg channel 1206 PP E500 BD-C
	2	83-09-4080	Egg channel 1206 PP E400 BD-C
7	4	83-07-7488	Longitudinal support 1206 for egg channel PP BD-Colony 2+ with clip
	4	83-09-3272	Longitudinal support 1206 for egg channel 400
8	4	83-10-1026	Bottom wire grille nest Relax
9	4	83-09-4422	Fringe rail 1206 Relax
10	12	83-10-0956	Locking lower for partition Relax
11	3	83-10-1064	Wire 5.8 mm for returning egg belt E500
	3	83-09-6468	Wire 5.8 mm for returning egg belt E400

8.1.4 Back panels and roof for nest

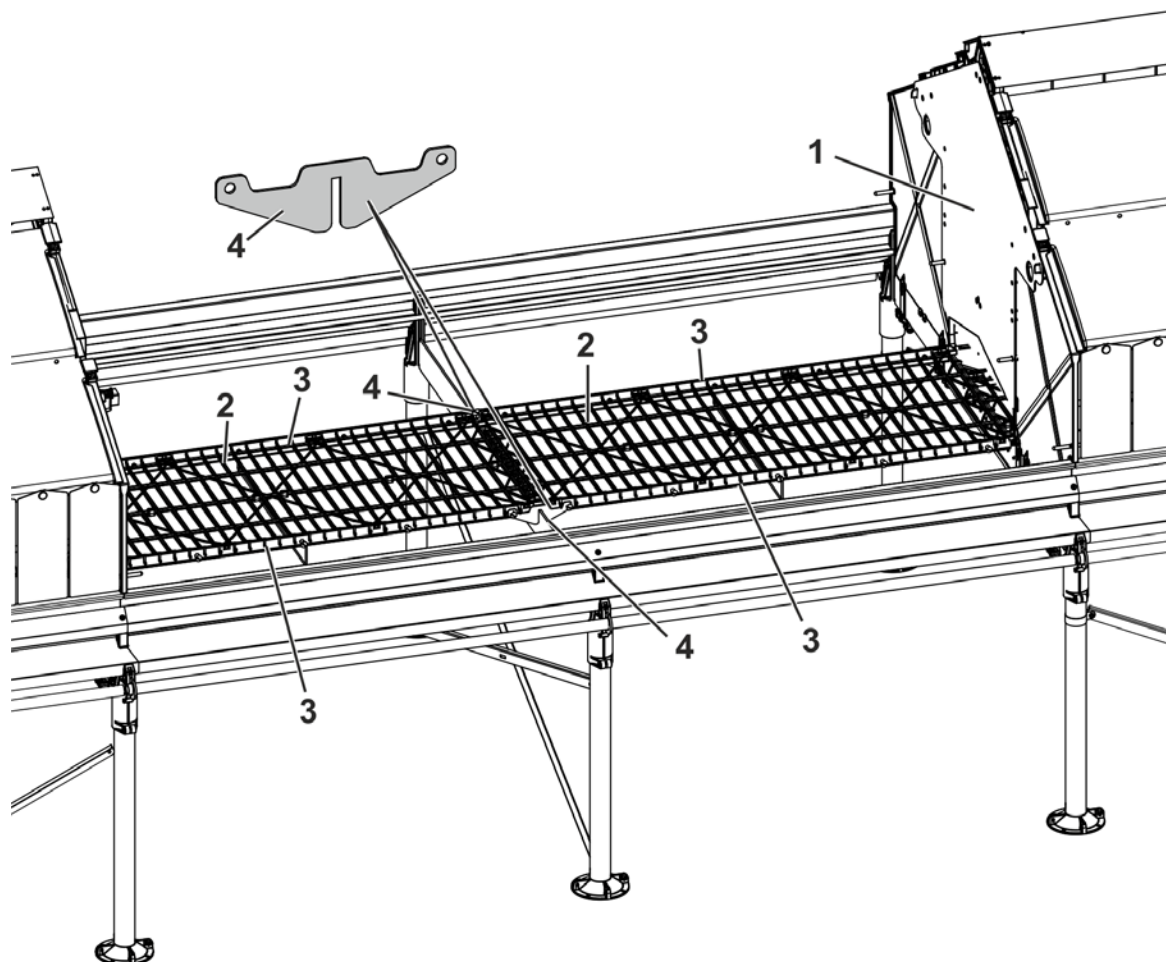


The position numbers apply to both sides / each stillage of the nest

Pos.	Qty.	Code no.	Description
1	1	83-10-1073	Ridge plate 2412 E500 Relax
	1	83-10-1030	Ridge plate 2412 E400 Relax
2	4	83-07-7152	Flap grey for expel system per nest hole 1206 BD-C-MB
3		99-40-3102	Rectangular tube 30 x 30 x 2-6000 galvanized DIN 2395
4	8	83-10-0967	Cover PP 1206 without curtain nest Relax
5	32	83-15-7807	Curtain strip PP soft 127 x 330 nest Relax V17
6	32	83-01-5968	Fastening button PA6.6 for nest curtain

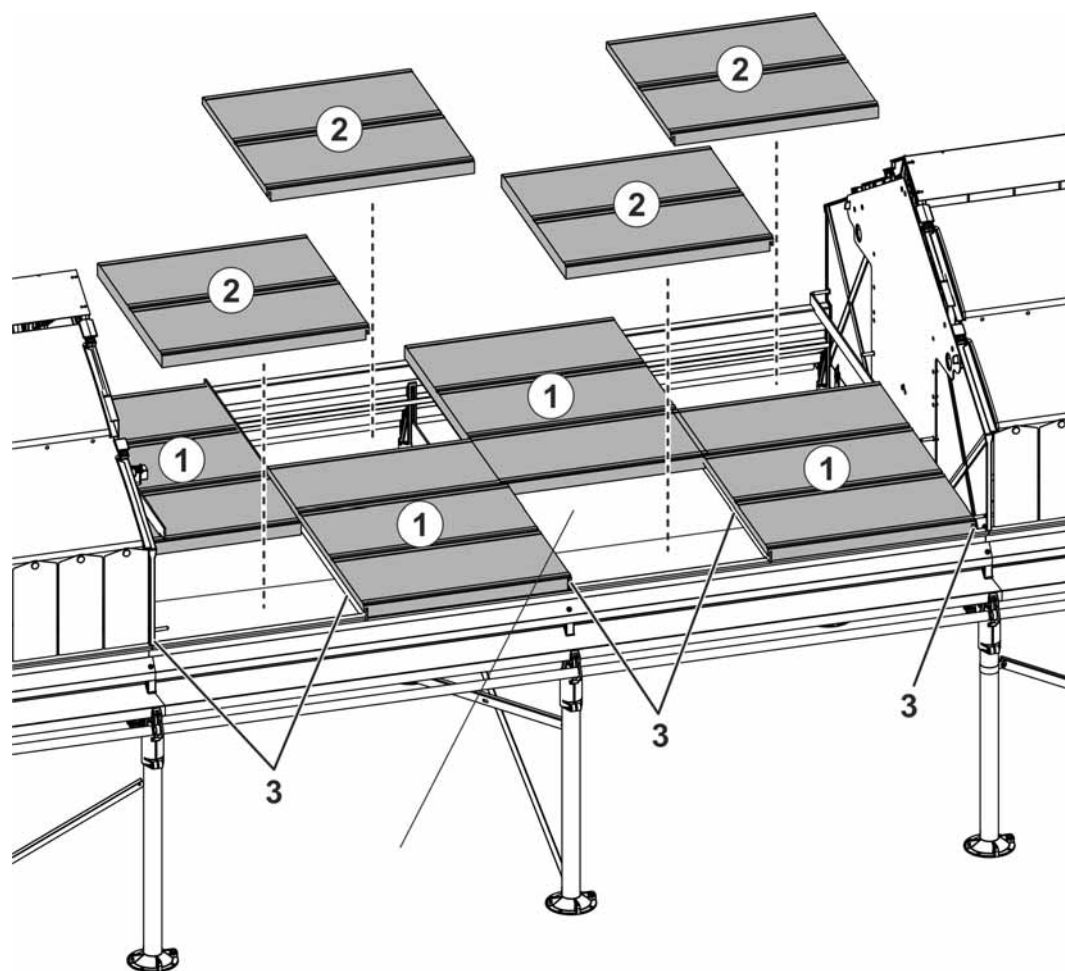
8.2 Passage

8.2.1 Egg channel



Pos.	Qty.	Code no.	Description
1	1	83-12-1047	Cover plate at idler for nest EB 500 BD-C Relax
	1	83-11-8268	Cover plate at idler for nest EB 400 BD-C Relax
2	2	83-03-2842	Egg channel 1206 PP E500 BD-C
	2	83-09-4080	Egg channel 1206 PP E400 BD-C
3	4	83-07-7488	Longitudinal support 1206 for egg channel PP BD-Colony 2+ with clip
	4	83-09-3272	Longitudinal support 1206 for egg channel 400
4	2	83-10-2972	Coupling for egg channel passage BD-C Relax

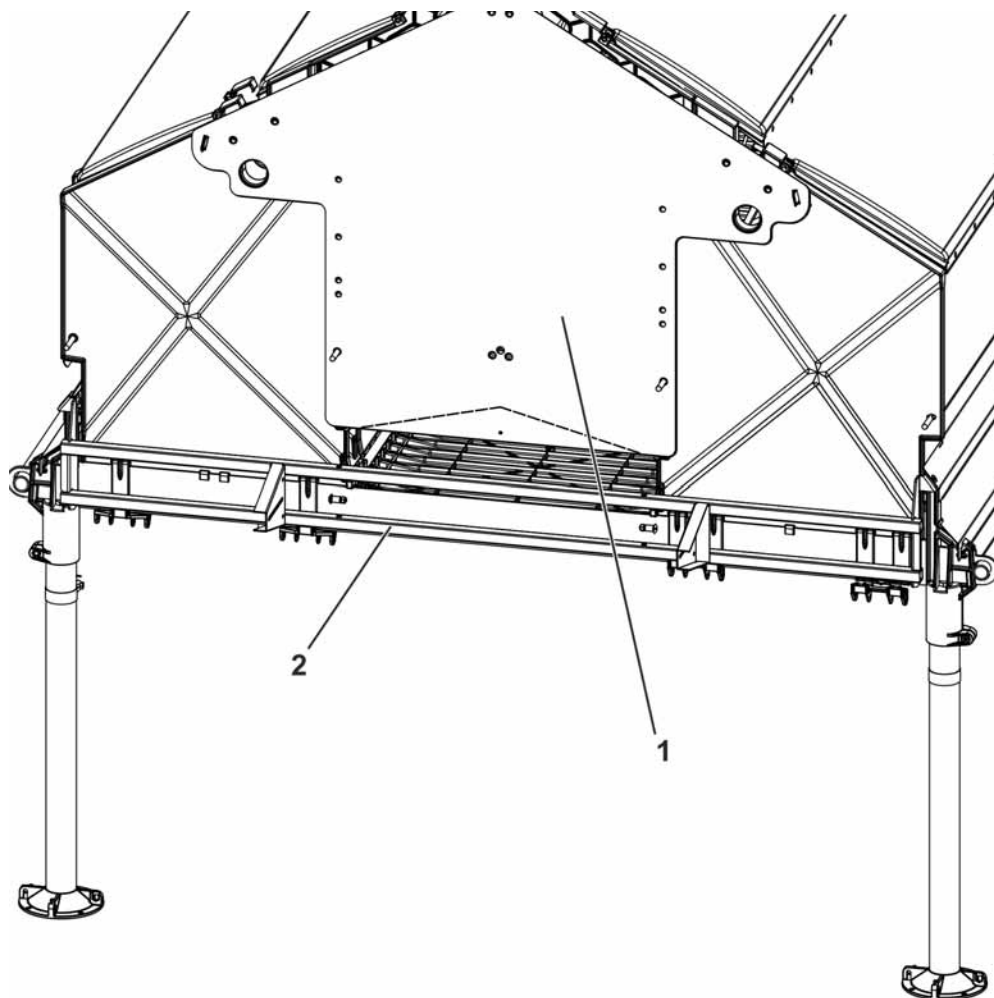
8.2.2 Egg channel cover and plastic flooring



Pos.	Qty.	Code no.	Description
1	4	83-00-8252	Plastic flooring 1K 900x600 (pre-cut)
2	4	83-00-8251	Plastic flooring 1K 598x600 (pre-cut) [for nest 500]
	4	83-10-9231	Plastic flooring 1K 520x600 (pre-cut) [for nest 400]
3	5	83-10-9897	Supporting plate for passage BET 500
	5	83-09-7489	Supporting plate for passage BET 400
4	1	83-10-2980	Covering cap E500 SST for passage 2412 BD-C Relax
	1	83-10-3128	Covering cap E400 SST for passage 2412 BD-C Relax

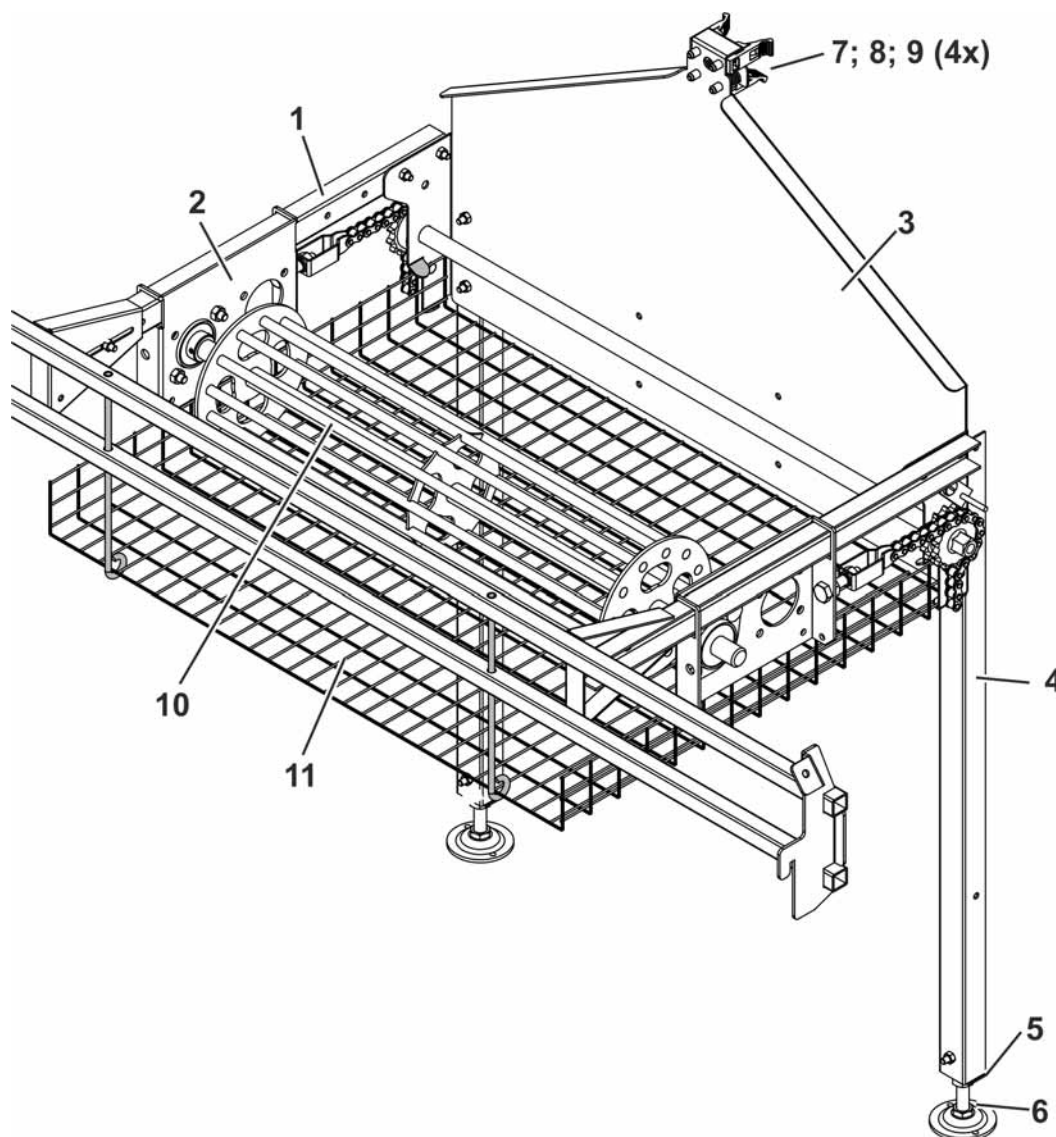
8.3 End set egg belt idler unit

8.3.1 Fastening frame and cover plate



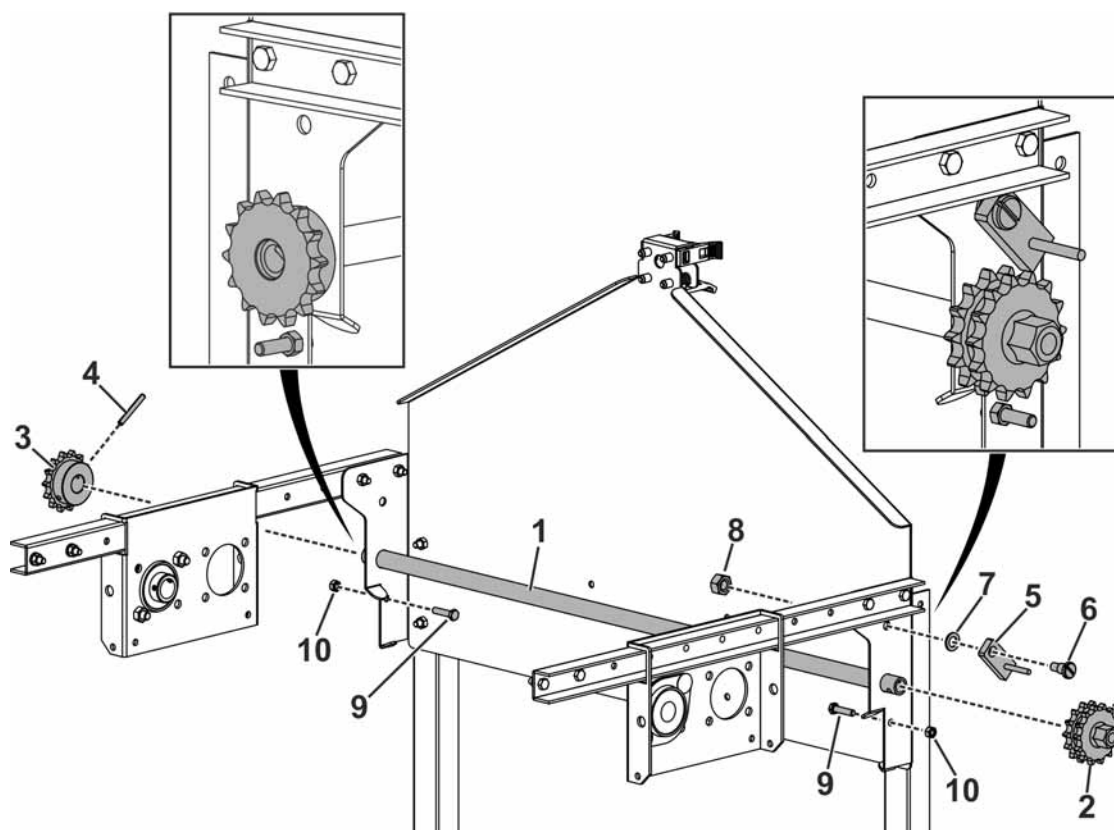
Pos.	Qty.	Code no.	Description
1	1	83-12-1047	Cover plate at idler for nest EB 500 BD-C Relax
	1	83-11-8268	Cover plate at idler for nest EB 400 BD-C Relax
2	1		Fastening frame for idler at nest BD-C Relax

8.3.2 Skeletal structure egg belt idler unit



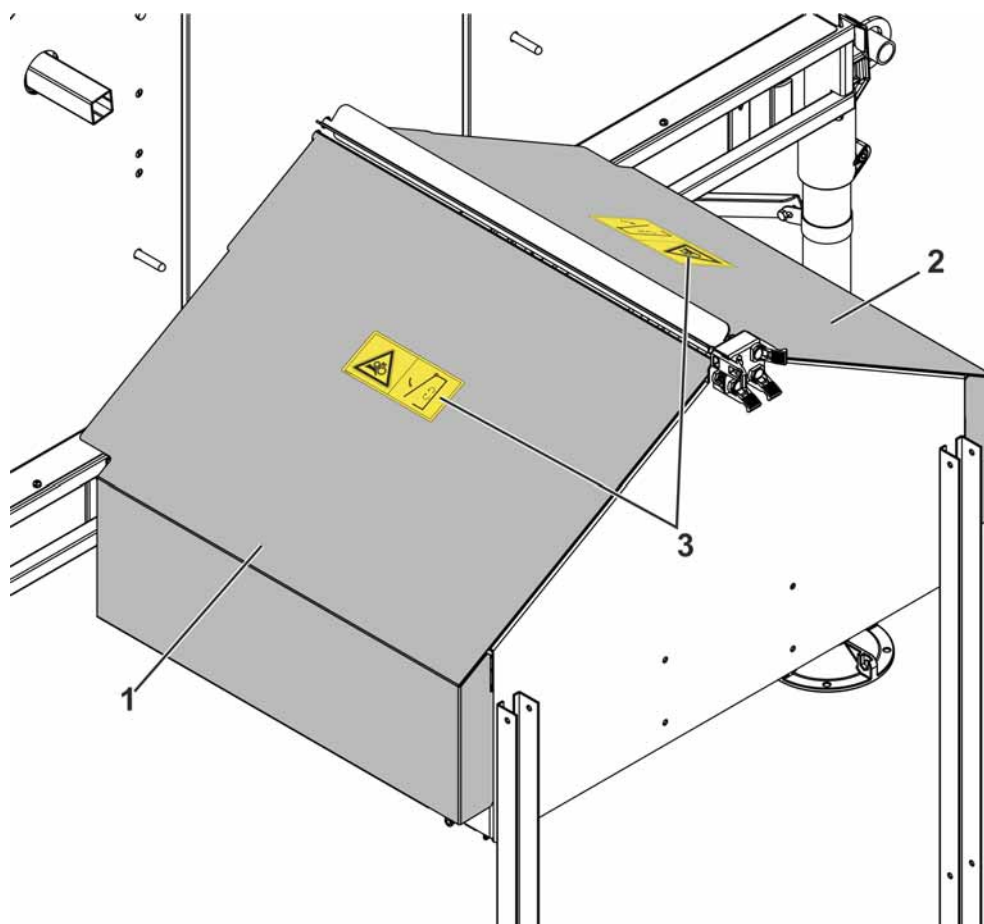
Pos.	Qty.	Code no.	Description
1	2	83-03-9947	U-guiding rail universal for idler longitudinal belt
2	2	83-04-7767	Guide plate idler longitudinal belt
3	1	83-06-9737	Frame for tension shaft idler egg belt 500 BD-C
4	2	83-06-1186	Extension for main post SST for nest BD-C
5	2	83-01-3155	Holding plate SST at extension NAT/BD-Colony 2+
6	2	37-97-4317	Foot adjustable M12x140 PA/SST cpl.
7	4	83-04-9324	Fastener for pivoting floor AMX150 transit
8	4	37-96-9523	Compression spring VD-190B SST AMX150transit
9	4	83-07-1948	Safety bold head 13 mm AMX150transit
10	1	83-00-6956	Idler roller cpl. including shaft & ball bearing for egg belt 500
11	1	83-08-1640	Wire mesh guard idler 600 mm egg belt 500 BD-C
	1	83-06-9744	Wire mesh guard idler 1000 mm egg belt 500 BD-C

8.3.3 Tension shaft and locking pawl



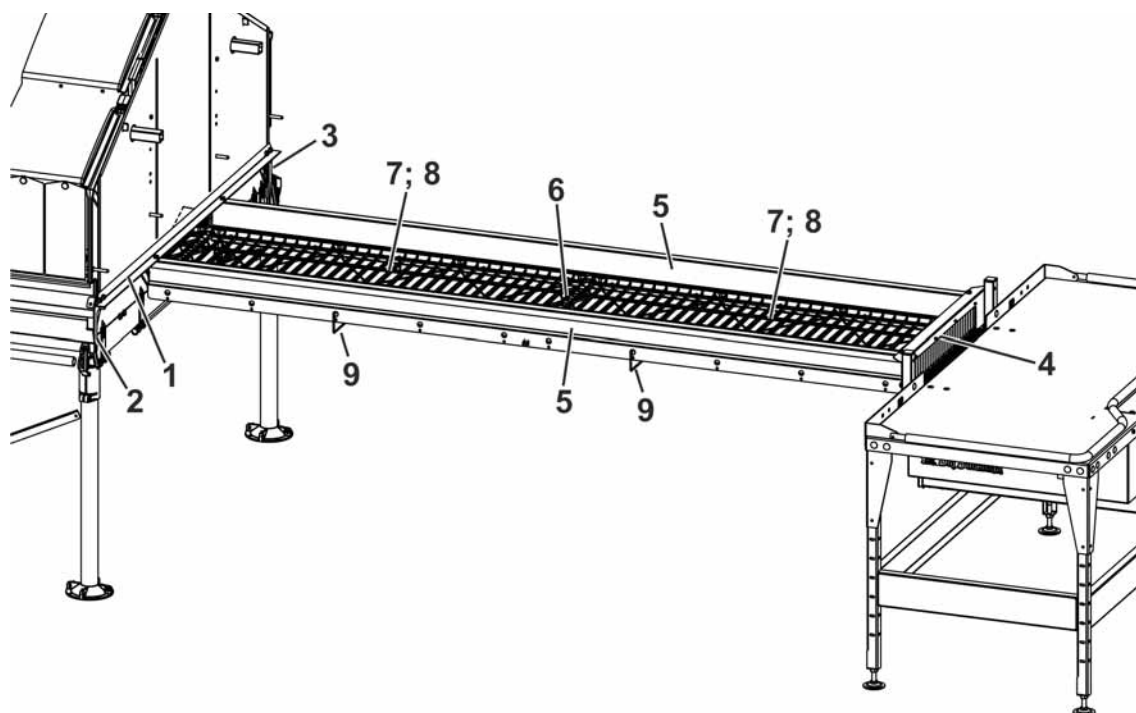
Pos.	Qty.	Code no.	Description
1	1	83-00-7068	Tube 3/8"x 737 BD-Colony 2+ egg belt idler unit 500
2	1	39-00-4115	Chain wheel 1/2"-14t-b17.5 double with nut/idler roller with chain
3	1	39-00-4116	Chain wheel 1/2"-14t-b17.5 single idler roller with chain
4	2	99-50-1351	Spring type straight pin DIN 1481 - 5x40
5	1	83-03-1714	Detent pawl for idler roller with chain
6	1	99-10-3919	Slotted pan-head screw M 8x10 DIN 923 galv.
7	1	99-10-3920	U-washer 10.5 DIN 433 galv.
8	1	99-10-1040	Hexagon nut M 8 galv. DIN 934-8
9	2	99-10-1257	Hexagon head screw M 6x30 galv. DIN 933 8.8
10	2	99-10-1045	Hexagon nut M 6 galv. DIN 934-8

8.3.4 Cover



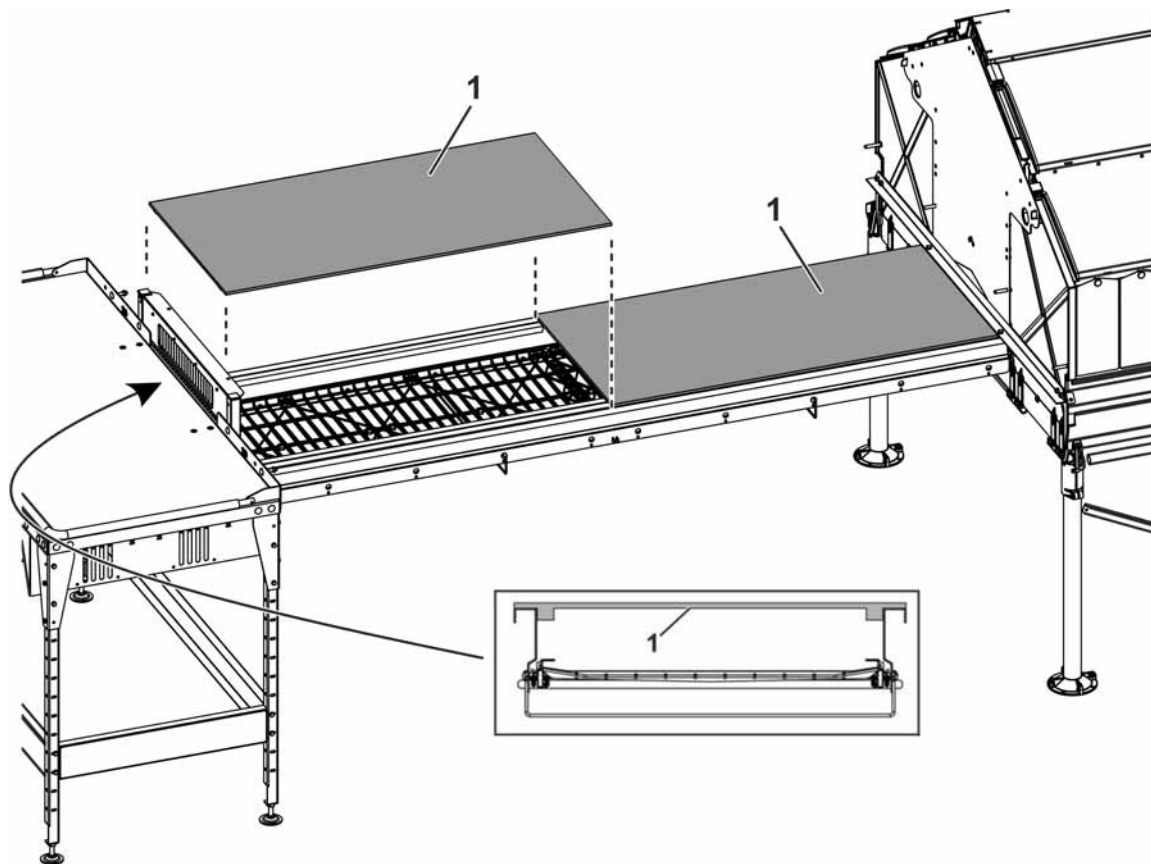
Pos.	Qty.	Code no.	Description
1	1	83-08-1633	Covering right for idler egg belt 600
	1	83-06-9741	Covering right idler 1000mm EB500 BD-C
2	1	83-08-1634	Covering left for idler egg belt 600
	1	83-06-9739	Covering left idler 1000mm EB500 BD-C
3	2	00-00-1187	Pictograph: Danger of being crushed / protective equipment

8.4 Connection of egg belt between nest and gathering table



Pos.	Qty.	Code no.	Description
1	1	83-09-5991	Cross member at nest for extension egg channel EB500 BD-C Relax
	1	83-09-9760	Cross member at nest for extension egg channel EB400 BD-C Relax
2	1	83-09-9725	Fastening plate for connection left BD-C Relax
3	1	83-09-9738	Fastening plate for connection right BD-C Relax
4	1	83-10-8385	Curtain sheet E500 for connection at table drive BD-C Relax
	1	83-10-8378	Curtain sheet E400 for connection at table drive BD-C Relax
5	1	83-09-5996	Side rail for extension egg channel nest BD-C Relax
6	1	83-09-5997	Support for connection BD-C Relax
	1	83-09-6987	Support for connection E400 BD-C Relax
7	2	83-03-2842	Egg channel 1206 PP E500 BD-C
	2	83-09-4080	Egg channel 1206 PP E400 BD-C
8	4	83-07-7488	Longitudinal support 1206 for egg channel PP BD-Colony 2+ with clip
	4	83-09-3272	Longitudinal support 1206 for egg channel 400
9	3	83-10-8386	Bracket for returning egg belt Relax E500 galv.
	3	83-10-8389	Bracket for returning egg belt Relax E400 galv.

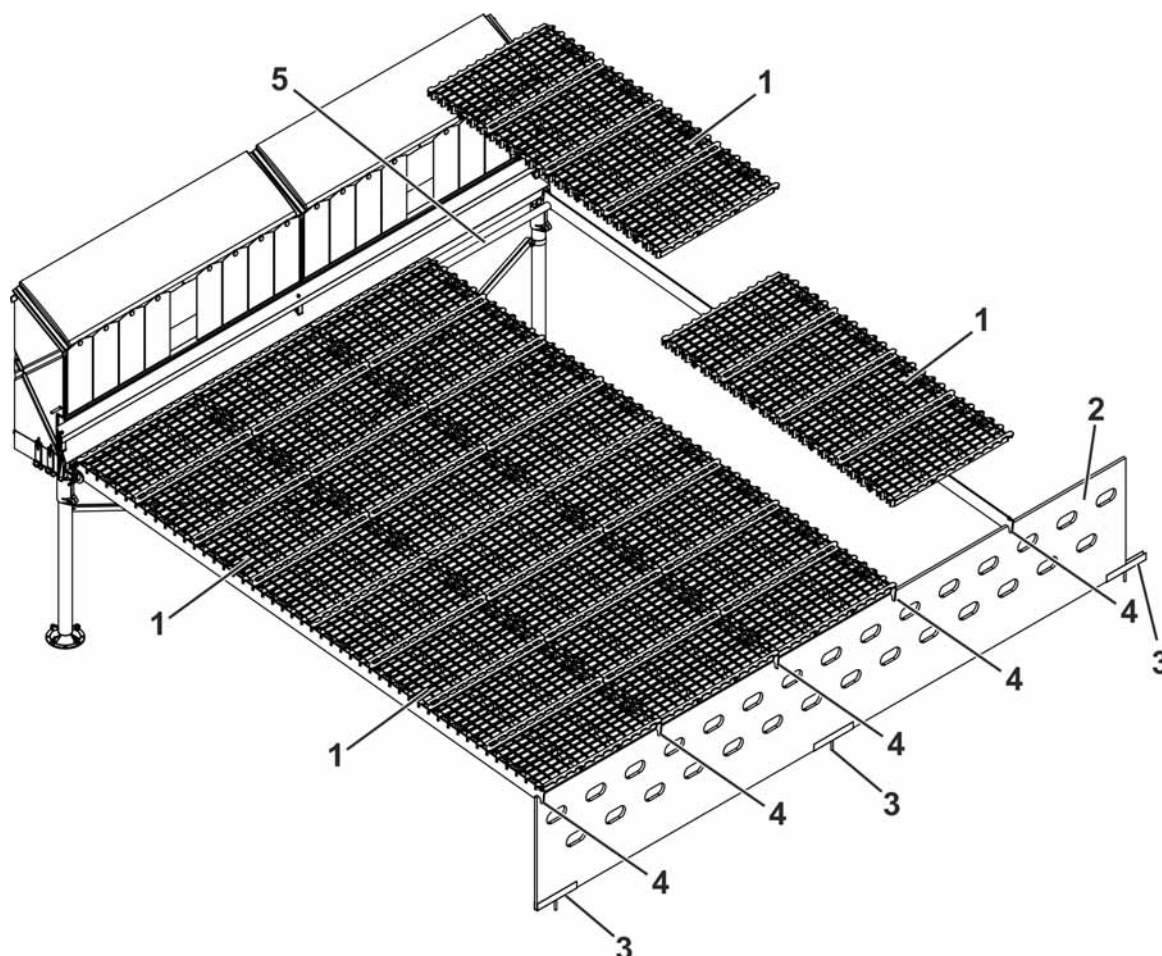
8.4.1 Egg channel cover



Pos.	Qty.	Code no.	Description
1	2	83-09-5995	Covering wood for egg channel E500 Relax
	2	83-10-8372	Covering wood for egg channel E400 Relax

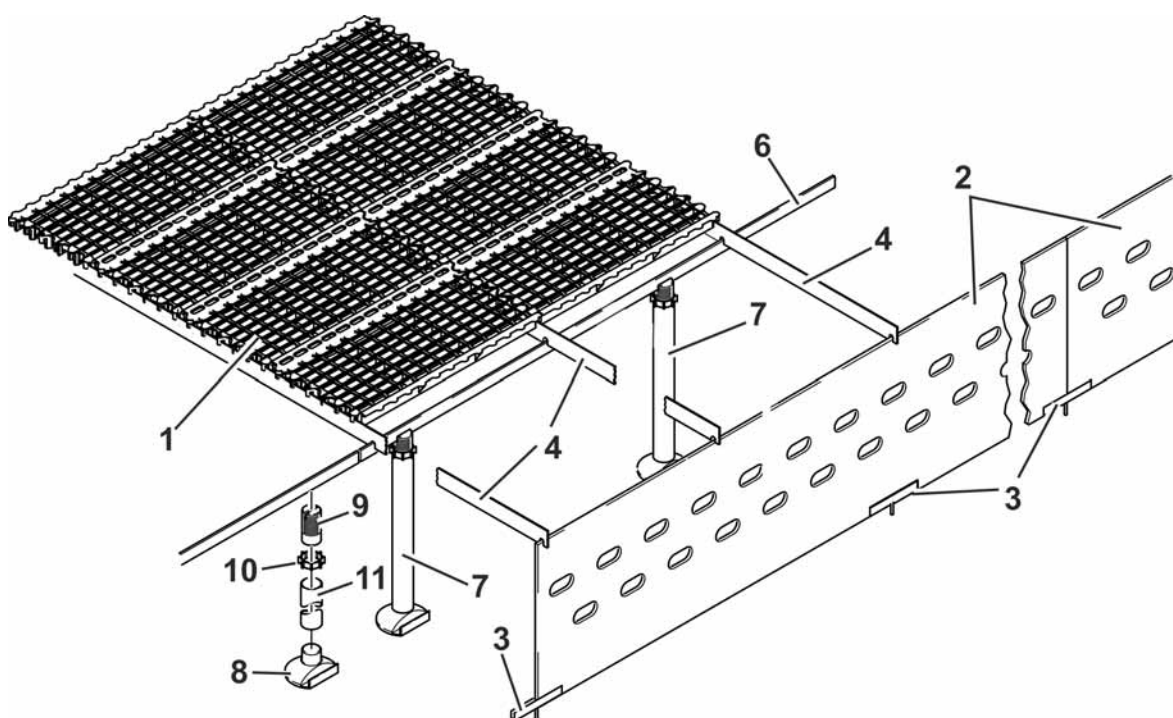
8.5 Manure pit

8.5.1 Manure pit with 1.2 or 2.4 m standard width



Pos.	Code no.	Description
1	83-00-1222	Plastic flooring 1K 1200 x 600
2	36-00-3338	Panel 12x497.0x3000 laminated plywood with holes
	83-07-2978	Panel 12x400x3000 laminated plywood with holes
	83-14-0791	Panel 25x400x1800 plastic with holes
	83-14-0790	Panel 25x500x1800 plastic with holes
	83-14-0759	Panel 25x750x1800 plastic with holes
3	36-00-3336	Mounting set SST floor for laminated plywood
4	36-00-7001	Flat steel 1200x60x5 galvanized notch: 3/4" 3/4"
	36-00-7004	Flat steel 2400x60x5 galvanized notch: 3/4" 3/4"
5	99-40-3812	Pipe 3/4" x 6000 galv. DIN 10255

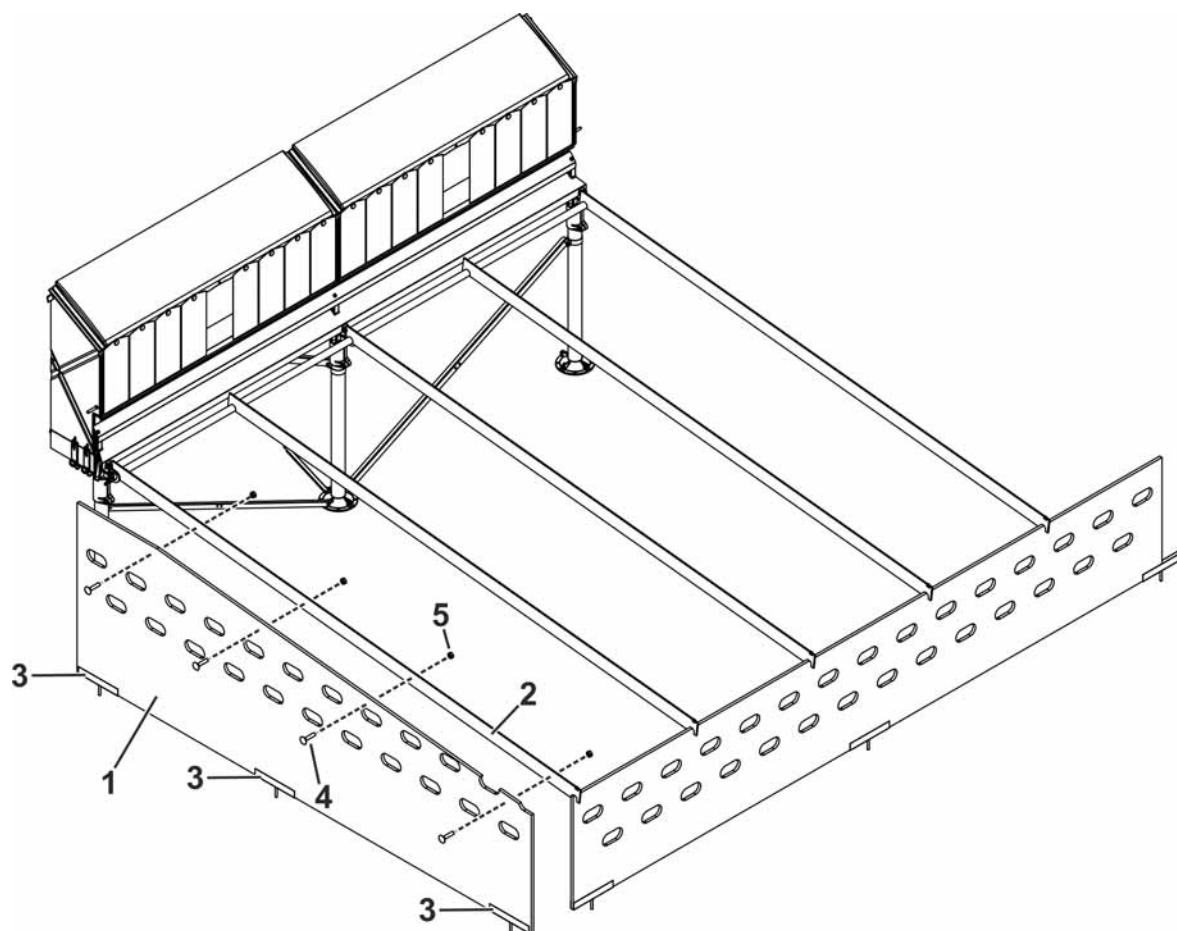
8.5.2 Manure pit with 3.6 m standard width



Pos.	Code no.	Description
1	83-00-1222	Plastic flooring 1K 1200x600
2	36-00-3338	Panel 12-497.0x3000 laminated plywood with holes
	83-07-2978	Panel 12-400x3000 laminated plywood with holes
	83-14-0791	Panel 25-400x1800 plastic w/holes
	83-14-0790	Panel 25-500x1800 plastic w/holes
	83-14-0759	Panel 25-750x1800 plastic w/holes
3	36-00-3336	Mounting set SST floor for laminated plywood
4	36-00-7042	Flat steel 3600-60x5 galv. notch: 3/4" 3/4"

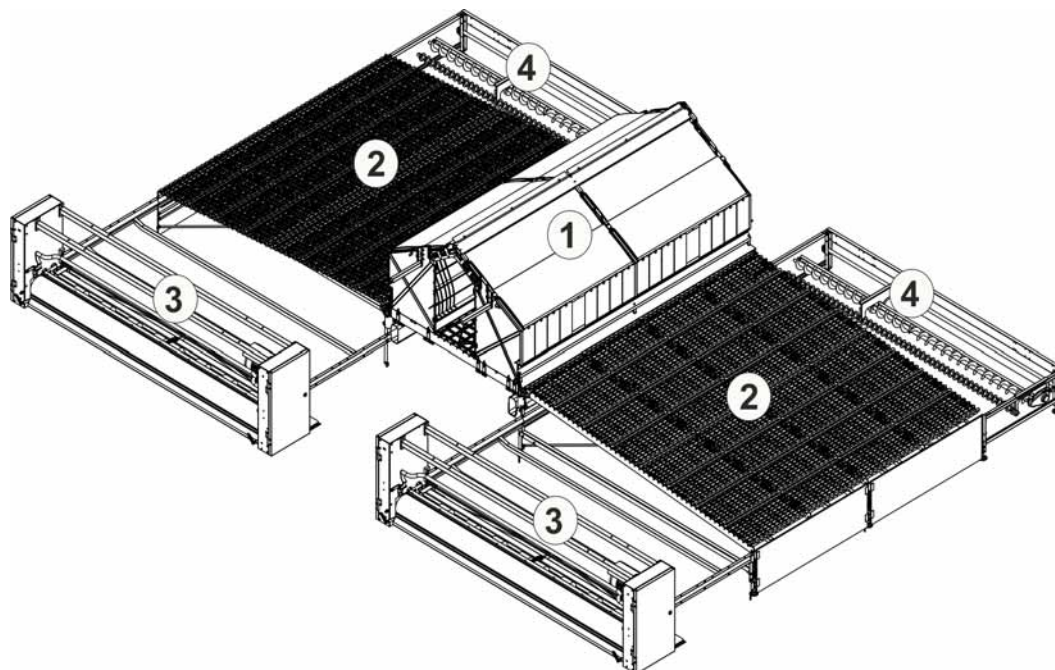
Pos.	Code no.	Description
	36-00-3498	Longitudinal support for manure pit more than 3m width per runn. mtr.
6	36-00-3368	Flat steel 40x8-6000 galv.
7	36-00-3340	Post cpl. for support of plastic flooring manure pit consisting of pos. 8-11:
8	36-00-3341	Foot
9	36-00-3342	Guide piece M56x3
10	36-00-3343	Nut M56x3
11	20-50-1066	Pipe 63x3.00-5000 PVC DIN 8061/62

8.5.3 Lateral enclosure of the manure pit



Pos.	Code no.	Description
1	36-00-3337	Panel 12-747.5x3000 laminated plywood with holes (blank)
2	36-00-7001	Flat steel 1200-60x5 galv. notch: 3/4" 3/4"
	36-00-7004	Flat steel 2400-60x5 galv. notch: 3/4" 3/4"
	36-00-7042	Flat steel 3600-60x5 galv. notch: 3/4" 3/4"
		Flat steels (special length)
3	36-00-3336	Mounting set SST floor for laminated plywood
4	99-20-1428	Mushroom head square neck bolt M 6x30 DIN 603 SST
5	99-20-1102	Hexagon nut M6 SST DIN 934

8.6 Manure pit with manure removal via belts (option)



1. Nest Relax
2. Manure pit
3. Manure belt drive
4. Manure belt idler unit

A spatial separation of drive / idler and the birds is absolutely necessary. The following parts lists are available for the planning of the partition:

36-00-2013; 36-00-2014

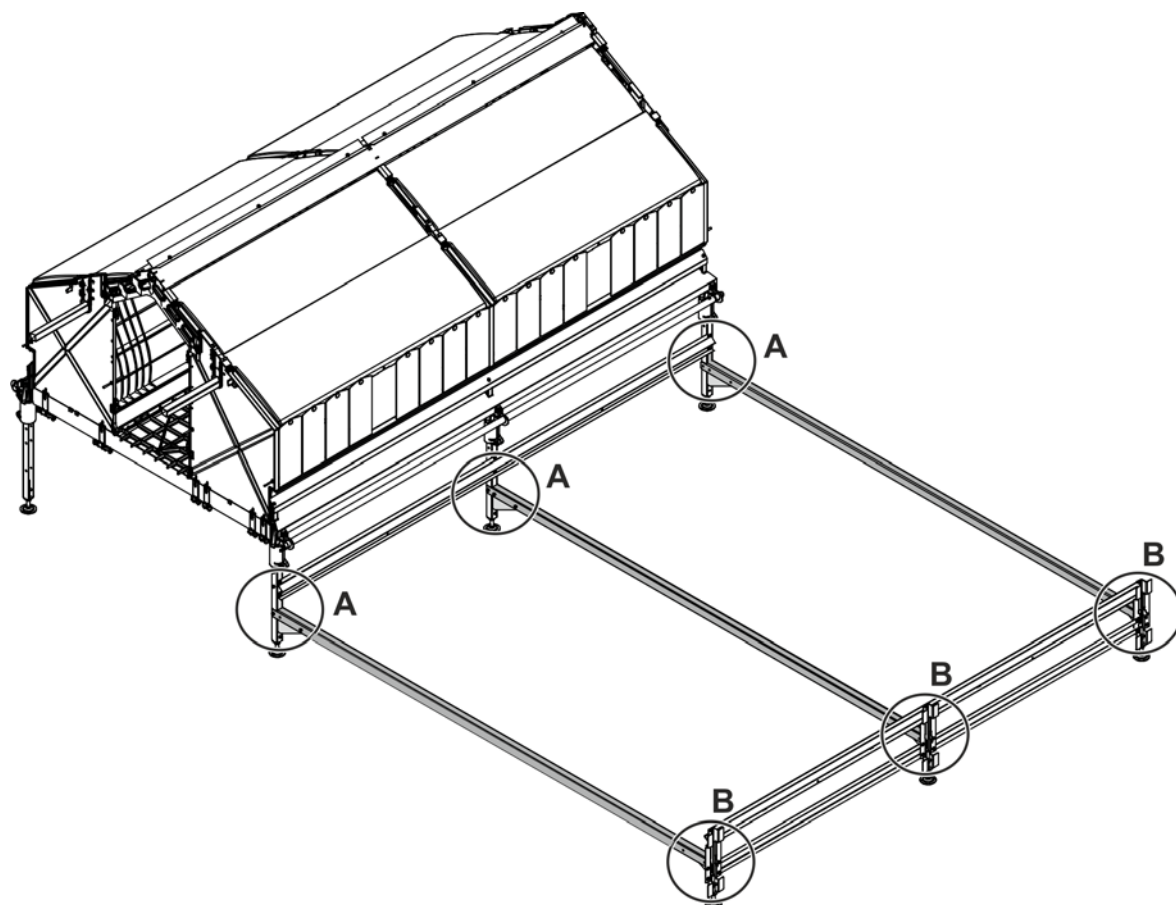
Please find information about the drives in product information no. 1566.

The cross manure removal must also be strictly separated from the bird area. This separation depends on the respective house width and the form of the cross manure removal. Information on the usable cross conveyors can be found in the manual 99-97-2367 "Spare parts list manure conveyor belts from 2014".

Please find information regarding assembly, insertion and adjustment of the manure belt in the following manuals:

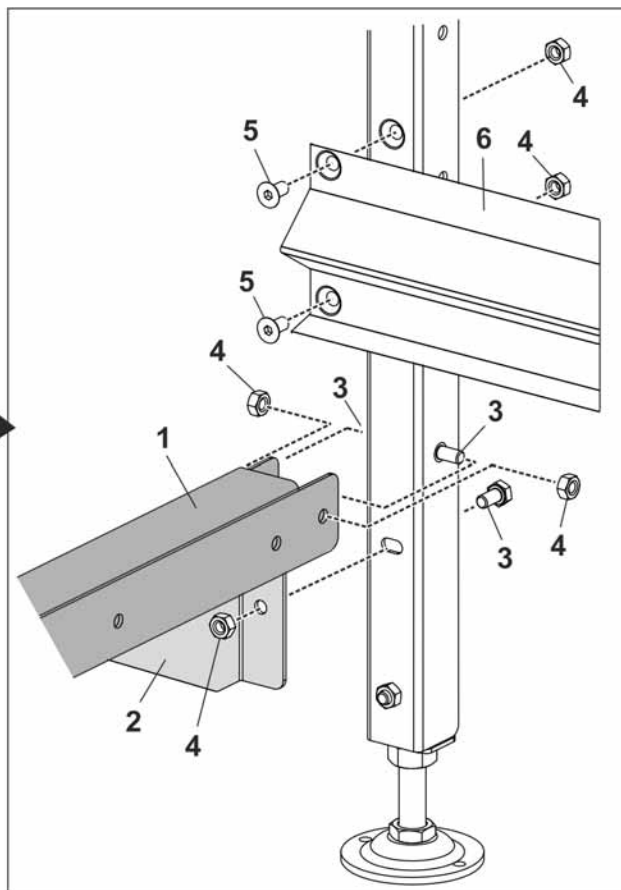
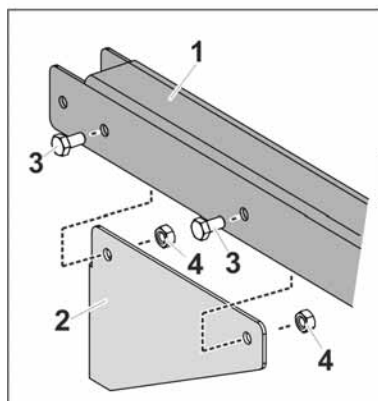
99-97-4318 "Manure belt"; 99-97-0140 "Adjustment of manure belt"

8.6.1 Mounting the manure pit

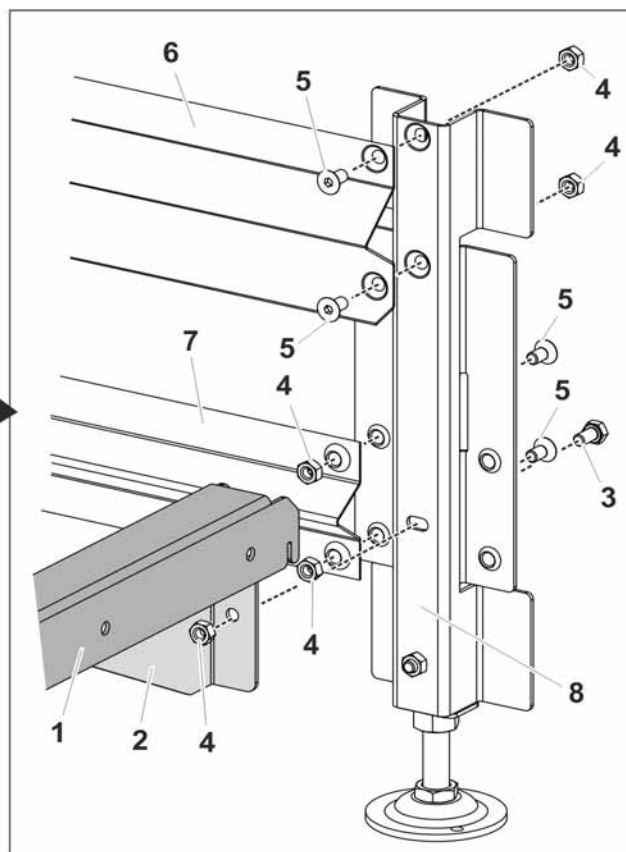
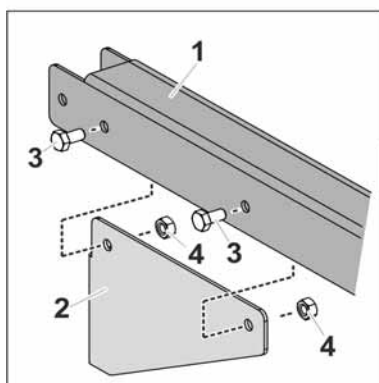


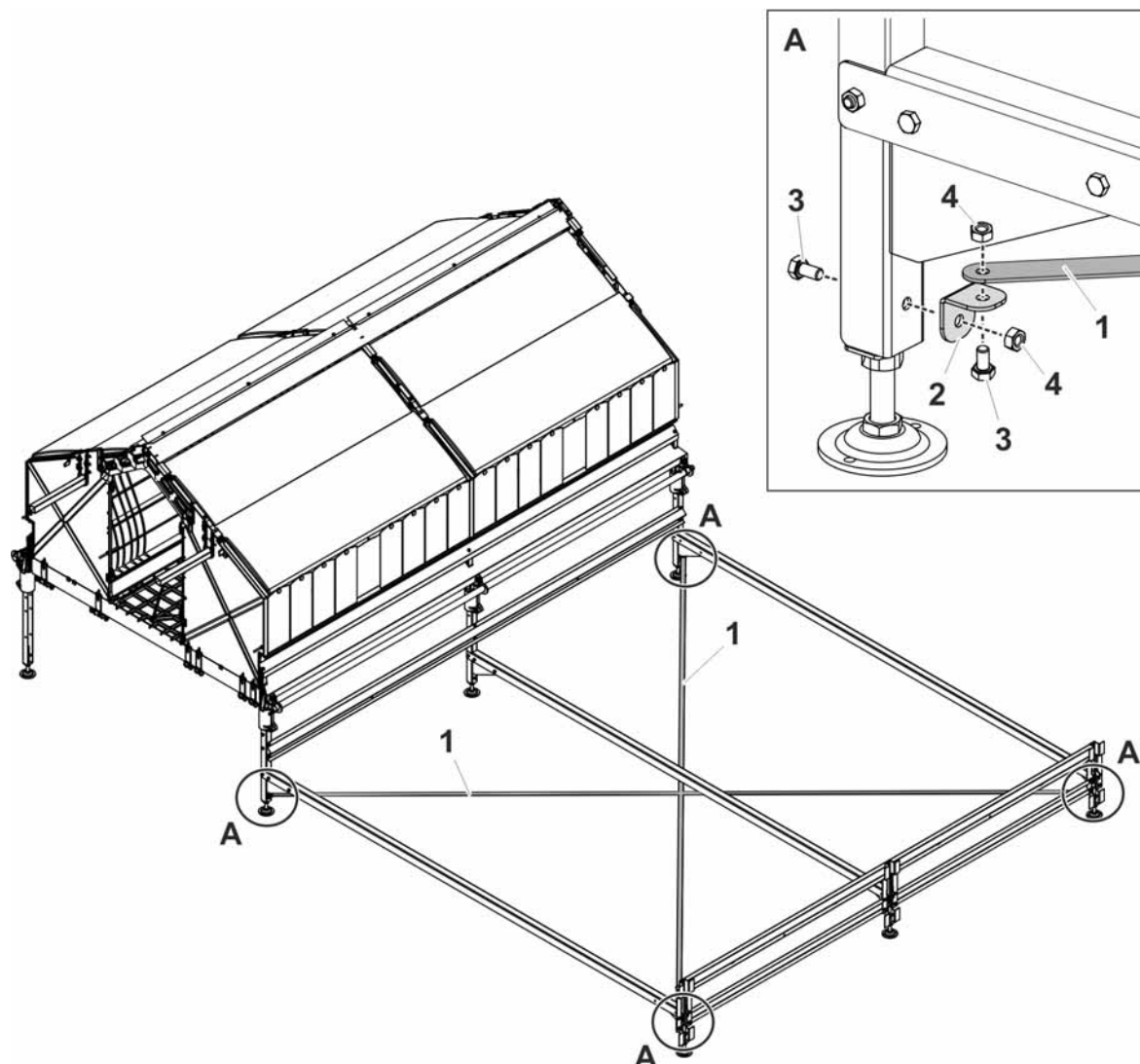
Pos.	Qty.	Code no.	Description
1	1	83-17-0268	Cross member for manure pit with manure belt removal
2		83-14-5635	Gusset plate for manure pit with manure belt removal
3		99-10-1100	Hexagon head screw M 6 x 12 galvanized DIN 933 8.8
4		99-10-1045	Hexagon nut M 6 galv. DIN 934-8
5		99-10-3985	Hexagon socket countersunk head screw M 6 x 16 DIN 7991 galv.
6		83-06-5960	Side rail 2412 EV/UV-S SST
7		83-17-0304	Rail for manure pit with manure removal
8		83-17-2231	Post for plastic front 10 mm for manure pit with manure belt removal

A

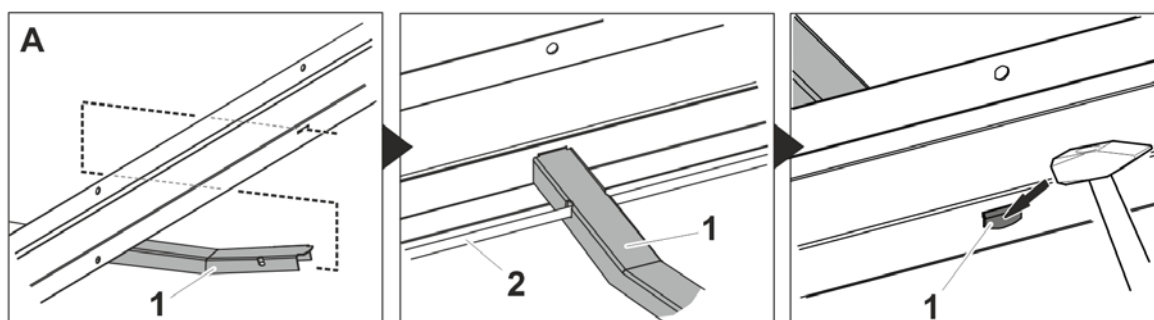
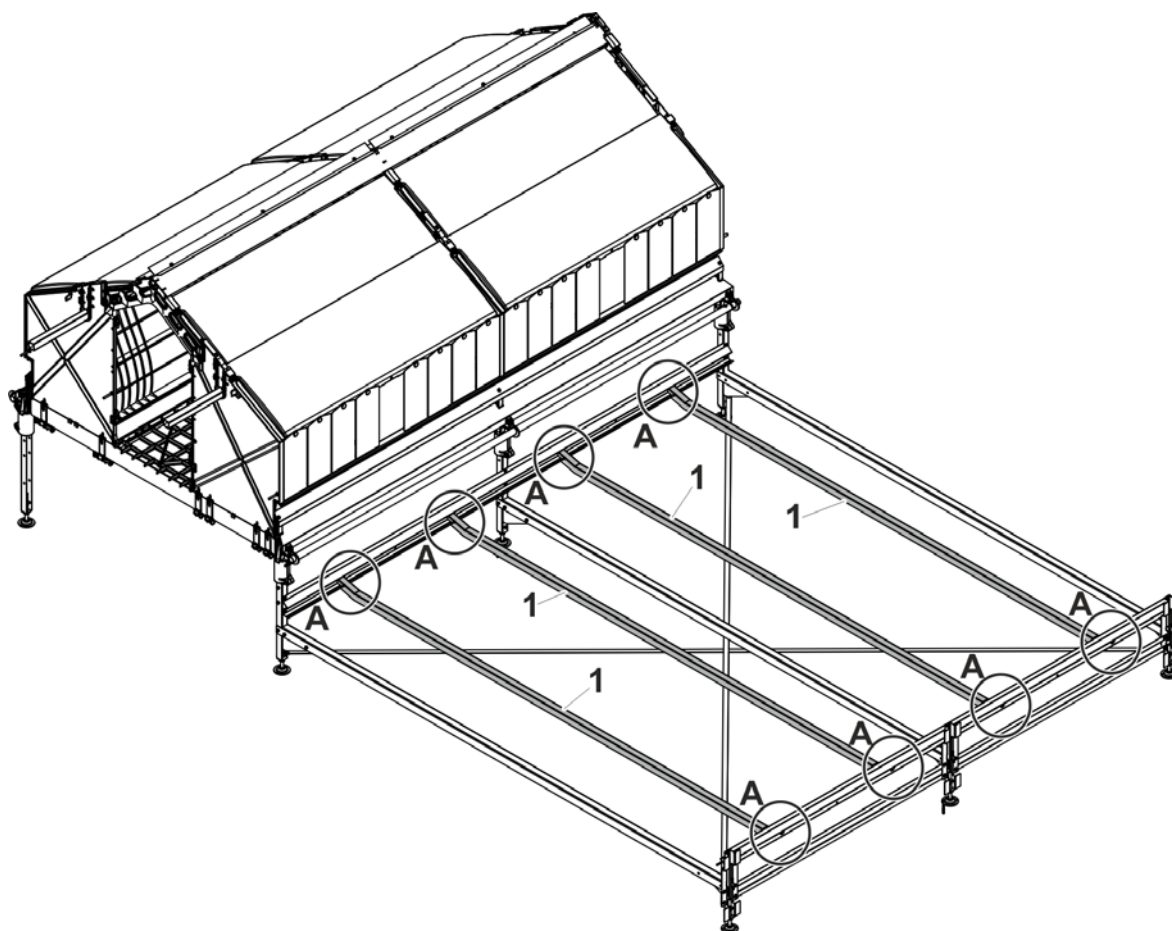


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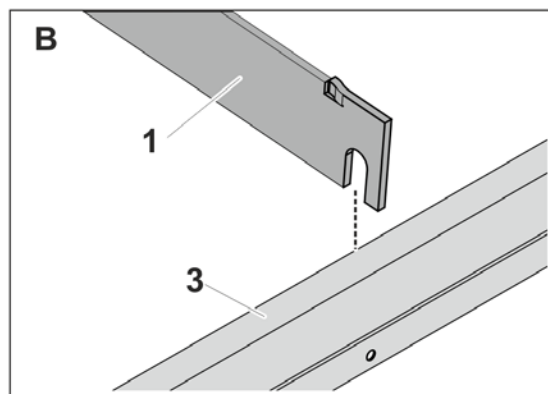
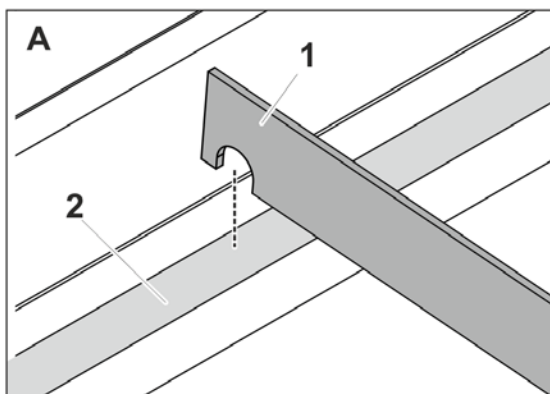
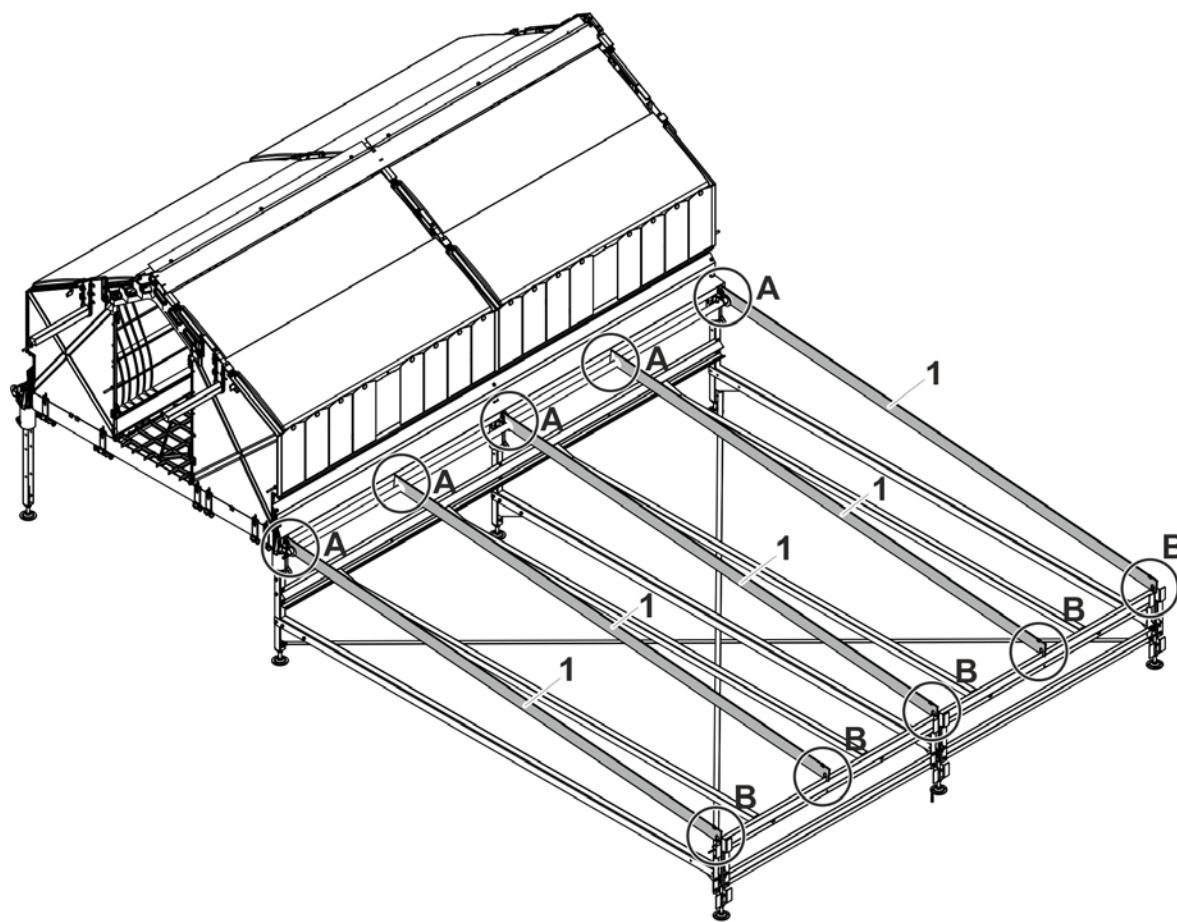




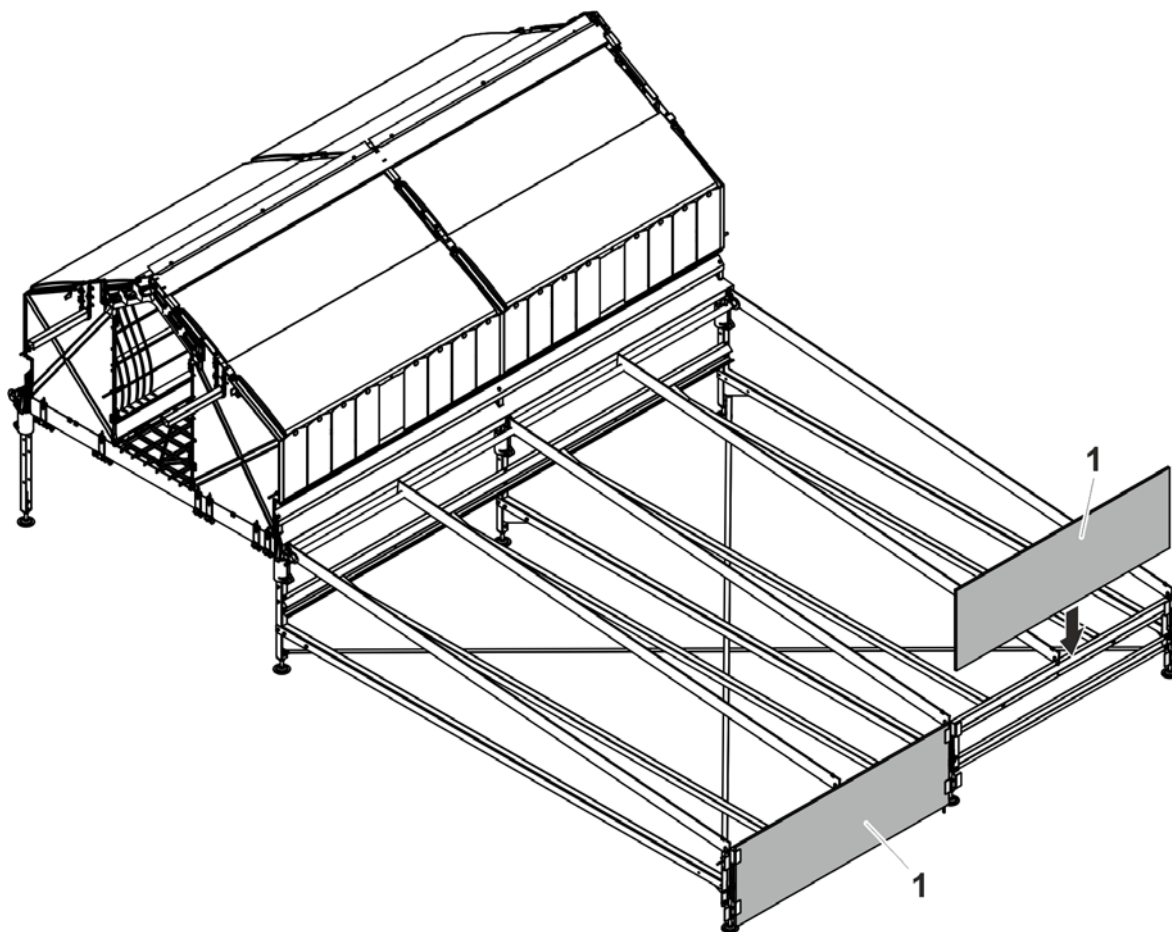
Pos.	Qty.	Code no.	Description
1		83-17-3395	Diagonal strut for manure pit with manure belt removal system
2		83-14-0032	Support angle for diagonal strut
3		99-10-1100	Hexagon head screw M 6 x 12 galvanized DIN 933 8.8
4		99-10-1045	Hexagon nut M 6 galv. DIN 934-8



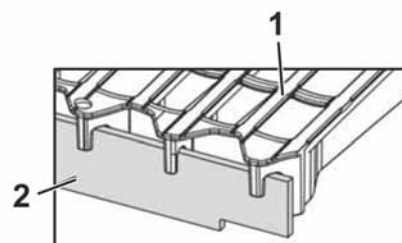
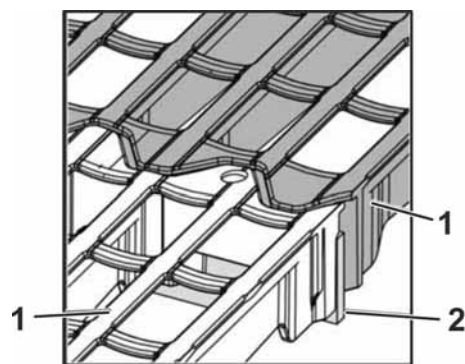
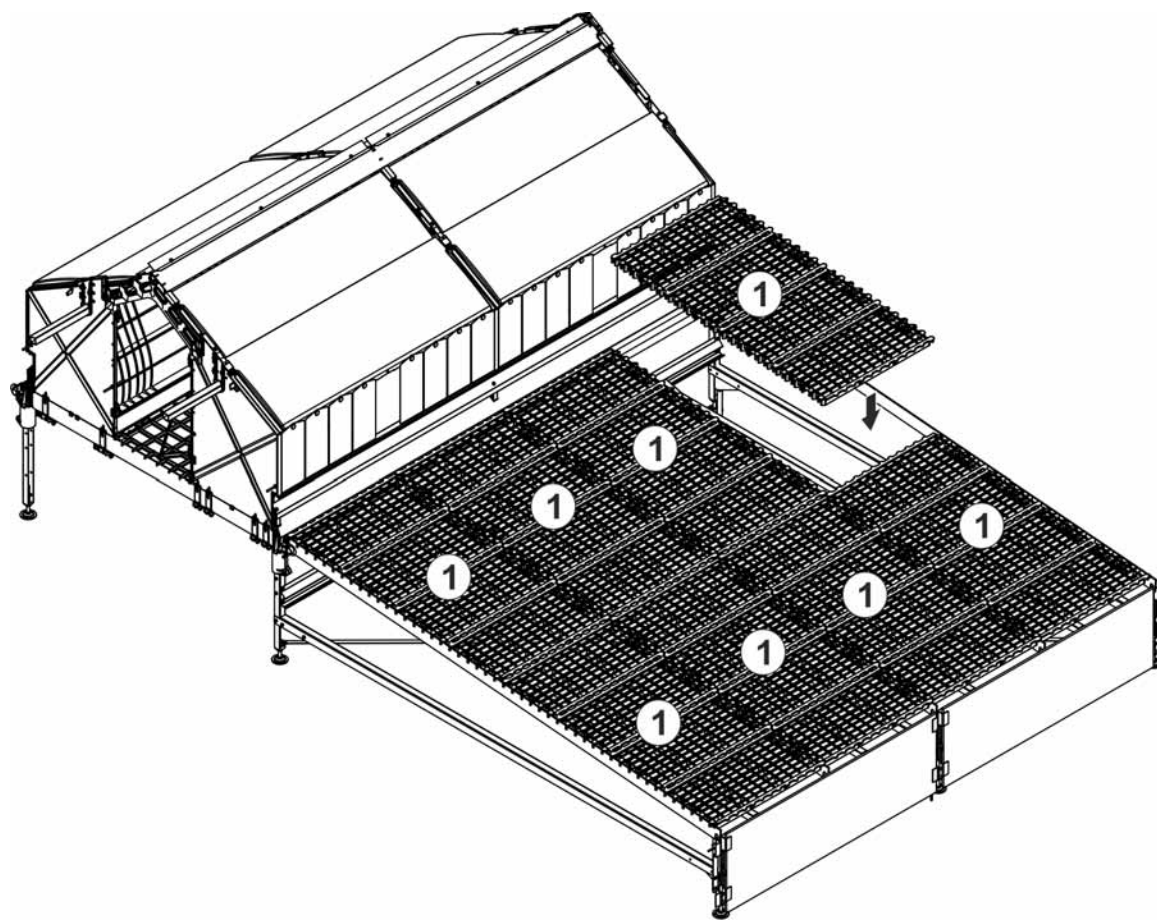
Pos.	Qty.	Code no.	Description
1		83-04-4974	Support for manure belt 2400 C-2400
2		83-00-2932	Rod 5 x 4820 galv.



Pos.	Qty.	Code no.	Description
1		83-16-7666	Flat steel 2420 - 60 x 5 galv. notch: 3/4" 16 x 21
2		99-40-3812	Pipe 3/4" x 6000 galvanized DIN 2240
3		83-06-5960	Side rail 2412 EV/UV-S SST

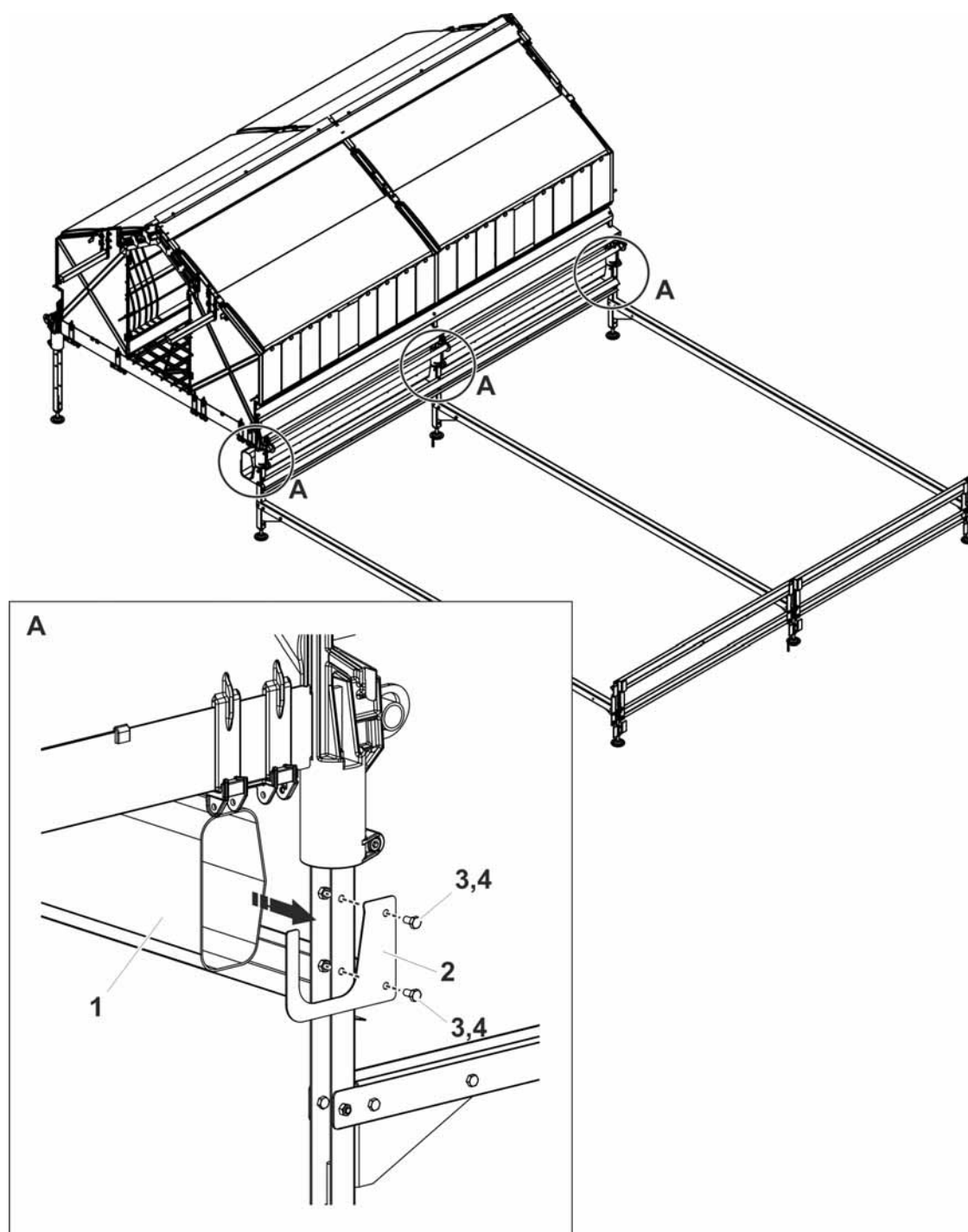


Pos.	Qty.	Code no.	Description
1	1	83-17-2229	Front disk 10 mm PE-HD for manure pit with manure belt removal



Pos.	Qty.	Code no.	Description
1		83-00-1222	Plastic flooring 1K 1200 x 600
2		83-16-7666	Flat steel 2420 - 60 x 5 galv. notch: 3/4" 16 x 21

8.6.2 Manure pit with manure belt removal system and air duct (option)



Pos.	Qty.	Code no.	Description
1		83-04-3322	Air duct 150 x 80-4820/ 20 x 6 mm NAT-60
2		83-16-8518	Holding plate for air duct 150 x 80-4820/20 x 6 mm NAT-60
3		99-10-1100	Hexagon head screw M 6 x 12 galvanized DIN 933 8.8
4		99-10-1045	Hexagon nut M 6 galv. DIN 934-8