

Introduction

NV Bekaert SA
Engineering department
Oude Heerweg 5
BE-8540 Deerlijk
www.bekaert.com

Dear customer, dear user, dear maintenance team,

Thank you for choosing a Bekaert Engineering machine.

This guide provides details about how to set up your machine, how to use your machine and how to maintain your machine.

We wish you a pleasant and safe use of your machine.

Please use the bookmarks on the left side. You can navigate to:

- **User and service manual**
- **Mechanical drawing(s)**
- **Electrical drawing(s)**

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NV BEKAERT SA
VU/PP/SY
7/17/2026



INSTRUCTION HANDBOOK

MACHINE, type: IDF nr: 102-103BE

NATURE: ROTARY DRUM FOR LOOP FIBER

CUSTOMER: SC – Sustainable construction (on field)



Important:

In case of a partly completed machine (check EC declaration further in this manual): The partly completed machinery must not be put into service until the final machinery or the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machine Directive 2006/42/EC.

In all cases (completed machine or partly completed machine):

Before handling, mounting or commissioning the machine, make sure that the instructions for use have been read and understood. Please, contact us if you have any questions. Before commissioning, check whether all safety devices function correctly. Please contact us in case of malfunctions. The supplier cannot be held responsible if the customer does not observe all instructions of this handbook. Safety prescriptions shall be strictly observed. The supplier will not accept any responsibility if modifications which do not meet the prevailing safety prescriptions are carried out to mechanical, electrical or other components as well as to safety equipment.

Advice against unauthorized use:

For safety reasons, the machine shall only be used as described in the present instructions for use. Any other application is at the customer's responsibility barring written permission by the supplier.

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Note : Each of the above-mentioned items may be classified in mechanical, electrical, pneumatic and hydraulic subdivisions - if necessary.

1. General data

1.1. Safety symbols that can be used in this instruction handbook or on the machine.

Symbol	Meaning
	Ignoring this instruction can cause damage to the machine or physical injury to a person.
	Ignoring this instruction can cause damage to the machine.
	Tip. Advice to execute a certain task more easily.
	Eye protection mandatory
	Safety boots mandatory
	Ear protection mandatory
	Safety helmet mandatory
	Safety gloves mandatory
	Protective clothing mandatory
	Face shield mandatory

	Dust mask mandatory
	No admittance to unauthorized personnel
	No admittance to persons with pacemaker
	No walking on
	Danger of death
	Danger live electrical equipment
	Warning strong magnetic field
	Caution corrosive
	Caution hot surface
	Caution hot vapor
	Caution hot liquids
	Caution rotating parts

	Caution pinch point
	Caution cut hazard
	Caution feet injury
	Caution trip hazard
	Caution crush hazard

1.2. EC-declaration of conformity



EC-declaration of conformity (Annex II.1.A Machine Directive 2006/42/EC) - original



This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user. The machine must be installed according to the instructions in the manual including the necessary guards and protective covers, if not, the machine may not be put into service.

MANUFACTURER

NAME : NV BEKAERT SA – Engineering department
ADDRESS : Oude Heerweg 5 , BE-8540 Deerlijk

AUTHORISED TO COMPILE THE TECHNICAL FILE:

NAME : NV Bekaert SA – Engineering department
ADDRESS : Oude Heerweg 5 , BE-8540 Deerlijk

MACHINE : Loop in device

TYPE : IDF

SERIAL NUMBER : 102BE

The machine described above, if it is installed, maintained and used in accordance with the manual and the rules of good skill, meets the fundamental requirements for safety and health of the EC-directives, and following determinations and standards:

The directives:

2006/42/EC:	Machinery directive	OJ L 157/24	09/06/2006
2014/35/EU:	Low voltage directive	OJ L 96/357	29/03/2014
2014/30/EU:	Electromagnetic compatibility (EMC) directive	OJ L 96/79	29/03/2014

The standards:

EN 60204-1:2018	Safety of machinery - Electrical equipment of machines (IEC60204-1:2016 modified)
ISO/TR 14121-2:2023	Safety of machinery - Risk assessment - part2: practical guidance and examples of methods
EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN ISO 13850:2015	Safety of machinery - Emergency stop - Principles for design
EN ISO 13854:2019	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN ISO 13857:2019	Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 14120:2015	Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards

Deerlijk - Belgium, July 9, 2026

Signature,

Name : Valentijn Kuijken

Function : Head of Advanced Equipment Solutions



EC-declaration of conformity (Annex II.1.A Machine Directive 2006/42/EC) - original



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Deerlijk - Belgium, July 9, 2026

Signature,

Name : Valentijn Kuijken

Function: Head of Advanced Equipment Solutions

1.3. ISO 9001

Bekaert Engineering operates in compliance with an ISO 9001 certified quality system.



Certificate

Management system as per
DIN EN ISO 9001:2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

NV BEKAERT SA
Bekaertstraat 2
8550 Zwevegem
Belgium

with the locations according to the annex

operates a management system in accordance with the requirements of EN ISO 9001:2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

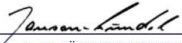
Scope

Design, development, manufacturing, sales and distribution of steel wire, steel fibre products, steel wire products, gas burners, heat exchangers and the corresponding key peripheral components for the residential and industrial heating

Certificate Registration No. 44 100 161879
Audit Report No. 3534 4260

Valid from 2024-01-30
Valid until 2027-01-29
Initial certification 2015

Essen, 2023-11-01


Certification Body at TÜV NORD CERT GmbH



Visit our database to verify the validity of this certificate.

TÜV NORD CERT GmbH
Am TÜV 1, 45307 Essen
www.tuev-nord-cert.com

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1.4. Noise level

Mention here the air noise output, its effective value or value defined by measuring the air noise output of an identical machine.

The following measurement has been carried out:

- the level of the A-weighted equivalent continuous sound-pressure on the working areas, when it is more than 70 dB(A); when the level is lower or equal to 70 dB(A), please mention this	
value continuous sound-pressure (dB(A))	max. 70 dB(A)
measuring device	
serial number	
Place of measurement (by preference on the working area, if not at a distance of 1 m from the machine surface).	
process conditions	

1.5. Description of the standard version of the electrical installation

1.5.1. Application

Unless explicitly mentioned otherwise, the electrical equipment is carried out according to this description.

1.5.2. Standards

The electrical equipment has been carried out according to EN60-204/IEC 204.

Electrical equipment of tools for general use.

Electrical equipment of machine tools.

The customer accepts the responsibility for consulting and applying the standards concerning the **installation** of the electrical equipment.

We especially would like to draw the attention to following stipulations according to this standard:



- The service voltage at the connecting terminals of the machine must not differ more than $\pm 5\%$ from the specified rated voltage of the machine.
- A neutral wire is not required. An earth continuity conductor (PE) has to be connected together with the current supply.
- Short circuit protection of the supply cable is to be provided by the customer. In case the machine is equipped with a disconnecting switch instead of a circuit breaker, the maximum acceptable fuses, which are to be provided by the customer, are indicated.
- The squirrel cage motors are provided for full voltage motor start.

1.5.3. Machines with thyristor converters

- Machines with thyristor converters have to be connected to a feeder with a short-circuit capacity of minimum 100 times the rated current indicated on the diagram. This corresponds to 1% voltage drop over the feeding conductors.

For more than 1 converter on the same feeder, following simultaneity factor can be counted in:

<u>Number of converters</u>	<u>Factor for the total short-circuit capacity</u>
3	70%
10	40%
40	20%

- The machines with thyristor converters are provided with line chokes, which reduce the commutation currents to 20 times the rated current of the converter. This also results in the commutation voltage drop at the main switch not being more than 20 % of the rated voltage, on condition that the feeders are dimensioned according to the preceding rule. The total amount of harmonics at the connecting terminals of the machine will under these circumstances be no more than 3.5 % of the mains voltage.

1.5.4. Power factor

Our machines are **not** provided with power factor correcting installations, so they have to be part of the customer's installation. In case of machines with thyristor converters, the power factor correction by capacitors only, cannot be applied without special consideration.

In order to avoid a condensator or possibly a transformer overload, series resonance filters have to be used. It would be recommendable to consult the supplier of the power factor correcting installation.

1.5.5. Ambient conditions (IEC 204-1)



- Ambient air temperature:
maximum 40° C
maximum 35° C as an average in 24 h
minimum 5° C
- Relative humidity level:
between 30 % and 95 % without condensation
- Height above sea level:
maximum 1000 m.
- Our control cabinets are equipped for a maximum over-temperature of 10 K in relation to the ambient air temperature.
In case it is necessary, we will provide the ventilation.

1.5.6. Miscellaneous

- The electrical control cabinets are provided for the connection of cables from the machine, and from the mains at the side of the unit.
- The electrical control cabinets are delivered with a maximum dimension of:
length 400 mm
height 400 mm
depth 300 mm

2. Required conditions for use



Advice against unauthorized use :

For safety reasons, the machine shall only be used as described in the present instruction handbook. Any other application is at the customer's responsibility barring written permission by the supplier.



Information for the operator :

- Before opening the doors or removing the guards that contain moving elements and in case of maintenance or repair works, disconnect or neutralize all power sources. This means, shut off all power sources supplying the machine : electrical power, fuel, steam, compressed air, etc., set all accumulators without pressure, ventilate the pneumatic circuit, release or unlock spring systems, lock all systems etc.
- The working area of operator as well as maintenance man should have sufficient protection for their own safety and for the safety of persons passing by.
- Keep spectators at a distance. Do not let unauthorized persons touch the machine and keep them as far as possible from the working area.
- Keep the working area neat. Garbage, disorder and dirt are bywords for risks of accident.
- Mind your posture. For carrying out the various tasks you should keep your balance at all times by taking on a firm position which will prevent you from falling.
- The operator/maintenance man should be sufficiently and adequately protected when doing his job : safety goggles, gloves, safety footwear and ear muffs, appropriate clothes which do not hang loose. Clothes which are hanging loose and jewels have to be avoided because they can get caught by the moving machine parts. Long hair should be tied together. He should also use the right tools.
So the operator needs safety goggles and gloves while the maintenance man needs safety goggles, safety footwear and gloves.



- The operator/maintenance man should be trained adequately so that he can perform his task safely and smoothly.

**Residual risks:**

In spite of the integrated safety in the design of the machine and the taken protection measures en additional utilities, there are some residual risks possible.

This list is made with utmost care, but there can still be some residual risks which are not detected by the manufacturer.

- The residual risks associated with this machine/installation/unfinished machine, after the risk assessment and the mitigating measures are as follows, with reference to Appendix I of the Machinery Directive 2006/42/EC:
- The interference of the rotating drum upon discharge of the fibers (if the conveyor belt is not connected properly)
- There should always be conveyor belt underneath the unit while operating, because there is exit opening and rotating drum can be accessed from the bottom opening

EXPLANATION OF THE SYMBOLS ON THE MACHINE/INSTALLATION/UNFINISHED MACHINE

The machine has stickers to designate the danger of jamming when the fibers are discharged

**Guards:**

- The supplied guards must be assembled as indicated on the added assembly drawings.
- If not all guards are ordered, the customer has to provide the guards according to added assembly drawings.
- The machine/installation can not be used before all guards are mounted.

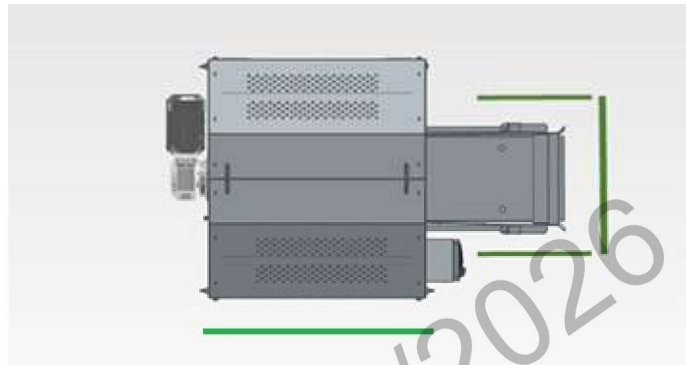
In no case the protection of the guard can be bridged. This can cause serious injuries.

3. Operator's working area

The working area for the various operators is indicated on lay out drawing.

For maintenance and cleaning purposes, there has to be enough space around the machine and the switch cabinets to carry out these activities. The needed space depends on the means used by the customer (e.g. lifting truck, rolling bridge, cleaning machines).

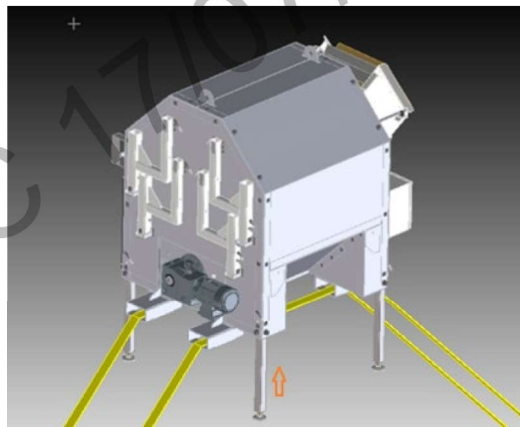
Operator is continuously feeding the material through the chute provided on side of the unit



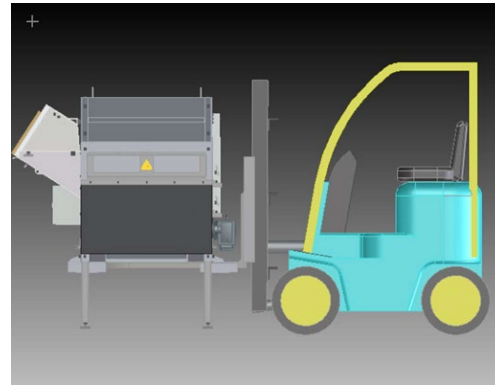
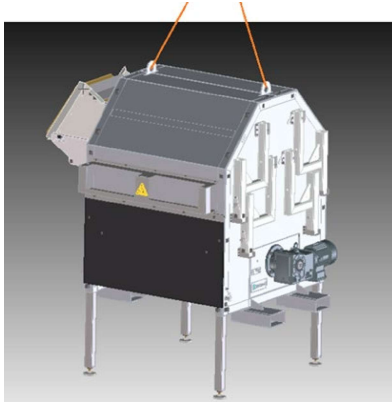
4. Handling

4.1. Handling : mechanical section

- Machine is lifted with forklift, without any extra tool
- Handling: refers to handling drawing ED003131628
- All four legs to be slid inside the frame as maximum as possible
- All leg adapter parts to be placed and firmly fixed on the side of the unit
- All rubber flaps to be dismantled and kept into storage box while transporting this unit
- During transportation, the machine must be properly fixed & securely strapped as shown
- Do not apply straps on the protection covers, as this may cause bending or damage
- See to it that nothing gets stuck between the lifting cords and the machine; avoid sharp edges against the lifting cord.
- Disconnect the machine completely from the environment
- Lift the machine with closed loop of ropes as shown on handling drawing.
- Weight: refer to handling diagram
- Avoid rocking during handling (as C.G not exact at the middle).
- Never handle the machine higher than necessary
- Never put body parts under the machine
- Unauthorized persons have to stay out of the environment during handling
- Attach all loose parts before handling the machine.



- Machine always to be handled shown in 1st picture below
- Forklift can only be used while unloading or loading into the truck in 2nd picture below
- Forklift arm to be inserted from motor side and not from feeding chute side
- Minimum forklift arm length must be 1300mm



- Storage conditions: temperature between 10 and 40°C, relative humidity < 70%. Protected against rain, dust and aggressive influences.
- When storing the machine/installation/unfinished machine for a period of time, it is advisable to do so in a dry place and to cover it to prevent dust

4.2. Handling : electrical section



- Protect all switch cabinets against toppling over by for instance fixing them to the structure of the building. The cabinets should be handled with care using the appropriate parts so as to avoid damage and toppling over of the cabinets. Some of these auxiliary parts have to be ordered by the customer.
- Motors: always use the provided lifting lugs. Never lift around the shaft end and/or tacho. If the motors have to be stored for a longer period, turn the shaft a quarter of a turn.

- Storage conditions : temperature between 10°C and 40°C, relative humidity < 70 %. Protected against rain, dust and aggressive influences.
If the cabinets have to be stored for a longer period, the room should be subject to minor temperature fluctuations.

For handling the switch cabinets: see figure on the next page.



Handling

Information stickers to be placed on the unit as shown below for 'FORKLIFT HANDLING SIDE' & 'SECURE THE UNIT CORRECTLY' while handling



5. Mounting/dismounting the machine

Dismounting the machine has to be done in reverse order as mounting, unless explicitly mentioned.

At end of life of the machine, materials have to be selected and turned into scrap according to the going government regulations.

5.1. Required accessories, groundwork and facilities

Unless explicitly mentioned otherwise, the machine has to be set up in a non-corrosive environment. The machine cannot be used in an explosive atmosphere either.

5.1.1. Required accessories, groundwork and facilities : mechanical part

- No groundworks are required. See lay out of the line.
- The machine has to be set up and connected according to the instructions mentioned in this instruction handbook. This is necessary to guarantee a good and safe operation, and to restrict the noise- and vibration level.

5.1.2. Required accessories, groundwork and facilities: electrical part

- When the connections have to be underground (electricity, compressed air, ...) the customer should carry out the groundwork.
- Lighting: to be provided by the customer.
- Electrical connection: 110(US)/220/400VAC
- Pneumatic connection: N/A.

5.2. Setting up and connecting the machine



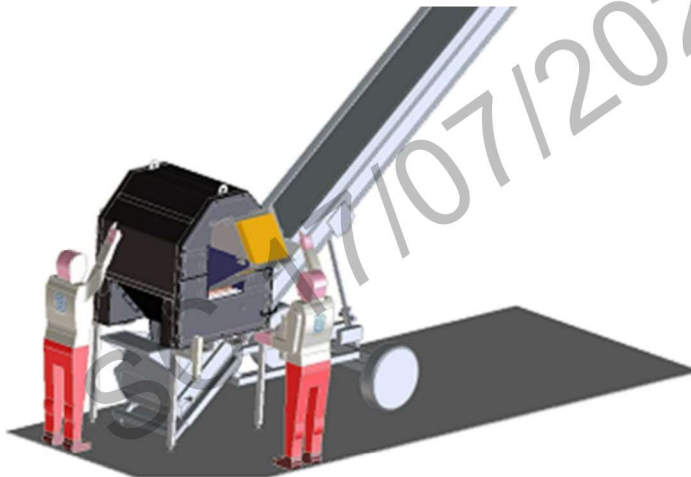
The supplied guards must be assembled as indicated on the added assembly drawings.

If not all guards are ordered, the customer has to provide the guards according to added assembly drawings.

The machine/installation can not be used before all guards are mounted.

5.2.1. Setting up and connecting the machine: mechanical part

The positioning of the machine, installation, or partly completed machinery within the operational environment shall be defined by BEKAERT. The equipment may be installed either within or outside a designated work area, depending on application requirements.



5.2.2. Setting up and connecting the machine : electrical part

In the electrical file you can find which type of cable is necessary to make the different connections.

Switch cabinets



Protect all cabinets against toppling over by for instance fixing them to the structure of the building..

Some cabinets are provided with cooling and filter mats. If the cabinets are installed in a filthy environment, special attention has to be paid to keeping the filters clean.

Overall electric power supply

Generally, the electric power supply is fitted at the upper part of the power-cutout switch. The three-phase connection is made with a clockwise rotating field. The earthing has to be connected to the earthing bolt in the cabinet.

When the supply has to be fitted to the lower part, this should be clearly mentioned on the connecting point.

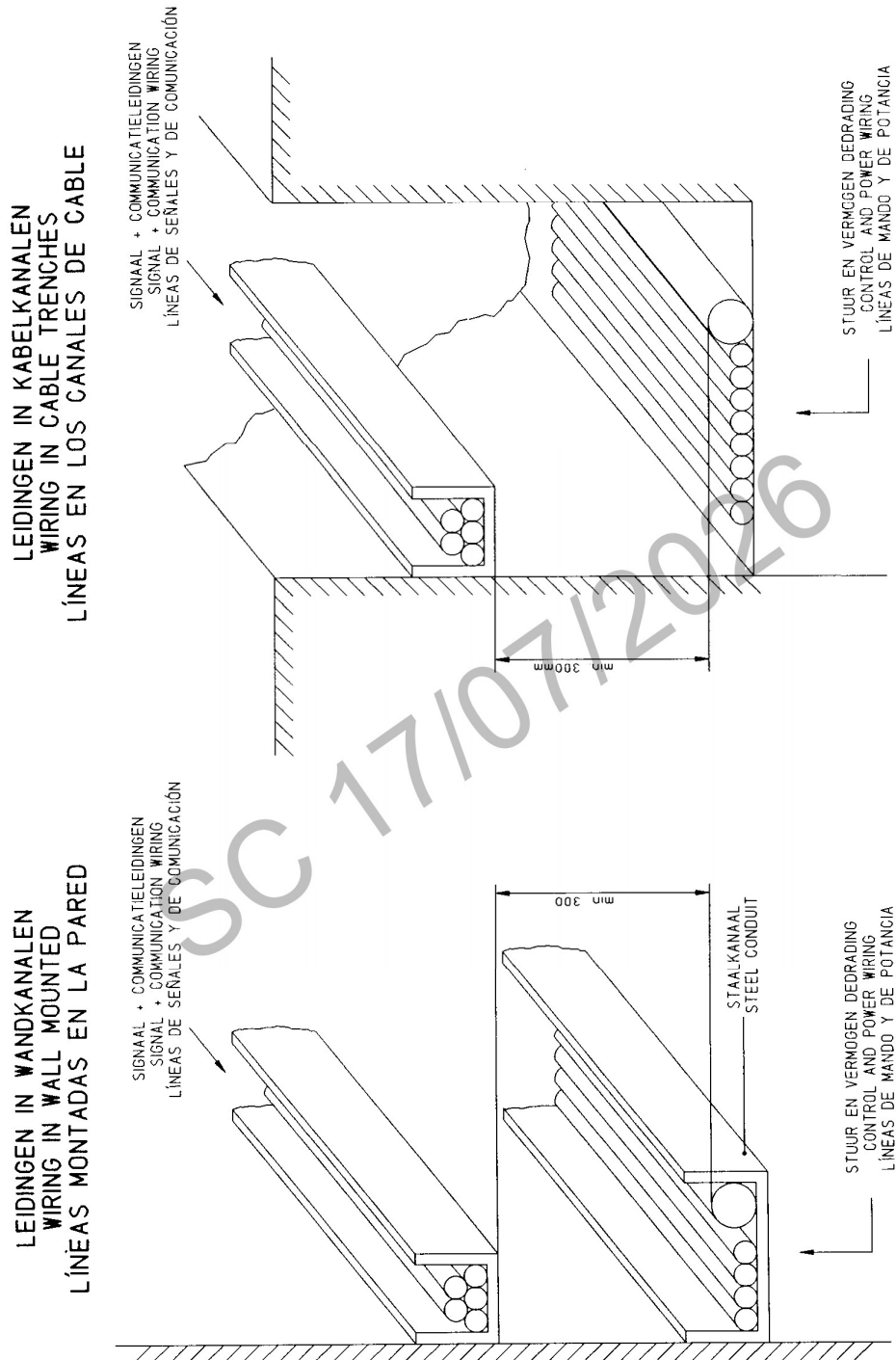
Connection cabinet - machine

The cables have to be connected in conformity with the file. The cross-section has to be respected. Special attention has to be paid to the section of the earth continuity conductors in the cables : up to 16 mm² the section remains the same; > 16 mm² the section will be divided by 2 or it will be a higher approximate section.

Put the cables carefully in the cable gutters. The control and power cables are separated from the signal and communication cables (see drawing on the next page : NO007379.wp). Avoid loops in the cables.

Pay special attention to screened cables. For the connection, the signal wires should be max. 50 mm unscreened. The connecting conductor between the screen and the connecting terminal should be max. 150 mm as far as the apparatus to be connected allows for this. In other cases the unscreened part should be kept as short as possible. Unused wires in the screened cables are cut as short as possible and insulated with shrink sleeve.

no007379.wp

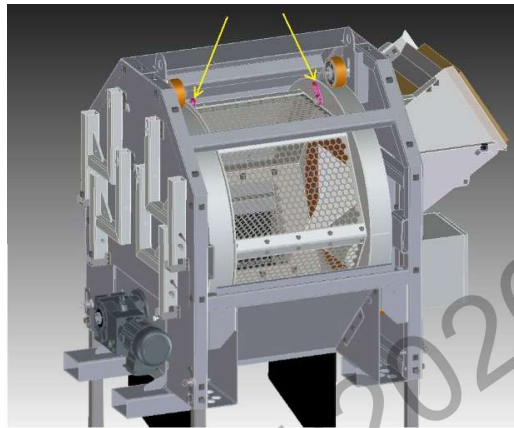


6. Commissioning

6.1. Removing the transport aids

6.1.1. Removing the transport aids : mechanical part

- Once the drum assembly is mounted onto the unit, the lifting eyes shall be removed.



6.1.2. Removing the transport aids : electrical part

6.2. Check-up upon commissioning

6.2.1. Check-up before commissioning



6.2.1.1. Check-up before commissioning - mechanical section

Check oil levels in reducers.



Before commissioning, test all safety functions in practice. Do not commission in case of incorrect operation

Before operating the machine/installation/unfinished machine, you must ensure that the following conditions are met:

- There are no person or objects on the machine/installation/unfinished machine.
- The space round the machine/installation/unfinished machine is free of obstacles.
- The machine/installation/unfinished machine is installed correctly.
- The screens are correctly mounted and firmly fixed.
- The machine/installation/unfinished machine must be positioned so that it is virtually level.

The sound pressure of the machine/installation/unfinished machine is less than 70 dB(A)
If otherwise, this is stated and PPE is recommended.

If the sound pressure is different than stated, the cause must be investigated!

Noise and vibrations are a warning of possible wear, defects and incorrect assembly.

Human hearing is part of preventive maintenance!

Always keep your ears open to detect any abnormal vibrations and sounds

Safety functions to be tested:

- emergency stop
- All protection covers are fixed during operation.



6.2.1.2. Check-up before commissioning - electrical section



Before commissioning, test all safety functions in practice. Do not commission in case of incorrect operation

Safety functions to be tested :

- emergency stop
-

6.2.2. Check-up upon commissioning

6.2.2.1. Check-up upon commissioning - mechanical section

- Ensure all protection covers are fixed during operation.
- Keep the area around the machine/installation/unfinished machine free of materials and other obstacles
- Do not place any loose tools or parts on the machine/installation/unfinished machine. These can end up or fall between the moving parts.
- If you leave the machine/installation/unfinished machine unattended, turn off the master switch with the key lock and remove the key.
- The sound pressure of the machine/installation/unfinished machine is less than 70 dB(A)
- Make sure the surrounding area is as clean as possible.

6.2.2.2. Check-up upon commissioning - electrical section

Check without supply voltage

Read safety instruction Altivar before commissioning (see next pages).

Insulation test L1 & PE
L2 & PE
L3 & PE

Note: disconnect all cables from the drive before doing the insulation test.

Check if the earthing between cabinet and machine has been connected.

Check under voltage

Check the supply:

- voltage (see also 1.4.2.1)
- right rotation field

Check various control voltages

110/220/240 V

Check the rotation sense of fans, pumps and motors.

Read and understand these instructions before performing any procedure with this drive

DANGER



HAZARDOUS VOLTAGE

- Read and understand this manual before installing or operating the Altivar 71 drive. Installation, adjustment, repair and maintenance must be performed by qualified personnel.
- The user is responsible for compliance with all international and national electrical standards in force concerning protective grounding of all equipment.
- Many parts in this variable speed drive, including printed wiring boards, operate at line voltage. DO NOT TOUCH.
Use only electrically insulated tools.
- DO NOT touch unshielded components or terminal strip screw connections with voltage present.
- DO NOT short across terminals PA and PC or across the DC bus capacitors.
- Install and close all covers before applying power or starting and stopping the drive.
- Before servicing the variable speed drive
 - Disconnect all power.
 - Place a "DO NOT TURN ON" label on the variable speed drive disconnect.
 - Lock the disconnect in the open position.
- Disconnect all power including external control power that may be present before servicing the drive. WAIT 15 MINUTES for the DC bus capacitors to discharge. Then follow the DC bus voltage measurement procedure given in the installation manual to verify that the DC voltage is less than 45 Vdc. The drive LEDs are not accurate indicators of the absence of DC bus voltage.



Electric shock will result in death or serious injury.

CAUTION



DAMAGED EQUIPMENT

Do not operate or install any drive that appears damaged.

Failure to follow this instruction can result in equipment damage.

7. Use

The machine can only be used by persons skilled for this purpose and who dispose of the instruction handbook at all times.



Operations which involve danger have to be taught by an experienced operator / instructor. If such a person is not available, please contact the supplier. These operations should be taught at lowered speed, if possible. The speed may not be increased until the operation is fully under control

7.1. Specification, description, construction and working

See the spec **IDF_ROTARY DRUM FOR LOOP FIBER_V01-00_Confidential.doc** in Annexure 11.

* **Specification**

- Dimensions

	IDF
Length (mm)	1,800
Width (turning circle) (mm)	1,280
Height (mm)	2,285
Weight full (kg)	± 570

- Power supply:

- * control voltage: 110(US)/220/240V±10%
- * confirm IS:12615/IEC6m3+1

- Gear Motor:

- * Power: 0.75kW
- * Gear ratio: 55.17
- * Output torque: 280Nm

- Material: all stainless steel (except commercial parts)

- Electrical cabinet

- * Electrical cabinet of 400x400x300mm
- * Frequency drive fixed in electrical cabinet

- Instructions for use: in accordance with European machine directive. The instruction manual is supplied together with the machine.

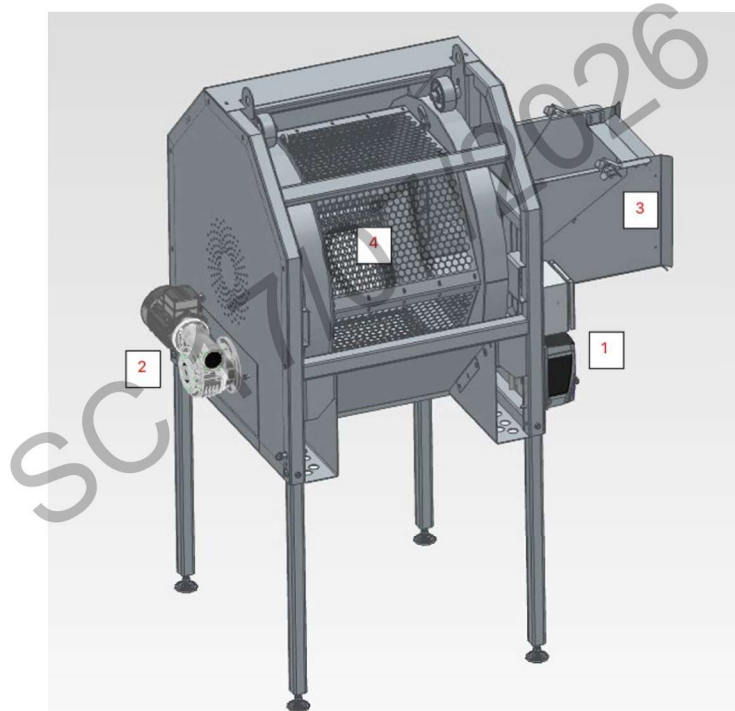
Use

The positioning of the machine, installation, or partly completed machinery within the operational environment shall be defined by BEKAERT. The equipment may be installed either within or outside a designated work area, depending on application requirements. BEKAERT is responsible for defining workstation conditions and ensuring compliance with applicable safety and operational standards.

A comprehensive risk assessment of both the installation and the surrounding environment shall be performed by BEKAERT in accordance with relevant directives.

The machine/installation/partly completed machinery is designed for autonomous operation. Material feeding is performed manually by the operator, who introduces fiber boxes into the system via the designated chute. Loading shall be carried out exclusively from the predefined operator positions, as indicated in the layout drawings.

The following figures provide an overview of the most important components of the machine/installation/unfinished machine:

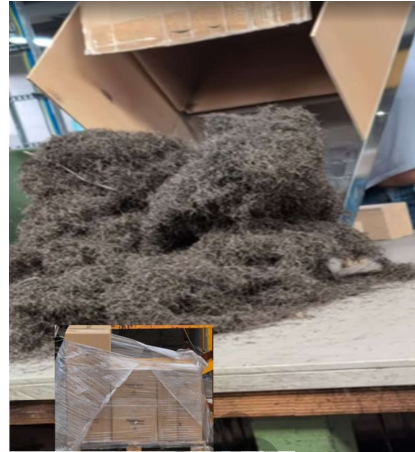


- 1) Frequency controller and emergency stop
- 2) Motor
- 3) Dosing funnel
- 4) Rotary drum

7.2. Place the product to be processed on the machine

The Dramix loop fibers are fed into the rotating drum via the chute.

The material is supplied in boxes (400 × 400 × 300 mm) with an approx. weight of 10 kg.



The product is disentangled within the rotating drum, separated into individual filaments, and subsequently transferred onto the conveyor belt.



7.3. Operation and monitoring

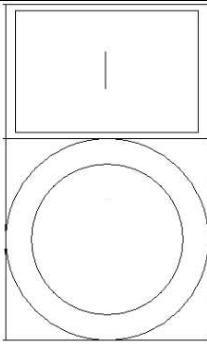
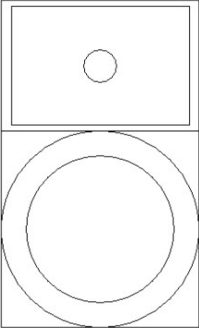
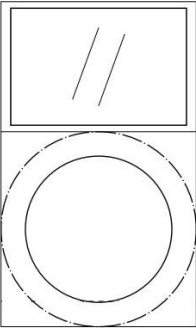
The actual operation of the machine is simple. However, it is extremely important to observe all safety regulations when working with the machine.

- The Dramix loop fibers are manually fed into the rotating drum through the feeding chute. There are two possibilities as below (refer sec. 8.1)
 - Keep the feeding Shute is horizontal
 - Keep the feeding Shute in inclined position
- The rotating drum is driven by a motorized mechanism, ensuring continuous rotation at the specified speed.
- As the drum rotates, the loop fibers are subjected to controlled tumbling and agitation, facilitating the disentanglement process.
- The internal configuration of the drum promotes effective separation of interlocked loops into individual filaments.
- The disentangled filaments are progressively guided towards the discharge side of the drum.
- Separated filaments exit the drum and are transferred onto the conveyor belt for further handling or processing.
- Continuous monitoring of feed rate and drum rotation is required to ensure uniform disentanglement and avoid accumulation or blockage inside the drum.

Before operating the machine/installation/unfinished machine, you must ensure that the following conditions are met:

- There are no person or objects on the machine/installation/unfinished machine.
- The space round the machine/installation/unfinished machine is free of obstacles.
- The machine/installation/unfinished machine is installed correctly.
- The screens are correctly mounted and functional
- The machine/installation/unfinished machine must be positioned so that it is virtually level.

7.4. Switches and buttons

Item	Function	Description	Remark
	START	This switch starts the rotation of the Drum	
	STOP	This switch stops the rotation of the Drum	
	RESET	This switch reset the operation	
	EMERGENCY STOP	This switch is used while emergency stop	

7.5. Detection and stop reasons

Detection and safety systems:

- emergency stop

7.6. Starting conditions



All guards always have to be closed!

- Ensure all protection covers are fixed on the unit
- Rubber flaps are installed to guide the product onto the conveyor from exit channel
- Feeding chute is firmly fixed

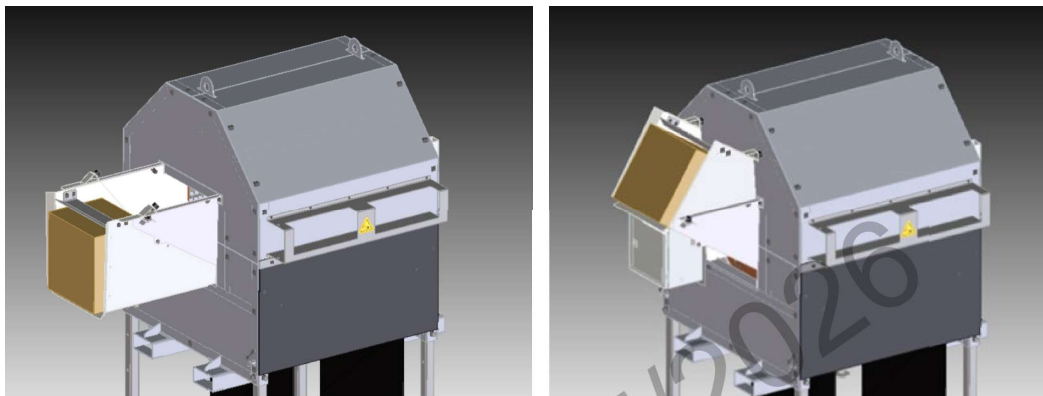
SC 17/07/2026

8. Adjustments

8.1. Adjustments: mechanical section

The feeding chute can be installed in either a horizontal or inclined orientation, depending on site conditions and operator convenience for effective dosing of material into the drum.

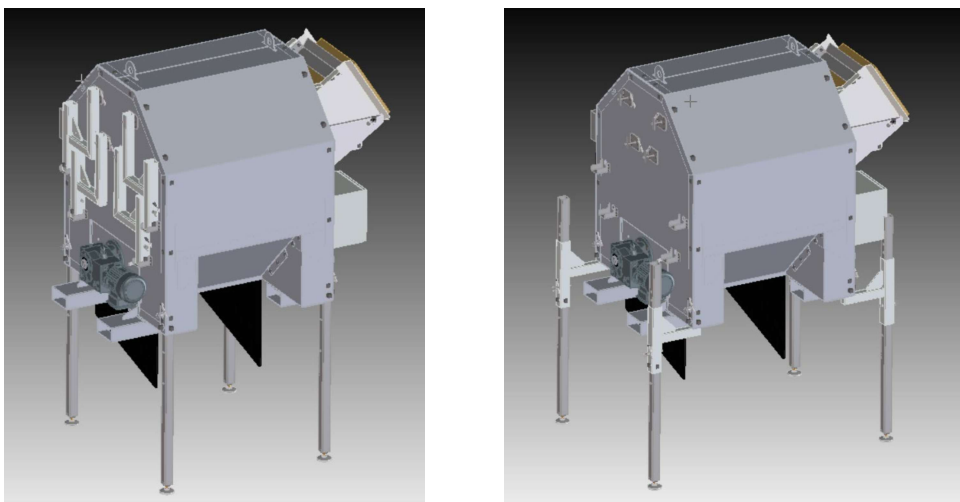
Ensure all screws are properly secured when the chute is in the inclined position, as specified in the drawing.



Leg adapters shall be used when accommodating wider conveyor belt configurations. When not in use, the adapters shall be securely stored and fixed at the designated mounting provisions on the side of the unit.

Reason for using adapter parts:

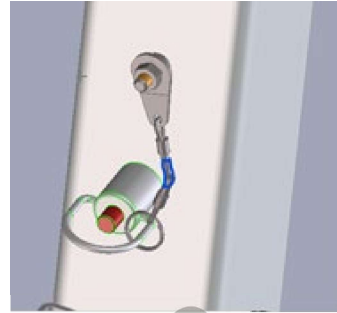
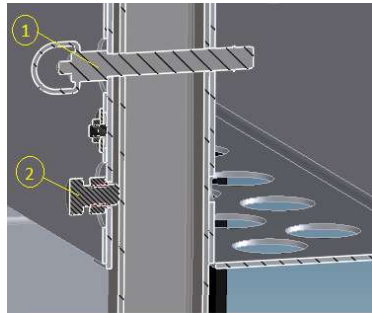
- For conveyor belt width up to 600 mm: Adapter parts are not required.
- For conveyor belt width up to 1100 mm: Adapter parts must be used.



Height Adjustment for the Unit

Reason: Conveyor belts may be installed at different inclinations depending on the application. To prevent interference between the frame and the conveyor belt, the height is adjustable, allowing the unit to be positioned as close as possible to the conveyor belt.

1. Use the locking pin during height adjustment to secure the legs within the frame.
2. After adjusting the height, tighten the screws to firmly clamp the legs.
3. All locking pins are attached with retaining cables.



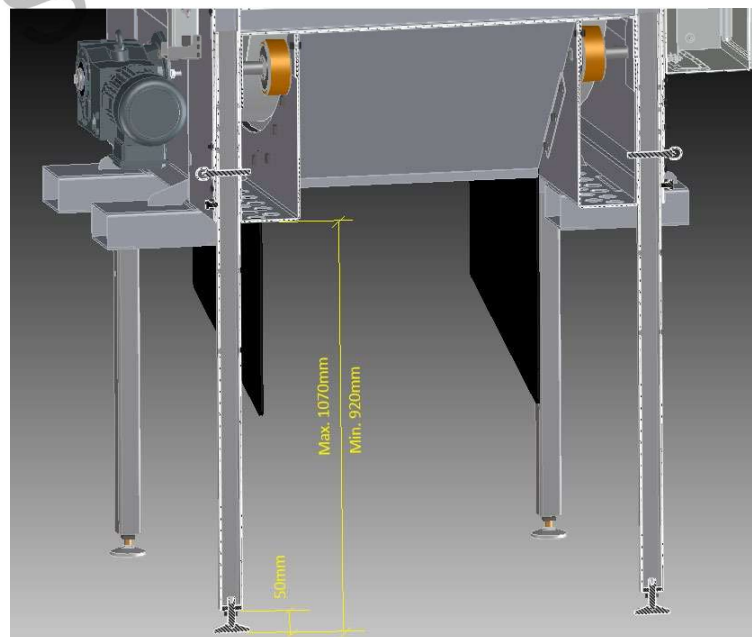
With leg adapter parts, the height from ground level to the bottom of the frame is as follows:

- Maximum height: ~1140 mm
- Minimum height: ~920 mm

Without leg adapter parts, the height from ground level to the bottom of the frame is as follows:

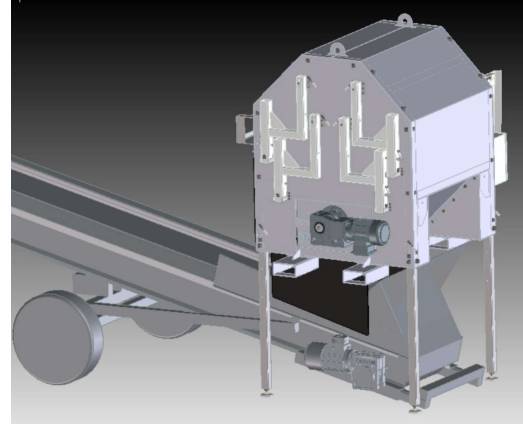
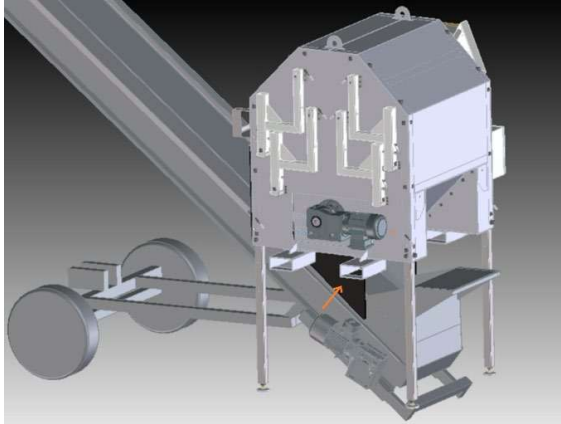
- Maximum height: ~1070 mm
- Minimum height: ~920 mm

During transport, the height from ground level to the bottom of the frame is:
Minimum height: ~520 mm

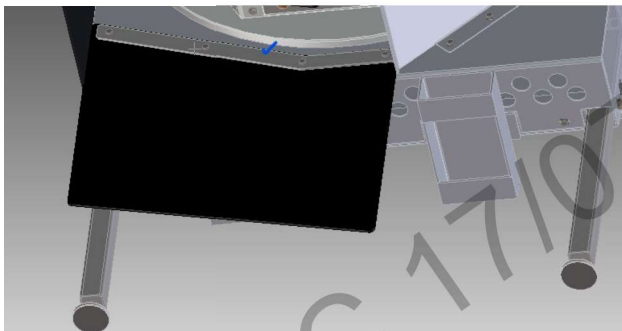


Rubber flaps to be used according to the angle of the conveyor belt

- Shorter rubber flaps for higher angle
- Normal rubber flaps for lower angle



Rubber flaps can be replaced by fixing and unfixing the attachment plate, as shown below.



8.2. Adjustments: electrical section

Gear motor identification

P	750W
U	230/400 V
I	3.1 A
n	1415 rpm

Drive Parameters

P	
U	
I	
n	

9. Maintenance



Increased noise or vibration level, loss of oil or wear can point to problems and have to be checked.

When doing maintenance activities, always disconnect the main switch and lock it with a padlock.



When doing maintenance activities, always let the energy flow off from the machine in a safe way.

- electrical power: disconnect main switch, make sure that there is no electrical energy left (condensators,...)
- compressed air: disconnect machine from mains, let flow off the pressure, make sure that there is no pressure left in the different elements
- steam: disconnect machine from mains, let flow off the pressure, let everything cool down
- hot surfaces: make sure that the temperature is safe.
- fuels:
- Refer "SP-S-35114-BCQA" document available on BDMS which explains Bekaert LOTOTO Standards at below link
- bekaert.sharepoint.com/sites/ENG-Design/Safety/SafetyCircuits/Forms/AllItems.aspx?id=%2Fsites%2FENG-Design%2FSafety%2FSafetyCircuits%2Fsafety_training%2F20230718_Bekaert_LOTOTO_Standard_Links_to_Engineering%2Epdf&parent=%2Fsites%2FENG-Design%2FSafety%2FSafetyCircuits%2Fsafety_training

Storage conditions

- When storing the machine/installation/unfinished machine for a period of time, it is advisable to do so in a dry place and to cover it to prevent dust

9.1. Preventive maintenance

9.1.1. Preventive maintenance: mechanical section

- check on regular bases the conditions of the unit.

NATURE AND FREQUENCY OF INSPECTIONS

- DAILY
 - N/A
- WEEKLY

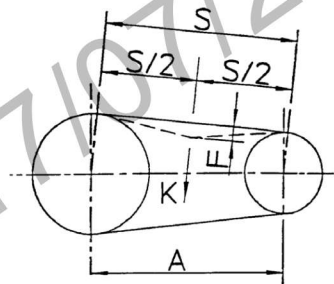
During the weekly inspection, pay special attention to the following points:

 - The electrical insulation.
 - The correct functioning of the controls and especially the emergency stop devices
- MONTHLY
 - Wear parts listed in manual



Measuring the belt tensions

1st method - deflection depth : see figure



- measure the deflection depth f. (see table dwg. ...)
- measure the deflection force K. (see table dwg. ...)

The deflection depth is measured with a mechanical pre-tensioning measuring device.

2nd method

The easiest way is to use a frequency measuring device.

Pre-tensioning frequencies : refer to table dwg.

- Oils and greases. See enclosed tables ENG 600 page 3 & 4, ENG 601 page 2 & 3. The tables show a selection of lubricants. The boxed ones are preferable.



Take care:

Collect oils/greases/process fluids/process products in an ecological considered way and according to the locally going rules.

Description and characteristics of oils used by Engineering										OILS Characteristics		ENG 600 page 3 Okt 2012
ENG type	Brand and type	Description and characteristics	ρ	Viscosity (cSt) 40°C 100°C		VI	Solidif. point (°C)	flash point (°C)	Denomination according to DIN 51502	SAP number	* - Polyglycols and mineral oil cannot be mixed - Polyglycols do not attack polyurethane enamels, polytetrafluoroethylene, viton, butadiene, silicone and leather - Other materials might be attacked.	
SO-01	Velocite 6 MOBIL	Technical oil	0,85	9,5	2,6	95	-30	154	C10 H10	2506465		
SO-11	Tellus S22 SHELL	Hydraulic oil	0,87	22	4,3	97	-39	166	HLP22	2523832		
SO-12	Tellus S2 M46	Hydraulic oil	0,88	46	7	108	-36	210	HLP46	3500654		
SO-21	Vactra 2 MOBIL	Oil for slides	0,88	63	8,8	112	-9	205	CGLP68	2510808		
SO-31	Turbo T 78 SHELL	Turbine oil	0,88	78	9,4	96	-9	218	TDL	2531955		
SO-40	Omala 68 SHELL	Mild EP gear oil	0,88	66	8,6	108	-24	228	CLP68	2550761		
SO-41	Omala 100 SHELL	Mild EP gear oil	0,89	96	11	103	-24	236	CLP100	2526415		
SO-42	Omala 150 SHELL	Mild EP gear oil	0,89	150	15	98	-18	240	CLP150	2506452		
SO-43	Omala 320 SHELL	Mild EP gear oil	0,90	329	24,8	97	-12	250	PGLP150	2506453		
SO-61	Tivela WA SHELL	Synthetic Polyglycol oil *	1,02	142	25	210	-48	275	PGLP220	2506459		
SO-62	Tivela WB SHELL	Synthetic Polyglycol oil *	1,02	200	35	224	-42	320	CLP320	2552188		

Bekaert Engineering		OILS Comparison table						ENG 600 page 4 Okt 2012
Oils ENG types	SHELL	ESSO	MOBIL	BP	FINA	TEXACO	ELF	CASTROL
SO-01	Vitrea 9	Marcol 82	Velocite oil Nr 6	Energol HP 10	Lycran C 808	Technical 20	Spinelf 10	Hyspin AWS 10
SO-11	Tellus S22	Spinesso 22	DTE 22	Energol HLP 22	Hydran LZ 22	Rando HD 22	Elfoina DS 22	Hyspin AWS 22
SO-12	Tellus S2 M46	Nuto H 46	DTE 25 (1)	Energol HLP 46	Hydran LZ 46	Rando HD 46	Elfoina DS 46	Hyspin AWS 46
SO-21	Tanna TX 68	Febis K 68	Vactra 2	Maccurat D 68	Hydran G 68	Way Lubric X68	Moglia 68	Magna BTH 68
SO-31	Turbo T 78	Teresso 77	DTE Heavy	Energol THB 77	Bakola 68	Regal R&O 68	Turbelf SA 68	Perfecto T68
SO-40	Omala 68	Spartan EP 68	Mobilgear 626	Energol GR-XP 68	Giran 68	Meropa 68	Reductelf SP 68	Alpha SP 68
SO-41	Omala 100	Spartan EP 100	Mobilgear 627	Energol GR-XP 100	Giran 100	Meropa 100	Reductelf SP 100	Alpha SP 100
SO-42	Omala 150	Spartan EP 150	Mobilgear 629	Energol GR-XP 150	Giran 150	Meropa 150	Reductelf SP 150	Alpha SP 150
SO-43	Omala 320	Spartan EP 320	Mobilgear 632	Energol GR-XP 320	Giran 320	Meropa 320	Reductelf SP 320	Alpha SP 320
SO-44	Omala 460	Spartan EP 460	Mobilgear 634	Energol GR-XP 460	Giran 460	Meropa 460	Reductelf SP 460	Alpha SP 460
SO-61	Tivela WA	Synessitic 100	Glygoyle 22	Energol SG 150	Persan S 150	Geartext S 475 W 90	Syntherma P 125	Alpha SN 150
SO-62	Tivela WB	Spartan EP 220	Glygoyle 30	Energol SG XP 220	Persan S 220	Synelope Clp 220	Syntherma P 270	Alpha SN 220

(1) vacuoline 1405 is used in hydraulic systems .
The colored framed oils are preferred Bekaert Engineering types. They are chosen on basis of their technical properties.

Description and characteristics of the greases used by Engineering.										ENG 601	
										Page 2	
										February 2003	
GREASES											
Characteristics											
ENG type	Brand and type	Description and characteristics	Drop point °C DIN ISO 2178	Temp - Range °C	NLGI DIN 51818	Viscosity of base oil at 40 °C [cSt]	Soap type or thickener	DN value x 10 ⁵	Article number		
SV-01	Mobilux EP 2 MOBIL	General ball bearing grease on lithium basis	180	-20 120	2	150	Lithium		8.521.113.89260		
SV-02	Merkan 2 FINA	Ball bearing grease on calcium basis	104	-20 60	2	38,4	Calcium		8.521.113.89018		
SV-03	Abida grease SDM1 SHELL	Grease for open gears	250	-20 150	1	730	Lithium		8.521.113.89007		
SV-04	Mobilgrease 28 MOBIL	Grease for torsion shafts of bunchers	230	-55 175	1	29	Bentoniet		8.521.113.89060		
SV-05	Alvania grease R3 SHELL	Gen. ball bearing grease such as SV01, but having lower viscosity and without	180	-35 150	3	70	Lithium		8.521.113.89003		
SV-06	Isoflex NCA 15 KLÜBER	Grease for spindle and tapered roller bearings on calcium basis.	180	-40 130	2	23	Calcium		8.521.113.89094		
SV-11	Darina grease R2 SHELL	Ball bearing grease for temp. > 120 °C.	> 250	+10 200	2	490	Mineral fibre		8.521.113.89253		
SV-12	Altemp Q NB 50 KLÜBER	Assembly paste preventing fretting corrosion and preventing stik-slip, contains MoS2.	< 140	-30 150	2	490	Barium		8.521.113.89028		
SV-13	Molykote G-Rapid (60 % MoS2) DOW CORNING	Grease containing 60 % MoS2.	-	-30 450	2	-			8.521.113.89023		
SV-14	Molykote longterm 2 plus	Grease containing 5 % MoS2.	180	-25 110	2	310	Lithium	2,5	8.521.113.89017		
SV-15	- NEVER SEEZ	Paste of grease, copper and graphite to prevent fretting corr.	-	130 0		-			8.521.113.89021		
Jan. 1976, Feb. 1977					Dec. 1999 : Viscosity SV-04 improved						
June 1977 : SV-03 penetration ASTM becomes 265/295.					Feb. 2002 : Article numbers modified						
Dec. 1985 : SV-04 is omitted					Feb..2003 : SV-03 modified						
March 1995 : SV-06 added											

GREASES										Eng 601
Table of comparison										Page 3
										February 2003
Greases Eng type	SHELL	ESSO	MOBIL	BP	FINA	TEXACO	ELF	CASTROL	KLÜBER	
SV-01	Alvania EP 2	Beacon EP 2	Mobilux EP 2	Energrease LS EP 2	Marson EP L2	Multifak EP 2	EPEXELF 2	LM grease		
SV-02	Rhodina grease 2		Mobilgrease HP222		Merkan 2	Cup grease 2	Palissa 2			
SV-03	Albida grease SDM1									
SV-04			Mobilgrease 28							
SV-05	Alvania R 3									
SV-06									Isoflex NCA 15	
SV-11	Darina grease R2		Mobiltemp SHC 100	Grease PR 9142	Bentex 2	Thermatex EP 2	Staterna MO2	BNS grease		
SV-12	Klüber – Altemp Q NB 50 Lubricating paste									
SV-13	Dow Corning Corp. : Overseas Import Lubric. NV OIL SA Molykote G Rapid (6s0 % MoS2) Adegem : Paste ' S' special									
SV-14	Dow Corning Corp. : Overseas Import Lubric. NV OIL SA Molykote longterm 2 (5 % MoS2) Adegem : Paste G.U.N.V.									
SV-15	Never Seez NSBT-16 Meet the Militaire spec. A907A			Bostik group Boston ST Middleton MA 01949						

(1) : The greases in frame are used by Engineering. They have been chosen on the basis of technical considerations.

June 1977, feb. 1982	March 1995 : SV-06 added
Dec. 1985 : Adaptation to new type denominations.	Nov. 1995 : Sv-07 added
Dec. 1988 : Adaptation to new type denominations	Feb. 2003 : SV-03 modified
Oct. 1994 : SV-04, SV-05 added	

9.1.2. Preventive maintenance: electrical section

WEEKLY

During the weekly inspection, pay special attention to the following points:

- The electrical insulation.
- The correct functioning of the controls and especially the emergency stop devices

DC-motor + tacho + contact rings

Check brushes and commutator every 1000 hours.

See also constructors ' manuals.



Activities on drives

When doing activities on and around drives, always check if the DC-bus is dead

Filter mats

The mats should have a sufficient flow passage, if not, they have to be cleaned or replaced.

Batteries

Replace all batteries every year.



Attention :

Collect the batteries separately and in an ecological way so as to avoid short-circuits and leakage.

Compressed air

Check the compressed air circuit and replenish oil, if necessary: N/A

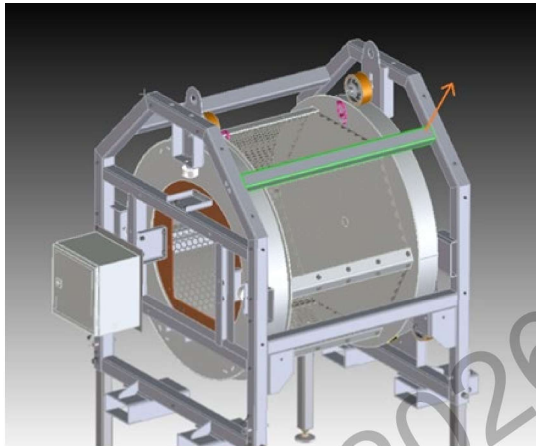
Main switch

Check the correct operation of disconnecting coil and main switch preventively.

9.2. Special mounting and dismantling

9.2.1. Special mounting and dismantling: mechanical section

- One profile tube of the frame is dismantlable, to assemble/disassemble in the DRUM assembly into the unit as shown below.
- Once the drum assembly is mounted onto the unit, the lifting eyes shall be removed.



9.2.2. Special mounting and dismantling: electrical section

- The main electrical power switch is foreseen for applying LOTOTO

9.3. Tools

9.3.1. Tools: mechanical section

- Standard toolbox is sufficient
- No special tools for maintenance needed

9.3.2. Tools: electrical section

9.4. Troubleshooting

9.4.1. Troubleshooting: mechanical section

N/A

9.4.2. Troubleshooting: electrical section

Refer to signalization and messages on main display on line.

10. Drawings, lists of parts, lists of spare parts



In order to guarantee a reliable and safe operation, only original parts can be used (as mentioned in the parts lists). One can only deviate from this principle after consent of the manufacturer or after the necessary checks of this specific part by the customer.

10.1. Drawings, lists of parts, lists of spare parts: mechanical section

10.1.1. Structure of the drawings

a. In the list of parts of each drawing the following information is given :

- [Level] *
- [Position]: refers to the position of the part on the drawing.
- [Component]: material number
- [Rev] *
- [Description]: gives a short description of the part
- [Qty] = Quantity: gives the number of each part used in the drawing.
- [Unit]: explains in which unit the number is expressed (PC = piece, M = metre, L = litre)
- [Ref pnt] *
- [Eng/design] *
- [Size 1, 2, 3, unit] *
- [Drawing]: drawing number
- [Rev] *
- [Baan number]: refers to Baan article
- [Bulk] *
- [Sort String] *

(* = information only used internally)

Example of a parts list

Level	Position	Component	Rev	Description	Qty	Unit	Ref pnt	Eng/design	Size 1	Size 2	Size 3	Size unit	Drawing	Rev	Baan number	Bulk	Sort String
1	0011	2750753	C	DRIVE OBLIQUE CAPSTAN PB	5	PC	M		0	0	0		3001358	C	003001358V01		
2	0010	2533730		STRAIGHT HOSE COUPLING R	1	PC			0	0	0				801369952200		
2	0020	2561763	D	UPRIGHT , COLUMN (905.695.71000)	1	PC			0	0	0		569571	D	00000569571		
2	0030	2533613		28x16x200 PARALLEL KEY	1	PC			0	0	0				806012816200		
2	0040	2546085		GEAR UNIT i=4,7 PB2604 D	1	PC			0	0	0				804172000112		
2	0050	2551921		LUBRICANT OIL ENERSYN HT	11	L			0	0	0				852111389208		
2	0060	2530327		STRAIGHT HOSE COUPLING R3/4-25mm	1	PC			0	0	0				801369952527		
2	0070	2508794		ELBOW 3/4" 90G MF ISO49	1	PC			0	0	0				801110920048		
2	0080	2556772		COVER PB2604 DIAM.180mm	1	PC			0	0	0				804172012604		
2	0090	2659917		HEX. HEAD SCREW M24x90 DIN933 St8.8 GAL	1	PC			0	0	0				810302430090	X	
2	0100	2684157		RONDS CU 24 X29X 2	1	PC			0	0	0				806540240029		
2	0110	2542119	A	RING	1	PC			0	0	0		083512	A	000000083512		
2	0120	2509112		HEX. HEAD SCREW M20x40 DIN933 St8.8 GAL	6	PC			0	0	0				810302025040	X	
2	0130	2503365		WASHER M20 DIN125B STAAL	6	PC			0	0	0				806510210037	X	
2	0140	2694472	*	FLAT PIECE 2605	1	PC			0	0	0		2002274	*	000002002274		
2	0150	2509092		HEX. HEAD SCREW M12x35 DIN933 St8.8 GAL	2	PC			0	0	0				810301217035	X	
2	0160	2503357		WASHER M12 DIN125B STEEL	2	PC			0	0	0				806510130024	X	

b. Way of ordering

The necessary data for correct ordering are :

- . Material number (Component)
- . Quantity.

Description, drawing number and position number may also be indicated.

General example (not valid for this machine)

example of a house-made part :

1 piece : Component 2694472, FLAT PIECE
(assy.dwg. 3001358 pos.0140 (=pos.14 on assembly))

example of a purchased part:

6 pieces : Component 2503365, WASHER
(assy. dwg. 3001358 pos. 0130 (=pos.13 on assembly))

c. Explanation of the drawing title block

Mach.type	Doc. Creation	DATE	05/07/2019	NAME	Karande Baliram	1
DRT	Doc. Last Modified	DATE	21-Aug-25	NAME	Ubale Vaijinath	2
	Doc. Release	DATE	21/08/2025	NAME	Ubale Vaijinath	3
	()		Replaces drawing No:			4
	()		Replaced by drawing No:			5
	Tolerance class according ENG 118: NotApplicable			GD&T according ENG 154		6
2-PLANE WIRE STRAIGHTENER						7
no painting/coating				Scale	SAP: 2434610	8
				1:5 (1:2)	UDM:	9
Engineering			Pag. 1 / 1	ED001882534		B

- 1.Date of the original drawing
- 2.Date of the actual revision
- 3.Name of the draftsman of the original drawing
- 4.Name of the draftsman of the actual revision
- 5.Drawing name (title)
- 6.SAP number (material)
- 7.Actual revision letter
- 8.UDM number
- 9.Drawing number (identification)

10.1.2. Assembly drawings + lists of parts

Assembly list per unit: General assembly 20305355

Sr. Nr.	Number	Version	Description	Number 2D	Quantity
1	20307698	A	ROTARY DRUM FOR LOOP FIBER	ED003131381	1
2	20307453	A	FRAME STRUCTURE	ED003130992	1
3	20307454	*	FRAME LEG ADAPTER	ED003131039	1
4	20307455	*	DRUM HOUSING	ED003131173	1
5	20307456	*	RADIAL GUIDE ROLLER - LOWER	ED003129517	4
6	20307457	*	RADIAL GUIDE ROLLER - UPPER	ED003129481	2
7	20307458	A	SIDE SUPPORT ROLLER	ED003129441	6
8	20307459	A	DRIVE UNIT	ED003131370	1
9	20307460	A	FEEDING SHUTE	ED003131366	1
10	20307461	A	OUTLET FLAPS	ED003130219	1
11	20307462	A	PROTECTIVE COVER	ED003130321	1

Additional Drawings/Documents

Description	Drawing Nr.
HANDLING PLAN	ED003131628

10.1.3. Lists of spare parts

The need for spare parts, the types and the number are different for each customer and depend on :

- the number of purchased machines
- does the customer already have such machines in production
- the availability of components on the local market
- the construction possibilities within the firm, etc.

That's why we advise the customer to define his needs himself starting from the parts lists (see item 10.1.2.).

For all parts, a quotation can be made and an order placed with Bekaert Engineering. All the customer has to do is indicate the article number which is mentioned in the parts lists.

SAP Nr.	Part Rev.	Description	Number 2D	Quantity
3675869	*	WHEEL POLYURETHANE RE.F4-125-RSL		6
3105300	*	WHEEL POLYURETHANE RE_F5-080-RXL-ESD		6
3675877	*	V-BELT SPB LW=1740		1
3675890	*	TENSIONING ROLLER DIA 40mm ID-14087400		1
20307719	*	RUBBER FLAP FRONT	ED003130136	1
20307721	*	SIDE FLAP	ED003130146	2
20307720	*	SIDE FLAP SHORT	ED003130166	2

10.1.4. Documentation of purchased parts

N/A

10.2. Drawings, lists of parts, lists of spare parts: electrical section

10.2.1. Inspection reports

10.2.2. Structure of the diagram

See "DEMO RUPLAN" : drawing 4000982.

Refer to the electrical drawing

SAP NR.	Description	Drawing Number
20312651	IDF	ED003163907

10.2.3. Electrical, pneumatic and hydraulic diagrams + lists of parts

Electrical and pneumatic/hydraulic diagram + electrical and pneumatic lists of parts:

10.2.4. Lists of spare parts

The need for spare parts, the types and the number are different for each customer and depend on :

- the number of purchased machines
- does the customer already have such machines in production
- the availability of components on the local market
- the construction possibilities within the firm, etc.

That's why we advice the customer to define his needs himself starting from the parts lists (see item 10.1.2.).

For all parts, a quotation can be made and an order placed with Bekaert Engineering. All the customer has to do is indicate the article number which is mentioned in the parts lists.

10.2.5. Programs (PLC and display data)

10.2.6. Documentation of purchased parts

For this documentation, visit our website *Catalogs and Manuals of Commercial Parts used on Equipment of Bekaert Engineering* on <http://portal.bekaertcorp.local/> Technology – Engineering – Technical Information - Catalogs and Manuals of...

Intranet address

SC 17/07/2026

Annex A : list of documents

All documents used in the instruction manual are mentioned below so that the complete manual can be recomposed at any time.

*Specification: Ref document - **IDF_ROTARY DRUM FOR LOOP FIBER_V01-00_Confidential**

SC 17/07/2026

IDF – ROTARY DRUM FOR LOOP FIBER

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1. Version history

Version	Date	Author (mech/elec)	Approval	Comment
V01-00	May, 2026	Wouter D (Vaijinath U)/ Hendrik D (Prashant P)	Valentijn Kuijken	- Original version - First version

2. Contents

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3. Application range

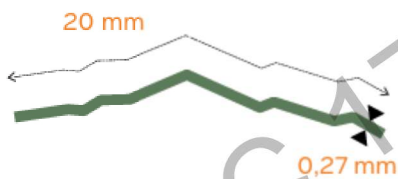
Dramix® Loop™ is the next generation in concrete reinforcement: second life, high-performance steel fibers, made entirely from steel recovered from end-of-life tires.

Up to 80% lower CO2 emissions compared to traditional concrete reinforcement.

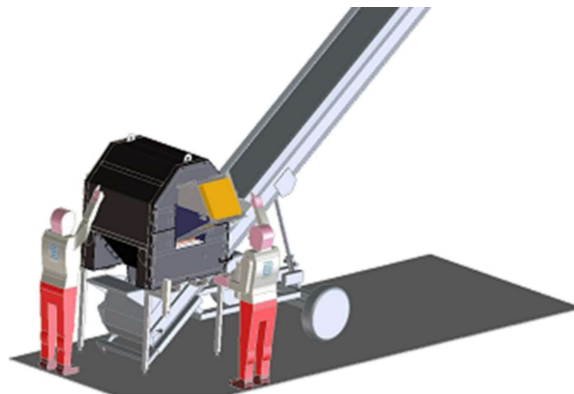
Supports sustainable and circular construction



- Dramix® Loop™ 15 steel fibers
- Dramix® Loop™ 20 steel fibers
- Dramix® Loop™ 25 steel fibers
-



The machine is only intended for disentangling fibers mentioned above
The machine must not be used for products with physical properties that differ from the goods described above.



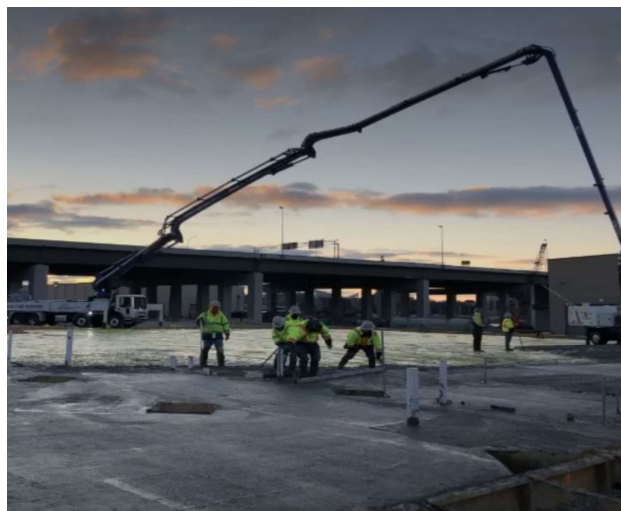
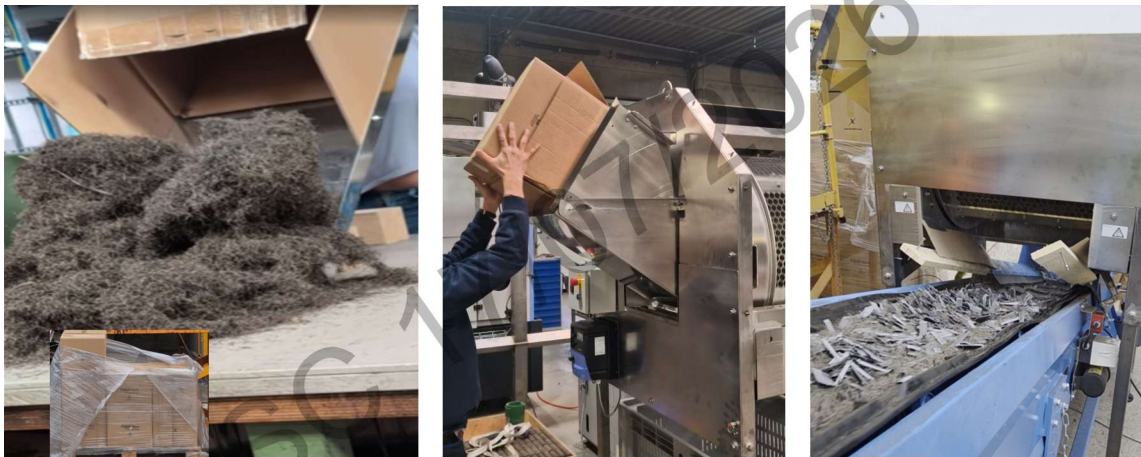
4. Description

4.1. Use

The positioning of the machine, installation, or partly completed machinery within the operational environment shall be defined by BEKAERT. The equipment may be installed either within or outside a designated work area, depending on application requirements. BEKAERT is responsible for defining workstation conditions and ensuring compliance with applicable safety and operational standards.

A comprehensive risk assessment of both the installation and the surrounding environment shall be performed by BEKAERT in accordance with relevant directives.

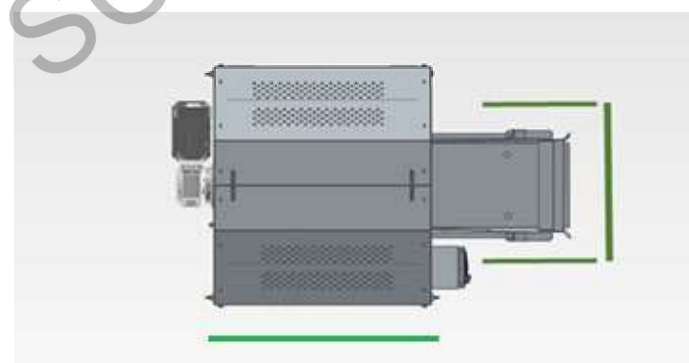
The machine/installation/partly completed machinery is designed for autonomous operation. Material feeding is performed manually by the operator, who introduces fiber boxes into the system via the designated chute. Loading shall be carried out exclusively from the predefined operator positions, as indicated in the layout drawings.



The following figures provide an overview of the most important components of the machine/installation/unfinished machine:



- 1) Frequency controller and emergency stop
- 2) Motor
- 3) Dosing funnel
- 4) Rotary drum



4.2. Technical Specifications - Mechanical

4.2.1. Overview

- Below you can find the general connection values of the machine/installation.

Column1	Description	Value
<i>Installation dimensions</i>	L x W x H (mm)	1870x1280x2285
<i>Installation weight</i>	Mass (kg)	570
<i>Maximum power</i>	Power (kW)	0.75
<i>Recommended fuse</i>	Circuit breaker (A)	10 3x110/220/240V
<i>Recommended working pressure</i>	Pressure (bar)	N/A
<i>air consumption</i>	Flow rate (l/min)	N/A

4.2.2. FRAME

The main frame is constructed entirely from stainless steel to prevent corrosion of components and ensure long-term durability.

The frame height is adjustable by sliding the four support legs within the main frame structure. Once the required height is set at site, the legs are securely fixed using locking pins provided at all four locations.

Levelling screws are incorporated to enable precise alignment and leveling of the frame during installation.

One profile tube of the frame is dismantlable, to assemble/disassemble in the DRUM assembly into the unit

4.2.3. LEG ADAPTER

Additional leg adapters are supplied to accommodate increased conveyor belt width requirements. When not in use, the adapters shall be securely mounted at the designated storage locations provided on the unit.

4.2.4. DRUM HOUSING

The drum housing is fabricated entirely from stainless steel and comprises six perforated laser-cut plates with a hexagonal pattern, assembled to form a hexagonal configuration. The drum has an overall diameter of 1 meter and a width of 0.8 meters. The laser-cut hexagonal plates are designed to be replaceable based on specific product requirements.

Lifting eyes are provided for handling the drum assembly during installation. Once the drum assembly is mounted onto the unit, the lifting eyes shall be removed.

4.2.5. DRIVE UNIT

The drum is rotated by a dedicated drive mechanism, enabling the feed product to be disentangled during operation.

The drive system consists of a geared motor, two V-pulleys, drive belts, and a tensioning assembly to maintain the required belt tension.

The rotational speed of the drum is adjustable via a frequency drive, allowing the motor speed to be controlled as per process requirements.

4.2.6. FEEDING SHUTE

Chute Design:

- Ergonomically designed chute to facilitate smooth and safe material entry into the drum.
- Designed for controlled feeding of fibre material into the drum system.
- Fabricated from stainless steel to ensure corrosion resistance and durability in industrial environments.
- Chute is rigidly mounted to the main unit to ensure stability during operation and can be

Feeding Method:

- Manual feeding of fibre boxes (max size 400x400x300mm) through an inclined chute.

Operator Access:

- Material to be loaded from designated operator positions as defined in the machine layout.

Safety Considerations:

- Designed to minimize spillage during feeding
- Allows safe operator interaction during loading

4.2.7. OUTLET FLAPS

Rubber flaps are provided to guide the fibers onto the conveyor belt and prevent spillage outside the belt area.

When not in use, the rubber flaps can be removed and stored in the designated storage box provided on the frame.

4.2.8. PROTECTION COVERS

Provided physical guarding for the rotating drum to prevent accidental contact and ensure operator safety during operation.

Designed in compliance with applicable machine safety standards and guarding requirements.

4.3. Technical Specifications - Electrical

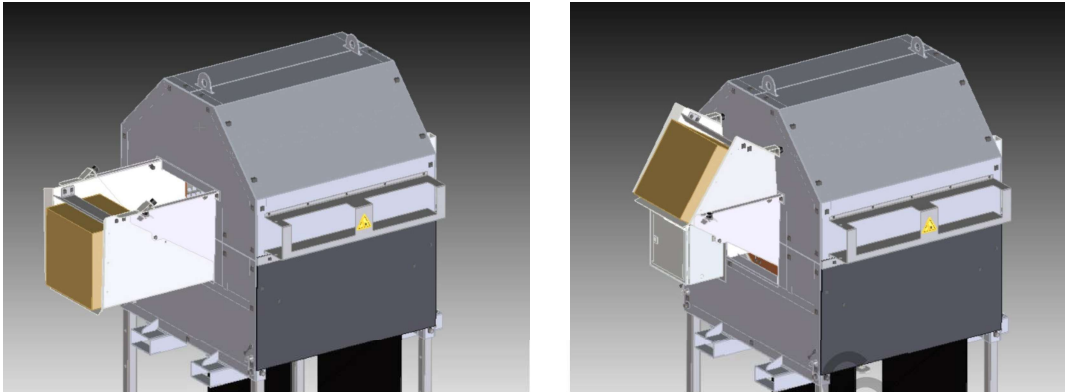
- The machine is equipped with a start, stop & emergency stop, reset button and frequency control where the general controls are provided.
- A reset must be carried out upon starting up for the first time (or after an emergency stop).
- The drum rotation to be activated by pushing the start push button on the front of the electrical cabinet.
- The drum rotational speed can be controlled by turning the rotary knob on the frequency drive.
- Machine is stopped by pushing the stop push button on the front of the electrical cabinet.
- Earthing is taken from the industrial top supply connection.
- LOTOTO to be applied on ON-LOAD SWITCH



4.4. Adjustments

The feeding chute can be installed in either a horizontal or inclined orientation, depending on site conditions and operator convenience for effective dosing of material into the drum.

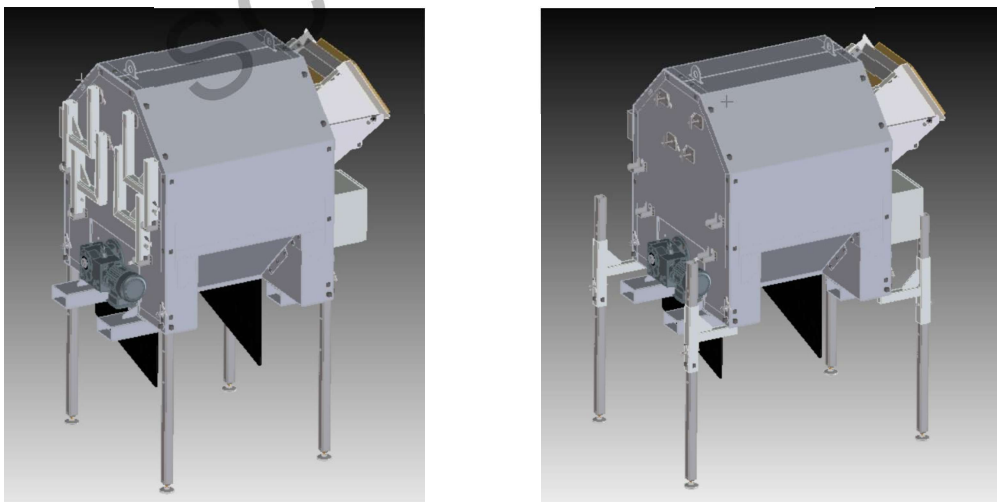
Ensure all screws are properly secured when the chute is in the inclined position, as specified in the drawing.



Leg adapters shall be used when accommodating wider conveyor belt configurations. When not in use, the adapters shall be securely stored and fixed at the designated mounting provisions on the side of the unit.

Reason for using adapter parts:

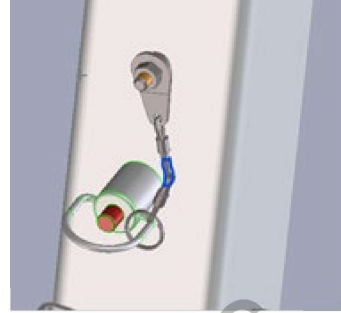
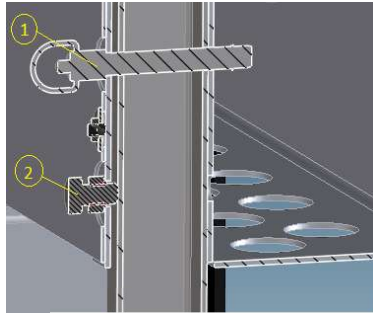
- For conveyor belt width up to 600 mm: Adapter parts are not required.
- For conveyor belt width up to 1100 mm: Adapter parts must be used.



Height Adjustment for the Unit

Reason: Conveyor belts may be installed at different inclinations depending on the application. To prevent interference between the frame and the conveyor belt, the height is adjustable, allowing the unit to be positioned as close as possible to the conveyor belt.

1. Use the locking pin during height adjustment to secure the legs within the frame.
2. After adjusting the height, tighten the screws to firmly clamp the legs.
3. All locking pins are attached with retaining cables.



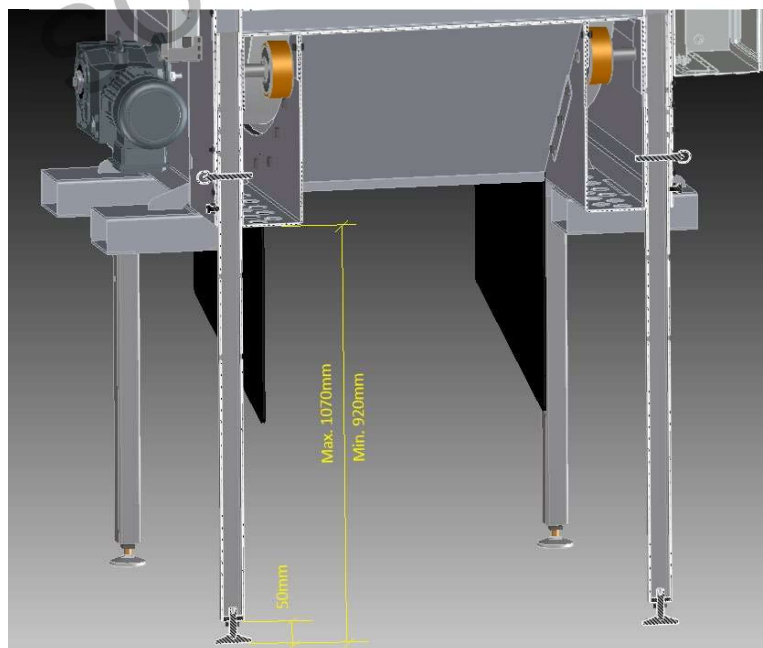
With leg adapter parts, the height from ground level to the bottom of the frame is as follows:

- Maximum height: 1140 mm
- Minimum height: 920 mm

Without leg adapter parts, the height from ground level to the bottom of the frame is as follows:

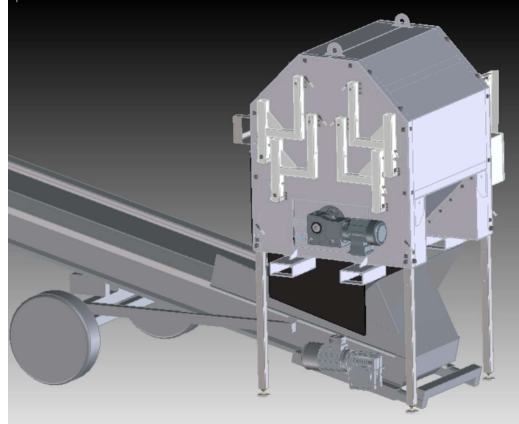
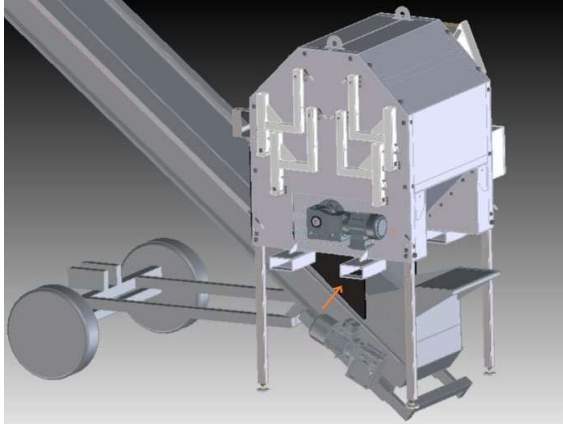
- Maximum height: 1070 mm
- Minimum height: 920 mm

During transport, the height from ground level to the bottom of the frame is:
Minimum height: 520 mm



Rubber flaps to be used according to the angle of the conveyor belt

- Shorter rubber flaps for higher angle
- Normal rubber flaps for lower angle



4.5. Safety

4.5.1. Safety measures

In order to make using the machine/installation/unfinished machine as safe as possible, the following safety measures have been implemented:

MECHANICAL

- The moving parts of the machine/installation/unfinished machine are screened off as much as possible and the screen must be removed with tools.

ELECTRICAL

- The machine is fitted with an emergency stop to stop the rotation of the drum at any time.
- The frequency controller is fitted with a built-in thermal protection for the motor.

PNEUMATIC

- N/A

NOISE

- The sound pressure of the machine/installation/unfinished machine is less than 70 dB(a)

SURROUNDING AREA

- We recommend clearly demarcating the zones on the ground
- We recommend regular cleaning and brushing of the machine

4.5.2. Residual safety risk

The residual risks associated with this machine/installation/unfinished machine, after the risk assessment and the mitigating measures are as follows, with reference to Appendix I of the Machinery Directive 2006/42/EC:

The interference of the rotating drum upon discharge of the fibers (if the conveyor belt is not connected properly)



There should always be conveyor belt underneath the unit while operating, because there is exit opening and rotating drum can be accessed from the bottom opening.

EXPLANATION OF THE SYMBOLS ON THE MACHINE/INSTALLATION/UNFINISHED MACHINE

The machine has stickers to designate the danger of jamming when the fibres are discharged:



4.5.3. Operator condition

The machine/installation/unfinished machine may only be used under the operating conditions specified here:

- The machine/installation/unfinished machine must be positioned so that it is virtually level.
- The machine/installation/unfinished machine must not be used in an environment where there is a risk of explosion.
- The machine/installation/unfinished machine should not be used outdoors without the necessary noise measures, where applicable.
- The machine/installation/unfinished machine may only be used in environments with temperatures between 0 and 35 °C
- The machine/installation/unfinished machine may only be used for non-domestic purposes

SAFETY PRECAUTIONS TO BE OBSERVED

- For safe use of the machine/installation/unfinished machine, a number of safety measures must be observed; these are listed below by category

PERSONAL PROTECTIVE EQUIPMENT

- We recommend that you wear safety shoes, safety gloves, and safety glasses while using the machine/installation/unfinished machine.

PREPARATION FOR SAFE USE

- Make sure that operating procedures, minor maintenance work and procedures for setting up, assembling and moving the machine/installation/unfinished machine are carried out exclusively by qualified personnel, i.e. personnel who are competent and familiar with the contents of this manual.
- Provide a correct, stable set-up
- The connection and circuit inside the machine is fitted with a safety earth. Make sure you have a proper earth connection.

- Use extension cords with earthing of a sufficiently large diameter and with a voltage source that is fitted with an earth leakage switch.
- Make sure that the wall socket and any connections between extension cords are properly protected from moisture. Do not unplug the connector by the cord.
- Before starting up the machine, ensure that all screens are mounted correctly

SAFETY PRECAUTIONS DURING USE

- Keep the area around the machine/installation/unfinished machine free of materials and other obstacles
- Do not place any loose tools or parts on the machine/installation/unfinished machine. These can end up or fall between the moving parts.
- If you leave the machine/installation/unfinished machine unattended, turn off the master switch with the key lock and remove the key.
- The sound pressure of the machine/installation/unfinished machine is less than 70 dB(A)
- Make sure the surrounding area is as clean as possible.

SAFETY MEASURES DURING INSPECTION, CLEANING AND MAINTENANCE

- Ensure that maintenance and repair work is carried out only by competent and skilled persons. This work may only take place when the machine/installation/unfinished machine is at a standstill.
- When opening the control cabinet and during maintenance, make sure that the electricity is switched off.
- Make sure that other power sources are switched off and/or disconnected and that the circuit is depressurised or de-energised.
- If anyone has to be inside the screen, near any rotating parts, the machine must be electrically switched off and locked out

WARNING:

THE MACHINE/INSTALLATION/UNFINISHED MACHINE MUST BE PUT INTO SERVICE BY BEKAERT 'S INTERNAL ACCIDENT PREVENTION SERVICE. TRAINING AND SAFETY INSTRUCTION CARDS MUST BE PREPARED.

ENSURE THAT MAINTENANCE AND CLEANING ARE CARRIED OUT BY TRAINED PERSONNEL, WHO ARE FAMILIAR WITH THE HAZARDS AND RESIDUAL RISKS OF THE MACHINE/INSTALLATION/UNFINISHED MACHINE AND THE CONTENTS OF THIS USER MANUAL.

PAY PARTICULAR ATTENTION TO DISCONNECTING THE POWER SUPPLIES AND DE-ENERGIZING THE VARIOUS CIRCUITS!!!

MEASURES TO KEEP THE MACHINE/INSTALLATION/UNFINISHED MACHINE IN GOOD CONDITION

- Make sure that the machine/installation/unfinished machine is always in good condition, which includes the paintwork. When carrying out repairs, use only suitable materials and working methods that are appropriate for the intended use
- For the known wear parts, use only parts supplied by Bekaert
- If the machine/installation/unfinished machine is used regularly, check it at least once a week and clean it regularly.

5. Requirement for machine Installation

- Installation: no groundwork required, refer layout drawing
- Ensure ground surface must be flat and rigid enough to carry the weight about 570kg
- Make sure that all power sources are disconnected and the circuit is depressurized or deenergized.
- Ensure that machine/installation/unfinished machine is properly and stably anchored when moving
- Compressed air: NA

6. Options and variants of the machine

options on the machines

- Leg adapter assembly (if only one type of conveyor belt, then this sub-assembly not needed)

variants on the machines

- Rubber flaps (shorter and longer variants available, based on the conveyor belt angle suitable type to be used)

SC 17/07/2026

7. Needed tools for handling and maintenance

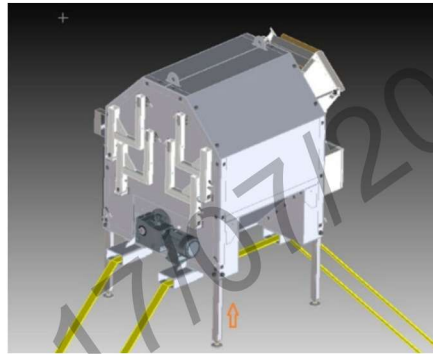
Some tools can be needed to do machine handling and maintenance in a safe way.

These tools need to be ordered separately and are not included in the machine delivery.

Make sure that the people who are handling the machine/installation/unfinished machine or parts thereof are trained to use equipment such as a forklift truck, telescopic handler, crane, etc.!!

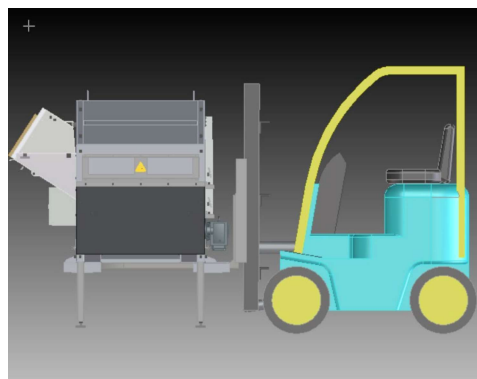
7.1. Tools for Handling

- Machine is lifted with forklift, without any extra tool
- Handling: refers to handling drawing ED003131628
- All four legs to be slid inside the frame as maximum as possible
- All legs adapter parts to be placed and firmly fixed on the side of the unit
- All rubber flaps to be dismantled and kept into storage box while transporting this unit
- During transportation, the machine must be properly fixed and securely strapped as shown
- Do not apply straps on the protection covers, as this may cause bending or damage.



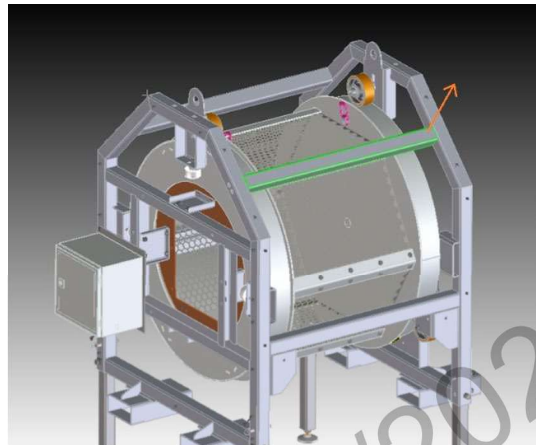
WARNING:

- Machine always to be handled shown in 1st picture below
- Forklift can only be used while unloading or loading into the truck in 2nd picture below
- Forklift arm to be inserted from motor side and not from feeding chute side
- Minimum forklift arm length must be 1300mm



7.2. Tools for maintenance

- No special tools for maintenance needed
- The main electrical power switch is foreseen for applying LOTOTO
- One profile tube of the frame is dismantlable, to assemble/disassemble in the DRUM assembly into the unit as shown below.
- Once the drum assembly is mounted onto the unit, the lifting eyes shall be removed.
-



7.3. Storage conditions

- When storing the machine/installation/unfinished machine for a period of time, it is advisable to do so in a dry place and to cover it to prevent dust

7.4. Cleaning & Maintenance

NATURE AND FREQUENCY OF MAINTENANCE WORK

These are machine-specific tasks, but some general points can always be taken into consideration:

- After prolonged periods of inactivity, check that the lubricating grease/oil is reaching the correct location. If necessary, replace the pipes annually as a preventive measure.
- Replace the bearings of the (functional) and safety-critical parts annually.
- In total, there is 1 grease nipple on each bearing. Lubrication must be completed monthly, and weekly with intensive use. The bearings are located by the drive and return roller.
- For the gearboxes with a gauge glass and filler cap, it is advisable to check the oil level on a monthly basis, and to add oil if necessary. The other gearboxes are maintenance-free. If, after a long period of use, a layer of grease separates on the cabinet, precautions must be taken, such as replacing the oil seals. See also the enclosed technical documentation of the gearboxes themselves

NATURE AND FREQUENCY OF CLEANING WORKS

This is determined by the customer depending on the load on the installation and the scheduling of the various types of cleaning work. In any case, immediate action must be taken when spilling to avoid the risk of slipping.

The machines are manufactured from mainly stainless-steel components. This means that they are cleaned in the morning using the most common cleaning products used in industry.

If you have any doubts, please contact NV BEKAERT. After analyzing the information sheet for the item of equipment being used, we can advise whether it can be used.

CAUTION: NEVER SPRAY AT HIGH PRESSURE ON THE FOLLOWING PARTS:

- ELECTRICAL COMPONENTS AND PHOTOCELLS

- BEARINGS

- MOTOR GEARBOXES

All of the above should be cleaned with wet cloth, if necessary, with a small amount of cleaning product

NATURE AND FREQUENCY OF INSPECTIONS

- DAILY
 - N/A
- WEEKLY

During the weekly inspection, pay special attention to the following points:

 - The electrical insulation.
 - The correct functioning of the controls and especially the emergency stop devices
- MONTHLY
 - Wear parts listed in manual

8. Appendix A: Needed information for quotation/order

Refer configuration of the unit by looking to the general assembly drawing (Ref. SAP Nr. 20307698)

- Option and Variant can be selected based on site conditions
- Almost whole unit is made up of stainless-steel material, if need to change to other material based on site conditions then need to inform.
- Confirm supply voltage 3x 110/220/240 V, without N, 50 / 60 Hz.
- If other voltage, special version is needed.

9. Appendix B: Process parts and wear parts

Needed spare parts available in draft manual & also should be discussed with GAMM.

NV BEKAERT SA
VU/PP/SY
17/7/2026



MANUAL DE INSTRUCCIONES

MÁQUINA, tipo: N.º IDF: 102-103BE

TIPO: TAMBOR ROTATIVO PARA FIBRA EN BUCLE

CLIENTE: SC – Construcción sostenible (sobre el terreno)



Importante:

En caso de una máquina semipacificada (consulte la declaración CE más adelante en este manual): La máquina semipacificada no debe ponerse en servicio hasta que la máquina final o la máquina en la que se vaya a incorporar haya sido declarada conforme a las disposiciones de la Directiva sobre máquinas 2006/42/CE.

En todos los casos (máquina completa o máquina parcialmente completada):

Antes de manipular, montar o poner en servicio la máquina, asegúrese de haber leído y comprendido las instrucciones de uso. Póngase en contacto con nosotros si tiene alguna duda. Antes de la puesta en servicio, compruebe que todos los dispositivos de seguridad funcionen correctamente. Póngase en contacto con nosotros en caso de averías. El proveedor no se hace responsable si el cliente no cumple todas las instrucciones de este manual.

Deben respetarse estrictamente las normas de seguridad. El proveedor no asumirá ninguna responsabilidad si se realizan modificaciones que no cumplan con las normas de seguridad vigentes en los componentes mecánicos, eléctricos o de otro tipo, así como en los equipos de seguridad.

Advertencia contra el uso no autorizado:

Por razones de seguridad, la máquina solo debe utilizarse tal y como se describe en las presentes instrucciones de uso. Cualquier otra aplicación es responsabilidad del cliente, salvo que el proveedor haya dado su autorización por escrito.

NV BEKAERT SA – Departamento de Ingeniería
Oude Heerweg 5, BE-8540 Deerlijk
www.bekaert.com

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Manual digital elaborado en BTEC (China)

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Clasificación: Información restringida de Bekaert

ÍNDICE

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Nota: Cada uno de los elementos mencionados anteriormente puede clasificarse en subapartados mecánicos, eléctricos, neumáticos e hidráulicos, si fuera necesario.

1. Datos generales

1.1. Símbolos de seguridad que pueden utilizarse en este manual de instrucciones o en la máquina.

Símbolo	Significado
	No seguir esta instrucción puede provocar daños en la máquina o lesiones físicas a una persona.
	No seguir esta instrucción puede provocar daños en la máquina.
	Consejo. Recomendación para realizar una tarea determinada con mayor facilidad.
	Es obligatorio el uso de protección ocular
	Es obligatorio el uso de calzado de seguridad
	Protección auditiva obligatoria
	Casco de seguridad obligatorio
	Guantes de seguridad obligatorios
	Ropa de protección obligatoria
	Visiera protectora obligatoria

	Mascarilla antipolvo obligatoria
	Prohibida la entrada a personal no autorizado
	Prohibida la entrada a personas con marcapasos
	Prohibido transitar por esta zona
	Peligro de muerte
	Peligro: equipos eléctricos bajo tensión
	Advertencia: campo magnético intenso
	Precaución: sustancia corrosiva
	Precaución: superficie caliente
	Precaución: vapor caliente
	Precaución: líquidos calientes
	Precaución: piezas giratorias

	Precaución: punto de pellizco
	Precaución: riesgo de corte
	Precaución: riesgo de lesiones en los pies
	Precaución: riesgo de tropiezo
	Precaución: riesgo de aplastamiento

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1.2. Declaración de conformidad CE



EC-declaration of conformity (Annex II.1.A Machine Directive 2006/42/EC) - original



This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user. The machine must be installed according to the instructions in the manual including the necessary guards and protective covers, if not, the machine may not be put into service.

MANUFACTURER

NAME : NV BEKAERT SA – Engineering department
ADDRESS : Oude Heerweg 5 , BE-8540 Deerlijk

AUTHORISED TO COMPILE THE TECHNICAL FILE:

NAME : NV Bekaert SA – Engineering department
ADDRESS : Oude Heerweg 5 , BE-8540 Deerlijk

MACHINE : Loop in device

TYPE : IDF

SERIAL NUMBER : 102BE

The machine described above, if it is installed, maintained and used in accordance with the manual and the rules of good skill, meets the fundamental requirements for safety and health of the EC-directives, and following determinations and standards:

The directives:

2006/42/EC:	Machinery directive	OJ L 157/24	09/06/2006
2014/35/EU:	Low voltage directive	OJ L 96/357	29/03/2014
2014/30/EU:	Electromagnetic compatibility (EMC) directive	OJ L 96/79	29/03/2014

The standards:

EN 60204-1:2018	Safety of machinery - Electrical equipment of machines (IEC60204-1:2016 modified)
ISO/TR 14121-2:2023	Safety of machinery - Risk assessment - part2: practical guidance and examples of methods
EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN ISO 13850:2015	Safety of machinery - Emergency stop - Principles for design
EN ISO 13854:2019	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN ISO 13857:2019	Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 14120:2015	Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards

Deerlijk - Belgium, July 9, 2026

Signature,

Name : Valentijn Kuijken

Function : Head of Advanced Equipment Solutions



EC-declaration of conformity (Annex II.1.A Machine Directive 2006/42/EC) - original



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The directives:

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Deerlijk - Belgium, July 9, 2026

Signature,

Name : Valentijn Kuijken

Function: Head of Advanced Equipment Solutions

1.3. ISO 9001

Bekaert Engineering opera de conformidad con un sistema de calidad certificado según la norma ISO 9001.



Certificate

Management system as per
DIN EN ISO 9001:2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

NV BEKAERT SA
Bekaertstraat 2
8550 Zwevegem
Belgium

with the locations according to the annex

operates a management system in accordance with the requirements of EN ISO 9001:2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

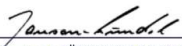
Scope

Design, development, manufacturing, sales and distribution of steel wire, steel fibre products, steel wire products, gas burners, heat exchangers and the corresponding key peripheral components for the residential and industrial heating

Certificate Registration No. 44 100 161879
Audit Report No. 3534 4260

Valid from 2024-01-30
Valid until 2027-01-29
Initial certification 2015

Essen, 2023-11-01


Certification Body at TÜV NORD CERT GmbH



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1.4. Nivel de ruido

Indique aquí el nivel de ruido emitido, su valor efectivo o el valor determinado mediante la medición del nivel de ruido emitido por una máquina idéntica.

Se ha realizado la siguiente medición:

- el nivel de presión acústica continua equivalente ponderada A en las zonas de trabajo, cuando sea superior a 70 dB(A); cuando el nivel sea inferior o igual a 70 dB(A), indíquelo	
valor de la presión acústica continua (dB(A))	máx. 70 dB(A)
dispositivo de medición	
Número de serie	
Lugar de medición (preferiblemente en la zona de trabajo; si no es posible, a una distancia de 1 m de la superficie de la máquina).	
Condiciones de proceso	

1.5. Descripción de la versión estándar de la instalación eléctrica

1.5.1. Aplicación

Salvo que se indique expresamente lo contrario, el equipo eléctrico se ejecuta de acuerdo con esta descripción.

1.5.2. Normas

El equipamiento eléctrico se ha realizado de acuerdo con la norma EN 60-204/IEC 204.

Equipos eléctricos de herramientas de uso general.

Equipos eléctricos de máquinas-herramienta.

El cliente asume la responsabilidad de consultar y aplicar las normas relativas a la **instalación** del equipo eléctrico.

Nos gustaría llamar especialmente la atención sobre las siguientes disposiciones según esta norma:



- La tensión de servicio en los terminales de conexión de la máquina no debe diferir en más de un ± 5 % de la tensión nominal especificada para la máquina.
- No se requiere un cable neutro. Se debe conectar un conductor de continuidad de tierra (PE) junto con el suministro de corriente.
- El cliente deberá proporcionar la protección contra cortocircuitos del cable de alimentación. En caso de que la máquina esté equipada con un interruptor de desconexión en lugar de un disyuntor, se indican los fusibles máximos admisibles, que deberá proporcionar el cliente.
- Los motores de jaula de ardilla están diseñados para un arranque a tensión plena.

1.5.3. Máquinas con convertidores de tiristores

- Las máquinas con convertidores de tiristores deben conectarse a una línea de alimentación con una capacidad de cortocircuito de, como mínimo, 100 veces la corriente nominal indicada en el esquema. Esto corresponde a una caída de tensión del 1 % en los conductores de alimentación.

Si hay más de un convertidor en la misma línea de alimentación, se puede tener en cuenta el siguiente factor de simultaneidad:

<u>Número de convertidores</u>	<u>Factor para la capacidad total de cortocircuito</u>
3	70 %
10	40 %
40	20 %

- Las máquinas con convertidores de tiristores están provistas de bobinas de línea, que reducen las corrientes de conmutación a 20 veces la corriente nominal del convertidor. Esto también hace que la caída de tensión de conmutación en el interruptor principal no supere el 20 % de la tensión nominal, siempre que los alimentadores estén dimensionados según la regla anterior.
En estas circunstancias, la cantidad total de armónicos en los terminales de conexión de la máquina no superará el 3,5 % de la tensión de red.

1.5.4. Factor de potencia

Nuestras máquinas **no** están equipadas con instalaciones de corrección del factor de potencia, por lo que estas deben formar parte de la instalación del cliente. En el caso de las máquinas con convertidores de tiristores, la corrección del factor de potencia mediante condensadores únicamente no puede aplicarse sin tener en cuenta aspectos especiales.

Para evitar una sobrecarga del condensador o, posiblemente, del transformador, es necesario utilizar filtros de resonancia en serie. Sería recomendable consultar al proveedor de la instalación de corrección del factor de potencia.

1.5.5. Condiciones ambientales (IEC 204-1)



- Temperatura del aire ambiente:
máximo 40° C
máximo 35° C como media en 24 h
mínima de 5° C
- Nivel de humedad relativa:
entre el 30 % y el 95 %, sin condensación
- Altitud sobre el nivel del mar:
máximo 1000 m.
- Nuestros armarios de control están preparados para una sobrecalentamiento máximo de 10 K con respecto a la temperatura del aire ambiente.
En caso de que sea necesario, nos encargaremos de la ventilación.

1.5.6. Varios

- Los armarios de control eléctrico están preparados para la conexión de los cables procedentes de la máquina y de la red eléctrica en el lateral de la unidad.
- Los armarios de control eléctrico se suministran con unas dimensiones máximas de:
longitud 400 mm
altura 400 mm
profundidad 300 mm

2. Condiciones de uso obligatorias



Advertencia contra el uso no autorizado:

Por razones de seguridad, la máquina solo debe utilizarse tal y como se describe en el presente manual de instrucciones. Cualquier otra aplicación es responsabilidad del cliente, salvo que el proveedor haya dado su autorización por escrito.



Información para el operador:

- Antes de abrir las puertas o retirar las protecciones que contienen elementos móviles, así como en caso de trabajos de mantenimiento o reparación, desconecte o neutralice todas las fuentes de energía. Esto significa que debe cortar todas las fuentes de energía que alimentan la máquina: electricidad, combustible, vapor, aire comprimido, etc.; vaciar todos los acumuladores de presión; purgar el circuito neumático; liberar o desbloquear los sistemas de resortes; bloquear todos los sistemas... etc.
- La zona de trabajo del operador, así como la del personal de mantenimiento, debe contar con la protección suficiente para su propia seguridad y la de las personas que pasen por allí.
- Mantenga a los espectadores a distancia. No permita que personas no autorizadas toquen la máquina y manténgalas lo más lejos posible de la zona de trabajo.
- Mantenga la zona de trabajo ordenada. La basura, el desorden y la suciedad son sinónimos de riesgo de accidente.
- Cuida tu postura. Para realizar las distintas tareas, debes mantener el equilibrio en todo momento adoptando una postura firme que te evite caídas.
- El operario o el técnico de mantenimiento debe llevar una protección suficiente y adecuada mientras realiza su trabajo: gafas de seguridad, guantes, calzado de seguridad y orejeras, así como ropa adecuada que no cuelgue holgada. Debe evitarse llevar ropa holgada y joyas, ya que pueden quedar atrapadas en las piezas móviles de la máquina. El pelo largo debe recogerse. También debe utilizar las herramientas adecuadas.
Así pues, el operario necesita gafas de seguridad y guantes, mientras que el técnico de mantenimiento necesita gafas de seguridad, calzado de seguridad y guantes.



- El operador o el técnico de mantenimiento debe recibir la formación adecuada para poder realizar su tarea de forma segura y sin contratiempos.

**Riesgos residuales:**

A pesar de la seguridad integrada en el diseño de la máquina y de las medidas de protección adoptadas, así como de los dispositivos adicionales, pueden existir algunos riesgos residuales. Esta lista se ha elaborado con el máximo cuidado, pero aún así pueden existir algunos riesgos residuales que el fabricante no haya detectado.

- Los riesgos residuales asociados a esta máquina, instalación o máquina sin terminar, tras la evaluación de riesgos y las medidas de mitigación, son los siguientes, con referencia al anexo I de la Directiva sobre máquinas 2006/42/CE:
- La interferencia del tambor giratorio durante la descarga de las fibras (si la cinta transportadora no está correctamente conectada)
- Siempre debe haber una cinta transportadora debajo de la unidad durante su funcionamiento, ya que hay una abertura de salida y se puede acceder al tambor giratorio desde la abertura inferior

EXPLICACIÓN DE LOS SÍMBOLOS DE LA MÁQUINA/INSTALACIÓN/MÁQUINA INACABADA

La máquina cuenta con pegatinas que indican el peligro de atascamiento durante la descarga de las fibras

**Protectores:**

- Las protecciones suministradas deben montarse tal y como se indica en los planos de montaje adjuntos.
- Si no se han pedido todas las protecciones, el cliente deberá proporcionarlas de acuerdo con los planos de montaje adjuntos.
- La máquina/instalación no puede utilizarse hasta que se hayan montado todas las protecciones.

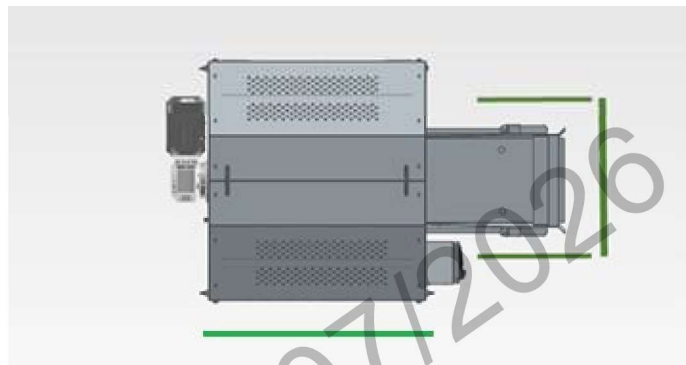
En ningún caso se puede eludir la protección de la cubierta. Esto puede provocar lesiones graves.

3. Área de trabajo del operario

El área de trabajo de los distintos operarios se indica en el plano de disposición.

A efectos de mantenimiento y limpieza, debe haber espacio suficiente alrededor de la máquina y de los armarios de control para llevar a cabo estas actividades. El espacio necesario depende de los medios utilizados por el cliente (por ejemplo, carretilla elevadora, puente rodante, máquinas de limpieza).

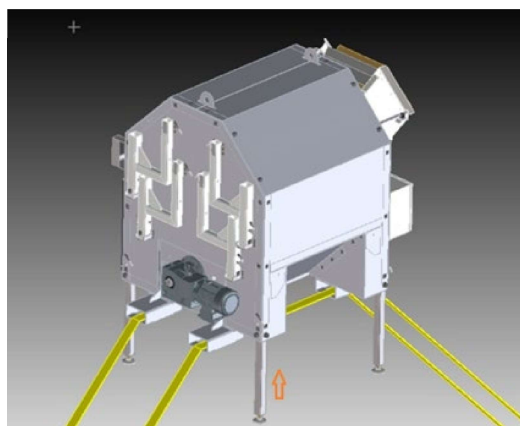
El operario alimenta continuamente el material a través de la tolva situada en el lateral de la unidad



4. Manipulación

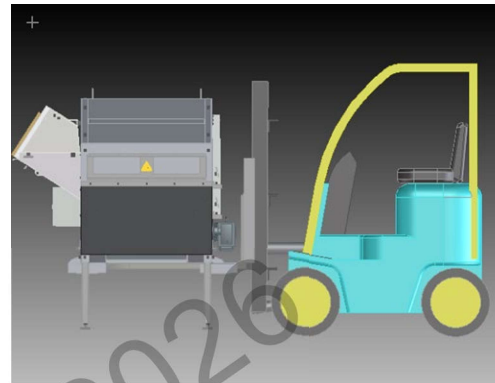
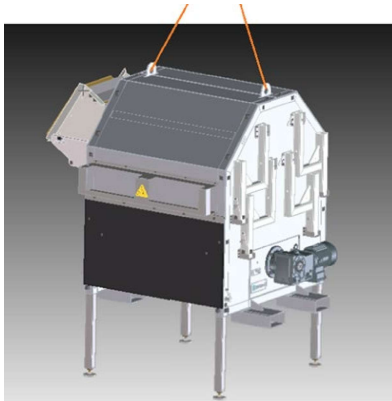
4.1. Manipulación: sección mecánica

- La máquina se eleva con una carretilla elevadora, sin necesidad de herramientas adicionales
- Manipulación: véase el plano de manipulación ED003131628
- Las cuatro patas deben introducirse dentro del bastidor lo máximo posible
- Todas las piezas adaptadoras de las patas deben colocarse y fijarse firmemente en el lateral de la unidad
- Todas las aletas de goma deben desmontarse y guardarse en la caja de almacenamiento durante el transporte de esta unidad
- Durante el transporte, la máquina debe fijarse correctamente y sujetarse con correas de forma segura, tal y como se muestra
- No coloque correas sobre las cubiertas protectoras, ya que esto podría provocar deformaciones o daños
- Asegúrese de que nada quede atrapado entre las cuerdas de elevación y la máquina; evite que los bordes afilados entren en contacto con la cuerda de elevación.
- Desconecte la máquina por completo de su entorno
- Levante la máquina con un bucle cerrado de cuerdas, tal y como se muestra en el esquema de manipulación.
- Peso: consulte el diagrama de manipulación
- Evite que la máquina se balancee durante la manipulación (ya que el centro de gravedad no se encuentra exactamente en el centro).
- Nunca eleve la máquina más de lo necesario
- No coloque nunca ninguna parte del cuerpo debajo de la máquina
- Las personas no autorizadas deben mantenerse alejadas del área durante la manipulación.
- Fije todas las piezas sueltas antes de manipular la máquina.





- La máquina debe manipularse siempre tal y como se muestra en la primera imagen de abajo.
- La carretilla elevadora solo puede utilizarse durante la descarga o la carga en el camión, tal y como se muestra en la segunda imagen de abajo
- El brazo de la carretilla elevadora debe introducirse desde el lado del motor y no desde el lado de la tolva de alimentación
- La longitud mínima de la horquilla de la carretilla elevadora debe ser de 1300 mm



- Condiciones de almacenamiento: temperatura entre 10° C y 40° C, humedad relativa < 70 %. Protegida contra la lluvia, el polvo y las influencias agresivas.
- Si se va a almacenar la máquina, la instalación o la máquina sin terminar durante un periodo de tiempo, se recomienda hacerlo en un lugar seco y cubrirla para evitar que se acumule polvo.

4.2. Manipulación: sección eléctrica



- Proteja todos los armarios de distribución contra el riesgo de vuelco, por ejemplo, fijándolos a la estructura del edificio. Los armarios deben manipularse con cuidado utilizando los accesorios adecuados para evitar daños y que se vuelquen. Algunos de estos accesorios deben ser solicitados por el cliente.
- Motores: utilice siempre las orejetas de elevación suministradas. Nunca levante por el extremo del eje ni por el tacómetro. Si los motores deben almacenarse durante un periodo prolongado, gire el eje un cuarto de vuelta.

- Condiciones de almacenamiento: temperatura entre 10° C y 40° C, humedad relativa < 70 %. Protegidos contra la lluvia, el polvo y las influencias agresivas. Si los armarios deben almacenarse durante un periodo prolongado, la sala debe estar sujeta a fluctuaciones de temperatura mínimas.

Para la manipulación de los armarios de distribución: véase la ilustración de la página siguiente.

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Manipulación

Las etiquetas informativas deben colocarse en la unidad tal y como se muestra a continuación con las indicaciones «LADO DE MANIPULACIÓN CON CARRETILLA ELEVADORA» y «ASEGURA LA UNIDAD CORRECTAMENTE» durante la manipulación

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5. Montaje y desmontaje de la máquina

El desmontaje de la máquina debe realizarse en orden inverso al montaje, salvo que se indique lo contrario.

Al final de la vida útil de la máquina, los materiales deben seleccionarse y transformarse en chatarra de acuerdo con la normativa gubernamental vigente.

5.1. Accesorios, preparativos e instalaciones necesarios

Salvo que se indique expresamente lo contrario, la máquina debe instalarse en un entorno no corrosivo. La máquina tampoco puede utilizarse en una atmósfera explosiva.

5.1.1. Accesorios, obras de cimentación e instalaciones necesarias: parte mecánica

- No se requieren obras de cimentación. Véase el esquema de la línea.
- La máquina debe instalarse y conectarse de acuerdo con las instrucciones que figuran en este manual de instrucciones. Esto es necesario para garantizar un funcionamiento correcto y seguro, así como para limitar los niveles de ruido y vibraciones.

5.1.2. Accesorios, obras de cimentación e instalaciones necesarias: parte eléctrica

- Cuando las conexiones deban realizarse bajo tierra (electricidad, aire comprimido, etc.), el cliente deberá encargarse de los trabajos de cimentación.
- Iluminación: a cargo del cliente.
- Conexión eléctrica: 110 (EE. UU.)/220/400 V CA
- Conexión neumática: N/A.

5.2. Montaje y conexión de la máquina



Las protecciones suministradas deben montarse tal y como se indica en los planos de montaje adjuntos.

Si no se han pedido todas las protecciones, el cliente deberá proporcionarlas de acuerdo con los planos de montaje adjuntos.

La máquina o instalación no puede utilizarse hasta que se hayan montado todas las protecciones.

5.2.1. Instalación y conexión de la máquina: parte mecánica

La ubicación de la máquina, la instalación o la maquinaria parcialmente completada dentro del entorno operativo deberá ser definida por BEKAERT. El equipo podrá instalarse tanto dentro como fuera de un área de trabajo designada, en función de los requisitos de la aplicación.



5.2.2. Instalación y conexión de la máquina: parte eléctrica

En la documentación eléctrica se indica qué tipo de cable es necesario para realizar las diferentes conexiones.

Armarios de distribución



Proteja todos los armarios contra el riesgo de vuelco, por ejemplo, fijándolos a la estructura del edificio.

Algunos armarios están provistos de sistemas de refrigeración y mallas filtrantes. Si los armarios se instalan en un entorno sucio, hay que prestar especial atención a mantener limpios los filtros.

Suministro eléctrico general

Por lo general, la alimentación eléctrica se instala en la parte superior del interruptor de corte de corriente. La conexión trifásica se realiza con un campo giratorio en sentido horario. La toma de tierra debe conectarse al perno de tierra del armario.

Cuando el suministro deba instalarse en la parte inferior, esto deberá indicarse claramente en el punto de conexión.

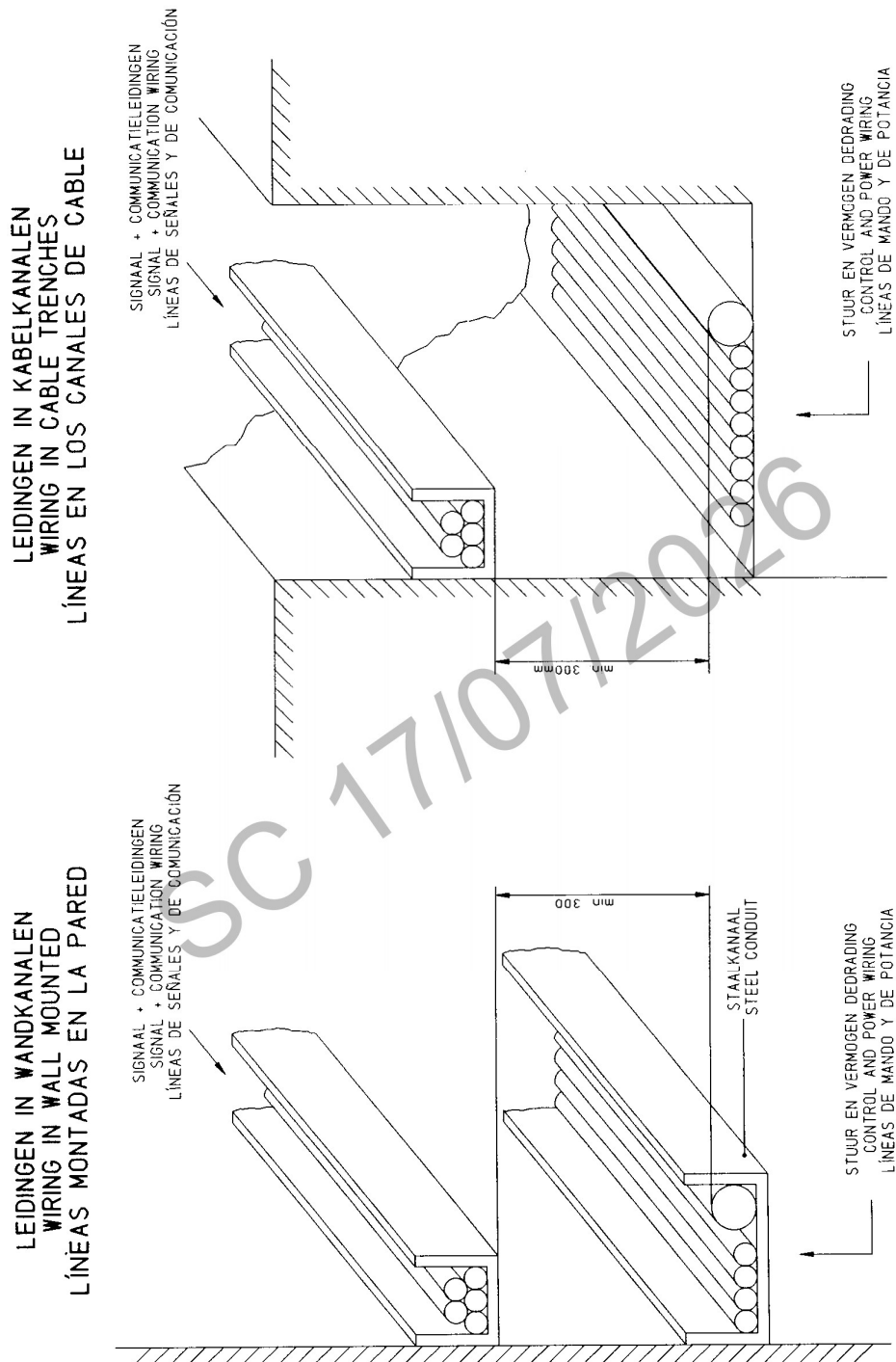
Armario de conexión - máquina

Los cables deben conectarse de acuerdo con el archivo. Debe respetarse la sección transversal. Debe prestarse especial atención a la sección de los conductores de continuidad de tierra de los cables: hasta 16 mm² la sección permanece igual; > 16 mm² la sección se dividirá por 2 o se redondeará al valor superior más cercano.

Coloque los cables con cuidado en los canaletines. Los cables de control y de alimentación deben estar separados de los cables de señal y de comunicación (véase el esquema de la página siguiente: NO007379.wp). Evite que se formen bucles en los cables.

Preste especial atención a los cables apantallados. Para la conexión, los hilos de señal deben quedar sin apantallar un máximo de 50 mm. El conductor de conexión entre el apantallamiento y el terminal de conexión debe tener una longitud máxima de 150 mm, siempre que el aparato que se vaya a conectar lo permita. En los demás casos, la parte sin apantallar debe mantenerse lo más corta posible. Los hilos no utilizados de los cables apantallados se cortan lo más cortos posible y se aíslan con manga termorretráctil.

no007379.wp

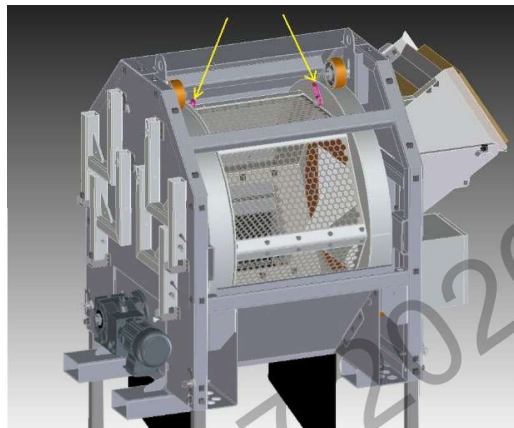


6. Puesta en servicio

6.1. Retirada de los elementos de transporte

6.1.1. Retirada de los elementos de transporte: parte mecánica

- Una vez montado el conjunto del tambor en la unidad, se retirarán los ojales de elevación.



6.1.2. Retirada de los medios de transporte: parte eléctrica

6.2. Revisión previa a la puesta en servicio

6.2.1. Revisión previa a la puesta en servicio



6.2.1.1. Revisión previa a la puesta en servicio: parte mecánica

Compruebe los niveles de aceite en los reductores.



Antes de la puesta en servicio, compruebe todas las funciones de seguridad en la práctica. No realice la puesta en servicio si el funcionamiento es incorrecto

Antes de poner en marcha la máquina, la instalación o la máquina sin terminar, debe asegurarse de que se cumplan las siguientes condiciones:

- No haya personas ni objetos sobre la máquina, la instalación o la máquina sin terminar.
- El espacio alrededor de la máquina, la instalación o la máquina sin terminar está libre de obstáculos.
- La máquina, la instalación o la máquina sin terminar está correctamente instalada.
- Las pantallas están montadas correctamente y bien fijadas.
- La máquina, la instalación o la máquina sin terminar debe estar colocada de manera que quede prácticamente nivelada.

La presión acústica de la máquina, la instalación o la máquina sin terminar es inferior a 70 dB(A).

De no ser así, se indicará y se recomendará el uso de EPI.

Si la presión acústica difiere de la indicada, se debe investigar la causa!

El ruido y las vibraciones son una señal de posible desgaste, defectos y montaje incorrecto.

¡El oído humano forma parte del mantenimiento preventivo!

Mantenga siempre los oídos atentos para detectar cualquier vibración o sonido anómalo

Funciones de seguridad que deben comprobarse:

- parada de emergencia
- Todas las cubiertas de protección deben estar fijadas durante el funcionamiento.



6.2.1.2. Revisión previa a la puesta en servicio: parte eléctrica



Antes de la puesta en servicio, compruebe todas las funciones de seguridad en la práctica. No realice la puesta en servicio si el funcionamiento es incorrecto

Funciones de seguridad que deben comprobarse:

- parada de emergencia
-

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6.2.2. Revisión tras la puesta en servicio

6.2.2.1. Revisión tras la puesta en servicio: sección mecánica

- Asegúrese de que todas las cubiertas de protección estén bien fijadas durante el funcionamiento.
- Mantenga el área alrededor de la máquina, la instalación o la máquina sin terminar libre de materiales y otros obstáculos
- No coloque herramientas ni piezas sueltas sobre la máquina, la instalación o la máquina sin terminar. Estas podrían acabar o caer entre las piezas móviles.
- Si deja la máquina, la instalación o la máquina sin terminar desatendida, apague el interruptor principal con el bloqueo de llave y retire la llave.
- La presión acústica de la máquina, la instalación o la máquina sin terminar es inferior a 70 dB(A)
- Asegúrese de que el entorno esté lo más limpio posible.

6.2.2.2. Revisión tras la puesta en servicio: parte eléctrica

Realice la comprobación sin tensión de alimentación

Lea las instrucciones de seguridad de Altivar antes de la puesta en servicio (véanse las páginas siguientes).

Prueba de aislamiento L1 y PE

L2 y PE

L3 y PE

Nota: desconecte todos los cables del variador antes de realizar la prueba de aislamiento.

Compruebe si se ha conectado la toma de tierra entre el armario y la máquina.

Compruebe si hay subalimentación

Compruebe la alimentación:

- (véase también 1.4.2.1)
- campo de rotación a la derecha

Compruebe las distintas tensiones de control

110/220/240 V

Compruebe el sentido de giro de los ventiladores, las bombas y los motores.

Lea y comprenda estas instrucciones antes de realizar cualquier procedimiento con este variador

PELIGRO



TENSIÓN PELIGROSA

- Lea y comprenda este manual antes de instalar o poner en funcionamiento el variador Altivar 71. La instalación, el ajuste, la reparación y el mantenimiento deben ser realizados por personal cualificado.
- El usuario es responsable del cumplimiento de todas las normas eléctricas internacionales y nacionales vigentes relativas a la puesta a tierra de protección de todos los equipos.
- Muchas piezas de este variador de velocidad, incluidas las placas de circuito impreso, funcionan a tensión de red. NO TOCAR.
Utilice únicamente herramientas con aislamiento eléctrico.
- NO toque los componentes sin blindaje ni las conexiones atornilladas de la regleta de bornes cuando haya tensión presente.
- NO provoque un cortocircuito entre los terminales PA y PC ni entre los condensadores del bus de CC.
- Instale y cierre todas las cubiertas antes de conectar la alimentación o de poner en marcha y detener el variador.
- Antes de realizar el mantenimiento del variador de velocidad
 - Desconecte toda la alimentación.
 - Coloque una etiqueta con la indicación «NO ENCENDER» en el seccionador del variador de velocidad.
 - Bloquee el seccionador en la posición abierta.
- Desconecte toda la alimentación, incluida la alimentación de control externa que pueda haber, antes de realizar el mantenimiento del variador. ESPERE 15 MINUTOS a que se descarguen los condensadores del bus de CC. A continuación, siga el procedimiento de medición de la tensión del bus de CC que se indica en el manual de instalación para verificar que la tensión de CC es inferior a 45 V CC. Los LED del variador no son indicadores precisos de la ausencia de tensión en el bus de CC.

Una descarga eléctrica puede provocar la muerte o lesiones graves.



**Danger
of death**

PRECAUCIÓN



EQUIPO DAÑADO

No ponga en funcionamiento ni instale ningún variador que parezca dañado.

El incumplimiento de esta instrucción puede provocar daños en el equipo.

7. Uso

La máquina solo puede ser utilizada por personas cualificadas para ello y que dispongan del manual de instrucciones en todo momento.



Las operaciones que entrañen peligro deben ser enseñadas por un operador o instructor con experiencia. Si no se dispone de dicha persona, póngase en contacto con el proveedor. Estas operaciones deben enseñarse a velocidad reducida, si es posible. No se debe aumentar la velocidad hasta que la operación esté totalmente bajo control

7.1. Especificaciones, descripción, construcción y funcionamiento

Consulte la ficha técnica **IDF_ROTARY DRUM FOR LOOP FIBER_V01-00_Confidential.doc** en el anexo 11.

* **Especificaciones**

- Dimensiones

	IDF
Longitud (mm)	1 800
Ancho (radio de giro) (mm)	1 280
Altura (mm)	2 285
Peso total (kg)	± 570

- Fuente de alimentación:
 - * tensión de control: 110 (EE. UU.)/220/240 V ±10 %
 - * Confirmar IS: 12615/IEC6m3+1
- Motorreductor:
 - * Potencia: 0,75 kW
 - * Relación de transmisión: 55,17
 - * Par de salida: 280 Nm
- Material: totalmente de acero inoxidable (excepto las piezas comerciales)
- Armario eléctrico
 - * Armario eléctrico de 400 x 400 x 300 mm
 - * Variador de frecuencia instalado en el armario eléctrico
- Instrucciones de uso: conformes a la Directiva europea sobre máquinas. El manual de instrucciones se suministra junto con la máquina.

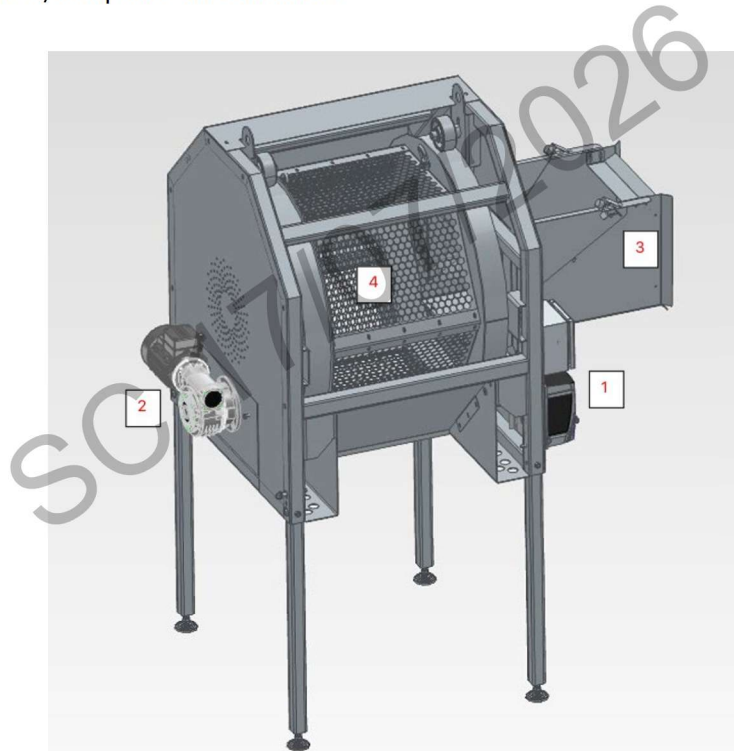
Uso

La ubicación de la máquina, la instalación o la maquinaria parcialmente completada en el entorno operativo deberá ser definida por BEKAERT. El equipo puede instalarse tanto dentro como fuera de un área de trabajo designada, en función de los requisitos de la aplicación. BEKAERT es responsable de definir las condiciones del puesto de trabajo y de garantizar el cumplimiento de las normas de seguridad y operativas aplicables.

BEKAERT deberá realizar una evaluación exhaustiva de los riesgos, tanto de la instalación como del entorno circundante, de conformidad con las directivas pertinentes.

La máquina, la instalación o la máquina parcialmente completada están diseñadas para funcionar de forma autónoma. La alimentación de material la realiza manualmente el operador, quien introduce las cajas de fibra en el sistema a través de la rampa designada. La carga se llevará a cabo exclusivamente desde las posiciones predefinidas para el operador, tal y como se indica en los planos de disposición.

Las siguientes figuras ofrecen una visión general de los componentes más importantes de la máquina/instalación/máquina sin terminar:

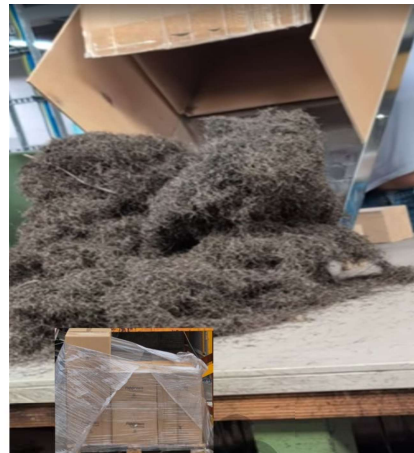


- 1) Controlador de frecuencia y parada de emergencia
- 2) Motor
- 3) Embudo dosificador
- 4) Tambor giratorio

7.2. Coloca el producto que se va a procesar en la máquina

Las fibras en bucle de Dramix se introducen en el tambor giratorio a través de la tolva.

El material se suministra en cajas (400 × 400 × 300 mm) con un peso aproximado de 10 kg.



El producto se desenreda dentro del tambor giratorio, se separa en filamentos individuales y, a continuación, se transfiere a la cinta transportadora.



7.3. Funcionamiento y supervisión

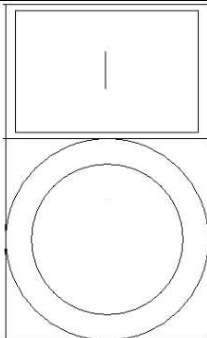
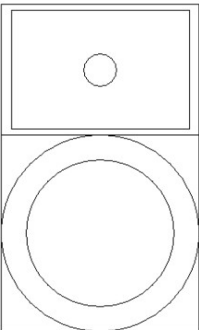
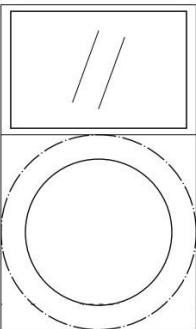
El funcionamiento de la máquina es sencillo. Sin embargo, es extremadamente importante respetar todas las normas de seguridad al trabajar con la máquina.

- Las fibras en bucle de Dramix se introducen manualmente en el tambor giratorio a través de la tolva de alimentación. Existen dos posibilidades, tal y como se indica a continuación (véase el apartado 8.1)
 - Mantener la tolva de alimentación en posición horizontal
 - Mantener la tolva de alimentación en posición inclinada
- El tambor giratorio es accionado por un mecanismo motorizado, lo que garantiza una rotación continua a la velocidad especificada.
- A medida que el tambor gira, las fibras en bucle se someten a un movimiento giratorio y una agitación controlados, lo que facilita el proceso de desenredado.
- La configuración interna del tambor favorece la separación eficaz de los bucles entrelazados en filamentos individuales.
- Los filamentos desenredados se guían progresivamente hacia el lado de descarga del tambor.
- Los filamentos separados salen del tambor y se transfieren a la cinta transportadora para su posterior manipulación o procesamiento.
- Es necesario supervisar continuamente la velocidad de alimentación y la rotación del tambor para garantizar un desenredado uniforme y evitar acumulaciones u obstrucciones en el interior del tambor.

Antes de poner en funcionamiento la máquina, la instalación o la máquina sin terminar, debe asegurarse de que se cumplan las siguientes condiciones:

- No haya personas ni objetos sobre la máquina, la instalación o la máquina sin terminar.
- El espacio alrededor de la máquina, la instalación o la máquina sin terminar está libre de obstáculos.
- La máquina, la instalación o la máquina sin terminar esté correctamente instalada.
- Las cribas estén correctamente montadas y sean funcionales.
- La máquina, la instalación o la máquina sin terminar debe colocarse de manera que quede prácticamente nivelada.

7.4. Interruptores y botones

Elemento	Función	Descripción	Observación
	INICIO	Este interruptor pone en marcha la rotación del tambor	
	PARAR	Este interruptor detiene la rotación del tambor	
	REINICIO	Este interruptor reinicia el funcionamiento	
	PARADA DE EMERGENCIA	Este interruptor se utiliza en caso de parada de emergencia	

7.5. Detección y motivos de parada

Sistemas de detección y seguridad:

- parada de emergencia

7.6. Condiciones de arranque



¡Todas las protecciones deben estar siempre cerradas!

- Asegúrese de que todas las cubiertas de protección estén fijadas a la unidad
- Se han instalado aletas de goma para guiar el producto hacia la cinta transportadora desde el canal de salida
- La rampa de alimentación esté bien fijada

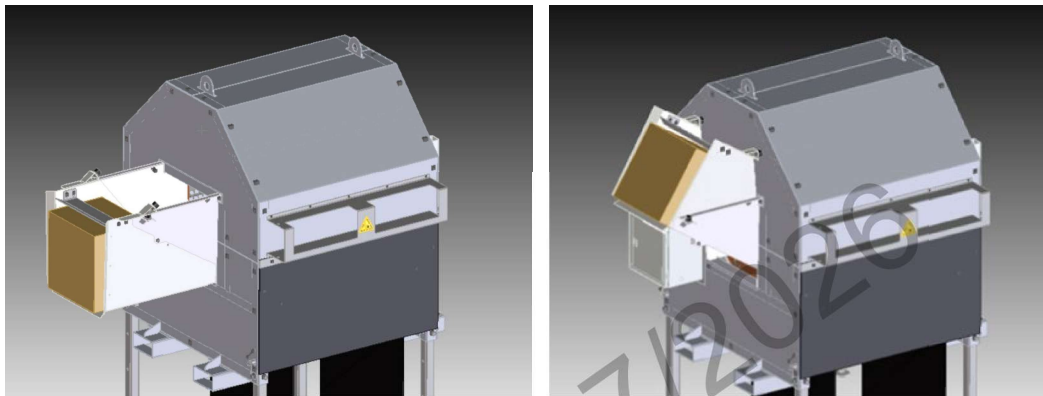
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8. Ajustes

8.1. Ajustes: sección mecánica

La rampa de alimentación puede instalarse en posición horizontal o inclinada, dependiendo de las condiciones del emplazamiento y de la comodidad del operario, para una dosificación eficaz del material en el tambor.

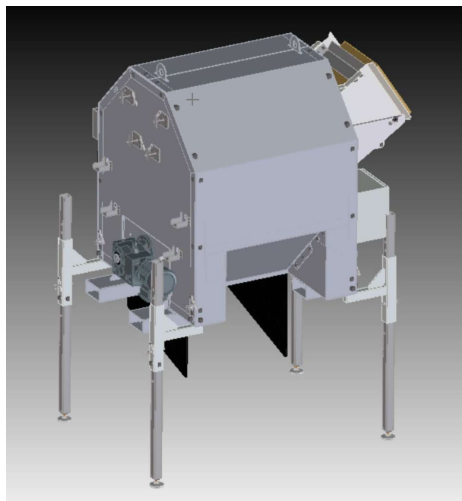
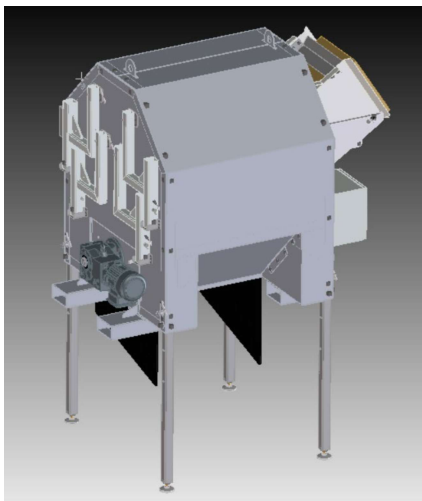
Asegúrese de que todos los tornillos estén bien apretados cuando la rampa se encuentre en posición inclinada, tal y como se especifica en el plano.



Se utilizarán adaptadores de patas cuando se adapten a configuraciones de cinta transportadora más anchas. Cuando no se utilicen, los adaptadores se guardarán de forma segura y se fijarán en los puntos de montaje designados en el lateral de la unidad.

Motivo para utilizar piezas adaptadoras:

- Para cintas transportadoras de hasta 600 mm de ancho: no se requieren piezas adaptadoras.
- Para cintas transportadoras de hasta 1100 mm de ancho: es obligatorio utilizar adaptadores.

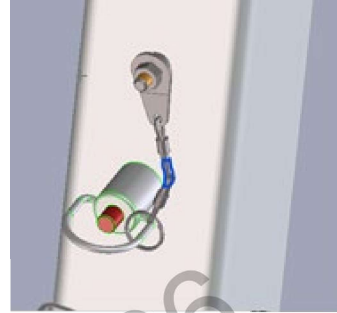
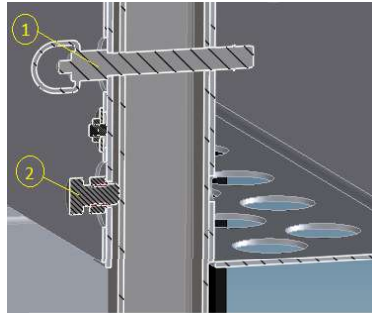


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Ajuste de la altura de la unidad

Motivo: Las cintas transportadoras pueden instalarse con diferentes inclinaciones en función de la aplicación. Para evitar interferencias entre el bastidor y la cinta transportadora, la altura es regulable, lo que permite colocar la unidad lo más cerca posible de la cinta transportadora.

1. Utilice el pasador de bloqueo durante el ajuste de la altura para fijar las patas al bastidor.
2. Tras ajustar la altura, apriete los tornillos para fijar firmemente las patas.
3. Todos los pasadores de bloqueo están sujetos con cables de sujeción.



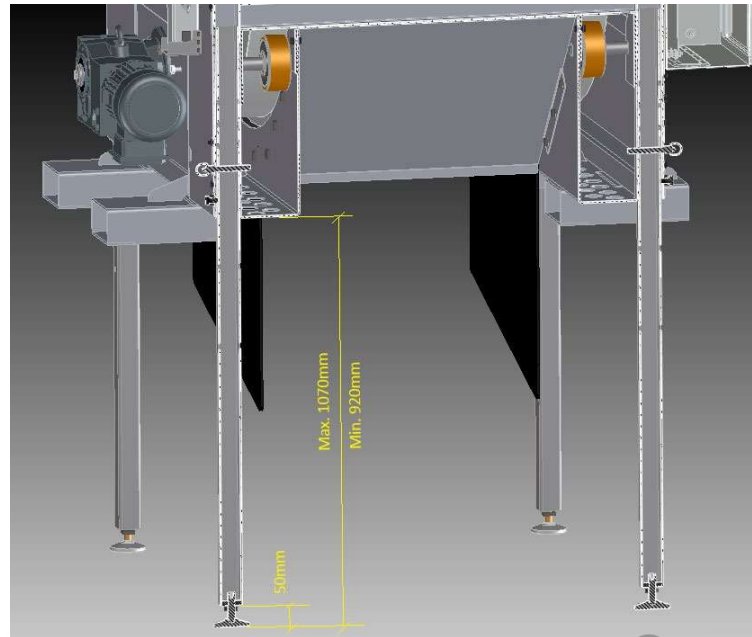
Con las piezas adaptadoras de las patas, la altura desde el nivel del suelo hasta la parte inferior del bastidor es la siguiente:

- Altura máxima: ~1140 mm
- Altura mínima: ~920 mm

Sin las piezas adaptadoras de las patas, la altura desde el suelo hasta la parte inferior del bastidor es la siguiente:

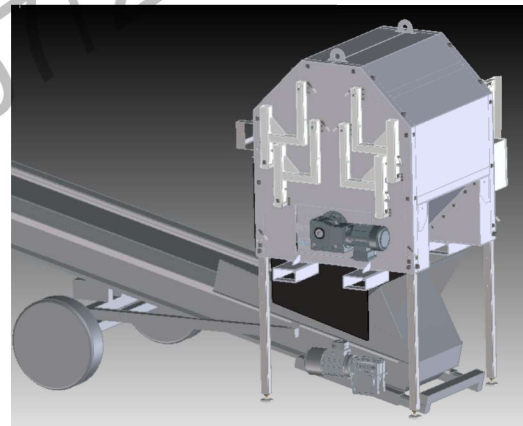
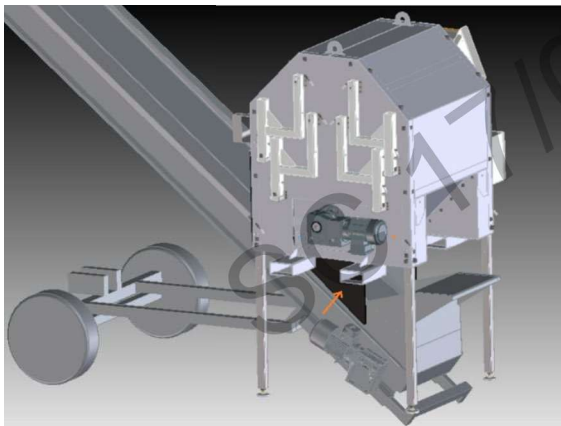
- Altura máxima: ~1070 mm
- Altura mínima: ~920 mm

Durante el transporte, la altura desde el suelo hasta la parte inferior del bastidor es:
Altura mínima: ~520 mm

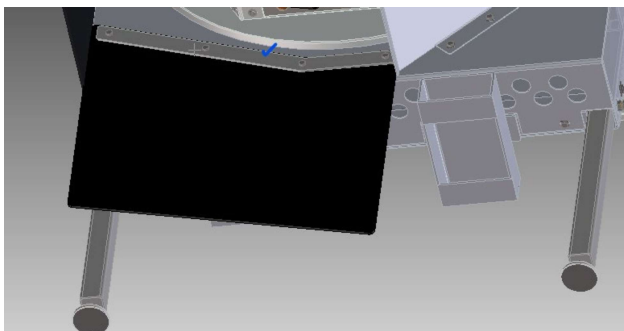


Las aletas de goma deben utilizarse en función del ángulo de la cinta transportadora

- Aletas de goma más cortas para ángulos más pronunciados
- Aletas de goma normales para ángulos más reducidos



Las aletas de goma se pueden sustituir fijando y desmontando la placa de sujeción, tal y como se muestra a continuación.



8.2. Ajustes: sección eléctrica

Identificación del motorreductor

P	750 W
U	230/400 V
I	3,1 A
n	1415 rpm

Parámetros de conducción

P	
U	
I	
n	

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9. Mantenimiento



Un aumento del nivel de ruido o de vibraciones, una pérdida de aceite o el desgaste pueden indicar problemas y deben revisarse.

Al realizar tareas de mantenimiento, desconecte siempre el interruptor principal y bloquéelo con un candado.



Al realizar tareas de mantenimiento, asegúrese siempre de que la energía se descargue de la máquina de forma segura.

- Energía eléctrica: desconecte el interruptor principal y asegúrese de que no quede energía eléctrica residual (condensadores, etc.).
- aire comprimido: desconecte la máquina de la red, deje que se libere la presión y asegúrese de que no quede presión en los distintos elementos
- Vapor: desconecte la máquina de la red, deje que se libere la presión y deje que todo se enfríe
- Superficies calientes: asegúrese de que la temperatura sea segura.
- Combustibles:
- Consulte el documento «SP-S-35114-BCQA», disponible en BDMS, que explica las normas LOTOTO de Bekaert en el siguiente enlace
- [bekaert.sharepoint.com/sites/ENG-Design/Safety/SafetyCircuits/Forms/AllItems.aspx?id=%2Fsites%2FENG-Design%2FSafety%2FSafetyCircuits%2Fsafety_training%2F20230718 Enlaces a las normas LOTOTO de Bekaert para Ingeniería%2Epdf&parent=%2Fsites%2FENG-Design%2FSafety%2FSafetyCircuits%2Fsafety_training](https://bekaert.sharepoint.com/sites/ENG-Design/Safety/SafetyCircuits/Forms/AllItems.aspx?id=%2Fsites%2FENG-Design%2FSafety%2FSafetyCircuits%2Fsafety_training%2F20230718%2FEnlaces_a_las_normas_LOTOTO_de_Bekaert_para_Ingenieria%2Epdf&parent=%2Fsites%2FENG-Design%2FSafety%2FSafetyCircuits%2Fsafety_training)

Condiciones de almacenamiento

- Cuando se almacene la máquina, la instalación o la máquina sin terminar durante un periodo de tiempo, es recomendable hacerlo en un lugar seco y cubrirla para evitar que se acumule polvo

9.1. Mantenimiento preventivo

9.1.1. Mantenimiento preventivo: sección mecánica

- Compruebe periódicamente el estado de la unidad.

NATURALEZA Y FRECUENCIA DE LAS INSPECCIONES

- DIARIO

- N/A

- SEMANAL

Durante la inspección semanal, preste especial atención a los siguientes puntos:

- El aislamiento eléctrico.
 - El correcto funcionamiento de los mandos y, especialmente, de los dispositivos de parada de emergencia.

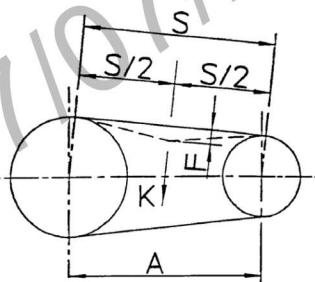
- MENSUAL

- Las piezas de desgaste indicadas en el manual.



Medición de la tensión de las correas

1.º método: profundidad de deflexión: véase la figura



- medir la profundidad de deflexión f . (véase la tabla del plano ...)

- Mida la fuerza de deflexión K . (véase la tabla del plano ...)

La profundidad de deflexión se mide con un dispositivo mecánico de medición de pretensión.

2.º método

La forma más sencilla es utilizar un dispositivo de medición de frecuencia.

Frecuencias de pretensado: consulte la tabla del plano.

- Aceites y grasas. Véanse las tablas adjuntas ENG 600, páginas 3 y 4, y ENG 601, páginas 2 y 3. Las tablas muestran una selección de lubricantes. Son preferibles los que aparecen en recuadro.



Precaución:

Recoja los aceites, grasas, fluidos de proceso y productos de proceso de forma respetuosa con el medio ambiente y de acuerdo con la normativa local vigente.

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Description and characteristics of oils used by Engineering

OILS										
Characteristics										
ENG type	Brand and type	Description and characteristics	ρ	Viscosity (cSt) 40°C 100°C		VI	Solidif point (°C)	flash point (°C)	Denomination according to DIN 51502	SAP number
SO-01	Velocite 6 MOBIL	Technical oil	0,85	9,5	2,6	95	-30	154	C10 H10	2506465
SO-11	Tellus S22 SHELL	Hydraulic oil	0,87	22	4,3	97	-39	166	HLP22	2523832
SO-12	Tellus S2 M46	Hydraulic oil	0,88	46	7	108	-36	210	HLP46	3500654
SO-21	Vactra 2 MOBIL	Oil for slides	0,88	63	8,8	112	-9	205	CGLP68	2510808
SO-31	Turbo T 78 SHELL	Turbine oil	0,88	78	9,4	96	-9	218	TDL	2531955
SO-40	Omala 68 SHELL	Mild EP gear oil	0,88	66	8,6	108	-24	228	CLP68	2550761
SO-41	Omala 100 SHELL	Mild EP gear oil	0,89	96	11	103	-24	236	CLP100	2526415
SO-42	Omala 150 SHELL	Mild EP gear oil	0,89	150	15	98	-18	240	CLP150	2506452
SO-43	Omala 320 SHELL	Mild EP gear oil	0,90	329	24,8	97	-12	250	PGLP150	2506453
SO-61	Tivela WA SHELL	Synthetic Polyglycol oil *	1,02	142	25	210	-48	275	PGLP220	2506459
SO-62	Tivela WB SHELL	Synthetic Polyglycol oil *	1,02	200	35	224	-42	320	CLP320	2552188

* - Polyglycols and mineral oil cannot be mixed

- Polyglycols do not attack polyurethane enamels, polytetrafluoroethylene, viton, butadiene, silicone and leather

- Other materials might be attacked.

ENG 600
page 3
Okt 2012

Bekaert Engineering		OILS Comparison table							ENG 600 page 4 Okt 2012
Oils ENG types	SHELL	ESSO	MOBIL	BP	FINA	TEXACO	ELF	CASTROL	
SO-01	Vitrea 9	Marcol 82	Velocite oil Nr 6	Energol HP 10	Lycran C 808	Technical 20	Spinelf 10	Hyspin AWS 10	
SO-11	Tellus S22	Spinesso 22	DTE 22	Energol HLP 22	Hydran LZ 22	Rando HD 22	Elfolna DS 22	Hyspin AWS 22	
SO-12	Tellus S2 M46	Nuto H 46	DTE 25 (1)	Energol HLP 46	Hydran LZ 46	Rando HD 46	Elfolna DS 46	Hyspin AWS 46	
SO-21	Tanna TX 68	Febis K 68	Vactra 2	Maccurat D 68	Hydran G 68	Way Lubric X68	Moglia 68	Magna BTH 68	
SO-31	Turbo T 78	Teresso 77	DTE Heavy	Energol THB 77	Bakola 68	Regal R&O 68	Turbelf SA 68	Perfecto T68	
SO-40	Omala 68	Spartan EP 68	Mobilgear 626	Energol GR-XP 68	Giran 68	Meropa 68	Reductelf SP 68	Alpha SP 68	
SO-41	Omala 100	Spartan EP 100	Mobilgear 627	Energol GR-XP 100	Giran 100	Meropa 100	Reductelf SP 100	Alpha SP 100	
SO-42	Omala 150	Spartan EP 150	Mobilgear 629	Energol GR-XP 150	Giran 150	Meropa 150	Reductelf SP 150	Alpha SP 150	
SO-43	Omala 320	Spartan EP 320	Mobilgear 632	Energol GR-XP 320	Giran 320	Meropa 320	Reductelf SP 320	Alpha SP 320	
SO-44	Omala 460	Spartan EP 460	Mobilgear 634	Energol GR-XP 460	Giran 460	Meropa 460	Reductelf SP 460	Alpha SP 460	
SO-61	Tivela WA	Synessitic 100	Glygoyle 22	Energol SG 150	Persan S 150	Geartext S 475 W 90	Syntherma P 125	Alpha SN 150	
SO-62	Tivela WB	Spartan EP 220	Glygoyle 30	Energol SG XP 220	Persan S 220	Synelope Clp 220	Syntherma P 270	Alpha SN 220	

(1) vacuoline 1405 is used in hydraulic systems .
The colored framed oils are preferred Bekaert Engineering types. They are chosen on basis of their technical properties.

GRASAS										ENG 601
Características										Página 2
										Febrero de 2003
Descripción y características de las grasas utilizadas por Ingeniería.										
Tipo ENG	Marca y tipo	Descripción y características	Punto de goteo °C DIN ISO 2178	Temperatura - Rango °C	NLGI DIN 51818	Viscosidad del aceite base a 40 °C [cSt]	Tipo de jabón o espesante	Valor DN x 10 ³	Número de artículo	
SV-01	Mobilux EP 2 MOBIL	Grasa general para rodamientos de bolas a base de litio	180	-20 120	2	150	Litio		8.521.113.89260	
SV-02	Merkon 2 FINA	Grasa para rodamientos de bolas a base de calcio	104	-20 60	2	38,4	Calcio		8.521.113.89018	
SV-03	Grasa Abida SDM1 SHELL	Grasa para engranajes abiertos	250	-20 150	1	730	Litio		8.521.113.89007	
SV-04	Mobilgrease 28 MOBIL	Grasa para ejes de torsión de agrupadoras	230	-55 175	1	29	Bentonita		8.521.113.89060	
SV-05	Grasa Alvania R3 SHELL	Grasa para rodamientos de bolas de uso general, como la SV01, pero con menor	180	-35 150	3	70	Litio		8.521.113.89003	
SV-06	Isoflex NCA 15 KLUBER	Grasa para cojinetes de husillo y de rodillos cónicos a base de calcio.	180	-40 130	2	23	Calcio		8.521.113.89094	
SV-11	Grasa Darina R2 SHELL	Grasa para rodamientos de bolas para temperaturas >	> 250	+10 200	2	490	Esqueleto de fibra		8.521.113.89253	
SV-12	Altemp Q NB 50 KLUBER	Pasta de montaje que previene la corrosión por fricción y evita el efecto «stik- slip», contiene MoS2.	< 140	-30 150	2	490	Bario		8.521.113.89028	
SV-13	Molykote G-Rapid (60 % de MoS ₂) DOW CORNING	Grasa con un 60 % de MoS2.	-	-30 450	2	-			8.521.113.89023	
SV-14	Molykote Longterm 2 plus	Grasa con un 5 % de MoS2.	180	-25 110	2	310	Litio	2,5	8.521.113.89017	
SV-15	- NEVER SEEZ	Pasta de grasa, cobre y grafito para prevenir la corrosión por fricción.	-	130 0		-			8.521.113.89021	
Enero de 1976, febrero de 1977 Junio de 1977 : La norma ASTM de penetración SV-03 pasa a ser la 265/295. Diciembre de 1985 : Se omite la norma SV-04 Marzo de 1995 : Se añade la norma SV-06					Diciembre de 1999 : Se mejora la viscosidad del SV-04 Febrero de 2002 : Se modifican los números de artículo Febrero de 2003 : Modificación de SV-03					

GRASAS											Eng 601
Tabla comparativa											Página 3
											Febrero de 2003
Grasas Tipo Eng	SHELL	ESSO	MOBIL	BP	FINA	TEXACO	ELF	CASTROL	KLÜBER		
SV-01	Alvania EP 2	Beacon EP 2	Mobilux EP 2	Energrease LS EP 2	Marson EP L2	Multifak EP 2	EPEXELF 2	Grasa LM			
SV-02	Rhodina grasa 2		Mobilgrease HP222		Merkan 2	Grasa para copas	Palissa 2				
SV-03	Albida grasa SDM1										
SV-04			Mobilgrease 28								
SV-05	Alvania R 3										
SV-06											
SV-11	Darina grasa R2		Mobiltemp SHC 100	Grasa PR 9142	Bentex 2	Thermatex EP 2	Staterma MO2	Grasa BNS			
SV-12	Klüber – Altemp Q NB 50 Pasta lubricante										
SV-13	Dow Corning Corp.: Overseas Import Lubric. NV OIL SA Molykote G Rapid (6s0 % MoS2) Adegem: Pasta «S» especial										Shell S 4768
SV-14	Dow Corning Corp.: Overseas Import Lubric. NV OIL SA Molykote Longterm 2 (5 % de MoS2) Adegem: Pasta G.U.N.V.										Shell S 5544
SV-15	Never Seez NSBT-16 Conoce la Militaire especificación A907A	Grupo Bostik Boston ST Middleton, MA 01949									

(1): Las grasas indicadas en el cuadro son las que utiliza el departamento de Ingeniería. Se han seleccionado en función de criterios técnicos.

Junio de 1977, febrero de 1982	Marzo de 1995 : Se añade el SV-06
Diciembre de 1985 : Adaptación a las nuevas denominaciones de los tipos.	Noviembre de 1995 : Se añade el SV-07
Diciembre de 1988 : Adaptación a las nuevas denominaciones de tipos	Febrero de 2003 : Modificación del SV-03
Octubre de 1994 : Se añaden SV-04 y SV-05	

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9.1.2. Mantenimiento preventivo: sección eléctrica

SEMANAL

Durante la inspección semanal, presta especial atención a los siguientes puntos:

- El aislamiento eléctrico.
- El correcto funcionamiento de los mandos y, especialmente, de los dispositivos de parada de emergencia

Motor de corriente continua + tacómetro + anillos de contacto

Revise las escobillas y el conmutador cada 1000 horas.

Consulte también los manuales del fabricante.



Operaciones en los variadores

Al realizar trabajos en los accionamientos o en sus alrededores, compruebe siempre que el bus de corriente continua esté desalimentado

Alfombrillas filtrantes

Las esteras deben permitir un paso de flujo suficiente; de lo contrario, deben limpiarse o sustituirse.

Baterías

Sustituya todas las baterías cada año.

Atención:

Recoja las pilas por separado y de forma respetuosa con el medio ambiente para evitar cortocircuitos y fugas.

Aire comprimido

Comprueba el circuito de aire comprimido y rellena de aceite si es necesario: N/A

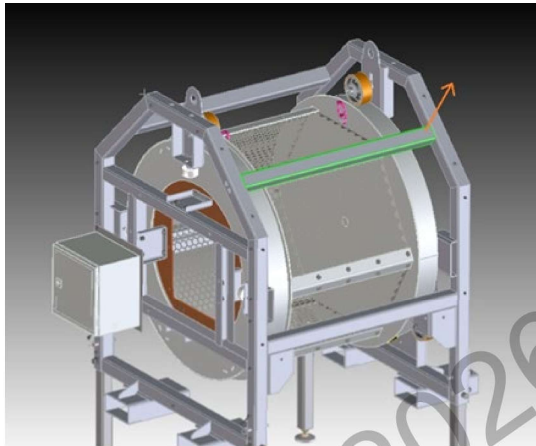
Interruptor principal

Compruebe de forma preventiva el correcto funcionamiento de la bobina de desconexión y del interruptor principal.

9.2. Montaje y desmontaje especiales

9.2.1. Montaje y desmontaje especiales: sección mecánica

- Uno de los tubos perfilados del bastidor es desmontable, para montar o desmontar el conjunto del TAMBOR en la unidad tal y como se muestra a continuación.
- Una vez montado el conjunto del tambor en la unidad, se deben retirar los ojales de elevación.



9.2.2. Montaje y desmontaje especiales: sección eléctrica

- El interruptor eléctrico principal está previsto para aplicar el procedimiento LOTOTO

9.3. Herramientas

9.3.1. Herramientas: sección mecánica

- Basta con una caja de herramientas estándar
- No se necesitan herramientas especiales para el mantenimiento

9.3.2. Herramientas: sección eléctrica

9.4. Solución de problemas

9.4.1. Solución de averías: sección mecánica

N/A

9.4.2. Solución de problemas: sección eléctrica

Consulte la señalización y los mensajes que aparecen en la pantalla principal en línea.

10. Planos, listas de piezas, listas de recambios



Para garantizar un funcionamiento fiable y seguro, solo se pueden utilizar piezas originales (tal y como se indica en las listas de piezas). Solo se podrá hacer una excepción a este principio tras obtener el consentimiento del fabricante o una vez que el cliente haya realizado las comprobaciones necesarias de dicha pieza específica.

10.1. Planos, listas de piezas, listas de recambios: sección mecánica

10.1.1. Estructura de los planos

a. En la lista de piezas de cada plano se proporciona la siguiente información:

- [Nivel] *
- [Posición]: se refiere a la posición de la pieza en el plano.
- [Componente]: número de material
- [Rev] *
- [Descripción]: ofrece una breve descripción de la pieza
- [Cant.] = Cantidad: indica el número de cada pieza utilizada en el plano.
- [Unidad]: indica en qué unidad se expresa la cantidad (PC = pieza, M = metro, L = litro)
- [Punto de referencia] *
- [Ing/diseño] *
- [Talla 1, 2, 3, unidad] *
- [Plano]: número de plano
- [Rev.] *
- [N.º de Baan]: hace referencia al artículo de Baan
- [A granel] *
- [Cadena de clasificación] *

(* = información de uso interno)

Ejemplo de una lista de piezas

Level	Position	Component	Rev	Description	Qty	Unit	Ref pnt	Eng/design	Size 1	Size 2	Size 3	Size unit	Drawing	Rev	Baan number	Bulk	Sort String
1	0011	2750753	C	DRIVE OBLIQUE CAPSTAN PB	5	PC	M		0	0	0		3001358	C	003001358V01		
2	0010	2533730		STRAIGHT HOSE COUPLING R	1	PC			0	0	0				801369952200		
2	0020	2561763	D	UPRIGHT, COLUMN (905.695.71000)	1	PC			0	0	0		569571	D	000000569571		
2	0030	2533613		28x16x200 PARALLEL KEY	1	PC			0	0	0				806012816200		
2	0040	2546065		GEAR UNIT i=4,7 PB2604 D	1	PC			0	0	0				804172000112		
2	0050	2551921		LUBRICANT OIL ENERSYN HT	11	L			0	0	0				852111389208		
2	0060	2530327		STRAIGHT HOSE COUPLING R3/4-25mm	1	PC			0	0	0				801369952527		
2	0070	2508794		ELBOW 3/4" 90G MF ISO49	1	PC			0	0	0				801110920048		
2	0080	2556772		COVER PB2604 DIAM.180mm	1	PC			0	0	0				804172012604		
2	0090	2659917		HEX. HEAD SCREW M24x90 DIN933 Si8.8 GAL	1	PC			0	0	0				810302430090	X	
2	0100	2684157		RONDS CU 24 X29X 2	1	PC			0	0	0				806540240029		
2	0110	2542119	A	RING	1	PC			0	0	0		083512	A	000000083512		
2	0120	2509112		HEX. HEAD SCREW M20x40 DIN933 Si8.8 GAL	6	PC			0	0	0				810302025040	X	
2	0130	2503365		WASHER M20 DIN125B STAAL	6	PC			0	0	0				806510210037	X	
2	0140	2694472	*	FLAT PIECE 2605	1	PC			0	0	0		2002274	*	000002002274		
2	0150	2509092		HEX. HEAD SCREW M12x35 DIN933 Si8.8 GAL	2	PC			0	0	0				810301217035	X	
2	0160	2503357		WASHER M12 DIN125B STEEL	2	PC			0	0	0				806510130024	X	

b. Cómo realizar un pedido

Los datos necesarios para realizar correctamente el pedido son:

- . Número de material (componente)
- . Cantidad.

También se pueden indicar la descripción, el número de plano y el número de posición.

Ejemplo general (no válido para esta máquina)

Ejemplo de una pieza de fabricación propia:

1 pieza : Componente 2694472, PIEZA PLANA
(assy.dwg. 3001358 pos. 0140 (= pos. 14 en el ensamblaje))

Ejemplo de una pieza comprada:

6 unidades: Componente 2503365, ARANDELA
(dib. de montaje 3001358, pos. 0130 (= pos. 13 en el conjunto))

c. Explicación del bloque de título del plano

Mach.type	Doc. Creation	DATE	05/07/2019	NAME	Karande Baliram	1
DRT	Doc. Last Modified	DATE	21-Aug-25	NAME	Ubale Vaijinath	2
	Doc. Release	DATE	21/08/2025	NAME	Ubale Vaijinath	3
	()				Replaces drawing No:	4
					Replaced by drawing No:	5
	Tolerance class according ENG 118: NotApplicable				GD&T according ENG 154	6
2-PLANE WIRE STRAIGHTENER						7
no painting/coating				Scale	SAP: 2434610	B
				1:5 (1:2)	UDM:	
Engineering			Pag. 1 / 1	ED001882534		B

- 1.Fecha del plano original
- 2.Fecha de la revisión actual
- 3.Nombre del delineante del plano original
- 4.Nombre del dibujante de la revisión actual
- 5.Nombre del plano (título)
- 6.Número SAP (material)
- 7.Letra de la revisión actual
- 8.Número UDM
- 9.Número de plano (identificación)

10.1.2. Planos de montaje + listas de piezas

Lista de montaje por unidad: Montaje general 20305355

N.º de serie	Número	Versión	Descripción	N.º 2D	Cantidad
1	20307698	A	TAMBOR GIRATORIO PARA FIBRA EN BUCLE	ED003131381	1
2	20307453	A	ESTRUCTURA DEL BASTIDOR	ED003130992	1
3	20307454	*	ADAPTADOR DE PATAS DE BASTIDOR	ED003131039	1
4	20307455	*	CARCASA DEL TAMBOR	ED003131173	1
5	20307456	*	RODILLO DE GUÍA RADIAL - INFERIOR	ED003129517	4
6	20307457	*	RODILLO DE GUÍA RADIAL - SUPERIOR	ED003129481	2
7	20307458	A	RODILLO DE SOPORTE LATERAL	ED003129441	6
8	20307459	A	UNIDAD DE ACCIONAMIENTO	ED003131370	1
9	20307460	A	CANAL DE ALIMENTACIÓN	ED003131366	1
10	20307461	A	ALETAS DE SALIDA	ED003130219	1
11	20307462	A	FUNDA PROTECTORA	ED003130321	1

Planos/documentos adicionales

Descripción	N.º de plano
PLAN DE MANIPULACIÓN	ED003131628

10.1.3. Listas de piezas de recambio

Las necesidades de piezas de recambio, así como los tipos y la cantidad, varían según cada cliente y dependen de:

- el número de máquinas adquiridas
- si el cliente ya cuenta con dichas máquinas en producción
- la disponibilidad de componentes en el mercado local
- las posibilidades de fabricación dentro de la empresa, etc.

Por eso recomendamos al cliente que defina él mismo sus necesidades partiendo de las listas de piezas (véase el punto 10.1.2.).

Para todas las piezas, se puede realizar un presupuesto y realizar un pedido a Bekaert Engineering. Lo único que tiene que hacer el cliente es indicar el número de artículo que figura en las listas de piezas.

N.º SAP	Rev. de pieza	Descripción	N.º 2D	Cantidad
3675869	*	RUEDA DE POLIURETANO REF. F4-125-RSL		6
3105300	*	RUEDA DE POLIURETANO RE_F5-080-RXL-ESD		6
3675877	*	CORREA TRAPEZOIDAL SPB LW=1740		1
3675890	*	RODILLO TENSOR DIÁM. 40 mm ID-14087400		1
20307719	*	ALETA DE GOMA DELANTERA	ED003130136	1
20307721	*	SOLAPA LATERAL	ED003130146	2
20307720	*	SOLAPA LATERAL CORTA	ED003130166	2

10.1.4. Documentación de las piezas adquiridas

N/A

10.2. Planos, listas de piezas, listas de recambios: sección eléctrica

10.2.1. Informes de inspección

10.2.2. Estructura del esquema

Véase «DEMO RUPLAN»: plano 4000982.

Consulte el plano eléctrico

N.º SAP	Descripción	N.º de plano
20312651	IDF	ED003163907

10.2.3. Esquemas eléctricos, neumáticos e hidráulicos + listas de piezas

Esquema eléctrico y neumático/hidráulico + listas de piezas eléctricas y neumáticas:

10.2.4. Listas de piezas de recambio

Las necesidades de piezas de recambio, así como los tipos y la cantidad, varían según cada cliente y dependen de:

- el número de máquinas adquiridas
- si el cliente ya cuenta con máquinas de este tipo en producción
- la disponibilidad de componentes en el mercado local
- las posibilidades de fabricación dentro de la empresa, etc.

Por eso aconsejamos al cliente que defina él mismo sus necesidades partiendo de las listas de piezas (véase el punto 10.1.2.).

Para todas las piezas, se puede solicitar un presupuesto y realizar un pedido a Bekaert Engineering. Lo único que tiene que hacer el cliente es indicar el número de artículo que figura en las listas de piezas.

10.2.5. Programas (PLC y datos de pantalla)

10.2.6. Documentación de las piezas adquiridas

Para consultar esta documentación, visite nuestra página web «Catálogos y manuales de piezas comerciales utilizadas en los equipos de Bekaert Engineering» en <http://portal.bekaertcorp.local/> Tecnología – Ingeniería – Información técnica – Catálogos y manuales de...

Dirección de la intranet

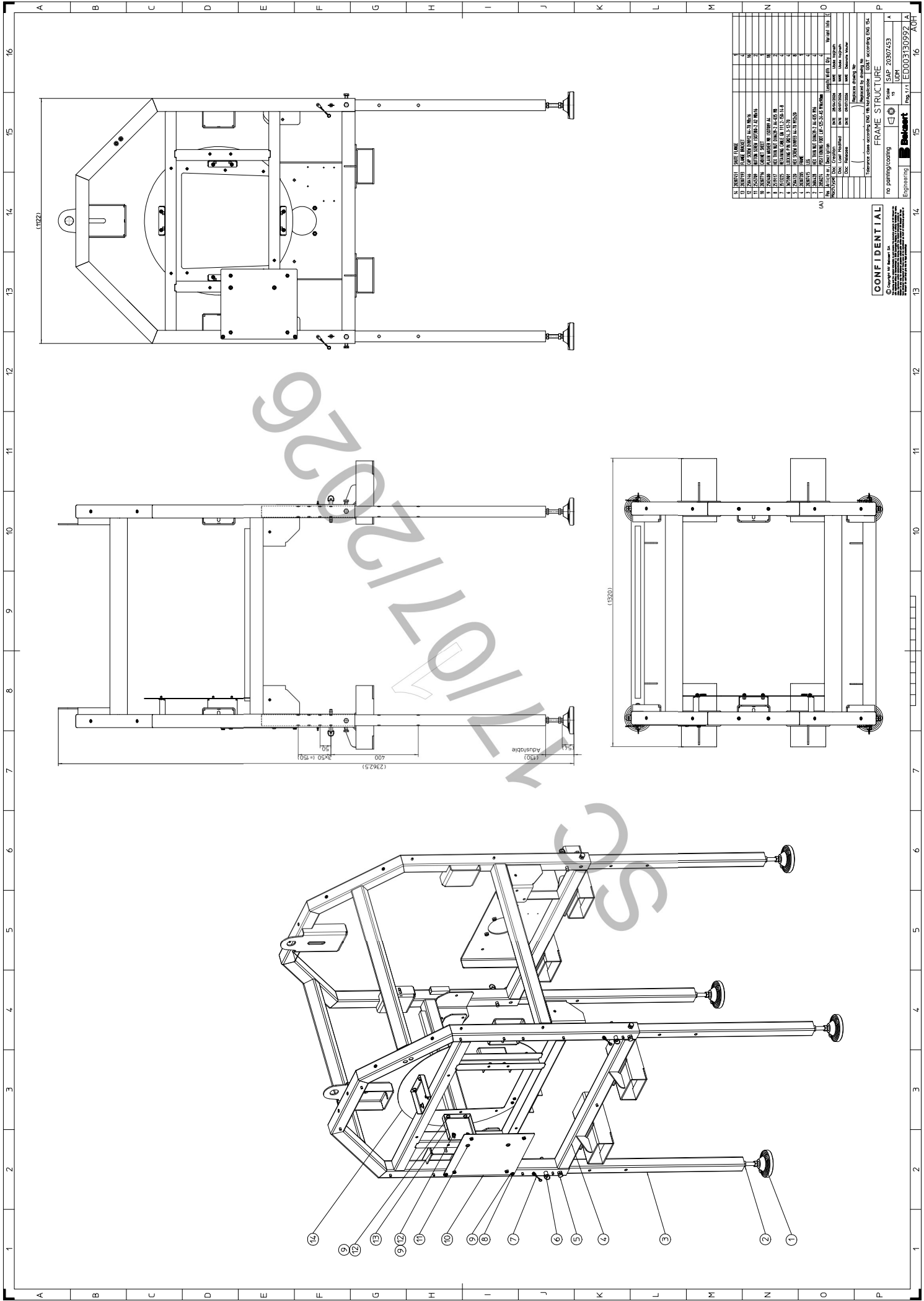
SC 17/07/2026

Anexo A: lista de documentos

A continuación se enumeran todos los documentos utilizados en el manual de instrucciones, de modo que el manual completo pueda recomponerse en cualquier momento.

*Especificaciones: Documento de referencia - **IDF_TAMBOR GIRATORIO PARA FIBRA EN BUCLE_V01-00_Confidencial**

SC 17/07/2026



CONFIDENTIAL

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no painting/coating

Scale: 1:1
SAP: 20307453
LOH

FRAME STRUCTURE

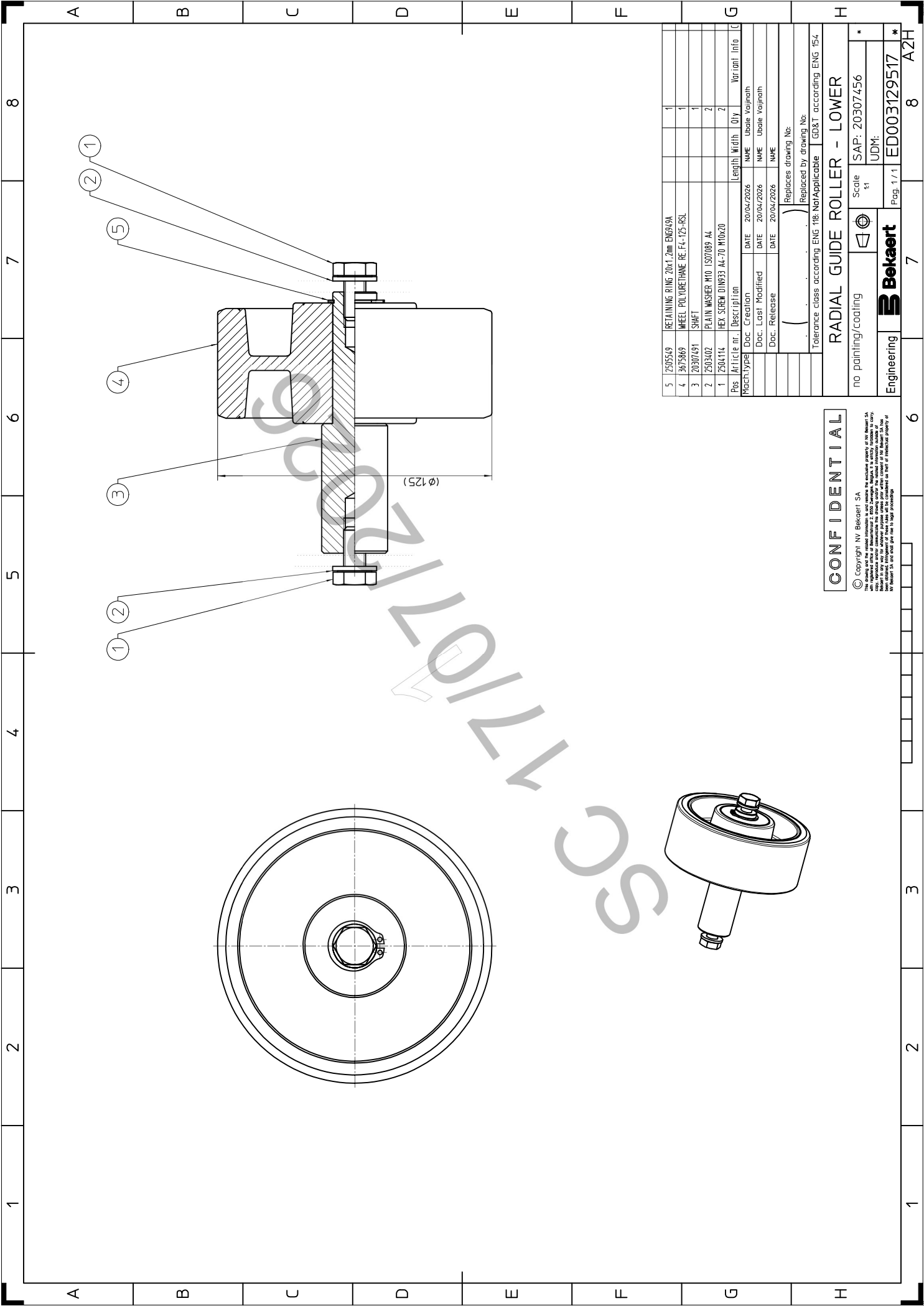
Belmont Engineering

Reference drawn according to EN 1090-1:2009 (EN 1090-1:2009)

Page 1 of 1

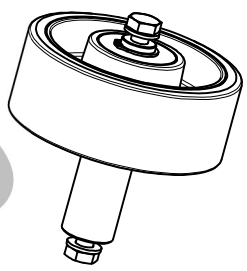
16

16



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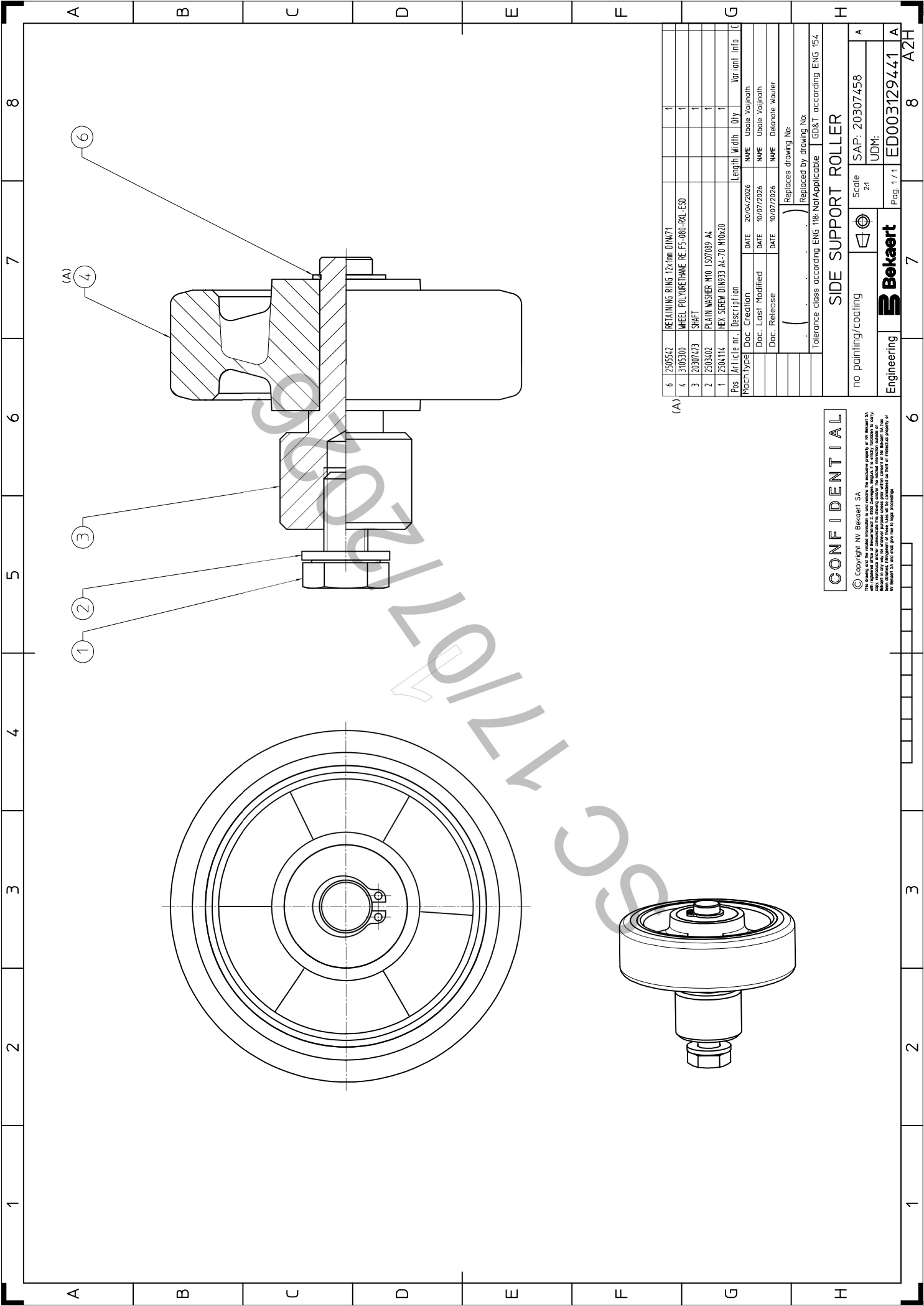
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5	2505519	RETAINING RING 20x1.2mm ENG/SA				1
4	3075069	WHEEL POLYURETHANE RE F4-T5-HSL				1
3	20307491	SHAFT				1
2	2503402	PLAIN WASHER M10 ISO7089 A4				2
1	2504114	HEX SCREW DIN933 A4-70 M10x20				2
Pos Article nr.		Description	Length	Width	Qty	Variant Info
Machtype		Doc Creation	DATE	20/04/2026	NAME	Udate Valjraht
Doc. Last Modified		DATE	20/04/2026	NAME	Udate Valjraht	
Doc. Release		DATE	20/04/2026	NAME	Udate Valjraht	
		Replaces drawing No:				
		Replaced by drawing No:				
		Tolerance class according ENG 118: NotApplicable				
		GD&T according ENG 154				
		RADIAL GUIDE ROLLER - LOWER				
		no painting/coating				
		Scale 1:1				
		SAP: 20307456				
		UDM:				
		Pag. 1/1				
		ED003129517				
		A2H				



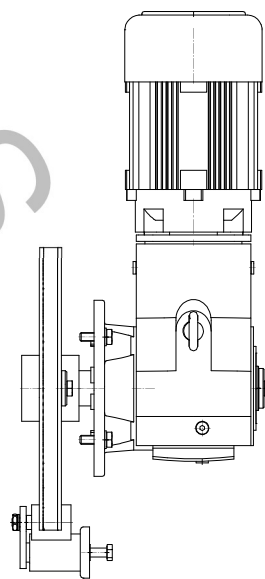
Engineering



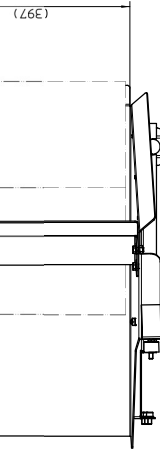
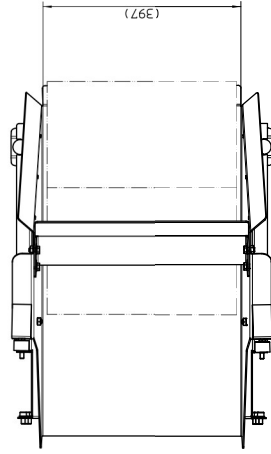
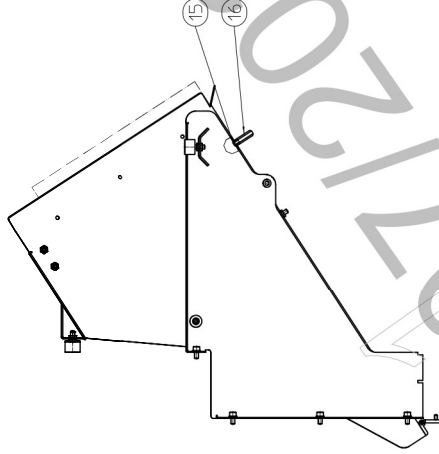
6	250542	RETAINING RING 12x1mm DIN671				1	
4	3105300	WHEEL POLYURETHANE RE F5-080-RUL-ESD				1	
3	2030743	SHAFT				1	
2	2503402	PLAIN WASHER M10 ISO7089 A4				1	
1	2504114	HEX SCREW DIN933 A4-70 M10x20				1	
Pos Article nr.		Description					
Machtype		Doc Creation	DATE	20/04/2026		NAME	Udale Valjnrath
Doc. Last Modified		DATE	10/07/2026		NAME	Udale Valjnrath	
Doc. Release		DATE	10/07/2026		NAME	Delanote Wouler	
		Replaces drawing No:					
		Replaced by drawing No:					
		Tolerance class according ENG 118: NotApplicable					
		GD&T according ENG 154					
SIDE SUPPORT ROLLER							
no painting/coating			Scale	21		SAP: 20307458	
					UDM:		A
Engineering					ED003129441		A
			7		8		A2H

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Doc.	Accession	Materials	File
16	3640277	CARNEY L HAMBLES SW47-5-12-180	1
17	3640278	PLATE SW47-5-12-172	2
18	3640279	PLATE SW47-5-12-171	3
19	3640280	PLAIN WASHER SW47-5-12-180	4
20	3640281	PLAIN WASHER SW47-5-12-180	5
21	3640282	PLAIN WASHER SW47-5-12-180	6
22	3640283	PLAIN WASHER SW47-5-12-180	7
23	3640284	PLAIN WASHER SW47-5-12-180	8
24	3640285	PLAIN WASHER SW47-5-12-180	9
25	3640286	PLAIN WASHER SW47-5-12-180	10
26	3640287	PLAIN WASHER SW47-5-12-180	11
27	3640288	PLAIN WASHER SW47-5-12-180	12
28	3640289	PLAIN WASHER SW47-5-12-180	13
29	3640290	PLAIN WASHER SW47-5-12-180	14
30	3640291	PLAIN WASHER SW47-5-12-180	15
31	3640292	PLAIN WASHER SW47-5-12-180	16
32	3640293	PLAIN WASHER SW47-5-12-180	17
33	3640294	PLAIN WASHER SW47-5-12-180	18
34	3640295	PLAIN WASHER SW47-5-12-180	19
35	3640296	PLAIN WASHER SW47-5-12-180	20
36	3640297	PLAIN WASHER SW47-5-12-180	21
37	3640298	PLAIN WASHER SW47-5-12-180	22
38	3640299	PLAIN WASHER SW47-5-12-180	23
39	3640300	PLAIN WASHER SW47-5-12-180	24
40	3640301	PLAIN WASHER SW47-5-12-180	25
41	3640302	PLAIN WASHER SW47-5-12-180	26
42	3640303	PLAIN WASHER SW47-5-12-180	27
43	3640304	PLAIN WASHER SW47-5-12-180	28
44	3640305	PLAIN WASHER SW47-5-12-180	29
45	3640306	PLAIN WASHER SW47-5-12-180	30
46	3640307	PLAIN WASHER SW47-5-12-180	31
47	3640308	PLAIN WASHER SW47-5-12-180	32
48	3640309	PLAIN WASHER SW47-5-12-180	33
49	3640310	PLAIN WASHER SW47-5-12-180	34
50	3640311	PLAIN WASHER SW47-5-12-180	35
51	3640312	PLAIN WASHER SW47-5-12-180	36
52	3640313	PLAIN WASHER SW47-5-12-180	37
53	3640314	PLAIN WASHER SW47-5-12-180	38
54	3640315	PLAIN WASHER SW47-5-12-180	39
55	3640316	PLAIN WASHER SW47-5-12-180	40
56	3640317	PLAIN WASHER SW47-5-12-180	41
57	3640318	PLAIN WASHER SW47-5-12-180	42
58	3640319	PLAIN WASHER SW47-5-12-180	43
59	3640320	PLAIN WASHER SW47-5-12-180	44
60	3640321	PLAIN WASHER SW47-5-12-180	45
61	3640322	PLAIN WASHER SW47-5-12-180	46
62	3640323	PLAIN WASHER SW47-5-12-180	47
63	3640324	PLAIN WASHER SW47-5-12-180	48
64	3640325	PLAIN WASHER SW47-5-12-180	49
65	3640326	PLAIN WASHER SW47-5-12-180	50
66	3640327	PLAIN WASHER SW47-5-12-180	51
67	3640328	PLAIN WASHER SW47-5-12-180	52
68	3640329	PLAIN WASHER SW47-5-12-180	53
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70	3640331	PLAIN WASHER SW47-5-12-180	55
71	3640332	PLAIN WASHER SW47-5-12-180	56
72	3640333	PLAIN WASHER SW47-5-12-180	57
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78	3640339	PLAIN WASHER SW47-5-12-180	63
79	3640340	PLAIN WASHER SW47-5-12-180	64
80	3640341	PLAIN WASHER SW47-5-12-180	65
81	3640342	PLAIN WASHER SW47-5-12-180	66
82	3640343	PLAIN WASHER SW47-5-12-180	67
83	3640344	PLAIN WASHER SW47-5-12-180	68
84	3640345	PLAIN WASHER SW47-5-12-180	69
85	3640346	PLAIN WASHER SW47-5-12-180	70

POS	DATE	DESCRIPTION	DATE	NAME	UNIT	QUANTITY	UNIT PRICE	AMOUNT
		Doc. Creation	29/04/2026	NAME	Unité Voignnon			
		Doc. Last Modified	10/07/2026	NAME	Unité Voignnon			
		Doc. Release	10/07/2026	NAME	Département Rouler			
				Replaces drawing No				
				Replaced by drawing No				
				Tolerance class according to ENG 18: Not Applicable				
				Tolerance class according to ENG 154				

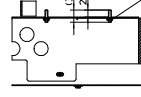
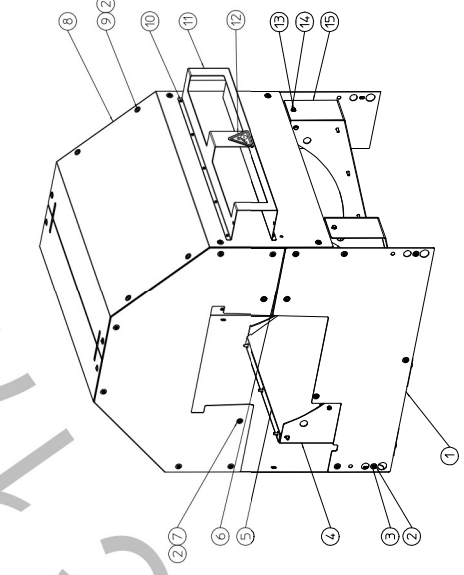
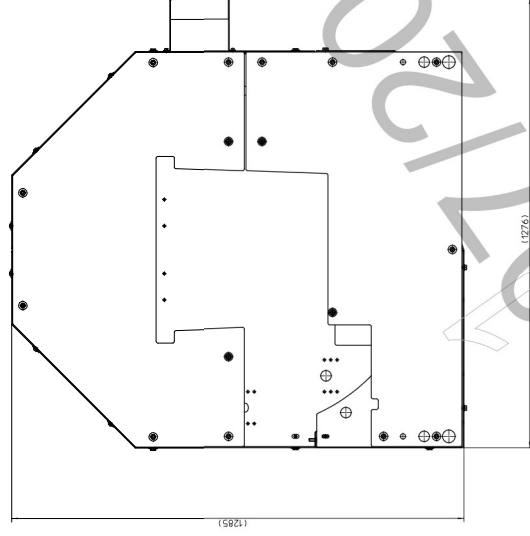
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FEEDING SHUTE

no painting/coating		Scale 1:5	SAP: 20307460		A
			UDM:		
Engineering	Bekaert		ED003131366		A

Engineering	 Bekaert	Pag. 1 / 1	ED003131366	ED003131366	A
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Line Nr.	Part Nr.	Part Revision	Description	Number 2D	Quantity	UOM	Spare Part
1	20307698	A	ROTARY DRUM FOR LOOP FIBER	ED003131381	1	each	
1	2557420	E	BEKAERT LOGO PLATE 165x60mm	ED000509653	1	each	No
2	2713957	*	FLAT BLIND RIVET GB/T12618 ALU 3x8mm		6	each	
3	2556690	H	NAMEPLATE CE 096x033mm	ED000510436	1	each	
2	20307453	A	FRAME STRUCTURE	ED003130992	1	each	
1	2850274	*	POSITIONING FOOT LVF-125-24-AS M16x98mm		4	each	No
2	2684428	*	HEX THIN NUT DIN439-2 A4-035 M16		4	each	No
3	20307415	*	LEG	ED003129542	4	each	
4	20307205	*	FRAME	ED003130358	1	each	
5	2504120	*	HEX SCREW DIN933 A4-70 M12x20		8	each	No
6	3675901	*	LOCKING PIN GN214.3-12-70		4	each	
7	3513225	*	RETAINING CABLE GN 111.2-150-14-B		4	each	
8	2519117	*	HEX THIN NUT DIN439-2 A4-035 M8		2	each	No
9	2503400	*	PLAIN WASHER M8 ISO7089 A4		18	each	No
10	20307716	*	CABINET SHEET	ED003130325	1	each	
11	2545709	*	BUTTON SCREW ISO7380-2 A2 M8x16		2	each	No
12	2504146	*	CAP SCREW DIN912 A4-70 M8x16		16	each	No
13	20307193	*	FLANGE BRACKET	ED003130759	4	each	
14	20307451	*	SHUTE FLANGE	ED003130356	1	each	
3	20307454	*	FRAME LEG ADAPTER	ED003131039	1	each	
1	20307376	*	SUPPORT	ED003130904	4	each	
2	2504135	*	CAP SCREW DIN912 A4-70 M5x10		24	each	No
3	3675901	*	LOCKING PIN GN214.3-12-70		4	each	
4	3513225	*	RETAINING CABLE GN 111.2-150-14-B		8	each	
5	2504053	*	HEX NUT DIN934 A4-70 M5		4	each	No
6	20307356	A	LEG ADAPTER	ED003131033	4	each	
7	20307373	*	LOCKING PIN	ED003130761	4	each	
8	3675990	*	SPRING COTTER PINS 3mm GN 1024-NI-3-E		4	each	
9	2608039	*	CAP SCREW DIN912 A4-70 M5x12		24	each	No
4	20307455	*	DRUM HOUSING	ED003131173	1	each	
1	20307149	A	DRUM WELDED	ED003131053	1	each	
2	20307700	*	PERFORATED SHEET 25MM	ED003130287	6	each	
3	2545709	*	BUTTON SCREW ISO7380-2 A2 M8x16		60	each	No
4	2528724	*	BOLT-ON LOAD RING 630kg M10		2	each	No
5	20307456	*	RADIAL GUIDE ROLLER - LOWER	ED003129517	4	each	
1	2504114	*	HEX SCREW DIN933 A4-70 M10x20		8	each	No
2	2503402	*	PLAIN WASHER M10 ISO7089 A4		8	each	No
3	20307491	*	SHAFT	ED003129509	4	each	
4	3675869	*	WHEEL POLYURETHANE RE.F4-125-RSL		4	each	
5	2505549	*	RETAINING RING 20x1,2mm ENG949A		4	each	No
6	20307457	*	RADIAL GUIDE ROLLER - UPPER	ED003129481	2	each	
1	2503623	*	HEX NUT DIN934 ST(8) Zn M20		2	each	No
2	2941492	*	PLAIN WASHER M20 DIN125-1A ST Zn		4	each	No
3	20307475	*	INTERMEDIATE BUSH	ED003129451	2	each	
4	3675869	*	WHEEL POLYURETHANE RE.F4-125-RSL		2	each	
5	2521109	*	CAP SCREW DIN912 8.8 Zn M20x120		2	each	No
7	20307458	A	SIDE SUPPORT ROLLER	ED003129441	6	each	
1	2504114	*	HEX SCREW DIN933 A4-70 M10x20		6	each	No
2	2503402	*	PLAIN WASHER M10 ISO7089 A4		6	each	No
3	20307473	A	SHAFT	ED003129436	6	each	
4	3105300	*	WHEEL POLYURETHANE RE.F5-080-RXL-ESD		6	each	
6	2505542	*	RETAINING RING 12x1mm DIN471		6	each	No
8	20307459	A	DRIVE UNIT	ED003131370	1	each	
1	20307699	*	V-PULLEY 315	ED003130003	2	each	
2	3675877	*	V-BELT SPB LW=1740		1	each	
3	3675890	*	TENSIONING ROLLER DIA 40mm ID-14087400		1	each	
4	3675884	*	BELT TENSIONER MADLER 14080203		1	each	
5	3675969	*	GEARED MOTOR i=55,17 0,75kW 1415Rpm IE3		1	each	
6	20307450	*	SHAFT	ED003130039	1	each	
7	2618022	A	WASHER SHAFT 28mm M10 ENG906B	ED000010784	2	each	No
8	2503772	*	HEX SCREW DIN933 8.8 Zn M10x20		3	each	No
9	2509990	*	PARALLEL KEY 8x7x36mm DIN6885AM C45K		2	each	No

10	2512902	*	PARALLEL KEY 10x8x125mm DIN6885AS C45K		1	each	No
11	2540239	A	WASHER SHAFT 32mm M10 ENG906B	ED000049928	1	each	No
12	2504116	*	HEX SCREW DIN933 A4-70 M10x30		4	each	No
13	2503402	*	PLAIN WASHER M10 ISO7089 A4		4	each	No
9	20307460	A	FEEDING SHUTE	ED003131366	1	each	
1	20307377	*	SHUTE SIDE PLATE - LEFT	ED003131312	1	each	
2	20307388	A	SHUTE ENTRY SHEET	ED003131202	1	each	
3	2526960	*	C-SUNK SCREW ISO10642 A4 M6x16		4	each	No
4	2504146	*	CAP SCREW DIN912 A4-70 M8x16		8	each	No
5	20307381	*	SHUTE SIDE PLATE - RIGHT	ED003131363	1	each	
6	3676028	*	VIBRATION DAMPER DVA4-30-20-SST-M8-20-55		2	each	
6	3676028	*	VIBRATION DAMPER DVA4-30-20-SST-M8-20-55		4	each	
7	2519117	*	HEX THIN NUT DIN439-2 A4-035 M8		4	each	No
7	2519117	*	HEX THIN NUT DIN439-2 A4-035 M8		8	each	No
8	2503400	*	PLAIN WASHER M8 ISO7089 A4		8	each	No
8	2503400	*	PLAIN WASHER M8 ISO7089 A4		4	each	No
9	2504107	*	HEX SCREW DIN933 A4-70 M8x16		4	each	No
10	20307391	*	CONNECTION SHEET	ED003131365	1	each	
11	2504148	*	CAP SCREW DIN912 A4-70 M8x25		2	each	No
12	2503401	*	PLAIN WASHER LARGE M8 ISO7093 A4		10	each	No
15	2679838	*	BUTTON SCREW ISO7380-1 A2 M5x12		2	each	No
16	3676077	*	CABINET U HANDLES GN427.5-12-180		1	each	
10	20307461	A	OUTLET FLAPS	ED003130219	1	each	
1	20307717	*	LATH	ED003130181	1	each	
2	2504146	*	CAP SCREW DIN912 A4-70 M8x16		5	each	No
3	20307719	*	RUBBER FLAP FRONT	ED003130136	1	each	
4	20307721	*	SIDE FLAP	ED003130146	2	each	
5	2504055	*	HEX NUT DIN934 A4-70 M8		8	each	No
6	20307785	*	ATTACHMENT RUBBER FLAP	ED003130193	2	each	
7	20307720	*	SIDE FLAP SHORT	ED003130166	2	each	
11	20307462	A	PROTECTIVE COVER	ED003130321	1	each	
1	20307590	*	COVER - SHUTE ENTRY LOWER	ED003129689	1	each	
2	2503401	*	PLAIN WASHER LARGE M8 ISO7093 A4		46	each	No
3	2519117	*	HEX THIN NUT DIN439-2 A4-035 M8		30	each	No
4	20307618	A	BOTTOM COVER - SHUTE SIDE	ED003129748	1	each	
5	20307722	*	SHUTE FLAP	ED003130304	1	each	
6	20307596	*	COVER - SHUTE ENTRY UPPER	ED003129694	1	each	
7	2545709	*	BUTTON SCREW ISO7380-2 A2 M8x16		4	each	No
8	20307611	*	COVER - FRONTSIDE	ED003129725	1	each	
9	2875315	*	BUTTON SCREW ISO7380-1 A2 M8x20		12	each	No
10	2504135	*	CAP SCREW DIN912 A4-70 M5x10		10	each	No
11	20307857	*	BOX	ED003130308	1	each	
12	2879367	*	LABEL DANGER FOR HANDS 90mm		1	each	
13	2504108	*	HEX SCREW DIN933 A4-70 M8x20		13	each	No
14	2503400	*	PLAIN WASHER M8 ISO7089 A4		19	each	No
15	20307615	A	BOTTOM COVER - MOTOR SIDE	ED003129747	1	each	
16	20307248	*	COVER - MOTOR SIDE	ED003129674	1	each	
17	2504107	*	HEX SCREW DIN933 A4-70 M8x16		6	each	No
18	20307612	*	COVER - BACKSIDE	ED003129726	1	each	
19	2534127	*	SET SCREW DIN913 A4 M8x35		8	each	No
90	20312651	*	IDF	ED003163907	1	each	



NV BEKAERT SA.
Bekaertstraat 2
8550 Zwevegem

ELECTRICAL
A3H
en_US
EPLAN_P8 V 2.4.4

Project name: DEMO "EPLAN"	
Project description: Description of a "BEKAERT" Eplan drawing	
Drawing Number: ED000922987 Rev.: *	
SAP Number: 2160406 Rev.: *	
RESPONSIBLE FOR THIS DRAWING Designer: DEJAEGHERE KOEN by GRENIERS RENIK Created on: 27/09/2013 by GRENIERS RENIK Edit date: 24/10/2016 by GRENIERS RENIK	
Customer: BEKAERT	Customer DrNr:
Design site BENG Meulebkestraat 139 8770 Ingelmunster	
UDM: 4000982	OLD UDM DRAWING NUMBER
Ruplan Drawing Number: ED000306755	OLD RUPLAN DRAWING NUMBER
Number of pages 19	

0123456789

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ENGINEERING

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Drawing made
Last Change
Designer

GRENIERS RENIK
GRENIERS RENIK
DEJAEGHERE KOEN

DATE
27/09/2013
24/10/2016
SAP: 2160406

VERSION
*
*
*

=
+ S

CODELETTERS VOOR PLAATSCODES
LETTER CODES FOR DESIGNATION OF LOCATION

+S	PARTS IN CABINET	MATERIAAL IN KAST
+M	PARTS ON MACHINE	MATERIAAL OP MACHINE
+P	PNEUMATIC PARTS ON MACHINE	PNEUMATISCH MATERIAAL OP MACHINE

LOCATION CODE FOR COMPONENTS
THIS LIST SHOWS ONLY THE AVAILABLE LOCATIONS IN THE DRAWING
EACH CODE HAS A SEPERATE PARTS LIST

2 CABLE LISTS WILL BE CREATED:
1 AS INFO FOR THE CUSTOMER (ALL CABLES THAT START WITH CODE LETTERS "WC") AND
1 WITH THE MOUNTED AND/OR DELIVERED CABLES (ALL CABLES THAT START WITH THE CODE LETTER "W")

OPMERKING
BESCHERMING TEGEN INDIRECTE AANRAKING IS AFHANKELIJK VAN NET
TYPE EN AARDINGSYSTEEM. PASSENDE MAATREGELEN DIENEN GENOMEN TE
WORDEN OP DE PLAATS VAN INSTALLATIE EN ZIJN DE
VOLLEDIGE VERANTWOORDELIJKHEID VAN DE GEBRUIKER VAN DE
MACHINE / INSTALLATIE.

REMARK
PROTECTION AGAINST INDIRECT CONTACT DEPENDS ON THE TYPE OF
SUPPLY AND THE EARTHING SYSTEM. SUITABLE MEASURES MUST BE
TAKEN AT THE PLACE OF INSTALLATION AND ARE THE FULL
RESPONSIBILITY OF THE USER OF THE MACHINE / INSTALLATION.

ALLE BEDRADING IN KASTEN KOPER 0,75mm2,
BUITEN KASTEN KOPER 1mm2,
TENZIJ ANDERS VERMELD

ALL WIRING IN CABINETS COPPER 0,75mm2,
OUTSIDE CABINETS COPPER 1mm2,
UNLESS SPECIFIED OTHERWISE

DEZE MACHINE IS GECONSTRUEERD EN
GETEST IN OVEREENSTEMMING MET
IEC 204-1 EN EN 60204 PART 1

THIS MACHINE WAS BUILT
AND TESTED ACCORDING TO
IEC 204-1 AND EN 60204 PART 1

Letter Codes

Customer DrNr:

DEMO "EPLAN"

BEKAERT

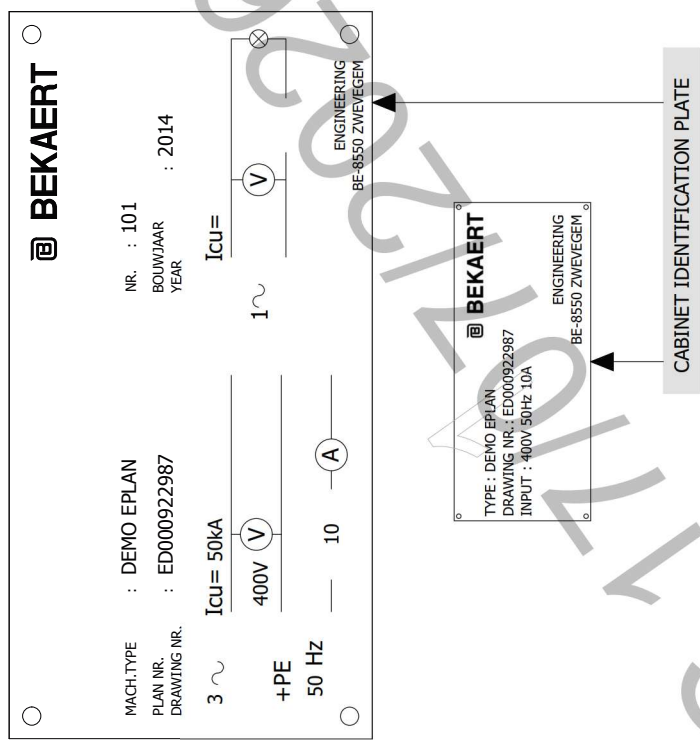
ED000922987
SHEET 2 OF 19

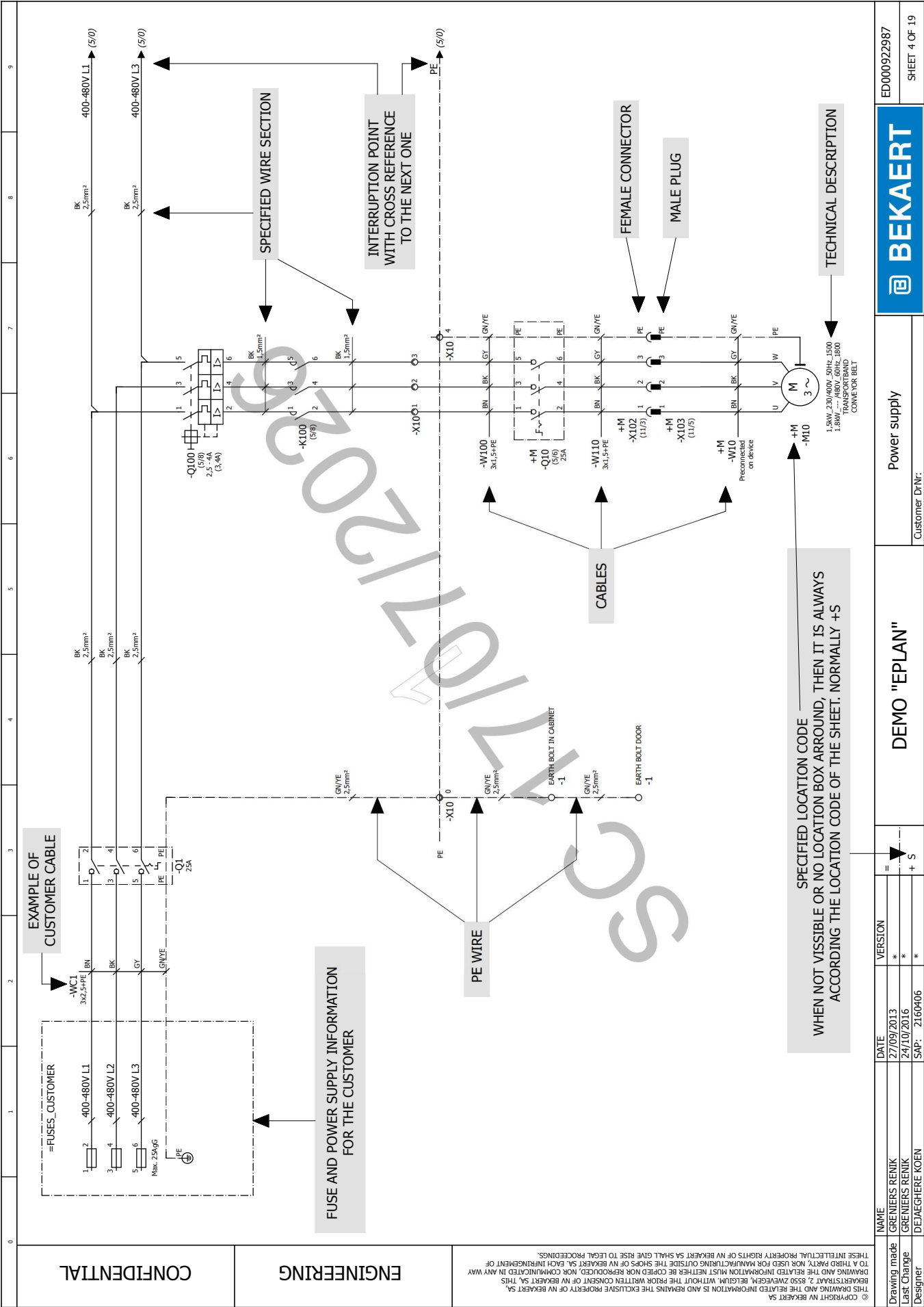
	Drawing made
	Last Change
	Designer

	NAME	DATE	VERSION
1	GRENIERS RENIK	27/09/2013	*
2	GRENIERS RENIK	24/10/2016	*
3	DEJAEGHERE KOEN	SAP: 2160406	*

BEKAERT

SHEET DESCRIPTION



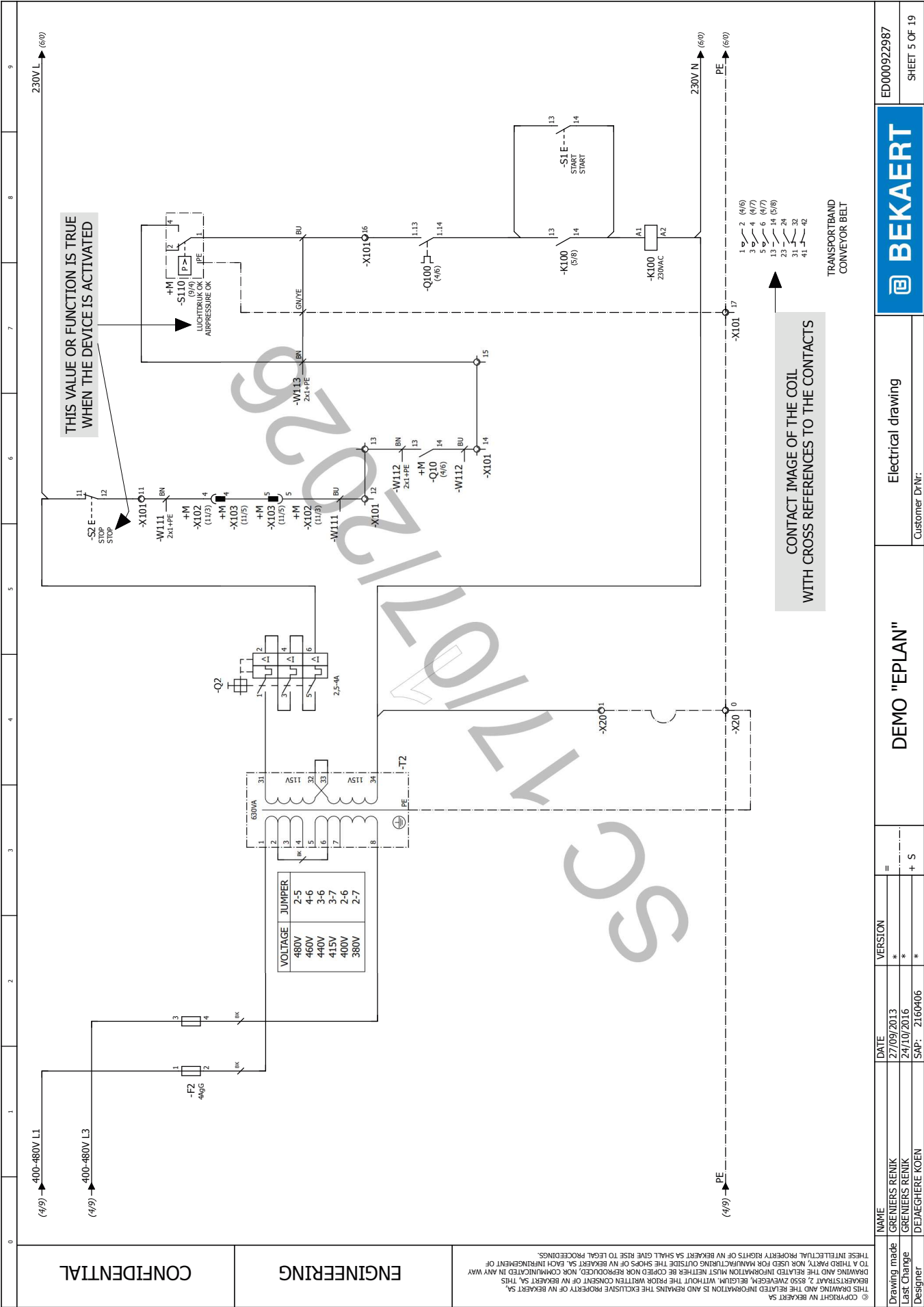


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				=  ---		Power supply	
NAME		DATE	VERSION		Customer DrNr:		
Drawing made		27/09/2013	*				
Last Change		24/10/2016	*				
Designer		DEJAEGHERE KOEN	SAP: 2160406	*			
DEMO "EPLAN"							
							ED000922987
							SHEET 4 OF 19



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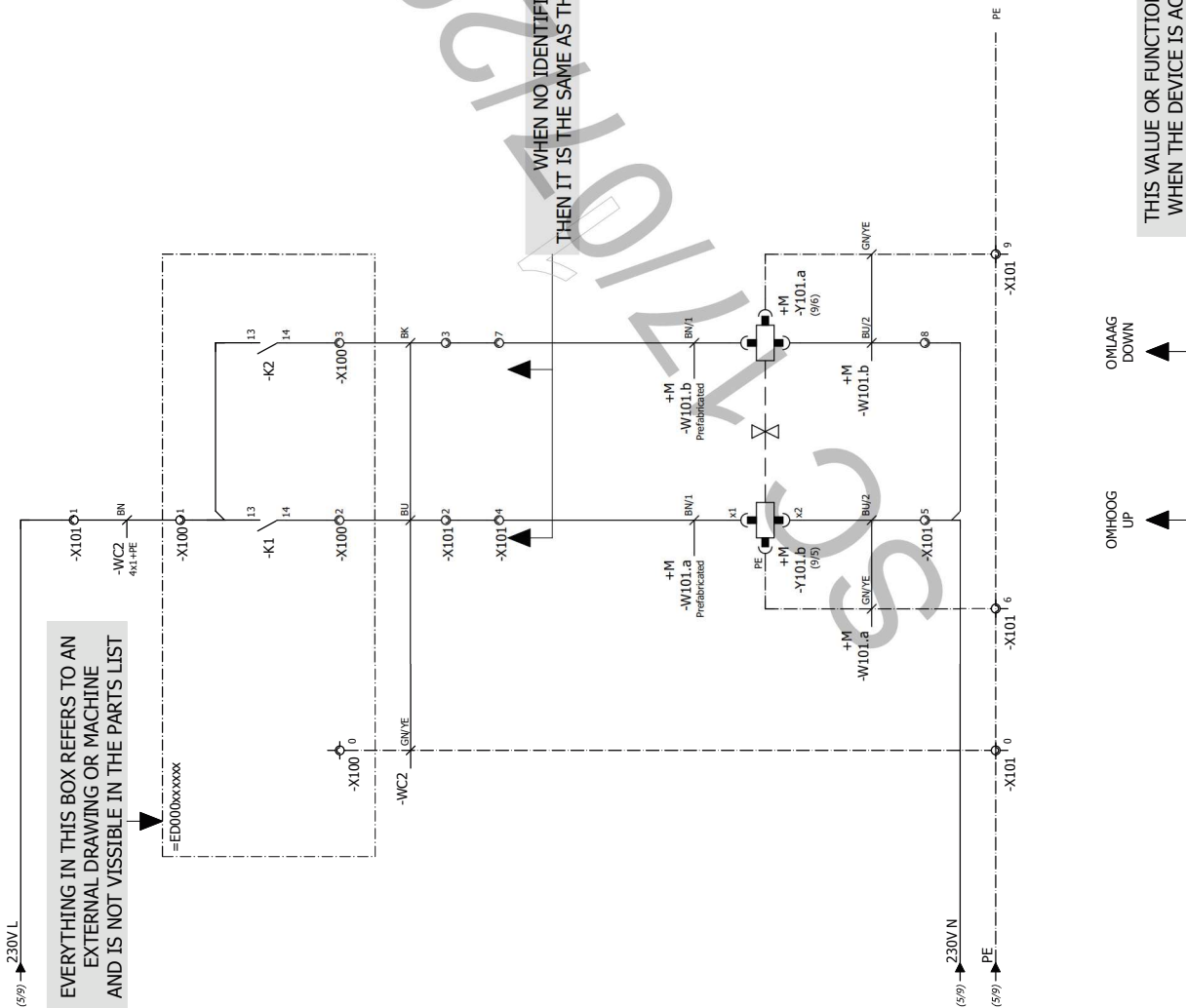
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NAME	DATE	VERSION	
Drawing made	27/09/2013	*	
Last Change	24/10/2016	*	
Designer	SAP: 2160406	*	
DEMO "EPLAN"			Electrical drawing
Customer DrNr:			
ED000922987			SHEET 5 OF 19

ENGINEERING

	Drawing made
	Last Change
	Designer

$$\frac{230\text{V}}{(5/9)} \rightarrow$$


WHEN NO IDENTIFICATION NAME IS VISIBLE,
THEN IT IS THE SAME AS THE ONE IN LINE ON THE LEFT SIDE

THIS VALUE OR FUNCTION IS TRUE
WHEN THE DEVICE IS ACTIVATED

01

DEVICENET

1794-ADN

-A040

E

G

AVDD

COM

LD

BK

BU

SCR

WH

RD

REPRESENTATION OF A "BUNDLED CONNECTION"

W401

1485C-P1-C150

BK

WH

SCR

BU

RD

U1:BU

U1:SCR

U1:WH

U1:BK

U2:BU

U2:SCR

U2:WH

U2:BK

U3:BU

U3:SCR

U3:WH

U3:BK

U4:BU

U4:SCR

U4:WH

U4:BK

U2:RD

U2:BU

U2:SCR

U2:WH

U2:BK

U3:RD

U3:BU

U3:SCR

U3:WH

U3:BK

U4:RD

U4:BU

U4:SCR

U4:WH

U4:BK

TRUNK LINE

BK

WH

SCR

BU

RD

TRUNK LINE

BK

WH

SCR

BU

RD

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ENGINEERING

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NAME: GRENIERS RENIK
Drawing made: 27/09/2013
Last Change: 24/10/2016
Designer: DEJAEGHERE KOEN

DATE: 27/09/2013
24/10/2016
SAP: 2160406

VERSION: *
*
*
= + S

DEMO "EPLAN"

Devicenet
Customer DrNr:

BEKAERT

ED000922987
SHEET 8 OF 19

0123456789

CONFIDENTIAL

ENGINEERING

RIGHT CABINET VIEW

CABLE DUCT

DIN RAIL

DETAIL ETIKETTEN
LABEL DETAILS

27x46mm
27x38mm
27x34mm
80x20x1,6mm

IN AFS. MET FRONTS. MET ZWART-LETTING, MINST. AANDEKS. 80/20/1,6MM.
IN AFS. MET FRONTS. MET WITTE-LETTING, MINST. AANDEKS. 80/20/1,6MM.

DETAILED SCALE (DIFFERENT WITH THE SHEET SCALE)
OF PARTS IN THIS CIRCLE

50 mm
SCHAAL
SCALE

IDENTIFICATION PLATE

500
250
270
210
102
S1
S2
-102
-103

SHEET SCALE AND SCALE OF ALL THE OBJECTS ON THIS PAGE

210 mm
SCHAAL
SCALE

BEKAERT

ED000922987

SHEET 10 OF 19

DEMO "EPLAN"

Cabinet layout

Customer DrNr:

NAME

DATE

VERSION

GRENIERS RENIK

27/09/2013

*

GRENIERS RENIK

24/10/2016

*

DEJAEGHERE KOEN

SAP: 2160406

*

Drawing made

Last Change

Designer

GRENIERS RENIK

GRENIERS RENIK

DEJAEGHERE KOEN

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0123456789											
MATERIAALLIJST VOOR PLAATSCODE: +M PARTSLIST FOR DESIGNATION OF LOCATION: ALL PARTS ON THIS SHEET HAVE THE SAME MOUNTING LOCATION											
CONFIDENTIAL	REFERENTIE DESIGNATION	OMSCHRIJVING DESCRIPTION	Aantal QTY	MERK BRAND	TYPE TYPE	TECHNISCHE GEGEVENS TECHNICAL DATA		BEKAERT ARTNR BEKAERT PARTNR	C N		
	-004 (8/3)	2-PORT DEVICEBOX FOR DEVICENET	1	ALLEN BRADLEY	1485P-P2T5-T5			2552332			
	-M10 (4/6)	AC MOTOR 1,5kW 1500rpm IE3 B3T	1			3x230/400V 50Hz T.B=IP		2878914			
	-Q10 (4/6)	ON-LOAD SWITCH 25A FLUSH-MT. PADL.	1	MOELLER	P1-25/12/SVB-SW/H11	MAIN SW. INO+1NC		2536603			
	-S110 (5/8)	Pressure switch	1			See pneumatic parts list					
	-W101.a (6/3)	RIGHT-ANGLE CON.(F) 2+PE FORM C	1			WITH CABLE l=10m		2529263			
	-W101.b (6/4)	RIGHT-ANGLE CON.(F) 2+PE FORM C	1			WITH CABLE l=10m		2529263			
	-X102 (11/3)	CONNECTOR (F) 6 POLE +PE SIZE 6B	1	HARTING	09.33.006.2701	500V 16ASCREW TERMINALS		2583135			
	-X103 (11/5)	HOOD FOR SIZE 6B CONNECTOR	1	HARTING	19.30.006.1540	SIDE ENTRY M20		2567568			
	-Y101.a (6/4)	CONNECTOR (M) 6 POLE + PE SIZE 6B	1	HARTING	09.33.006.2601	500V 16ASCREW TERMINALS		2583134			
ENGINEERING	-Y101.a (6/4)	HOUSING FOR SIZE 6B CONNECTOR	1	HARTING	19.30.006.1250	SIDE ENTRY M20		2567578			
	-Y101.b (6/3)	VALVE COIL	1			See pneumatic parts list					
2021/07/12											
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Drawing made Last Change Designer		NAME GRENIERS RENIK GRENIERS RENIK DEJAEGHERE KOEN		DATE 27/09/2013 24/10/2016 SAP: 2160406		VERSION = * * * + S		PARTS LIST Customer Drnr:		BEKAERT ED000922987 SHEET 13 OF 19	

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ENGINEERING

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MATERIAALLIJST VOOR PLAATSCODE: +P
PARTSLIST FOR DESIGNATION OF LOCATION:

ALL PARTS ON THIS SHEET HAVE THE SAME MOUNTING LOCATION

REFERENTIE DESIGNATION	OMSCHRIJVING DESCRIPTION	Aantal QTY	MERK BRAND	TYPE TYPE	TECHNISCHE GEGEVENS TECHNICAL DATA	BEKAERT ARTNR BEKAERT PARTNR	C N
-100	(9/1) AIR LINE EQUIPMENT G1/4 WITHOUT LUBRICATOR	1	SMC	AC20X-F02G-X2284	800/min (at 10BAR)	2669539	
-101	(9/5) 5/2 VALVE + SINGLE BASE PLATE	1	SMC	EV25 2250-4D0-01F	230VDC G1/8	2530559	
-102	(9/5) DOUBLE ACTING CYLINDER, VDMA 24562-1	1	SMC	CD85NZ5-50C-B	DIA 25mm STROKE 50mm MAGN.PISTON	2637747	
-110	(9/4) PRESSURE SWITCH 1-10 BAR G1/4	1	SUCO	0180 45803 1 006	for NBR (buna-N): hydraulic fluid, machine oil, heating oil, et	2556736	

Drawing made
Last Change
Designer

NAME
GRENIERS RENIK
GRENIERS RENIK
DEJAEGHERE KOEN

DATE
27/09/2013
24/10/2016
SAP: 2160406

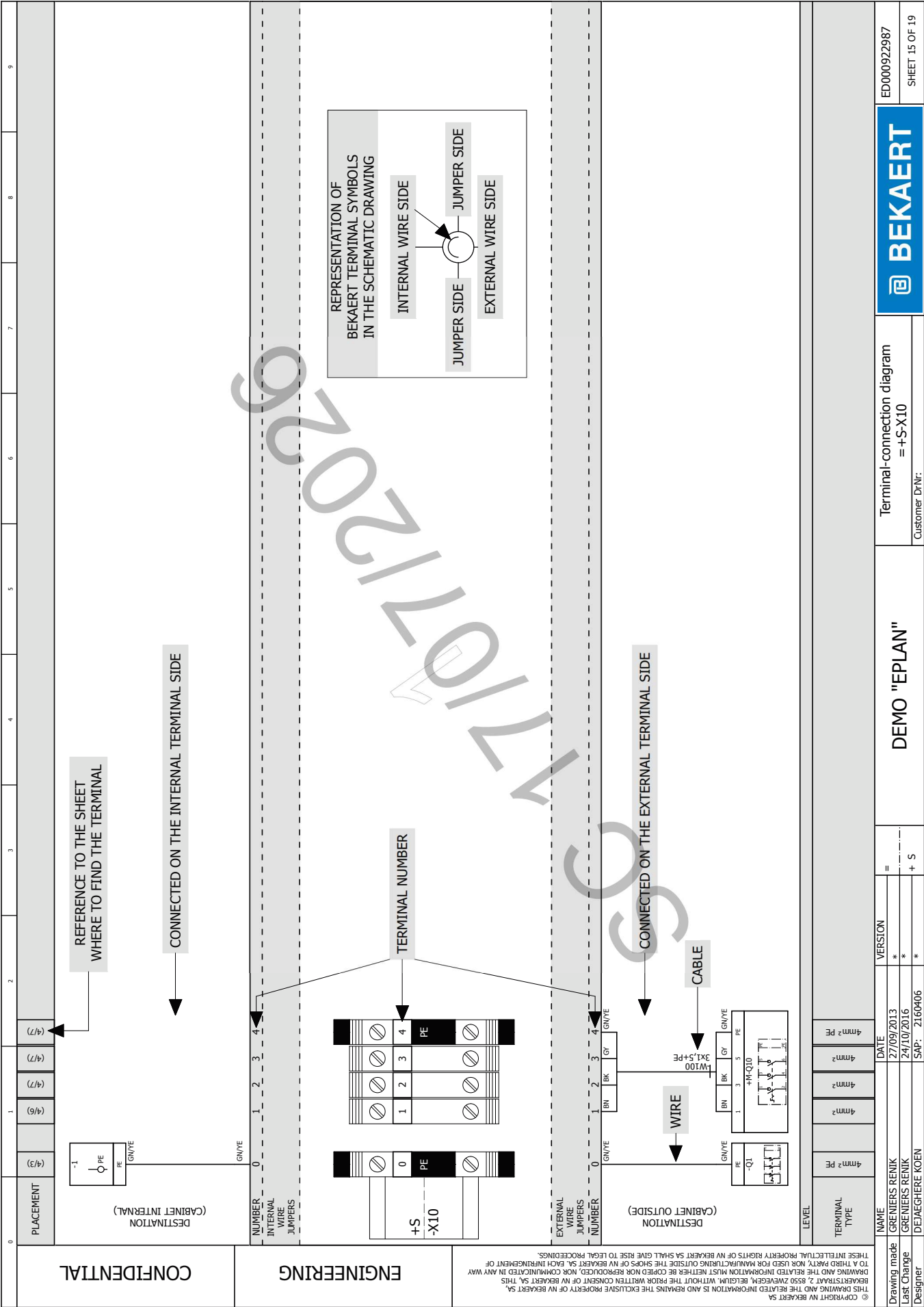
VERSION
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*

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PARTS LIST
Customer DrNr:

ED000922987
SHEET 14 OF 19

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0

1

2

3

4

5

6

7

8

9

PLACEMENT

(5/4)

(5/4)

DESTINATION (CABINET INTERNAL)

-12

34

PE

34

NUMBER

INTERNAL

WIRE

JUMPERS

0

1

IDENTIFICATION OF THE TERMINAL ROW

DESTINATION (CABINET OUTSIDE)

+S

-X20

0

1

PE

WIRE JUMBER BETWEEN 2 TERMINALS ON THE EXTERNAL SIDE

EXTERNAL

WIRE

JUMPERS

NUMBER

0

1

TYPE OF THE TERMINAL

LEVEL

TERMINAL TYPE

4mm² PE

4mm²

Drawing made

27/09/2013

GRENIERS RENIK

Last Change

24/10/2016

GRENIERS RENIK

Designer

SAP: 2160406

DEJAEGHERE KOEN

DATE

VERSION

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DEMO "EPLAN"

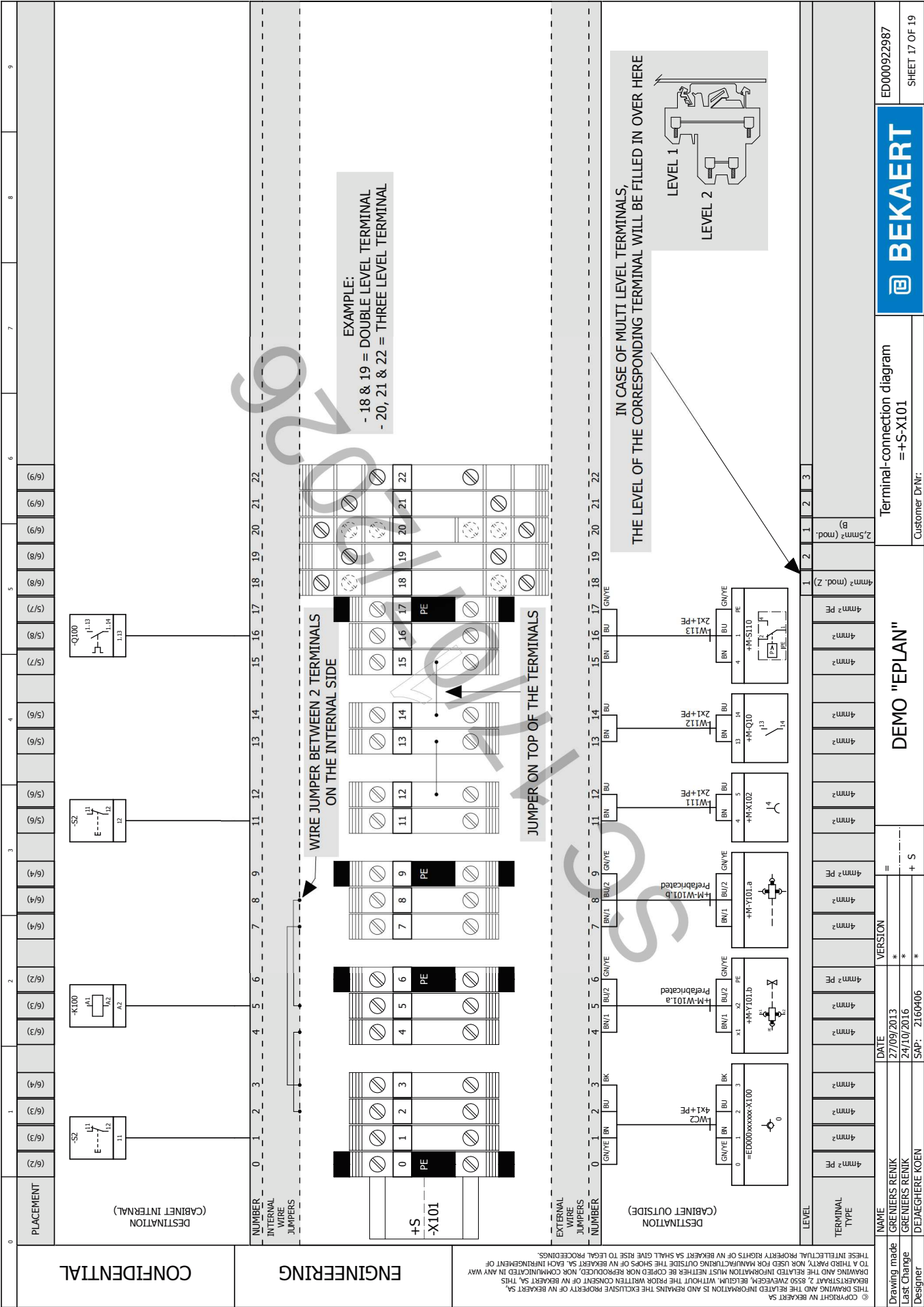
Terminal-connection diagram
= +S-X20
Customer DrNr:

BEKAERT

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SHEET 16 OF 19

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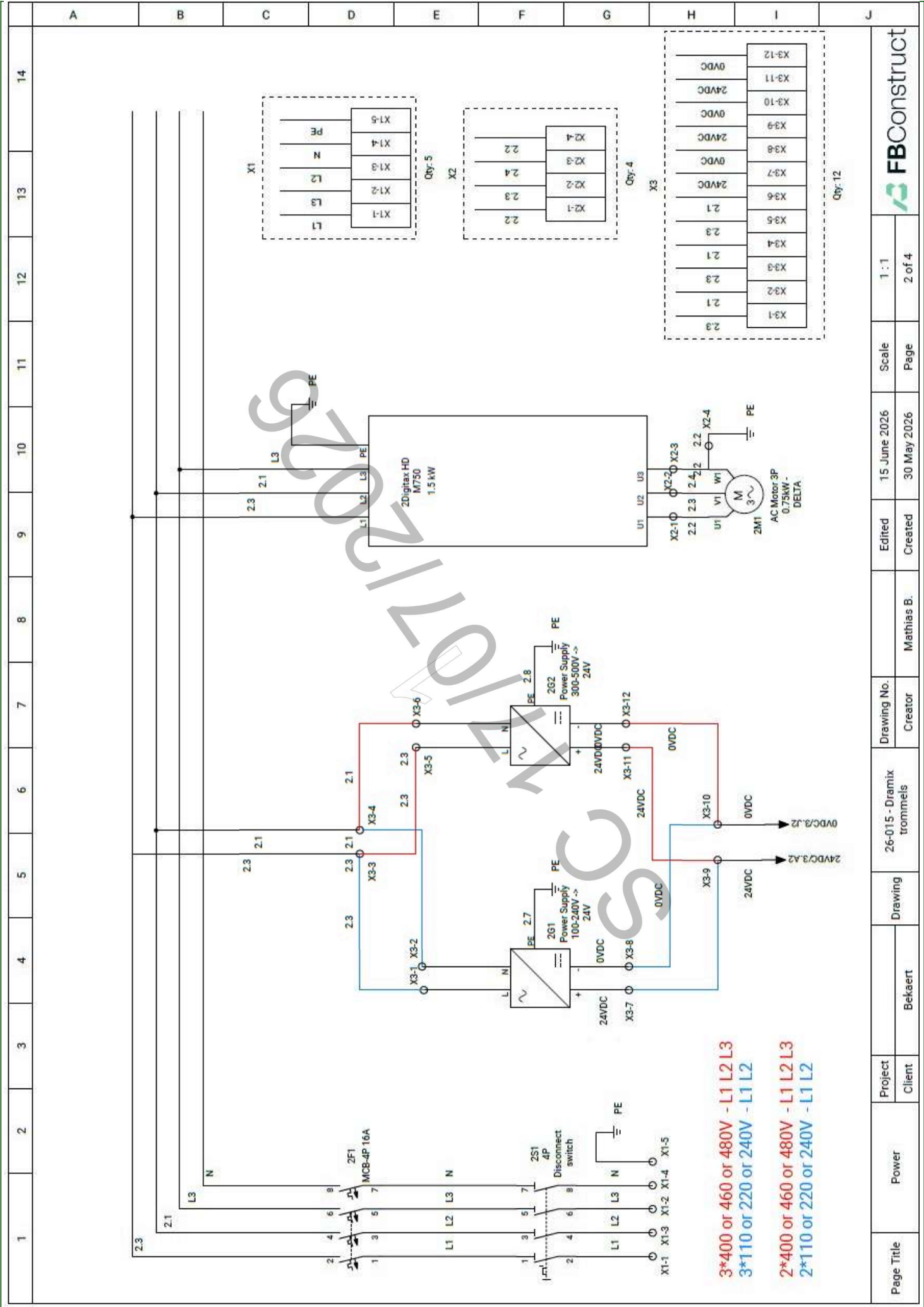
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en_US
EPLAN_P8
nl_BE
v 2025.0.3
3D Available: NO

Project name: IDF		Customer:	
Project description: TROMMEL		Additional customer info	
Drawing Number: ED003163907 Rev.: *		Customer DrNr:	
SAP Number: 20312651 Rev.: *		Design site	
Original Designer: Prashant Patil		BENG	
Original ECAD Designer: Greniers Renik		Oude Heerweg 5	
Drawing Revision: *		8540 Deerlijk	
SAP Revision.: *		Created on:	
Designer: Prashant Patil		(dd/mm/yyyy)	
ECAD Designer: Greniers Renik		08/07/2026	
Reference to old drawing numbers		last modification on:	
UDM:		(dd/mm/yyyy)	
Drawing Number:		14/07/2026	
Total project pages: 6			

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EN DE BIJHORENDE INFORMATIE NIET WORDEN GEKOPIEERD, NOCH GEREPRODUCEERD, NOCH MEEGEDEELD OP EEN ANDERE MANIER
AAN DERDEN; NOCH GEBRUIKT WORDEN VOOR DE PRODUCTIE BUITEN DE BEDRIJVEN VAN NV BEKAERT SA. ALLE INBREUKEN OP DEZE
INTELLECTUELE EIGENDOMSRECHTEN VAN NV BEKAERT SA ZULLEN LEIDEN TOT JURIDISCHE PROCEDURES



1	2	3	4	5	6	7	8	9	10	11	12	13	14
A													
B													
C													
D													
E													
F													
G													
H													
I													
J													
Reference	Component Name			Description	Brand	Quantity	Location						
2Digitrax HD M750	Digitrax HD M750			Automaat 4-ploig 16A C	Nidec	1	/3 F3, /2 F10						
2F1	MCB 1600A 4P 16AC			Voeding step Power 2.5A 24VDC	Schneider	1	/2 D1						
2G1	STEP3-PS/1AC/24DC/2.5/PT			Geschakelde voeding 5A 400-500VDC	Phoenix Contact	1	/2 F4						
2G2	TRIO-PS-2G/3AC/24DC/5				Phoenix Contact	1	/2 F7						
2M1	Motor 3P AC				Generic	1	/2 I10						
3PL1	Pilot Light				Generic	1	/3 H11						
2S1	Isolator/disconnector 4P 16A-Lock				Siemens	1	/3 C9, /2 F1						
3S1	Generic Component				Generic	1	/3 B7						
3S2	Push Button - Momentary				Generic	1	/3 E1						
3S3	Push Button - Momentary				Generic	1	/3 F1						
3Schneider XPSBAC14AP	XPSBAC14AP			Veiligheidsrelais	Schneider	1	/3 E10						
R1	Resistor				Generic	1	/3 B5						
R2	XBSAD012R10K			Potentiometer 10K	Schneider	1	/3 C5						
X1-[Terminal]	Terminal PT2.5				Phoenix Contacts	5	/2 D13						
X2-[Terminal]	Terminal PT2.5				Phoenix Contacts	6	/2 F13						
X3-[Terminal]	Terminal PT2.5				Phoenix Contacts	6	/2 I13						
Page Title	Partslist	Project Client	Bekaert	Drawing	26-015 - Dramix trommels	Drawing No. Creator	Mathias B.	Edited Created	15 June 2026 30 May 2026	Scale Page	1 : 1 4 of 4	FBConstruct	

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