



LaiCa™ Poolai™

Use and Assembly Guide



Original use and assembly guide



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GENERAL INFORMATION

THESE INSTRUCTIONS MUST BE READ, UNDERSTOOD AND ALL POINTS OBSERVED BY THE USER, THE RESPONSIBLE AND OPERATING PERSONNEL.

1. OBEY THE LEGAL REGULATIONS AND THE APPLICABLE RULES!

This concerns, among other things, the European directives transposed into national legislation and/or the laws, safety and accident prevention regulations that apply in the user's country.

During assembly, operation and maintenance of the installation the legal regulations concerned and the applicable technical rules must be obeyed.

2. INTENDED USE

The installation has been designed solely for intensive livestock use and has been developed according to the applicable rules of good workmanship. Extra loading of the product is therefore prohibited. Any other use is considered to be improper use. The manufacturer is not responsible for damage resulting there from. The user bears sole responsibility.

3. NOT-INTENDED USE

All use different than described in point 2" intended use" is at the responsibility of the end user.

4. LIABILITY

The (Extended) Warranty will not apply if any of the following has occurred: failure to conduct incoming goods inspection with regards to the Products, improper handling, transportation, modification or repair; accident, abuse or improper use; improper assembly, installation, connection or maintenance (having regard to Roxell's most current assembly, installation, connection and maintenance manuals); force majeure; negligence, lack of supervision or of maintenance on the part of customer; normal wear and tear; use of cleansing agents and disinfectants that are excluded in Roxell's most current use and maintenance manuals; use of cleansing agents and disinfectants in violation with the instructions received from the suppliers; or use of the Products in an ATEX-surrounding.

The (Extended) Warranty shall not apply in the event of a defect caused either by materials or accessories supplied by or services rendered by Customer, or by an intervention by a person or entity which is not authorised or qualified for carrying out such intervention. Furthermore, the (Extended) Warranty will only apply if the Products are used in livestock houses and if all parts or components of the Products are supplied by Roxell.

Roxell will not be liable for any damages caused due to improper use, assembly, installation, connection or maintenance of the Products. In this respect, the Customer expressly acknowledges that (i) all use, assembly, installation, connection or maintenance must be done in accordance with Roxell's most current assembly, installation, connection and maintenance manuals and (ii) the electrical installation on which the Products must be connected must be done in accordance with applicable local legislation on electrical installations. Furthermore, the Products must be tested both mechanically and electrically in accordance with state of the art techniques and applicable local legislation.

5. PERSONNEL QUALIFICATIONS

USER:

The person who uses a function or operation of a product for their work or who works on the product. The user must be able to read the instructions for use and fully understand them. The user has knowledge of the functioning and construction of the installation.

TECHNICALLY TRAINED PERSON:





An expert who can assemble and maintain the installation (**mechanically/electrically**), and resolve malfunctions. On the basis of his/her technical training and experience, he/she has sufficient knowledge to be able to assess activities, recognise possible dangers and rectify dangerous situations.

6. INFORMATION ABOUT THE RESIDUAL RISKS - USED SAFETY SIGNS

There are three levels of danger, which you can recognize from the signal word

- * **DANGER**
- * **WARNING**
- * **CAUTION**

The nature and source of the imminent danger and possible consequences of not obeying warnings is stated here!

 DANGER	<p>DANGER indicates a direct imminent danger that can result in a serious or even fatal accident if the safety measures are not respected.</p>
 WARNING	<p>WARNING indicates a possible imminent danger that can result in a serious accident or damage to the product if the safety measures are not respected.</p>
 CAUTION	<p>CAUTION indicates possible, dangerous situations that can result in minor physical injury or material damage if the safety measures are not respected.</p>
	<p>This symbol refers to supporting information.</p>
<p> <input checked="" type="checkbox"/> allowed <input type="checkbox"/> not allowed </p>	

7. STORAGE

Put all parts to be assembled in a room or at a location where the not yet assembled components are protected against weather influences.

8. TRANSPORT

Depending on the size of the parts and according to local circumstances and local legislation, the parts of the machine have to be transported with a forklift.

The forklift must be operated by a qualified person and in accordance with the rules of good workmanship.

When lifting the load, always check if the center of gravity of the load is stable.

9. DISMANTLING

Dismantle the installation and its components in accordance with the environmental legislation of the country or the local authorities applicable at that time. All functioning products and exchange parts must be stored and disposed of in accordance with the applicable environmental regulations.

Environmental information for customers in the European Union



European directive 2002/96/EC amended by the Directive 2008/34/EC requires that equipment that bears this symbol on the product or packaging must not be disposed of with unsorted household waste. This symbol indicates that the product must be disposed of separately. You are yourself responsible for the destruction of this and other electrical and electronic equipment via the disposal channels designated for that purpose by the national or local government. The correct destruction and recycling of this equipment prevents any negative consequences for the environment and health. For more information about destroying your old equipment, contact your local authorities or waste disposal service.

Information about waste disposal - electrical/electronic material for companies

1. In the European Union

If you have used the product for commercial purposes and you want to dispose of it, contact Roxell who will give you information about the return of the product. It is possible that you will have to pay a disposal charge for the return and recycling. Small products (and small quantities) can be processed by the local collection agencies.

2. In other countries outside the European Union

If you want to dispose of this product, contact the local authorities for information concerning the correct disposal procedure.

10. THE LEVEL OF NOISE EMISSION

The noise level of the installation in operation does not exceed 70dB(A).

11. LOCK OUT TAG OUT – LOCK METHOD GENERAL

- Everyone needs his own lock and tag (label), which can't be removed by other persons.
- Inform all persons who are influenced by the procedure.
- Localize all sources of energy (electric, hydraulic, pneumatic).
- Switch off.
- Lock out and tag out.
- Check if the source of energy is switched off.
- Remove any remaining energy.

12. USE PERSONAL PROTECTIVE EQUIPMENT.

Ensure you wear personal protective equipment (gloves, dust masks...).

13. SUFFICIENT LIGHTING - ILLUMINANCE

- **A minimum illuminance of 200 lux is necessary** during usage, maintenance and installation.
- Provide at the installation **(portable) emergency lighting in case of power failure.**

14. ELECTRICAL EQUIPMENT, CONTROL PANELS, COMPONENTS AND DRIVE UNITS

- To operate control panels, there must be **at least 70 cm of free space.**
- Control panels must **always remain closed.** The key of the control panel must be in possession of an authorized person.
- The necessary measures must be taken by the user to keep out **rats, mice and other vermin from the control panels**
- If electrical equipment, control panels, components and drive units are damaged, the system must be stopped **IMMEDIATELY!**
- Electrical equipment, control panels, components and drive units should **NEVER be sprayed with water or other liquid!**
- Electrical equipment, control panels, components and drive units should **NEVER be covered with any material.**

A blank sheet of lined paper with horizontal ruling lines spaced evenly down the page.

PART I

INSTRUCTIONS FOR THE USER

GENERAL SAFETY RULES

LaïCa/PooLaï Nr: 009...

Automatisch pannen voedersysteem voor opfok en productie van leghennen
Automatic pan feeding system for rearing layers and laying hens

Winching systeem

Liersysteem voor voer- en drinklijnen

Winching system for feed- and drink lines



DANGER

IMPORTANT

Carefully read the following instructions before USING the system

1. Before you do any **repair**, or **maintenance works**, always **disconnect the electricity supply**.
2. Ensure you wear **personal protection equipment** (gloves, dust masks).
3. The system **starts automatically**.
Never use your **hands** at **dangerous locations** (feed intake boots, drive units, control units or outlet holes in the tubes) before you have **completely switched off** the transport system and made sure that **nobody** can **switch it on** without your knowledge.
4. **Never** allow **unauthorized persons** to **enter the house** in your absence.
5. **Be careful** when **lowering** or **winching** up the feeding lines/circuits :
 - **stop** immediately at the slightest hitch.
 - **never** stay **underneath** when lowering or winching up the lines/circuit.
6. If the auger stalls : **immediately** switch **off** the system. Carefully read the trouble shooting guide and strictly follow instructions. Contact a **technically trained person**.
An auger **under tension** can **cause very serious injuries** when released.
7. Regularly check the **elbow/trough and/or tube connections**. Tighten if necessary.
8. Ensure that the **hopper cover (grill)** or **cover** on the 100 kg hopper **closes properly**.
9. Regularly check that the **control unit (pan)** and/or the **motor handy box** are properly closed.



This **SYMBOL** will be used to draw your attention to matters that are of **GREAT IMPORTANCE** for your **SAFETY**.

It means : **WARNING** - follow the safety instructions :
disconnect the current - re-read the safety rules.

In short : **BE ALERT**. **IGNORING** these instructions can cause **SE-RIOUS INJURIES** or even **DEATH**.

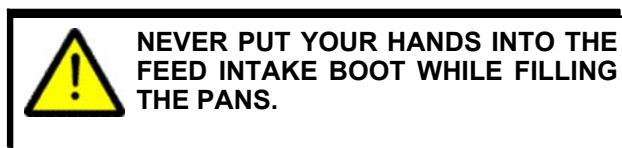
DIRECTIONS FOR USE AND MAINTENANCE

TO START UP THE SYSTEM

The oil layer on the new auger and the tubes slows down the feed transport.

This is corrected as soon as the oil has disappeared after some runs.

When starting up your new feeding system, let 25kg (50Lbs) of feed run through the feed intake boot into the pans.



Let the circuit run empty for another half minute. Repeat this procedure until the whole circuit is filled.

By doing this :

- you limit the load on the motors of long circuits
- you test the system for functioning of the control panels and possible mistakes during installation
- you become acquainted with your installation

Birds are very sensitive to light, humidity and temperature. If there are spots in the house where these conditions do not meet the average standard, birds will spread unevenly over the house.

The drop tube above the feed intake boot farthest from the weigher/feed bin has a sensor. This sensor starts the feed transport from the weigher/feed bin.

If the last circuit is not completely emptied by the birds at the beginning of the rearing period, check the following points :

- temperature/air humidity
- ventilation (e.g. draughts)
- light
- litter
- insulation

If everything is OK, birds will automatically spread evenly over the house.

PRACTICAL DATA FOR USING THE POOLAÏ SYSTEM (REARING PERIOD)

A. PREPARATION

1. Make sure that the motors are suspended at the correct height. The weight of the motors on a new system slightly stretches the main cable. The circuit is no longer level and premature wear and/or disturbances can be the result.
If necessary, adjust the suspension to level the circuit !
2. Warm up the house and (if used) the litter at the correct temperature at least 24 hours before the birds arrive.

Lower ALL pans onto the floor/slats before birds arrive in the house.

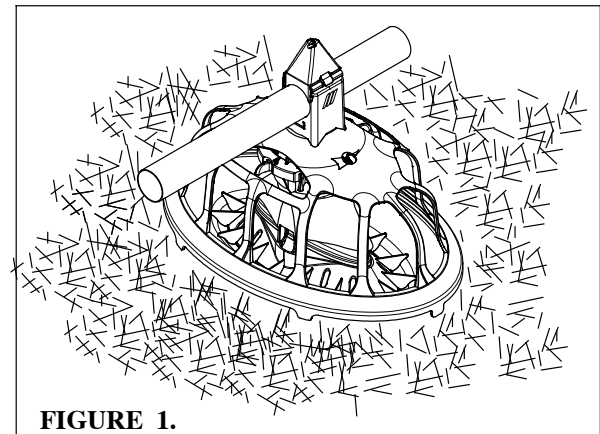


FIGURE 1.

Make sure that all feed windows open and close simultaneously.

The suspension cables of the tubes must be stretched correctly.

After a couple of days, when the pans sink deeper into the litter, the feed windows remain completely open.

The feed level per pan is preferably adjusted at position 1-3.

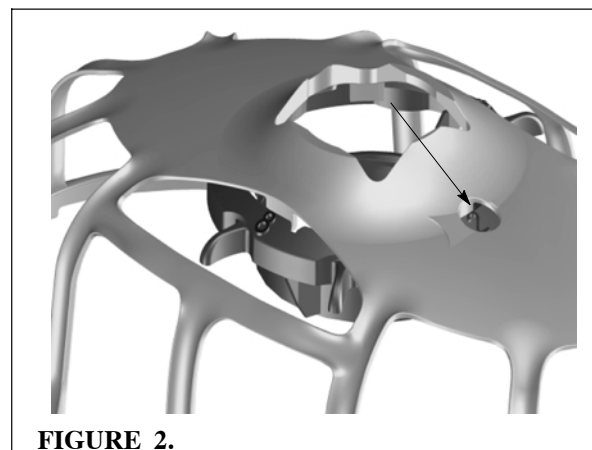


FIGURE 2.

3. Fill up all pans by pushing the on/off button on the control panel or use automatic fill up. Stop the feeding system as soon as all pans are full.

If circuits run too full, the motors may overload and be disconnected automatically by the thermic protection.

Stop the feeding system as soon as all pans are full.

Birds now have enough feed for the first day(s).

B. THE FIRST DAYS : OPEN WINDOWS

Fill all pans again after 1-2 days. Preferably let the auger make a full round (see page I-5). Repeat this 2-3 times per day, so that you have a good control on the feed intake during the important starting period.

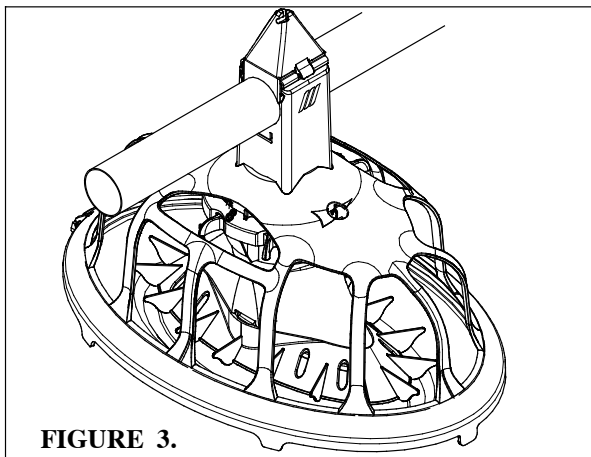
Manual feeding during the second week, or you can already use the control panel to run the system fully automatically.

C. CLOSED WINDOWS

The time to start working with closed feed windows depends upon the type of feed. We recommend to start after 10 days with free flowing (pelleted) feed.

If you have more difficult feed (mash), you start after 14 days.

Winch up the circuits so that all feed windows are correctly closed (see fig. 3)



Attention : all pans are still sitting on the floor/slats !

The birds easily adapt to the lower feed level.

Winch up the system as soon as the birds are used to the lower feed level.

The next day, and all days thereafter, you start with a full system. All pans anywhere in the house are filled simultaneously with the same amount of feed.

Winch up the circuits until the pans hang just above the litter/slats. This will produce a positive feed flow.

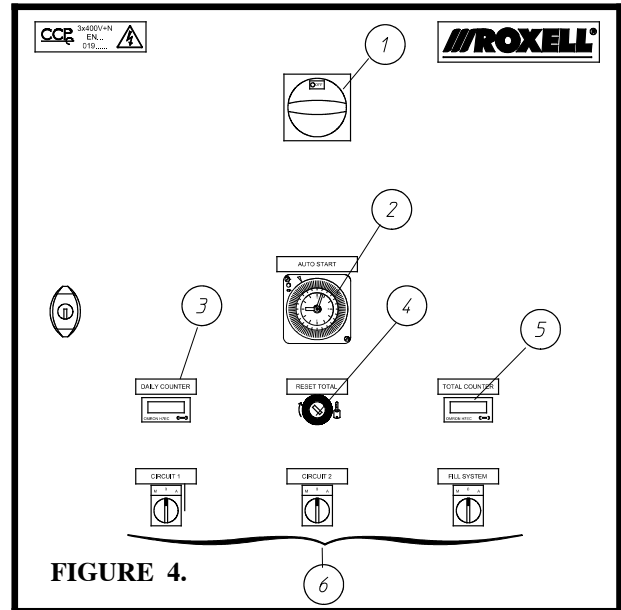
Adjust the feed level per pan at position 1-3.

D. PROGRAMMED FEEDING (GUIDELINE*)

*** You have to develop your own program according to your circumstances to get the maximum profit out of your installation.**

When raising layers, you spread the meals over several periods in accordance with the lighting scheme you have chosen.

You program the start time of each feeding cycle on the time clock (2), per meal.



Example:

1. Meals to be programmed on the time clock: 5 a.m., 11 a.m., 3 and 6 p.m.

2. Determine the running period.

- If you use the running period, you must also program the running period of the circuit. **In** the box you program the running period at 2 runs of the circuit.

- For a circuit in a house of 60m, this means :

- total circuit length : 2 x 60= 120m

- runn. speed (auger) : 30m/min. :

- circuit. time f/2 rounds : $2 \times \frac{120}{30} = 8\text{min.}$

PRACTICAL DATA FOR USING THE LAICA SYSTEM (PRODUCTION PERIOD) (GUIDELINE*)

*You have to develop your own program according to your circumstances to get the max. profit out of the installation.

In production period of layers, you have several meals, and you spread the meals over several periods in accordance with the lighting scheme you have chosen.

You program the start time of each feeding cycle on the time clock (2), per meal.

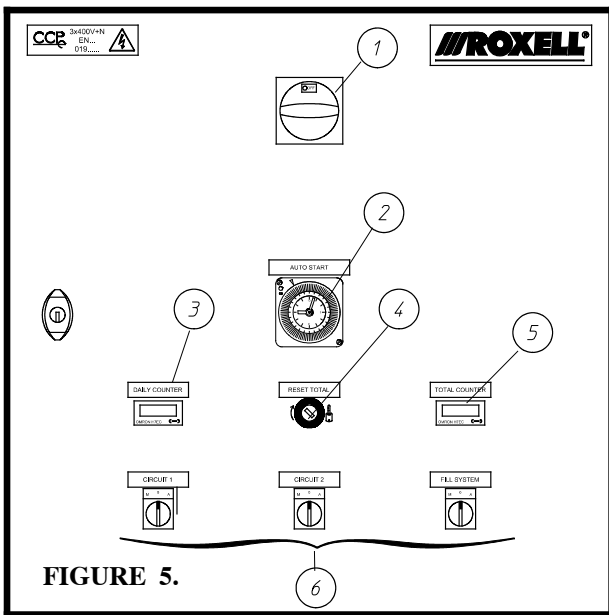


FIGURE 5.

Example:

1. Meals to be programmed on the time clock: 5 a.m., 11 a.m., 3 and 6 p.m.

2. Determine the running period.

- If you use the running period, you must also program the running period of the circuit. In the box you program the running period at 2 runs of the circuit.

For a circuit in a house of 60m, this means :

- total circuit length : 2 x 60= 120m
- runn. speed (auger) : 30m/min. :
- circul. time f/2 rounds : $2 \times \frac{120}{30} = 8\text{min.}$

Have the pans emptied by the birds minimum one time pro day.

IMPORTANT : HEIGHT ADJUSTMENT : SEE PAGE 12.

CLEANING AND MAINTENANCE.

- At the end of the rearing/production period, empty the **COMPLETE** system.
At the last meal, consider the amount of feed in the tubes (450- 500gr./0,75m) Winch up the system completely to remove the birds and the manure from the house.

NEVER STAY UNDERNEATH WHEN LOWERING OR WINCHING UP THE FEEDER CIRCUITS. STOP IMMEDIATELY AT THE SLIGHTEST HITCH.

- If you use heavy objects or machines when emptying the house, you must avoid any damage to the system.
- Winch up the circuits to a working height of about 1m for easy cleaning.
- **Remove the pan in the correct order : 1 - 2 - 3 - 4**

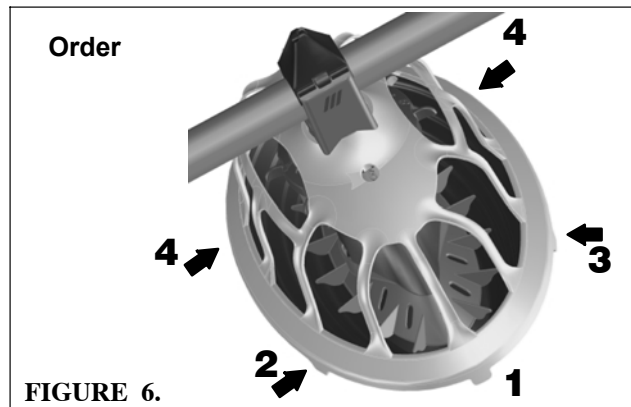


FIGURE 6.

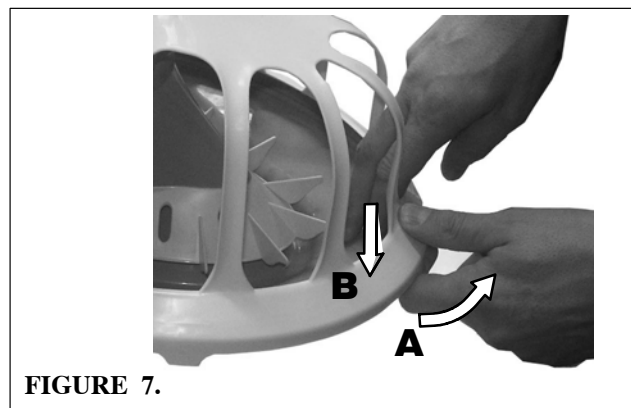


FIGURE 7.

- Pull the lip to the outside with one hand (A). Push the pan downward with the other hand (B).

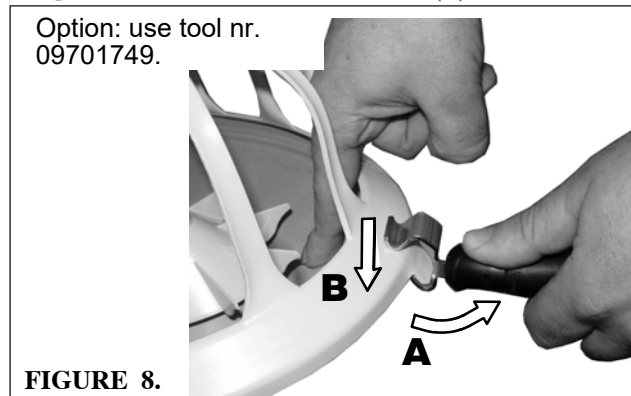


FIGURE 8.

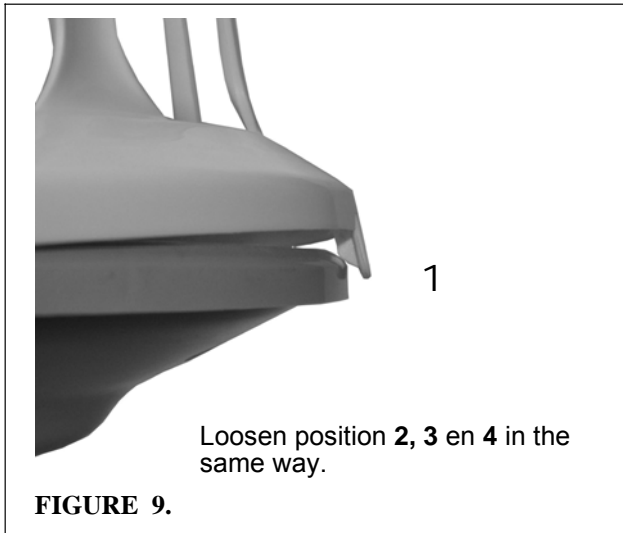


FIGURE 9.

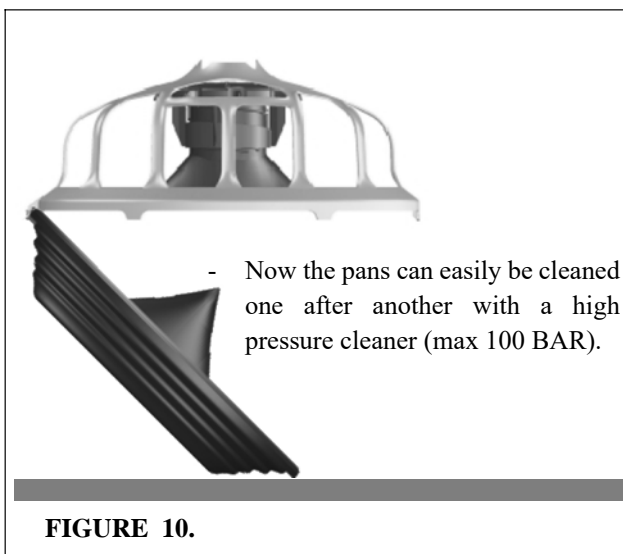


FIGURE 10.

- Push the pan back into the grill and click the clips one after another over the pan edge.
- If you want to replace a complete pan :

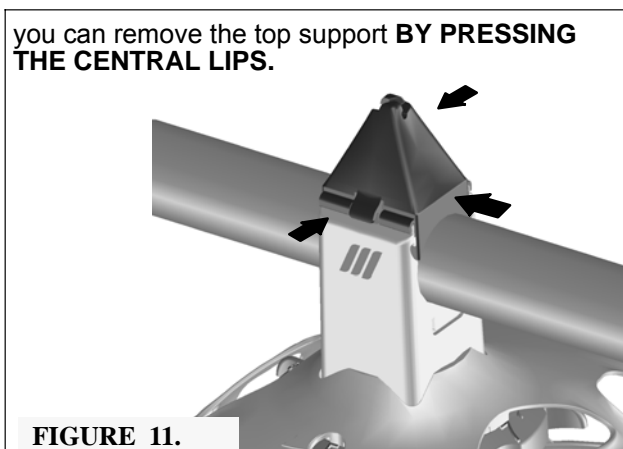


FIGURE 11.

REMEMBER TO COVER THE MOTORS WITH WATERPROOF COVER !!

Motors and switches are insulated IP54, which means that they resist splashing, but certainly not a high pressure cleaner.

Take care that no water remains in the feed intake boot (corrosion !!!) You can avoid this :

- by loosening the tube clamp and turning the feed intake boot with the opening downwards before you use the high pressure cleaner, or
- by hanging up the feed intake boot, so that all remaining water flows away through the hole in the tube. This method requires an extra suspension point next to the 100kg hopper or fixing the hopper suspension chain to the feed intake boot.

The **feeder pan**, made of high **quality polypropylene**, resists practically all cleansers and disinfectants.

However, if you want to use an aggressive product (1), you should contact your supplier.

Put the **OPERATOR'S MANUAL** on the house wall at an eye-catching spot.

(1) NB : Gaseous formaldehyde (formalin), liquid caustic soda, hypochlorite or chlorine water, cresoles are very corrosive and affect the system in no time !

BEFORE THE BIRDS ARRIVE.

First check the operation of your system.

Check the operation of the control panel :

- time clock
- feed amount
- circulating time

Check the feed supply system : any leaks / obstructions.

Adjust the feed level of all pans at the same position (position 1-3 at start).

Check tension of the antiperch cables.

Make sure that all circuits are perfectly level. Motors must hang at the same height.

ELECTRICAL PART : STARTING UP AND OPERATION.

The central control panel (several models) operates the whole system. It is built according to the system to be installed.

OPERATION OF THE CONTROL PANEL

FOR ELECTRICAL CONNECTION OF THE SYSTEM : IT IS ESSENTIAL THAT YOU TAKE CARE TO MEET LOCAL SECURITY AND INSTALLATION REGULATIONS AS FAR AS MATERIAL USED AND EXECUTION ARE CONCERNED.

OPERATING INSTRUCTIONS AND TROUBLE SHOOTING CAN BE DIFFERENT FOR THE "SPECIAL" EXECUTION !!!

ACTIONS IN GREY BACKGROUND MUST BE DONE BY A TECHNICALLY TRAINED PERSON.

- BEFORE connecting to the main supply, check ALL electrical connections in the panel at terminals side, and on the motors.
- Adjust ALL motor protections of FLEX-AUGER and CIRCUIT motors.
- Connect to the main supply with the main switch 1.

CIRCUIT and EACH FLEX-AUGER. This can be done by means of the MANUAL operation (6).

With this button, you can test the Flex-Augers and the circuits individually or together (depending upon the position of their MAN/O/AUT button and their motor protection).

After completing all necessary tests, you fill up the system for the first time by hand operation.

Test proper functioning and motor rotation of **EACH**

EXPLANATION OF DOOR COMPONENTS ON THE CENTRAL CONTROL PANEL

FRONT VIEW.

1. MAIN SWITCH
2. TIME CLOCK
3. DAILY COUNTER
4. RESET TOTAL COUNTER
5. TOTAL COUNTER
6. MAN/O/AUTO SWITCH + MALFUNCTION SIGNALS FOR ALL CIRCUITS + FA.

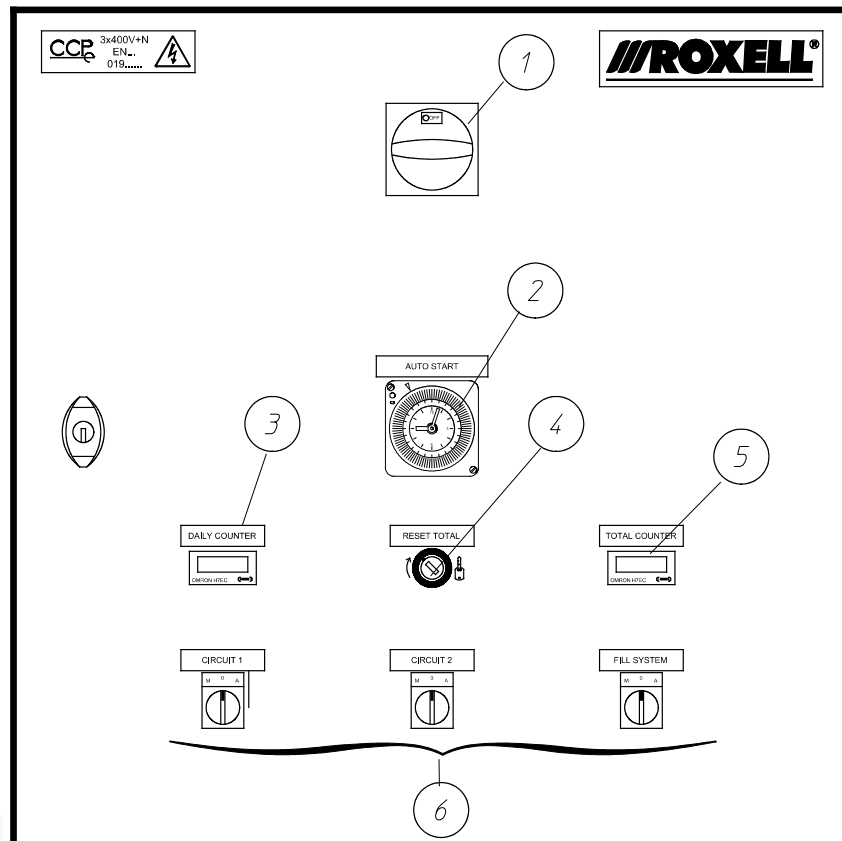



FIGURE 12.

MAINTENANCE INSTRUCTIONS				
 DANGER	Switch off the main switch first. Use personal protective equipment.	3-monthly	6-monthly	Yearly
ACTIONS IN GREY BACKGROUND MUST BE DONE BY A TECHNICALLY TRAINED PERSON.				
1. Power unit				
- Make fan dust-free				X
- Check possible damages to electrical wiring				X
2. Drive unit (circuits)				
- Make fan dust-free			X	
- Check possible damages to electrical wiring				X
- Clean gear housing				X
3. 100kg hopper (lines)				
- Check level switch				X
4. Suspension				
- Check operation of (central) winch	X			
- Check operation of (central) winch. Grease after cleaning.				X
- Check connection of cable	X			
- Check connection of pulleys	X			
- Check suspension of tubes and motors	X			
- Keep suspension cord/cable in tension	X			
5. Poultry perch cable above the tubes/elbows				
- Check cable				X
6. Pans				
- Check possible damages of pans				X
7. Sensors/switches				
- Check operation of safety switch or sensor.			X	
- Check electrical wiring				X
8. Control pan				
- Remove the pan and clean the inside tube				X
- Clean (dry) sensor head and central tube				X
- Check switch of control units				X
9. Feed intake boot				
- Clean				X
- Check possible wear of plastic gear				X
10. Lines/circuits				
- Check screws and bolts in the system after the first month and after each batch . Tighten if necessary.	X			
- Keep tubes level.	X			
- Remove all feed from the system when the system will be out of use for a period.	X			

TROUBLE SHOOTING GUIDE



DANGER

**Switch off the main switch first.
Use personal protective equipment.**

ACTIONS IN GREY BACKGROUND MUST BE DONE BY A TECHNICALLY TRAINED PERSON.

FOR ANY AUTOMATIC OPERATION, NONE OF THE YELLOW LAMPS SHOULD BURN !

PROBLEM	YELLOW LAMP	CAUSE	CORRECTIVE ACTION
1. None of the feeder lines run.	NO	No current.	Check main switch and/or fuses and/or line current.
2. FA bin to weigher does not run	NO	a. Operation button not on "ON" position.	Adjust button.
	NO	b. Max. switch of weigher remains activated.	Check Max. switch and repair or replace it if necessary.
	NO	c. FA safety switch is activated.	Disengage safety switch and find cause of blockage.
	YES	d. Thermal-magnetic switch-off of the FA.	Check fuses. Check adjustment of motor protection. Reload motor protection and check its proper operation.
3. FA weigher to circuits does not run.	NO	a. See 2.a.	
	NO	b. Sensor remains activated. See signal lamp sensor.	Check and repair.
	NO	c. See 2.b. and 2.c.	
	YES	d. See 2.d.	
4. FA weigher to circuits short cycles	NO	a. Sensor not properly installed.	Check.
	NO	b. Timer of sensor adjusted too low.	Adjust timer on a higher value.
5. The circuit does not run.	NO	Wrong programming of time clock or counter or no programming at all.	Check programming.
	YES	a. Left or right hand motor of one or more circuits switched-off without being overloaded.	Check fuses. Check adjustment of motor protection. Reload motor protection and check its proper operation.
	YES	b. Left or right hand motor of one or more circuits switched-off thermal-magnetically (overloaded).	
	YES	1. Too much feed in the tubes. 2. Connector intake boot/tube or tube-elbow not properly tightened. 3. Auger coupling not properly installed.	Have pans emptied by the birds. Check the operation of the sensor in the control pan. Tighten connector correctly. Check auger couplings and replace if necessary.

PROBLEM	YELLOW LAMP	CAUSE	CORRECTIVE ACTION
		4. Auger kinked . 5. Wheel inside intake boot is blocked. 6. Obstruction in the tube.	Replace damaged auger. Disengage wheel or replace if necessary. Find blocking spot and remove the obstruction. SEE NOTE* .



CAUTION

NOTE : IF THE AUGER OF THE CIRCUIT IS BLOCKED AS A RESULT OF ONE OF THE ABOVE PROBLEMS, IT WILL BE UNDER SPRING TENSION, SO BE EXTREMELY CAREFUL AND PROCEED AS DESCRIBED BELOW THIS PAGE*

6. The circuit : - stops prematurely . - does not stop in time.	a. Time set on time clock is not sufficient.	Adjust time clock programming.
	b. The sensor in the control pan is defective or not properly adjusted.	Check the sensor operation and replace if necessary
7. Auger runs erratically.	a. When using the system for the first time.	This is not a breakdown; it will be ok after a couple of days.
	b. Auger too short.	Adjust auger length.
	c. Auger kinked as a result of careless installation.	Replace kinked parts.
	d. Auger coupling not properly installed.	See installation instructions. Replace coupling if necessary.
	e. Circuit too long.	Check maximum length and install an extra power unit if necessary.
	f. Circuit not properly suspended (loose or ineffective suspension).	Realign circuit. Check all suspensions and readjust where needed.



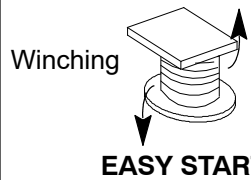
DANGER

SWITCH OFF THE MAIN SWITCH OF THE CENTRAL CONTROL PANEL BEFORE YOU PROCEED WITH MANUAL CHECKS OR REPAIRS OF AUGERS OR POWER UNITS !

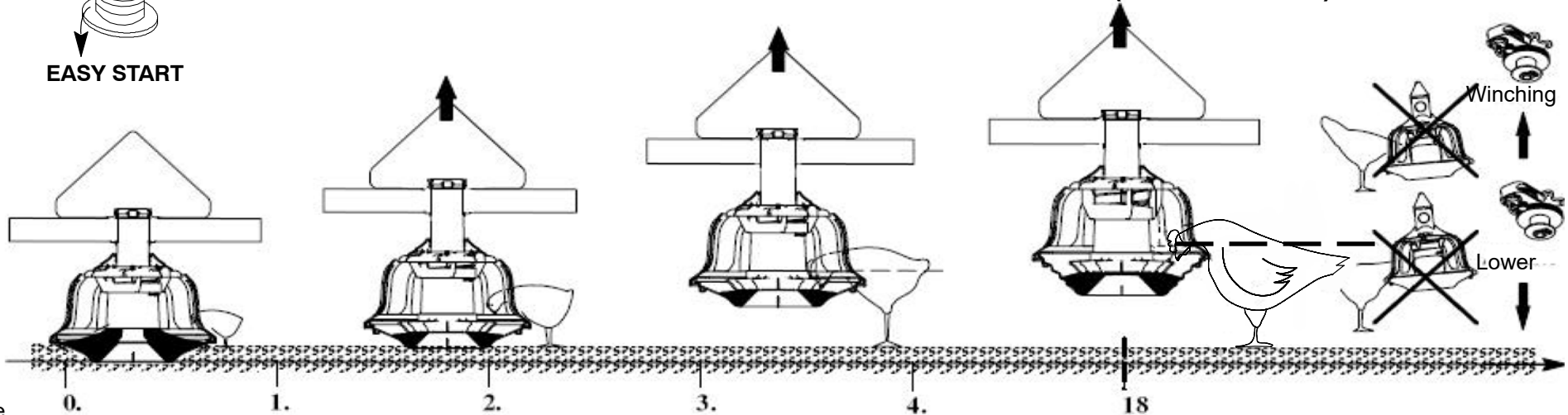
*** WHEN THE AUGER IS BLOCKED, PROCEED AS FOLLOWS :**

1. Put the main switch in position "Off".
2. Locate the blocking spot precisely.
3. Reload the motor protection (left or right).
4. Find the cause and correct. (See page I-10 : 3., 4., 5. or 6.).
5. Put main switch in position "ON". The circuit is ready for a new feeding cycle.

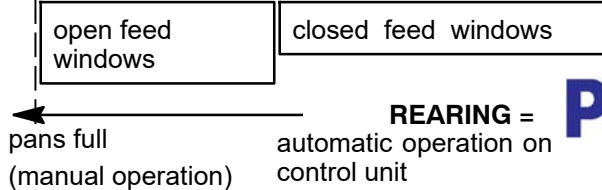
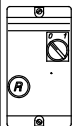
For floor feeding, or alternative housing of layers or layer breeders - Number of bird per pan : 29-51



**AVOID FEED WASTAGE =
ADJUST FEEDER HEIGHT AND FEED LEVEL (POSITION 1-3).**



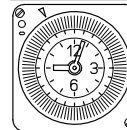
Age birds



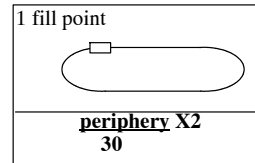
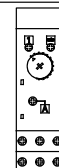
CONTROL PANEL SETTINGS

CLEANING

- * The last day : run the tubes empty and let the birds empty the pans as much as possible.
- * Collect the feed residues by opening all pans, and empty them.
- * Protect electrical components against water.
- * Clean the whole system by means of a high-pressure cleaner (max. 100 Bar).
- * When using aggressive detergents or disinfectants consult your supplier.



Set the starting time. Set activation time (tabs) longer than the time to finish the meal.



Set the running time so the auger always makes 2 full rounds.

30m/min



Inbouwverklaring betreffende niet voltooide machines (*Richtlijn 2006/42/EG, Bijlage II.1.B*)
Declaration of incorporation of partly completed machinery (*Directive 2006/42/EC, Annex II.1.B*)

Fabrikant/Manufacturer:
Roxell, Industrielaan 13, 9990 Maldegem
Tel: +32 50 72 91 72
Fax: +32 50 71 67 21

Verklaart geheel onder eigen verantwoordelijkheid dat het product:
Declares on its own responsibility that the product:

LaïCa/Poolaï Nr: 009...
Automatisch pannen voedersysteem voor opfok en productie bij leghennen.
Automatic pan feeding system for rearing layers and laying hens.

Waarop deze verklaring betrekking heeft, in overeenstemming is met:
- de volgende richtlijnen: 2006/42/EG (Machinerichtlijn); 2014/30/EU (Elektromagnetische
Compatibiliteit).
- de geharmoniseerde Europese Normen: EN ISO 13857:2008; EN 349:1993 + A1:2008; EN ISO
12100:2010; EN 60204-1:2006; EN 61439-1:2011; EN 61439-2:2011

Het is verboden bovengenoemd product in gebruik te stellen voordat de machine waarin het wordt ingebouwd in overeenstemming met de bepalingen van de Machinerichtlijn is verklaard.

Tevens verbindt de fabrikant (of zijn gemachtigde) zich om op met redenen omkleed verzoek van de nationale autoriteiten de relevante informatie over deze niet voltooide machine door te geven. De wijze van doorgifte is digitaal. De wijze van informatieverschaffing laat de intellectueel-eigendomsrechten van de fabrikant van de niet voltooide machine onverlet.
(NL)

Relating to this declaration is in accordance with
- The following directives 2006/42/EC (Machinery Directive); 2014/30/EU (Electromagnetic Compatibility).
- The harmonised European standards: EN ISO 13857:2008; EN 349:1993 + A1:2008; EN ISO 12100:2010; EN 60204-1:2006; EN 61439-1:2011; EN 61439-2:2011

This product must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive.

The manufacturer (or its agent) also undertakes, at the duly reasoned request of the national authorities, to provide the relevant information concerning this partly completed machinery. The method of transmission will be digital. The manner in which the information is provided does not prejudice the manufacturer's intellectual property rights concerning the partly completed machinery.
(EN)

00902205

Plaats, Datum / Place, Date : Maldegem, 01/01/2019

.....
Dhr. Gino Van Landuyt
Managing Director

“This part may only be filled out if all built-in subparts are delivered by Roxell”

EG-verklaring van overeenstemming (*Richtlijn 2006/42/EG, Bijlage II.1.A*)
EC-declaration of conformity (*Directive 2006/42/EC, Annex II.1.A*)

Wij/We _____
(naam installateur/name fitter)

(volledig adres en land/complete address)

Verklaren geheel onder eigen verantwoording de
Declare completely on own justification that

(naam machine/name machinery) (nummer CE-label/number CE-label)

In een installatie te hebben ingebouwd geheel volgens de Roxell-voorschriften en in overeenstemming met de bepalingen van de Machinerichtlijn.
Has been incorporated in conformity with the provisions of the Machinery Directive and the prescriptions of Roxell bvba.

(plaats, datum/place, date) (naam, handtekening/name, signature)

De EG-verklaring van overeenstemming / inbouwverklaring betreft uitsluitend de machine of niet voltooide machine in de toestand waarin zij op de markt is gebracht, met uitsluiting van de later bijvoorbeeld door de verdeler en/of installateur en/of eindgebruiker toegevoegde componenten en/of verrichte bewerkingen.

The EC-declaration of conformity / declaration of incorporation relates exclusively to the machinery or partly completed machine in the state in which it was placed on the market and excludes components which are added and/or operations carried out thereafter for instance by the distributor and/or the installer and/or the final user.



EG-verklaring van overeenstemming (*Richtlijn 2006/42/EG, Bijlage II.1.A*)
EC-declaration of conformity (*Directive 2006/42/EC, Annex II.1.A*)

Fabrikant/Manufacturer:
 Roxell, Industrielaan 13, 9990 Maldegem
 Tel: +32 50 72 91 72
 Fax: +32 50 71 67 21

Verklaart geheel onder eigen verantwoordelijkheid dat het product:
 Declares on its own responsibility that the product:

Winching system Nr: 00102368 / 00102087
 Liersysteem voor voer- en drinklijnen; manueel en gemotoriseerd
 Winching system for feed- and drink lines; manual and motorised
 Nummer CE-label/number CE-label : _____

Waarop deze verklaring betrekking heeft, in overeenstemming is met:

- de volgende richtlijnen: 2006/42/EG (Machinerichtlijn); 2014/30/EU (Elektromagnetische Compatibiliteit).
 - de geharmoniseerde Europese Normen: EN ISO 13857; EN 349:1993 + A1:2008; EN ISO 12100:2010; gemotoriseerd: EN 60204-1:2006; EN 61439-1:2011; EN 61439-2:2011
- De EG-verklaring van overeenstemming / inbouwverklaring betreft uitsluitend de machine of niet voltooide machine in de toestand waarin zij op de markt is gebracht, met uitsluiting van de later door bijvoorbeeld de verdeler en/of installateur en/of eindgebruiker toegevoegde componenten en/of verrichte bewerkingen.

(NL)

Relating to this declaration is in accordance with

- The following directives 2006/42/EC (Machinery Directive); 2014/30/EU (Electromagnetic Compatibility).
 - The harmonised European standards: EN ISO 13857:2008; EN 349:1993 + A1:2008; EN ISO 12100:2010; motorised: EN 60204-1:2006; EN 61439-1:2011; EN 61439-2:2011

The EC-declaration of conformity / declaration of incorporation relates exclusively to the machinery or partly completed machine in the state in which it was placed on the market and excludes components which are added and/or operations carried out thereafter for instance by the distributor and/or the installer and/or the final user.

(EN)

Plaats, Datum / Place, Date : Maldegem, 01/01/2019

.....
 Dhr. Gino Van Landuyt
 Managing Director

PART II

COMPONENTS

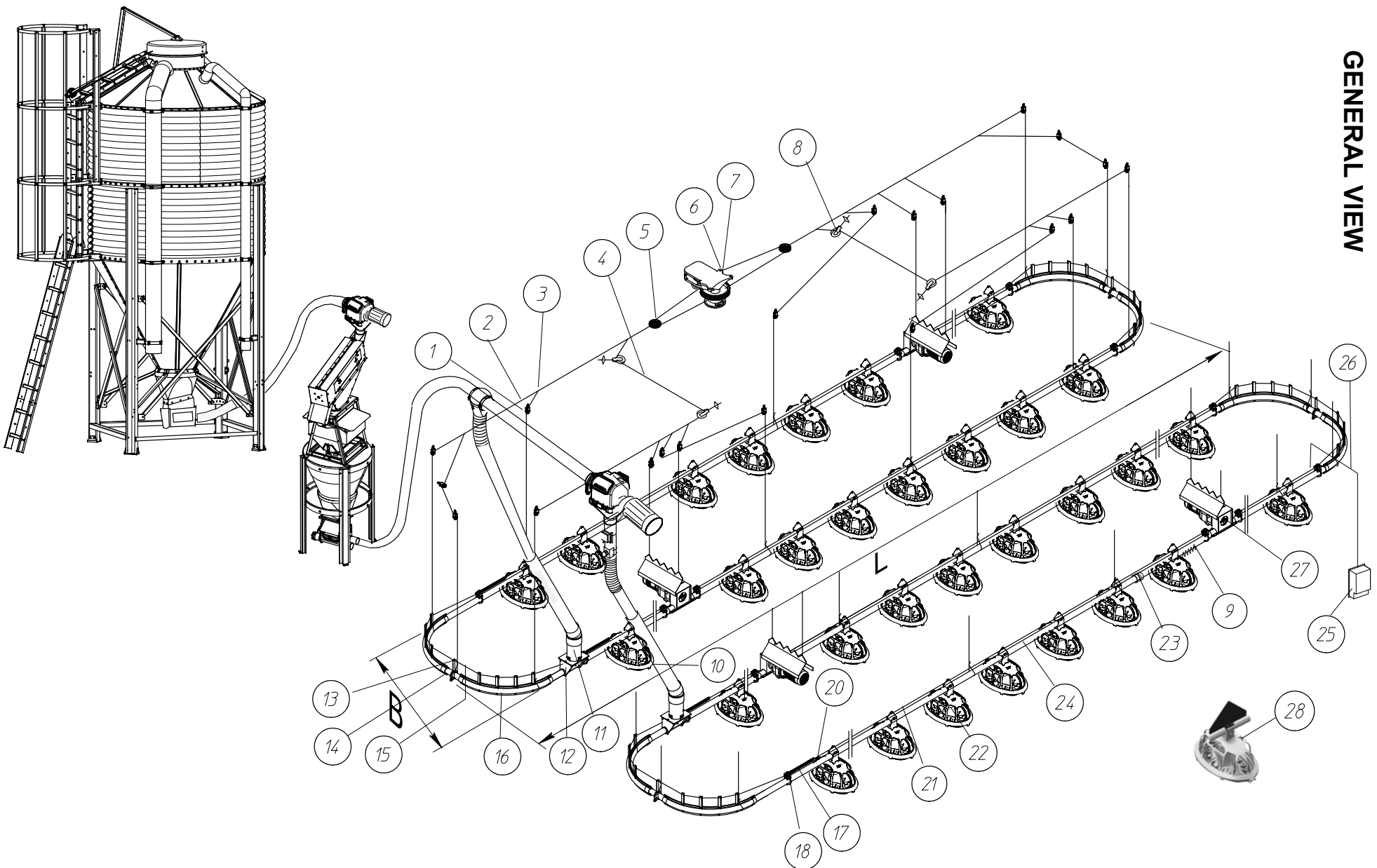
Environmentally-friendly design

The motors comply with the Ecodesign legislation.

Communication

For all communication concerning parts/spare parts refer to the appropriate part number (not part name).

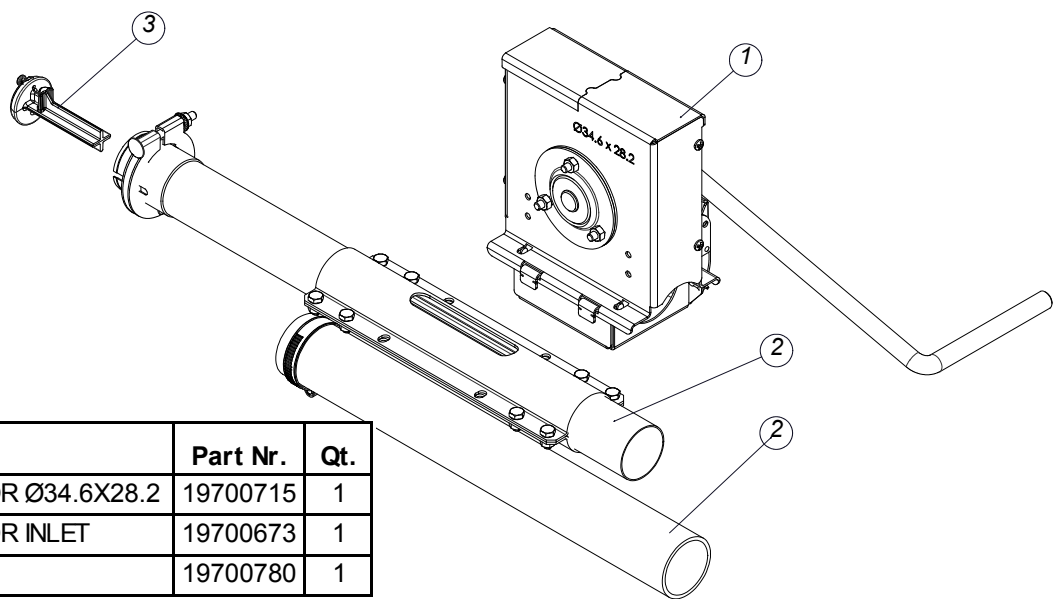
GENERAL VIEW



PRODUCT NUMBERS

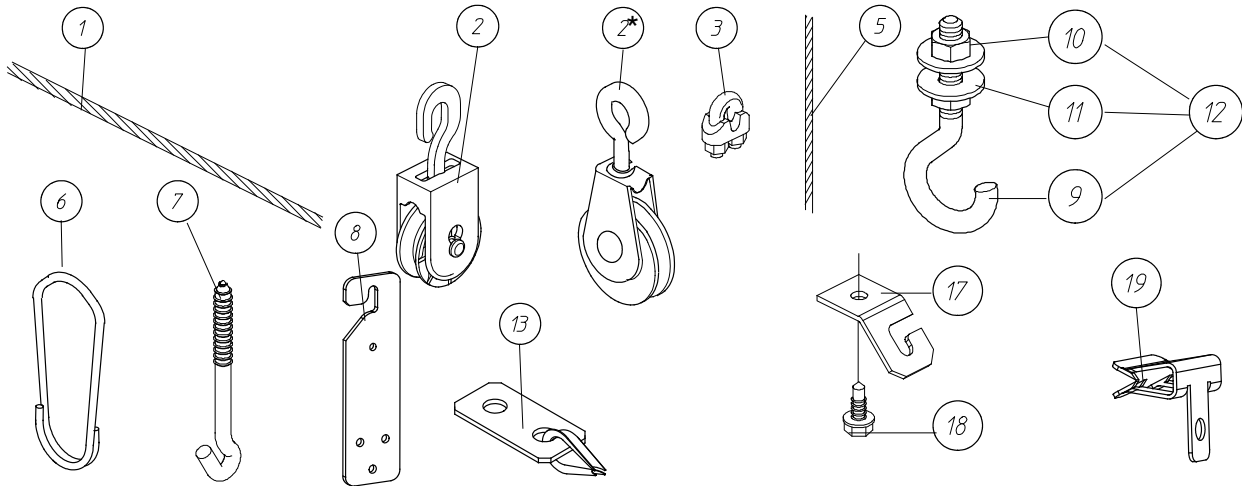
Key	Description	Number
1	SMALL PULLEY WITH STAINLESS STEEL HOOK	00104349
2	CABLE DIAM. 5mm	00100388
3	CABLE CLAMP NO.5	00100545
4	CABLE 3/32" - Ø2.5 MM - 250M	00106887
	CABLE 3/32" - Ø2.5 MM - 500M	00106895
5	CABLE SET FOR SINGLE DIVERSION	00105833
	CABLE SET FOR DOUBLE DIVERSION	00105841
6	CABLE CONNECTION ASSY	00102699
7	HAND OPERATED CENTRAL WINCH	00102368
8	HEAVY DUTY PULLEY (METAL)	00702571
9	CLOSED CIRCUIT AUGER	00601211
10	TELESCOPICAL DROP TUBE DIA.100 -1m	07400153
11	INLET FOR FEED INTAKE BOOT WITH FLEXIBLE TRANSITION	00707737
12	FEED INTAKE BOOT W/SCRAPER	00601252
13	ANTIPERCH TUBE SUPPORT	00700070
14	TUBE 3.05M WITHOUT HOLES	00102269
15	CABLE - 1/16" - 1.5MM - 250M	00106839
	CABLE - 1/16" - 1.5MM - 500M	00106831
16	ELBOW ASS'Y 90° (WIDTH 90 TO 108)	00701086
17	SPRING	00100164
18	ANCHOR BRACKET LOW	00102681
20	DUPLEX CABLE CLAMP ST. ST. - 3MM	00106945
21	CABLE - 1/16" - 1.5MM - 250M	00106839
	CABLE - 1/16" - 1.5MM - 500M	00106831
22	FEEDER PAN (POOLAĪ /LAĪCA)	PARTS
23	TUBE CLAMP ASS'Y DIA. 45mm	00102921
24	TUBE - RECTANGULAR HOLES	SEVERAL
	TUBE 2.9m OR 2.6m- RECTANGULAR HOLES	SEVERAL
25	POULTRY PERCH GUARD	00105692
26	CABLE FOR PERCH GUARD - 50M	00106847
	CABLE FOR PERCH GUARD - 100M	00106855
27	DRIVE UNIT	SEVERAL
28	PAN WITH ANTI ROOST PLATE	OPTION

OPTION : AUGER INJECTOR KIT - 09701889



Key	Name	Part Nr.	Qt.
1	AUGER INJECTOR Ø34.6X28.2	19700715	1
2	AUGER INJECTOR INLET	19700673	1
3	AUGER GUIDE	19700780	1

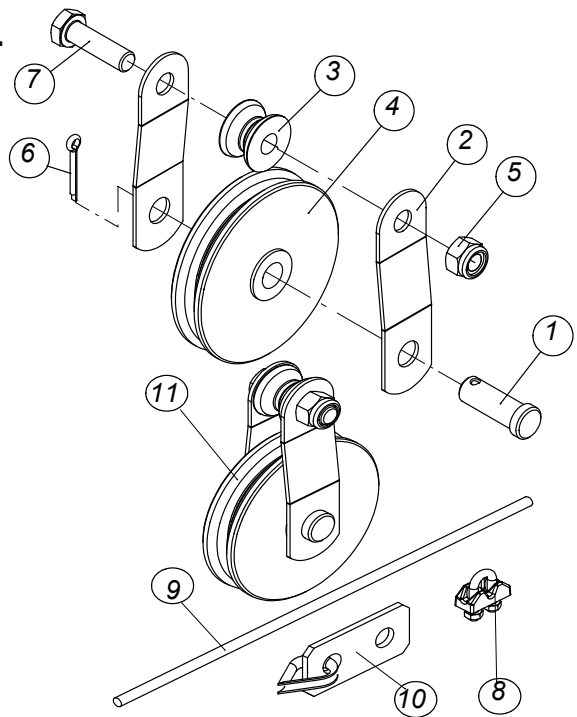
SUSPENSION COMPONENTS



Key	Name	Part Nr.	Key	Name	Part Nr.
1	CABLE ø 5MM - 3/16" - (7x7)	00100388	9	SCREW HOOK M6 X 60	20103156
2	SMALL PULLEY WITH STAINLESS STEEL HOOK	00104349	10	NUT M6 - DIN 934	20100210
*2	SMALL PULLEY - METAL	00101485	11	WASHER 6.4x18x1.5-DIN 9021	20100756
3	CABLE CLAMP NO. 5	00100545	12	SUSPENSION HOOK M6x60	05000302
5	CABLE 3/32" - ø2.5 MM - 250M	00106887	13	CABLE CONNECTION ASSEMBLY	00102699
	CABLE 3/32" - ø2.5 MM - 500M	00106895	17	SUSPENSION PLATE	00103069
6	HANGER Ø45MM	00100354	18	SELF DRILLING SCREW 6.3 X 25	00103077
7	SCREW HOOK 90 MM	05000039	19	CADDY CLIPS TYPE 4H58	20104220
	SCREW HOOK 160 MM	05000237		* OPTION	
8	ADJUSTMENT LEVELER	00600213			

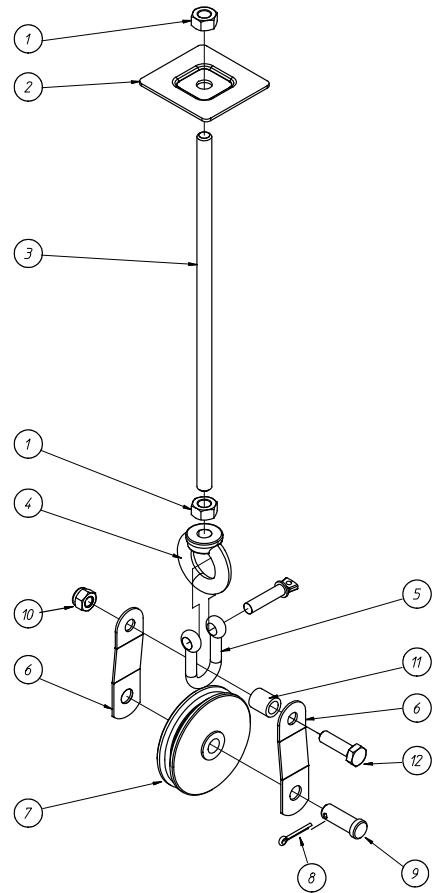
CABLE SET FOR SINGLE DIVERSION - 00105833

Key	Name	Part Nr.	Qt.
*1	CLEVIS PIN	10101723	1
*2	PULLEY SIDE PLATE (SE)	10111391	2
*3	CABLE GUIDE WHEEL	10111417	1
*4	PULLEY WHEEL - METAL	10700813	1
*5	LOCKNUT M10 - DIN 985	20100426	1
*6	SPLIT PIN 3X25 - DIN 94	20100533	1
*7	BOLT M10X35 - DIN 933	20102190	1
8	CABLE CLAMP NO.5	00100545	8
9	CABLE Ø5 MM - (19X7)	00104398	1
10	CABLE CONNECTION ASSEMBLY	00102699	2
*11	SINGLE EYE PULLEY - METAL	00105700	2

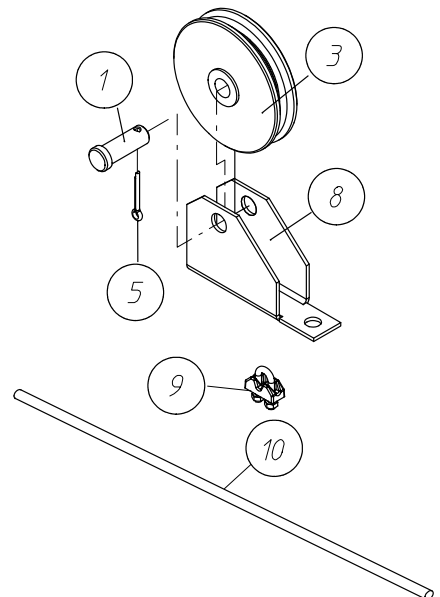
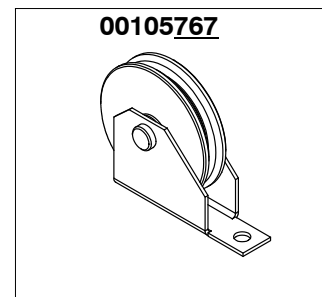
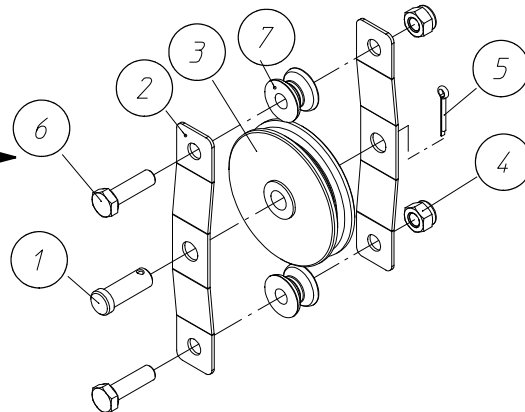
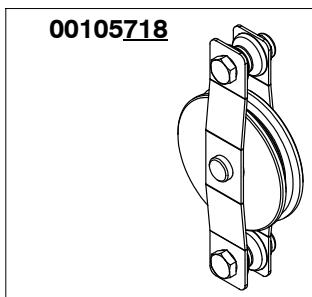


HEAVY DUTY PULLEY - METAL - 00702571

Key	Name	Part Nr.	Qt.
1	NUT M12-DIN 934	20100582	2
2	FOOT	10101657	1
3	SCREW SPINDLE M12 x 350	10107530	1
4	EYENUT M12	20104279	1
5	SHACKLE - 0.3T	11013638	1
6	PULLEY SIDE PLATE (SE)	10111391	2
7	PULLEY WHEEL - METAL	10700813	1
8	SPLIT PIN 3x25-DIN 94	20100533	1
9	CLEVIS PIN	10101723	1
10	LOCKNUT M10-DIN 985	20100426	2
11	SPACER	10101715	1
12	BOLT M10X35-DIN 933	20102190	1



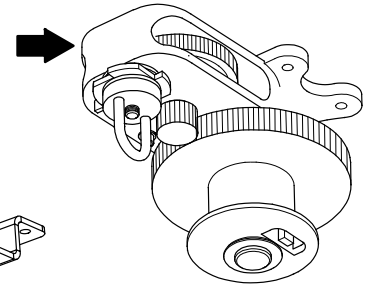
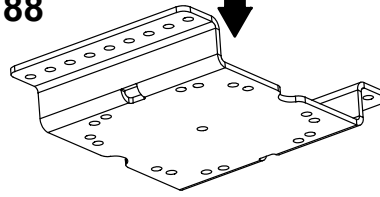
CABLE SET FOR DOUBLE DIVERSION - 00105841



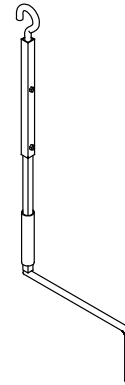
Key	Name	Part Nr.	Qt.	
			00105...	718
1	CLEVIS PIN	10101723	2	2
2	PULLEY SIDE PLATE (DE)	10111409	4	0
3	PULLEY WHEEL - METAL	10700813	2	2
4	LOCKNUT M10 - DIN 985	20100426	4	0
5	SPLIT PIN 3X25 - DIN 94	20100533	2	2
6	BOLT M10X35 - DIN 933	20102190	4	0
7	CABLE GUIDE WHEEL	10111417	4	0
8	SUPPORT PLATE - D.D. PULLEY	10106524	0	2
9	CABLE CLAMP NO.5	00100545	8	8
10	CABLE Ø5 MM - (19X7)	00104398	1	1

HAND OPERATED CENTRAL WINCH - 00102368

**MOUNTING PLATE F/HAND OPERATED CENTRAL
WINCH - 02001188**



**TELESCOPICAL WINCH DRIVE ASSEMBLY -
00102962**

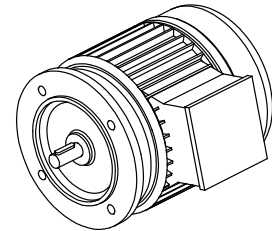


System	WINCH
Gearbox With Key	10106136
Motor Shaft	Ø14
Ratio	315
Output speed 50Hz	4.5
Output speed 60Hz	5.4
Construction size	71
Motor speed 50Hz(RPM)	1500
Motor speed 60Hz(RPM)	1800
3x230/400V 50Hz IE1	
Motor IE1	11111978 (0,25kW)
3x200/346V 50Hz	
Motor	11100476 (0,25kW)
1x230V 50Hz	
Motor	00102061 (0,25kW)
3x220-230/380-400V 60Hz	
Motor	00102343 (0,3kW)
3x200/346V 60Hz	
Motor	11102779 (0,3kW)
3x254/440V 60Hz	
Motor	11900842 (0,3kW)
1x220V 60Hz	
Motor	10103554 (0,37kW)

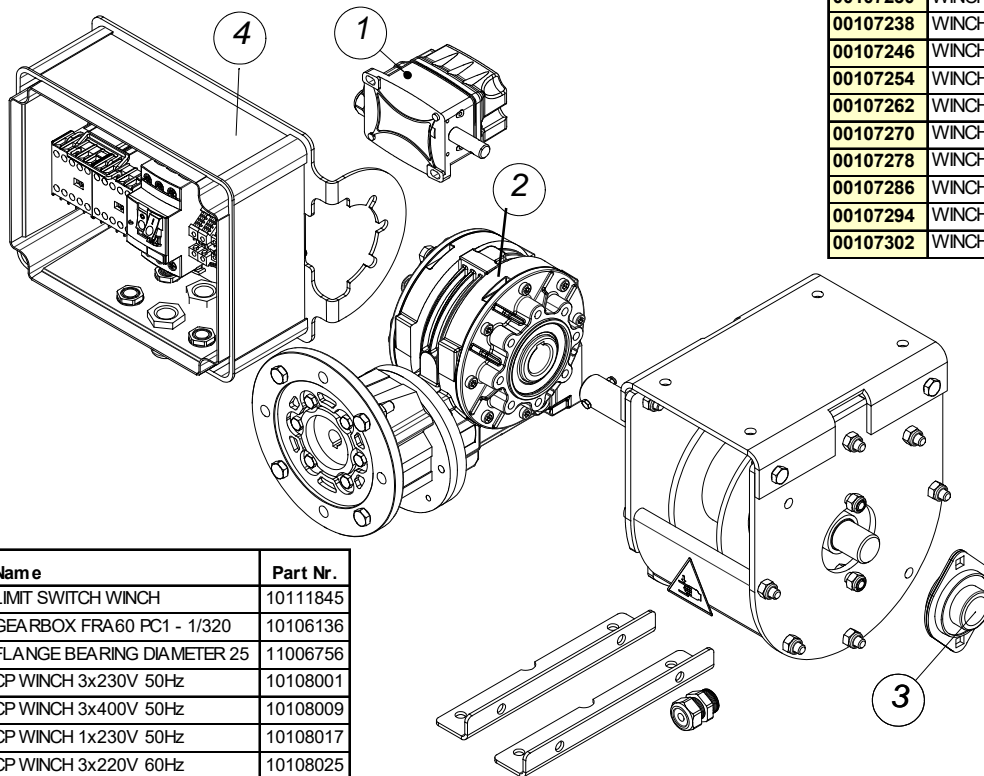
Capacitor 1 phase motor	
09802330	RUN CAPACITOR 10 µF
09802338	RUN CAPACITOR 12,5 µF
09802346	RUN CAPACITOR 18 µF
09802354	RUN CAPACITOR 20 µF
09802362	RUN CAPACITOR 25 µF
09802370	RUN CAPACITOR 30 µF
09802378	RUN CAPACITOR 45 µF
09802386	RUN CAPACITOR 50 µF
09802394	START CAPACITOR 12,5 µF
09802402	START CAPACITOR 14 µF
09802410	START CAPACITOR 16 µF
09802418	START CAPACITOR 20 µF
09802426	START CAPACITOR 25 µF
09802442	START CAPACITOR 36-43 µF
09802450	START CAPACITOR 56-63 µF
09802458	START CAPACITOR 108-130 µF

MOTOR

FOR CENTRAL
WINCH - MOTOR
OPERATED



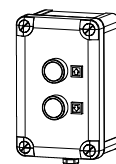
WINCH W/SWITCH + CP - MOTOR OPERATED



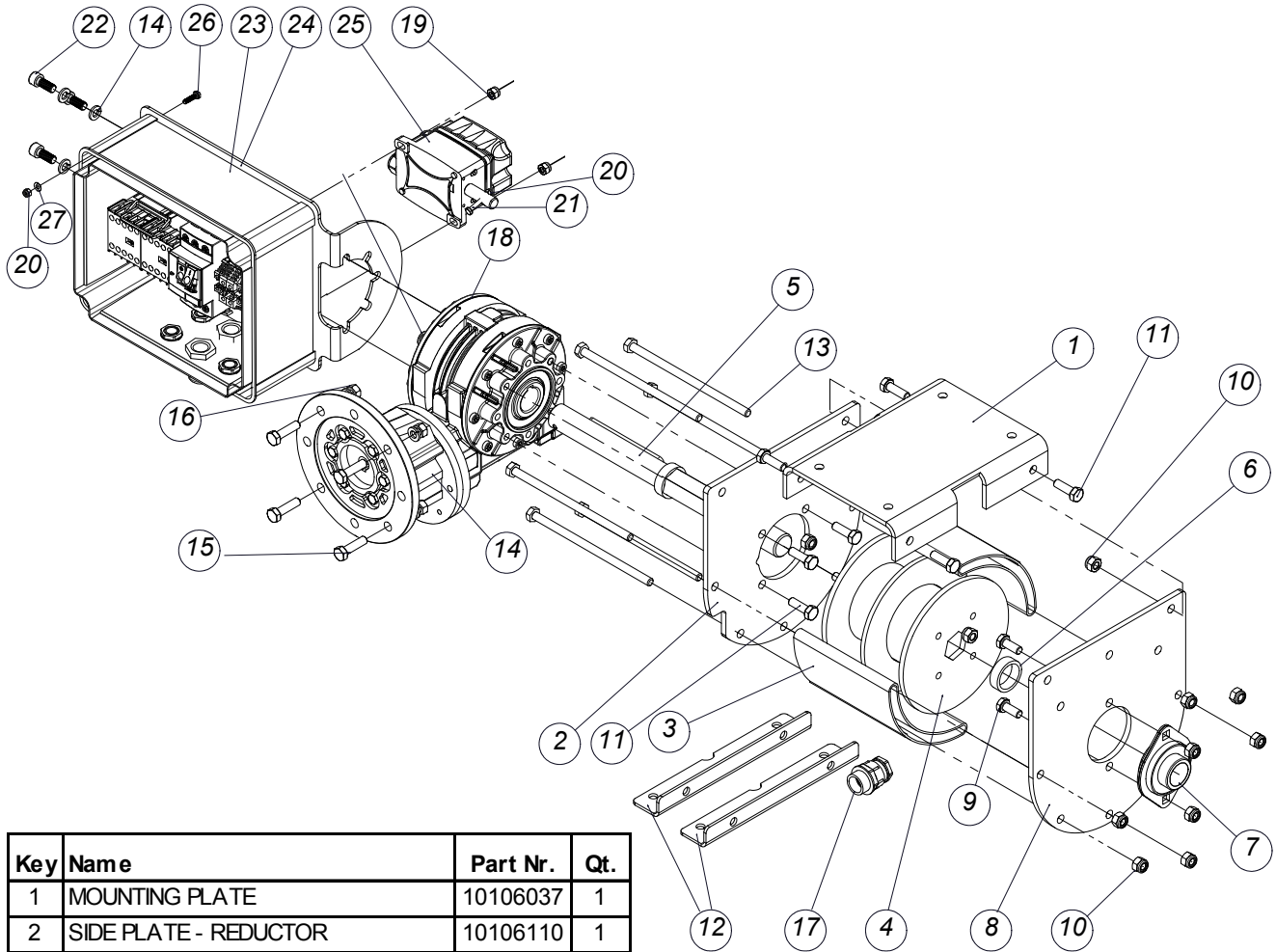
00107214	WINCH W/SWITCH+CP 3x230V 50Hz
00107222	WINCH W/SWITCH+CP 3x400V 50Hz
00107230	WINCH W/SWITCH+CP 1x230V 50Hz
00107238	WINCH W/SWITCH+CP 3x220V 60Hz
00107246	WINCH W/SWITCH+CP 3x230V 60Hz
00107254	WINCH W/SWITCH+CP 3x380V 60Hz
00107262	WINCH W/SWITCH+CP 3x400V 60Hz
00107270	WINCH W/SWITCH+CP 1x220V 60Hz
00107278	WINCH W/SWITCH+CP 3x254V 60Hz
00107286	WINCH W/SWITCH+CP 3x440V 60Hz
00107294	WINCH W/SWITCH+CP 3x200V 60Hz
00107302	WINCH W/SWITCH+CP 3x346V 60Hz

Key	Name	Part Nr.
1	LIMIT SWITCH WINCH	10111845
2	GEARBOX FRA60 PC1 - 1/320	10106136
3	FLANGE BEARING DIAMETER 25	11006756
4	CP WINCH 3x230V 50Hz	10108001
	CP WINCH 3x400V 50Hz	10108009
	CP WINCH 1x230V 50Hz	10108017
	CP WINCH 3x220V 60Hz	10108025
	CP WINCH 3x230V 60Hz	10108033
	CP WINCH 3x380V 60Hz	10108041
	CP WINCH 3x400V 60Hz	10108049
	CP WINCH 1x220V 60Hz	10108057
	CP WINCH 3x254V 60Hz	10108065
	CP WINCH 3x440V 60Hz	10108073
	CP WINCH 3x200V 60Hz	10108081
	CP WINCH 3x346V 60Hz	10108089

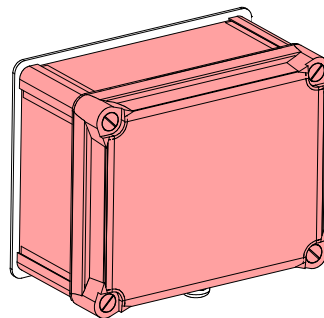
STANDARD : CONTROL SWITCH FOR WINCH - 00107206



WINCH W/SWITCH + CP - MOTOR OPERATED



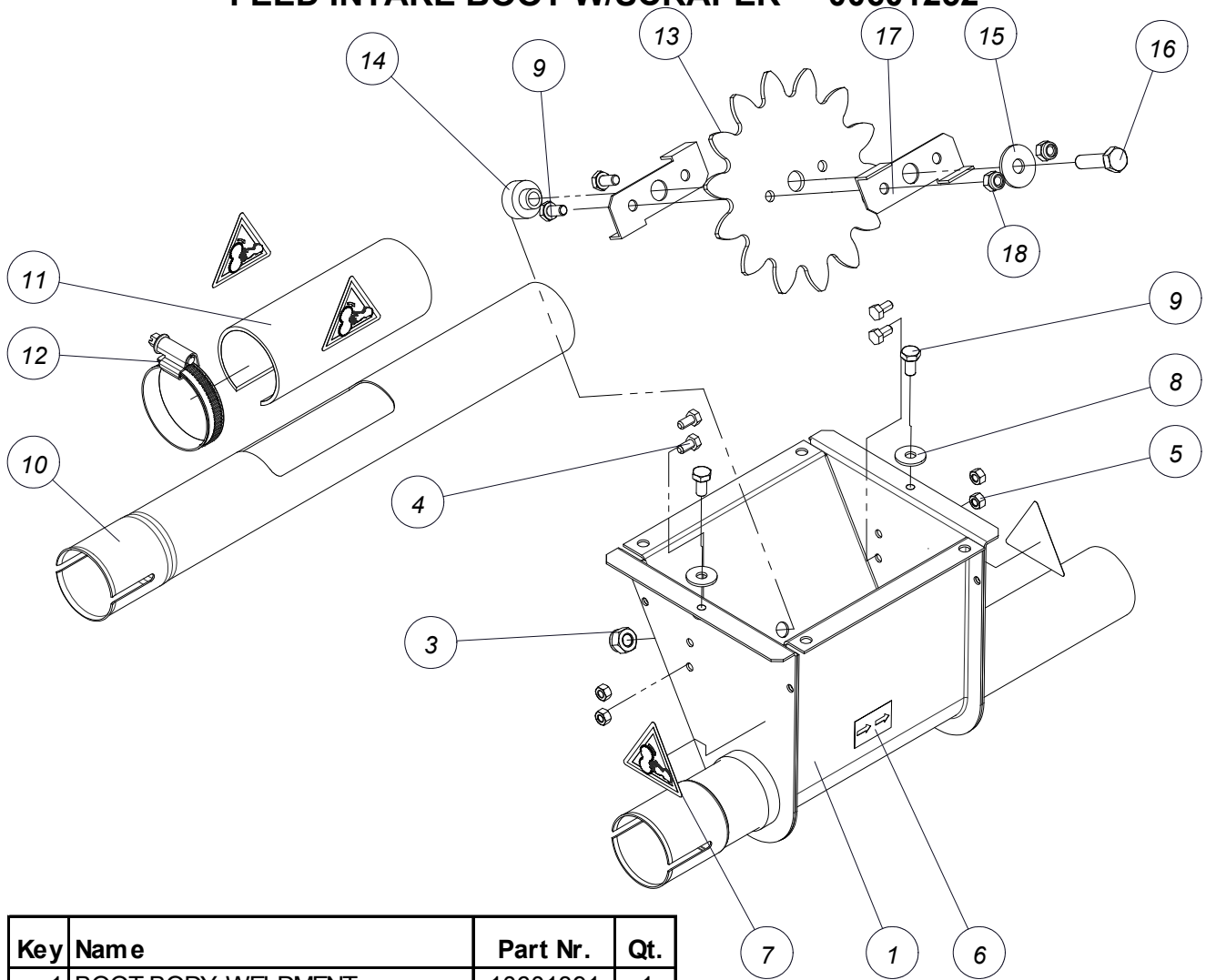
CP FOR CENTRAL WINCH



Key	Name	Part Nr.	Qt.
1	MOUNTING PLATE	10106037	1
2	SIDE PLATE - REDUCTOR	10106110	1
3	WINCH BODY	10104057	2
4	DRUM WELDMENT	10106060	1
5	DRUM SHAFT FOR SWITCH	10107977	1
6	SPACING TUBE D. 33.7X3.25X115.	10106052	1
7	FLANGE BEARING DIAMETER 25	11006756	1
8	SIDE PLATE - BEARING	10106045	1
9	BOLT M8X20-DIN 933-8.8	20200150	2
10	LOCKNUT M8 - DIN 985	20100418	12
11	BOLT M8X25-DIN 933-8.8	20100236	8
12	MOUNTING PLATE	10107456	2
13	BOLT M8X160 DIN 931 GALVANIZED	10106128	6
14	LOCKWASHER M8 - DIN 127B	20108908	7
15	BOLT M8X30-DIN 933-8.8	20100244	4
16	NUT M8 - DIN 934	20200028	4
17	CABLE RING PG 13.5	10100642	1
18	GEARBOX FRA60 PC1 - 1/320	10106136	1
19	LOCKNUT M6 - DIN 985	20100400	2
20	LOCKNUT M4-DIN 985	20100657	5
21	BOLT M4x30 - DIN931	20200497	1
22	SOCKET CAP SCREW M8 x 20 - A2	20102844	3
23	CP FOR WINCH	See table	1
24	MNT. BRACKET F/LIMIT SWITCH L	10107993	1
25	LIMIT SWITCH WINCH	10111845	1
26	BOLT M4X16-DIN 933-8.8	20103784	4
27	WASHER 4.3x9x0.8	20100566	4

WINCH	NAME	CP
00107214	WINCH W/SWITCH+CP 3x230V 50Hz	10108001
00107222	WINCH W/SWITCH+CP 3x400V 50Hz	10108009
00107230	WINCH W/SWITCH+CP 1x230V 50Hz	10108017
00107238	WINCH W/SWITCH+CP 3x220V 60Hz	10108025
00107246	WINCH W/SWITCH+CP 3x230V 60Hz	10108033
00107254	WINCH W/SWITCH+CP 3x380V 60Hz	10108041
00107262	WINCH W/SWITCH+CP 3x400V 60Hz	10108049
00107270	WINCH W/SWITCH+CP 1x220V 60Hz	10108057
00107278	WINCH W/SWITCH+CP 3x254V 60Hz	10108065
00107286	WINCH W/SWITCH+CP 3x440V 60Hz	10108073
00107294	WINCH W/SWITCH+CP 3x200V 60Hz	10108081
00107302	WINCH W/SWITCH+CP 3x346V 60Hz	10108089

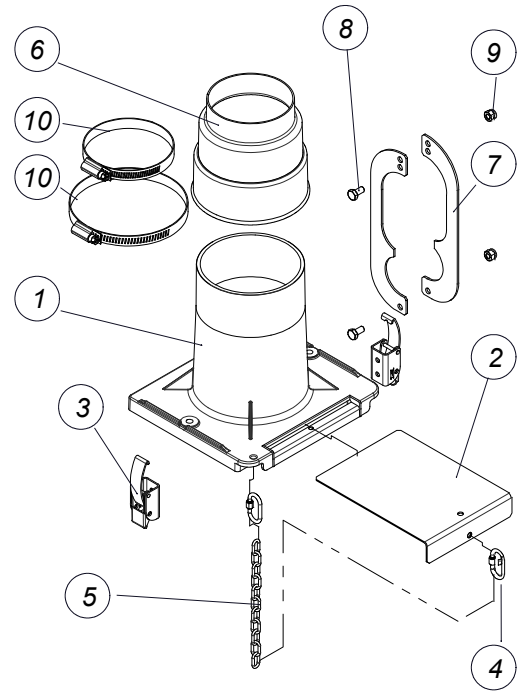
FEED INTAKE BOOT W/SCRAPER - 00601252



Key	Name	Part Nr.	Qt.
1	BOOT BODY WELDMENT	10601391	1
2	RESTRICTOR WELDMENT	10601359	1
3	LOCKNUT M8 - DIN 985	20100418	1
4	BOLT M5X10 DIN 933	20100111	4
5	NUT M5 - DIN 934	20100152	4
6	ROTATION ARROW	16102808	1
7	DECAL - HANDS WARNING	13106596	4
8	WASHER 6.4X18X1.5 - DIN 9021	20100756	2
9	BOLT M6X12 - DIN 933-8.8	20100160	2
10	TUBE WITH HOLE - LG = 380MM	11012861	1
11	CAPPING TUBE	11007531	1
12	HOSE CLAMP Ø32-50MM	11018702	1
13	AGITATOR GEAR WHEEL	10601318	1
14	AGITATOR WHEEL BEARING	10601300	1
15	NUT M6 - DIN 934	20100210	2
16	BOLT M8X30 - DIN 933-8.8	20100244	1
17	WASHER Ø16.2X50X5	10601326	2
18	BOLT M6X20 - DIN 933-8.8	20100186	2
19	WASHER Ø8.4X25X2 - DIN 9021	20102794	1

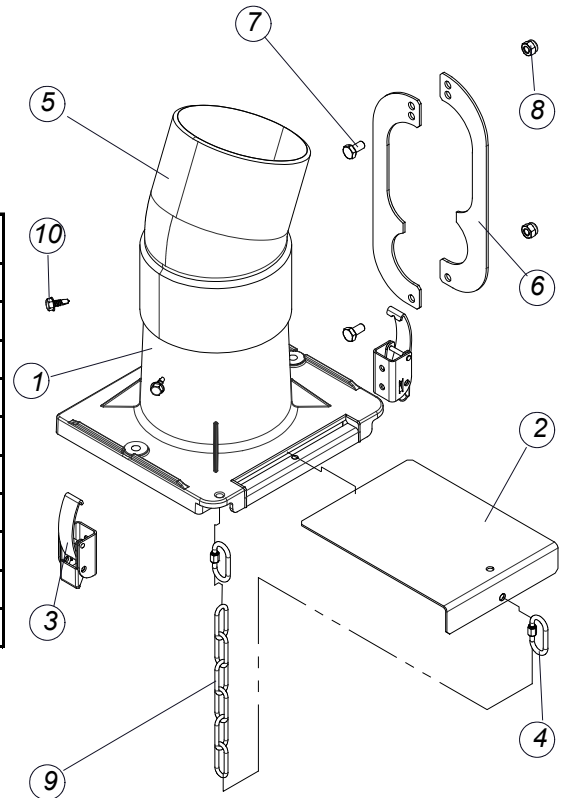
FLEXIBLE TRANSPARENT INLET ASS'Y F/BOOT - 00707737

Key	Name	Part Nr.	Qt.
1	TRANSITION INTAKE COVER	10703437	1
2	CLOSING SLIDE	10703569	1
3	DRAW LATCH	10703379	2
4	SCREW LINK Ø3.5	10203156	2
5	CHAIN Ø3MM STAINLESS STEEL LG=162 MM	10110575	1
6	FLEXIBLE TRANSITION Ø110-Ø100-Ø85	10703445	1
7	PINCH BRACKET - HALF	00105494	2
8	BOLT M6X12 - DIN 933-8.8	20100160	2
9	LOCKNUT M6 - DIN 985	20100400	2
10	HOSE CLAMP Ø90-110	00105726	2

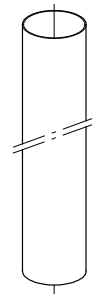


TRANSP.INLET ASS'Y F/INT. BOOT W/ELB.22° - 00707729

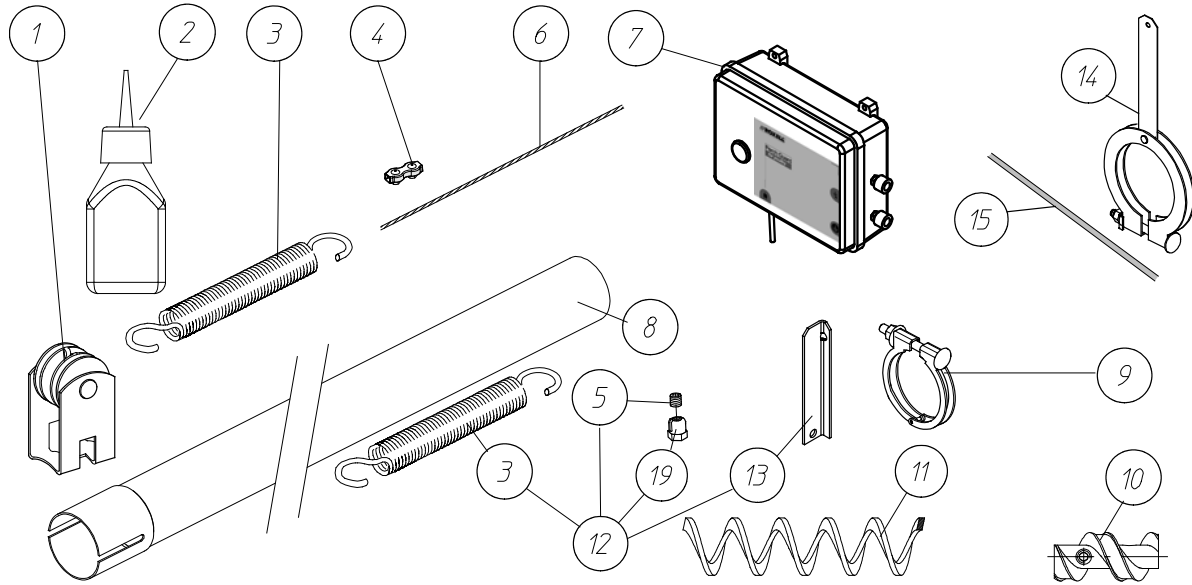
Key	Name	Part Nr.	Qt.
1	TRANSITION INTAKE COVER	10703437	1
2	CLOSING SLIDE	10703569	1
3	DRAW LATCH	10703379	2
4	SCREW LINK DIA. 3.5	10203156	2
5	PVC ELBOW - 22 DEGR. - DIA.110	10702744	1
6	PINCH BRACKET - HALF	00105494	2
7	BOLT M6 X 12 - DIN 933-8.8	20100160	2
8	LOCKNUT M6 - DIN 985	20100400	2
9	CHAIN Ø3MM STAINLESS STEEL LG=162 MM	10110575	1
10	SELF DRILLING SCREW 4.8 X 13	20103974	4



PLASTIC DROP TUBE Ø100 - LG=1000MM - 07400153

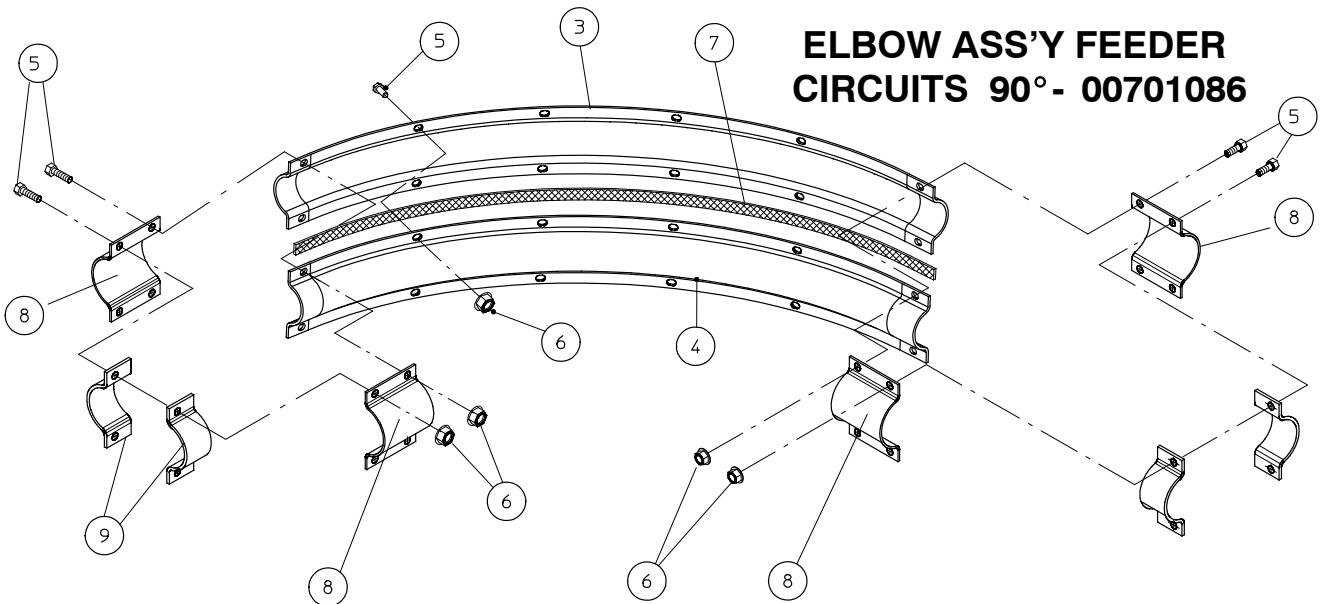


FEEDER LINE COMPONENTS



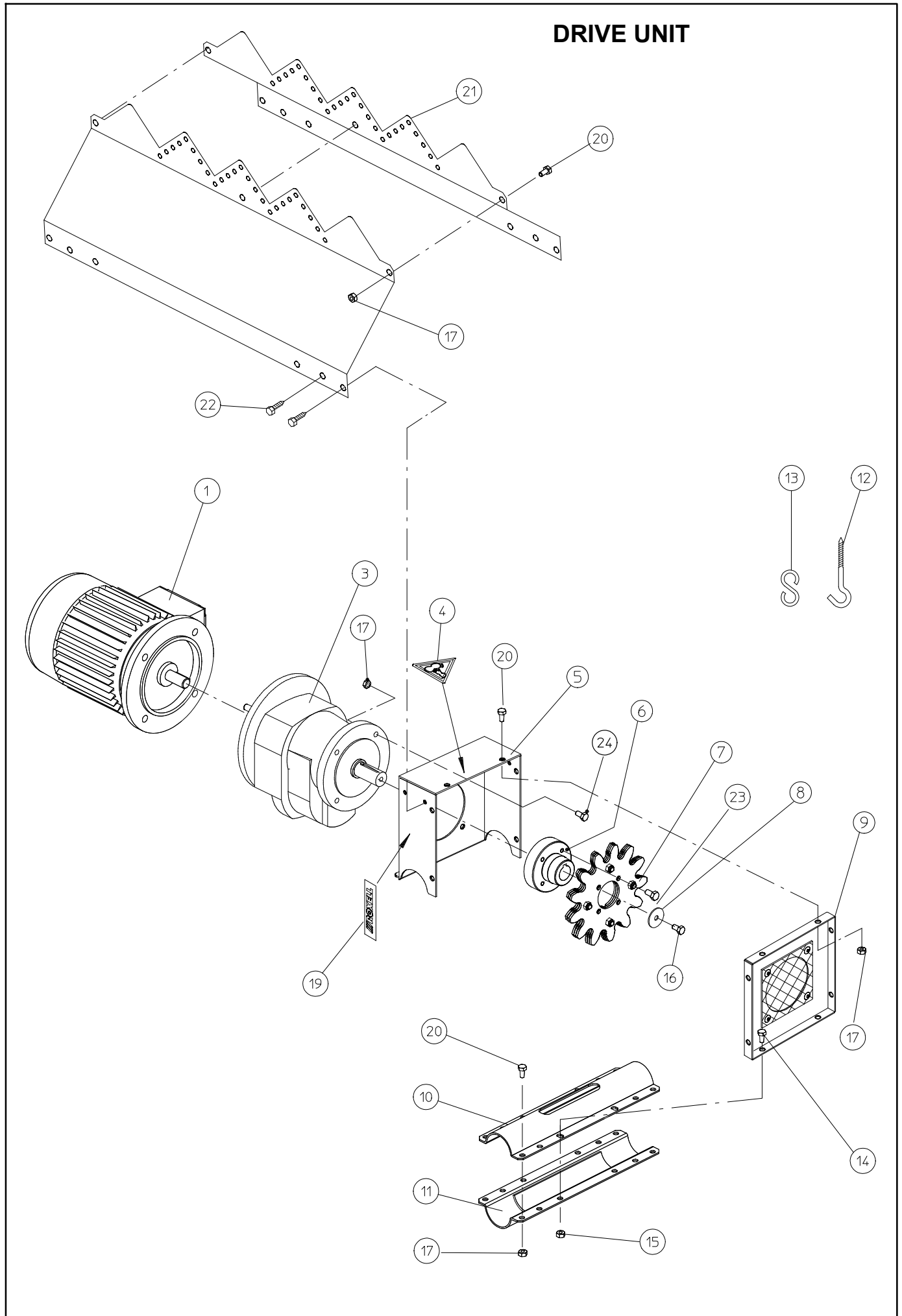
Key	Name	Part Nr.	Key	Name	Part Nr.
1	ANCHOR BRACKET - LOW	00102681	8	TUBE 2.6M W/4 RECTANGULAR HOLES	00901454
2	GLUE FOR TUBE FIXATION - 10ML	00106773	*	TUBE 2.6M W/3 RECTANGULAR HOLES	00901447
3	SPRING	00400077	9	TUBE CLAMP ASSEMBLY Ø45 MM	00102921
4	DUPLEX CABLE CLAMP ST.ST. - 3 MM	00106945	10	AUGER COUPLING ASSEMBLY	00601245
6	CABLE 1/16" - 1.5 MM - 250 M	00106839	11	CLOSED CIRCUIT AUGER	00601211
	CABLE 1/16" - 1.5 MM - 500 M	00106831	12	ANTIPERCH KIT	00700187
7	POULTRY PERCH GUARD	00105692	13	CABLE SUPPORT	10700185
8	TUBE 3.05M W/4 RECTANGULAR HOLES	00102301	14	ANTIPERCH TUBE SUPPORT	00700070
*	TUBE 3.05M W/3 RECTANGULAR HOLES	00102293	15	CABLE F. PERCH GUARD - 50 M	00106847
	TUBE 3.05M WITHOUT HOLES	00102269		CABLE F. PERCH GUARD - 100 M	00106855
8	TUBE 2.9 M W/4 RECTANGULAR HOLES	00101113	19	CABLE CLAMP BODY	00101386
*	TUBE 2.9 M W/3 RECTANGULAR HOLES	00101121			

ELBOW ASS'Y FEEDER CIRCUITS 90° - 00701086



Key	Name	Part Nr.	Qt.	Key	Name	Part Nr.	Qt.
3	ELBOW HALF OUTSIDE	11108669	1	7	GASKET 15 x 2	30800874	1
4	ELBOW HALF INSIDE	11108677	1	8	ELBOW CLAMP HALF	11019841	4
5	BOLT M6 X 20 - DIN 933 - 8.8	20100186	16	9	SHIM SHELL	11016698	4
6	HEX. NUT W/FLANGE - M6 - DIN 6923	20104105	16				

DRIVE UNIT



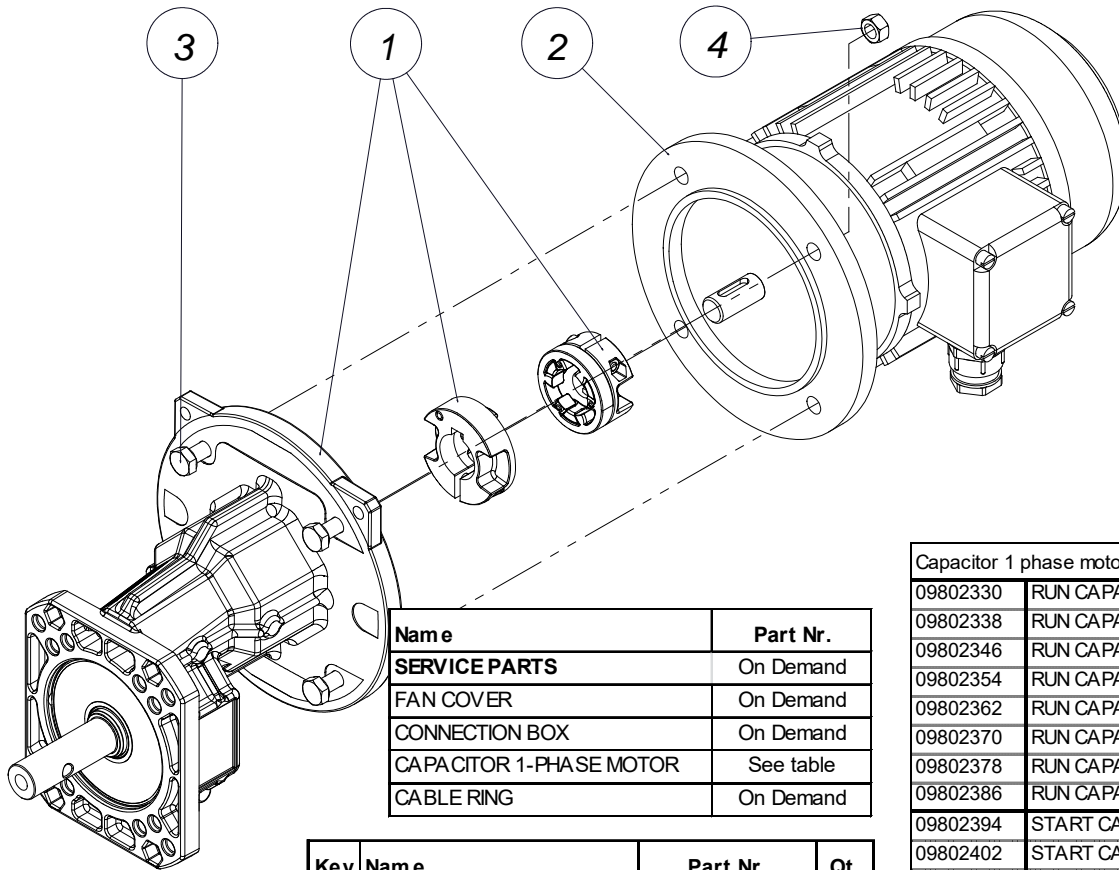
DRIVE UNIT

System	Lai-Line Circuit
Gearbox With Key	10704112
Motor Shaft	Ø14
Ratio	18.17
Output speed 50Hz	80
Output speed 60Hz	100
Construction size	71
Motor speed 50Hz(RPM)	1500
Motor speed 60Hz(RPM)	1800
Feed capacity kg	1.200
Drive 3x230/400V 50Hz IE1	00601260
Motor IE1	10106482 (0,37kW)
Drive 3x200/346V 50Hz	00601278
Motor	10104487 (0,37kW)
Drive 1x230V 50Hz	00601286
Motor	10103554 (0,37kW)
Drive 3x220-230/380-400V 60Hz	00601294
Motor	19910249 (0,45kW)
Drive 3x200/346V 60Hz	00601310
Motor	13105234 (0,45kW)
Drive 3x254/440V 60Hz	00601302
Motor	19913078 (0,45kW)
Drive 1x220V 60Hz	00602052
Motor	10110187 (0,55kW)

Capacitor 1 phase motor	
09802330	RUN CAPACITOR 10 µF
09802338	RUN CAPACITOR 12,5 µF
09802346	RUN CAPACITOR 18 µF
09802354	RUN CAPACITOR 20 µF
09802362	RUN CAPACITOR 25 µF
09802370	RUN CAPACITOR 30 µF
09802378	RUN CAPACITOR 45 µF
09802386	RUN CAPACITOR 50 µF
09802394	START CAPACITOR 12,5 µF
09802402	START CAPACITOR 14 µF
09802410	START CAPACITOR 16 µF
09802418	START CAPACITOR 20 µF
09802426	START CAPACITOR 25 µF
09802442	START CAPACITOR 36-43 µF
09802450	START CAPACITOR 56-63 µF
09802458	START CAPACITOR 108-130 µF

Key	Name	Part Nr.	Qt.
1	MOTOR	1.. (See table)	1
3	GEARBOX	1.. (See table)	1
4	DECAL - HANDS WARNING	13106596	1
5	GEAR WHEEL BOX ø80 H71.5	10601417	1
6	GEAR WHEEL FLANGE	11110006	1
7	GEAR WHEEL ASSY	10600393	1
8	WASHER D.6.5 X 30 X 1.5	20102448	1
9	FRONT PLATE ASSY	11900834	1
10	COVER PLATE	11100427	1
11	BASE WELDMENT	11100435	1
*12	SCREW HOOK 90 MM	05000872	1
*13	"S" HOOK	05000013	2
*14	BOLT M6X12 - DIN 933-8.8	20100160	4
*15	NUT M6 - DIN 934	20100210	4
16	BOLT M6X16 - DIN 933 - 8.8	20100178	1
17	NUT M6 - DIN 934	20100210	21
19	DECAL - ROXELL 73x18	10102697	1
20	BOLT M6X12 - DIN 933-8.8	20100160	17
21	MOTOR COVER	10703254	2
22	PARCKERSCREW/DIA.6.3X16-DIN7976	20101606	4
23	BOLT M6 X 20 - DIN 933 - 8.8	20100186	4
24	BOLT M8X16-DIN 933-8.8	20100228	4
*	SUSPENSION KIT	10701423	1

POWER UNIT



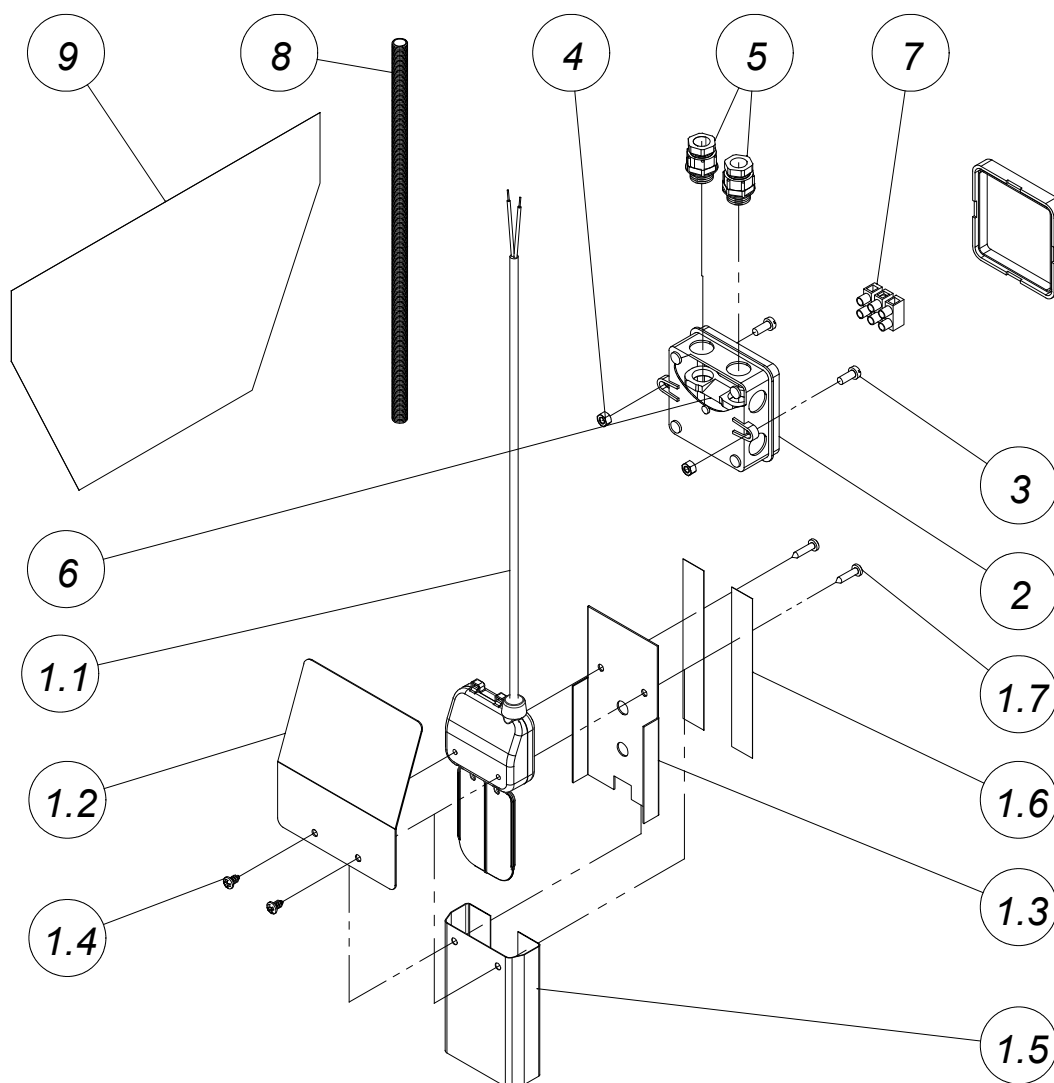
Name	Part Nr.
SERVICE PARTS	On Demand
FAN COVER	On Demand
CONNECTION BOX	On Demand
CAPACITOR 1-PHASE MOTOR	See table
CABLE RING	On Demand

Key	Name	Part Nr.	Qt.
	POWER UNIT	0..(See table)	1
1	GEARBOX	1..(See table)	1
2	MOTOR	1..(See table)	1
3	BOLT M8X30-DIN 933-8.8	20100244	4
4	NUT M8 - DIN 934	20200028	4

Capacitor 1 phase motor	
09802330	RUN CAPACITOR 10 µF
09802338	RUN CAPACITOR 12,5 µF
09802346	RUN CAPACITOR 18 µF
09802354	RUN CAPACITOR 20 µF
09802362	RUN CAPACITOR 25 µF
09802370	RUN CAPACITOR 30 µF
09802378	RUN CAPACITOR 45 µF
09802386	RUN CAPACITOR 50 µF
09802394	START CAPACITOR 12,5 µF
09802402	START CAPACITOR 14 µF
09802410	START CAPACITOR 16 µF
09802418	START CAPACITOR 20 µF
09802426	START CAPACITOR 25 µF
09802442	START CAPACITOR 36-43 µF
09802450	START CAPACITOR 56-63 µF
09802458	START CAPACITOR 108-130 µF

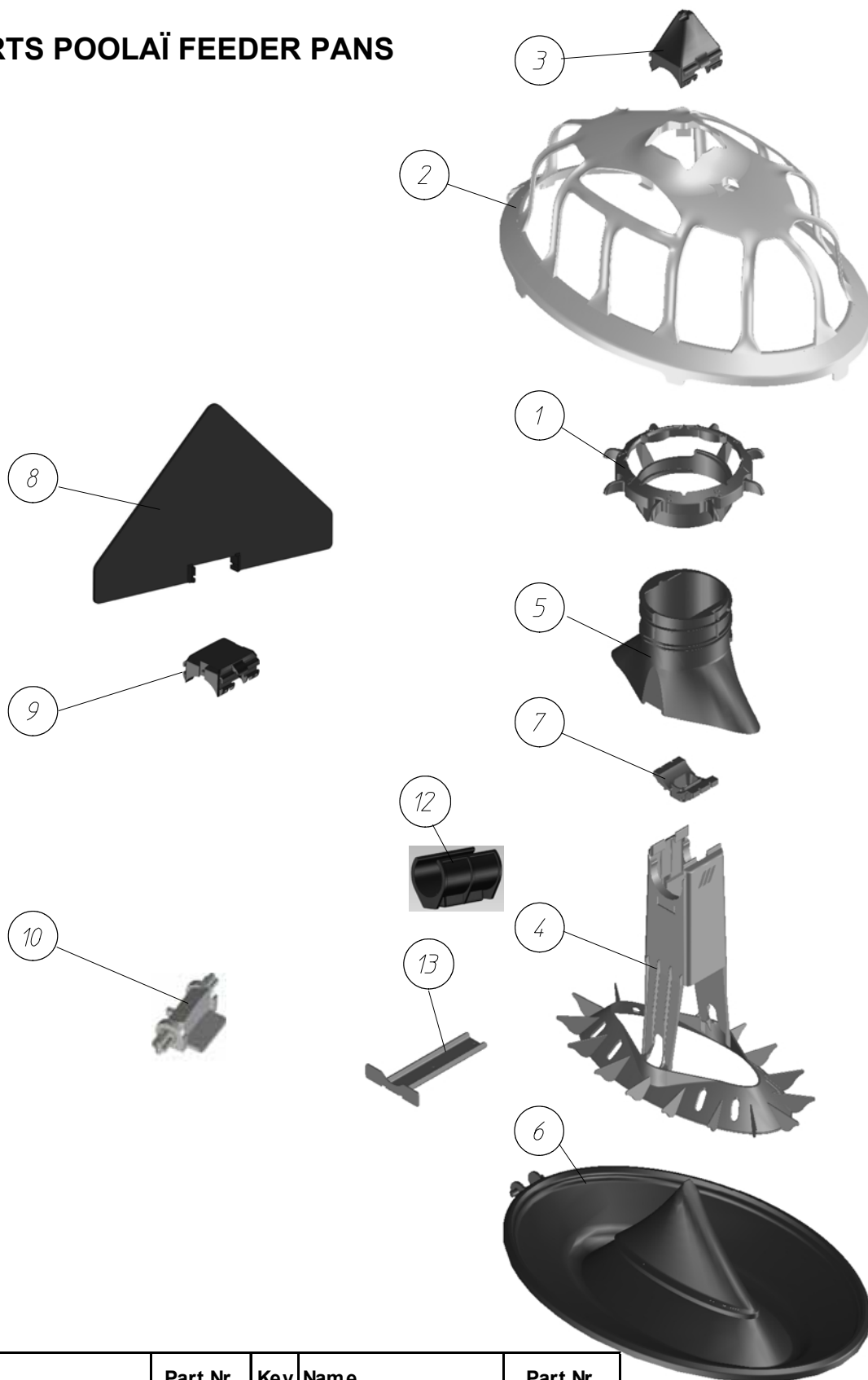
System	FA-75/90	FA-90	FA-90	FA-90
Gearbox With Key	13106505			
Gearbox With F-Coupling steel		13203633	13203641	13203633
Gearbox With F-Coupling alu	13109828	13204148	13204164	13204148
Type Elastic Coupling Set (CS 71-80-90)	CS71 13204180	CS80 13204196	CS90 13204204	CS80 13204196
Motor Shaft	Ø14	Ø19	Ø24	Ø19
Ratio	3.867	2.944	2.55	2.944
Output speed 50 Hz	350	450	550	900
Output speed 60 Hz	420	540	660	1080
Construction size	71	80	90	80
Motor speed 50 Hz (RPM)	1500	1500	1500	3000
Motor speed 60 Hz (RPM)	1800	1800	1800	3600
Feed capacity kg	1.300/2.400	3.100	3.900	5.200
Max. Run Time	2 H/day	2 H/day	2 H/day	2 H/day
Drive 3x230/400V 50Hz IE1	03104310	03202734	03202862	03202974
Motor IE1	13106687 (0,74kW)	13203385 (1,1kW)	14800742 (1,5kW)	13000252 (2,2kW)
Drive 3x230/400V 50Hz Conform IE		03202742	03202870	03202990
Motor Conform IE		13204212 (1,1kW IE)	14802946 (1,5kW IE)	13001102 (2,2kW IE)
Drive 3x200/346V 50Hz	03104318	03202750	03202878	03202998
Motor	13106158 (0,75kW)	11024247 (1,1kW)	14801443 (1,5kW)	13000260 (2,2kW)
Drive 1x230V 50Hz	03104326	03202758	03202886	
Motor	13106661 (0,75kW)	13203351 (1,3kW)	14800841 (1,5kW)	
Drive 3x220-230/380-400V 60Hz	03104334	03202766	03202894	03202982
Motor	13106216 (0,9kW)	19916030 (1,3kW)	14801450 (1,8kW)	13000278 (2,64kW)
Drive 3x200/346V 60Hz	03104342	03202774	03202902	03203006
Motor	13106166 (0,9kW)	13203369 (1,3kW)	14801476 (1,8kW)	13000286 (2,64kW)
Drive 3x254/440V 60Hz	03104350	03202782	03202910	03203014
Motor	13106240 (0,9kW)	13203377 (1,3kW)	14801468 (1,8kW)	13000294 (2,64kW)
Drive 1x220V 60Hz	03104358	03202790	03202918	
Motor	13108618 (0,9kW)	13203419 (1,3kW)	14802227 (1,8kW)	

MINIMUM SWITCH - 00201145



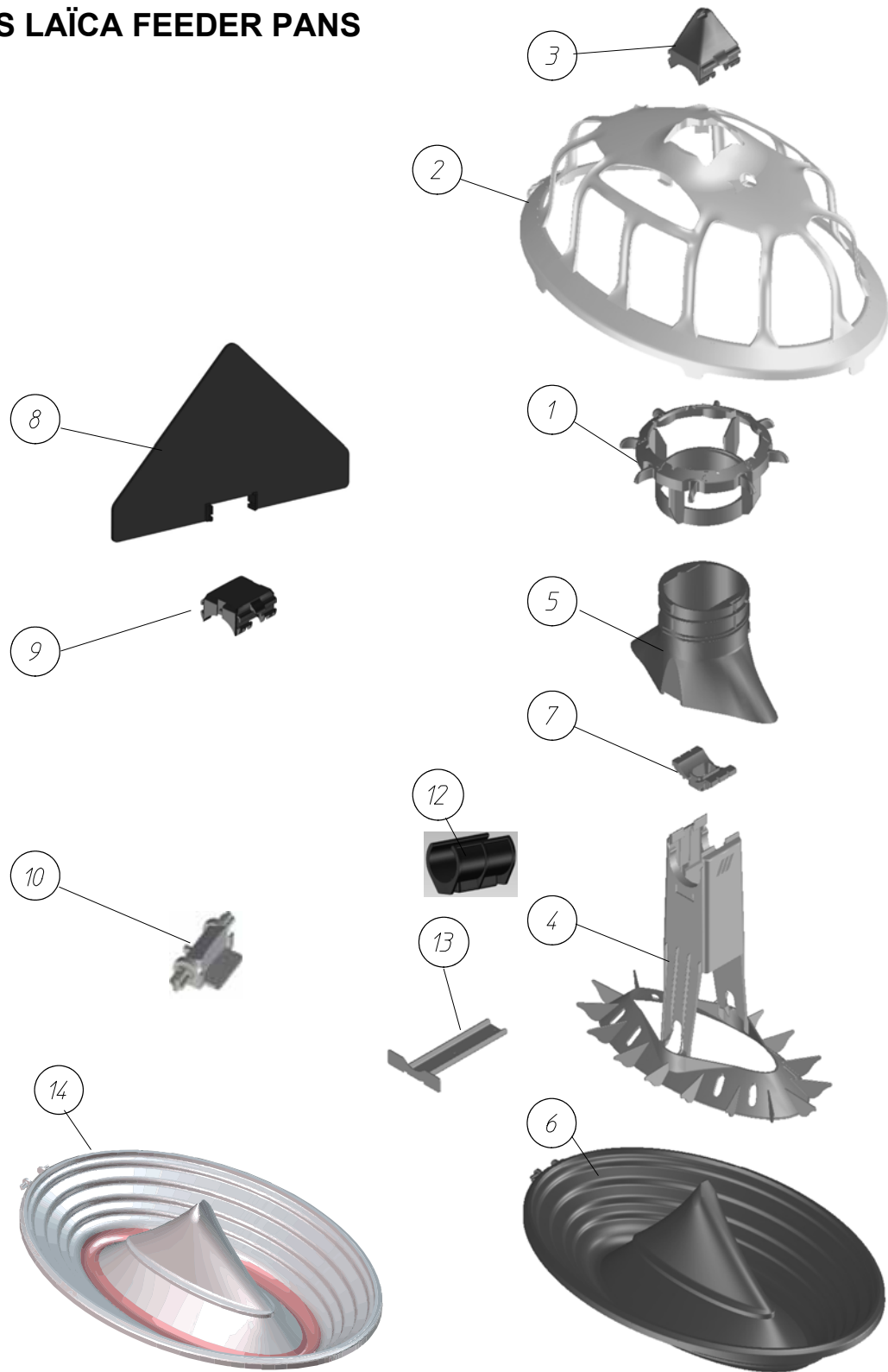
код	название	номер	кол.
1	ПЕРЕКЛЮЧАТЕЛЬ МИНИМУМА В СБОРЕ	10206043	1
1.1	ПЕРЕКЛЮЧАТЕЛЬ МИНИМУМА В СБОРЕ	10203073	1
1.2	КРЫШКА ВЫКЛЮЧАТЕЛЯ	10206035	1
1.3	ОПОРА ПЕРЕКЛЮЧАТЕЛЯ	10203107	1
1.4	ВИНТ 4.2X9.5 DIN 7981	20102745	2
1.5	МЕМБРАНА ПЕРЕКЛЮЧАТЕЛЬ МИНИМУМА	10203115	1
1.6	КЛЕЙКАЯ ЛЕНТА 19X0.23-2-СТОРОННЯЯ	30800726	2
1.7	ВИНТ Ф4.2X19 DIN 7981	20104535	2
2	КОРОБКА ОВО А8	15000037	1
3	ВИНТ М5X12 DIN 84-4.8	20101135	2
4	ГАЙКА М5- DIN 934	20100152	2
5	КАБЕЛЬНОЕ КОЛЬЦО PG 9	15001472	2
6	КОЛЬЦЕВОЙ ДЕРЖАТЕЛЬ КАБЕЛЯ (2XPG9)	15010119	1
7	ХОД ЗАЖИМА (3/6E)	10103109	1
8	ЗАЩИТА ШНУРА ПЕРЕКЛЮЧАТЕЛЯ	13104518	1
9	НАКЛЕЙКА ПЕРЕКЛЮЧАТЕЛЬ МИНИМУМА	10203149	1

PARTS POOLAÏ FEEDER PANS



Key	Name	Part Nr.	Key	Name	Part Nr.
1	SHORT ADJUSTER RING	00900068	*8	ANTI ROOST PLATE	00901819
2	12 STRUT GRILL	00901330	*9	FLAT TOP SUPPORT	00901793
3	TOP SUPPORT	00900050	*10	HINGE CLICK	00901389
4	SUPPORT CONE	00900027	*12	SHUT-OFF SHELL	00105262
5	SKIRT	00900035	*13	SHUT OFF SLIDE	00900159
6	FEEDER PAN	00900001	*	OPTION	
7	PAN LOCK - BLUE	00901363			

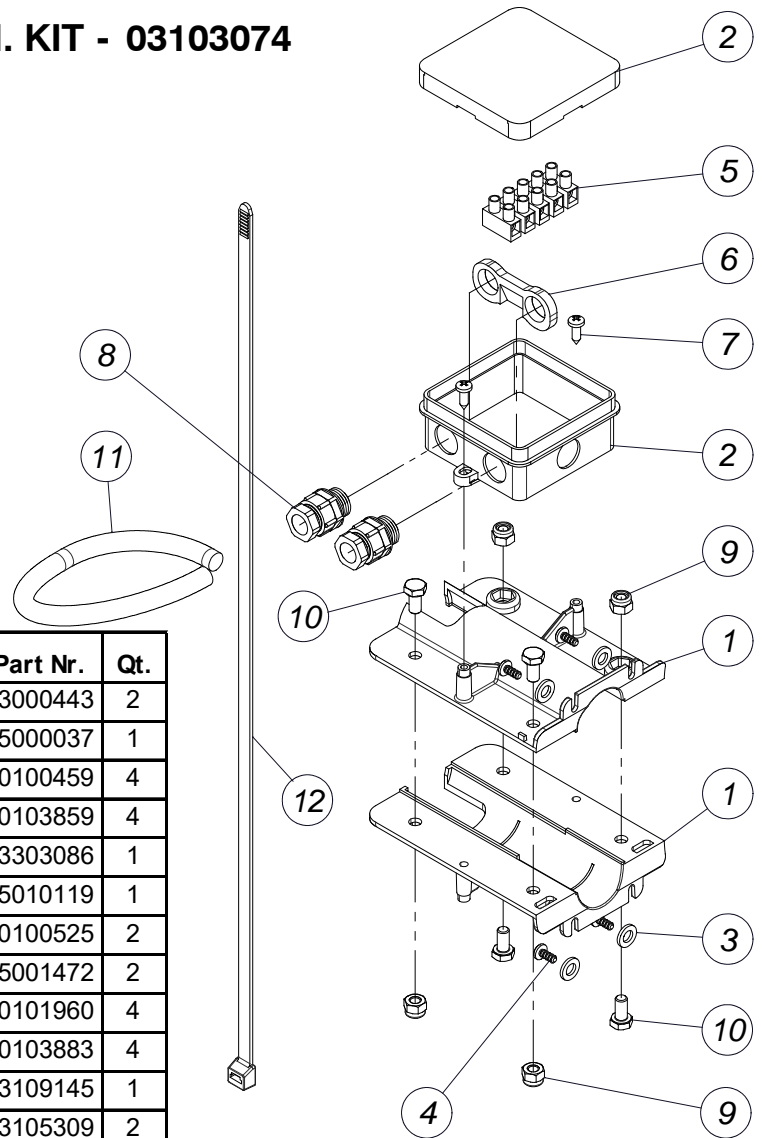
PARTS LAICA FEEDER PANS



Key	Name	Part Nr.	Key	Name	Part Nr.
1	LONG ADJUSTER RING	00901355	*8	ANTI ROOST PLATE	00901819
2	12 STRUT GRILL	00901330	*9	FLAT TOP SUPPORT	00901793
3	TOP SUPPORT	00900050	*10	HINGE CLICK	00901389
4	SUPPORT CONE	00900027	*12	SHUT-OFF SHELL	00105262
5	SKIRT	00900035	*13	SHUT OFF SLIDE	00900159
6	STEPPED FEEDER PAN	00901348	14	STEPPED FEEDER PAN WITH METAL INSERT	00905689
7	PAN LOCK - BLUE	00901363	*	OPTION	

SENSOR HOLDER + CONN. KIT - 03103074

Key	Name	Part Nr.	Qt.
1	SENSOR HOLDER	13000443	2
2	HANDY BOX OBO A8	15000037	1
3	WASHER D.6.6x12x1.6-DIN 126	20100459	4
4	PARCKER SCREW 4.2x9.5 DIN 7981FH	20103859	4
5	CLAMP STROKE 47 40 6E/5	13303086	1
6	CABLE RING HOLDER (2xPG9)	15010119	1
7	PARCKER SCREW 8 X 1/2"	20100525	2
8	CABLE RING PG 9	15001472	2
9	LOCKNUT M6 - DIN 985 -A2	20101960	4
10	BOLT M6X12-DIN 933-A2	20103883	4
11	CABLE GUARD LG=220MM	13109145	1
12	WRAP-IT-TIE	13105309	2



SENSORS

24 VDC

03104538: SENSOR VC12 RTM24106821-1 24-230VAC/DC

03104586: SENSOR VC12 RTM24106821-2 24-230VAC/DC

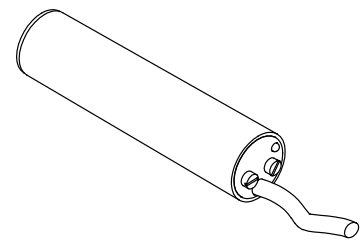
03104578: SENSOR VC12 RTM24106821-3 24-230VAC/DC

230 VAC

03101185: SENSOR VC12 RT230106821 OFF DELAY

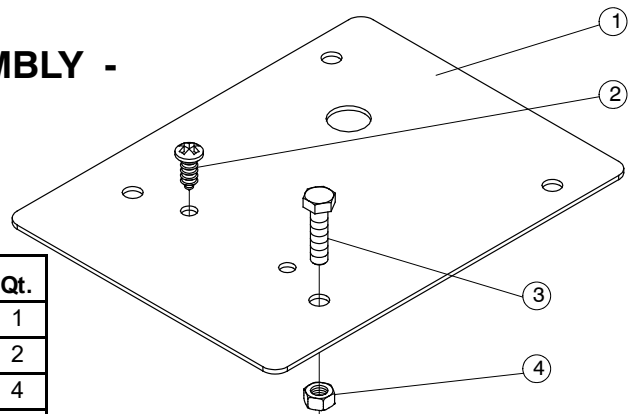
03103678: SENSOR VC12 RT230106821 S3 D1

03103660: SENSOR VC12 RT230106821 S3 D30

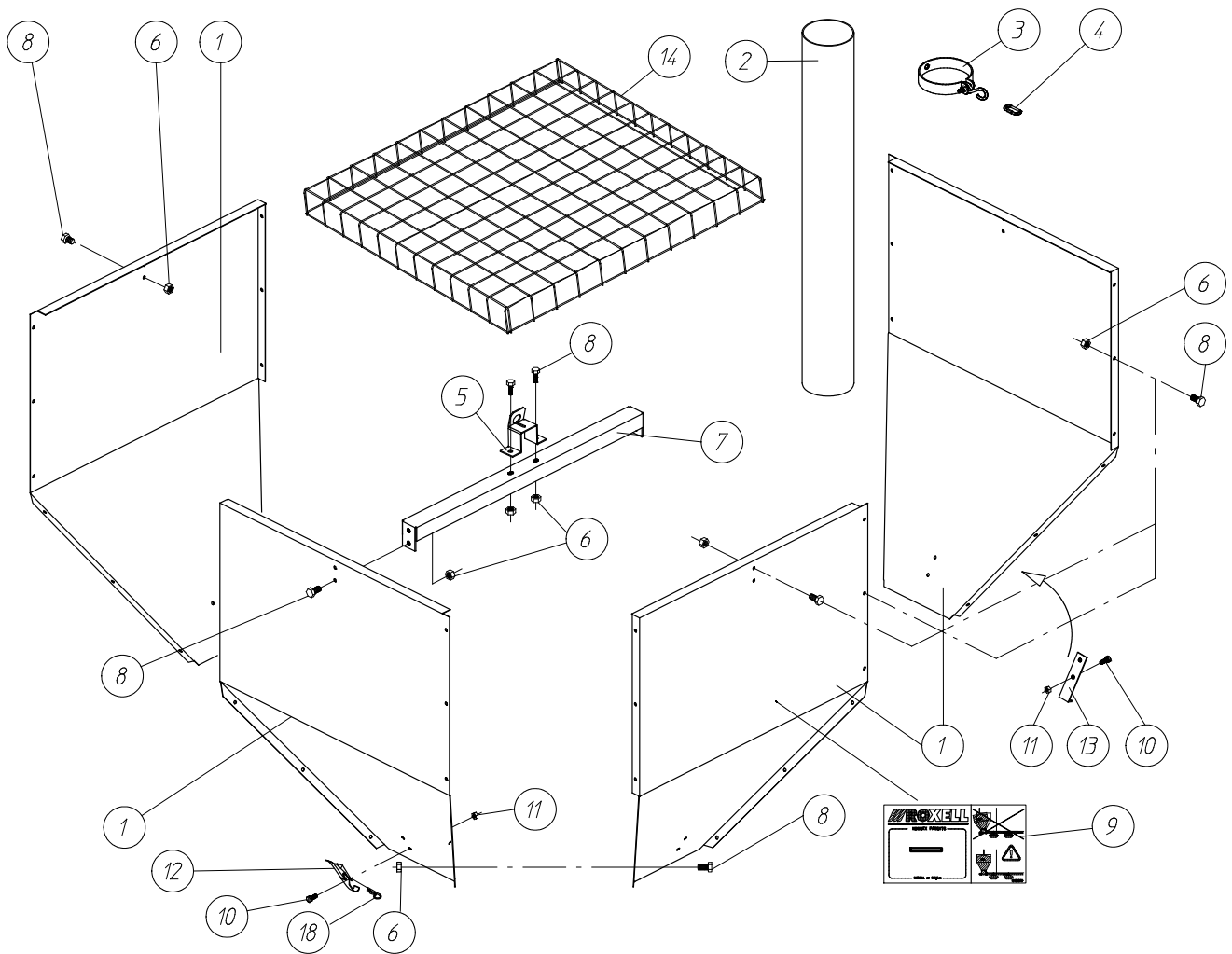


ASSEMBLY KIT FOR SWITCH ASSEMBLY - 00703025

Key	Name	Part Nr.	Qt.
1	SWITCH MOUNTING PLATE	10701324	1
2	PARCKER SCREW 4.2 X 16 - DIN 7981 - A2	20102331	2
3	BOLT M5X20-DIN 933-8.8	20100137	4
4	NUT M5 - DIN 934	20100152	4

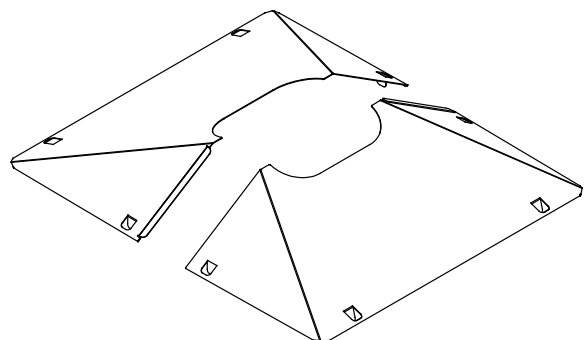


100KG HOPPER - 00100602



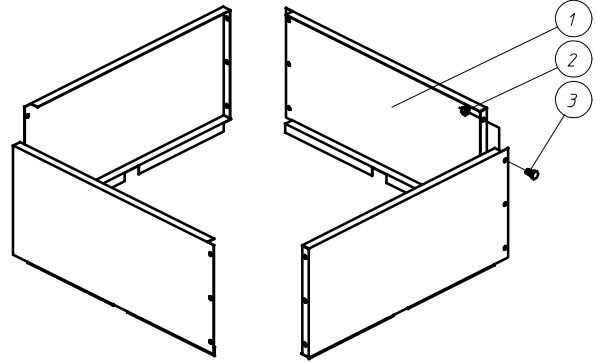
Key	Name	Part Nr.	Qt.	Key	Name	Part Nr.	Qt.
1	HOPPER SIDE	10102259	4	9	PATENT DECAL COM-ATF-MINIMAX	10103893	1
2	PVC TUBE DIAM. 90 - L = 700 MM	10102382	1	*10	SCREW M4x10-DIN 84 - 4.8	20100806	8
*3	TUBE SUPPORT ASS'Y	10102390	1	*11	NUT M4	20100681	8
*4	SCREW LINK DIA. 3.5	10203156	1	*12	FASTENER 30-1056 MSZN	10201697	1
*5	HOPPER HOOK	10105393	1	*13	FASTENING HOOK	10102200	1
*6	NUT M6 - DIN 934	20100210	34	14	HOPPER COVER GRILL	10103075	1
7	HANGER	10102291	1	*18	SPRING COTTER ø2	20100749	1
*8	BOLT M6 X 12 - DIN 933-8.8	20100160	34	*	HARDWARE KIT	10102341	1

COVER HALF FOR 100KG HOPPER - 10102267

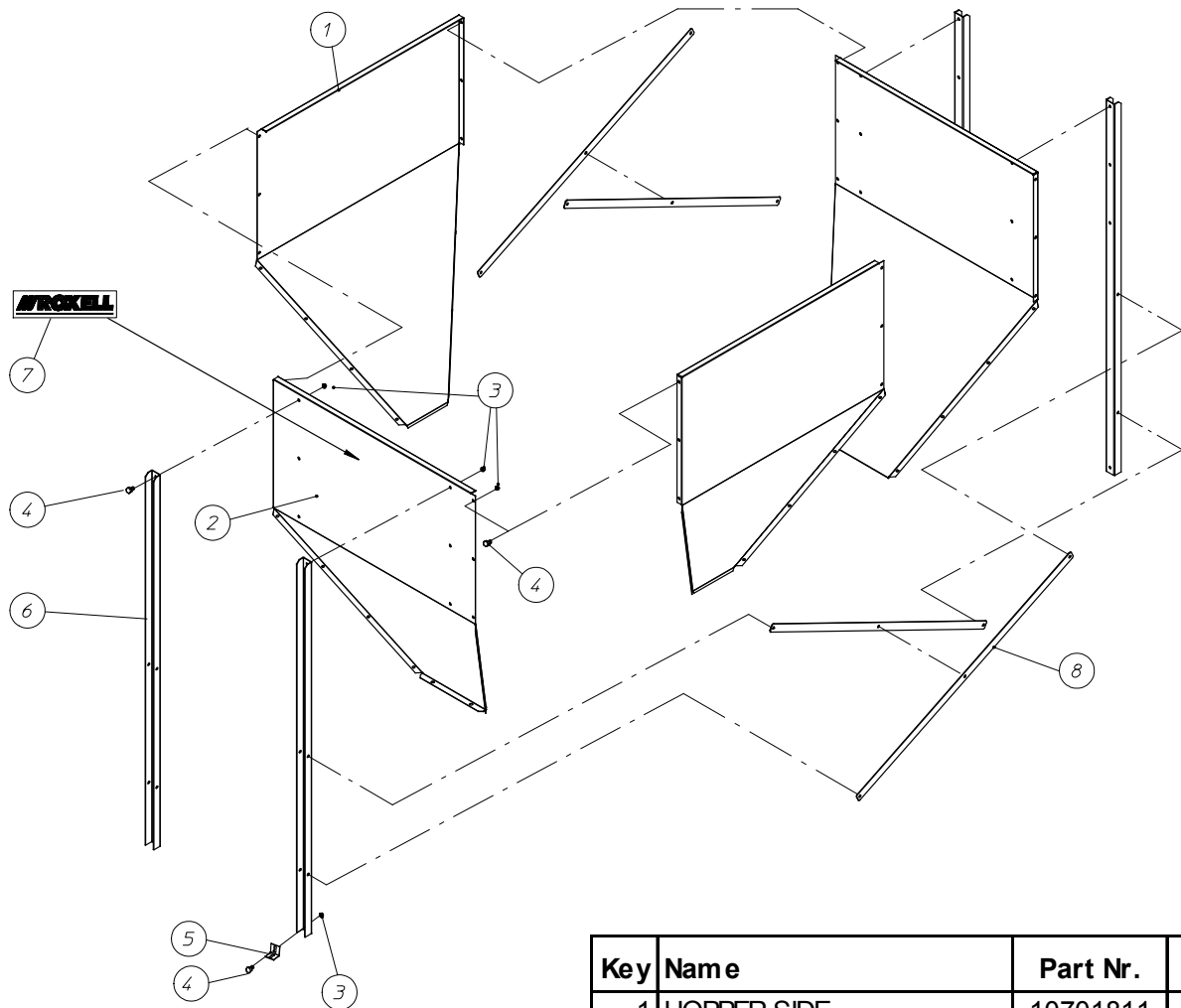


HOPPER EXTENSION 50KG- 00101238

Key	Name	Part Nr.	Qt.
1	HOPPER EXTENSION SIDE	10104719	4
2	NUT M6 - DIN 934	20100210	12
3	BOLT M6 X 12 - DIN 933-8.8	20100160	12

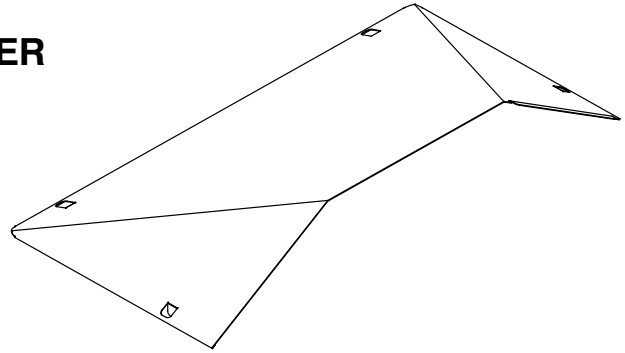


HOPPER ASSEMBLY 800 X 800mm - 00703462

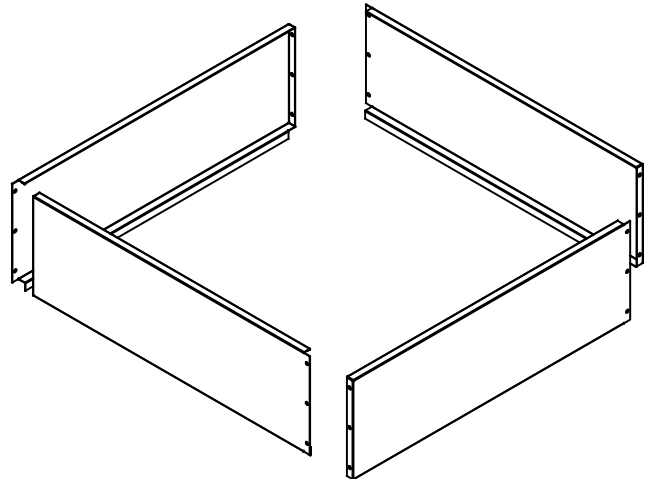


Key	Name	Part Nr.	Qt.
1	HOPPER SIDE	10701811	2
2	HOPPER SIDE F/LEGS	10701803	2
3	NUT M6 - DIN 934	20100210	54
4	BOLT M6X12 - DIN 933-8.8	20100160	54
5	ANCHOR HOOK	10701761	4
6	HOPPER LEG	10701829	4
7	ROXELL DECAL - 290 x 75	14901623	1
8	X-BRACE	10204006	4

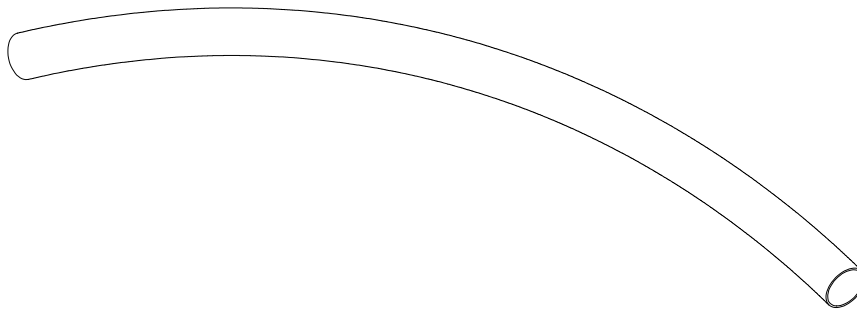
**COVER HALF FOR 250KG HOPPER
800X800mm - 03000080**



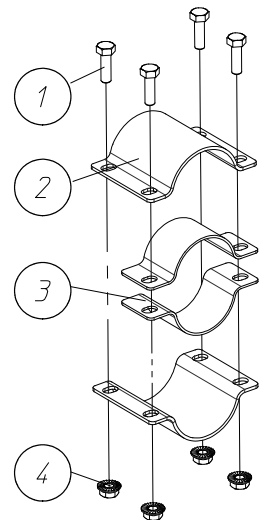
**HOPPER EXTENSION FOR
100KG EXTRA - 03000098**



STAINLESS STEEL ELBOW 45° - 01903129



KIT F/ST.ST. ELBOW 45° - 01903137



Key	Name	Part Nr.	Qt.
1	BOLT M6 X 20 - DIN 933 - 8.8	20100186	12
2	ELBOW CLAMP HALF	11019841	6
3	SHIM SHELL 1.5MM	11901238	4
4	HEX. NUT W/FLANGE - M6 - DIN 6923	20104105	12

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PART III

INSTALLATION INSTRUCTIONS

A blank sheet of lined paper with horizontal ruling lines spaced evenly down the page.

GENERAL SAFETY RULES

CIRCUITS



DANGER

IMPORTANT

Carefully read the following instructions before you **INSTALL** the system

1. Be **CAREFUL** when handling the **ROLLS OF AUGER**.
 - When you release the **BINDING WIRE**, it is possible that the auger **UNROLLS**. This can cause injuries.
 - **ALWAYS** use **SAFETY GLOVES** when you slide the auger into the tube.
 - **ALWAYS** see that the auger **CANNOT SPRING BACK** (by using clamps) when you put it under tension or couple it .
2. Check all **ELBOW** and **TUBE CONNECTIONS** and all **TUBE CLAMPS** on drive units and feed intake boots for **PROPER CLAMPING**. Tighten all tube clamps with a **TORQUE** of min. **10Nm**.
3. **TEST** the **SUSPENSION SYSTEM** for safe operation :
 - Firmly fasten the **WINCH** and the **SUSPENSION POINTS**. Firmly tighten **ALL CABLE CLAMPS**.
 - **WINCH UP THE FEEDING CIRCUITS THREE TIMES** and lower them again (full course). **NEVER STAND UNDERNEATH THE SYSTEM** when doing this.
 - Winching up and lowering must proceed **WITHOUT ANY HITCH**.
4. At the **FIRST START UP**, make sure that, if the auger **HITCHES** or **BLOCKS**, you can **IMMEDIATELY SWITCH OFF** the system with the main switch on the control panel.



This **SYMBOL** will be used to draw your attention to matters that are of **GREAT IMPORTANCE** for your **SAFETY**.

It means : **WARNING** - follow the safety instructions : disconnect the current - re-read the safety rules.

In short : **BE ALERT**. **IGNORING** these instructions can cause **SERIOUS INJURIES** or even **DEATH**.

INSTALLATION PLANNING

EXAMPLE OF INSTALLATION PLANNING	1	2	3	4	5	6	7	8	Page
1. Preparation : <u>read the installation instructions!</u>									
- "Warehouse"- Lay out - foresee electrical cables									III- 4
2. Suspension									III- 10
- Winch / main cable									III- 18
- Hooks									III- 10
- Suspension wire									III- 19
3. Assembling the pan									III- 22
- Pan combination									III- 22
- Pan on tube									III- 24
4. Circuit Lay-out									III- 11
- Auger (& Control pan)									III- 36
5. Poultry Perch system									III- 41
6. Electricity									III- 32
- Cabling									III- 4
- Connecting - Test - Starting up									III- 33

TOOLS

1. LOCK GRIP PLIERS



2. HEAVY HAMMER, LIGHT HAMMER



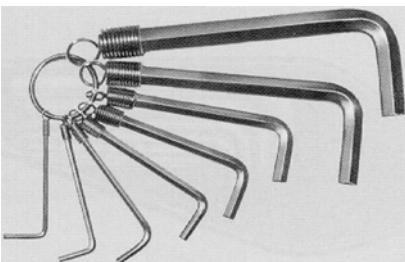
4. DRILLING MACHINE



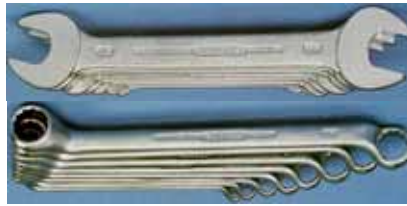
5. SCREW DRIVER WITH BATTERY (SLOT & CROSS) + NUT TIGHTENER



6. SET OF HEX WRENCHES



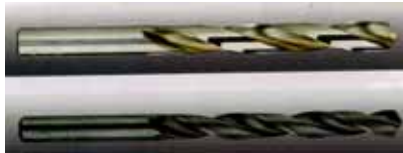
7. SET OF FLAT OPEN END WRENCHES AND RING WRENCHES (6-22MM)



8. CABLE CUTTING PLIERS



9. SET OF DRILLS (METAL Ø 3-13) & CONCRETE



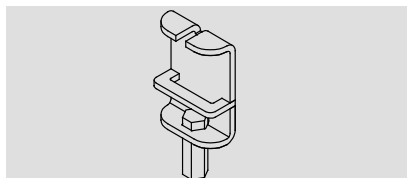
11. SET OF SOCKET WRENCHES W/ RATCHET & EXTENSION



15. HOLE SAW HOLDER - 09700071



12. DRIVER FOR SCREW HOOKS DIA. 6MM - 09700220



3. MULTIGRIP PLIERS



20. ELECTRICAL HEATED KNIFE (OPTIONAL)



13. SOCKET SCREW DRIVERS - 19700236



10. GRINDING MACHINE



14. HOLE SAW DIA 32-09701699 (SENSOR)

- Ø130MM (Holes in wall)
- Ø40 - 09700022 (MOD. 55),
- Ø51 - 09700030 (MOD. 75),
- Ø70 - 09700048 (MOD. 90),
- Ø108 - 09700055 (MOD. 125)



16. OPENING TOOL - 09701814



TO INSTALL THE CONTROL PANEL

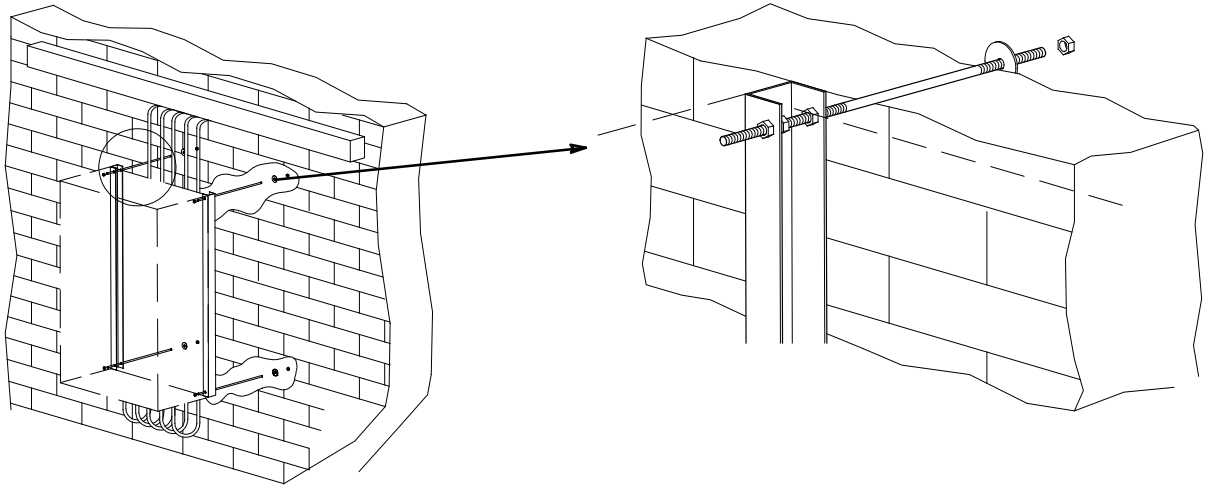
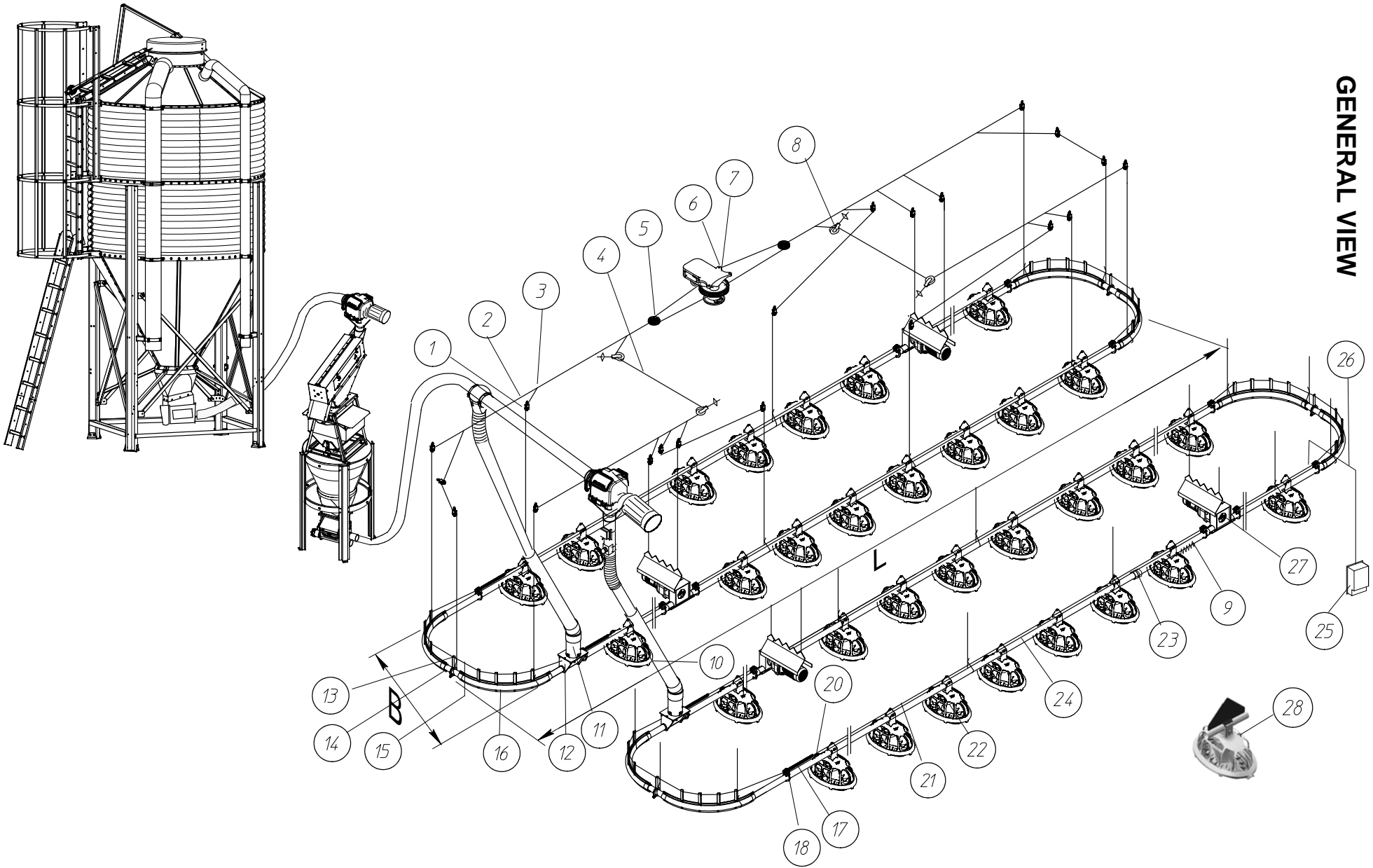


FIGURE 2.

- * Provide a solid suspension wall.
- * Suspension material always supplied with the panel.
- * Provide an earthing that meets local regulation.
- * Always install main fuses between the feeder and any panel supplied by Roxell.
- * Always use suitable supply- and control circuit cables at each connection point.



GENERAL VIEW

COMPONENT NUMBERS

Key	Description	Number
1	SMALL PULLEY WITH ST. STEEL HOOK	00104349
2	CABLE DIAM. 5mm	00100388
3	CABLE CLAMP NO.5	00100545
4	CABLE 3/32" - Ø2.5 MM - 250M	00106887
	CABLE 3/32" - Ø2.5 MM - 500M	00106895
5	CABLE SET FOR SINGLE DIVERSION	00105833
	CABLE SET FOR DOUBLE DIVERSION	00105841
6	CABLE CONNECTION ASSY	00102699
7	HAND OPERATED CENTRAL WINCH	00102368
8	HEAVY DUTY PULLEY (METAL)	00702571
9	CLOSED CIRCUIT AUGER	00601211
10	TELESCOPICAL DROP TUBE DIA.100 - 1m	07400153
11	INLET FOR FEED INTAKE BOOT WITH FLEXIBLE TRANSITION	00707737
12	FEED INTAKE BOOT W/SCRAPER	00601252
13	ANTIPERCH TUBE SUPPORT	00700070
14	TUBE 3.05M WITHOUT HOLES	00102269
15	CABLE - 1/16" - 1.5MM - 250M	00106839
	CABLE - 1/16" - 1.5MM - 500M	00106831
16	ELBOW ASS'Y 90 (WIDTH 90 TO 108)	00701086
17	SPRING	00100164
18	ANCHOR BRACKET LOW	00102681
20	DUPLEX CABLE CLAMP ST. ST. - 3MM	00106945
21	CABLE - 1/16" - 1.5MM - 250M	00106839
	CABLE - 1/16" - 1.5MM - 500M	00106831
22	FEEDER PAN (POOLAİ /LAİCA)	PARTS
23	TUBE CLAMP ASS'Y DIA. 45mm	00102921
24	TUBE - RECTANGULAR HOLES	SEVERAL
	TUBE 2.9m OR 2.6m- RECTANGULAR HOLES	SEVERAL
25	POULTRY PERCH GUARD	00105692
26	CABLE FOR PERCH GUARD - 50M	00106847
	CABLE FOR PERCH GUARD - 100M	00106855
27	DRIVE UNIT	SEVERAL
28	PAN WITH ANTI ROOST PLATE	OPTION

FOR THE INSTALLATION OF THE FEED SUPPLY SYSTEM MODEL 90/125

FOR STANDARD INSTALLATION INSTRUCTIONS : SEE OUR "FLEX-AUGER" USE AND ASSEMBLY GUIDE. STUDY CAREFULLY THESE INSTRUCTIONS !!!



ALWAYS USE A HORIZONTAL UPPER BOOT ON BOTH FEED BIN AND WEIGHER.



1. USE AS FEW ELBOWS AS POSSIBLE WHEN INSTALLING THE FLEX-AUGER
2. **ATTENTION** : DO NOT HAVE TUBE CONNECTIONS ABOVE THE FEED INTAKE BOOTS !!!
3. TAKE CARE TO LEAVE ENOUGH ROOM BETWEEN THE FEED SUPPLY SYSTEM AND THE CIRCUITS :
 - THIS WILL SIMPLIFY THE SUSPENSION.
 - IT ALSO PREVENTS THE SYSTEM HINDERING THE WINCHING UP OF THE CIRCUITS.
4. REMARK : INSTALL THE DROP TUBES UNDER AN ANGLE OF 60° WITH RESPECT TO THE FEED INTAKE BOOT.

TO PREPARE THE FEEDING CIRCUIT WITH 2 AND 3 DRIVE UNITS

<u>NUMBER OF DRIVE UNITS</u>	<u>MAXIMUM AUGER LENGTH</u>
2	< 200m
3	300m

MINIMUM 2 DRIVE UNITS !!

Put one drive unit at a distance of 3 tubes from the intake boot !

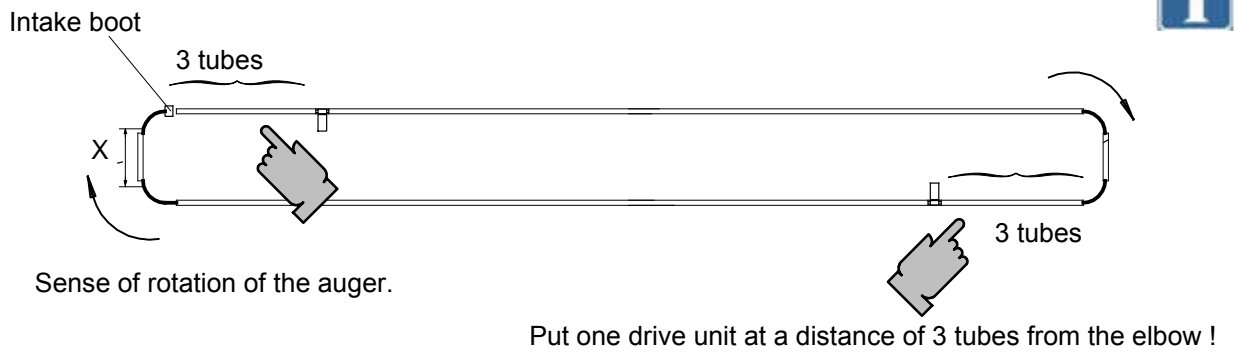


FIGURE 3.

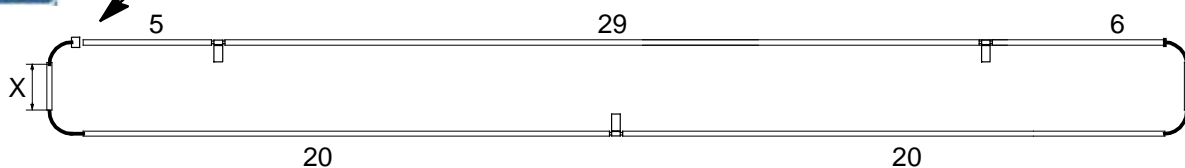
3 DRIVE UNITS

One side of the circuit has 1 drive unit in the middle. The other side has 2 drive units, position as follows : Determine drive unit locations as follows :

1. Calculate the **total** circumference of the circuit (example : $x = 1\text{m}$, number of tubes = 80).
 $[\text{NUMBER OF TUBES (T)} + 4 \text{ ELBOWS } 90^\circ] \times 3,05\text{M (TUBE LENGTH)} + 2 \times \text{CIRCUIT WIDTH (X)}$
 $[80 (T) + 4 \text{ ELBOWS }] \times 3,05\text{m} + (2 \times 1\text{m}) = 258,2\text{m}$
2. Divide this circumference by 3 : this is the total tube length between the 2 drive units on one side of the circuit.
 $258,2\text{m} : 3 = 86,06\text{m}$
3. Divide this length by 3,05m and you know the **number** of tubes.
 $86,06\text{m} : 3,05\text{m} = 28,88 \text{ OR } 29 \text{ tubes } 3,05\text{m}$ between both drive units on the straight part



ATTENTION : ALWAYS PUT THE 2 DRIVE UNITS IN LINE WITH THE INTAKE BOOT



REMARK : IT MAY HAPPEN THAT YOU HAVE TO INSTALL DRIVE UNITS ASYMMETRICALLY.

FIGURE 4.

DETERMINE THE POSITION OF THE INTAKE BOOT

Determine, in relation to the feed supply system, the location of the **FEED INTAKE BOOT** and the sense of rotation of the auger.

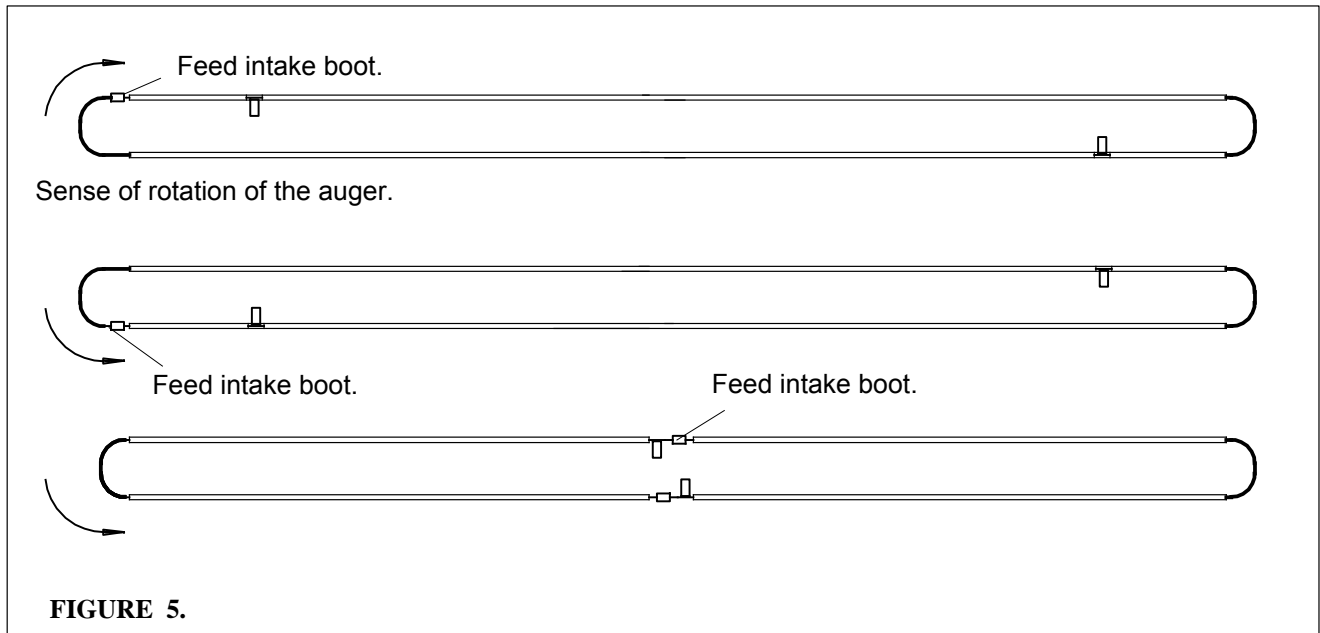


FIGURE 5.

INSTALL THE INTAKE BOOTS AS SHOWN ON FIG. 6.

The distance between **the last circuit and the one but last circuit** must always be LESS than the distance between the other circuits. Keep this distance as short as possible when installing the system.

THIS PREVENTS THAT THE LAST CIRCUIT RUNS EMPTY PARTLY.

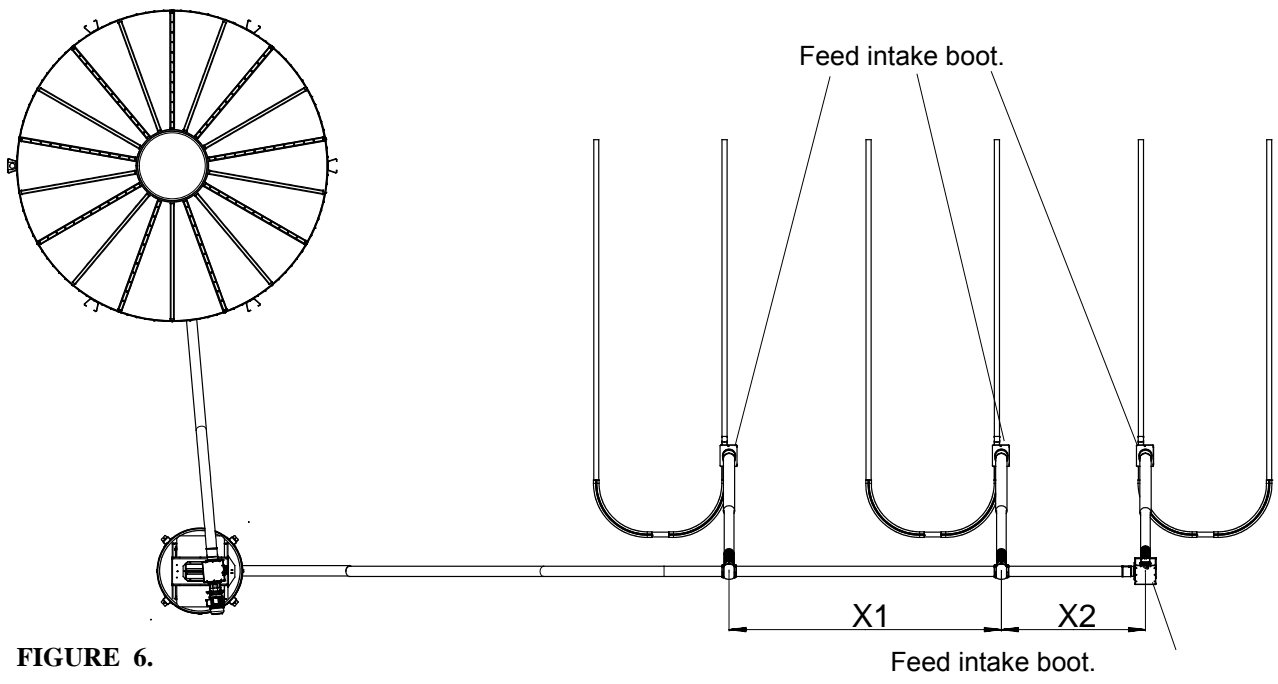


FIGURE 6.

THE SUSPENSION

THE SUSPENSION OF THE SYSTEM IS VERY IMPORTANT : IT MUST BE DONE CAREFULLY AND ACCURATELY ! CLOSELY STUDY THE INSTRUCTIONS BEFORE STARTING THE SUSPENSION.

One suspension point per elbow and one suspension point between two elbows if the width is more than 2m.

- IMPORTANT : IF THERE IS A LAYER OF INSULATION, FIRST INSTALL THE NECESSARY REINFORCEMENTS !!

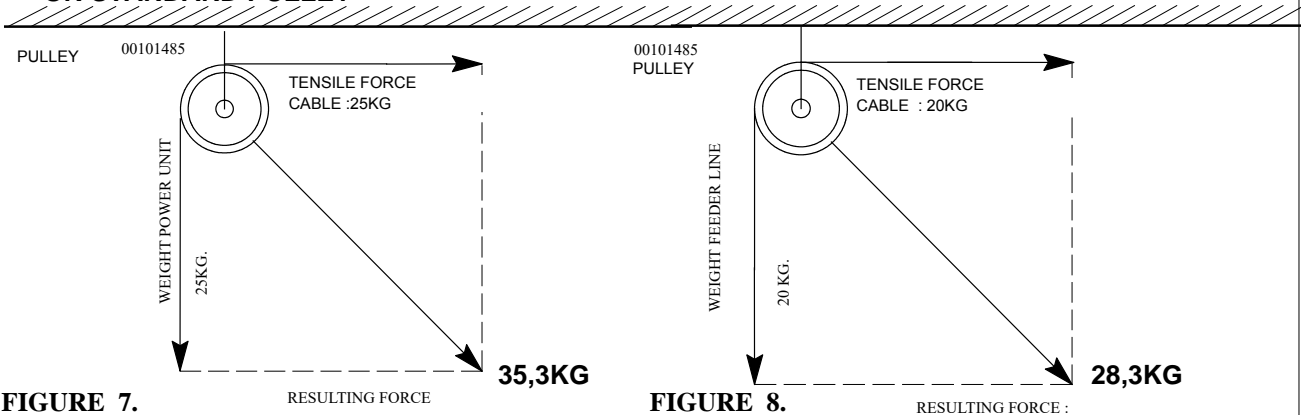


- EACH SUSPENSION POINT (SMALL PULLEY) SHOULD BE ABLE TO HOLD A 100KG BURDEN
- EACH FIXING OF THE HEAVY DUTY PULLEY SHOULD BE ABLE TO HOLD A BURDEN OF 3 X F. YOU CAN EASILY DETERMINE THE WINCH LOCATION BY MEANS OF FORCES :

DANGER

- ON STANDARD PULLEY

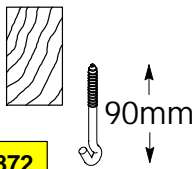
- ON POWER UNIT SUSPENSION



SUSPENSION COMPONENTS

IN A WOODEN BEAM :

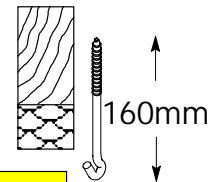
WOOD : + INSULATION



05000872

FIGURE 9.

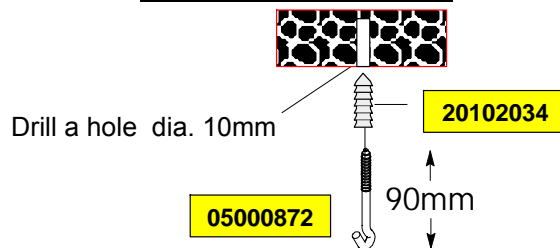
Drill a small hole in HARD WOOD. This will prevent screw hooks from breaking off.
Use a drilling machine with our special driver for screw hooks.



05000237

FIGURE 10.

IN A CONCRETE BEAM :



05000872

FIGURE 11.

IN A METAL GIRDER :

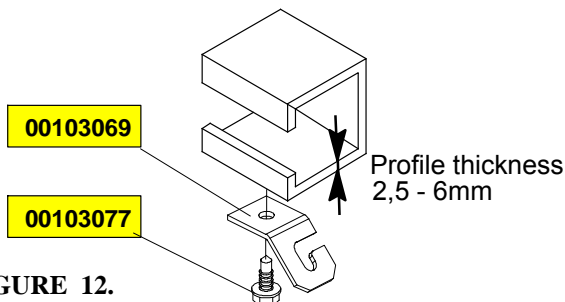


FIGURE 12.

IN METAL I GIRDER

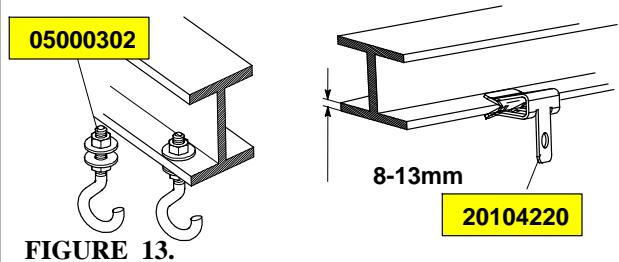
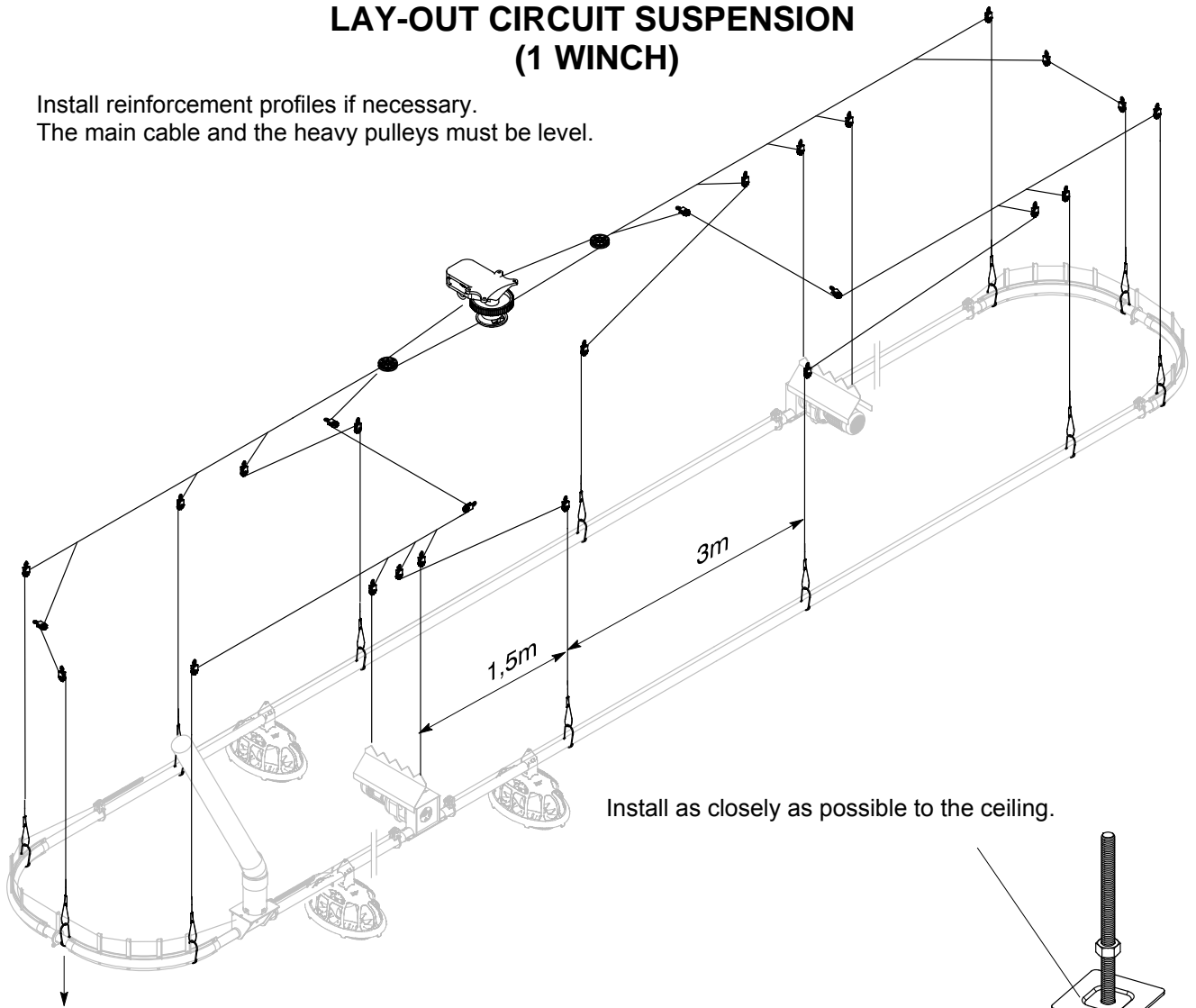


FIGURE 13.

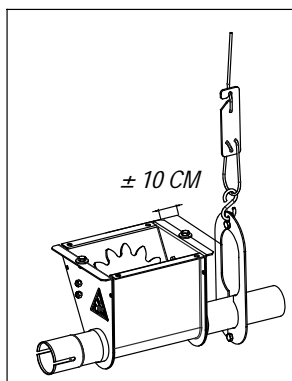
LAY-OUT CIRCUIT SUSPENSION (1 WINCH)

Install reinforcement profiles if necessary.
The main cable and the heavy pulleys must be level.



Install as closely as possible to the ceiling.

SIDE OF THE CIRCUIT : 1 SUSPENSION POINT ABOVE THE TUBE AND ONE SUSPENSION POINT PER ELBOW.



$$F = \frac{\text{total circuit length(m)} \times 7,6\text{kg}}{4}$$

Provide a suspension point approximately 10 cm next to the feed intake boot.

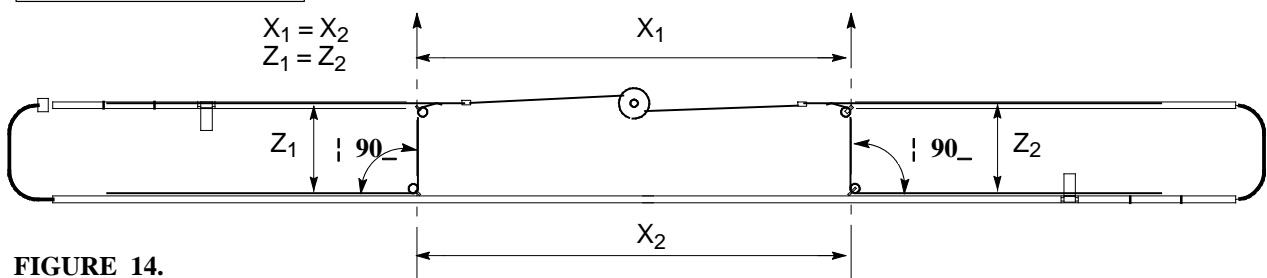
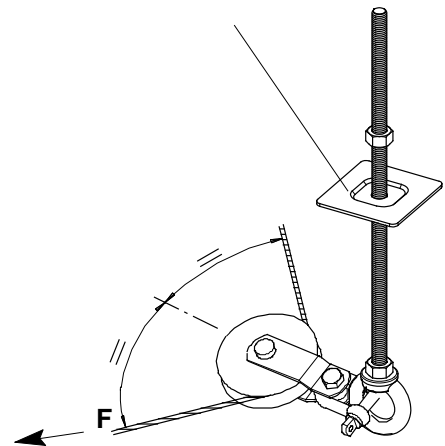
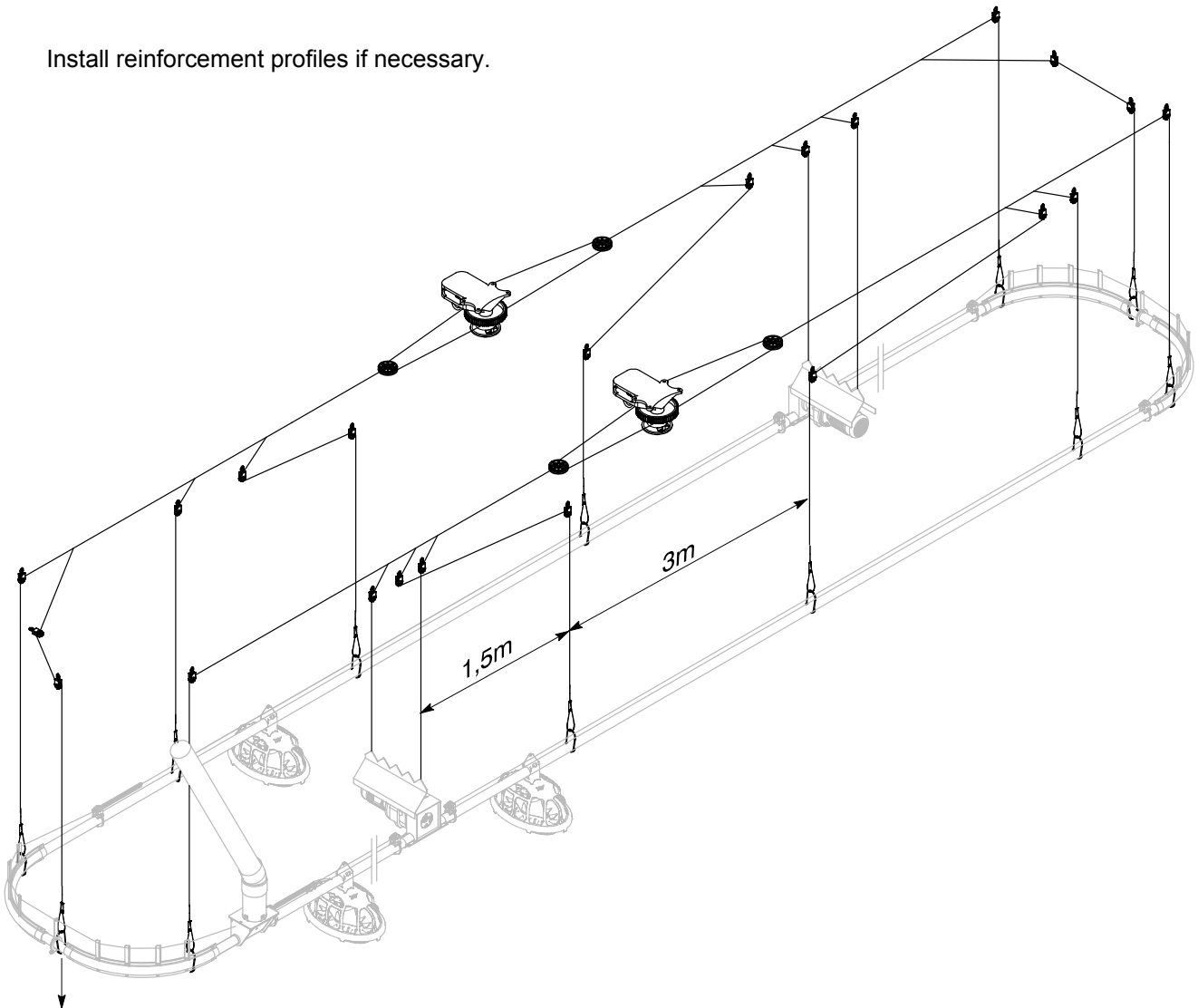


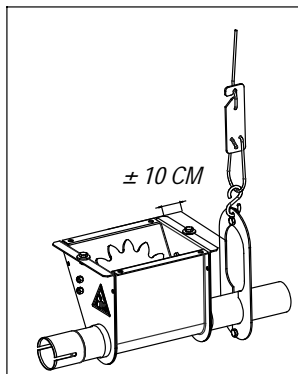
FIGURE 14.

OPTION : LAY-OUT CIRCUIT SUSPENSION (2 WINCHES)

Install reinforcement profiles if necessary.



SIDE OF THE CIRCUIT : 1 SUSPENSION POINT ABOVE THE TUBE AND ONE SUSPENSION POINT PER ELBOW.



Provide a suspension point approximately 10 cm next to the feed intake boot.

FIGURE 15.

SUSPENSION SYSTEM : 30-60m - MAX. 2.100KG



FOR YOUR SAFETY : NEVER MAKE THE INSTALLATIONS LONGER THAN THE RECOMMENDED LENGTH.

DANGER

UP TO 40 TUBES PER CIRCUIT

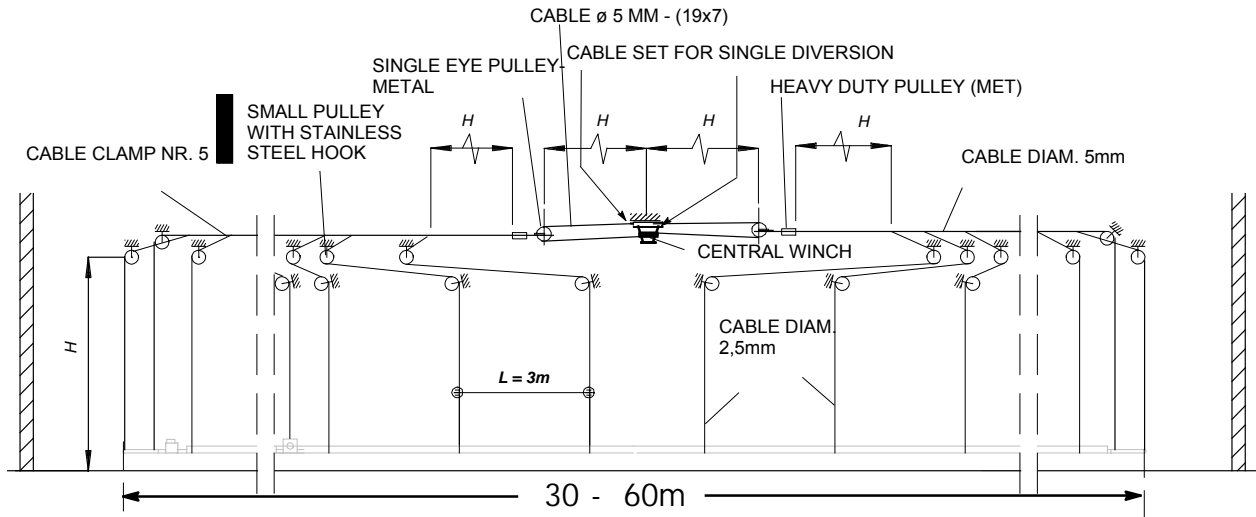


FIGURE 19.

SINGLE DIVERSION

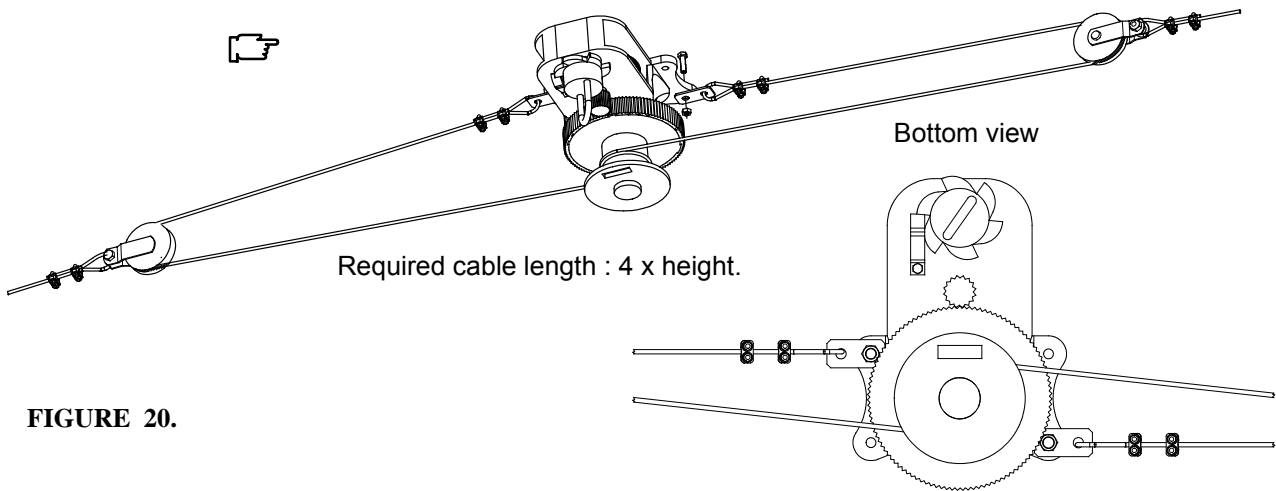


FIGURE 20.

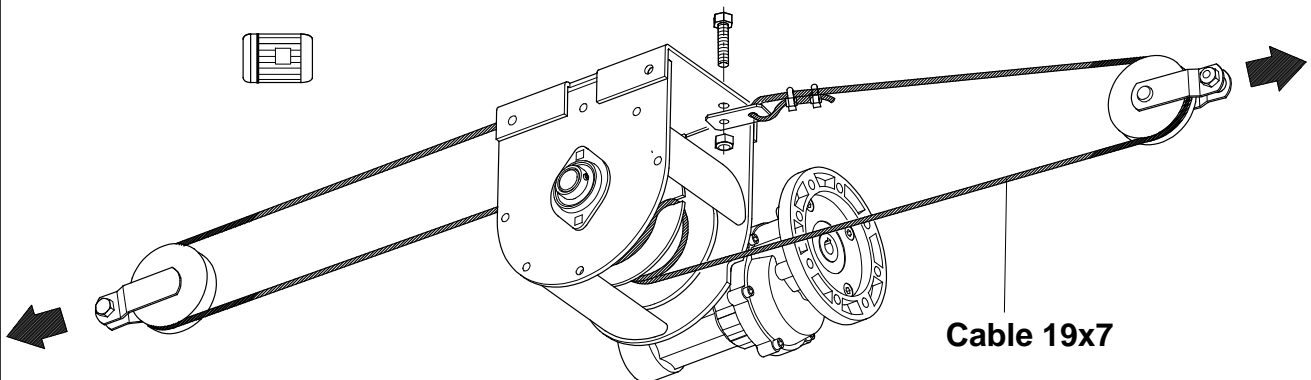


FIGURE 21.

SUSPENSION SYSTEM : 60-100m -MAX. 3.430KG



FOR YOUR SAFETY : NEVER MAKE THE INSTALLATIONS LONGER THAN THE RECOMMENDED LENGTH.

DANGER

UP TO 66 TUBES PER CIRCUIT

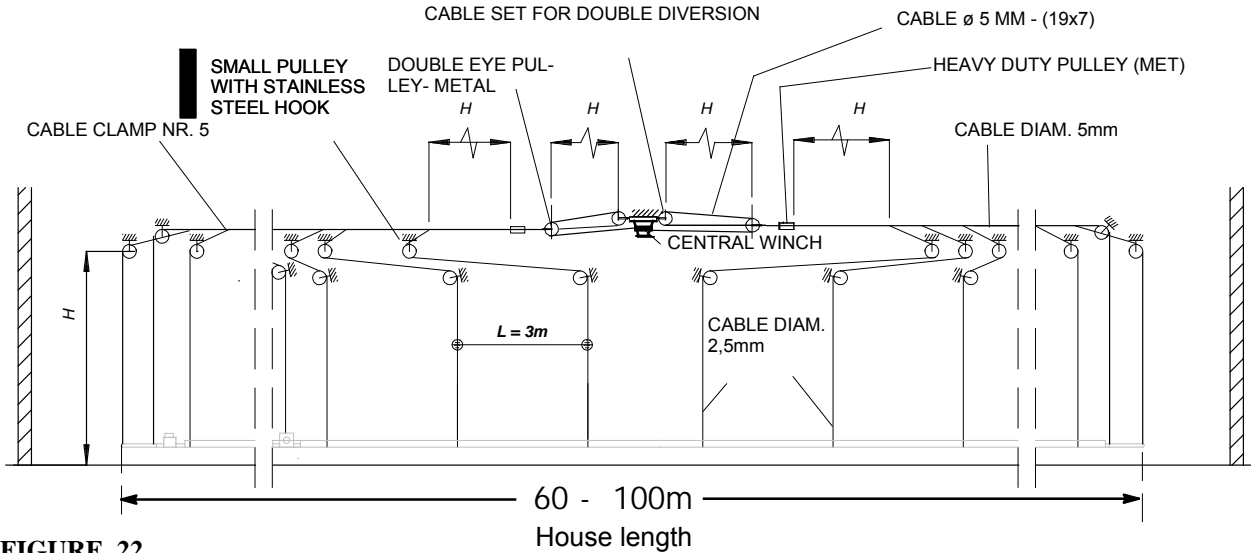


FIGURE 22.

DOUBLE DIVERSION

Solid ceiling or reinforcement profiles

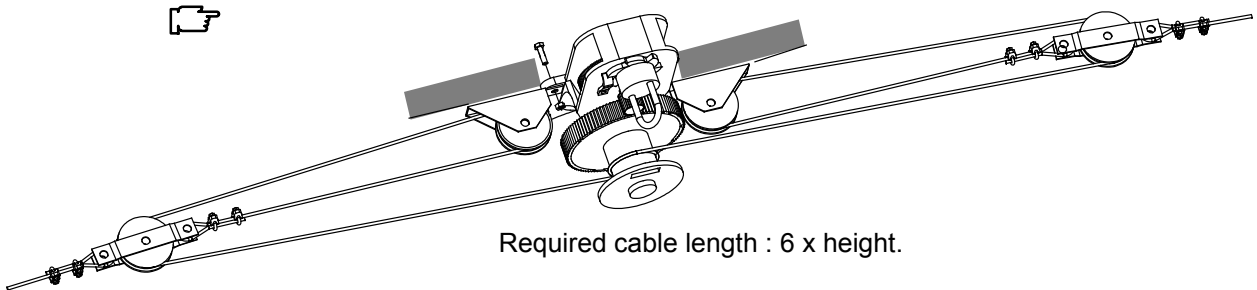


FIGURE 23.

Solid ceiling or reinforcement profiles

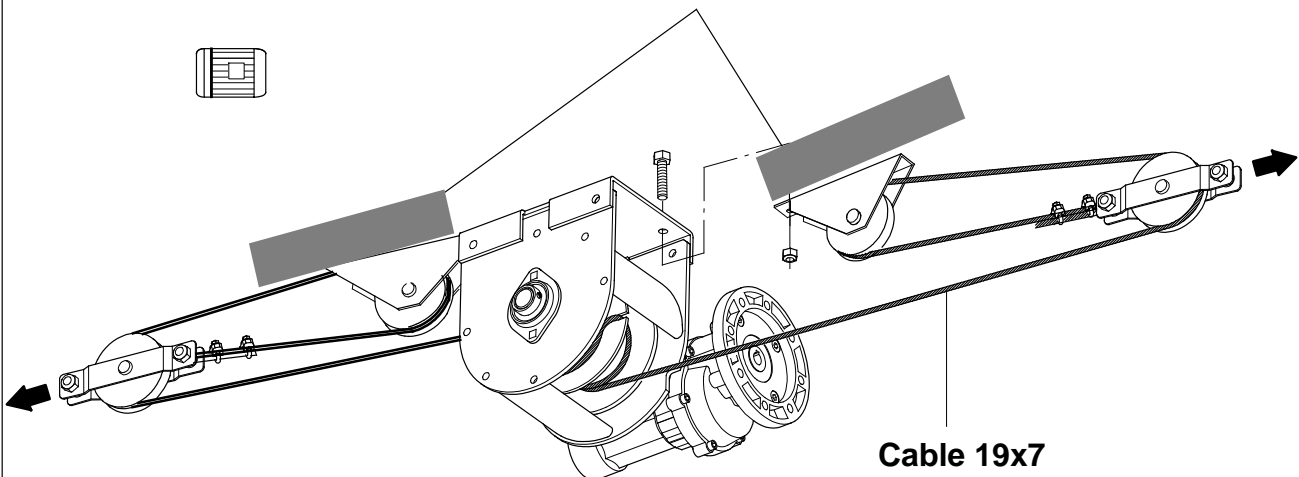


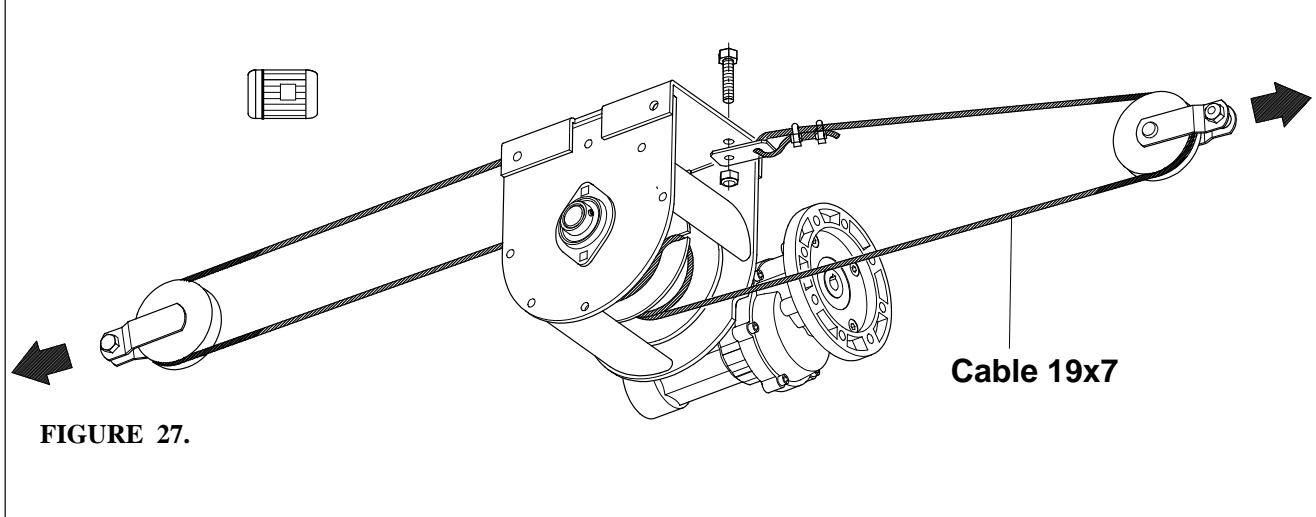
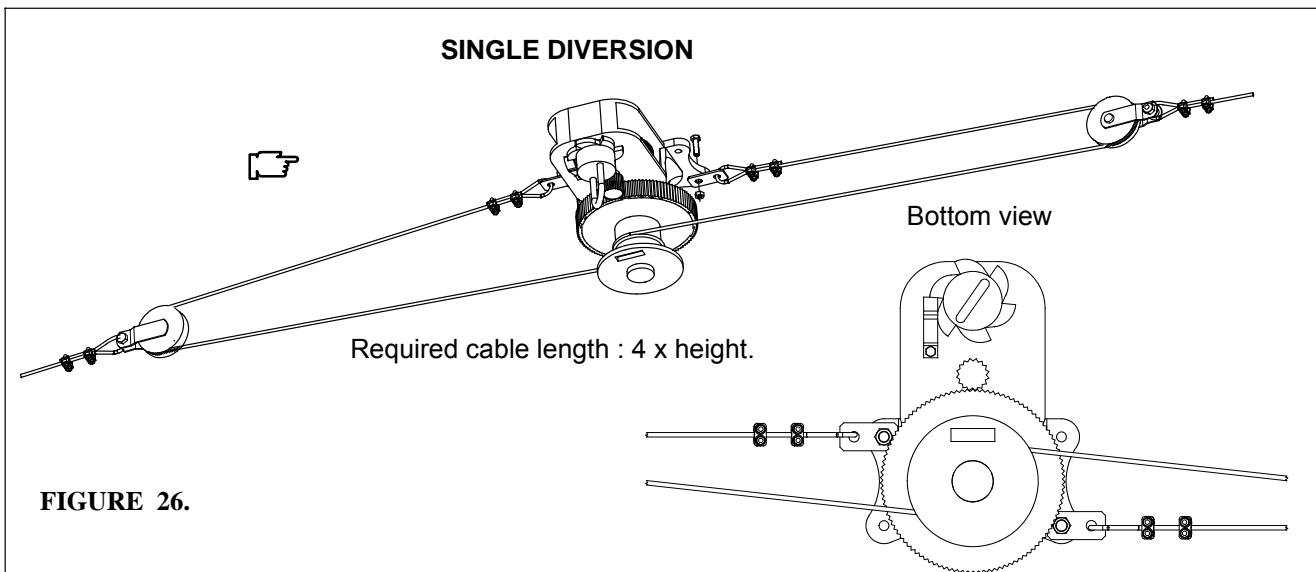
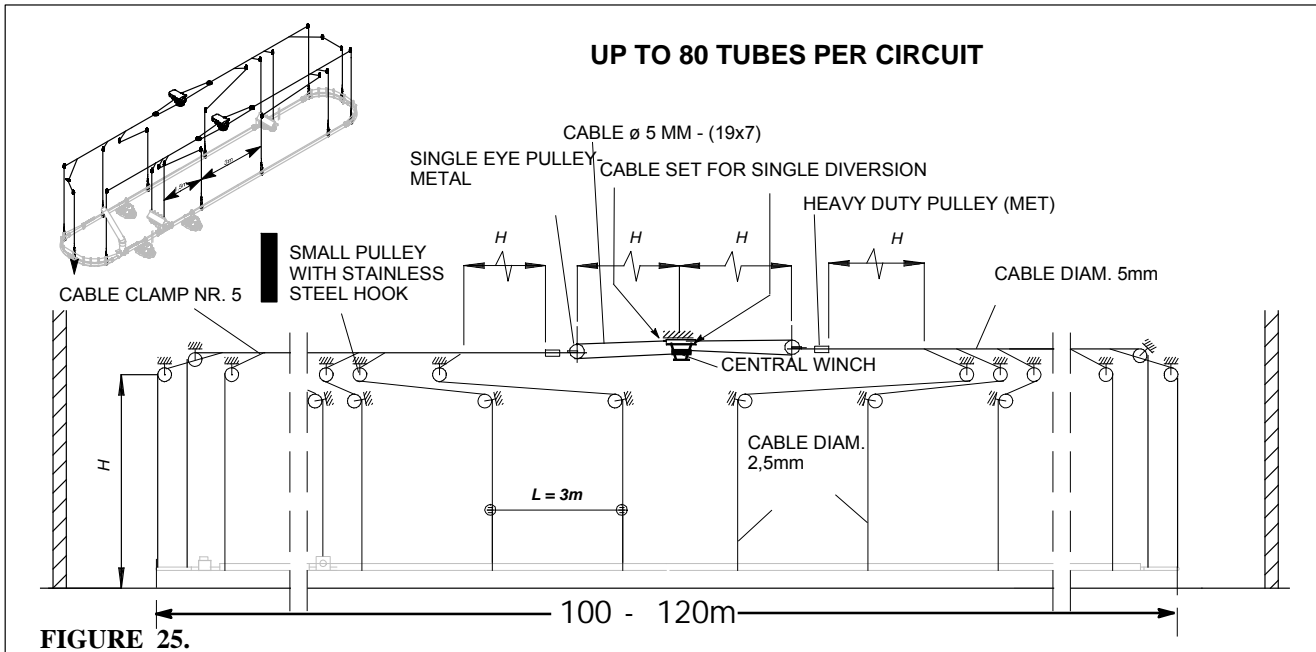
FIGURE 24.

SUSPENSION SYSTEM : 100-120m - MAX. 4.100KG



FOR YOUR SAFETY : NEVER MAKE THE INSTALLATIONS LONGER THAN THE RECOMMENDED LENGTH.

DANGER



SUSPENSION SYSTEM : 120-150m -MAX. 5.100KG



DANGER

FOR YOUR SAFETY : NEVER MAKE THE INSTALLATIONS LONGER THAN THE RECOMMENDED LENGTH.

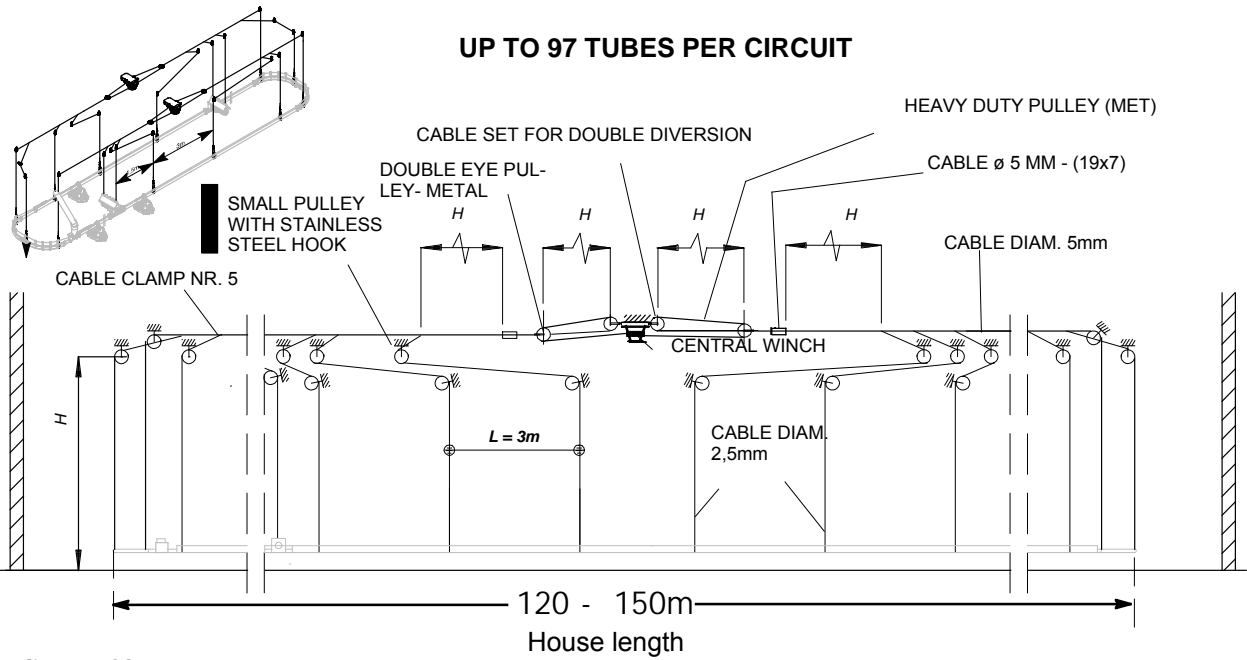


FIGURE 28.

DOUBLE DIVERSION

Solid ceiling or reinforcement profiles

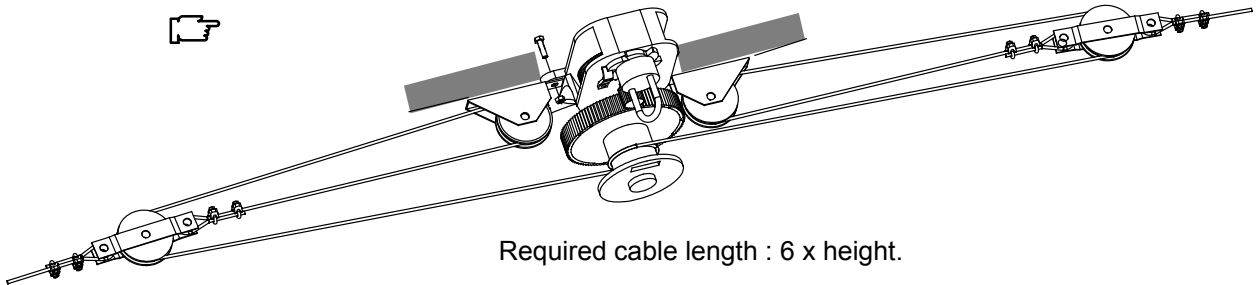


FIGURE 29.

Solid ceiling or reinforcement profiles

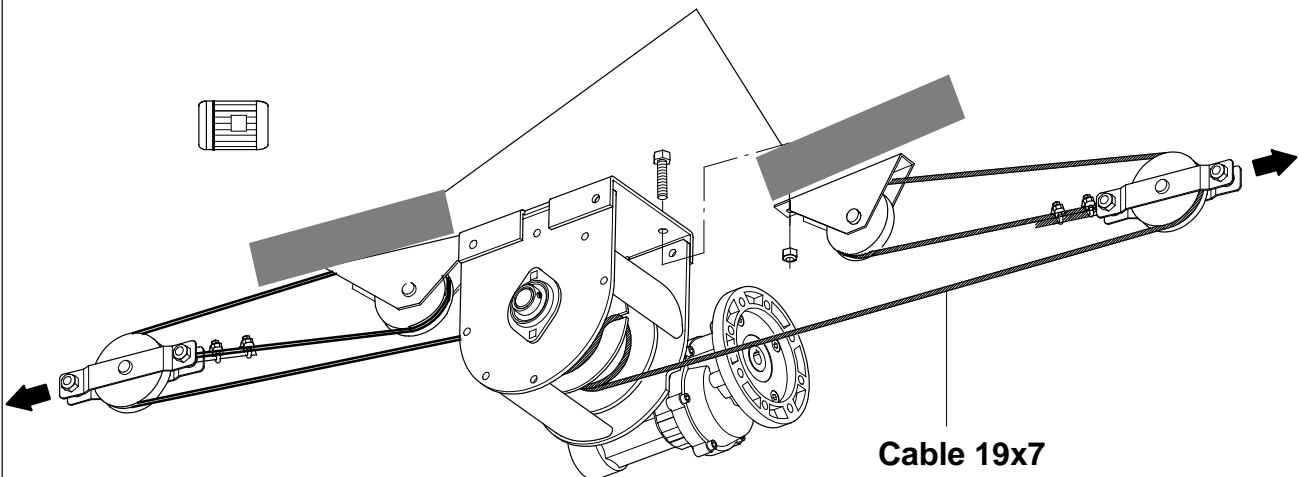


FIGURE 30.

CENTRAL WINCH

MAXIMUM LIFTING POWER : 800KGS.

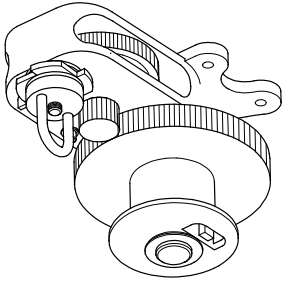


DANGER

IMPORTANT : THE WINCH CAN ONLY BE USED AS A CENTRAL WINCH, NOT AT THE END OF A CIRCUIT. SO INSTALL THE WINCH IN THE MIDDLE.

THE TRACTION OF THE WINCH IS 800 KG. INSTALL THE WINCH AT A SOLID SPOT IN THE ROOF CONSTRUCTION. REINFORCE WHEN NECESSARY.

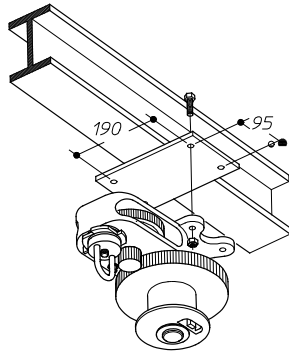
= HAND OPERATED CENTRAL WINCH.



Roxell supplies the hand operated winch without mounting plate and bolts/nuts.

Fix the winch directly to a **SOLID CEILING**.

You can install plate & winch in any direction.



OPTION

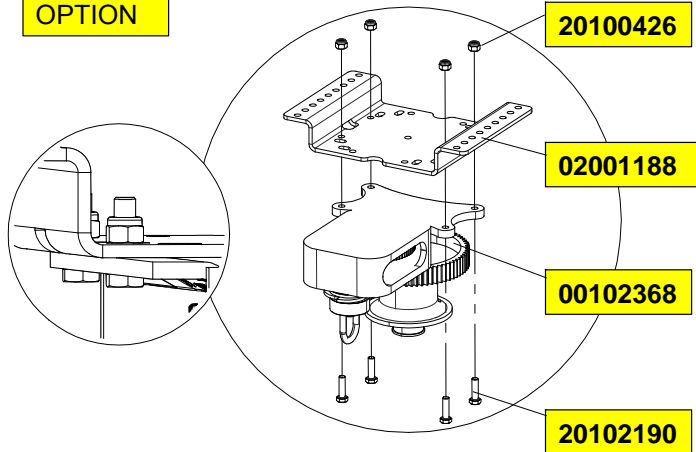
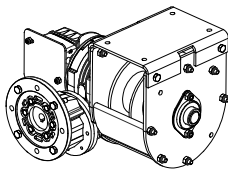


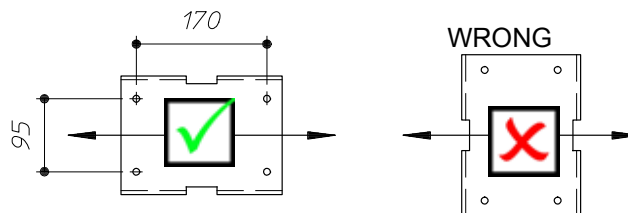
FIGURE 31.

= CENTRAL WINCH W/GEARBOX (MOTOR OPERATED), supplied with **MOUNTING PLATE**.

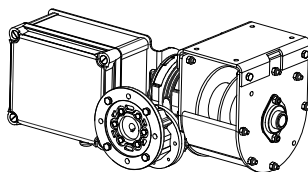
Winching up speed :
1m/minute.



Fix this plate to the ceilings before the insulation. Pay attention to the correct direction.



Fix the winch to the plate with bolts and locknuts.



Install the motor after finishing the installation.

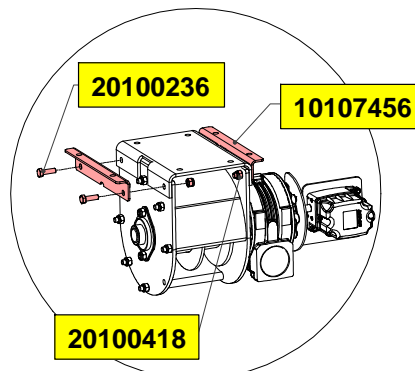


FIGURE 32.

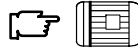
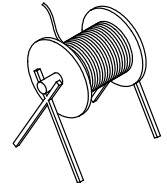
TO INSTALL THE MAIN CABLE

CONSIDER THE DOUBLE DIVERSION !! ONLY THEN INSTALL THE CABLE. YOU CAN HANG THE MAIN CABLE IN THE SCREW HOOKS FOR THE TIME BEING.



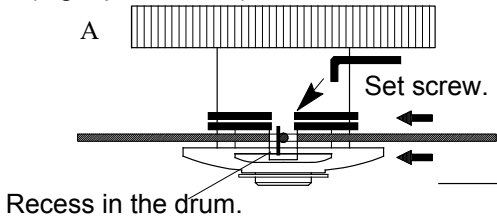
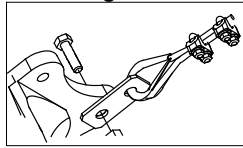
DANGER

- Start at the end of the circuit.
- Hang the roll of cable in a support to prevent torsion when unrolling the cable.
- Pull the cable through the first pulley.
- Unroll the cable towards the winch until you have the required length.



Pull the main cable through the bottom hole of the drum.

- **Always** connect the main cable with **two** cable clamps.
- Hook the cable over the recess in the drum (if necessary use a screw driver and a light hammer).
- Fix the cable with a set screw. See that you **do not damage** the cable by tightening too much.
- Make **4 full turns** on the drum, guide the cable against the drum flange and make sure that windings touch each other.
- **Always** fix the main cable with **two** cable clamps.
- Stretch the main cable by using counterweights (e.g. : power units).



- Guide the main cable through the winch.
- Hook the cable on the drum flange.
- Make **4 full turns** on the drum, guide the cable against the drum flange and make sure that windings touch each other.

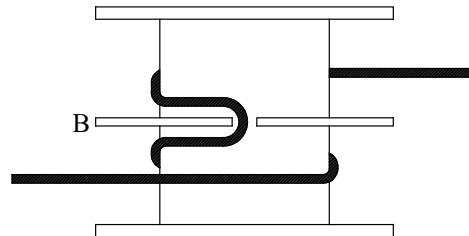


FIGURE 33.

- Now you can start the complete suspension of the system

AFTER INSTALLING THE SUSPENSION CABLES, MAKE SURE THAT THE CABLE RUNS ALONGSIDE (NOT THROUGH) THE SCREW HOOKS AND THE PULLEYS. THE MAIN CABLE RUNS ONLY THROUGH THE HEAVY DUTY PULLEYS AND THE PULLEYS AT BOTH ENDS OF THE CIRCUIT.

If lifting height is more than 3m, you can install the central winch somewhat out of line. So the pulleys will not touch the cable clamps. (Alternative system : see Fig. 25.)

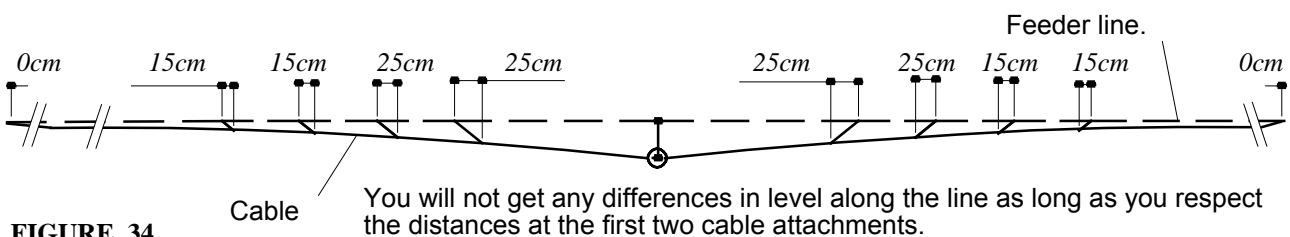


FIGURE 34.

If winching-up height (H) exceeds 3m, place suspension hooks crosswise off the beam center line. So the cable clamps will not touch the pulleys when you wind up the line.

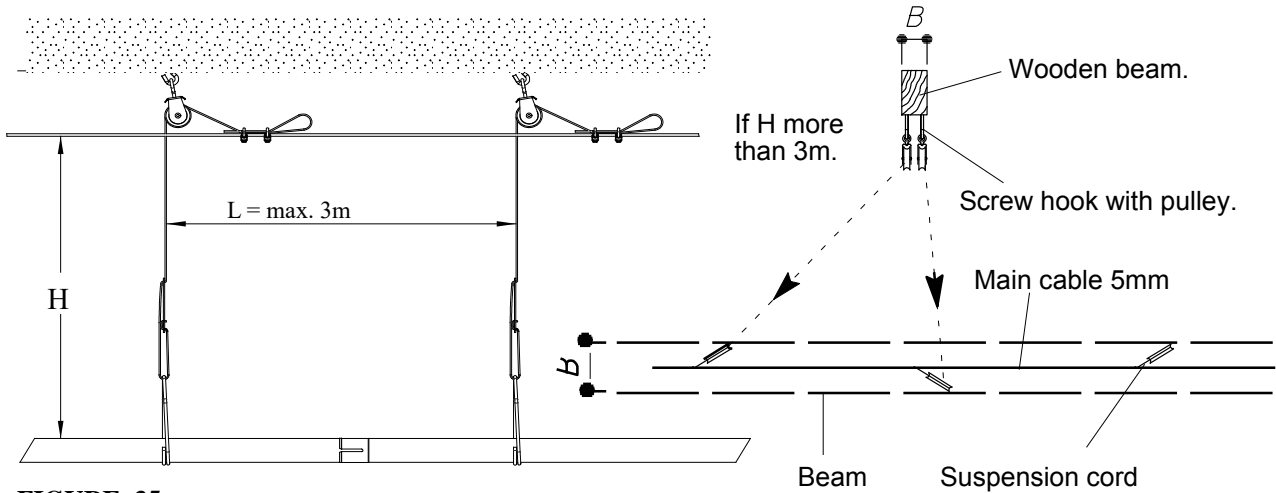


FIGURE 35.

PROCEDURE :

- First determine suspension points from the centre.
- Start from the drive unit. **The first suspension points are about 1,5m** ; then a suspension **maximum every 3m**.
- Always provide a suspension point at the beginning or at the end of the tubes (front & rear) at the elbows, and every meter between the elbows.

EXAMPLE :

Turn screw hooks **well aligned** every 3m into the girders of the roof on the marked line. Screw hook openings point away from the central winch.

ALTERNATIVE : SEE PAGE III-10



FIGURE 36.

CIRCUIT SUSPENSION



MAKE SURE THAT THE MAIN CABLE 5mm DOES NOT HANG IN, BUT BESIDES THE SCREW HOOKS AND PULLEYS !

Hang a **SMALL PULLEY** on each **SCREW HOOK**.
Slide a piece of **CABLE 2,5mm** or **SUSPENSION CORD** through each pulley (towards the central winch)

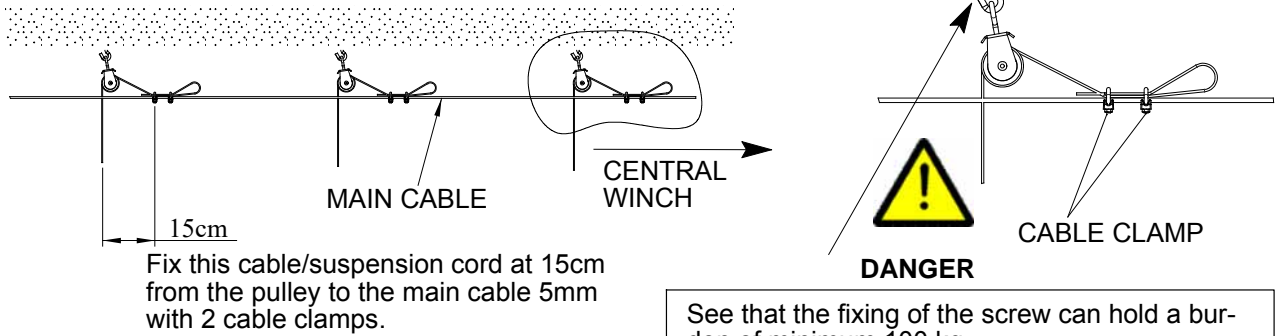


FIGURE 37.

Start suspending from the central winch. Proceed to both ends until the whole circuit is suspended.

STEEL CABLE SUSPENSION 2,4MM.

Determine the length of cable to be cut as follows :

- pull the cable downward under slight tension until it touches the tube.
- Add 15cm.
- Cut here.

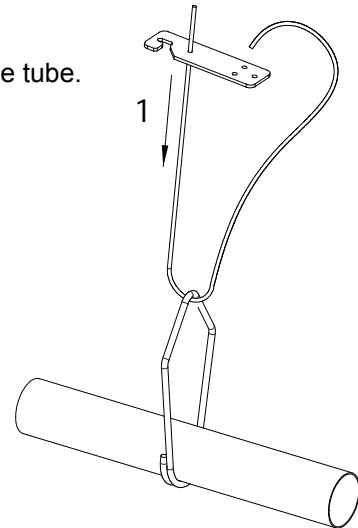


FIGURE 38.

TO INSTALL THE CIRCUIT

TO INSTALL THE FEEDER PANS

Choose a position of the feed level ring (our example = position 4)

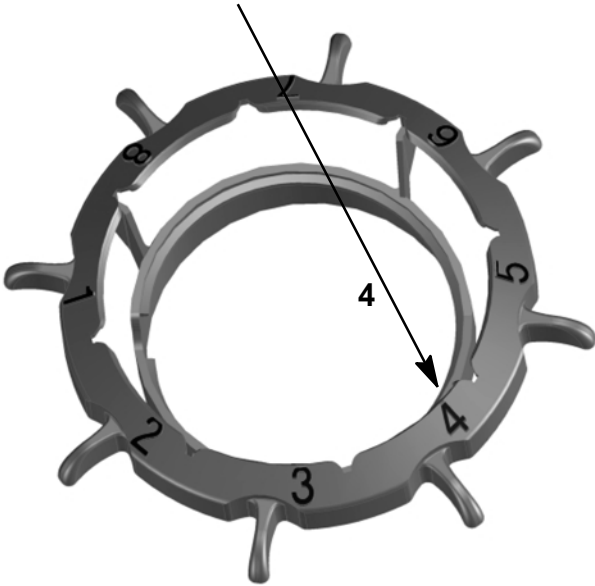


FIGURE 39.

Hook the feed level ring in the grill at the chosen position (4).

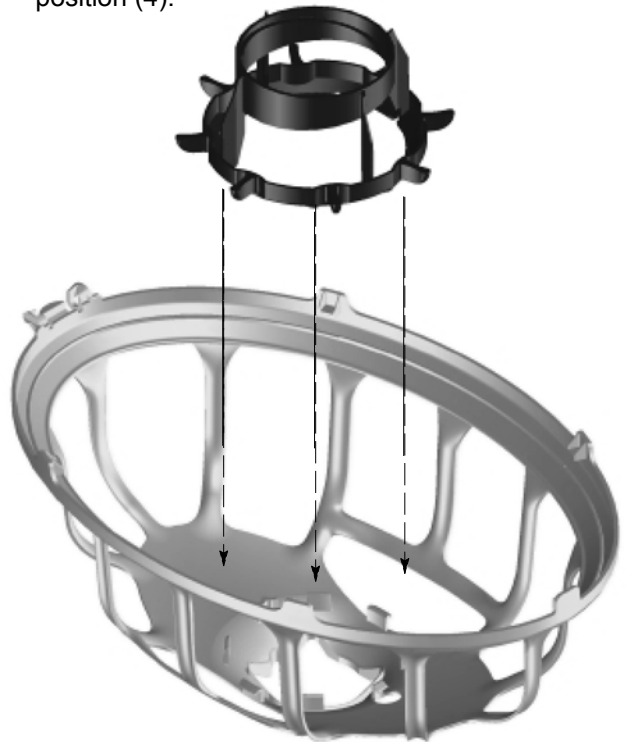


FIGURE 40.

If the cipher on the feed level ring is at the correct position facing the opening in the grill, the notch A of the feed level ring will perfectly match the B on the grill.

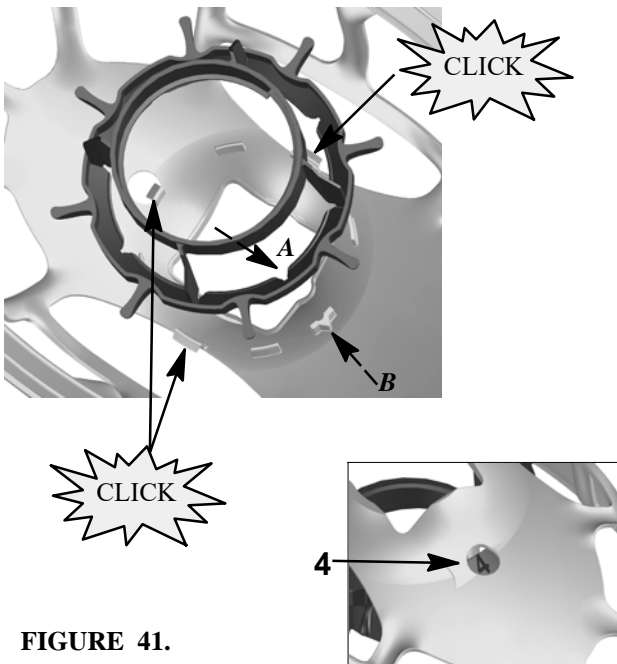


FIGURE 41.



Turn the skirt IN THE RIGHT POSITION into the adjuster ring.

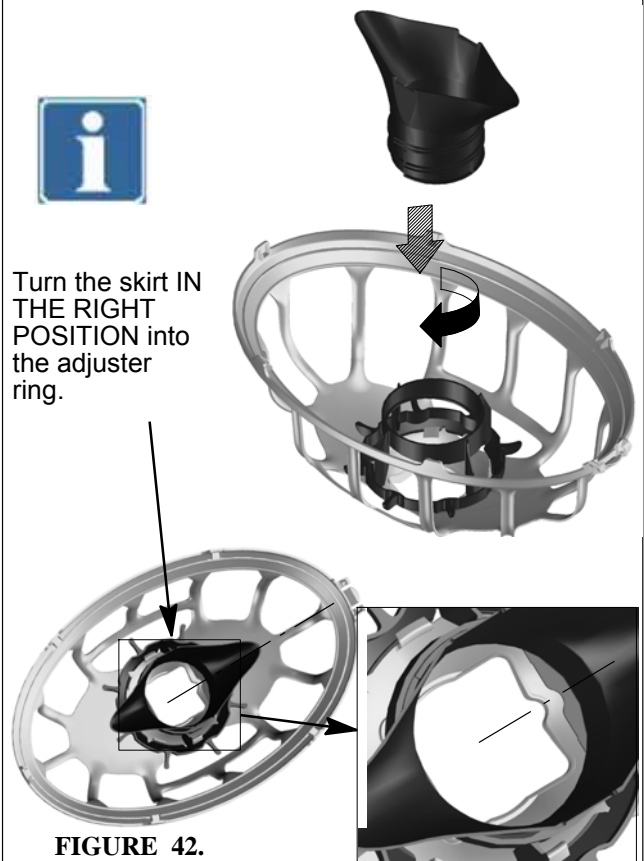


FIGURE 42.

FIX THE PAN TO THE GRILL

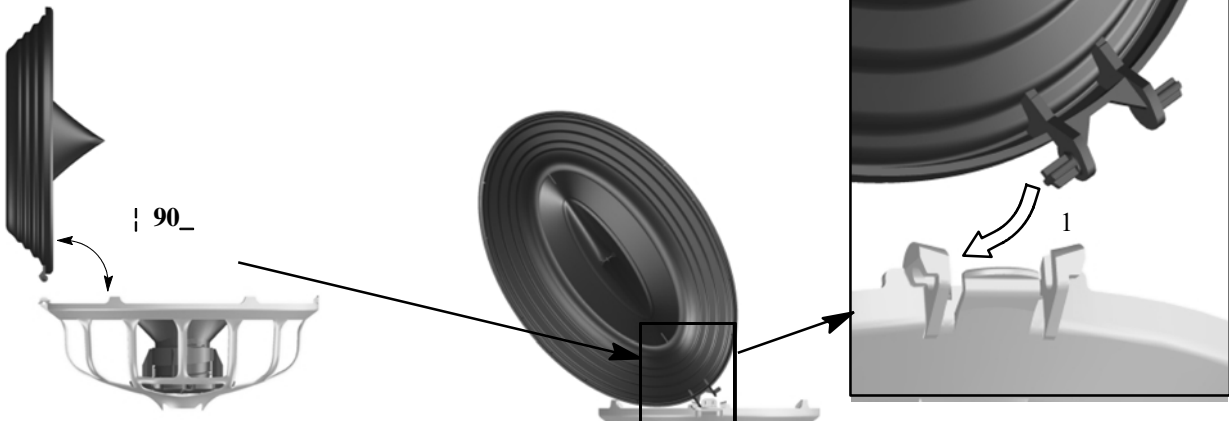


FIGURE 43.

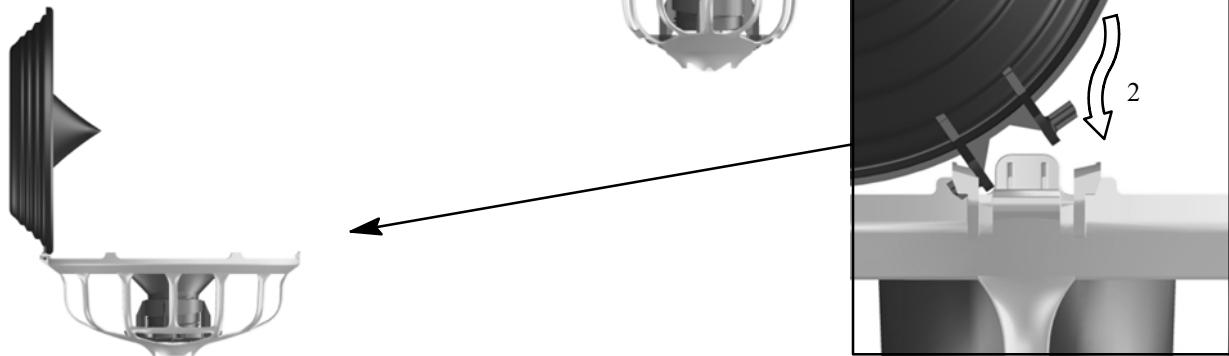


FIGURE 44.



FIGURE 45.

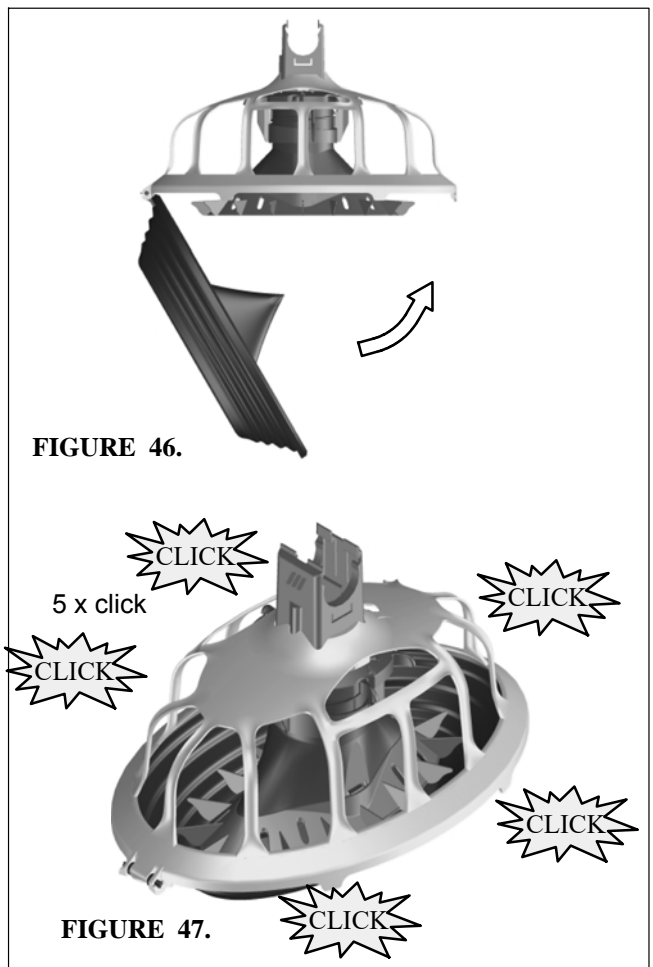
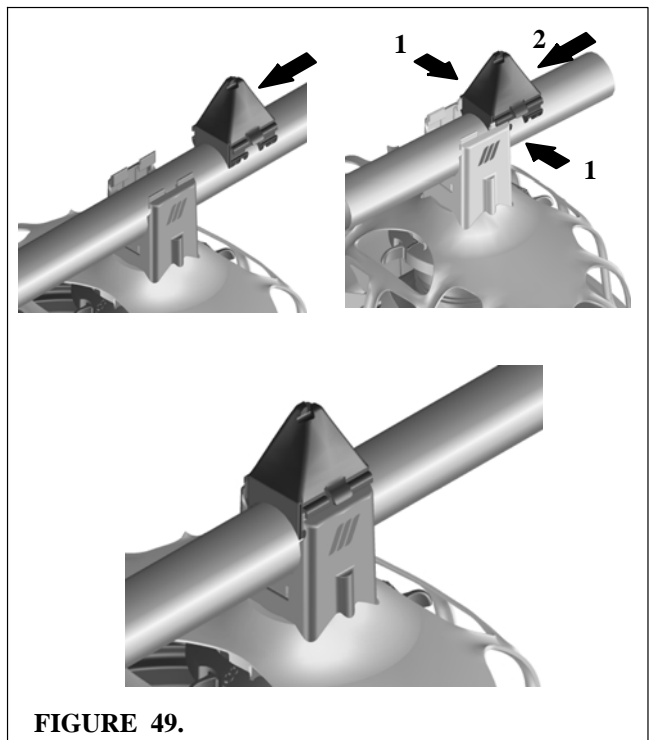
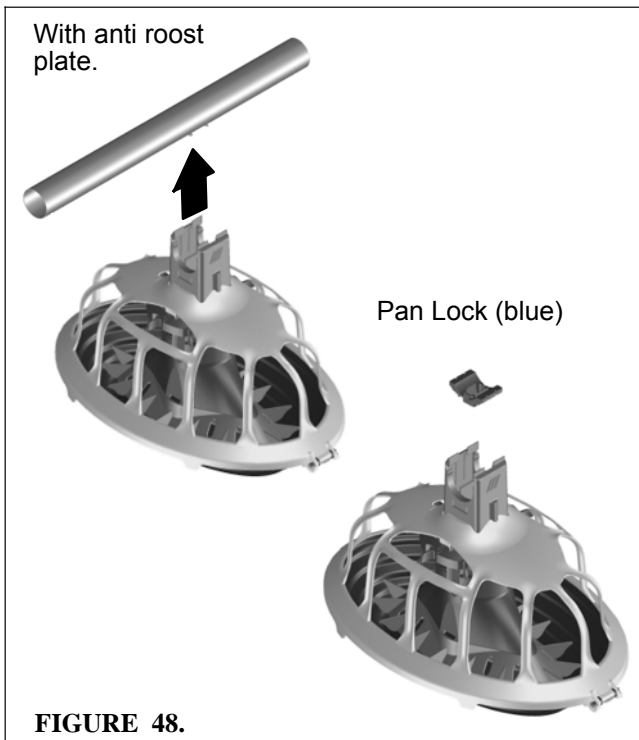


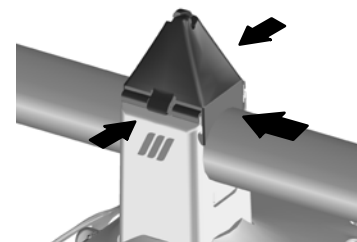
FIGURE 46.

FIGURE 47.



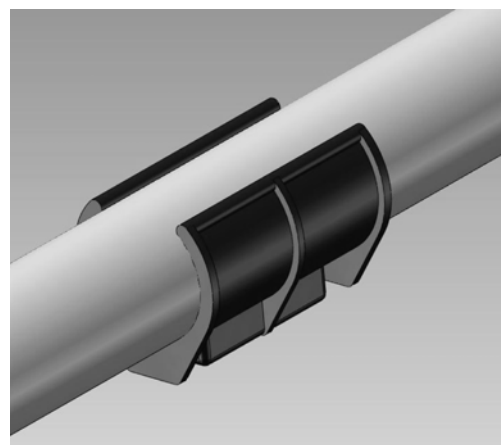
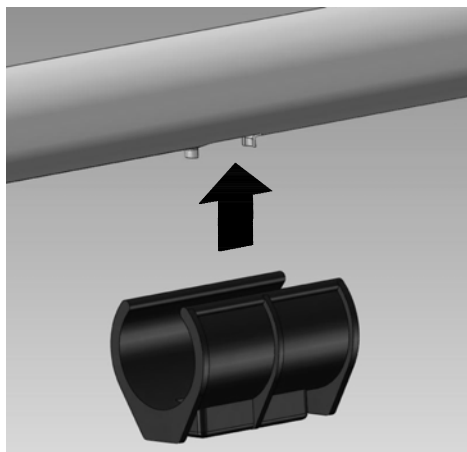
TO REMOVE THE PAN

You can remove the top support by PRESSING THE MIDDLE LIPS.



OPTIONAL : TO INSTALL THE SHUT-OFF-SHELL.

Put shut-off-shell underneath the drop hole in the tube.



OPTION: HINGE CLICK

1. Cut off the hinge pins of the pan.



FIGURE 53.



FIGURE 54.

2. Install the hinge click in the grill at the level of the hinge.



FIGURE 55.



FIGURE 56.

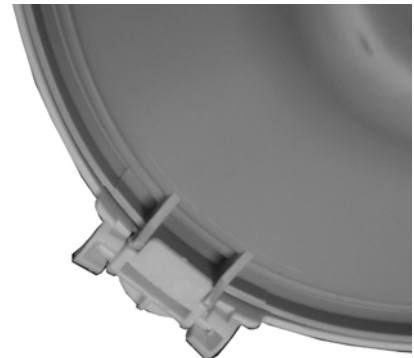


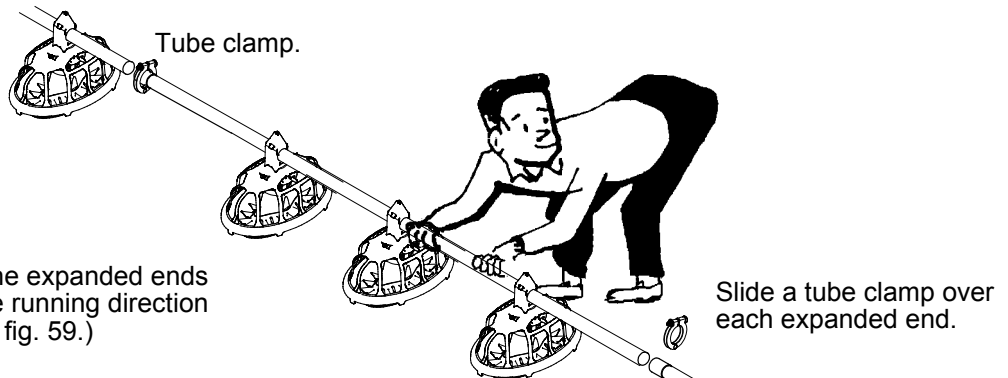
FIGURE 57.

3. The installation of the hinge click is unique. Now you can simply dismantle the pan before cleaning. If you open the pan as described on page I-6 the pan is falling down.

TO INSTALL THE FEEDING CIRCUIT WITH 2 MOTORS

Make a line at the location where the circuit will be suspended. Preferably start in the middle when installing the tubes.

Put the tubes with the pans on the floor. (See fig. 58.)



The direction of the expanded ends depends upon the running direction of the auger (See fig. 59.)

FIGURE 58.

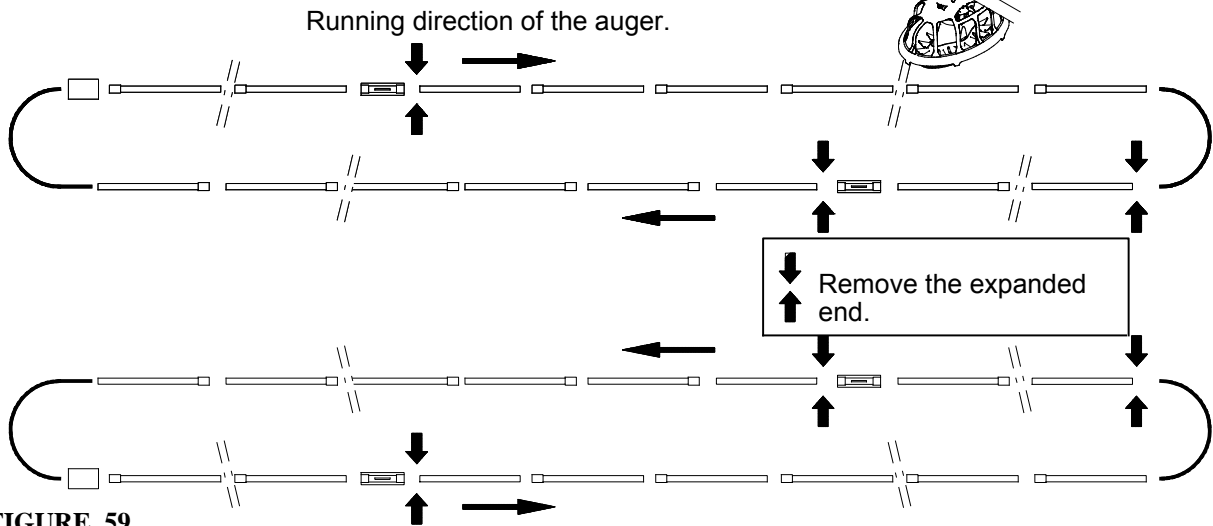


FIGURE 59.

Install the lower parts (2 shells) of the drive units together with the 2 tubes.

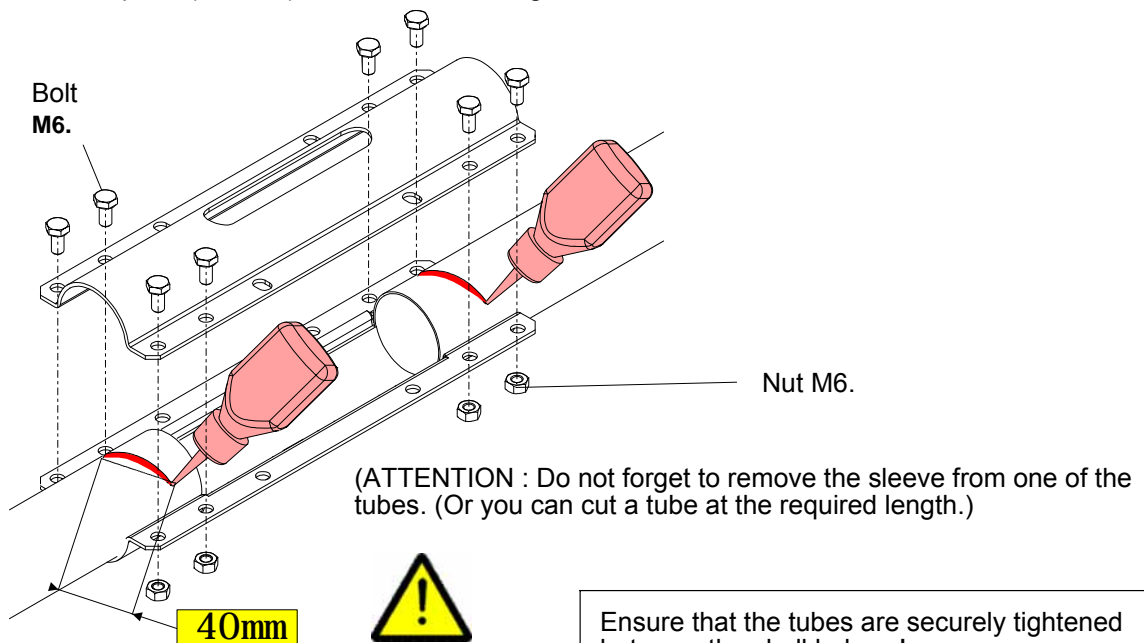


FIGURE 60.

DANGER

Connect the tubes : push each tube as far as possible into the socket of the next tube. (See fig. 61.).

ATTENTION: All pans well aligned and pointing downwards.

TIP : INSTALL AN ANCHOR BRACKET EVERY 3 TUBES + 2 NEXT TO EACH MOTOR + ONE AT BOTH ENDS OF THE CIRCUIT.

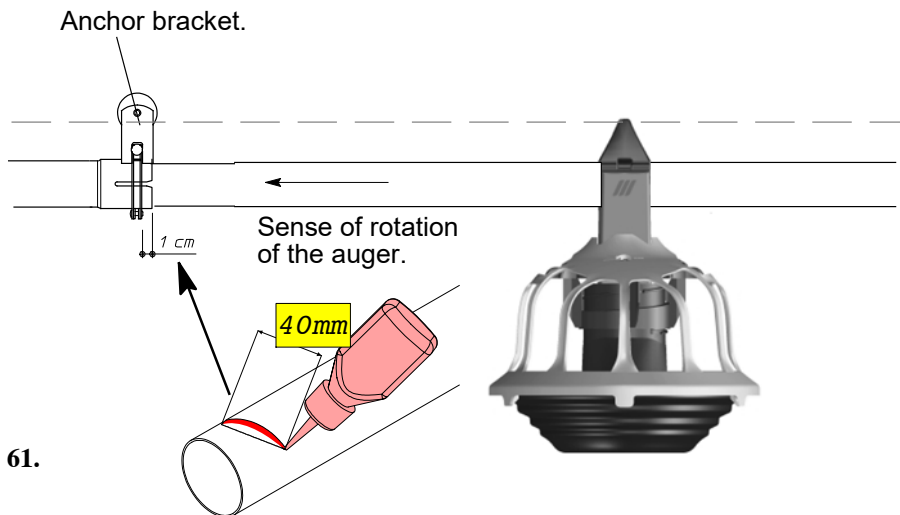


FIGURE 61.

IF ANTI-ROOST PLATE :

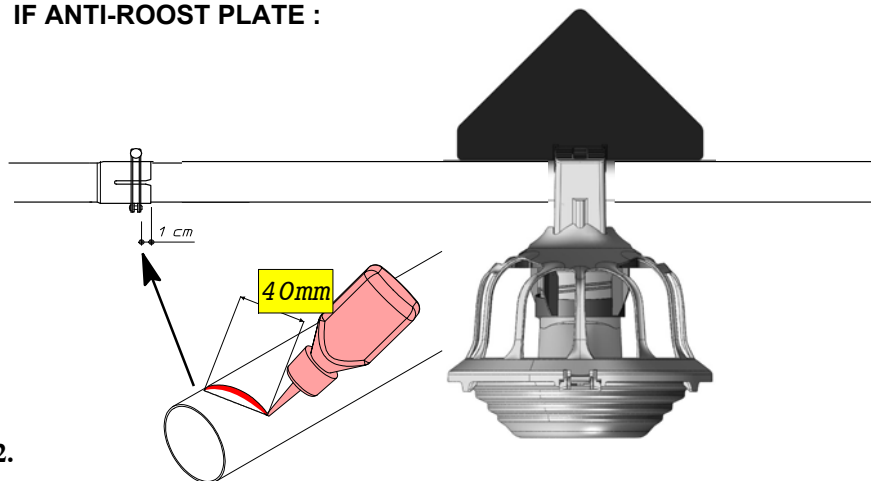


FIGURE 62.

Tighten all tube clamps by hand.
This way, you automatically compensate for any unevenness of the floor.

THIS IS VERY IMPORTANT FOR THE SIMULTANEOUS OPENING AND CLOSING OF ALL WINDOWS IN THE LAÏCA PANS !

The circuit must always end with a tube without expanded end. If necessary, cut the expanded end. See fig. 59.

This is necessary for installing the elbows, the feed intake boot and the tube with drop hole.

INSTALLING THE FEED INTAKE KIT - FEED INTAKE BOOT

TO DETERMINE EXACT LOCATIONS : SEE DATA ON PAGE III-8.

1. FEED INTAKE BOOT AT THE BEGINNING OF A CIRCUIT.

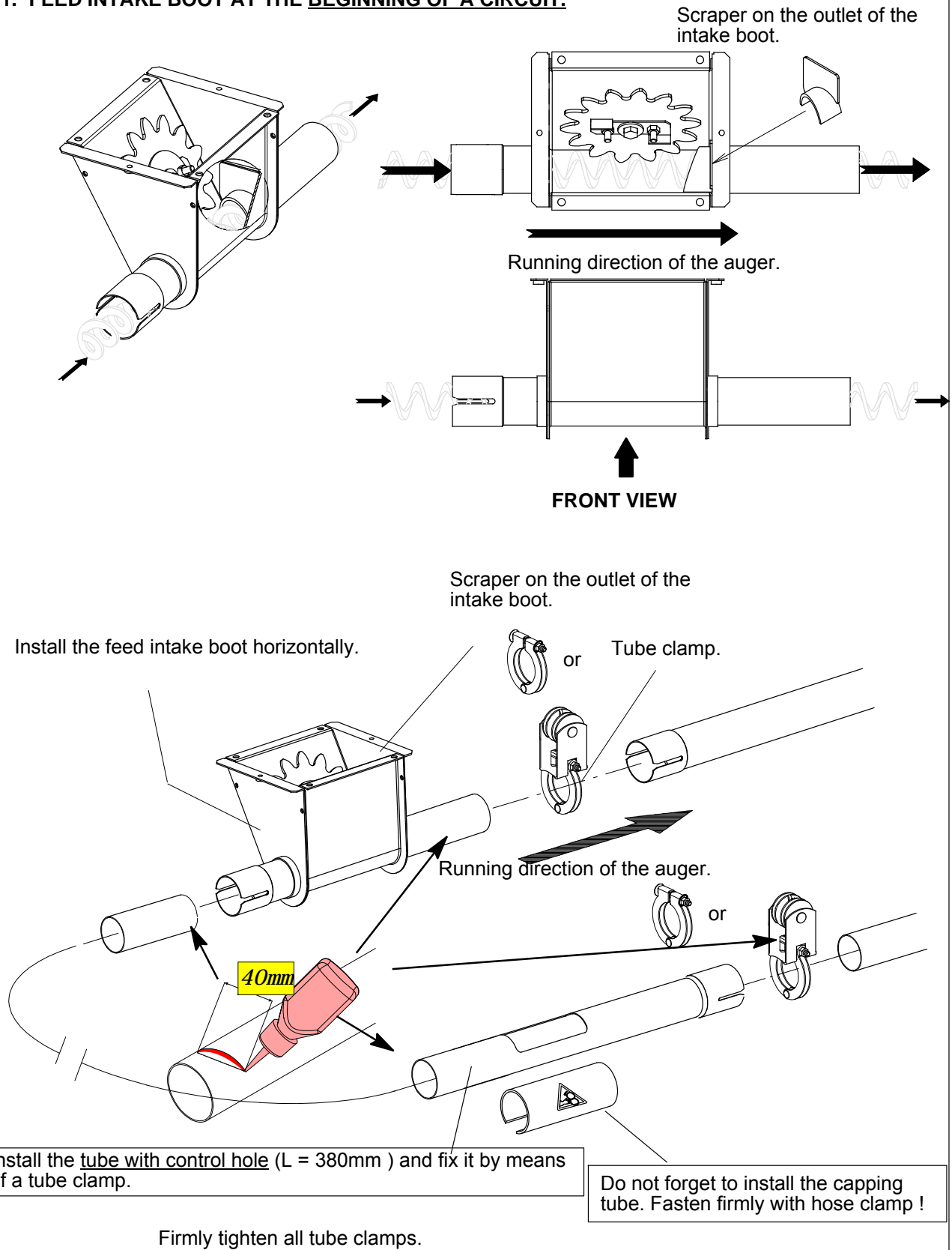


FIGURE 63.

2. FEED INTAKE BOOT IN THE MIDDLE OF A CIRCUIT.

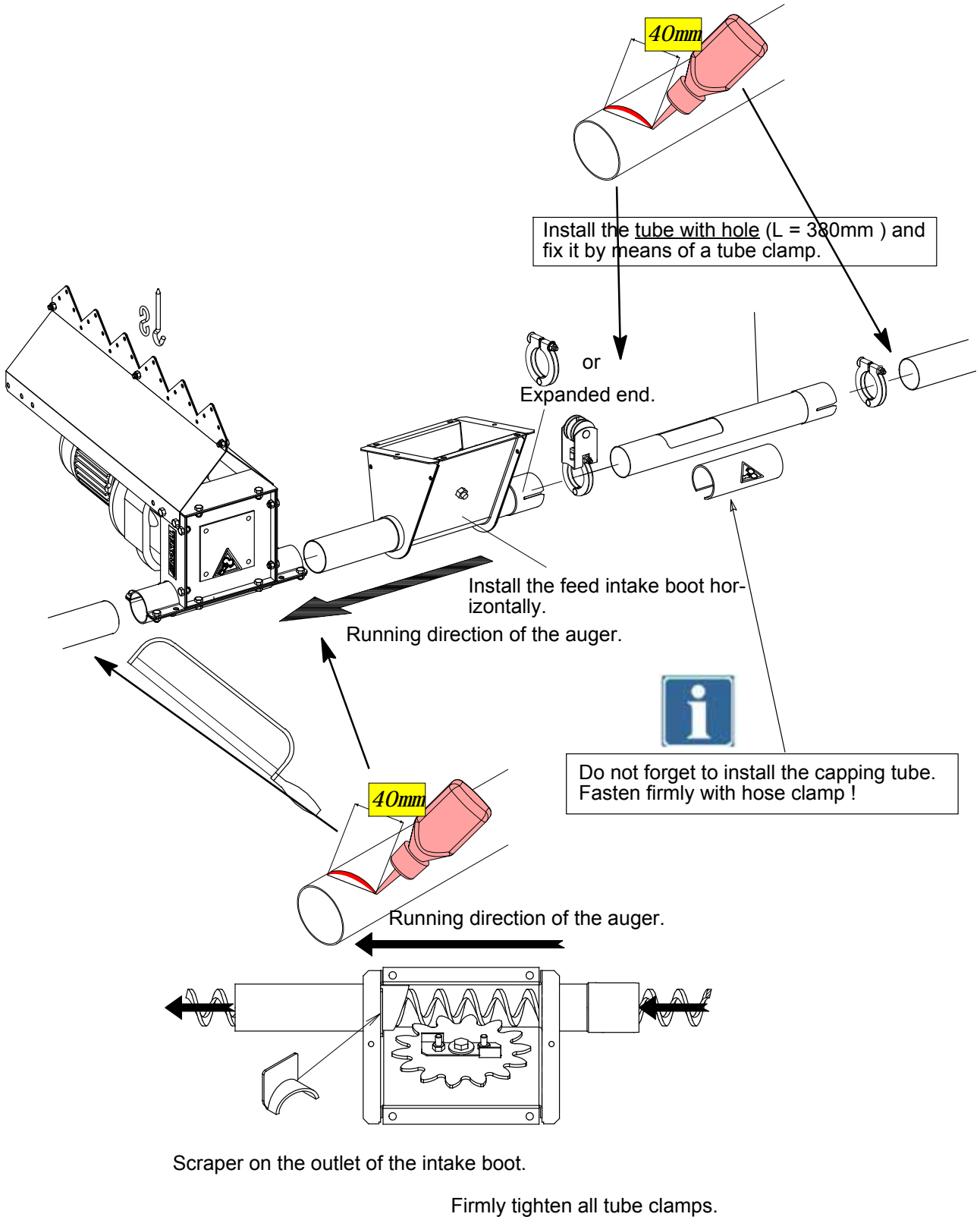


FIGURE 64.



DANGER

CHECK ALL CONNECTIONS FOR POSSIBLE DAMAGE.

TIGHTEN ALL TUBE CLAMPS : MINIMUM 10 Nm

TO INSTALL THE ELBOW

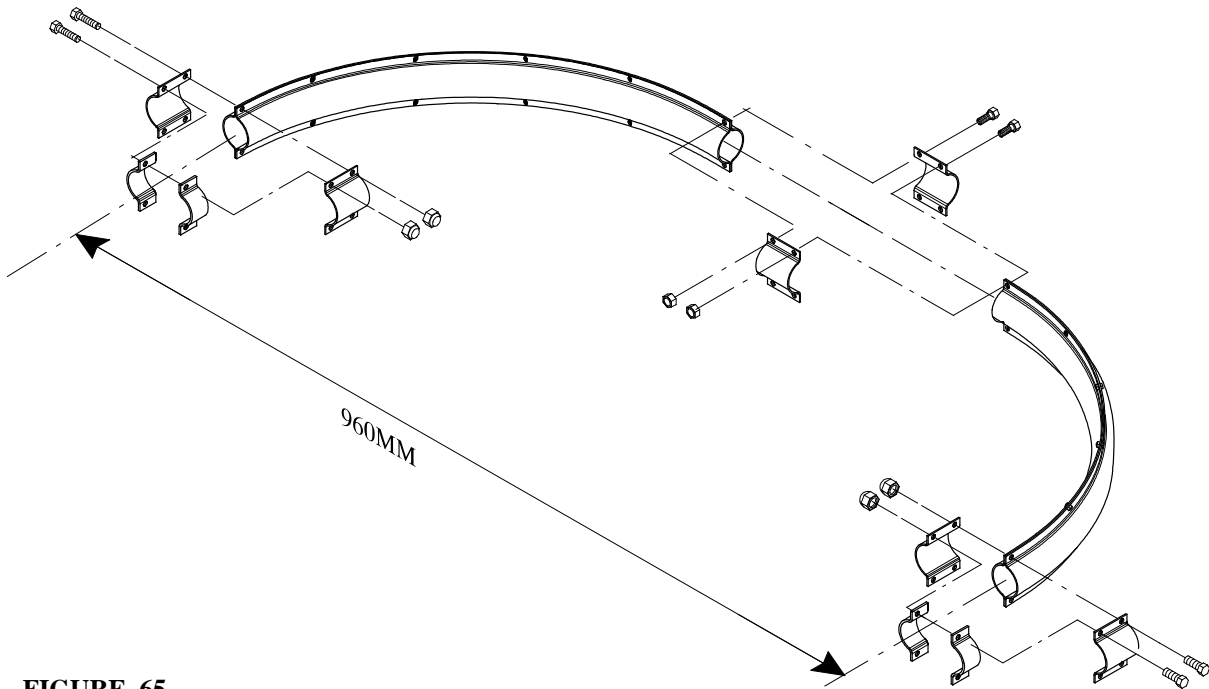
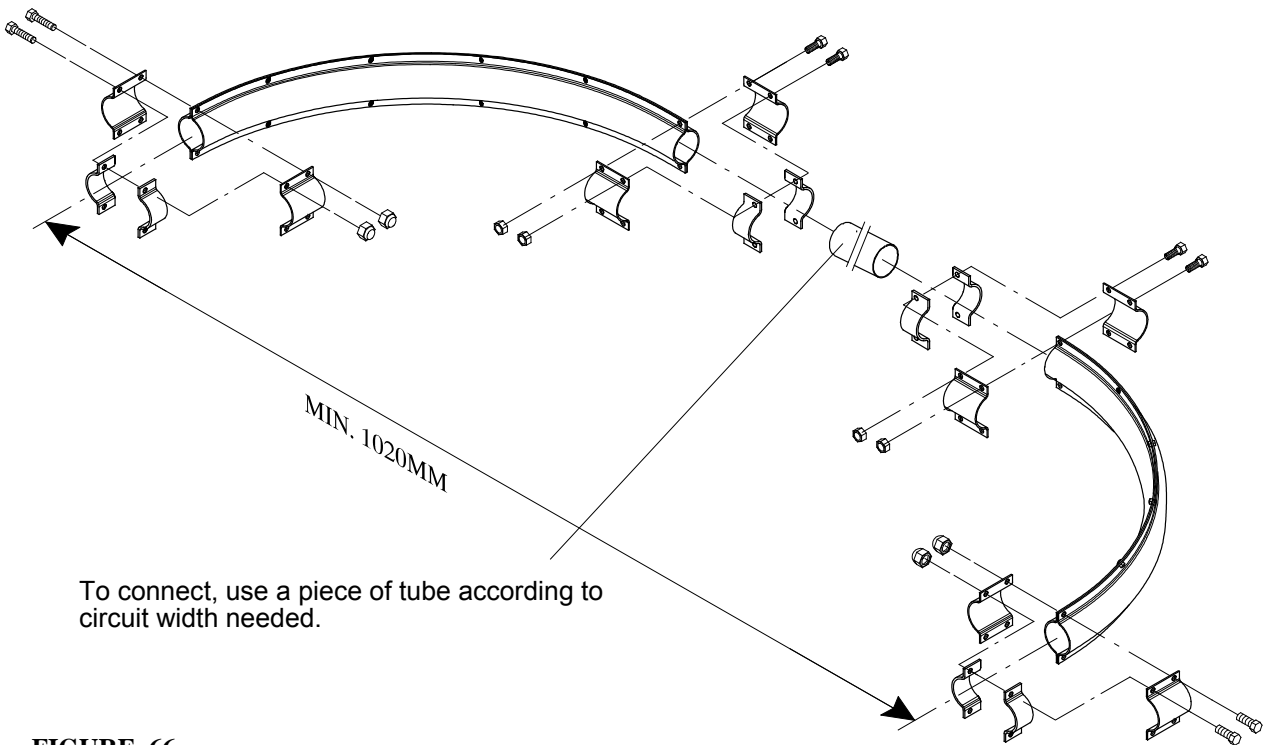


FIGURE 65.



To connect, use a piece of tube according to circuit width needed.

FIGURE 66.

To install the antiperch cable : see page III-42 FIGURE 87. .



DANGER

TIGHTEN ALL BOLTS : MINIMUM 10 Nm

CIRCUIT SUSPENSION

Start suspending from the central winch. Proceed to both ends until the whole circuit is suspended.

STEEL CABLE SUSPENSION 2,4MM.

Fix the suspension cable as follows :

TO START, SUSPEND ALL CABLES UNDER SLIGHT TENSION.

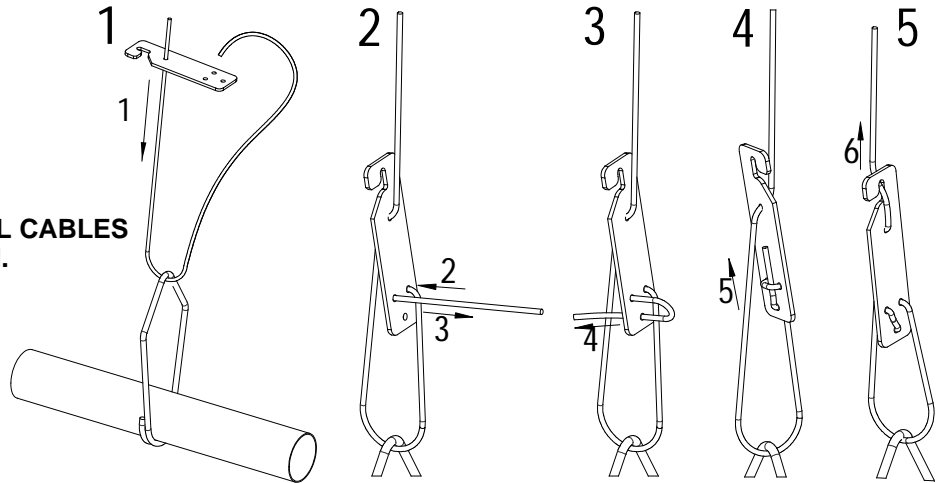
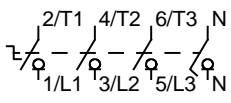
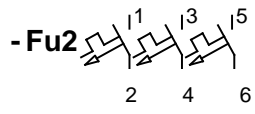
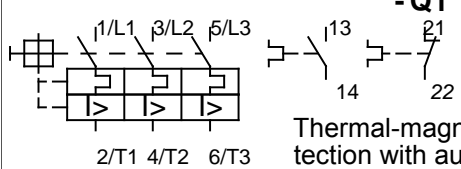
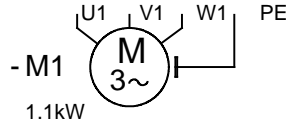
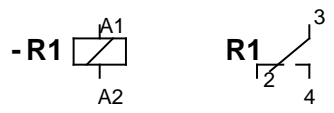
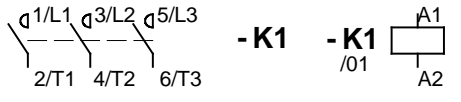
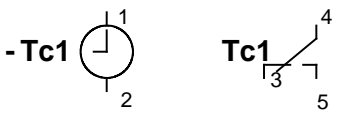
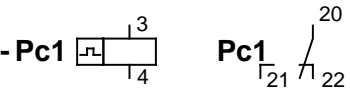
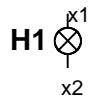
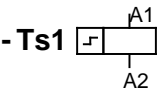
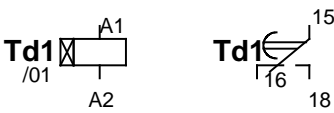
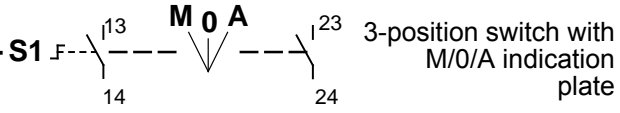
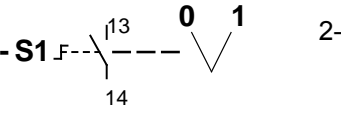
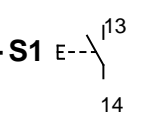
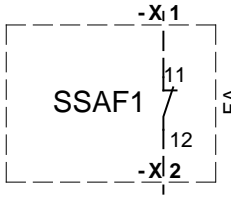
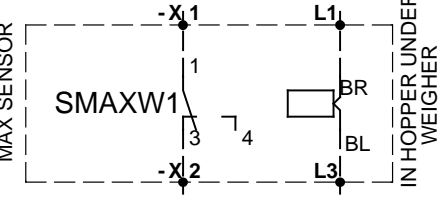
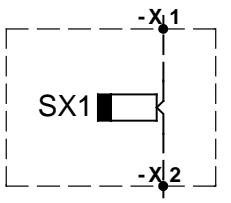
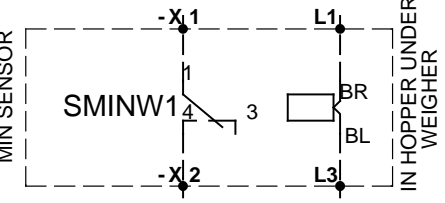


FIGURE 67.

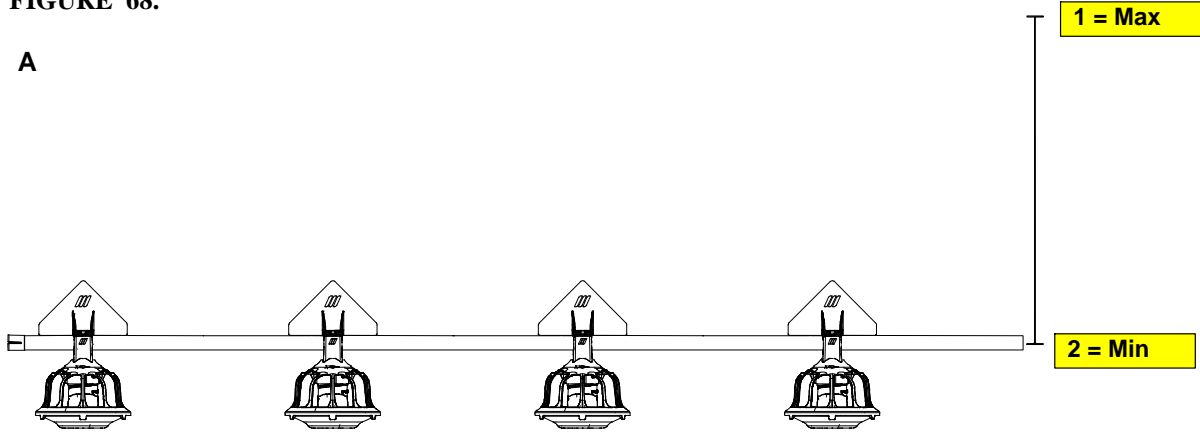
ELECTRICAL SYMBOLS

 <p>-Si1 Main Switch</p>	 <p>-Fu2 Automatic fuse</p>
 <p>-Q1 Thermal-magnetic motor protection with auxiliary contacts</p>	 <p>-M1 Motor 1.1kW MOTOR</p>
 <p>-R1 R1 Control circuit relay</p>	 <p>-K1 -K1 Contactor</p>
 <p>-Tc1 Tc1 Time clock</p>	 <p>-Pc1 Pc1 Preset counter</p>
 <p>H1 Signal Lamp</p>	 <p>-Ts1 Serial timer</p>
 <p>Td1 Td1 Adjustable timer with mode selection</p>	 <p>-S1 M O A 3-position switch with M/O/A indication plate</p>
 <p>-S1 0 1 2-position switch with 0/1 indication plate</p>	 <p>-S1 E Push button</p>
<p style="text-align: center;">SAFETY SWITCH</p>  <p>SSAF1 Safety or level switch for Flex-Augers, Discaflex,...</p>	<p style="text-align: center;">MAX SENSOR</p>  <p>SMAXW1 Sensor with NC-contact (supply on)</p>
<p style="text-align: center;">CONTROL PAN</p>  <p>SX1 Control sensor for Kixoo or Boozzter pans</p>	<p style="text-align: center;">MIN SENSOR</p>  <p>SMINW1 Sensor with NO-contact (supply on)</p>

ADJUSTMENT

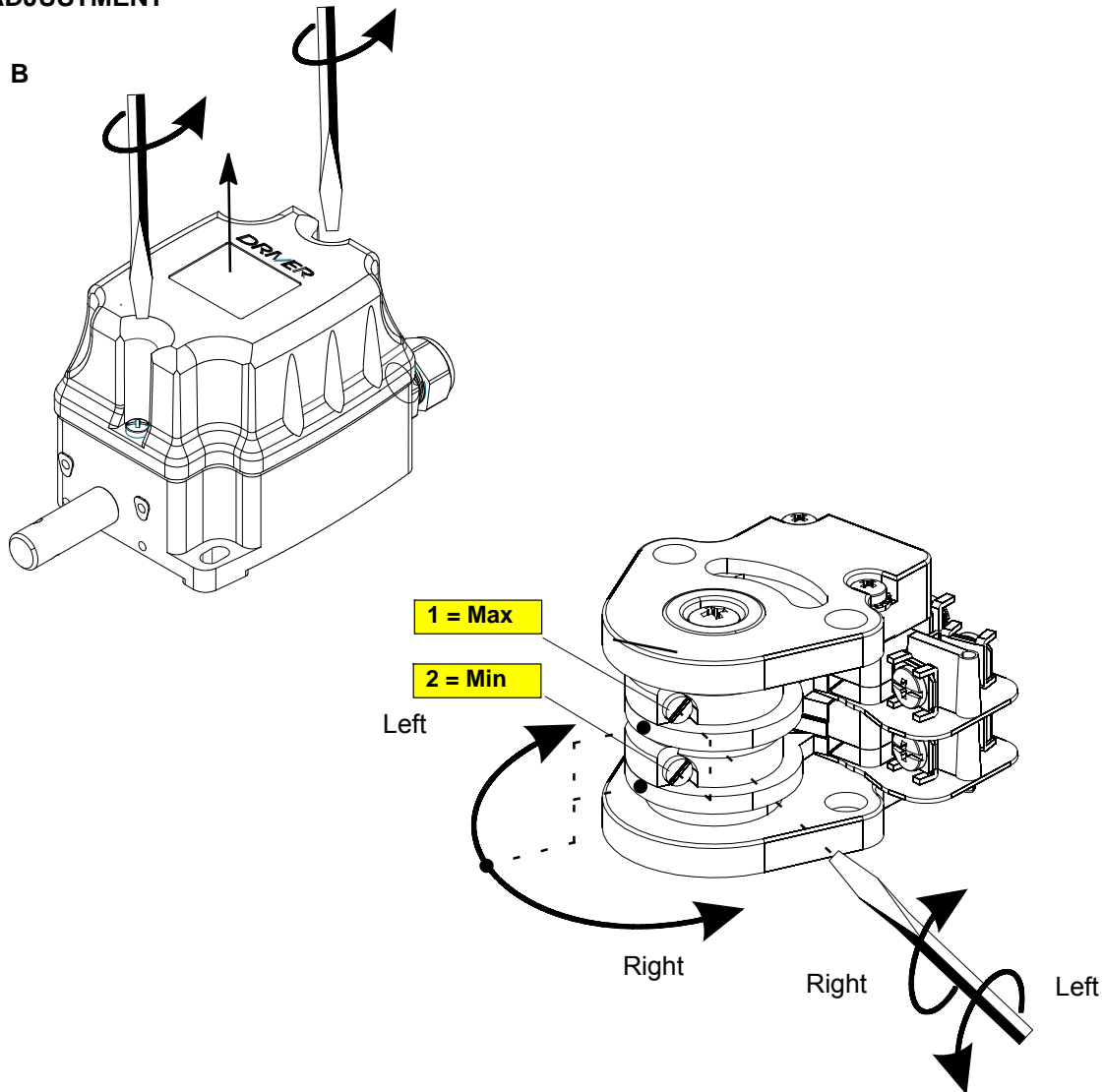
FIGURE 68.

A

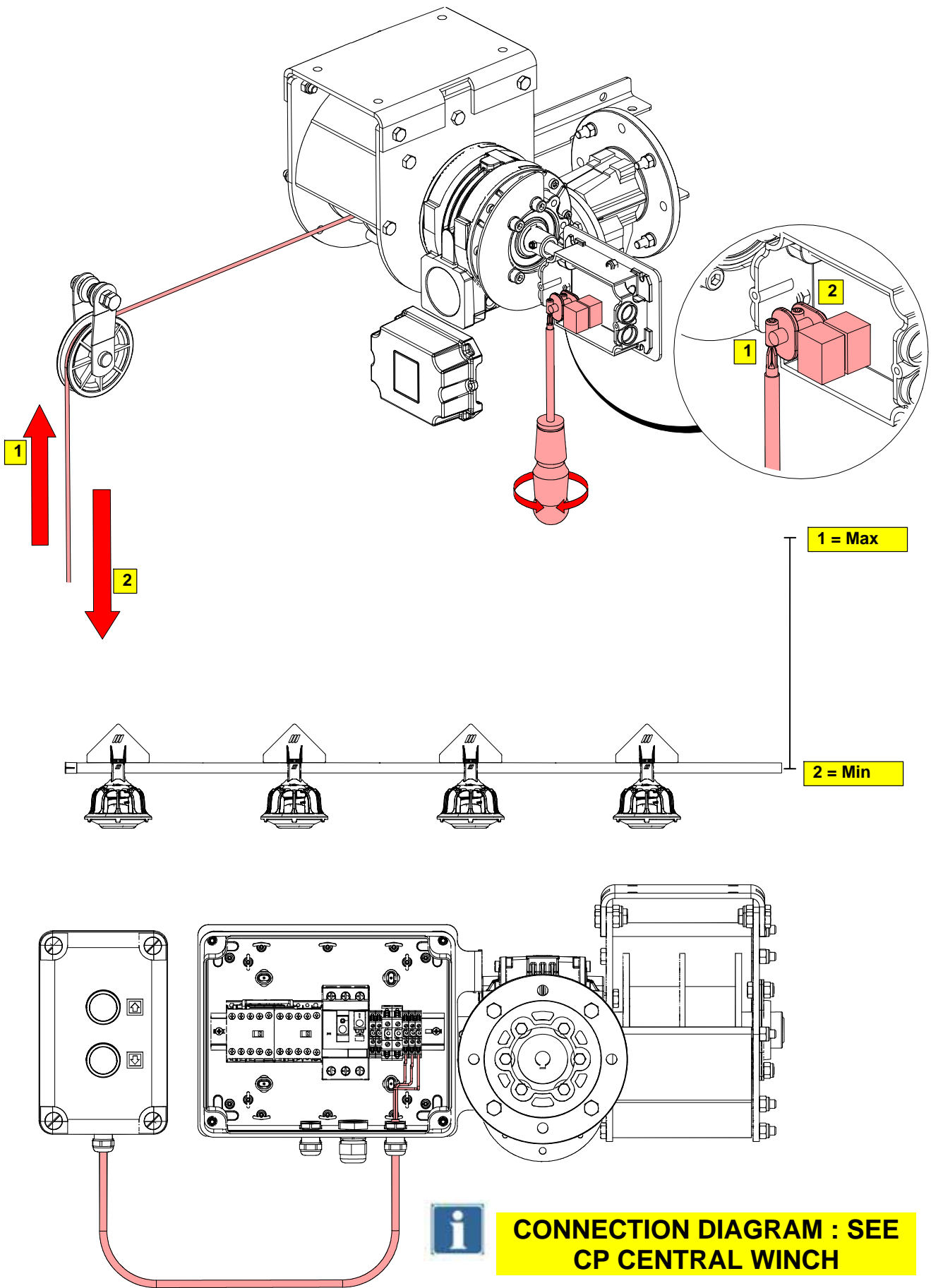


ADJUSTMENT

B



ADJUSTMENT LIMIT SWITCH



CONNECTION DIAGRAM : SEE CP CENTRAL WINCH

FIGURE 69.

ALIGN WITH THE FLOOR

Winch up the circuit.

Use a measure rule to get an equal distance from the floor.

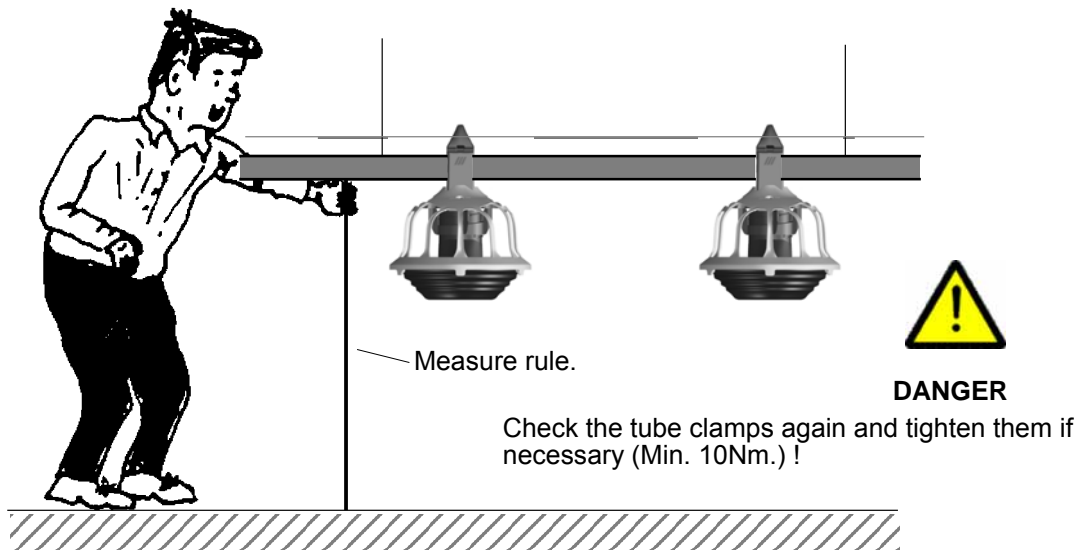


FIGURE 70.

TO INSTALL THE AUGER



**ALWAYS USE SAFETY GLOVES WHEN YOU WORK ON THE AUGER !
TAKE CARE THAT THE AUGER DOES NOT UNROLL !**

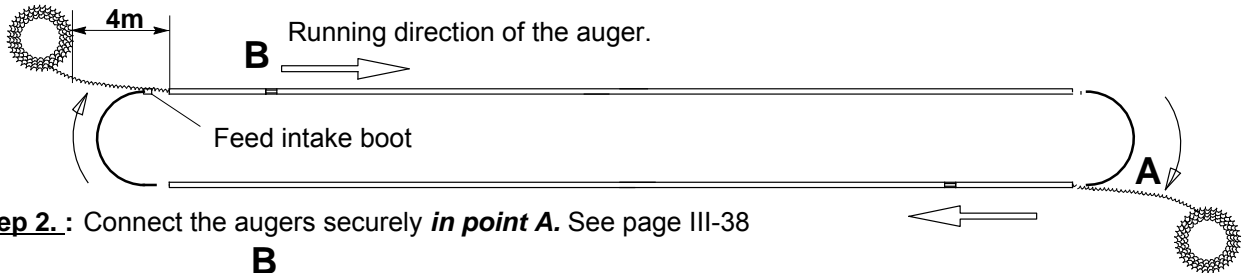
Remove all wires, labels etc... from the auger.

DANGER

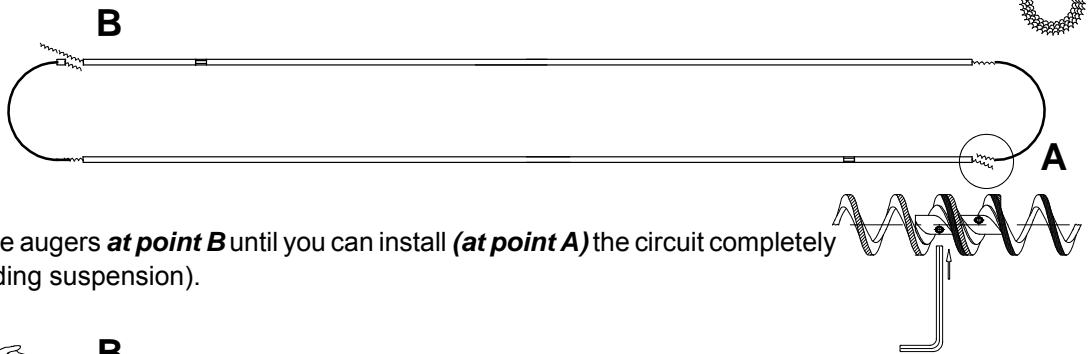
Step 1. : Put the auger coil about 4m. Start at the auger end inside the coil. **Two men** are needed for this job : one who unrolls the auger and another one who pushes **short pieces of auger** (30cm to max. 50 cm) into the circuit **according to the running direction of the auger**.

If you are further away from the line end, you increase the risk of bending or kinking the auger.

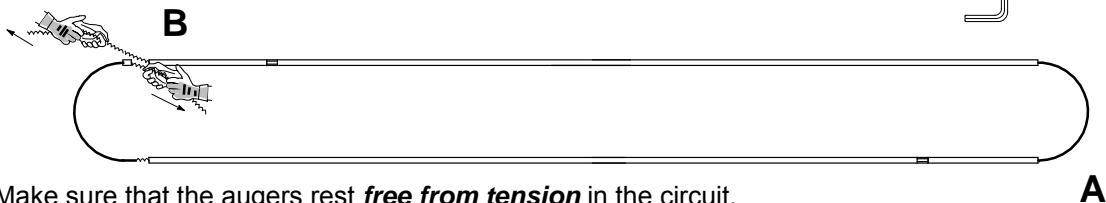
Turn the augers if they get stuck in the circuit !



Step 2. : Connect the augers securely **in point A**. See page III-38



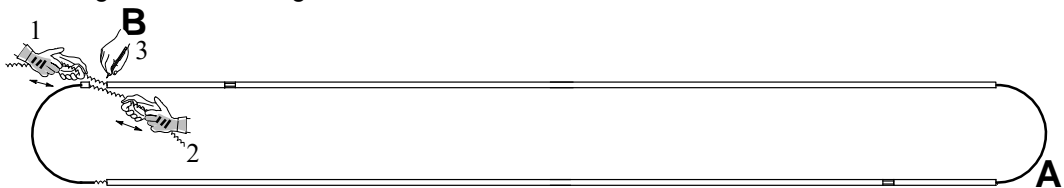
Step 3. : Pull the augers **at point B** until you can install **(at point A)** the circuit completely (including suspension).



Step 4. : Make sure that the augers rest **free from tension** in the circuit.

In point B stretch the augers a couple of times, then let them return to rest position.

Mark the augers at these lengths.



Step 5. : Put the augers under tension **by shortening them** with respect to the circuit length.



Secure the auger with clamps against jumping back !

DANGER

Tension on the auger = 3,5MM PER METRE AUGER

(Example for : circuit of 126 metres : tension = 3,5 x 126 = 441mm)

Step 6. : Cut the auger **at the correct length**. Connect the augers **in point B**.

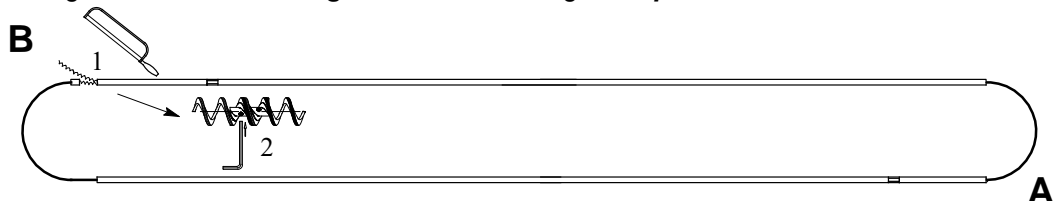


FIGURE 71.

OPTION : TO INSTALL THE AUGER BY MEANS OF THE INJECTOR.

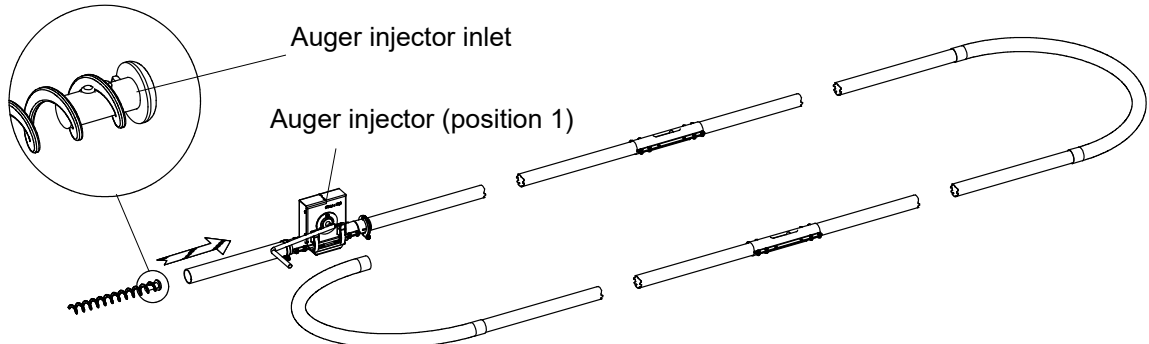


**ALWAYS USE SAFETY GLOVES WHEN YOU WORK ON THE AUGER!
TAKE CARE THAT THE AUGER DOES NOT UNROLL!**

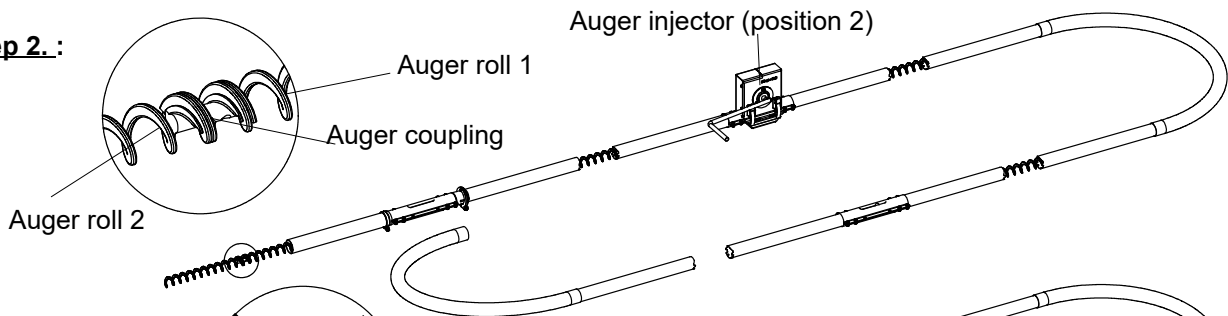
Remove all wires, labels etc... from the auger.

DANGER

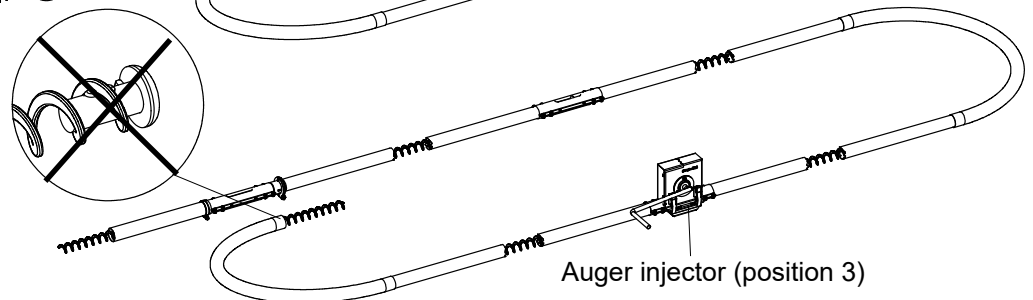
Step 1. :



Step 2. :



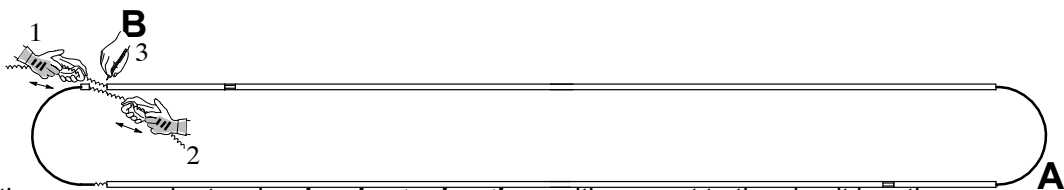
Step 3. :



Step 4. : Make sure that the augers rest **free from tension** in the circuit.

In point B stretch the augers a couple of times, then let them return to rest position.

Mark the augers at these lengths.



Step 5. : Put the augers under tension **by shortening them** with respect to the circuit length.



Secure the auger with clamps against jumping back!

DANGER

Tension on the auger = 3.5MM PER METRE AUGER LENGTH

(Example for : circuit of 126 metres : tension = 3.5 x 126 = 441mm)

Step 6. : Cut the auger **at the correct length**. Connect the augers **in point B**.

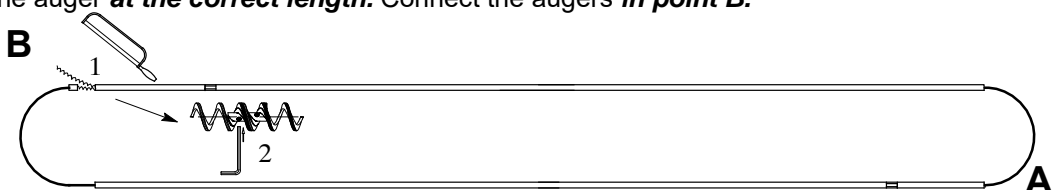


FIGURE 72.

TO INSTALL THE AUGER COUPLING

1. Cut off the auger. Make it round and free of burrs. This will make installation easier.
2. Turn the coupling into one auger end.

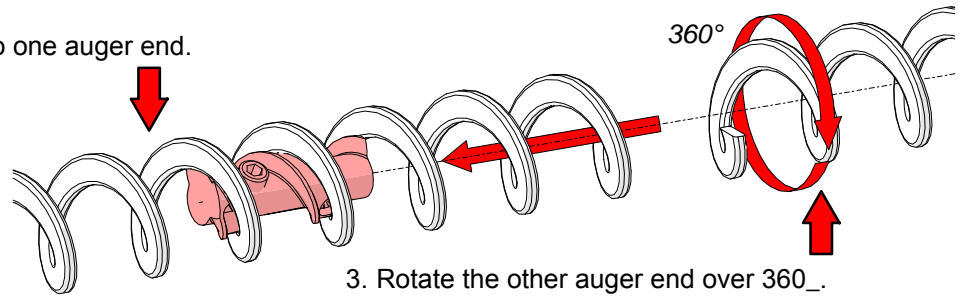


FIGURE 73.

3. Rotate the other auger end over 360°.

4. Hook both auger ends into one another.

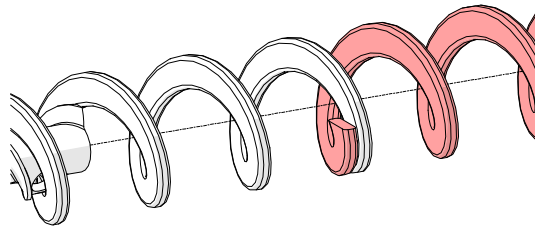
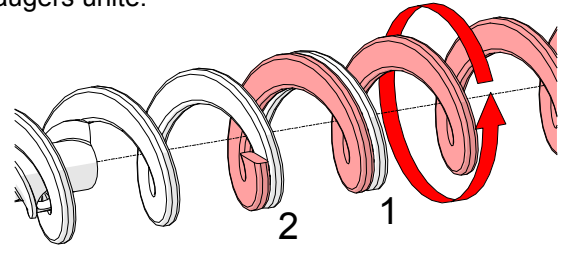


FIGURE 74. A

5. Release the other auger end, so that both augers unite.



B

6. Turn back the coupling until it is stopped by the auger end.

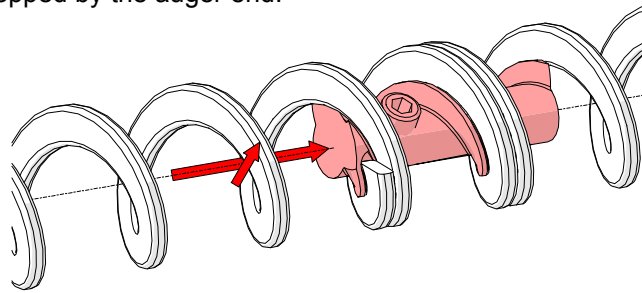


FIGURE 75.

7. Turn both auger ends until they match the auger coupling ends.

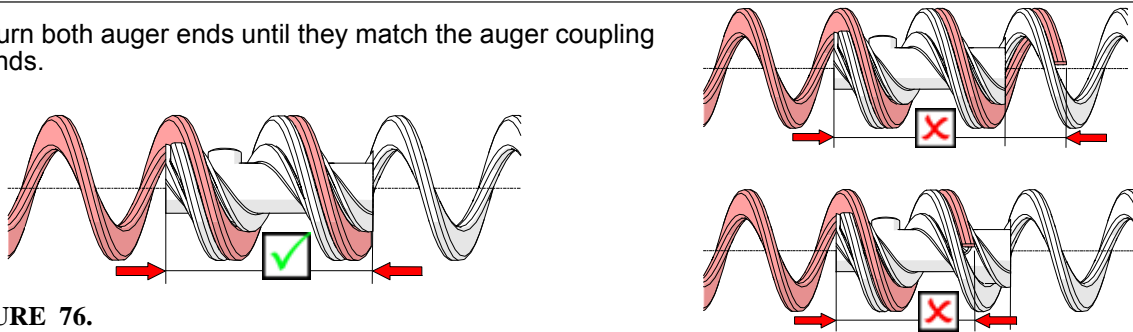


FIGURE 76.

8. Use only the short end of the key as a lever to tighten the set screws M8 by hand.

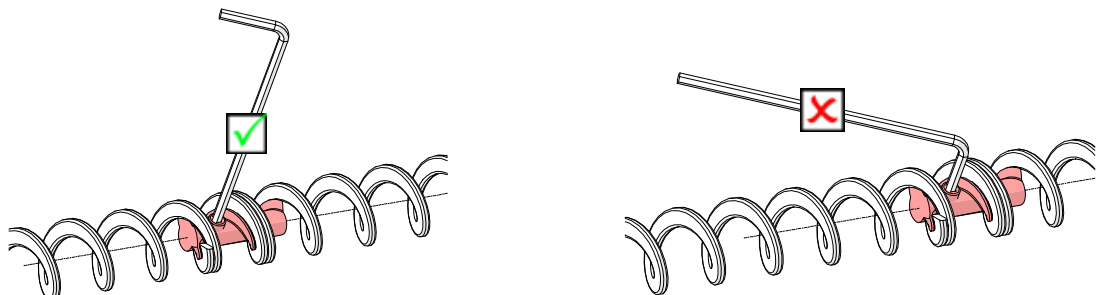


FIGURE 77.

TO INSTALL AND TO SUSPEND THE DRIVE UNITS

Put the S-hooks in the holes, so that the drive unit is balanced.

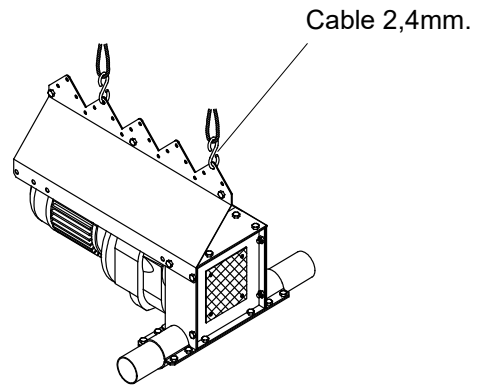
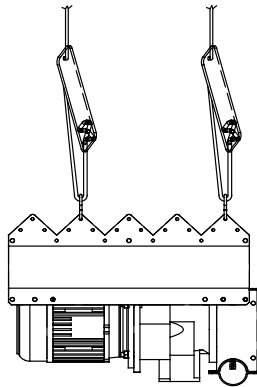


FIGURE 78.

TO INSTALL THE SENSOR

**INSTALL THE SENSOR AS HIGH AS POSSIBLE (A "MUST").
DO NOT INSTALL THE SENSOR IN THE FEED FLOW (HOUSING MAY WEAR OUT).**

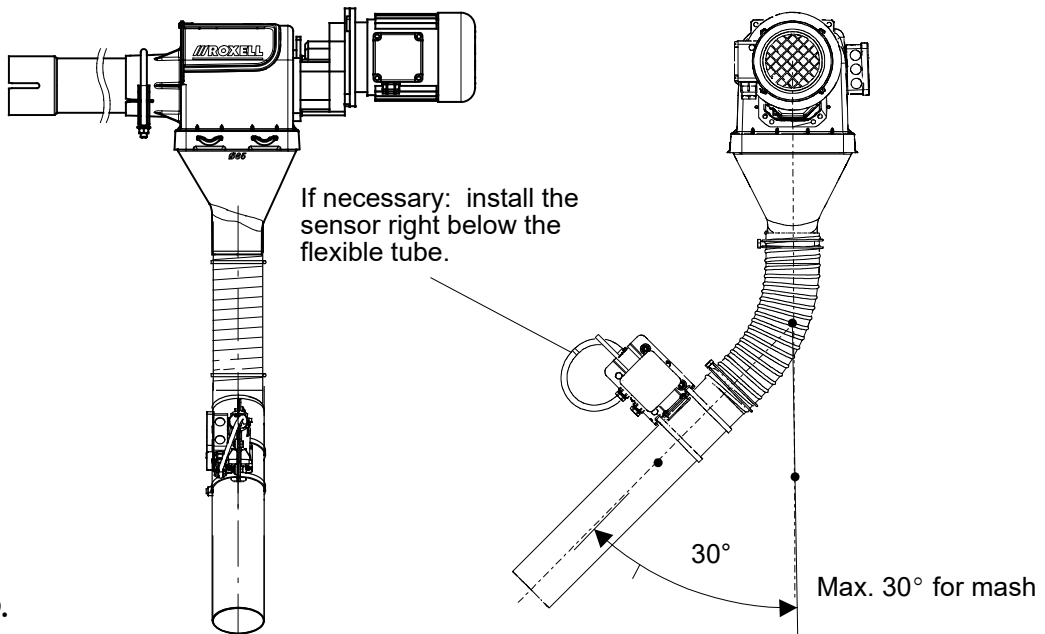


FIGURE 79.

Drill a hole dia. 32

Fix sensor holder with 2 clamps.

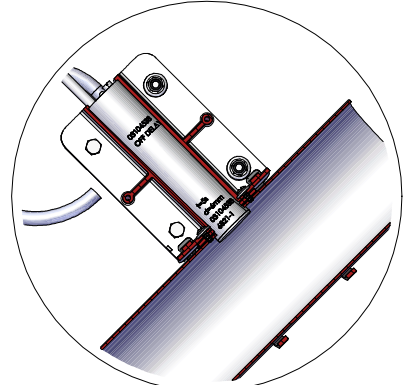
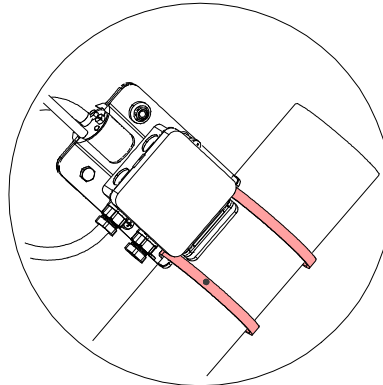
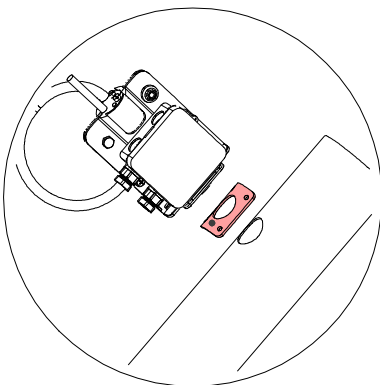


FIGURE 80.

- 03104538: Sensor VC12RTM (D = 6 mm, T = 5 s)
- 03104586: Sensor VC12RTM (D = 3 mm, T = 1 s)
- 03104578: Sensor VC12RTM (D = 3 mm, T = 30 s)

RTM 24 VDC

Connection

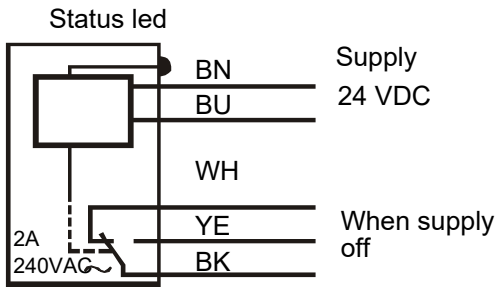
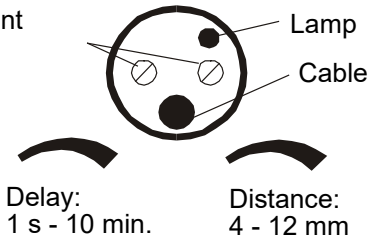
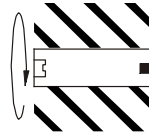


FIGURE 81.

Adjustment screws



Protection screw



Remove protection screw before adjustment.

- 03101185: Sensor VC12RT (D = 6 mm, T = 5 s)
- 03103678: Sensor VC12RT (D = 3 mm, T = 1 s)
- 03103660: Sensor VC12RT (D = 3 mm, T = 30 s)

RT 230 VAC

Connection

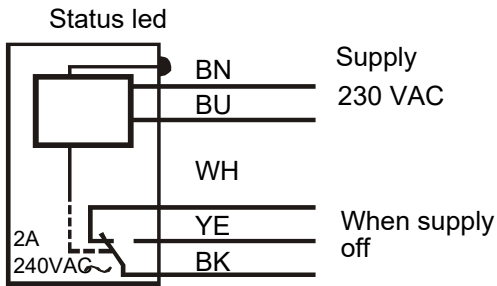
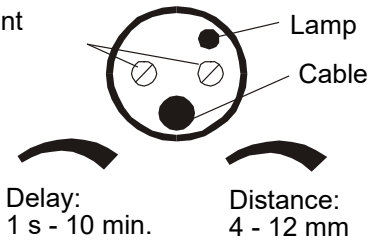
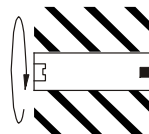


FIGURE 82.

Adjustment screws



Protection screw



Remove protection screw before adjustment.

TO INSTALL THE TRANSITION COVER

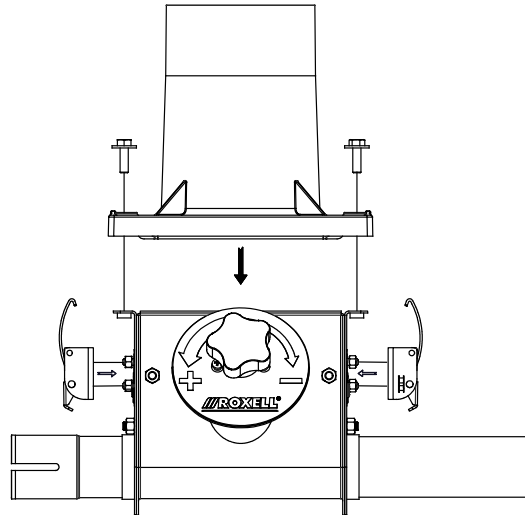


FIGURE 83.

TO INSTALL THE SHUT-OFF SLIDE

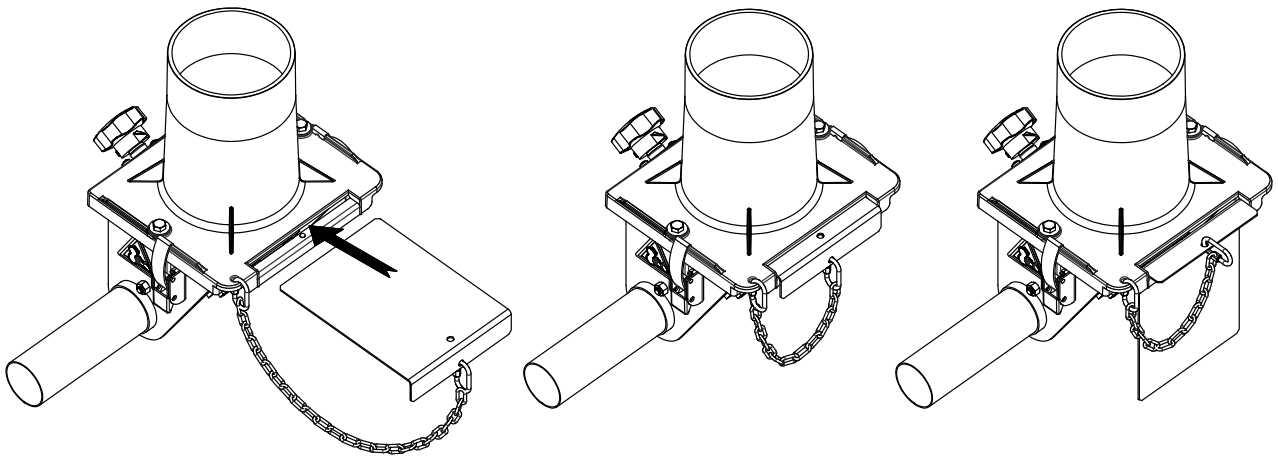


FIGURE 84.

TO INSTALL THE ELBOW UNDER THE DROP TUBE

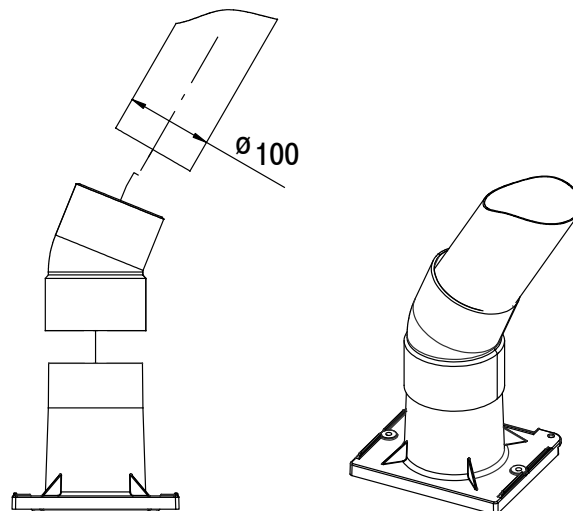


FIGURE 85.

THE USE OF THE FLEXIBLE TRANSITION

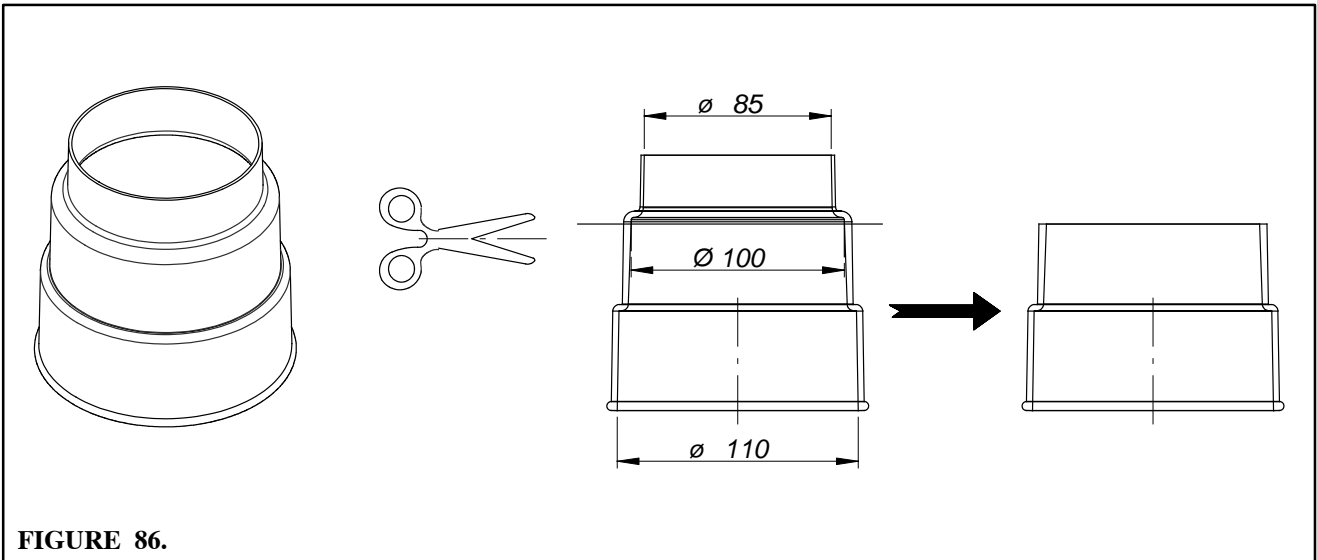
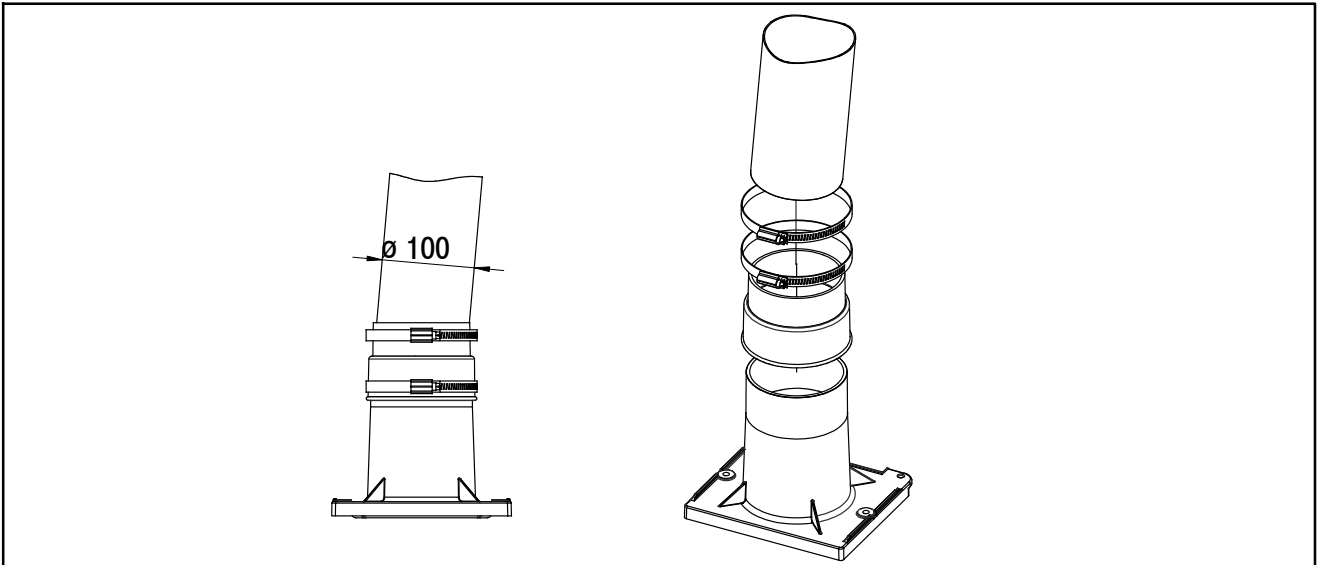


FIGURE 86.

TO INSTALL THE INLET FOR INTAKE BOOT W/FLEXIBLE TRANSITION (OPTION)

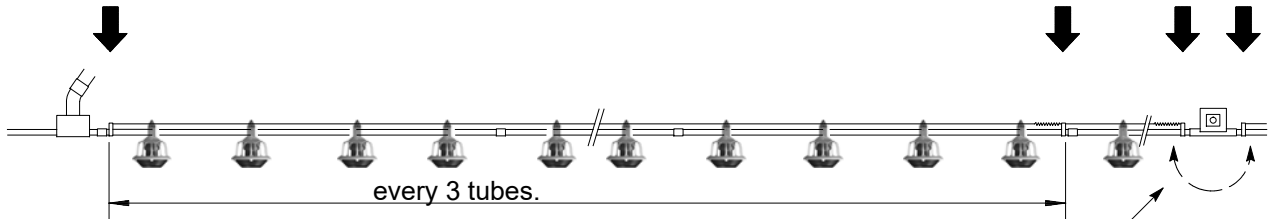


TO INSTALL THE CABLE FOR POULTRY PERCH GUARD

POSITION OF THE CABLE SUPPORTS

next to the feed intake boot.

next to the motors.
every 3 tubes.



Use insulated cable to bridge the motor and the intake boot.

FIGURE 87.

Unroll the cable between 2 anchor brackets.

Install a spring in the central notch of the second anchor bracket.

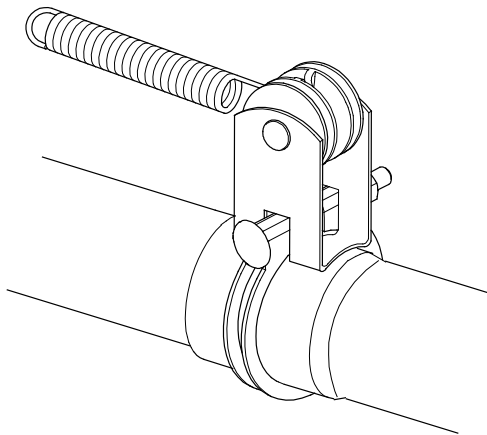
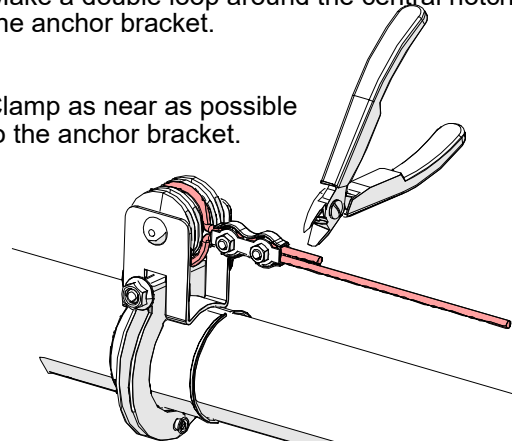


FIGURE 88.

START NEXT TO THE HOPPER

Make a double loop around the central notch of the anchor bracket.

Clamp as near as possible to the anchor bracket.



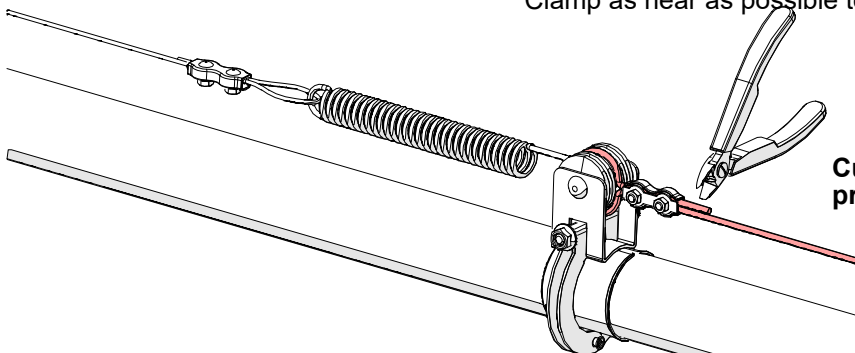
Click the cable into the upper cap of each pan up to the next cable connection.

FIGURE 89.

EVERY 3 FEEDER TUBES

Firmly tighten the cable.
The spring must be stretched 2cm.

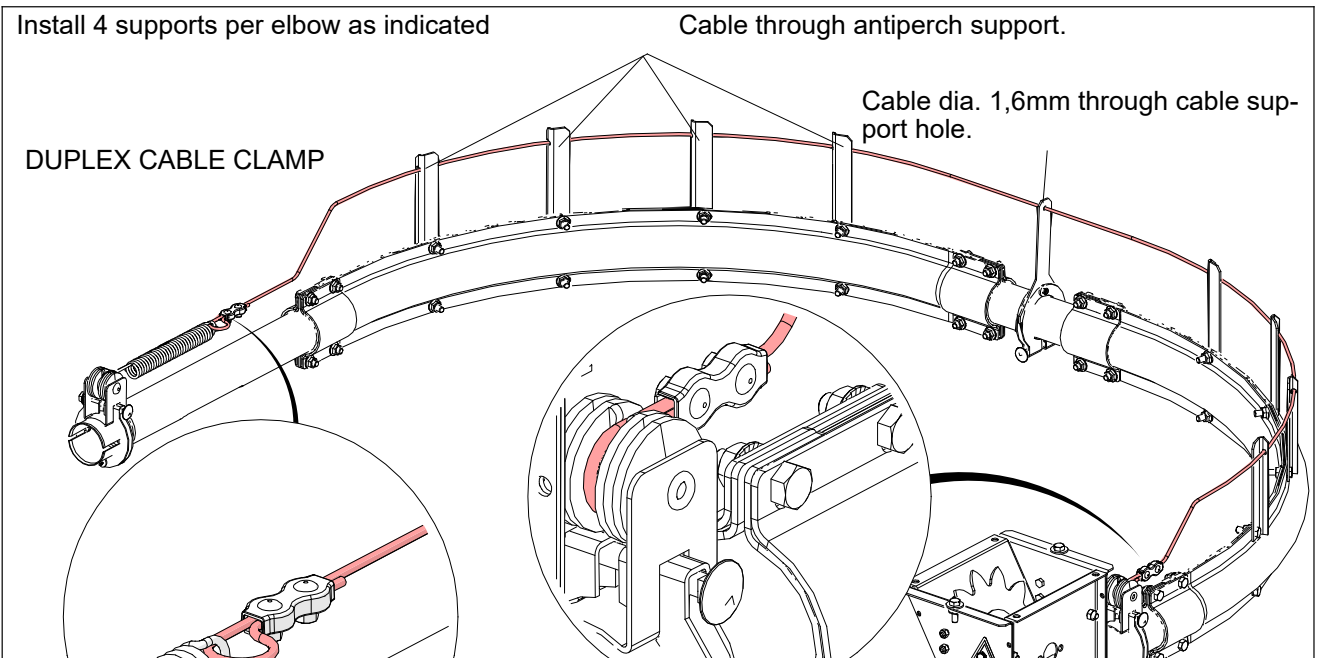
Make a loop through the spring's eye.
Clamp as near as possible to the anchor bracket.



Cut the surplus length of cable to prevent injuries.

FIGURE 90.

Proceed the same way for the next tubes etc...



After all cables for poultry perch guard have been installed, connect the poultry perch guard to the 1,6mm cable .

POULTRY PERCH GUARD AND FEEDER LINE MUST BE EARTHED !!!

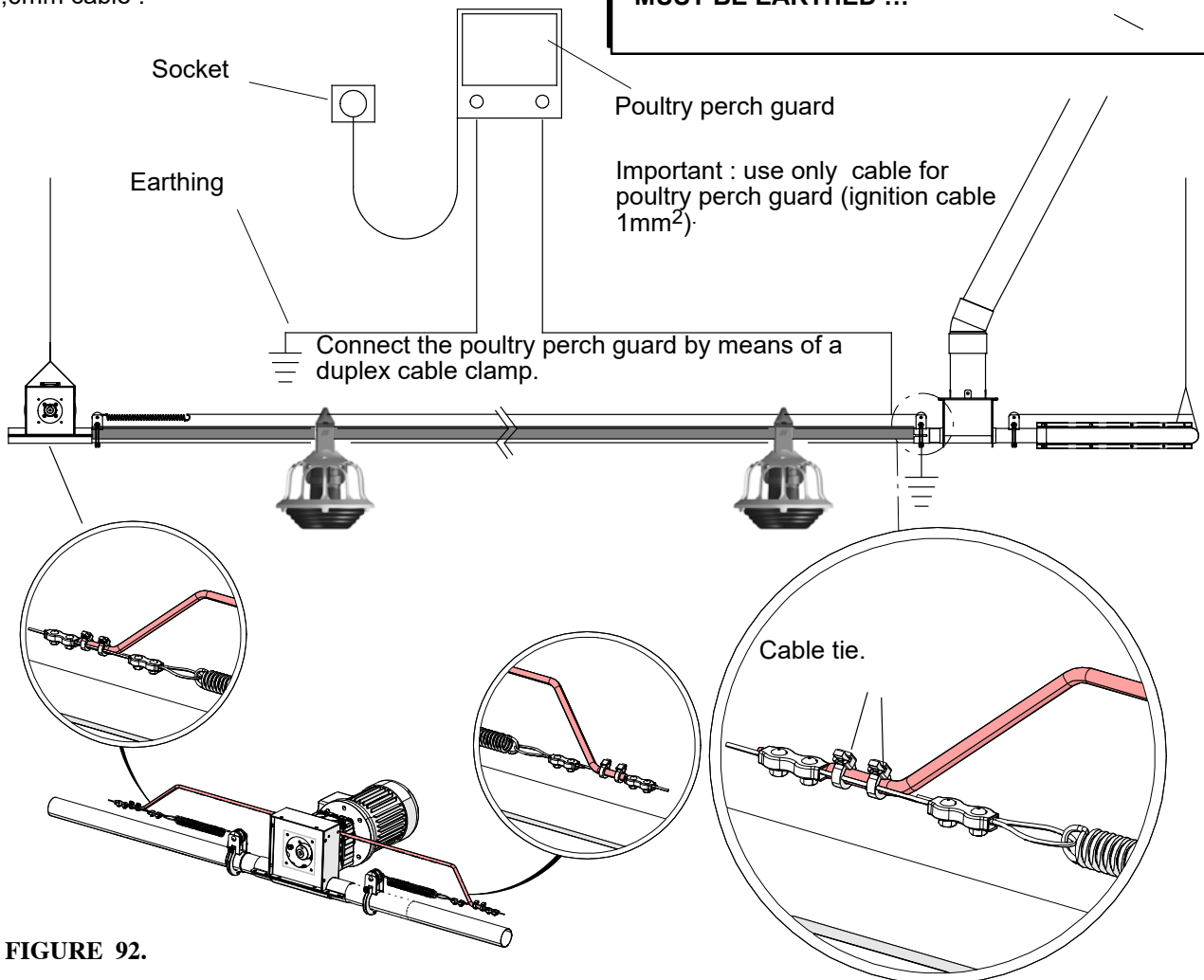
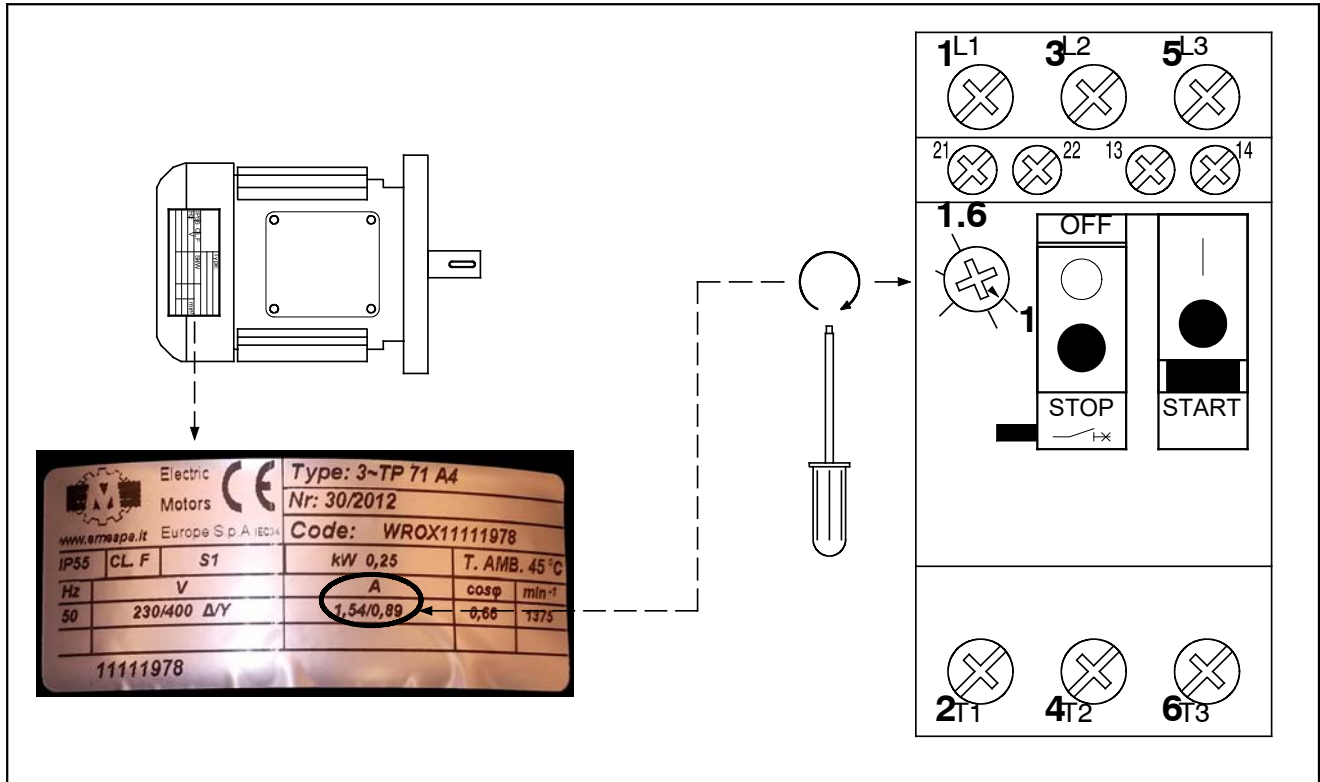


FIGURE 92.

MOTOR PROTECTION



MAXIMUM CABLE LENGTHS TO THE MOTORS

Calculation method:	IEC-HD 60364-5
Cable type:	PVC – XLPE – Silicon
Placing:	Open cable trough
Materials used:	Schneider Electric GV2 motor protections

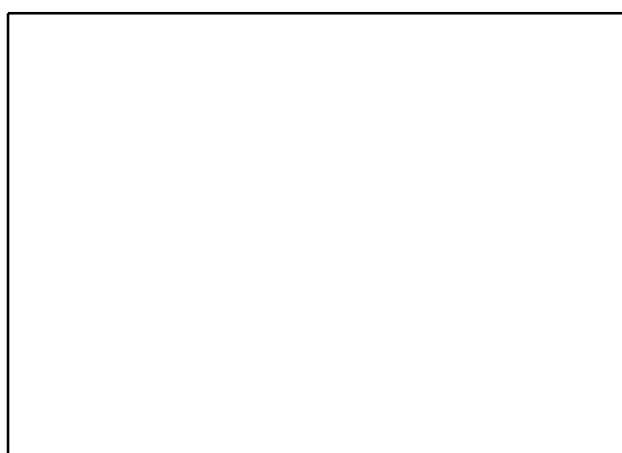
Please be aware that you have to follow the local regulations for your country!

Motor Power (kW)	Net voltage	Protection	Max. cable length (m)	Wire gauge (mm ²)
0.18	1x230V 50Hz	GV2ME07	0 - 110	1.5
			111 - 185	2.5
			186 - 297	4
	3x230V 50Hz	GV2ME06	0 - 174	1.5
			175 - 290	2.5
			291 - 464	4
	3x400V 50Hz	GV2ME05	0 - 492	1.5
			493 - 821	2.5
			822 - 1314	4
0.22	3x220V 60Hz 3x230V 60Hz	GV2ME06	0 - 167	1.5
			168 - 279	2.5
			280 - 446	4
	3x380V 60Hz 3x400V 60Hz	GV2ME05	0 - 471	1.5
			472 - 785	2.5
			786 - 1257	4
0.25	1x230V 50Hz	GV2ME07	0 - 110	1.5
			111 - 185	2.5
			186 - 297	4
	3x230V 50Hz	GV2ME06	0 - 174	1.5
			175 - 290	2.5
			291 - 464	4
	3x400V 50Hz	GV2ME05	0 - 492	1.5
			493 - 821	2.5
			822 - 1314	4
0.37	1x230V 50Hz	GV2ME08	0 - 69	1.5
			70 - 116	2.5
			117 - 185	4
	3x230V 50Hz	GV2ME07	0 - 111	1.5
			112 - 185	2.5
			186 - 297	4
	3x400V 50Hz	GV2ME06	0 - 308	1.5
			309 - 513	2.5
			514 - 821	4
0.45	3x220V 60Hz 3x230V 60Hz	GV2ME07	0 - 107	1.5
			108 - 178	2.5
			179 - 285	4
	3x380V 60Hz 3x400V 60Hz	GV2ME06	0 - 294	1.5
			295 - 491	2.5
			492 - 785	4
0.55	3x230V 50Hz	GV2ME08	0 - 69	1.5
			70 - 116	2.5
			117 - 185	4
	3x230V 50Hz	GV2ME07	0 - 111	1.5
			112 - 185	2.5
			186 - 297	4
	3x400V 50Hz	GV2ME07	0 - 197	1.5
			198 - 328	2.5
			329 - 525	4
3x400V 50Hz	GV2ME06	0 - 308	1.5	
		309 - 513	2.5	
		514 - 821	4	

Motor Power (kW)	Net voltage	Protection	Max. cable length (m)	Wire gauge (mm ²)
0.75	1x230V 50Hz	GV2ME10	0 - 44	1.5
			45 - 73	2.5
			74 - 117	4
	3x230V 50Hz	GV2ME08	0 - 69	1.5
			70 - 116	2.5
			117 - 185	4
	3x400V 50Hz	GV2ME07	0 - 197	1.5
			198 - 328	2.5
			329 - 525	4
0.9	1x220V 60Hz 1x230V 60Hz	GV2ME14	0 - 26	1.5
			27 - 44	2.5
			45 - 71	4
	3x220V 60Hz 3x230V 60Hz	GV2ME10	0 - 42	1.5
			43 - 70	2.5
			71 - 113	4
	3x380V 60Hz 3x400V 60Hz	GV2ME08	0 - 117	1.5
			118 - 196	2.5
			197 - 314	4
1.1	3x230V 50Hz	GV2ME10	0 - 44	1.5
			45 - 73	2.5
			74 - 117	4
	3x400V 50Hz	GV2ME08	0 - 123	1.5
			124 - 205	2.5
			206 - 328	4
1.32	3x220V 60Hz 3x230V 60Hz	GV2ME14	0 - 26	1.5
			27 - 44	2.5
			45 - 71	4
	3x380V 60Hz 3x400V 60Hz	GV2ME08	0 - 117	1.5
			118 - 196	2.5
			197 - 314	4
1.5	1x230V 50Hz	GV2ME14	0 - 27	1.5
			28 - 46	2.5
			47 - 74	4
	3x230V 50Hz	GV2ME10	0 - 44	1.5
			45 - 73	2.5
			74 - 117	4
	3x400V 50Hz	GV2ME08	0 - 123	1.5
			124 - 205	2.5
			206 - 328	4
1.8	3x220V 60Hz 3x230V 60Hz	GV2ME14	0 - 26	1.5
			27 - 44	2.5
			45 - 71	4
	3x380V 60Hz 3x400V 60Hz	GV2ME10	0 - 74	1.5
			75 - 124	2.5
			125 - 199	4
2.2	3x230V 50Hz	GV2ME14	0 - 27	1.5
			28 - 46	2.5
			47 - 74	4
	3x400V 50Hz	GV2ME10	0 - 78	1.5
			79 - 130	2.5
			130 - 208	4
2.64	3x380V 60Hz 3x400V 60Hz	GV2ME14	0 - 47	1.5
			48 - 78	2.5
			79 - 125	4

In reality, if the cable lengths are longer than the ones given in the tables above, then you have to take one of the following actions:

- Double the section of the PE (earth connection)
- Increase the section of the phases AND the PE (earth connection)
- Place a earth-leak circuit breaker



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