

Assembly Manual

Nest BD Colony 2+

Code No. 99-97-1530 GB

Edition: 05/2006



EC declaration of conformity

as defined by the following EC directives

- machinery 98/37/EEG; **Annex II A**
- electromagnetic compatibility 89/336/EEG & amended 92/31/EEG and 93/68/EEG
- low voltage 73/23/EEG

The equipment machinery

Make: Egg collection system for floor management
Type: Nest BD-Colony 2+
System No.
and year of construction: see customer order No.

has been designed, constructed and manufactured in compliance with the above-mentioned EC directives; under the sole responsibility of



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The following harmonised standards apply:

- DIN EN 292/1 and EN292/2, safety of machinery, devices and systems

A complete technical documentation exists.

The operating instructions referring to the equipment machinery are available.

Vechta
Place

10.09.2003
Date

H. Fraas
Managing Director
Signer and information regarding signer

Signature

Overview of changes / updates in the manual

Name of chapter	Type of change / update	No. of BD product information	Revision date	Page
14.2.2 Installing the covers 1206 tiltable	cover 1206 (code no. 83005736) was replaced by cover 1206 (code no. 83032454)		05/2006	page 95
18 Installing the footrails	insertion of a paragraph on the assembly of the foot rails at the end-set stillages		05/2006	page 115
25 Assembly of the extended manure pit	insertion of new chapter		05/2006	page 177
26 Assembly of the approach grating	insertion of new chapter		05/2006	page 189

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1 Basic instructions



Please take care of this manual and always keep it in the same place close to the installation for quick reference. All persons working with the system, assembling, cleaning and servicing it have to be familiar with the contents of these instructions.

Please observe the contained safety instructions!

If this manual gets damaged or lost, request a new copy from **Big Dutchman**.

1.1 Basics

The **Big Dutchman** installation has been constructed according to the current state of the art and all acknowledged regulations regarding technical safety. The installation 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 mounted, attended, repaired und used:




- for due use
- in an excellent state from the safety and technical point of view
- by persons who are familiar with the safety regulations

In the event of special problems which are not described in detail in this manual, we recommend to contact us for your own safety.

1.2 Explaining the symbols


1.2.1 Safety symbols in this manual


Upon reading this **manual** you will come across the following symbols


	<p>WARNING</p> <p>This symbol indicates risks possibly leading to personal injury resulting in death or to severe injuries.</p>
	<p>CAUTION</p> <p>This symbol indicates risks or insecure procedures possibly leading to injuries or material damage.</p>
	<p>NOTE</p> <p>This symbol indicates notes leading to an effective, economic and environmentally-conscious handling of the installation</p>

1.2.2 Safety symbols in the manual and on the installation

These safety symbols illustrate remaining dangers when handling the system. They are supplements to the above-mentioned symbols:

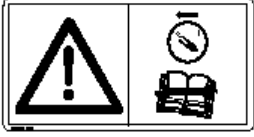



	Warning against dangerous electric tension
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	Warning against the cold
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	Warning against slippery surface
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1.2.3 Safety symbols and notes on your installation

Depending on the type of installation you will find the following safety symbols. They indicate technically remaining dangers when handling the system and give information on how to avoid these dangers

	<p>GENERAL DANGER !</p> <p>Installation automatically starts working. Before starting repair, maintenance or cleaning work, put main switch to "OFF"</p>
	<p>Danger of bruising due to rotating machine parts!</p> <p>Close protective devices each time before taking the system into operation. Opening protective devices is only allowed when the system is in a standstill. People have to be authorised for this.</p>
	<p>RISK OF INJURY due to operating auger, chain or cable discs!</p> <p>Never reach into or climb into a feed container or trough while the motor is running.</p>
	<p>DANGER OF SKIN CORROSION due to purifying agents!</p> <p>Always wear protective clothing when repairing, maintaining and cleaning the installation. Always observe the manufacturer's instructions when using acids!</p>

Implicitly observe the instructions attached to the installation, such as the arrow on the motor indicating the direction of rotation.

The signs and safety instructions always have to be visible and must not be damaged. If they are soiled by dust, manure, feed remains, oil or grease, clean them by means of a water-detergent mixture.

	<p>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.</p>
---	--

1.3 Designated use

This installation has been built to produce eggs and to increase the birds' freedom to move. These aims define the designated use of the installation. The **Big Dutchman** installation may only be used according to its designated use. Every other use is considered as non-designated use. The manufacturer does not accept liability for damage resulting from other uses, the user alone has to bear the risk. The designated use also includes the exact observance of the operation, maintenance and repair instructions as prescribed by the manufacturer..

1.4 General safety instructions

All established safety precautions and other generally accepted safety regulations and medical references have to be observed. Please check safety and function control devices to ensure safe and accurate operation:

- before putting into operation
- at adequate time intervals
- after modifications and 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. Follow the directions of the electric and water supply company.

1.5 Safety instructions when operating electrical appliances

You have to make sure that the system with the electrical appliances is operated and maintained according to the electro-technical regulations



Installations and work on the electric components/structural groups may only be carried out by qualified personnel according to electro-technical regulations (e.g. EN60204, DIN VDE 0100/0113/0160).



Dangerous electric tensions are bare in case of open control equipment. Please be aware of the danger and keep workers of other professions away from the dangerous spot!

Do not install control units directly in the house but in the service room in order to prevent damages due to ammonia vapours (NH₃). Immediately switch off the installation in the event of malfunctions of the power supply units. Use a bipolar voltage probe to make sure that the electrical equipment is not alive. Check the electrical wiring and cables for recognisable damage before putting the device into operation. Replace damaged wiring and cables before taking the device into operation. Only use the fuses indicated in the circuit diagram. Immediately replace damaged fuses.



Warning

Never repair or bypass the fuses!



Damaged fuses have to be replaced with new fuses!

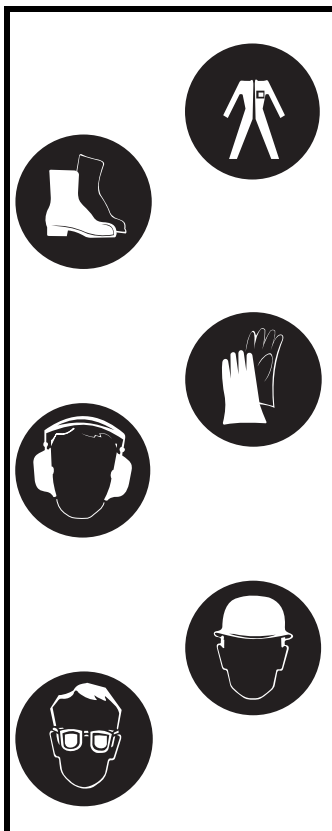
Never cover the electrical motor. This can cause high temperatures so that fire results and the working means can break down. The control box as well as the terminal and connector boxes of the installation must always be kept shut. Let damaged or broken plugs be replaced by an electrician. Let damaged or broken plugs be replaced by an electrician. For the respective connections please see the enclosed connecting plan of the system parts delivered.

1.6 Dangers resulting from non-compliance with the safety instructions

Non-observance of these instructions can cause severe danger for life and health of people or can lead to material or environmental damages and to the forfeiture of any claim for damages. To be precise, the non-observance of these instructions can lead to:

- Failure of vital functions of the installation
- Failure of prescribed maintenance methods
- Dangers for people owing to electrical and mechanical influences.



1.7 Clothing for personal safety

	<p>When operating, maintaining and cleaning the system, avoid wearing wide, fluttering clothes, rings and watches. Make sure that long hair is tied back when approaching moving system parts. Hair can get caught in the parts in motion and thus create severe injuries. Wear protective clothes and safety footwear upon operating, maintaining and cleaning the system, if required also use a safety helmet, ear protection, safety glasses, protective gloves and gas mask..</p>
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1.8 Assembly and maintenance

Assembly of the system can be carried out by the operator himself or by an authorised person. We require that the operator or the authorised person possess the required knowledge and practical experience or technical training and qualification necessary for a proper assembly.


Repairs may only be carried out by persons who are competent and can guarantee proper handling because of special training or knowledge and practical experience with the unit. The operator has the sole power of decision. Work on the electric components may only be carried out by technically skilled personnel and under consideration of German Industry Standards, VDE regulations, safety instructions and electro-technical regulations of the power supply industry (EVU). Only work with appropriate tools; in case of possible danger to hands, use protective gloves, and safety glasses in case of danger to the eyes

	Repair, maintenance and cleaning operations as well as the removal of functional disorders may generally only be carried out when the installation is turned off and the power supply is disconnected.
	Protect the installation by means of a sign fixed to the main switch reading "Do not put into operation!" Refer to maintenance works in case of need..

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


1.9 Employing external personnel


Mounting, maintenance and repair work is frequently carried out by non-operating personnel, which is not familiar with the special circumstances and the inherent dangers

	As supervisor, you are responsible for the safety of external personnel!
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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.

1.10 Ordering spare parts

	<p>Operational safety is the prime necessity!</p> <p>For your own safety only use original Big Dutchman spare parts. For foreign products that have not been released or recommended or for modifications carried out (e.g. software, control units) we cannot judge whether there is a safety risk in connection with the Big Dutchman systems.</p>
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	<p>You can find the exact description (Code No.) of the parts for ordering spare parts by means of the position numbers in the spare parts lists (see appendix).</p>
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Indicate the following for ordering spare parts:

- Code No. and description of the spare part or
- Invoice No. of original invoice
- Power supply e.g. 220/380V-3Ph.-50Hz

1.11 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.

These mounting and operating instructions, particularly the safety instructions, have to be observed by everyone working with 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 damages to the machine resulting from changes done by the user.

1.12 Warranty and liability

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

- non-designated use of the installation
- inappropriate mounting and operating of the system
- operating the system with defective safety equipment or not duly fixed or not functioning safety and protective devices,
- non-observance of the instructions in this manual regarding transport, stock keeping, mounting, maintenance, operating and upgrading of the system
- unauthorised modifications on the system
- inappropriate repairs
- in the event of disasters caused by foreign matters or force majeure.

1.13 Disorders due to power failure

We recommend the installation of warning systems for a better control of your production units or the use of an emergency power-generating set for supplying the system with power in case of power failure. By this, you protect the birds and thus your own economical health. Emergency power units with universal transmission for connection to a tractor are also suitable. For further information please contact your property insurance.

1.14 First aid

For the case of an accident, unless specified otherwise, a first-aid kit must always be available at the place of work. 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 (your data)!

1.15 Waste disposal

After finishing the assembly or repair of this installation, dispose of the packing material and remains which do not need to be further used according to the legal provisions for recycling. The same applies to the component parts after putting the installation out of service.

1.16 Notes for use

We reserve the right to modify the construction and technical data for reasons of further development. Therefore, no claims can be derived from the information, pictures, drawings and descriptions. Subject to correction! In addition to the safety-relevant instructions in this manual and the safety precautions valid in the country of use, also observe the generally acknowledged technical regulations (safe and appropriate working according to UVV, VBG, VDE etc.). In addition to these operating instructions, please also observe the instructions supplied by the manufacturers (e.g. sensors).

1.17 Copyright

This manual is subject to copyright. The information and drawings included in this manual shall not be copied without the manufacturer's consent, nor shall they be used for anything other than the designated use. Neither shall they be given 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. All trade marks mentioned or shown in the text are trade marks of their respective owners and are recognised as patented.

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2 Special safety instructions

2.1 Personal safety instructions

These safety instructions are intended to make you familiar with all information regarding the system that are important for your safety and that of the system.

Maintenance may only be carried out by specially trained and briefed users

Keep with the safety instructions in this manual.

2.2 Clothing and procedures for personal safety

2.2.1 Clothing and footwear

- Wide, fluttering clothes increase the risk of an accident
- Wide pieces of clothing, ties, scarves etc. can get caught in the moving or rotating system parts.
- High heels are a safety risk
- If you stumble, you can knock against sharp-edged, moving or rotating system parts and get severely injured



Secure wide, fluttering clothes or take them off!

When working at or on the system, only wear slip-free footwear and safety shoes when replacing heavy system parts!

2.2.2 Jewellery

- Loose or large jewellery increases the risk of an accident
- The large or loose parts of jewellery can get caught in components of the installation



Take off all jewellery, particularly necklaces, bracelets and rings!

2.2.3 Hair

- Long hair increases the risk of an accident.
- Long hair can get caught in moving or rotating system parts



Secure long hair by tying it back or wearing a bandanna or cap!



Secure long hair by tying it back or wearing a bandanna or cap!

2.3 System safety instructions


The different areas of the **Big Dutchman Colony 2+** laying nests are characterised by different types of construction. There are several system parts that run out, rotate or slide that can increase the risk of an accident when you are unaware of the type of construction.

Therefore:

It is essential to take into consideration the following instructions during maintenance, repair or operation of the system!

2.3.1 Entire system


- Parts lying about on the system or around it can cause you to stumble or fall so that you can get injured by the constructional parts of the system.
- Ignorance of the constructional structure of the system can lead to injuries.
- Parts lying about in / on the components (e.g. in the feed trough, on the egg belt, in the nests etc.) can severely damage the system.

	<p>After repair or maintenance work, never place any objects (e.g. spare parts, replaced parts, tools, cleaning implements etc.) in the accessible areas of the system or around it!</p> <p>Make sure that all loose or replaced parts have been removed from the system components before the system is taken into operation again!</p> <p>Make yourself familiar with the construction of the system in sufficient light! If this is not possible at site, get all available information on the remaining dangers in connection with this system!</p> <p>When working under the installation, always wear a safety helmet!</p>
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2.3.2 Individual components


2.3.2.1 Feeding system

- Rotating or sliding parts of the feeding system can lead to injuries!

	<p>Always disconnect power supply before working on the feeding system, since it can start automatically if controlled by a timer!</p> <p>Never reach into the feed trough with running feed chain!</p> <p>Never reach into the rotating feed chain drives (always keep safety cover closed)!</p> <p>Never touch rotating or powered system parts.</p> <p>Never reach into open and rotating feed chain corners!</p>
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2.3.2.2 Water supply

- Leaky hoses, seals or nipple drinkers can cause water damage in the house and destroy the installation and electrical systems.
- Danger of electric shock
- Danger of short circuits

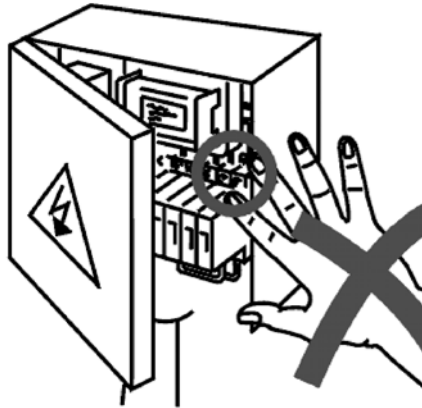
	<p>First disconnect main power supply and then enter the house compartment!</p> <p>If you have to carry out maintenance, cleaning or repair work get the information beforehand, where the main electric switch is located.</p> <p>Put main switch to "Off" and indicate maintenance or repair work by a sign fixed to the main switch!</p> <p>Immediately disconnect main water supply!</p>
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2.3.2.3 Egg collection system

- Rotating parts (drive rollers, guide rollers and idler rollers etc.) can lead to severe injuries!

	<p>Never touch drive, guide or idler rollers when the egg collection system is in operation!</p> <p>Make sure all covering caps or protection covers are properly closed and secured!</p>
--	---

2.3.2.4 Electrical components



	<p>High electric tension!</p>
	<p>If touching live parts, severe injuries due to electric shocks are possible!</p>
	<p>During repair or maintenance work, live elements can be bare!</p>
	<p>Never touch bare electrical components. Staff members must not use machines with bare electrical components</p>

2.3.2.5 Ventilation system

- Rotating fans can lead to severe injuries.
- Fans can start due to their automatic control units.

	<p>Never reach through the protective grills or blade flaps into a fan, even if it is not in operation!</p>
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	<p>Before carrying out repair or maintenance work, disconnect power supply and indicate this by a sign fixed to the main switch!</p>
--	--

3 Operational safety and orders for spare parts



Operational safety is the prime necessity!

For your own safety only use original **Big Dutchman** spare parts. For foreign products that have not been released or recommended or for modifications carried out (e.g. software, control units) we cannot judge whether there is a safety risk in connection with the **Big Dutchman** systems.

We recommend the installation of warning systems for a better control of your production units. By this, you protect the birds and thus your own economical health. In case of power failure, an emergency power-generating set should automatically supply the system with power. Emergency power units with universal transmission for connection to a tractor are also suitable. For further information please contact your property insurance!

4 System description and technical data

4.1 Assembly and use

The **Nest Colony 2+** is an automatic family nest from **Big Dutchman**, ensuring optimum quality of hatching and commercial eggs in broiler breeder and layer management. The central egg belt and the patented divided tilting nest floor allows for particularly smooth egg collection and transport. This reduces the share of cracked and checked eggs to an absolute minimum.

Due to the automatically lifted nest floor, the nests are closed for the night and thus hens are locked out at night and cannot brood inside. The daily dirt can drop off the nest inserts so that there is a reduced danger of diseases due to the improved hygiene conditions.

The drive unit for opening/closing the nests consists of a gear motor and a winch. Depending on the length of the nest line, they are located in the centre or at the beginning of each line.

Depending on the situation in the house, the installation can be connected to a manure pit.

4.2 Designated use

The **Big Dutchman Nest-Colony 2+** may only be used according to its designated use for laying hens and breeders (layer and broiler breeders) in poultry management. Use in any other way is considered as contrary to the intended use. The manufacturer does not accept liability for damage resulting from other uses, the user alone has to bear the risk.

The **Big Dutchman Nest-Colony 2+** causes a noise level of <70 dB (A) during operation.

4.3 Technical data

Nest BD C2+	Double nest	Wall nest
Total length (m)	2,41	2,41
Total width (m)	1,53	0,80
Total height (1-tier)	1,82	1,85
Total height (2-tiers)	2,37	2,40
Nest length / compartment (m) *	1,20	1,20
Depth of nest insert (cm)	46,8	46,8
Nest depth in bird area (cm)	53,0	53,0
Width of egg belt (mm)	500	245

Bird numbers layers / layer breeders	1-tier	2-tiers	1-tier	2-tiers
-for 83.3 birds/m ² nest surface	212	424	106	212
-for 120 birds/m ² nest surface	305	610	153	205
- maximum	320	640	160	320
Bird numbers broiler breeders				
- light breeds	240	-	120	-
- heavy breeds	220	-	110	-

5 Notes for nest-management

The Colony nest system can be handled very easily. Depending on the scope of supply, you can run the egg belts in the system by means of a foot switch, a light barrier or 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 control the egg belt running time 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. Please 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.

5.1 Notes for everyday work with the Colony nests

At the beginning of the laying period, when the laying performance increases, the hens often show a very specific behaviour.

They crowd around the laying nests located at both ends of the house or around the nests on the two sides of the cross partitions.

This might lead to a temporary overcrowding of the above mentioned nests. Hens might crush each other or suffocate, or they might get stuck in the opening between fringe rail and nest floor (opening for rolling off of the eggs).

This behaviour is natural and usually normalizes by itself after a couple of weeks. There is hardly a possibility to influence this behaviour by means of technical adjustments.

The intensity with which this phenomenon occurs depends on the race and many other factors.

The following measures might prove effective:

- Temporary removal of curtains or opening of the nest lids (only for nests with wooden roof). Both measures reduce the attractiveness of the nests as the nest ventilation increases (draught) and it is easier to look into the nest.
- Inspection and manual "clearing" of the overcrowded nest 2 to 3 times during the main laying time. Thus birds are saved from getting crushed or suffocating.
- Erection of barriers which keep the hens from moving lengthwise. This creates artificial "end nests" so that the pressure is distributed on a larger number of laying nests.

5.2 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 occurrence of further mislaid eggs.
- Hence, it is 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 starting at the point when the hens start laying and every 2 hours in the afternoon. On the whole 6 to 7 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 floor eggs and place them in the centre of the next laying nest. This will further encourage the hens to access the nests. Always walk up and down the passages 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 4 to 5 times a day during the entire laying-period and at the beginning of the laying period as early as possible in the morning.
- 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 house air. Check the ventilation system regularly and seek immediate repair or adjustment of ventilation if required.

5.3 Cleanliness of the Colony-nests

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 also damage the system if they are not removed on a regular basis. It is important to draw up a cleaning programme 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.

For your notes::

6 Basic mounting instructions

We recommend to use the following tools to assemble the Big Dutchman Colony nests 2+:

- 1 cross head screw drive size 2 and 3
- 1 open-ended / ring / socket spanner 8 mm, 10 mm, 13 mm
- 1 open-ended / ring spanner 17 mm and 19 mm
- 1 pair of combination pliers
- 1 pair of side cutters and pair of bolt cutters
- 1 pair of pincers
- 1 sledge hammer 500 g and 250 g
- 1 portable electric drilling machine
- 1 electric disc grinder
- 1 twist drills 6, 8 and 10 mm
- 1 spirit level
- 1 metal cutting saw
- 1 paint brush
- 1 vise-grip wrench 250-350 mm long
- 1 electric screwdriver with fittings for hex head screws M5, M6, M8
- 1 pair of walkie-talkies
- 1 cutting pliers for nipple tubes

Do not put these instructions beside before reading them. Even if you have already installed similar systems, there may always be things and alterations you do not yet know. Being properly informed will help you to avoid unnecessary work, troubles and abnormal expenses.

6.1 Explanation on the lay-out of the assembly instructions

In the table of contents you can find and select the subjects to be treated. The individual installation steps are described in the respective paragraph

**Note:**

Once certain nest components have been installed, they will no longer be illustrated in the graphics contained in this manual for reasons of clarity.

The position numbers used in the text refer to the position of the parts in the drawings and exploded views.

All parts mentioned in the text or appendix of this manual are indicated with their respective Code No. and description.

Indicate the following for ordering spare parts:

- Code No. and description of the spare part
- Invoice No. of original invoice
- In case of electric parts: power supply e.g. 220/380V-3Ph.-50Hz.

6.2 Before starting to assemble the system

Before starting to assemble the system, check whether:

- house dimensions, installation drawing and order are corresponding to one another,
- the ventilation, the water and power supply as well as the lighting system in the house are completely installed.

6.3 Assembly order

Use the installation or planning drawing to determine the number of nest rows and nests as well as the position of nests per row.



In case of several nest rows per installation, start mounting the outer row first. Always work from "the outside to the inside", so that you can deposit the building material in the inner empty space of the installation.

7 Mounting the stillages for double nest

7.1 Important preliminary notes for mounting the stillages 1 and 2 tier(s).



Note:

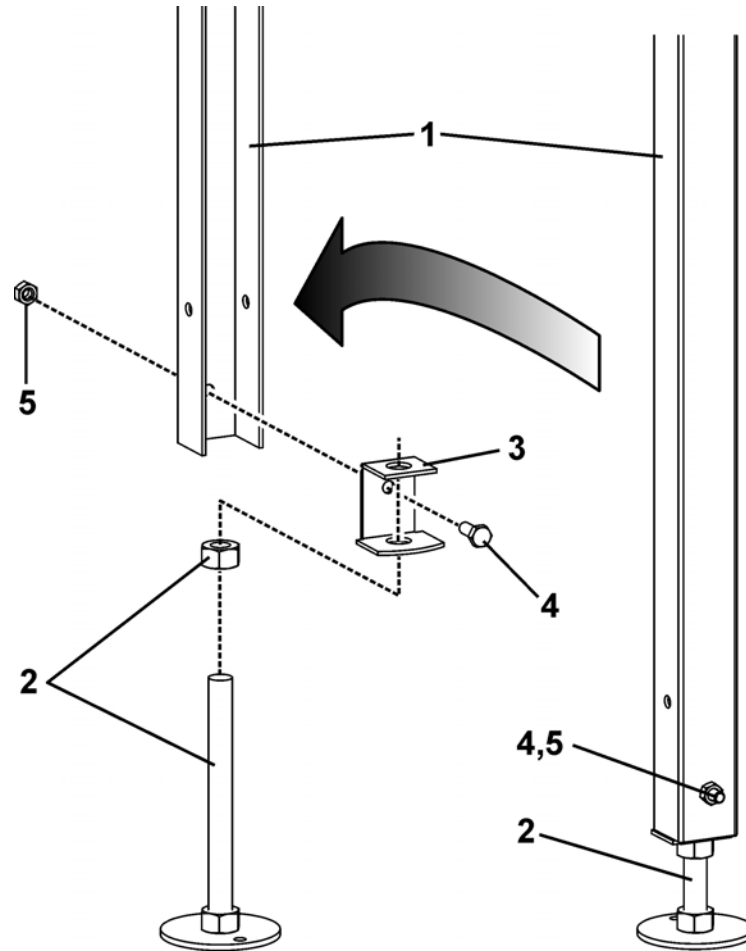
In case of connection to a **manure pit** see chapter 10!



Note: Diagonal braces for the nest substructure for longitudinal belt heights of more than 800 mm diagonal bracings have to be mounted to the nest substructure both for single and double tier nests.

Instructions for the assembly of diagonal braces at double nest: see chapter 7.8!

7.2 Installing the stand post



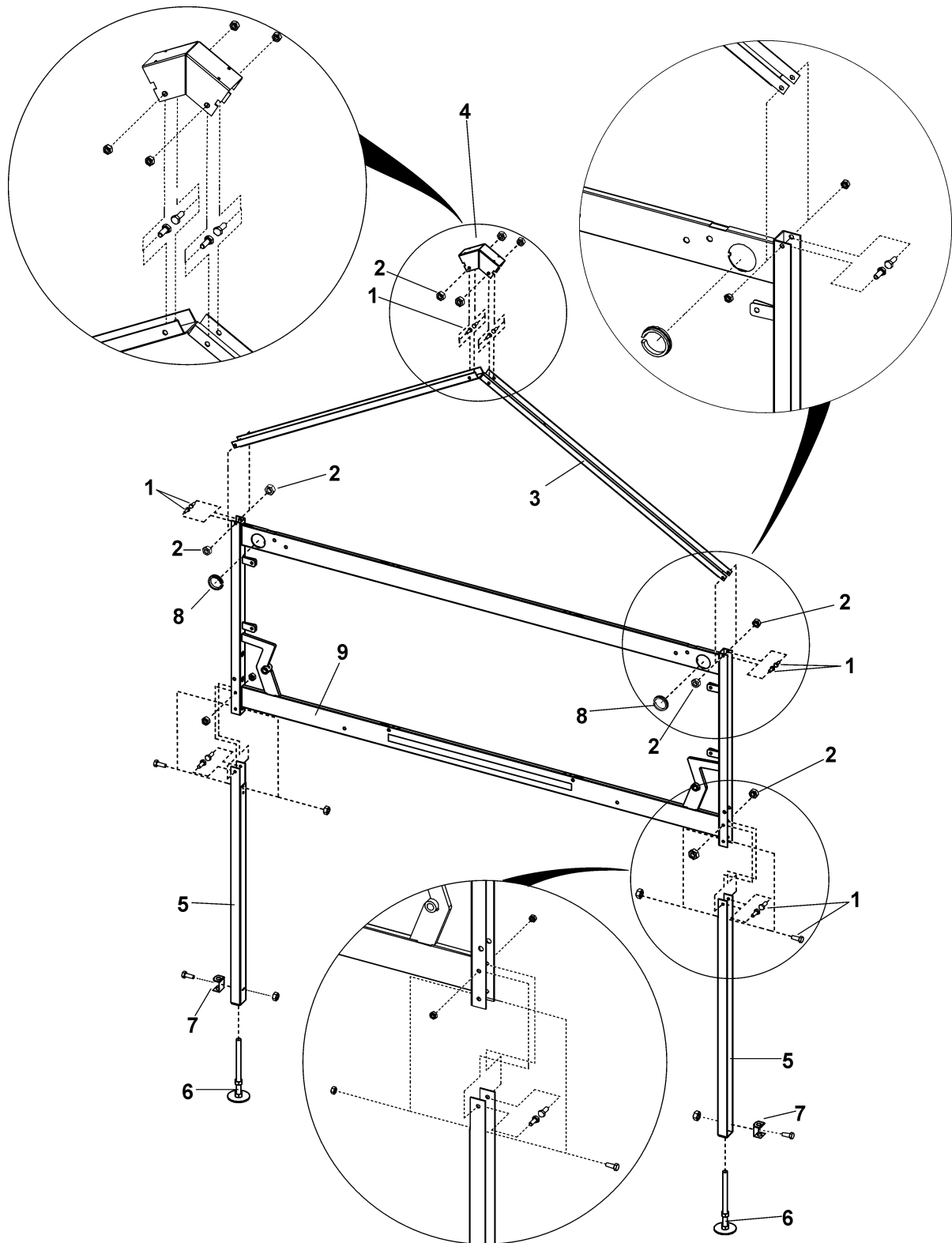
Pos.	Qty.	Code no.	Description
1	1	83-01-5087	Extension for main post galv BD-C2+
	1	83-01-3831	Extension for main post SST BD-C2+
2	1	37-97-4317	Foot adjustable M12x140 PA/SST cpl
3	1	83-01-5088	Holding plate galv at extension NAT/BD-C2+
4	1	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
5	1	99-10-1045	Hexagon nut M 6 galv. DIN 934

Instruction:

- Screw the holding plate (3) onto the extension (1). Make sure you insert the hexagon head screw the right way (see figure above).
- If not pre-assembled, screw the hexagon nut (2) into the threaded rod of the adjustable foot.
- Insert the adjustable foot from the bottom through the holes of the holding plate (3).
- For rough height adjustment and alignment use the upper hexagon nut on the adjustable foot.

7.3 Stillage 1 tier (standard height of longitudinal belt 800mm)

Pos.	Qty.	Code no.	Description
	1	36-00-6011	Stillage 1t double BD-C2+ with plastic partition
1	4	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
2	4	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	1	83-00-5686	Diagonal trussing double for roof sheet
4	1	83-00-5687	Bracket double for ridge plate BD-C2+
5	2	83-01-5087	Extension for main post galv. BD-C2+
		83-01-3831	Extension for main post SST BD-C2+
6	2	37-97-4317	Foot adjustable M12x140 PA/SST cpl
7	2	83-01-5088	Holding plate galv at extension NAT/BD-C2+
8	2	36-00-6206	Bush PA6 for tube 1"
9	1	83-00-8774	Stillage 1t double welded BD-C2+



Note:

In case of connection to a **manure pit** see chapter 10!

7.4 End set stillage 1 tier (standard height of longitudinal belt 800mm)

At different positions within a nest row

nest end set stands

are required.

These positions are:

- at the beginning of a row (drive side of longitudinal belt)
- at the end of the row (egg belt idler side)
- at the beginning and the end of each passage.

The assembly of the nest end set stillage has to be carried out as described in the previous chapter.

The particularity about this nest end set is that additional partitions are mounted closing the nest from the outside.

Furthermore the tubes for the nest floor resetting mechanism and the rods are fixed to the end set stillage.



Note:

In case of connection to a **manure pit** see chapter 10!



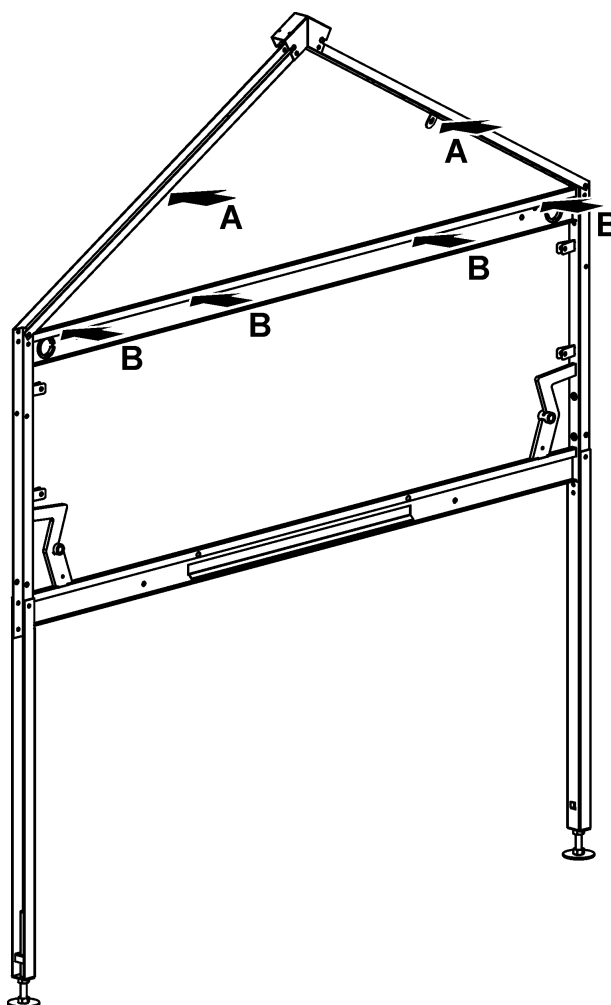
Important:

Upon set-up, take into consideration the alignment of the stand. The edge at the opening for egg belt in the lower cross support has to point in the direction of the egg belt idler unit. (See chapter 9)

7.4.1 Installing the additional partitions at the nest end set

Additionally install the following partitions at the end set stillage:

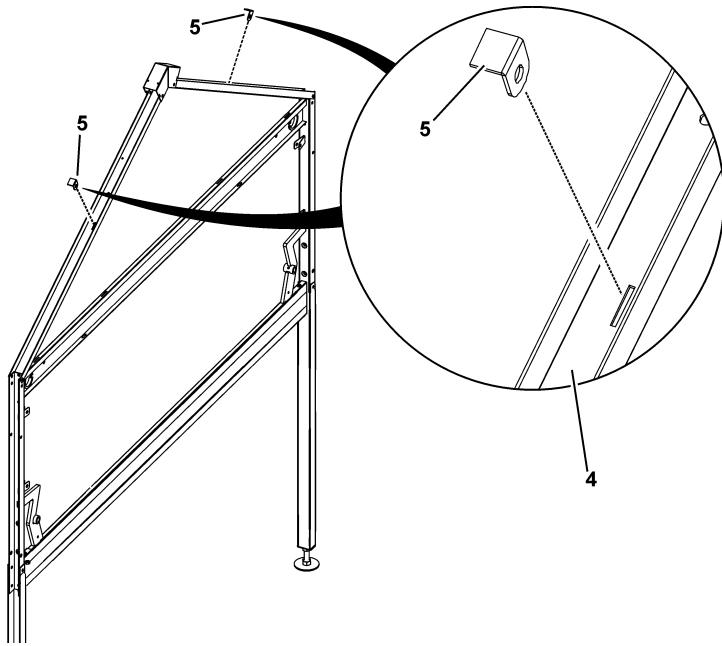
Pos.	Qty.	Code no.	Description
1	1	83-01-4168	Sheet metal partition dbl. upper closed f/end partition BD-C2+
2	1	83-01-4988	Separating plate double for end partition BD-C2+



Positions where the sheet metal partition double upper closed (1) is fixed.

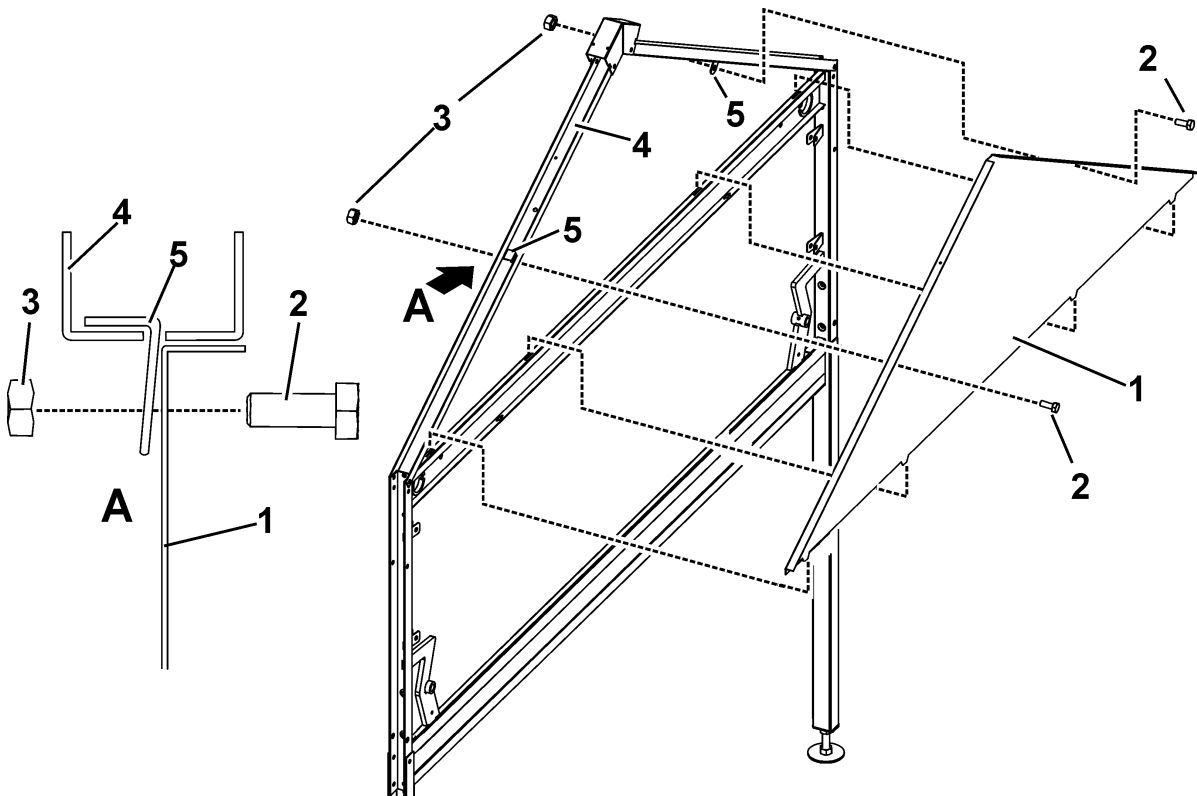
At the positions A suspend one mounting each in the diagonal trussing, where the partition is fixed with hexagon head screws and nuts.

At the positions B insert the partition into the stillage.



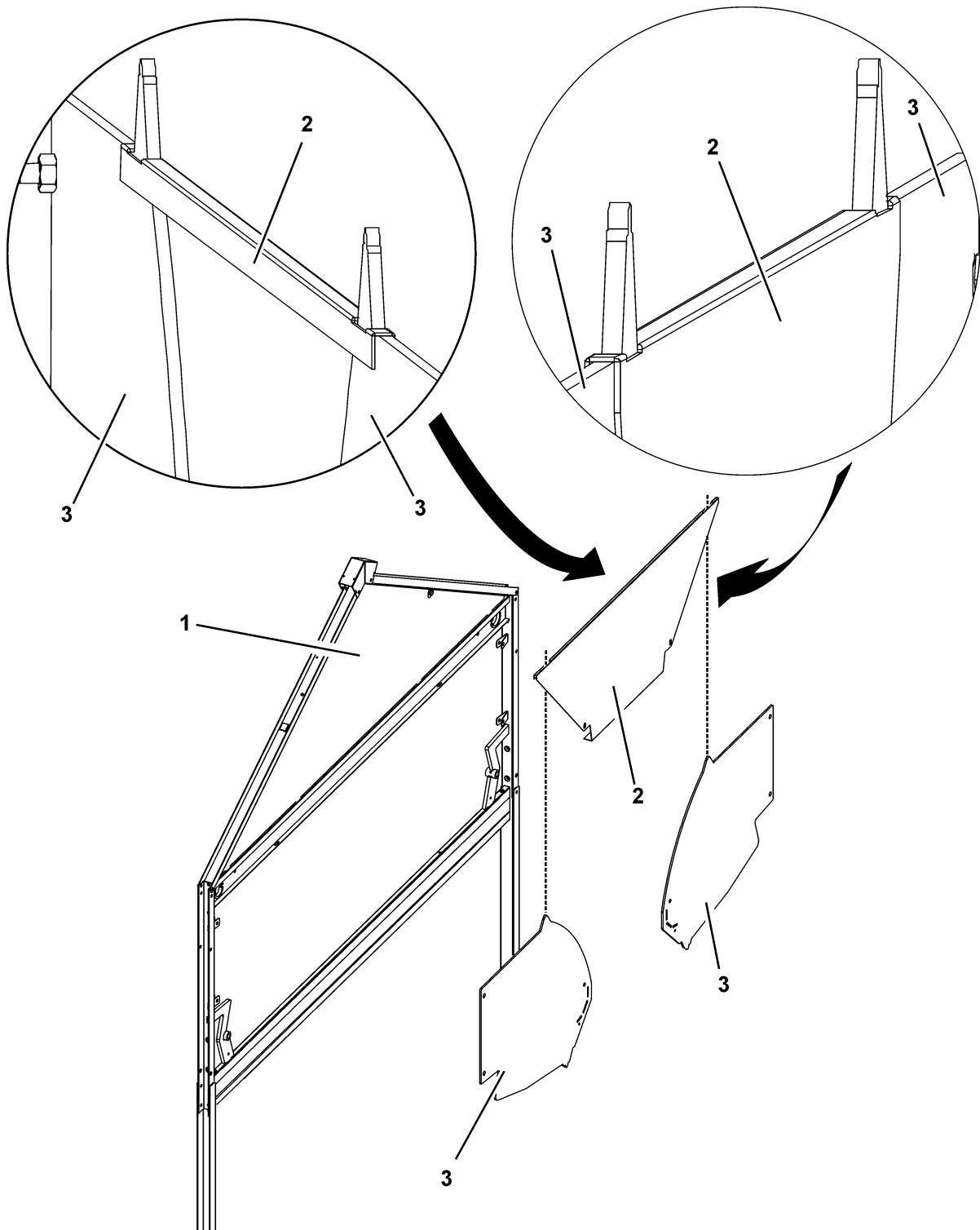
At these positions, install the mountings to the stillage

For aligning the mounting and the partition, see detail A in bottom drawing.

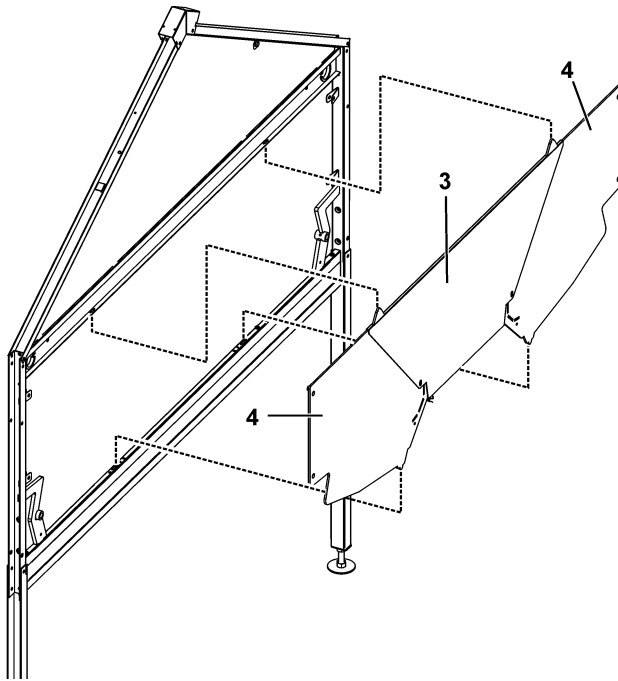


Pos.	Qty.	Code no.	Description
1	1	83-01-4168	Sheet metal partition dbl. upper closed f/end partition BD-C2+
2	2	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
3	2	99-10-1045	Hexagon nut M 6 galv. DIN 934
4	1	83-00-5686	Diagonal trussing double for roof sheet
5	2	83-00-8943	Mounting for pluggable partition BD-C2+

Installing the separating plate double for end partition (2)

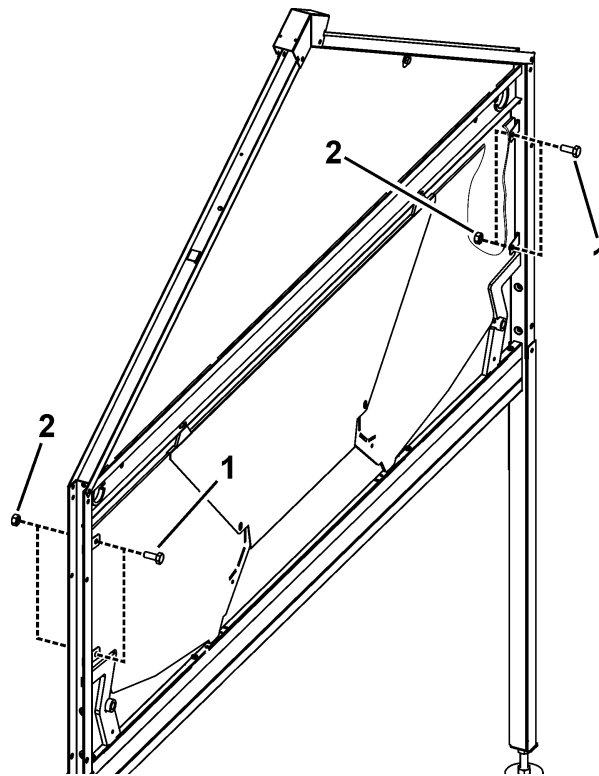


Pos.	Qty.	Code no.	Description
1	1	83-01-4168	Sheet metal partition dbl. upper closed f/end partition BD-C2+
2	1	83-01-4988	Separating plate double for end partition BD-C2+
3	2	83-01-3769	Plastic partition pluggable for welded stillage BD-C2+



The upper edge of the separating plate (3) has holes, where to insert the partitions (4).

Insert this assembly group into the slots of the stillage cross supports and screw them down at the side to the weld-on angles of the stillages.



Pos.	Qty.	Code no.	Description
1	2	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
2	2	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	1	83-01-4988	Separating plate double for end partition BD-C2+
4	2	83-01-3769	Plastic partition pluggable for welded stillage BD-C2+

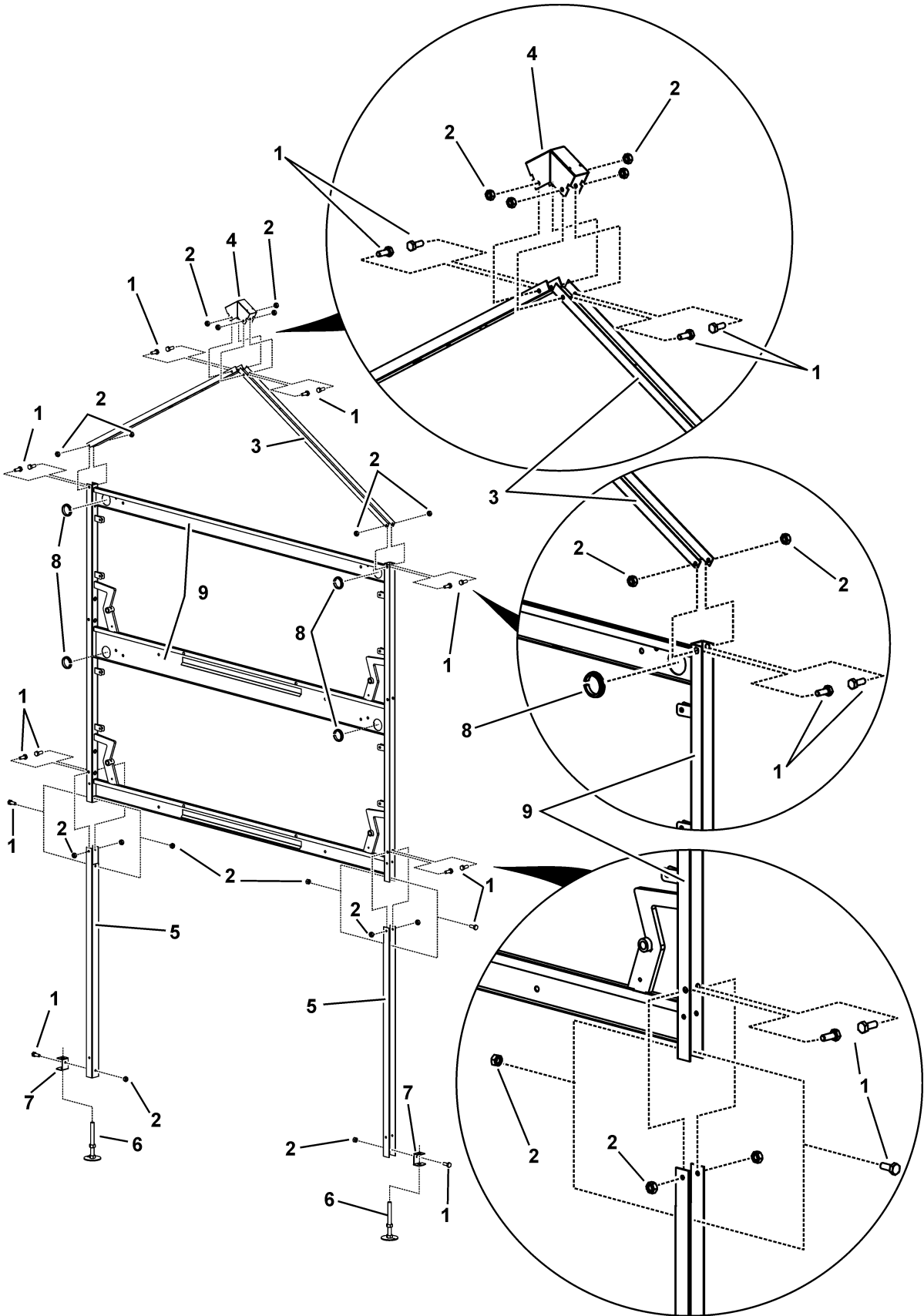
7.5 Stillage 2 tiers (standard height of longitudinal belt 800mm)

Pos.	Qty.	Code no.	Description
	1	36-00-6021	Stillage 2t double BD-C2+ with plastic partition
1	4	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
2	4	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	1	83-00-5686	Hexagon nut M 6 galv. DIN 934
4	1	83-00-5687	Bracket double for ridge plate BD-C2+
5	1	83-01-5087	Extension for main post galv. BD-C2+
		83-01-3831	Extension for main post SST BD-C2+
6	2	37-97-4317	Foot adjustable M12x140 PA/SST cpl
7	1	83-01-5088	Holding plate galv. for adjustable foot NAT/BD-C2+
8	2	36-00-6206	Bush PA6 for tube 1"
9	1	83-00-9107	Stillage 2t double welded BD-C2+



Note:

In case of connection to a **manure pit** see chapter 10!



7.6 End set stillage 2 tiers (standard height of longitudinal belt 800mm)

At different positions within a nest row

nest end set stands

are required.

These positions are:

- at the beginning of a row (drive side of longitudinal belt)
- at the end of the row (egg belt idler side)
- at the beginning and the end of each passage.

The assembly of the nest end set stillage has to be carried out as described in the previous chapter.

The particularity about this nest end set is that additional partitions are mounted closing the nest from the outside.

Furthermore the tubes for the nest floor resetting mechanism and the rods are fixed to the end set stillage.



Note:

In case of connection to a **manure pit** see chapter 10!



Important:

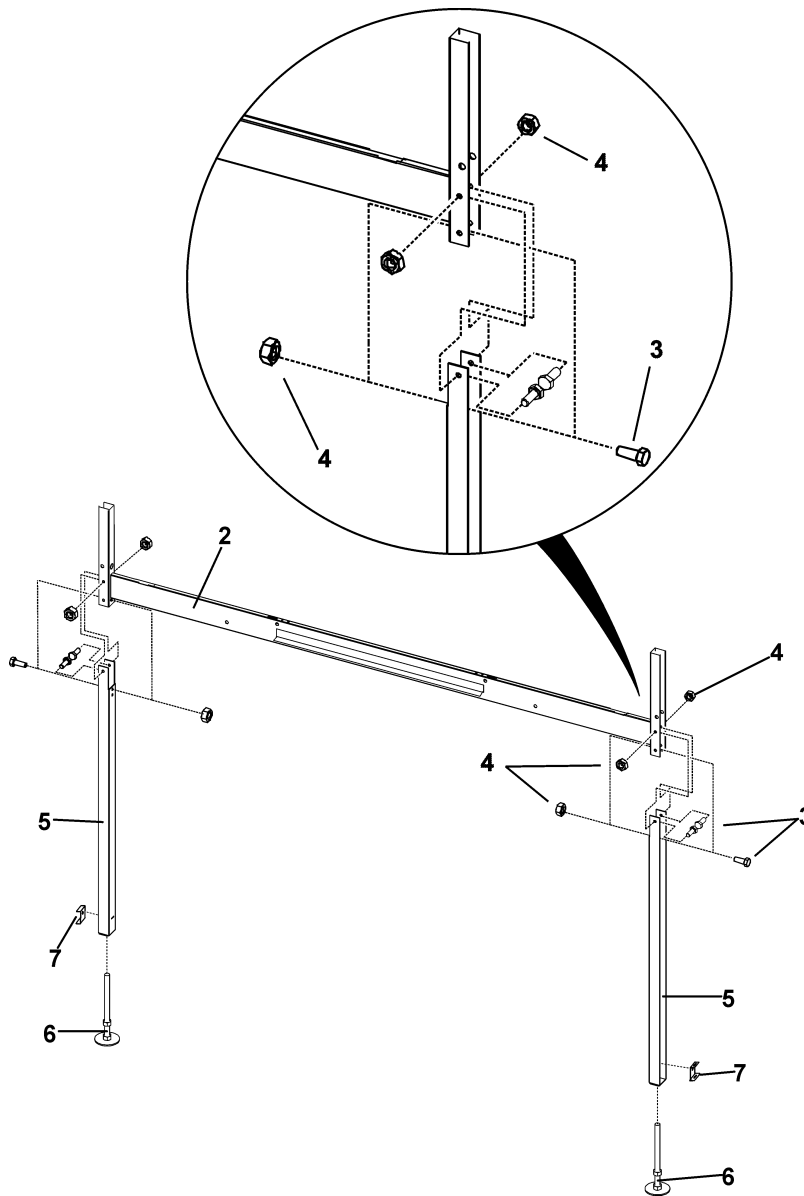
Upon set-up, take into consideration the alignment of the stand. The edge at the opening for egg belt in the lower cross support has to point in the direction of the egg belt idler unit. (See chapter 9)

7.6.1 Installing the additional partitions at the nest end set

Assemble the additional partitions **per tier** as described in the previous chapter regarding the single-tier nest version.

7.7 Assembling the central stillage for passage 2412 (standard height of longitudinal belt 800mm)


	<p>Note:</p> <p>In case of connection to a manure pit see chapter 10!</p>
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Pos.	Qty.	Code no.	Description
2	1	83-00-9143	Frame double 1t for passage BD-C2+
3	6	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
4	6	99-10-1045	Hexagon nut M 6 galv. DIN 934
5	2	83-01-5087	Extension for main post galv. BD-C2+
6	2	37-97-4317	Foot adjustable M12x140 PA/SST cpl
7	2	83-01-5088	Holding plate galv. for adjustable foot NAT/BD-C2+

7.8 Stillage for heights over 800mm of longitudinal belt (with additional cross brace)

	<p>Note: In case of connection to a manure pit see chapter 10!</p>
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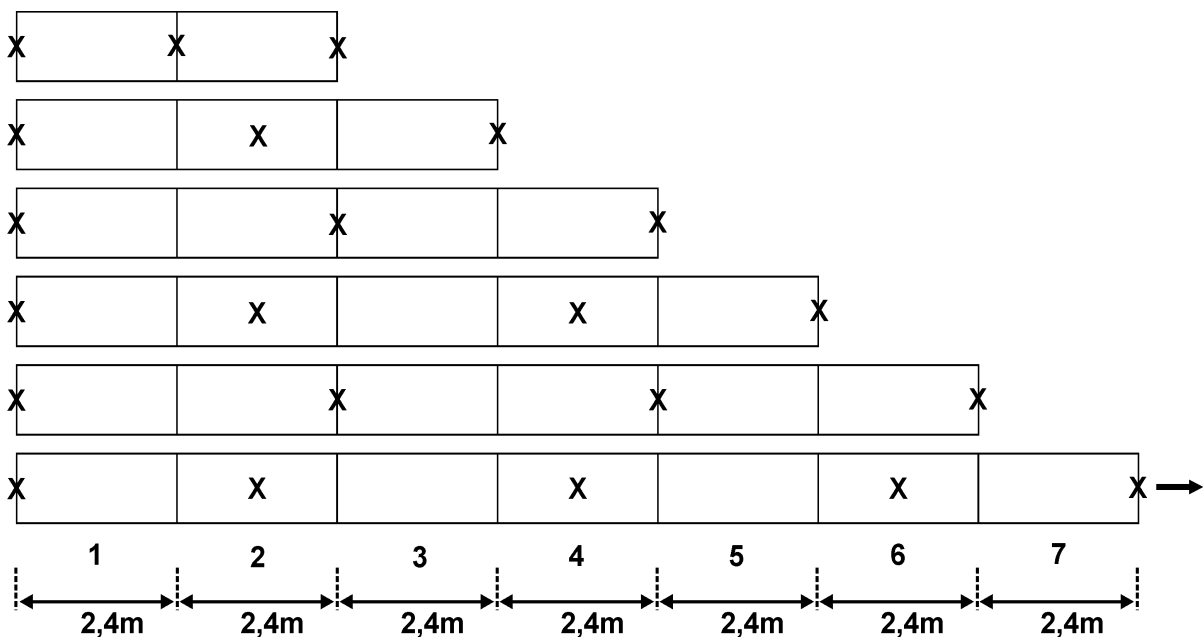
	<p>Note: Diagonal braces for the nest substructure for longitudinal belt heights of more than 800 mm diagonal bracings have to be mounted to the nest substructure both for single and double tier nests.</p>
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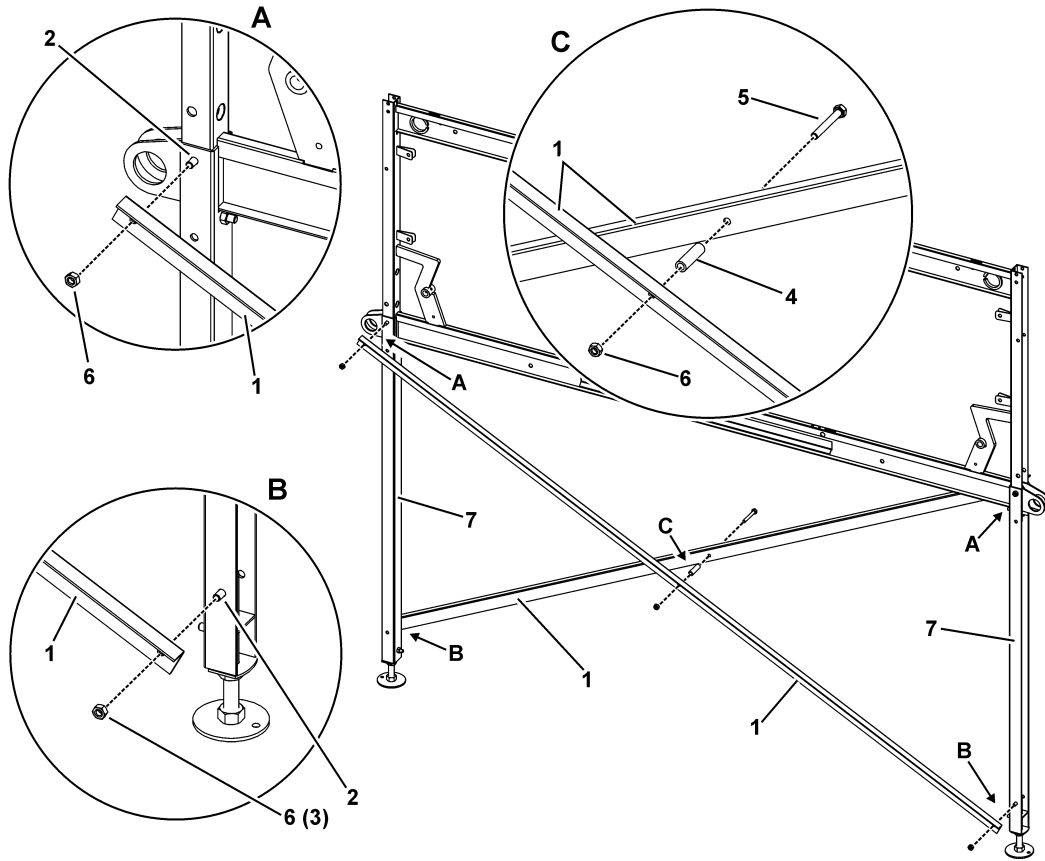
Calculation per row:

Quantity of sections 2412	Quantity of cross braces
5 or more	1pc per 2 sections
4 or less	at least 3 pcs

Generally applies:The first and the last stand of a row **must** be provided with a diagonal bracing. The other bracings have to be distributed **evenly** along the nest row.

Arrangement of cross braces (X) within one row (e.g. 2-7 sections):






Pos.	Qty.	Code no.	Description
SST	1	36-00-6102	Cross brace SST for nest dbl f/heights >800mm of longitudinal belt
1	2	83-02-2576	Cross brace SST for nest dbl
2	2	99-20-1470	Hexagon head screw M 6x 12 DIN 933 SST
3	2	99-20-1102	Hexagon nut M 6 SST DIN 934
5	1	99-10-1260	Hexagon head screw M 6x 45 DIN 933-8,8 galv
4	1	83-00-6827	Distance sleeve 6,4x10-34 NAT-R-a
6	1	99-10-1045	Hexagon nut M 6 galv DIN 934-8
7	2		Extension for main post SST BD-C2+ (f/heights >800mm of longitudinal belt)

Pos.	Qty.	Code no.	Description
galv.	1	36-00-6101	Cross brace galv for nest dbl f/heights >800mm of longitudinal belt
1	2	83-02-2575	Cross brace galv for nest dbl
2	2	99-10-1100	Hexagon head screw M 6x 12 DIN 558 galv
4	1	83-00-6827	Distance sleeve 6,4x10-34 NAT-R-a
5	1	99-10-1260	Hexagon head screw M 6x 45 DIN 933-8,8 galv
6	3	99-10-1045	Hexagon nut M 6 galv DIN 934-8
7	2		Extension for main post galv. BD-C2+ (f/heights >800mm of longitudinal belt)

8 Mounting the stillages for wall nest

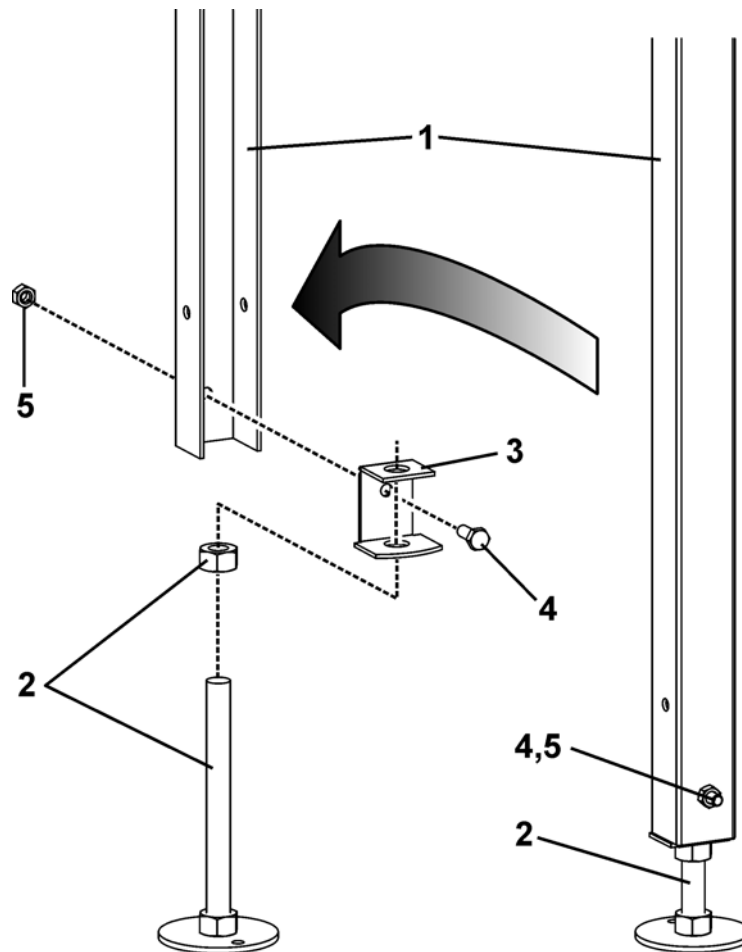
8.1 Important preliminary notes for mounting the stillages 1 and 2 tier(s).

	<p>Note: In case of connection to a <u>manure pit</u> see chapter 10!</p>
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	<p>Note: Diagonal braces for the nest substructure for longitudinal belt heights of more than 800 mm diagonal bracings have to be mounted to the nest substructure both for single and double tier nests.</p>
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Instructions for the assembly of diagonal braces at wall nest: see chapter 8.7!

8.2 Installing the stand post



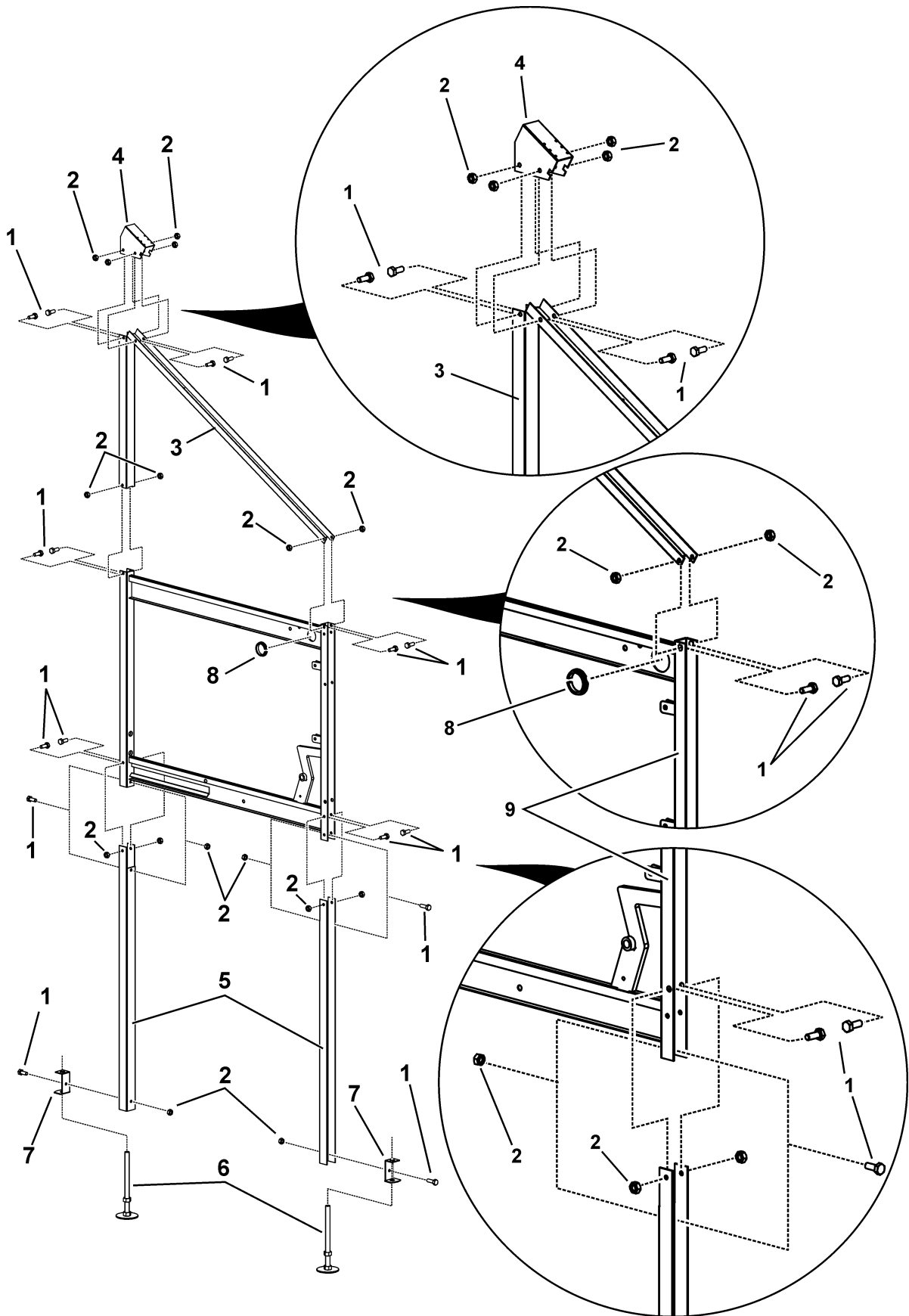
Pos.	Qty.	Code no.	Description
1	1	83-01-5087	Extension for main post galv BD-C2+
	1	83-01-3831	Extension for main post SST BD-C2+
2	1	37-97-4317	Foot adjustable M12x140 PA/SST cpl
3	1	83-01-5088	Holding plate galv at extension NAT/BD-C2+
4	1	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
5	1	99-10-1045	Hexagon nut M 6 galv. DIN 934

Instruction:

- Screw the holding plate (3) onto the extension (1). Make sure you insert the hexagon head screw the right way (see figure above).
- If not pre-assembled, screw the hexagon nut (2) into the threaded rod of the adjustable foot.
- Insert the adjustable foot from the bottom through the holes of the holding plate (3).
- For rough height adjustment and alignment use the upper hexagon nut on the adjustable foot.

8.3 Stillage 1 tier (standard height of longitudinal belt 800mm)

Pos.	Qty.	Code no.	Description
	1	36-00-6061	Stillage 1t simple BD-C2+ with plastic partition
1	16	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
2	16	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	1	83-00-6079	Diagonal trussing single for roof sheet
4	1	83-00-6185	Bracket single for ridge plate BD-C2+
5	2	83-01-5087	Extension for main post galv. BD-C2+
		83-01-3831	Extension for main post SST BD-C2+
6	2	37-97-4317	Foot adjustable M12x140 PA/SST cpl
7	2	83-01-5088	Holding plate galv. for adjustable foot NAT/BD-C2+
8	1	36-00-6206	Bush PA6 for tube 1"
9	1	83-00-9108	Stillage 1t simple welded BD-C2+





Note:

In case of connection to a **manure pit** see chapter 10!

8.4 End set stillage 1 tier (standard height of longitudinal belt 800mm)

At different positions within a nest row

nest end set stands

are required.

These positions are:

- at the beginning of a row (drive side of longitudinal belt)
- at the end of the row (egg belt idler side)
- at the beginning and the end of each passage.

The assembly of the nest end set stillage has to be carried out as described in the previous chapter.

The particularity about this nest end set is that additional partitions are mounted closing the nest from the outside.

Furthermore the tubes for the nest floor resetting mechanism and the rods are fixed to the end set stillage.



Note:

In case of connection to a **manure pit** see chapter 10!



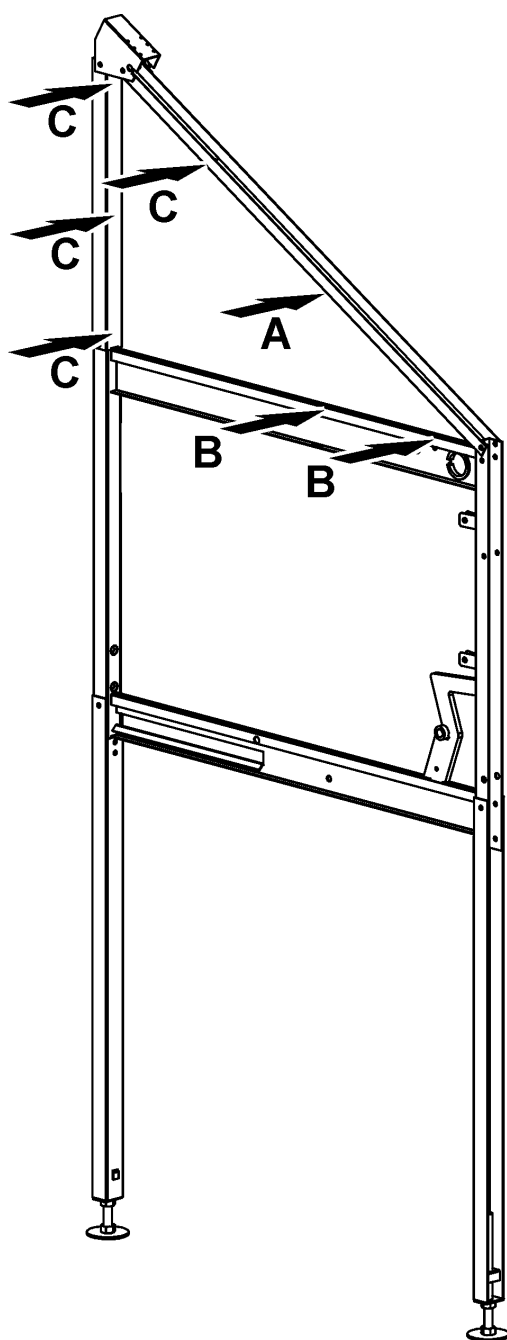
Important:

Upon set-up, take into consideration the alignment of the stand. The edge at the opening for egg belt in the lower cross support has to point in the direction of the egg belt idler unit. (See chapter 9)

8.4.1 Installing the additional partitions at the nest end set

Additionally install the following partitions:

Pos.	Qty.	Code no.	Description
1	1	83-01-4170	Sheet metal partition spl.. upper closed f/end partition BD-C2+
2	1	83-01-5054	Separating plate simple for end partition BD-C2+



Position A:

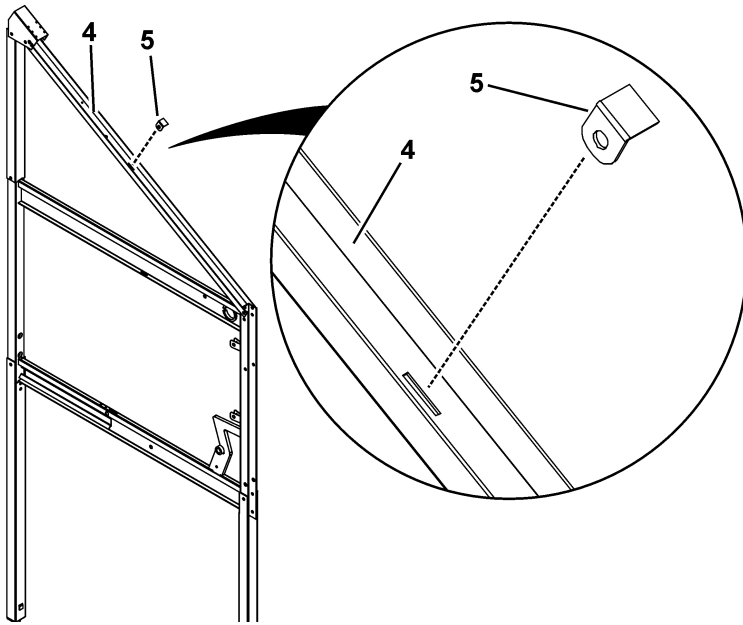
Here, a mounting is suspended from the diagonal trussing, to which the partition is fixed by means of a hexagon head screw and a nut.

Positions B:

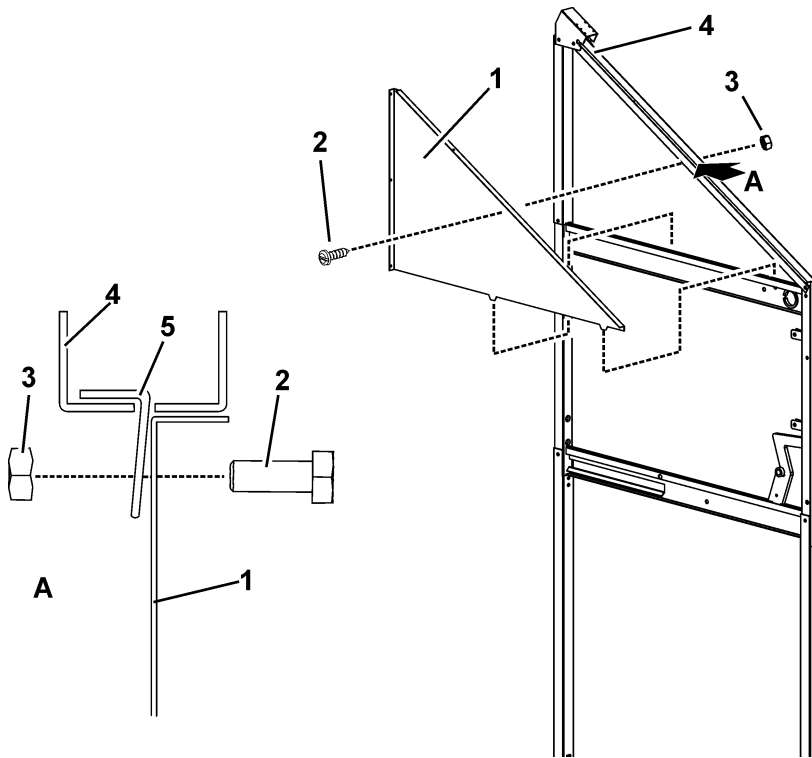
Here, the partition is inserted into the stillage.

Positions C:

Here, screw the partitions to the stillage with drilling screws.

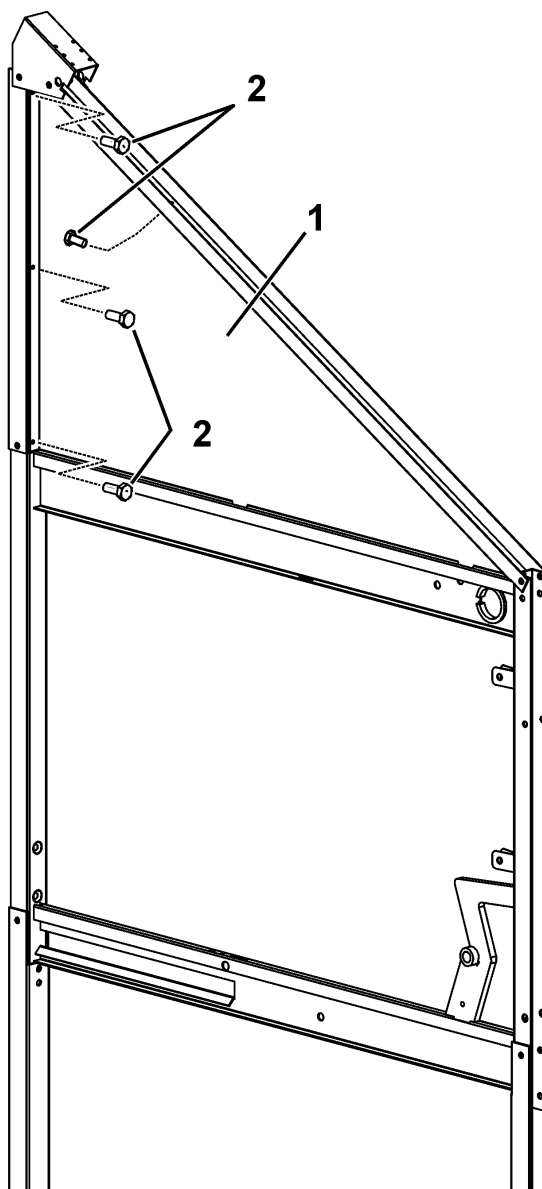


Before inserting the upper partition, install a mounting (5) at the stillage. Insert the upper partition (1) so that the edge of the partition (1) points in the direction of the egg belt idler unit. (see detail A in bottom drawing)



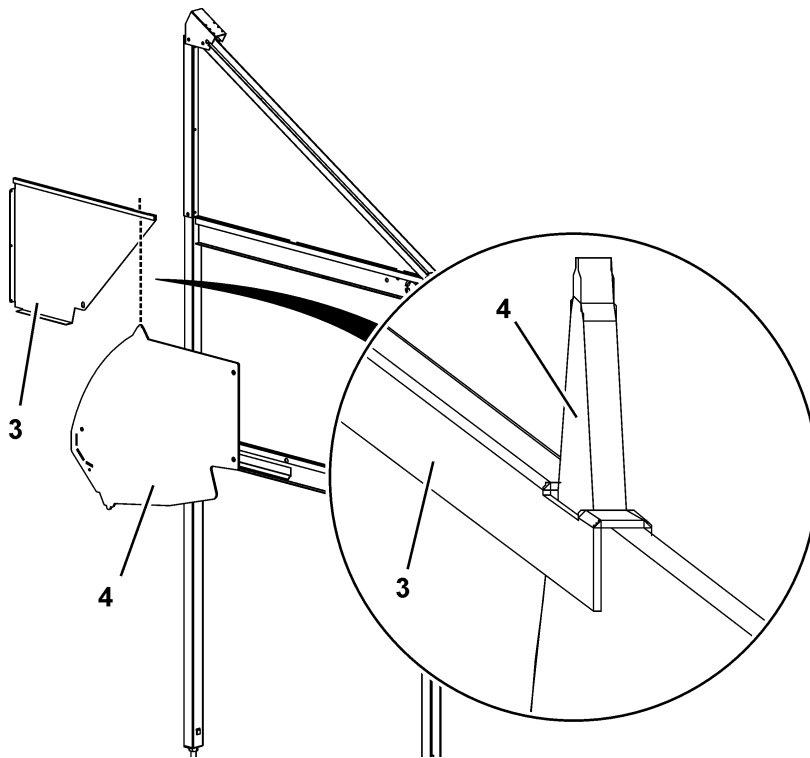
Pos.	Qty.	Code no.	Description
1	1	83-01-4170	Sheet metal partition spl.. upper closed f/end partition BD-C2+
2	1	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
3	1	99-10-1045	Hexagon nut M 6 galv. DIN 934
4	1	83-00-6079	Diagonal trussing single for roof sheet
5	1	83-00-8943	Mounting for pluggable partition BD-C2+

After inserting the partition (1), fix it to the stillage with drilling screws (2)

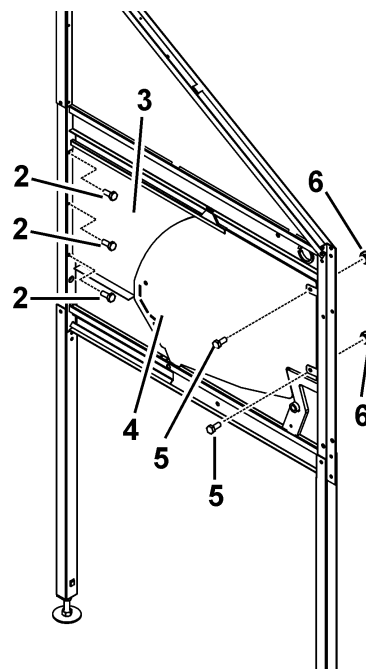
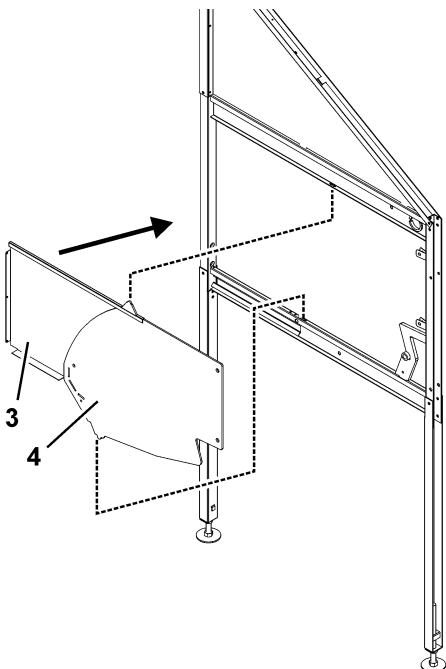


Pos.	Qty.	Code no.	Description
1	1	83-01-4170	Sheet metal partition spl.. upper closed f/end partition BD-C2+
2	4	99-10-3938	Drilling screw 4,8x 25 DIN 7504-K, galv.

Inserting the separating plate simple for end partition (3)



Pos.	Qty.	Code no.	Description
2	3	99-10-3938	Drilling screw 4,8x 25 DIN 7504-K, galv.
3	1	83-01-5054	Separating plate simple for end partition BD-C2+
4	1	83-01-3769	Plastic partition pluggable for welded stillage BD-C2+
5	2	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
6	2	99-10-1045	Hexagon nut M 6 galv. DIN 934



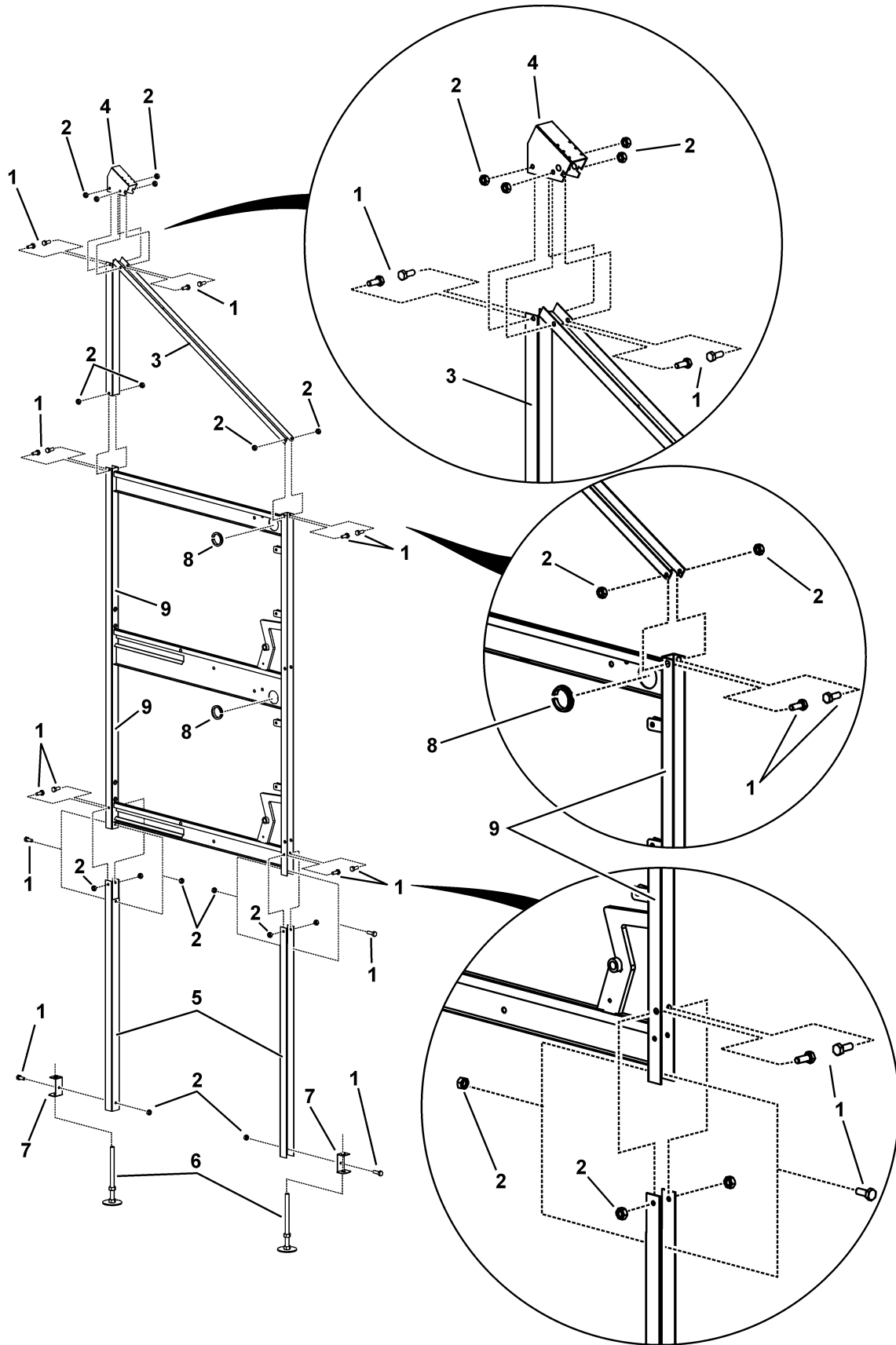
8.5 Stillage 2 tiers (standard height of longitudinal belt 800mm)

Pos.	Qty.	Code no.	Description
	1	36-00-6071	Stillage 2t simple BD-C2+ with plastic partition
1	16	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
2	16	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	1	83-00-6079	Diagonal trussing single for roof sheet
4	1	83-00-6185	Bracket single for ridge plate BD-C2+
5	2	83-01-5087	Extension for main post galv. BD-C2+
	2	83-01-3831	Extension for main post SST BD-C2+
6	2	37-97-4317	Foot adjustable M12x140 PA/SST cpl
7	2	83-01-5088	Holding plate galv. for adjustable foot NAT/BD-C2+
8	1	36-00-6206	Bush PA6 for tube 1"
9	1	83-00-9109	Stillage 2t simple welded BD-C2+



Note:

In case of connection to a **manure pit** see chapter **10!**



8.6 End set stillage 2 tiers (standard height of longitudinal belt 800mm)

At different positions within a nest row

nest end set stands

are required.

These positions are:

- at the beginning of a row (drive side of longitudinal belt)
- at the end of the row (egg belt idler side)
- at the beginning and the end of each passage.

The assembly of the nest end set stillage has to be carried out as described in the previous chapter.

The particularity about this nest end set is that additional partitions are mounted closing the nest from the outside.

Furthermore the tubes for the nest floor resetting mechanism and the rods are fixed to the end set stillage.



Note:

In case of connection to a **manure pit** see chapter 10!



Important:


Upon set-up, take into consideration the alignment of the stand. The edge at the opening for egg belt in the lower cross support has to point in the direction of the egg belt idler unit. (See chapter 9)

8.6.1 Installing the additional partitions at the nest end set

Assemble the additional partitions **per tier** as described in the previous chapter regarding the single-tier nest version.

8.7 Stillage for heights over 800mm of longitudinal belt (with additional cross brace)

	<p>Note: In case of connection to a manure pit see chapter 10!</p>
---	---

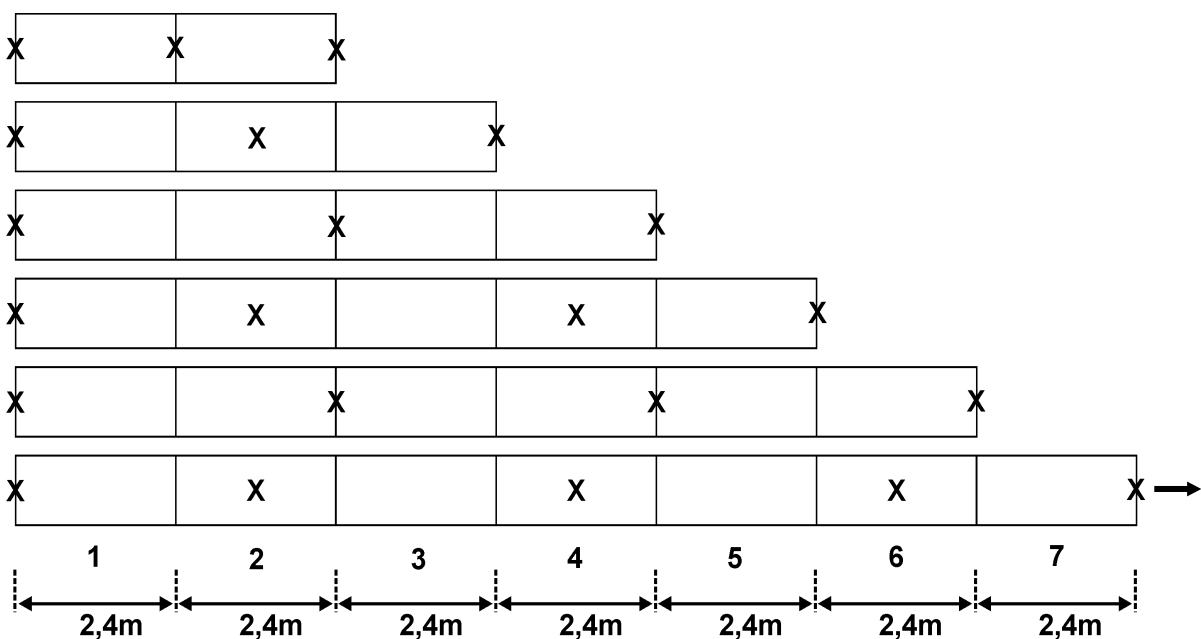
	<p>Note: Diagonal braces for the nest substructure for longitudinal belt heights of more than 800 mm diagonal bracings have to be mounted to the nest substructure both for single and double tier nests.</p>
---	--

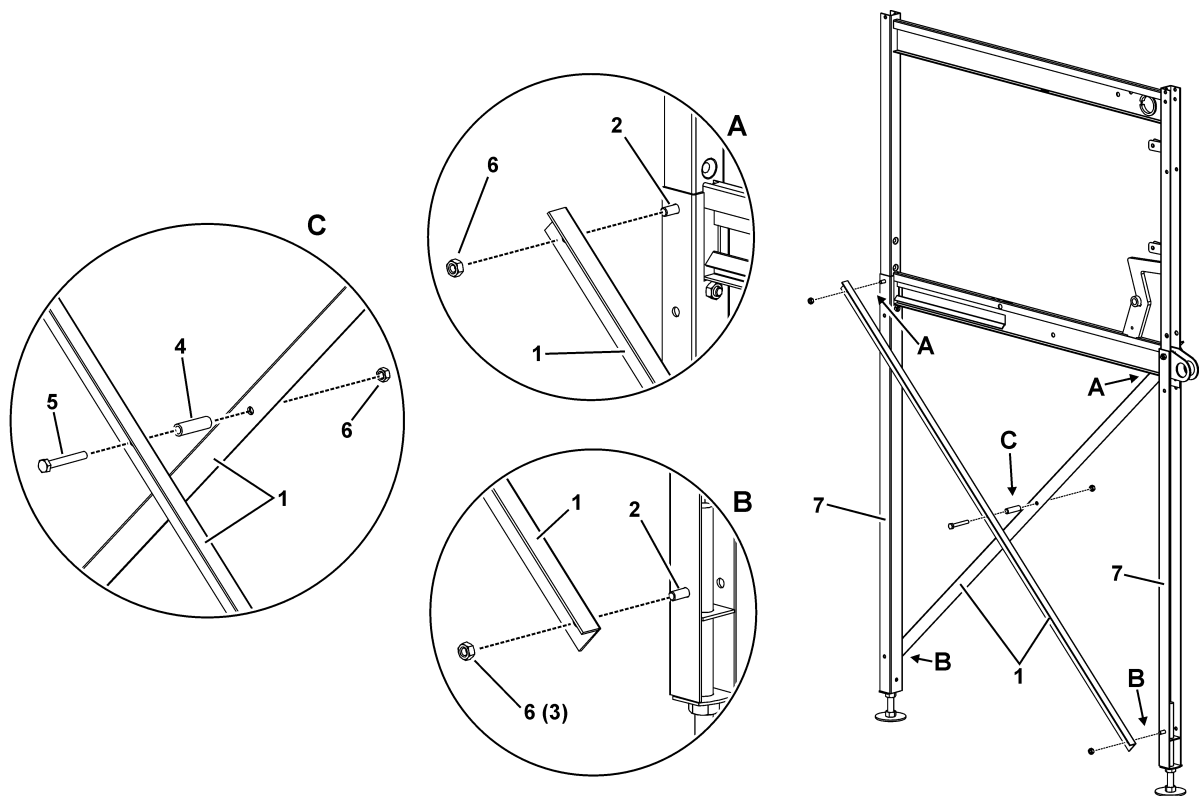
Calculation per row:

Quantity of sections 2412	Quantity of cross braces
5 or more	1pc per 2 sections
4 or less	at least 3 pcs

Generally applies:The first and the last stand of a row **must** be provided with a diagonal bracing. The other bracings have to be distributed **evenly** along the nest row.

Arrangement of cross braces (X) within one row (e.g. 2-7 sections):







Pos.	Qty.	Code no.	Description
SST	1	36-00-6104	Cross brace SST for nest sgl f/heights >800mm of longitudinal belt
1	2	83-02-2577	Cross brace SST for nest sgl
2	2	99-20-1470	Hexagon head screw M 6x 12 DIN 933 SST
3	2	99-20-1102	Hexagon nut M 6 SST DIN 934
4	1	83-00-6827	Distance sleeve 6,4x10-34 NAT-R-a
5	1	99-10-1260	Hexagon head screw M 6x 45 DIN 933-8,8 galv
6	1	99-10-1045	Hexagon nut M 6 galv DIN 934-8
7	2		Extension for main post SST BD-C2+ (f/heights >800mm of longitudinal belt)

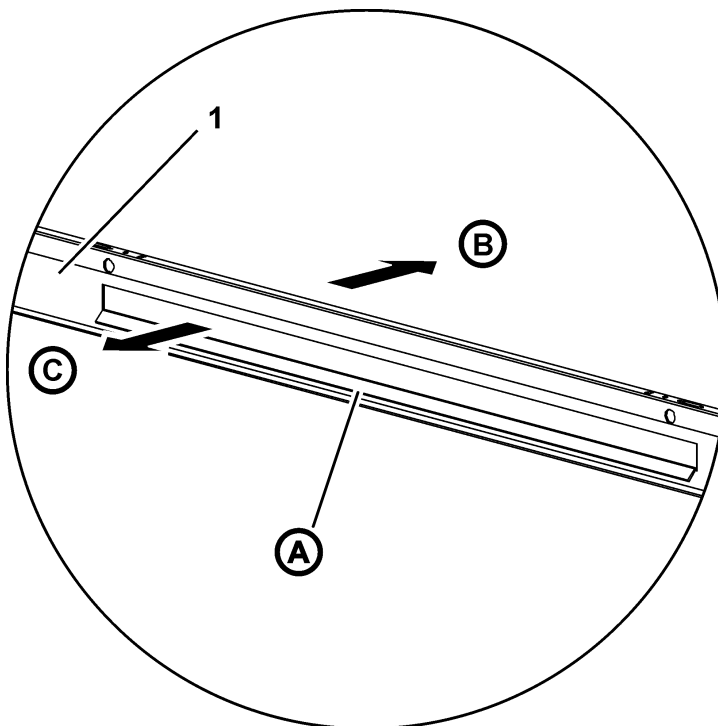
Pos.	Qty.	Code no.	Description
galv.	1	36-00-6103	Cross brace galv for nest sgl f/heights >800mm of longitudinal belt
1	2	83-02-2578	Cross brace galv for nest sgl
2	2	99-10-1100	Hexagon head screw M 6x 12 DIN 558 galv
4	1	83-00-6827	Distance sleeve 6,4x10-34 NAT-R-a
5	1	99-10-1260	Hexagon head screw M 6x 45 DIN 933-8,8 galv
6	3	99-10-1045	Hexagon nut M 6 galv DIN 934-8
7	2		Extension for main post galv BD-C2+ (f/heights >800mm of longitudinal belt)

9 Setting up the skeleton

9.1 Important notes and prerequisites for setting up

	<p>Important:</p> <p>Use the installation or planning drawing to determine the number of nest rows and nests as well as the number of nets per row.</p> <p>Also pay attention to the position of possible passages.</p> <p>Then you can start to erect the stillages at the side of the longitudinal belt drive of one nest row.</p>
---	---

	<p>Note:</p> <p>The alignment of the stillages must be borne in mind.</p> <p>The edge (A) at the egg belt guide slot in the lower cross beam (1) of each stillage must point in the direction of the end set for the egg belt idler unit (C).</p> <p>Never in the direction of the longitudinal belt drive!</p>
--	---



- Put up the ready-mounted stillages at a distance of 120 cm

A = Edge of egg belt guide slot

B = Side of longitudinal belt drive

C = Side of egg belt idler unit

1 = Lower cross beam of a stillage

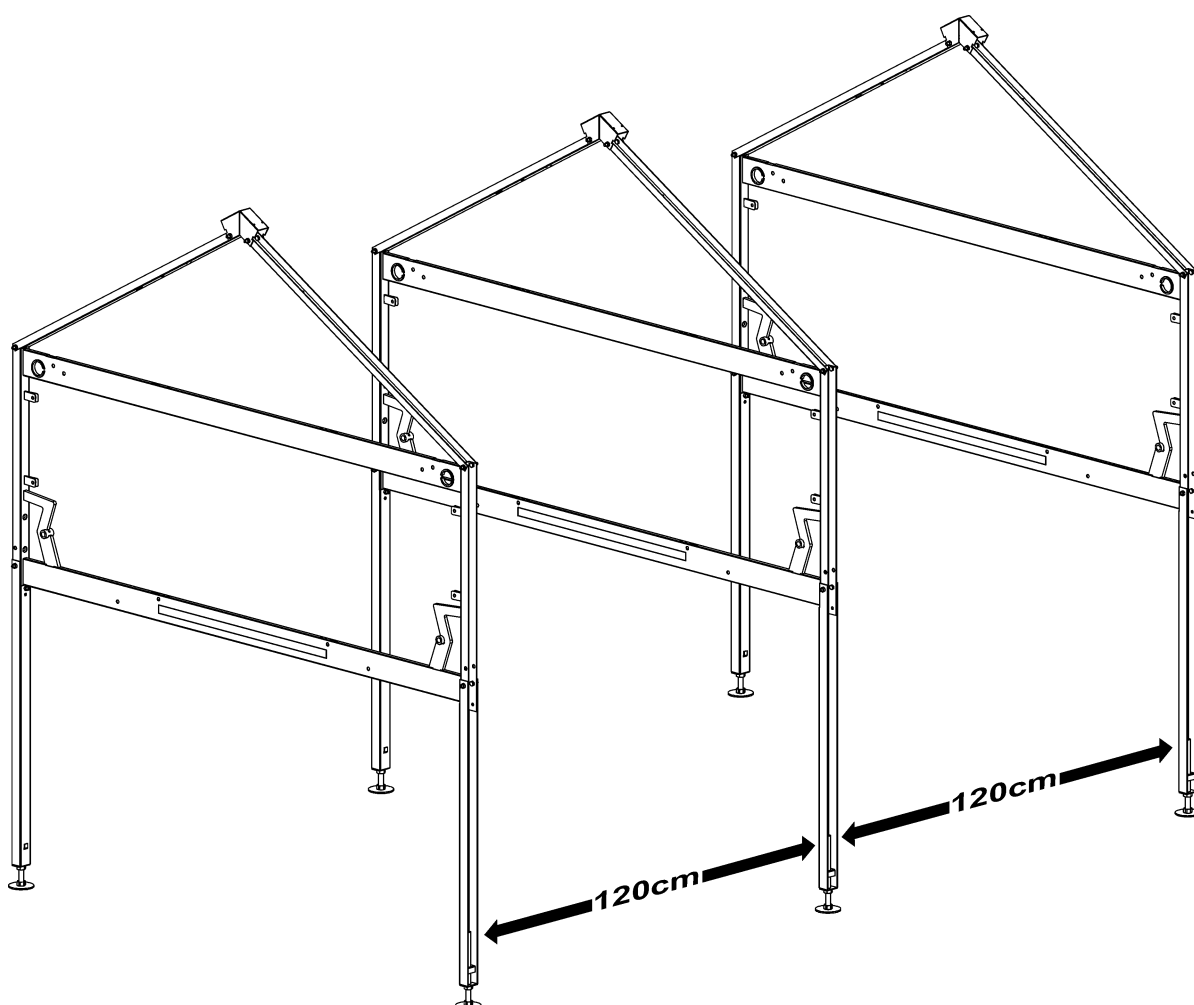
9.2 Skeleton double nest 1 tier

**Note:**

It is essential to take into consideration the **alignment** of the stillages

The edge (A) at the egg belt guide slot in the lower cross beam (1) of the stillage must point in the direction of the end set for the egg belt idler unit (C).

See chapter 9.1 "Important notes and prerequisites for setting up"

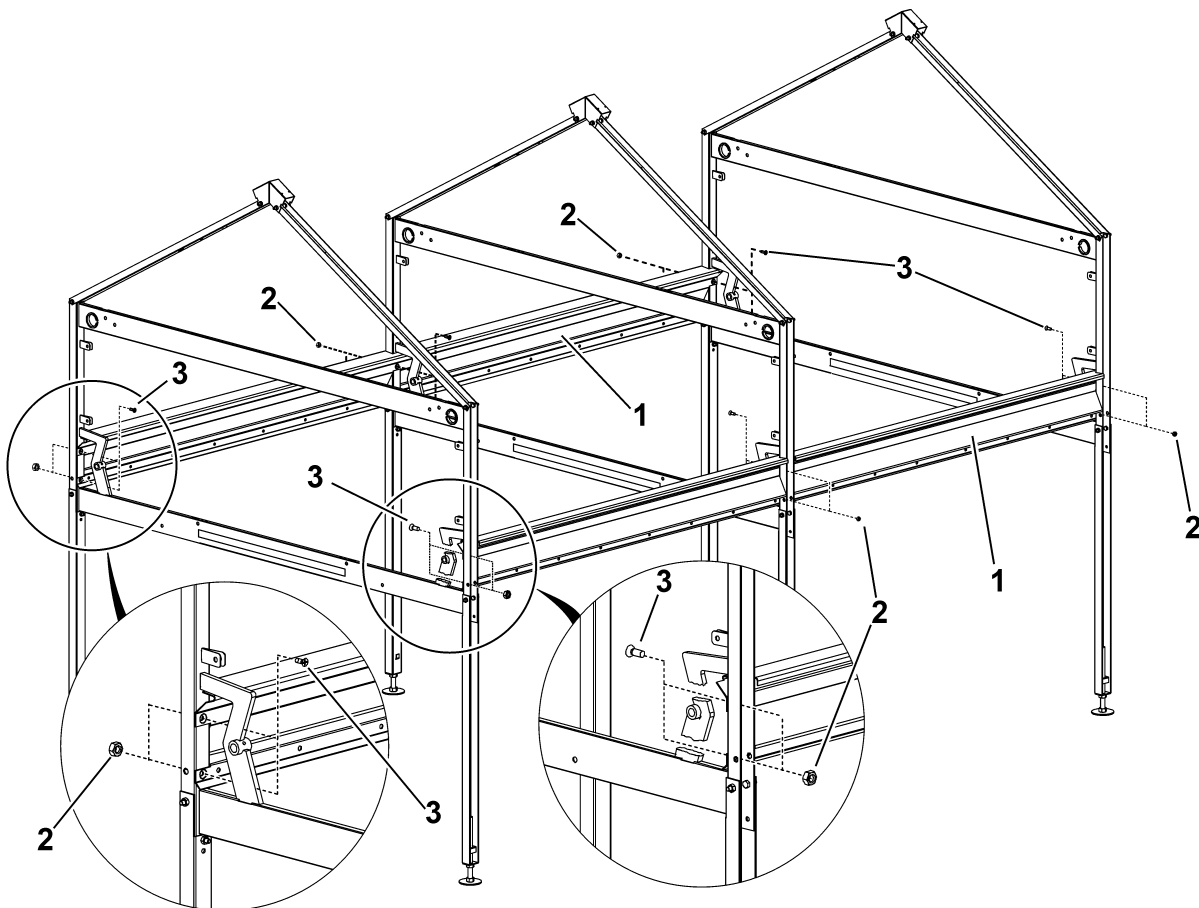


- Put up the stillages at a distance of 120 cm.
- The pre-assembled stillages are connected by means of side rails (1).

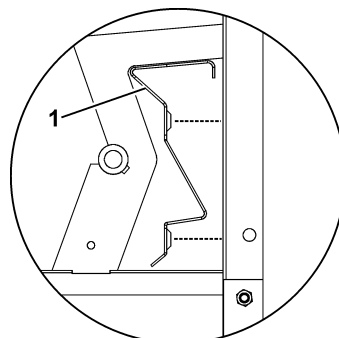
- Fix the side rails by means of cross-recessed countersunk head screws M6x16 galv. (3) and hexagon nuts M6 galv. (2)



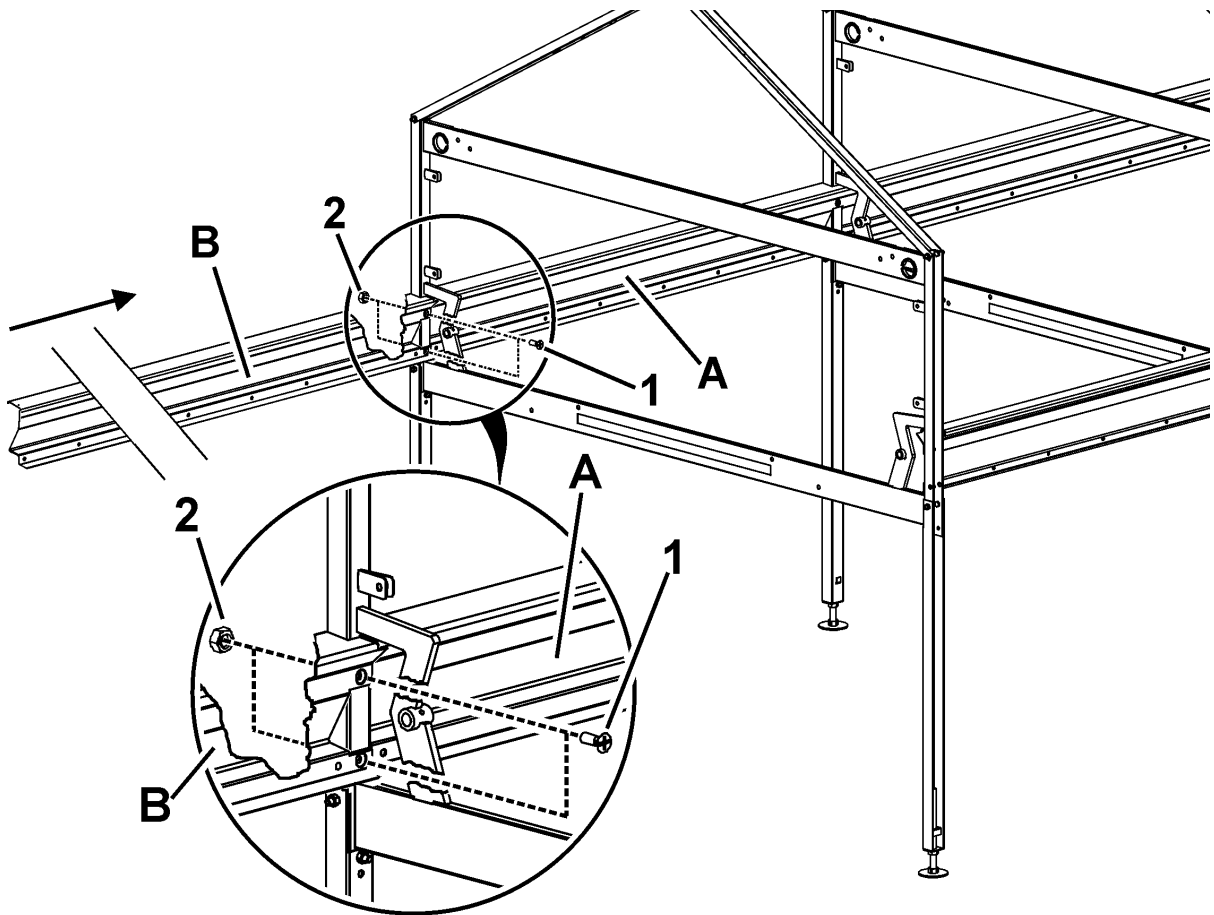
Put the countersunk screws (3) from the **inside to the outside** through the drilled holes of the side rails and the stillage and then tighten them with a hexagon nut M6 (2)



Pos.	Qty.	Code no.	Description
1	2	83-02-3865	Side rail 2412 BD-C2+
2	6	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	6	99-10-1368	Cross-recessed countersunk head screw M 6x16 DIN 965-5.8 galv.



The side rails of successive sections (A and B) must overlap and then have to be screwed on to the stillage **together**.



Pos.	Qty.	Code no.	Description
A	1		Side rail section 1
B	1		Side rail section 2
3	1	99-10-1368	Cross-recessed countersunk head screw M 6x16 DIN 965-5.8
2	1	99-10-1045	Hexagon nut M 6 galv. DIN 934

9.3 Skeleton double nest 2 tiers

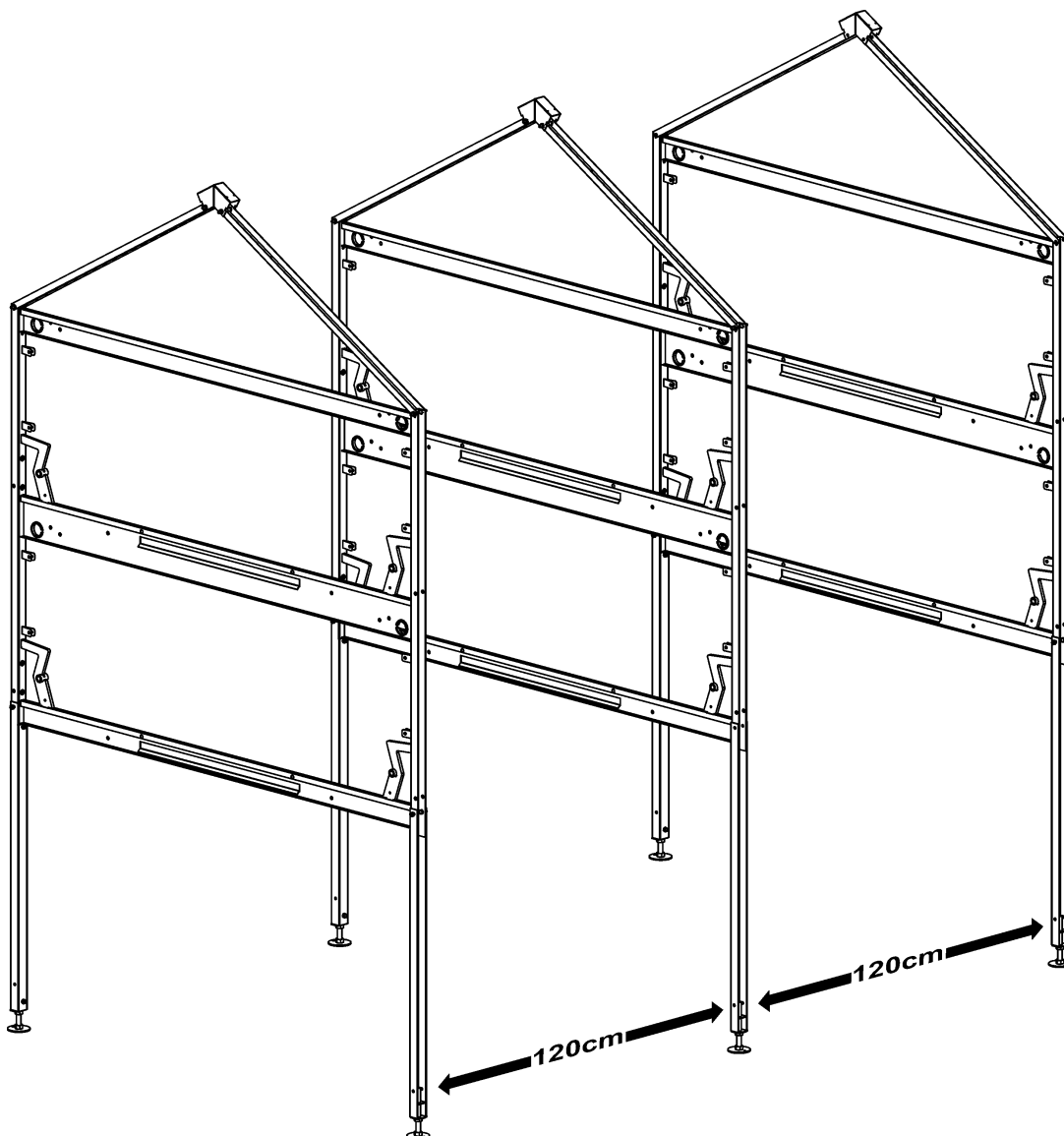


Note:

It is essential to take into consideration the **alignment** of the stillages


The edge (A) at the egg belt guide slot in the lower cross beam (1) of the stillage must point in the direction of the end set for the egg belt idler unit (C).

See chapter 9.1 "Important notes and prerequisites for setting up"

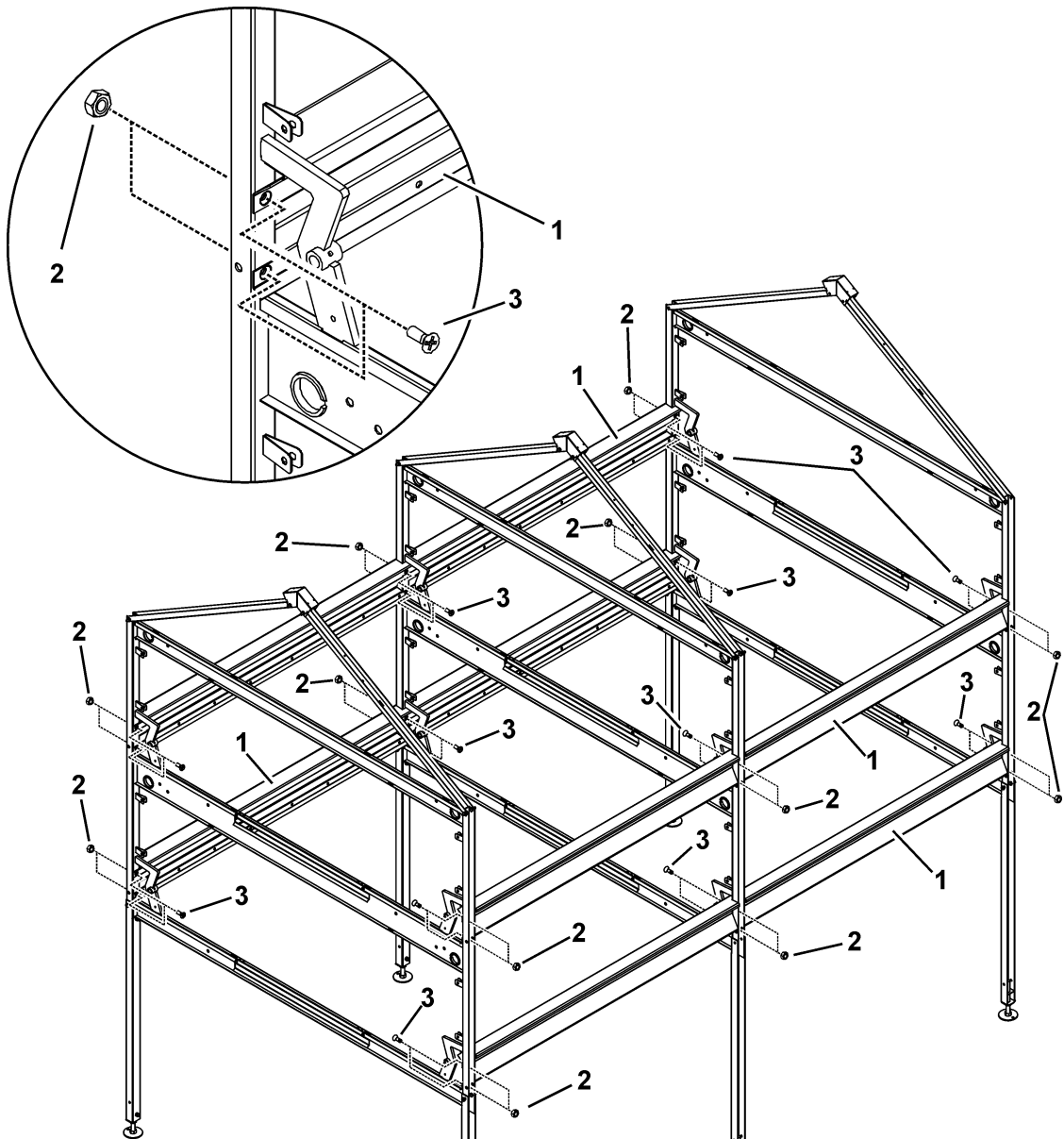


- Put up the stillages at a distance of 120 cm.
- Connect the stillages by means of two side rails (1) **per tier**.

- Fix the side rails by means of cross-recessed countersunk head screws M6x16 galv. (3) and hexagon nuts M6 galv. (2).



Put the countersunk screws (3) from the **inside to the outside** through the drilled holes of the side rails and the stillage and then tighten them with a hexagon nut M6 (2)



Pos.	Qty.	Code no.	Description
1	4	83-02-3865	Side rail 2412 BD-C2+
2	24	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	24	99-10-1368	Cross-recessed countersunk head screw M 6x16 DIN 965-5.8 galv.

9.4 Skeleton wall nest 1 tier

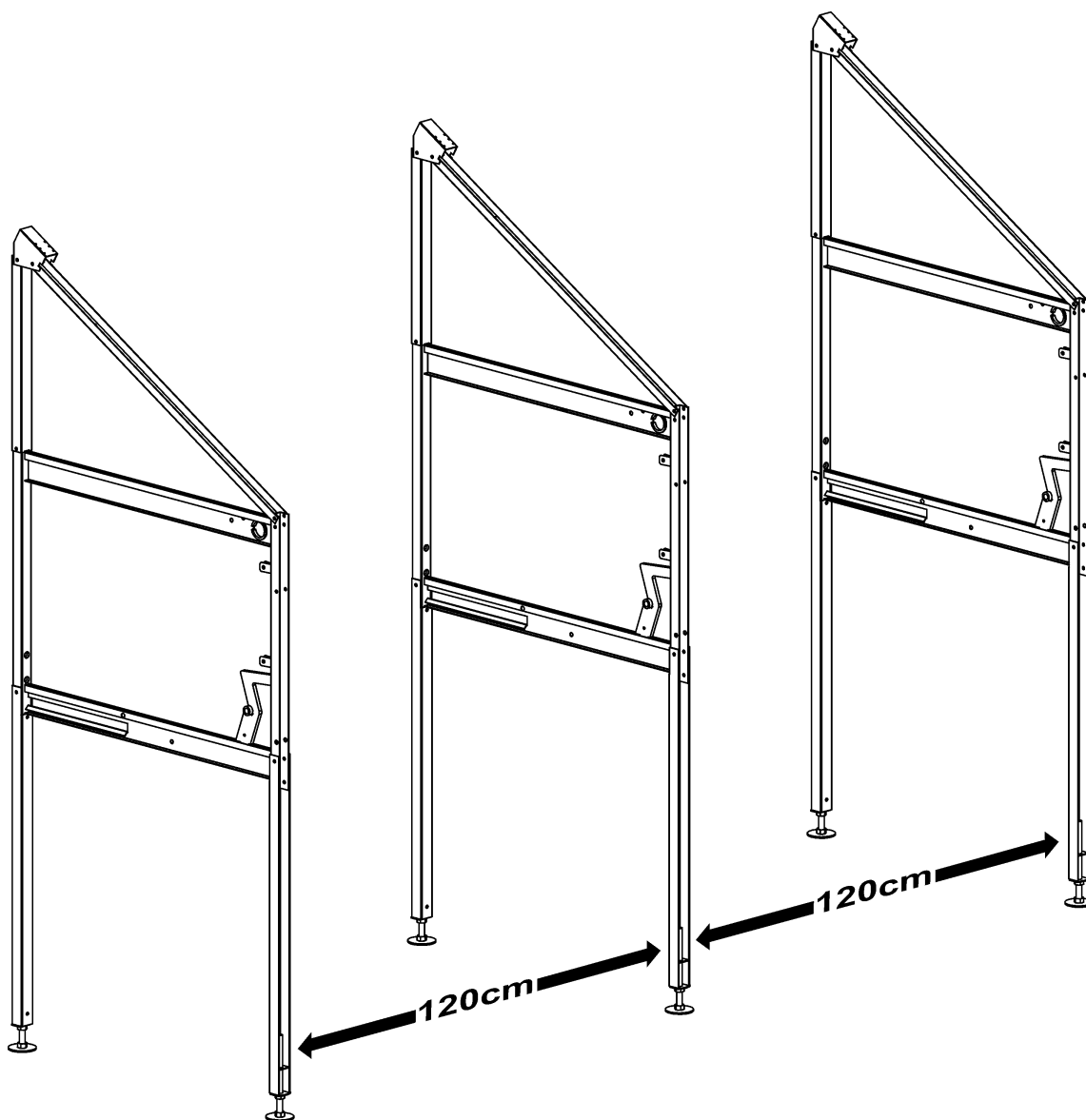


Note:

It is essential to take into consideration the **alignment** of the stillages

The edge (A) at the egg belt guide slot in the lower cross beam (1) of the stillage must point in the direction of the end set for the egg belt idler unit (C).

See chapter 9.1 "Important notes and prerequisites for setting up"

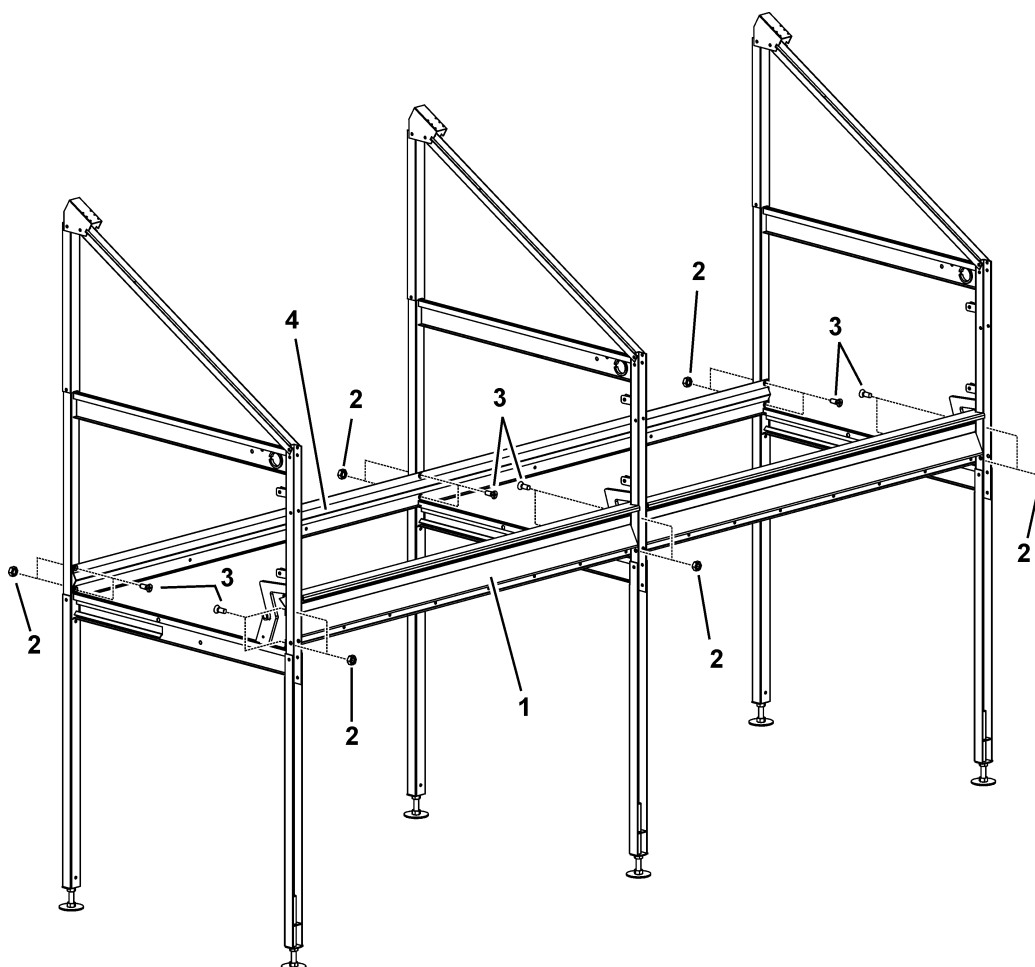


- Put up the stillages at a distance of 120 cm

- Connect the pre-assembled stillages by means of **1 side rail (1)** and **1 lateral guide rail (4)**.
- Fix the rails by means of cross-recessed countersunk head screws M6x16 galv. (3) and hexagon nuts M6 galv. (2)



Put the countersunk screws (3) from the **inside to the outside** through the drilled holes of the side rails and the stillage and then tighten them with a hexagon nut M6 (2)



Pos.	Qty.	Code no.	Description
1	1	83-02-3865	Side rail 2412 BD-C2+
2	12	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	12	99-10-1368	Cross-recessed countersunk head screw M 6x16 DIN 965-5.8 galv.
4	1	83-00-6082	Lateral guide 2412 for egg channel single

9.5 Skeleton wall nest 2 tiers

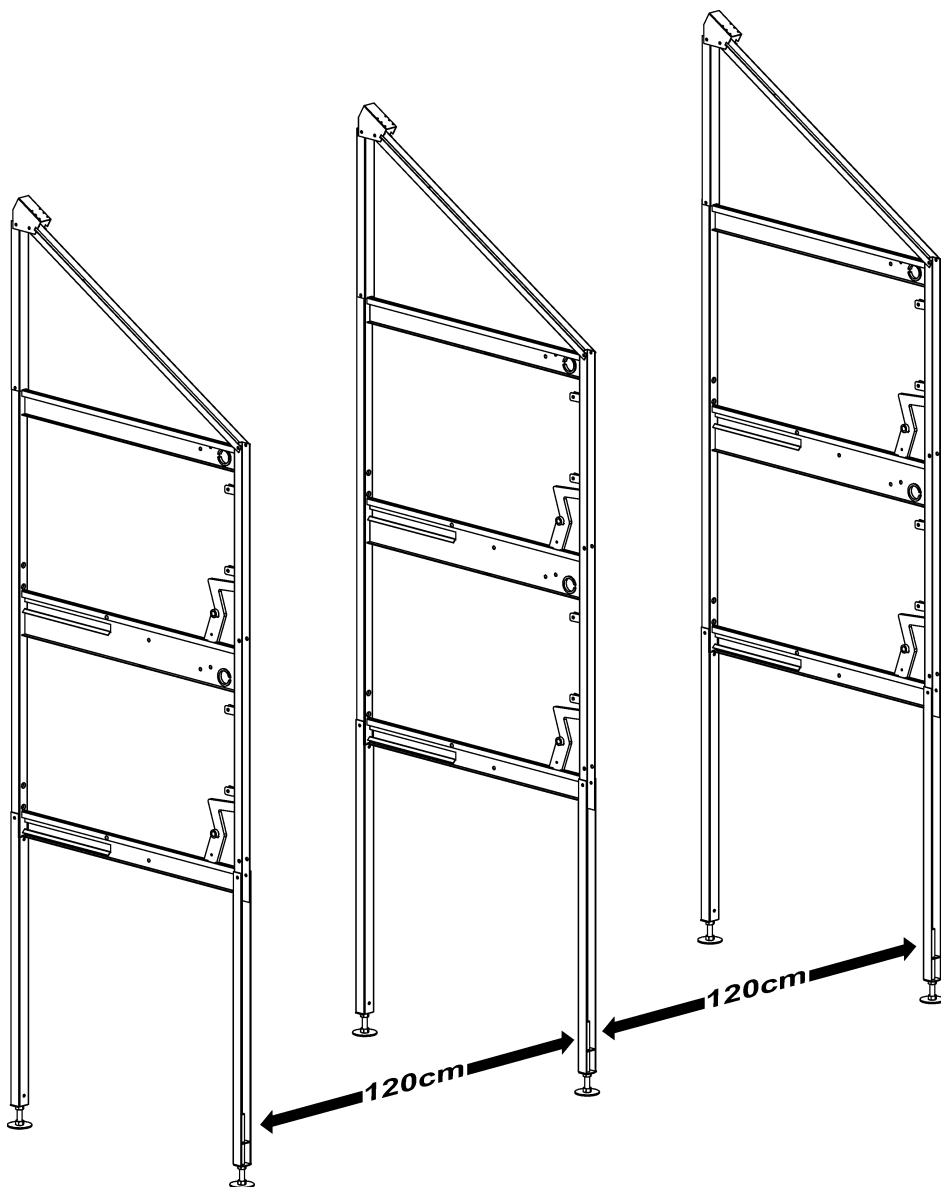


Note:

It is essential to take into consideration the **alignment** of the stillages


The edge (A) at the egg belt guide slot in the lower cross beam (1) of the stillage must point in the direction of the end set for the egg belt idler unit (C).

See chapter 9.1 "Important notes and prerequisites for setting up"

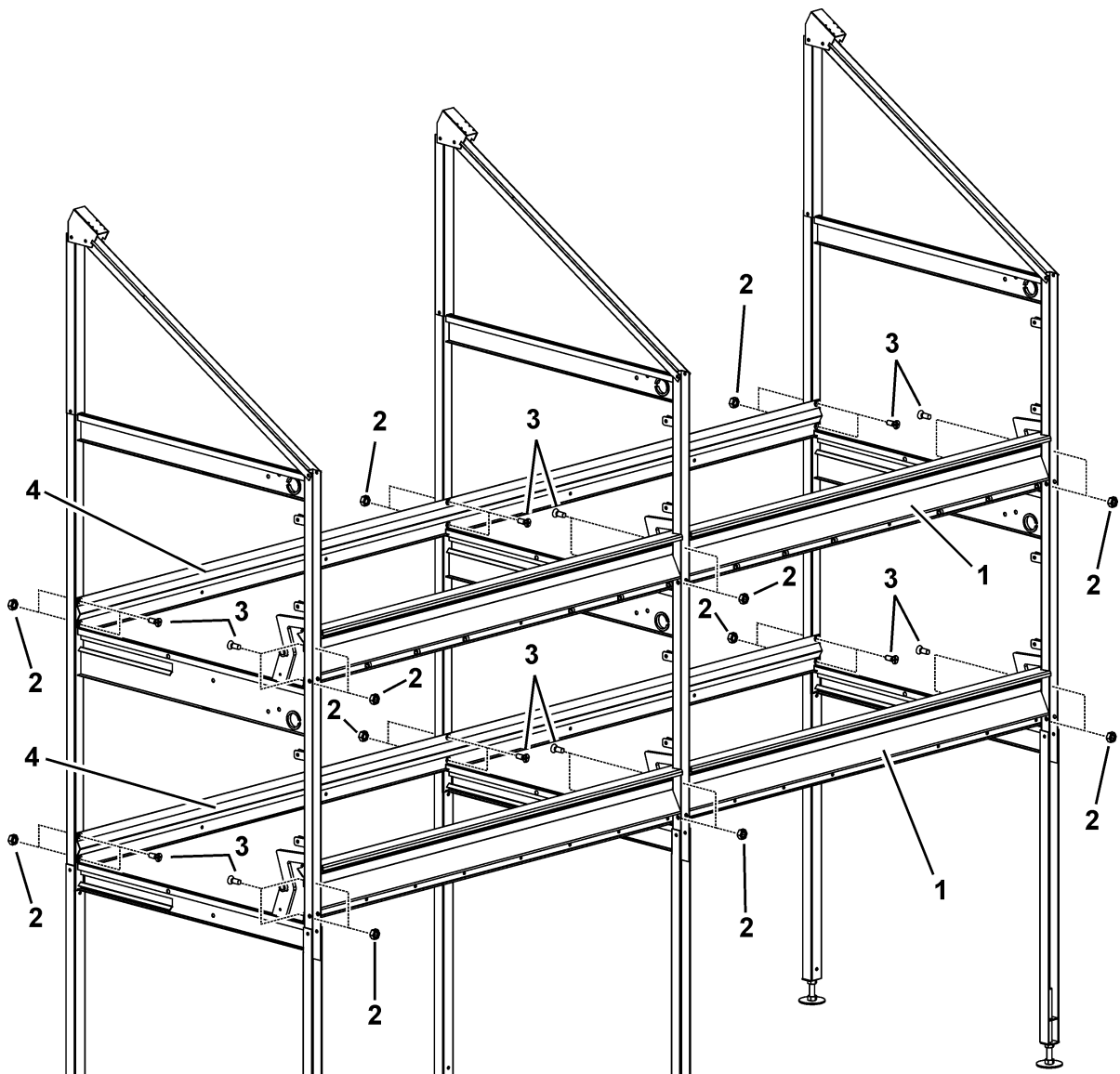


- Put up the stillages at a distance of 120 cm

- Connect the pre-assembled stillages by means of a side rail (1) and a **lateral guide rail (4) per tier.**
- Die Befestigung der Seitenschienen erfolgt mit Senkschrauben / Kreuzschlitz M6x16 verz (3) und Skt-Muttern M 6 verz (2)




Put the countersunk screws (3) from the **inside to the outside** through the drilled holes of the side rails and the stillage and then tighten them with a hexagon nut M6 (2)



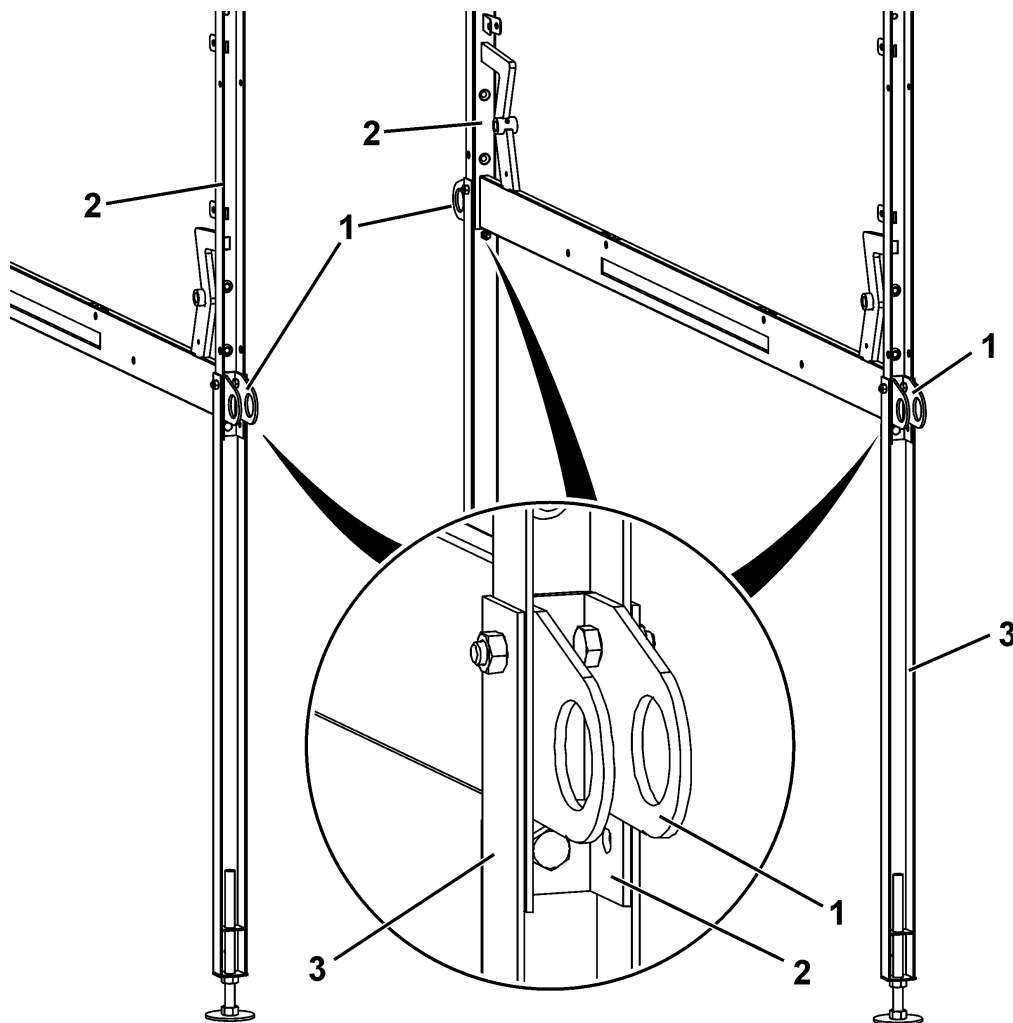
Pos.	Qty.	Code no.	Description
1	2	83-02-3865	Side rail 2412 BD-C2+
2	24	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	24	99-10-1368	Cross-recessed countersunk head screw M 6x16 DIN 965-5.8 galv.
4	2	83-00-6082	Lateral guide 2412 for egg channel single

10 Note regarding the connection of a manure pit



Note regarding the **CONNECTION OF A MANURE PIT**:

If a connection between the nest and a manure pit is planned, a bracket for tube 3/4" of the connection to manure pit has to be installed additionally at the screw union of the stillage with the post. In case of the **double nest install it at both sides** of a stillage and in case of the **wall nest at the side of a stillage directed towards the inside of the house**



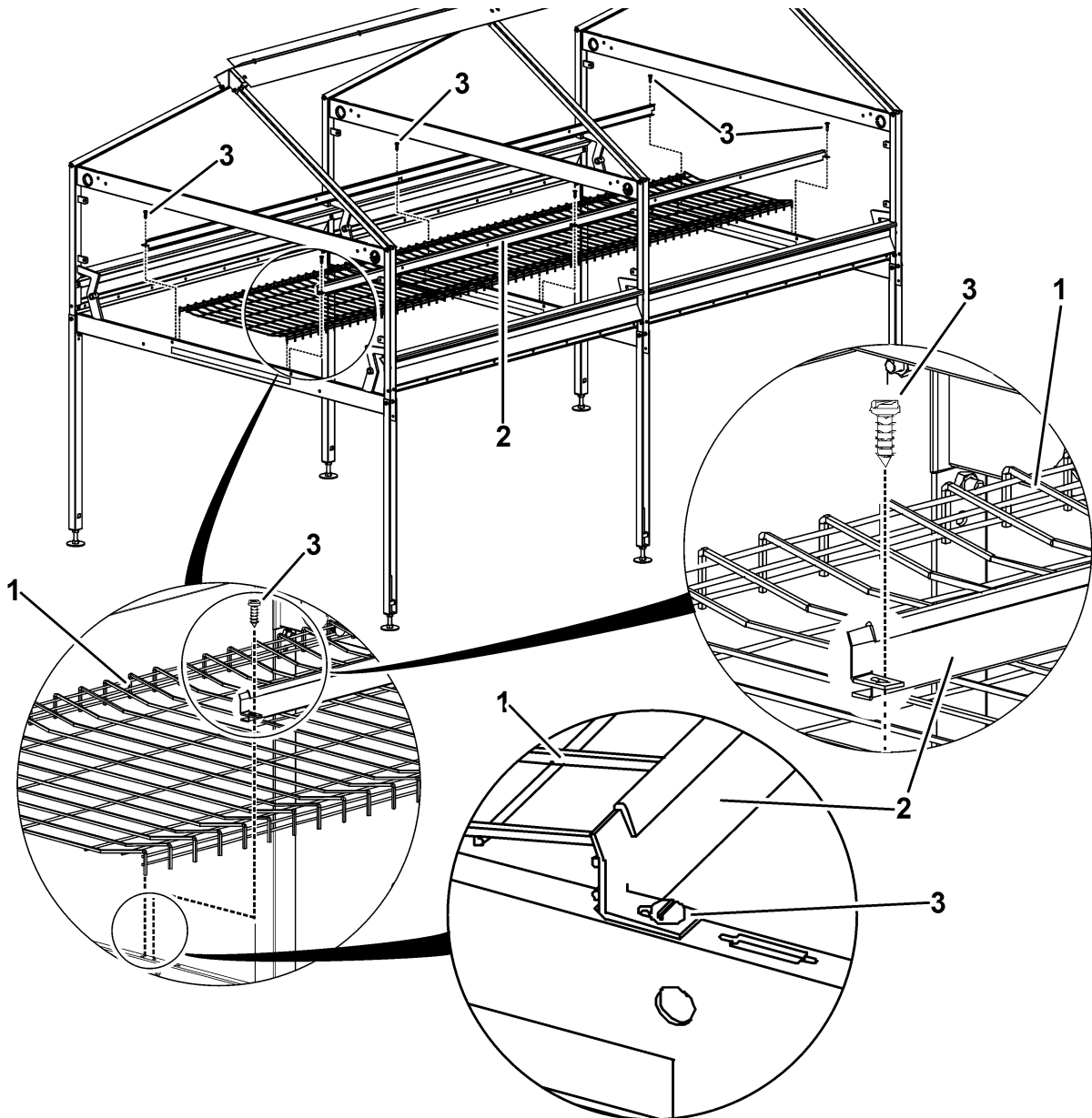
1 bracket for wall nest (1+2 tiers) 2 brackets for double nest (1+2 tiers)

Pos.	Qty.	Code no.	Description
1		83-02-0572	U-bracket for 3/4"-tube in main post BD-Colony
2			Stillage 1t/2t double and 1t/2t simple welded BD-C2+
3		83-01-5087	Extension for main post galv. BD-C2+

11 Installing the egg channel

11.1 Egg channel for double nest 1 tier

11.1.1 Installing the wire grille and longitudinal supports

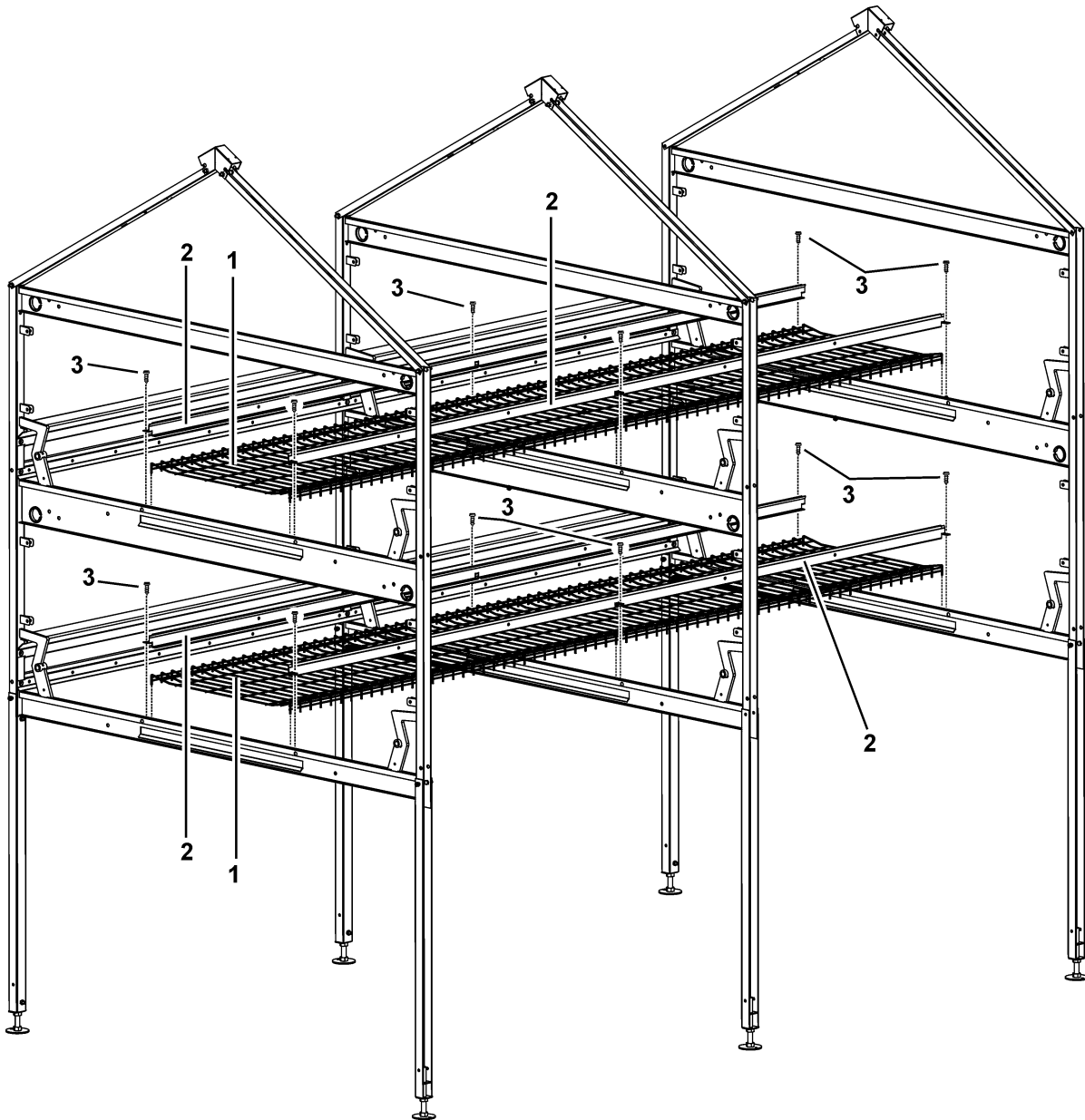


Pos.	Qty.	Code no.	Description
1	1	83-00-5719	Wire grille 2412 for egg channel double BD-C2+
2	2	83-00-5720	Longitudinal support 2412 for egg channel BD-C2+
3	6	99-10-3938	Tapping screw 4,8x 25 DIN 7504-K, galv.

The screw links of **successive** longitudinal supports (2) are placed on top of one another and fixed to the stillage with 1 tapping screw (3).

11.2 Egg channel for double nest 2 tiers

11.2.1 Installing the wire grille and longitudinal supports

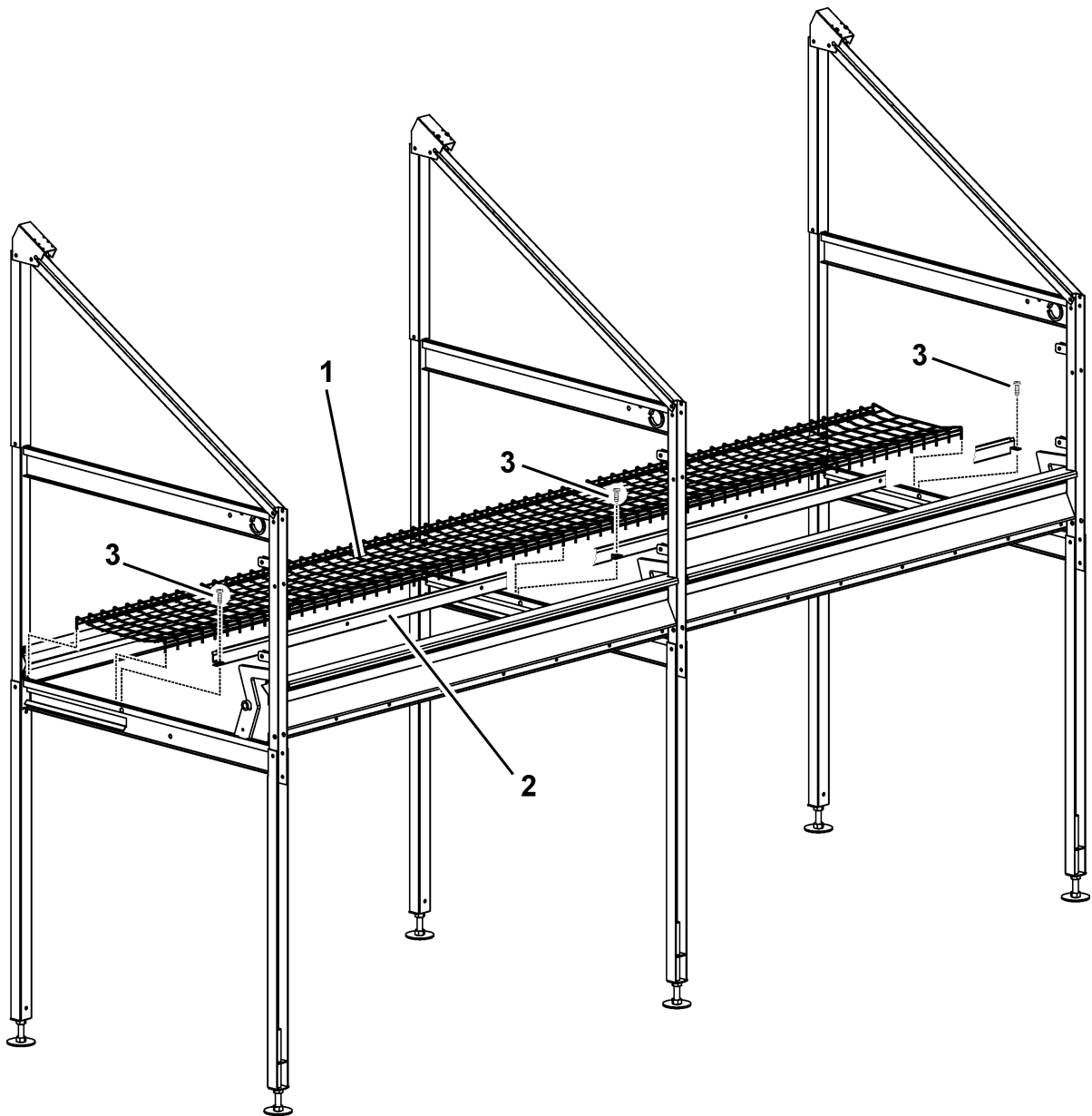


Pos.	Qty.	Code no.	Description
1	2	83-00-5719	Wire grille 2412 for egg channel double BD-C2+
2	4	83-00-5720	Longitudinal support 2412 for egg channel BD-C2+
3	12	99-10-3938	Tapping screw 4,8x 25 DIN 7504-K, galv.

The screw links of **successive** longitudinal supports (2) are placed on top of one another and fixed to the stillage with 1 tapping screw (3).

11.3 Egg channel for wall nest 1 tier

11.3.1 Installing the wire grille and longitudinal supports

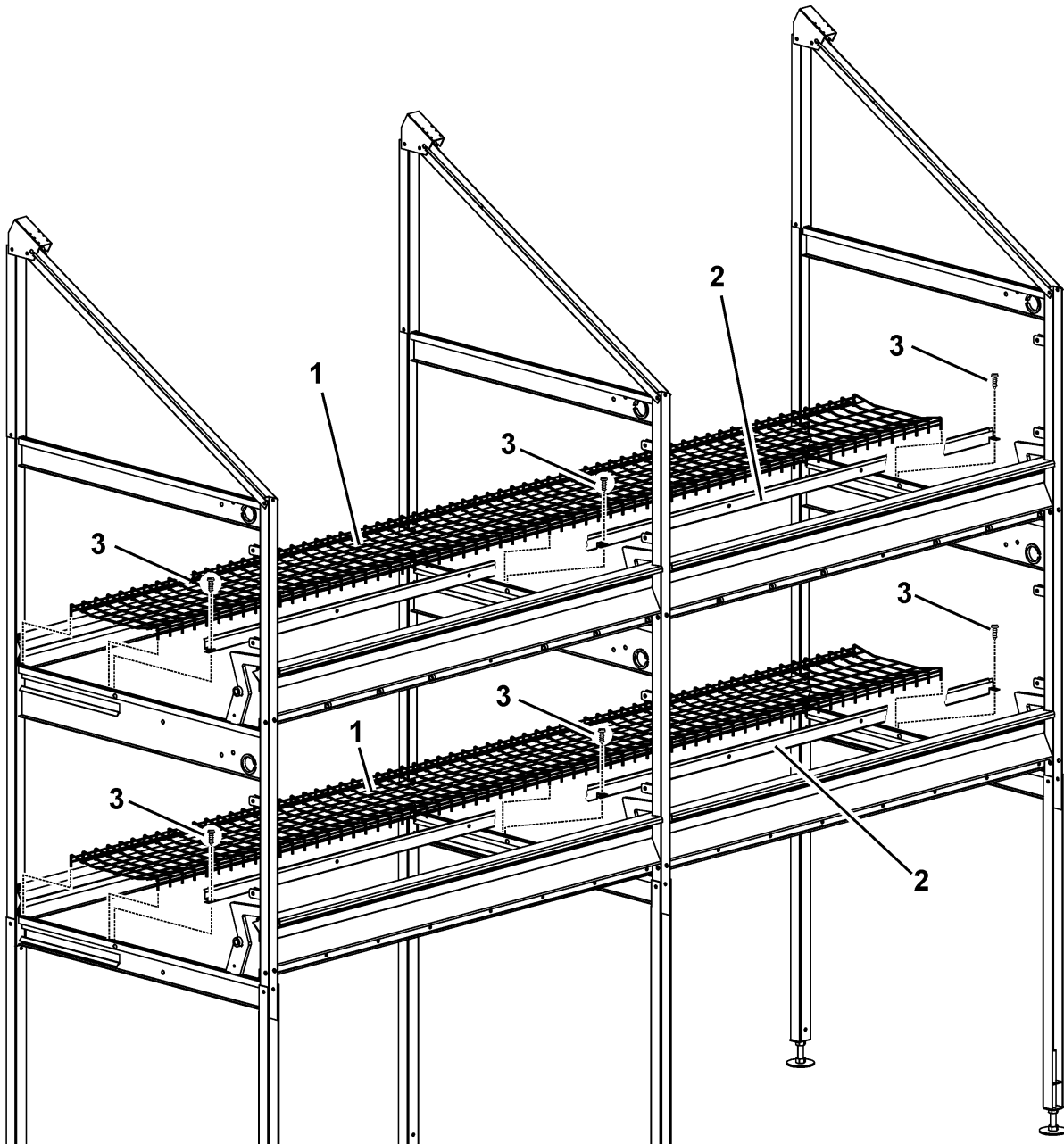


Pos.	Qty.	Code no.	Description
1	1	83-00-6084	Wire grille 2412 for egg channel E250 BD-C2+
2	1	83-00-5720	Longitudinal support 2412 for egg channel BD-C2+
3	3	99-10-3938	Tapping screw 4,8x 25 DIN 7504-K, galv.

The screw links of **successive** longitudinal supports (2) are placed on top of one another and fixed to the stillage with 1 tapping screw (3).

11.4 Egg channel for wall nest 2 tiers

11.4.1 Installing the wire grille and longitudinal supports



Pos.	Qty.	Code no.	Description
1	1	83-00-6084	Wire grille 2412 for egg channel E250 BD-C2+
2	1	83-00-5720	Longitudinal support 2412 for egg channel BD-C2+
3	3	99-10-3938	Tapping screw 4,8x 25 DIN 7504-K, galv.

The screw links of **successive** longitudinal supports (2) are placed on top of one another and fixed to the stillage with 1 tapping screw (3).

For your notes:

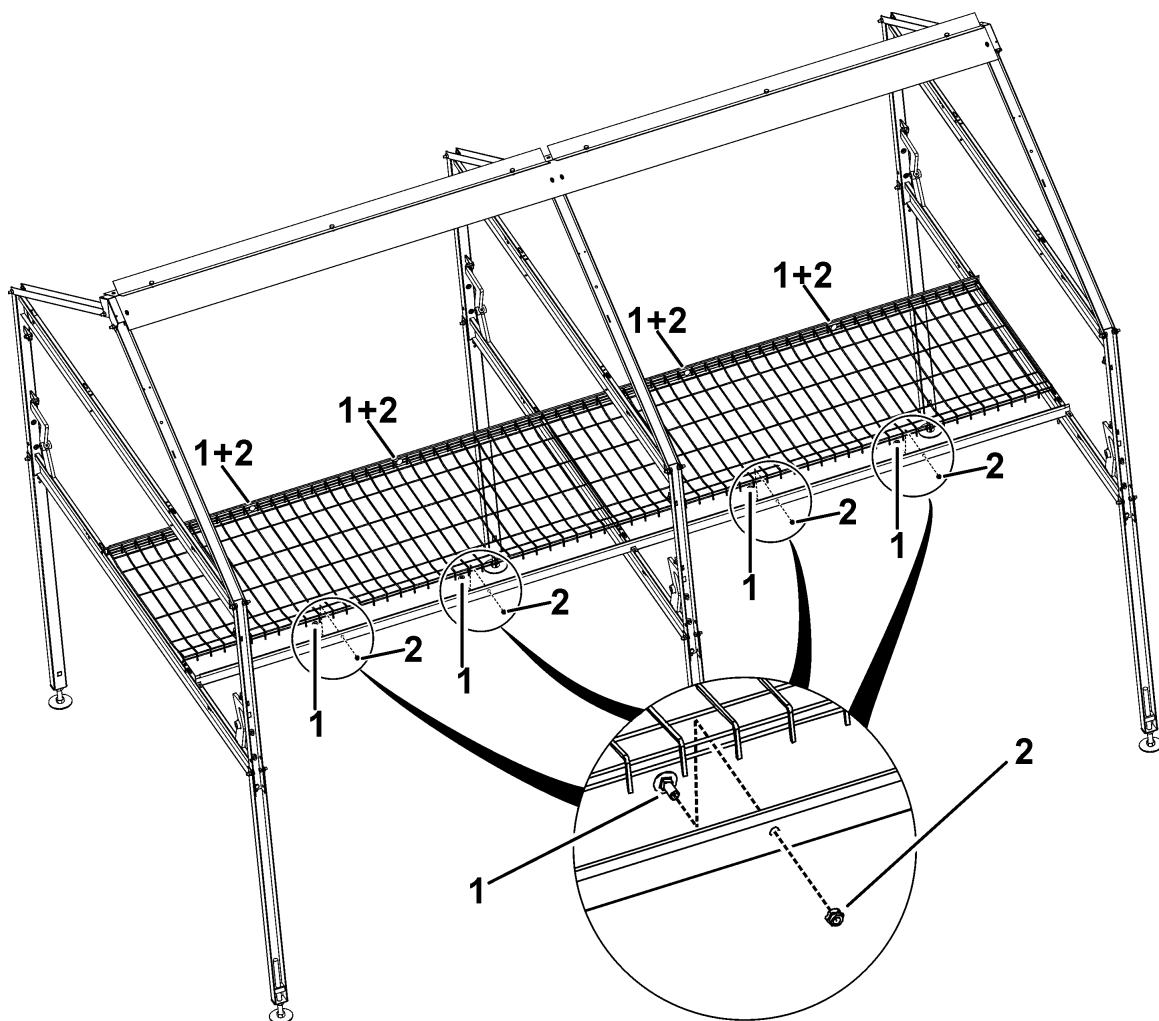
11.5 Fixing the wire grilles to the longitudinal support and the stillage

11.5.1 Double nest and wall nest 1 and 2 tier(s)



In the following, only the assembly of the double nest with 1 tier is explained by means of drawings.

The assembly of the two-tier double nest and the single and double-tier wall nest is done the same way per tier.



Pos.	Qty.	Code no.	Description
1	8	99-10-1602	Mushroom head square neck bolt M 6x 16 galv. DIN 603
2	8	99-10-1045	Hexagon nut M 6 galv. DIN 934-8

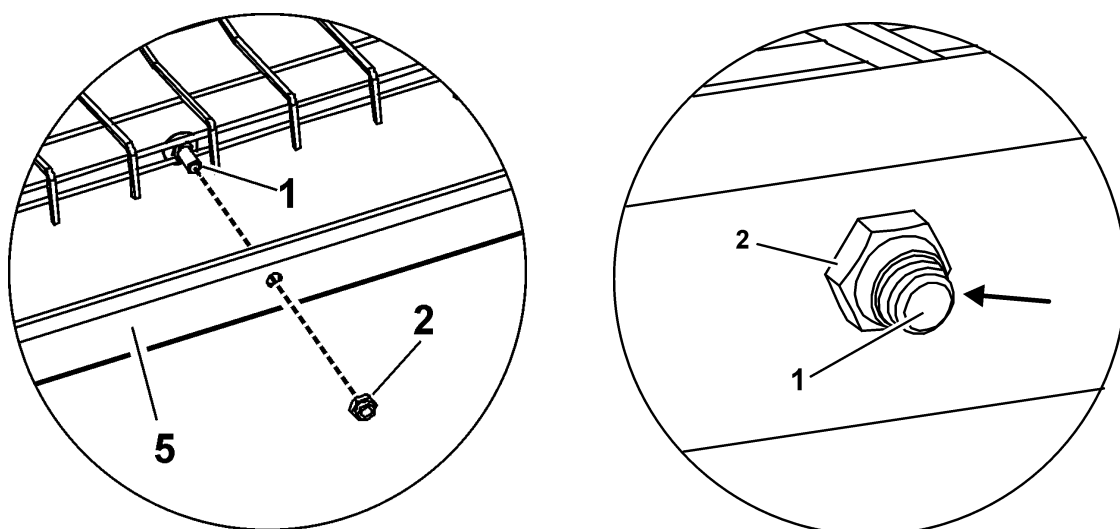
!

Important:

The self-locking counter nut M6 (2) has to be screwed completely down to the longitudinal support / lateral guide rail (5).

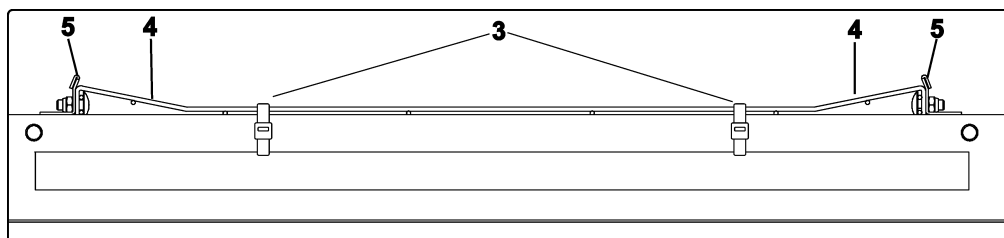
Later on, the projecting end of **one** mushroom head square neck bolt per nest hole will be needed to fix the wire rope with tension spring for the nest floor resetting mechanism.

(see chapter: Installing the floor unit)



Pos.	Qty.	Code no.	Description
1	8	99-10-1602	Mushroom head square neck bolt M 6x 16 galv. DIN 603
2	8	99-10-1045	Hexagon nut M 6 galv DIN 934-8
3	4	99-50-3775	Strap 290mm plt3s-cs
4	1	83-00-5719	Wire grille 2412 for egg channel double BD-C2+
5	2	83-00-5720	Longitudinal support 2412 for egg channel BD-C2+
	1	83-00-6082	Lateral guide 2412 for egg channel single (wall nest)


Stabilising the egg channel by means of straps:



To avoid bulging of the egg channel wire grille (4) it is fastened to each stillage by means of two straps (3) through the egg belt guide slot.

12 Installing the nest floor drive tubes and rods

12.1 Position of the connection tubes and tube coupler

	<p>Note:</p> <p>When joining two rods by means of a connection tube and two tubes 1" by means of couplers see to it that neither connection tubes nor couplers obstruct the further installation of back panels or nest floors.</p> <p>The same applies to double nests and wall nests!</p>
---	---

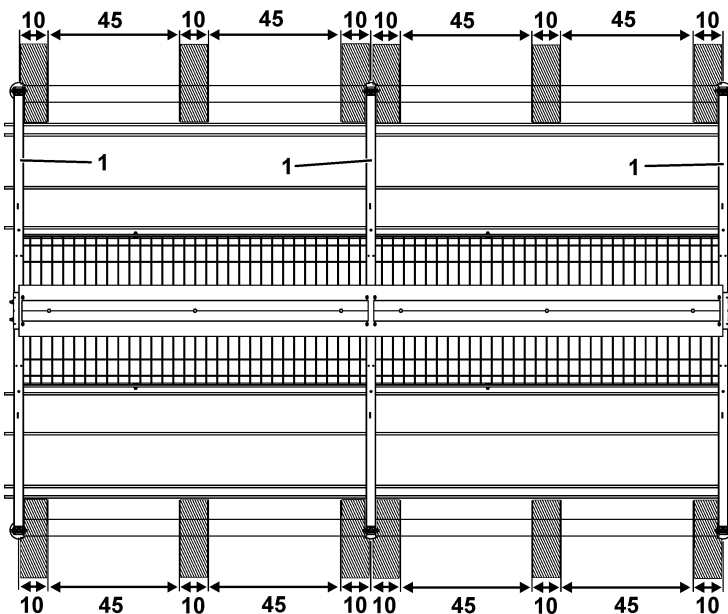
The following drawing shows in which areas (**hatched**) of a section connection tubes or couplers for tubes 1" must **not** be installed.

These positions are:

- 10 cm left and right of each stillage (1),
- in an area of 10 cm width in the centre of each nest hole.

This is the place where later:

- the back panels will be fixed or the nest floors placed on.




If a **connection point** of the rods or tubes happens is located in this area, shorten them respectively.

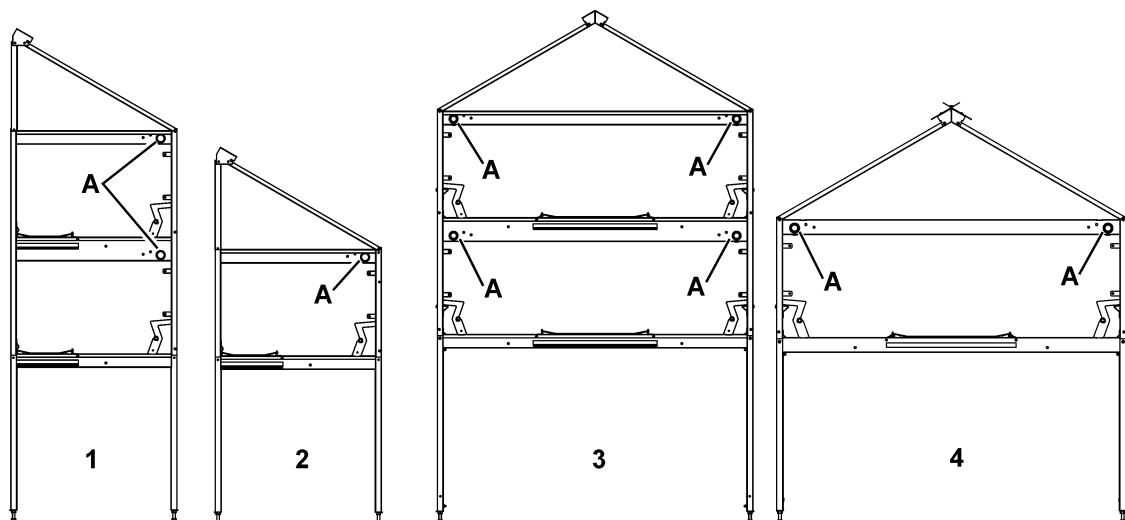
All specifications in cm.

12.2 Installing the tubes for nest floor drive

12.2.1 Placing the tubes 1"

	<p>Important:</p> <p>If the gear of the ejection mechanism has to be installed on the drive side, keep a distance of at least 11cm between the end of the tube and the first stillage (drive side).</p> <p>If the gear is planned to be installed in the centre of the row, it is essential, to take into consideration to install the gear at the respective point in the nest row at the same time as placing the tubes 1". We do not recommend installing the gear at a later point of time after all tubes 1" have been placed (see chapter 23)!</p> <p>Make sure before installing the tubes that all bushes for tubes 1" have been placed in the pre-determined holes of the stillage! They are required for optimum operation of the tubes while lifting and lowering the nest floors</p>
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Position of tubes in the different nest versions:

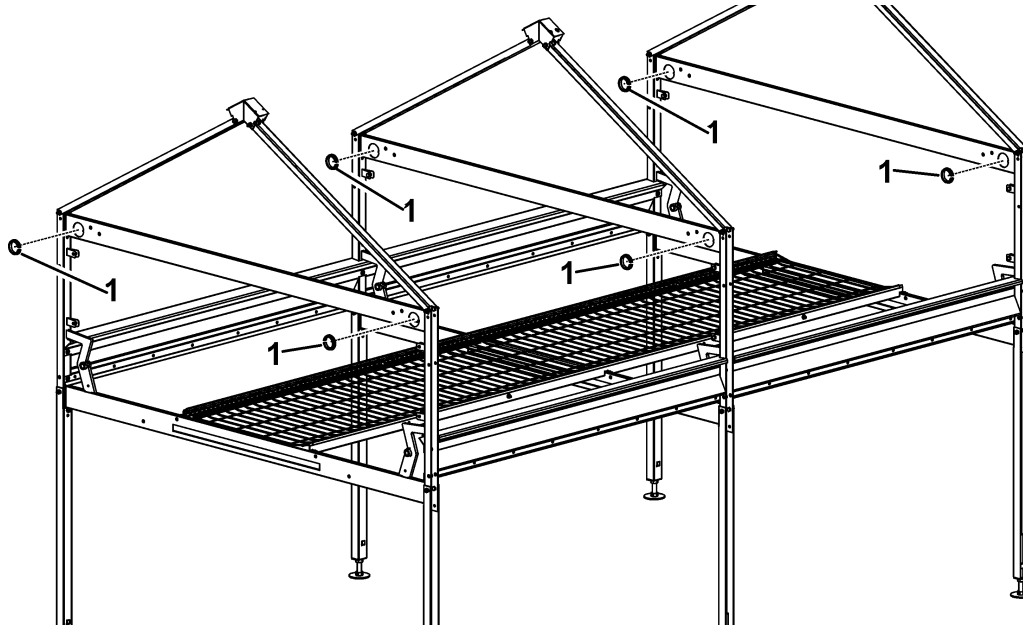


1	Wall nest 2 tiers	3	Double nest 2 tiers
2	Wall nest 1 tier	4	Double nest 1 tier
A	Position of tubes 1"		



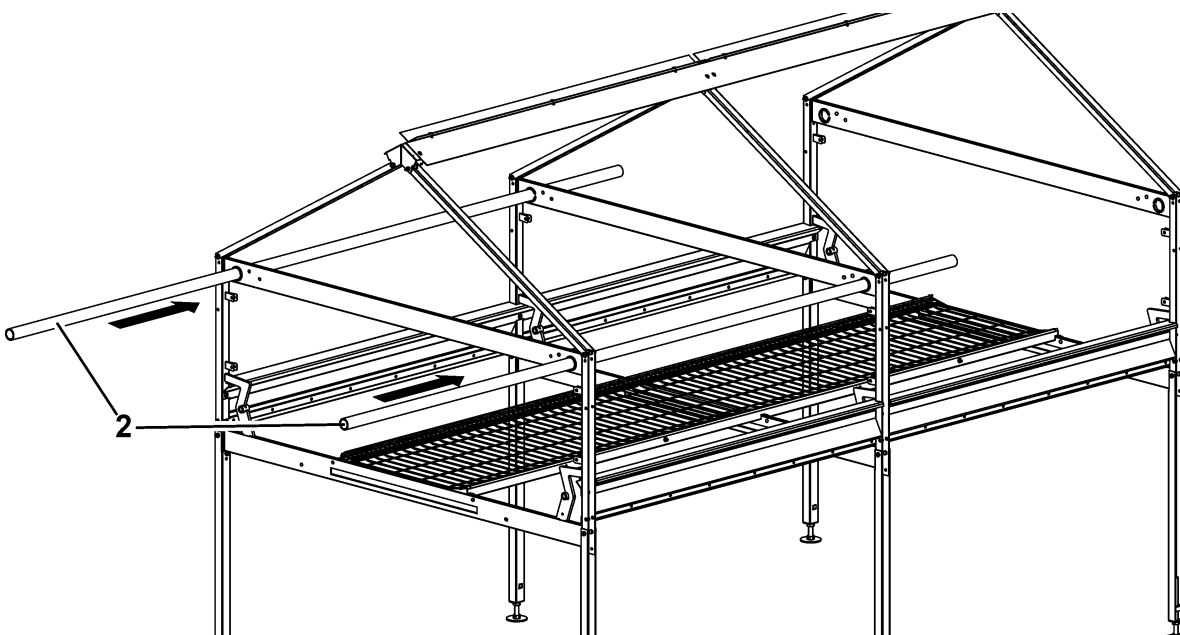
Following find the drawings illustrating **inserting the tubes** into a double nest 1 tier.

The same procedure must be taken **per tier** when inserting the tubes into other nest versions (double or wall nest).

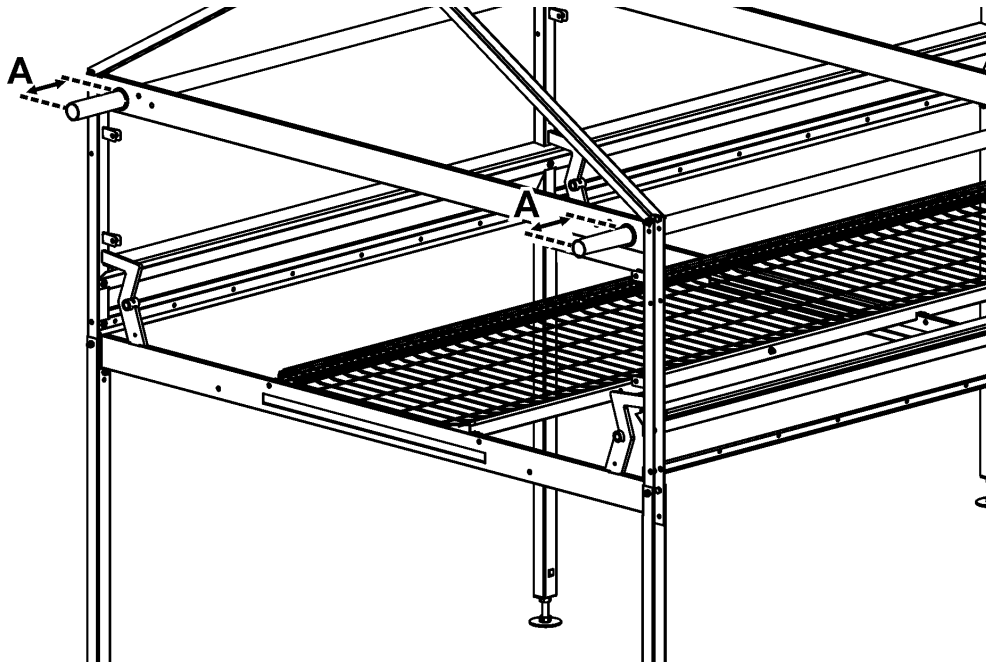


Pos.	Qty.	Code no.	Description
1	6	36-00-6206	Bush PA6 for tube 1"
2		99-40-3813	Pipe 1"x6000 galv. DIN 2440

- When inserting the tubes 1" start at the drive side of a nest row.





- Please take into consideration that **depending on the position of the ejection mechanism drive within a nest row**, the distance (A) between the tube end and the first stillage (drive side) can vary.



- A = min. 11cm:
if the drive for ejection mechanism is planned to be installed at the drive side.
- A = approx.. 5cm:
if the drive is planned to be installed in the centre of the row.

12.2.2 Connecting the tubes 1”

	<p>See chapter 11.1: “ Position of the connection tubes and tube couplers ”</p> <p>It describes the positions for mounting the couplers for tube 1” BD-C2+ within a nest hole!</p>
---	---


	<p>In the following, the drawings only show the assembly of the tubes in a double nest with 1 tier.</p> <p>The same procedure must be taken per tier when connecting the tubes in other nest versions (double or wall nest)</p>
---	--

Procedure:

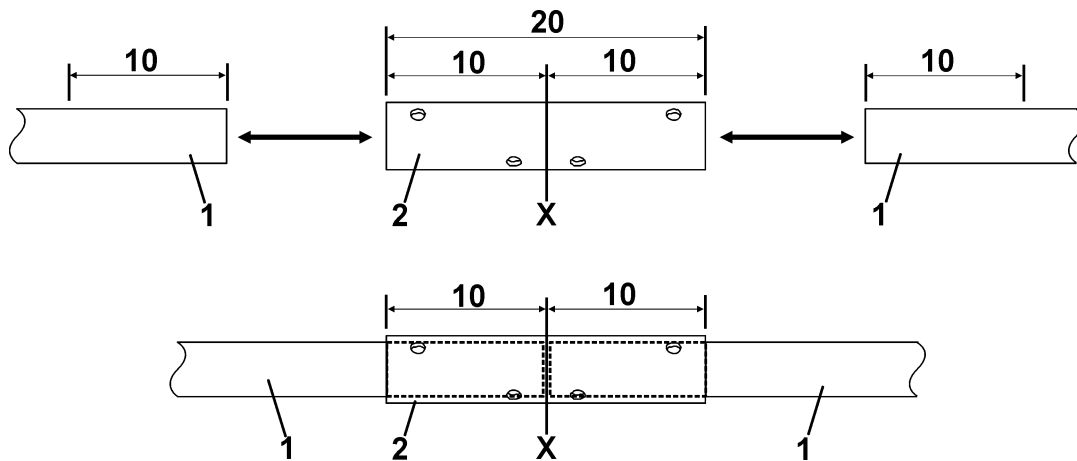
- push the coupler (2) 10 cm on the tube ends to be connected,
- take the drill holes in the coupler tube as a pattern and drill the holes respectively into the inner tubes 1”.



For drilling the tubes 1” use a drill Ø 8,5 mm.



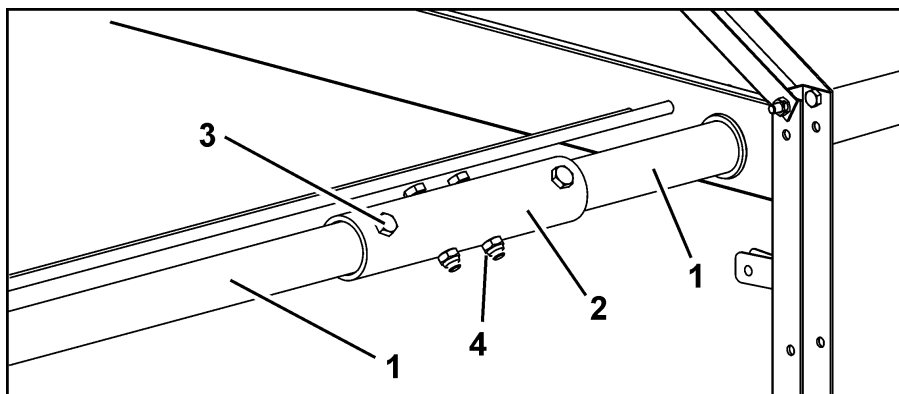
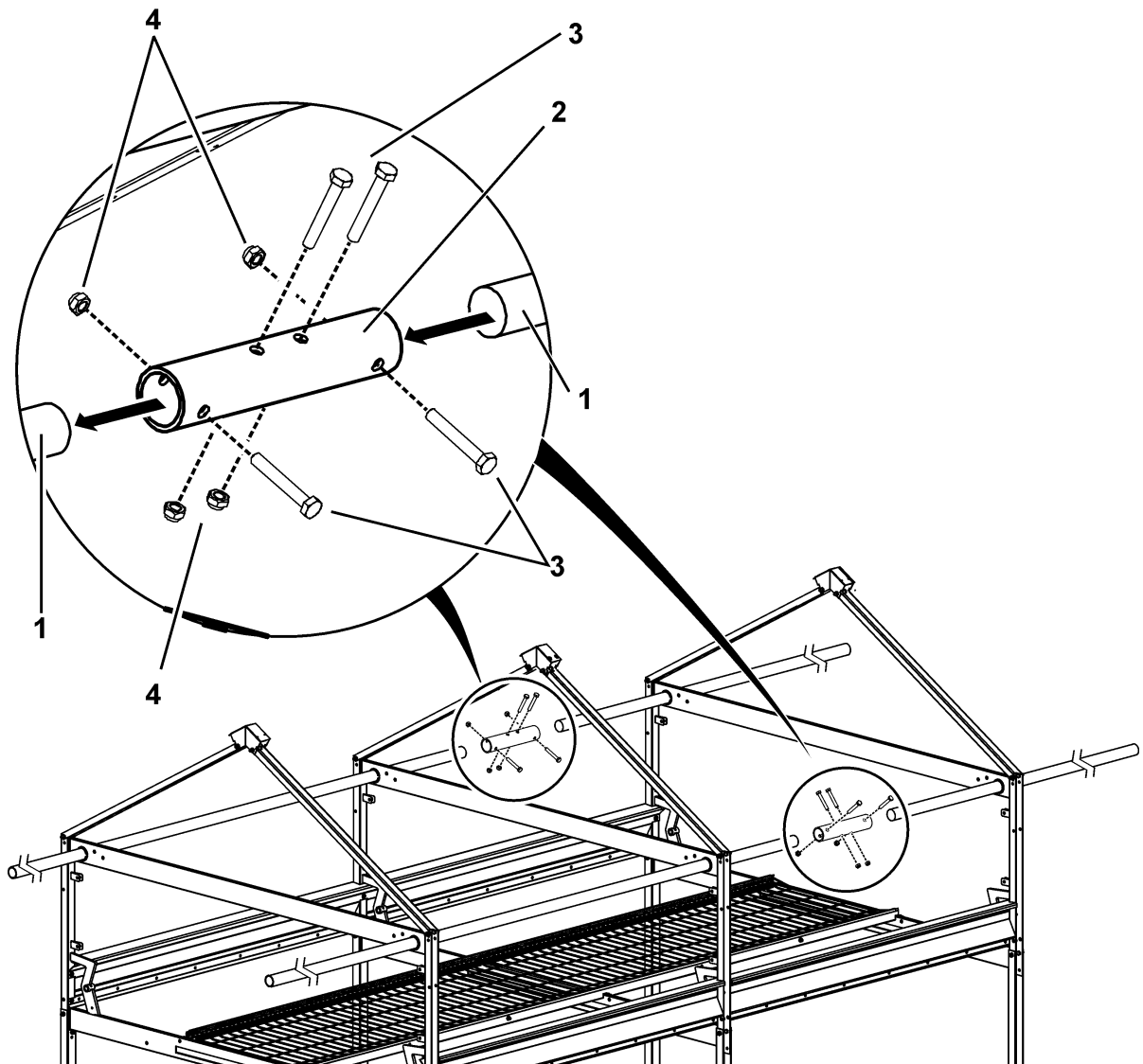
Note:
The ends of the tubes (1) have to join exactly in the centre (X) of the coupler tube (2).



Pos.	Qty.	Code no.	Description
1		99-40-3813	Pipe 1"x6000 galv. DIN 2440
2	1	36-00-4030	Coupler for tube 1" BD-C2+
3	4	99-10-1265	Hexagon head screw M 8x 55 galv. DIN 558
4	4	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv.
X			Centre of coupler for tube 1" BD-C2+

See also pictures at the next page.

- The tubes 1" are screwed to the coupler as shown in the following



Readily mounted coupler

12.3 Installing the rods

	<p>When inserting the rods, take into consideration the position of the passage in the nest row. Do not install any rods in these places!</p>
---	--

12.3.1 Inserting the rods

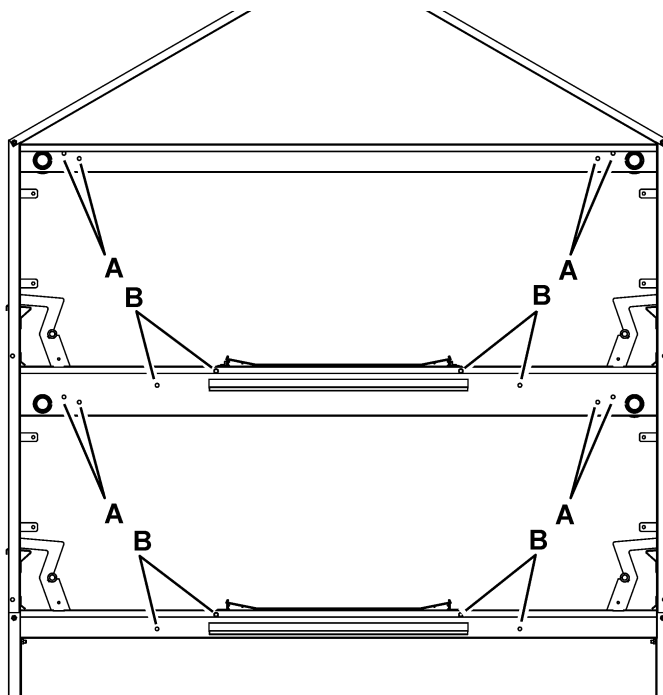
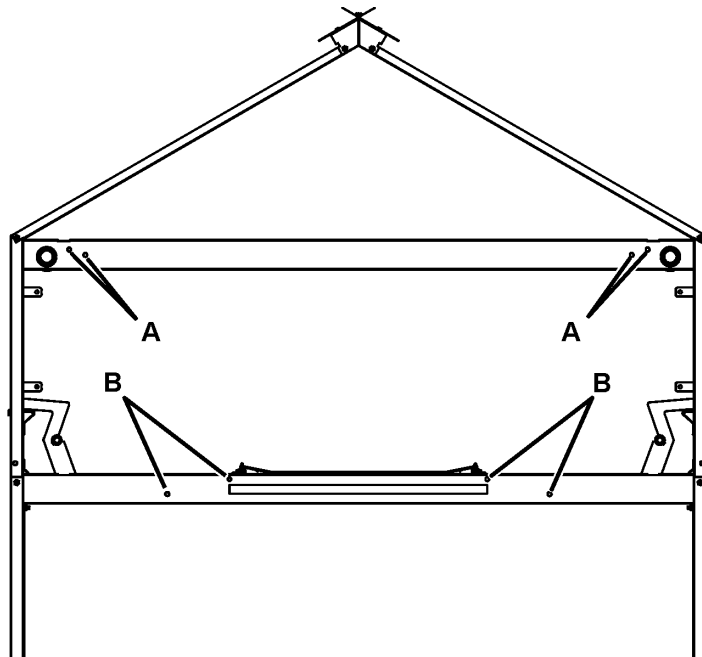
The upper rods (A) of a tier are required:

- for fixing the back panels of a nest,

The lower rods (B) of a tier are required:

- for supporting the tilting floors

double nest 1 tier

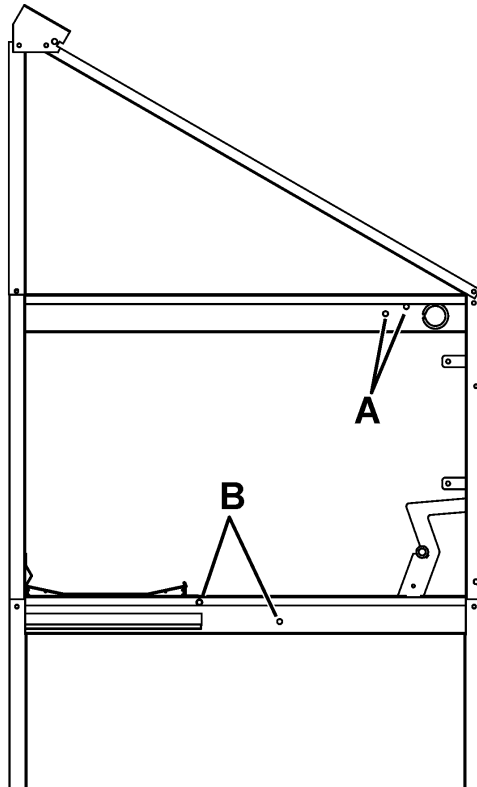


In the positions **A** and **B** insert rods through the drill holes of each stillage.

Note (also see above):

It is essential to take into consideration the positions of the planned passages!

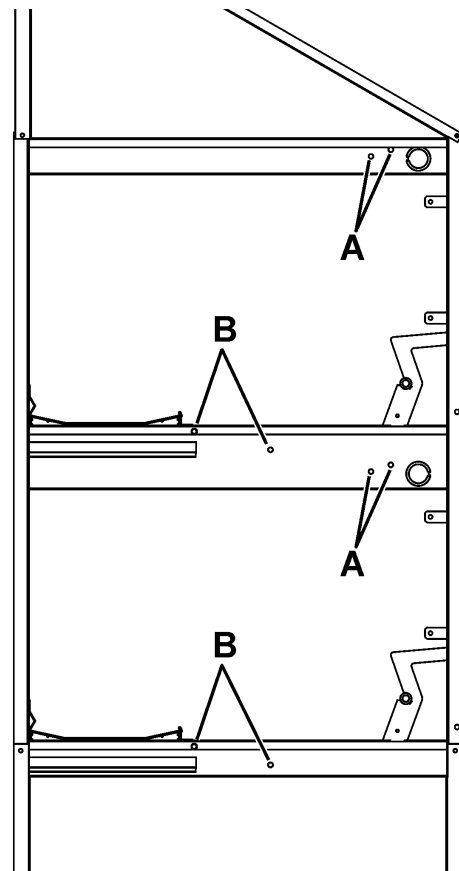
double nest 2 tiers



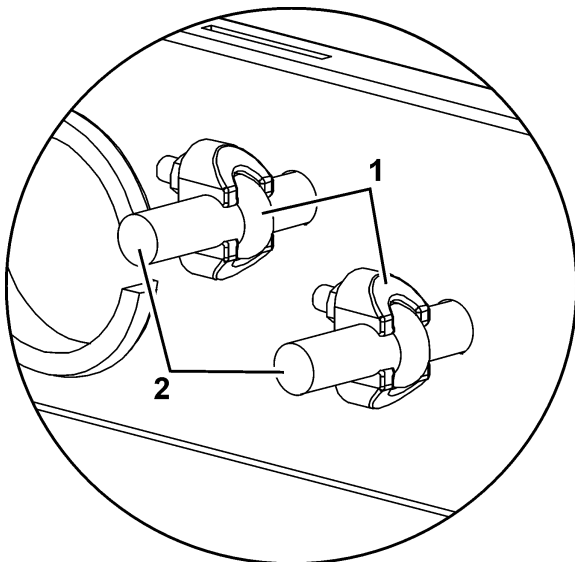
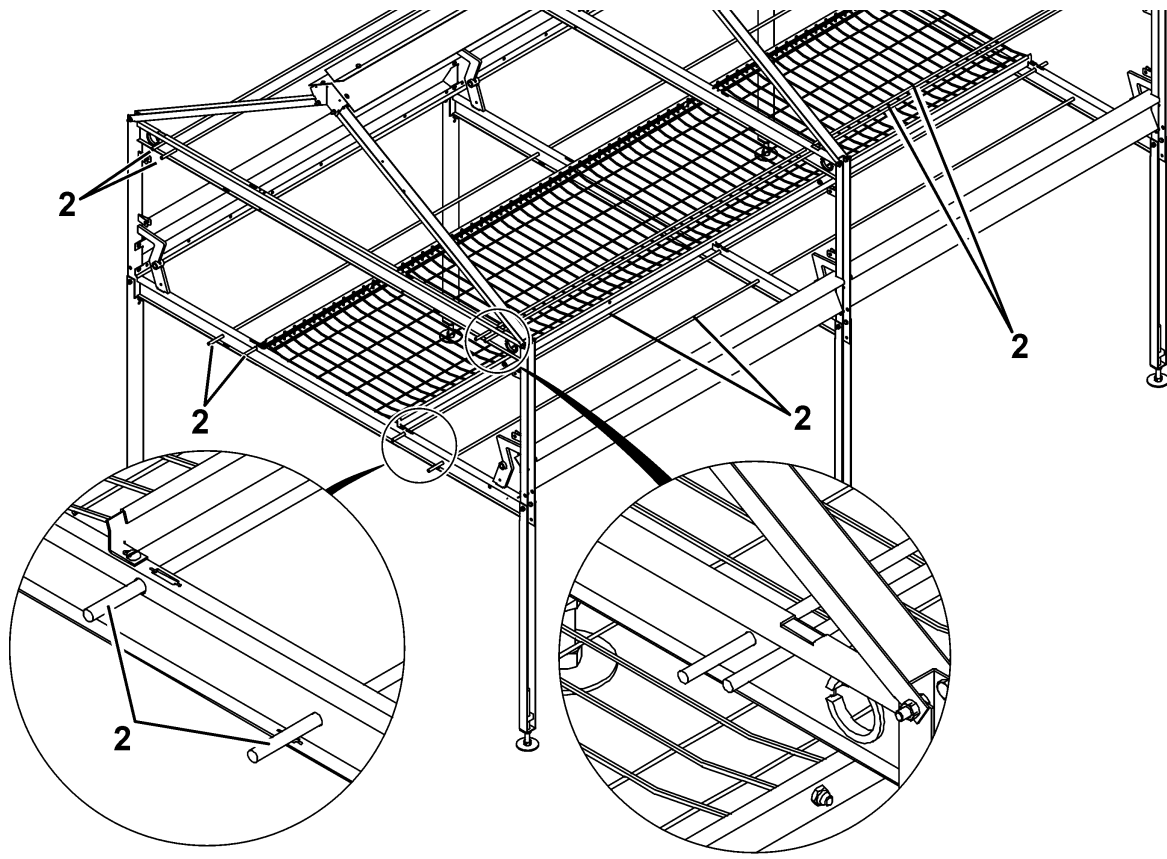
A= Rods for fixing back panels
B= Rods as supports for tilting floors

wall nest 1 tier

Wall nest 2 tiers
Note
(also see previous page): It is essential to take into consideration the positions of the planned passages!



12.3.2 Fixing the rods to the final stillages.



The rods are fixed to the stillages:

- at the beginning of a row (drive side)
- at the end of a row (egg belt idler unit)
- at the beginning and at the end of a passage

For this purpose, the rod projecting approx. 3 cm is fixed by means of a cable clamp

Pos.	Qty.	Code no.	Description
1	8	99-50-0090	Cable clamp 8mm 5/16" galv. DIN 741
2		37-46-3708	Rod 8x5000

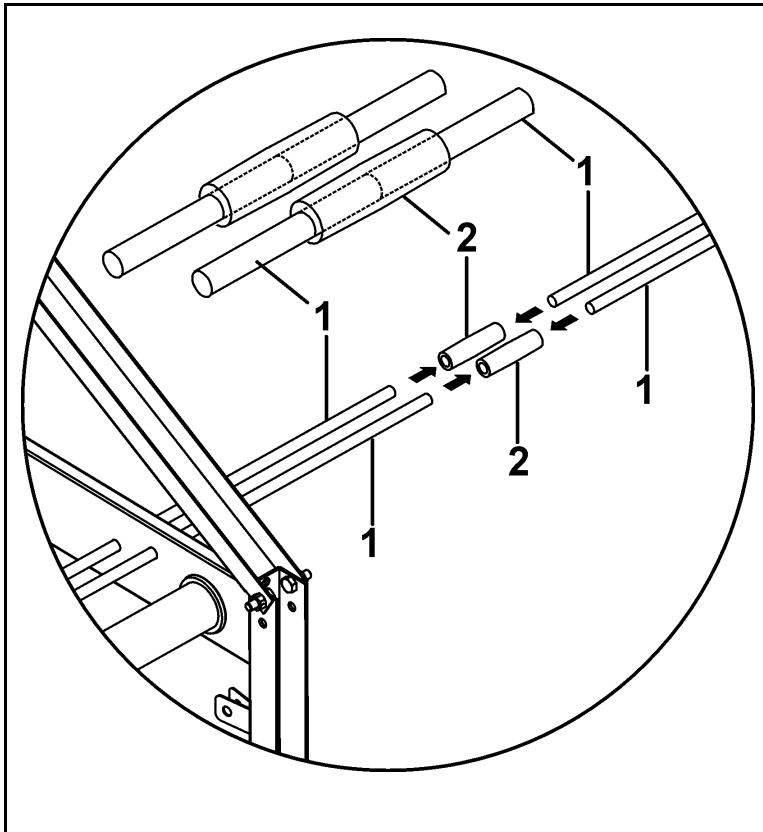
12.3.3 Connecting the rods



See chapter 11.1:

“ Position of the connection tubes and tube couplers ”

It describes the possible positions for installing the connection tubes dia 8 mm PA6.6 in a nest hole!



The inserted rods (1) are joined by connection tubes (2).

Half of the latter is pushed on each end of the rod to be connected.

Pos.	Qty.	Code no.	Description
1		37-46-3708	Rod 8x5000
2		37-46-3709	Connection tube dia 8mm PA6.6

13 Installing the egg belt



Following find the drawings illustrating threading in the egg belt into a double nest 1 tier.

The same procedure must be taken per tier when threading in the egg belt into other nest versions (double or simple nest)

13.1 Threading in the egg belt

- When threading in the egg belt start at the drive side of a nest row.
- The egg belt will first be rolled out over the wire grills of the egg channel of the stands up to the egg belt idler unit above the cross supports.
- Now pull the egg belt through the egg belt guide slots in each stand back to the drive side.

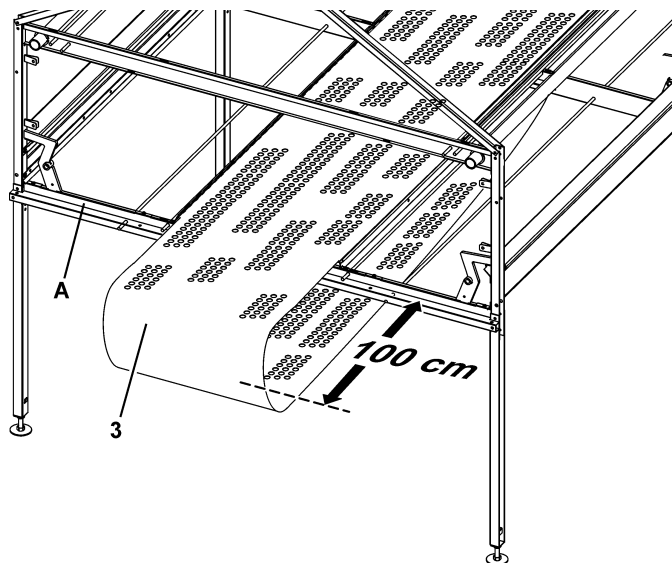
Exception: The egg belt guide slot of the end set stand in the egg belt idler unit

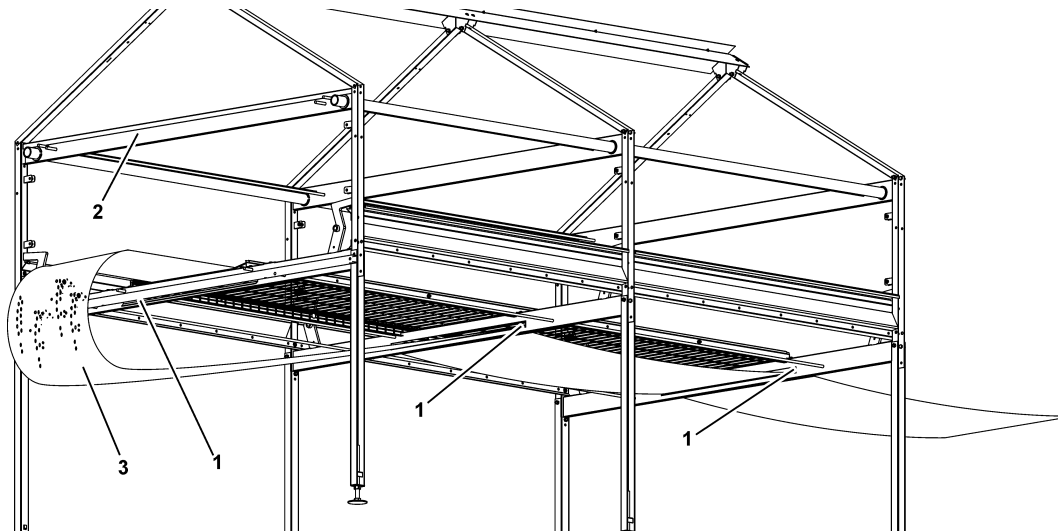


See to it that there is sufficient length of egg belt at the drive side to be able to correctly install the egg belt at the longitudinal belt drive. Refer to the planning and installation drawing for the correct position of the longitudinal belt drive. Leave a loop of 100 cm length at the end set egg belt idler unit. The idler roller of the egg belt idler unit will later be passed through this loop.

Note:

Do not pass the egg belt through the egg belt guide slot of the end set stillage (A) of the egg belt idler unit.





Pos.	Qty.	Code no.	Description
1	3		Egg belt guide slot
2	1		Stillage of end set egg belt idler unit
3		83-00-5365	Egg belt 500mm white- KB PP 1,3mm/12 rows a 20mm punched (for double nest 1 and 2 tiers)
		36-00-3799	Egg belt 245mm white- KB PP 1,3mm/6 rows a 20mm punched (for wall nest 1 and 2 tiers)

- After the egg belt has been threaded in on the entire row length, it must not yet be tensioned. Only after the entire egg belt idler unit and the longitudinal belt drive have been installed, cut the egg belt to size and weld it.

14 Installing the roof cover incl. anti-roost device

The nest cover is available in two different versions:

Standard is:

Cover 1206 cpl. sheet metal for roof BD-C2+ incl. curtain (sheet metal version)

Optional is:

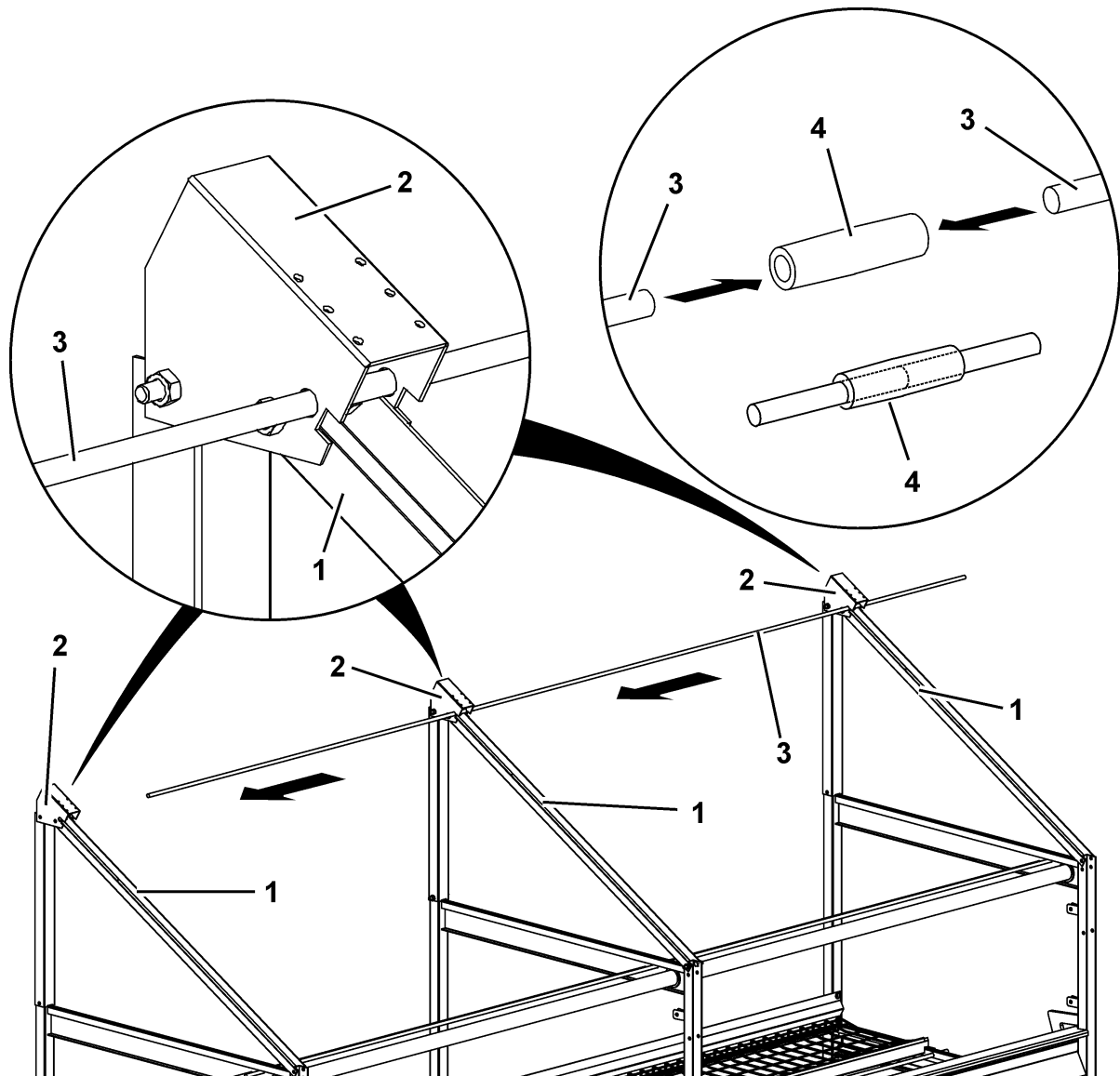
Cover 2412 cpl. for roof BD-C2+ (wood version)

It is necessary to install the nest roof to provide the entire nest construction with sufficient weight. Only after the roof has been installed, the system can be aligned by means of a laser.

14.1 Installing the sheet metal cover and anti-roost device

14.1.1 Sheet metal cover for wall nest 1 and 2 tiers

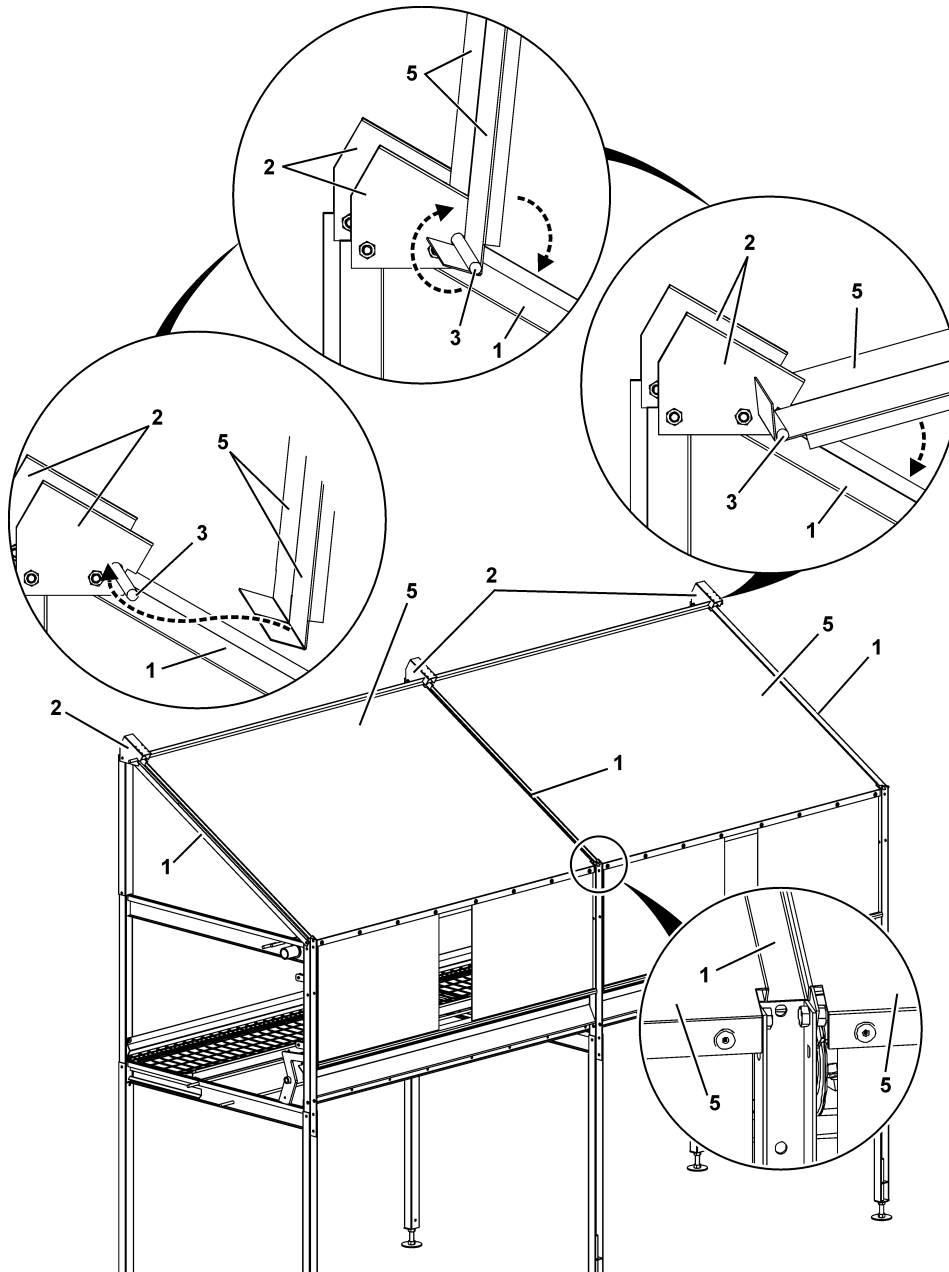
14.1.1.1 Installing the rod for sheet metal cover



Pos.	Qty.	Code no.	Description
1	3	83-00-6079	Diagonal trussing single for roof sheet
2	3	83-00-6185	Bracket single for ridge plate BD-C2+
3		37-46-3708	Rod 8x5000
4		37-46-3709	Connection tube dia 8mm PA6.6

Fixing the rods at the end set stillages is done by cable clamps.

14.1.1.2 Installing the cover 1206 mm sheet metal



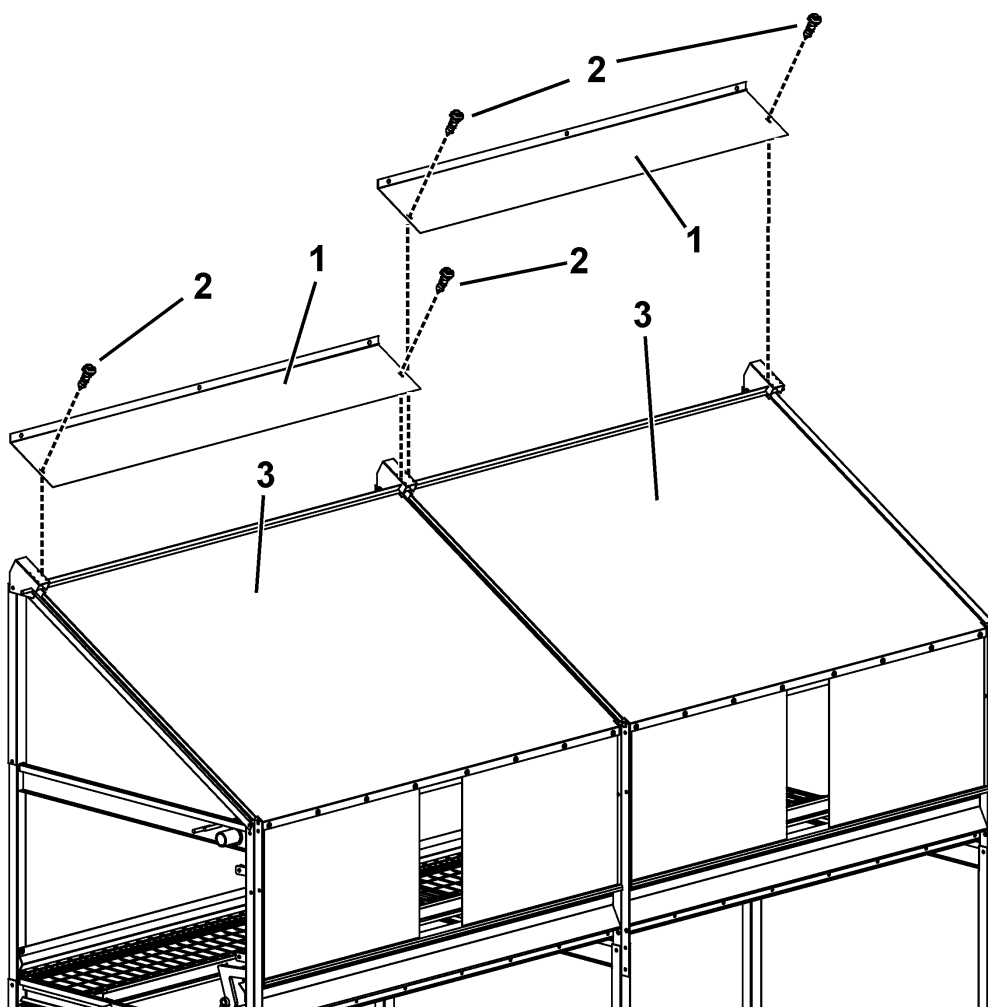
The lateral edges of the individual roof covers (5) are hooked into the diagonal trussing (1) of the section.

Pos.	Qty.	Code no.	Description
1	3	83-00-6079	Diagonal trussing single for roof sheet
2	3	83-00-6185	Bracket single for ridge plate BD-C2+
3		37-46-3708	Rod 8x5000
4		37-46-3709	Connection tube dia 8mm PA6.6
5	2	36-00-6155	Cover 1206 cplt sheet metal for Colony Nest

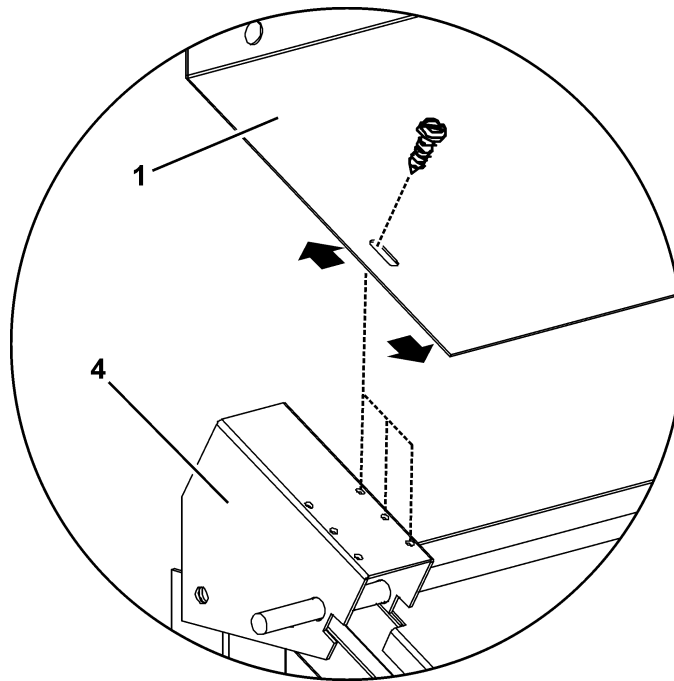
14.1.1.3 Installing the anti-roost unit for wall nest 1 and 2 tiers

**Note:**

Since the border for wall nest can compensate different distances of the nest to the wall, only install the borders after exactly aligning the system (see implicitly chapter 14)



Pos.	Qty.	Code no.	Description
1	2	83-01-4762	Border 1206 upper for wall nest BD-C2+
2	4	99-10-3802	Tapping screw B 4,2x16 DIN7981
3	2	36-00-6155	Cover 1206 cplt sheet metal for Colony Nest
4		83-00-6185	Bracket single for ridge plate BD-C2+



To compensate any unevenness in the house wall, there are 3 drill holes in the bracket for ridge plate for the wall nest.

Depending on the distance to the house wall, the border can be fixed with tapping screws in the upper, middle or lower hole.



The border has to be level with the wall.

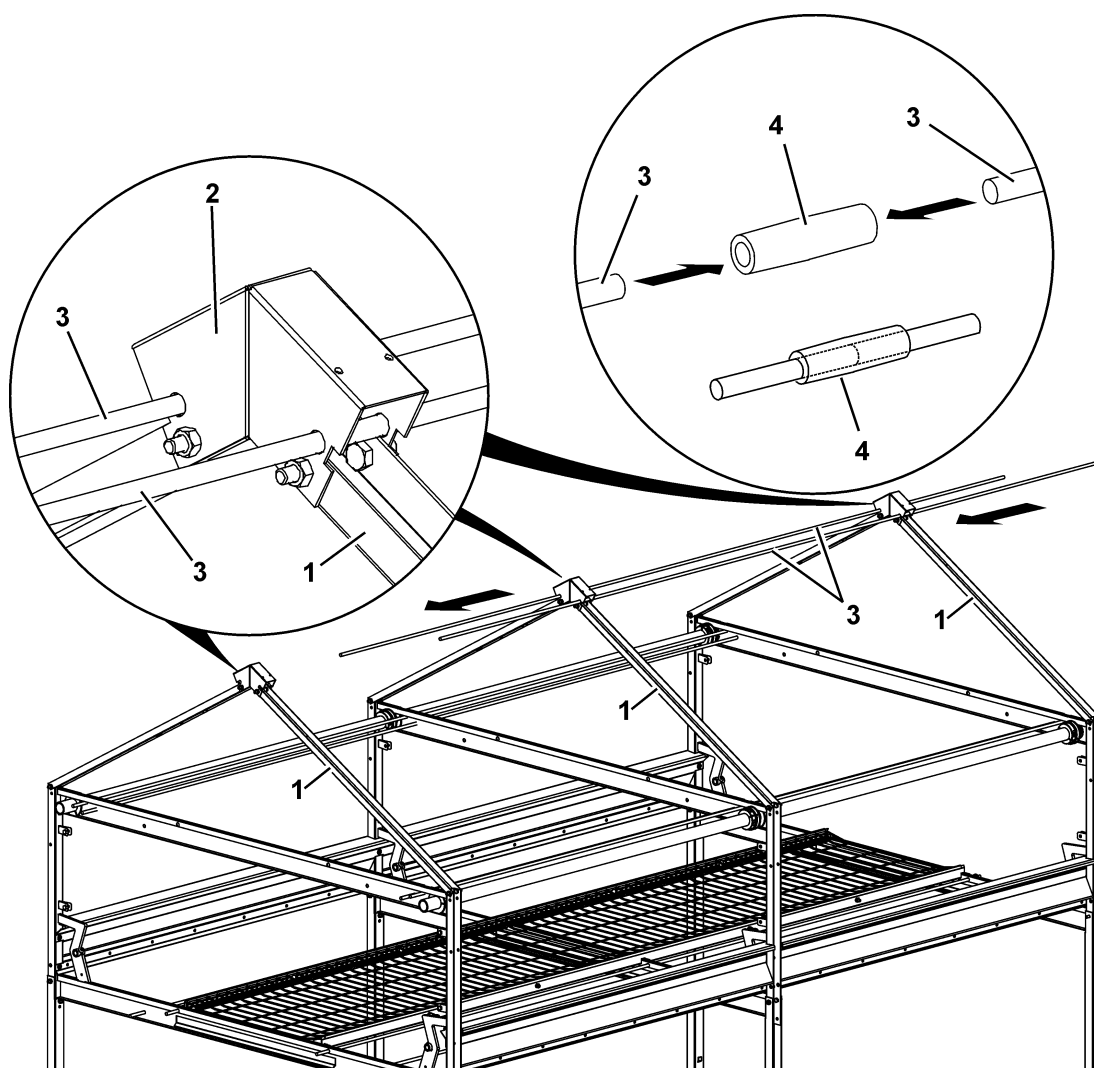
To compensate any unevenness in the house wall, it may be necessary to fix a wood strip at the house wall.
(see chapter 14).

14.1.2 Sheet metal cover double nest 1 and 2 tiers

14.1.2.1 Installing the rod for sheet metal cover



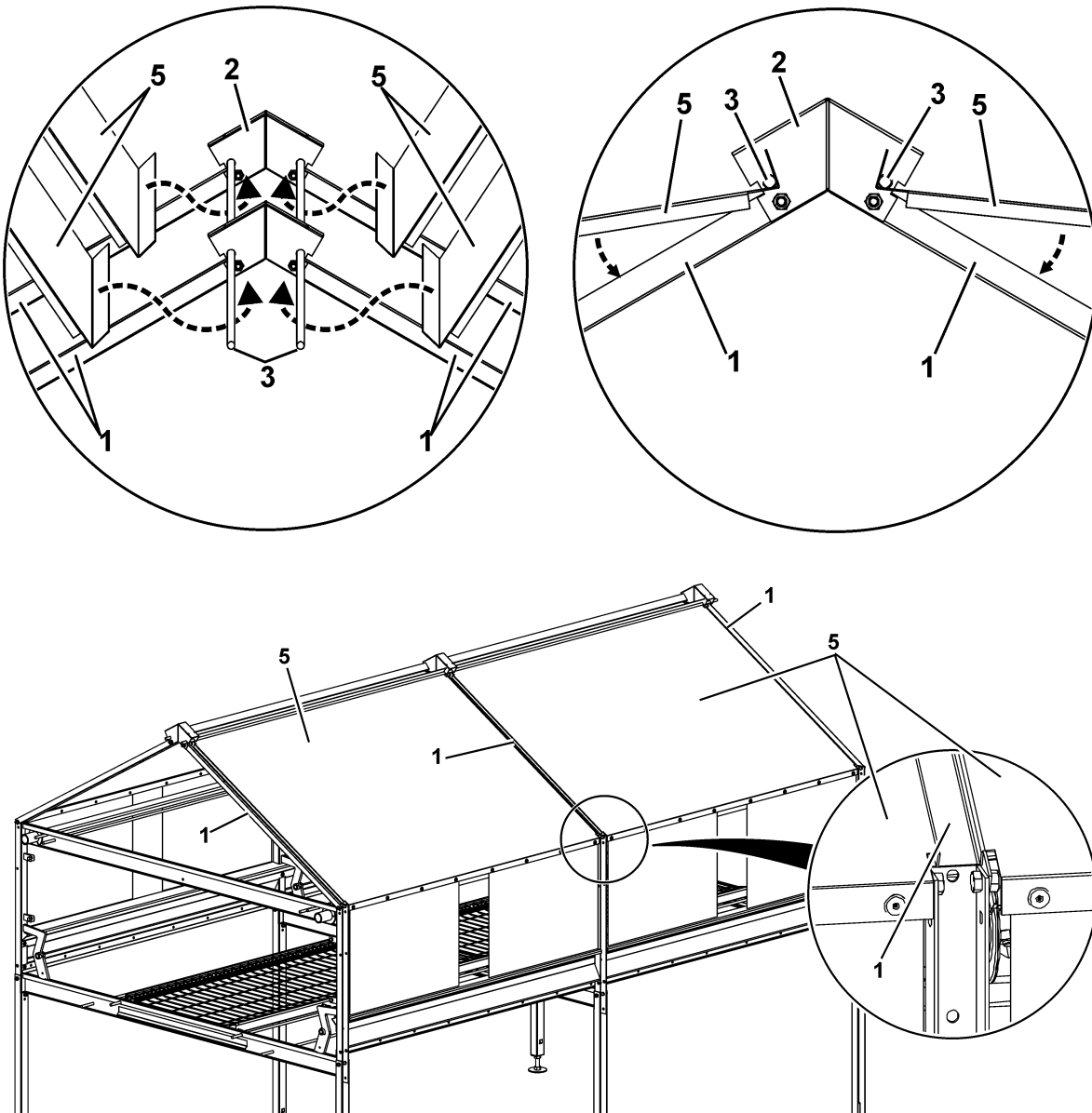
When inserting the rods, take into consideration where in the nest row the passage is planned. **Do not install any rods in these places!**



Pos.	Qty.	Code no.	Description
1	3	83-00-5686	Diagonal trussing double for roof sheet
2	3	83-00-5687	Bracket double for ridge plate BD-C2+
3		37-46-3708	Rod 8x5000
4		37-46-3709	Connection tube dia 8mm PA6.6
5	2	36-00-6155	Cover 1206 cpl. sheet metal for Colony Nest

Fixing the rods at the end set stillages is done by cable clamps.

14.1.2.2 Installing the cover 1206 mm sheet metal

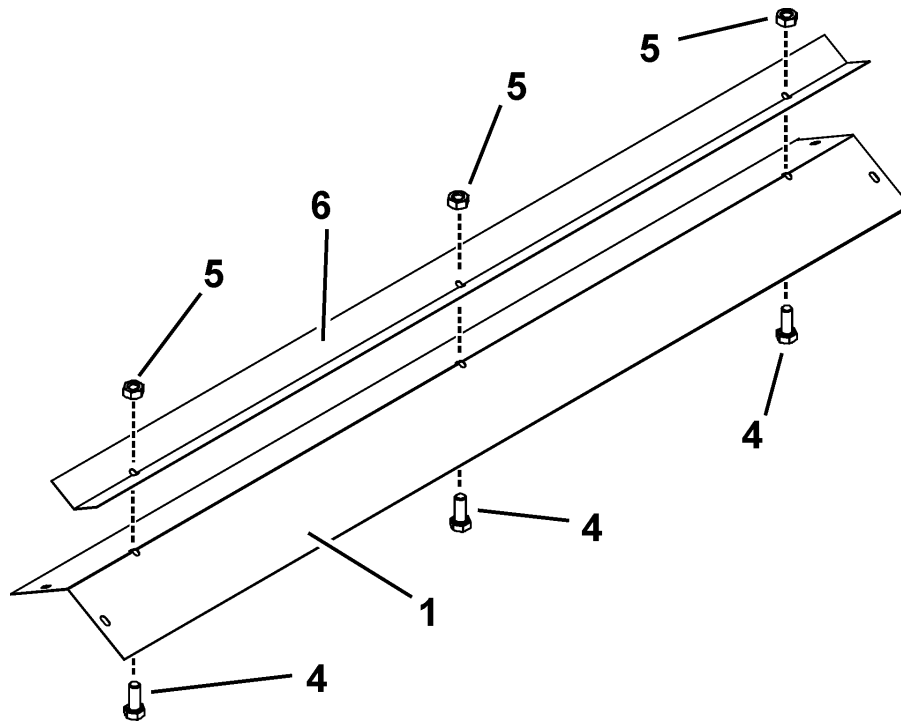


The lateral edges of the individual roof covers (5) are hooked into the diagonal trussing (1) of the section.

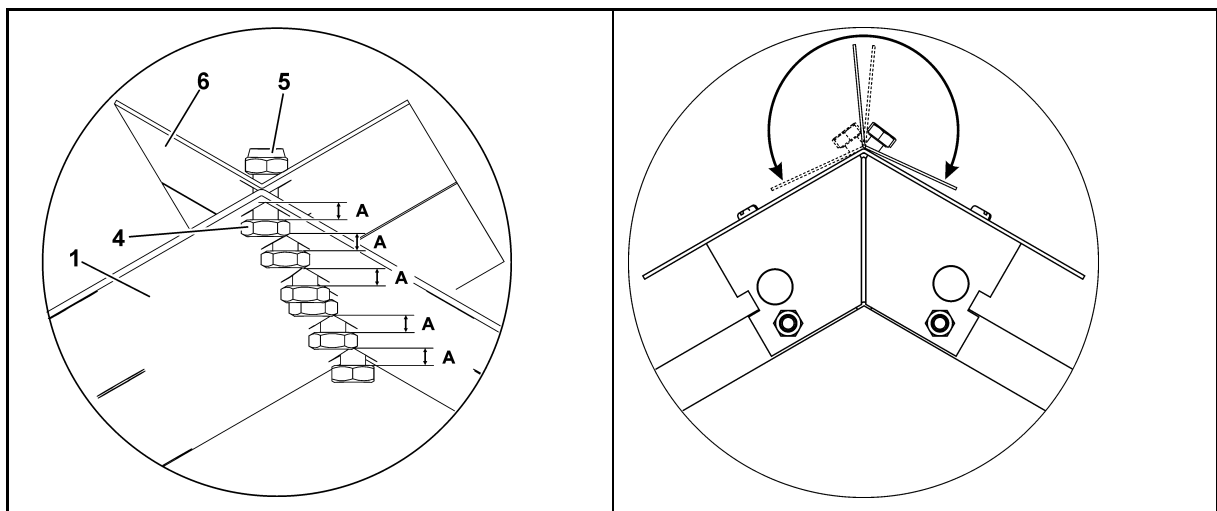
Pos.	Qty.	Code no.	Description
1	3	83-00-5686	Diagonal trussing double for roof sheet
2	3	83-00-5687	Bracket double for ridge plate BD-C2+
3		37-46-3708	Rod 8x5000
4		37-46-3709	Connection tube dia 8mm PA6.6
5	2	36-00-6155	Cover 1206 cpl. sheet metal for Colony Nest


14.1.2.3 Installing the anti-roost unit for double nest 1 and 2 tiers

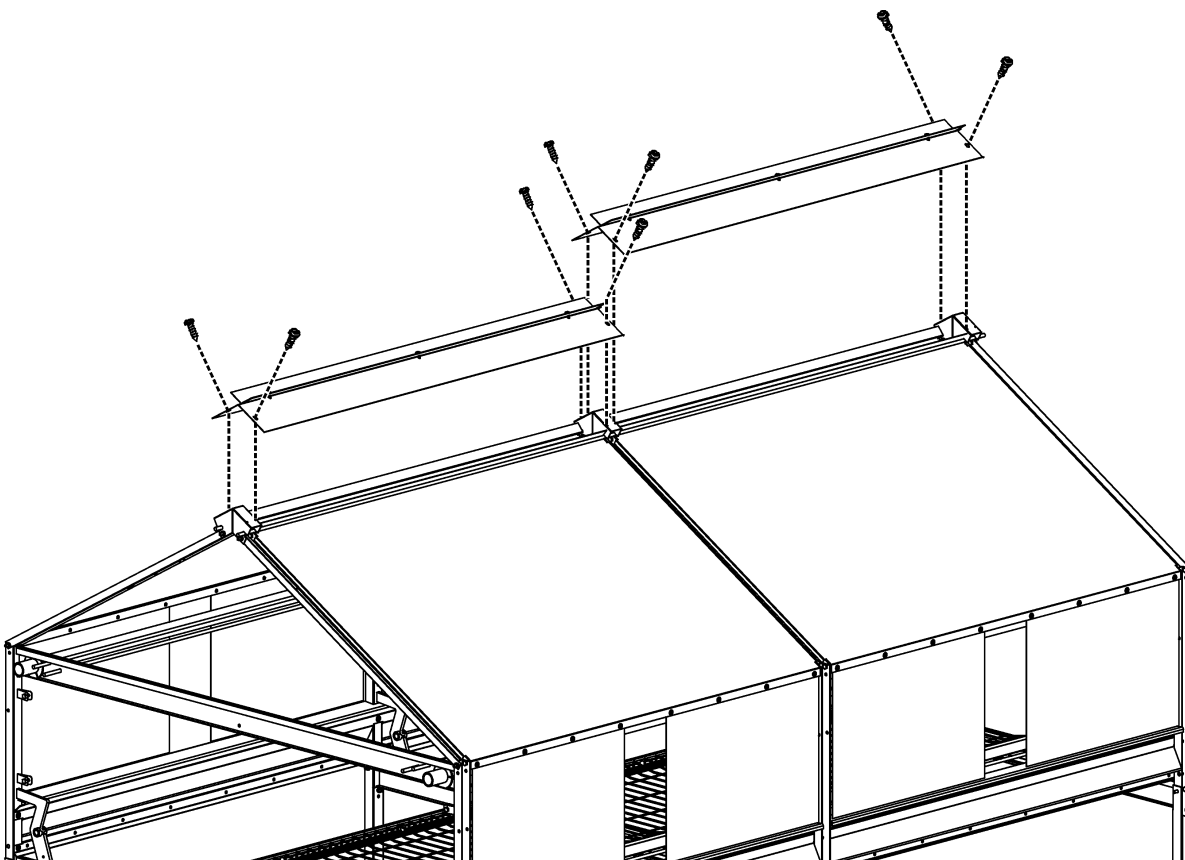
The anti-roost rocker (6) is installed on the ridge plate to prevent the birds from sitting on the ridge plate (1). The anti-roost device is pre-assembled on the floor and subsequently fixed to the stillage of the double nest as a complete sub-assembly.



Pos.	Qty.	Code no.	Description
1	1	83-00-7099	Ridge plate 1206 BD-C2+
4	3	99-10-1088	Hexagon head screw M 6x 20 galv. DIN 558
5	3	99-20-1043	Self-locking counter nut M6 DIN 985-6 galv.
6	1	83-00-3620	Rocker for anti-roost BD-C2+



	<p>Important</p> <p>It has to be flexible so that it does not offer the birds a foothold. For this purpose, the self-locking counter nuts (5) must only be screwed on the hexagon head screws (4) until the thread ends up level with the bottom side of the self-locking counter nut. The distance (A) is very important in this case to ensure sufficient flexibility of the rocker. (see distance (A) in previous diagram)</p>
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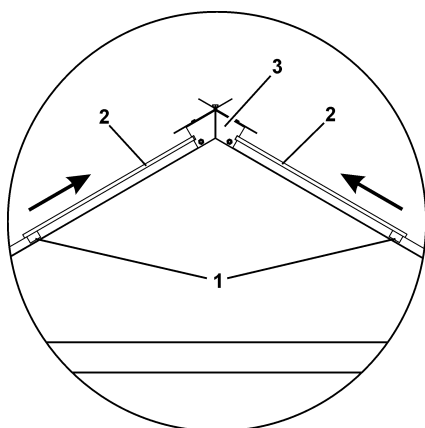


Pos.	Qty.	Code no.	Description
1	2	83-00-7099	Ridge plate 1206 BD-C2+
2	3	83-00-5687	Bracket double for ridge plate BD-C2+
3	8	99-10-3802	Tapping screw B 4,2x16 DIN7981
6	2	83-00-3620	Rocker for anti-roost BD-C2+

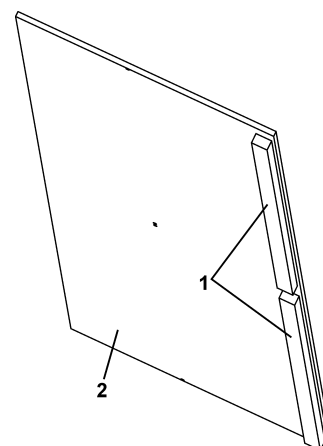
14.2 Installing the wooden roof cover

14.2.1 Wood cover double nest 1 and 2 tiers

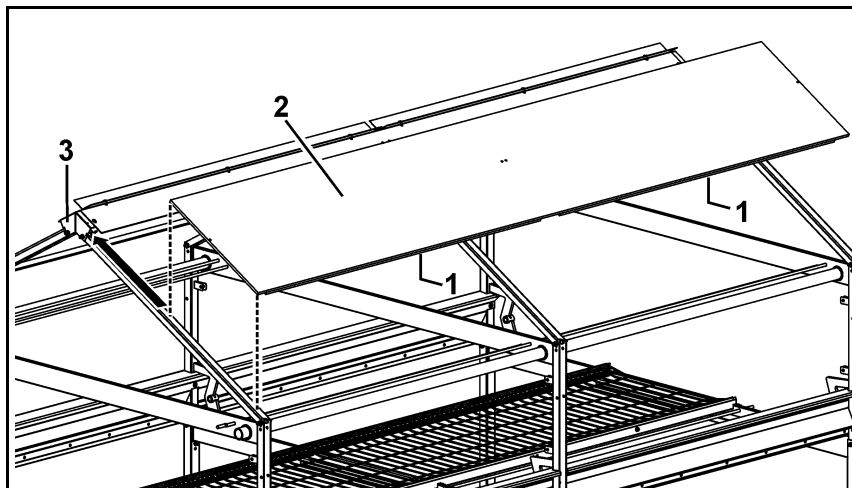
14.2.1.1 Cover 2412 rigid cpl. for roof BD-C2+



Two borders (1) are fixed to the bottom side of this plate (2). They serve as reinforcements for the screws of the hinges of the lower folding cover.

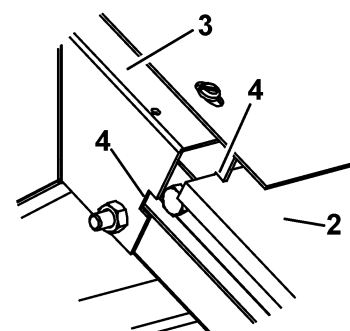


Pos.	Code no.	Description
1+2	83-00-5732	Cover 2412 rigid cpl. for roof BD-C2+
3	83-00-5687	Bracket double for ridge plate BD-C2+

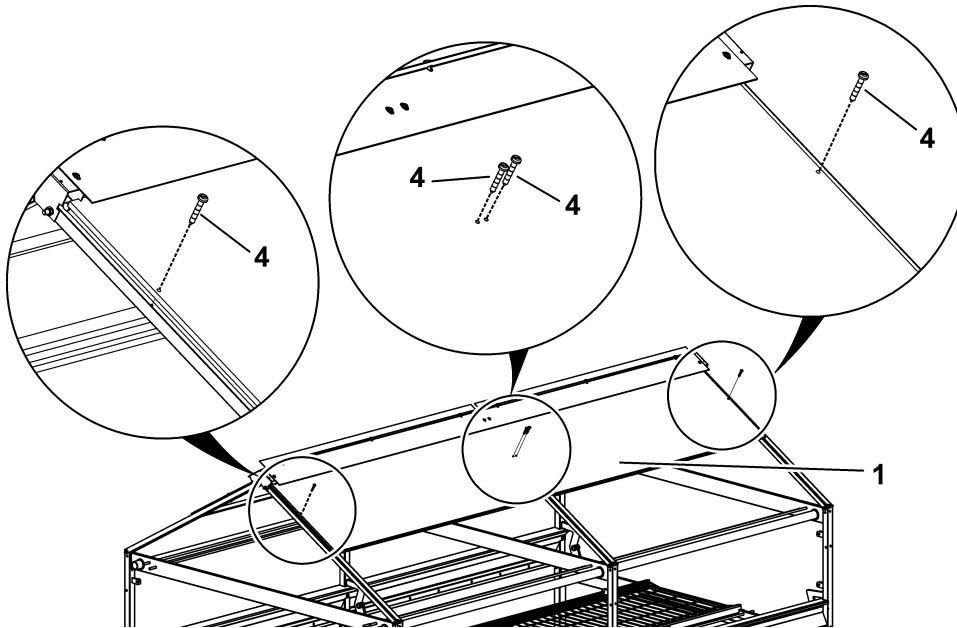


Note:When installing the cover (2) see to it that the wooden borders (1) point downwards into the nest as well as to the outer border of the stillages.

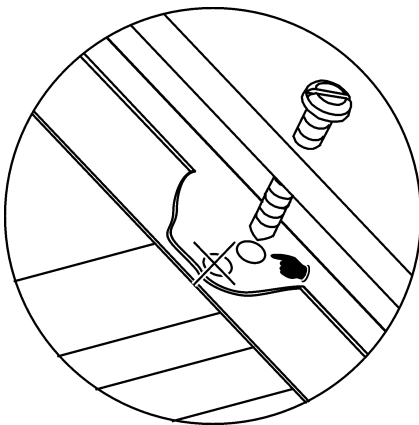
Place the cover (2) on the centre of the diagonal trussing of the section and push the cover upwards in the direction of the brackets for ridge plate (3) (see arrows). The plates have to be pushed into the notches (4) of the brackets.



After the covers are placed in the correct position, fix them to the stillage by tapping screws.




Pos.	Qty.	Code no.	Description
1	1	83-00-5732	Cover 2412 rigid cpl. for roof BD-C2+
4	4	99-10-3802	Tapping screw B 4,2x16 DIN7981



Each stillage has 2 holes for the fixing screws of the cover plates.

Note:

To correctly fix two successive cover plates to the stillage it is important to apply the screws vertically into the corresponding drill hole, when looking onto the upper side of the cover.



Important:

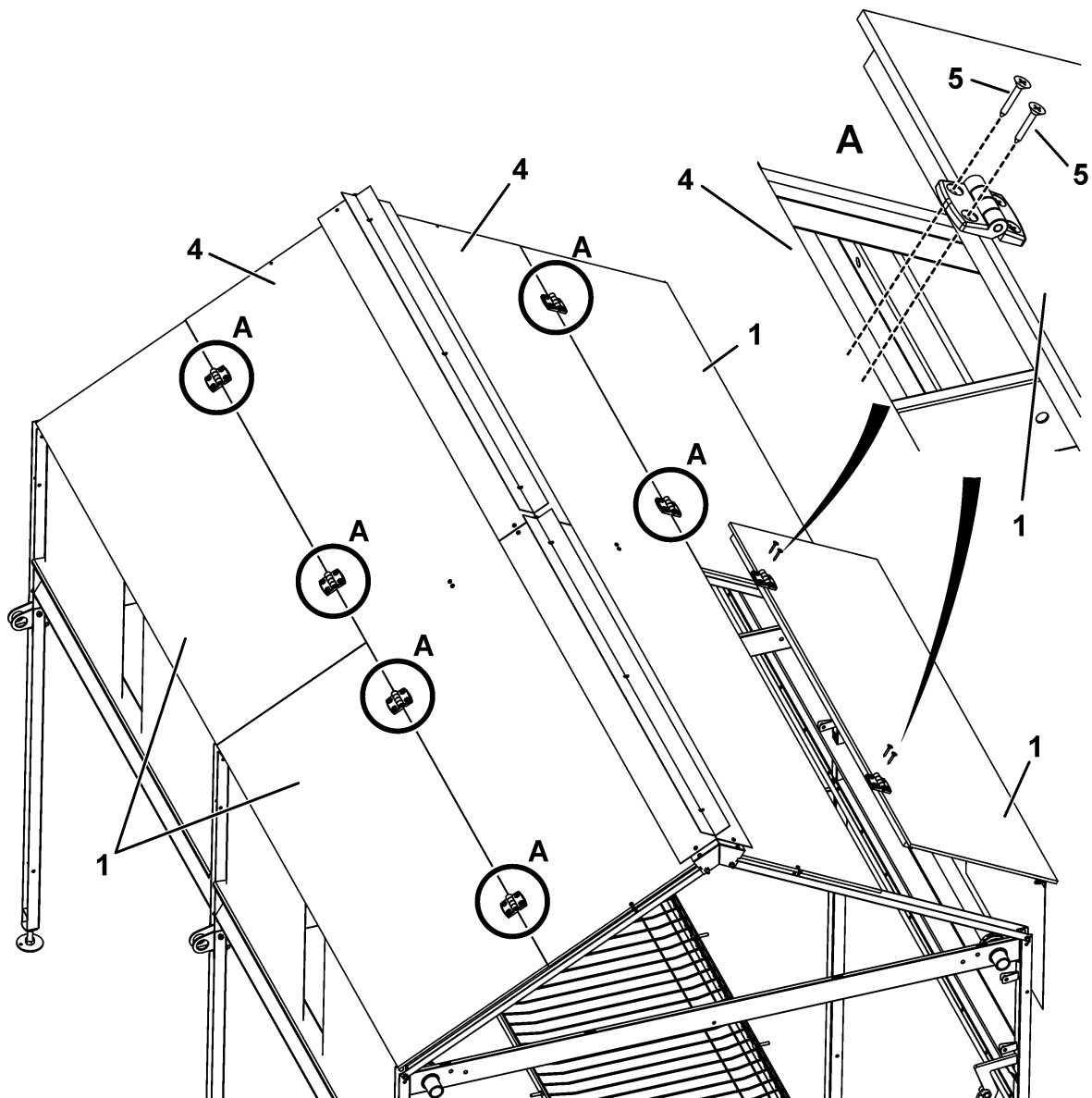
When the screws are installed slanted, the following roof plate cannot be correctly fixed!

14.2.2 Installing the covers 1206 tiltable

For the double nest 4 covers 1206 per section and 2 covers for the single nest are required. The hinges of these covers are preassembled so that they only have to be screwed down to the roof cover 2412.

Procedure:

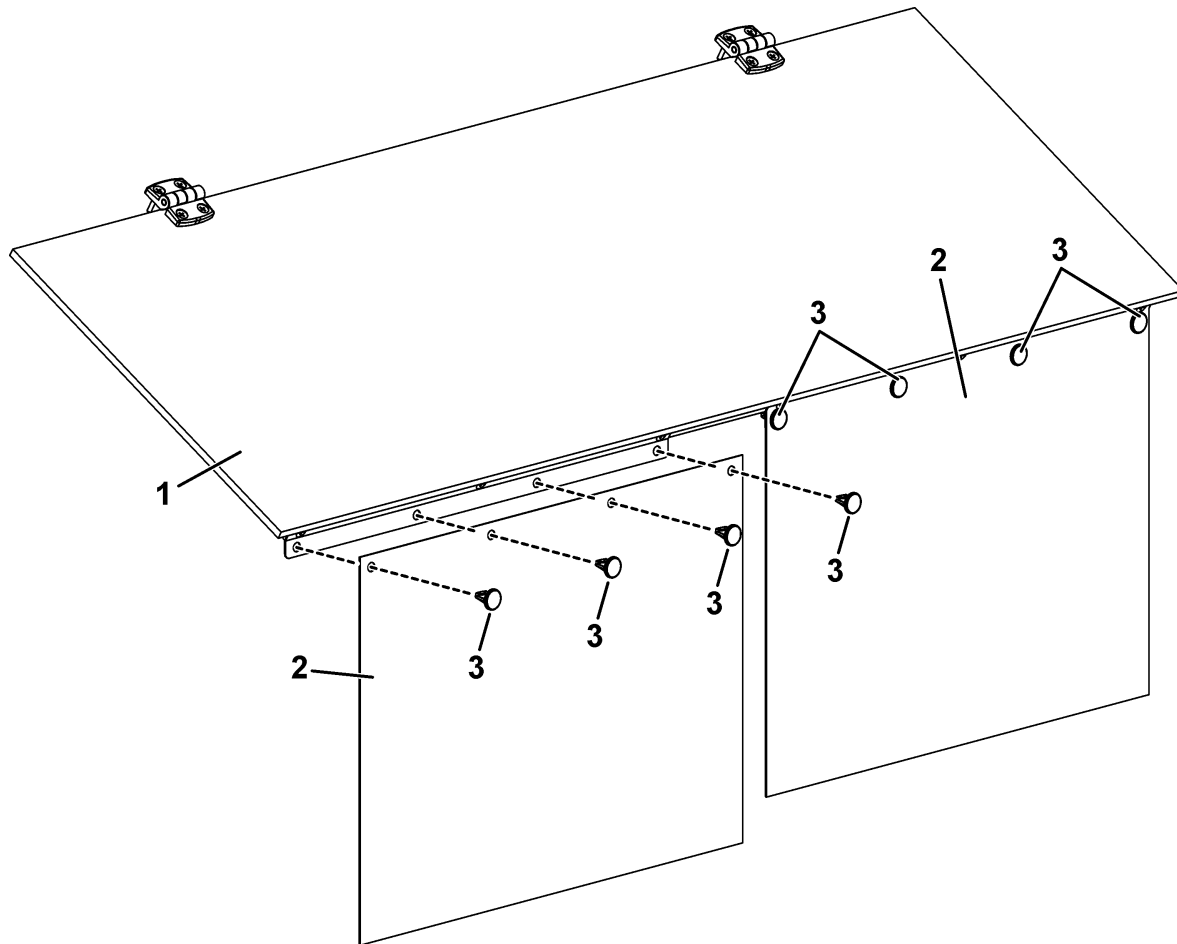
- Center the first roof cover 1206 onto the diagonal trussings of the section; see instructions for roof cover 2412.
- Push roof cover 1206 against roof cover 2412.
- The outer edges of both cover plates must be in true alignment.
- Each hinge is screwed to the cover plate 2412 by means of 2 chipboard screws.



(position numbers: see next page)

Pos.	Qty.	Code no.	Description
1		83-03-2454	cover 1206 tiltable cpl for roof - excl. curtain
2		83-01-0339	curtain 500x380 for nest BD-C2+
3		83-01-5968	fastening button PA6.6 for nest curtain
4		83-00-5732	cover 2412 rigid cpl for roof BD-C2+
5		99-10-3864	chipboard screw 5.0x 25 SBC-Spax counter sunk hd galv.

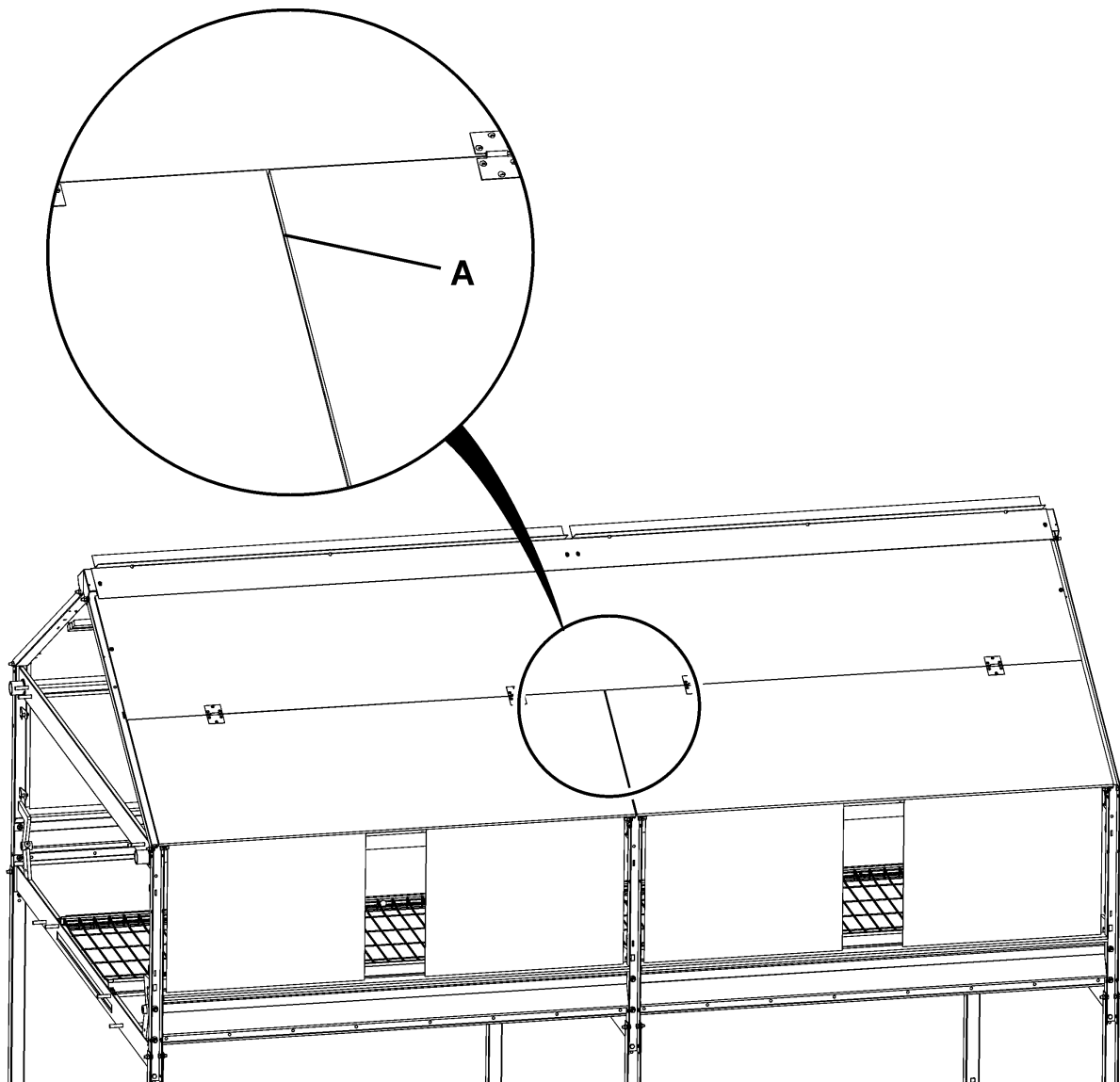
The curtains are mounted as shown below.





Note:

Leave a gap (A) of approx. 3.5 mm to make sure that the roof covers 1206 cpl. can be opened properly.



15 Alignment und securing of the installation

15.1 Laser alignment

After the roof has been installed, the system has the necessary weight to be aligned in vertical and horizontal direction.

Special attention has to be paid to the horizontal alignment, since eggs cannot roll off optimally from the nest inserts on the tilting nest floors into the egg channel if the stillages are oblique.

Big Dutchman uses different types of laser units, all operating according to the same principle.

The accessories are the same for all types of laser. They include:

- 2 targets with magnetic cohesion
- 1 telescopic table-tripod-levelling-stand with additional height adjustment
- 1 set of walkie-talkies



Without a special permission walkie-talkies can only be used in Western Europe.

Lasers are sensitive electro-optical devices. They have to be handled with great care and in a proper way. The same applies to the accessories.



Warning:

Observe the rules for the prevention of accidents!

The laser units correspond to the safety regulation VGB '93, paragraph 10 section 1-3.

Before putting the laser into operation, affix the yellow-black warning sign "Laser beam" to the entrances of the building. Only people working on the alignment are allowed to stay in the area. All others have to clear this area.

Always effect alignment works in the opposite direction of the laser beam, never towards the laser.

Do not directly look into the laser beam. This could result in irreparable damage to your eyes!.

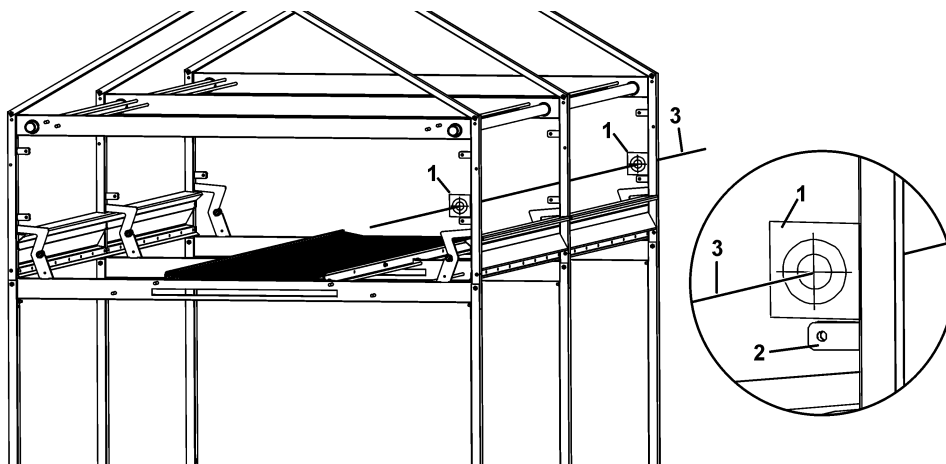
Procedure:**Warning:**

Do not directly look into the laser beam. Your eyes could be seriously damaged.

- The first and the last stillage of a row have to be exactly aligned vertically and horizontally by means of a water level and for height adjustment by the adjustable feet.
- Screw the laser to the stand and place it behind the end set. Power supply: 220 V/ 50 Hz.
- Look for points of reference within the stillage, where you can attach the targets.


Example for a possible point of reference:

- Suspend one target (1) each by means of the magnets directly on the first and last horizontally and vertically aligned stillage of a row. Now push them downwards and place them with the edge onto the lower welded bracket (2) of the stillage.



- Align the laser according to the instructions, so that the directional beam (3) goes directly through the centre of the cross hairs of both targets (1).
Keep the laser in this position.
- Suspend a target (1) at the same spot in the next stillage. Align the stillage vertically and horizontally by means of the adjustable foot until the beam hits the centre of the cross hairs.
- Continue step by step with every stillage until the end of the row.
- After that, continue to align the installation also on the other side of the stillage.

15.2 Securing and anchoring the installation

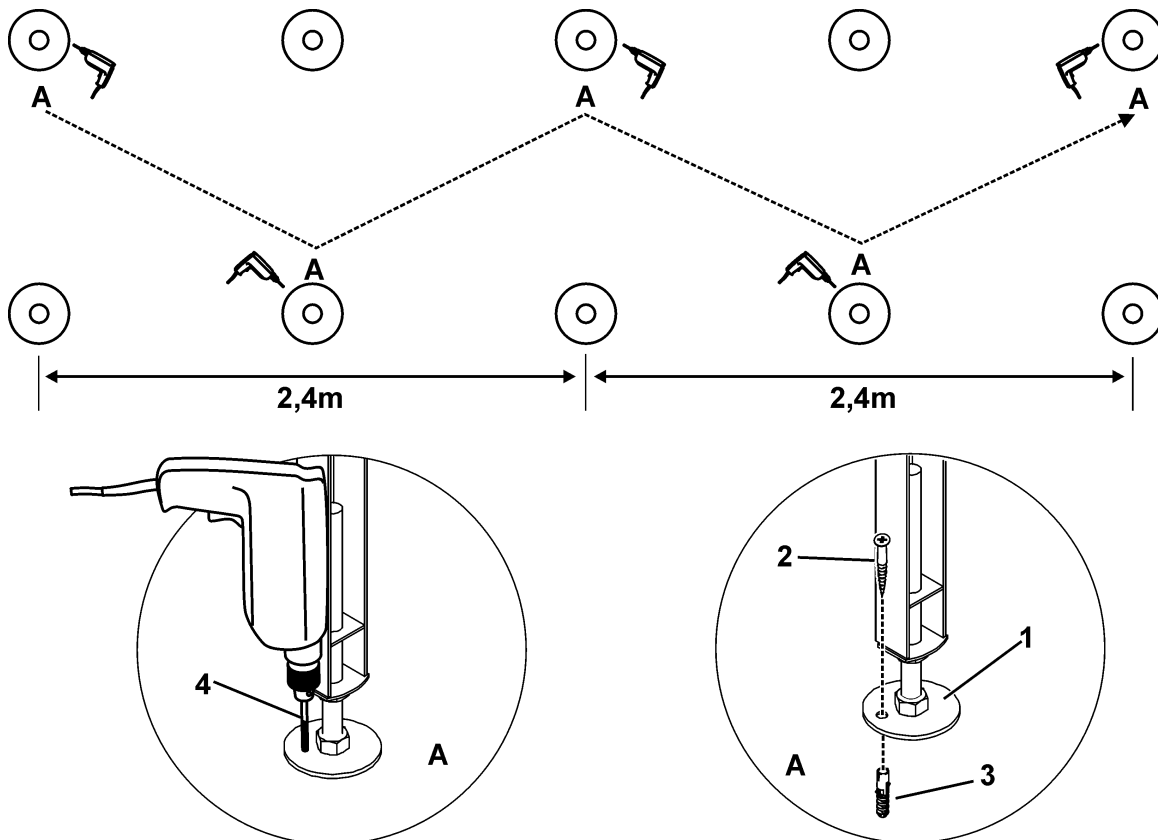


Important note:

Only, **after the installation has been correctly aligned vertically and horizontally**, it may be **fastened** to the wall and to the floor. (for alignment: see beginning of chapter)

For a set-up that differs from wall-fastening of the wall nest (e.g. self-supporting), we ask you to consult with the technical department of BIG DUTCHMAN.

15.2.1 Anchorage of the stillages to the house floor (wall and double nest)



Pos.	Qty.	Code no.	Description
1			stand
2	1	99-10-3958	chipboard screw 5,0x 50 ABC-Spax pan head SST
3	1	99-98-3782	dowel S6
4			drill dia 6mm
A			fixing points of the stands to the house floor

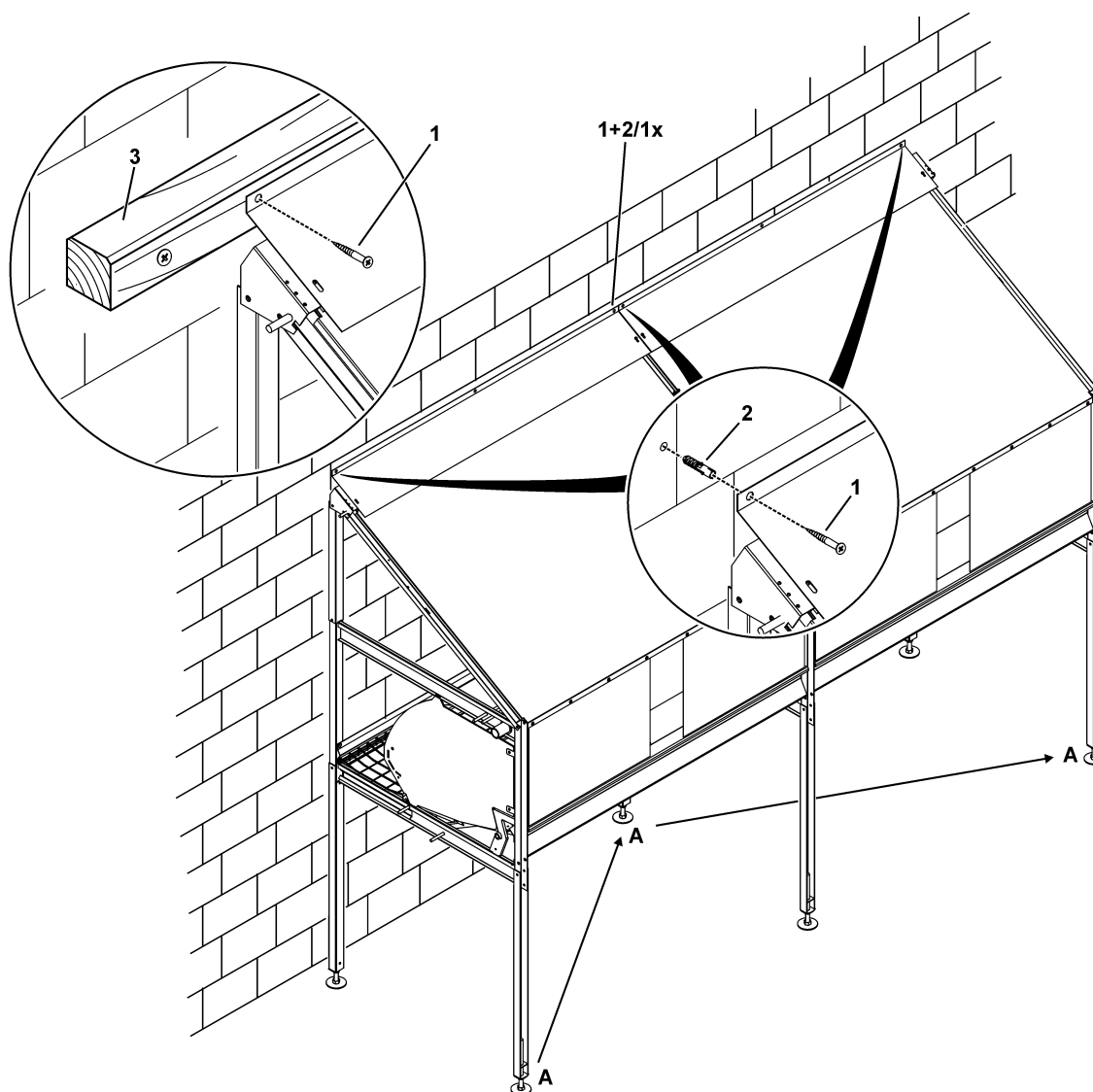
15.2.2 Anchorage of the stillages to the wall (only wall nest)



Important note:


The nest is directly fixed to the house wall by chipboard screws and dowels.

In case the house wall is uneven, the unevenness has to be compensated by **fixing a wood ledge** to the wall before mounting the nest!



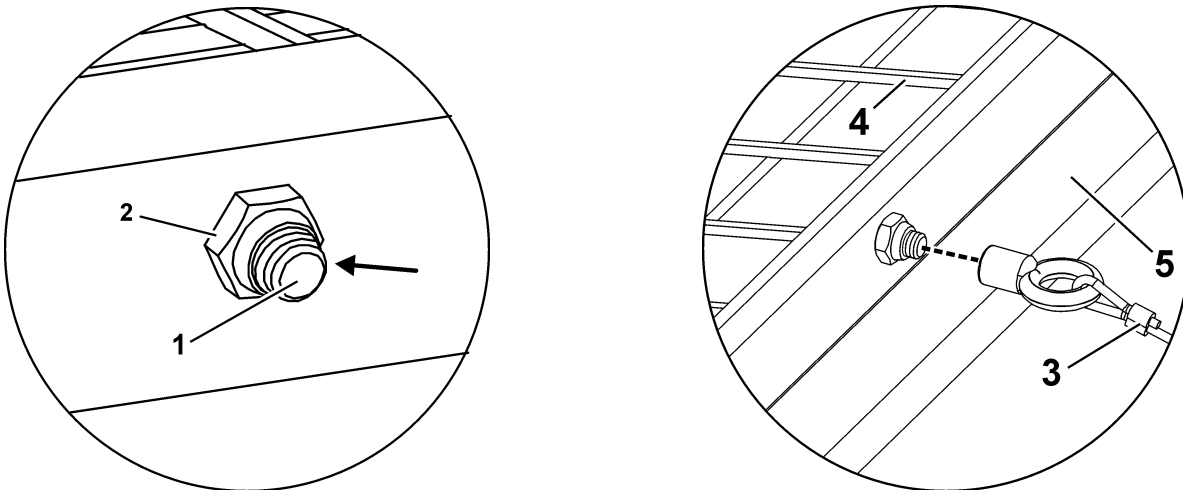
Pos.	Qty.	Code no.	Description
1	1	99-10-3958	chipboard screw 5,0x 50 ABC-Spax pan head SST
2	1	99-98-3782	dowel S6
3			wood ledge + mounting materials (supplied by customer)
A			fixing points of stands to the house floor

16 Assembling the bottom unit

	<p>Note:</p> <p>For reasons of clarity, the previously mounted nest roof is no longer shown in the drawings.</p> <p>The assembly of the bottoms is identical for each nest hole in case of the double nest as well as the wall nest (1st or 2nd tier).</p>
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Before installing the tilting floors in the individual nest holes, install the wire ropes for the nest floor resetting mechanism.

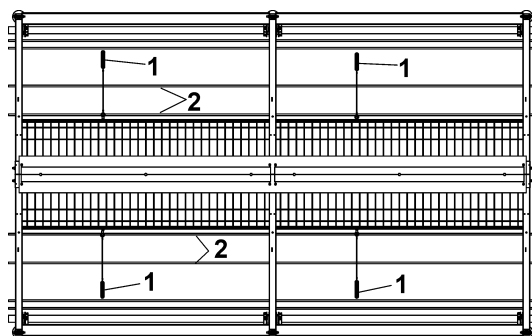
16.1 Installing the wire ropes for the nest floor resetting mechanism



Upon installation of the egg channel, the longitudinal support has been screwed down to the egg channel wire by means of two mushroom head square neck bolts M6x16 and 2 self-locking counter nuts M6 per nest hole.

The projecting threads of one of these mushroom head square neck bolts (see arrow) of the respective nest hole are now required for fixing the wire ropes for the nest floor resetting mechanism.

Pos.	Qty.	Code no.	Description
1	8	99-10-1602	Mushroom head square neck bolt M 6x 16 galv. DIN 603
2	8	99-10-1045	Hexagon nut M 6 galv DIN 934-8
3	4	83-00-7148	Wire rope 1mm special steel with tension spring
4	1	83-00-5719	Wire grille 2412 for egg channel double BD-C2+
	1	83-00-6084	Wire grille 2412 for egg channel simple BD-C2+
5	2	83-00-5720	Longitudinal support 2412 for egg channel BD-C2+

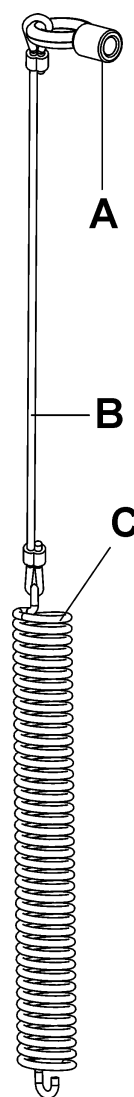
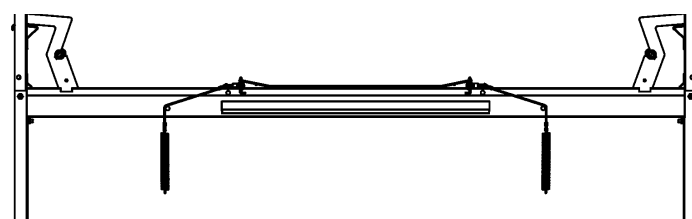
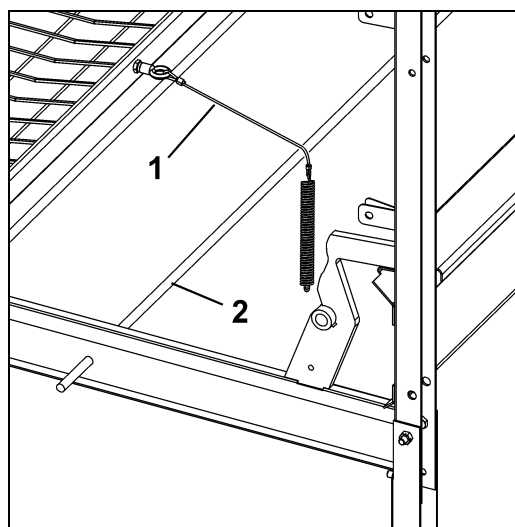


Position of the wire ropes inside a nest hole

Install one wire rope per nest hole.

The wire rope consists of a fixing eyelet (A), the rope itself (B) and a tension spring (C).

Install the wire rope so that it is placed on top of the rods.



Pos.	Qty.	Code no.	Description
1	4	83-00-7148	Wire rope 1mm special steel with tension spring
2		37-46-3708	Rod 8x5000

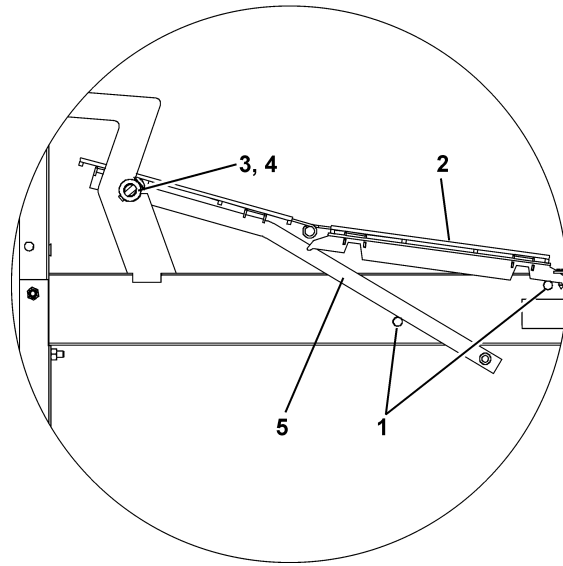
Now start the installation of the tilting floors.

16.2 Installing the tilting floor

Preliminary note:

The rods (1) in the lower cross support of the stillage serve as a rest for the floor tappet (5) as well as for the rear, movable part of the tilting floor (2).

As shown here, the floor is placed on the rods.



Pos.	Qty.	Code no.	Description
1		37-46-3708	Rod 8x5000
2	1	83-01-1388	Tiltable bottom cpl. BD-C2+
3	2	99-10-4035	Thread forming screw A M 5x20 DIN 7513
4			Nest floor bearing
5			Floor tappet

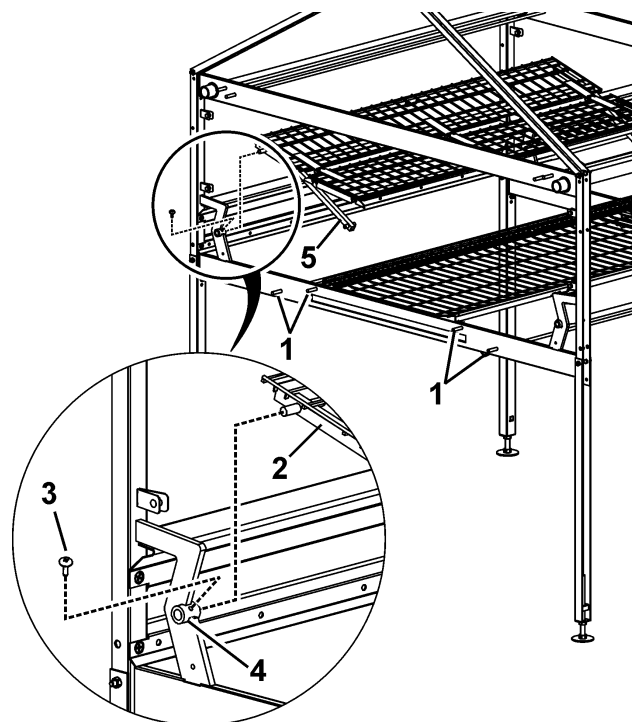
Procedure:

- Start with inserting the tilting floors in the nest floor bearings (4) **on the drive side** of each row.

Note:

Do **not yet** screw the thread forming screws (3) for fixing the tilting floors into the predetermined holes of the nest floor bearing (4)!

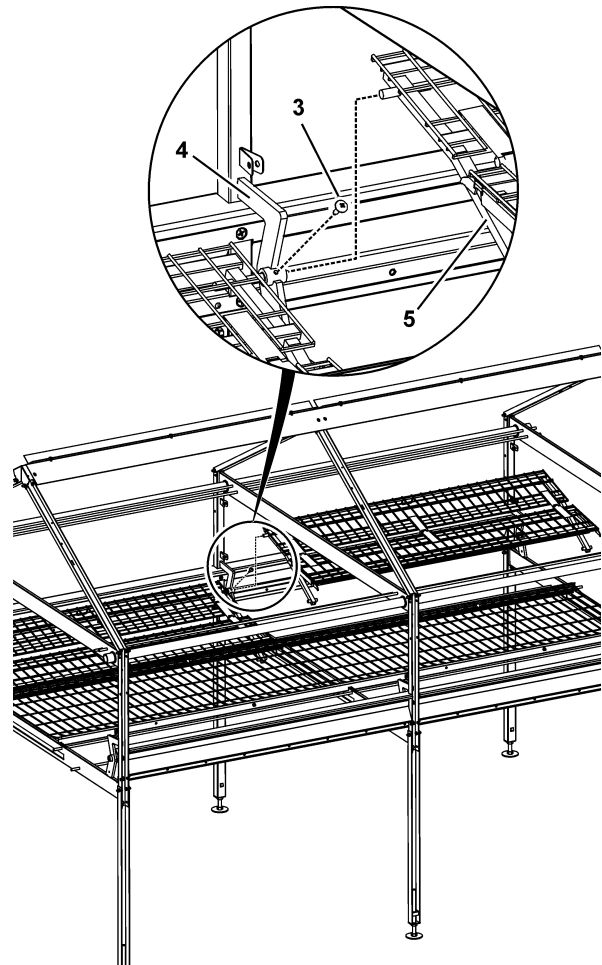
The bolts at the tilting floor need some clearance to be installed correctly!



- First place the bolt of the tilting floor at the beginning of the row (drive side) into the nest floor bearing and push the entire floor close up to the bearing.
- Now insert the second bolt of the floor also in the bearing.
- Install the following tilting floor the same way.

Notes for screwing:

When screwing see to it that the floors are located in the centre of a nest hole. Thus, you can prevent drilling through the bolt located in the nest floor bearing and consequently prevent a restricted mobility and functionality of the tilting floor.



Important:

The bolt has to be located free-moving in the nest floor bearing!

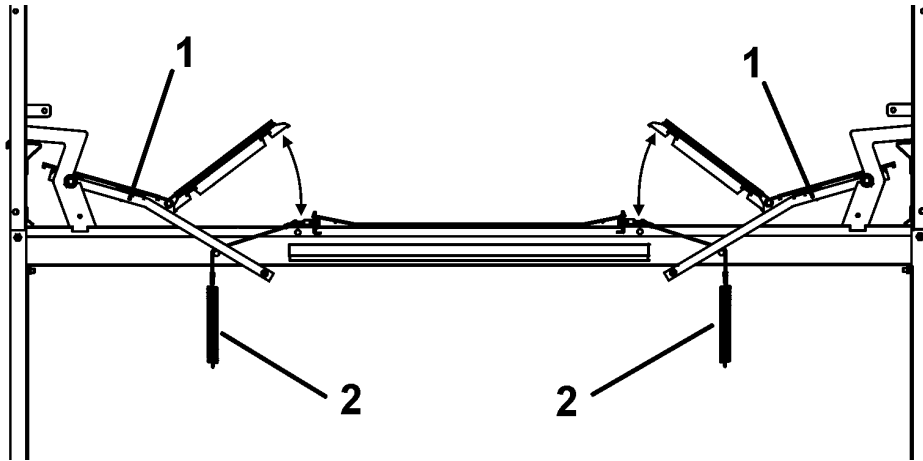
- Fix the first tilting floor with a thread forming screw on the side first inserted (drive side).

Apply the thread forming screw of the first tilting floor only after the following floor (second nest hole) has been correctly installed into the nest floor bearing.

- This way, continue inserting the tilting floors on each side up to the end of the row.

16.3 Hooking the wire rope for nest floor resetting mechanism into the tilting floor

After all tilting floors have been installed and fixed by thread forming screws, hook the wire rope for resetting the nest floor mounted before into the nest bottom.

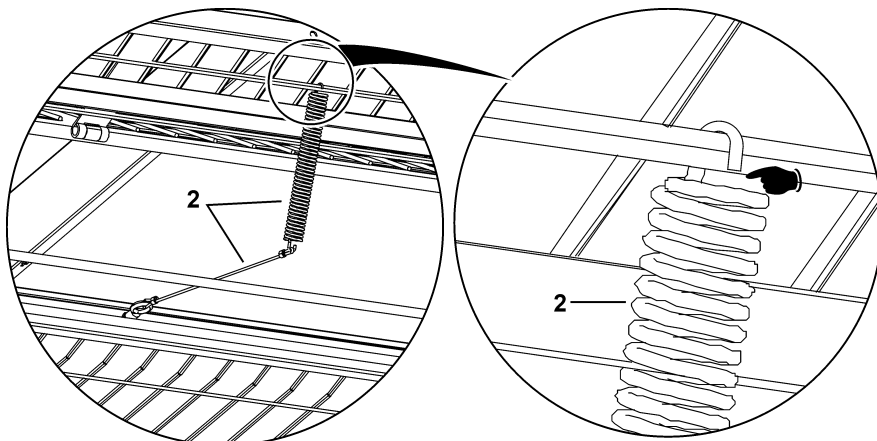


Pos.	Qty.	Code no.	Description
1	4	83-01-1388	Tiltable bottom 1206 BD-C2+
2	4	83-00-7148	Wire rope 1mm special steel with tension spring

Suspend the hook at the end of the tension spring from below into the first cross wire after the cross beam of the nest floor.

Note:

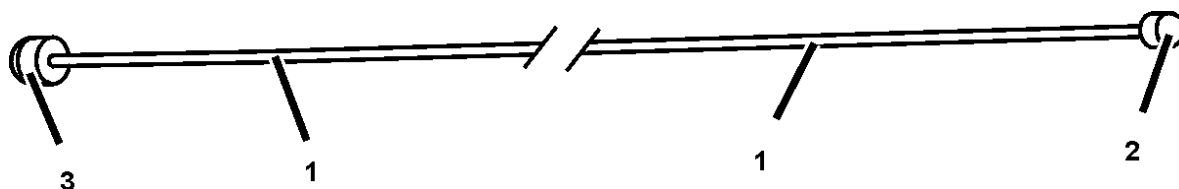
See to it that the hook is pointing **with its opening towards the outside of the section**. If tension springs are hooked the other way round, they can loosen upon lifting of the tilting floor and thus restrict its functionality.



16.4 Installing the rope rewind

In order to lift the tilting floor, it has to be connected with the tube 1" of the nest floor drive. This is ensured by the traction ropes (1,2,3)

They are 750 mm long and have a tappet for anchoring on each end (2, 3).



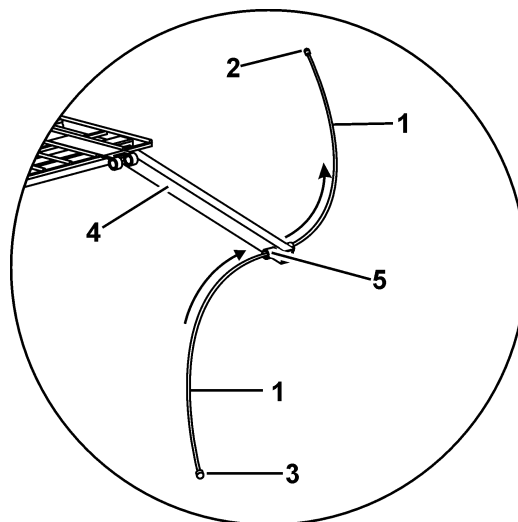
Pos.	Qty.	Code no.	Description
1	2	83-01-1984	Traction rope 750lg 1,50mm special steel with 2 tappets
2			Tappet for fixing to half (small)
3			Tappet for fixing to nest floor tappet (large)

16.4.1 Fixing the traction ropes to the tilting floor

The smaller tappet (2) of the traction rope serves for anchoring it in the halves of the nest floor drive. The other large tappet (3) anchors the traction rope to the floor tappet (4).

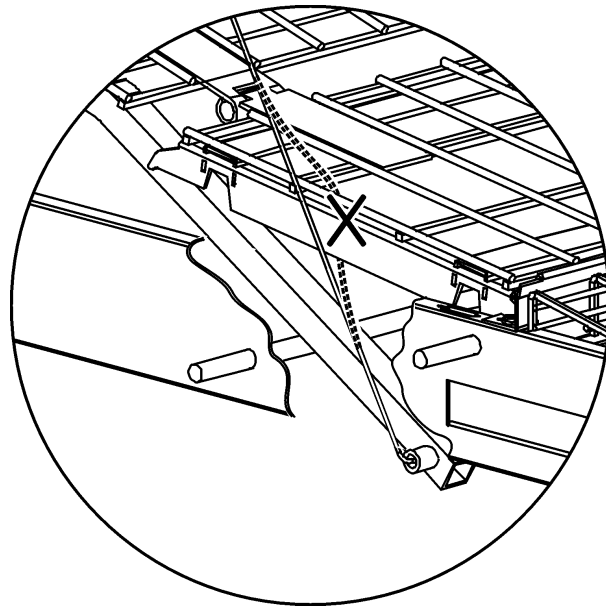
Procedure:

- Start with inserting the traction rope (1) with the smaller tappet (2) from **inside to outside** through the welded tube sleeves (5) of the two floor tappets (4) of a tilting floor.



Pos.	Code no.	Description
1-3		see top drawing
2		Floor tappet
3		Tube sleeve

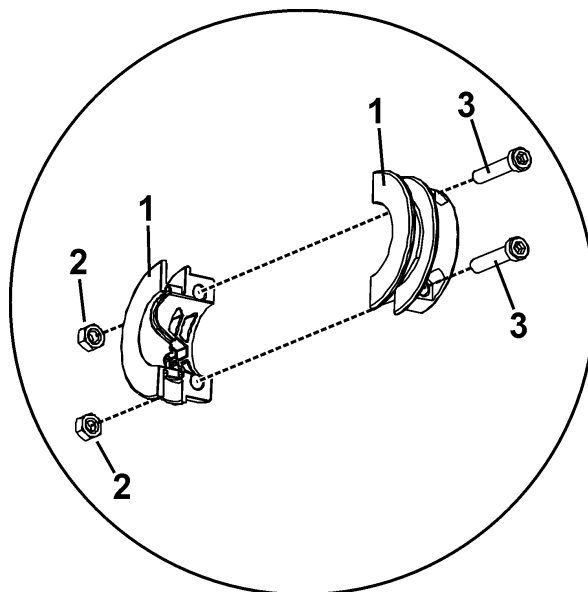
- Pull the rope through the sleeve on its entire length. The large tappet (3) has to be close to the tube sleeve (5).
- Make sure the rope is placed **between** the tilting floor and the stillage. **It must not be pulled through the mesh of the rear part of the floor.**
- Continue like this until 2 traction ropes are inserted in each tilting floor.



16.4.2 Fixing the traction ropes at the tube 1” for nest floor drive

2 bearing shells PA for winding of wire are required per nest hole

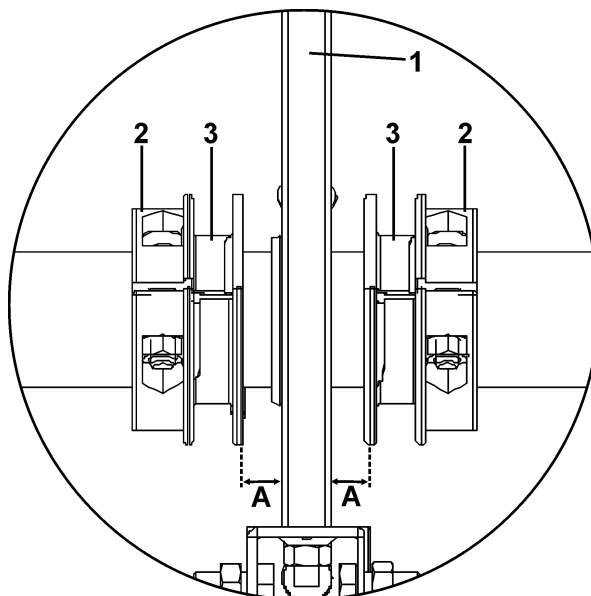
Pos.	Qty.	Code no.	Description
	1	36-00-6240	Bearing shell PA cpl. for winding of wire BD-C2+/NAT-Nova
1	2	83-00-9884	Half PA for winding of wire BD-C2+/NAT-Nova
2	2	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	2	99-10-3936	Hexagon socket head cap screw M 6x35 DIN 912-8.8 galv



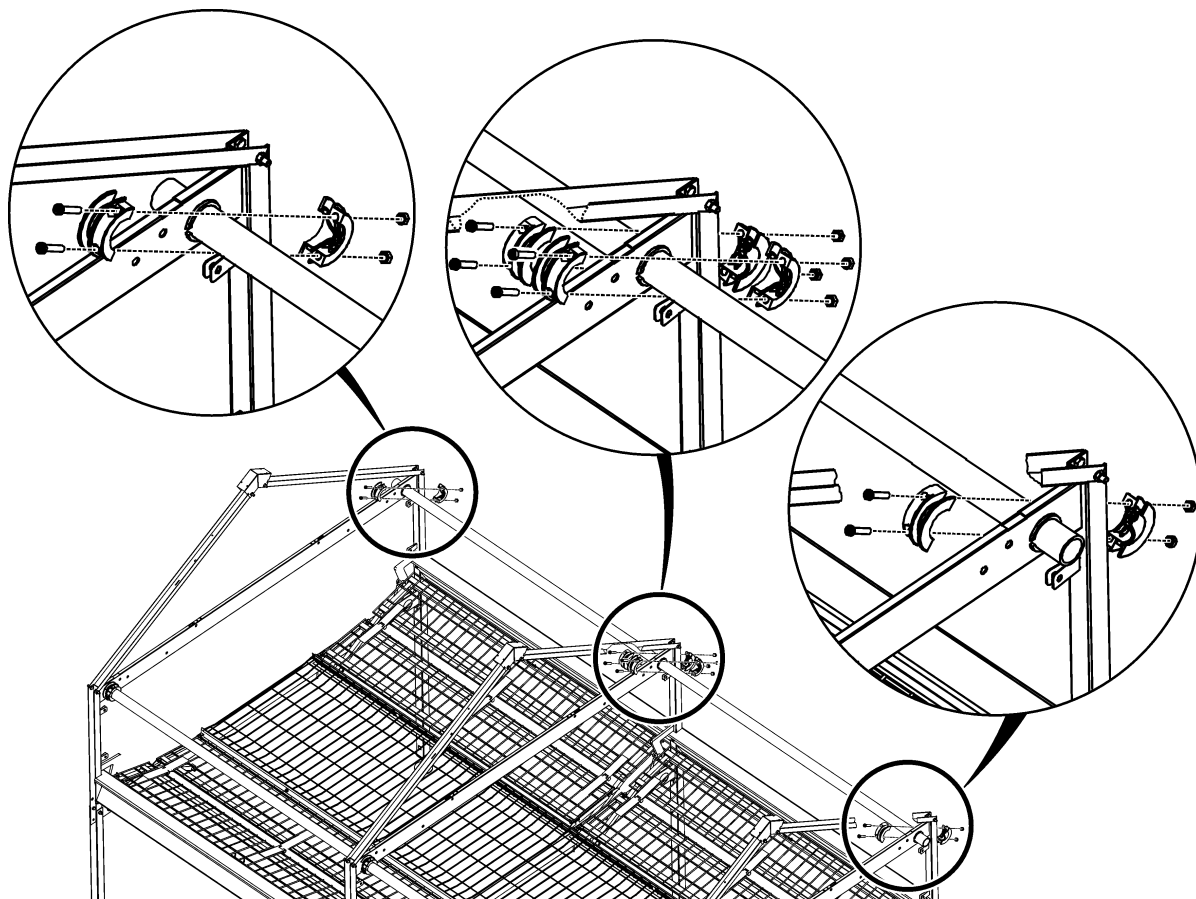
16.4.3 Positions of bearing shells within the nest holes

The halves are manufactured so that they have one fixing side (2) for screwing together the halves and one side with the contact surface for winding of wire (3).


Mount the bearing shells on the tubes of the nest floor drive so that the sides of the winding of wire (3) are placed next to the stillage (1) at a distance of approx. 0,5-1cm (A).



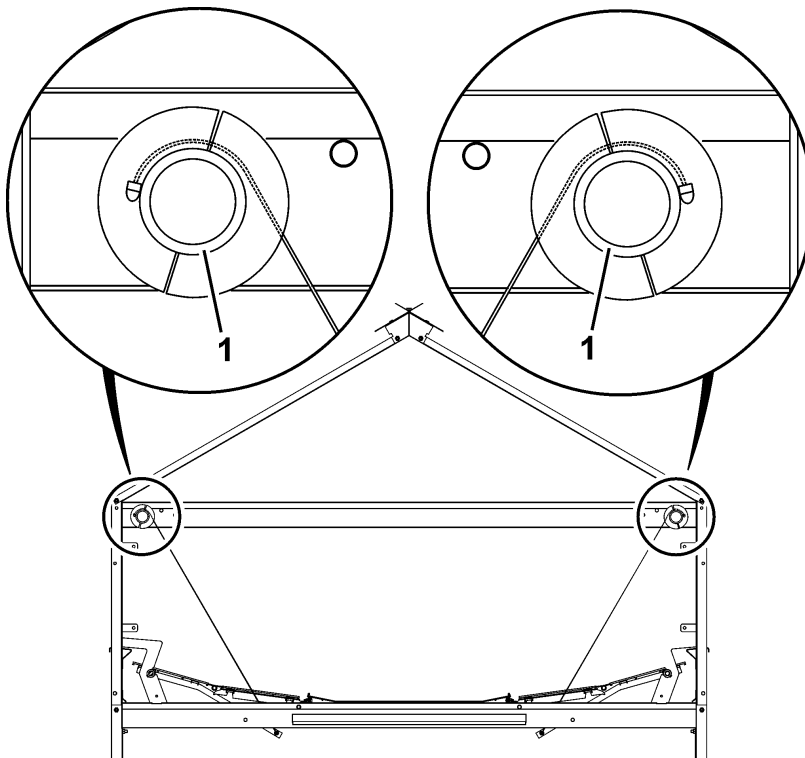
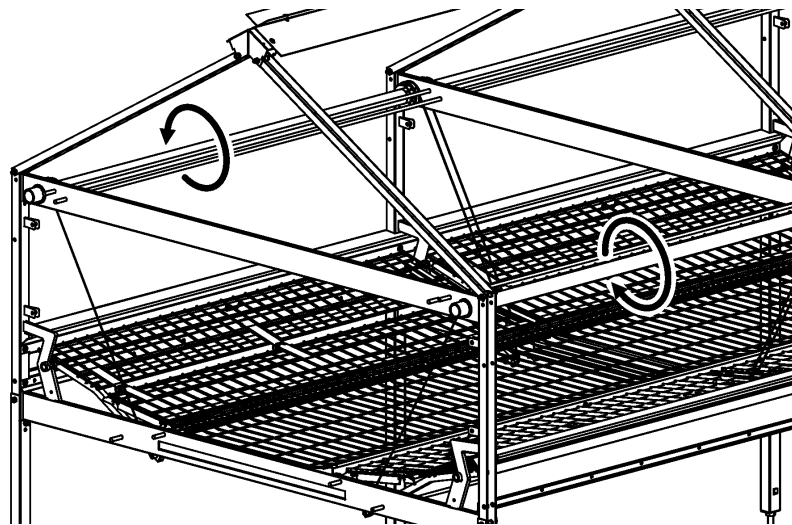
Pos.	Qty.	Code no.	Description
1	1	36-00-6011	Stillage 1t double BD-C2+ with plastic partition
2			Fixing side of bearing shell
3			Surface for winding of wire of bearing shell



16.4.4 Placing the traction rope tappet into the half

	<p>Important:</p> <p>For correctly mounting the tappet of the traction rope into the halves, take into consideration the sense of rotation of the nest floor drive.</p>
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Sense of rotation of the nest floor drive:

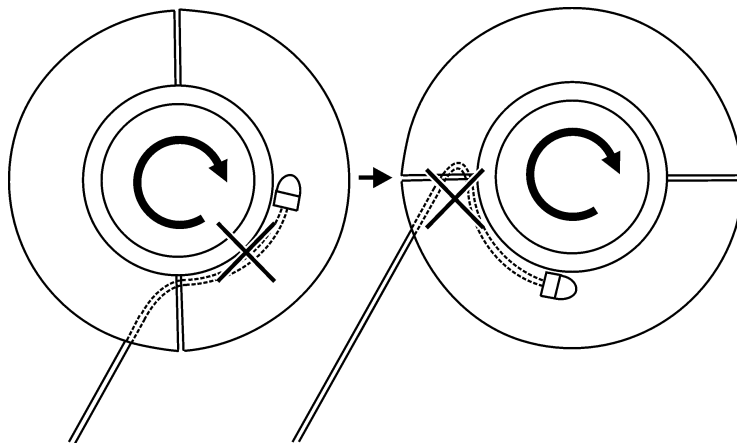


Correctly mounted traction rope.

Important:

For trouble-free operation of the winding of wire it is required to place the traction ropes **from above** over the tubes (1) into the halves and screw them down there.

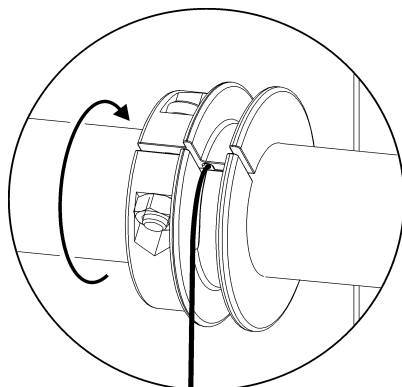
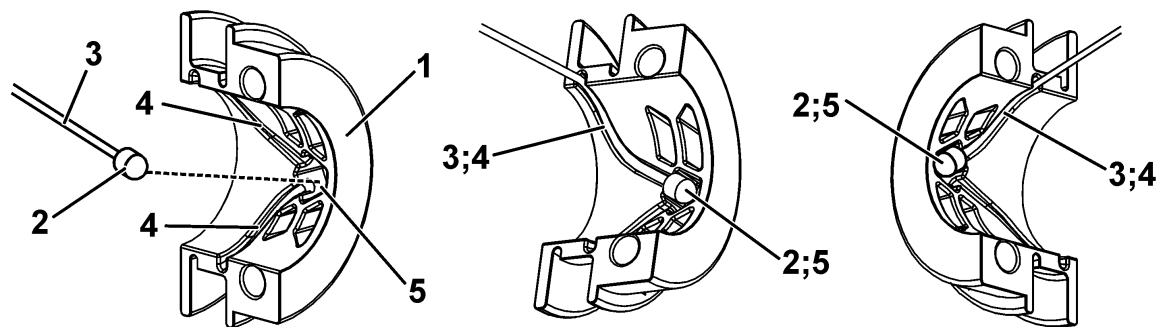
	<p>Note:</p> <p>If this is not considered, the wires bend and tear apart after longer times of operation!</p> <p>Replace bent traction ropes!</p>
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Wrongly mounted traction rope:

If the nest floor drive has the same sense of rotation (see arrow), the traction ropes bend and tear apart.

Inserting the traction rope tappets



- The halves (1) are made so that the respective tappets (2) of the traction ropes (3) can be placed into the notch (5) of the half inside.
- After placing the tappet into the notch and the wire into the rope channel (4) running upwards, this half is placed on the tube 1" of the nest floor drive.

**Note:**

Prevent the wire from slipping out of the guide (rope channel)!

- Now place the second half of the bearing shell on the tube 1" and screw it to the first half that has the traction rope fixed already.

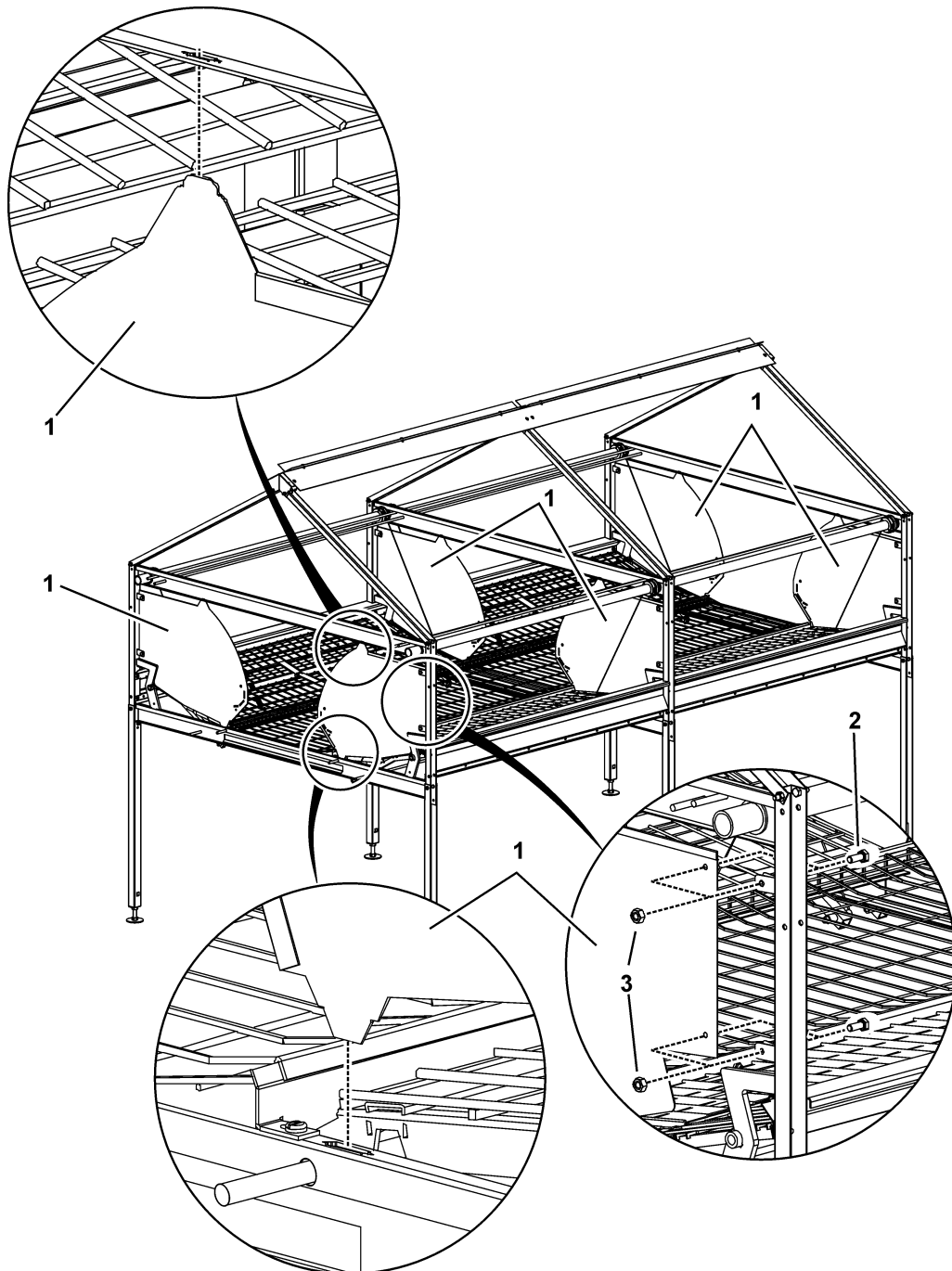
Do not yet tighten the screws, but turn the bearing shell in the sense of rotation of the nest floor drive, until the traction rope does no longer sag and is tensioned.

- Then screw down the screws of the bearing shells.

17 Installing the plastic partitions

The partitions are very easy to install. They are screwed to the stillages at four points or inserted into these.

Pos.	Qty.	Code no.	Description
1	6	83-01-3769	Plastic partition pluggable for welded stillage BD-C2+
2	12	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
3	12	99-10-1045	Hexagon nut M 6 galv. DIN 934

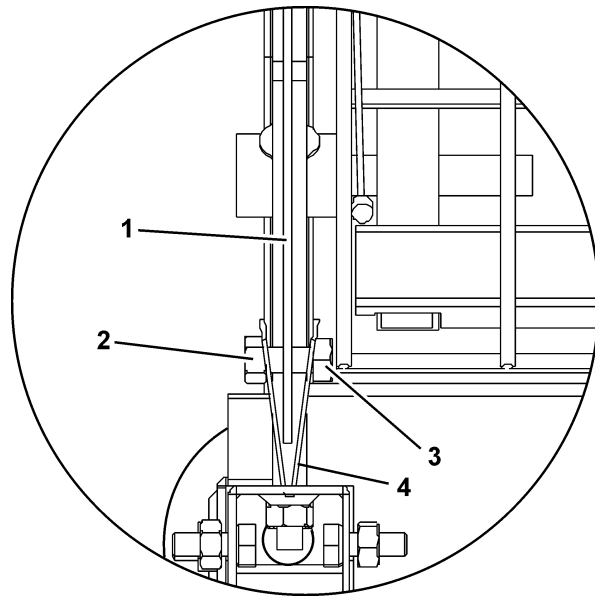


- The upper and lower guide of the partitions are inserted into the cross beams of the stillage as shown above.
- At the lateral stillage there are two welded angles. Fix the partitions to these angles by means of hexagon head screws M6x16 and hexagon nuts M6.

**Note:**

When inserting the partitions, it is essential to place the inside the welded angles, not left or right of it.

Partition inside the welded angles (top view)



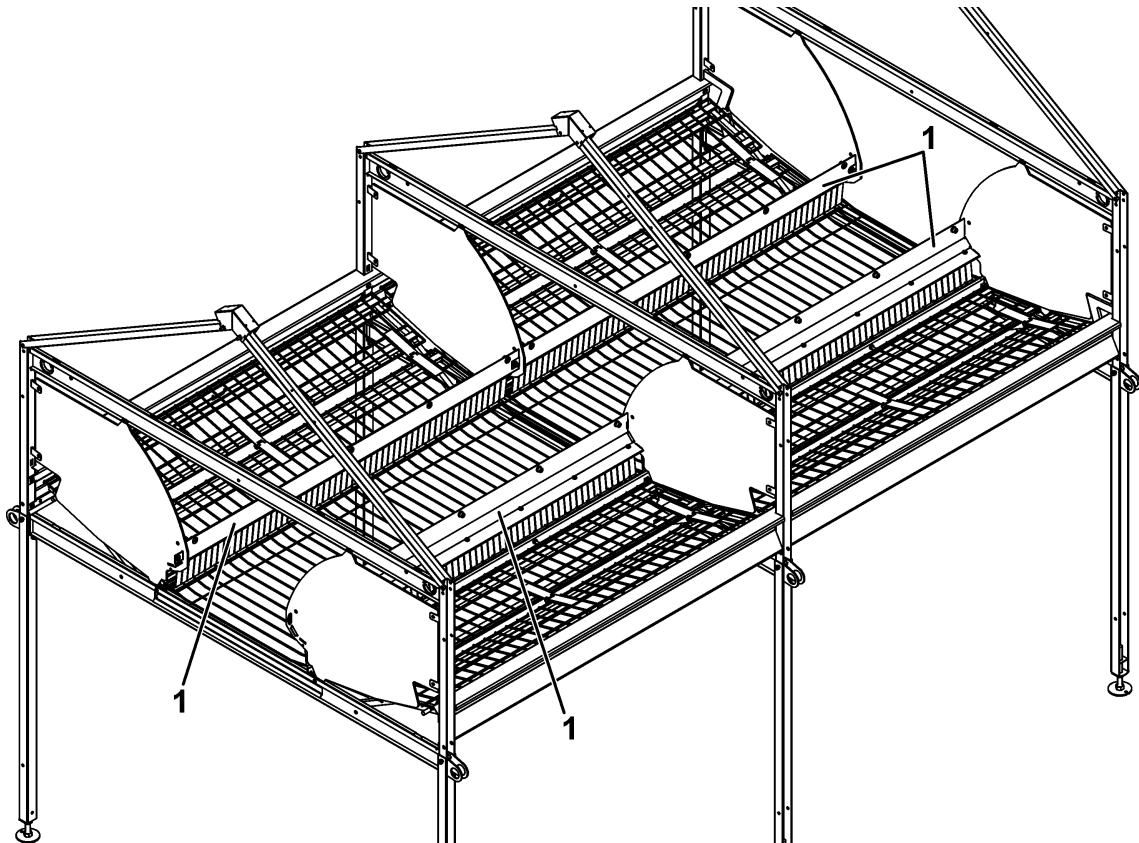
Pos.	Qty.	Code no.	Description
1		83-01-3769	Plastic partition pluggable for welded stillage BD-C2+
2		99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
3		99-10-1045	Hexagon nut M 6 galv. DIN 934
4			Welded angle at stillage

18 Installing the footrails

18.1 Overview of 1 section

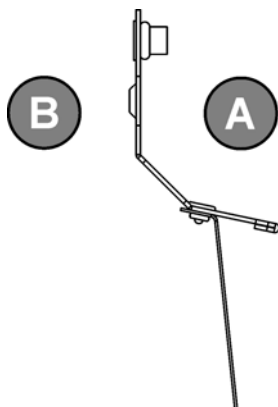


One footrail is mounted for each nest hole.



Pos.	Qty.	Code no.	Description
1		83-02-8345	footrail 1206 cpl. profiled per nest hole BD-C2+

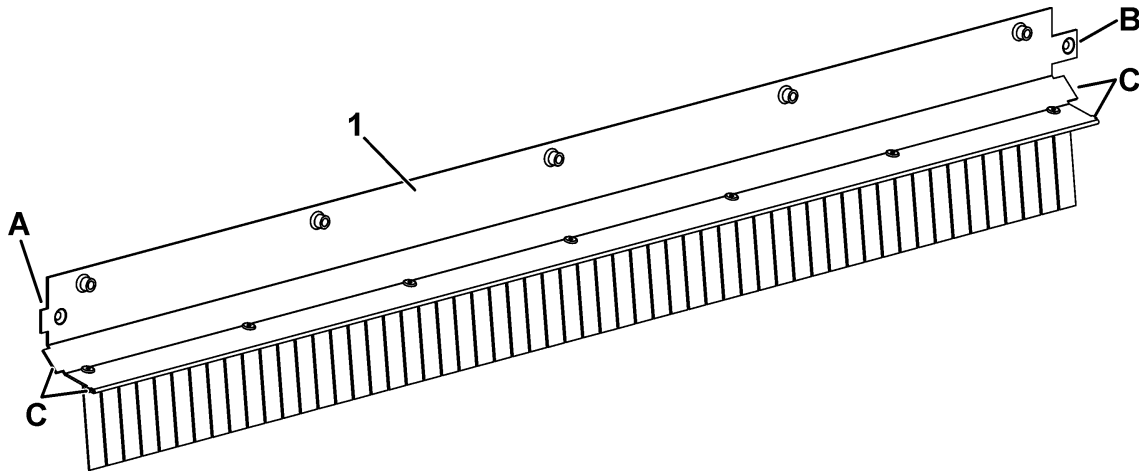
Alignment of the footrail (cross section):



A= side directed towards the aisle
B= side directed towards the egg channel

18.2 Inserting and screwing down footrails


Overview footrail

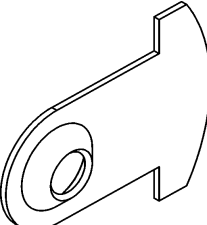


The footrails are inserted in the corresponding slits in the partitions for support and screwing to the lateral joint shackles (A; B and C).

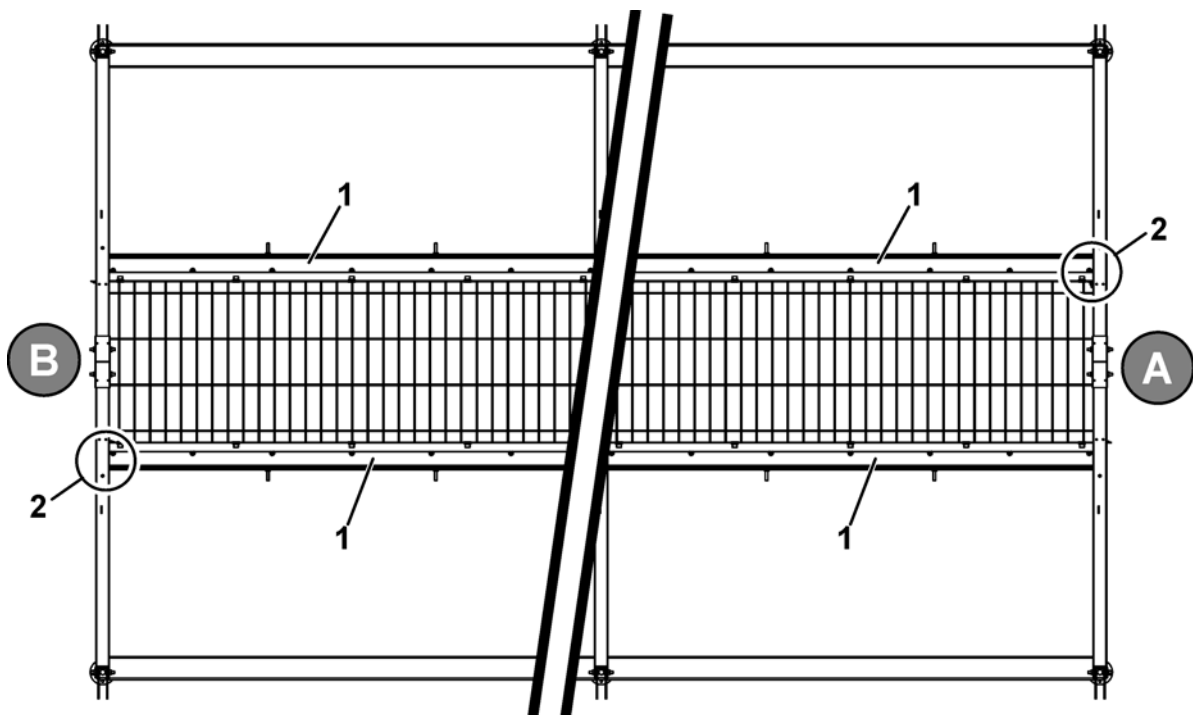
Pos.	Qty.	Code no.	Description
1		83-02-8345	footrail 1206 cpl. profiled per nest hole BD-C2+
A			short joint shackle
B			long screw union and supporting joint shackle
C			joint shackle

18.2.1 End pieces for footrails

	<p>For double nest:</p> <p>Depending on the side of the nest row at which the assembly of the footrail is started, it is necessary to insert an "end piece for footrail" in the end-set stillages.</p> <p>For wall nest:</p> <p>An end piece is needed only on one side of the nest row.</p>
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	<p>The end piece for the footrail is used:</p> <ul style="list-style-type: none"> • for the end-set stillage longitudinal belt drive • for the end-set stillage egg belt idler unit • at the beginning and end of a passage
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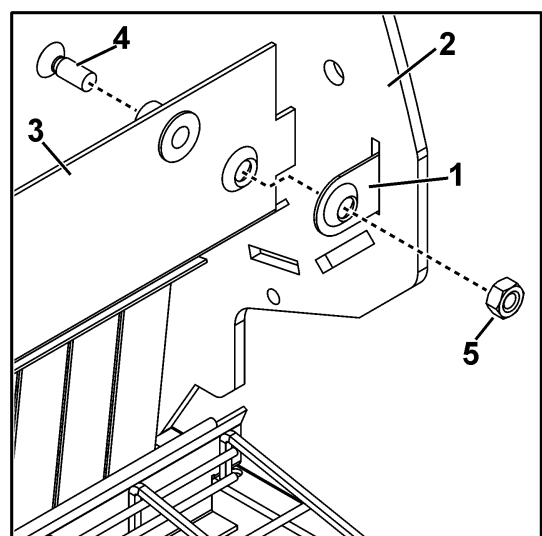
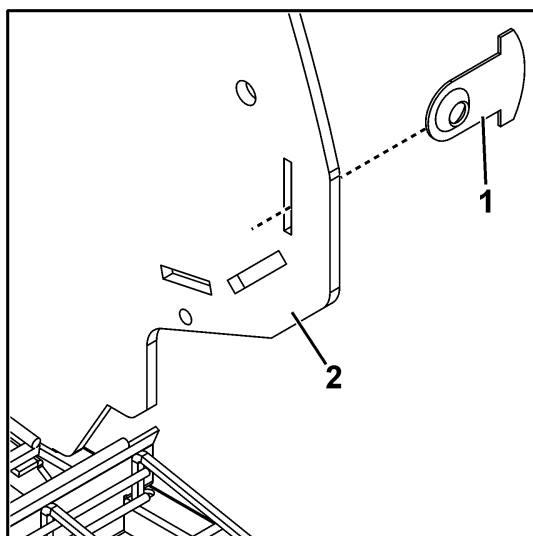
18.2.1.1 Positions of the end pieces for the footrails in a section



Pos.	Qty.	Code no.	Description
A			end-set stillage longitudinal belt drive side
B			end-set stillage egg belt idler unit side
1		83-02-8345	footrail 1206 cpl. profiled per nest hole BD-C2+
2	2	83-03-4781	end piece for footrail BD-C2+

18.2.1.2 Inserting and screwing of the end pieces with the footrail

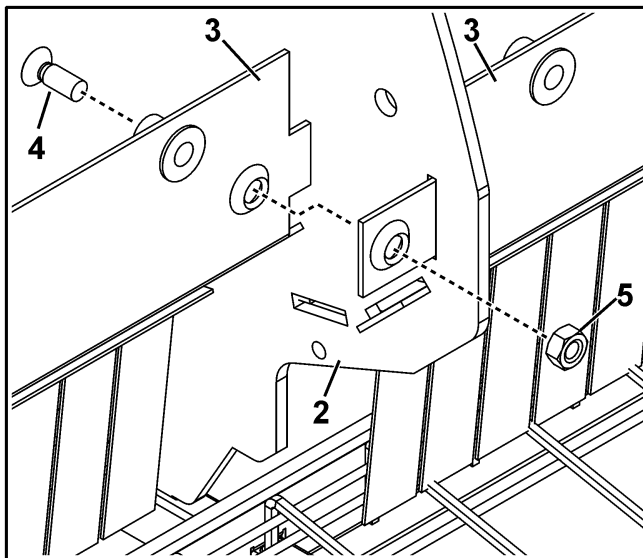
Insertion of the end piece for the footrail at the end-set stillage Screwing the footrail to the end piece



(position numbers: see next page)

Pos.	Qty.	Code no.	Description
1		83-03-4781	end piece for footrail BD-C2+
2		83-01-3769	plastic partition pluggable f/ welded cage stand BD-C2+
3		83-02-8345	footrail 1206 cpl. profiled per nest hole BD-C2+
4		99-10-1368	countersunk screw/cross recess M 6x16 DIN 965-5.8 galv.
5		99-10-1045	hexagon nut M 6 galv. DIN 934-8

18.2.2 Screwing of the footrails in the section



One end of the footrail **with long joint shackle** is inserted in the respective opening in the partition.

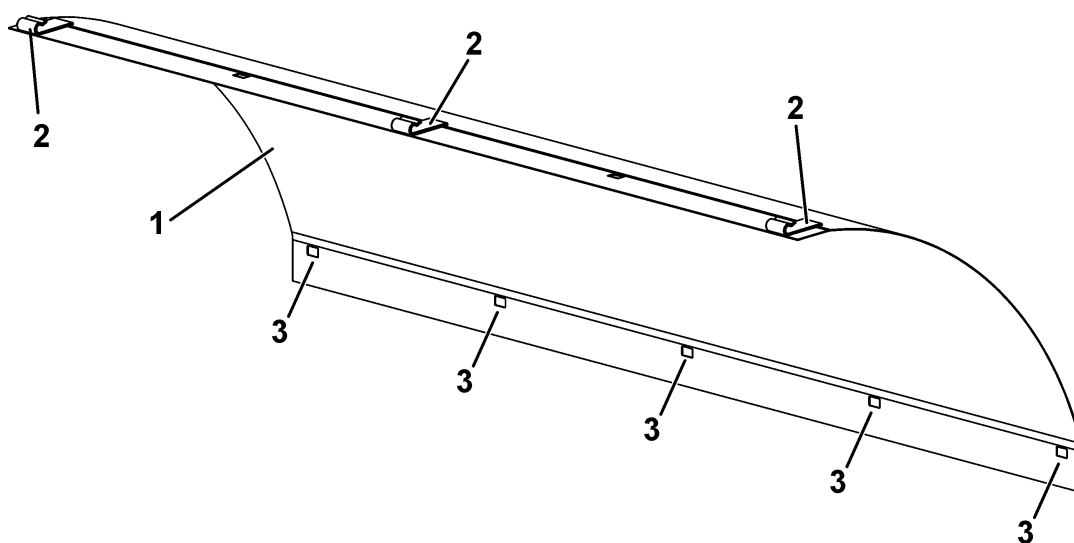
In the successive nest hole the side of the footrail **with the short joint shackle**, must be placed **in front of** the inserted tongue of the previously assembled rail.

Both rails are screwed together by means of a countersunk screw and nut.

(viewing direction: from the aisle into the nest)

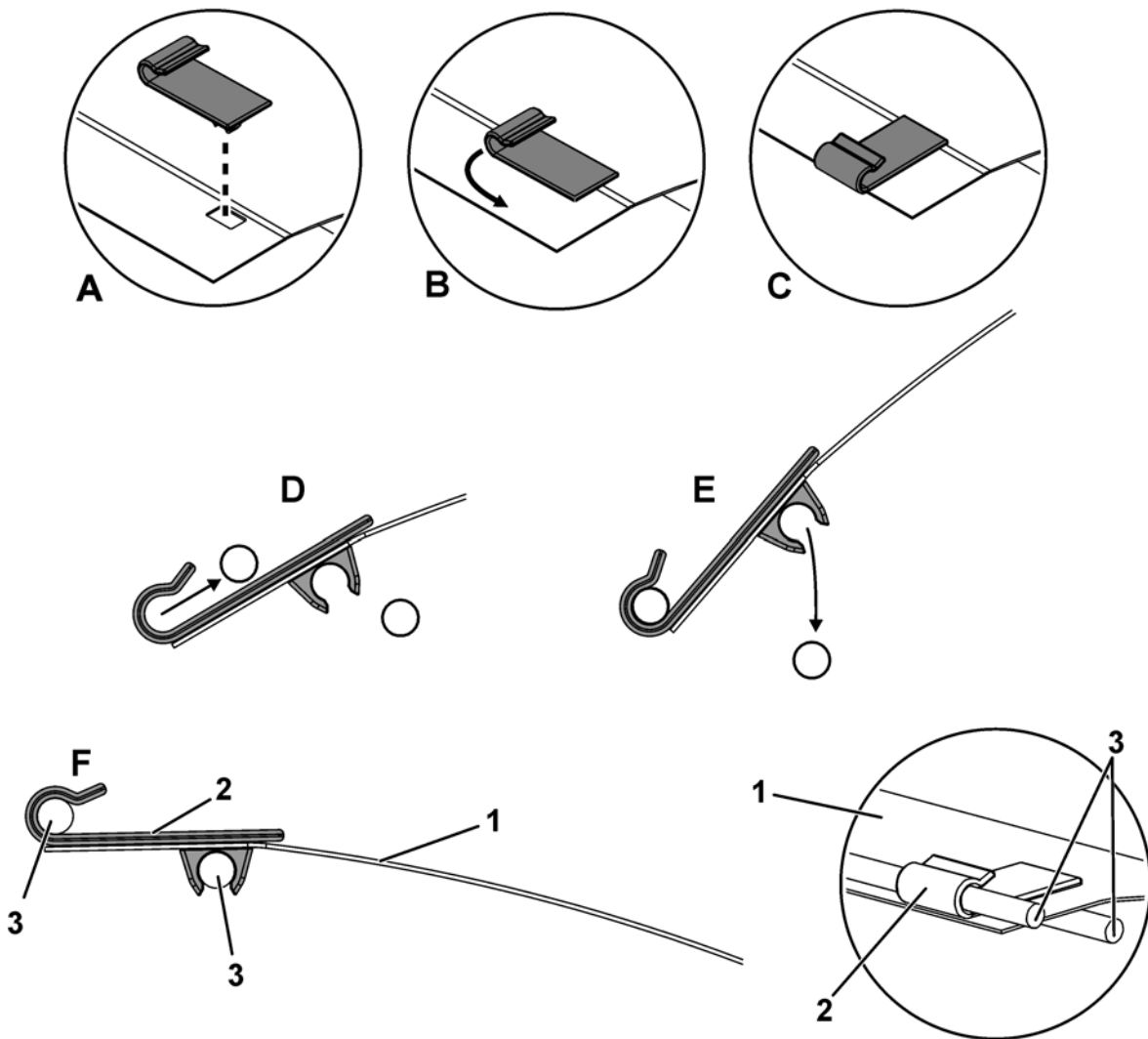
Pos.	Qty.	Code no.	Description
1		83-03-4781	end piece for footrail BD-C2+
2		83-01-3769	plastic partition pluggable f/ welded cage stand BD-C2+
3		83-02-8345	footrail 1206 cpl. profiled per nest hole BD-C2+
4		99-10-1368	countersunk screw/cross recess M 6x16 DIN 965-5.8 galv.
5		99-10-1045	hexagon nut M 6 galv. DIN 934-8

19 Installing the back panels



Pos.	Qty.	Code no.	Description
1	1	83-00-5740	Back panel 1206 PP per nest hole BD-C2+
2	3	83-01-7442	Hook PA at back panel BD-C2
3	5		Holes to fasten the foot rail

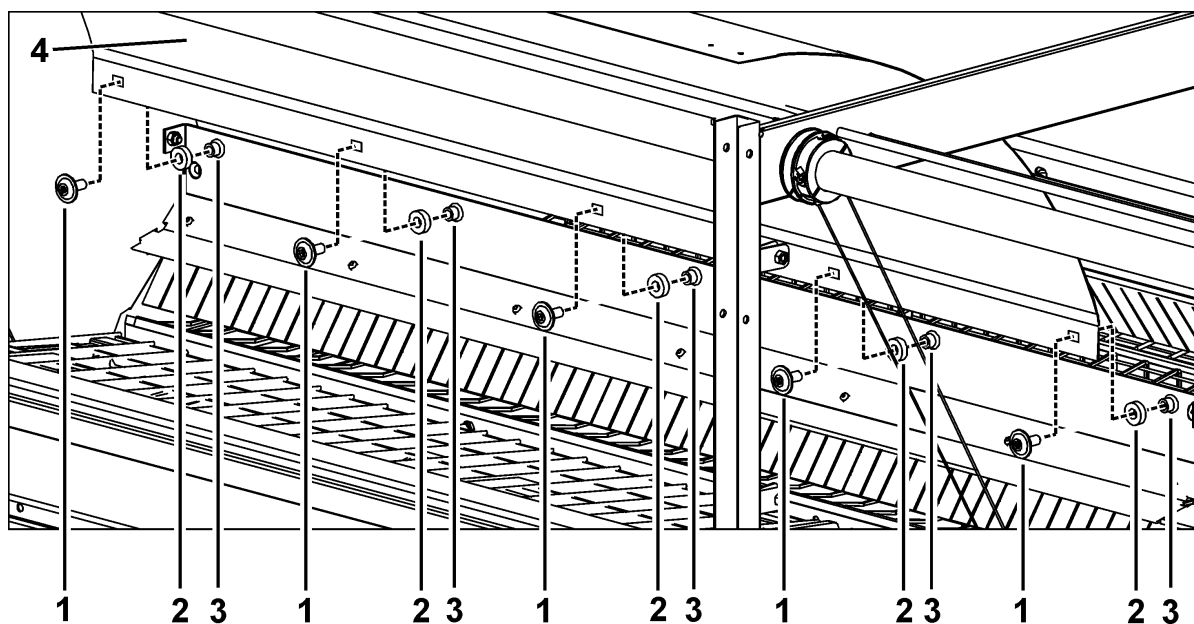
Upper fixing of the back panels to the rods



For the upper fixing of the back panel, you need **3 hooks**. (Position at the back panel: refer to the beginning of the chapter)

Pos.	Qty.	Code no.	Description
1	1	83-00-5740	Back panel 1206 PP per nest hole BD-C2+
2	3	83-01-7442	Hook PA at back panel BD-C2
3		37-46-3708	Rod 8x5000

Lower fixing of the back panels to the foot rails



Pos.	Qty.	Code no.	Description
1	20	99-10-4000	Pan head screw with flange M 8x20 galv.
2	20	15-00-3711	Washer PP black 19x8,5-6
3	20		Drawing nut
4	4	83-00-5740	Back panel 1206 PP per nest hole BD-C2+

20 Installing the end sets for egg belt idler unit

The end sets for egg belt idler unit for double nest 1 and 2 tier(s) and wall nest 1 and 2 tier(s) consist of two larger constructional groups.

These groups are:

1. **the nest end set**
and
2. **the egg belt idler unit itself with idler roller, detent pawl etc.**

20.1 Installing the nest end sets

The last stillage of a nest row - **the nest end set stillage** - serves as the connection between the nest row and the egg belt idler unit.

The assembly of the stillages of nest end sets is done for double nests 1 and 2 tier(s) as well as wall nests 1 and 2 tier(s) as described in chapter 7 and 8.

The particularity about these nest end sets is that additional partitions are mounted closing the nest from the outside.



Important:

Take into consideration the alignment of the stillage. The border (A) at the opening for egg belt in the lower cross support (1) has to point in the direction of the egg belt idler unit.(see drawing on next page)

20.2 Installing the egg belt idler unit

20.2.1 Installing the adapter rails

20.2.1.1 Adapter rail for double nest 1 tier

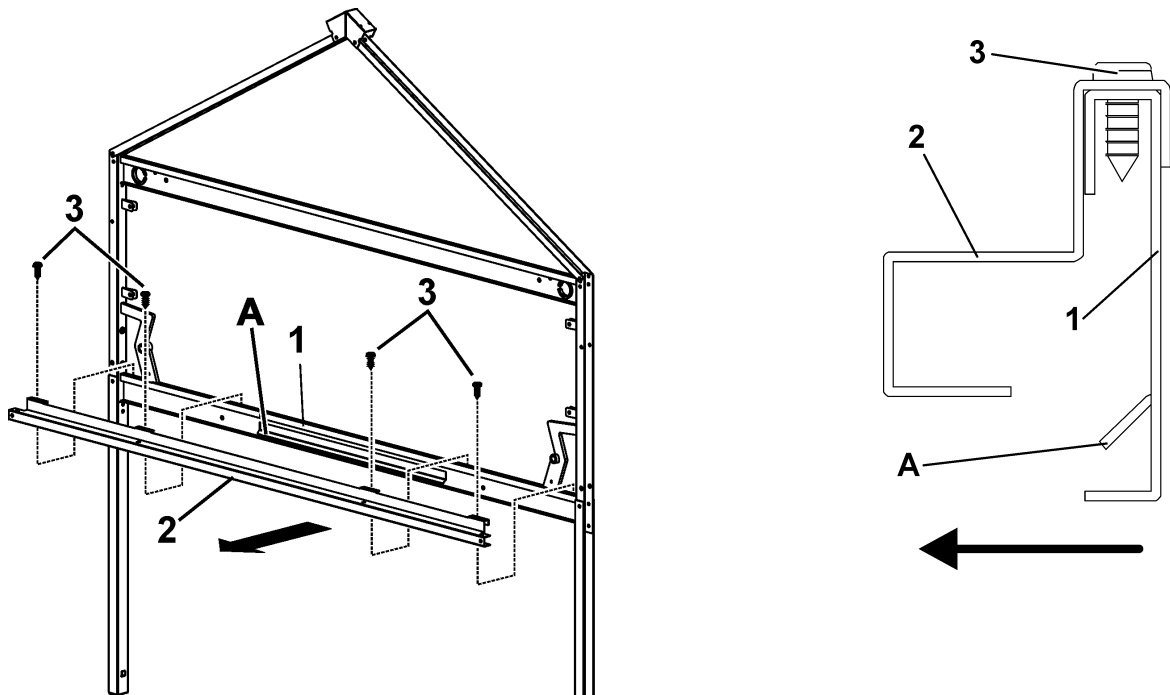


The connection of the egg belt idler unit with the nest end set is done by means of an adapter rail (2) fixed to the lower cross support of the end set stillage by means of four drilling screws (3).

Important:

Before fixing the adapter rails, the U-guiding rails for the guide plates have to be fixed at the adapter rails.

(see next chapter: "Installing the basic structure for egg belt idler unit")



Pos.	Qty.	Code no.	Description
1			lower cross support of the stillage
2	1	83-01-0236	Adapter rail double LB245 for connection of end set with stillage
3	4	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K



Note:

The adapter rail has to be screwed to the stillage exactly in the centre.

20.2.1.2 Adapter rail for double nest 2 tiers

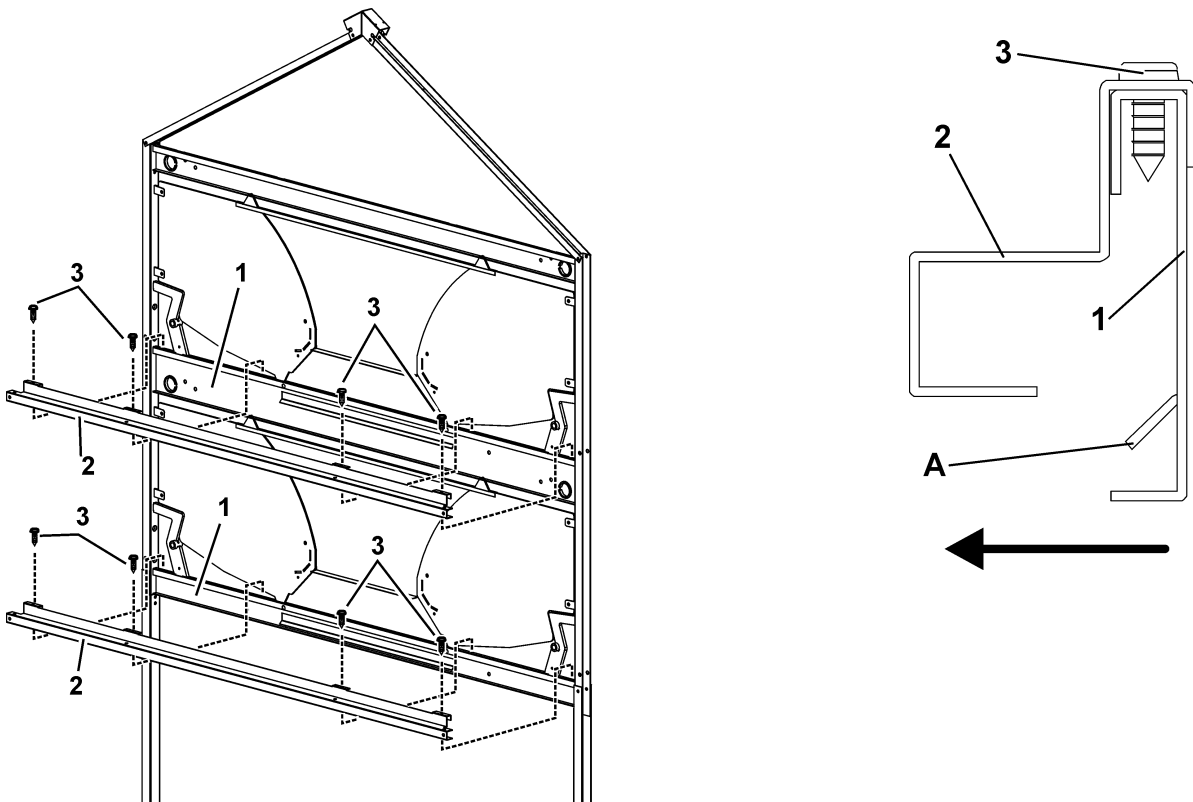
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The connection of the egg belt idler unit with the nest end set is done by means of an adapter rail (2) fixed to the lower cross support of the end set stillage by means of four drilling screws (3).

Important:

Before fixing the adapter rails, the U-guiding rails for the guide plates have to be fixed at the adapter rails.

(see next chapter: "Installing the basic structure for egg belt idler unit")




Pos.	Qty.	Code no.	Description
1			lower / central cross support of the stillage
2	2	83-01-0236	Adapter rail double LB245 for connection of end set with stillage
3	8	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

☞

Note:

The adapter rail has to be screwed to the stillage exactly in the centre.

20.2.1.3 Adapter rail for wall nest 1 tier

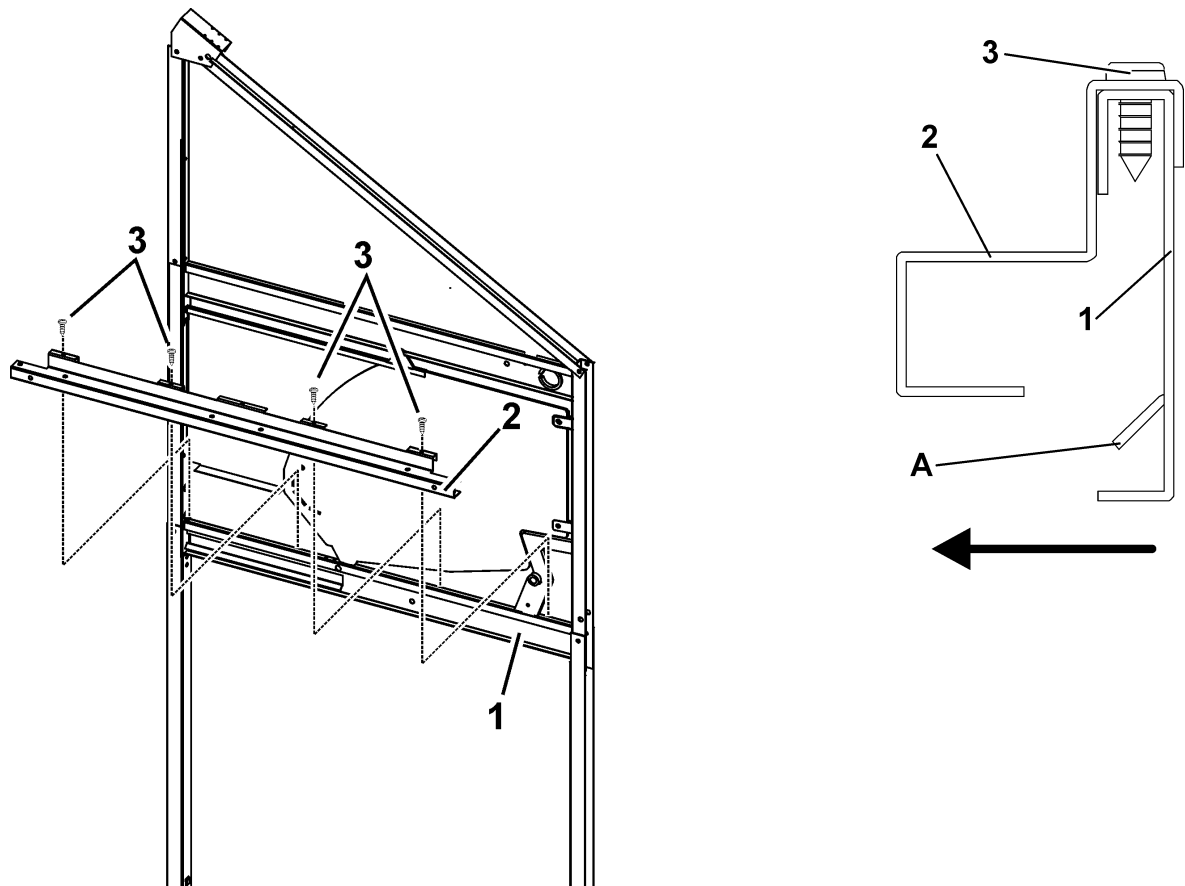


The connection of the egg belt idler unit with the nest end set is done by means of an adapter rail (2) fixed to the lower cross support of the end set stillage by means of four drilling screws (3).


Important:

Before fixing the adapter rails, the U-guiding rails for the guide plates have to be fixed at the adapter rails.

(see next chapter: "Installing the basic structure for egg belt idler unit")




Pos.	Qty.	Code no.	Description
1			lower cross support of the stillage
2	1	83-01-0193	Adapter rail simple LB245 for connection of end set with stillage
3	4	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K



Note:

The adapter rail has to be screwed to the stillage exactly in the centre.

20.2.1.4 Adapter rail for wall nest 2 tiers

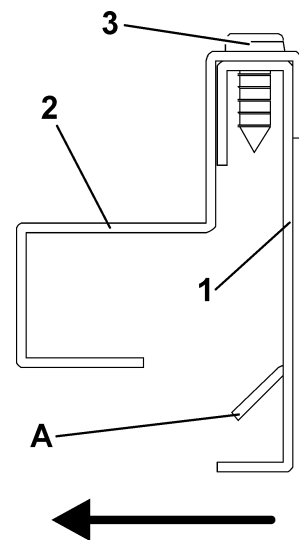
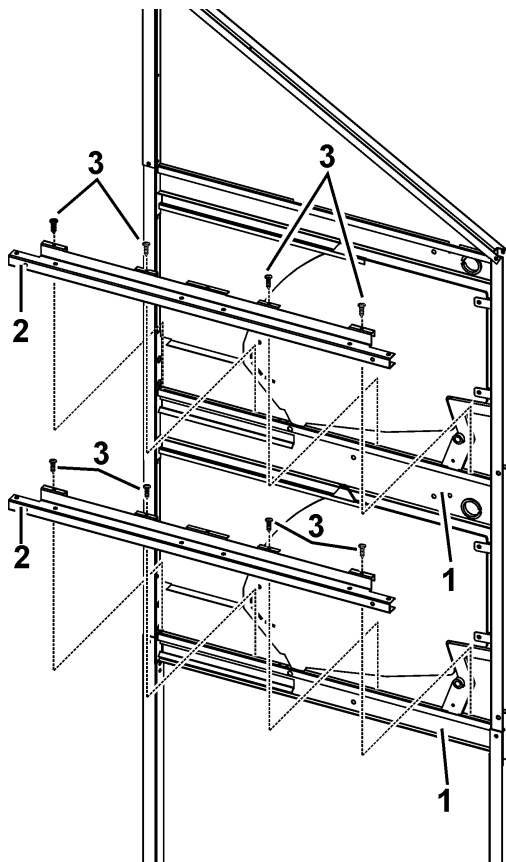


The connection of the egg belt idler unit with the nest end set is done by means of an adapter rail (2) fixed to the lower cross support of the end set stillage by means of four drilling screws (3).


Important:

Before fixing the adapter rails, the U-guiding rails for the guide plates have to be fixed at the adapter rails.

(see next chapter: "Installing the basic structure for egg belt idler unit")



Pos.	Qty.	Code no.	Description
1			lower / central cross support of the stillage
2	2	83-01-0193	Adapter rail simple LB245 for connection of end set with stillage
3	8	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

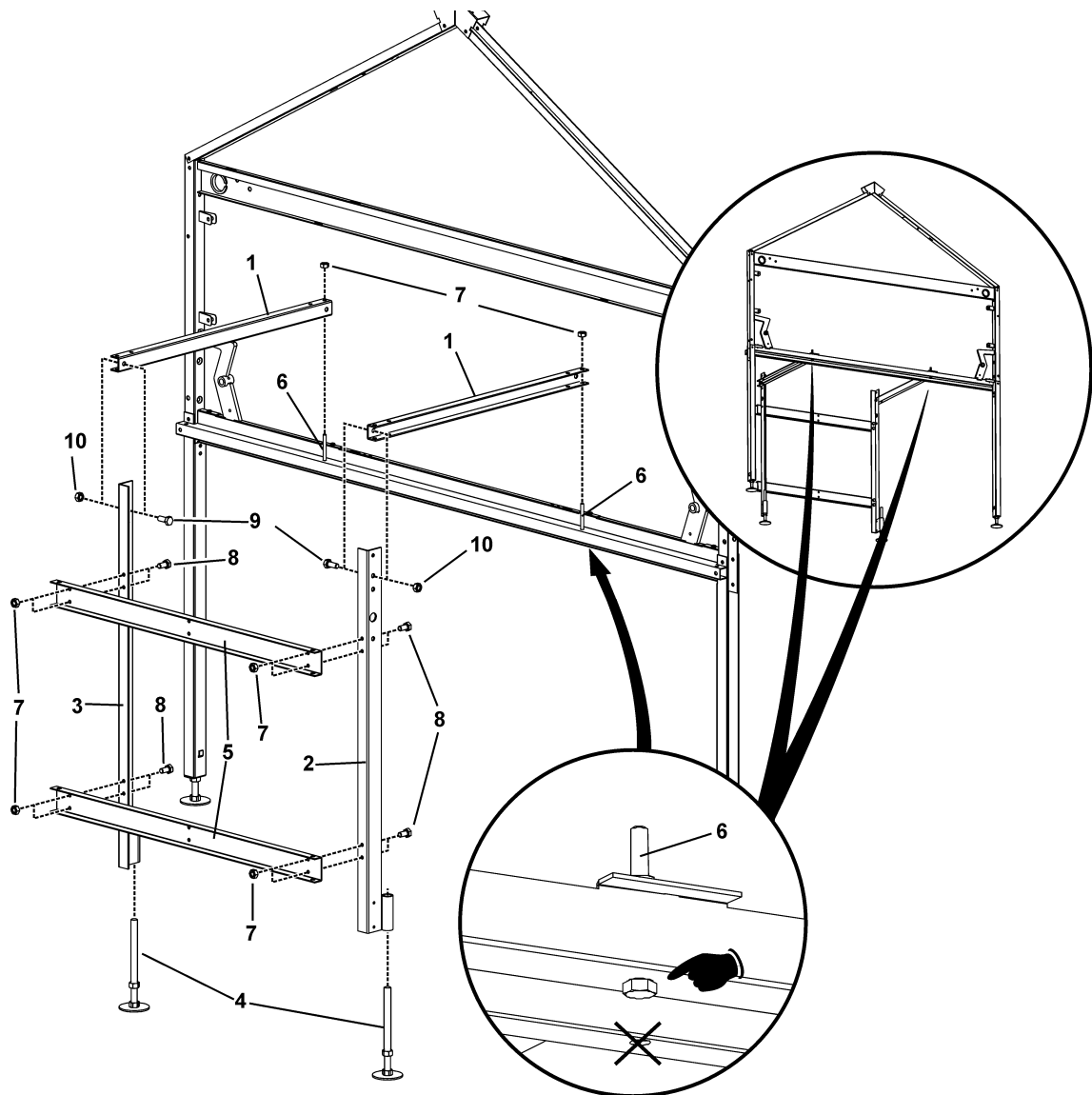


Note:

The adapter rail has to be screwed to the stillage exactly in the centre.

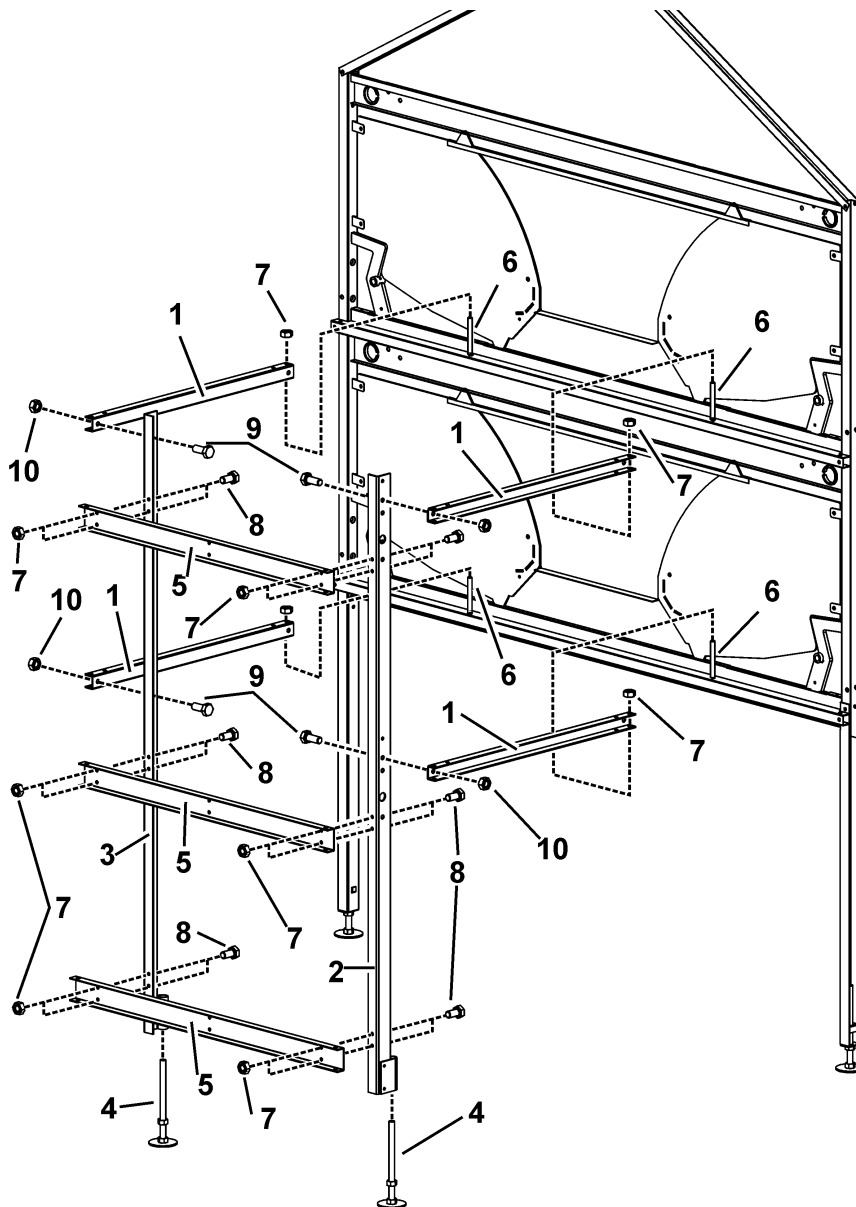
20.2.2 Installing basic structure f/ egg belt idler unit (600mm and 1000mm)

20.2.2.1 Basic structure for double nest 1 tier



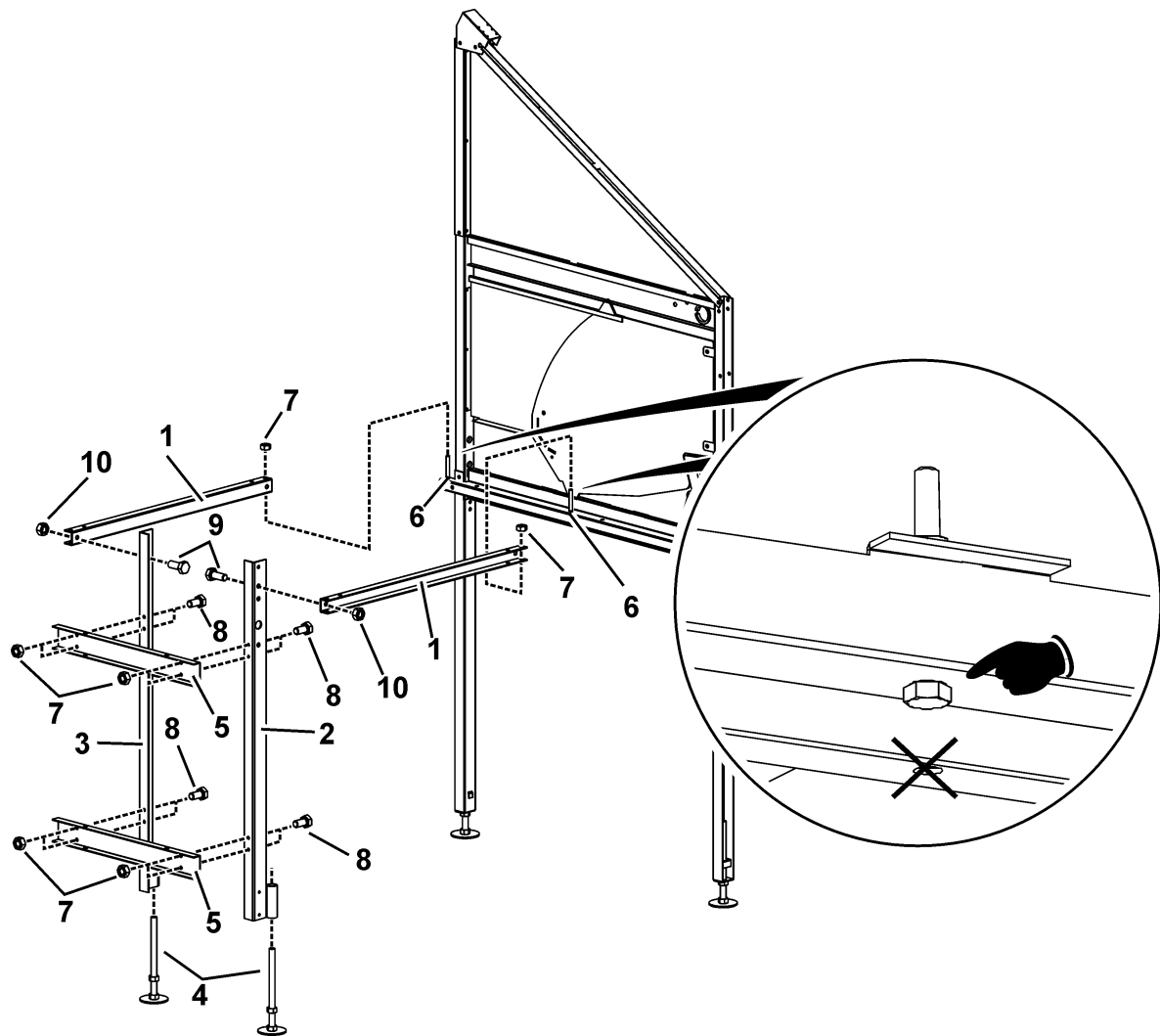
Pos.	Qty.	Code no.	Description
1	2	83-00-6112	U-guiding rail for idler 1000
	2	83-00-8727	U-guiding rail for idler 600
2	1	83-00-6275	Angle post rh 1t BD-C2+
3	1	83-00-6277	Angle post lh 1t BD-C2+
4	2	37-97-4318	Foot fully threaded M12x200 M12x200 PA/SST cpl
5	2	83-00-6106	Cross connector double for idler of lg. belt 245 BD-C2+
6	2	99-10-1320	Hexagon head screw M 6x 55 galv. DIN 558
7	10	99-20-1043	Self-locking counter nut M6 DIN 985-6 galv.
8	8	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
9	2	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558
10	2	99-10-1040	Hexagon nut M 8 galv. DIN 934

20.2.2.2 Basic structure for double nest 2 tiers



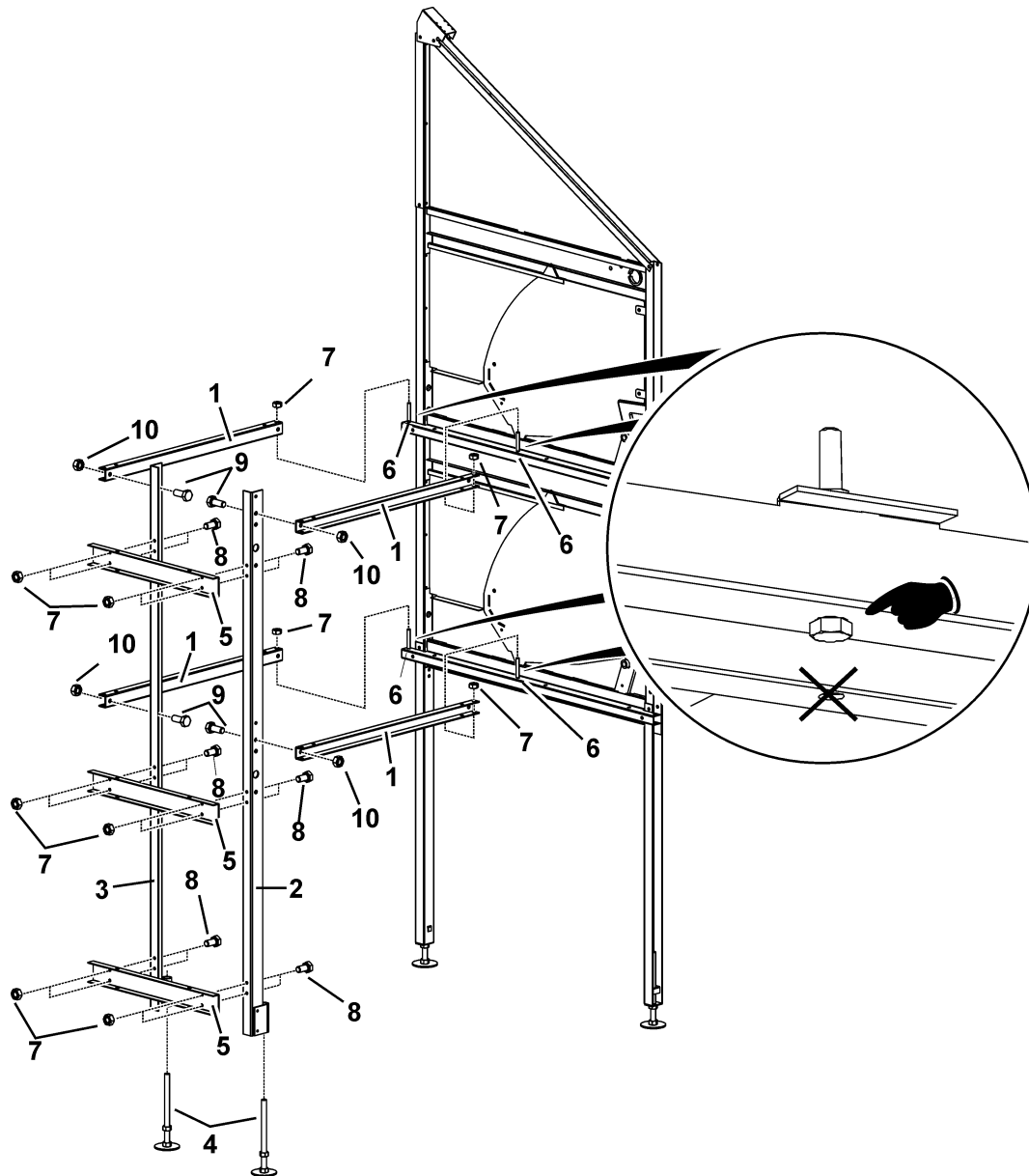
Pos.	Qty.	Code no.	Description
1	4	83-00-6112	U-guiding rail for idler 1000
	4	83-00-8727	U-guiding rail for idler 600
2	1	83-00-6111	Angle post rh 2t BD-C2+
3	1	83-00-6113	Angle post lh 2t BD-C2+
4	2	37-97-4318	Foot fully threaded M12x200 M12x200 PA/SST cpl
5	3	83-00-6106	Cross connector double for idler of lg. belt 245 BD-C2+
6	4	99-10-1320	Hexagon head screw M 6x 55 galv. DIN 558
7	16	99-20-1043	Self-locking counter nut M6 DIN 985-6 galv.
8	12	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
9	4	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558
10	4	99-10-1040	Hexagon nut M 8 galv. DIN 934

20.2.2.3 Basic structure for wall nest 1 tier



Pos.	Qty.	Code no.	Description
1	2	83-00-6112	U-guiding rail for idler 1000
	2	83-00-8727	U-guiding rail for idler 600
2	1	83-00-6275	Angle post rh 1t BD-C2+
3	1	83-00-6277	Angle post lh 1t BD-C2+
4	2	37-97-4318	Foot fully threaded M12x200 M12x200 PA/SST cpl
5	2	83-00-7880	Cross connector sgl for idler of lg. belt LB245 BD-C2+
6	2	99-10-1320	Hexagon head screw M 6x 55 galv. DIN 558
7	10	99-20-1043	Self-locking counter nut M6 DIN 985-6 galv.
8	8	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
9	2	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558
10	2	99-10-1040	Hexagon nut M 8 galv. DIN 934

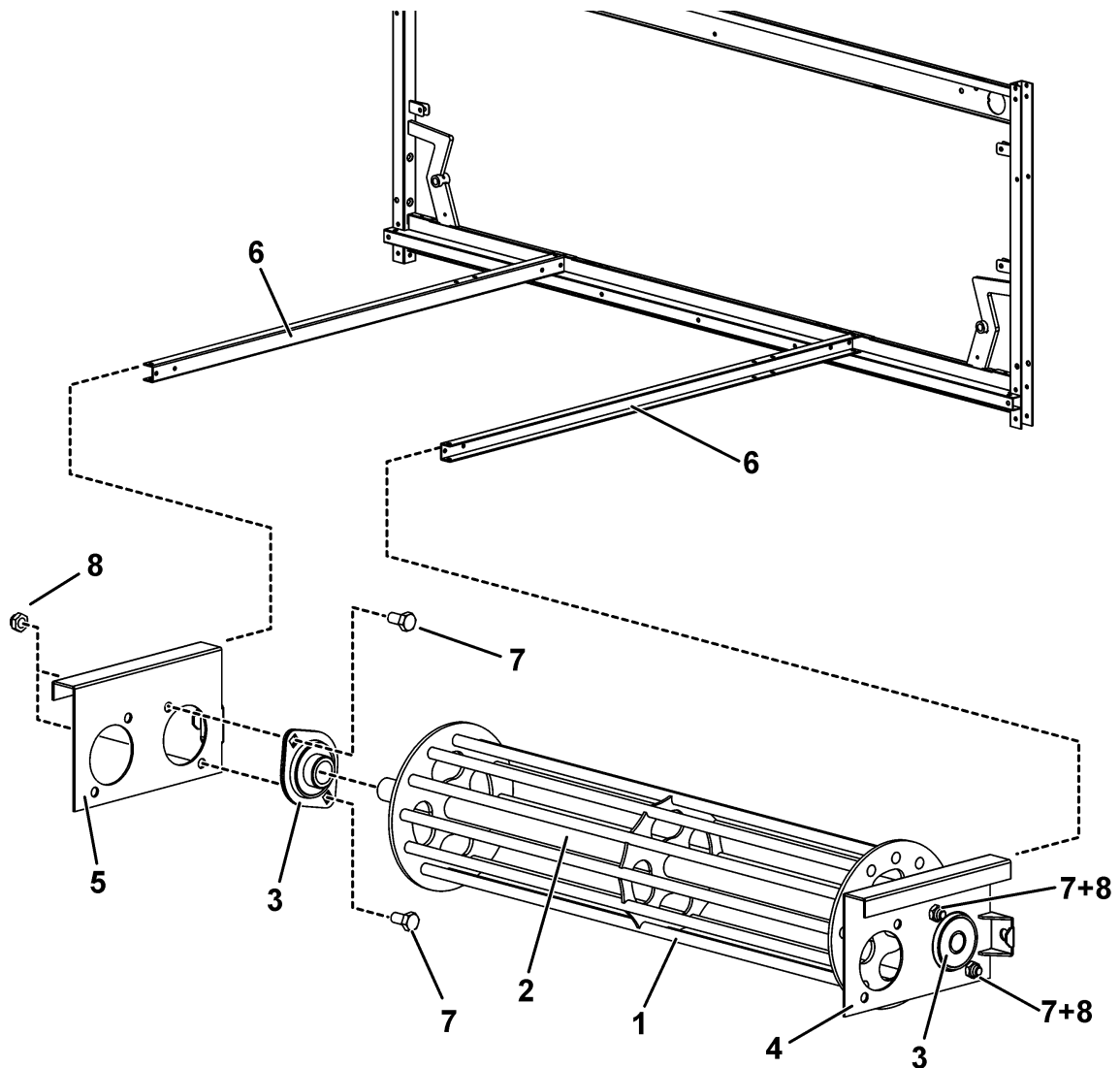
20.2.2.4 Basic structure for wall nest 2 tiers



Pos.	Qty.	Code no.	Description
1	4	83-00-6112	U-guiding rail for idler 1000
	4	83-00-8727	U-guiding rail for idler 600
2	1	83-00-6111	Angle post rh 2t BD-C2+
3	1	83-00-6113	Angle post lh 2t BD-C2+
4	2	37-97-4318	Foot fully threaded M12x200 M12x200 PA/SST cpl
5	3	83-00-7880	Cross connector sgl for idler of lg. belt LB245 BD-C2+
6	4	99-10-1320	Hexagon head screw M 6x 55 galv. DIN 558
7	16	99-20-1043	Self-locking counter nut M6 DIN 985-6 galv.
8	12	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
9	4	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558
10	4	99-10-1040	Hexagon nut M 8 galv. DIN 934

20.2.3 Installing the idler rollers (Idler unit 600mm and 1000mm)

20.2.3.1 Idler roller for double nest 1 tier

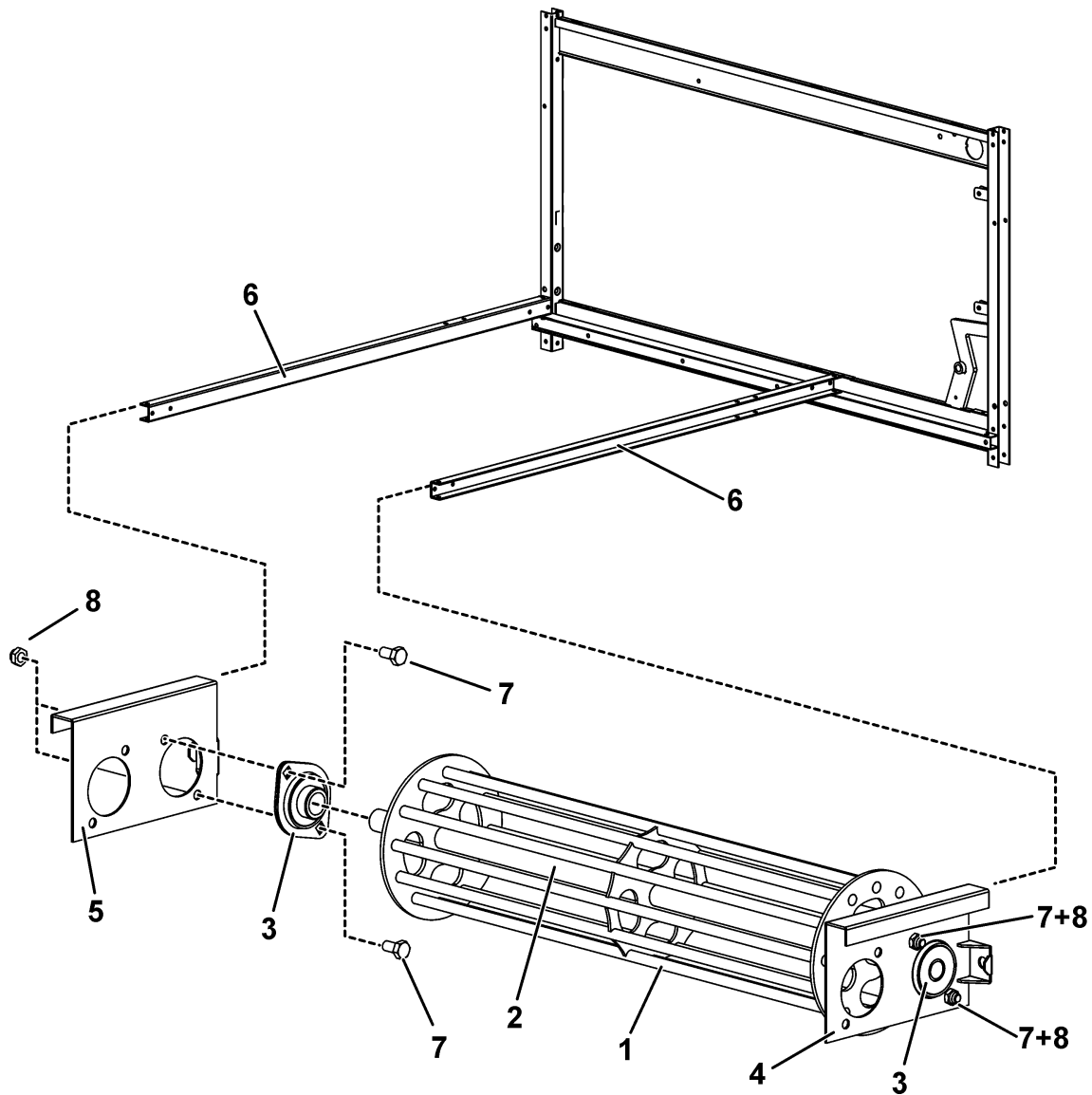


Pos.	Qty.	Code no.	Description
1	1	83-00-6956	Idler roller cpl. incl. shaft and ball bearing for belt 500
2	1		shaft
3	2		ball bearing
4	1	83-00-6102	Guide plate lh for egg belt cleaner / idler 1000
5	1	83-00-6103	Guide plate rh for egg belt cleaner / idler 1000
6	2	83-00-6112	U-guiding rail for idler 1000
	2	83-00-8727	U-guiding rail for idler 600
7	4	99-10-1038	Hexagon head screw M8x 20 galv DIN 558
8	4	99-10-1040	Hexagon nut M 8 galv DIN 934-8



At the 2 tier nest one idler roller per tier is installed the same way.

20.2.3.2 Idler roller for wall nest 1 tier



Pos.	Qty.	Code no.	Description
1	1	83-00-6098	Idler roller cpl. incl. shaft and ball bearing for belt 245
2	1		shaft
3	2		ball bearing
4	1	83-00-6102	Guide plate lh for egg belt cleaner / idler 1000
5	1	83-00-6103	Guide plate rh for egg belt cleaner / idler 1000
6	2	83-00-6112	U-guiding rail for idler 1000
	2	83-00-8727	U-guiding rail for idler 600
7	4	99-10-1038	Hexagon head screw M8x 20 galv DIN 558
8	4	99-10-1040	Hexagon nut M 8 galv DIN 934-8

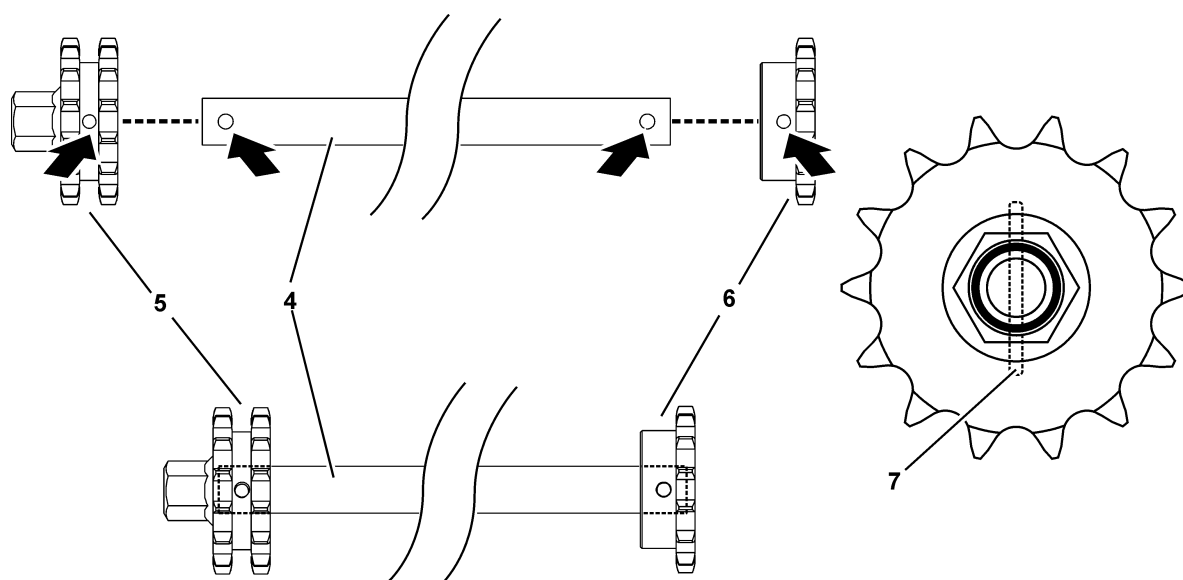
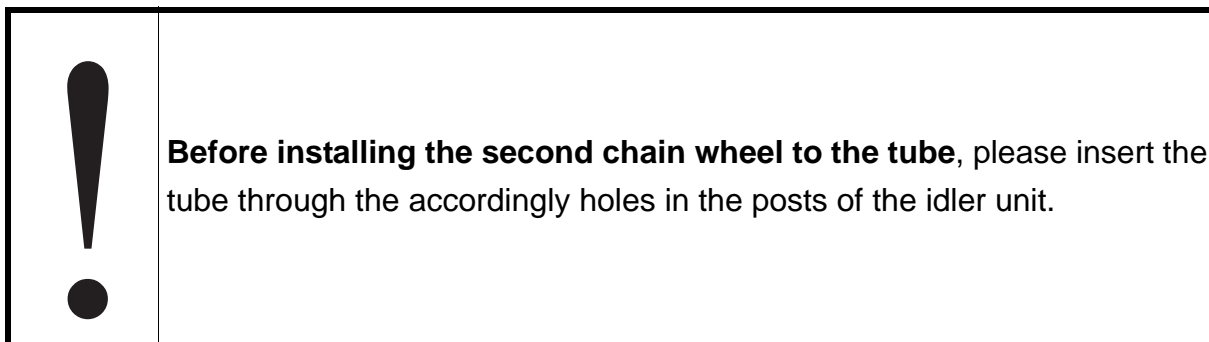


At the 2 tier nest one idler roller per tier is installed the same way.

20.2.4 Installing the tension shaft and detent pawl

20.2.4.1 Note regarding fixing the chain wheels to the tension shaft

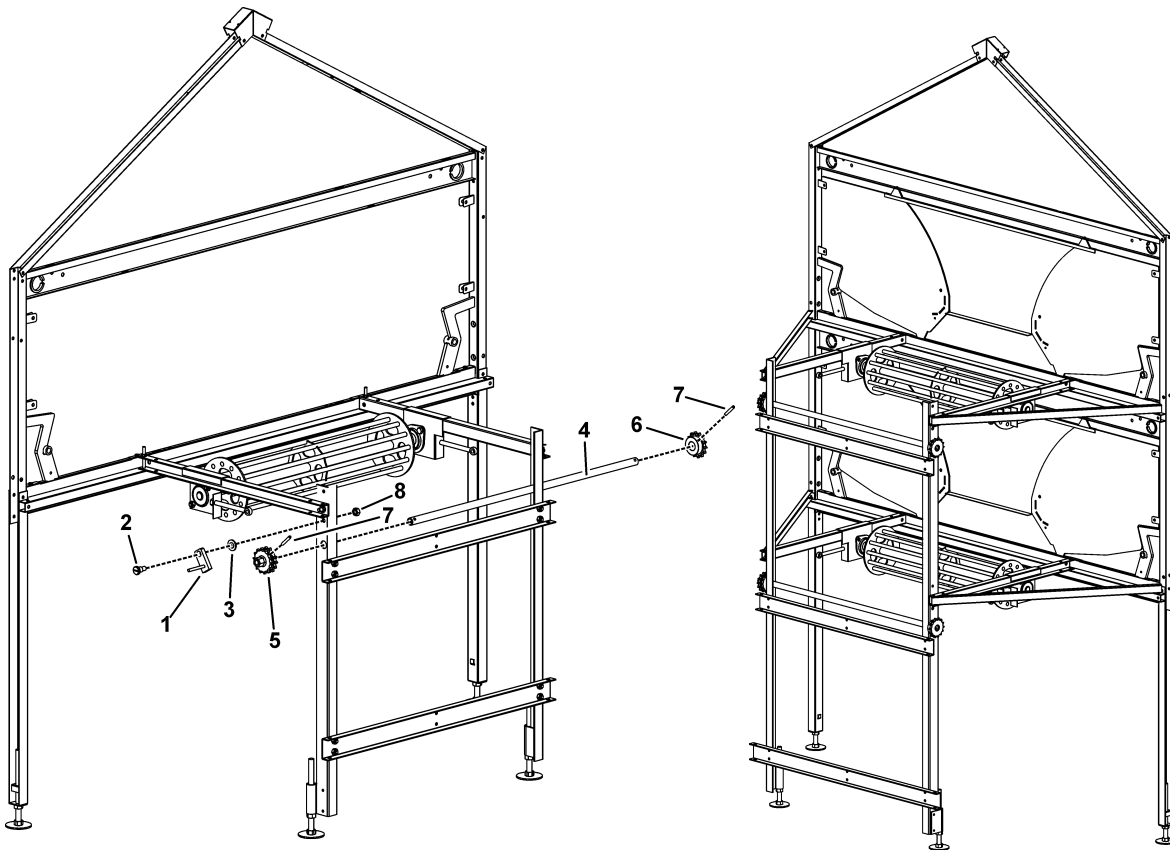
The chain wheels are pushed on the tube so that the drill holes of the wheels and the tube are congruent. The chain wheels are fixed to the tube by inserting the spring type straight pins into these holes.



Pos.	Qty.	Code no.	Description
4	1	83-00-7068	Tube 3/8"x 737 BD-C2+ Idler of egg belt 500
	1	83-00-6107	Tube 3/8"x 382 BD-C2+ Idler of egg belt 245
5	1	39-00-4115	Chain wheel 1/2-Z14-B17,5 double with nut /Idler roller with chain
6	1	39-00-4116	Chain wheel 1/2-Z14-B17,5 spl. Idler roller with chain
7	2	99-50-1351	Spring type straight pin DIN 1481 - 5x40

20.2.4.2 Installing tension shaft and detent pawl for double nest 1 and 2 tier(s)

The detent pawl is only installed at the side with the double chain wheel.

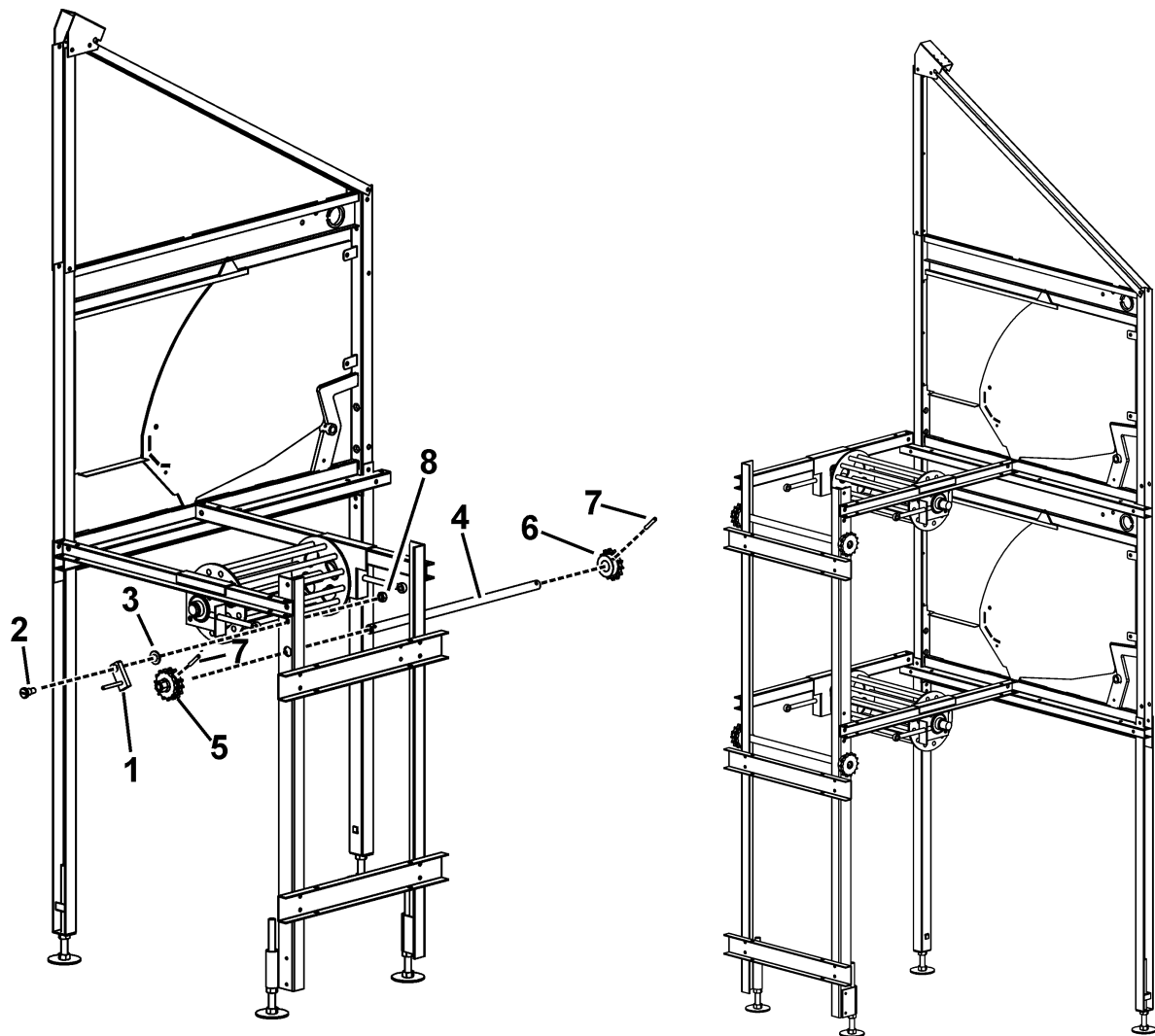


Pos.	Qty.	Code no.	Description
1	1(2)	39-00-4117	Detent pawl with pin Idler roller with chain
2	1(2)	99-10-3919	Slotted pan head screw with shoulder M 8x10 DIN 923 galv.
3	1(2)	99-10-3920	Washer 10,5 DIN 433 galv.
4	1(2)	83-00-7068	Tube 3/8"x 737 BD-C2+ Idler of egg belt 500
5	1(2)	39-00-4115	Chain wheel 1/2-Z14-B17,5 double with nut /Idler roller with chain
6	1(2)	39-00-4116	Chain wheel 1/2-Z14-B17,5 spl. Idler roller with chain
7	2(4)	99-50-1351	Spring type straight pin DIN 1481 - 5x40
8	1(2)	99-10-1040	Hexagon nut M 8 galv. DIN 934

The amounts in brackets are for the nests with 2 tiers.

20.2.4.3 Installing tension shaft and detent pawl for wall nest 1 and 2 tier(s)

The detent pawl is only installed at the side with the double chain wheel.



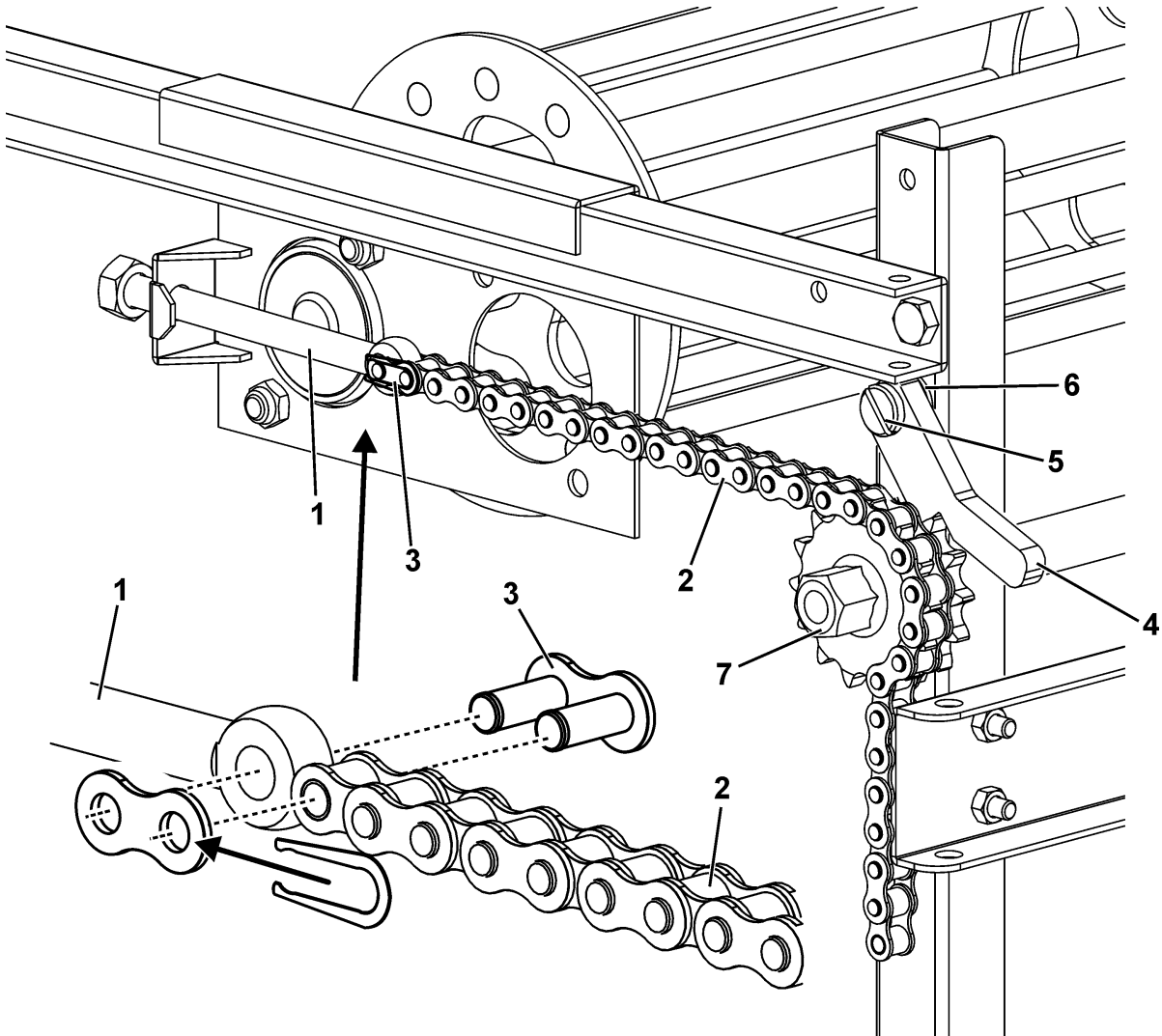
Pos.	Qty.	Code no.	Description
1	1(2)	39-00-4117	Detent pawl with pin Idler roller with chain
2	1(2)	99-10-3919	Slotted pan head screw with shoulder M 8x10 DIN 923 galv.
3	1(2)	99-10-3920	Washer 10,5 DIN 433 galv.
4	1(2)	83-00-6107	Tube 3/8"x 382 BD-C2+ Idler of egg belt 245
5	1(2)	39-00-4115	Chain wheel 1/2-Z14-B17,5 double with nut /Idler roller with chain
6	1(2)	39-00-4116	Chain wheel 1/2-Z14-B17,5 spl. Idler roller with chain
7	2(4)	99-50-1351	Spring type straight pin DIN 1481 - 5x40
8	1(2)	99-10-1040	Hexagon nut M 8 galv. DIN 934

The amounts in brackets are for the nests with 2 tiers

20.2.5 Installing the roller chain (wall and double nest)

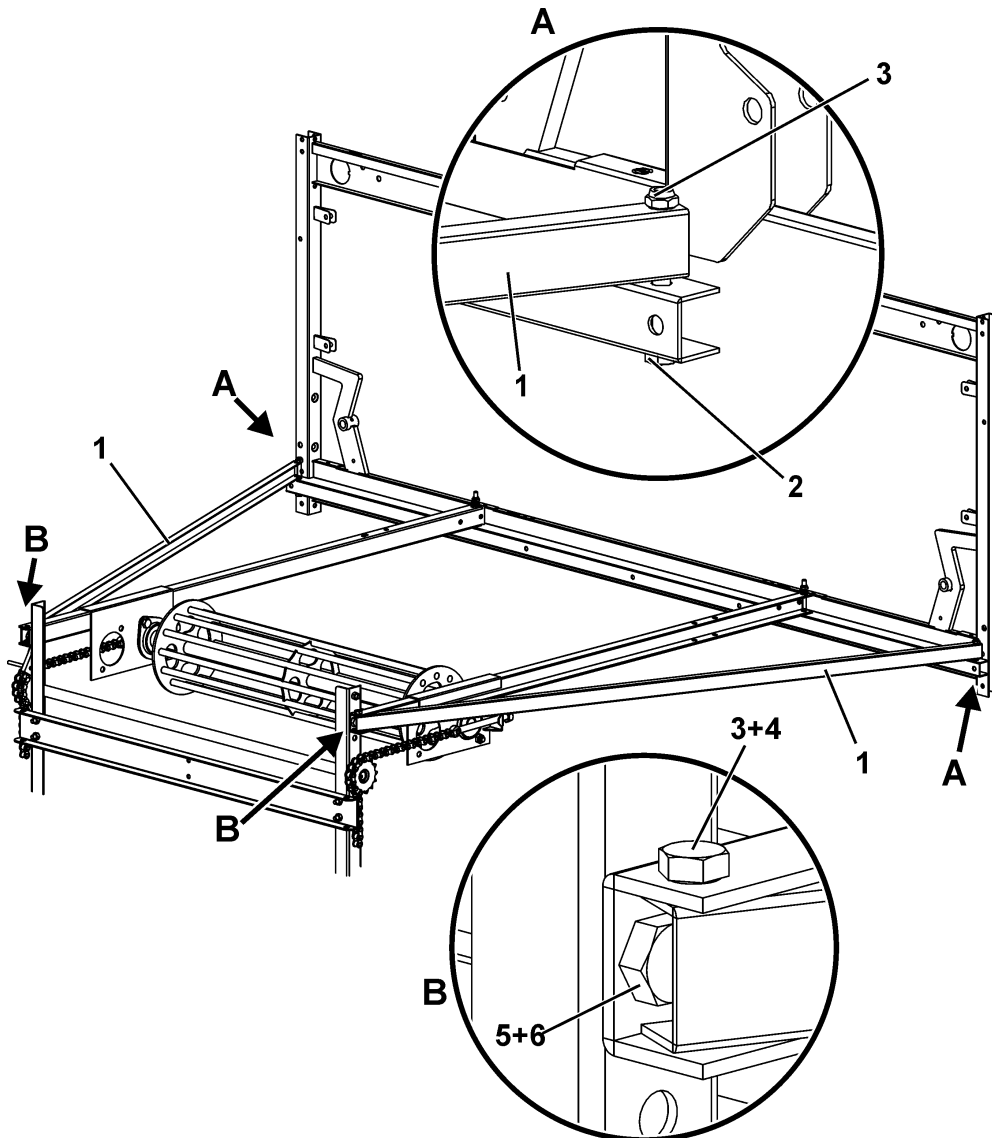
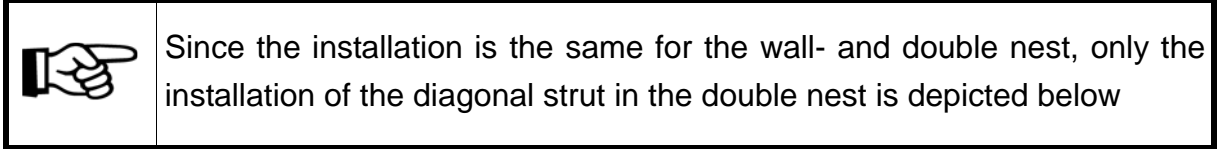
Install the roller chain on both chain wheels of the tension shaft.

The detent pawl is only installed at the side with the double chain wheel.



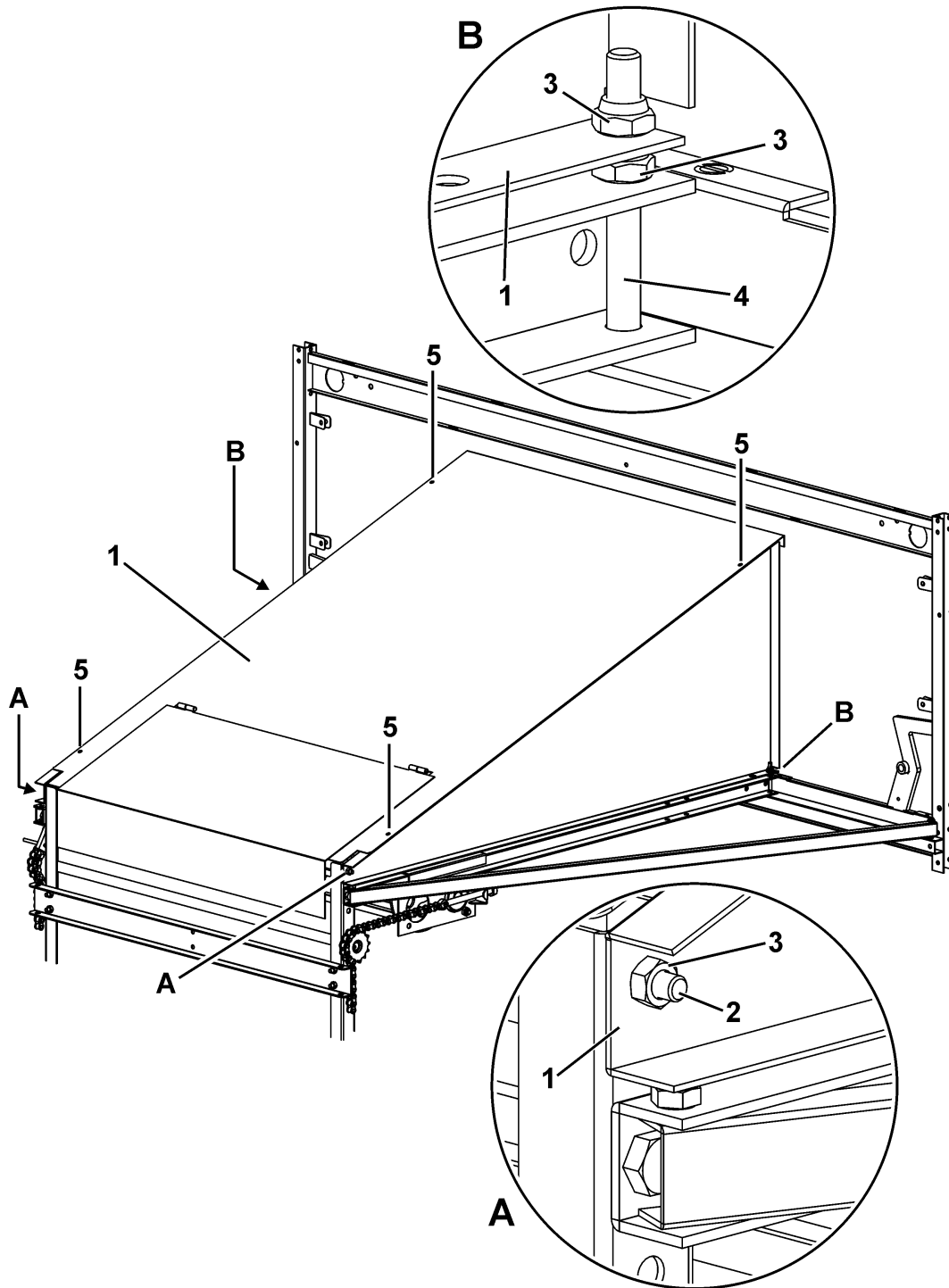
Pos.	Qty.	Code no.	Description
1	2	39-00-4112	Eye bolt M10x120 (DIN444) Idler roller with chaine
2	2	39-00-4030	Roller chain 1/2" 48GI
3	2	99-50-1241	Chain joint 1/2"x5/16"
4	1	83-03-1714	Detent pawl for Idler roller with chain
5	1	99-10-3919	Slotted pan head screw with shoulder M 8x10 DIN 923 galv.
6	1	99-10-3920	Washer 10,5 DIN 433 galv.
7	1	39-00-4115	Chain wheel 1/2-Z14-B17,5 double with nut /Idler roller with chain

20.2.6 Installing the diagonal strut



Pos.	Qty.	Code no.	Description
1	2	83-00-8799	U-profile for diagonal strut for idler 1000/E245+500
	2	83-00-9013	U-profile for diagonal strut for idler 600/E245+500
2	2	99-10-1320	Hexagon head screw M 6x 55 galv. DIN 558
3	4	99-20-1043	Self-locking counter nut M6 DIN 985-6 galv.
4	2	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
5	2	99-10-1038	Hexagon head screw M8x 20 galv DIN 558
6	2	99-10-1040	Hexagon nut M8 galv DIN 934-8

20.2.7 Installing the cover for the egg belt idler unit (600mm /1000mm)



Pos.	Qty.	Code no.	Description
1	1	83-00-9486	Cover cpl. for idler 600 dbl E500 BD-C2+
	1	83-00-7065	Cover cpl. for idler 1000 dbl E500 BD-C2+
2	2	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
3	4	99-20-1043	Self-locking counter nut M6 DIN 985-6 galv.
4	2	99-10-1320	Hexagon head screw M 6x 55 galv. DIN 558
5	4	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

21 Assembling the passages 2412

21.1 Passage 2412 for 1 tier

21.1.1 Assembling the cage stands for passage

**Note:**

First determine the number and position of the planned passages according to the installation or planning drawing.

Start erecting the cage stands **only after that** !

The stillages are assembled as described in chapter 7.

The particularity about these stillages is that additional partitions are mounted closing the nest from the outside.

Furthermore the tubes for the nest floor resetting mechanism and the rods are fixed to the stillage.

**Important:**

Take into consideration the alignment of the stillage. The edge at the opening for egg belt in the lower cross support has to point **in the direction of the egg belt idler unit**.

Do **not install any rods** in the passage (also see chapter 10)

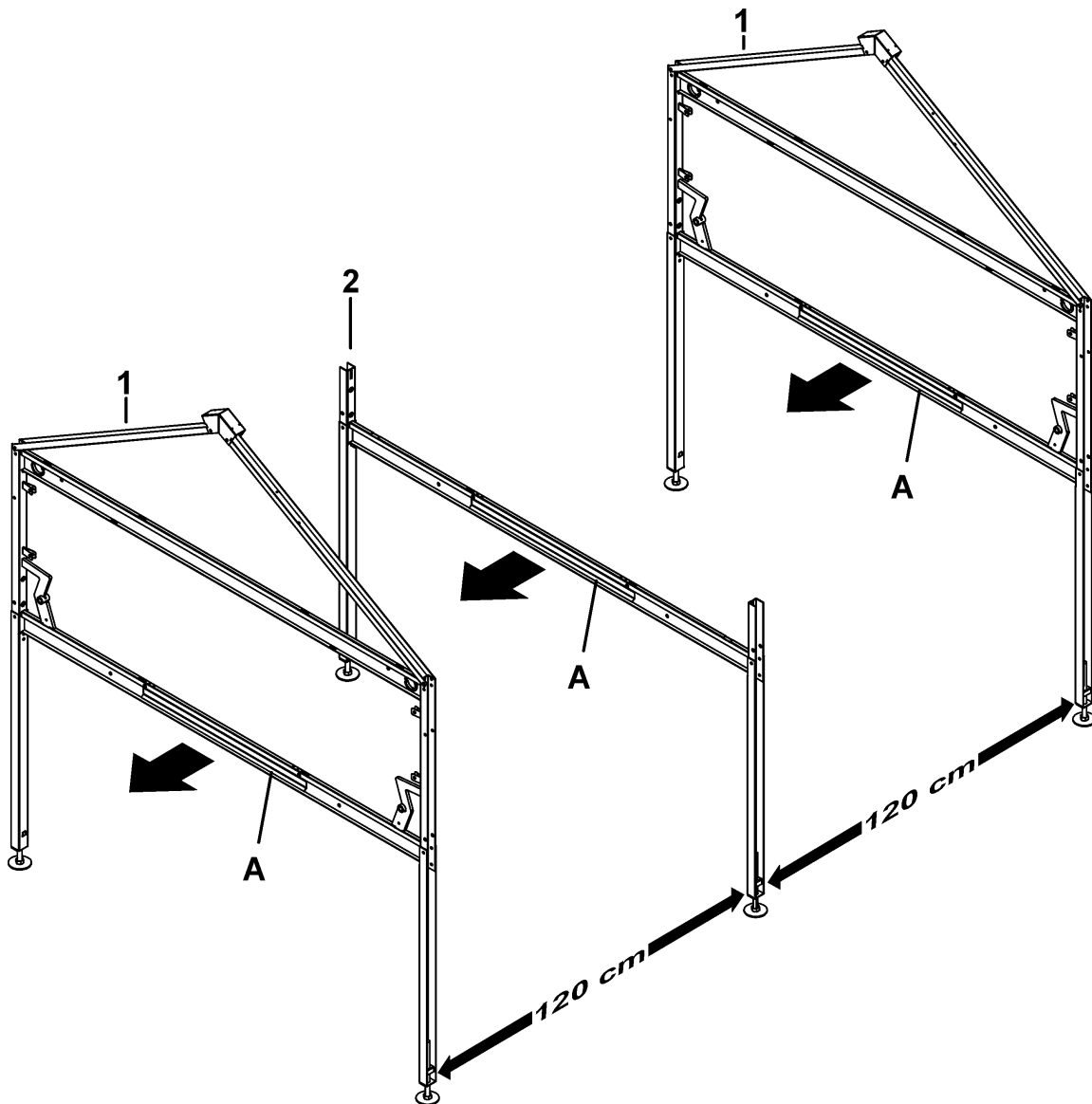
21.1.2 Erecting and connecting the pre-assembled stands



Note:

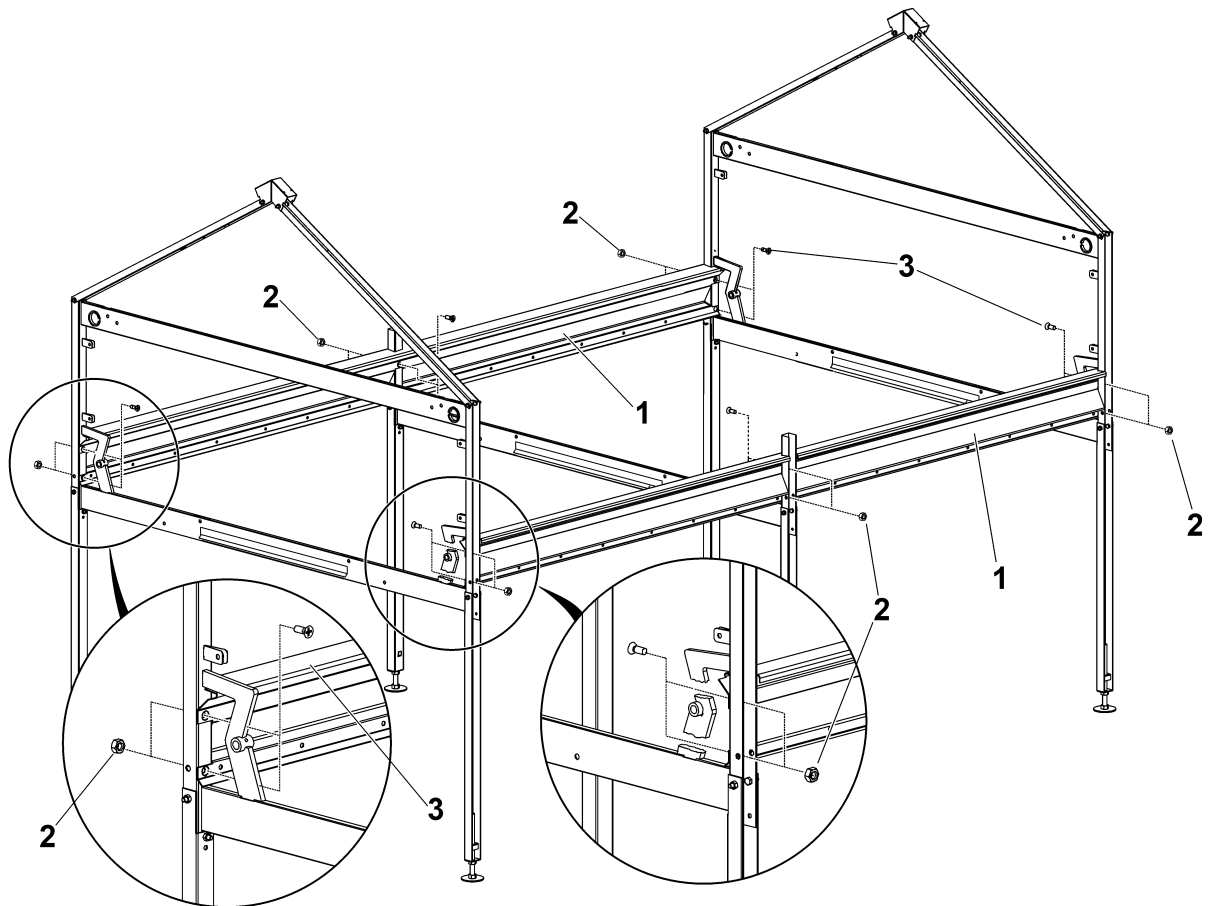
Take into consideration the alignment of the stillages. The border (A) at the opening for egg belt in the lower cross support has to point in the direction of the egg belt idler unit end set (see arrows).

- Put up the readily mounted stillages at a distance of 120 cm.



Pos.	Qty.	Code no.	Description
1	2	36-00-6011	Stillage 1t double BD-C2+ with plastic partition
2			Frame double 1t for passage 2412 +post

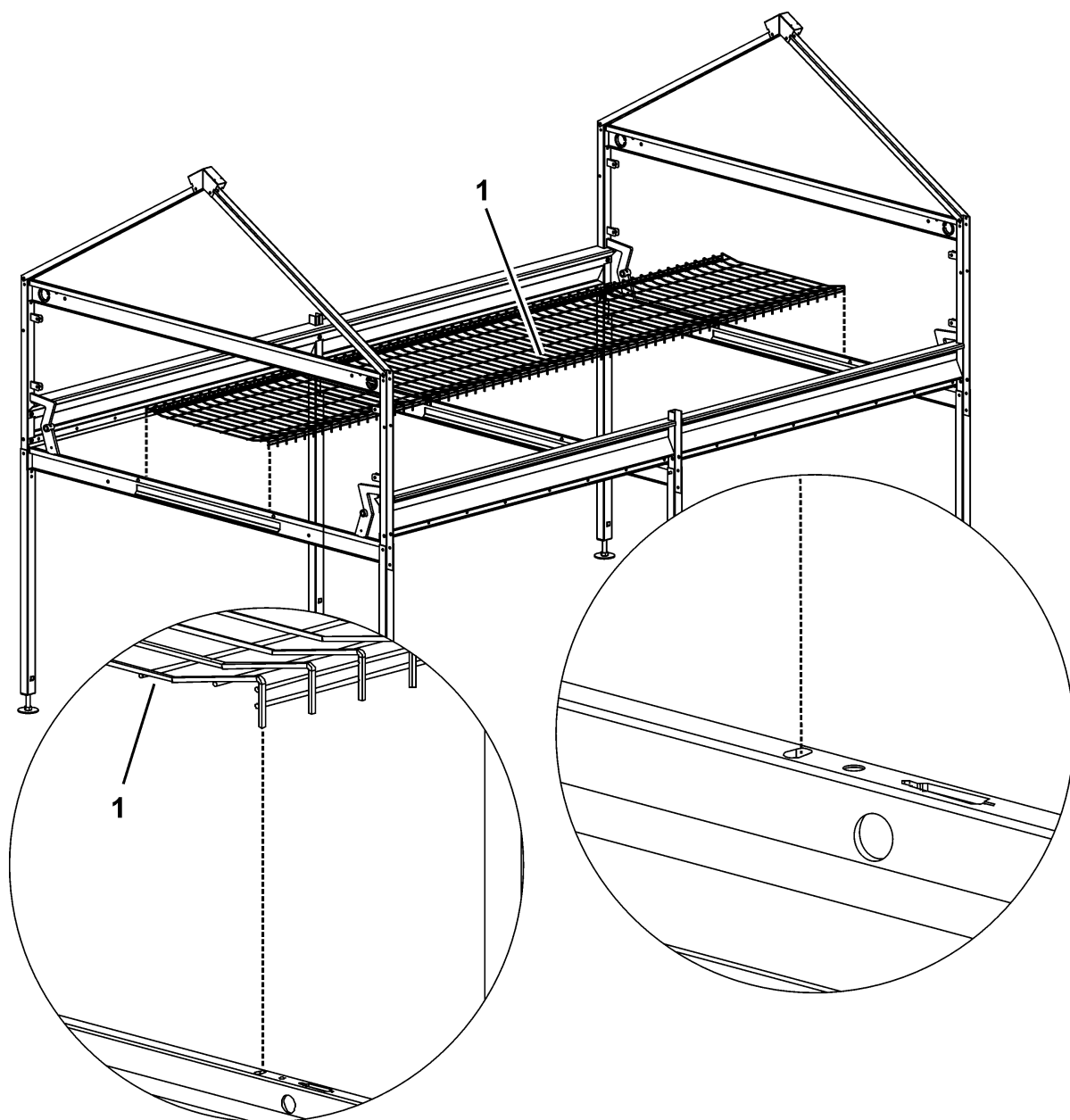
- The stillages are connected by means of side rails



Pos.	Qty.	Code no.	Description
1	2	83-02-3865	Side rail 2412 BD-C2+
2	12	99-10-1045	Hexagon nut M 6 galv. DIN 934
3	12	99-10-1368	Cross recessed countersunk head screw M 6x16 DIN 965-galv.

21.1.3 Installing the egg channel per tier 2412 for 1 tier

21.1.3.1 Installing the wire grille

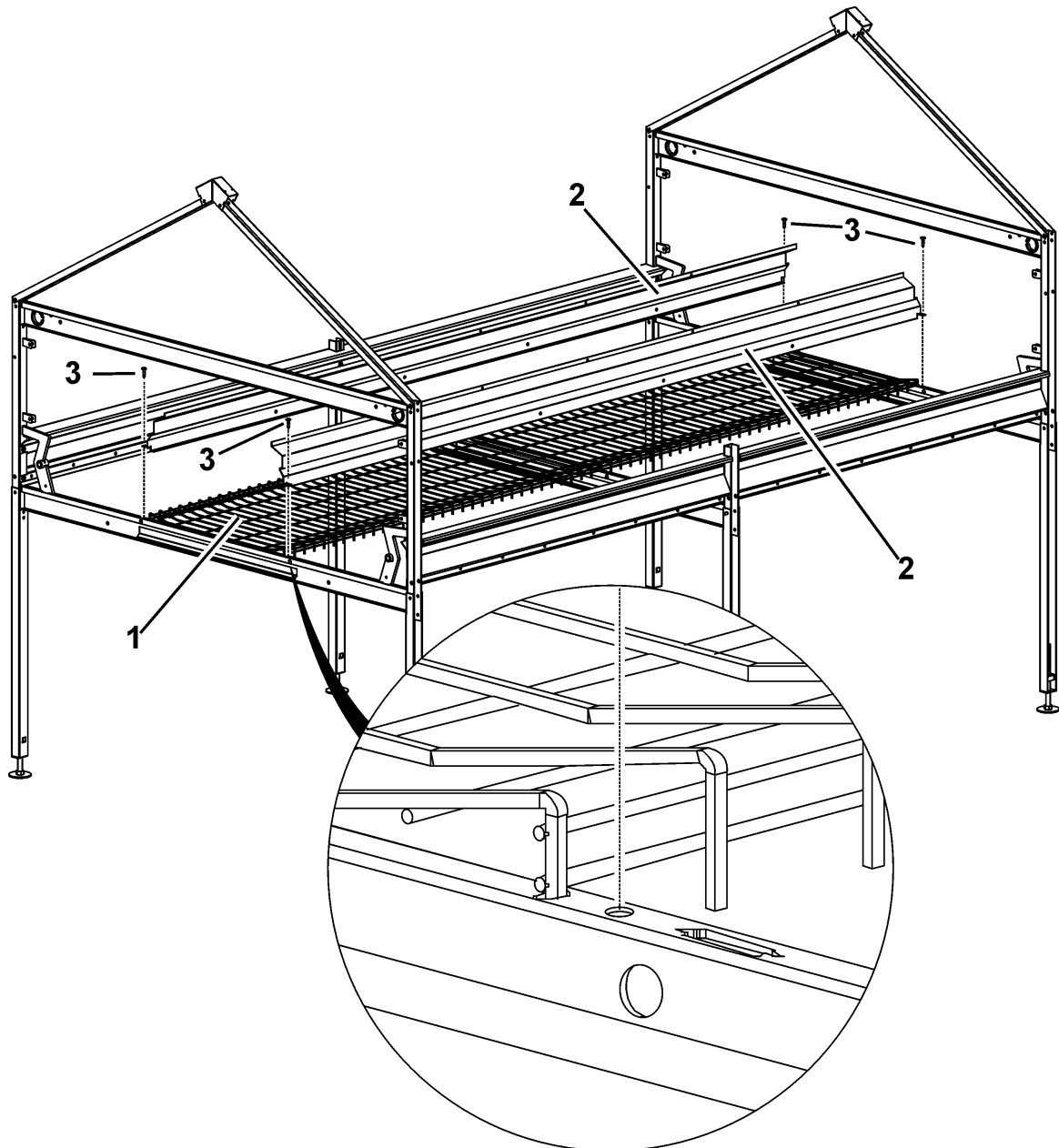


Pos.	Qty.	Code no.	Description
1	1	83-00-5719	Wire grille 2412 for egg channel double BD-C2+

21.1.3.2 Installing the longitudinal rails

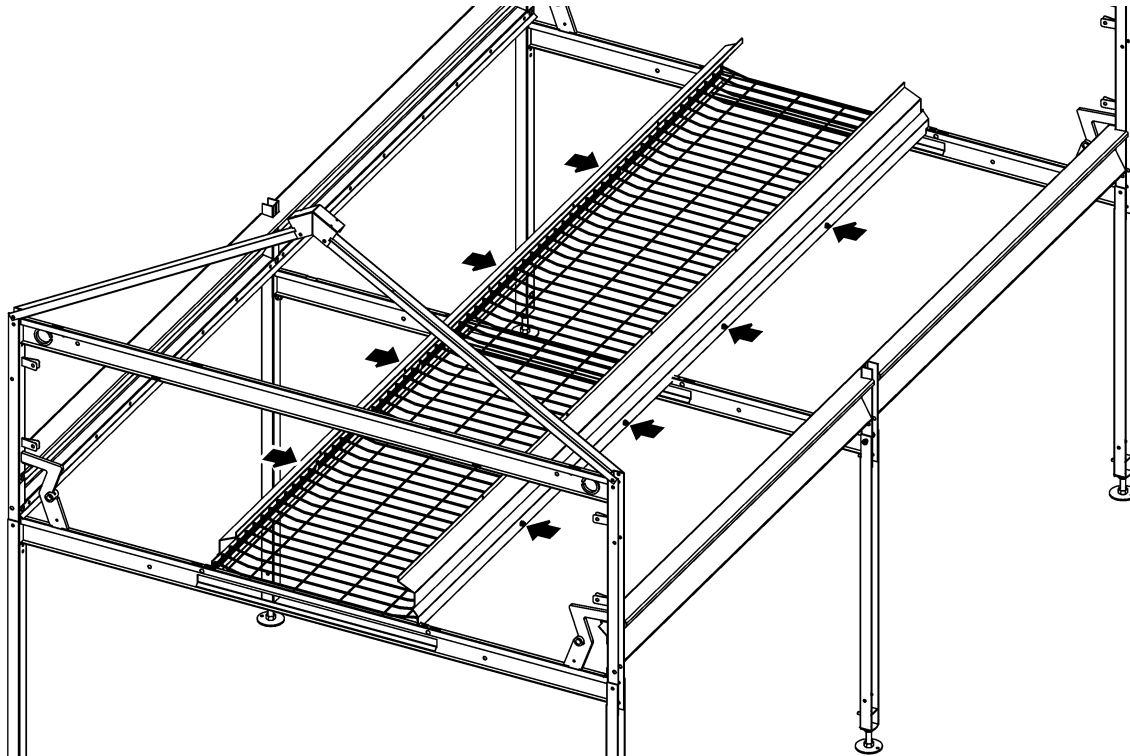
The particularity is that instead of the longitudinal supports used in the regular nest section, longitudinal rails are mounted in this case.

They are fixed to the stillages by means of tapping screws.



Pos.	Qty.	Code no.	Description
1	1	83-00-5719	Wire grille 2412 for egg channel double BD-C2+
2	2	83-00-6345	Longitudinal rail 2412 BD-C2+
3	6	99-10-3938	Tapping screw 4,8x 25 DIN 7504-K, galv.

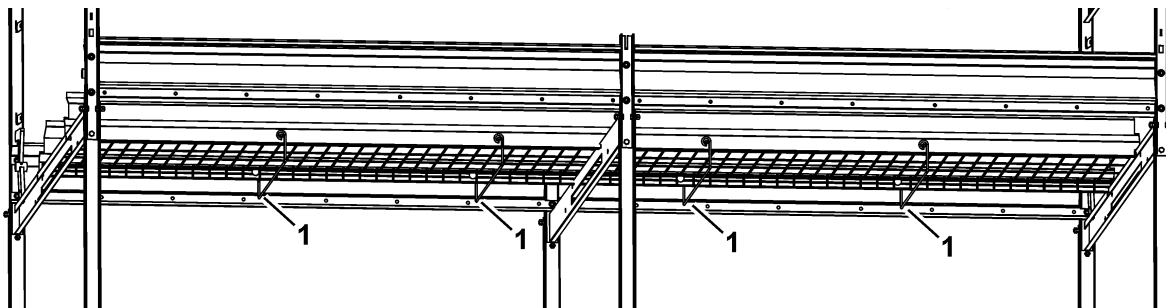
At the positions marked with an arrow, mushroom head square neck bolts + hexagon nuts are mounted within the section as in case of the assembly of the egg channel.



Pos.	Qty.	Code no.	Description
1	8	99-10-1602	Mushroom head square neck bolt M 6x 16 galv. DIN 603
2	8	99-10-1045	Hexagon nut M 6 galv. DIN 934-8

Within a passage, fix 4 brackets for returning egg belt underneath the egg channel. The brackets for returning egg belt are fixed to the projecting ends of the mushroom head square neck bolts or suspended there.

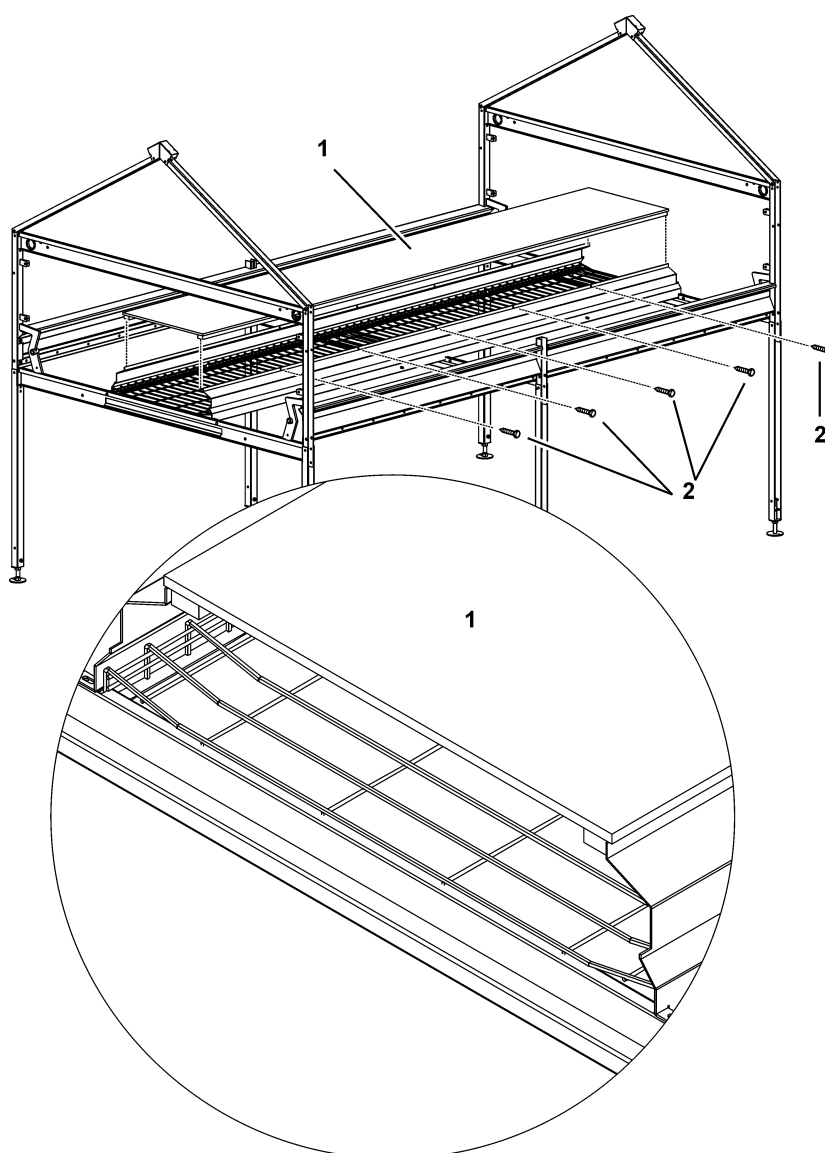
Pos.	Qty.	Code no.	Description
1	4	83-01-5122	Bracket for returning egg belt E500 galv.



21.1.4 Assembling the cover for passage 2412


Note:

Before starting to install the cover, make sure the egg belt has been thread in correctly..

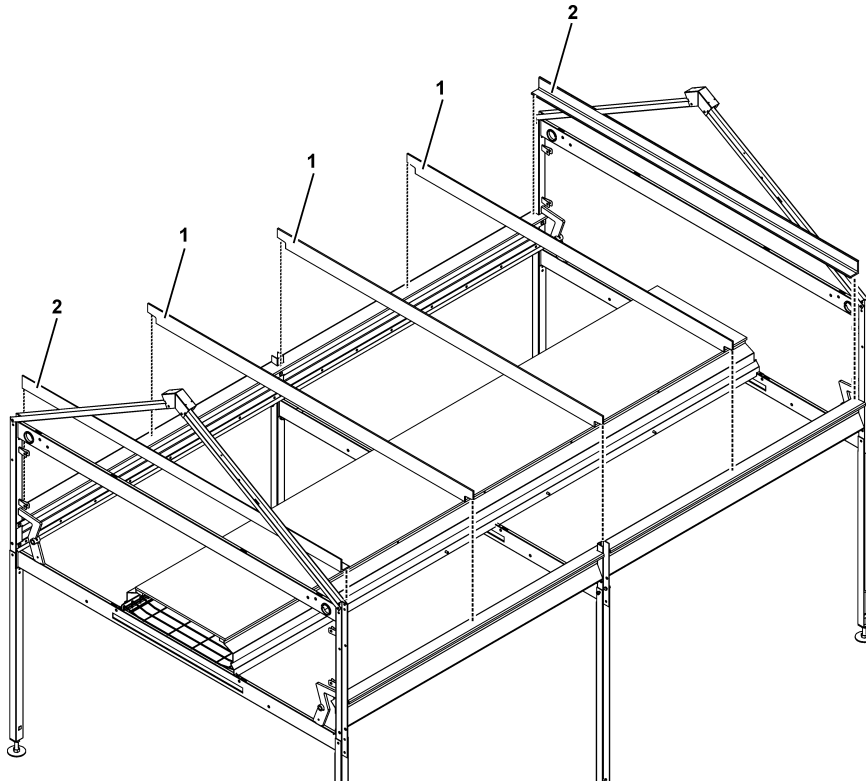


The cover is fixed to the longitudinal rails by means of chipboard screws.

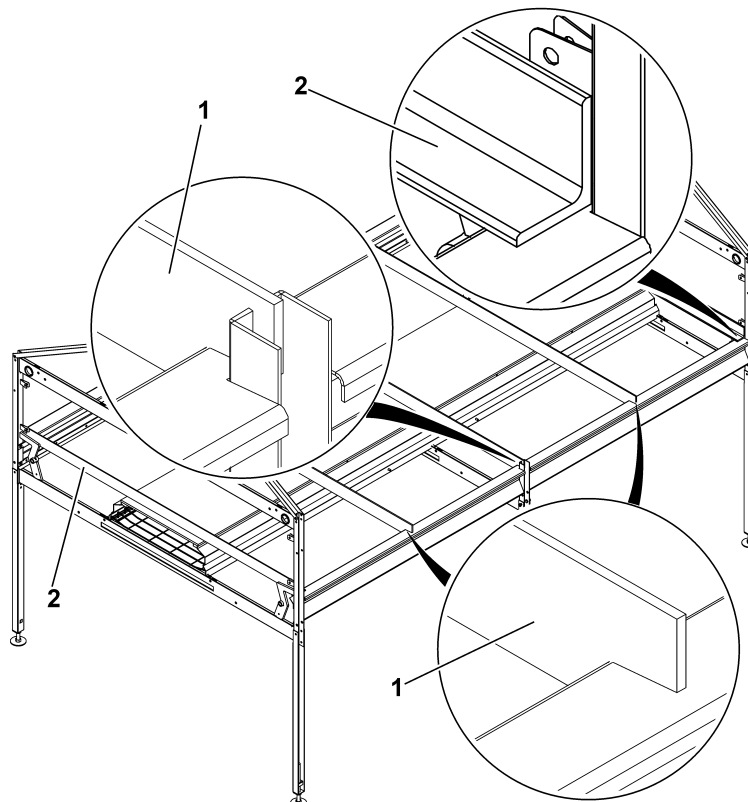
On each side of the egg channel, 5 chipboard screws are required

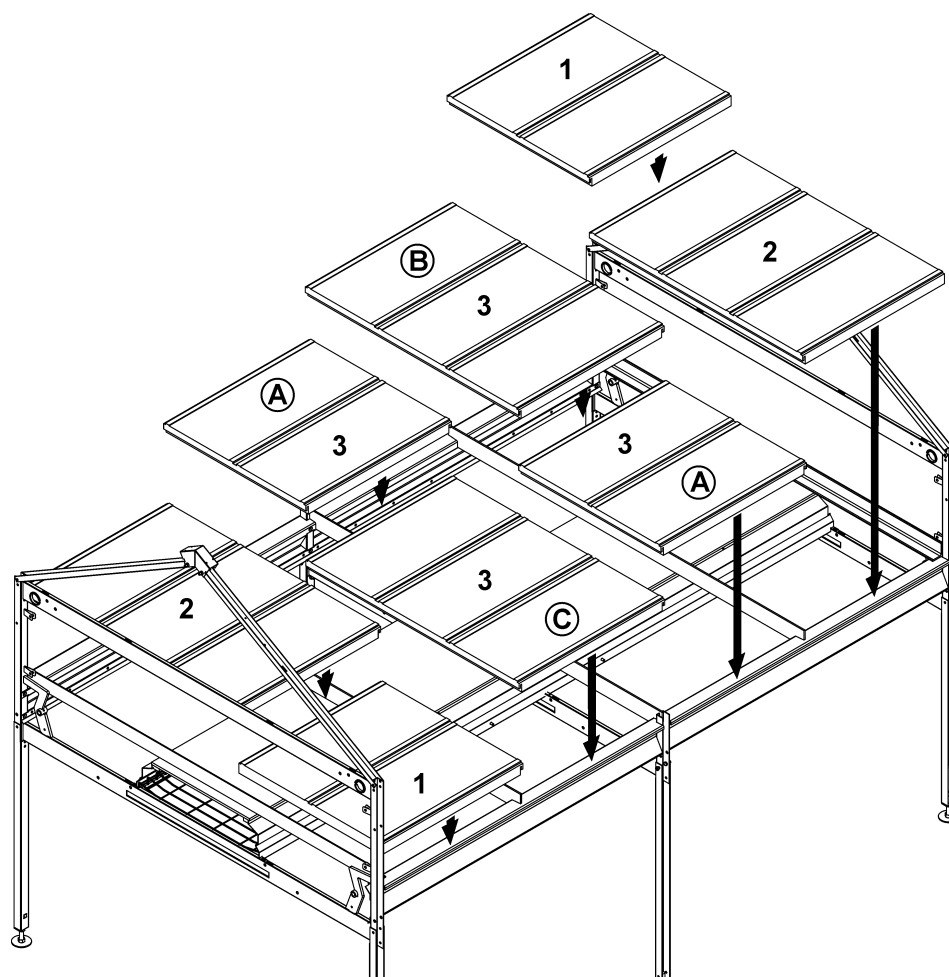
Pos.	Qty.	Code no.	Description
1	1	83-01-5061	Covering plate double 2412 for passage BD-C2+
2	10	99-10-3975	Chipboard screw 3,5x 30 SBC-Spax countersunk hd galv.

21.1.5 Assembling the plastic flooring for passage 2412



Pos.	Qty.	Code no.	Description
1	3	83-00-8249	Flat steel 60x5-1500 galv. for passage
2	2	83-00-8250	Angle 50x40x4-1500 galv. for passage





Pos.	Qty.	Code no.	Description
1	2	83-00-8251	Plastic flooring 1K 598x600 (pre-cut)
2	2	83-00-8252	Plastic flooring 1K 900x600 (pre-cut)
3	4	83-00-1222	Plastic flooring 1K 1200x600



Note: The position of the different plastic floorings is determined exactly!

On the outside of the passage, a flooring of 900 mm length (Pos. 2) and one of 598 mm length (Pos. 1) is required.

The two central rows are being cut from the plastic flooring of 1200 mm length (Pos. 3).

A+A = one plastic flooring of 1200 mm length cut in half (= 2x 600 mm)

B = 3/4 of one plastic flooring of 1200 mm length (= 900 mm)

C = 3/4 of one plastic flooring of 1200 mm length (= 900 mm)

21.2 Passage 2412 for 2 tiers

21.2.1 Assembling the stillages for passage

**Note:**

First determine the number and position of the planned passages according to the installation or planning drawing.

Start erecting the cage stands **only after that** !

The stillages are assembled as described in chapter 7.

The particularity about these stillages is that additional partitions are mounted closing the nest from the outside.

Furthermore the tubes for the nest floor resetting mechanism and the rods are fixed to the stillage.

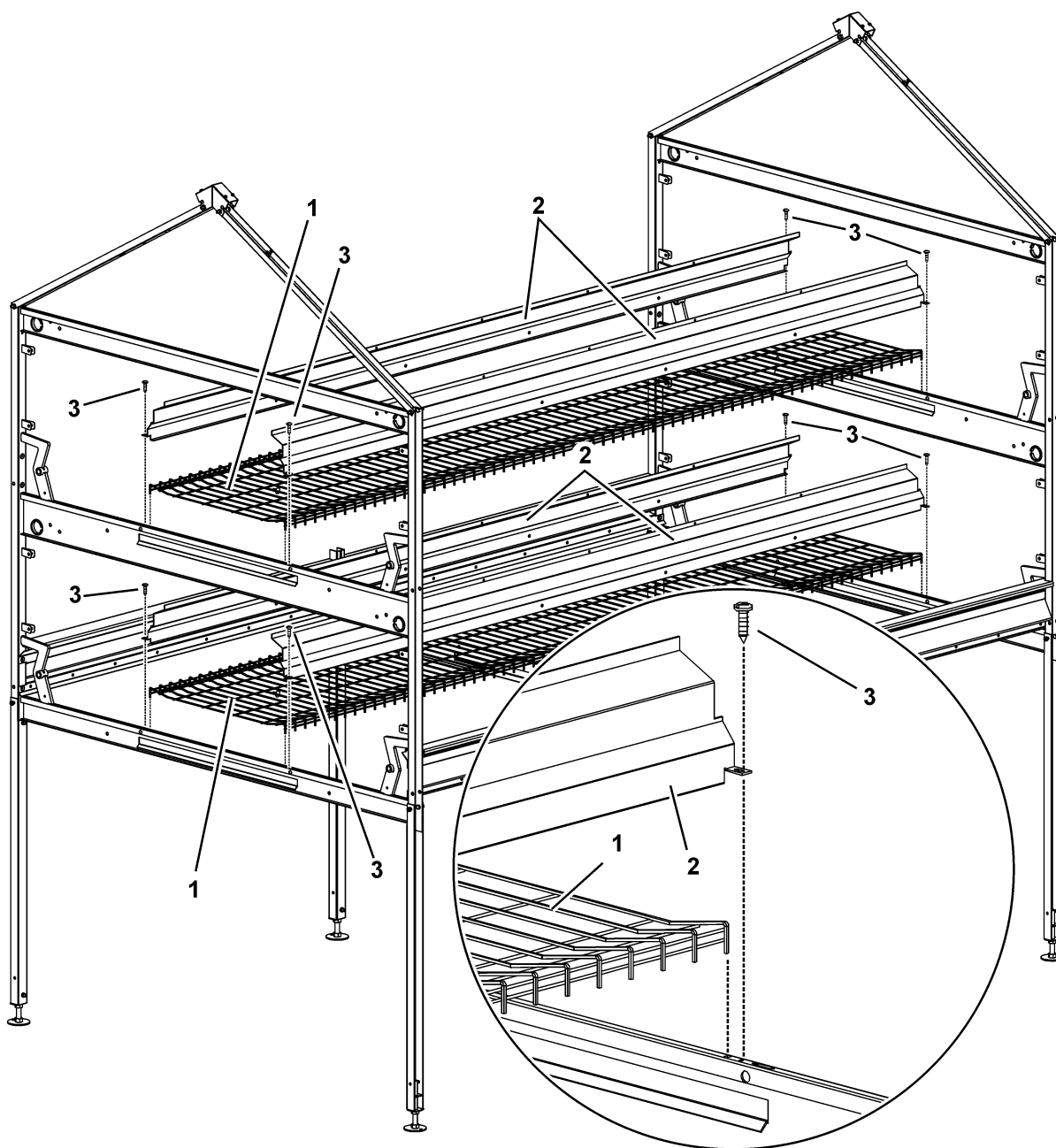
**Important:**

Take into consideration the alignment of the stillage. The edge at the opening for egg belt in the lower cross support has to point **in the direction of the egg belt idler unit**.

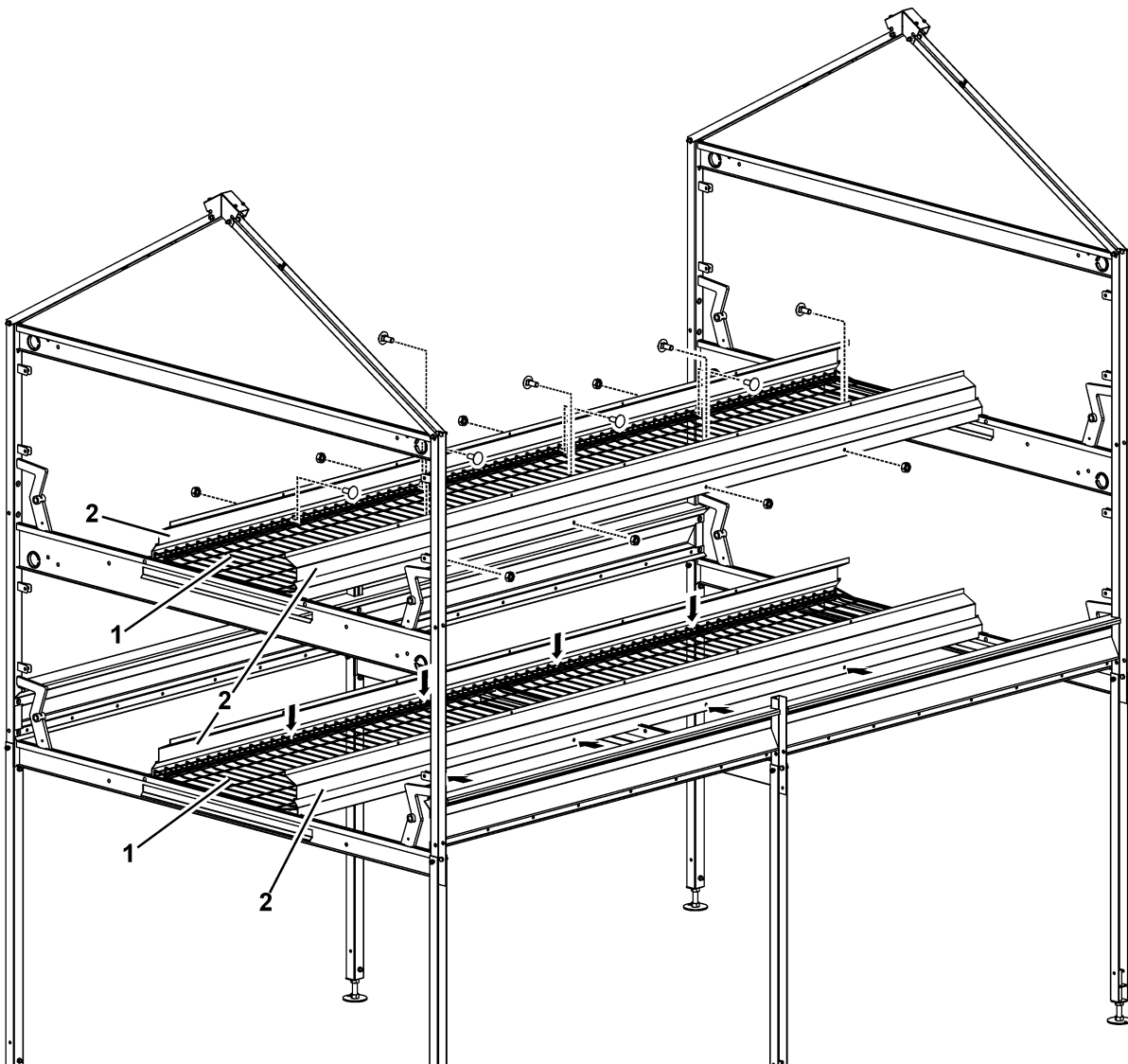
Do **not install any rods** in the passage (also see chapter 10)

21.2.2 Installing the egg channel per tier 2412 for 2 tiers

21.2.2.1 Installing the wire grille and longitudinal supports



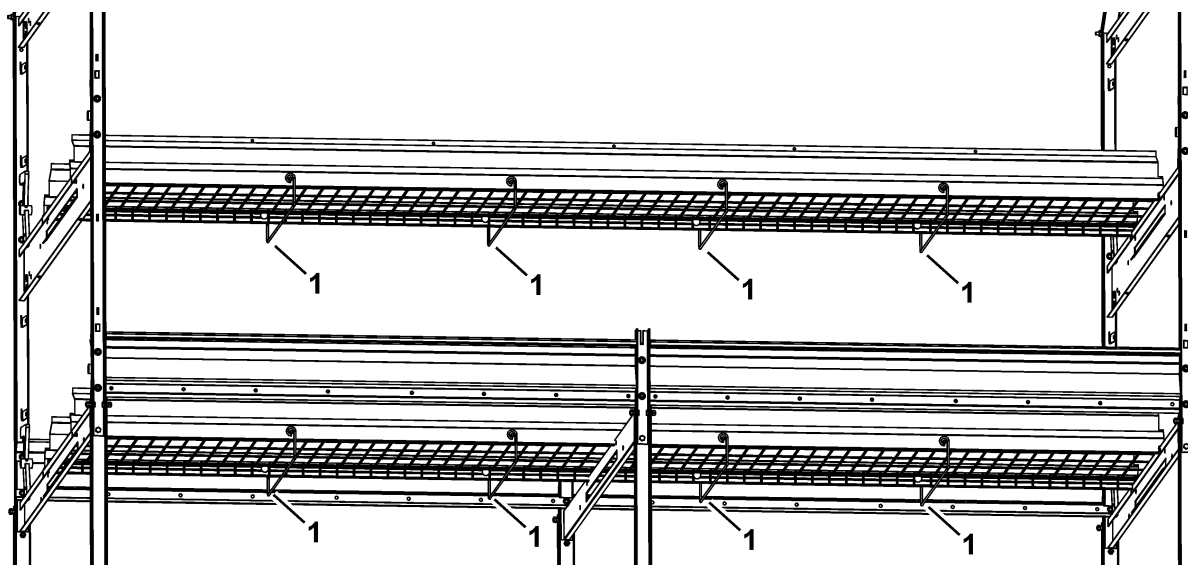
Pos.	Qty.	Code no.	Description
1	2	83-00-5719	Wire grille 2412 for egg channel double BD-C2+
2	4	83-00-6345	Longitudinal support 2412 for egg channel BD-C2+
3	8	99-10-3938	Tapping screw 4,8x 25 DIN 7504-K, galv.



In the positions marked with an arrow on the lower egg channel, the wire grille is also screwed down to the longitudinal support with mushroom head square neck bolts and hexagon nuts.

Pos.	Qty.	Code no.	Description
1	2	83-00-5719	Wire grille 2412 for egg channel double BD-C2+
2	4	83-00-6345	Longitudinal support 2412 BD-C2+
	16	99-10-1602	Mushroom head square neck bolt M 6x 16 galv. DIN 603
	16	99-10-1045	Hexagon nut M 6 verz DIN 934-8

21.2.2.2 Installing the bracket for returning egg belt

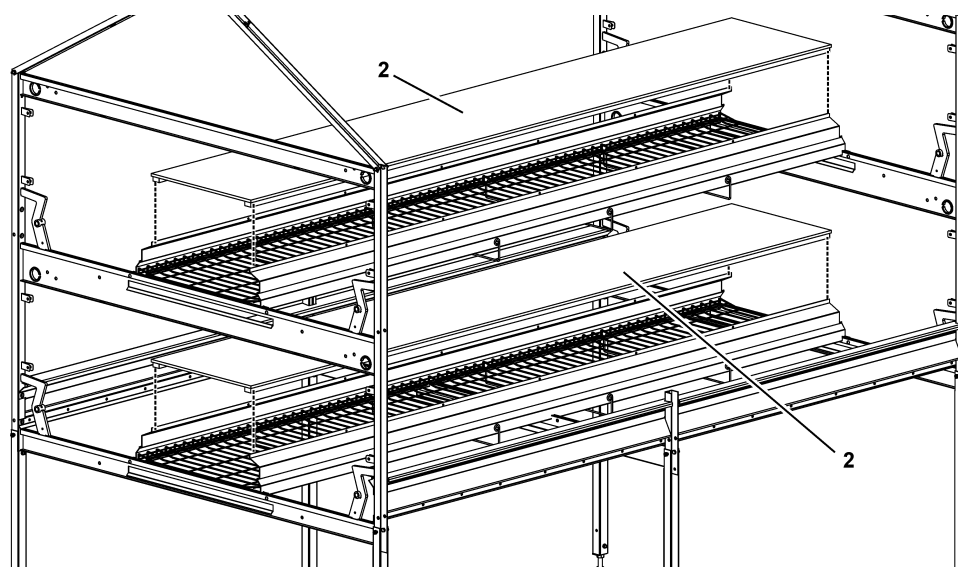


Within a passage, fix 4 brackets per tier for returning egg belt underneath the egg channel

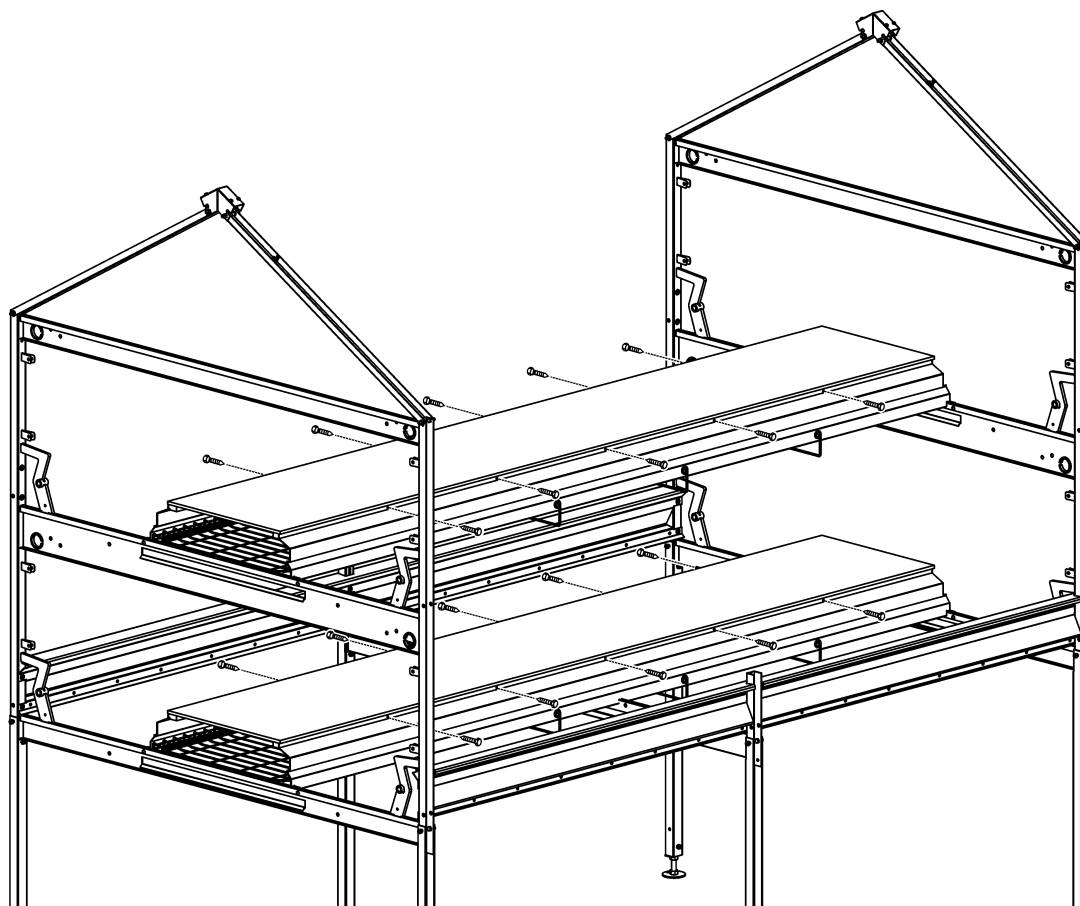
The brackets for returning egg belt are fixed to the projecting ends of the mushroom head square neck bolts or suspended there.

Pos.	Qty.	Code no.	Description
1	8	83-01-5122	Bracket for returning egg belt E500 galv

21.2.2.3 Assembling the cover for passage 2412

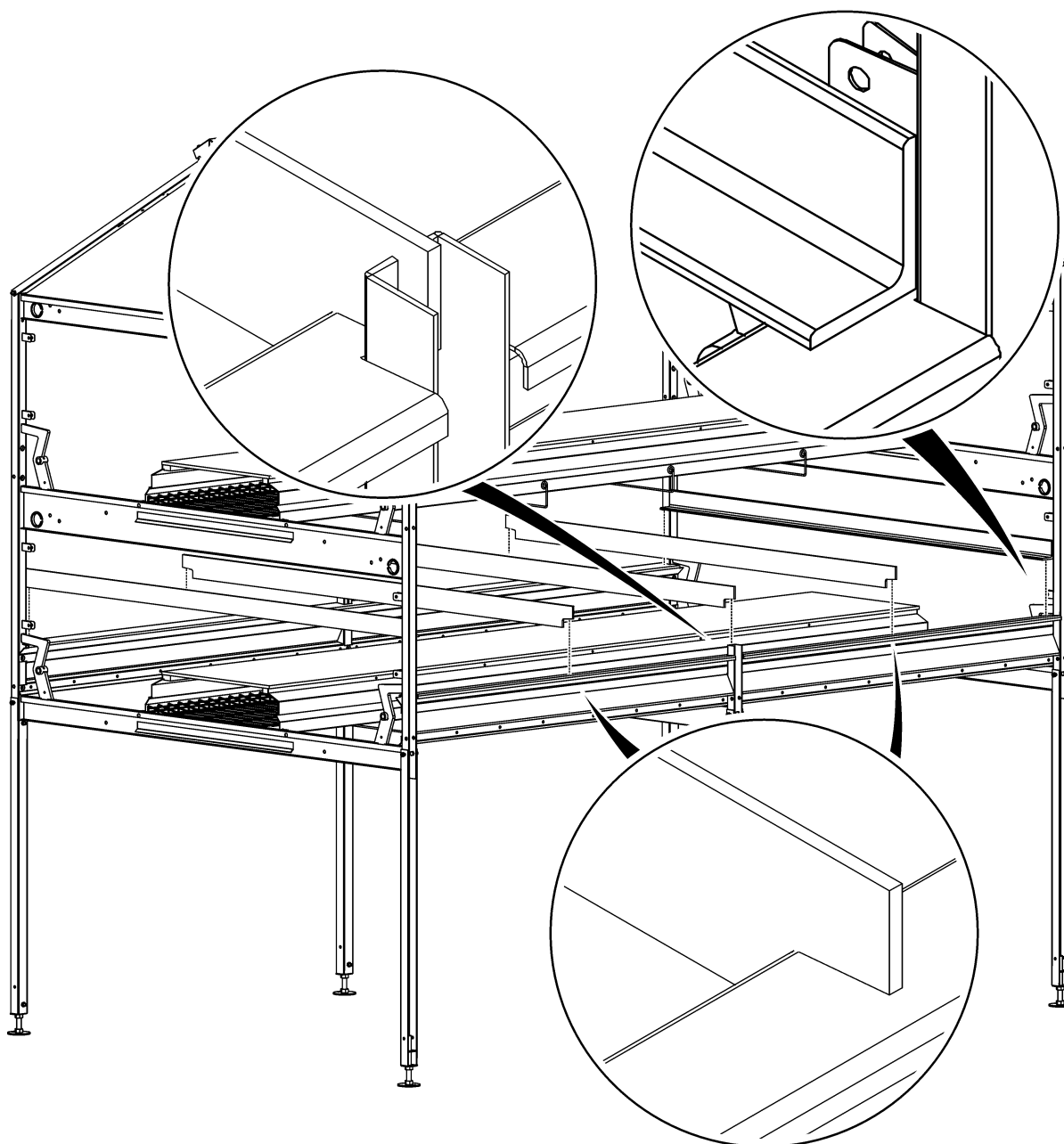


Pos.	Qty.	Code no.	Description
2	2	83-01-5061	Covering plate double 2412 for passage BD-C2+



Pos.	Qty.	Code no.	Description
2	2	83-01-5061	Covering plate double 2412 for passage BD-C2+
8	20	99-10-3975	Chipboard screw 3,5x 30 SBC-Spax countersunk hd galv

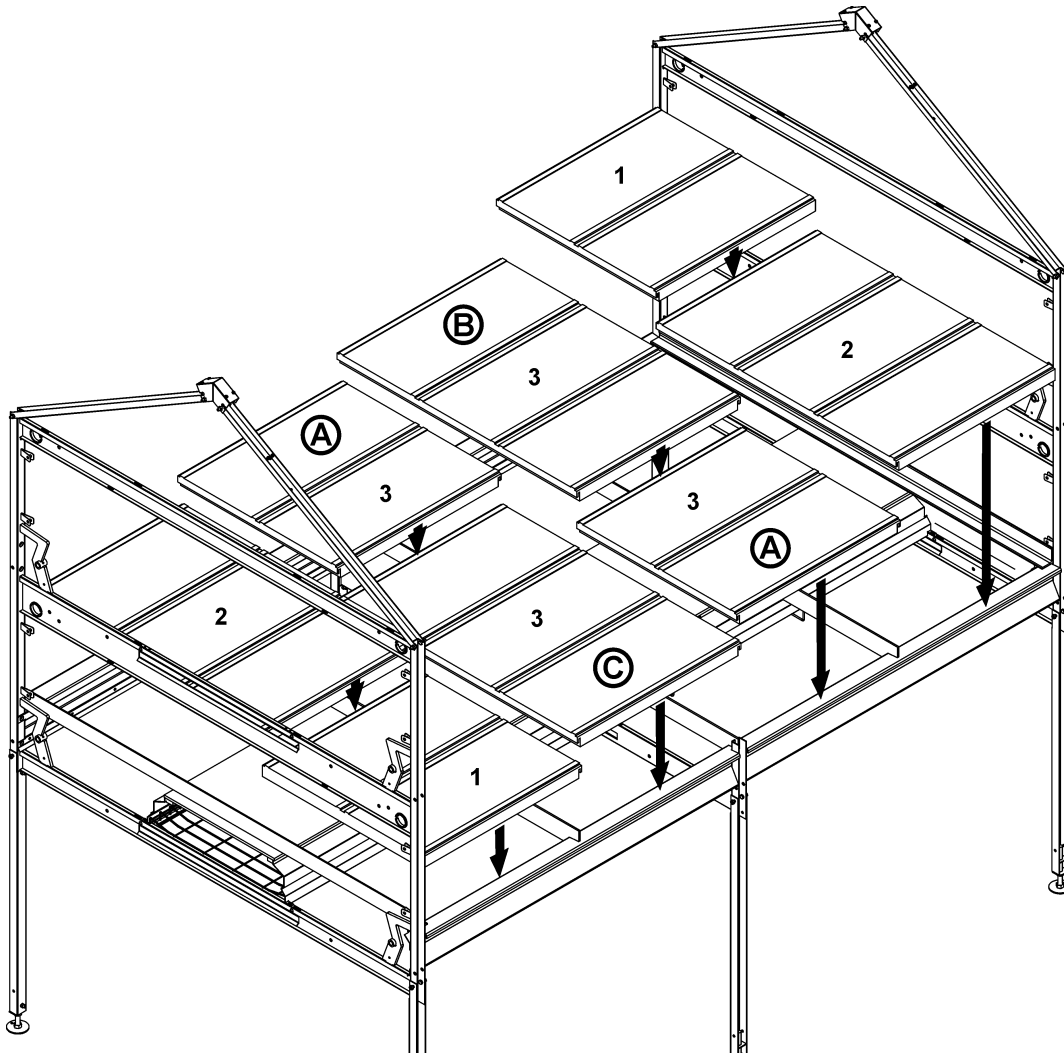
21.2.2.4 Assembling the plastic flooring for passage 2412




Pos.	Qty.	Code no.	Description
1	3	83-00-8249	Support double central passage BD-C2+
2	2	83-00-8250	Support double outer passage BD-C2+



In the following drawing, the upper egg channel is not shown for reasons of clarity.



Pos.	Qty.	Code no.	Description
1	2	83-00-8251	Plastic flooring 1K 598x600 (pre-cut)
2	2	83-00-8252	Plastic flooring 1K 900x600 (pre-cut)
3	4	83-00-1222	Plastic flooring 1K 1200x600



Note: The position of the different plastic floorings is determined exactly!

On the outside of the passage, a flooring of 900 mm length (Pos. 2) and one of 598 mm length (Pos. 1) is required.

The two central rows are being cut from the plastic flooring of 1200 mm length (Pos. 3).


A+A = one plastic flooring of 1200 mm length cut in half (= 2x 600 mm)

B = 3/4 of one plastic flooring of 1200 mm length (= 900 mm)

C = 3/4 of one plastic flooring of 1200 mm length (= 900 mm)

22 Installing the passage 1206


22.1 Assembling the cage stands for passage

	<p>Note:</p> <p>First determine the number and position of the planned passages according to the installation or planning drawing.</p> <p>Start erecting the cage stands only after that !</p>
---	--

The stillages are assembled as described in chapter 7.

The particularity about these stillages is that additional partitions are mounted closing the nest from the outside.

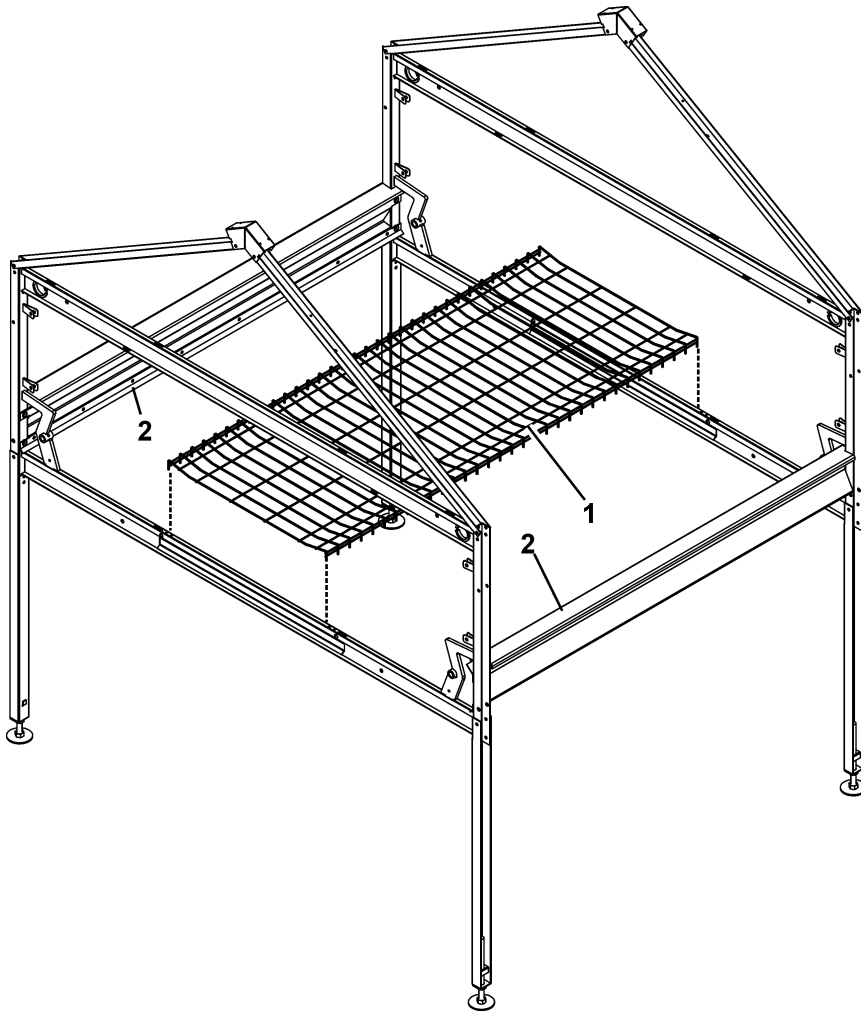
Furthermore the tubes for the nest floor resetting mechanism and the rods are fixed to the stillage.

	<p>Important:</p> <p>Take into consideration the alignment of the stillage. The edge at the opening for egg belt in the lower cross support has to point in the direction of the egg belt idler unit.</p> <p>Do not install any rods in the passage (also see chapter 10)</p>
---	--

The stillages are connected by means of :

Pos.	Qty.	Code no.	Description
1	2	83-00-8243	Side rail 1206 BD-C2+
2	4	99-10-1368	Cross recessed countersunk head screw M 6x16 DIN 965-5.8 galv
3	4	99-10-1045	Self-locking counter nut M6 DIN 985-6 galv.

22.2 Assembling the egg channel for passage 1206

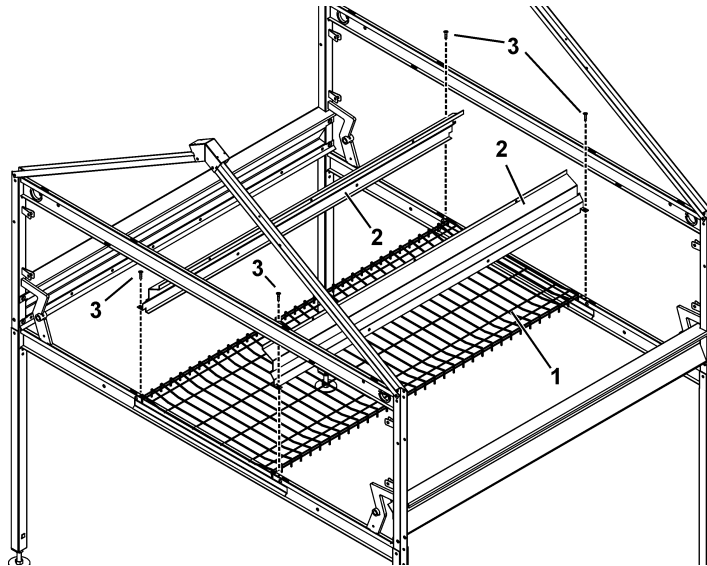


Pos.	Qty.	Code no.	Description
1	0,5	83-00-5719	Wire grille 1206 for egg channel double BD-C2+
2	2	83-00-8243	Side rail 1206 BD-C2+

22.2.1 Installing the longitudinal rails

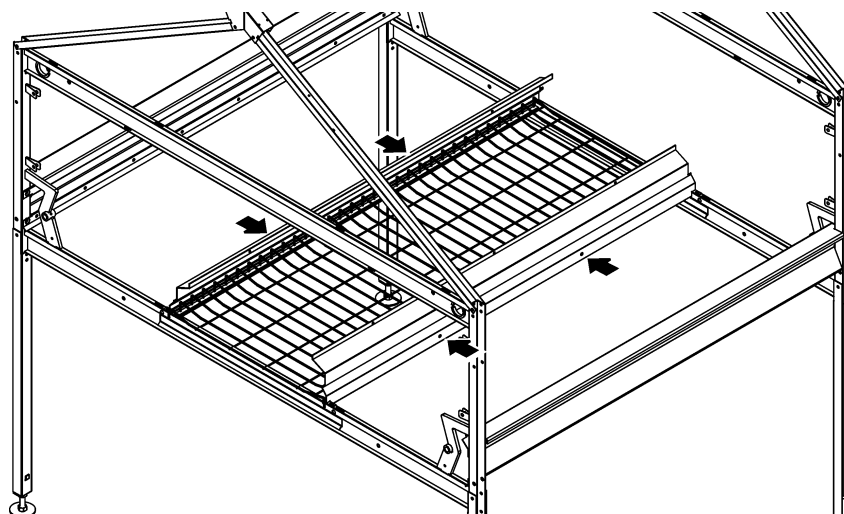
The particularity is that instead of the longitudinal supports used in the regular nest section, longitudinal rails are mounted in this case.

They are fixed to the stillages by means of tapping screws.



Pos.	Qty.	Code no.	Description
1	0,5	83-00-5719	Wire grille 1206 for egg channel double BD-C2+
2	2	83-01-5125	Longitudinal rail 1206 BD-C2+
3	4	99-10-3938	Tapping screw 4,8x 25 DIN 7504-K, verz.

At the positions marked with an arrow, mushroom head square neck bolts + hexagon nuts are mounted within the section as in case of the assembly of the egg channel.

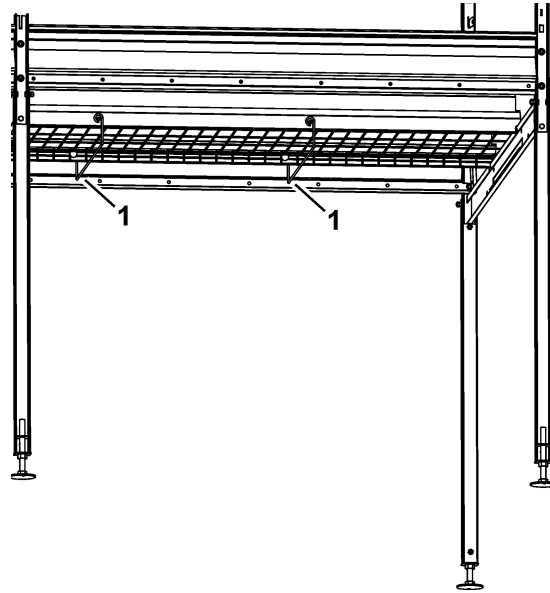


Pos.	Qty.	Code no.	Description
	4	99-10-1602	Mushroom head square neck bolt M 6x 16 galv. DIN 603
	4	99-10-1045	Self-locking counter nut M6 DIN 985-6 galv.

Within a passage, fix 2 brackets for returning egg belt underneath the egg channel.

Fix the brackets for returning egg belt on the projecting ends of the mushroom head square neck bolts.

Pos.	Qty.	Code no.	Description
1	2	83-01-5122	Bracket for returning egg belt E500 galv

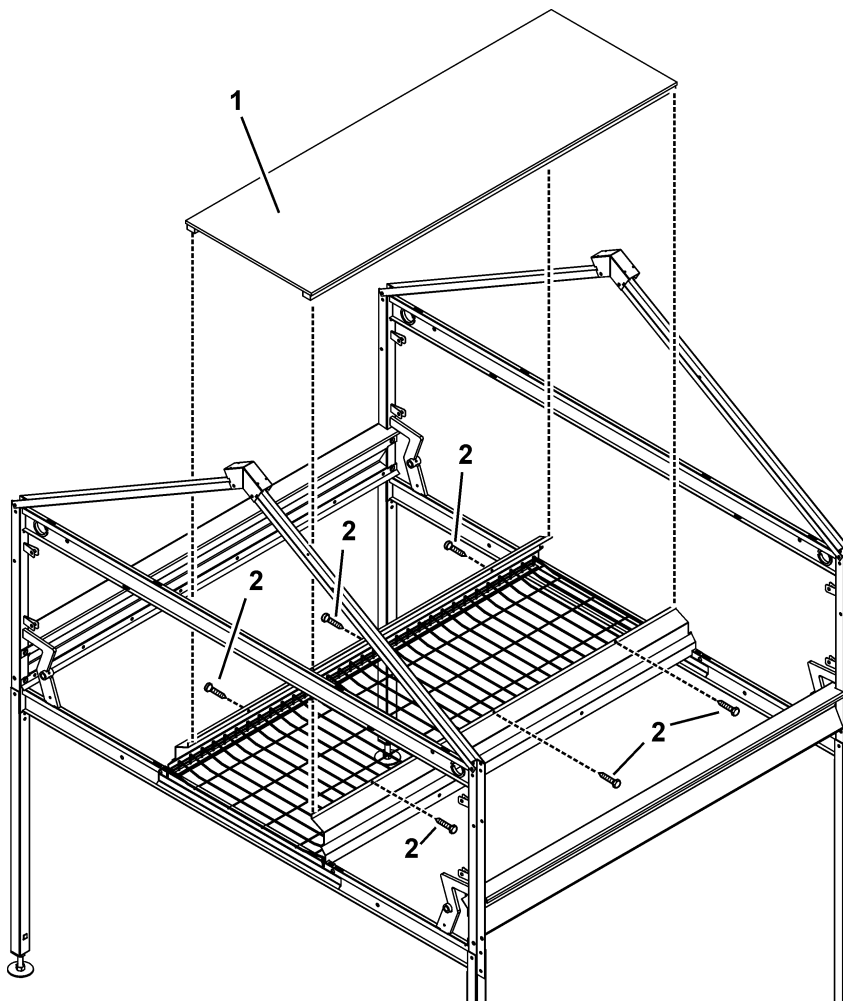


22.2.2 Assembling the cover for passage 1206



Note:

Before starting to install the cover, make sure the egg belt has been thread in correctly..

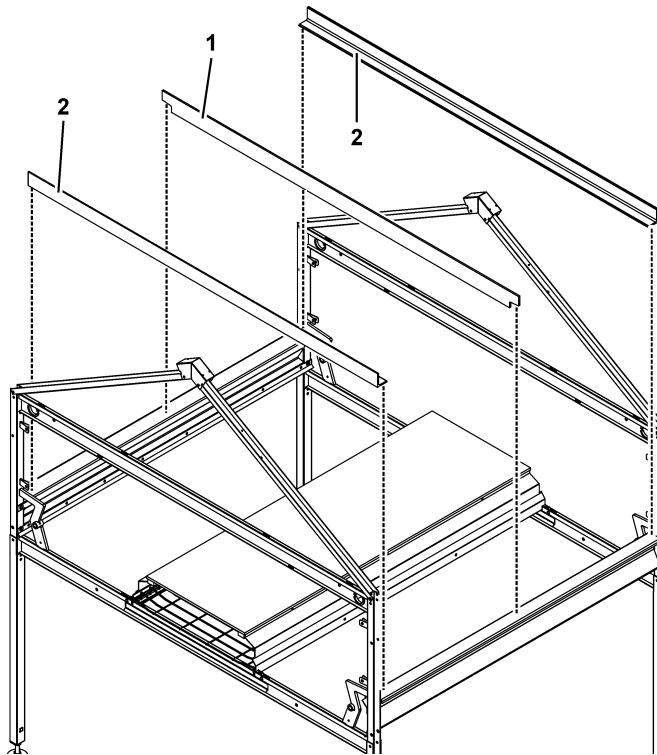


The cover is fixed to the longitudinal rails by means of chipboard screws.

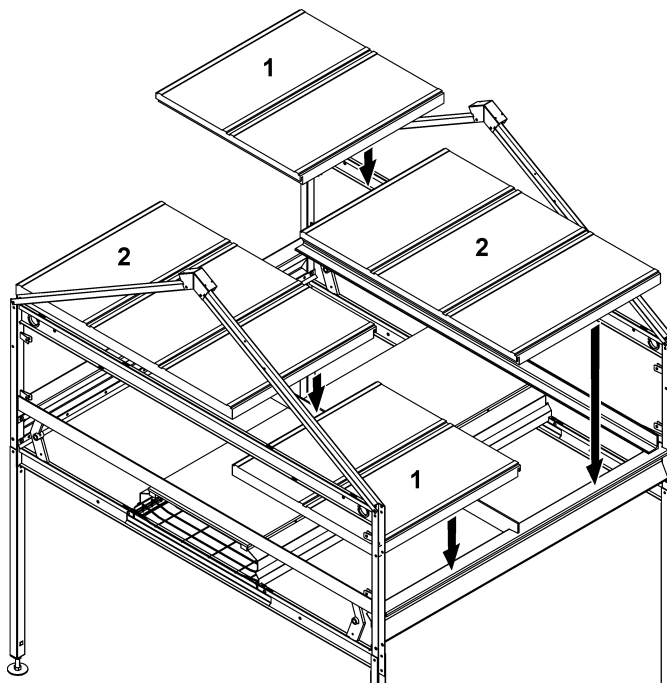
On each side of the egg channel, 3 chipboard screws are required.

Pos.	Qty.	Code no.	Description
1	1	83-01-5127	Covering plate double 1206 for passage BD-C2+
2	6	99-10-3975	Chipboard screw 3,5x 30 SBC-Spax countersunk hd galv

22.2.3 Installing the plastic flooring for passage 1206



Pos.	Qty.	Code no.	Description
1	3	83-00-8249	Support double central passage BD-C2+
2	2	83-00-8250	Support double outer passage BD-C2+



Pos.	Qty.	Code no.	Description
1	2	83-00-8251	Plastic flooring 1K 598x600 (pre-cut)
2	2	83-00-8252	Plastic flooring 1K 900x600 (pre-cut)

23 Installing the drives for ejection mechanism

23.1 Which type of drive is used for a specified row length.

The type of drive to be used depends on the length of the nest rows and the type of nest.

Use the following type and number of drives for:

Wall nest 1 tier up to max. 41m row length

Wall nest 2 tiers up to max. 20 m row length

Double nest 1 tier up to max. 20 m row length

1x 36-00-6200 Drive cpl. for ejection mechanism RW45/row end

Wall nest 1 tier up to max. 60 m row length

Wall nest 2 tiers up to max. 60 m row length

Double nest 1 tier up to max. 60 m row length

1x 36-00-6210 Drive cpl. for ejection mechanism RW245/row end.

Wall nest 1 tier up to max. 97 m row length

Wall nest 2 tiers up to max. 97 m row length

Double nest 1 tier up to max. 97 m row length

1x 36-00-6220 Drive cpl. for ejection mechanism RW405/middle of row

Double nest 2 tiers up to max. 20 m row length

2x 36-00-6200 Drive cpl. for ejection mechanism RW45/row end

Double nest 2 tiers up to max. 60 m row length

2x 36-00-6210 Drive cpl. for ejection mechanism RW245/row end

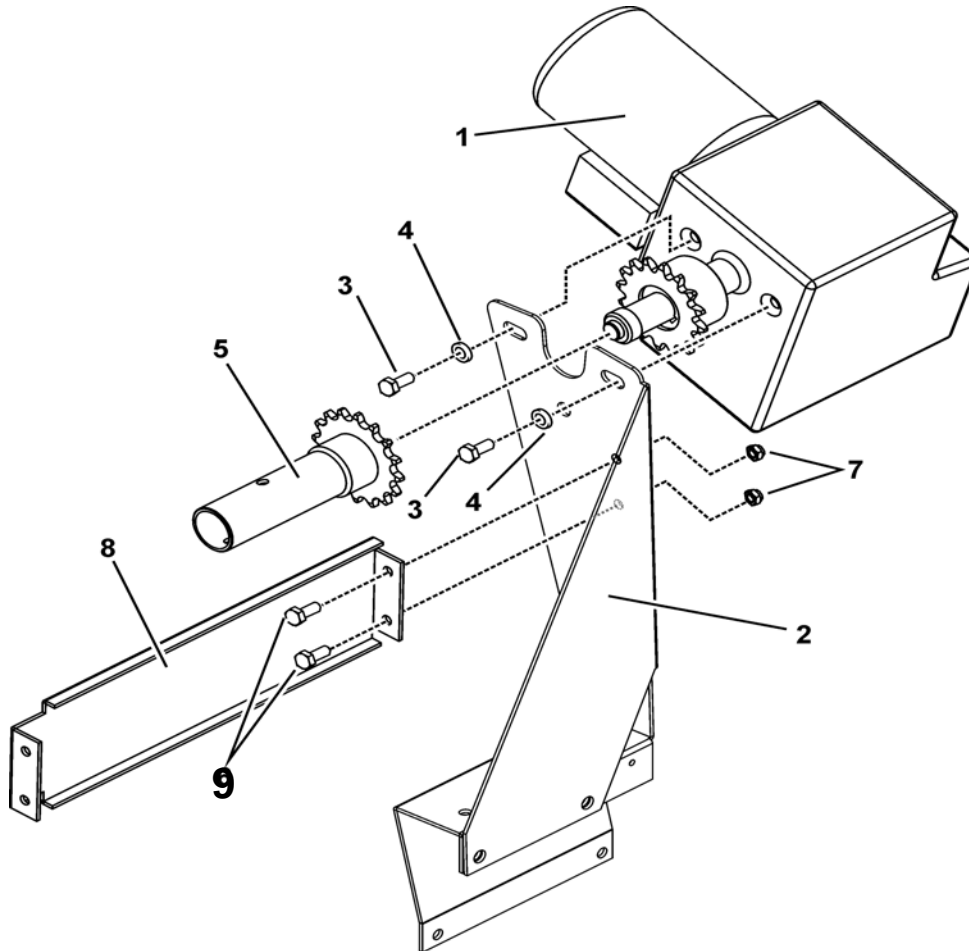
Double nest 2 tiers up to max. 97 m row length

2x 36-00-6220 Drive cpl. for ejection mechanism RW405/middle of row

23.2 Pre-assembling drives RW45 and RW245 at the end of the row

The drives RW 45 and RW 245 have to be installed at the end of the row.

Pre-assemble the group on the floor and fix it to the nest as a whole.

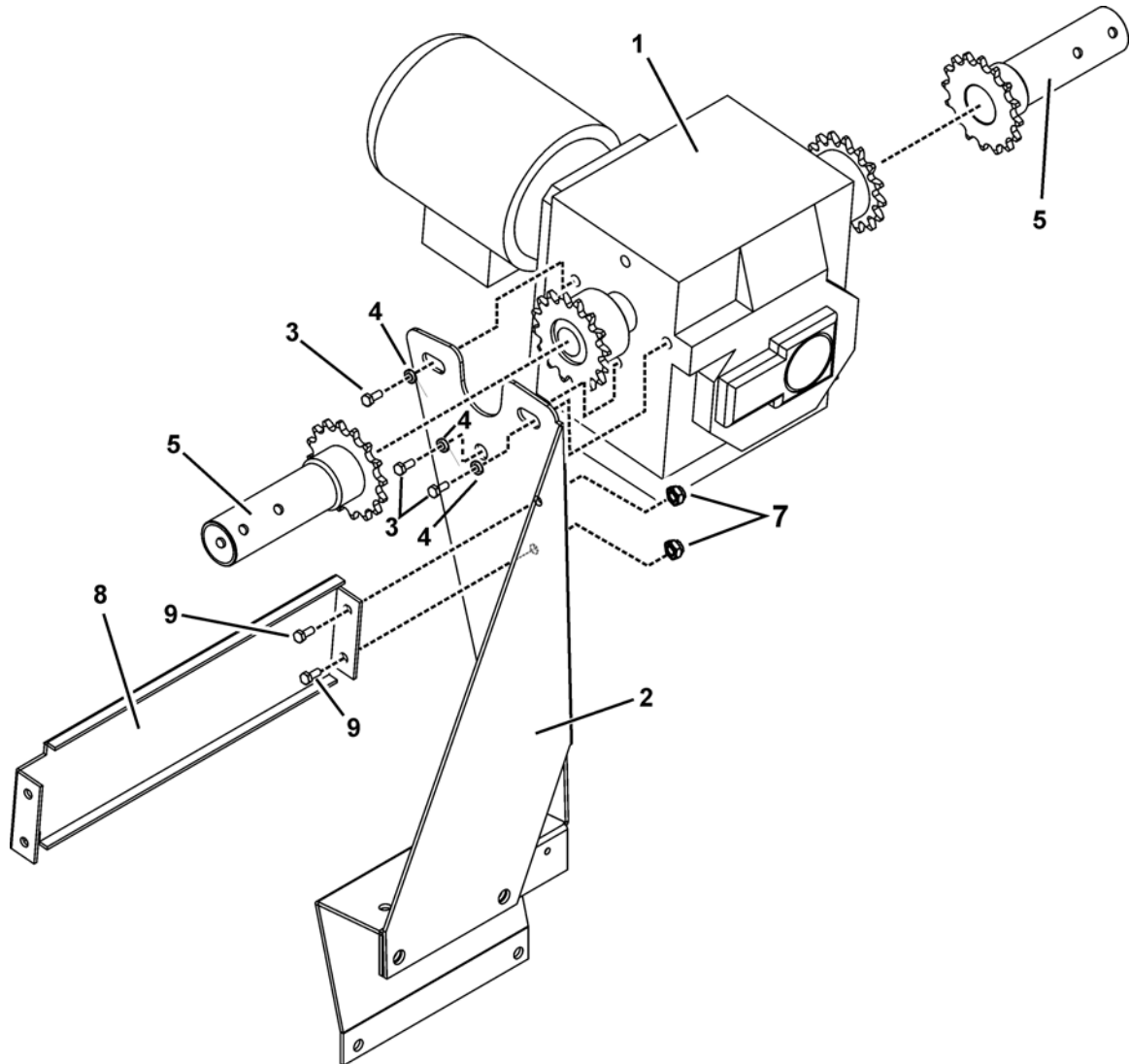


Pos.	Qty.	Code no.	Description
1	1	36-00-6202	Cable winch 0,09 230 50/60 RW45 320/250kg with limit switch.
	1	99-50-3152	Cable winch 0.37 230 50/60 RW245 850/850kg with limit switch
2	1	83-00-7212	Bracket BD-C2+ for cable winch RW45/240/405
3	2	99-10-1144	Hexagon head screw M 10x 25 galv. DIN 558
4	2	99-20-1055	Spring washer A 10 DIN 127-A2E
5	1	36-00-6201	Chain bolt coupler 1/2"/Z12 for cable winch RW45/BD-C2+
	1	99-50-3183	Chain bolt coupler 1"/25 for cable winch 0,37/0,55KW
6		99-10-1265	Hexagon head screw M 8x 55 galv. DIN 558
7	2	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv.
8	1	83-00-9060	Fixation at main post for bracket BD-C2+
9	2	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558

23.3 Pre-assembling drive RW 405 in the middle of the row

Install the drive RW 405 in the middle of the row.

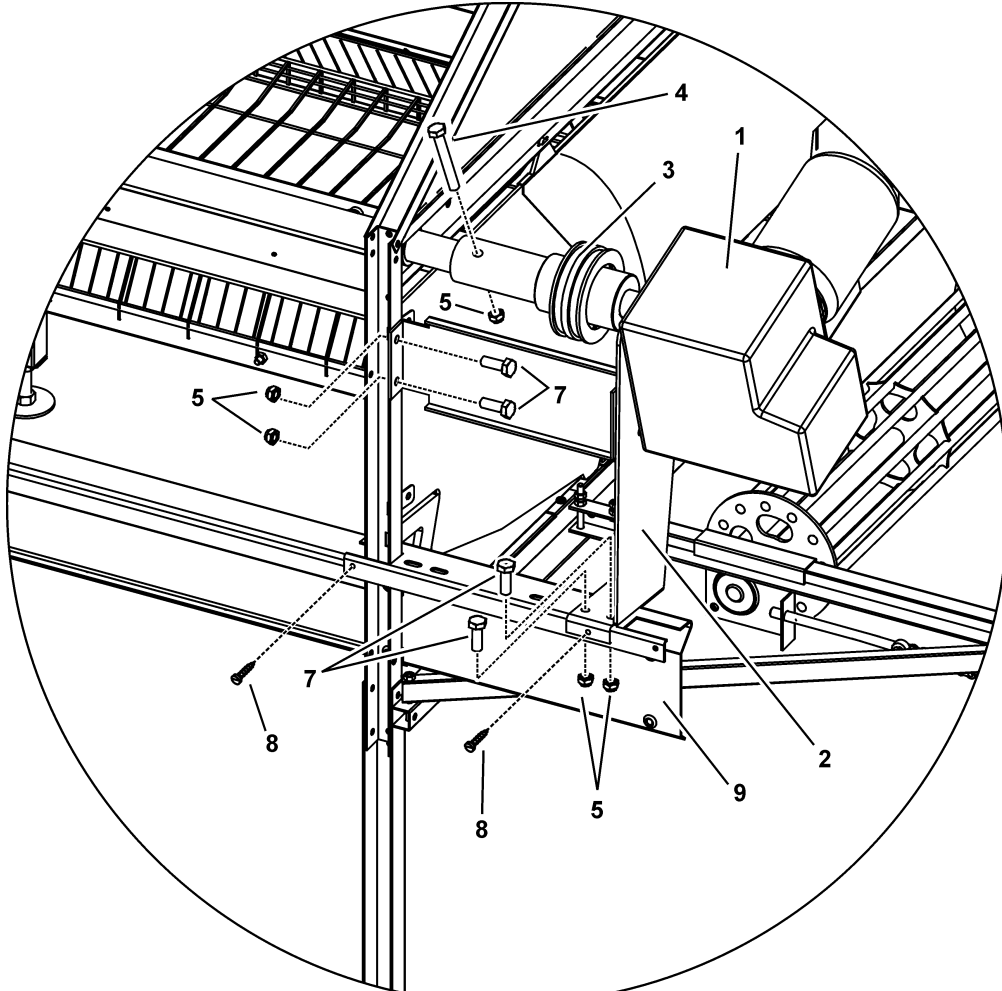
Pre-assemble the group on the floor and fix it to the nest as a whole.



Pos.	Qty.	Code no.	Description
1	1	99-50-3154	Cable winch 0.55 230 50/60 RW405 1400/1400kg with limit switch
2	1	83-00-7212	Bracket BD-C2+ for cable winch RW45/240/405
3	3	99-10-1144	Hexagon head screw M 10x 25 galv. DIN 558
4	3	99-20-1055	Spring washer A 10 DIN 127-A2E
5	2	99-50-3183	Chain bolt coupler 1"/25 for cable winch 0,37/0,55KW
6		99-10-1265	Hexagon head screw M 8x 55 galv. DIN 558
7	2	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv
8	1	83-00-9060	Fixation at main post for bracket BD-C2+
9	2	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558

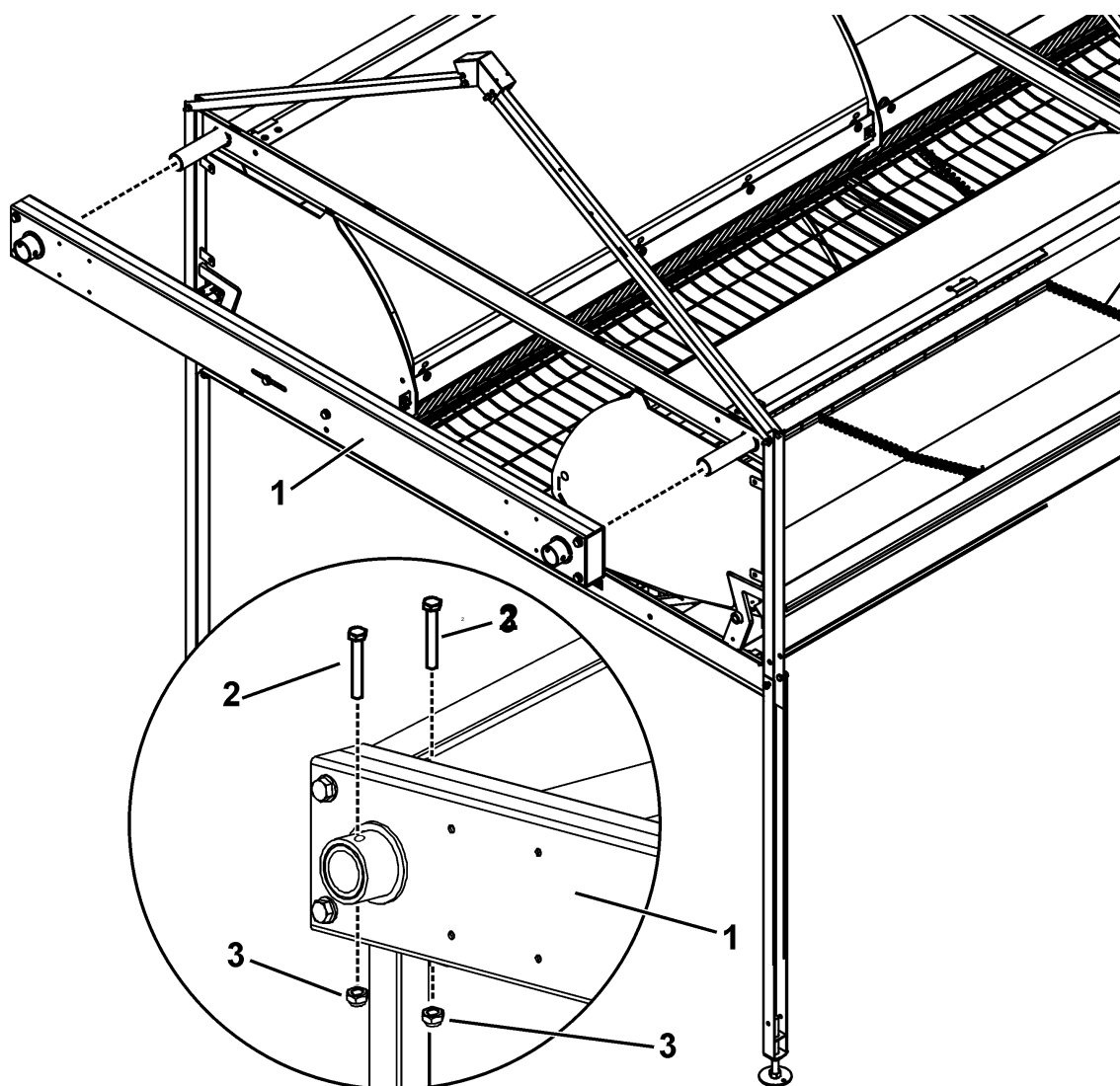
23.4 Installing the drive and the gear box for double nest 1 tier / row end

23.4.1 Drive



Pos.	Qty.	Code no.	Description
1	1	36-00-6202	Cable winch 0,09 230 50/60 RW45 320/250kg with limit switch
	1	99-50-3152	Cable winch 0.37 230 50/60 RW245 850/850kg with limit switch
2	1	83-00-7212	Bracket BD-C2+ for cable winch RW45/240/405
3	1	36-00-6201	Chain bolt coupler 1/2"/Z12 for cable winch RW45/BD-C2+
	1	99-50-3183	Chain bolt coupler 1"/25 for cable winch 0,37/0,55KW
4	1	99-10-1265	Hexagon head screw M 8x 55 galv. DIN 558
5	5	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv
6	1	83-00-9060	Fixation at main post for bracket BD-C2+
7	4	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558
8	2	99-10-3938	Drilling screw 4,8x 25 DIN 7504-K, galv
9	1	83-00-9589	Extension for side rail BD-C2+

23.4.2 Gear box



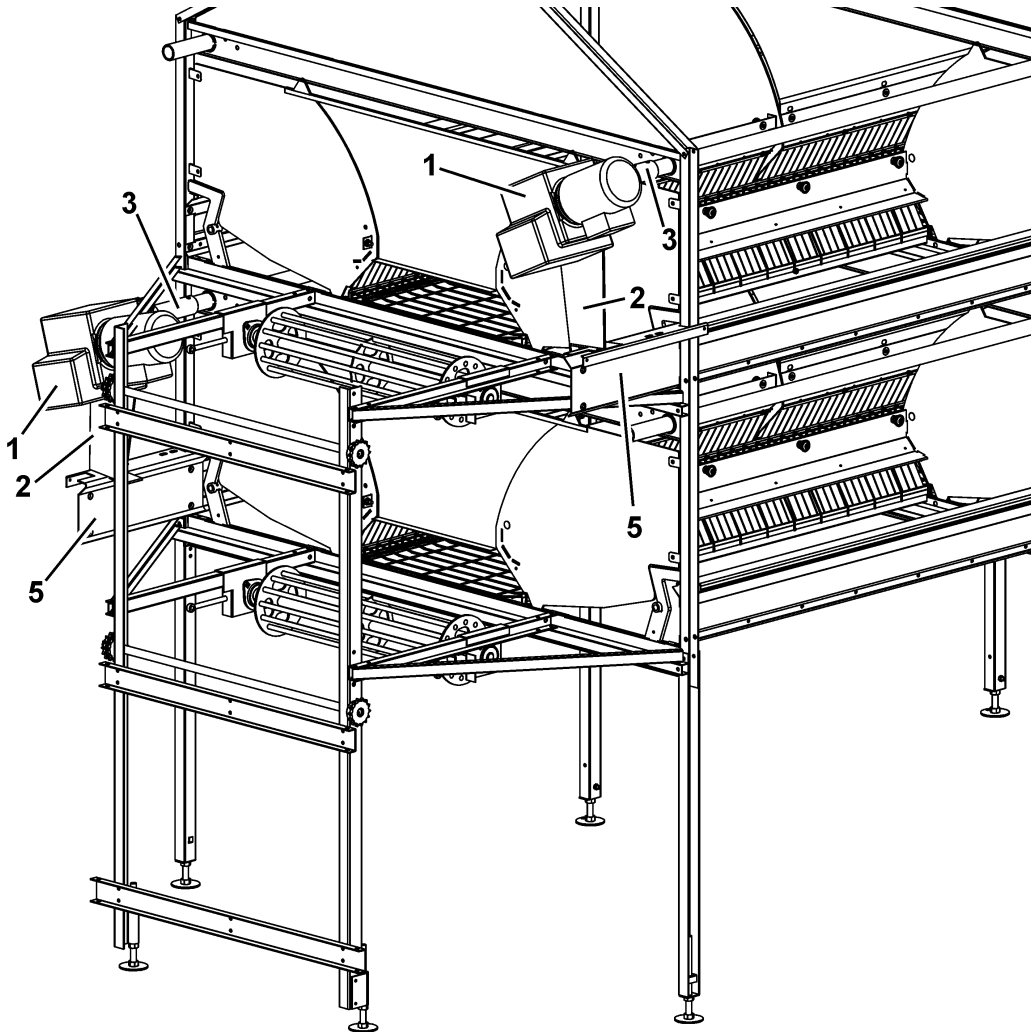
Pos.	Qty.	Code no.	Description
1	1	83-01-0108	Gear box attachable for ejection mechanism 1t BD-C2+
2	2	99-10-1265	Hexagon head screw M 8x 55 galv. DIN 558
3	2	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv.

23.5 Installing the drive and gear box for double nest 2 tiers / row end

23.5.1 Drive

One drive is necessary on each side for the double nest 2 tiers.

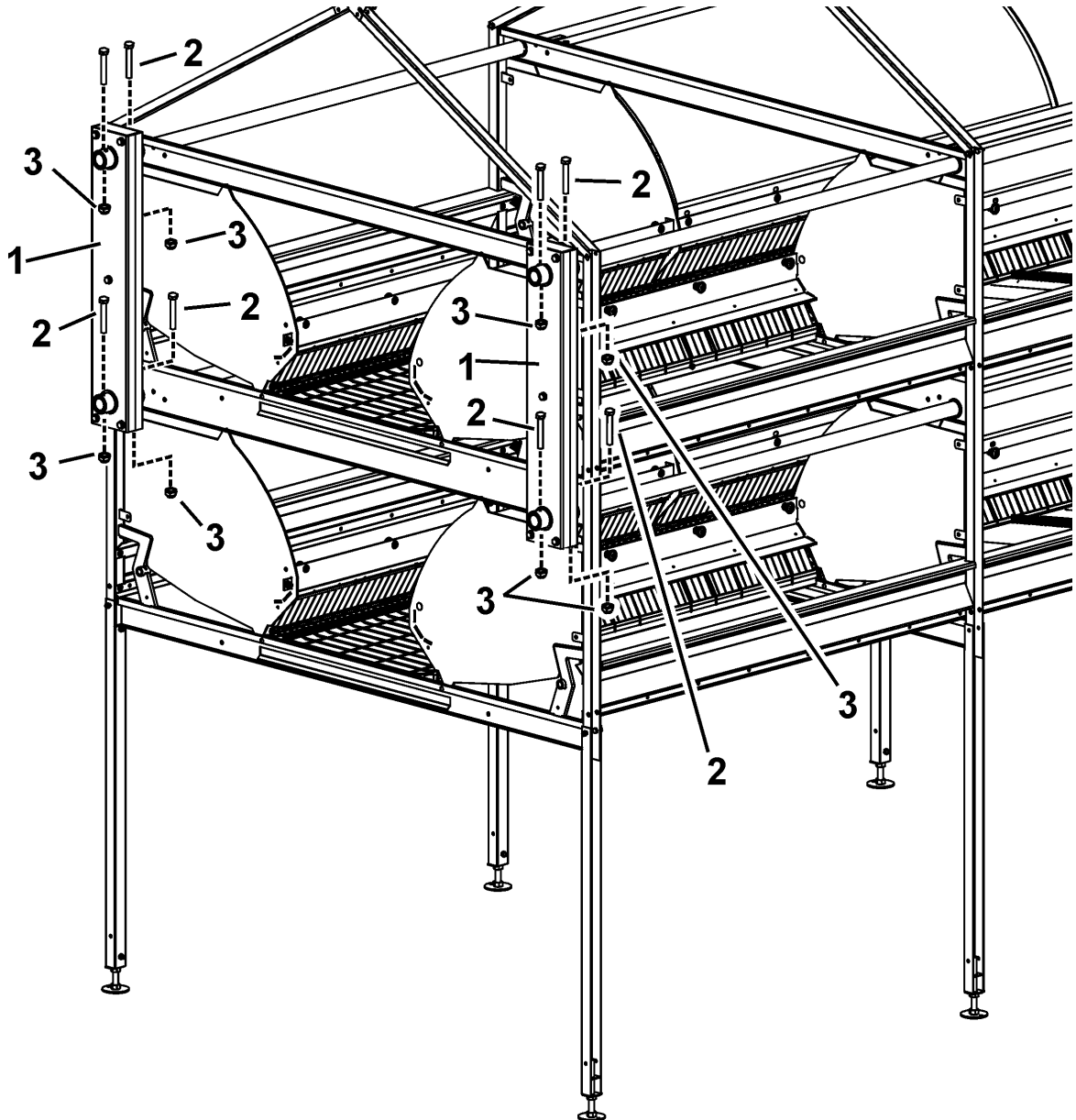
The assembly of each drive is done as described in chapter 23.4.1



Pos.	Qty.	Code no.	Description
1	2	36-00-6202	Cable winch 0,09 230 50/60 RW45 320/250kg with limit switch.
	2	99-50-3152	Cable winch 0.37 230 50/60 RW245 850/850kg with limit switch
2	2	83-00-7212	Bracket BD-C2+ for cable winch RW45/240/405
3	2	36-00-6201	Chain bolt coupler 1/2"/Z12 for cable winch RW45/BD-C2+
	2	99-50-3183	Chain bolt coupler 1"/25 for cable winch 0,37/0,55KW
5	2	83-00-9589	Extension for side rail BD-C2+

23.5.2 Gear box

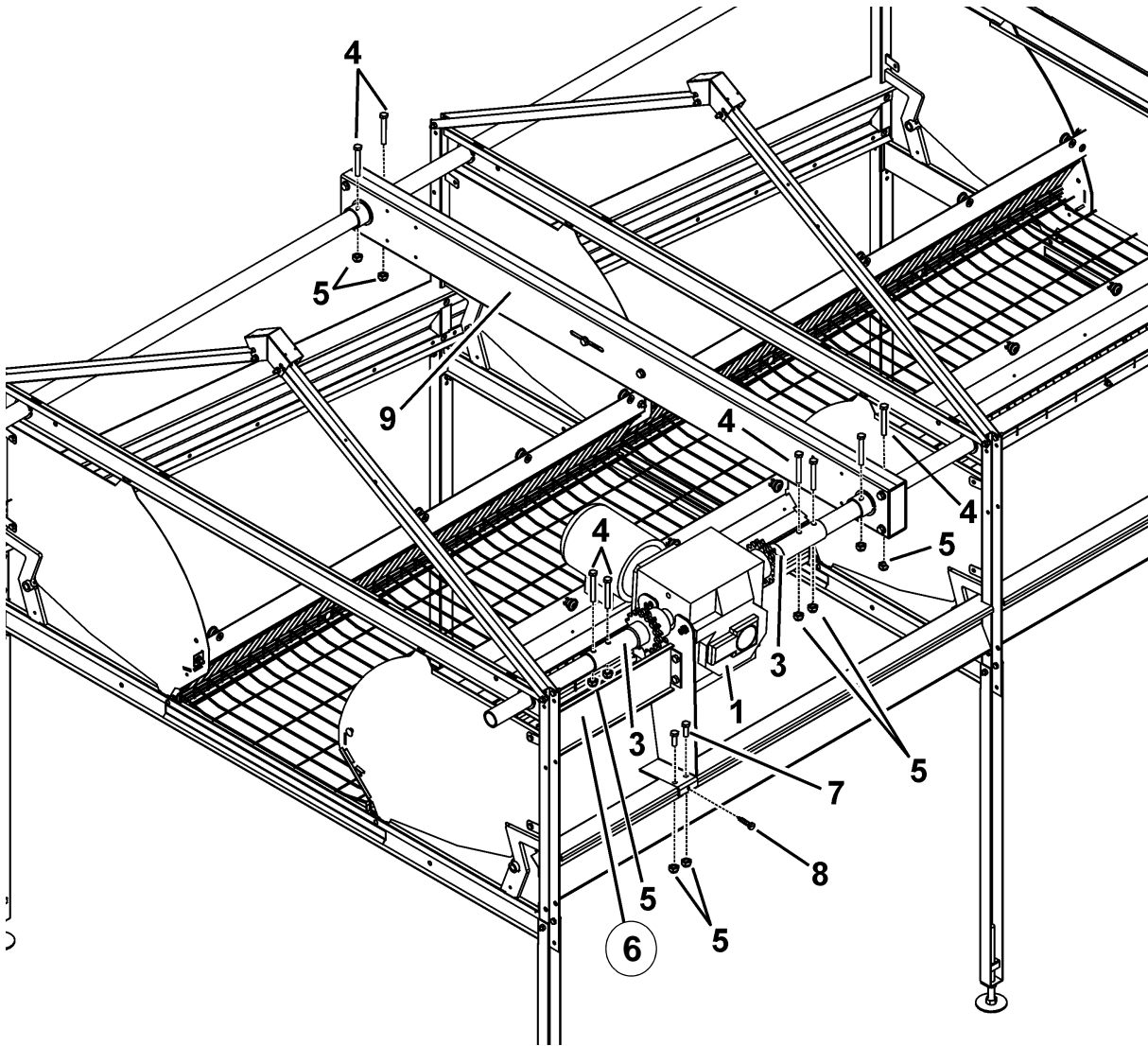
Always install the gear box at the beginning of the row (i.e. in case of the drive located in the middle of the row as well as at row end). Push it on the nest floor drive tubes so that the upper and lower tier of a nest side will be connected by means of the gear box.



Pos.	Qty.	Code no.	Description
1	2	83-01-0110	Gear box attachable for ejection mechanism 2E BD-C2+
2	8	99-10-1265	Hexagon head screw M 8x 55 galv. DIN 558
3	8	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv.

23.6 Installing the drive and gear box for double nest 1 tier middle of the row

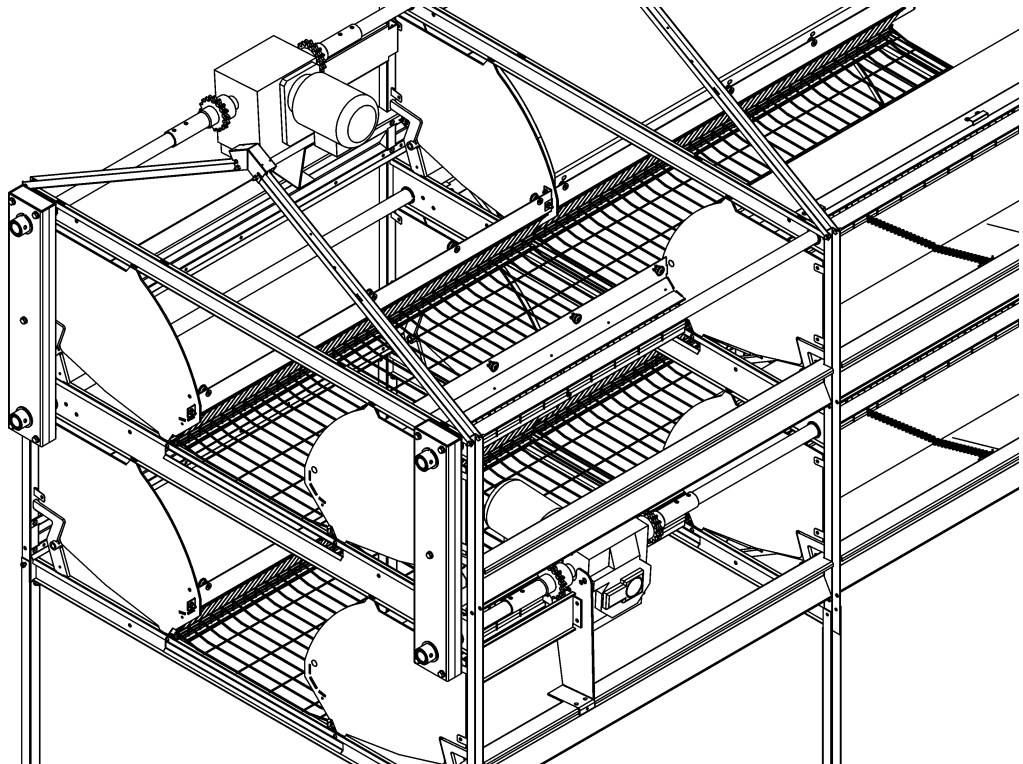
Install the drive RW 405 in case of system lengths up to 97 m in the middle of the nest row as follows.



Pos.	Qty.	Code no.	Description
1	1	99-50-3154	Cable winch 0.55 230 50/60 RW405 1400/1400kg with limit switch.
2	1	83-00-7212	Bracket BD-C2+ for cable winch RW45/240/405
3	2	99-50-3183	Chain bolt coupler 1"/25 for cable winch 0,37/0,55KW
4	8	99-10-1265	Hexagon head screw M 8x 55 galv. DIN 558
5	8	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv
6	1	83-00-9060	Fixation at main post for bracket BD-C2+
7	4	99-10-1038	Hexagon head screw M 8x 20 galv. DIN 558
8	1	99-10-3938	Drilling screw 4,8x 25 DIN 7504-K, galv
9	1	83-01-0108	Gear box attachable for ejection mechanism 1t BD-C2+

23.7 Installing the drive and gear box for double nest 2 tiers middle of the row

In case of the double nest 2 tiers up to 97 m row length, install a drive on each side of the nest. One on the lower and one on the upper tier.



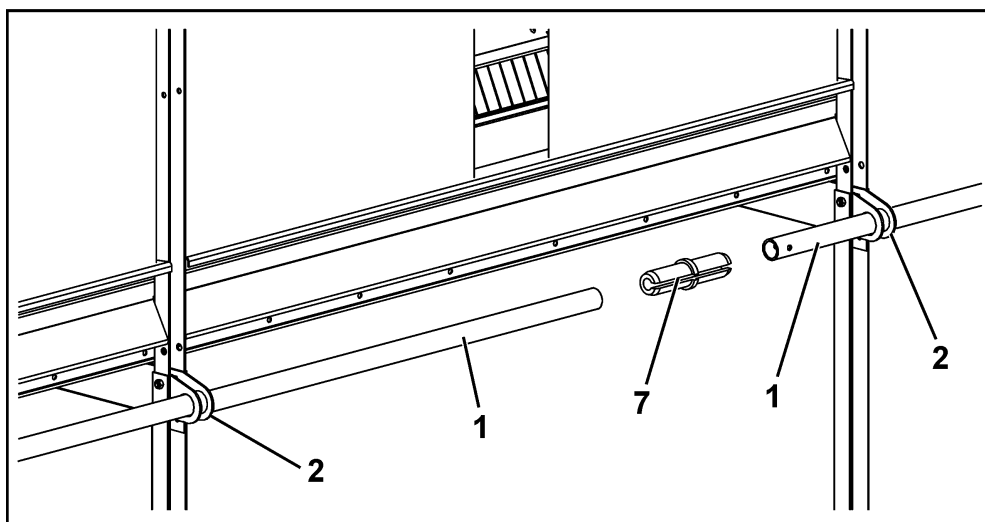
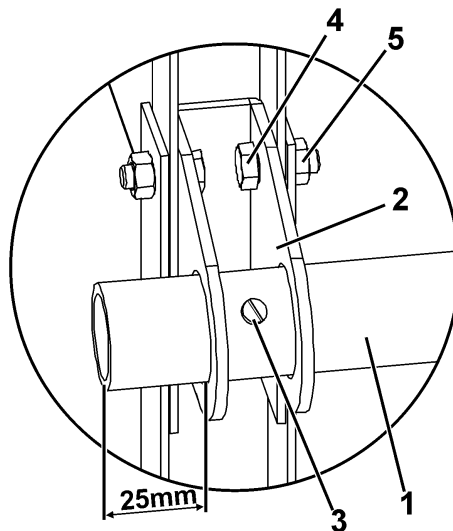
Pos.	Qty.	Code no.	Description
1		99-50-3154	Cable winch 0.55 230 50/60 RW405 1400/1400kg with limit switch.
2		83-00-7212	Bracket BD-C2+ for cable winch RW45/240/405
3		99-50-3183	Chain bolt coupler 1"/25 for cable winch 0,37/0,55KW
6		83-00-9060	Fixation at main post for bracket BD-C2+
9		83-01-0110	Gear box attachable for ejection mechanism 2E BD-C2+

The assembly of each drive is done as described in the previous chapter.

24 Assembling the manure pit

24.1 Connection of manure pit

Pos.	Qty.	Code no.	Description
	1		Connection of manure pit 2412 for BD-C2+
1		99-40-3812	Pipe 3/4"x6000 galv. DIN 2440
2	4	83-02-0572	U-bracket for 3/4"-tube in main post BD-Colony
3		99-10-3882	Drilling screw 4,8X16
4	8	99-10-3872	Mushroom head screw M 6x 16 galv slotted
5	8	99-10-1045	Hexagon head screw M 6 verz DIN 934-8
7		60-54-5417	Coupler slotted PA6 for tube 3/4"



The tube $\frac{3}{4}$ " has to overlap approx. 25 mm at the beginning and end of the row and must be fixed by means of a drilling screw in the bracket to avoid longitudinal displacement.

24.2 Assembly of the plastic slats

24.2.1 Preliminary notes



When laying out the plastic slats, please note that an expansion joint must be incorporated lengthwise every 12m (equal to 20 plastic slats).

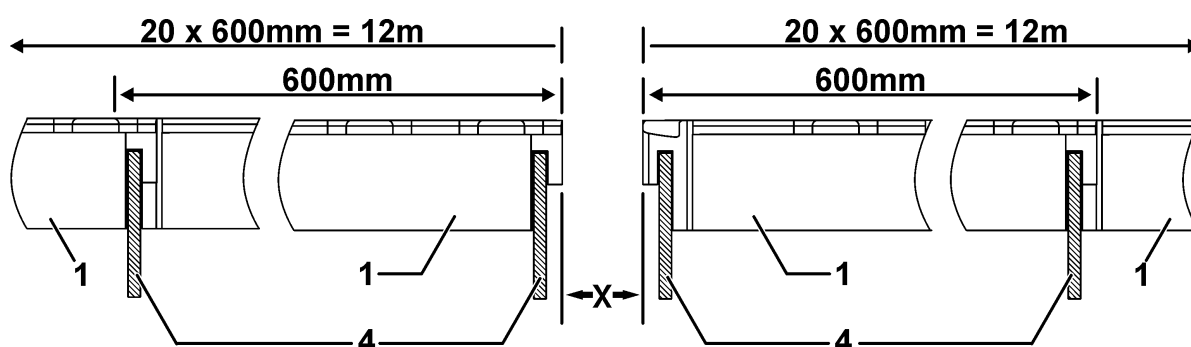


Important:

The width of the expansion joint is determined by the temperature of the slats at the assembly. It usually equals the temperature inside the building. If the slats are stored outside of the building, the slat temperature may either be higher (summer) or lower (winter) than the maximum temperature inside the building.

The following table shows the width of the expansion joint (X) as a function of the slat temperature during the assembly. For the calculation, the maximum temperature inside the house during the laying cycle is assumed to be 30°C.

temperature of the slats at the assembly (in °C)	-5	0	5	10	15	20	25	30
width of the expansion joint X (in mm)	63	54	45	36	27	18	9	0



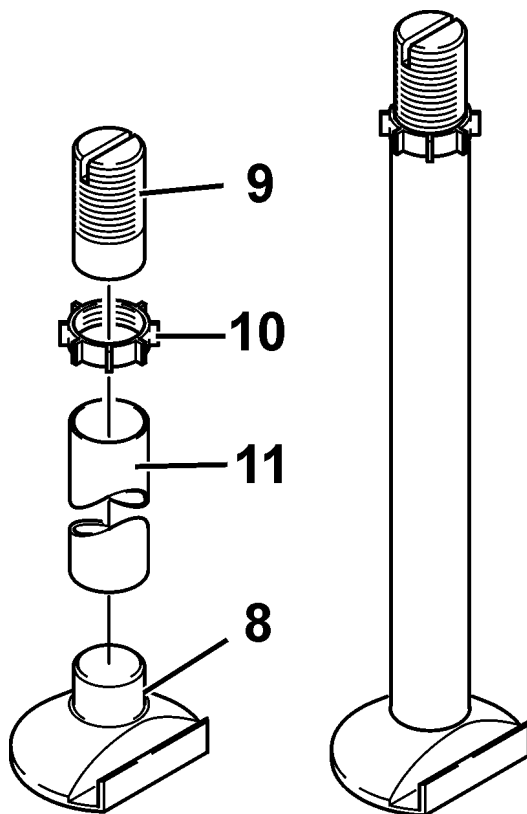
X = width of the expansion joint (as a function of the house temperature at the assembly)

Pos.	Qty.	Code no.	Description
1	1	83-00-1222	plastic flooring 1K 1200x600
4			flat steel

24.2.2 Procedure

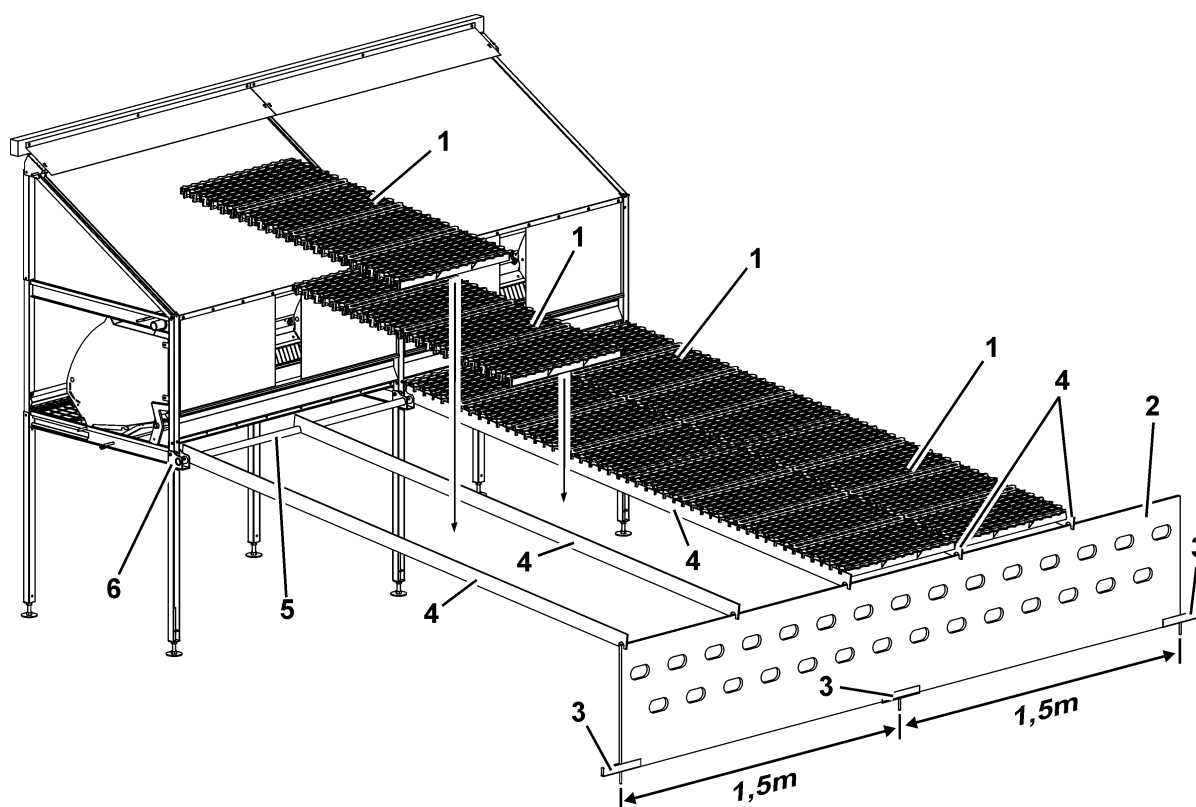
- Plan an expansion joint every 12 m (= 20 plastic slats).
- Distribute flat steel bars along the nest row (1 flat steel bar every 60cm and 2 flat steel bars every 12m for expansion joints directly side by side).
- Determine and mark the distance from the nest bottom to the panels by erecting the first and the last manure pit segment.
- Connect both markers by means of a cord.
- Mount the floor fixtures along the cord at intervals of 1.5 m (bore holes in the house floor dia 10.5 mm).
- Place the panels in the floor fixtures and connect them to the nest via flat steel bars.

Additionally for manure pits with more than 3m width



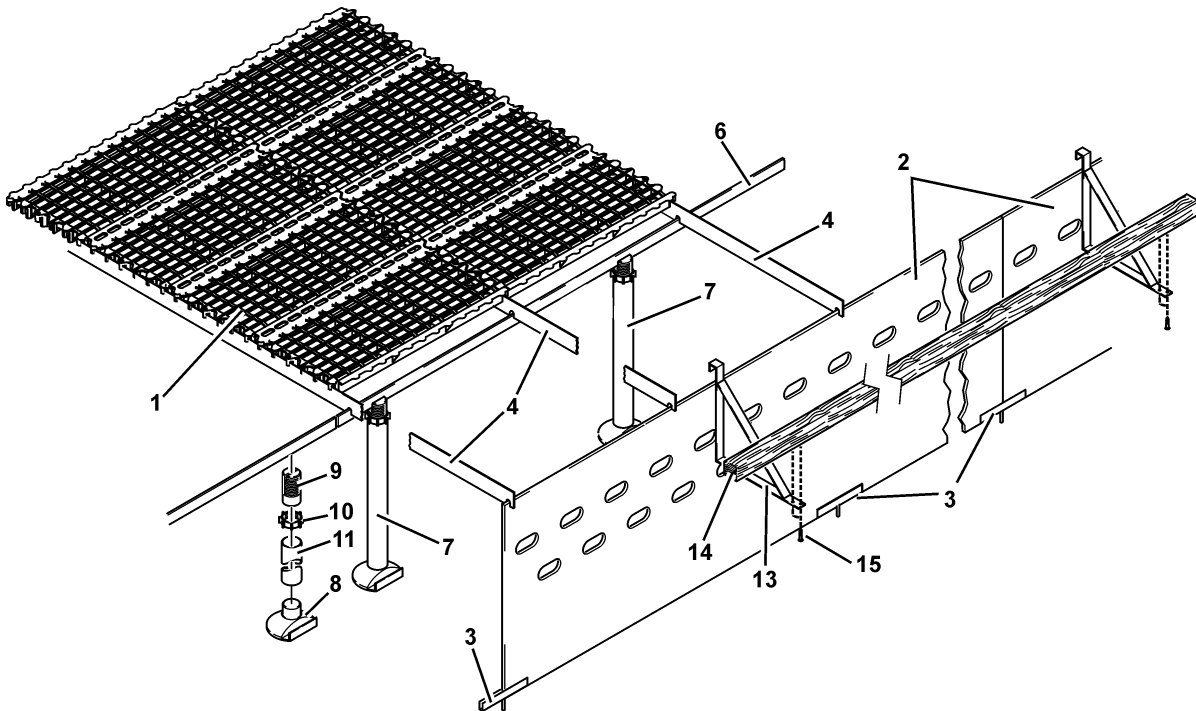
- Support the flat steel bars in the middle of the manure pit lengthwise to the nest row with an additional flat steel bar.
- Support every flat steel lengthwise with 6 posts. The tube parts (11) have to be cut to the right length from a 5m PVC-tube
- Position the first and last post of a flat steel bar at a distance of approx. 20 cm at the beginning / end underneath the flat steel bar (longitudinal support). Position the posts in between at intervals of 112 cm.
- Height adjustment of the posts is done via a screw nut (10) at the guide piece (9).

24.2.3 Manure pit with 1.2 or 2.4 m standard width



Pos.	Code no.	Description
1	83-00-1222	plastic flooring 1K 1200x600
2	36-00-3338	panel 12x497.0x3000 laminated plywood with holes
	36-00-3337	panel 12x747.5x3000 laminated plywood with holes
3	36-00-3336	mounting set SST floor for laminated plywood
4	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"
5	99-40-3812	pipe 3/4"x6000 galv DIN 2440
6	83-02-0572	U-bracket for 3/4"-tube in main post BD-Colony

24.2.4 Manure pit with 3.6 m standard width



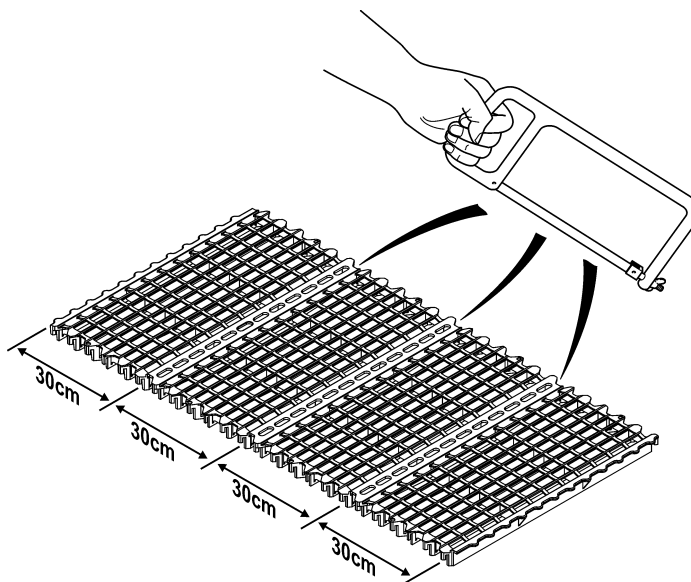
Pos.	Code no.	Description
1	83-00-1222	plastic flooring 1K 1200x600
2	36-00-3338	panel 12x497.0x3000 laminated plywood with holes
	36-00-3337	panel 12x747.5x3000 laminated plywood with holes
3	36-00-3336	mounting set SST floor for laminated plywood
4	36-00-7042	flat steel 3600-60x5 galv notch 3/4" 16x21 3/4"

Pos.	Code no.	Description
	36-00-3498	longitudinal support for manure pit w/ over 3 m width p/ run. m
6	36-00-3368	flat steel 40x8-6000 galv.
7	36-00-3340	post cplt for support of plastic flooring manure pit consists of pos 8-11:
8	36-00-3341	foot
9	36-00-3342	guide piece M 56x3
10	36-00-3343	nut M 56x3
11	20-50-1066	pipe 63x3.00-5000 PVC DIN 8061/62

Pos.	Code no.	Description
	36-00-3295	perch cplt. consists of pos. 13-15:
13	36-00-3299	bracket for perch layers floor-management
14	37-97-3374	wooden perch 55x55-1974 NAT
15	99-10-3716	hex. wood screw 6x40 DIN 571-ST galv.

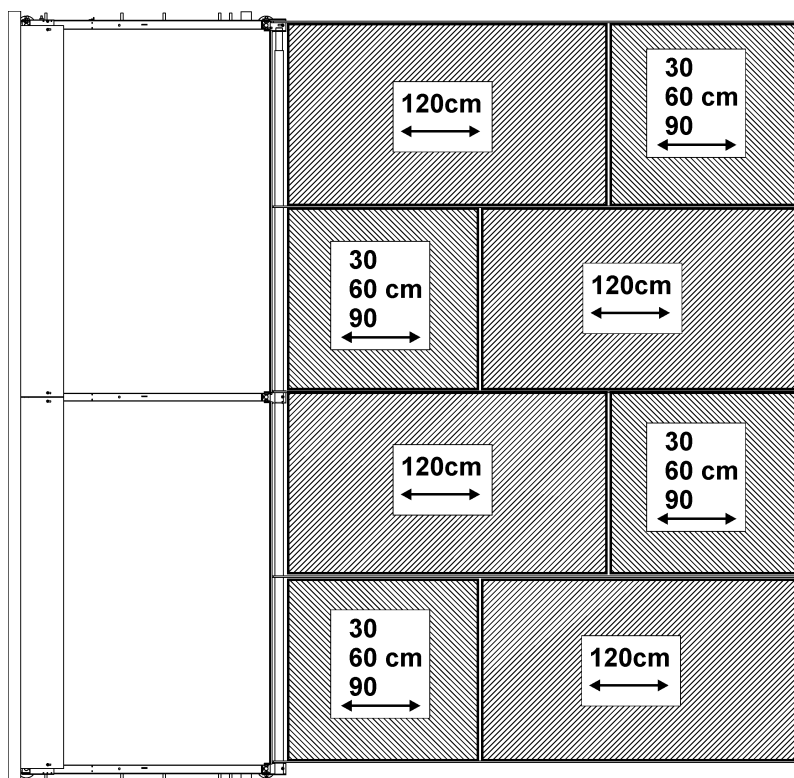
24.2.5 Manure pit with customized width (cannot be divided by 120cm)

For manure pits with customized width it is necessary to shorten the 120 cm plastic slats to the respective length (sections of 30, 60 or 90 cm of width are possible).



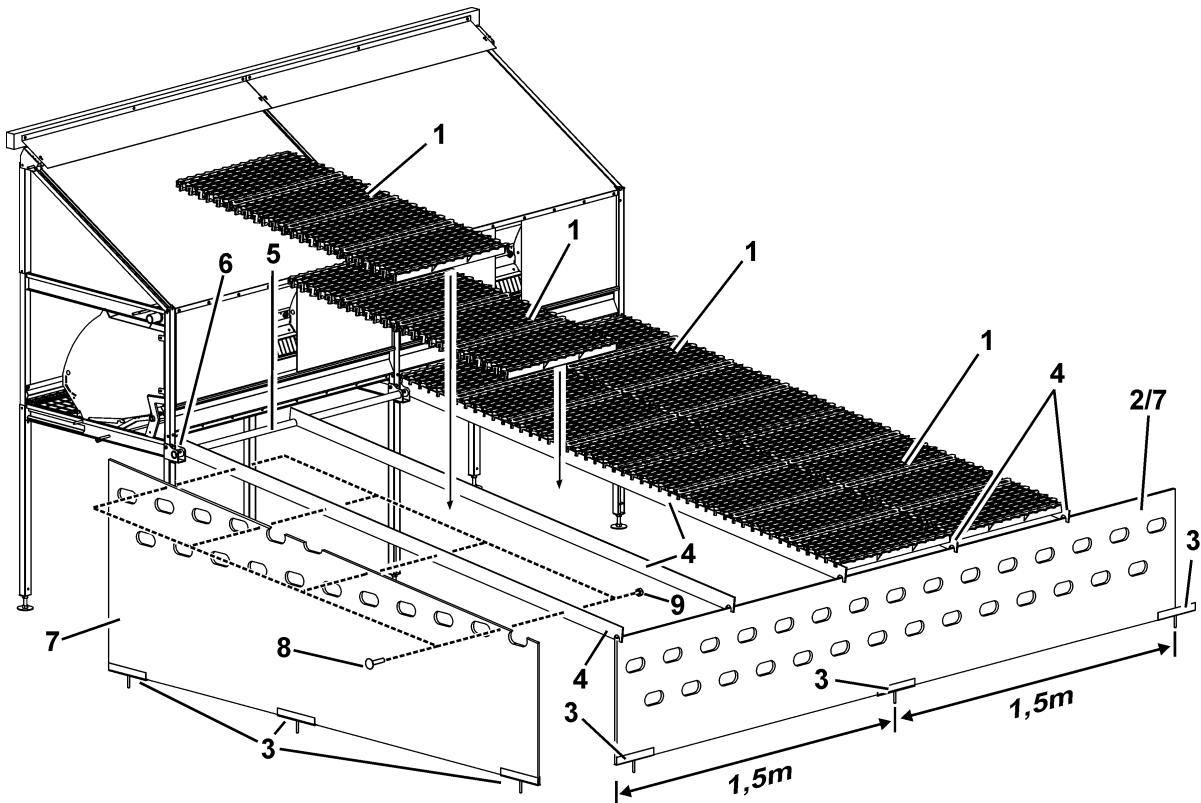
You may only cut along the integrated webbs.

24.2.5.1 Laying of plastic slats in customized manure pits




If sections (30; 60; 90cm) are needed, the slats have to be placed offset on the flat bars

24.2.6 Lateral enclosure of the manure pit



Pos.	Code no.	Description
1	83-00-1222	plastic flooring 1K 1200x600
2	36-00-3338	panel 12x497.0x3000 laminated plywood with holes
3	36-00-3336	mounting set SST floor for laminated plywood
4	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" 16x21 3/4"
		flat steel (special length)
5	99-40-3812	pipe 3/4"x6000 galv DIN 2440
6	83-02-0572	U-bracket for 3/4"-tube in main post BD-Colony
7	36-00-3337	panel 12x747.5x3000 laminated plywood with holes
8	99-20-1428	mushroom head square neck bolt M6x30 DIN 603 SST
9	99-20-1102	hexagon nut M6 SST DIN 934

 In case of a manure pit with more than 3m width, the **lateral enclosure** has to be fixed by **5 floor fixtures**.
Any panels that protrude over the manure pit slats have to be cut off.

25 Assembly of the extended manure pit

**Important:**

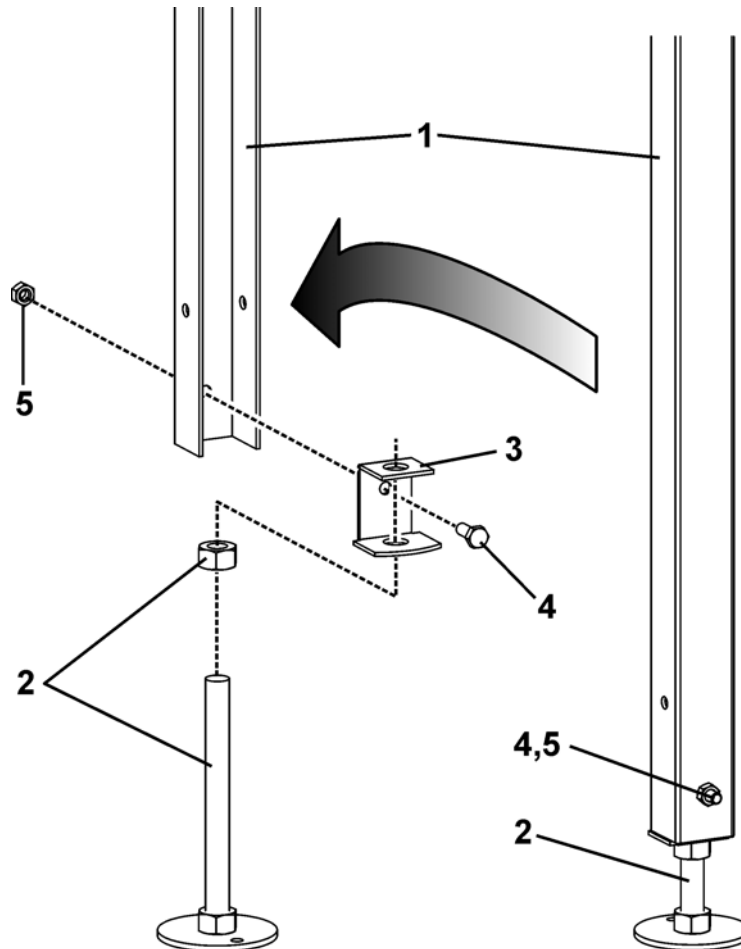
If an extended manure pit is used **which may only be mounted behind a nest row (egg belt idler side)** the following points must be observed:

- The substructure must be stabilized by cross and diagonal bracings.
- **Every** foot must be screwed to the house floor.

General view: Extended manure pit

25.1 Assembly of the cage stands for the extended manure pit

25.1.1 Installing the stand post



Pos.	Qty.	Code no.	Description
1	1	83-01-5087	Extension for main post galv BD-C2+
	1	83-01-3831	Extension for main post SST BD-C2+
2	1	37-97-4317	Foot adjustable M12x140 PA/SST cpl
3	1	83-01-5088	Holding plate galv at extension NAT/BD-C2+
4	1	99-10-1067	Hexagon head screw M 6x 16 galv. DIN 558
5	1	99-10-1045	Hexagon nut M 6 galv. DIN 934

Instruction:

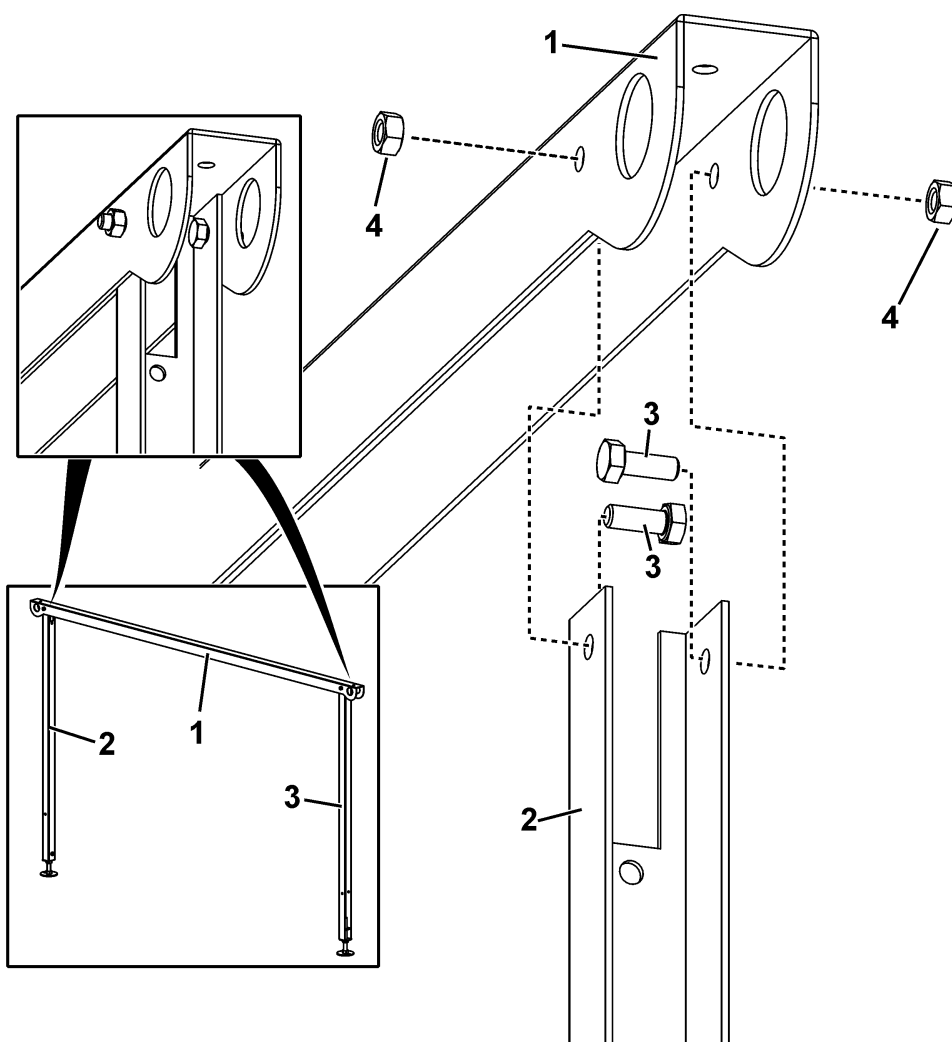
- Screw the holding plate (3) onto the extension (1). Make sure you insert the hexagon head screw the right way (see figure above).
- If not pre-assembled, screw the hexagon nut (2) into the threaded rod of the adjustable foot.
- Insert the adjustable foot from the bottom through the holes of the holding plate (3).

- For rough height adjustment and alignment use the upper hexagon nut on the adjustable foot.

25.1.2 Assembly of the cross supports

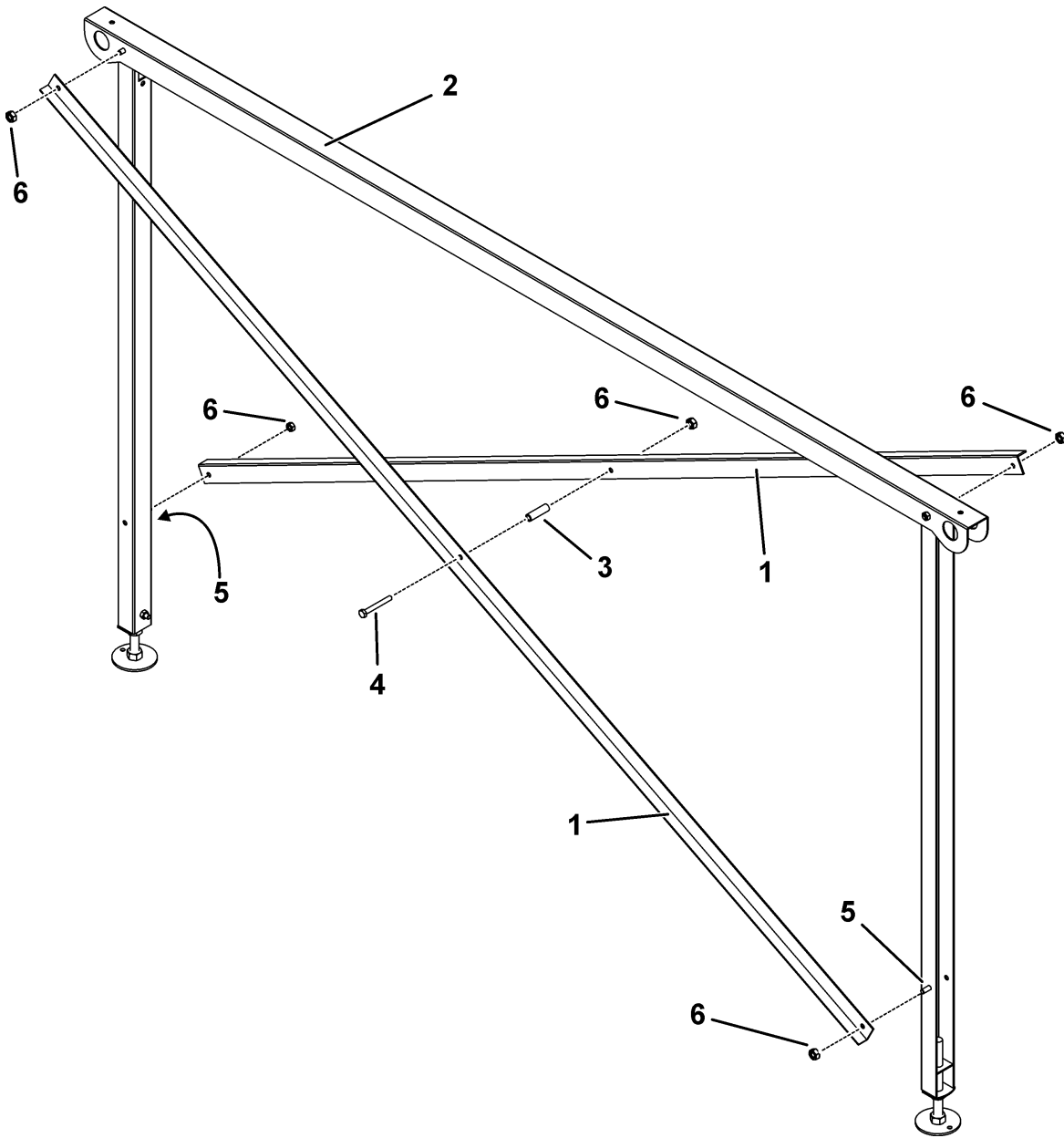


At those positions at which the cross supports are screwed to the elongation of the main supports, **the nuts must not be tightened yet** (for assembly of the cross supports, see next page).



Pos.	Qty.	Code no.	Description
1	1	83-01-7824	cross support for tube 3/4"
2	2	83-01-5087	extension for main post galv. BD-C2+
3	4	99-10-1067	hexagon head screw M 6x16 galv. DIN 933 8.8
4	4	99-10-1045	hexagon nut M 6 galv. DIN 934-8

25.1.3 Assembly of the cross braces

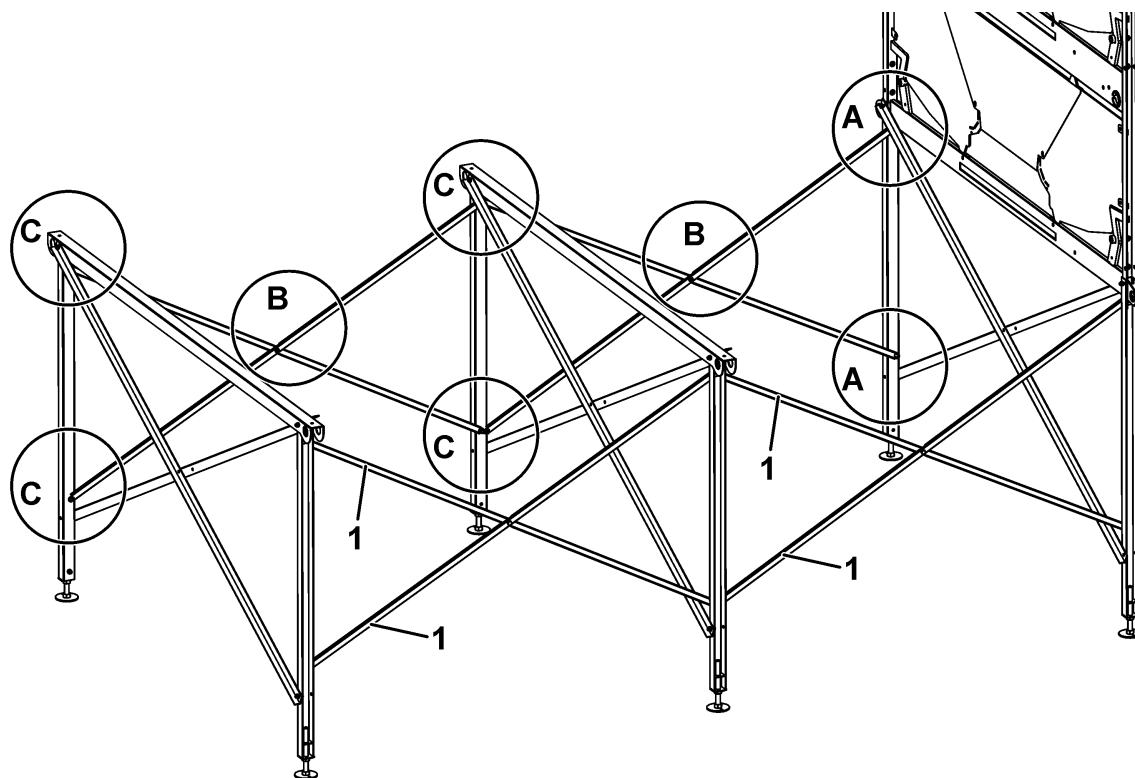



Pos.	Qty.	Code no.	Description
1	2		cross brace
2	1	83-01-7824	cross support for tube 3/4"
3	1	83-00-6827	distance sleeve 6.4x10-34long NAT-R-a
4	1	99-10-1260	hexagon head screw M 6x145galv. DIN 933 -8.8
5	4	99-10-1067	hexagon head screw M 6x16 galv. DIN 933 8.8
6	5	99-10-1045	hexagon nut M 6 galv. DIN 934-8

25.1.4 Assembly of the diagonal braces

The pre-assembled cage stands for the substructure are spaced at intervals of 1206 mm. Further stabilisation is done by assembly of the diagonal braces (1).


General view



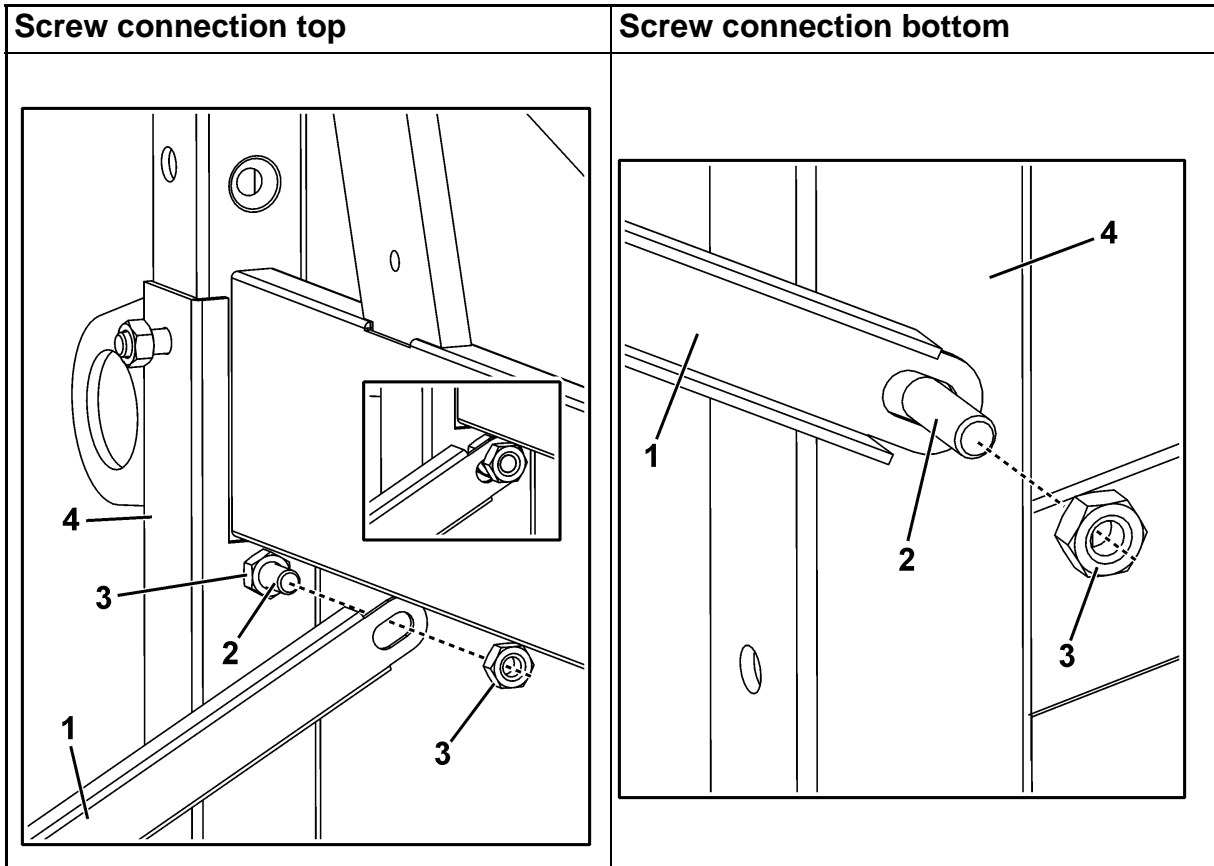
	<p>Important:</p> <p>The diagonal braces have to be mounted using a special method. See the following drawings.</p>
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Detail drawings for A-C: see the following pages.

Pos.	Qty.	Code no.	Description
1		83-01-7823	diagonal strut under nest
A			screw connection at the post of the end-set cage stand
B			screw connection of the diagonal braces with one another
C			screw connection at the posts of the substructure

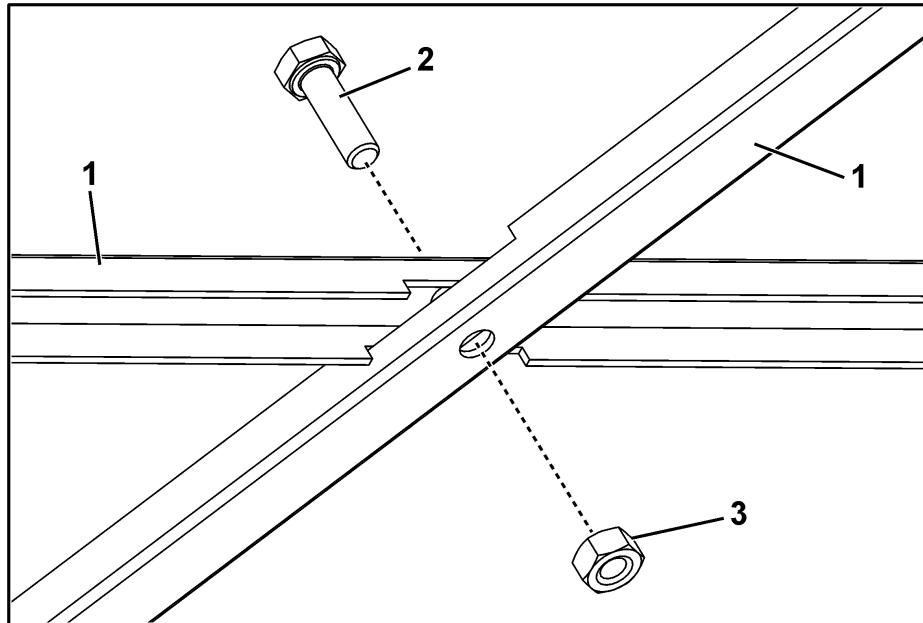
 For a better overview, the following drawings will not show the previously mounted cross braces.


Screw connection at the post of the end-set cage stand (A in the drawing "general view")



Pos.	Qty.	Code no.	Description
1		83-01-7823	diagonal strut under nest
2		99-10-1067	hexagon head screw M 6x16 galv. DIN 933 8.8
3		99-10-1045	hexagon nut M 6 galv. DIN 934-8
4		83-01-5087	extension for main post galv. BD-C2+

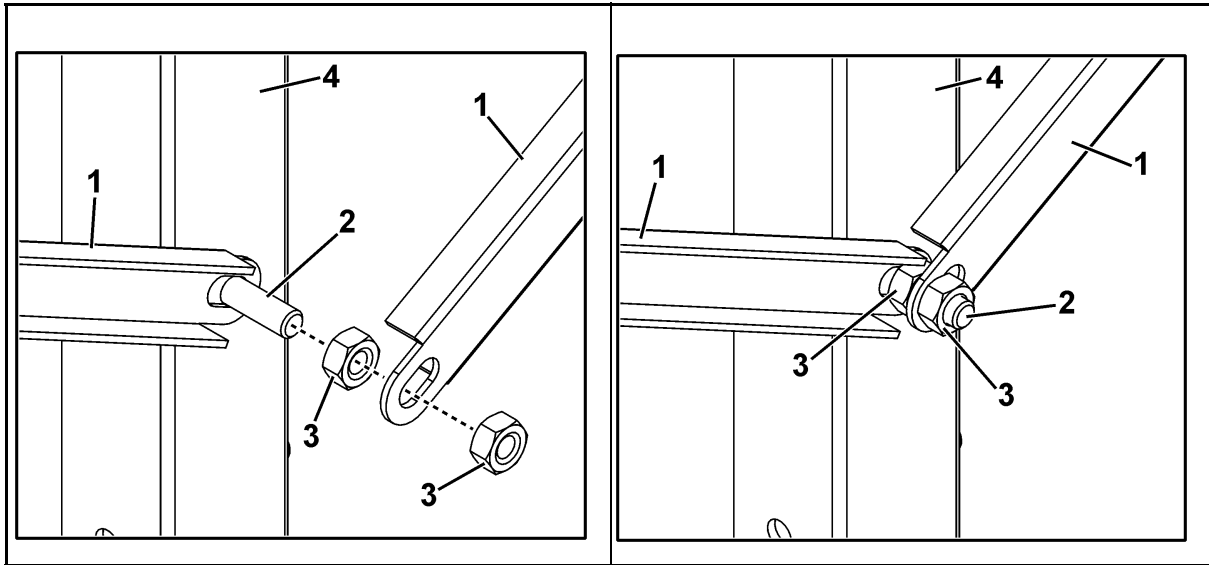
Screw connection of the diagonal braces with one another (B in the drawing "general view")



 The open sides of two U-profiles (diagonal braces) must be aligned to each other. The cut-outs in the centre must be screwed together "interlocked".

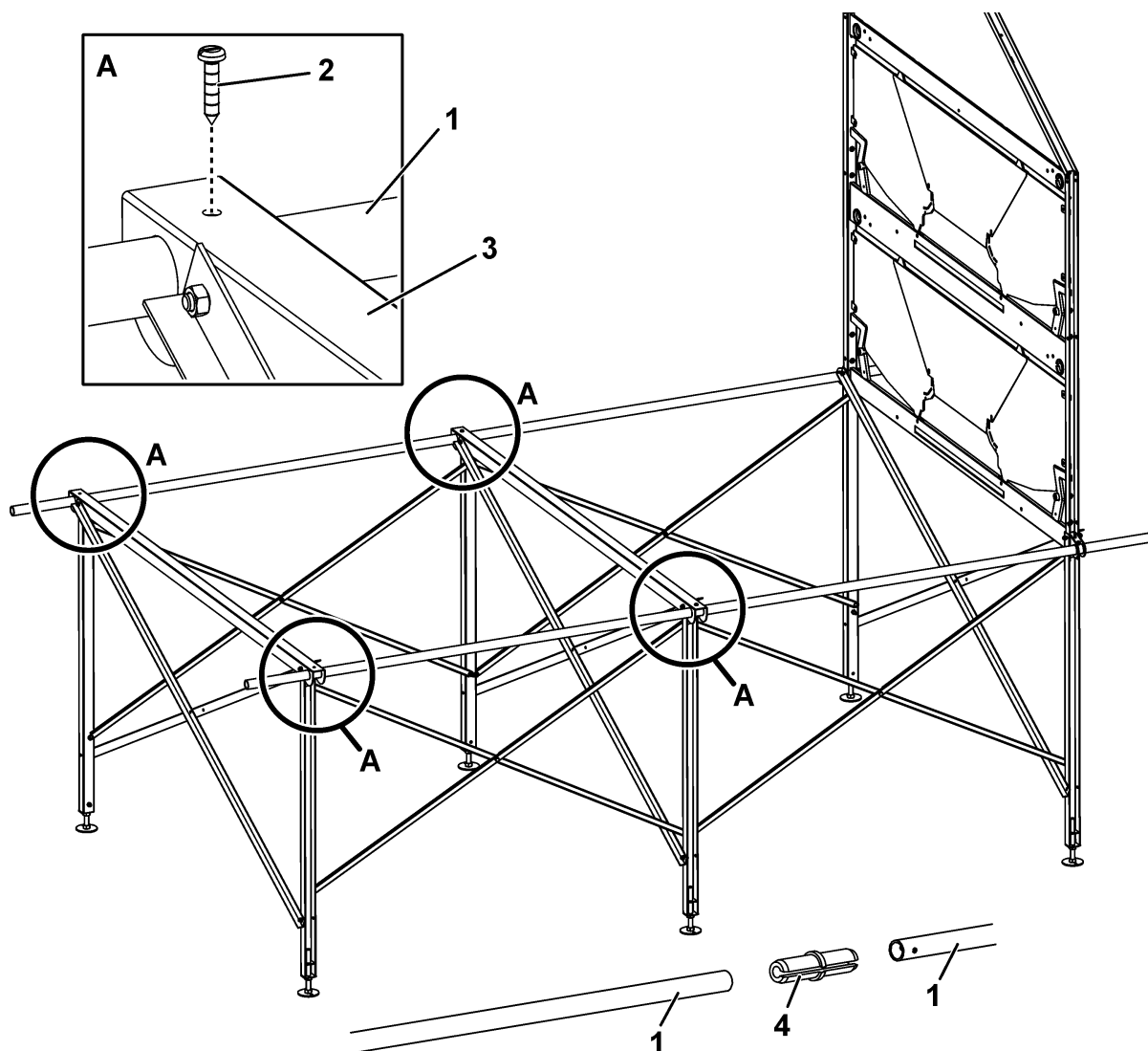
Pos.	Qty.	Code no.	Description
1		83-01-7823	diagonal strut under nest
2		99-10-1067	hexagon head screw M 6x16 galv. DIN 933 8.8
3		99-10-1045	hexagon nut M 6 galv. DIN 934-8
4		83-01-5087	extension for main post galv. BD-C2+


Screw connection at the post of the substructure (C in the drawing "general view")



25.2 Insertion of the pipelines for the manure pit connection

Before assembling the pipelines for the manure pit connection, make sure that the entire substructure is in true alignment, horizontally and vertically. Use the height-adjustable feet as well as a water level and / or laser for the alignment.



 When connecting the pipes, keep in mind that the last pipe of a row still has to be guided through at least two retainers in the cross supports. The connection joint should always be situated close to a pipe retainer and **not in the centre** between 2 cage stands.

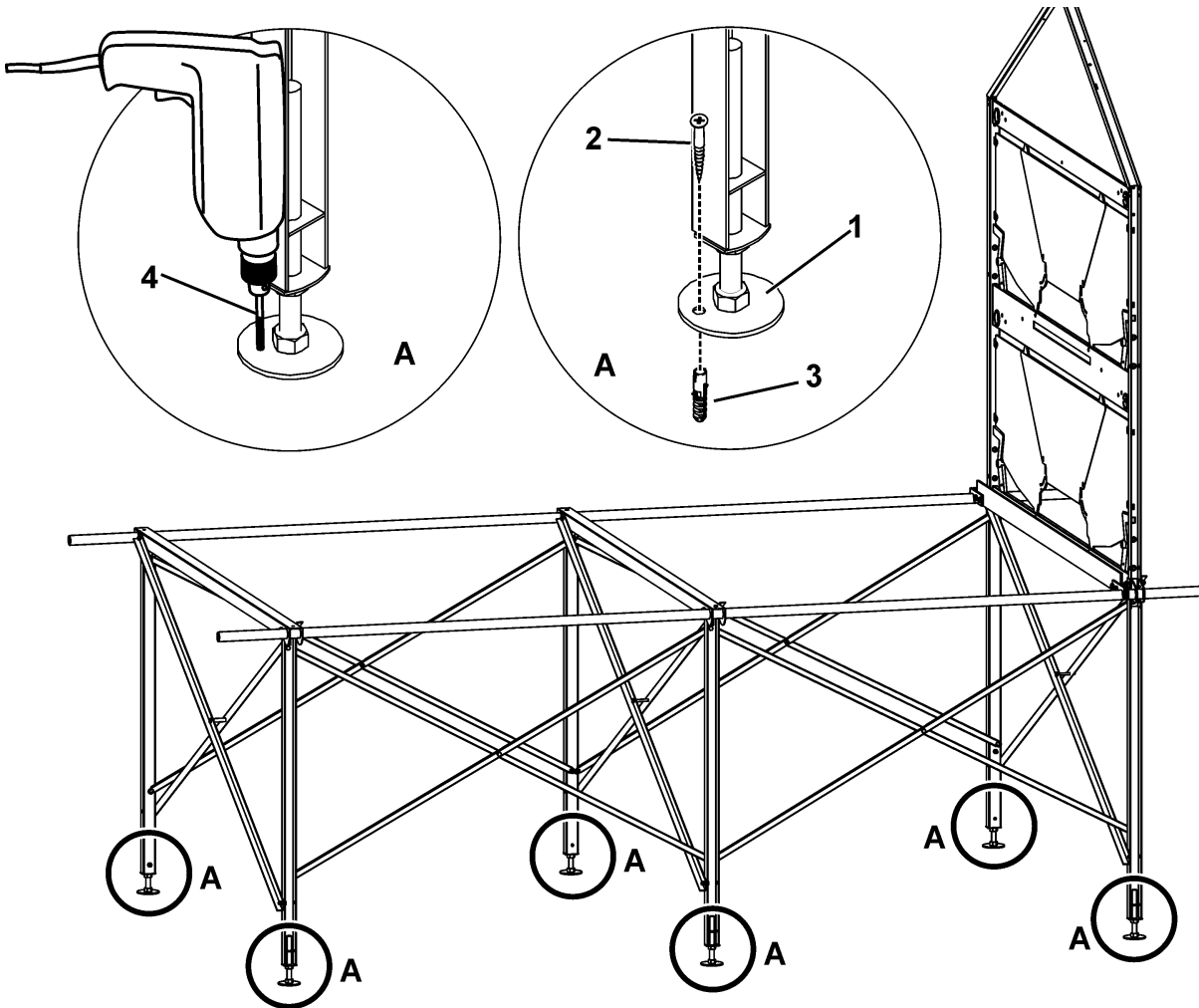
Pos.	Qty.	Code no.	Description
1		99-40-3812	tube 3/4"x6000 galv. DIN 2440
2		99-10-3938	drilling screw 4.8x 25 DIN 7504-K, galv.
3		83-01-7824	cross support for tube 3/4"
4		60-54-5417	coupler slotted PA6 for tube 3/4"

25.3 Screw connection of the extended manure pit to the floor

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Important:

All feet of the extended manure pit, as well as the feet of the end-set cage stands have to be screwed to the house floor.



Pos.	Qty.	Code no.	Description
1			foot
2	1	99-10-3958	chipboard screw 5,0x 50 ABC-Spax pan head SST
3	1	99-98-3782	dowel S 6
4			drill dia 6mm
A			attachment points of the feet to the house floor

25.4 Assembly of the plastic slats

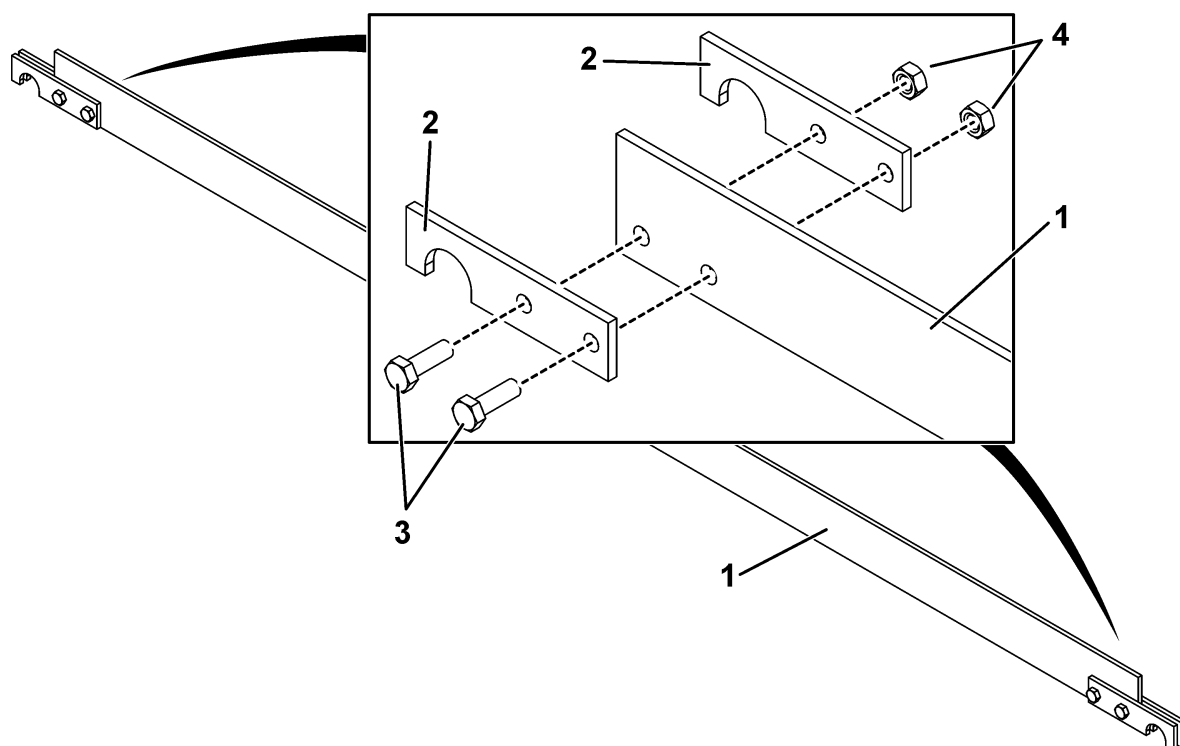
!

Because of the differences between the individual manure pits, it is not possible to make any general statements on the laying of the plastic slats; however, the following points should be observed in any case:

- Make sure that the slats are laid consistently without gaps
- do not insert any cross joints / mount the slats off-set
- do not lay out 1/4 slat pieces

25.4.1 Pre-assembly of the flat steels for the support of the plastic slats

For the extended manure pit, flat steels into which the plastic slats are hooked are needed every 60 cm.

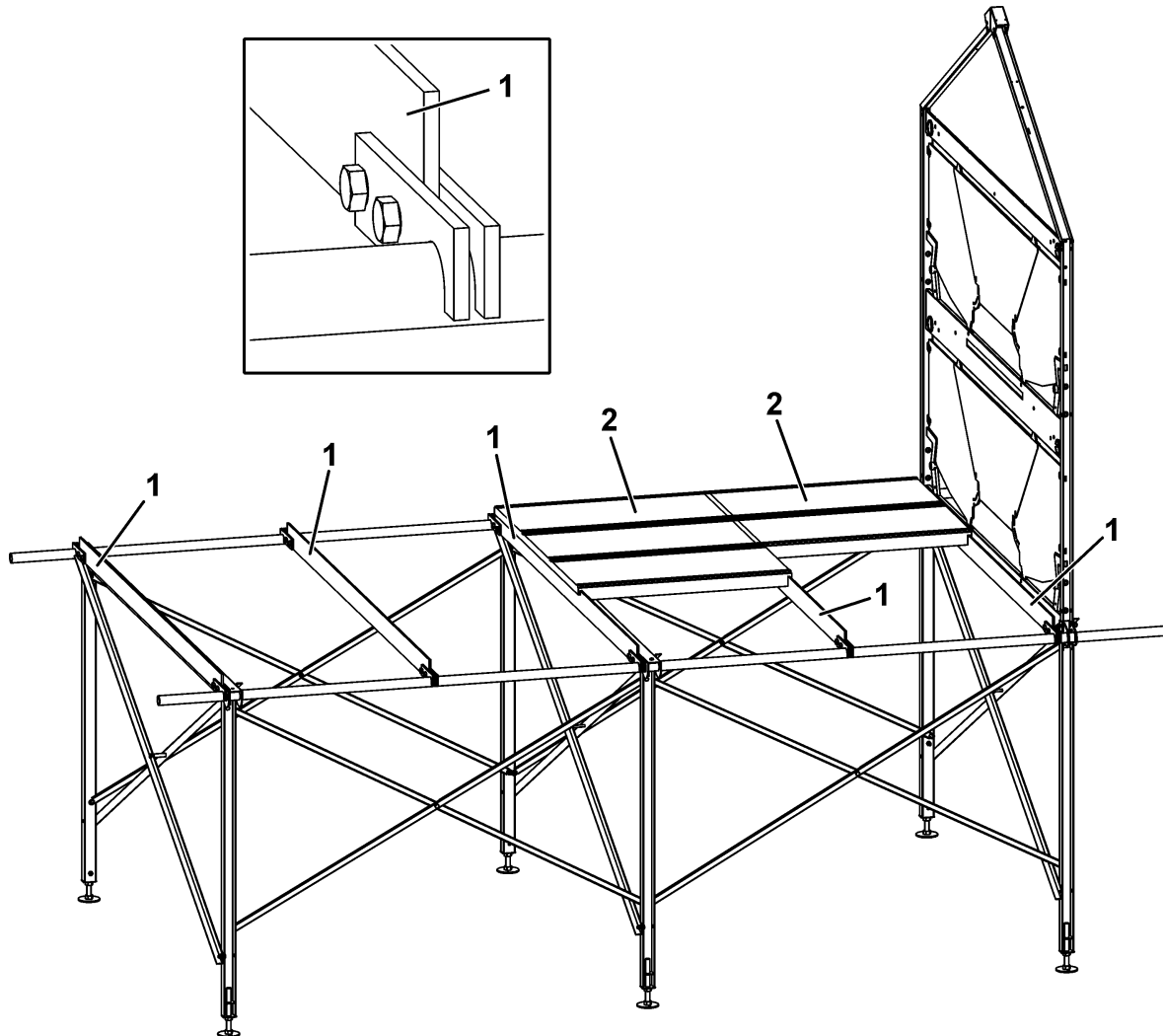


Pos.	Qty.	Code no.	Description
1	1	83-01-8420	flat steel 1525.5-60x5 galv behind nest area
2	4	83-01-8419	coupler for flat steel
3	4	99-10-1038	hex. head screw M 8x20 DIN 558
4	4	99-10-1040	hexagon nut M8 galv. DIN 934-8

25.4.2 Hooking-in the slats



Depending on the situation inside the house and the type of manure pit, the plastic slats may have to be laid out differently. The following lay-out is therefore only an example.

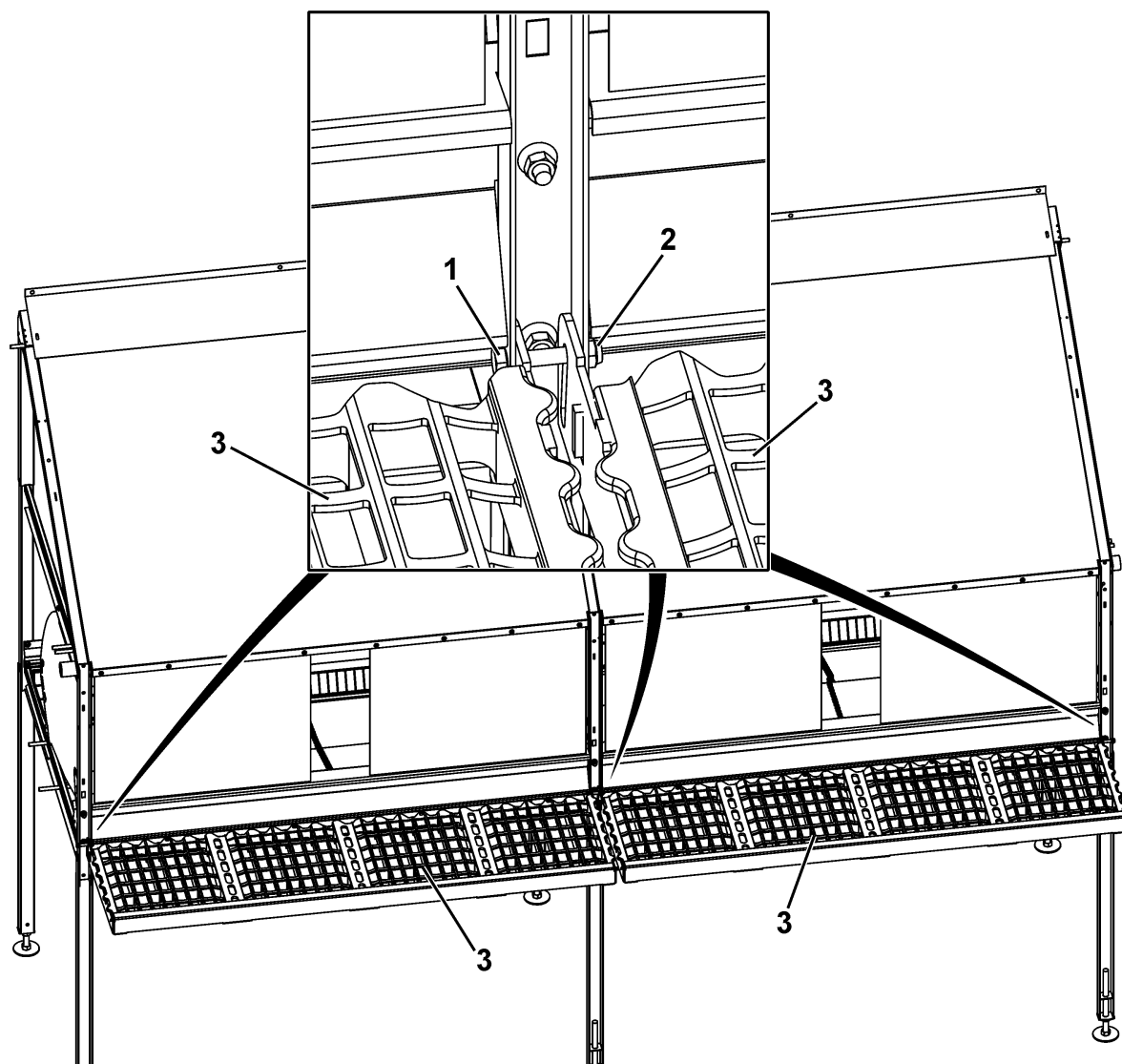


Pos.	Qty.	Code no.	Description
1		83-01-8420	flat steel 1525.5-60x5 galv behind nest area
2		83-00-1222	plastic flooring 1K 1200x600 (blank)

26 Assembly of the approach grating

Important: The safety nuts **must not be tightened**. The screws must be able to freely rotate in the holes of the cage stands.

Example: Approach grating wall nest 1 tier



Pos.	Qty.	Code no.	Description
	1	36-00-6055	approach grating 2412 per tier nest BD-C single
1	2	99-10-1232	hexagon head screw M 6x35 galv. DIN 931-8.8
2	2	99-20-1043	self-locking counter nut M 6 DIN 985-6 galv.
3	2	83-00-9510	approach grating cplt 1206 per nest hole BD-C2+

Pos.	Qty.	Code no.	Description
	1	36-00-6050	approach grating 2412 per tier nest BD-C double
1	4	99-10-1232	hexagon head screw M 6x35 galv. DIN 931-8.8
2	4	99-20-1043	self-locking counter nut M 6 DIN 985-6 galv.
3	4	83-00-9510	approach grating cplt 1206 per nest hole BD-C2+