SSD-HDD-Granulator

Operating Instructions

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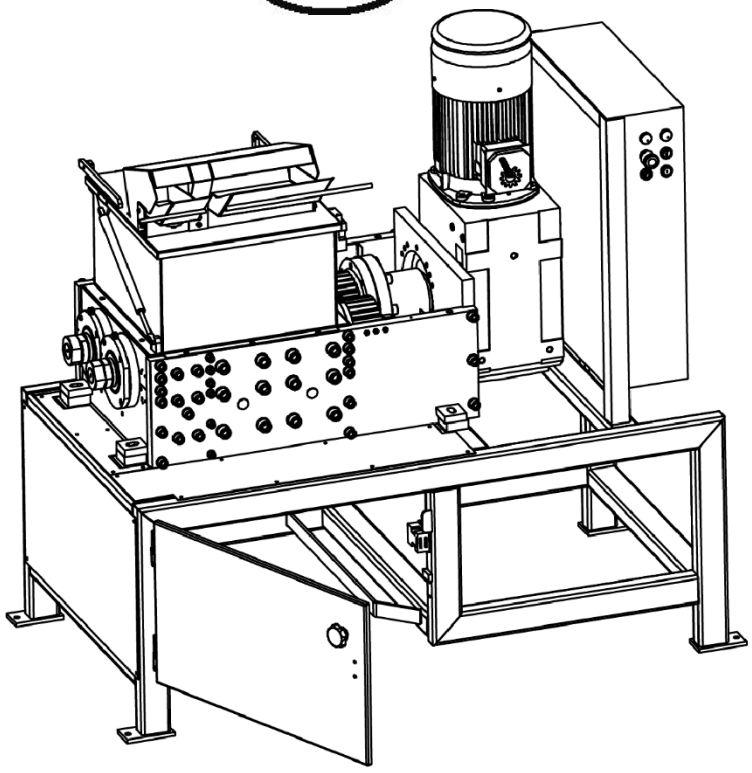

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Before operating carefully read the Operating Instructions!

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1 CONTENTS

Appendix:
- Circuit diagrams
- List of electrical components
- Dimensional drawing
- Spare parts list
- Description of purchased parts

2 Description of Symbols

Information!
Important application note.

Attention!
Danger of destruction or damaging of machine or facility

Danger!
Danger for life or physical condition.

3 General

3.1 Warranty and Liability

General terms of intimus International GmbH apply.

Warranty and Liability claims are null and void if one or more of the following points apply:

- Inappropriate use of the machine
- Improper installation, commissioning, set-up, operation or servicing of the machine
- The machine was designed for safe operation by trained and instructed staff only and is not designed to be used by children.
- No other work may be performed on the machine during cleaning or servicing
- If the machine was used:
  - with inoperative safety devices
  - with incorrectly installed safety devices
- Non-observance of the references related to:
  - transport
  - installation
  - start-up
  - set-up
  - maintenance
- Unauthorised physical/structural modification of the machine
- Unauthorised intervention into the control system
- Emplacement and use of unapproved components and spare parts
- Faulty repairs by non-trained and unauthorized personnel

3.2 Copyright

The operation manual in hand and associated documents remain the property of intimus International GmbH. They are handed to our customers and users of our products.

Without our explicit permission it is forbidden to copy these documents or hand them over to any third parties, especially to our competitors.
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3.3 Convention, intended use

3.3.1

- The machine is built according to state of the art technology and to generally approved safety regulations
- Nevertheless, when using unless used strictly in accordance with the instructions and by a trained operator then the operator and third parties may place themselves in harm's way.
- adverse effects to the machine and other material property

3.3.2

- Use the machine only in proper technical condition
- Use the machine only under awareness of safety & danger and in full compliance with the operation manual
- Permanently check and repair any malfunctions of the machine especially regarding damage to safety switches and interlocks, which in case of damage and malfunction must be repaired without any delay by qualified personnel
- The machine is to be used:
  - only for the purposes for which it was originally designed and built
  - only for the purposes as described in the operator manual, see chapter 7 of this manual
  - for industrial and commercial use only
- Any other use than specified above is out of designated use
- The manufacturer or supplier is not liable for any damages if the machine is not used and maintained in the correct manner
- The operator bears the full risk of any such damages
- The operator must be suitably trained on the equipment, have full knowledge of the operation manual and be aware of all safety, usage and maintenance requirements.

3.4 Organisational measures

- The operation manual must be readily available at the machine.
- In addition to the operation manual users are to observe:
  - general legal requirement and regulations
  - full accident prevention regulations
  - environment protection regulations
  - personnel protective equipment is to be provided by the operating company
- Local and internal instructions are to be respected and adhered to
- Before starting any work on the machine the operating personnel has:
  - to respect the basic rules for job safety and accident prevention
  - to read, understand and acknowledge all aspects of job safety pertinent to the operation of the machine.
- The behaviour of the operating personnel in accordance of the safety regulations must be checked and corrected by the operating company
- It is forbidden for any personnel working on or near the equipment to have long, untied hair, loose clothing or jewellery, or any other items that may potentially become attached to the equipment in case of:
  - risk of injury
  - getting caught whilst near or feeding into the machinery
- Personnel must be provided and wear suitable protective clothing
- All safety and hazard notifications on the machine or in the instructions must be respected
- All safety and hazard signs on the machine must be in readable state
- In the case of any security or safety related issues, or if any changes are noted in performance relating to the machine, the unit must be stopped immediately and reported and recorded both to a suitable responsible person internally, and in turn to the suppliers

- Without of the consent and approval of the supplier:
  - No modifications must be made to the machine
  - No changes or adjustments are to be made to the height of the machine or that will change the operating height in relation to the operator
  - The operator must not stand higher than the machine when feeding items into to the machine and must never stand on any raised platform such as a pallet or box placed in front of the machine which might reduce the distance between operator and cutting system to a level which does not meet the required safety standards
  - No modifications of calibrations of any of the safety device must be made which may impair safety.
- Use only original spare parts or those that are conforming to the specified technical standards may be used
- Do not make any modifications in programmable control systems
- Always keep terms of any issues relating to performance, modification and safety mentioned with the manual
- To undertake any maintenance task a proper workshop equipment is absolutely essential
- Provide, communicate and record the location and handling of suitable fire extinguishers
- Observe and record any fire call and fire fighting

3.5 Personnel selection and qualification; basic responsibilities

- The operation of the equipment is only allowed to be executed by reliable personnel. Always observe the lawful minimum age
- Clearly define the responsibilities of personnel for operating, servicing and maintenance
- Ensure, that only fully instructed personnel work on or use the equipment
- Carefully note down and communicate who will be the responsible person for the training of machine operators
- Personnel to be trained are only allowed to work at the machinery under permanent view a suitably trained supervisor, who is in the position to reject any safety-adverse directives from third parties
- Electrical requirements are to be carried out by authorised and suitably qualified electricians/trained personnel. Observe normal rules and regulations relating to local requirements

4 Security information

Read careful before start-up of the machinery!

4.1 Normal mode

- Minimum age of persons to operate the machinery is 16 years.
- Inside the working area of the machine, the operator is responsible for other persons.
- The machine must be placed on even and solid ground.
- Before leaving the machine turn-off main switch and protect it against unauthorised start-up.
- Maintenance and cleaning as well as the removal of the safety devices are only allowed with main switch turned-off (ensure that the main switch cannot be turned-on).
- Ensure that safety devices supplied with the machine are in function and uses.
- Do not access the cutting knives. Danger of serious injury!
- Collecting containers for shred goods must be suitable for the shredded materials and their residual liquids.
- Dangerous goods and improper materials must be separated from the waste before shredding and be disposed separately (e.g. cans and containers used for highly inflammable and explosive substances).
- Waste that can produce loops/tails must be pre-treated separately not to be able to create danger of injury by pulling the operator or other materials into the shredding unit. I.e. do not feed a material with tails that could become tangled drawing the operator or persons in the vicinity towards the machinery.
- The operator has to be trained on the machine and must always wear appropriate safety clothing.
- Take measures for steadily operating the machine in a safe and functional condition. Use machine only, when protection devices and safety attachments are installed and also functional.

- Check the machine for external visible damage and defects on a daily basis or before any new operation starts.

- Be aware of any changes to the equipment, including the operating performance. Inform the responsible person about any changes. If any change occurs immediately stop the machine and shut down and carry out checks. Do not re-start until being confident there is no fault or problem.

- In case of malfunction of the machine: stop and protect it against unauthorised start-up. Clear faults without any delay.

- Before starting the machine assure that nobody will be at risk.

4.2 Special work

Special work in the course of operation and maintenance as well as troubleshooting during operation; waste disposal

- Observe the terms for service and maintenance. This tasks must be executed only by qualified personnel.

- The operating personnel and supervisors are to be informed before service tasks will take place.

- If necessary, block off and mark a suitable service area.

- Before service/maintenance: clean the machine from oil .

- Do not use aggressive cleaning agent.

- Use fibre-free cleaning rag.

- After demounting of safety devices for servicing or maintenance works always re-install and test them before operating the machine.

- Take care for environmentally friendly disposal of operating materials fluids and replacement parts.

4.3 Reference to possible cause of risks

4.3.1 Power supply

- Operations in the power supply system must executed by performed by qualified personnel only.
- The switch cabinet must always be closed.
- Access to any electrical part by authorised personnel with key only.

4.3.2 Noise

- Permanent sound level of the machine in idle mode: max. 70 dB(A).
- Depending on the working processes the sound level can be higher.
- Personal ear protection is mandatory.

4.3.3 Oil, grease and other chemical substances

- Handling of oil, grease and other chemical substances only in accordance with safety regulations for the according material.

5 Function of the machine

Exchangeable hardened cutting discs are mounted on two counter rotating steel shafts

Materials such as optical and magnetic data mediums are drawn-into cutting shafts and cut into pieces.

Depending on requested security level the shredded chips can be fed once more to reach a smaller particle size or, if necessary, a screen can be optionally installed underneath the cutting unit with hole diameters of e.g. 12, 10, 8, 6 mm to reach the target security level.

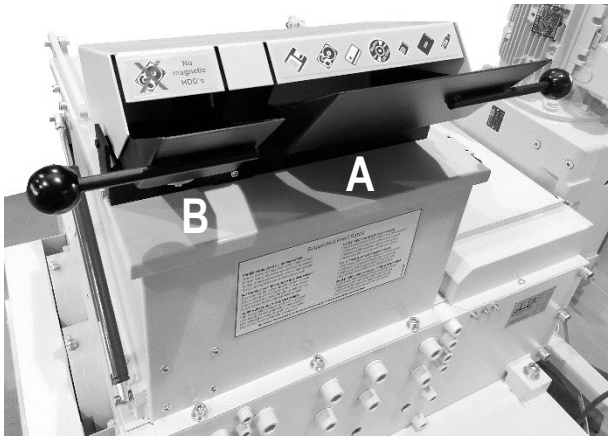
The drive and cutting unit is protected against overload by an electronic torque limiter with reversing movement.

6 Technical Data

Hard drive shredder		intimus SSD-HDD Granulator
Cutting area A		350 x 500 mm for HDD´s
Cutting Area B Opening		106 x 500 mm for Flash media 102 x 200 mm
Drive	P	5,5 kW 400V 50Hz 3Ph
Current consumption	I_N	11 A (in case of overcharge: temporary rising of charging rate to 3x I_N possible)
Fuse		32 A
Revolutions		15 1/min
Machine number		see typeplate
Year		2021
Noise level max.		≤ 70 dB(A) - in no load operation
Weight		approx. 1200 kg with screens

7 Shreddable materials and warranty details

The SSD-HDD Granulator features two different cutting units.
Cutting unit A (right) is designed to shred optical and magnetic media including standard size hard drives (2.5'', 3.5'' and 5.25''), video cassettes, printed circuit boards and data storage tapes, CDs, DVDs, DDS and DLT. It is fed via a special feed tray, whose maximum accepted media size is approx. 270 x 220 x 50 mm (l x w x h).
Cutting unit B (left) is equipped with thinner knives and designed to shred Flash-media like thumb- or pen-drives, SD-cards and smart cards. It is fed via a separate feed tray, whose maximum accepted media size is approx. 100 x 220 x 50 mm. **No magnetic HDD´s must be fed into this cutting unit to avoid damage to its slim knives. The feed tray is equipped with two magnets which will prevent most magnetic HDD´s from sliding into the cutting unit and allow for a removal by the operator. For feeding of any differing products please contact the supplier for written approval and advice.**



The machine is supplied with a limited warranty for 6 months from the date of delivery with wear parts excluded (cutting cylinders, spacers, security screen and drive system). Whilst cutting head parts are specially hardened it must be noted that computer hard drives and other media contain tough materials including metal parts which wear the cutting head of the shredder after varying time, depending on type, size, quality and volume of shredded goods.

Media of categories F, O and T must only be fed in a mix with FLASH-Media at a reduced feed rate to avoid melting after longer operation.

Computer hard drives and other optical media contain magnetic parts which by their nature will stick to any metal surfaces including cutters, spacers etc. It is an absolute necessity therefore that these magnetic parts are removed from the machine on a weekly basis **or earlier if the capacity throughput of the unit shrinks.**

It must also be noted that you should never try to shred any type of hardened metal like the head of a hammer as this will permanently damage the cutting knives and associated parts.

Please note that the unit should be placed under a suitable annual preventative maintenance contract from new by a trained engineer or the warranty may be void.

Attention!
Do not shred material which contains poisonous or caustic substances or substances which develop corrosion or which are combustible.

8 Suggested Feed Rates

To avoid jamming when operating the machine with sieve and the following long-winded clearing of the jam and eventual damages to the machine, the feed rate must be equal to the output of the sieve. With a smaller meshed sieve the output will decrease as well.

Attention!
The operator must define the output of the machine with his specific shredding material and the installed sieve and adapt his feed-rate accordingly.

8.1 Cutting unit A

For standard 3.5” HDD´s with average weight the following suggestions for feed rates were evaluated for ease of operation:

For 3.5” HDD´s up to 520 grams weight
1 HDD every 1,200 seconds with 3 mm screen
1 HDD every 135 seconds with 10 mm screen
1 HDD every 85 seconds with 12 mm screen
1 HDD every 60 seconds with 14 mm screen

For 3.5” HDD´s up to 620 grams weight
1 HDD every 1,200 seconds with 3 mm screen
1 HDD every 165 seconds with 10 mm screen
1 HDD every 100 seconds with 12 mm screen
1 HDD every 60 seconds with 14 mm screen

For 3.5” HDD´s with hot swap tray caddy
1 HDD every 1,800 seconds with 3 mm screen
1 HDD every 240 seconds with 10 mm screen
1 HDD every 150 seconds with 12 mm screen
1 HDD every 90 seconds with 14 mm screen

For smaller HDD´s and lighter media shorter intervals may be chosen according to the actual load level. Please note that the above mentioned figures are based on intimus internal tests. HDD´s, which intimus used for their tests, may achieve different throughput figures than your specific material.

For this reason each operator must determine the output of the machine with his specific shredding material and adapt his feed rate accordingly. Damages which result out of overloading are excluded from warranty.

8.2 Feed conveyor with timer for cutting unit A

To make feeding more convenient, the machine can be updated with a feed conveyor with timer. The feed conveyor can be loaded with around 15 data media at a time. It is imperative to put one 3.5” HDD or two 2.5” HDD´s only in each compartment of the feed conveyor. It is **interdicted** to put more media in each compartment to avoid overfeeding and jamming of the shredder, which may require time-consuming disassembly of the screen to clear the jam. After loading the feed conveyor operation of the shredder can be started. While the conveyor feeds the loaded data media automatically over a period of time into the shredder, the operator can leave the machine and perform other tasks.

Once the shredder is started via the START button, automatic operation of the feed conveyor is started simultaneously. To avoid overfeeding and jamming of the shredder, the feed intervals of the feed conveyor must be adapted to the data media being put into each compartment of the conveyor and to the installed screen. Please refer to the feed rates given in chapter 8.1 and continue as follows: With the shredder stopped, adjust the timer according to the data media loaded and the screen installed. Example: when 3.5” HDD´s with hot swap tray caddy are loaded and the 14 mm screen is installed, the correct feed rate is 90 seconds or 1 minute and 30 seconds. The timer must be set to 1 minute 30 seconds for proper function as follows:
Press the “✓” key on the timer. A small green “s” appears on the display. As long as the s shows, the interval can be adapted by pressing the two left cursor keys at the timer. “▲” will increase the interval and “▼” will decrease it. When you keep pressing one key, it will accelerate after a while. Use the keys to install the desired feed rate and confirm by pressing the “✓” key again. Now the new interval shows on the display. When you start the shredder by pressing the “Start”-button, the timer will start to count down. Once it reaches “0”, the conveyor will move for 5 seconds and feed one compartment into the cutting unit. The timer then automatically starts the next count-down with the same interval.

Attention!
When feeding data media via the feed conveyor, you must **NOT** feed further data media manually via the feed tray of **cutting unit A** to avoid overloading and jamming of the shredder.

8.3 Cutting unit B

For standard thumb and pen-drives with average weight the following suggestions for feed rates were evaluated for ease of operation:

For pen drives up to 15 grams weight
1 unit every 225 seconds with 2.5 mm screen
2 units every 60 seconds with 3 mm screen
2 units every 40 seconds with 4 mm screen
2 units every 5 seconds without screen

For SD-cards up to 2.5 grams weight
1 units every 36 seconds with 2.5 mm screen
8 units every 60 seconds with 3 mm screen
10 units every 30 seconds with 4 mm screen
12 units every 5 seconds without screen

For SSD drives up to 70 grams weight
1 unit every 1,200 seconds with 2.5 mm screen
1 unit every 200 seconds with 3 mm screen
1 unit every 105 seconds with 4 mm screen
1 unit every 15 seconds without screen

For smaller and lighter media shorter intervals may be chosen according to the actual load level. Please note that the above mentioned figures are based on intimus internal tests. Media, which intimus used for their tests, may achieve different throughput figures than your specific material.
For this reason each operator must determine the output of the machine with his specific shredding material and adapt his feed rate accordingly. Damages which result out of overloading are excluded from warranty.

9 Machine set-up

9.1 Transportation or relocation

The machine may only be transported with fork lift trucks or pallet trucks with sufficient lifting capacity as well as with other suitable lifting devices. Weight of the machine is @ 1,200 kgs. Transportation / lifting devices may only be used at corresponding spots of wooden crate or the machine itself. Local prescriptions or legislation have to be obeyed.

9.2 Storage

The machine has to be stored dry and dust free. Big differences in temperature cause steam and are therefore prohibited. The electronics might else be damaged. Parts that are not protected against corrosion can get rusty as well.

9.3 Installation

Place the shredder on stable and solid ground. For transportation use a forklift truck or pallet truck. For further information please refer to chapter "transportation". It is imperative, that the maximum permissible floor load is not exceeded, as the unit can reach a total weight of up to 1,200 kgs, depending on execution. Additional anchoring of the unit to the floor is possible but not imperative

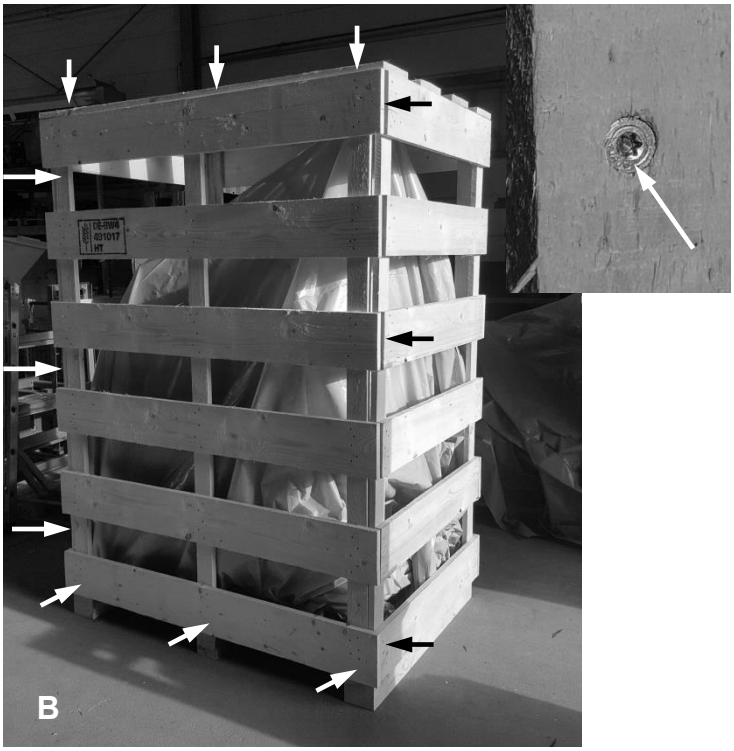
Caution: the unit must be operated indoors only and at moderate ambient (10-40° C) temperatures!

A threephase current outlet must be available, protected with a slow blow fuse (required capacity see chapter 3). Differing voltage can cause electronic faults or loss of performance. The loop resistance of the mains supply at location of connection must not exceed 0.5 Ohms. The metallic section of the electrical supply at location of connection must be designed in a way that if the machine is blocked the voltage is not reduced by more than 15% (blocking current of machine is app. 6 times nominal current).

9.4 Unpacking and assembly

1. Machine is packed in a wooden crate (A). For unloading and transport a suitable fork lift truck or hand pallet truck must be used. Check, that the maximum permissible floor load is not exceeded, as the unit can reach a total weight of up to 1,200 kgs, depending on execution.
2. Then place the wooden crate on even and solid soil and remove the crate. Usually it is sufficient, to remove the bolted front side of the crate (C), since it is not nailed but fixed with T20 Torx wooden screws (B).
3. Now remove the protective plastic foil (D).
4. Next step is unbolting of the 4 bolts which connect the machine with the basic pallet. This can be size 8 allen head bolts at the machine feet and a size 17 nut below the pallet €. Alternatively, Torx T40 wooden screws can be used or a mixture of both systems.


A


B


C


D

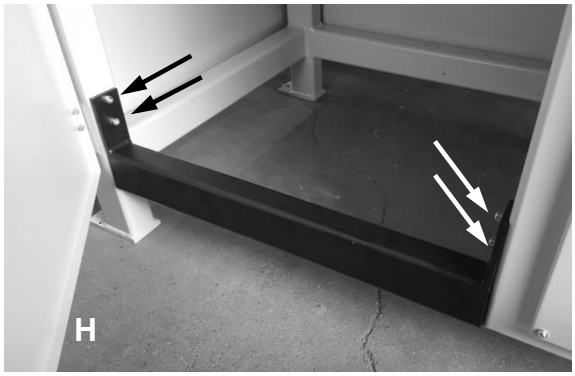

E

5. Lift the shredder with a forklift with 1,500 kgs capacity and remove the wooden pallet. Then place the shredder on even and solid soil (G).
6. Now open the door in the chassis of the machine by turning the black knob. Remove the black transport traverse after unbolting the bolts with a size 6 allen key (H). Ensure to keep traverse and bolts for eventual future relocations. Now you may bring the machine with one or two hand pallet trucks to the final installation site. The machine may be dowelled to the floor, which is, however, not imperative. In mobile installations on trucks or in vans, the machine must be properly fixed to the vehicle by the coachbuilder according to local regulations.
7. Lubrication of synchronising gears (K): Remove the sheet steel cover after unbolting the two allen head bolts with a size 4 key. Standard lubrication is with grease. Fill the supplied grease gun with suitable grease (see chapter “lubrication” in the manual), apply the grease gun to the right nipple and feed grease until it exits the end of the grease tube and drops onto the synchronizing gears. Continue feeding grease while the machine is running until the gears are greased all around.

   A canister with oil is supplied with the machine. Oil is for emergency lubrication. Pour oil into the oil pan below the synchronizing gears until the oil reaches the “oil”-marked level. Don´t fill in more, since the rim of the oil pan is lower in the hidden area below the synchronizing gears and oil might escape here. Operate the machine and check, whether oil is applied onto the synchronizing gears. Then close the sheet steel cover and fix it with two allen head bolts and a key size 4.


F


G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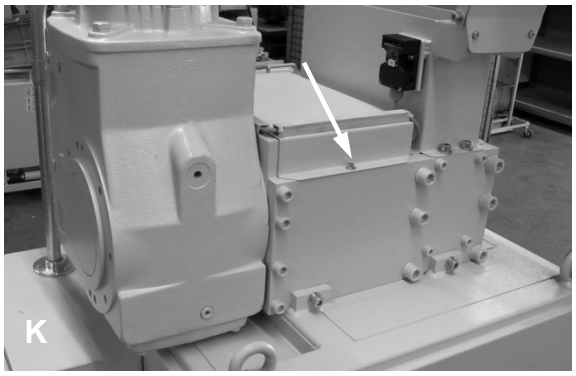
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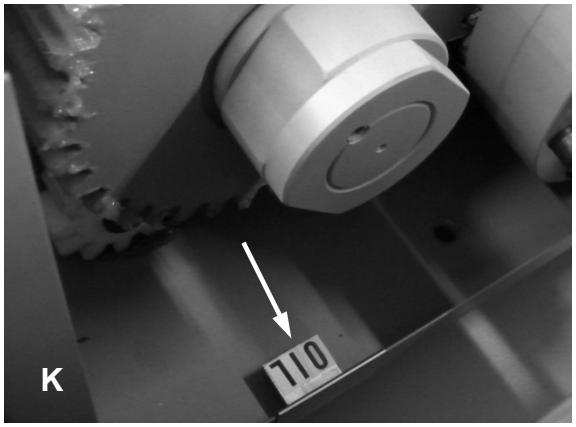
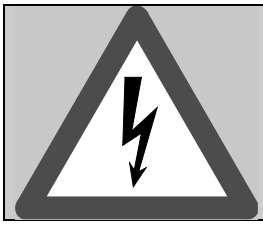

K
110

8. For operation of the machine a three-phase power supply and a matching outlet for the Cekon CEE 32A plug is required (O). Fusing by the customer must be 25A slow blow for 400V supply voltage, for differing voltages refer to the owner´s manual. Differing voltage can cause electronic faults or loss of performance. The loop resistance of the mains supply at location of connection must not exceed 0.5 Ohms. The metallic section of the electrical supply at location of connection must be designed in a way that if the machine is blocked the voltage is not reduced by more than 15% (blocking current of machine is app. 6 times nominal current).Lay the feed line so that no one can stumble across.
9. Check the proper function of all safety devices. Pushing the emergency stop button, opening the access door to the bin, opening the cover of the hopper and switching the main switch off must cause an immediate stop of all functions of the machine. If not, immediately disconnect machine from power supply, make sure that it cannot be connected by anybody else and contact the manufacturer.
10. Check the operating direction of the shredder. Switch the main switch on (position "1"). Release the emergency stop button if pressed and operate the start-button. . The rotation of the cutting shafts must comply with the arrows in picture (P). If necessary, correct by altering the phase at the terminals of the mains supply (L1 , L2, L3).



Caution: Alteration of the phase at the mains supply cord must only be carried out by a qualified electrician and with the power supply to the machine disconnected.

11. After all installation and connection work has been carried out, operation can be started.

Important note: To ensure safe operation of this unit without malfunctions, the operating instructions must be read first carefully

9.5 Checklist

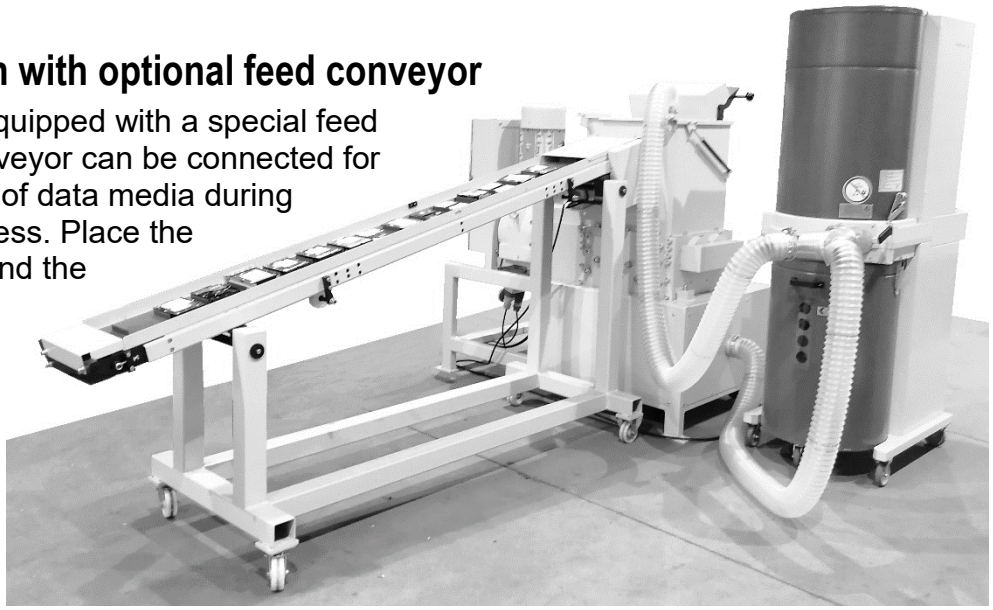
After receipt and prior to any installation machine must be checked as follows:

Check completeness with delivery note			
Visual check for damages (if applicable issue and communcate a damage report)			
Check availability of all safety devices (chapter “installation” in the manual)			
Have machine approved after installation by an expert or authorised person			
Supply voltage to the machine (chapter “electrical installation”)			
Place operation manual near the machine			
Ensure that safety instructions are available for anyone			
Train the operators			
I herewith confirm correctness of all points above:	Date, signature	Date, signature	Date, signature

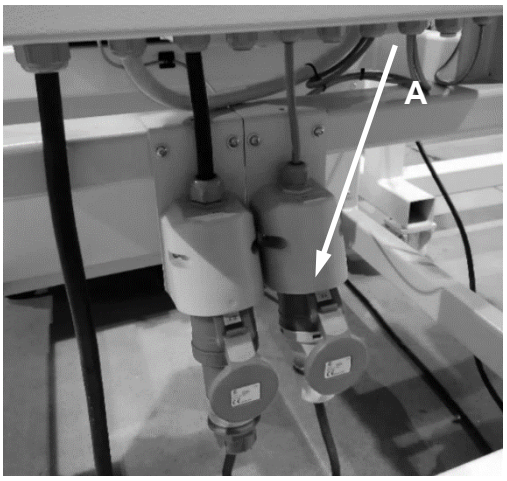
9.6 Required tools:

Fork lift with 1.5 t capacity for unloading
Allen keys of sizes 4, 6, 8, 10
Closed and open-end wrenches of sizes 17 and 19
Torx-keys of sizes T20 and T40
One or two hand pallet trucks for relocation of the machine
An electrical expert with screwdriver, if phases must be altered

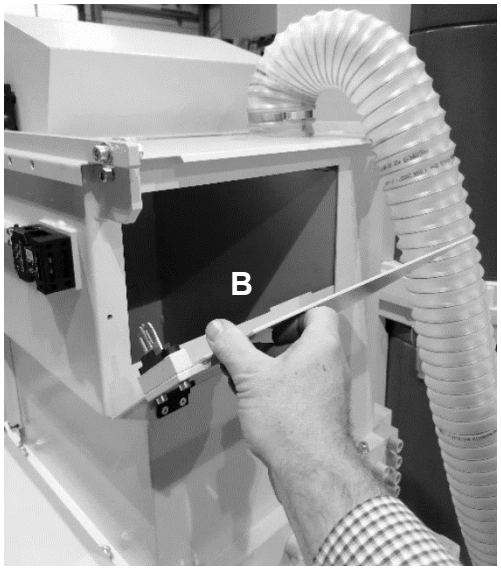
9.7 Combination with optional feed conveyor

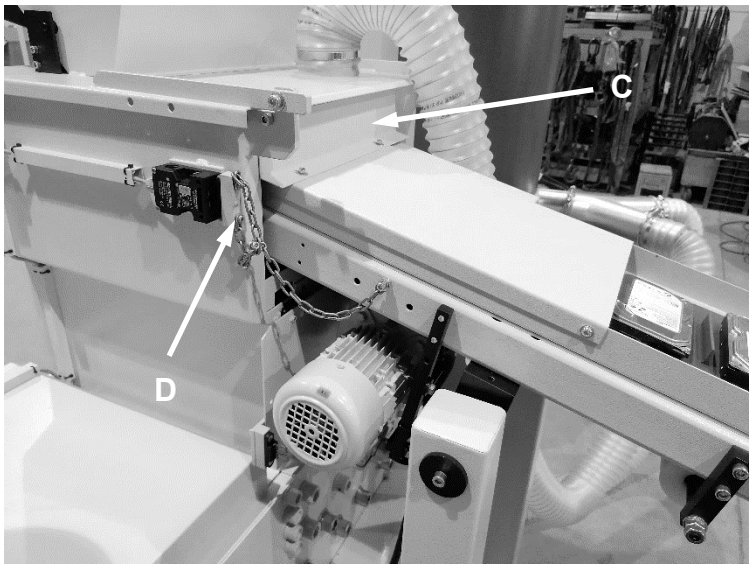


If the shredder is equipped with a special feed hopper, a feed conveyor can be connected for automated feeding of data media during the shredding process. Place the feed conveyor behind the machine. Ensure there is enough space around it for proper feeding. Take the feed line of the conveyor and lay it towards the control cabinet of the shredder.
Connect it´s CEKON CEE 16A plug to outlet X4 (A).



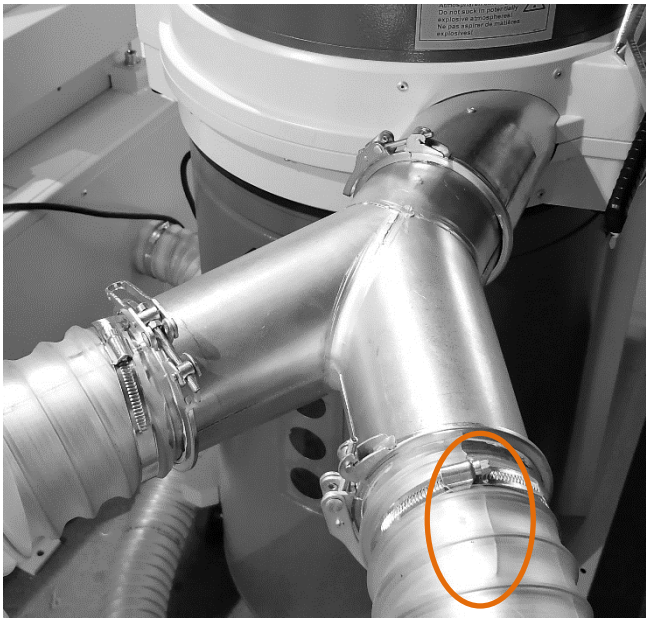
Now open the flap at the rear of the shredder´s feed hopper (B) and fold it down completely.
Guide the feed conveyor into the hole of the hopper until the sheet steel angle touches the feed hopper (C) and apply the brakes of the feed conveyor´s casters.
Now take the safeguard key at the chain and put it into the limit switch at the feed hopper (D). Now the machine is operatable. When you start the shredder, the feed conveyor will be put in operation automatically, depending on the shredder´s load level.
When removing the feed conveyor, you need to close the flap at the rear of the feed hopper before you can continue operation again.

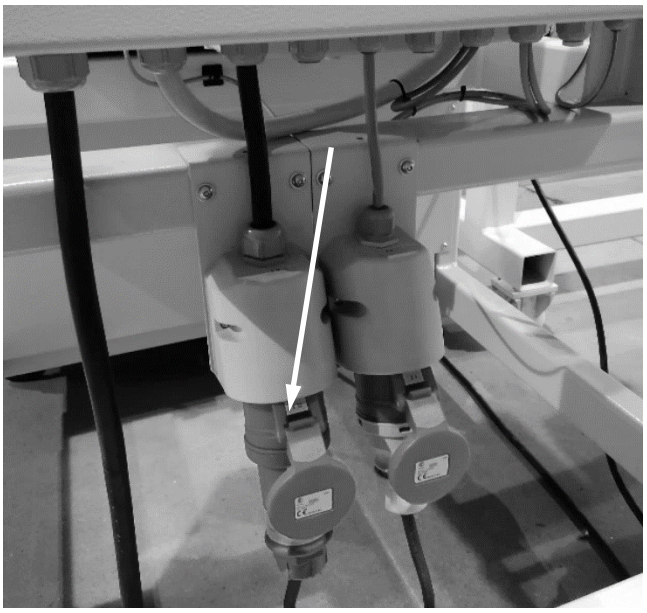




9.8 Combination with optional dust extractor

If the shredder is equipped with extraction ports, a dust extractor can be connected to remove the dust, which is created during the shredding process.
Place the dust extractor besides the machine and connect it to the extraction ports with flexible tubes. Only use tubes with a copper wire for earthing. At both ends of the tube cut the plastic away so that the copper wire is free for some 4 centimeters. Fold this bare copper wire into the tube. When pushing the tube onto the connection port and when tightening the clamp, the wire will have good contact to the connecting port. When the port is coated, you must remove the coat so that the copper wire can get in touch with the bare metal. This will provide for proper earthing of both machines and eliminate electrostatic loads between them.





If the extractor is supplied by intimus and is equipped with a feed line with CEKON CEE 16A plug, you can plug it in at the shredder at outlet X32 under the control cabinet of the shredder.

When you press the green button at the dust extractor and leave it pressed, the dust extractor will start automatically when you start the shredder and will stop automatically, when you stop the shredder.

10 Operation Manual

10.1 Installation information:

The unit must be operated indoors only and at moderate ambient (10-40° C) temperatures!

10.2 Operating information:

Fill only shreddable parts in the shredding unit, no solid, massive parts. (see Chap.7).

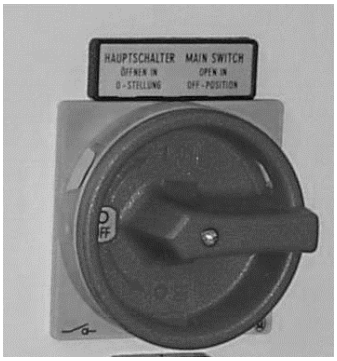
Attention!

Warranty becomes null and void when shredding other materials, which are not approved by the manufacturer.

10.3 Operating

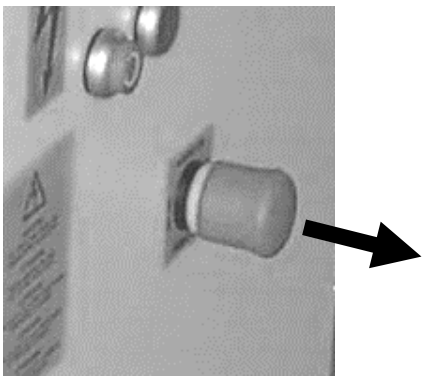
Turn main power switch on

To note: main switch can be locked for maintenance with a padlock in off position

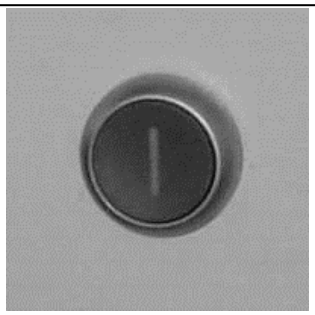


If activated, unlock emergency-stop switch by pulling

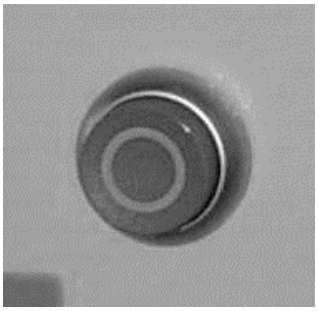
If several emergency-stop buttons are installed, please unlock all of them.



To start the machine – press the green push-button. The machine starts operation.

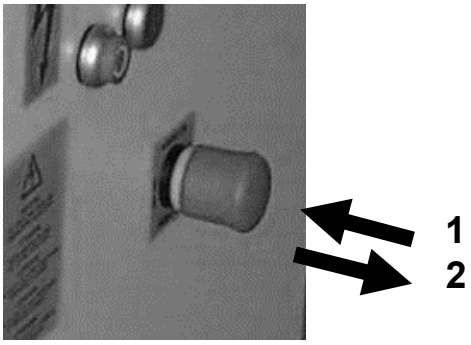


To stop the machine – press the red push-button. The machine stops operation.



Reverse mode:

1. push emergency-stop button and pull it out again



2. Then press the black reverse push-button. The cutting unit reverses as long as you press the button.

Please note that the hopper cover and doors at the machine are equipped with electric safeguards and must be closed during operation. Opening of door or hopper covers will immediately release an emergency-stop of the shredder. To re-start the machine, you need to close all doors and hopper covers and then restart the machine by pressing the green start-button.

Attention!
In case of disturbances or if hazards to the operator will occur during normal operation, **emergency-stop button(s)** will have to be pushed immediately.

Suggested Feed Rates

See chapter 8

10.4 Troubleshooting

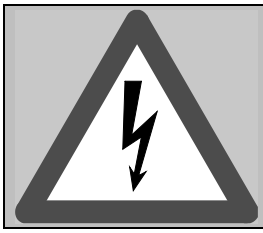
IF RED DISTURBANCE LIGHT ON CONTROL PANEL IS ON, PLEASE CHECK:

→ is the emergency stop button pressed in → pull out
→ is the front collection door open → closed it
→ is the hopper open and unlocked → close and relock
→ is shredded waste container full → empty the container
→ Is one of the safety switches on door or hopper damaged → immediately call a technician in charge

If this fault message appears several times consecutively, switch-off main switch and lock main switch against switching-on. Then check the root cause for the fault.

Possible causes of fault:

- There is non-shreddable material in the machine → Remove it
- Cutting zone is blocked by too much material → empty the cutting zone



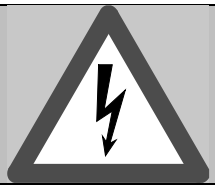
Danger!
Before servicing takes place in the danger area of the shredding machine: push emergency-stop and lock the main switch surely against engaging!

Information!
A half-yearly service check by a trained person is recommended.

11 Cleaning of shredding unit and screen

11.1 Cleaning of shredding unit

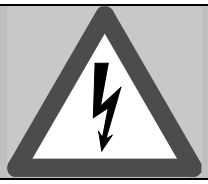
The shredding unit must be cleaned once a week.



Danger!
Before cleaning ensure that the main switch of the shredding machine cannot be switched on.

11.2 Cleaning of the screens

Computer hard drives and other data media contain magnetic parts which by their nature will strongly stick to any metal surfaces including cutters, spacers and the disintegration security screen. It is absolutely necessary to remove these magnetic parts manually with gloves and a scraper from the machine on a weekly basis or earlier if the throughput capacity of the unit shrinks. These parts will eventually block the screen and - if not removed on a regular basis - they may cause serious damage.



Danger!
Before cleaning ensure that the main switch of the shredding machine cannot be switched on.

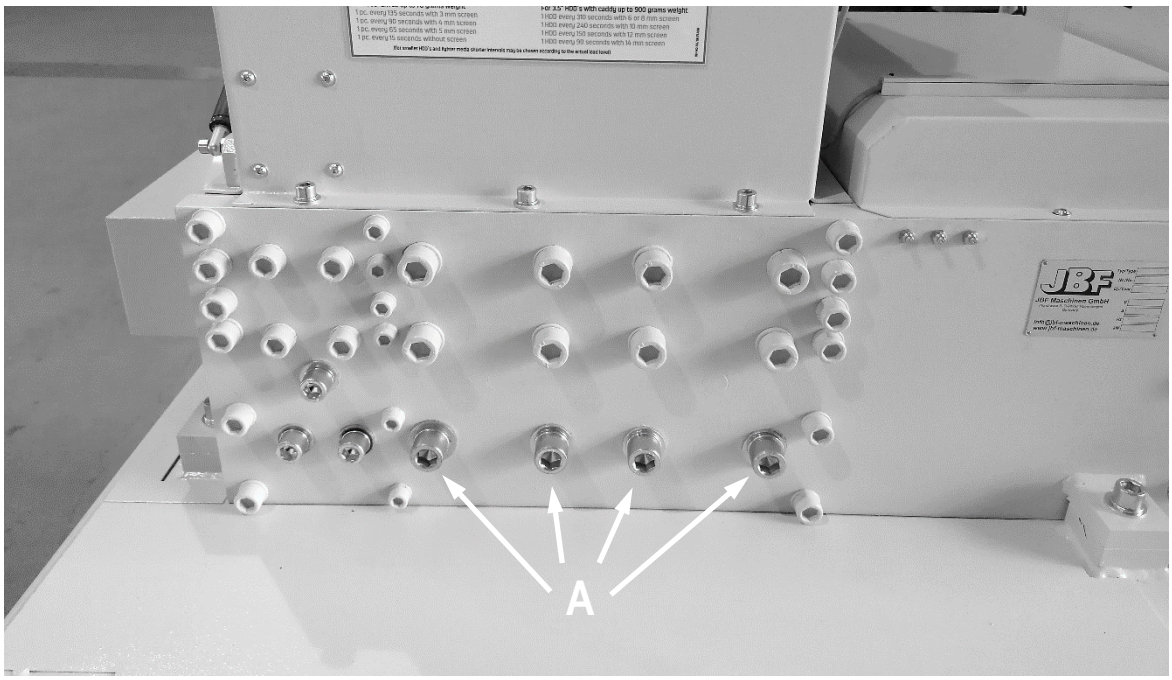
Attention!
Staff must be provided with suitable clothing including eye protection, gloves and hard shoes etc. as the magnetic parts can be very sharp.

11.3 Exchange & cleaning of screen in cutting unit A

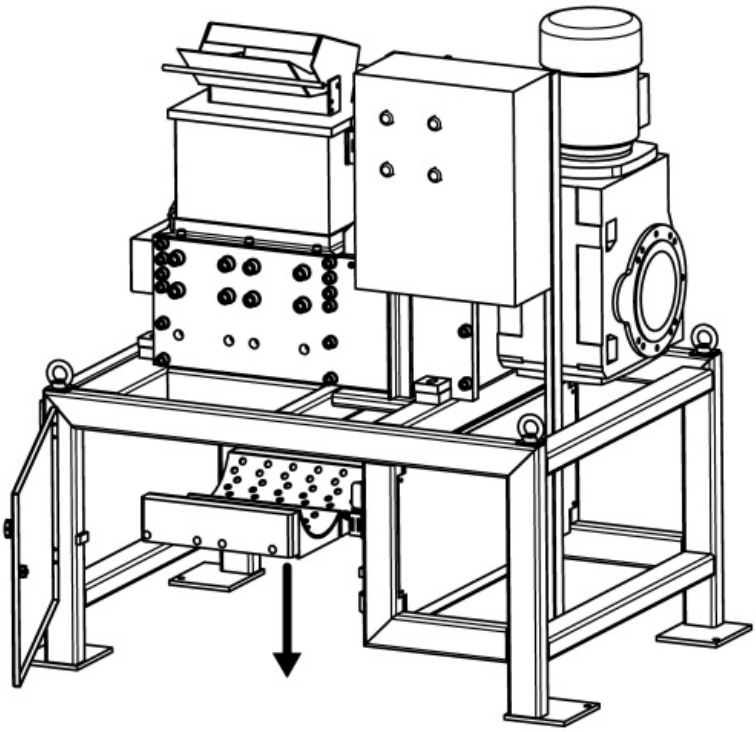
Procedure:

1. Switch-off machine and ensure that the main power switch cannot be switched-on again until the service process is finished
2. Open front door and remove the waste container.
3. Prop up the right screen from underneath with the help of a forklift or platform lift to support the screen before loosening the screen's fixing bolts

4. Loosen the bolts "A" (4 x silver allen bolts M20 each on front and 4 x silver allen bolts M20 on the back side of the cutting unit

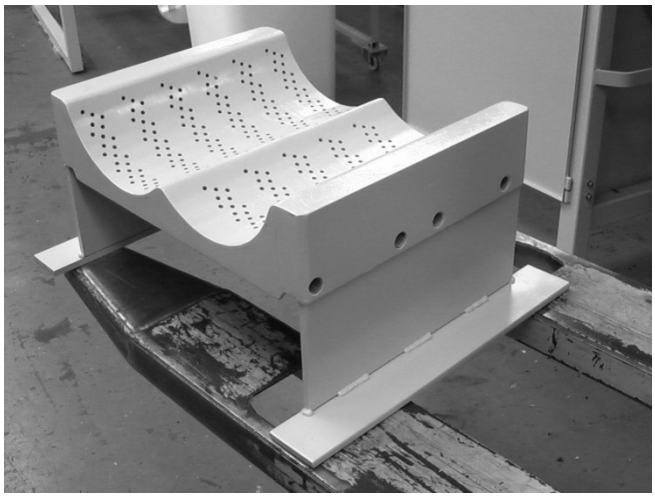


5. With the help of the lifting device move the screen downwards out of the cutting unit when all bolts are removed. Please note that the weight of the screen is approx. 45 kg without the magnetic parts attached.



6. If the screen is stuck and will not slide down by gravity, you may use a crowbar (naildrawer / assembly lever) to pull it out of the chassis. attach it between the foot of the screen and the chassis of the machine and pull the screen down.

7. Once the screen is sitting on the platform lift, pull it out from under the shredder and remove all magnetic parts from accessible areas underneath the cutting knives and from the screen surface with suitable tools like heavy duty pliers. Also unblock the screen holes with a suitably sized punch. Be careful not to damage the screen.



The re-assembly of the screen after cleaning is to be done in reverse order. **Attention: bring the platform with the screen up so that the platform is above the door switch and the guide bars of the collecting bin, but also ensure that the screen is low enough to match under the chassis.** Then carefully position the screen so that it matches with the opening of the cutting block and carefully lift it into the cutting block. Finally it will get in touch with the combs within the cutting block. **At the feet there will remain a gap towards the chassis, so do not try to lift the screen any further, else you will lift the complete machine.** Then the holes in the cutting block should match with the treads in the screen so that you can assemble the 4 large allen head bolts at the front and rear side of the cutting block. First tighten the 4 bolts at the front carefully, then the 4 bolts at the rear.

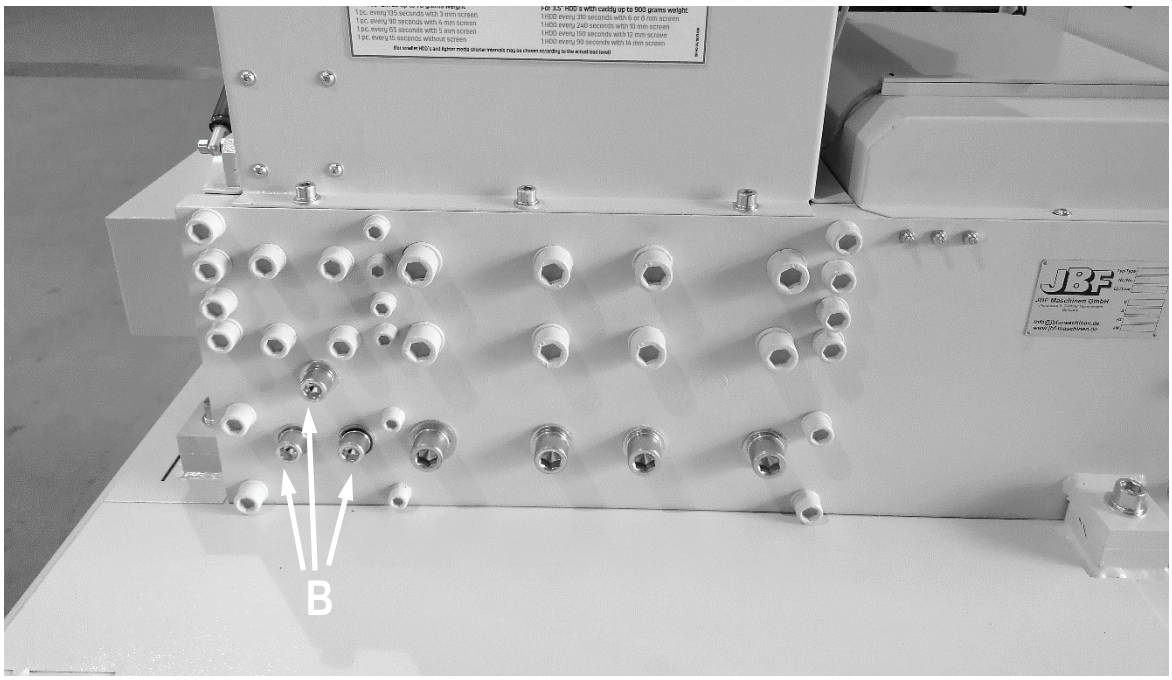
Further instructions and pictures will follow later in this chapter.

11.4 Exchange & cleaning of screen in cutting unit B

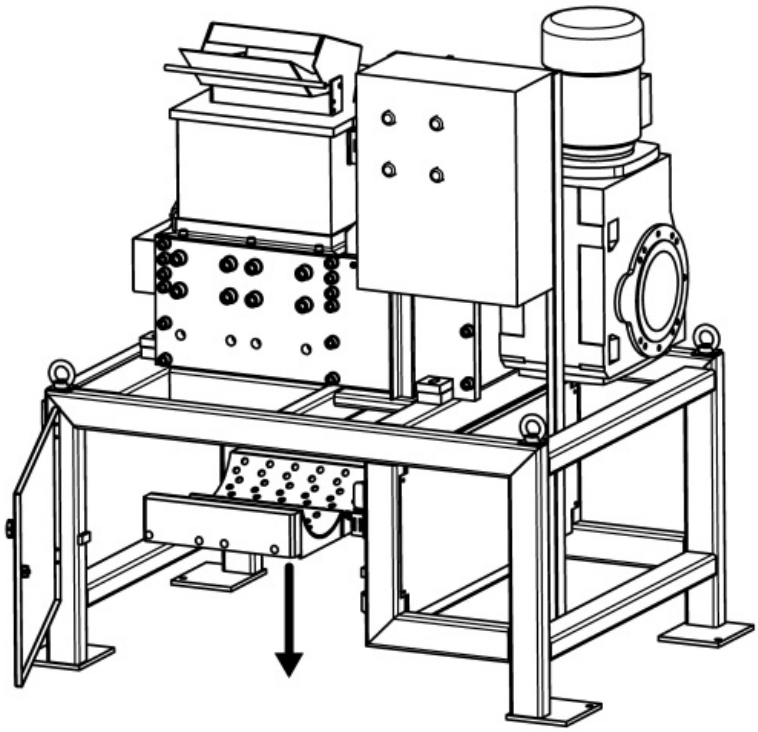
Procedure:

1. Switch-off machine and ensure that the main power switch cannot be switched-on again until the service process is finished
2. Open front door and remove the waste container.
3. Prop up the right screen from underneath with the help of a forklift or platform lift to support the screen before loosening the screen's fixing bolts

4. Loosen the bolts "B" (3 x silver allen bolts M16 each on front and 3 x silver allen bolts M16 on the rear of the cutting unit



5. With the help of the lifting device move the screen downwards out of the cutting unit when all bolts are removed. Please note that the weight of the screen is approx. 17 kg without the magnetic parts attached.

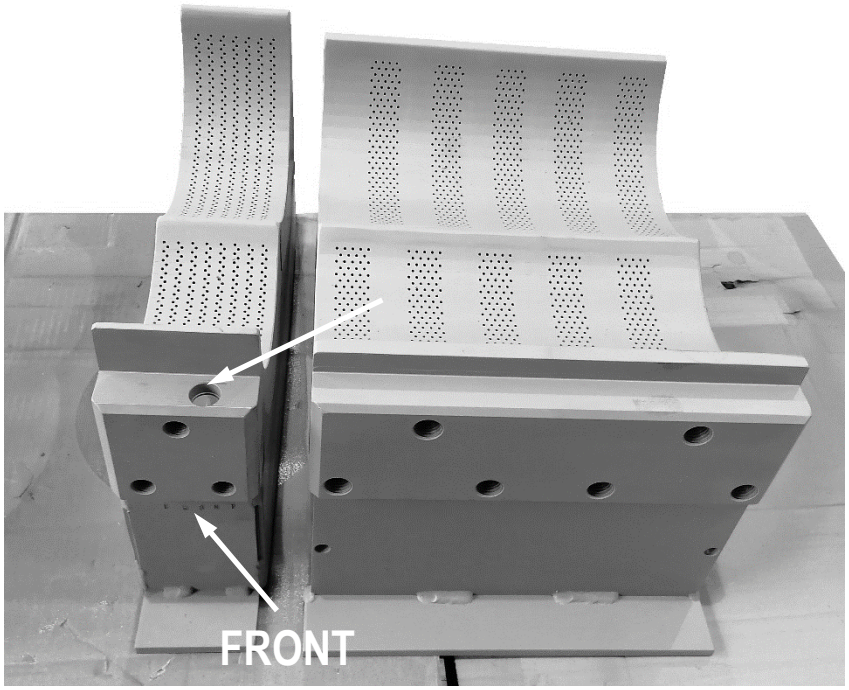


6. If the screen is stuck and will not slide down by gravity, you may use a crowbar (naildrawer / assembly lever) to pull it out of the chassis. attach it between the foot of the screen and the chassis of the machine and pull the screen down.

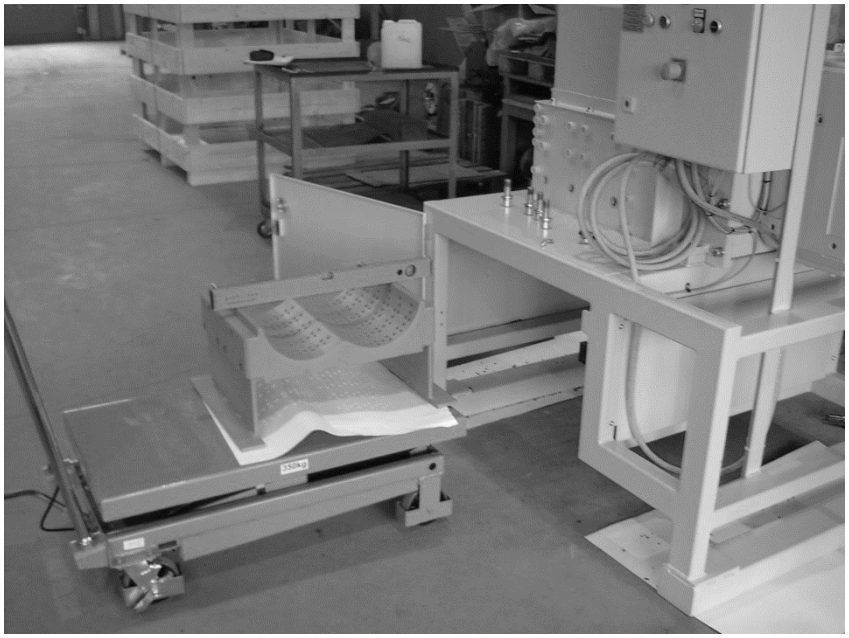
7. Once the screen is sitting on the platform lift, pull it out from under the shredder and remove all magnetic parts from accessible areas underneath the cutting knives and from the screen surface with suitable tools like heavy duty pliers. Also unblock the screen holes with a suitably sized punch. Be careful not to damage the screen

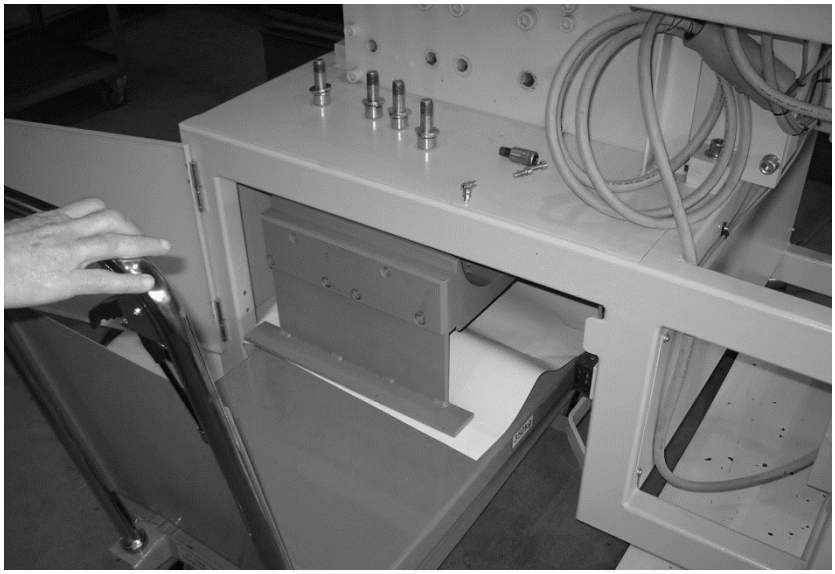
The re-assembly of the screen after cleaning is to be done in reverse order. **Attention: please check the screen for the mark "FRONT" and a 10 mm hole (see arrows on the picture). This side must be installed towards the front side (door) of the machine. Attention: bring the platform with the screen up so that the platform is above the door switch and the guide bars of the collecting bin, but also ensure that the screen is low enough to match under the chassis.** Then carefully position the screen so that it matches with the opening of the cutting block and carefully lift it into the cutting block. Finally it will get in touch with the combs within the cutting block. **At the feet there will remain a gap towards the chassis, so do not try to lift the screen any further, else you will lift the complete machine.** Then the holes in the cutting block should match with the treads in the screen so that you can assemble the 3 large allen head bolts at the front and rear side of the cutting block. First tighten the 3 bolts at the front carefully, then the 3 bolts at the rear.

Further instructions and pictures will follow later in this chapter.

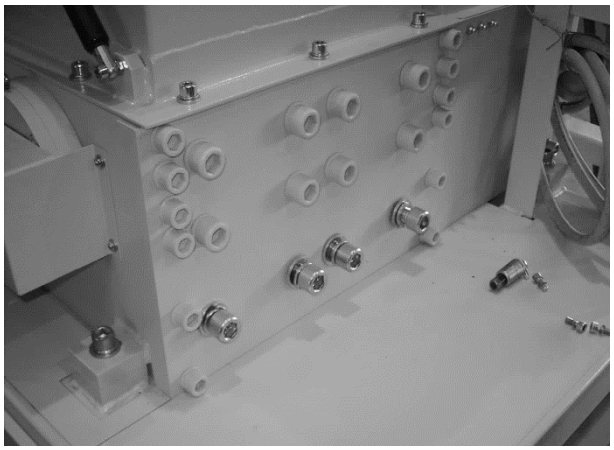


Attention!
Position the screen correctly.
In case of doubt please contact a qualified engineer or do not operate the machine, as if positioned incorrectly serious damage may occur.





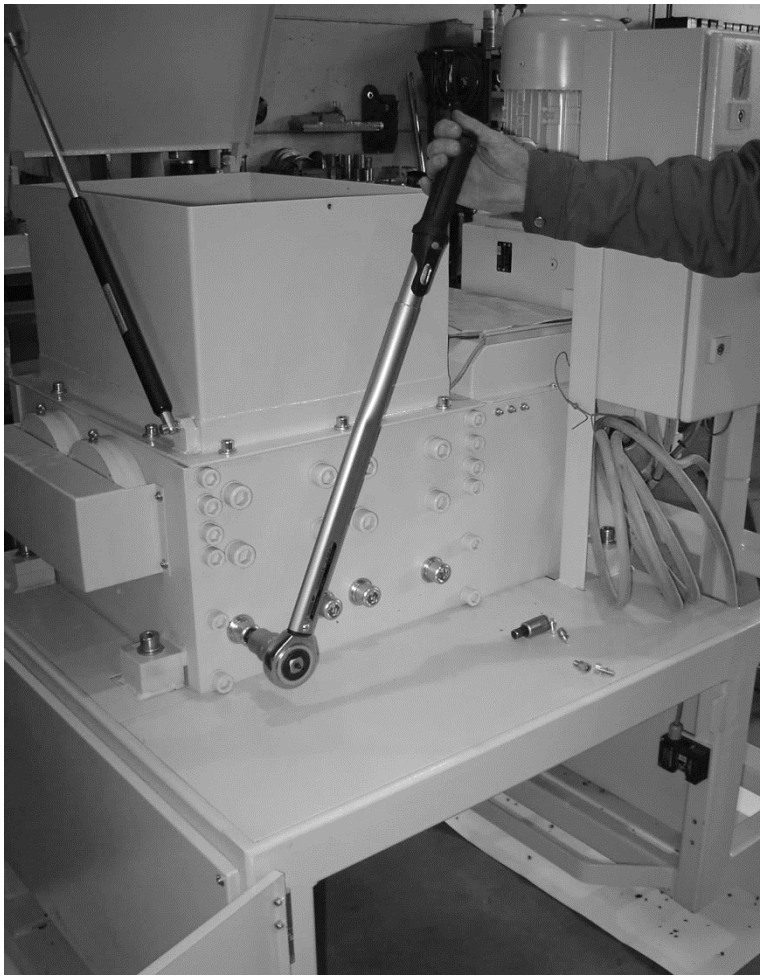
Tighten the screws on both sides of the cutting unit.



Remove the lifting table from the machine.

The M20 allen bolts (8x) of screen A must be re-tightened by using a fastening torque with 350 kN

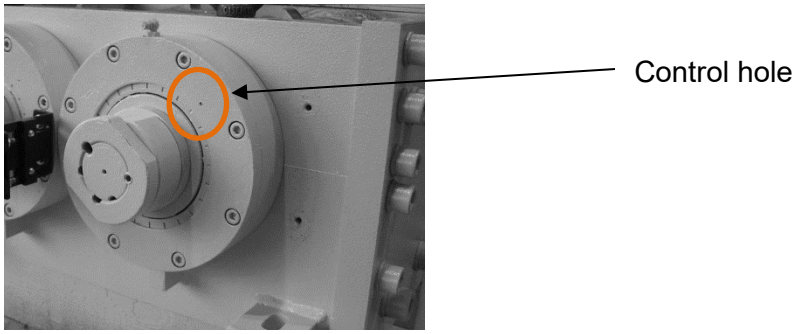
The M16 allen bolts (6x) of screen B must be re-tightened by using a fastening torque with 180 kN



12 Lubrication and service

	servicing periods	working steps	recommended lubricants
	Every week or 40 working hours		
A	synchronizing gears cutting unit	greasing	5
B	bearings cutting unit	greasing	8
C	cutting unit	cleaning from magnetic waste	
D	both screens	disassembly and cleaning	
	Every 6 months or 500 working hours		
A	synchronizing gears cutting unit	checking oil level,	6 checking for oil leaks
E	cutting shafts	check for wear	-
F	both screens	check for wear	-
G	gearbox of main drive	checking oil level, checking for oil leaks	mineral 1 synthetic 6
	Every 2 years or 10,000 working hours		
A	synchronizing gears cutting unit	changing oil	1 , 6
G	gearbox of main drive	changing oil	mineral 1 synthetic 6
B	bearings cutting unit	exchange grease	7 , 8

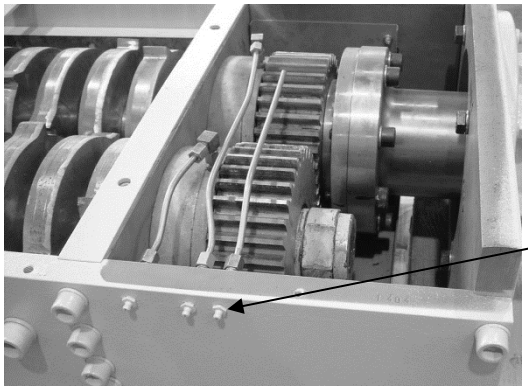
Roller bearings filled with grease should also be cleaned after approx. 10.000 working hours and be filled with new grease (see lubricant table). Grease should only fill 1/3 of the hollow spaces. This is the case when grease comes out the control hole in the bearing flange



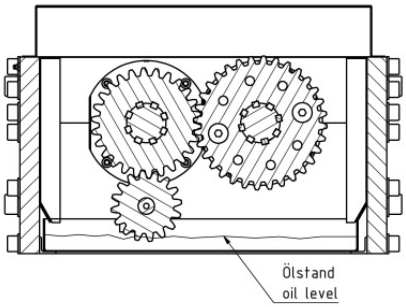
Attention!
Do not use or shred material which contains poisonous or caustic substances or substances which develop corrosion or which are combustible.

Cylindrical gears:

(shredding units with one driving motor only)
Lubricate once a week with universal grease (temperature range from –30°C to +60°C)

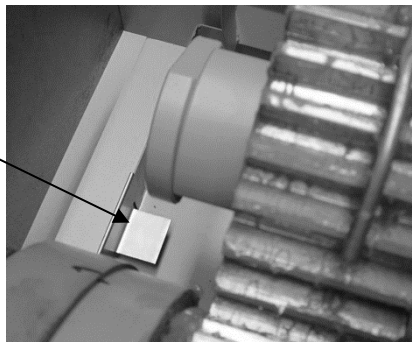


With standard horizontal assembly of the machine it is possible to install an oil bath as emergency lubrication device. Please use gear oil before start-up.



Check the oil level on a half year basis.
Change oil every 2 years.
On especially bad conditions please change oil more frequently.

oil level



The oil level should reach the “OIL” mark.

Information!
The type of lubricants could be taken out from the included operating and maintenance instruction of unicase-helical-gearboxes.

13 Declaration of EC-Conformity

Konformitätserklärung
Declaration of Conformity
Déclaration de conformité
Declaración de conformidad

CE UK CA

Bezeichnung der Maschine:	**Spezialshredder**
Type of machine:	**Special Shredder**
Description de la machine:	**Destructeur spécial**
Descripcion de la máquina:	**Destructora especial**
Modell / Model / Modèle / Modelo:	**SSD-HDD-Granulator**
Typ / Type / Type / Tipo:	**555**
Artikel-Nr. / item number / numéro d'article / número de la pieza:	**5554xx**
Serien-Nr. / serial number / numéro de série / número de serie:	**5554xx.000xx.xxx**
Baujahr / year of manufacture / année de production / año de producción:	**siehe Typenschild / see type plate / voir plaque d'identification / mirar la placa de identificación**

Hiermit wird bestätigt, dass vorgenanntes Produkt den Anforderungen der **Maschinen-Richtlinie 2006/42/EU** sowie der **Niederspannungs-Richtlinie 2014/35/EU** einschließlich allen bis heute veröffentlichten Änderungen bzw. Nachträgen entspricht. Das vorgenannte Produkt entspricht folgenden harmonisierten bzw. nationalen Normen:

We do hereby certify that the above mentioned product meets the requirements set forth in **EEC-Guidelines 2006/42** and **EEC-Low-Voltage-Directive 2014/35** including all changes and addendums to date thereto. The above mentioned product meets the following harmonized and national standards:

Nous vous confirmons que le produit cité ci-dessus correspond aux **exigences des directives 2006/42/CEE** ainsi qu' à la **directive de basse tension 2014/35/CEE**, ci-inclus toutes les modifications ainsi que tous les suppléments publiés jusqu'à ce jour. Le produit mentionné correspond aux normes citées ci-après:

Confirmamos que los productos arriba citados cumplen las exigencias de las **directivas 2006/42/CEE y directivas de baja tensión 2014/35/CEE**, incluidas todas las modificaciones publicadas hasta la fecha. Los productos citados corresponden con las siguientes normas:

Harmonisierte Normen / harmonized standards normes harmonisées / normas armonizadas	Nationale Normen / national standards normes national / normas nacional
DIN EN ISO 12100	
DIN EN ISO 13857	
DIN EN ISO 14121-1	
DIN EN 60204	

CE-Bevollmächtigter / authorized person of CE / personne autorisée de la CE / persona autorizada por CE:
intimus International GmbH; Bergheimer Straße 6-16; D-88672 Markdorf / Germany

2022/01

intimus
Postfach / p.o.box 1420
D-88672 Markdorf / Germany

Ulrich Niedermeier
CTO
(Chief Technical Officer)

14 Reference to product liability

According to EC regulations 1999/34/EG valid since May 10, 1999, the manufacturer is only liable for his product when all parts are originally supplied by the manufacturer or are released by the manufacturer – and the machine will be operated in accordance to the regulations given by manual in hand.

When using external accessories or spare parts the product liability of the manufacturer will not be to apply in total or partial. In extreme cases the use of the complete machine can be denied by the appropriate authorities.

15 Reference to improper use of the machine

In case of improper use of the machine the product liability of the manufacturer expires. E.g. if materials will be shred which deviates from the material tested and released by the manufacturer. See hereto also chapter 3.

16 Manufacturer and Service Provider

intimus International GmbH
Bergheimer Straße 6 – 16
88677 Markdorf
Germany

Tel.: ++49 (0)7544 / 60-0
Fax.: ++49 (0)7544 / 60-248
E-Mail: sales.de@intimus.com
www.intimus.com

17 PLC programm EASY E4

SSD-HDD Granulator

Easy E4
PLC program E4_V1.0

1 Bedienung der Anlage

1) Maschine am Hauptschalter einschalten, der Leuchtmelder „Steuerspannung 24V“ leuchtet.
2) Nothalt-Kette überprüfen: Die Türen am Zerkleinerer müssen geschlossen sein, die Nothalt-Taster am Zerkleinerer müssen entriegelt sein.

4) Nun kann die Maschine durch Drücken des Tasters „Start“ gestartet werden. Die optionale Meldeleuchte „Zerkleinerer läuft“ leuchtet auf und die Messerwellen beginnen zu drehen.
5) Um die Maschine zu stoppen, drücken Sie den Taster „Stopp“.
6) Zum Wiederanlauf befolgen sie die Anweisungen von Punkt 2 an.

2 Bedienung des Rückwärts-Tasters

Die Maschine besitzt einen Rückwärts-Taster mit Tipp-Funktion. Dieser Taster funktioniert nur direkt nach dem Einschalten der Maschine oder nach Betätigen eines Nothalt- oder Türschalters. Jedoch muss die Nothalt-Kette wieder geschlossen werden, um den Rückwärts-Taster zu benutzen.

Funktion „Zerkleinerer Rückwärts“- Taster: Wird benötigt, um bei Überfüllung eine Verstopfung zu entfernen, wenn die automatische Steuerung die Maschine nach fünfmaligem Reversieren ausgeschaltet hat. Hierbei drehen sich die beiden Messerwellen rückwärts.

Maschinen mit Frequenzumrichter:
Nach dem Aufheben des Nothalts muss der Reset-Taster betätigt werden. Erst danach ist entweder der Start oder Reverse möglich.

3 Details of the program

3.1 Function of the motor current measurement

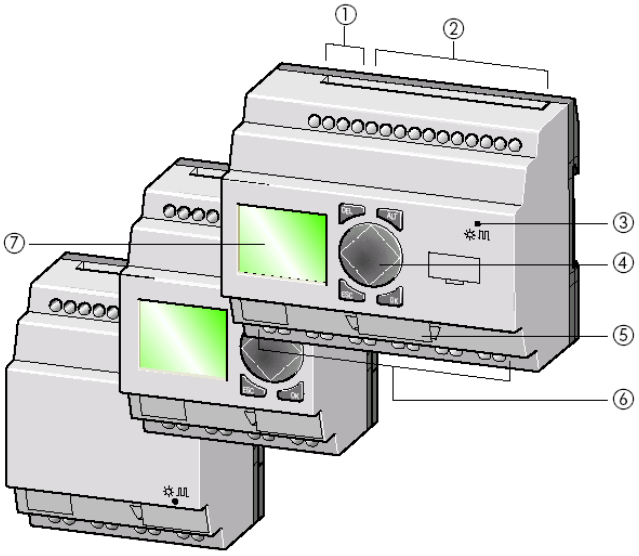
- The current **sensor B1** produces an AC voltage proportional to the motor current. With the **rectifier A1** we get a DC voltage. The **capacitor C1** is smoothing the voltage.
- The DC voltage is connected to an analog input of the plc. Material, which is running through the knives, is inducing a higher motor current. Is the voltage increasing above a programmed threshold the turning of the knives in the shredder are stopped. When the knives are in a standstill the plc automatically activates the reverse mode.
- After a programmed time in reverse mode the plc changes back to forward mode.
- After **4 times** going to reverse mode (during 2 minutes) the **machine stops**.
  The indicator lamp "disturbance" goes on.
  The user has to check the content of the funnel.
- To **restart** the machine:
  press the button **"stop"** → the indicator lamp "**disturbance**" goes **off**
  press the button "**start**" → the **machine starts**
- With the switch "Timer" it is possible to activate an automatic switch off of the machine.
  Switch **S4** is **on**: automatic switch off is **active**
  Switch **S4** is **off**: automatic switch off is **inactive**

- **Automatic switch off is active:**
  By measuring the motor current it is possible to detect if there is no material running thru the machine. If there is no material the timer begins to count. The detection of material set the counter to zero.
  After 3 minutes the timer stops the machine.

- **Automatic switch off is inactive:**
  The machine is running independent of the load.

- An optional sensor detects the level of the material in the box / bag. You have to empty the bag or box before it is possible to restart the machine.

3.2 Short description of the PLC



1. Power supply
2. Inputs
3. Status LED
4. Buttons
5. Interface socket for memory card or PC interface cable
6. Outputs
7. LCD display

3.3 Changing parameters

The parameters of the EASY PLC are adjusted optimally by the manufacturer of the machine. To change the parameters nevertheless, it follows a short how-to.

Attention!
Wrong adjustments of the parameters can cause defective functions!

Changing the menu language

EASY provides five menu languages.

GB = English
D = German
F = French
E = Spanish
I = Italian

These can be set as required via the System menu as follows:

1. Press DEL and ALT to call up the System menu.
2. Select “GB D F E I...” as required to modify the menu language.
3. The language selection for the first entry “GB” is displayed.
4. Use [∧] or [∨] to select the new menu language, e.g. Italian.
5. Confirm with OK.
6. “Easy” will now show the new menu language.
7. Press ESC to return to the Status display.

Changing parameters

EASY allows you to change function relay parameters such as times and counter set points without having to call up the circuit diagram.

1. Press OK to switch to the main menu.
2. Start the parameter display by selecting PARAMETER. A complete parameter set will be shown. In the example these are the parameters for a timing relay T1.
3. Use the PARAMETER menu to access and modify accessible parameter sets.
4. Use [∧] or [∨] to scroll through the parameter sets. For this the cursor must be located on the identifier of the function relay, in this case T1.
5. Change the values for a parameter set:
   [<] [>] Move between the parameters
   [∧] [∨] Change the value of a parameter
6. **OK** Save parameter or
   ESC Retain previous setting. The cursor should still be on the identifier T1.
7. Press **ESC** to leave the parameter display.

3.4 Parameter list A1/EASY 512-DC-RC

Para-meter	description	default value no screen (7,5kW)	default value with screen	FU-Option
T01	Load detection is not active due to startup of the knife rotation	0.5s	0.5s	0.50s
T03	Delay time of the overload detection	0.50s	0.50s	0.50s
T04	Delay time between switching forward and backward turning of the knives.	1s	1s	1s
T05	Duration of the reverse mode, overload or autoreverse	2s (3s)	20s	20s
T08	Startup delay for FU option	0.5s	0.5s	1.5s
T10	Duration Reverse caused by Overload	-	5s	-
T11	If there is no material running thru the machine, it will stop after this time. For automatic stop S4 has to be switch on.	5min	5min	5min
T12	Timeout for resetting reverse mode counter C1. If there are more reverse mode cycles during this time, than set in C1, the machine reports a disturbance.	30s	30s	30s
T14	Automatic reverse after	99min01s	1m30s	99min30s
T16	Level detection outlet box, delay of the detection	15s	15s	15s
C01	Anzahl Reversierungen bis zur Störmeldung	4	8	8
A01 (I8)	Load measurement for automatic shutdown. If there is a higher load than the value adjusted here, the counter for the automatic shutdown will be reset.	640	640	800
A02 (I8)	Threshold for overload detection.	1440	1440	1440

3.5 Removal of disturbances

malfunction	cause	clearing-up
indicator lamp "24V" is off	power cut fuse F9.1 or F9.2 is faulty	if necessary replace fuse
indicator lamp " disturbance " is on	to many reverse mode cycles or motor overload, motor protection switch has been activated	press stop button, remove material by pressing the button "reverse" check motor, wait for a while to cool down the motor, switch on the motor protection switch
indicator lamp “disturbance” is blinking	level in the outlet box / bag is too high	empty the box / exchange the bag with an empty one
it's not possible to start the machine	emergency stop is activated Check fill level in bag or box	check emergency devices: push button or safety door Empty bag or box and press stop button
knives are turning in the wrong direction	sense of rotation of the 3-phase power supply is wrong	change sense of rotation
motor is droning	one phase is missing	check power supply

3.6 Display of the PLC

Display	Relevance	Notes
STOP MODE PwrON: ######h Start:######h	Machine stopped	PON = Power ON: Elapsed hour counter: Power ON STRT = Start: Elapsed hour counter: Machine is working
RUN MODE Load I8: #### V	Machine is working	The value shows the actual load of the machine: 400 means 100% load
REVERSE MODE Overload Revers Counter ####	Knives are turning backwards H counts 10.000 L counts up to 9.999	Counter for entering the reverse mode.
Reverse Mode Too Many Retries	The machine entered reverse mode for too many times.	Clean cutting block.
Check Outlet Container Full Sensor S6/B106	Optional outlet sensor says “full”	Empty bag/box and press stop button.