

3devo

SHR3D IT



Version 1.0 November 2017

English user guide

3devo

COMPANY INFO

3devo

3devo B.V.

Zonnebaan 12F

3542 EC Utrecht

The Netherlands

service@3devo.com

www.3devo.com



TABLE OF CONTENTS

1.	SAFETY INSTRUCTIONS.....	4
2.	OVERVIEW.....	8
2.1.	MACHINE FEATURES.....	8
2.2.	INCLUDED ACCESSORIES.....	14
2.3.	OPTIONAL ACCESSORIES.....	15
2.4.	TECHNICAL SPECIFICATIONS.....	16
3.	INSTRUCTIONS.....	17
3.1.	QUICK USER GUIDE.....	17
3.2.	INSTALLATION INSTRUCTIONS.....	17
3.3.	PREPERATION INSTRUCTIONS.....	18
3.4.	ADJUSTING AND MAINTENANCE.....	19
3.4.1.	INSTALLING AND REMOVING THE HOPPER.....	19
3.4.2.	OPENING THE MACHINE.....	21
3.4.3.	REMOVING AND MOUNTING FILTER SCREEN.....	23
3.4.4.	ADJUSTING THE STATIC GRANULATOR KNIFE.....	26
3.4.5.	CLEANING THE MACHINE.....	27
3.4.6.	REPLACING THE GRANULATOR KNIVES.....	28
4.	TROUBLESHOOTING.....	29
5.	TRANSPORTATION.....	31
6.	NOTES.....	32
7.	COMPANY INFO.....	33

1. SAFETY INSTRUCTIONS

The SHR3D IT is a powerful and effective plastic processing machine.

Processing your plastic waste plastic to granulate,

The processing process inside the SHR3D IT consist of a multitude of moving components, moving at high speeds and/or great force. Which if improperly used can cause serious harm.

Read and adhere to all safety instructions and user instructions carefully before using the machine. Do not allow persons younger than 18 years old to use the machine. This machine is not intended for users with a low reaction response time, physical or intellectual impairments. The manufacturer is not liable for any damage or other problems caused by the user's failure to observe these instructions.

WARNING

Ear protection must always be used when using SHR3D IT. Especially processing hard materials will emit a lot of noise which may cause hearing loss.

WARNING

Always inspect datasheets from the materials that are to be processed for potential health risks. When working with an unknown material or materials that may emit dangerous dust or gasses when being processed, make sure to wear a gas mask and use an extraction system.

WARNING

Prevent entanglement when feeding long lengths of material by breaking it down into lengths of max 1 meter.

WARNING

Do not leave the SHR3D IT in operation unattended.

WARNING

Single person lift could cause injury. Use assistance when moving or lifting.

WARNING

Never modify or manipulate any of the safety switches or other components of the machine, this can cause extremely dangerous situations.

WARNING

Only use the SHR3D IT with the 3devo hopper mounted on the machine.

WARNING

Never change or remove guards when the machine is powered.

WARNING

Inspect datasheets of the to be processed materials for flammability. Some plastics can emit flammable dust or gasses that have potential ignition risks. Always make sure to have a fire extinguisher nearby and know how to use it.

CAUTION

The machine is designed to process plastics only. Any non-plastic materials that are inserted in the machine can cause the machine blades to degrade fast. Non-plastic materials can also damage the machine itself. Always make sure the plastic parts do not contain any non-plastic pieces or particles.

CAUTION

Never use the Shredder compartment latch when the Filter screen is not installed.

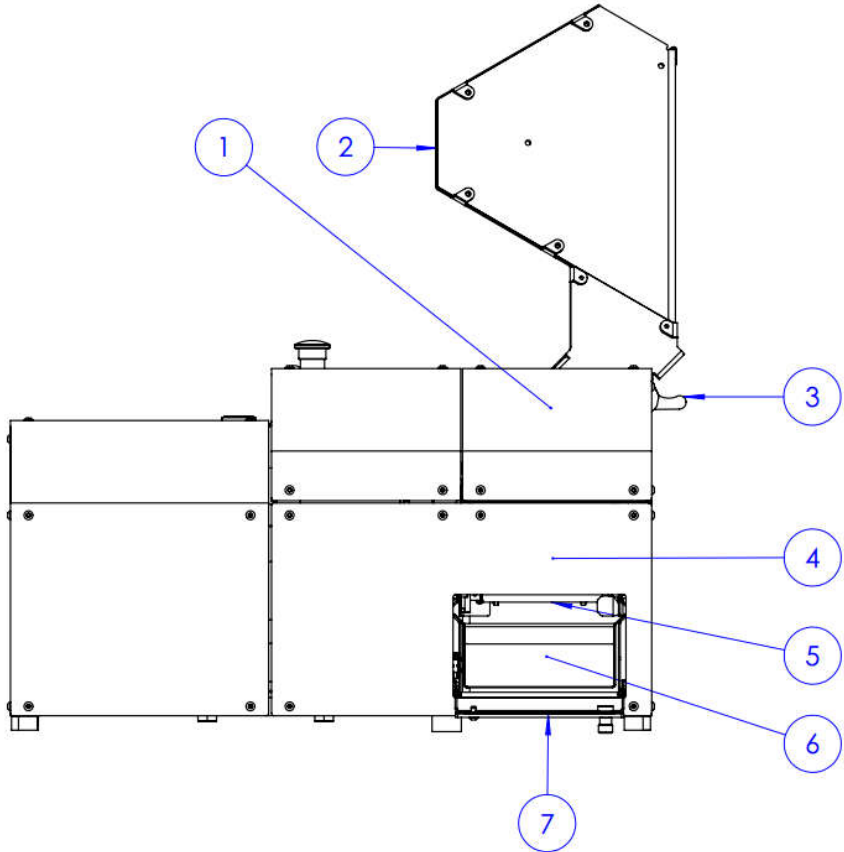
3devo

CAUTION

Check if the voltage in your power socket corresponds to that of the purchased product. Consult the sticker on the back of the machine.

2. OVERVIEW

2.1. MACHINE FEATURES



1. Shredder compartment

The Shredder compartment is the compartment where the first stage of the plastic processing happens. The shredder is designed to shred, cut and tear chunks of plastic waste into smaller chunks so that the Granulator compartment (4) can do its own operation easier.

3devo

2. Hopper

The hopper prevents the user from getting in contact with the shredder blades and prevents plastic waste from escaping the machine.

3. Hopper locking lever

The Hopper locking lever allows the user to assemble and disassemble the hopper safe and easy. The Hopper locking lever is a safety system for both holding the hopper in place and preventing the user from entering his/her hands in a running shredder. This way, the machine can only be used, if the hopper is placed correctly.

4. Granulator compartment

Plastic chunks inside of the granulator compartment are being cut until the granules are small enough to fit through the holes in the filter screen.

5. Shredder compartment latch

Pushing this latch allows the user to unlock the shredder compartment and lift it open.

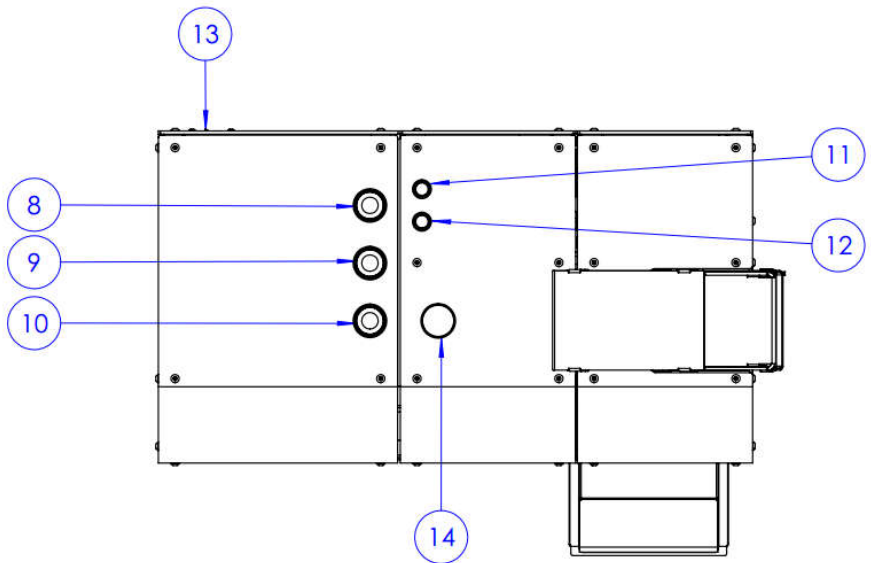
Never use the latch when the Filter screen is not installed.

6. Granulate collector

The granulate collector is placed below the Filter screen and collects all the granulate coming from the granulator compartment. Open the interlock guard and pull the granulate collector out to store your granulate.

7. Interlock guard

In order to reach the granulate collector, the interlock guard must be opened first. The interlock guard can be opened by simply pulling the button in the top right corner. The emergency break circuit is activated when the interlock guard is opened with the machine running. Therefore it is important to turn off the machine before opening the interlock guard.



8. Start button (green):

To start the machine, hold the Start button for 1 seconds. The machine is ready to start when both indicator lights are on.

The shredder- and granulator compartment will both rotate forward. The machine will not start if;

3devo

- the hopper is not mounted correctly on the machine,
- the filter screen is not installed correctly
- the shredder compartment is not closed correctly
- the interlock guard is not closed,
- the motor temperature has been too high,
- the motor current has been too high,
- the switch on the power entry module is “O”
- the power cable is not plugged in

It is advised to empty the granulator compartment before starting the machine.

9. Reverse button (white):

Hold the Reverse button for one second to start the machine in reverse. Note that the machine first has to be shut down using the Stop button if the machine was already rotating. When the machine is running in reverse, the granulator shaft is deactivated since the granulator is only effective in the forward direction. The button will emit white light. This reverse feature is to be used for two reasons:

- To get a new grab on difficult shapes of materials
- To free the shredder blades from the material if it gets stuck.
- To roughly clean out the shredder compartment from big chunks around the shredder shaft.

The same starting conditions as on the Start button apply to the Reverse button.

10. Stop button (red)

Press the stop button to turn the machine off. Note that the red button will emit light if the machine is turned off but is connected to the power socket.

11. High temperature indicator

When the high temperature indicator light is turned off, it means that the machine was stopped due to an overheated motor. This can occur when the temperature of the motor is above 80 degrees Celsius. If the machine turned off for this reason, it might take a while to let the motor cool down. Reset the High temperature indicator by pressing the Stop button. If both the Current indicator light and the High temperature indicator light are activated, the machine is ready to start. If the machine keeps turning off right after turning it on, the motor temperature is still too high and it need some time to cool down.

12. Current indicator

When the Current indicator light is turned off, it means that the machine was stopped due to a high current (i.e., a blocked shredder or blocked granulator). This can occur when the machine is overloaded. Check if the Shredder or Granulator compartment is blocked. The indicator light can be reset by pressing the Stop button. Please note that if the machine is reset, and the machine is still blocked, the machine might immediately turn off again.

When the motor turns off due to high current it is important to first resolve the cause of the block.

13. Power entry module

3devo

Press the switch to ("I" mode) to power on the machine. The red light of the Stop button will turn on. Press the switch to ("O" mode) to disconnect all power from the machine. The red light of the Stop button will now turn off as well.

14. Emergency button

The emergency button cuts off all power from the machine. Resetting this knob can be done by rotating the knob counter clockwise.

2.2. INCLUDED ACCESSORIES



Quick start guide



Power cable (230 V or 120 V)



Hopper



Granulate collector



Filter screen 4 mm holes
(already installed)



2.3. OPTIONAL ACCESSORIES

- Granulator rotary knives
- Granulator stator knife
- Extra granulate collector
- Extra hopper
- Filter screen 3 mm holes

2.4. TECHNICAL SPECIFICATIONS

Type	SHR3D IT
Color	Black powdercoated
Weight	35 kgs
Dimension with hopper	585 mm (23.0 in) x 310 mm (12.2 in) x 620 mm (24.4 in) (Width x Depth x Height)
Dimension without hopper	550 mm (21.7 in) x 310 mm (12.2 in) x 310 mm (12.2 in) (Width x Depth x Height)
Operating temperature	0 C to +55 C
Capacity	5.1 kg polymers / hour
Speed	9 rpm shredder / 750 rpm granulator
Power	1100 W / (230 V 50 Hz) or (110 V 60 Hz)



3. INSTRUCTIONS

CAUTION

The manufacturer is not liable for any problems caused by the user's failure to observe these instructions. Wrong use of the machine or manipulating safety switches may lead to severe injuries or failure of the machine.

3.1. QUICK USER GUIDE

For the fast starters out there we have made a short and simple out of the box quick start guide. This is shipped in your NEXT extruder accessory box, or you can download it from www.3devo.com/manuals

3.2. INSTALLATION INSTRUCTIONS

- Place the machine on a flat stable surface close to a power socket. Make sure the fuses are rated on at least 15A
- Push hopper locking lever down and slide hopper inside. Release lever to lock the hopper in place
- Open interlock guard
- Slide the granulate collector in
- Close interlock guard
- Plug in the power cable and turn on the power switch at the back of the machine
- Check if both indicator lights are turned on
- Press the green button down for one second to start the machine.

- Throw in plastic parts and wait until the part is processed into granulate.
- Turn the machine off and open the interlock guard to slide out the granulate collector.

3.3. PREPERATION INSTRUCTIONS

Before turning plastic waste into granulate. The following steps must be taken:

Inspect the plastic parts for any impurities such as other types of plastic, non-plastics or dust. Remove as much as possible to prevent any damage to the machine and keep the output material as pure as possible.

If SHR3D IT is used before with different materials, clean out the machine first. More information about cleaning the machine can be found in Chapter 3.4.5.

Break the material down to chunks that fit through the hopper opening. The smaller the chunks, the easier the shredder can process the material.

3.4. ADJUSTING AND MAINTENANCE

For all adjustments and maintenance to the machine, make sure to turn the machine off and remove the power cable.

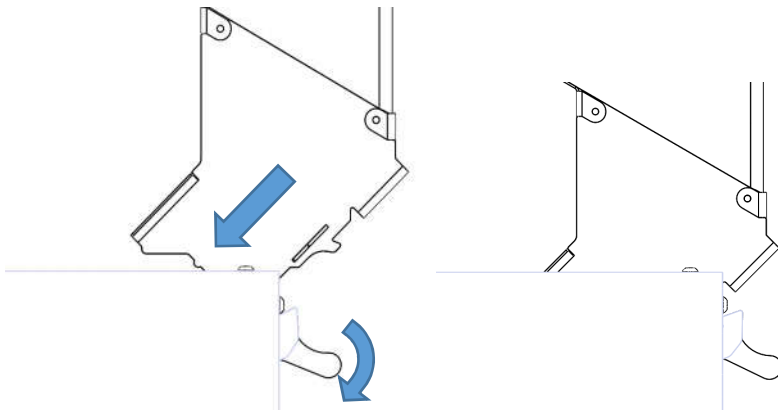
3.4.1. INSTALLING AND REMOVING THE HOPPER

Removing the hopper is useful in the following situation:

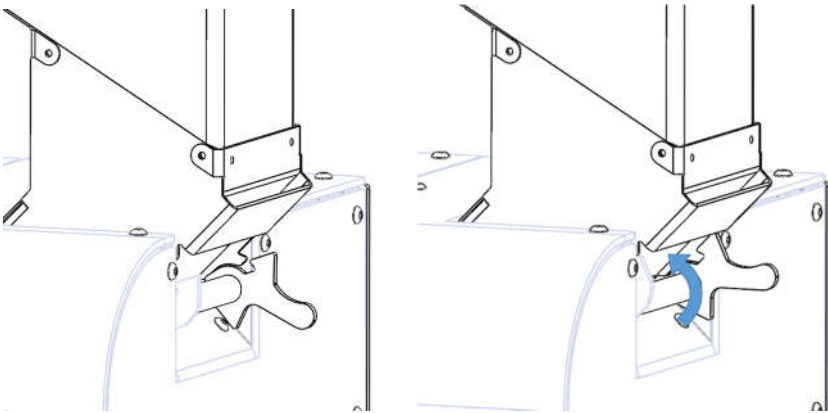
- Circular parts or waste with big diameters for example, are difficult to be grabbed by the shredder teeth. On the contrary, extremely flat objects can lay still on the shredder stator knife after the shredder took a bite out of it.
- When the shredder is not powerful enough to shred a solid chunk of waste, the machine will deactivate. After reversing the rotational direction of the shredder followed by removing the hopper, the part can be removed from the machine.

The hopper can be installed and removed really easy.

Step 1. To install the hopper, push the Hopper locking lever down and slide the hopper.

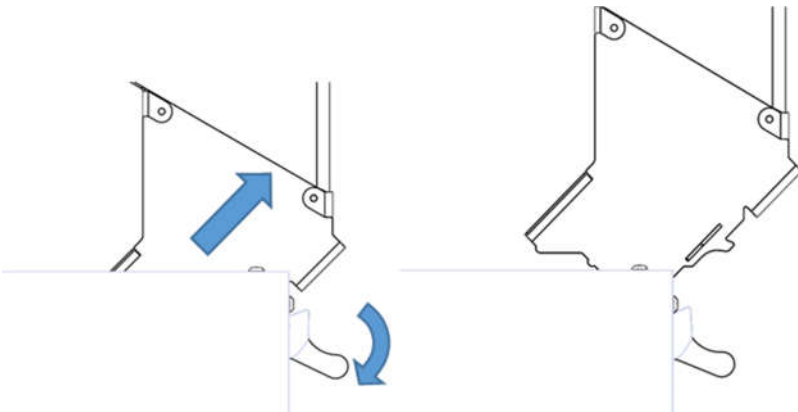


Step 2. Release the Hopper locking lever



To remove the hopper from the machine, make sure that the shredder compartment is empty from big chunks. If the shredder compartment isn't empty, let the machine run in reverse first.

Step 1. Push the Hopper locking lever down and slide the hopper out.



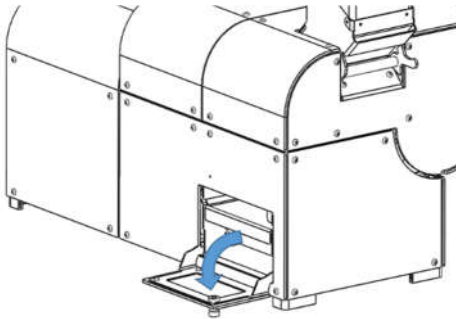
3.4.2. OPENING THE MACHINE

Opening the machine is really useful for adjustment and/or cleaning purposes.

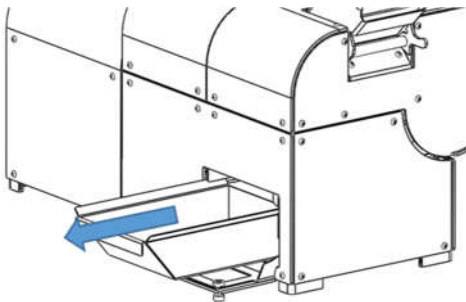
Step 1. Remove power plug from machine

Step 2. Slide in the hopper

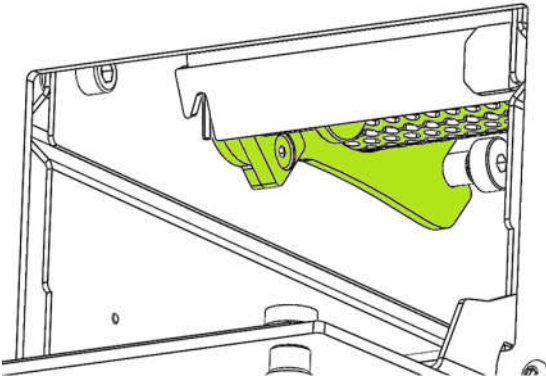
Step 2. Open the interlock guard



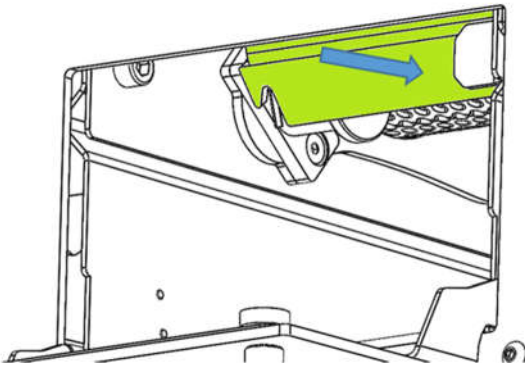
Step 3. Remove the granulate collector.



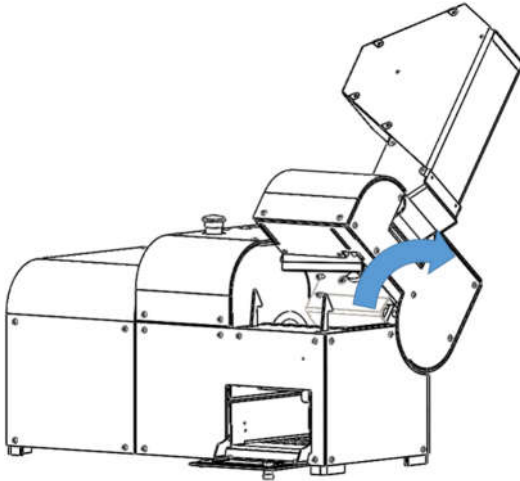
Step 3. Check if the Filter screen is inside of the machine.



Step 4. Push the Shredder compartment latch towards the back of the machine with the palm of the hand. Hold the Filter screen with the tops of your fingers to assist the pushing force.



Step 5. While the Shredder compartment latch is pushed forward, tilt the Shredder compartment open 90 degrees.



3.4.3. REMOVING AND MOUNTING FILTER SCREEN

In order to clean out the Granulator compartment dismounting the Filter screen is highly recommended. The Filter screen is placed underneath the granulator knives and is visible when the Interlock guard is opened. Different Filter screens can be used to create different granule sizes. The machine can only be turned on when the Filter screen is placed in the correct way.

When replacing the Filter screen, always open the shredder compartment first. The reason for this is that the Filter screen can be mounted back into the machine a lot easier when the shredder compartment is opened than when it is closed. Furthermore, it is much safer to open the shredder compartment when the Filter screen is still in place.

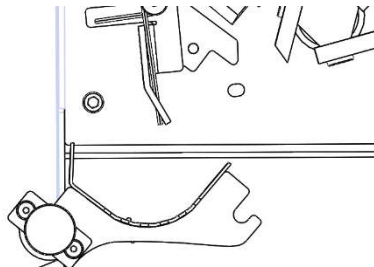
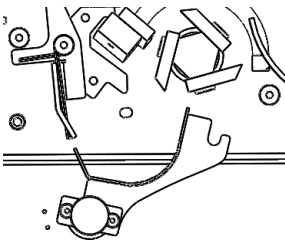
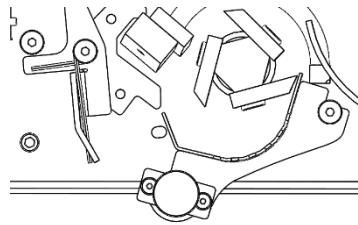
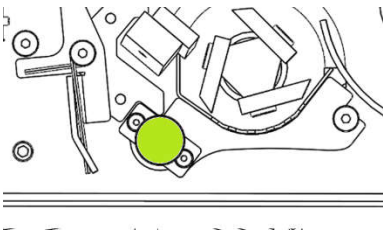
Step 1. Remove power plug from machine

Step 2. Open Interlock guard

Step 3. Take out the granulate collector

Step 4. Push the shredder compartment latch and tilt the shredder compartment open (as explained in 3.4.2).

Step 5. Reach for the two plunger knobs attached to the Filter screen and pull them toward each other [1]. The Filter screen can now be rotated down [2] and pulled out of the machine [2 & 3] and release the two plunger knobs.

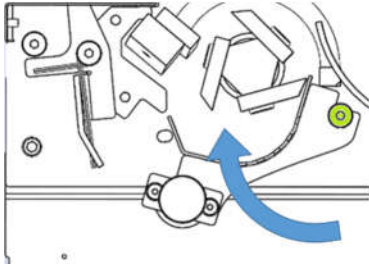


Step 6. To mount the Filter screen back in, simply do step 5 reversed.

Now that the machine is still opened, two small shafts on the sides are visible in the back of the granulator shaft. Aim the two half slots on the

3devo

back of the Filter screen at the two shafts and rotate the front part of the Filter screen up until the plungers click in place.



3.4.4. ADJUSTING THE STATIC GRANULATOR KNIFE

The granulator knives are wear components, they will become blunt after processing for a long time. When processing very hard materials or non-plastics the life span of the knives is drastically reduced.

Replacing them is necessary to have the optimal efficiency.

WARNING

Always wear cutting proof hand protection when working with the granulator knives.

3.4.5. CLEANING THE MACHINE

Step 1. Switch the machine on and let it run until the granulator stops processing granulate. *This can be heard by the decreasing noise or checked by regularly turning off the machine and checking the granulate collector.*

Step 2. Switch the machine on in reverse for a few rotations of the shredder blades. Now repeat step 1.

WARNING

Make sure the machine is turned off and the power plug is removed before proceeding with the next steps!

For the manual cleaning in the next steps the following tools can be used for removal of dust and plastic: Brush, Screwdriver (or similar object), pressurized air and a vacuum cleaner

Step3. To clean the top part of the shredder compartment remove the hopper and clean all visible pieces.

Step 4. Open the granulator compartment to clean the bottom part of the shredder compartment.

Step 5. Remove filter screen and clean the granulator knives. They can now be turned by hand using protective gloves.

Step 6. Finally clean the granulator compartment and reinstall the filter.

3.4.6. REPLACING THE GRANULATOR KNIVES

WARNING

Always wear cutting proof hand protection when working with the granulator knives.

Step 1. The rotating granulator knives are positioned by shoulder screws. Apply Loctite 243 on the shoulder screws and tighten them with 30Nm.

Step 2. Adjust the stator knife so the gap between the rotating knives and the stator is paper thin and can move freely.

4. TROUBLESHOOTING

Trouble	Probable cause	Measures
Machine shuts off and material is stuck between shredder blade and its counterpart. The overcurrent indicator light is off.	Material is too strong to be shredded, overcurrent sensor triggered.	Run the machine in reverse and shut it down. Remove the hopper and take out the material. Reset the machine by pressing the stop button.
Machine shuts off and no material is visible between shredder blade and its counterpart. The overcurrent indicator light is off.	Granulator is blocked, overcurrent sensor triggered.	Wear cut resistant gloves, remove the filter screen and clean the granulator compartment before switching it on again. Reset the machine by pressing the stop button.
The machine shuts off and the temperature indicator light is off.	Motor reached maximum temperature. Temperature sensor triggered.	Let the machine cool down. After cooling the machine can be reset by pressing the stop button.
Machine turns off or won't start and all lights are off.	1: Machine is not connected to power. 2: One of the safety switches is triggered	1: Connect the machine to the wall socket and switch it on.

		2: Ensure that the following parts are in place and locked: The interlock guard, the filter, hopper and the shredder compartment.



5. TRANSPORTATION

Keep the original packaging. When the machine is shipped back to 3Devo for service or maintenance the machine should be packed in the same way as how it arrived.

For additional questions, please contact us via Service@3devo.com

6. NOTES

3devo

7. COMPANY INFO

3devo

3devo B.V.
Zonnebaan 12F
3542 EC Utrecht
The Netherlands
service@3devo.com
www.3devo.com