

PART B: Additional Equipment

Roller Feeder

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1 INFORMATION ON THIS INSTRUCTION MANUAL

Author: VIRTUS Equipment

No part of this operation manual may be reproduced, distributed or used in any shape or form, stored in a data processing system or translated into another language without written permission.

This operation manual serves to help you to get to know your machine and how to make use of its application possibilities in accordance with the regulations.

The operation manual contains important information on how to operate the machine safely, correctly and economically. Following this advice will help you to avoid danger, minimize repair costs and down times and to increase the reliability and durability of the machine.

Before you begin to work on and with the machine, please read the operation manual thoroughly. Only after you have read and understood the contents of this operation manual may you begin work on and with the machine. Keep this operation manual at the application site for future reference.

References to chapters, plans and other documents as well as key markings are written in *italics*.

↓ Instructions on handling are marked in this way.

The machine is designed in modular system and offers a wide spectrum of variations to do justice to your expectations.

This operation manual is divided into three parts:

1. Part A: Information of the basic machine.
2. Part B: Plans, operation manuals for systems from other manufacturers etc.

Should you wish to order further operation manuals, please quote the machine number.

We wish you every success with your new machine!

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2 TECHNICAL DATA

Maximum input width:	mm	990
Roller diameter:	mm	115
Length of roller:	mm	1000
Material of rollers:	Normal steel	Q235-A
Roller pressure:	Pneumatic	
Fixed roller bearing:	HCFL206	
Moveable roller bearing:	6207	
Pneumatic cylinder	SC63-25	
Geared motor:	Supplier	SEW
See also operation manual from the manufacturer.	Output in kW:	1.5
	Speed in min ⁻¹ :	3-30
Input opening:	Infeed chute	
Material of input opening:	Stainless steel	SIS03
Weight:	kg	350
Dimensions:	see <i>Layout</i>	
Air pressure:	Connection in bar:	4 - 6
	TARGET pressure to be set on maintenance unit:	6
	Other requirements:	oil-free compressed air
Noise level:	dB(A)	80

3 GENERAL INFORMATION

3.1 Copyright

VIRTUS and related parties, holds the copyright for these operation instructions, entrusted to the owner of the shredder for his personal use. This contains technical instructions and drawings which are not be copied complete or in part, distributed or used for reasons of unauthorized competition or for informing others.

3.2 Application

The shredder is designed for size-reduction of plastic material such as PE, PP, and PVC etc. The user is responsible for consequences resulting from incorrect operation: This will lead to the loss of the warranty as well as any compensation claims.

3.3 Safety

The shredder has been constructed in accordance to the general standards of technology and is fitted with safety devices to prevent accidents that could endanger the life or health of the operator. The company operating the unit is responsible for the compliance to the safety regulations. We recommend staff training courses at regular intervals subsequent to initial training during commissioning.

3.4 Inspection of goods

The goods must be inspected by the purchaser to ensure that the delivery is complete and free from damage during transport. In the event of any queries VIRTUS must be informed with regard to missing items or transport damage. In the event of actual transport damage, written notification including photographs should be made and sent to the transport company as well as sent to VIRTUS immediately after delivery.

4 GENERAL SAFETY ADVICE

4.1 Use in accordance with the regulations

The operational safety of the roller feeder is only guaranteed for use in accordance with the regulations! This regulation use of the roller feeder is the in feed of plastic foil strips and foil widths which correspond to the agreed customer-specific specifications in all points (see *Contract of sale*).

Connection of Emergency Stop button

The nip roll feed device may only be operated with the installed Emergency Stop buttons. In case no Emergency Stop buttons have been installed, an Emergency Stop button must be mounted on the control cabinet, the second directly at the nip roll feed device.

Miscellaneous:

- The working conditions and instructions specified in this operation manual must be adhered to.
- The nip roll feed device is not suitable for operation in an explosive environment.
- Faults which can impair safety are to be reported immediately and eliminated by a trained and skilled specialist.
- The nip roll feed device may only be used in the industrial application range.

Known uses not in accordance with the regulations

Never put grinding material into the in feed which does not correspond to the agreed customer-specific specifications. If this occurs, there is a danger to persons and the possibility of damage to the nip roll feed device and the successive units.

4.2 Structural changes and spare parts

For reasons of safety, remodeling and modifications to the nip roll feed device, in particular to the electrical devices, are only permissible by arrangement with the manufacturer!

Replace faulty parts immediately. Only use original spare parts or spare parts from other manufacturers which correspond to the original spare parts with regards to function, stress and safety. This applies in particular for reasons of EMC (electro-magnetic compatibility) for electrical components.

The use of unsuitable parts can impair resistance to rays and increase emission of rays!

If parts are replaced which are relevant for safety they have to be checked afterwards for proper functioning.

4.3 Operation manuals from other manufacturers

Integrated in the nip roll feed device are systems from other manufacturers. When working on or with these systems, please observe the advice in the operation manuals from the respective manufacturer. These operation manuals are enclosed with the machine documentation.

4.4 Noise levels and noise control measures

The mean values for noise levels can be found in the chapter

4.5 Work stations

The work station is located in front of the in feed hopper.

For maintenance work, the whole area around the nip roll feed device is at your disposal.

4.6 Remaining risks

The nip roll feed device is constructed so that you are able to operate it safely. Structurally non-avoidable dangers are prevented as well as possible by the protective devices. A certain remaining risk does however always remain! Being aware of these remaining risks will help you to structure your work more safely and in so doing to avoid accidents.

To avoid danger, please observe in addition the specific safety advice in the individual chapters.

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4.6.1 Mechanical dangers

Type of danger:	Danger of crushing caused by heavy parts falling down or falling over.
Activity:	Unloading, loading and transportation of the roller feeder.
Possible consequences:	Serious injury can result.
Preventative measures:	Wear personal protective gear (see <i>Personal protective gear</i>). Follow the instructions in this <i>Operation manual</i> .

Type of danger:	Danger of crushing when opening and closing the nip roll feed device.
Activity:	Maintenance work.
Possible consequences:	Serious injury can result.
Preventative measures:	Make sure that no persons are in the danger area.

Type of danger:	Danger of pulling in caused by foil being pulled in which has become wrapped around body parts.
Activity:	Operation.
Possible consequences:	Serious injury can result.
Preventative measures:	Pay attention whilst working!

Type of danger:	Tripping over cables and other objects lying around.
Activity:	All activities.
Possible consequences:	Serious injury can result.
Preventative measures:	Lay cables in accordance with the regulations. Keep work station clean and tidy.

Type of danger:	Danger of pulling in caused by run down of rotating parts.
Activity:	Maintenance work.
Possible consequences:	Serious injury can result.
Preventative measures:	During operation, the nip roll feed device must always be tightly connected with the intermediate hopper by means of connecting screws. Do not make the run down safety devices ineffective by using technical aids or

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	other manipulations. The protective casing may only be dismantled for maintenance work and when all rotating parts are at a standstill.
--	--

Type of danger:	Danger of pulling in caused by running toothed belts and rotating parts.
Activity:	All activities.
Possible consequences:	Hair, jewelry etc. can be pulled in. Serious injury can result.
Preventative measures:	Only dismantle protective casing when all parts are at a standstill.

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4.6.2 Electrical dangers

Danger:	Direct or indirect contact with live parts.
Activity:	Maintenance work, startup.
Possible consequences:	Serious injury or death.
Preventative measures:	All work on the electrical equipment may only be carried out by trained electricians. If work is required on parts which conduct dangerous voltage, a second person should be called in who can break the power supply in the case of emergency. The yellow-marked lines conduct voltage even when the nip roll feed device is switched off (main switch to 0). Only use original fuses with stipulated intensity of current. Faulty electrical components must be replaced immediately. If faults occur in the electrical energy supply, switch the nip roll feed device off immediately. The control cabinet must be locked during operation. Before opening the control cabinet: main switch to 0.

4.6.3 Dangers caused by the control system

Type of danger:	Danger caused by failure of the Emergency Stop function.
Activity:	All activities.
Possible consequences:	Serious injury or death.
Preventative measures:	It must be guaranteed that failure of an Emergency Stop button is displayed and leads to an immediate stop.

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4.6.4 Thermal dangers

Type of danger:	Danger of fire and explosion caused by inserting dangerous objects (e.g. spray cans) into the nip roll feed device.
Activity:	Operation.
Possible consequences:	Serious injury or death can result.
Preventative measures:	Only insert foil which corresponds in all points to the agreed customer-specific specifications.

4.6.5 Dangers caused by noise

Type of danger:	Damage to hearing.
Activity:	All activities.
Possible consequences:	Diminished hearing, headaches, impaired balance, and deterioration of concentration.
Preventative measures:	Reduce noise emissions by taking suitable measures and/or wear ear protection.

4.6.6 Dangers caused by vibration

Type of danger:	Loosening of mounting screws of the nip roll feed device caused by vibration.
Activity:	All activities.
Possible consequences:	Serious injury can result.
Preventative measures:	Check mounting screws regularly according to the instructions in this operation manual.

4.6.7 Dangers caused by manipulation of protective devices

Type of danger:	Danger of crushing and pulling in.
Activity:	All activities.
Possible consequences:	Serious injury can result.
Preventative measures:	Never make the protective devices ineffective. Check the protective devices regularly for proper functioning according to the specifications given in this operation manual.

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4.7 Protective devices

The nip roll feed device may under no circumstances be operated without these protective devices or with faulty or manipulated protective devices. The threaded spindles of the run down safety devices may only be rotated by hand.

Dismounting of protective devices may only be carried out when all parts are at a standstill, the power supply is disconnected and the main switch is safeguarded using a padlock.

If the protective devices have been dismantled, the machine may only be started up again when all protective devices have been mounted and checked for proper functioning.

4.7.1 Protective housing (Optional)

The complete Roller feeder is fixed inside a housing. This housing has two doors which can be opened for maintenance. The maintenance doors are safeguarded with safety switches. If you open the door the roller feeder will stop.

Illustration:
Housing of roller feeder



Illustration:
Safety switch



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4.7.2 Safety markings

Safety markings are attached to the nip roll feed device. If one of these markings becomes detached or is no longer recognizable, it must be replaced. You can order new markings at specialist shops or from us (see *Customer service and spare parts orders*).

4.8 Authorized persons

Work on the nip roll feed device may only be carried out by authorized personnel. Observe the legally permissible minimum age!

As a basic rule, the nip roll feed device may only be operated by persons who have received training on the machine.

Personnel which are still to be trained or receive instruction may only work on the nip roll feed device under constant supervision by an experienced person.

The company operating the nip roll feed device must make the operation manual accessible to the user and ensure that he has read and understood it. Only then may he put the nip roll feed device into operation.

Responsibility for the different jobs on the nip roll feed device must be clearly established and adhered to. There must be no unclear areas of authority, as this could endanger the safety of the user.

All work on the electrical equipment may only be carried out by trained electricians.

Faults on the control system may only be eliminated by authorized specialist personnel.

All work related to installation, fittings and maintenance may only be carried out by trained specialist personnel having received instruction on the nip roll feed device.

The operator must make sure that only authorized persons work on the nip roll feed device. He is responsible for the safety of third persons in the working area.

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4.9 Personal protective gear

Wear close-fitting clothing. Jewelry and hair must be worn so that they cannot be pulled in by moving parts.

The following protective gear must be worn when carrying out the following work:

	Safety helmet	Safety boots	Safety gloves	Safety goggles	Ear muffs
Unloading the nip roll feed device.	x	x			
Connecting the nip roll feed device.		x			
Operation.		x		x	(1)
Maintenance.		x			

(1) The complete roller feeder is sound proofed so the noise level is so low that it allows you to work without ear protection, ear muffs must not be worn.

4.10 Safety measures at the application site

See the chapter *Requirements at the application site*.

The nip roll feed device must be fixedly connected with the cutting chamber by means of mounting screws.

Ensure by means of appropriate in-house orders and controls that the environment of the work station is always clean and clear of obstructions.

4.11 Fire fighting agents

In the case of fire, disconnect the power supply or pull out the mains plug. Extinguish the fire from a distance of several meters using a suitable fire extinguisher.

4.12 Cleaning agents

Only use suitable cleaning agents to clean the nip roll feed device and in doing so, the advice of the manufacturer is to be heeded. Please be aware that unsuitable cleaning agents (e.g. thinners) can damage the paint as well as the cables and plastic parts.

4.13 Conduct in case of an emergency

The Roller feeder may only be operated with the installed Emergency Stop buttons. An Emergency Stop button must be mounted onto the control cabinet, the second directly onto the nip roll feed device.

Emergency Stop:







- ↓ In case of emergency, immediately press one of the *Emergency Stop buttons*.

Reoperation:

- ↓ Eliminate cause for Emergency Stop.
- ↓ Unlock *EMERGENCY STOP BUTTON*.
- ↓ Acknowledge fault.
The nip roll feed device is now ready for operation again.

4.14 Classification of specific safety advice

The specific safety advices in the following chapters of this operation manual are classified as follows:

 DANGER	
	Indicates an immediately threatening danger. If you do not take avoiding action, death or serious injury will result.
 WARNING	
	Indicates a possibly dangerous situation. If you do not take avoiding action, death or serious injury could result.
 CAUTION	
	Indicates a possibly dangerous situation. If you do not take avoiding action, slight or minor injury could result.

This safety advice refers to the remaining risks for certain working steps and helps you to work safely with the nip roll feed device. In addition to the safety advice above, there are also the hint and the tip.

HINT



Indicates a possibly harmful situation. If you do not take avoiding action, the roller feeder could be damaged.

TIP



Indicates application tips and other particularly useful information.

5 DESCRIPTION OF ROLLER FEEDER

5.1 Standard

The roller feeder is directly connected to the back of the hopper or the upper housing of the cutting chamber. After loosening the mounting screws which connect the upper housing and the lower housing, the nip roll feed device including the hopper can be pivoted down together with the upper housing.

The material is pulled in via two rollers. The lower roller is fixed in the housing whilst the upper roller is in a movable bearing. The rollers are profiled, so that they can pull in the material easily.

Illustration:
Standard roller feeder



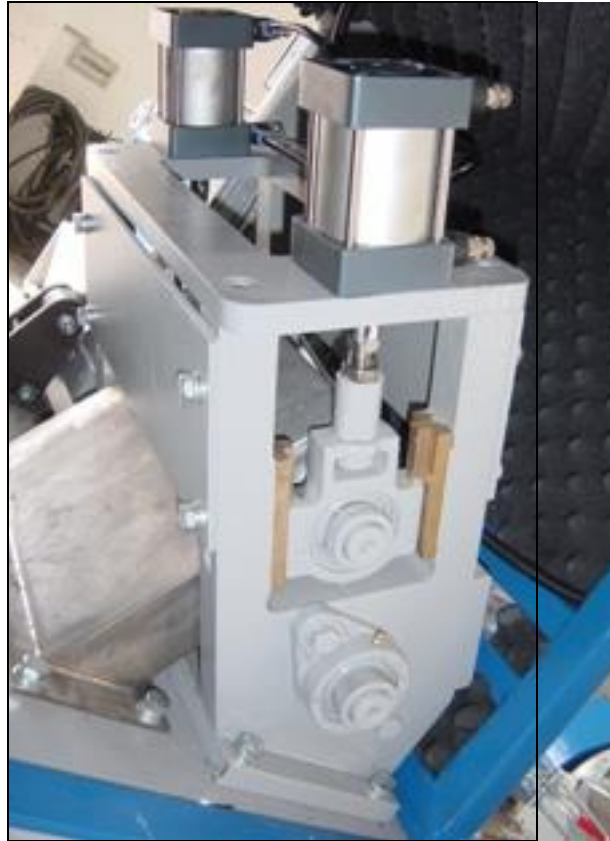
An in feed chute is flanged onto the input opening of the nip roll feed device. Additionally, it is guaranteed due to the length of the in feed chute that nobody can take his hands into the rollers.

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The upper roller can be moved by means of two pneumatic cylinders.

Illustration:
Upper roller with moveable bearing and pneumatic cylinder.



The upper roller can be moved upwards by pushing the foot pedal. This allows feed the material easily.

Illustration:
Foot pedal



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The lower roller is not driven. The upper roller is driven by means of a gear motor which is mounted directly on the shaft of the upper roller.

Illustration:
Gear motor



Please read the operation manual from the motor manufacturer!

The speed of the motor is controlled by a frequency inverter, which is located in the control panel. It can be adjusted at the panel

Illustration:
Inverter



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5.2 Soundproof housing (optinal)

The roller feeder is directly connected to the upper housing of the cutting chamber. The roller feeder is covered by a soundproof box. Two doors allow easy access for maintenance. After loosening the mounting screws which connect the upper housing and the lower housing, the nip roll feed device can be pivoted down together with the upper housing.

The material is pulled in via two rollers. The lower roller is fixed in the housing whilst the upper roller is in a movable bearing. The rollers are profiled, so that they can pull in the material easily.

Illustration:
Optional Soundproof
housing



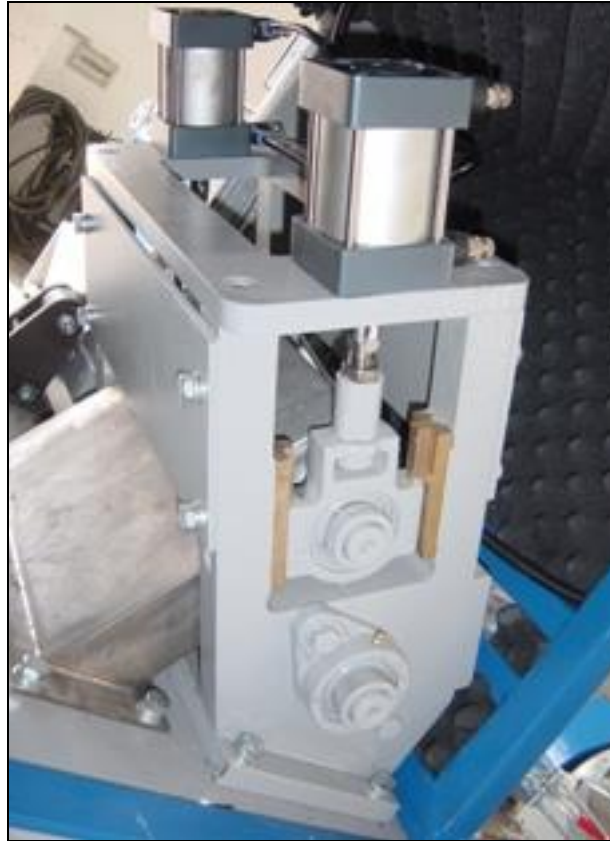
An in feed chute is flanged onto the input opening of the nip roll feed device. Additionally, it is guaranteed due to the length of the in feed chute that nobody can take his hands into the rollers.

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The upper roller can be moved by means of two pneumatic cylinders.

Illustration:
Upper roller with moveable bearing and pneumatic cylinder.



The upper roller can be moved upwards by pushing the foot pedal. This allows feed the material easily.

Illustration:
Foot pedal



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The lower roller is not driven. The upper roller is driven by means of a gear motor which is mounted directly on the shaft of the upper roller.

Illustration:
Gear motor



Please read the operation manual from the motor manufacturer!

The speed of the motor is controlled by a frequency inverter, which is located in the control panel. It can be adjusted at the panel on the soundproof housing.

Illustration:
Inverter



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5.3 Dancing bar (optinal)

The roller feeder can be equipped with a dancing bar. It is mounted in front of the infeed opening of the rollfer feeder. The dancing bar is automatically controlling the infeed speed of the material by its tension. The speed is controlled by a linear potentiometer

If the bar gets to the lower position, the speed will increase, when the bar gets to the upper position, the feeding will slow down or stop.

Illustration:
Dancing bar



6 INITIAL STARTUP

6.1 General Advice

**All work related to startup may only be carried out by trained specialist personnel.
Check the nip roll feed device for possible transportation damage or other damage. Should you determine damage, have this confirmed by the freight company and please report this to us in writing immediately after delivery. When starting up for the first time and after setting up ready for service, you must carry out the necessary checks according to the chapter *Check prior to initial startup*.**

6.2 Requirements at the application site

The site of application for the roller feeder must exhibit the following features:

- The nip roll feed device must be freely accessible from all sides.
- There must be sufficient room available for operating and service personnel.
- Spatial requirements
- Vibration-free environment.
- The application site must be well-lit.
- The roller feeder may not be exposed to direct radiation caused by radiators or the sun.
- Room temperature: +5° to +40°C
- Relative atmospheric humidity according to DIN 40040:
15 to 70 % (indoor), no dewing.
By humidity levels higher than 70 %, apply anticorrosive agent to the metallic-finished parts. Insulation for the tropics is also necessary.
- The nip roll feed device may not be operated within range of static discharges or strong magnetic fields as this could lead to faults in the control system.




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6.3 Unloading and installing the nip roll feed device

As a rule, the nip roll feed device is mounted onto the cutting chamber or the hopper.

The machine and the roller feeder are packed so that they arrive safely to you. For unloading, you may use a suitable crane or forklift.

 WARNING	
	Suspended load. Falling loads can cause serious injury or death. Only use a crane or forklift which is suitable for the weight and the dimensions of the load.
	Also use a suitable stopping means and pay attention to the gravity centre location. Do not step under the suspended load. Wear a safety helmet in addition to your basic protective gear.



- ↓ After unloading, remove the packaging material and all transportation safety devices.

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6.4 Connections

6.4.1 Electrical connection

 WARNING	
	<p>Dangerous voltage. Touching live parts can lead to serious injury or death. All work which relates to electricity may only be carried out by trained electricians. Observe the currently effective EMC regulations.</p>

- ↓ If the roller feeder or the whole plant have been supplied non-pre-wired by ZERMA. The electrical connection has to be carried out in accordance with the enclosed *Wiring plan*. When doing this, the regulations of the local electricity authority are to be adhered to. The cable cross section required is to be determined according to the rated capacity of the units.

HINT



Alterations to the *Wiring plan* from VIRTUS require our approval. Failure to do this will exclude all guarantee claims.

Connection of the Emergency Stop button

The roller feeder may only be operated with installed Emergency Stop buttons. In the case that no Emergency Stop buttons have been installed at the factory, an Emergency Stop button must be installed at the control cabinet, the second directly on the roller feeder.

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Checking the rotational direction

Checking the rotational direction is part of the checks before initial startup (see chapter of same name). The steps prior to this check must be carried out beforehand.

- ↓ Switch on the roller feeder and then immediately off again for a short time
- ↓ Observe whether the discharge air fan in the drive motor is rotating in the direction of the attached arrow.

HINT



If running in the wrong direction, reconnect the motor connection immediately. Damage to the machine will result from operation in the wrong direction.

6.4.2 Air pressure connection

HINT



Use only oil-free compressed air!

- ↓ Connect the maintenance unit of the roller feeder to the compressed air supply system.
- ↓ Set the TARGET pressure (see
- ↓) on the valve of the maintenance unit.

6.5 Check prior to initial startup

Check	See chapter
1. Pivot the roller feeder and upper cutting chamber downwards and search for foreign matter.	Error! Not a valid result for table..
2. Close roller feeder and upper cutting chamber and fix the screws on the cutting chamber.	Error! Reference source not found.roller feeder.
3. Check that the <i>Emergency Stop buttons</i> are unlocked.	
4. Check all protective devices for proper functioning.	<i>Checking the protective devices.</i>
5. Switch roller feeder for a short time and check rotational direction. The rotational direction can be seen at the discharge air fan of the drive motor (see running direction arrow).	<i>Electrical connection.</i>
6. Allow roller feeder to run for approx. 10 minutes without grinding material.	

7 OPERATION

**Have you read and understood the operation manual, in particular the safety advice in the chapter four?
You may not operate the roller feeder until you have done so!**

7.1 Checks before switching on the nip roll feed device

Check	See
1. Roller feeder is free of foreign matter.	<i>Error! Not a valid result for table..</i>
2. The roller feeder and cutting chamber are closed and the bolts are fixed.	<i>Error! Reference source not found.roller feeder.</i>
3. All safety devices are mounted and operative.	<i>Checking the protective devices.</i>

7.2 Switching on the roller feeder

1. Switch on the grinding material discharge device (accessories).
2. Switch on the granulator. Wait until the rotor has reached its full speed.
3. Switch on the roller feeder (main switch to I).

7.3 Switching off the roller feeder

1. Switch off the roller feeder (main switch to 0).
2. Wait until the remaining grinding material has been ground, and then switch off the granulator.
3. Switch off the grinding material discharge device (accessories).

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7.4 Film infeed

- ↓ Push the foot pedal
- ↓ Insert the film strips through the in-feed chute until they are gripped by the rollers
- ↓ Release the foot pedal




Illustration:
Foot pedal



8 MAINTENANCE

8.1 Safety advice

Work included in the framework of maintenance may only be carried out by trained specialist personnel.
Carry out the maintenance work within the specified time and document this. The roller feeder will thank you for this by providing high reliability.

 WARNING	
	Danger caused by electrical voltage and starting the roller feeder during maintenance work. Mortal danger.
	Therefore, as a basic rule when carrying out maintenance work: Main switch to 0, safeguard using padlock and attach a warning sign. Exception: when checking protective devices for proper functioning!

8.2 Maintenance plan

The tasks for maintenance work are described in detail in this chapter.

Maintenance work	Oh = Operation hours		
	Every 7 Oh	Every 35 Oh	If necessary
Check protective devices for proper functioning.	x		
Check all screws on the roller feeder for a tight fit.	x		
Visual check of the condition of the roller surface.	x		
Check wearing parts.			x
Check the main bearings (bearing clearance, lubricant renewal).			x
Lubricant replacement, lubricant renewal	See <i>Lubrications intervals.</i>		
Adjust the air pressure of the upper roller.			x

Yearly maintenance


The purpose of the yearly maintenance is to primarily check the general condition of the roller feeder and to arrange for the supply of any necessary replacement parts in good time. This can also be carried out on request by a service engineer from ZERMA.

8.3 Checking the protective devices

For this, see also the chapter *Protective devices*.



Check the protective devices for:

- stipulated condition,
- stipulated location,
- safe mounting,
- stipulated function.

 WARNING	
	<p>Danger due to non-functioning protective devices. Serious injury or death can result.</p> <ul style="list-style-type: none">• Eliminate all defects before you put the nip roll feed device into operation!• If defects occur during operation, stop the nip roll feed device immediately and eliminate the defects!• Do not change or remove any protective devices. Do not put any protective devices out of action by modifying them.

8.4 Opening and closing of the granulator and the roller feeder

For some maintenance work it is necessary to pivot the roller feeder downwards. The roller feeder is fixed to the cutting chamber, so it can only be pivoted together with the upper housing of the machine. Please also refer to the machine manual.

 WARNING	
	<p>Granulator upper section pivots downwards. Serious injury can result. Always open the granulator upper section completely. Intermediate positions are not allowed. Make sure when closing that no persons are in the danger area.</p>

8.4.1 Opening the granulator and the roller feeder

Please see in the manual of the main machine

8.4.2 Closing the granulator and the roller feeder

Please see in the manual of the main machine

8.5 Replacing the bearings

The bearings of the roller feeder are dimensioned so that a bearing replacement is only necessary in exceptional cases. Dismounting and mounting of the bearings requires specialist knowledge and a careful working method. Therefore, please observe the mounting instructions of the bearing manufacturer.

The bearings mounted on this roller feeder are illustrated in the spare parts list. A requirement for dismounting and mounting the bearings is a suitable pulling-off device.

8.6 Lubricating the bearings

An important requirement for high operational safety and long service life of the arrangement of bearings is the correct lubricant supply. Every VIRTUS machine is greased and checked in test runs before delivery.

HINT



Unsuitable lubricant, lubricant deficiency, excessive lubrication or impurities in the lubricant lead to overheating and thus extreme wear of the bearings.

8.6.1 Lubrications intervals

Shift operation	Replace lubricant	Check
One shift operation:	every 18 months	monthly
Two shift operation:	every 9 months	monthly
Three shift operation:	every 6 months	monthly

8.6.2 Check lubricant quality

You can judge whether the lubricant needs to be replaced by checking for the following features:

- change in consistency,
- discolouration,
- degree of soiling.

8.6.3 Replacing or refilling lubricant



HINT

- **Fill the bearings uniformly with grease, so that all operating surfaces are well greased.**
- **The regreasing quantity for one bearing is 30 - 40 g. If too much grease is filled in, the lubricant will become unusable as a result of excessive temperature.**
- **Only one type of grease may be used, mixing different types of grease is not allowed. The bearings have been filled at the factory with lithium base saponification roller bearing grease F3.**
- **To find out which lubricants from which manufacturers you can use, look in the *Lubricant list*.**

Replacing lubricant

Only in the case of unusual bearing noises or overheating it is also necessary to renew the lubricant between the specified intervals. Mounting and dismounting of the bearings has to be carried out in accordance with the instructions of the bearing manufacturer.

To clean the bearings petroleum ether, petroleum, spirit, aqueous neutral or alkaline cleaning agents may be used (observe the manufacturers advice before use).

After washing out, the bearing must immediately be preserved using lubricant in order to avoid corrosion.

PART B: Additional Equipment

Roller Feeder

8.6.4 Lubricant list

Country of manufacture / Manufacturer	Roller bearing grease
ARAL	ARAL Grease HL 3
BP	BP ENERGREASE LS 3
CASTROL	CASTROL SPHEEROL AP 3
ESSO	Beacon 3
FUCHS	FUCHS Grease 1200 FUCHS Grease FWA 220
SHELL	SHELL Alvania Grease 3
MOBIL-OIL	MOBILUX 3
WISURA	WISURA Liba L 3
Zeller & Gmelin	ZET GE Grease M 50
FAG	FAG L 71
ANTAR Petroles de l'Atlantique	ROLEXA
Holland, Fa. Beverol	Beverol Multi Purpose Grease
Italien, Fa. Agip	AGIP Grease 33 FD
Schweden, Fa. NYNÄS	Nynäs FI 3-42

9 STORAGE, DISPOSAL, TRANSPORTATION

9.1 Storage



Clean the roller feeder. Preserve all the polished metal surfaces using a suitable rust preventing agent. Store the nip roll feed device in an enclosed, dry place. Cover the nip roll feed device completely with a plastic sheet.




9.2 Disposal



Protect the environment.

The disposal of machines, machine components and process materials is partially subject to legal controls. More detailed information is given at the relevant administrative authority (e.g. regional and national Water Conservation Bureau and Environmental Protection Agencies). Only deposit the material to be disposed of at authorized drop-off points.

9.3 Transport

 WARNING	
	<p>Suspended loads. Falling loads can cause serious injury or death. Only use a crane or forklift which is suitable for the weight and dimensions of the loads.</p>
	<p>Also use suitable stopping means and pay attention to the gravity center location. Do not step under the suspended load. Wear a protective helmet in addition to your basic protective gear.</p>

10 CUSTOMER SERVICE AND SPARE PARTS ORDERS



Should problems occur during operation of the nip roll feed device or if you have general questions about the nip roll feed device which this operation manual cannot answer, please do not hesitate to contact us. We would be pleased to help you further in order to solve your problem as quickly as possible.

You can identify the spare parts you require using the spare parts list. Please quote the following information when making your order so that we can deliver the spare parts to you quickly:

- Company name and address.
- Contact person.
- Machine type.
- Machine number.
- Piece number of the spare part.
- Spare part reference.
- Subject number.
- Order quantity.

VIRTUS EQUIPMENT
311 Era Drive
Northbrook, IL 60062

Tel: 1-847-291-1800

E-Mail: sales@Virtus-Equipment.com
Internet: <http://www.Virtus-Equipment.com>



TIP

The easiest way to order your spare parts is to copy the spare parts list and to fill in the order quantity after the respective spare part.

11 SPARE PART LIST

Please see contact VIRTUS for the spare parts

**PART B: Additional Equipment
Roller Feeder**

12 CLARIFICATION FOR PERSONAL TRAINING

This is to certify that I have attended an in company training for service and operation of the granulator and understand all safety regulations. Further to this I have read and understand the owners' manual.

City	Date	Printed name	Signature

13 ADDITION

Documentation gear motor
Documentation inverter
Electrical diagram

ATTENTION:

The wiring schematics are located in the control panel in the event that the control panel is a part of the delivery