Assembly/ Operation/ Maintenance/ Spare parts

FlexVey

Code No. 99-97-0579 GB

Edition: 07/2008

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

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

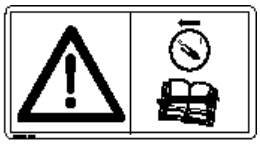
1.2.2 Safety symbols in the manual and on the installation

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

	Warning against dangerous electric tension
	Warning against the cold
	Warning against slippery surface

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.

	**GENERAL DANGER !** Installation automatically starts working. Before starting repair, maintenance or cleaning work, put main switch to ”OFF”.
	**Danger of bruising due to rotating machine parts!** 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.
	**RISK OF INJURY due to operating auger, chain or cable discs!** Never reach into or climb into a feed container or trough while the motor is running.
	**DANGER OF SKIN CORROSION due to purifying agents!** Always wear protective clothing when repairing, maintaining and cleaning the installation. Always observe the manufacturer’s instructions when using acids!

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.

	**If a safety symbol or instruction is fixed to a part to be replaced, ensure that it will be fixed to the new part as well.**

1.3 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.

1.4 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 (NH_3).

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!

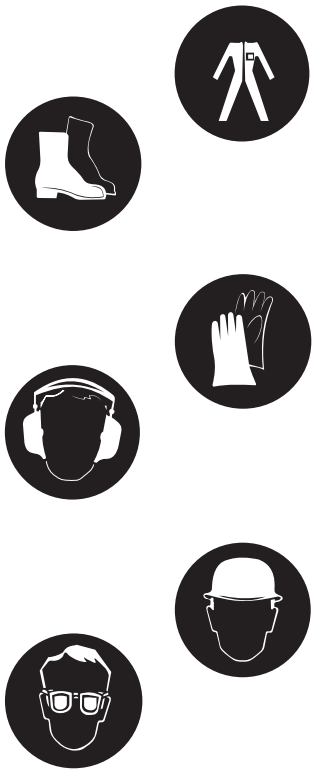
Never cover the electrical motor. This can cause high temperatures so that fire results and the working means can break down. The control box as well as the terminal and connector boxes of the installation must always be kept shut. Let damaged or broken plugs be replaced by an electrician. For the respective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

1.5 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.

1.6 Clothing for personal safety



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.

1.7 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.

1.8 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!

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.

1.9 Ordering 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.

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).

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

1.10 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.

1.11 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.

1.12 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.

1.13 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)!

1.14 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.

1.15 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).

1.16 Copyright

For further information please contact:

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e-mail: big@bigdutchman.de, Internet: www.bigdutchman.de

2 Planning instructions for the assembly of the Flex-Vey Feed Conveying System

2.1 Definition of the information on the left and right hand

The information "left" and "right" result from the viewing direction in the flow direction of the feed, i.e. from the silo to the feed line drive unit.

2.2 Notes

Important note:

Due to the manifold design options of a **Big Dutchman** Flex-Vey feed conveying system, it is not possible to describe every possible model type in this manual.

The type of the Flex Vey feed conveying system specific to your house can be found in the planning instructions supplied by **Big Dutchman**.

There are, however, some points which should be considered already in the preliminary planning, in order to guarantee an efficient operation of the feed conveying system.

- **If you you without tube bends to a large extent** and if you use a high part of straight-lined FlexVey lines, the feed can be conveyed with highest efficieny.

Important:

The mounting of a left bends should above all be avoided.

Within a left bend the pipe wall will not be sufficiently protected by the conveyed feed, resulting in an increased wear of the pipe wall.

- **Do not mount any feed outlets in or directly after a bend.**
- See to a suitable electrical wiring guaranteeing the energy supply of the motors.

- In case of a necessary change of the conveying direction and in case of conveying lengths exceeding the prescribed maximum conveying length of the system, you have to use transfer units instead of a bend, if possible.

  Thus you avoid an idle running for a longer period of time at the end of the system.

- Install the transfer unit avoiding feed outets in the bend after the transfer unit and in the short tube between bend and transfer unit.
- In some cases the use of a bend in the system, can only be avoided by installing the transfer unit crossways. I

  This means: At a place where a bend would normally be used, the installation of a transfer unit would change the conveying direction by up to 90° in minimal space.

- The **longer part** of the line with the highest number of outlets, must be situated **behind the transfer unit.**

  Seen from the silo this means that the transfer unit has to be installed **within the first half of the total length** of the conveying system.

- If a bend is mounted in the system, a transfer unit should be mounted in front of the bend, in order to avoid wear in the bend.

Notes for the planning of a tandem system:

- A tandem system is a **straight-lined connection** of two silos. It permits a feed supply of the house **with one Flex-Vey conveying line only**.

  Furthermore this type of system allows the supply of two different types of feed or the doubling of the feed storage capacity without the use of a second conveying system.

!	**Important:** **The following instructions have absolutely to be observed when planning a tandem system :** • Both silos must be placed on the same concrete slab. Please observe the instructions of the manufacturer of the silo in this regard. • Never insert bends between two silos. • The max. distance between the silos to be connected may not exceed 3 m.

3 Designated use and description of Flex-Vey System

3.1 Designated use

The **Big Dutchman** Flex-Vey feed conveying system must only be used to transport suitable feed in feeding systems for pig and poultry management.

This **Big Dutchman** system 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 damages resulting from other uses, the user alone has to bear the risk.

The designated uses also includes the exact following of the operation, maintenance and assembly conditions as prescribed by the manufacturer.

The limits mentioned in the technical data may in no case be exceeded.

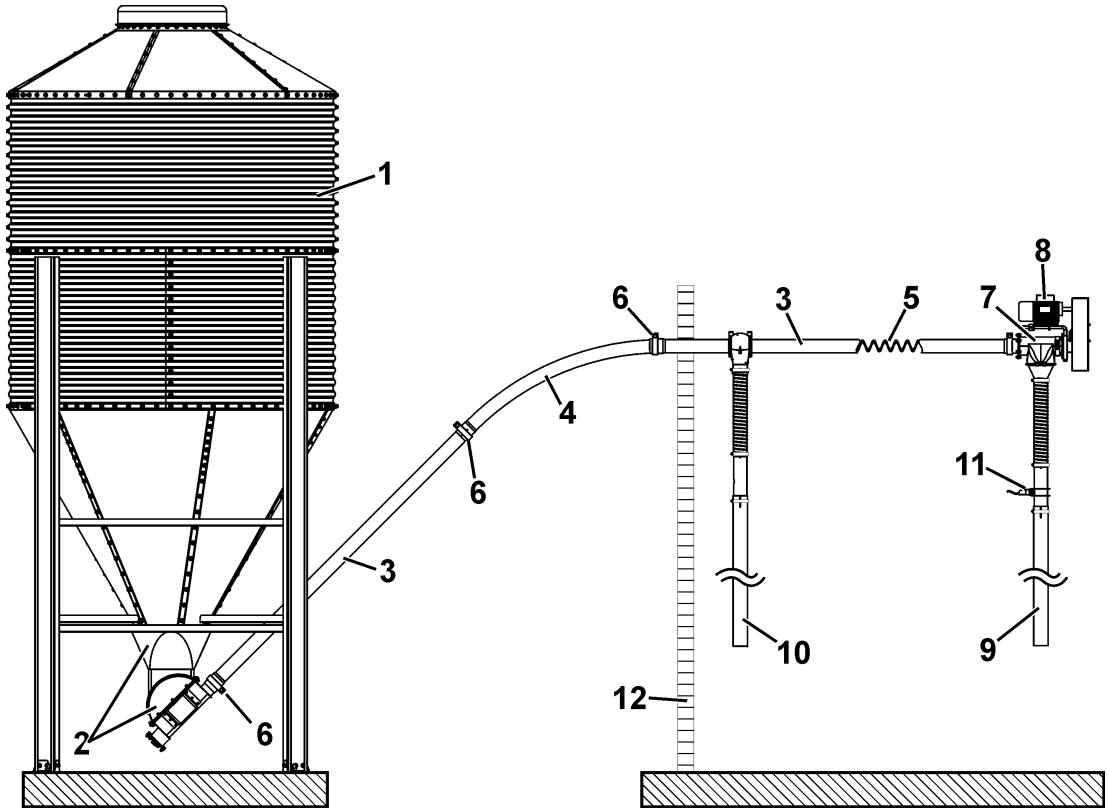
3.2 Description of Flex-Vey Feed Conveying System

The **Big Dutchman** Flex-Vey feed conveying system consists of:

- drive unit (boot for auger, tension shaft, drive)
- connection tubes with conveying auger
- control for drive unit Flex-Vey

4 Technical data

4.1 Overview of system



Pos.	Description	Pos.	Description
1	Silo	**7**	Drive unit
2	Funnel and boot	**8**	Electrical control
3	Conveying pipe	**9**	Drop pipe incl. sensor
4	Bend, plastic	**10**	Drop pipe with outlet
5	Conveying auger	**11**	Sensor
6	Clamp for pipe	**12**	Building

4.2 Available drive units and maximum possible system lengths

Flex Vey 75

Pos	max. length of system (*) [m]	Code No	Description
1	60	25-60-3065	drive 0,75KW 400V 3PH 50Hz YZ Flex-Vey 75
2	60	25-60-3071	drive 0,75KW 400V 3PH 60Hz YZ Flex-Vey 75
3	48	25-60-3067	drive 0,75KW 230V 1PH 50Hz YZ Flex-Vey 75
4	48	25-60-3066	drive 0,75KW 230V 1PH 60Hz YZ Flex-Vey 75
5	60	25-60-3073	drive 1,10KW 230V 1PH 50Hz YZ Flex-Vey 75
6	60	25-60-3072	drive 1,10KW 230V 1PH 60Hz YZ Flex-Vey 75

(*) = with **one** bend 45 degree. For each **additional** bend you have to deduct 5m from the length of system.

Flex Vey 90

Pos	max. length of system (*) [m]	Code No	Description
1	40	25-61-3065	drive 0,75KW 400V 3PH 50Hz YZ Flex-Vey 90
2	40	25-61-3071	drive 0,75KW 400V 3PH 60Hz YZ Flex-Vey 90
3	32	25-61-3068	drive 0,75KW 230V 1PH 50Hz YZ Flex-Vey 90
4	32	25-61-3066	drive 0,75KW 230V 1PH 60Hz YZ Flex-Vey 90
5	40	25-61-3073	drive 1,10KW 230V 1PH 50Hz YZ Flex-Vey 90
6	40	25-61-3072	drive 1,10KW 230V 1PH 60Hz YZ Flex-Vey 90

(*) = with **one** bend 45 degree. For each **additional** bend you have to deduct 5m from the length of system.

Flex Vey 125

Pos	max. length of system (*) [m]	Code No	Description
1	25	25-62-3065	drive 1,10KW 400V 3PH 50Hz YZ Flex-Vey 125
2	25	25-62-3071	drive 1,10KW 400V 3PH 60Hz YZ Flex-Vey 125
3	20	25-62-3068	drive 1,10KW 230V 1PH 50Hz YZ Flex-Vey 125
4	20	25-62-3066	drive 1,10KW 230V 1PH 60Hz YZ Flex-Vey 125
5	25	25-62-3073	drive 1,50KW 230V 1PH 50Hz YZ Flex-Vey 125
6	25	25-62-3072	drive 1,50KW 230V 1PH 60Hz YZ Flex-Vey 125

(*) = with **one** bend 45 degree. For each **additional** bend you have to deduct 5m from the length of system.

4.3 Conveying capacity of the auger

Type of Flex Vey	max. length of system (3*) [m]		max. conveying capacity (4*) [to/h]		max. diameter of pellets [mm]
			with conveying direction :		
	(1*)	(2*)	horizontal	45deg	
Flex-Vey 75	60	120	1,4	1,0	8
Flex-Vey 90	40	80	2,5	1,75	10
Flex-Vey 125	25	50	4,5	3,15	10

(1*) = with **one** bend 45 degree

(2*) = with **one** bend 45 degree and **one** transfer station

(3*) = for each **addtional** bend 5 m of the system length have to be deducted

(4*) = for feed with a specific weight of 650 kg/m^3)

4.4 Dimensions of auger

Type of Flex Vey	Outer diameter [mm]	Inclination [mm]
Flex-Vey 75	60	60 **(*)**
Flex-Vey 90	70	65
Flex-Vey 125	100	70

(*) = on request available even with 40mm available

4.5 Dimensions of conveying pipes

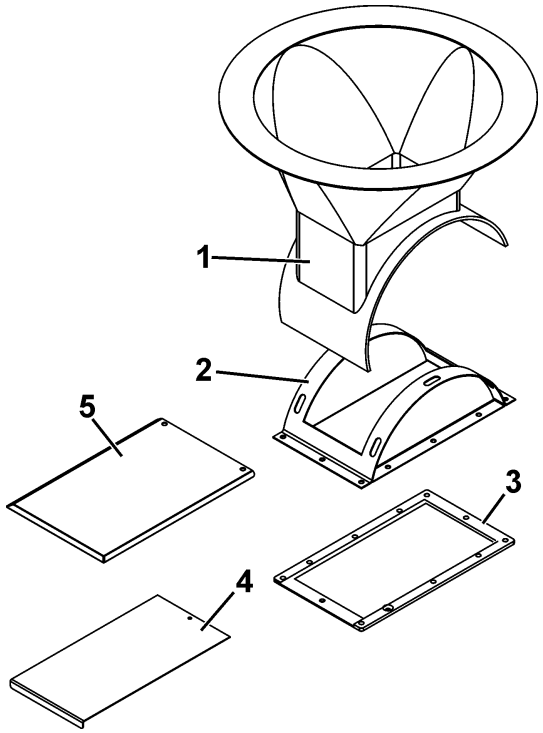
Type of Flex Vey	Outer diameter of pipe [mm]	Material / Wall thickness [mm]	Radius of pipe bend (45°/90°) [mm]
Flex-Vey 75	75	PVC **(*)** / 3,3	1533
Flex-Vey 90	90	PVC **(*)** / 3,5	1568
Flex-Vey 125	125	PVC **(*)** / 5,0	2750

(*) = on request also available as zinc-coated pipe

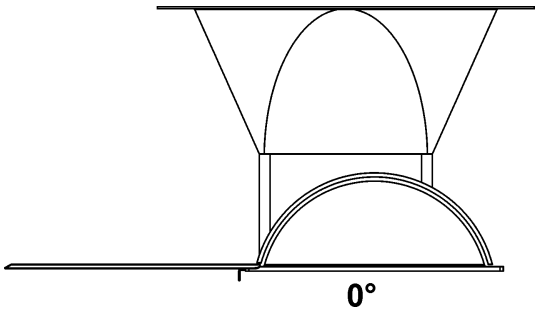
5 Assembling the Flex Vey boot

5.1 Survey of basic boot

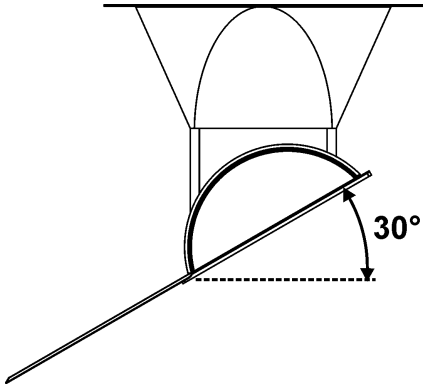
Component parts of basic boot for sheet metal and GRP silo



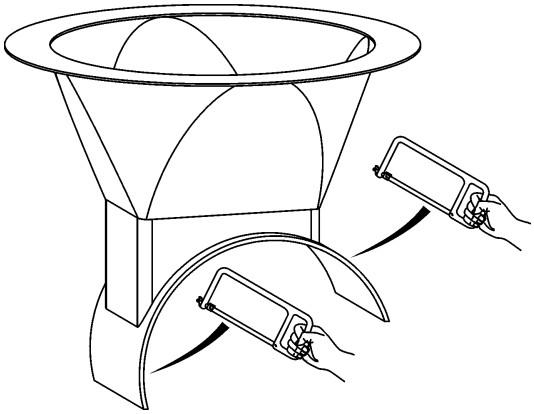
Upper part for boot set to 0 degree



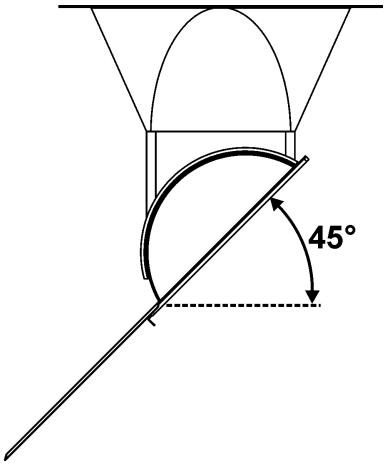
Upper part for boot set to 30 degree



The connection for the upper part has to be shortened according to the requested conveying angle.



Upper part for boot set to 45 degree



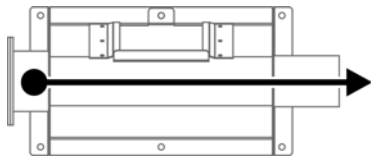
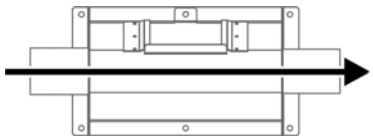
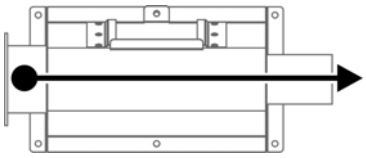
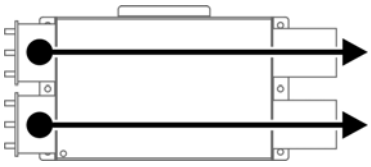
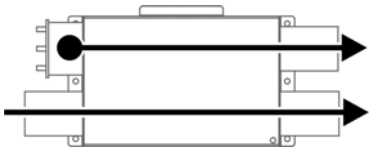
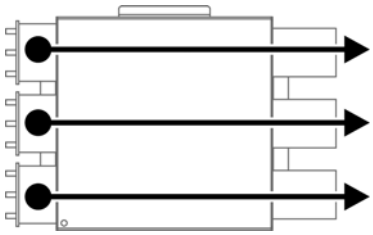
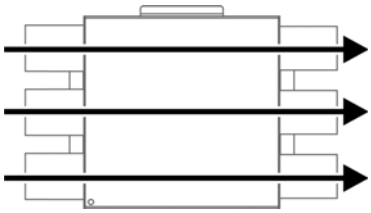
position numbers see the following page

Pos.	Qty.	Code no.	Description
1	1		Funnel GRP f/boot (sheet metal or GRP-Silo)
2	1	25-16-3602	Upper part galv f/boot for flexible auger
3	1	25-16-3603	Shutter guide PE for boot
4	1	25-16-3607	Hand slide galv f/boot f/flex. auger
5	1	25-16-3625	Cover plate galv for hand slide

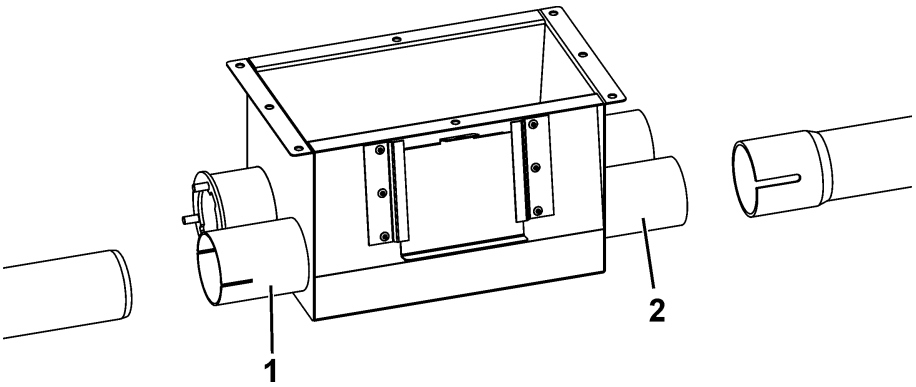
5.2 Survey: Conveying directions of the lower parts for boot

There are different types of lower parts for boot, depending on the required conveying direction and the use of one or more silos in combination.

(View from bottom)

1 line / 1 direction 	**1 line / passing** 	**Tandem** (for pushed auger with silos in Tandem-arrange-ment with 2. drive unit) 
2 lines / 1 direction 	**2 lines / passing** 	**2 lines / 2 direction**s 
2 lines / 1 direction / 1 line passing 	**3 lines/ 1 direction** 	**3 lines / passing** 

5.2.1 Note regarding the lower parts for boot with passing conveying lines



The lower parts for boot with **passing conveying lines** have a **pipe flange with slots** on one side(1). Here the conveying pipe will be **inserted** with the smooth end.

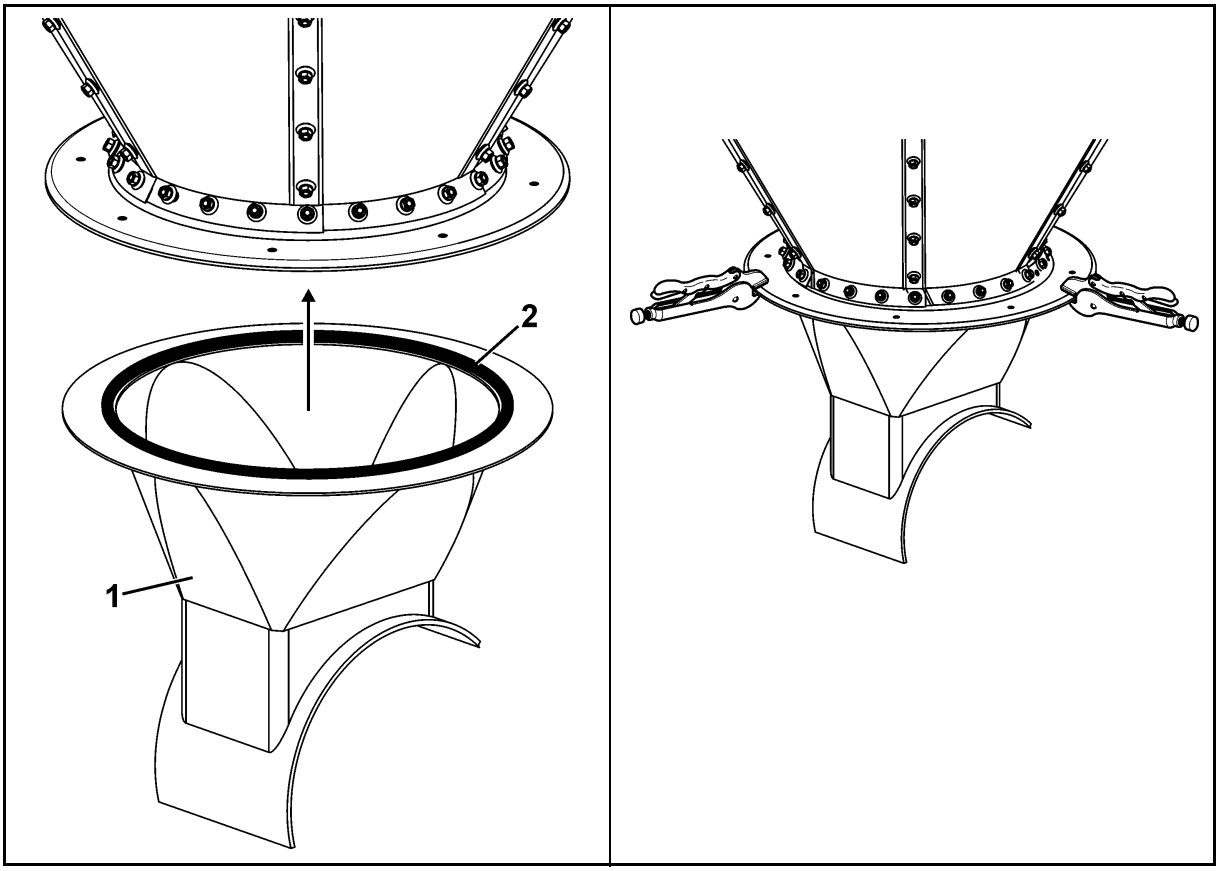
The end of the conveying pipes will be attached on the pipe flange at the other side with a socket.

5.3 Assembly of funnel for boot to the silo

	Note: The following assembly instructions are only applicable for **Big Dutchman** silos in connection with the **Big Dutchman** Flex-Vey feed conveying system.

Procedure:

1. Put a sealing strip (2) cut to correct size around the whole size of the funnel. **See to it that the sealing strip is put around the inner border of the funnel opening (not in the centre or outside).**
2. Clamp the funnel under the receiving ring of the silo hopper using vise-grip wrenches or thumbscrews. **Make sure that the funnel is already nearly aligned in the conveying direction of the auger.**



Pos.	Qty.	Code no.	Description
1	1	25-16-3629	Funnel GRP for boot for flex. auger for sheet metal silos (illustrated)
	1	25-16-3626	Funnel GRP for boot for flex. auger for silos GRP
2		25-17-8758	Sealing strip Butyl 2x10mm reel = 2x20m for Silo B

5.4 Assembly components: Upper- and lower part for boot with shutter guide

1. Put a sealing strip (10) cut to size around the whole inner border of the hole of the shutter guide (2).
2. Screw the shutter guide (2) and the upper part of the boot (1) by means of a cross recessed countersunk head screw M8x20 (8) and hexagon nuts M8 (7).

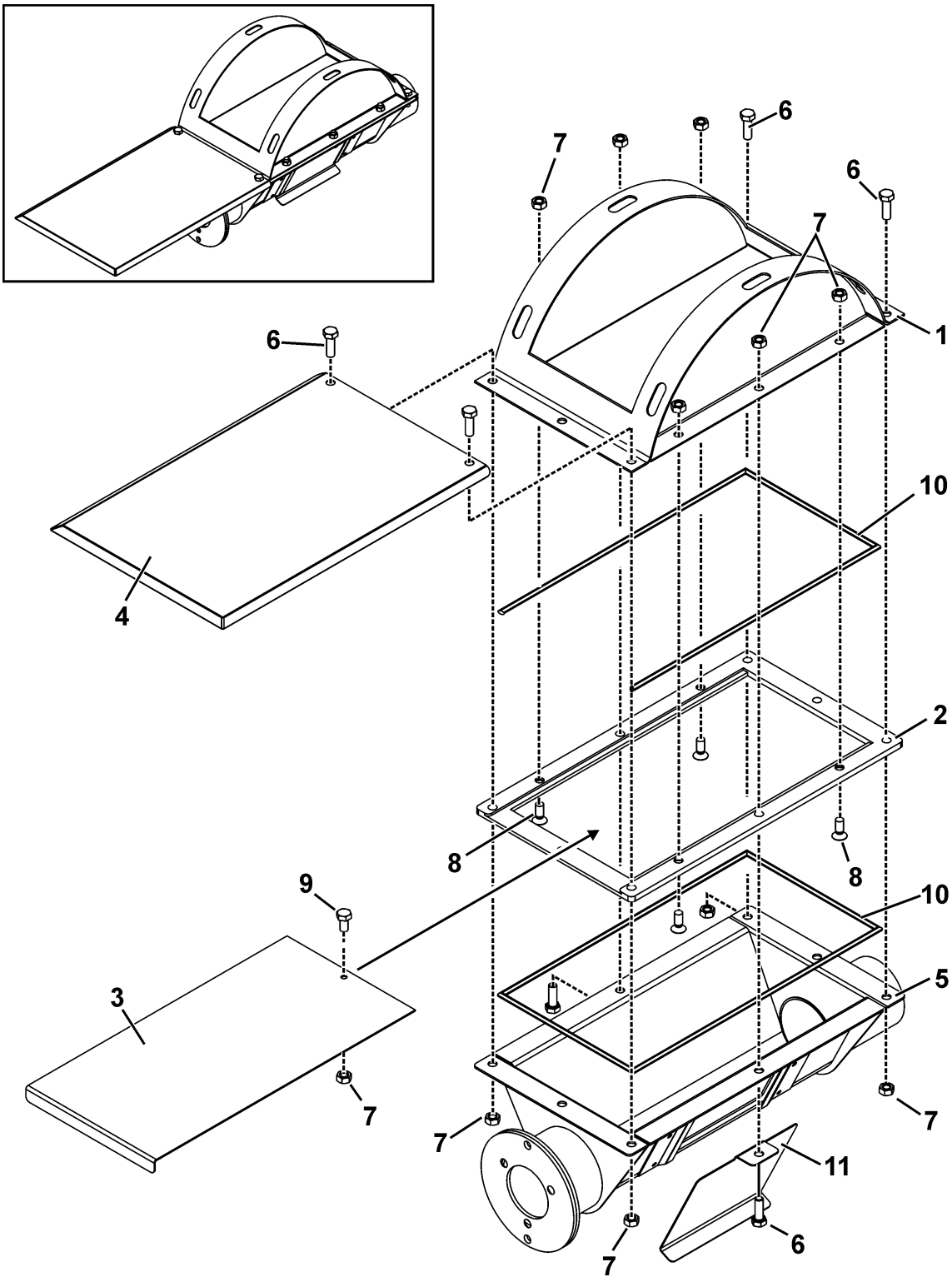
   The screws must be mounted **from the bottom to the top**.

   Make sure that the slot shows in direction of the guide of the hand slide (3) to the top and in direction of the cover plate (4).
3. **(!) Only for lower parts for boots with several lines:** Seal the bore at the bottom by means of a hexagon head screw M 8x16 (9) and by means of a hexagon nut M 8 (7).
4. Put a sealing strip (10) cut to size around the whole inner border of the hole of the lower part for boot (5).
5. Screw the lower part for boot (5), the upper part for boot (1) and the shutter guide (2) by means of hexagon head screws M8x25 (6) and hexagon nuts M8 (7).

   Make sure that the cleaning scraper (11) and the cover plate (4) are also screwed on one side of the lower part for boot.
6. Put the hand slide (3) into the opening of the shutter guide (2) and close the boring of the hand slide (3) by means of a hexagon head screw M 8x16 (9) and a hexagon nut M8 (7).

Pos.	Qty.	Code no.	Description
1	1	25-16-3602	Upper part galv f/boot for flexible auger
2	1	25-16-3603	Shutter guide PE for boot
3	1	25-16-3607	Hand slide galv f/boot f/flex. auger
4	1	25-16-3625	Cover plate galv for hand slide
5	1		lower part for boot (**shown here:** 25-16-3630 M75 1-line; 1 direction)
6	6	25-17-8766	Hexagon head screw M 8x 25 DIN 933 8.8 for silo B
7	11	25-17-8753	Hexagon nut M 8 DIN 934 Kl. 8 for silo B
8	4	99-10-1311	Cross recessed countersunk head screw M 8x16 DIN 965-5.8
9	1	99-10-1046	Hexagon head screw M8x 16 galv. DIN 933 8.8
10		25-17-8758	Sealing strip Butyl 2x10mm reel = 2x20m
11	1		Cleaning scraper

position numbers see the following page



position numbers: see previous page

5.5 Assembling the components (Upper- / lower part for boot) to the funnel

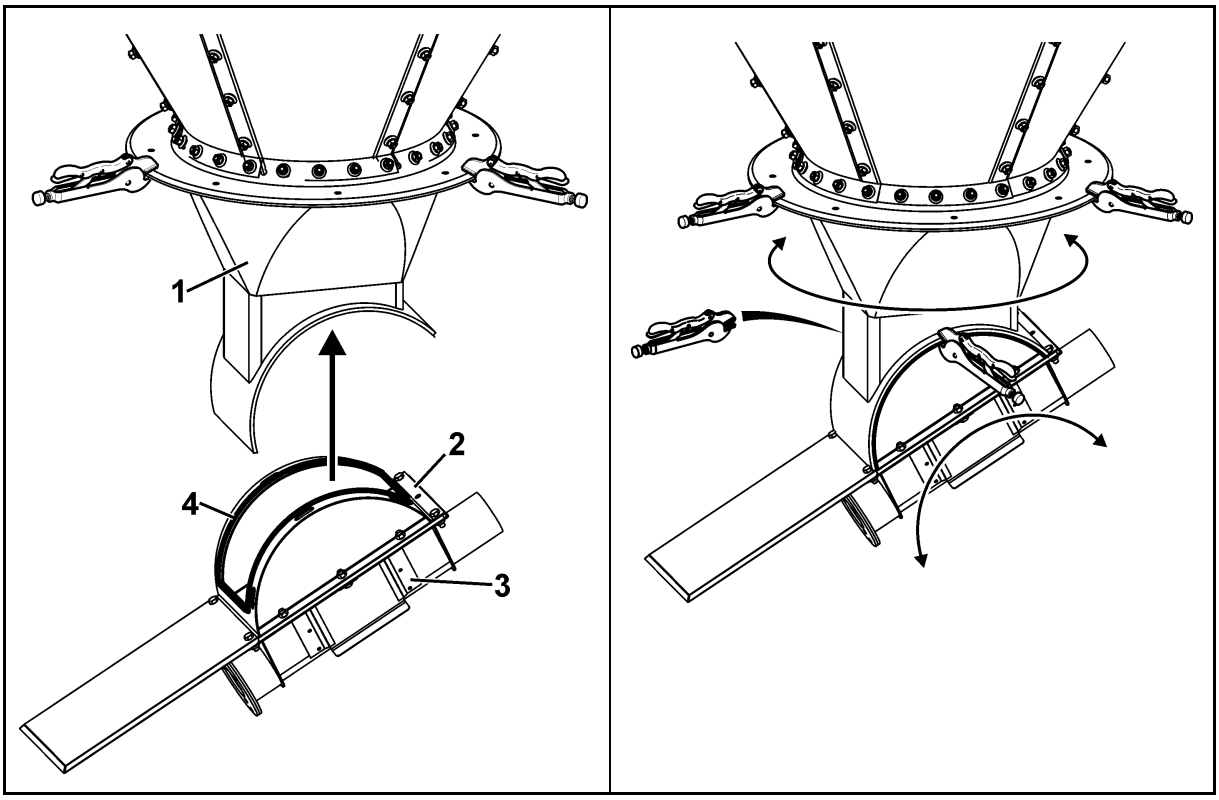
5.5.1 Alignment of boot and funnel

Procedure:

1. For adjusting, clamp the unit previously mounted by means of vise-grip wrenches or screw clamps under the funnel for boot (1).
2. In order to achieve the **correct angle of inclination (between 0° and 45°)** for the conveying pipe, the contact area of the funnel (1) has to be shortened according to the requested angle.
3. Align the **outlet** of the lower part for boot (3) **according to the conveying direction indicated in the planning drawing.**
4. The premounted unit will be adjusted, **until the conveying direction and the angle of inclination are right.** If necessary, turn the funnel (1) under the silo.
5. Put a sealing strip (4) around the inner border of the hole of the upper part for boot (2) after having finished the adjustment.

Pos.	Qty.	Code no.	Description
1	1	25-16-3629	Funnel GRP for boot for flex. auger for sheet metal silos (shown)
	1	25-16-3626	Funnel GRP for boot for flex. auger for silos GRP
2	1	25-16-3602	Upper part galv f/boot for flexible auger
3	1		Lower part f/boot (**shown here:** 25-16-3630 M75 1-line; 1 direction)
4		25-17-8758	Sealing strip Butyl 2x10mm reel = 2x20m
5			Vise-grip wrench or screw clamp

position numbers see the following page


1
2
4
3

5.5.2 Screwing the boot to the funnel and funnel to silo

Important:

Before screwing the components make sure that the funnel and the boot are correctly positioned as shown in the plan drawing.

Vibrator to silo:

If a vibrator to silo has been planned, **the vibrator plate has to be screwed, too**. (see chapter 6).

5.5.2.1 Screwing for sheet metal silo

Procedure:

Screwing funnel / upper part for boot:

1. Drill holes (Ø 11 mm) at the junction point of funnel/upper part for boot.

   Use the existing oblong holes in the upper part for boot as drilling jig.

2. Screw the upper part for boot (3) and the funnel for boot (2) by means of hexagon head screws M10x25 (4), washers B10.5 (5) and hexagon nuts M10 (6).

   Make sure the the hexagon head screws M10x25 (4) are put into the bores of the funnel from the top.

Screwing funnel/collar of silo:

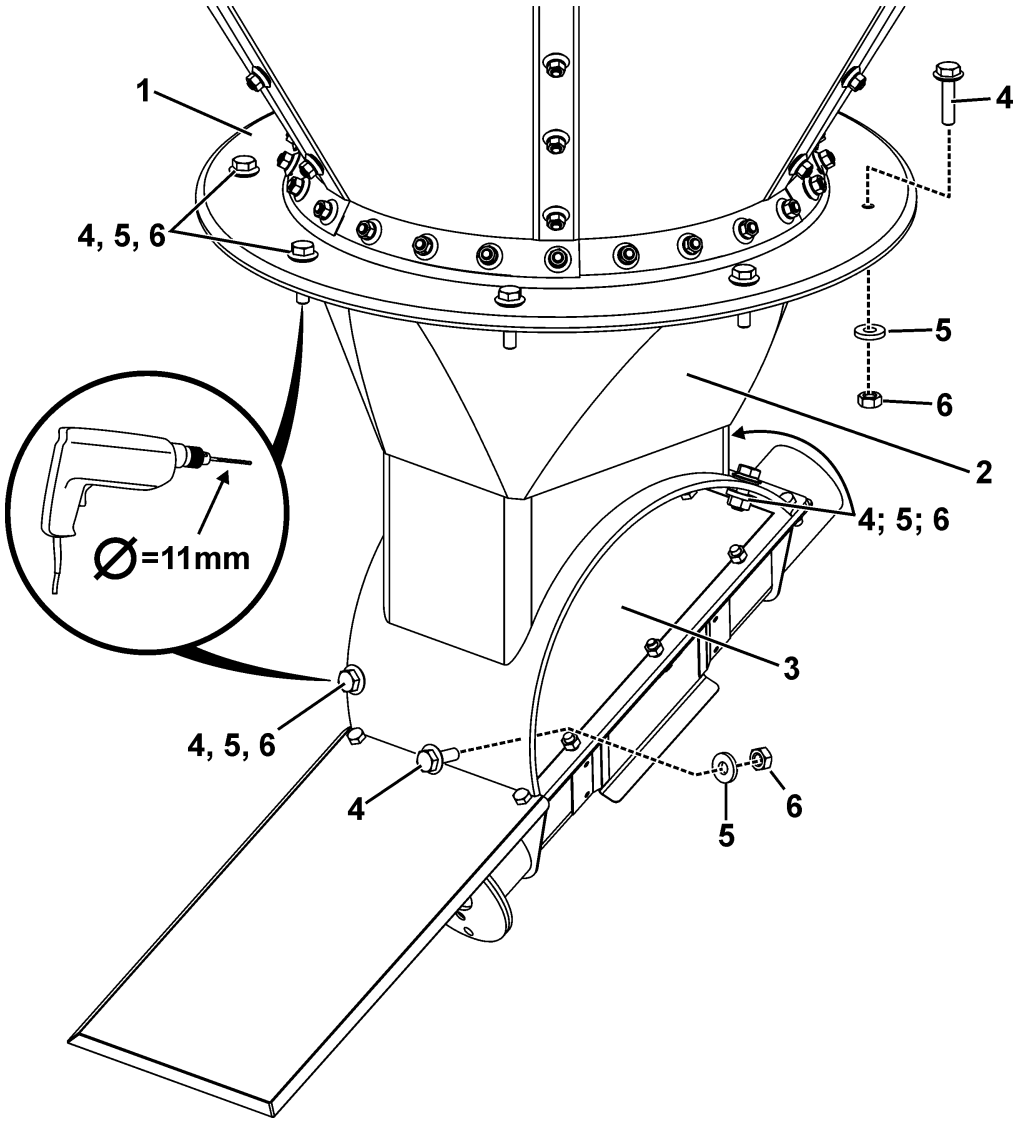
1. Drill holes (Ø 11 mm) from bottom into the collar of the funnel.

   Use the bore holes existing in the collar of the silo as drilling jig.

2. Screw the funnel for boot (2) and the collar of silo by means of hexagon head screws M10x25 (4), washers B10.5 (5) and hexagon nuts M10 (6).

   Make sure that the hexagaon head screws M 10x25 (4) are put into the bores of the collar of silo from the top.

Check whether all screws are firmly tightened.



Pos.	Qty.	Code no.	Description
1	1		Collar for boot for flexible auger
2	1	25-16-3629	Funnel GRP for boot for flex. auger for sheet metal silos
3	1	25-16-3602	Upper part galv f/boot for flexible auger
4	(*)	25-16-3608	Hexagon head screw M 10x 25 hot-galvan. with rubber gasket
5	(*)	99-50-1483	Washer A 10,5x30x2,5 DIN 9021 galv.
6	(*)	25-17-3259	Hexagon nut M10 hot-galvanised

(*) = The total number is dependent on the type of the sheet metal silo used.

5.5.2.2 Screwing for GRP-Silo

Procedure:

Screwing funnel / upper part for boot:

1. Drill holes (Ø11 mm) at the junction point funnel/upper part for boot. .

   Use the existing oblong holes in the upper part for boot as drilling jig.

2. Screw the upper part for boot (3) and the funnel for boot (2) by means of hexagon head screws M10x30 (5), washers M10 (6), washers B10.5 (7) and hexagon nuts M10 (8).

   Make sure that the hexagon head screws M10x30 (5) are put into the bore holes of the funnel from the top.

Screwing funnel/collar of silo:

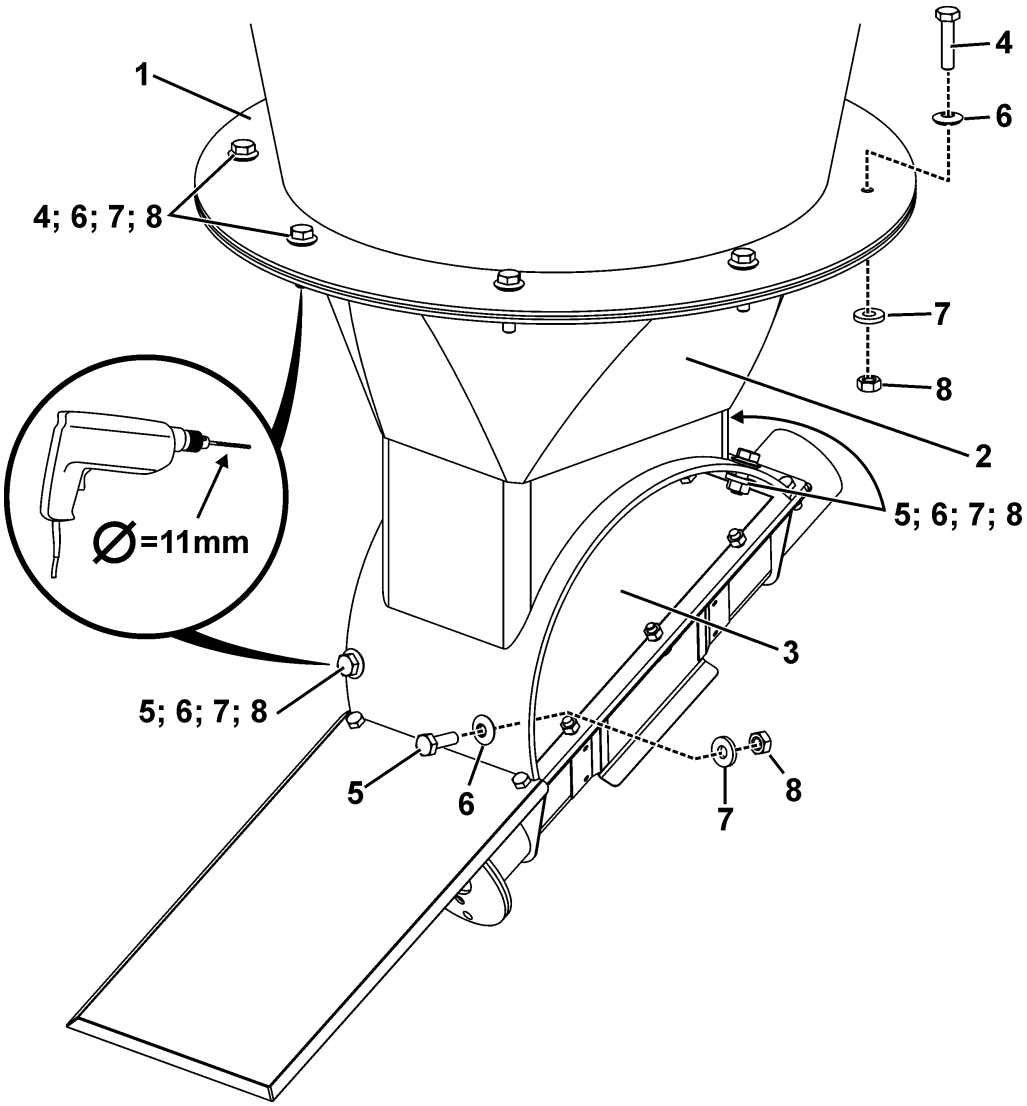
1. Drill holes (Ø 11 mm) from bottom into the collar of the funnel.

   Use the bore holes existing in the collar of the silo as drilling jig.

2. Screw the funnel for boot (2) and the collar of the silo by means of hexagon head screws M10x45 (4), washers M10 (6), washers B10.5 (7) and hexagon nuts M10 (8).

   Make sure that the hexagon head screws M10x45 (4) are put into the bore holes of the collar of the silo from the top.

Check whether all screws are firmly tightened.



Pos.	Qty.	Code no.	Description
1	1		Collar of GRP silo funnel
2	1	25-16-3626	Funnel GRP for boot for flex. auger for silos GRP
3	1	25-16-3602	Upper part galv. f/boot
4	(*)	99-20-1465	Hexagon head screw M 10x 45 DIN 933
5	4	99-20-1416	Hexagon head screw M10x 30 DIN 933
6	(*)	25-17-3255	Washer SST with mounted gasket for screw M10
7	(*)	99-20-1617	Washer 10,5x40x1,5 SST
8	(*)	99-20-1500	Hexagon nut M 10 SST DIN 934

(*) = The total number is dependent on the type of the GRP silo used.

5.6 Assembling the boot for Tandem-Silo

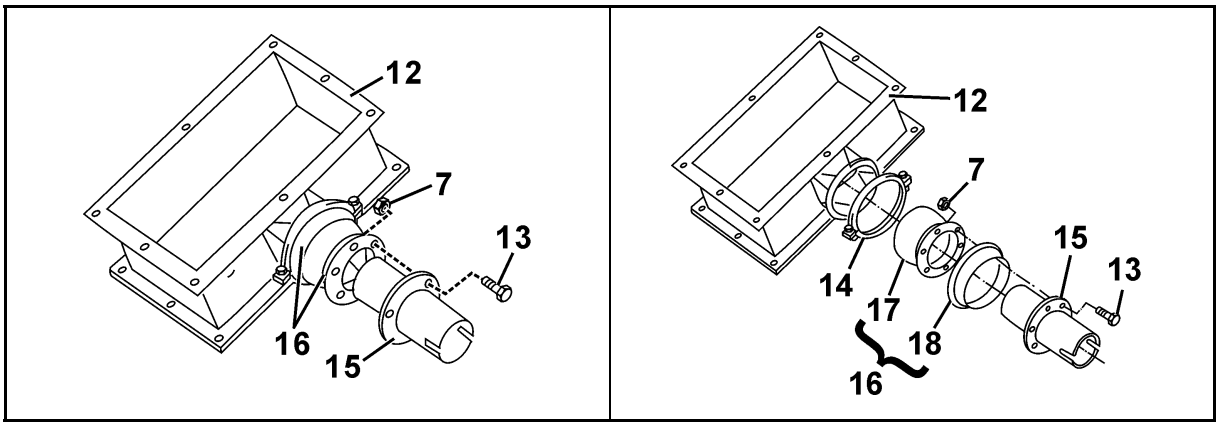
Assembling must be carried out as described in chapter 5.4 **with the supplement of an additional intermediate flange** to be mounted :

1. Put a sealing strip (10) cut to size around the inner border of the hole of the intermediate flange (12).
2. Screw the intermediate flange (12), the upper part for boot (1) and the shutter guide (2) by means of hexagon head screws M 8x25 (6) and hexagon nuts M8 (7).

   Make sure that the lateral outlet at the intermediate flange points to the second silo and the the cleaning scraper (11) is also screws on one side of the lower part for boot.
3. Put the hand slide (3) into the opening of the shutter guide (2) and close the hole of the hand slide by means of a hexagon head screw M 8x16 (9) and a hexagon nut M8 (7).
4. Put a sealing strip (10) cut to size around the whole inner border of the hole of the lower part for boot (5).
5. Screw the lower part for boot (5) and the intermediate flange (12) by means of hexagon head screws M 8x25 (6) and hexagon nuts M8 (7).

Assembling of intermediate flange with lateral ball bearing outlet:

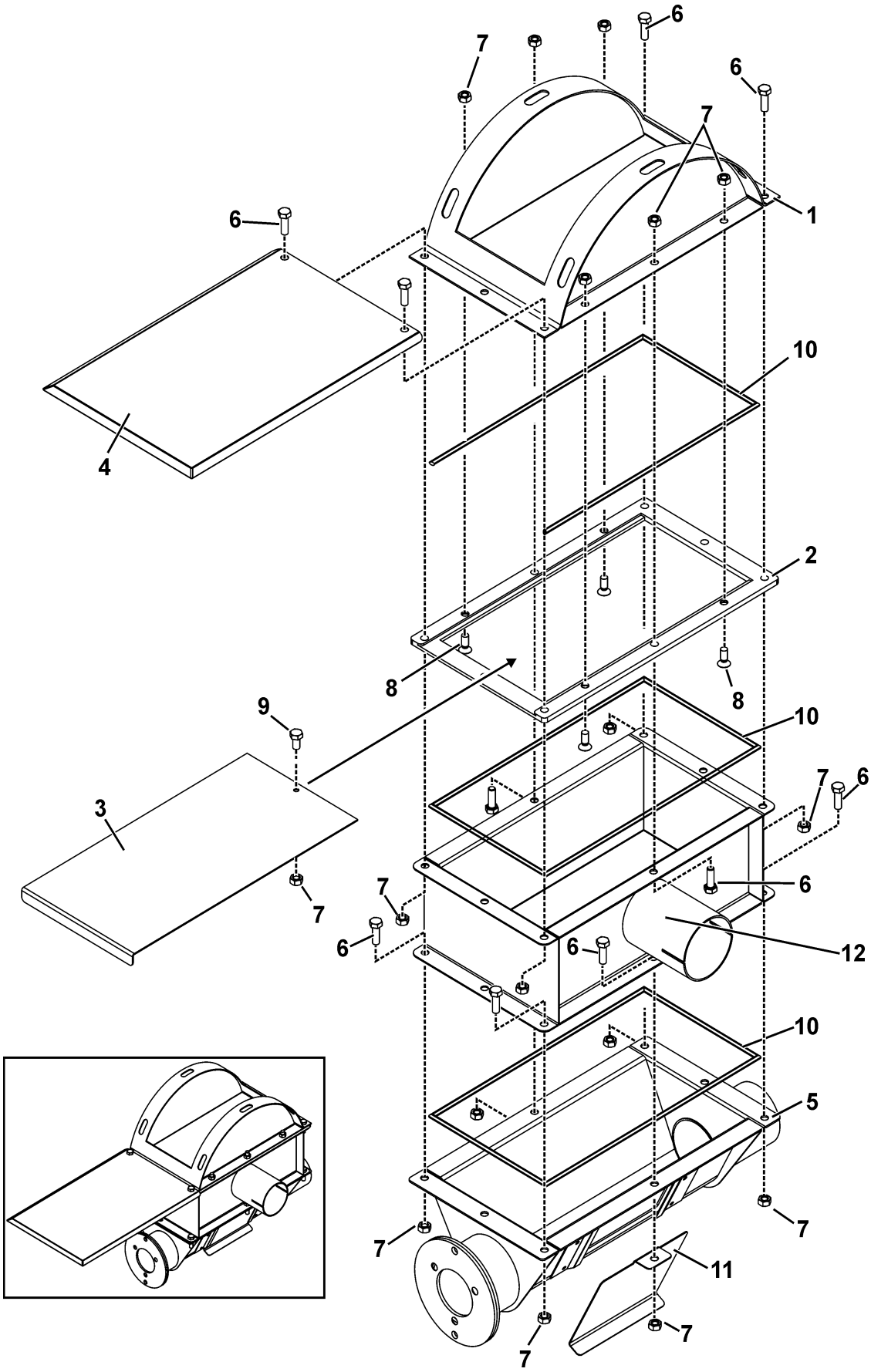
6. Push the inner part for universal joint (18) over the ball housing (17).
7. Fix this unit by means of a tension ring (14) to the lateral outlet of the intermediate flange (12).
8. Screw the adapter for auger tandem (15) by means of hexagon head screws M 8x20 (13) and hexagon nuts M8 (7) to the flange of the ball housing(17).



position numbers see the following page

Pos.	Qty.	Code no.	Description
1		25-16-3602	Upper part galv f/boot for flexible auger
2		25-16-3603	Shutter guide PE for boot
3		25-16-3607	Hand slide galv f/boot f/flex. auger
4		25-16-3625	Cover plate galv for hand slide
5			Lower part f/boot
6		25-17-8766	Hexagon head screw M 8x 25 DIN 933 8.8 for silo B
7		25-17-8753	Hexagon nut M 8 DIN 934 Kl. 8 for silo B
8		99-10-1311	Cross recessed countersunk head screw M 8x20 DIN 965-5.8
9		99-10-1046	Hexagon head screw M 8x 16 DIN 933 8.8 galv
10		25-17-8758	Sealing strip Butyl 2x10mm reel = 2x20m
11			Cleaning scraper
12		25-60-3098	Intermediate flange w/lateral outlet dia 75
		25-61-3098	Intermediate flange w/lateral outlet dia 90
			Intermediate flange w/lateral ball bearing outlet
13		99-10-1038	Hexagon head screw M 8x 20 DIN 558 galv
14		25-16-3033	Tension ring 150 galv with sealing ring 1mm
15			Adapter for Tandem-Auger
16			Universal joint 30deg (Nr. 4110971)
			consisting of:
17	1		Ball housing for universal joint 30° (S 154 000)
18	1		Inner part for universal joint S 102 (155 000)

position numbers see the following page



position numbers: see previous page

5.7 Assembling the components (Upper- / lower part for boot) to the funnel

The assembly of the group of components (upper/lower part for boot / intermediate flange) to the funnel is made as described in chapter 5.5 .

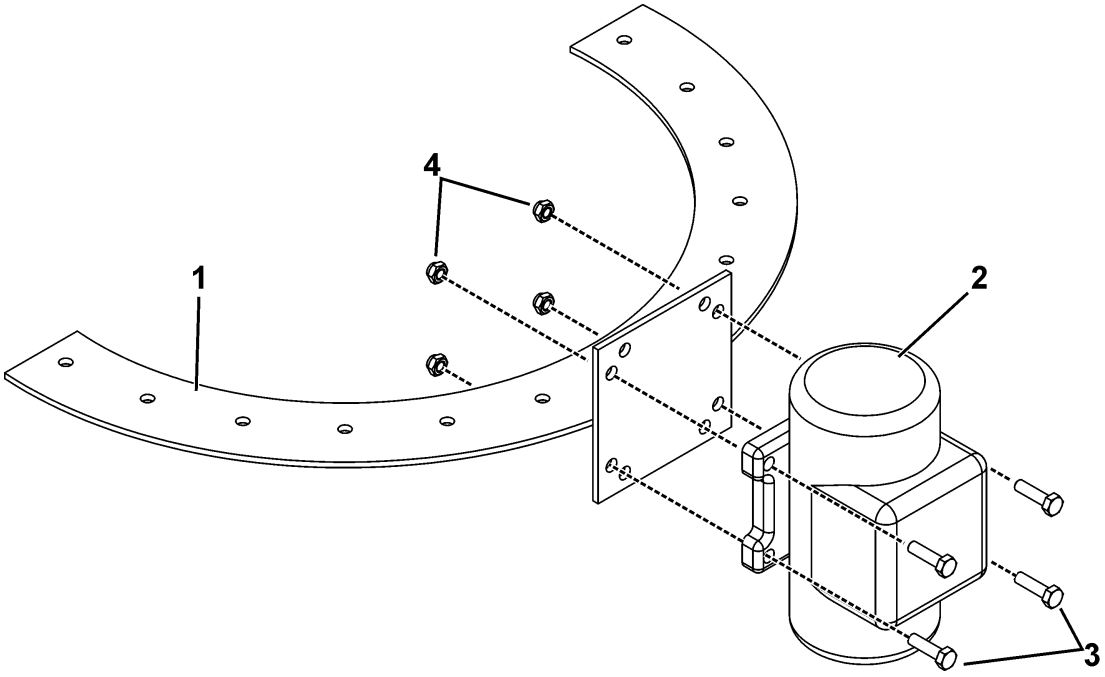
6 Assembling the electric vibrator (optional)

6.1 Pre-assembly of the vibrator

Important:

The electric vibrator is mounted vertically to the vibrator plate.

All screws must **firmly tightened** and must be **checked regularly for a firm fit**.



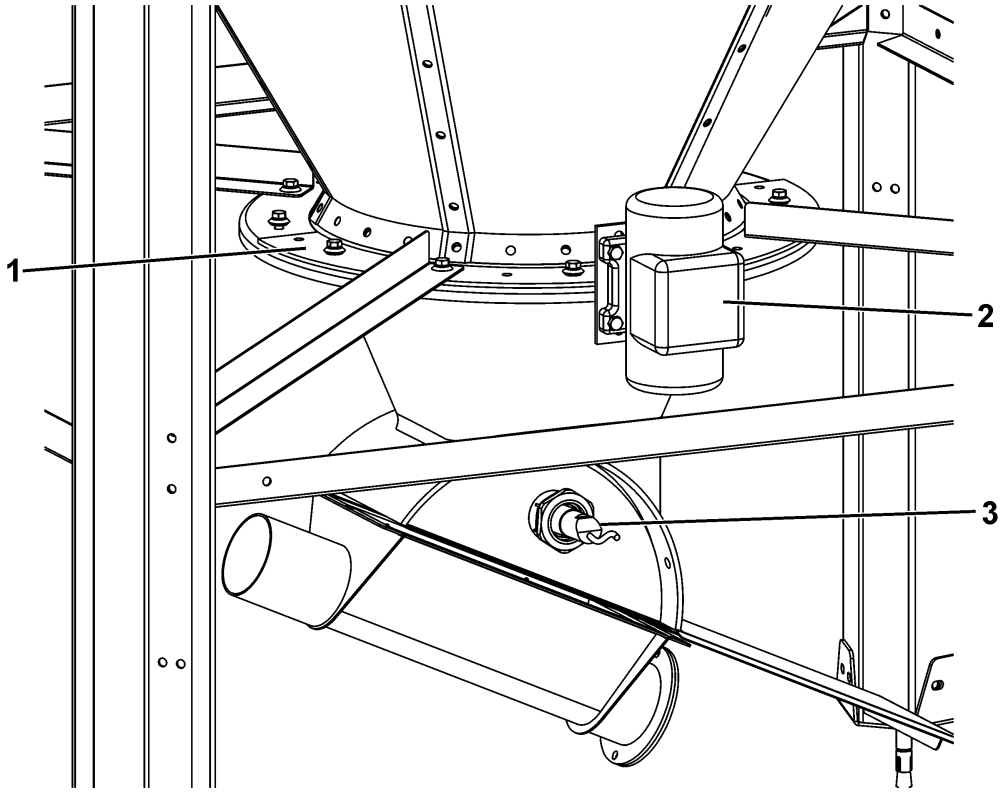
Pos.	Qty.	Code no.	Description
1	1	25-00-3702	Vibrator plate round galv without screws
2	1	25-00-1002	Vibrator 0,18KW 3000Umin 230/400V 50/60Hz
3	1	99-10-1058	Hexagon head screw M8x 30 galv. DIN 933
4	1	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv.

6.2 Assembly to the silo

The vibrator plate of the electric vibrator - lying on the horizontal collar - will be screwed to the horizontal collar and the funnel for boot.

Regarding the control of the vibrator, a sensor in the upper part of the boot and a control unit with timer will be installed.

(As regards the mode of operation of the sensor and the control unit: see chapter 6.3)



Pos.	Qty.	Code no.	Description
1	1	25-00-3702	Vibrator plate round galv without screws
2	1	25-00-1002	Vibrator 0,18KW 3000Umin 230/400V 50/60Hz
3	1	91-00-3985	Sensor MS-45R w/union

6.3 Function of the vibrator

A sensor MS45 is installed in the boot, switching on the electric vibrator as soon as there will be no more feed and switching it off if feed is supplied.

The running time is preset to approximately 10 sec. and can be changed if necessary. After expiration of this time the electric vibrator stops and will restart as soon as the sensor is again in contact with feed (e.g. with an empty silo and after refilling of the silo).

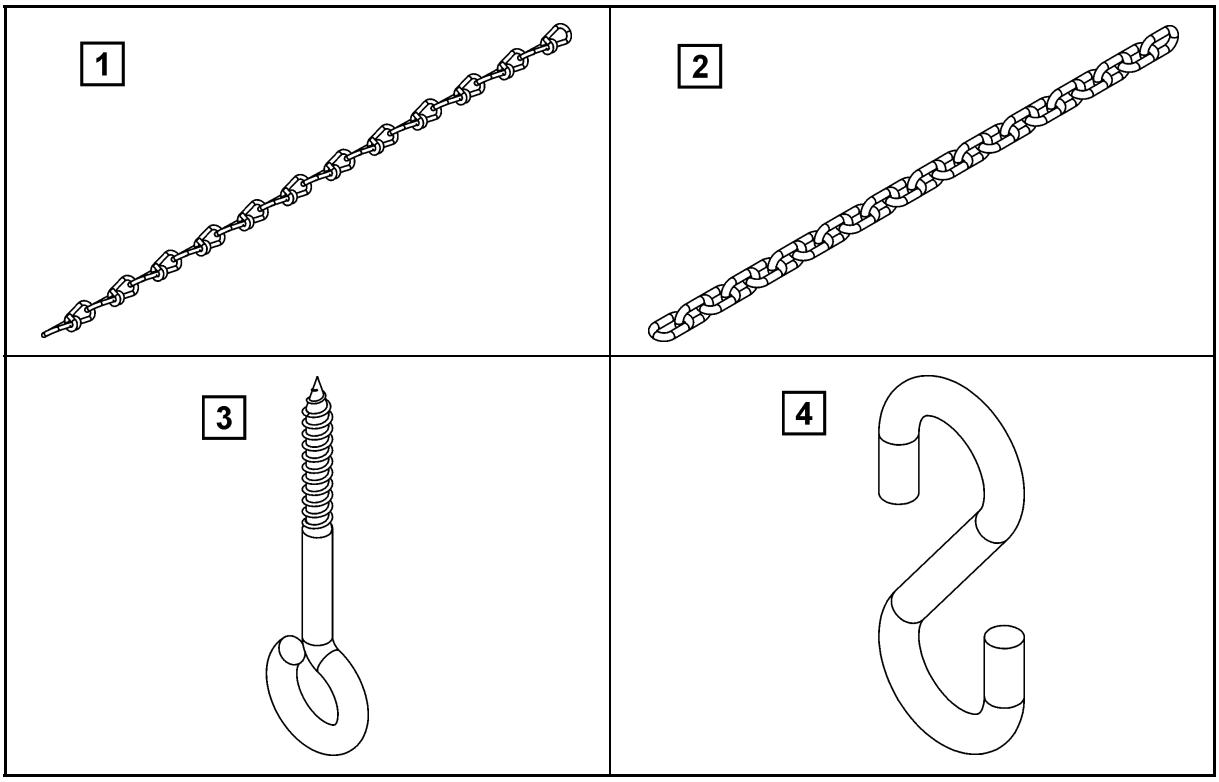
7 Assembling the conveying pipes and the suspension

Note

Assembly direction: From the silo into the building and then to the drive drive unit.

7.1 Survey suspension material

Additional suspension material (dowels, cup hooks, S-hooks and suspension chains) has to be provided for according to the type of suspension.

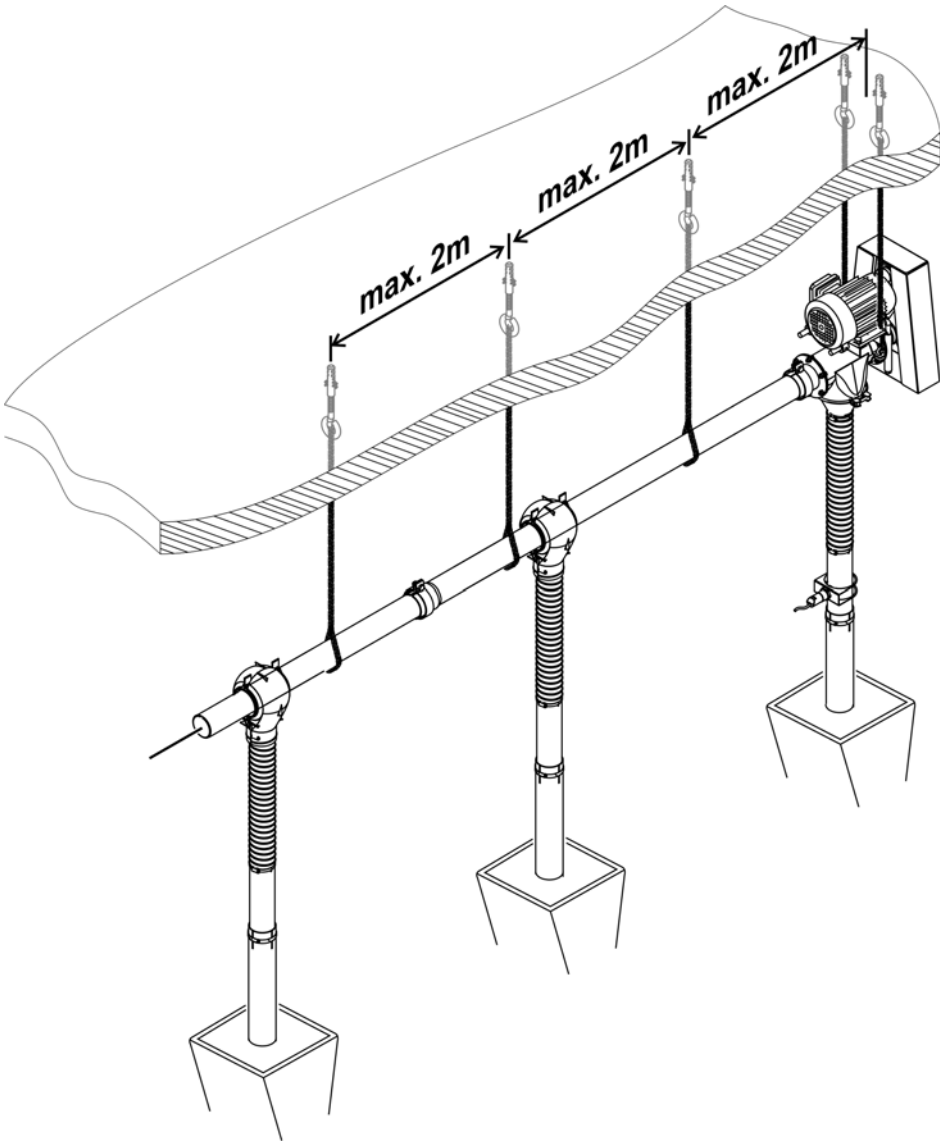


Pos.	Qty.	Code no.	Description
1		99-50-0012	Suspension chain K 27
2		99-50-0003	Ship chain galv. 5mm DIN 766
3		10-93-1629	Cup hook galv 80x22x7,8
		10-93-1642	Cup hook galv 120x22x7,8
		99-50-3834	Cup hook galv 140x22x7,8
4		99-50-0005	S-hook 2" no. 60/6x55

7.2 Notes for suspension and laying of conveying pipes

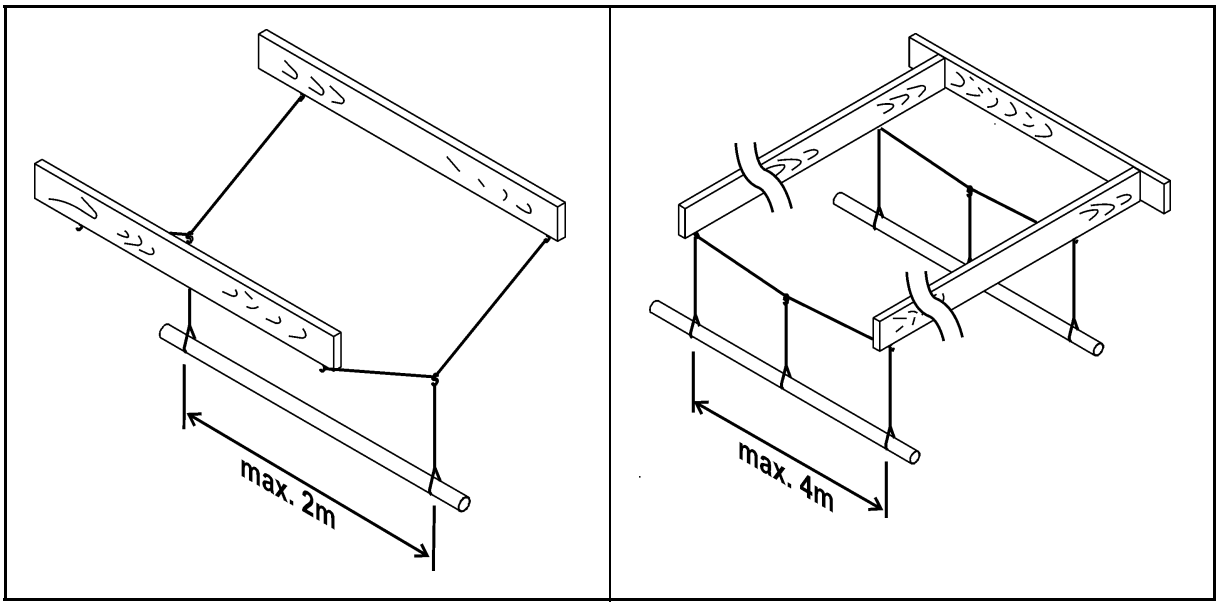
7.2.1 Suspension of conveying pipes

- Pay attention to a solid and firm fixing of the suspension points.
- **Maximum distance between the suspension points: 2m**. The distance between the feed outelets remain unaffected.



- If there are **not sufficient beams or supports** in the house for fixing the suspension points the following solutions are applicable:

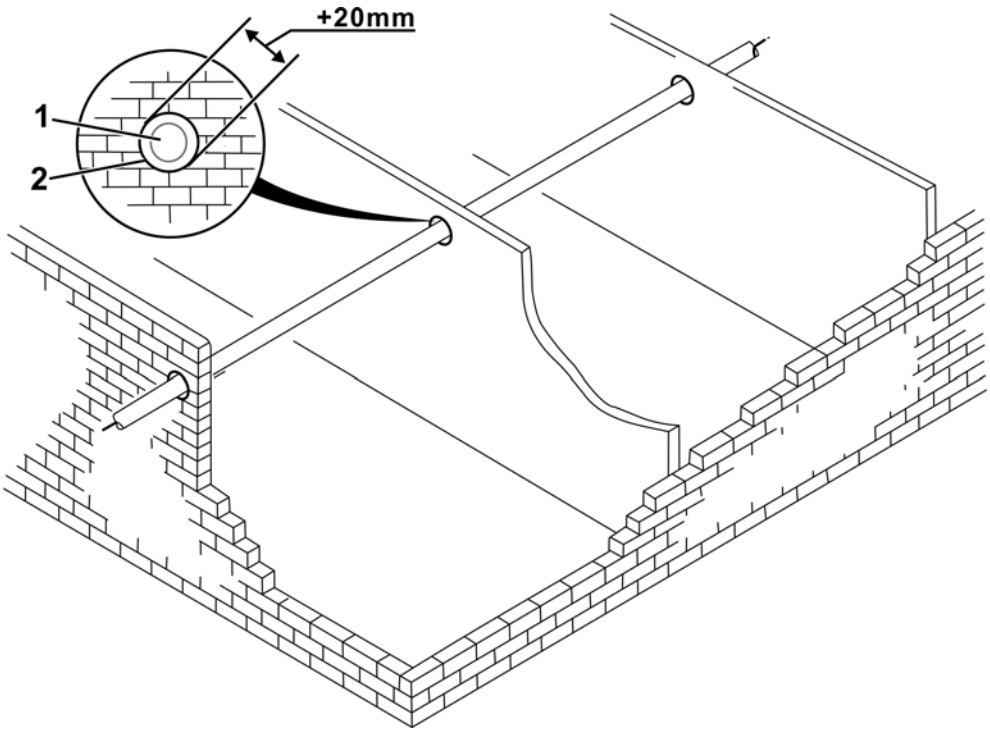
	When using one of these solutions, you have to provide for **additional suspension material** e.g. cup hooks, S-hooks and suspension chains.


max. 2m
max. 4m

7.2.2 Laying of conveying pipes

- If the conveying pipe is led through the wall, e.g. in case of smaller house departments, **the wall openings** must be made 20mm larger than the actual diameter of the conveying pipe.

Type of conveying pipe:	Diameter wall opening [mm]
Flex Vey 75	95
Flex Vey 90	110
Flex Vey 125	145



1=	Conveying pipe
2=	Wall opening (= diameter Pos 1 + 20mm)

- **Make sure that the conveying pipe is exactly in the middle of the hole of the wall opening.**

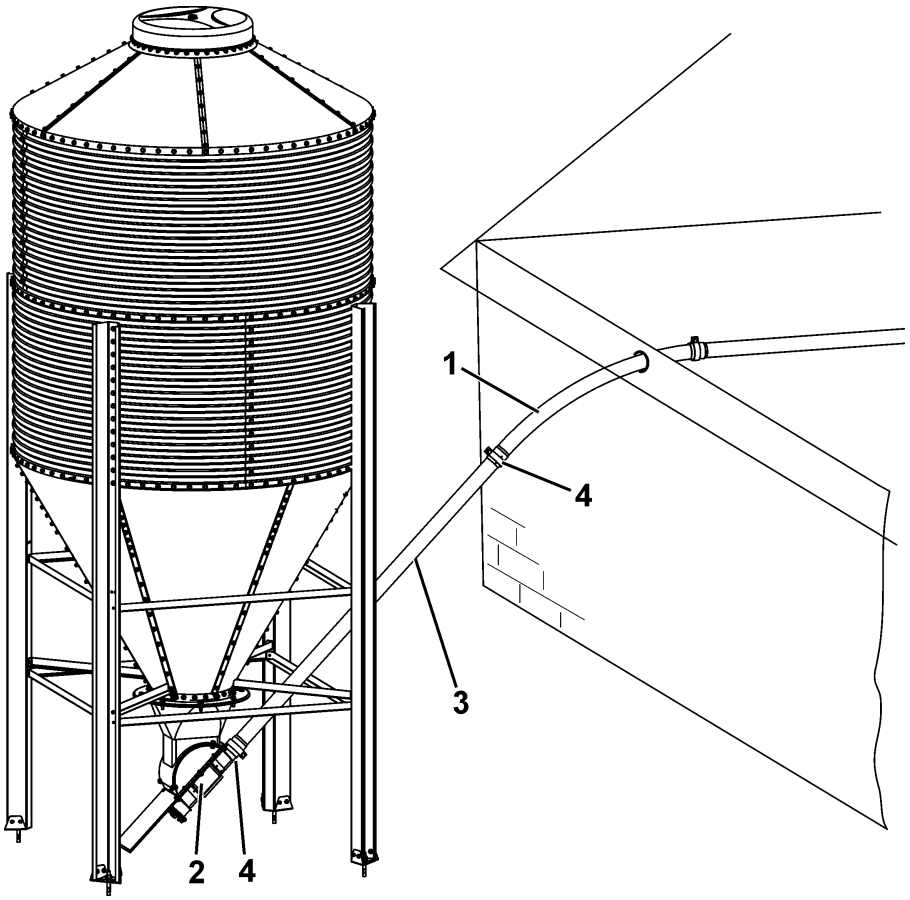
  This avoids wear of the pipes due to friction against the wall.

- If you break through the outer wall you will have to make a weather sealing out of rubber material and fasten it at the outer wall.

7.3 Assembling the conveying pipes

7.3.1 Assembling of conveying pipes from the silo to the outer wall of the house

1. Insert a bend 45° (1) through the opening of the wall. The end of the bend with the socket shows in direction of the boot of the silo. Fix the bend at the wall of the building very firmly so that the end of the bend runs horizontally in the building.
2. If the length of the end of the bend with socket does not fit onto the adapter of the lower part of the boot (2), a corresponding piece of conveying pipe (3) must be mounted in between.



3. Measure the distance between the adapter of the lower part of the boot (2) and the end of the bend 45° (1).
4. Cut a conveying pipe (3) to the length measured beforehand.

   Make sure that one end of the conveying pipe has a socket, which will be fixed to the adapter of lower part of the boot (2).
5. Put a tube clip (4) onto the socket of the conveying pipe (3) and the bend (1).

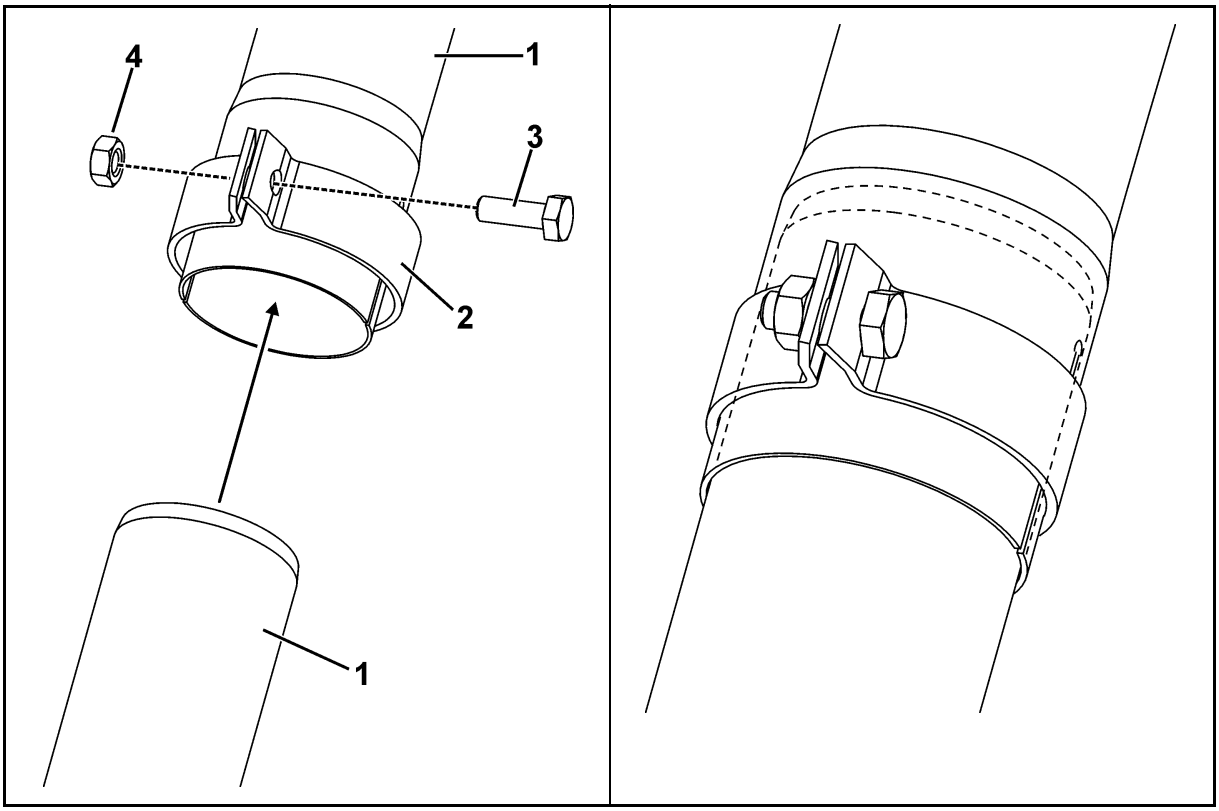
6. Put the cut conveying pipe with the socket onto the adapter of the lower part of the boot (2) and the other end in the socket of the bend (1).

   Make sure that the ends are inserted up to the limit stop into the sockets.

7. Align the conveying pipe piece (3) and the bend (1) and tighten the screws of the tube clips (4).

Note:

All sockets of the conveying pipes and bends **outside** the house must **be turned downwards**, in order to avoid any penetration of rain water.



Pos.	Qty.	Code no.	Description
1			Conveying pipe / bend
2			Tube clip Flex-Vey
3			Hexagon head screw
4			Hexagon nut

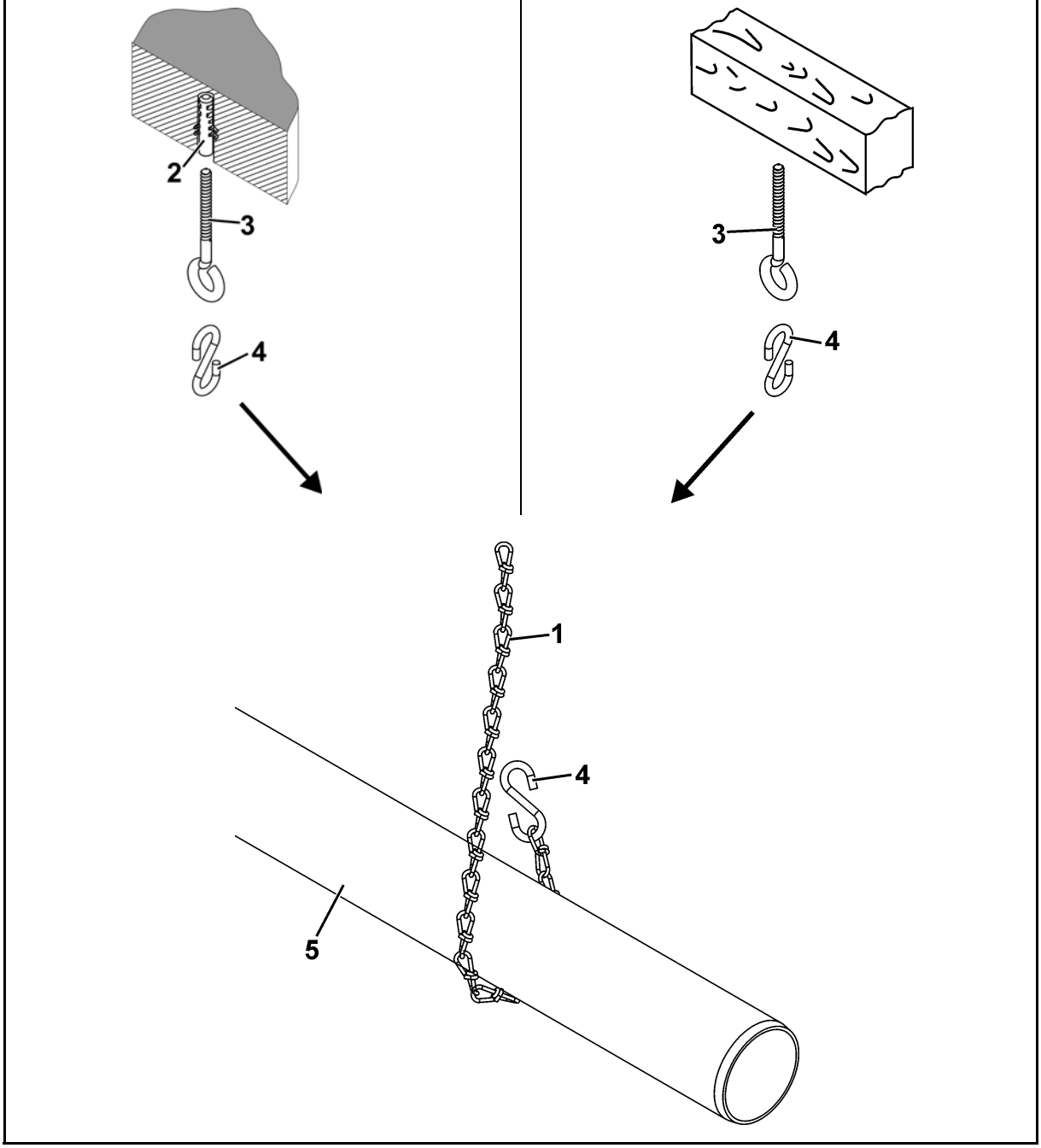
8. Before mounting the horizontal conveying pipes in the house, the suspension for the conveying pipes has to be made.

7.4 Assembling the suspensions and the conveying pipes in the building

Note

Which mounting material you have to use, will depend on the quality of the ceiling or the beams respectively.

Suspension to concrete ceiling	Suspension to wooden beam



position numbers see the following page

Pos.	Qty.	Code no.	Description
1		99-50-0012	Suspension chain K 27
2			Dowel
3			Cup hook galv.
4		99-50-0005	S-hook 2" No. 60/6x55
5			Conveying pipe

1. Fasten the cup hooks (3) with a distance of max. 2m to the wooden beam or to the ceiling.
2. Measure the required length of suspension chain (1) and cut one piece of chain for each suspension point.

   Please consider that a certain length of suspension chain is required for the eyelet around the conveying pipe (5).
3. Suspend the conveying pipe (5) with the chain (1) and the S-hook (4). The alignment of the conveying pipes is made by reducing or decreasing the size of the eyelet around the conveying pipe.
4. Now mount all horizontal conveying pipes in the house up to the provided position of the drive unit.
5. Cut, if necessary, the last pipe before the drive unit to the adequate length.
6. Put a tube clip onto every socket of the conveying pipe and tighten the screws.

7.5 Procedure in case of repairs of the conveying pipes

Regarding the exact procedure in case of a repair of a conveying pipe see chapter 17.1 .

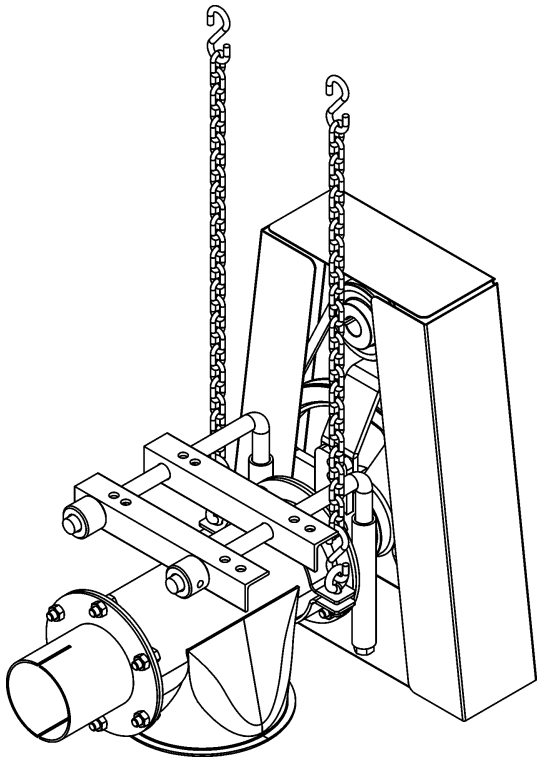
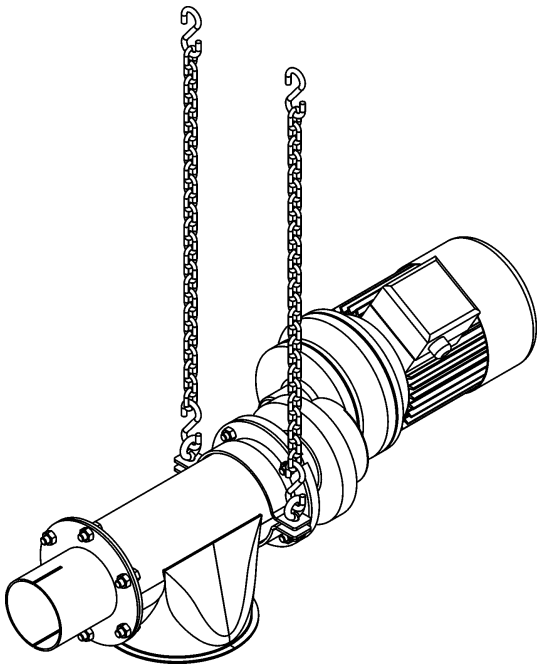
Note:

In case of repairs or for other reasons it may happen that a conveying pipe must be cut.

A repair without replacing the total conveying pipe is possible.

Use a coupler for pipe Flex-Vey to connect the conveying pipes.

8 Assembly of drive unit

V-belt drive unit	Unit with geared motor
	

8.1 Suspension of drive unit

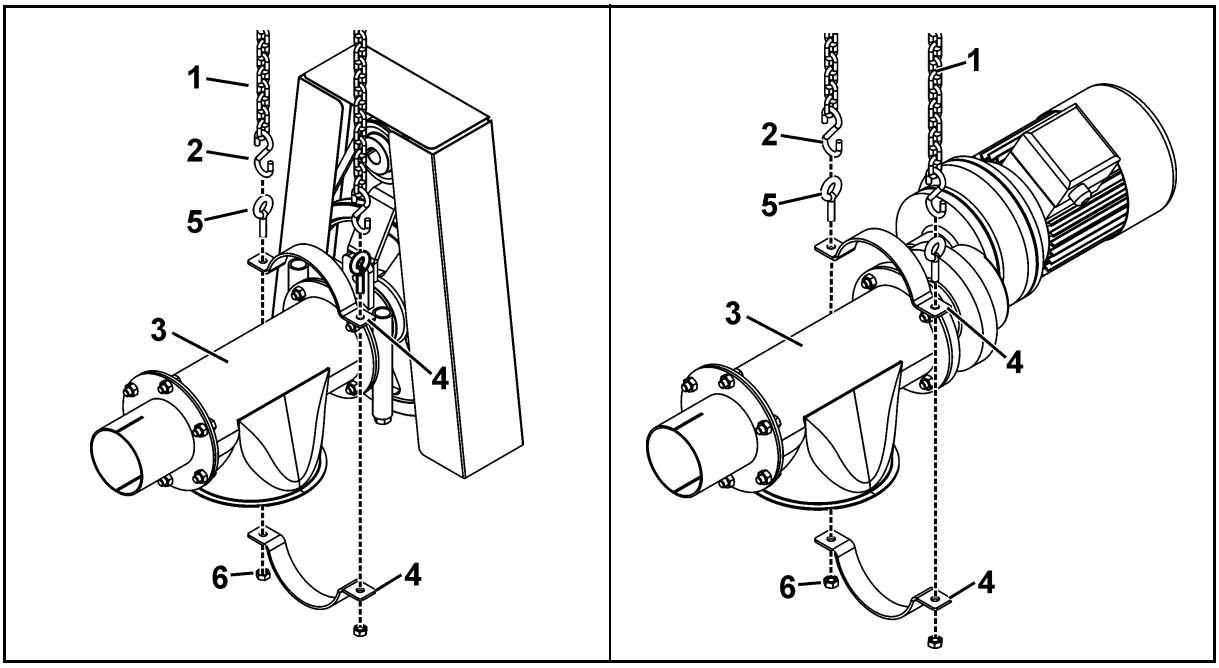
Pos.	Qty.	Code no.	Description
1		99-50-0003	Ship chain galv. 5mm DIN 766
2		99-50-0005	S-hook 2" No. 60/6x55
3	1	25-16-3610	Drive head S105000 for drive Flex-Vey
	1	81-05-3312	Drive head for drive Flex Vey 125
4	2		Mounting clip for drive head Flex-Vey
5	2	99-10-1563	Lifting eyebolt M 8x 25
6		99-10-1040	Hexagon nut M8 galv. DIN 934-8
7	1	25-16-3611	Adapter S335000 for auger Flex-Vey 75
	1	25-16-3612	Adapter S344000 for auger Flex-Vey 90
	1	81-03-4938	Adapter S3?? 000 for auger Flex-Vey 125
8		99-10-1038	Hexagon head screw M 8x 20 galv. DIN 933
9	1	99-50-0475	Clamp for pipe Flex-Vey 75
	1	99-50-0476	Clamp for pipe Flex-Vey 90
	1	99-50-0477	Clamp for pipe Flex-Vey 125
10			Conveying pipe

Regarding the position nos.: see following pictures

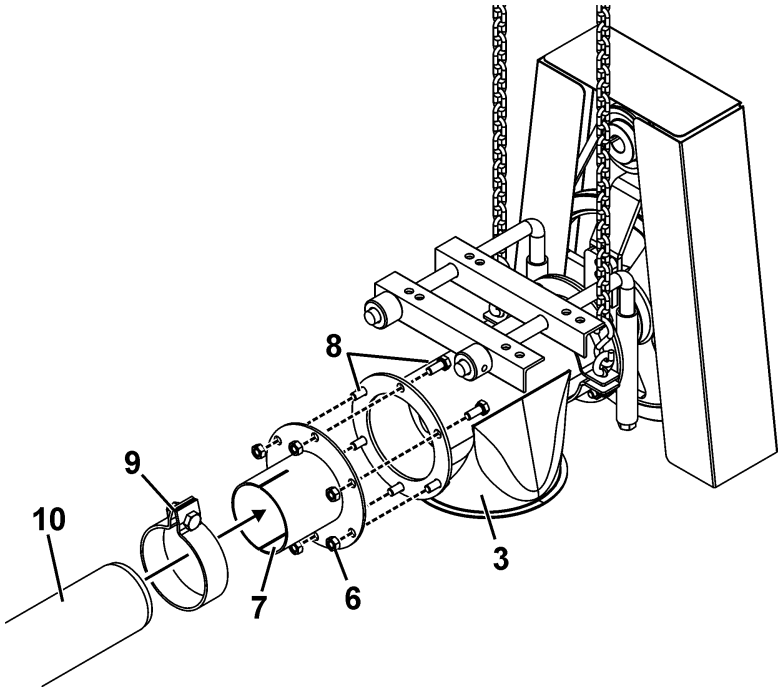
Note:

The **fastening of the cup hooks for the suspension of the drive unit** to the ceiling / wooden beam is made as described in chapter 7.4 .

1. Fasten two cup hooks to the ceiling/wooden beam where the drive is to be placed.
2. Cut 2 pieces ship chain (1) to the required length for the suspension.
3. Hang one end each of the cut ship chains (1) into the cup hooks to the ceiling by means of S-hooks (2).
4. Screw 2 mounting clips (4) with lifting eye bolts M 8x25 (5) and hexagon nuts M 8 (6) to the drive head (3).
5. Hang one S-hook (2) each into the lower end of the ship chains (1) and also into the lifting eye bolts (5) of the mounting clips.

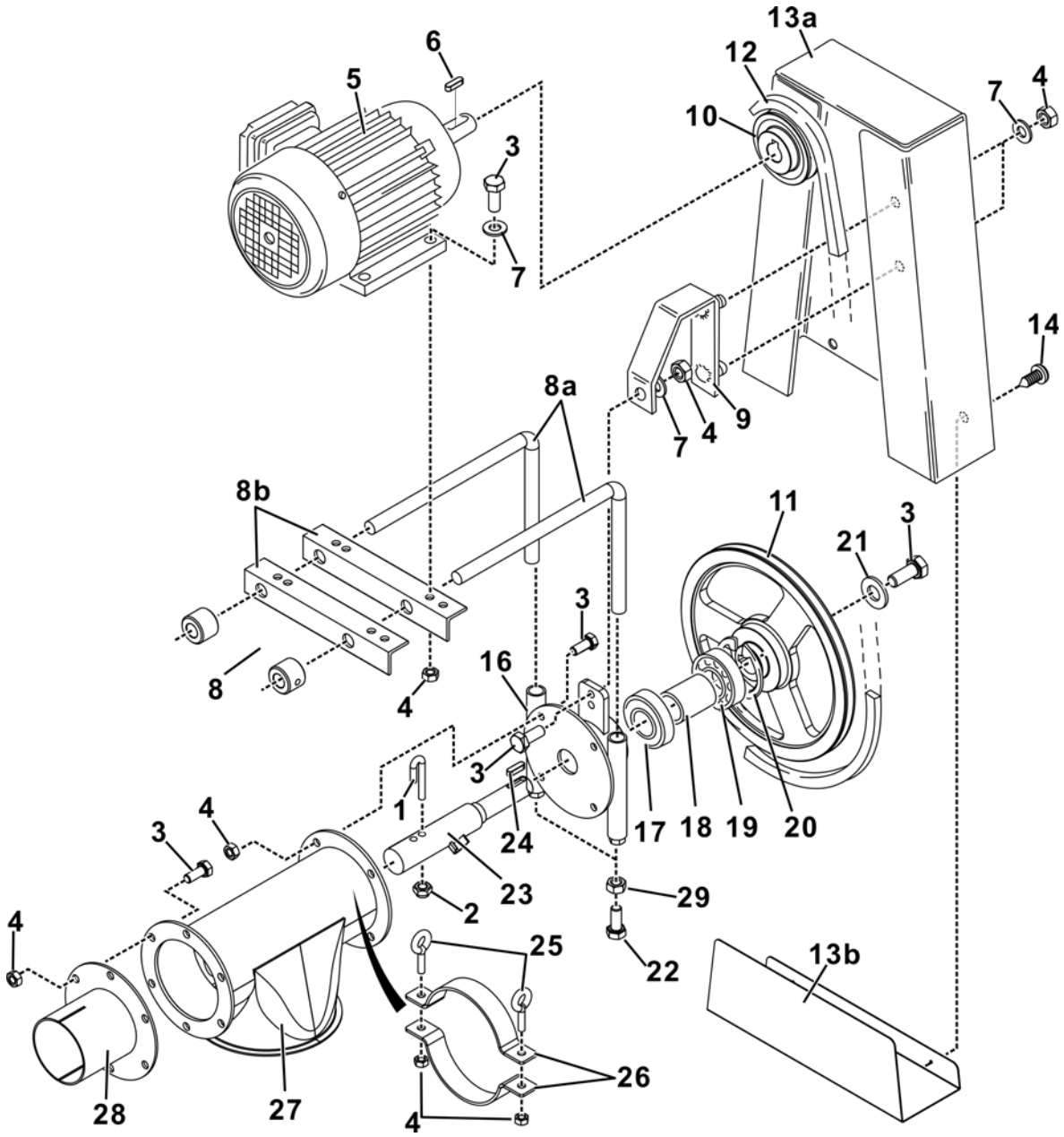


6. Screw an adapter (7) with hexagon head screws M 8x20 (8) and hexagon nuts M 8 (6) to the drive head (3).
7. Push a tube clip (9) to the adapter (7).
8. Push the conveying pipe (1) (if required: cut to size) into the socket of the adpater (7) and tighten the screw of the tube clip (9).



9. Align this entire line once again.

8.2 Assembly of drive unit with V-belt drive (electric motor)



Pos.	Qty.	Code no.	Description
1	1	99-10-3924	Hooked bolt galv. M 8x63 Flex-Vey 60/75
	1	99-10-3909	Hooked bolt galv. M 8x78 Flex-Vey 90
2	1	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv.
3		99-10-1038	Hexagon head screw M 8x 20 galv. DIN 933
4		99-10-1040	Hexagon nut M8 galv. DIN 934-8
5	1	90-00-1507	Electric motor 0,75KW 230/400 50/60 1500/1800U B3
6	1	99-50-3801	Key 6x6x25 DIN6885
7	6	99-20-1026	Washer A 8,4 DIN 125 galv.
8	1	25-16-3613	Bracket cpl. for motor S186000 of drive Flex-Vey

Pos.	Qty.	Code no.	Description
8a	2		Angle round bar
8b	2		Angle for bracket for motor
9	1	25-16-3614	Guard cap holder S 109004
10	1	10-00-3719	V-belt pulley 1R A 70x13-B19
11	1	25-16-3615	V-belt pulley 1R 250/1/SPZ-B25
12	1	99-50-3853	V-belt 9,7x8- 950 DIN 7753 SPZ950
13	1	81-04-4164	Cover cpl. f/FV 75-90 (upper and lower part)
13a	1		Guard cap upper partl (S 109 000)
13b	1		Guard cap lower part (S 109 000)
14	2		Tapping screw Ø 4,2 x 10, DIN 7981
15(*)	1	25-16-3616	Flange bearing cpl. with bearing 25 Flex-Vey 75/90
	1	25-62-3116	Flange bearing cpl. with bearing 25 Flex-Vey125
16	1	25-16-3617	Housing for flange bearing Flex-Vey 75/90
	1	81-04-0213	Housing for flange bearing Flex-Vey 125
17	1	25-16-3618	Taper roller bearing 30205A DIN720
18	1	25-16-3619	Spacer 25/32-25 for Flex-Vey
19	1	25-16-3620	Ball bearing 6205 2ZR DIN 625
20	1	25-57-1018	Retaining ring DIN472 -52x2,00
21	1		Washer Ø 9 / 40 - 4
22	2	99-10-1043	Hexagon head screw M 10x 80 galv. DIN 931
23	1	25-01-3034	Tension device for auger M 75
	1	81-04-5796	Tension device for auger M 90
	1	25-62-3035	Tension device for auger M 125
24	1	99-50-3909	Key 8x7x35 DIN6885 Form A
25	2	99-10-1563	Lifting eye bolt M 8x 25
26	2		Mounting clip for drive head Flex-Vey
27	1	25-16-3610	Drive head S105000 for drive Flex-Vey
	1	81-05-3312	Drive head for drive Flex Vey 125
28	1	25-16-3611	Adapter S335000 for auger Flex-Vey 75
	1	25-16-3612	Adapter S344000 for auger Flex-Vey 90
	1	81-03-4938	Adapter S3?? 000 for auger Flex-Vey 125
29	2		Hexagon nutM10

(*) = Pos 15 cpl. consisting of 16; 17; 18; 19; 20; 21; 22; 29

Procedure:

1. Put the round bars angles (8a) of the motor bracket (8) into the receiving pipes of the flange bearing housing (16).
2. Push the angles for bracket for motor (8b) onto the round bars angles (8a).
3. Fasten the electric motor (5) to the angles for bracket for motor (8b) by means of hexagon head screws M 8x20 (3), washers (7) and hexagon nuts M8 (4).

4. Push the V-belt pulley (10) onto the shaft of the electric motor (5).

   Make sure that the key (6) is inserted into the groove of the motor shaft beforehand.

5. Push the V-belt pulley (11) onto the free shaft end of the auger tension device (23).

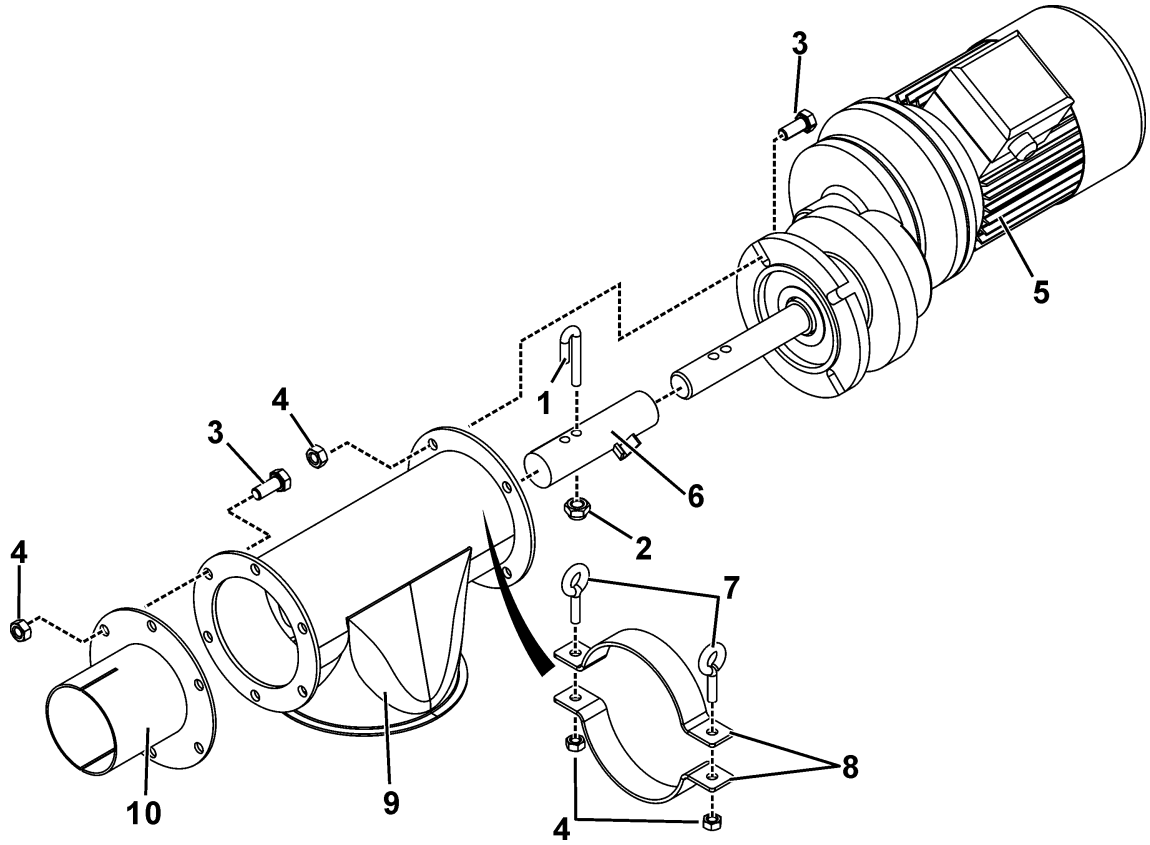
   Make sure that the key (24) is inserted into the groove of the auger tension device beforehand.

6. Fasten the V-belt pulley (11) by means of a washer dia 9 (21) and a hexagon head screw M 8x20 (3).
7. Align the V-belt pulley (10) parallely to the V-belt pulley (10) and fasten the head socket set screw in the center of the V-belt pulley (10).
8. Tighten all screws of the motor bracket cpl. (8) and the electric motor (5).
9. Put a V-belt (12) onto both V-belt pulleys (10; 11).
10. Tension the V-belt (12) by means of the hexagon head screws M10x80 (22) and lock these by means of the hexagon nuts M 10 (29) as counternuts.

!	**Important:** **An exact alignment** of the V-belt pulleys and **a correct tension** of the V-belt are **important** factors to achieve a **long life** of the V-belt. An **excessive** belt tension will more quickly wear out the bearings (17; 19). The **tension is correct**, if the V-belt can be pressed inwards by approximately 1 cm between the two V-belt pulley.

11. Screw the guard cap holder (9) to the flange bearing housing (16) by means of a hexagon head screw M 8x20 (3), a washer (7) and a hexagon nut M 8 (4).
12. Screw the upper part of the guard cap (13a) to the guard cap holder (9) by means of hexagon nuts M8 (4) and washers (7).
13. Screw the lower part of the guard cap (13b) to the upper part of the guard cap (13a) by means of tappings screws (14).

8.3 Assembly of drive unit with geared motor



Pos.	Qty.	Code no.	Description
1	1	99-10-3924	Hooked bolt galv. M 8x63 Flex-Vey 60/75
		99-10-3909	Hooked bolt galv. M 8x78 Flex-Vey 90
2	1	99-20-1064	Self-locking counter nut M8 DIN 985-6 galv.
3		99-10-1038	Hexagon head screw M 8x 20 galv. DIN 933
4		99-10-1040	Hexagon nut M8 galv. DIN 934-8
5	1	99-00-3964	G-Mot 0,75 230/400 50 344U Flex-Vey incl. spacer
6	1		Spacer
7	2	99-10-1563	Lifting eye bolt M 8x 25
8	2		Mounting clip for drive head Flex-Vey
9	1	25-16-3610	Drive head S105000 for drive Flex-Vey
	1	81-05-3312	Drive head for drive Flex Vey 125
10	1	25-16-3611	Adapter S335000 for auger Flex-Vey 75
	1	25-16-3612	Adapter S344000 for auger Flex-Vey 90
	1	81-03-4938	Adapter S3?? 000 for auger Flex-Vey 125

9 Assembling the feed outlets

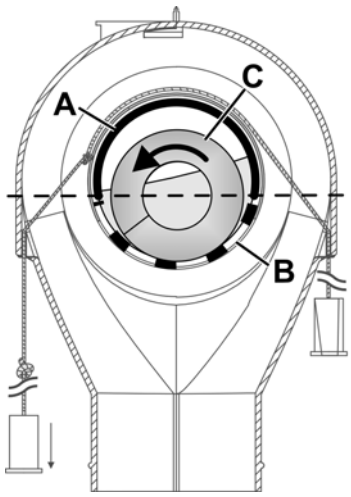
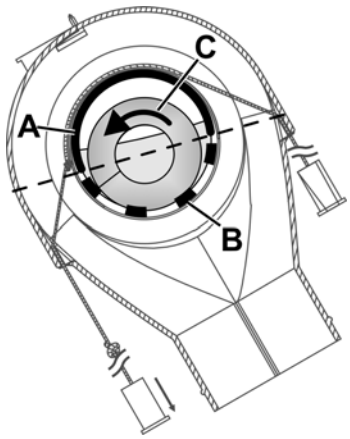
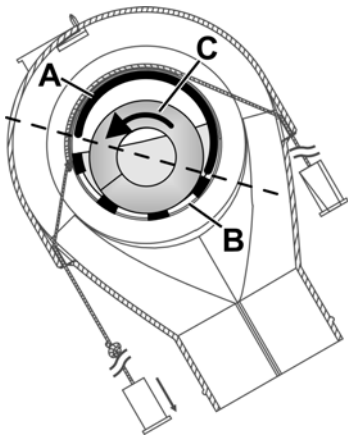
9.1 Position of the openings for feed outlet at the Flex-Vey tube

The conveying auger in the tube of the Flex-Vey rotates counter-clockwise (ccw) respectively to the left **(C)**, seen in conveying direction, i.e. from the silo towards the drive unit.

Thus the conveyed feed does not lie horizontally on the bottom of the conveying tube but accumulates at the right lower outer wall (4-5 o'clock position).

In order to ensure a complete feed emptying, it is extremely important that the openings built-in **(B)** in the conveying tube **(A)** show vertically downwards. The housing of the feed discharge has also to be mounted that way that it is directed vertically downwards.

!	If it is necessary, due to the situation at site, that the **Flex-Vey outlet must be moved laterally** and cannot be aligned vertically, this is allowable **up to the „4-o'clock-position" maximally (viewing direction: from the silo to the drive unit)**.

correct	**correct**	**wrong**
outlet and tube vertical	outlet and tube to 4-5 o'clock position	outlet to 4-5 o'clock position and tube to 7-8 o'clock position
		

9.2 Making the openings for feed outlets in the conveying pipe

Important:

The making of the openings for feed outlets in the conveying pipes has to be made with **utmost care.** Use a rotating circular band saw. **We expressly advise you against making the outlets by means of a grinding device!**

The shape of the outlet hole has **very much influences** the **flowing down of the feed** and the nondeformability of the conveying pipe.

Procedure:

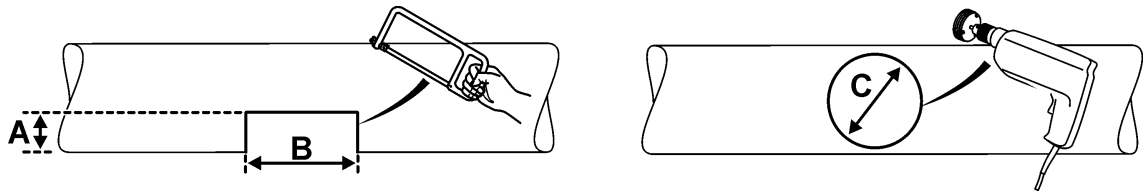
1. Mark the places at the bottom of the conveying pipes where the holes must be cut.

   Make sure that all the holes are exactly located on the the center line at the bottome of the conveying pipe.

In case you need two outlets one after the other, a distance of at least 17 cm is necessary.

If a **complete or partial emptying of the conveying pipe** has to take place at the outlets, the openings are to be made with dimensions indicated in the **following table.**

complete emptying	**partial emptying**
(side view)	**(view from bottom)**



	complete feed emptying		partial feed emptying
FV-type	**A**	**B**	**C**
75	19mm	70mm	60mm
90	22mm	80mm	75mm
125	38mm	110mm	110mm

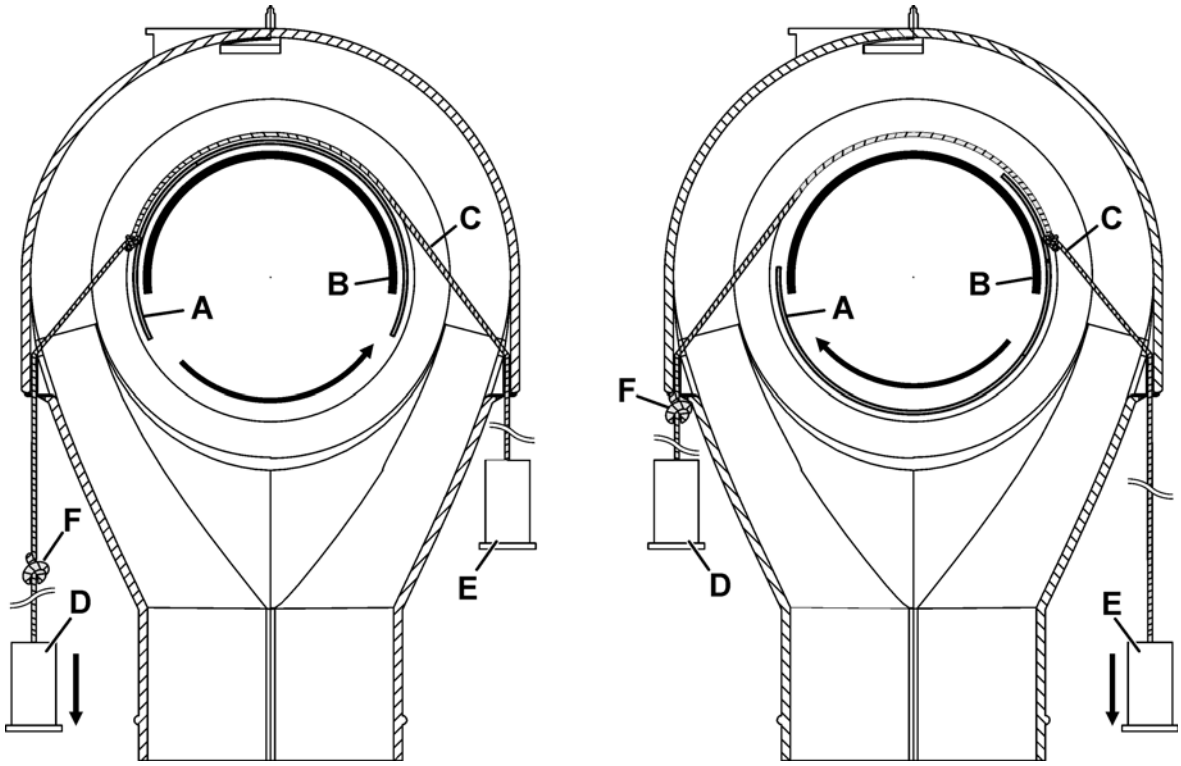
9.3 Assembling the outlet

1. Mount the outlet in that way that the outlet openings in the conveying pipe lying underneath are within the outlet housing.

Pos.	Qty.	Code no.	Description
1		25-57-3160	Outlet B with shut-off & cable control cpl Flex-Vey 75
2		25-59-3160	Outlet B with shut-off & cable control cpl Flex-Vey 90
3		25-62-3160	Outlet B with shut-off & cable control cpl Flex-Vey 125

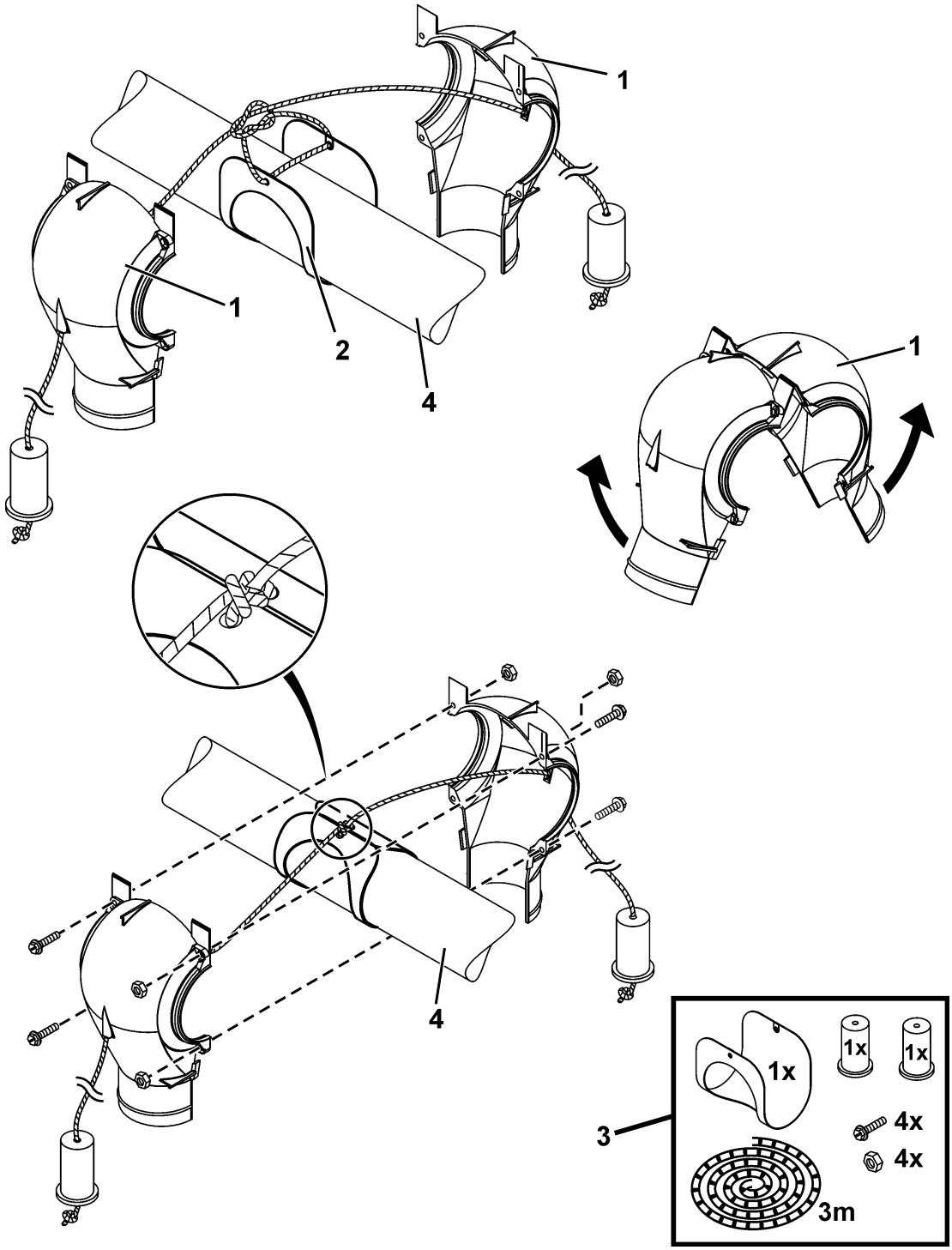
9.3.1 Function

Shutter opened **Shutter closed**



A= Shutter
B= Flex-Vey tube
C= Pull cord
D= Draw-button green (opening of shutter)
E= Draw-button red (closing of shutter)
F= Knot for stopping the shutter

9.3.2 Assembly to the pipe

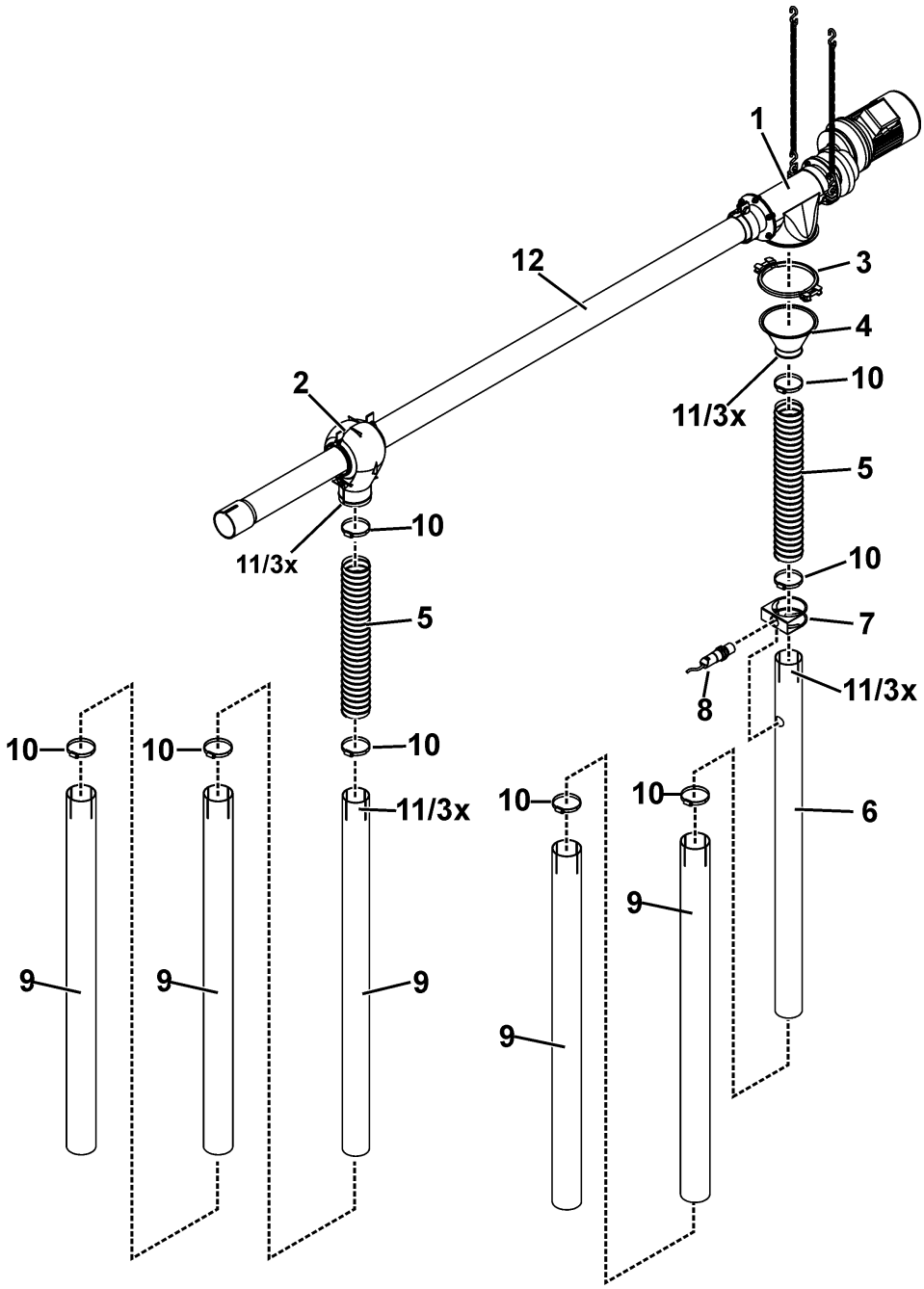


Pos.	Qty.	Code no.	Description
1	1		Housing for outlet
2	1		Shutter
3	1		Mounting set for outlet B Flex-Vey
4	1		Conveying pipe with outlet opening underneath

9.4 Assembling the supply pipes

If necessary the **supply pipes and flexible tubes** can be shortened.

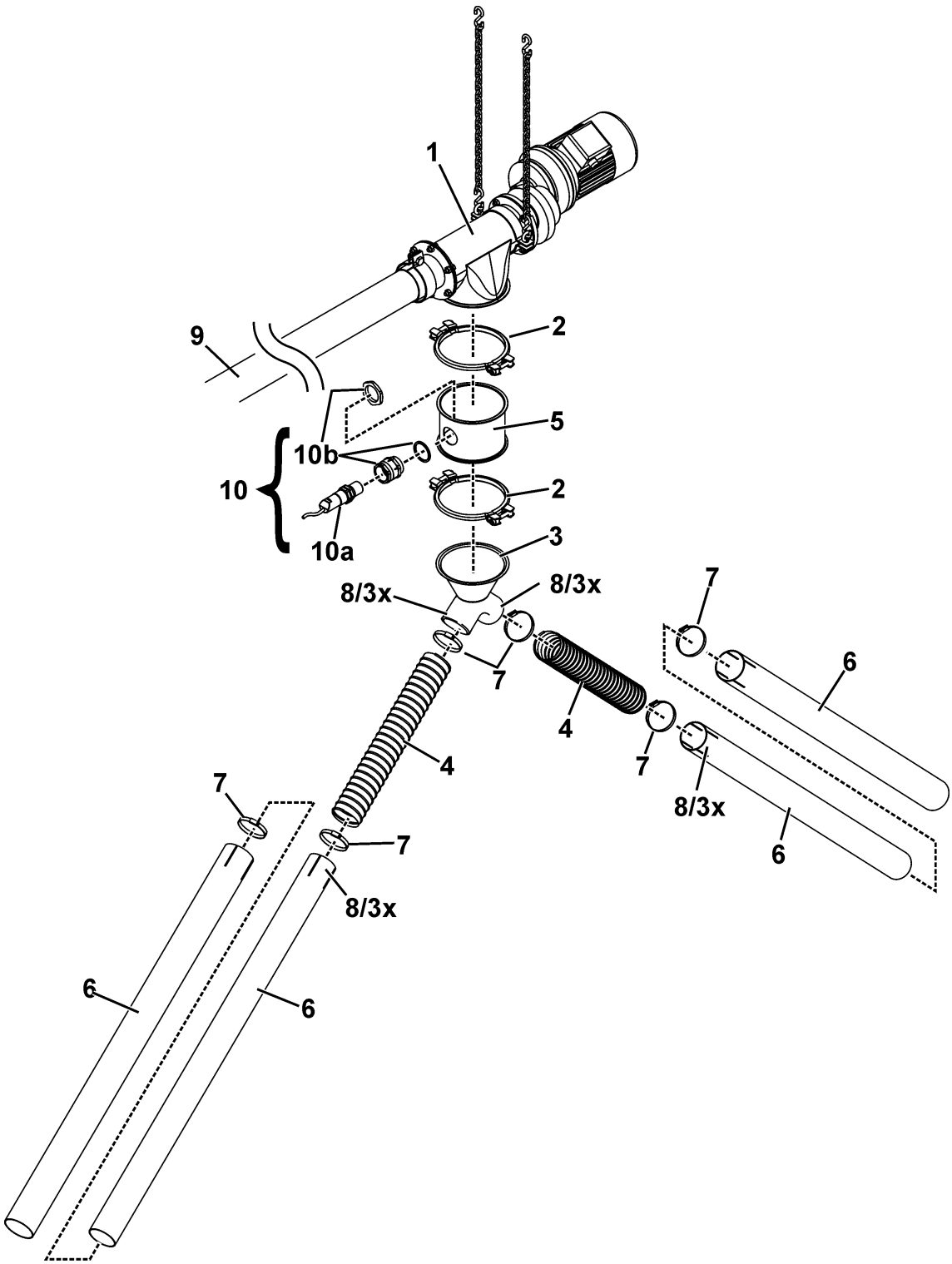
9.4.1 Supply pipes single



position numbers see the following page

Pos.	Qty.	Code no.	Description
1	1		Drive unit Flex-Vey
2		25-57-3160	Outlet B with shut-off & cable control cpl Flex-Vey 75
		25-59-3160	Outlet B with shut-off & cable control cpl Flex-Vey 90
		25-62-3160	Outlet B with shut-off & cable control cpl Flex-Vey 125
3	1	25-16-3033	Tension ring D150 galv. with sealing ring 1mm
4	1	83-00-5791	Reducing bush 150 x 75 galv.
	1	83-00-5792	Reducing bush 150 x 90 galv.
5	1	25-57-3127	Flexible tube DN 75 PUR-MH
	1	25-59-3129	Flexible tube DN 90 PUR-MH
	1	25-62-3128	Flexible tube DN 110 PUR
6	1		Pipe with bore for sensor MS-45R (Code No: see parts lists in chapter 18.6)
7	1	83-00-4958	Bracket for sensor MS-45R at drop pipe 75/90
8	1	60-40-0754	Sensor MS-45R 220V threaded
9			Pipe PVC slotted (Code No: see parts lists in chapter 18.6)
10	8	99-50-3829	Hose band clip 70-90
	8	99-50-1369	Hose band clip 90-110
11	12	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
12			Conveying pipe

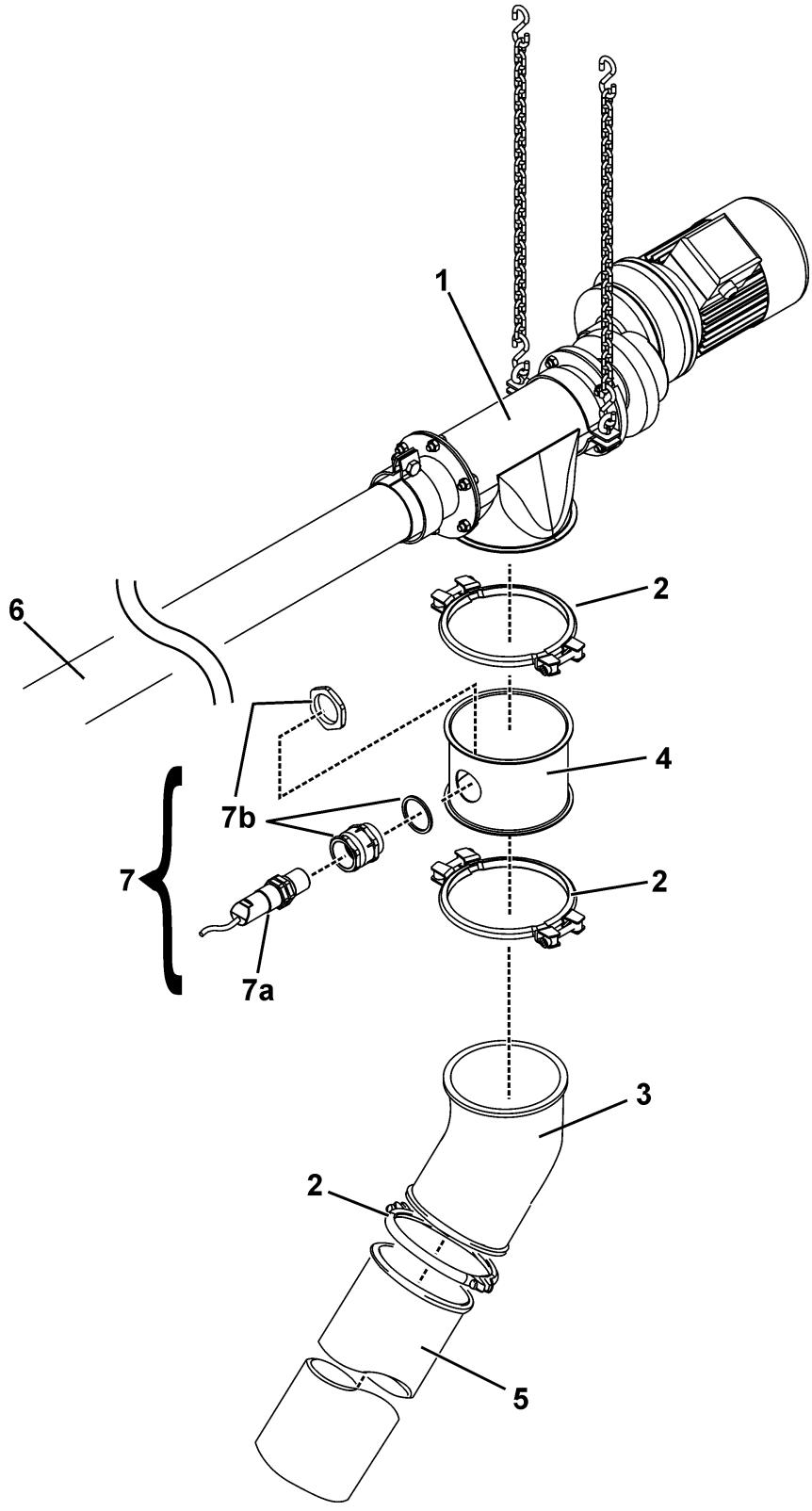
9.4.2 Supply pipe double with Y-piece for transfer to feed column or feed weigher



position numbers see the following page

Pos.	Qty.	Code no.	Description
1	1		Drive unit Flex-Vey
2	2	25-16-3033	Tension ring D150 galv. with sealing ring 1mm
3	1	25-16-3042	Y-piece galv. 150/70 2x30deg.
	1	25-16-3039	Y-piece galv. 150/2x150 2x45deg galv.
4		25-57-3127	Flexible tube DN 75 PUR-MH
		25-59-3129	Flexible tube DN 90 PUR-MH
		25-62-3128	Flexible tube DN 110 PUR
5	1	25-60-3100	Sleeve socket 150 for PG36
6			Pipe PVC slotted (Code No: see parts list in chapter 18.6)
7	6	99-50-3829	Hose band clip 70-90
	6	99-50-1369	Hose band clip 90-110
8	12	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
9			Conveying pipe / bend
10	1	91-00-3985	Sensor MS-45R with union
consisting of:			
10a	1	60-40-0654	Sensor MS-45R 220V
10b	1	99-30-3001	Screw union PG36

9.4.3 Supply pipes with segment(s) 15; 30 and/or 45 degree



position numbers see the following page

Pos.	Qty.	Code no.	Description
1	1		Drive unit Flex-Vey
2		25-16-3033	Tension ring D150 galv. with sealing 1mm
3		25-16-3034	Segment 150/15Grd
		25-16-3035	Segment 150/30Grd
		25-16-3036	Segment 150/45Grd
4	1	25-60-3100	Sleeve socket 150 for PG36
5		25-16-3031	Tube 150x1,50-1000 galv.
		25-16-3032	Tube 150x1,50-2000 galv.
6			Conveying pipe / bend
7	1	91-00-3985	Sensor MS-45R with union
consisting of:			
7a	1	60-40-0654	Sensor MS-45R 220V
7b	1	99-30-3001	Screw union PG36

10 Assembling the Flex Vey-auger

10.1 Important information regarding the assembly of the auger

Important:

The following notes should be observed before mounting the auger.

- The auger must be mounted with utmost care.
- Keep the auger dry.
- Remove all remains of string, wire, etc. from the auger before installing.
- Uncoil the auger from the reel and lay the uncoiled auger flat on the floor to prevent distortion.
- Kinks and bends in the auger must be removed and - if this is not possible the deformed part has to be removed and the auger must be welded again.
- In order to avoid any distortion during mounting, round off the two ends of the auger.

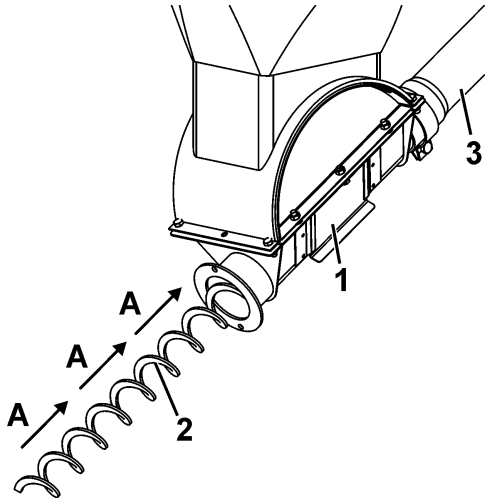
10.2 Insertion of the auger

Notes for inserting the auger:

When inserting the auger into the pipe you will notice that it pushes easy at the beginning.

The deeper you go into the pipe the more weight and friction will build up and the harder it becomes to push. This is quite normal.

1. Remove the tension bearing from the lower part of the bootl (1).
2. Now push the auger (2) through the lower part of the boot (1).
3. Push the auger (2) through the conveying pipes (3) up to the drive.

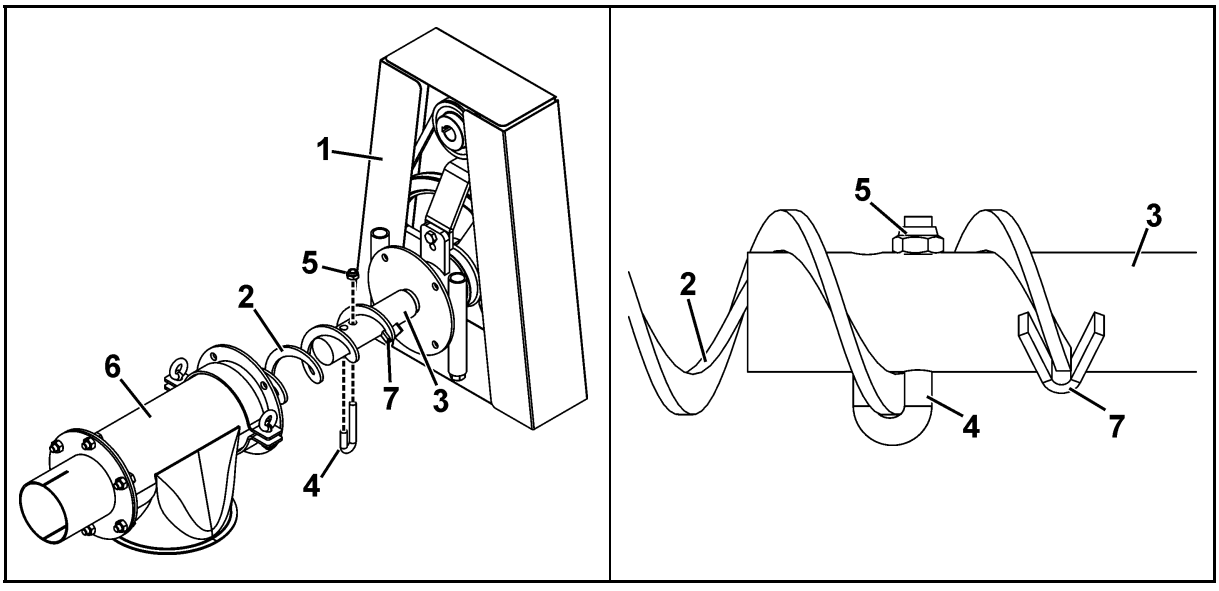
Important: **Make sure that you do not keep the auger too far away from the lower part of the boot (1). Push it through the conveying pipes (3) only in small steps (A).** **This procedure avoids a bending of the auger!**	

10.3 Fastening the auger to the drive unit

1. Unscrew the drive (1) from the drive head (6).
2. Push the auger (2) onto the tension shaft (3).

   Make sure that the end of the auger lies in the stop angle (7) of the tension shaft.
3. Fasten the auger by means of a hooked bolt (4) and a self-locking counter nut M8 (5).

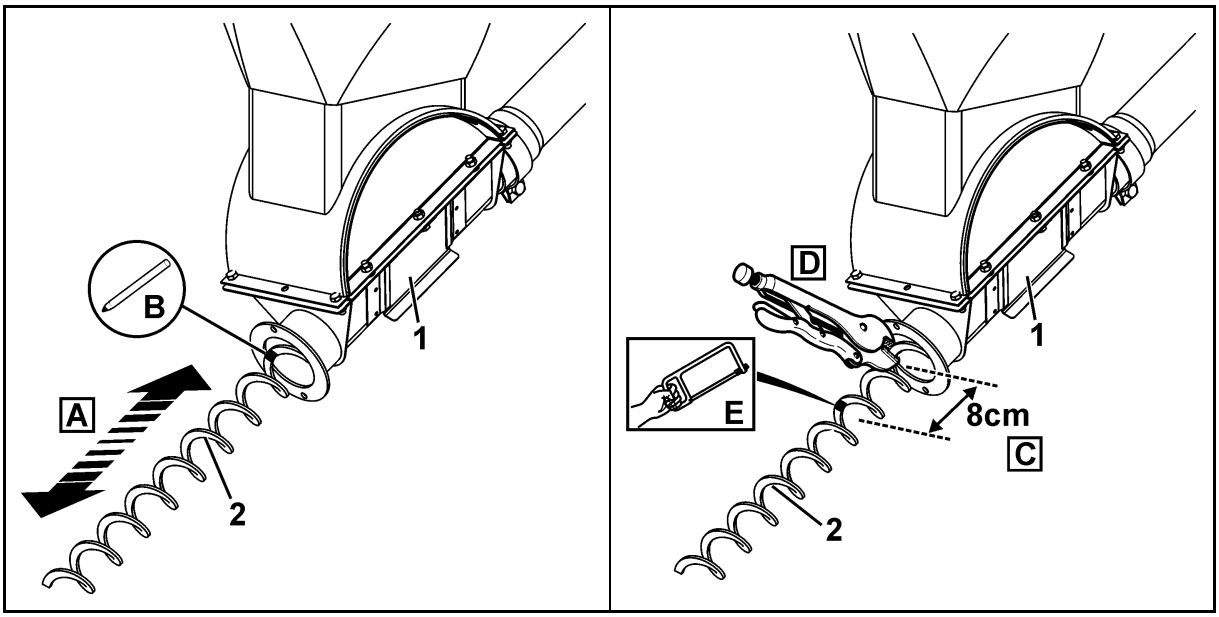
   See to it that the bent end of the hooked bolt (4) comes into the second bore hole of the tension shaft (3), too.
4. Screw the drive again to the drive head.



10.4 Fastening the auger to the tension shaft in the lower part of the boot

	Note regarding the optimum tension of the auger: When installing, the tension of the auger must generally be adjusted so that it can **easily turn in the pipe**. Make sure that the auger always has the same distance to the inner and outer pipe wall, especially in the bends. **Too high tension** of the auger will lead to too much wear on the inner wall of the bend. **Too low tension**, of the auger will lead to friction on the outer wall of the bend and thus to increased wear.

1. Now pull the auger (2) a few times out of the lower part of the boot (1) and relax it so that it can get its natural tension **(A)**.
2. Mark the place on the auger (2) where it flushes with the connecting flange at the lower part of the boot (1) **(B).**
3. Now pull the auger out of the lower part (1) of the boot by **approx. 8 cm (C)**, fasten it at the connecting flange (D) by means of a vise-grip wrench and cut the auger at the point marked beforehand **(E)**.
4. Do not yet loosen the vise-grip wrench.



10.4.1 Inserting and fastening the tension shaft

1. Insert the tension shaft (1) and the pipe for tension shaft (3) into the end of the auger (3).

   Make sure that the auger is led completely up to the stop plate of the tension bearing (4).

2. Fasten the auger by means of a hooked bolt (5) and a self-locking counter nut to the tensions shaft (1) and the pipe for tension shaft (2).

   Make sure that the hooked bolt is led through the bores of the pipes as well as through the bores of the tension shaft.

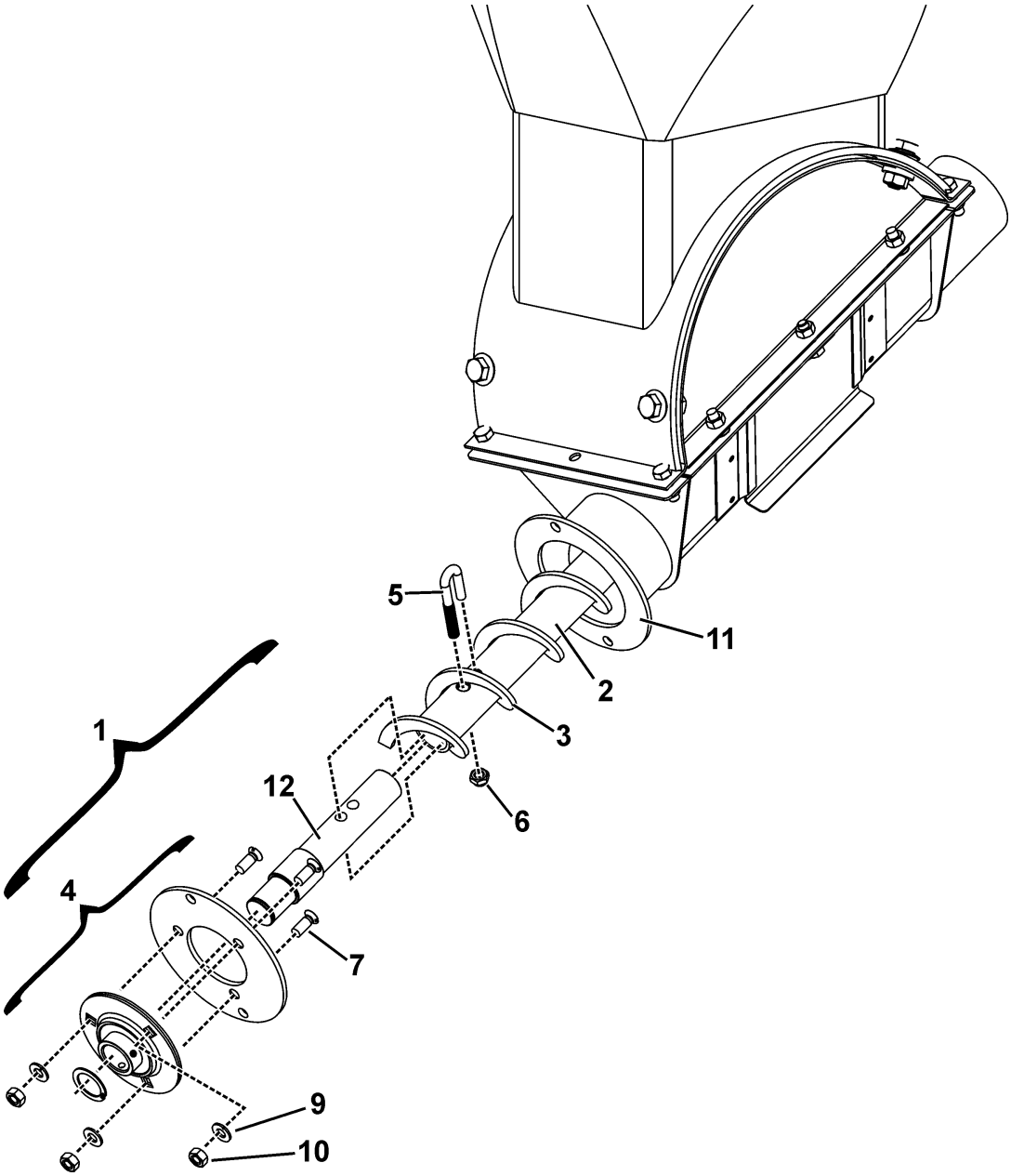
3. Screw the whole components by means of hexagon head screws (8x20) (7), washers A8,4 (8) and hexagon nuts M 8 (9) to the connecting flange of the lower part of the boot (10).

In case of certain types of lower part of boot, there are no hexagon head screws, because these screws are already integrated into the connecting flange.

Pos.	Qty.	Code no.	Description
1	1	25-01-3021	Tension shaft with bearing cpl M75
	1	25-59-3021	Tension shaft with bearing cpl M90
	1	25-62-3021	Tension shaft with bearing cpl M125
2		25-01-3024	Pipe for tension shaft 70
		81-04-9163	Pipe for tension shaft with bearing FV 90
		81-22-0771	Pipe for tension shaft 125
3		25-57-1701	Auger open core 60x60x36,5x4,3 right Flex-Vey 75/US
		25-59-1701	Auger open core 70x65x46,5x4,3 right Flex-Vey 90/US
		25-62-1701	Auger open core 100x70x72x5,0 right Flex-Vey 125/US
4		25-01-3025	Tension bearing cpl. for auger M75/90/125
5	1	99-10-3924	Hooked bolt galv. M 8x63 Flex-Vey 60/75
		99-10-3909	Hooked bolt galv. M 8 x78 Flex-Vey 90
		81-22-0349	Hooked bolt galv. Flex-Vey 125
6		99-20-1064	Self-locking counter nut M 8 DIN 985-6 galv.
7		99-10-1311	Cross recessed countersunk head screw M 8x20 DIN 965-5.8 galv.
8		99-10-1038	Hexagon head screw M 8x 20 galv. DIN 933
9	1	99-20-1026	Washer A 8,4, DIN 125 galv.
10		99-10-1040	Hexagon nut M 8 galv. DIN 934-8
11			Connecting flange of lower part of boot
12			Tension shaft single

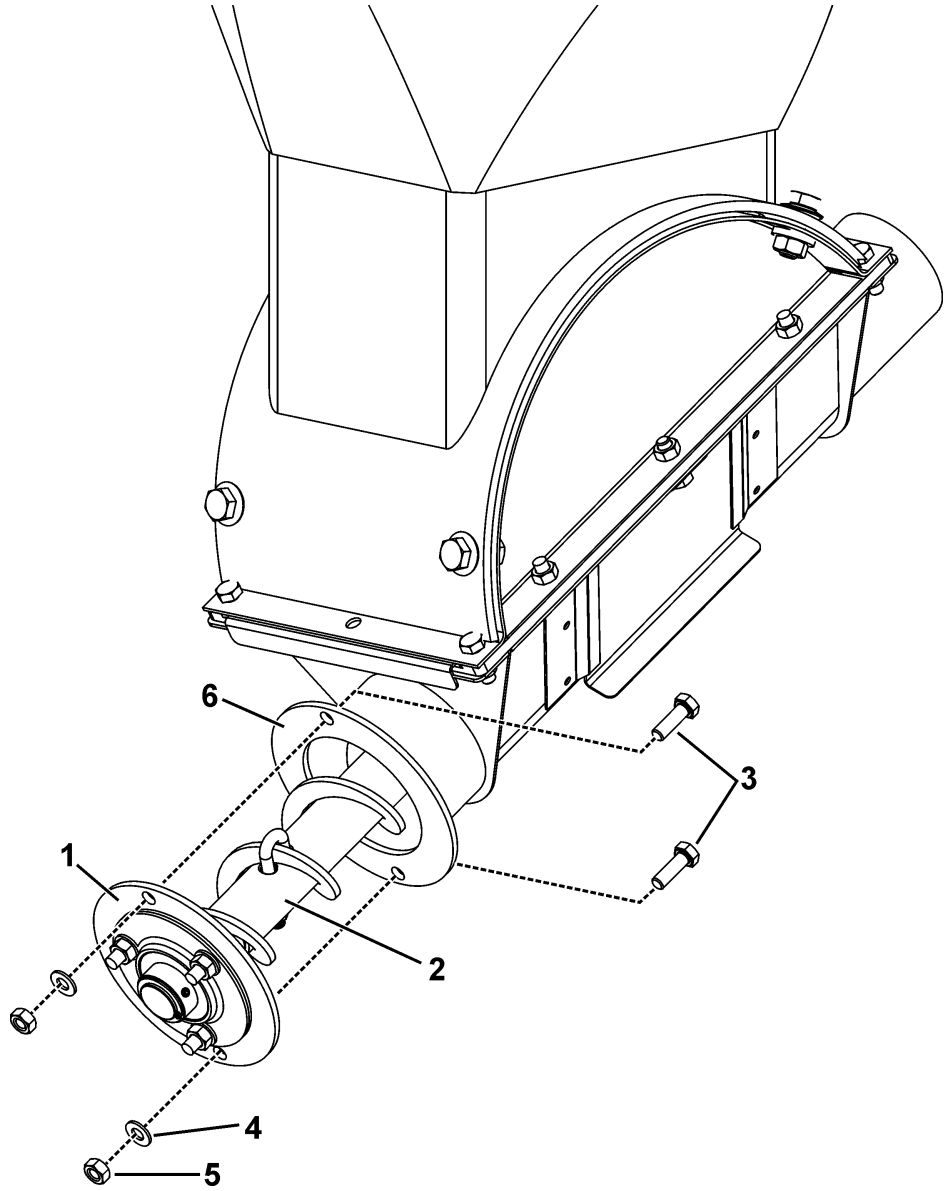
Position Numbers: see picture on following page

10.4.1.1 Inserting the tension shaft



Piece numbers: see foregoing page

10.4.1.2 Fixing of tension shaft at the lower part of the boot



Pos.	Qty.	Code no.	Description
1	1	25-01-3021	Tension shaft w/bearing cpl M75
	1	25-59-3021	Tension shaft w/bearing cpl M90
	1	25-62-3021	Tension shaft w/bearing cpl M125
2		25-01-3024	Pipe for tension shaft 70
		81-04-9163	Pipe for tension shaft w/bearing FV 90
		81-22-0771	Pipe for tension shaft 125
3		99-10-1038	Hexagon head screw M 8x 20 galv. DIN 933
4	1	99-20-1026	Washer A 8,4, DIN 125 galv.
5		99-10-1040	Hexagon nut M 8 galv. DIN 934-8
6			Connecting flange of lower part for boot

10.5 Welding of the auger

Important:

The auger may not be welded at the outer side (running treat at wall of conveying pipe).

Due to the hardening at the welding the welding joint is only to be made **in a straight part** of the Flex-Vey line.

Never weld the auger in the part of a bend of the conveying pipe!

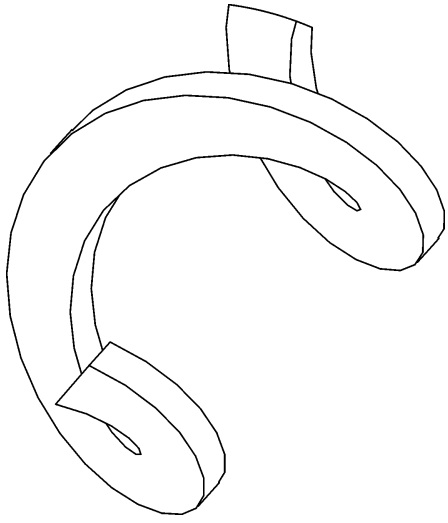
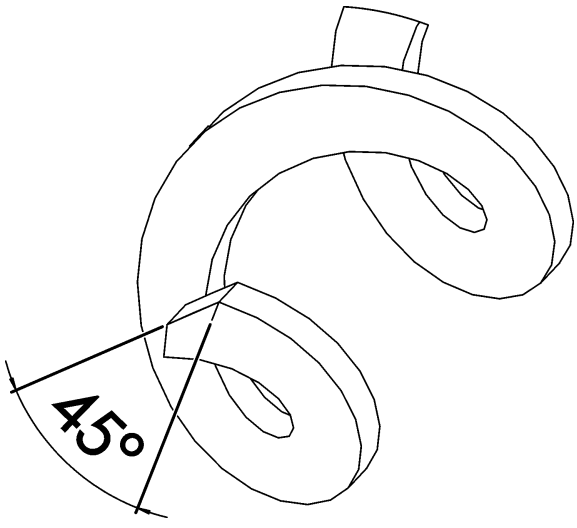
After having welded the auger, the welding joint must **slowly cool down** in the air.

Never cool down the auger with liquids or similar after welding!

Quick cooling will make the auger welding **brittle**.

Only remove the slag after the welding has cooled down.

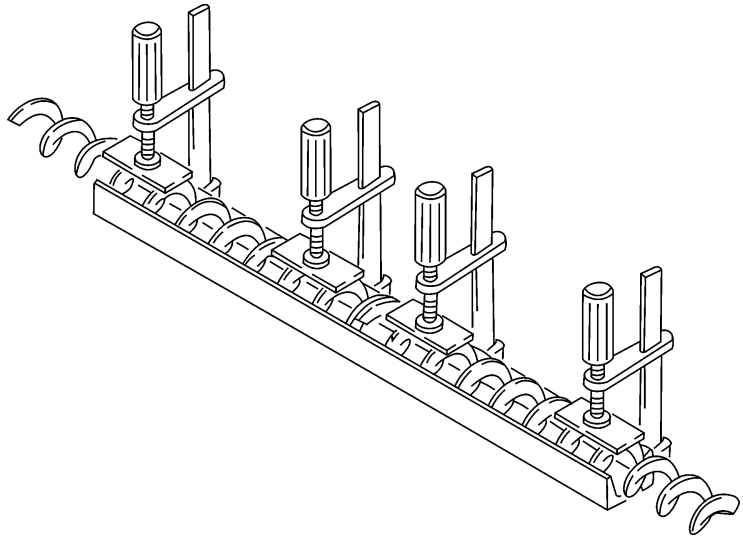
1. Put the augers to be welded against each other and turn them until you reach the point where the two auger ends lie congruently upon each other.
2. Cut the auger ends by means of a cut-off wheel with an overlapping of 30mm at both auger ends.
3. In order to avoid damages of the conveying pipes by sharp edges at the auger, the ends of the augers are provided with 45° bevels and all burrs will be removed.

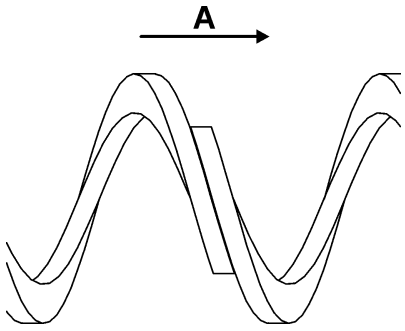
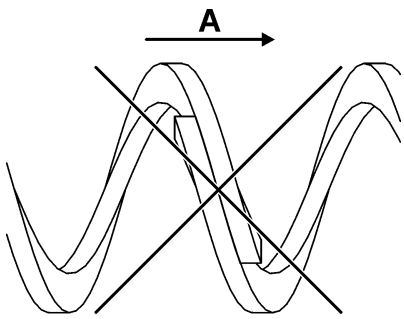
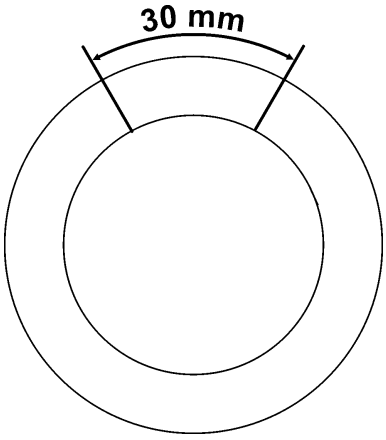
Auger raw	Auger with bevel
	

4. Remove any grease and rust from the auger ends and clean them thoroughly.

5. Push the ends against each other with an overlapping of 30 mm (**<u>do not hook the augers into each other</u>** but push them **against each other)**.

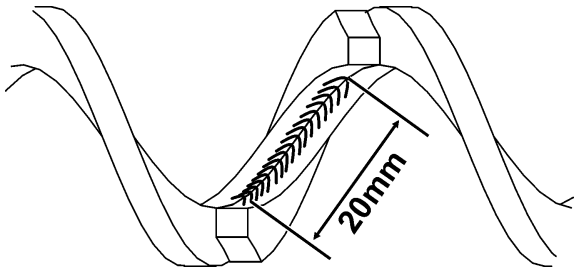
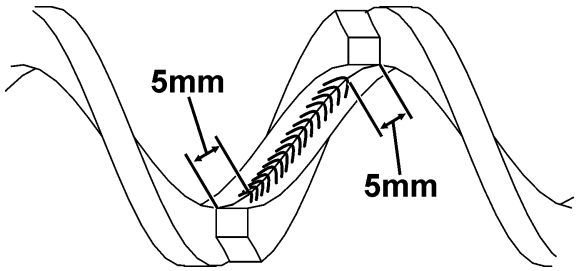
   Use a L- or U-profile for the alignment. And, the longer the profiles, the more exact the alignment of the auger positions to each other.



Augers **correctly** joined	Augers **incorrectly** joined
	
Overlapping: 30mm	**Remove any grease and other dirt from both auger ends.**
	

6. Both auger ends are joined at the overlapping joint by means of a welding seam of 20 mm length lying inside.

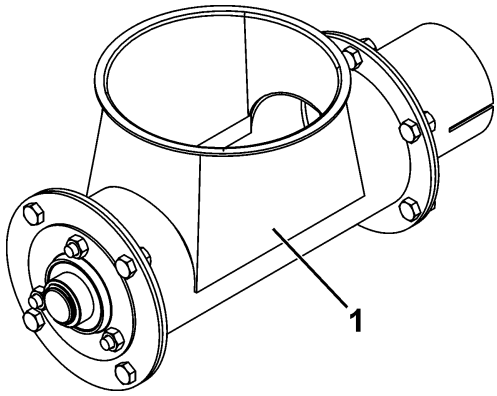
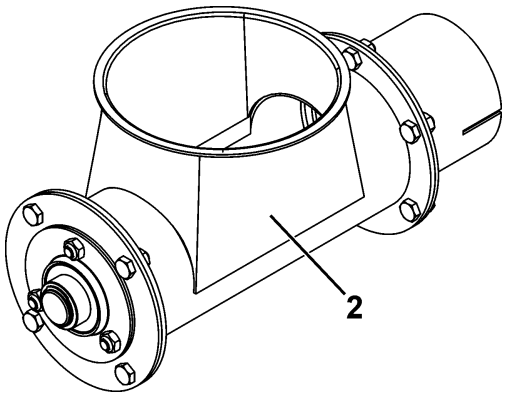
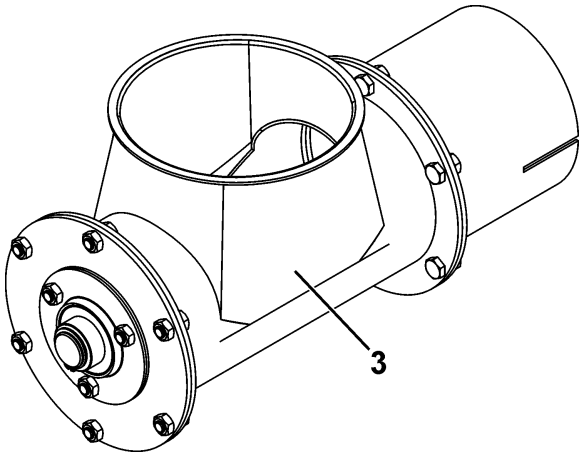
7. The distance of the welded joint to the both ends of the auger must be 5 mm.
8. **Slowly cool down in the air** the welded joint and remove any dirt and waste.

Welded joint 20mm length	**Distance of welded joint to the end 5mm**
	

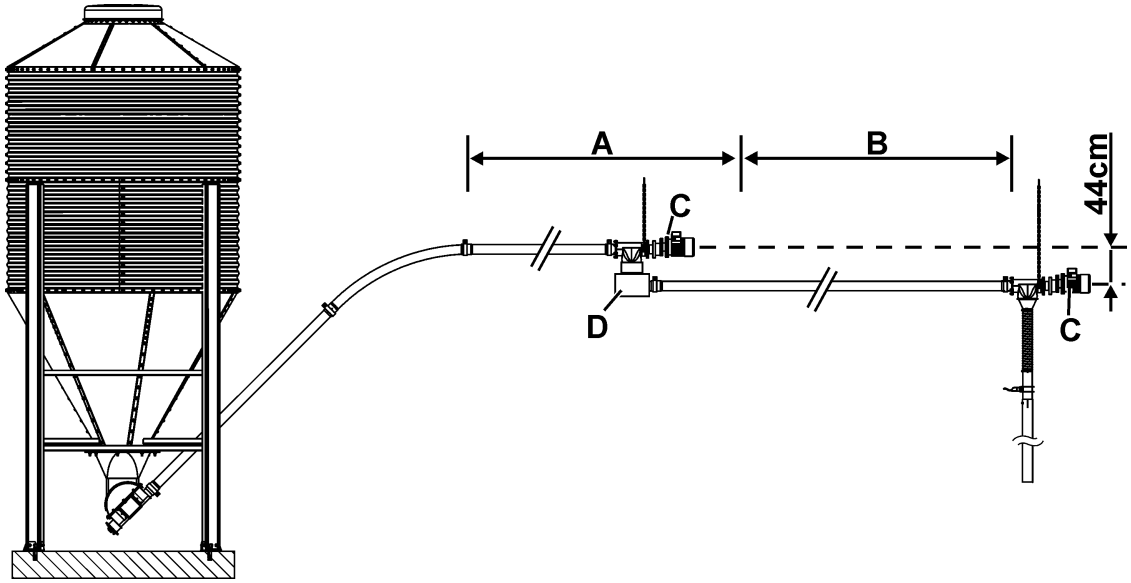
After having welded the auger to avoid that it become brittle. **Do not use any water to cool it down.** If necessary, round off the welded joints by grinding, in order to remove any projecting ends.

11 Assembling the Tranfer Unit

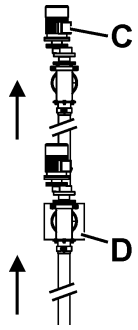
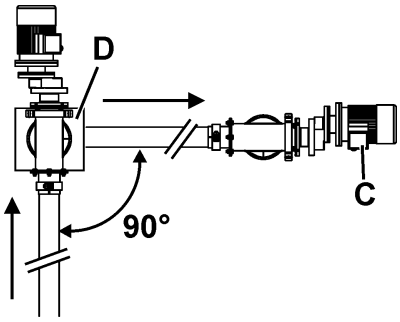
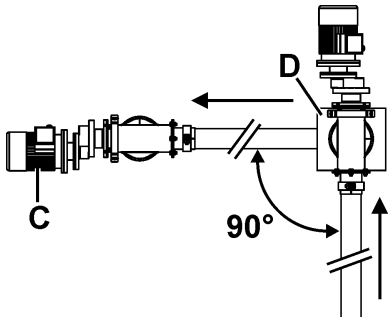
11.1 Available transfer units

Flex Vey 75	Flex Vey 90
	
Flex Vey 125	
	**Note:** A transfer unit offers the possibility to change the direction of the conveying line **up to 90°** to the left or to the right. Thus one can possibly avoid the assembly of a bow and therefore a shortening of the conveying tube length.

Pos.	Qty.	Code no.	Description
1	1	25-57-3011	Transfer funnel onto 2nd auger FV 75 (incl. tension shaft)
2	1	25-59-3011	Transfer funnel onto 2nd auger FV 90 (incl.tension shaft)
3	1	81-01-0379	Transfer funnel onto 2nd auger FV 125 (incl tension shaft)



A=	1. half of the conveying line	**C=**	Drive station
B=	2. half of the conveying line	**D=**	Transfer funnel

straight-lined	up to 90 degrees right	up to 90 degrees left
		

- In case of longer conveying lines an additional transfer unit can be mounted.

  Make sure that the transfer unit (D) is mounted before the end of the first half (A) of the total conveying line. When planning please consider that the conveying line will be lower behind the transfer unit by 44 cm.

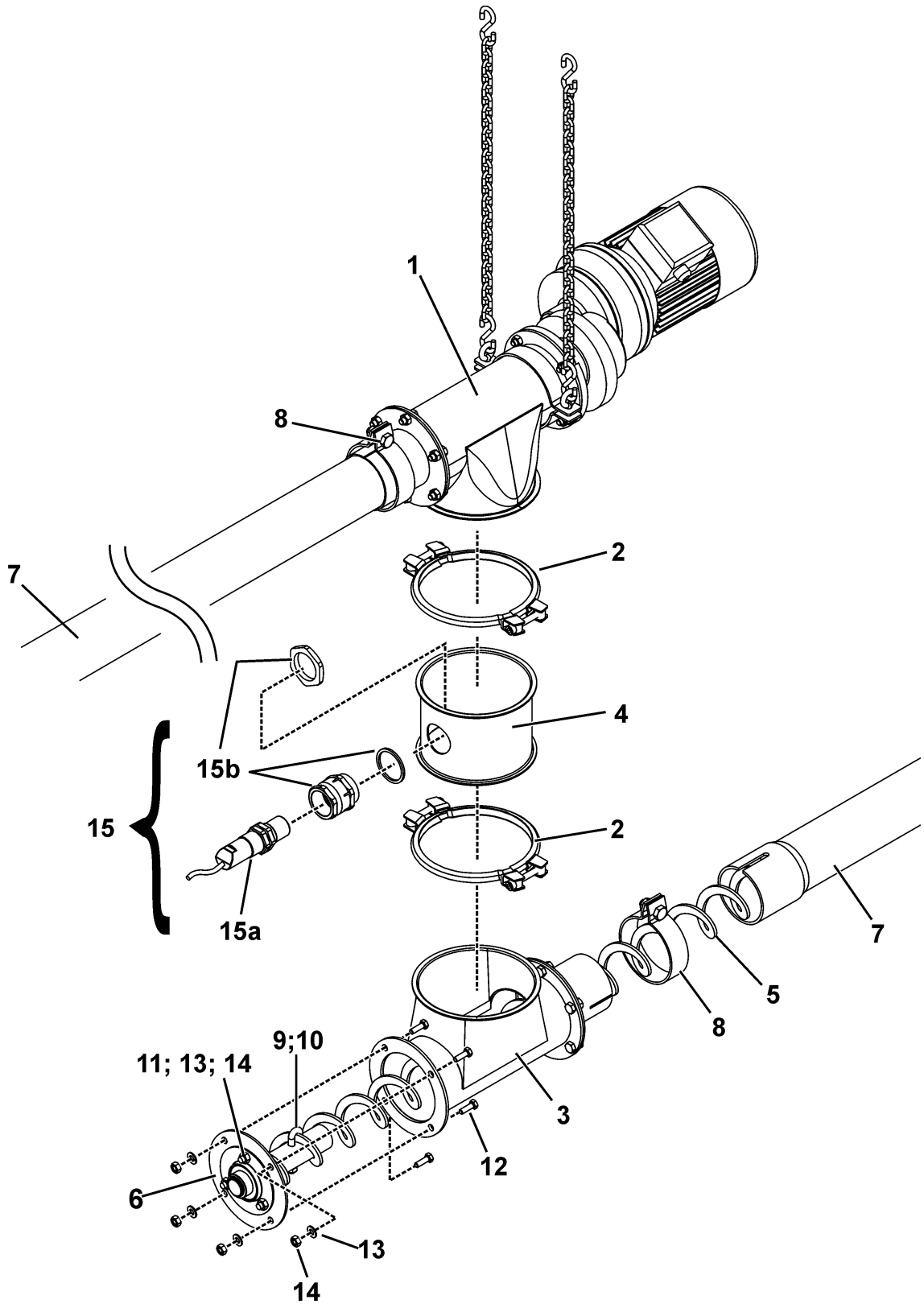
11.2 Mounting

1. Fasten a sleeve socket 150 (4) to the drive head (1) by means of a tension ring (2).
2. Fasten the transfer funnel (3) to the sleeve socket (4) by means of a tension ring (2).
3. Turn the transfer funnel (3) into the desired conveying direction.
4. Turn the tenson ring (2) into the desired direction.
5. Tighten the screws of the tension rings.

6. Fix the screw union PG 36 (15b) and the sensor (15a) to the sleeve socket.
7. Mount the pipes (7) and their suspensions as described in chapter 7 , the drive unit as described in chapter 8 , the feed outlets as described in chapter 9 and the auger (5) as described in chapter 10 .

Pos.	Qty.	Code no.	Description
1			Drive unit Flex-Vey
2		25-16-3033	Tension ring D150 galv. with sealing ring 1mm
3		25-57-3011	Transfer funnel onto 2nd auger FV 75 (incl. tension shaft)
		25-59-3011	Transfer funnel onto 2nd auger FV 90 (incl. tension shaft)
		81-01-0379	Transfer funnel onto 2nd auger FV 125 (incl. tension shaft)
4		25-60-3100	Sleeve socket 150 for PG36
5		25-57-1701	Auger open core 60x60x36,5x4,3 right Flex-Vey 75
		25-59-1701	Auger open core 70x65x46,5x4,3 right Flex-Vey 90
		25-62-1701	Auger open core 100/70 right Flex-Vey 125
6			Tension shaft
7			Conveying pipe
8		99-50-0475	Clamp f/pipe Flex-Vey 75
		99-50-0476	Clamp f/pipe Flex-Vey 90
		99-50-0477	Clamp f/pipe Flex-Vey 125
9		99-10-3924	Hooked bolt galv. M 8x63 Flex-Vey 60/75
		99-10-3909	Hooked bolt galv. M 8 x78 Flex-Vey 90
		81-22-0349	Hooked bolt galv. Flex-Vey 125
10		99-20-1064	Self-locking counter nut M 8 DIN 985-6 galv
11		99-10-1311	Cross recessed countersunk head screw M 8x20 DIN 965-5.8
12		99-10-1038	Skt-Schraube M 8x 20 verz DIN 933
13		99-20-1026	Washer A 8,4, DIN 125 galv.
14		99-10-1040	Hexagon nut M 8 galv. DIN 934-8
15		91-00-3985	Sensor MS-45R with union
		consisting of:	
15a		60-40-0654	Sensor MS-45R 220V
15b		99-30-3001	Screw union PG36

Position Numbers: see picture on following page



Piece numbers: see foregoing page

12 Assembling the Tandem Auger

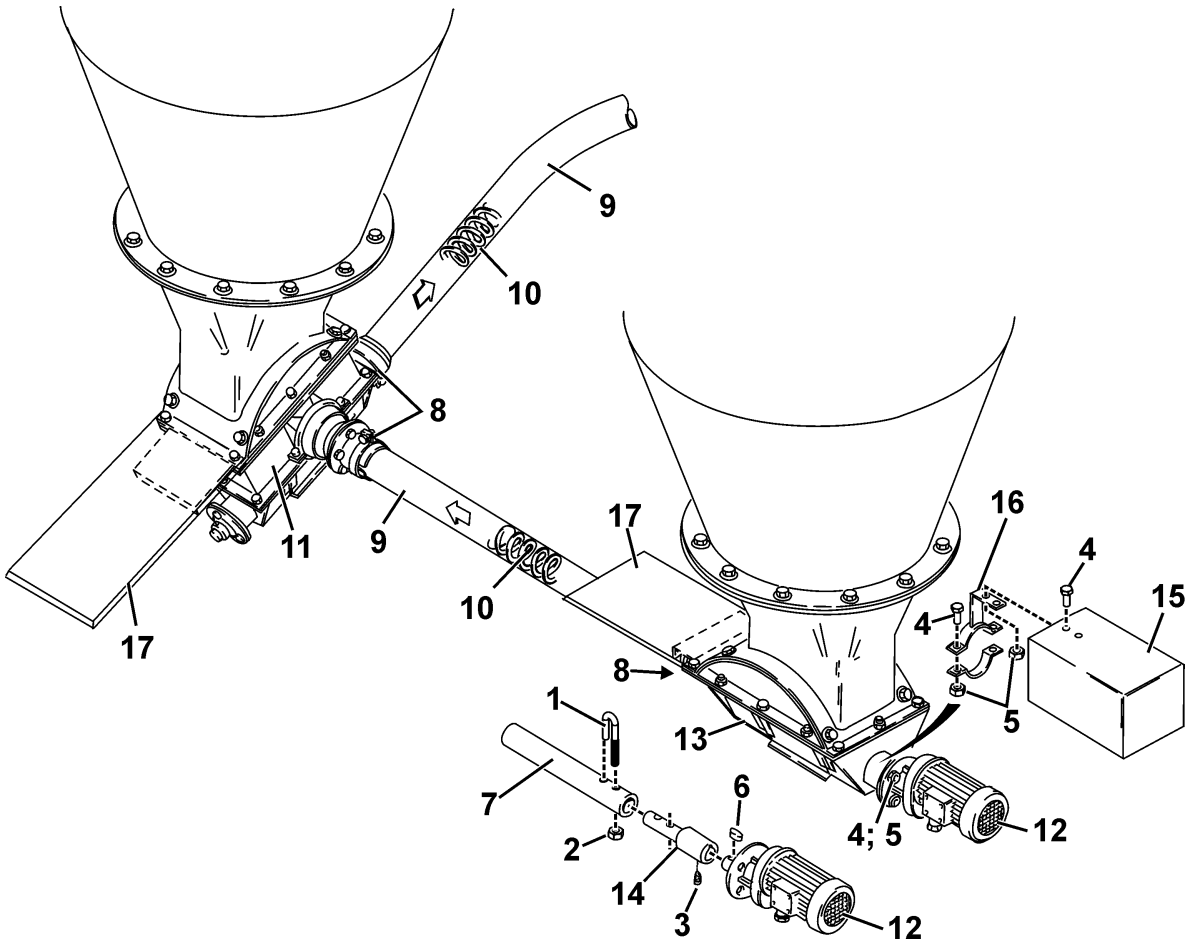
	The installation of the boot tandem is the same as the installation of the single boot, described in chapter 5 . **Make sure that the hand slide (17) is directed towards the second silo.**

1. Measure the length of the conveying pipe (9) between the two adapters of the silos and cut the pipe to size.
2. Push the smooth end of the cut pipe (9) into the pipe union of the intermediate flange (11) and the pipe end with the sleeve onto the pipe union of the boot tandem (13).

   Please make sure that a pipe clamp is pushed onto each end of the pipe beforehand.
3. Fasten both ends of the conveying pipe with the pipe clamps (8).
4. Measure the required length of the conveying auger (10) and cut it to size. Push the conveying auger into the conveying pipe (9) starting at the tadem drive (12).

	**Note regarding the required length of the conveying auger:** The distance between the end of the tension shaft (14) mounted at the tandem auger boot (13) and the inside of the intermediate flange (11) will be measured.

5. Push the conveying auger (10) onto the tension shaft (14) and the tube for tension shaft (7) at the tandem drive.
6. Fasten the conveying auger to the tension shaft (14) and the pipe for tension shaft (7) by means of a hooked bolt (1) and a self-locking counter nut (2).
7. Put the tension shaft (14) onto the shaft of the drive (12) using a key (6).
8. Screw the drive (12) by means of hexagon head screws M 8x20 (4) and hexagon nuts M8 (5) to the adapter of the tandem boot (13).
9. Screw the clamp for cap (16) using hexagon heads screws M 8x20 (4) and hexagon nuts M8 (5) to the pipe of the adapter.
10. Screw the protection cap for drive (15) using hexagon head screws M 8x20 (4) and hexagon nuts M8 (5) to the clip (16).



Pos.	Qty.	Code no.	Description
1	1		Hooked bolt
2	1	99-20-1064	Self-locking counter nut M 8 DIN 985-6 galv
3		99-10-3911	Hex socket set screw 6x 8 DIN 914-45H
4		99-10-1038	Hexagon head screw M 8x 20 galv. DIN 933
5		99-10-1040	Hexagon nut M 8 galv. DIN 934-8
6	1	99-50-3801	Key 6x6x25 DIN6885
7	1	25-01-3024	Pipe for tension shaft 70
	1		Pipe for tension shaft 90
	1	81-22-0771	Pipe for tension shaft 125
8		99-50-0475	Clamp f/pipe Flex-Vey 75
		99-50-0476	Clamp f/pipe Flex-Vey 90
		99-50-0477	Clamp f/pipe Flex-Vey 125
9		s. chapt 18.4	Conveying pipe
10		25-57-1701	Auger open core 60x60x36,5x4,3 right Flex-Vey 75/US
		25-57-1602	Auger open core 60x40x36,5x4,3 rh Flex-Vey 75/Tandem
		25-59-1701	Auger open core 70x65x46,5x4,3 right Flex-Vey 90/US
		25-62-1701	Auger open core100x70x72x5,0 right Flex-Vey125/US

Pos.	Qty.	Code no.	Description
11	1	25-60-3098	Intermediate flange w/lateral outlet dia 75
	1	25-61-3098	Intermediate flange w/lateral outlet dia 90
	1		Intermediate flange w/lateral ball headed outlet
12	1	25-60-3080	Drive 0,55KW Tandem 75 with pivot and tension shaft
	1	25-61-3080	Drive 0,55KW Tandem 75 with pivot and tension shaft
13	1	83-04-1320	Lower part for silo boot M75/100 tandem
	1	83-04-1322	Lower part for silo boot M90/100 tandem
14	1		Tension shaft for auger 70 Tandem
	1		Tension shaft for auger 90 Tandem
15	1	81-04-9101	Protection cap for drive Flex Vey
16	1	81-04-9102	Clamp for cap for Flex Vey
17	2	25-16-3625	Cover plate galv for hand slide

13 Electric control of the Flex-Vey System

13.1 Available control units

13.1.1 Standard control units

Pos.	Qty.	Code no.	Description
1	1	91-00-3625	Control box Flex-Vey 0,55/0,75KW
2	1	91-00-3626	Control box Tandem- 0,75/0,55KW

13.1.2 ECO control units

Pos.	Qty.	Code no.	Description
1	1	91-00-3640	Control box ECO for Flex-Vey/D-R 0,75KW 230/400V 3Ph 50Hz
2	1	91-00-3641	Control box ECO f/ Flex-Vey/D-R 0,75KW 230V 1Ph 60Hz
3	1	91-00-3642	Control box ECO f/ Flex-Vey/D-R 0,75KW 200V 3Ph 60Hz
4	1	91-00-3650	Control box ECO f/ Flex-Vey/D-R 1,50KW 230/400V 3Ph 50Hz
5	1	91-00-3651	Control box ECO f/ Flex-Vey/D-R 1,50KW 230V 1Ph 60Hz
6	1	91-00-3652	Control box ECO f/ Flex-Vey/D-R 1,50KW 200V 3Ph 60Hz

Note:

In the case of the ECO control boxes there is no pre-wiring on the clamps. The cables of the motor, the sensors and the time clock have to be directly connected by an authorized person.

A limit of running time is not integrated!

Function of control box:

1. Single filling (ON/OFF switch is pushed)

a) Start by means of a switch

- Single starting of the system, switching-off is made by MS45

b) Start by means of a time clock

- Automatic starting by means of a time clock, switching off is made by MS45
- The set time of the time clock must be shorter than the running time of the Flex-Vey

c) An additional switching off by means of the "empty" signalling sensor

2. Permanent filling (ON/OFF switch is locked)

a) Start by means of a switch

- Switching on/off is made by means of MS45

b) Start by means of a time clock

- With the time clock switched on the switching on/off is made by means of MS45

c) An additional switching off by means of the "empty" signalling sensor is possible

13.2 Examples regarding possible types of electric control boxes of the Flex-Vey feed conveying system

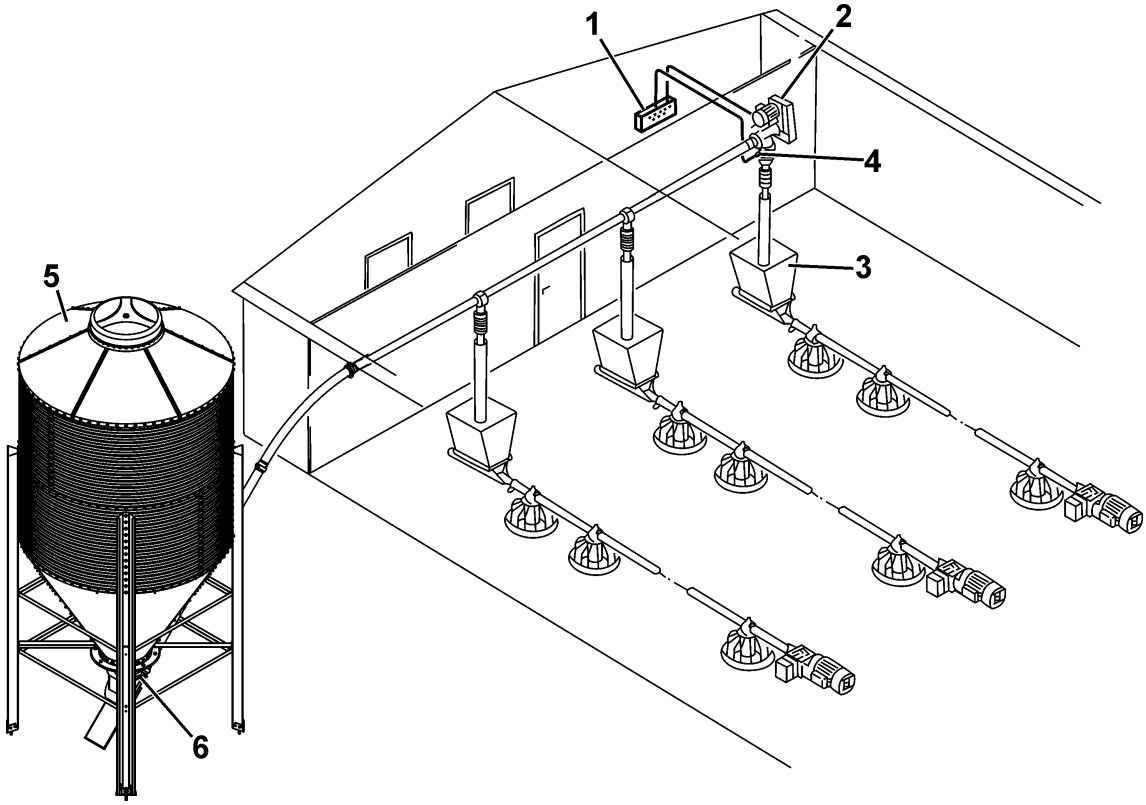
!	**Important:** The connection to the electric control of the drive unit, the electric motors and the sensors must be carried out by an authorised specialist.Earthing or a protective circuit must be carried out carefully at site according to the respectively valid regulations for electrical installations. The connections for the earth conductor must by arranged easily accessible. When working at electrical installations, the safety regulations must be observed. Please check if the data of the protective motor switch correspond to the data indicated on the motor housing. The threaded terminal ends and clamped connections must be checked for perfect contact making before setting into operation.

Direction of rotation of the auger:

In order to check the direction of rotation of the auger, place yourself behind the drive so that you can look to the silo. If you have, for example, a right-handed auger and the motor turns clockwise, the direction of rotation of the auger is correct.

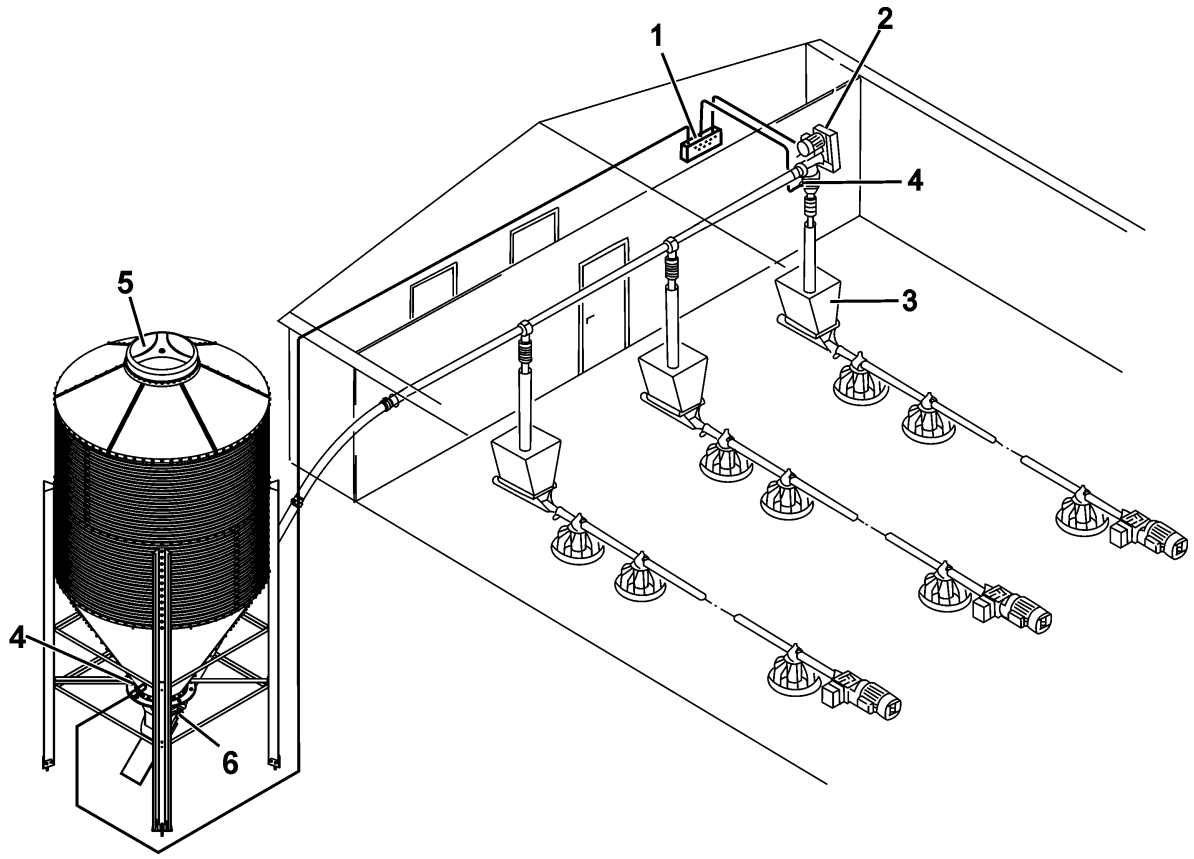
13.2.1 Control drive unit Flex-Vey auger

1=	Control for drive unit	**6=**	Boot with slide shut-off
2=	Drive Flex-Vey	**7=**	Intermediate flange with lateral outlet
3=	Feed container	**8=**	Boot for tandem auger
4=	Sensor with screw union	**9=**	Tandem drive
5=	Silo		



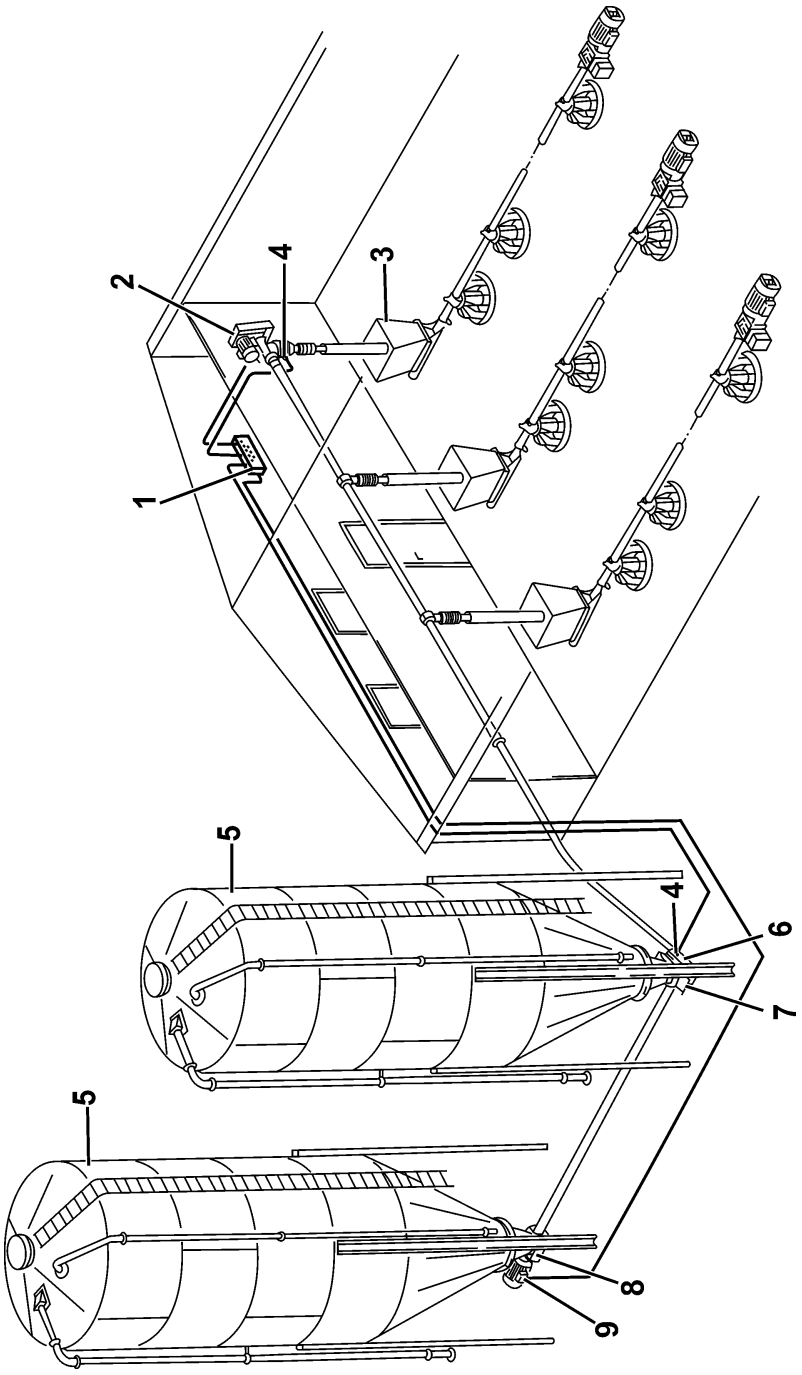
13.2.2 Control drive unit Flex-Vey-auger with the "empty" signalling sensor at the silo

1=	Control for drive unit	**6=**	Boot with slide shut-off
2=	Drive Flex-Vey	**7=**	Intermediate flange with lateral outlet
3=	Feed container	**8=**	Boot for tandem auger
4=	Sensor with screw union	**9=**	Tandem drive
5=	Silo		



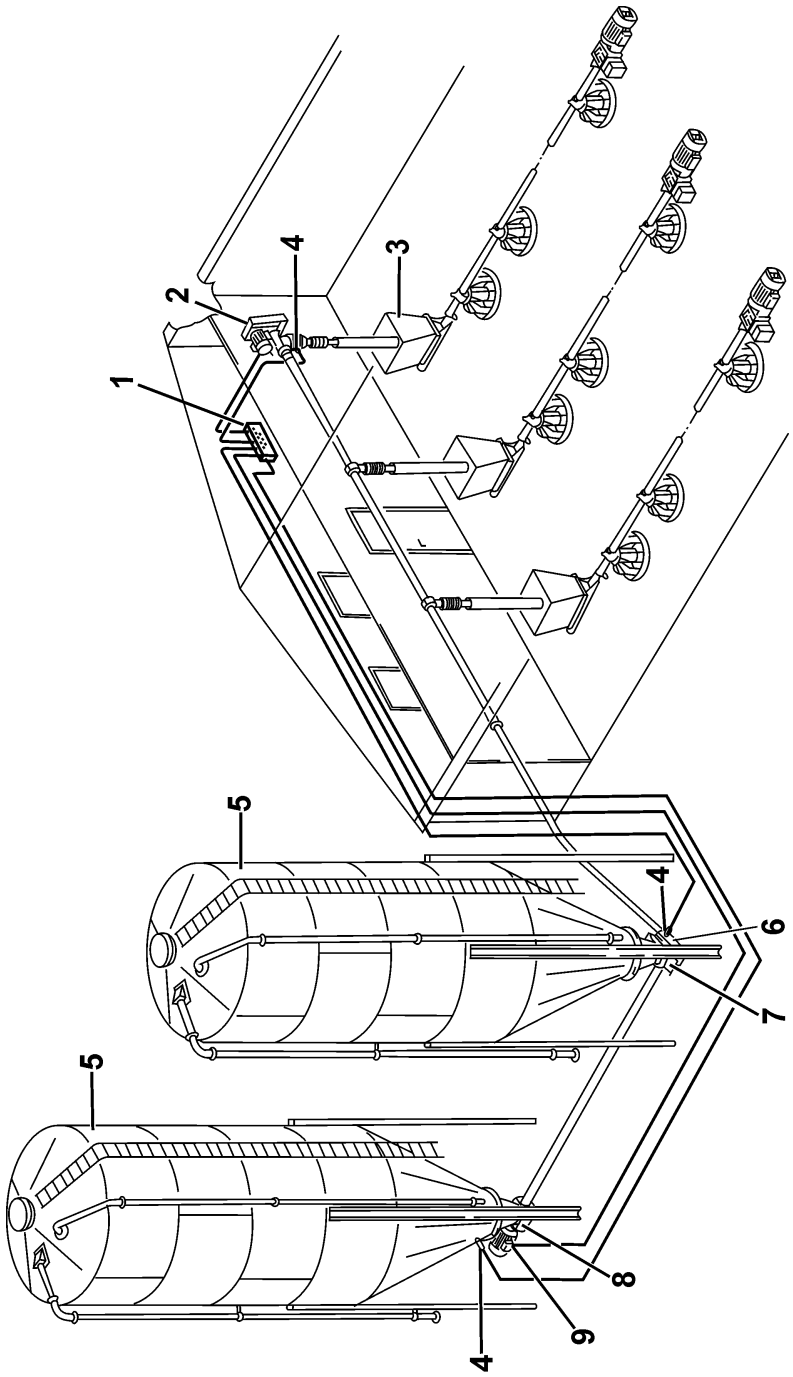
13.2.3 Control drive unit Flex-Vey Tandem Auger with the "empty" signalling sensor at one silo

1=	Control for drive unit	**6=**	Boot with slide shut-off
2=	Drive Flex-Vey	**7=**	Intermediate flange with lateral outlet
3=	Feed container	**8=**	Boot for tandem auger
4=	Sensor with screw union	**9=**	Tandem drive
5=	Silo		



13.2.4 Control drive unit Flex-Vey Tandem Auger with the "empty" signalling sensor at both silos

1=	Control for drive unit	**6=**	Boot with slide shut-off
2=	Drive Flex-Vey	**7=**	Intermediate flange with lateral outlet
3=	Feed container	**8=**	Boot for tandem auger
4=	Sensor with screw union	**9=**	Tandem drive
5=	Silo		



14 Operating Instructions

Important:

Completely remove the feed from the conveying system **before** a longer standstill period.

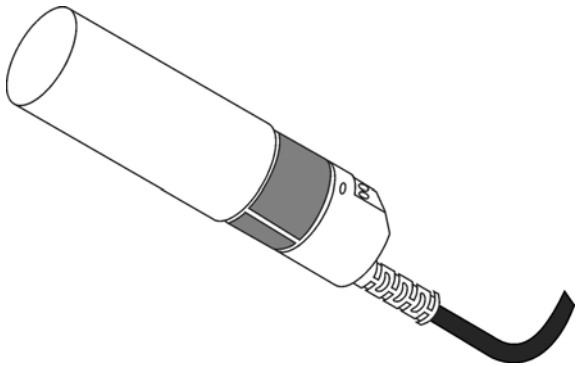
- Never run the feed conveying system without feed in the line.
- Use an "empty" signalling switch (sensor with union) for silos in the feed conveying system. This switch will stop the drive when the silo is empty.
- In the case of meal feeding, fully open the slide shut-off when the feed conveying system is running.
- In case of pellet feeding, adjust the feed supply by the slide-shut off, when the feed conveying system is running.
- When using feed with high moisture contents, clean the feed conveying system after each filling.
- New installed feed conveying systems must run in with maximum feed flow. The slide shut-off must be fully open.

15 Description and Operation of the Sensors MS45R

Sensor MS 45R is a capacitive sensor for solid matters in the range of grain and feed.

Sensor MS 45R has an integrated relais switch as well as adjustable time delay and sensitivity.

An electrical terminal connecting plan is appended to every sensor.



Sensor MS45R

Colour of LED	Parameter
green	sensitivity
red	time-delay
yellow	switch OFF/ON
black	set-up finished

Description of sensor MS45R

Product Description:

The MS 40R series is generally applicable capacitive sensors for usage in connection with solid and loose materials. The sensors have a relay output with a switch function.

Field of Application:
- Level control in silos and containers
- Control of filling and emptying

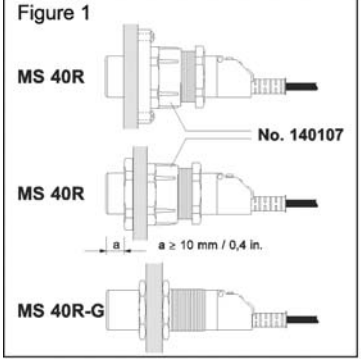
Mounting Guide (fig. 1):

The MS 40R series should be installed so at least 10 mm of the sensor contact point is free.

The MS 40R series in a smooth design is mounted efficiently in a special gland, additional accessory item number 140107.

The MS 40R-G series with M30 thread is mounted in a ø30 mm hole and is tightened with a locknut.

Figure 1



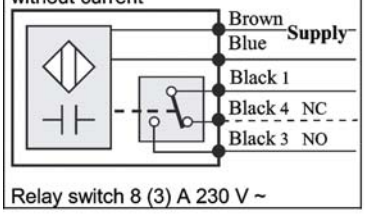
Installation Guide (fig. 2):

The power supply 90 V – 250 V AC is connected to the blue and brown wire. The load is connected in series with the relay contact of the sensor.

STOP by activating the sensor: use the black wires 1 and 3.
START by activating the sensor: use the black wires 1 and 4.

NOTICE! The internal relay is pulled when the power supply is connected and the sensor is not activated.

Figure 2: Activated sensor or sensor without current



Relay switch 8 (3) A 230 V ~

User's Guide (fig. 3):

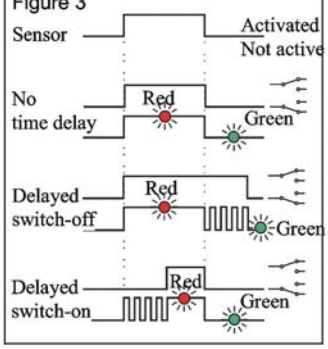
MS 41R has *no* time delay.

MS 43R has an option for delayed *switch-off*. When the activation stops, the time delay begins (red flash), and when this delay has run out, the relay switches back.

Besides the two options above the **MS 45R** can also be set for delayed *switch-on* (green flash). The time delay will start immediately when the sensor is activated. When the delay period runs out, the relay will switch. It does not switch back until the activation stops.

	Sensitivity	Off delay Delayed switch-off	On delay Delayed switch-on
41R	•		
43R	•	•	
45R	•	•	•

Figure 3



Technical Data:

Power supply:

High voltage model: 90 – 250 V 50 - 60 Hz

Item no. 100654

Low voltage model: 10 – 30 V AC/DC

Item no. 100655

Relay switch max. AC:

1.1 kVA at cos φ = 1
1.0 kVA at cos φ = 0.8
0.7 kVA at cos φ = 0.4

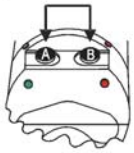
Temp. range: - 20 °C - + 70 °C
- 4 °F- +158 °F

For USA and Canada: Max. 40 °C

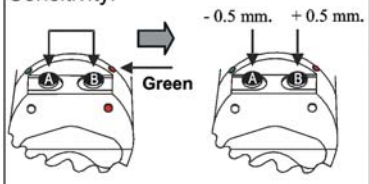
Max. delay: 4 hours

1. Start Ajustment

Press A and B simultaneously

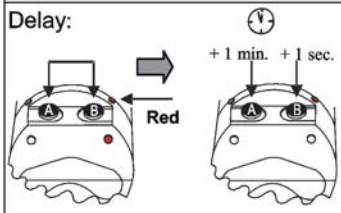


Sensitivity:



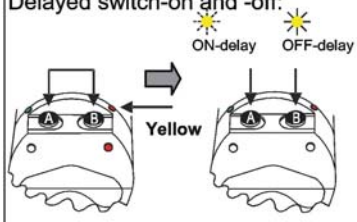
MS 41R: Adjustment completed

Delay:



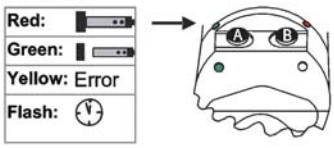
MS 43R: Adjustment completed

Delayed switch-on and -off:



MS 45R: Adjustment completed

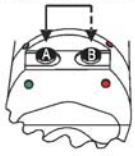
2. Status



3. Setting of Special Functions

Press A. Retain pressing.

Same procedure for B.



Reset	A + B (15 sec.)
Show delay	A + 2xB Red=1 min. Yellow=1 sec.
Adjust delay	A + 4xB (+10 sec.) A + 5xB (+5 sec.) A + 6xB (+1 h.)
Switch-off delay	A + 7xB
Switch off LED	A + 8xB
Switch on LED	A + 9xB

Adjustment of the time-delay mechanism of sensor MS 45R:

	Sensor MS 45R has an adjustable time-delay of 0-240 minutes.

The standard time-delay of sensor MS 45R, set by the manufacturer, is 30 seconds. We recommend, NOT to shorten the set time-delay. The duration of the time-delay can be activated by pushing and releasing buttons A and B simultaneously. The mode indicator has to be red. Each time button A is pushed, the time-delay is increased by 1 minute, each time button B is pushed, the time-delay is increased by 1 second.

Example: A time delay of 10 min and 5 sec means, that button A has to be pushed 10 times and button B 5 times.

Adjustment of the sensitivity of sensor MS 45R:

	The sensors' distinct reactivity ensures that varying moistness of the feed changes the set-time. For the adjustment, the feed should be as dry as possible. The drier the feed, the more secure the switching function of the sensor MS 45R.

The sensitivity can be activated by pushing and releasing buttons A and B simultaneously. The mode indicator has to be green. When pushing button A the sensitivity is decreased, when pushing button B it is increased.

If the sensor MS 45R does not interrupt the current supply to the drive, the sensitivity has to be **increased**.

If the Sensor MS 45R does not react and the motor of the drive does not start, the sensibility has to be **reduced**.

	For detailed information regarding the use of the sensor MS 45R see also the documentation attached to the sensor!

Reset to factory settings:

To reset to manufacturer's settings (30 seconds), buttons A and B have to be pushed simultaneously for at least 15 seconds.

16 Maintenance Instructions

Attention!

Turn off the power supply before carrying out any work at the system and mark the switch with a note reading: "Do not put into operation!"

Observe the manual!

Maintenance:

- = daily or during operation
- = after each use
- = weekly
- = monthly
- = after each batch

Big Dutchman

Code No. 00-00-2030 GB

Notes regarding the cleaning:

- Clean the systems thoroughly (wet or dry)!
- During the cleaning process, all electric appliances such as motors and switch boxes etc. have to be protected against direct splash water!
- Attention: Cleaning agents and disinfectants may cause corrosion! Make sure to check the selection of agents in this regard and observe the corresponding recommendations for dosing!
- In order to minimize corrosion, the drying should be accelerated by maximum ventilation after wet cleaning!

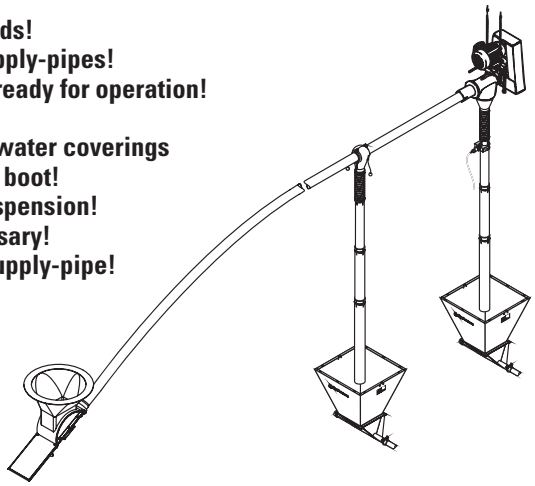
Big Dutchman

Code No. 00-00-2002 GB

Feed supply (conveying auger/FlexVey):

- Check conveying pipes and bends!
- Check the functioning of the supply-pipes!
- Check whether all sensors are ready for operation!

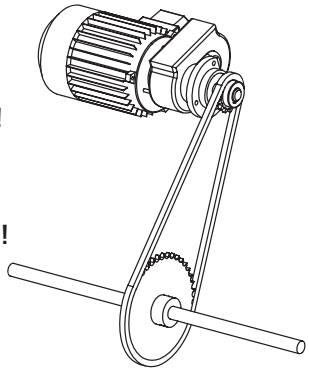
- Check screw connections, rainwater coverings and tension shaft bearing of the boot!
- Check the functioning of the suspension!
- Clean the boot outside, if necessary!
- Check the flexible tube at the supply-pipe!



Big Dutchman
Code No. 00-00-2018 GB

Drives:

- Lubricate all roller chains and wheels in the drive unit with a brush (oil SAE 90)!
- Clean the cooling webs of the motor in order to avoid overheating!
- Check pre-tension of the roller chains and re-tension, if necessary!
- Check pre-tension of V-belt and locking pin, if necessary!
- ▲ Check roller chains and tightener for wear!
- ▲ Protect the motors against splash water when cleaning!
- ▲ After wet cleaning: Lubricate chain drive immediately!



Big Dutchman
Code No. 00-00-2023 GB

17 Troubles and their Remedies

Trouble	Possible causes	Remedy
Feed conveying system fails to run	• Motor defective • Motor overloaded; stalls • "Empty" signalling switch stops the system because there is not feed • Power failure	• Replace motor • Check for foreign material in the feed • Check feed supply, remove possible obstructions • Check circuits, fuses, etc.
Motor overloaded after running briefly	• Too low voltage (motor runs too slowly and overheats) • Motor defective • Wrong wiring of motor (no feed transport) • Foreign object in the auger	• Check the voltage at motor (Check size of cable and change, if necessary) • Replace motor • Check direction of rotation of motor and change poles, if necessary • Check auger and remove foreign object
Auger runs erratically and untrue	• Ball bearing is dry, weared out or got stuck • Auger too long • Wrong suspension (kinks in pipes, too many bends) • Kinked or poorly welded auger.	• Grease or replace ball bearing • Shorten auger, check auger length afterwards • Provide for more suspension points; re-adjust suspension; use less bends • Adjust auger, if required replace the defective part. Weld auger according to specifications

Trouble	Possible causes	Remedy
Motor run is normal, but auger does not turn	• Defective auger tensioning device (e.g. hooked bolt is broken) • If system is driven with electric motor: V-belt too slack or weared out)	• Check auger tension device and replace it, if necessary • Tension or replace V-belt
Bend is weared out	• Auger too long (wear at the outside of the bend) • Auger too short (wear at the inside of the bend)	• Replace bend and shorten auger • Replace bend and extend auger
Straight conveying pipe is weared out	• Auger is kinked	• Replace kinked auger part and replace and repair respectively the conveying pipe
Feed conveying system is repeatedly switched on and off	• "Empty" signalling switch is wrongly installed	• Displace "empty" signalling switch

17.1 Procedure when repairing the conveying pipes

Note:

In case of repairs or for other reasons it may become necessary to cut in two a conveying pipe.

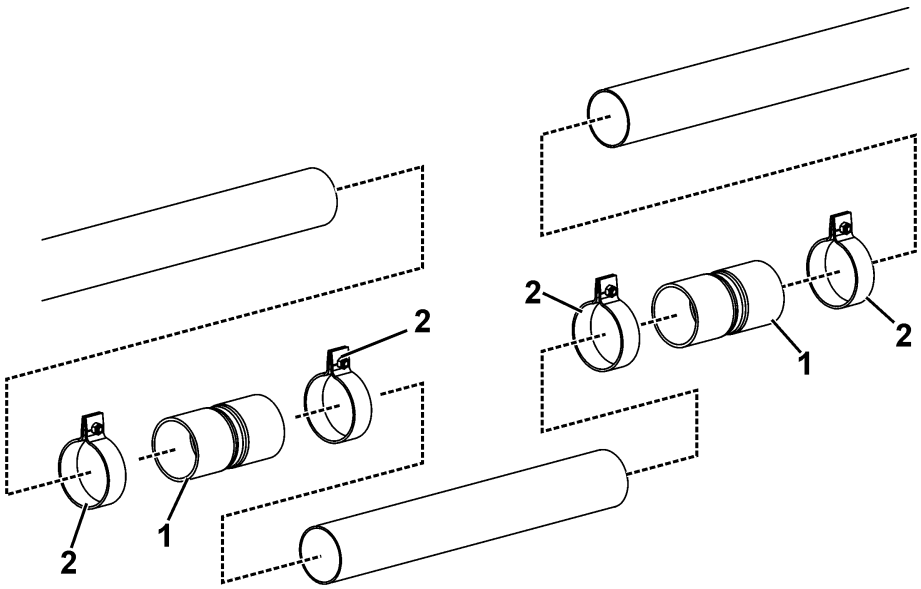
A repair with replacing the total conveying pipe is necessary.

Important:

When cutting in two the conveying pipes please see to a clean, rectangular cut.

Remove the conveying auger before you start repairs.

1. Cut the piece of conveying pipe which is defective or which has to be replaced out of the line. Schneiden Sie das auszuwechselnde oder defekte Stück Förderrohr aus der Linie.
2. Insert a new piece of conveying pipe cut to size and connect each cut surface with a coupler (1). Fasten the couplers with clamps for pipe (2).
3. Re-insert the conveying auger.



position numbers see the following page

Flex Vey 75

Pos.	Qty.	Code no.	Description
	1	25-57-1110	Coupler for pipe Flex-Vey 75
			consisting of:
1	1	25-57-1112	Coupler PVC for conveying pipe Flex-Vey 75
2	2	99-50-0475	Clamp for pipe Flex-Vey 75

Flex Vey 90

Pos.	Qty.	Code no.	Description
	1	25-59-1110	Coupler for pipe Flex-Vey 90
			consisting of:
1	1	25-59-1112	Coupler PVC for conveying pipe Flex-Vey 90
2	2	99-50-0476	Clamp for pipe Flex-Vey 90

Flex Vey 125

Pos.	Qty.	Code no.	Description
1	1	25-61-3011	Coupler PVC for conveying pipe Flex-Vey 125
2	2	99-50-0477	Clamp for pipe Flex-Vey 125

18 Spare parts

18.1 Drive units and acccessories for drive unit

18.1.1 Drive units

18.1.1.1 Flex-Vey 75

Pos.	Qty.	Code no.	Description
1	1	25-60-3065	Drive 0,75KW 400V 3PH 50Hz YZ Flex-Vey 75
2	1	25-60-3071	Drive 0,75KW 400V 3PH 60Hz YZ Flex-Vey 75
3	1	25-60-3067	Drive 0,75KW 230V 1PH 50Hz YZ Flex-Vey 75
4	1	25-60-3066	Drive 0,75KW 230V 1PH 60Hz YZ Flex-Vey 75
5	1	25-60-3073	Drive 1,10KW 230V 1PH 50Hz YZ Flex-Vey 75
6	1	25-60-3072	Drive 1,10KW 230V 1PH 60Hz YZ Flex-Vey 75

18.1.1.2 Flex-Vey 90

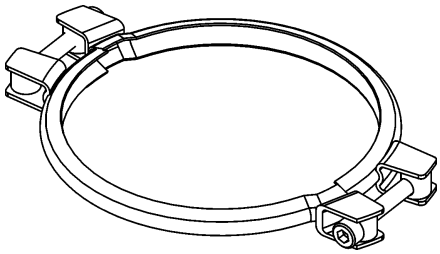
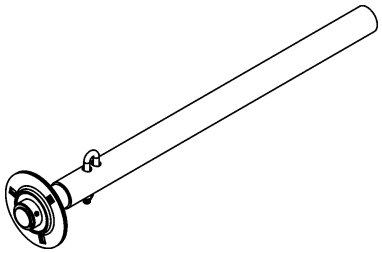
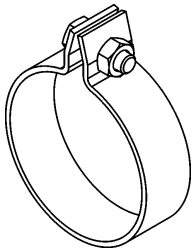
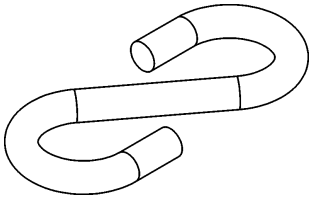
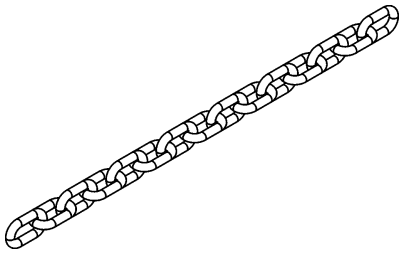
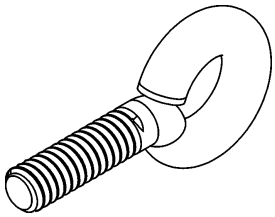
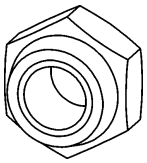
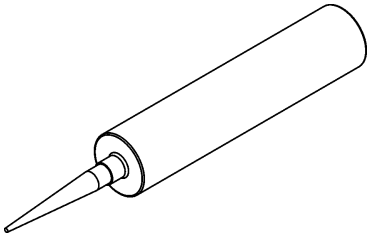
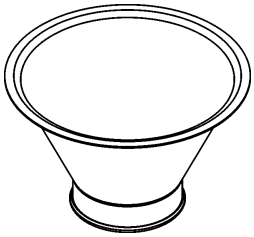
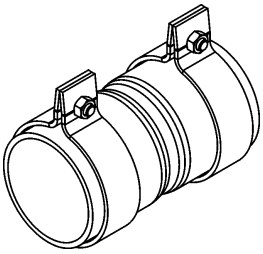
Pos.	Qty.	Code no.	Description
1	1	25-61-3065	Drive 0,75KW 400V 3PH 50Hz YZ Flex-Vey 90
2	1	25-61-3071	Drive 0,75KW 400V 3PH 60Hz YZ Flex-Vey 90
3	1	25-61-3068	Drive 0,75KW 230V 1PH 50Hz YZ Flex-Vey 90
4	1	25-61-3066	Drive 0,75KW 230V 1PH 60Hz YZ Flex-Vey 90
5	1	25-61-3073	Drive 1,10KW 230V 1PH 50Hz YZ Flex-Vey 90
6	1	25-61-3072	Drive 1,10KW 230V 1PH 60Hz YZ Flex-Vey 90

18.1.1.3 Flex-Vey 125

Pos.	Qty.	Code no.	Description
1	1	25-62-3065	Drive 1,10KW 400V 3PH 50Hz YZ Flex-Vey 125
2	1	25-62-3071	Drive 1,10KW 400V 3PH 60Hz YZ Flex-Vey 125
3	1	25-62-3068	Drive 1,10KW 230V 1PH 50Hz YZ Flex-Vey 125
4	1	25-62-3066	Drive 1,10KW 230V 1PH 60Hz YZ Flex-Vey 125
5	1	25-62-3073	Drive 1,50KW 230V 1PH 50Hz YZ Flex-Vey 125
6	1	25-62-3072	Drive 1,50KW 230V 1PH 60Hz YZ Flex-Vey 125

18.1.2 Accessories for drives

Exact description of the positions: see chapter 18.1.2.1 to 18.1.2.3

Pos. 1 	**Pos. 2** 
Pos. 3 	**Pos. 4** 
Pos. 5 	**Pos. 6** 
Pos. 7 	**Pos. 8** 
Pos. 9 	**Pos. 10** 

18.1.2.1 Flex-Vey 75

Pos.	Qty.	Code no.	Description
	1	**25-60-3000**	**Accessories for drive Flex-Vey 75**
			consisting of:
1	1	25-16-3033	Tension ring D150 galv. with sealing ring 1mm
2	1	25-01-3021	Tension shaft cpl. with bearing kplt M75
3	2	99-50-0475	Clamp pipe Flex-Vey 75
4	4	99-50-0005	S-hook 2" No. 60/6x55
5	2m	99-50-0003	Ship chain galv. 5mm DIN 766
6	2	99-10-1563	Lifting eye bolt M 8x 25
7	2	99-20-1064	Self-locking counter nut M 8 DIN 985-6 galv
8	1	99-50-3810	Silicone transparent 310ml
9	1	83-00-5791	Reducing bush 150 x 75 galv
10	1	25-57-1110	Coupler for pipe Flex-Vey 75
			consisting of:
10a	1	25-57-1112	Coupler PVC for conveying pipe Flex-Vey 75
10b	2	99-50-0475	Clamp for pipe Flex-Vey 75

18.1.2.2 Flex-Vey 90

Pos.	Qty.	Code no.	Description
	1	**25-61-3000**	**Accessories for drive Flex-Vey 90**
			consisting of:
1	1	25-16-3033	Tension ring D150 galv. with sealing ring 1mm
2	1	25-59-3021	Tension shaft w/bearing cpl M90
3	2	99-50-0476	Clamp for pipe Flex-Vey 90
4	4	99-50-0005	S-hook 2" No. 60/6x55
5	2m	99-50-0003	Ship chain galv 5mm DIN 766
6	2	99-10-1563	Lifting eye bolt M 8x 25 galv
7	2	99-20-1064	Self-locking counter nut M 8 DIN 985-6 galv.
8	1	99-50-3810	Silicon transparent 310ml
9	1	83-00-5792	Reducing bush 150 x 90 galv.
10	1	25-59-1110	Coupler for pipe Flex-Vey 90
			consisting of:
10a	1	25-59-1112	Coupler PVC for conveying pipe Flex-Vey 90
10b	2	99-50-0476	Clamp for pipe Flex-Vey 90

18.1.2.3 Flex-Vey 125

Pos.	Qty.	Code no.	Description
	1	**25-62-3000**	**Accessories for drive Flex-Vey 125**
			consisting of:
1	1	25-16-3033	Tension ring D150 galv. with sealing ring 1mm
2	1	25-62-3021	Tension shaft w/bearing cpl M90
3	2	99-50-0477	Clamp for pipe Flex-Vey 125
4	4	99-50-0005	S-hook 2" No. 60/6x55
5	2m	99-50-0003	Ship chain galv 5mm DIN 766
6	2	99-10-1563	Lifting eye bolt M 8x 25 galv
7	2	99-20-1064	Self-locking counter nut M 8 DIN 985-6 galv.
8	1	99-50-3810	Silicon transparent 310ml
9	1	83-00-5792	Reducing bush 150 x 90 galv

Available as option:

Pos.	Qty.	Code no.	Description
3	2	99-50-0477	Clamp for pipe Flex-Vey 125
10	1	25-61-3011	Coupler PVC for conveying pipe Flex-Vey 125

18.2 Control units

18.2.1 Standard control units

Pos.	Qty.	Code no.	Description
1	1	91-00-3625	Control-box Flex-Vey 0,55/0,75KW
2	1	91-00-3626	Control-box Tandem- 0,75/0,55KW

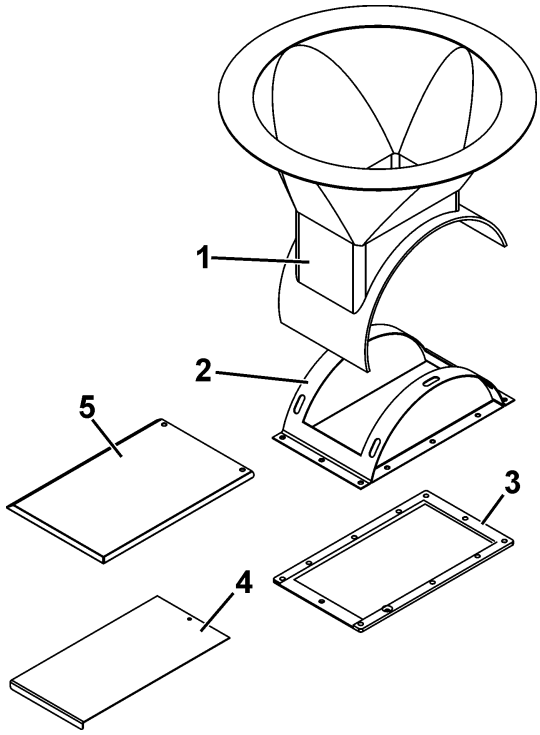
18.2.2 ECO Steuerungen

Pos.	Qty.	Code no.	Description
1	1	91-00-3640	Control box ECO for Flex-Vey/D-R 0,75KW 230/400V 3Ph 50Hz
2	1	91-00-3641	Control box ECO f/ Flex-Vey/D-R 0,75KW 230V 1Ph 60Hz
3	1	91-00-3642	Control box ECO f/ Flex-Vey/D-R 0,75KW 200V 3Ph 60Hz
4	1	91-00-3650	Control box ECO f/ Flex-Vey/D-R 1,50KW 230/400V 3Ph 50Hz
5	1	91-00-3651	Control box ECO f/ Flex-Vey/D-R 1,50KW 230V 1Ph 60Hz
6	1	91-00-3652	Control box ECO f/ Flex-Vey/D-R 1,50KW 200V 3Ph 60Hz

18.3 Boots under silo

18.3.1 Basic boots

Exact description of the positions: see this page and the following

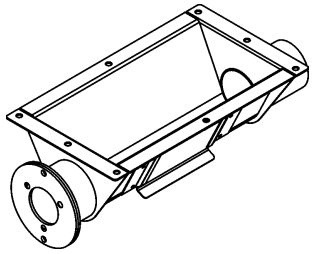
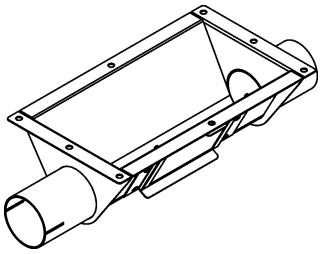
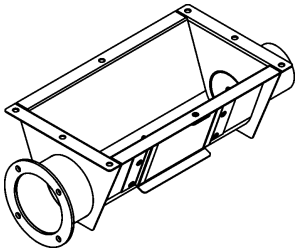
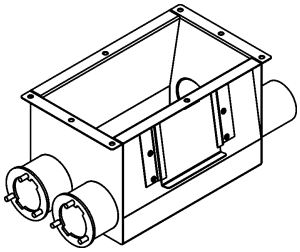
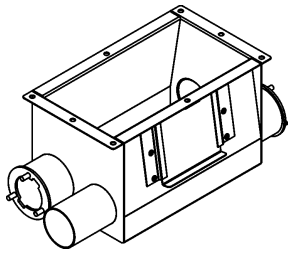
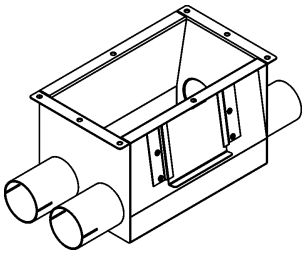
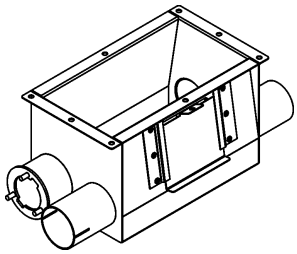
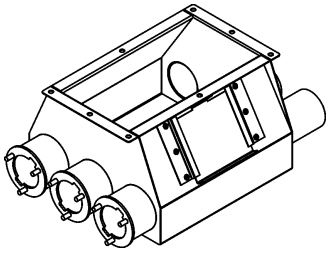
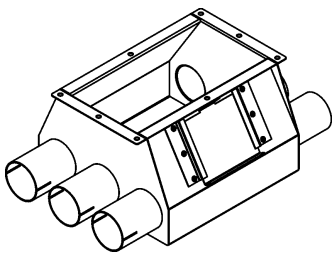
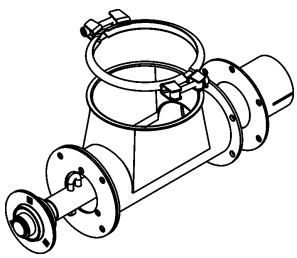


Pos.	Qty.	Code no.	Description
	1	**20-00-3215**	**Basic-boot for sheet metal silo**
			consisting of:
1	1	25-16-3629	Funnel GRP for boot for flex. auger for sheet metal silos
2	1	25-16-3602	Upper part galv f/boot for flexible auger
3	1	25-16-3603	Shutter guide PE for boot
4	1	25-16-3607	Hand slide galv f/boot f/flex. auger
5	1	25-16-3625	Cover plate galv for hand slide
6	1	20-00-3216	Fixing material for basic boot for sheet metal silo
			consisting of:
6a	16	25-16-3608	Hexagon head screw M 10x 25 hot-galvanised. with rubber gasket
6b	16	99-50-1483	Washer A 10,5x30x2,5 DIN 9021 galv.
6c	4	99-10-1311	Cross recessed countersunk head screw M 8x20 DIN 965-5.8
6d	1	99-10-1046	Hexagon head screw M8x 16 galv. DIN 933 8.8
6e	6	25-17-8766	Hexagon head screw M 8x 25 DIN 933 8.8 for silo B
6f	11	25-17-8753	Hexagon nut M 8 DIN 934 Kl. 8 for silo B
6g	16	25-17-3259	Hexagon nut M 10 hot-galvanised
6h	0,5	25-17-8758	Sealing strip Butyl 2x10mm reel = 2x20m

Pos.	Qty.	Code no.	Description
	1	**20-00-3220**	**Basic-boot for für GRP-silo**
			consisting of:
1	1	25-16-3626	Funnel GRP for boot for flex. auger for silos GRP
2	1	25-16-3602	Upper part galv f/boot for flexible auger
3	1	25-16-3603	Shutter guide PE for boot
4	1	25-16-3607	Hand slide galv f/boot f/flex. auger
5	1	25-16-3625	Cover plate galv for hand slide
6	1	20-00-3221	Fixing material for basic boot for GRP-silo
			consisting of:
6a	16	99-20-1465	Hexagon head screw M 10x 45 DIN 933
6b	20	25-17-3255	Washer SST with mounted gasket for screw M10
6c	20	99-20-1500	Hexagon nut M 10 SST DIN 934
6d	6	25-17-8766	Hexagon head screw M 8x 25 DIN 933 8.8 for silo B
6e	11	25-17-8753	Hexagon nut M 8 DIN 934 Kl. 8 for silo B
6f	4	99-10-1311	Cross recessed countersunk head screw M 8x20 DIN 965-5.8
6g	1	99-10-1046	Hexagon head screw M8x 16 galv. DIN 933 8.8
6h	4	99-20-1416	Hexagon head screw M10x 30 DIN 933
6i	20	99-20-1617	Washer 10,5x40x1,5 SST
6j	0,5	25-17-8758	Sealing strip Butyl 2x10mm reel = 2x20m

18.3.2 Lower parts for boots and funnel cpl. for transfer to second auger

Exact description of the positions: see the following page

Pos. 1 	**Pos. 2** 
Pos. 3 	**Pos. 4** 
Pos. 5 	**Pos. 6** 
Pos. 7 	**Pos. 8** 
Pos. 9 	**Pos. 10** 

18.3.2.1 Flex-Vey 75

Pos.	Qty.	Code no.	Description
1	1	25-16-3630	Lower part for silo boot M 75 1-line 1 direction
2	1	83-03-8498	Lower part for silo boot M 75 1tram passing auger
3	1	83-04-1320	Lower part for silo boot M75/100 tandem
4	1	83-03-8529	Lower part for silo boot M 75 2-line 1 direction
5	1	83-03-8535	Lower part for silo boot M 75 2-line 2 directions
6	1	83-03-8537	Lower part for silo boot M 75 2lines passing augers
7	1	83-03-1321	Lower part f/boot f/flex. M 75 2line 1direct. 1tram pas. aug.
8	1	83-03-8545	Lower part for silo boot M 75 3-line 1 direction
9	1	83-03-4546	Lower part for silo boot M 75 3lines passing augers
10	1	25-57-3012	Transfer funnel cpl onto second auger Flex-Vey 75

18.3.2.2 Flex-Vey 90

Pos.	Qty.	Code no.	Description
1	1	25-16-3605	Lower part for silo boot M 90 1-line 1 direction
2	1	83-03-8868	Lower part for silo boot M 90 1line passing auger
3	1	83-04-1322	Lower part for silo boot M90/100 tandem
4	1	83-03-9189	Lower part for silo boot M 90 2-line 1 direction
5	1	83-04-1323	Lower part for silo boot M 90 2-line 2 direction
6	1	83-04-1325	Lower part for silo boot M 90 2lines passing augers
7	1	83-04-1326	Lower part f/boot f/flex. M 90 2line 1direct. 1tram pas. aug.
8	1	83-03-9197	Lower part for silo boot M 90 3-line 1 direction
9	1	83-04-1324	Lower part for silo boot M 90 3lines passing augers
10	1	25-59-3012	Transfer funnel cpl onto second auger Flex-vey 90

18.3.2.3 Flex-Vey 125

Pos.	Qty.	Code no.	Description
1	1	83-03-2966	Lower part for silo boot M125 1-line 1 direction
2	1	83-04-3706	Lower part for silo boot M125 1line passing auger
4	1	83-04-1327	Lower part for silo boot M125 2-line 1 direction
6	1	83-04-1328	Lower part for silo boot M125 2lines passing augers
8	1	83-04-1329	Lower part for silo boot M125 3-line 1 direction
9	1	83-04-1330	Lower part for silo boot M125 3lines passing augers

18.4 Conveying pipes and bends

18.4.1 Flex-Vey 75

Pos.	Qty.	Code no.	Description
	1	**25-57-3005**	**Pipe 75x3080 cpl Flex-Vey**
			consisting of:
1	1 pc	83-03-6810	Conveying pipe 75x3,3-3080 PVC Flex-Vey 75
2	1 pc	99-50-0475	Clamp f/pipe Flex-Vey 75
3	3 m	25-57-1701	Auger open core 60x60x36,5x4,3 right Flex-Vey 75

Pos.	Qty.	Code no.	Description
	1	**25-57-3016**	**Bend plastic cpl 45deg radius 1533 Flex-Vey 75**
			consisting of:
1	1 pc	83-03-6812	Bend 45deg 75x3,3 radius 1533 Flex-Vey 75
2	1 pc	99-50-0475	Clamp f/pipe Flex-Vey 75
3	2 m	25-57-1701	Auger open core 60x60x36,5x4,3 right Flex-Vey 75

18.4.2 Flex-Vey 90

Pos.	Qty.	Code no.	Description
	1	**25-59-3005**	**Pipe 90x3095 cpl Flex-Vey**
			consisting of:
1	1 pc	83-03-6811	Conveying pipe 89x3,5-3095 PVC Flex-Vey 90
2	1 pc	99-50-0476	Clamp f/pipe Flex-Vey 90
3	3 m	25-59-1701	Auger open core 70x65x46,5x4,3 right Flex-Vey 90

Pos.	Qty.	Code no.	Description
	1	**25-59-3016**	**Bend plastic cpl 45deg radius 1568 Flex-Vey 90**
			consisting of:
1	1	83-03-6813	Bend 45deg 89x3,5 radius 1568 Flex-Vey 90
2	1	99-50-0476	Clamp f/pipe Flex-Vey 90
3	1.5m	25-59-1701	Auger open core 70x65x46,5x4,3 right Flex-Vey 90

18.4.3 Flex-Vey 125

Pos.	Qty.	Code no.	Description
	1	**25-62-3006**	**Pipe 125x3120 cpl Flex-Vey**
			consisting of:
1	1	83-01-2437	Conveying pipe125x5,0-3120 PVC Flex-Vey 125
2	1	99-50-0477	Clamp f/pipe Flex-Vey125
3	3.13m	25-62-1701	Auger open core 100/70 right Flex-Vey 125

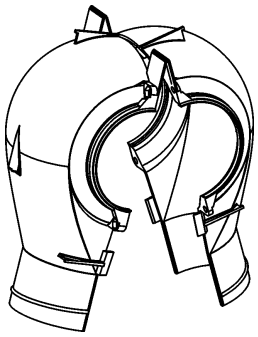
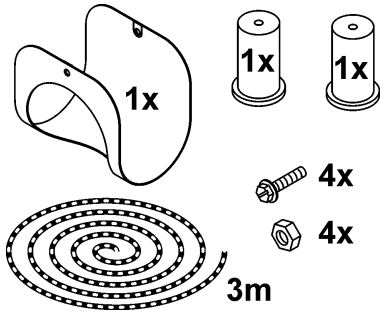
Pos.	Qty.	Code no.	Description
	1	**25-62-3030**	**Bend plastic cpl 45deg radius 2750 Flex-Vey 125**
			consisting of:
1	1	25-62-3034	Bend 45deg 125x5,0 radius 2750 Flex-Vey 125
2	1	99-50-0477	Clamp f/pipe Flex-Vey125
3	3.0m	25-62-1701	Auger open core 100/70 right Flex-Vey 125

18.5 Auger open core

Pos.	Qty.	Code no.	Description
1	m	25-57-1701	Auger open core 60x60x36,5x4.3 right Flex-Vey 75/US
2	m	25-59-1701	Auger open core 70x65x46,5x4.3 right Flex-Vey 90/US
3	m	25-62-1701	Auger open core 100x70x72x5.0 right Flex-Vey 125/US
4	m	25-57-1602	Auger open core 60x40x36.5x4.3 right Flex-Vey 75/Tandem

18.6 Outlet and drop pipes

18.6.1 Outlet

Pos. 1	Pos. 2
	

18.6.1.1 Flex-Vey 75

Pos.	Qty.	Code no.	Description
		25-57-3160	**Outlet B with shut-off & cable control cpl Flex-Vey 75**
			consisting of:
1	1	83-01-6117	Housing for outlet B with shut-off Flex-Vey 75
2	1	25-57-3161	Mounting-set for outlet B Flex-Vey 75

18.6.1.2 Flex-Vey 90

Pos.	Qty.	Code no.	Description
		25-59-3160	**Outlet B with shut-off & cable control cpl Flex-Vey 90**
			consisting of:
1	1	83-01-6119	Housing for outlet B with shut-off Flex-Vey 90
2	1	25-59-3161	Mounting-set for outlet B Flex-Vey 90

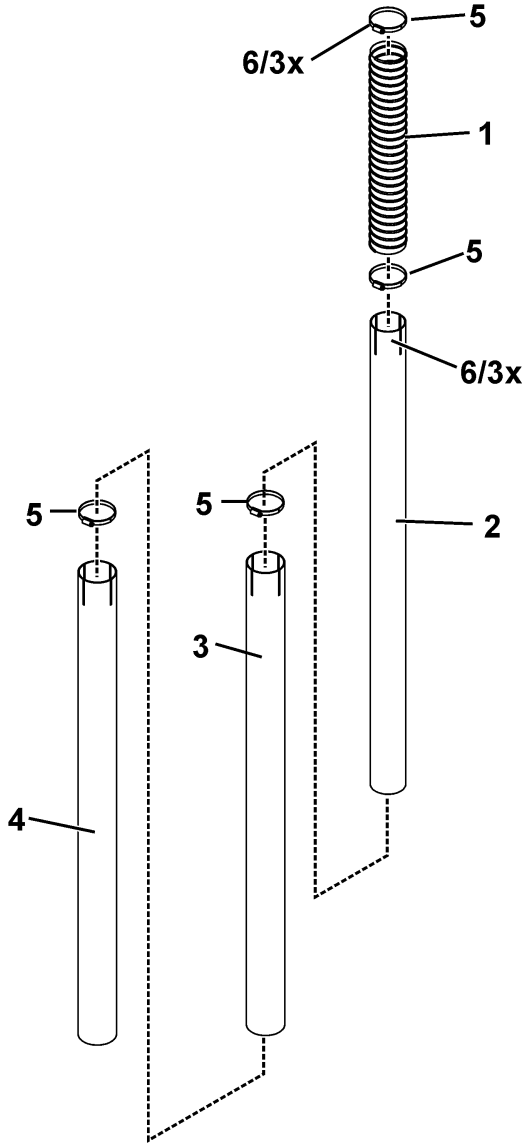
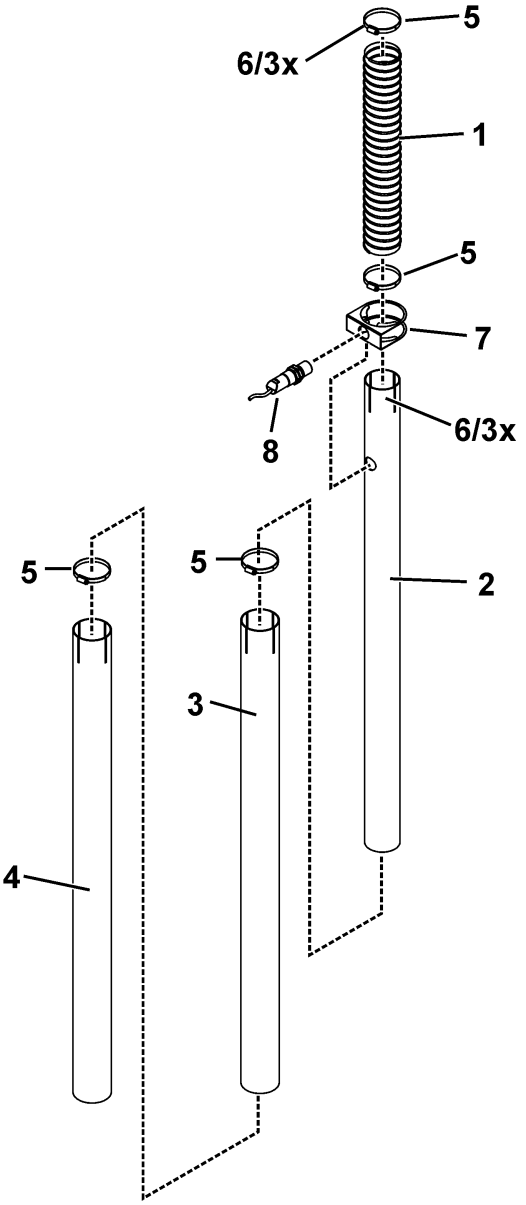
18.6.1.3 Flex-Vey 125

Pos.	Qty.	Code no.	Description
		25-62-3160	**Outlet B with shut-off & cable control cpl Flex-Vey 125**
			consisting of:
1	1	83-01-6121	Housing for outlet B with shut-off Flex-Vey 125
2	1	25-62-3161	Mounting-set for outlet B Flex-Vey 125

Pos.	Qty.	Code no.	Description
1;2	1	**25-62-3130**	**Outlet with shut-off incl. cable control Flex-Vey 125**

18.6.2 Drop pipes

Exact description of the positions: see chapter 18.6.2.1 to 18.6.2.3 .

with sensor	without sensor
	

18.6.2.1 Flex-Vey 75

Position numbers: see drawings on page 103

Pos.	Qty.	Code no.	Description
		25-57-3125	**Drop pipe Flex-Vey 75-2 max. height of ceiling 2,3 m**
			consisting of:
1	0,5m	25-57-3127	Flexible tube DN 75 PUR-MH
2	1	83-00-5085	Pipe 75x2,00-1200 PVC slotted
3	1	83-00-5086	Pipe 81,5x2,00-1200 PVC slott.
5	3	99-50-3829	Hose band clip 70- 90
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

Pos.	Qty.	Code no.	Description
		25-57-3126	**Drop pipe Flex-Vey 75-3 max. height of ceiling 3,5 m**
			consisting of:
1	0,5m	25-57-3127	Flexible tube DN 75 PUR-MH
2	1	83-00-5085	Pipe 75x2,00-1200 PVC slotted
3	1	83-00-5086	Pipe 81,5x2,00-1200 PVC slott.
4	1	83-00-5087	Pipe 90x3,50-1200 PVC slotted
5	4	99-50-3829	Hose band clip 70- 90
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

Pos.	Qty.	Code no.	Description
		25-57-3135	**Drop pipe Flex-Vey 75 -> 2,3m incl. sensor MS-45R**
			consisting of:
1	0,5m	25-57-3127	Flexible tube DN 75 PUR-MH
2	1	83-00-5828	Pipe 75x2,00-1200 with boring for sensor MS-45R
3	1	83-00-5086	Pipe 81,5x2,00-1200 PVC slott.
5	3	99-50-3829	Hose band clip 70- 90
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
7	1	83-00-4958	Bracket for sensor MS-45R at drop pipe 75/90
8	1	60-40-0754	Sensor MS-45R 220V threaded

Pos.	Qty.	Code no.	Description
		25-57-3136	**Drop pipe Flex-Vey 75 -> 3,5m incl. sensor MS-45R**
			consisting of:
1	0,5m	25-57-3127	Flexible tube DN 75 PUR-MH
2	1	83-00-5828	Pipe 75x2,00-1200 with boring for sensor MS-45R
3	1	83-00-5086	Pipe 81,5x2,00-1200 PVC slott.
4	1	83-00-5087	Pipe 90x3,50-1200 PVC slotted
5	4	99-50-3829	Hose band clip 70- 90
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
7	1	83-00-4958	Bracket for sensor MS-45R at drop pipe 75/90
8	1	60-40-0754	Sensor MS-45R 220V threaded

18.6.2.2 Flex-Vey 90

Position numbers: see drawings on page 103

Pos.	Qty.	Code no.	Description
		25-59-3125	**Drop pipe Flex-Vey 90-2 max. height of ceiling 2,3 m**
			consisting of:
1	0,5m	25-59-3129	Flexible tube DN 90 PUR-MH
2	1	83-00-5087	Pipe 90x3,50-1200 PVC slotted
3	1	83-00-5088	Pipe 102x4,00-1200 PVC slott.
5	3	99-50-1369	Hose band clip 90-110
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

Pos.	Qty.	Code no.	Description
		25-59-3126	**Drop pipe Flex-Vey 90-3 max. height of ceiling 3,5 m**
			consisting of:
1	0,5m	25-59-3129	Flexible tube DN 90 PUR-MH
2	1	83-00-5087	Pipe 90x3,50-1200 PVC slotted
3	1	83-00-5088	Pipe 102x4,00-1200 PVC slott.
4	1	83-00-5089	Pipe 110x3,00-1200 PVC slott.
5	4	99-50-1369	Hose band clip 90-110
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

Pos.	Qty.	Code no.	Description
		25-59-3135	**Drop pipe Flex-Vey 90/125->2,3 incl. sensor MS-45R**
			consisting of:
1	0,5m	25-59-3129	Flexible tube DN 90 PUR-MH
2	1	83-00-5829	Pipe 90x3,50-1200 with boring for sensor MS-45R
3	1	83-00-5088	Pipe 102x4,00-1200 PVC slott.
5	3	99-50-1369	Hose band clip 90-110
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
7	1	83-00-4958	Bracket for sensor MS-45R at drop pipe 75/90
8	1	60-40-0754	Sensor MS-45R 220V threaded

Pos.	Qty.	Code no.	Description
		25-59-3136	**Drop pipe Flex-Vey 90/125->3,5 incl. sensor MS-45R**
			consisting of:
1	0,5m	25-59-3129	Flexible tube DN 90 PUR-MH
2	1	83-00-5829	Pipe 90x3,50-1200 with boring for sensor MS-45R
3	1	83-00-5088	Pipe 102x4,00-1200 PVC slott.
4	1	83-00-5089	Pipe 110x3,00-1200 PVC slott.
5	4	99-50-1369	Hose band clip 90-110
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
7	1	83-00-4958	Bracket for sensor MS-45R at drop pipe 75/90
8	1	60-40-0754	Sensor MS-45R 220V threaded

18.6.2.3 Flex-Vey 125

Position numbers: see drawings on page 103

Pos.	Qty.	Code no.	Description
		25-62-3126	**Drop pipe Flex-Vey 125-2 max. height of ceiling 3,5 m**
			consisting of:
1	0,5m	25-62-3128	Flexible tube DN 110 PUR
2	1	83-00-5089	Pipe 110x3,00-1200 PVC slott.
3	1	25-62-3127	Pipe 102x4,00-2500 PVC slott.
5	4	99-50-1370	Hose band clip 104-138
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K

Pos.	Qty.	Code no.	Description
		25-59-3135	**Drop pipe Flex-Vey 90/125->2,3 incl. sensor MS-45R**
			consisting of:
1	0,5m	25-59-3129	Flexible tube DN 90 PUR-MH
2	1	83-00-5829	Pipe 90x3,50-1200 with boring for sensor MS-45R
3	1	83-00-5088	Pipe 102x4,00-1200 PVC slott.
5	3	99-50-1369	Hose band clip 90-110
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
7	1	83-00-4958	Bracket for sensor MS-45R at drop pipe 75/90
8	1	60-40-0754	Sensor MS-45R 220V threaded

Pos.	Qty.	Code no.	Description
		25-59-3136	**Drop pipe Flex-Vey 90/125->3,5 incl. sensor MS-45R**
			consisting of:
1	0,5m	25-59-3129	Flexible tube DN 90 PUR-MH
2	1	83-00-5829	Pipe 90x3,50-1200 with boring for sensor MS-45R
3	1	83-00-5088	Pipe 102x4,00-1200 PVC slott.
4	1	83-00-5089	Pipe 110x3,00-1200 PVC slott.
5	4	99-50-1369	Hose band clip 90-110
6	6	99-10-3891	Drilling screw 3,5x 16 DIN 7504-K
7	1	83-00-4958	Bracket for sensor MS-45R at drop pipe 75/90
8	1	60-40-0754	Sensor MS-45R 220V threaded

18.7 Accessories for Flex-Vey 75/90/125

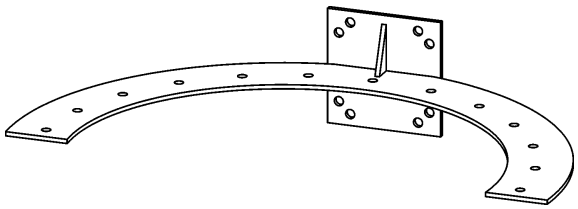
Pos.	Qty.	Code no.	Description
1		25-57-1110	Coupler for pipe Flex-Vey 75
2		25-59-1110	Coupler f/pipe Flex-Vey 90
3		99-50-0477	Clamp f/pipe Flex-Vey125
4		83-00-5791	Reducing bush 150x75 galv
5		83-00-5792	Reducing bush 150x90 galv
6		25-16-3042	Y-piece galv 150/70 2x30deg
7		25-16-3039	Y-piece galv 150/2x150 2x45deg
8		25-16-3041	T-piece galv 45deg 150x150
9		25-16-3034	Segment 150/15deg
10		25-16-3035	Segment 150/30deg
11		25-16-3036	Segment 150/45deg
12		25-16-3031	Tube 150x1,50-1000 galv
13		25-16-3032	Tube 150x1,50-2000 galv
14		25-16-3033	Tension ring 150 galv with sealing ring 1mm
15		25-57-1701	Auger open core 60x60x36.5x4.3 right Flex-Vey 75
16		25-57-1602	Auger open core 60/40 right Flex-Vey 75/Tandem
17		25-59-1701	Auger open core 70x65x46.5x4.3 right Flex-Vey 90
18		25-62-1701	Auger open core 100/70 right Flex-Vey 125
19		25-57-1111	Coupler half f/tube Flex-Vey75
20		25-59-1111	Coupler half f/tube Flex-Vey90

18.7.1 Fixing material

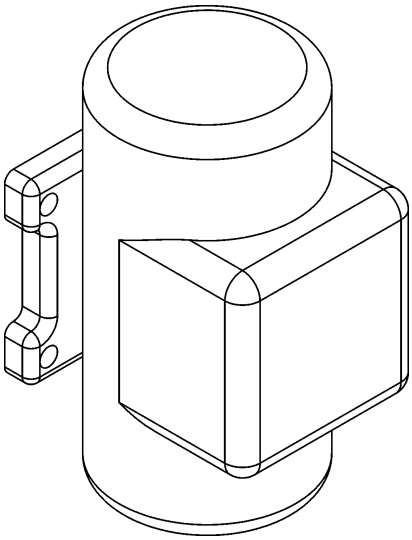
Pos.	Qty.	Code no.	Description
1		10-93-1629	Cup hook galv 80x22x7,8
2		10-93-1642	Cup hook galv 120x22x7,8
3		99-50-3834	Cup hook galv 140x22x7,8
4		99-10-3780	Hexagon wood screw 8x 80 DIN 571-ST galv
5		99-10-3814	Hexagon wood screw 8x120 DIN 571-ST galv
6		99-10-3832	Hexagon wood screw 8x180 DIN 571-ST galv
7		99-10-3783	Hexagon wood screw 10x 80 DIN 571-ST galv
8		99-10-3823	Hexagon wood screw 10x120 DIN 571-ST galv
9		99-10-3887	Hexagon wood screw 10x180 DIN 571-ST galv
10		99-50-3525	Angle 1780-40x40x4 galv
11		99-50-3025	Flat steel 6000-25x5 galv
12		99-10-1038	Hexagon head screw M8x 20 galv DIN 933
13		99-10-1040	Hexagon nut M8 galv DIN 934-8
14		99-50-0003	Ship chain galv 5mm DIN 766
15		99-50-0012	Suspension chain K 27
16		99-50-0005	S-hook 2" no 60/6x55

18.8 Vibrator for silo (optional)

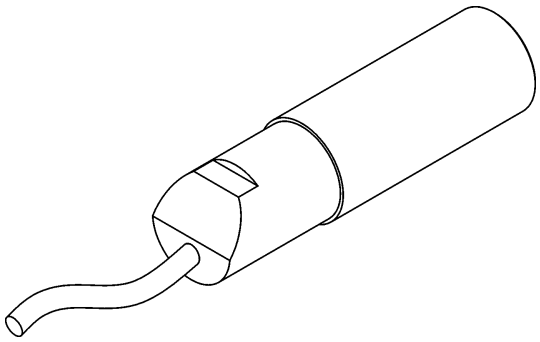
Pos. 1



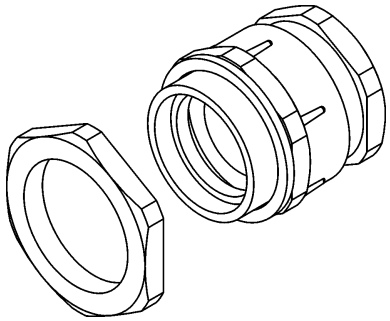
Pos. 2



Pos. 4a



Pos. 4b



Pos.	Qty.	Code no.	Description
	1	**25-00-1000**	**Vibrator cpl for silo**
			consisting of:
1	1	25-00-3702	Vibrator plate round galv without screws
2	1	25-00-1002	Vibrator 0,18KW 3000rpm 230/400V 50/60Hz
3	1	25-00-1003	Control-box for electric vibrator 0,18KW
4	1	91-00-3985	Sensor MS-45R with union
			consisting of:
4a	1	60-40-0654	Sensor MS-45R 220V
4b	1	99-30-3001	Screw union PG 36