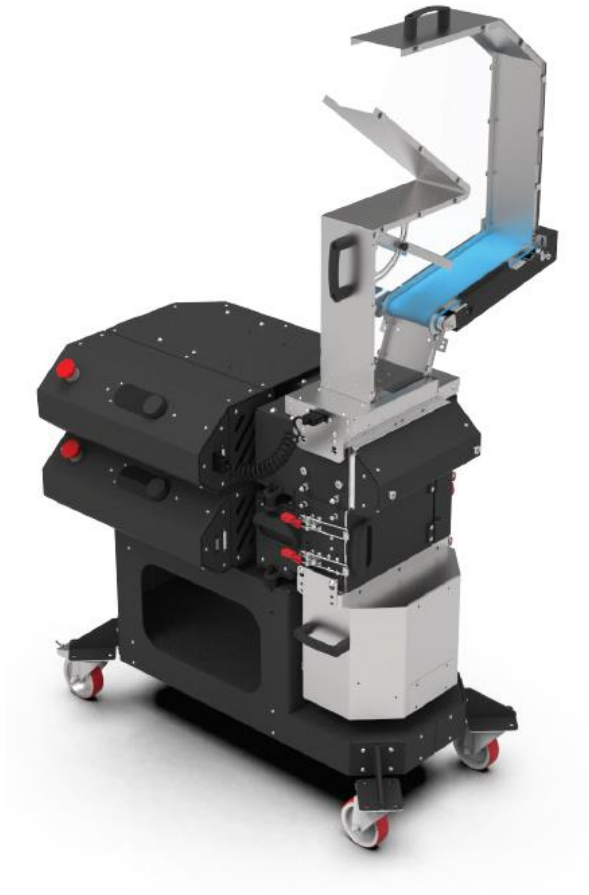


3devo

GP20 Hybrid



Version 2.0 – October 2023

English user guide

3devo

COMPANY INFO

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1. SAFETY INSTRUCTIONS

The GP20 Hybrid is a powerful and effective plastic processing machine, processing your plastic waste plastic to granulate. The processing process inside the GP20 Hybrid 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 the GP20 Hybrid. Especially processing hard materials will emit a lot of noise which may cause hearing loss.

WARNING

Always inspect datasheets of 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 GP20 Hybrid in operation unattended.

 **WARNING**

Single person lift could cause injury. Use assistance when lifting the machine or machine parts.

 **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 GP20 Hybrid 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**

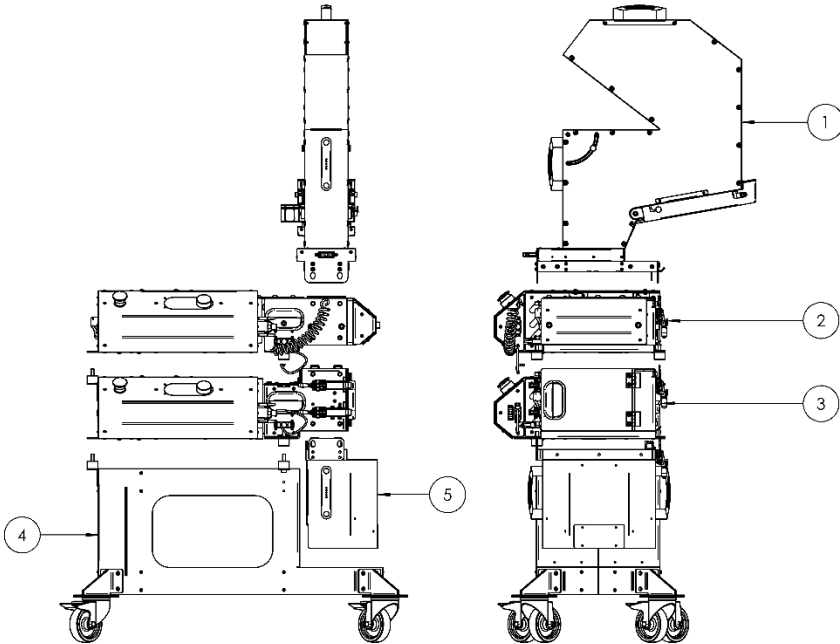
The machine is designed to process plastics only. Any non-plastic materials that are inserted in the machine can cause the machine blades to wear out fast. Non-plastic materials can also damage the machine itself. Always make sure the plastic parts do not contain any non-plastic pieces or particles.

 **CAUTION**

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

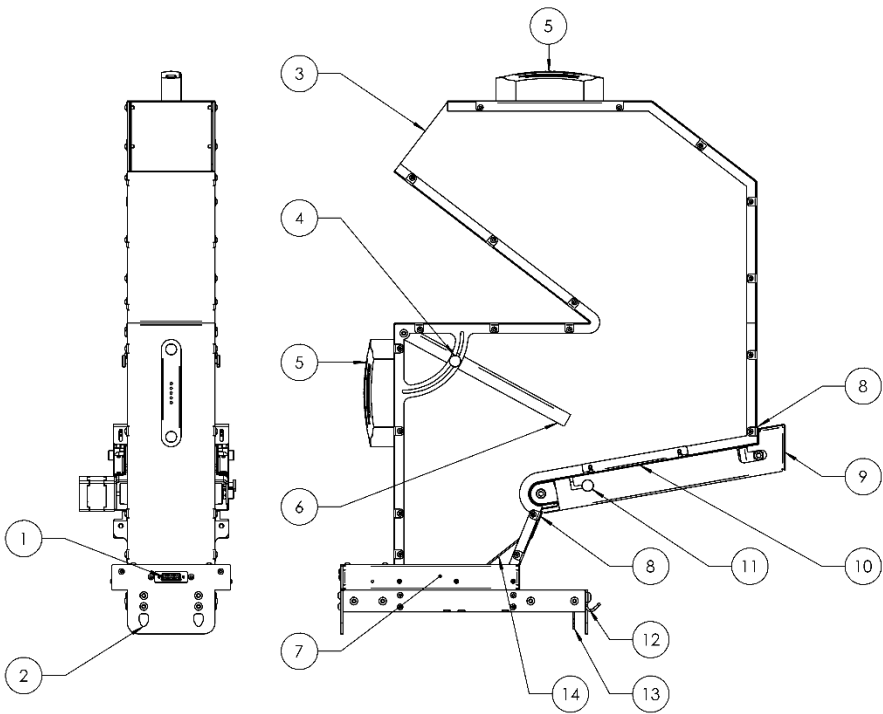
2. OVERVIEW

2.1. GP20 HYBRID OVERVIEW



- 1) Hopper
- 2) GP20 Shredder
- 3) GP20 Granulator
- 4) Trolley
- 5) Container

2.1.1. HOPPER OVERVIEW



The hopper prevents the user from getting in contact with the shredder blades and prevents plastic waste from escaping the machine. The Hopper uses a flat belt drive that helps feeding material to the GP20 Shredder and/or GP20 Granulator

- 1) Hopper connector
- 2) Mounting slots
- 3) Input
- 4) Thumb screw for changing the feeding aperture
- 5) Handlebar
- 6) Adjustable feeding aperture plate
- 7) Material detection sensor
- 8) Belt scraper
- 9) Belt cover

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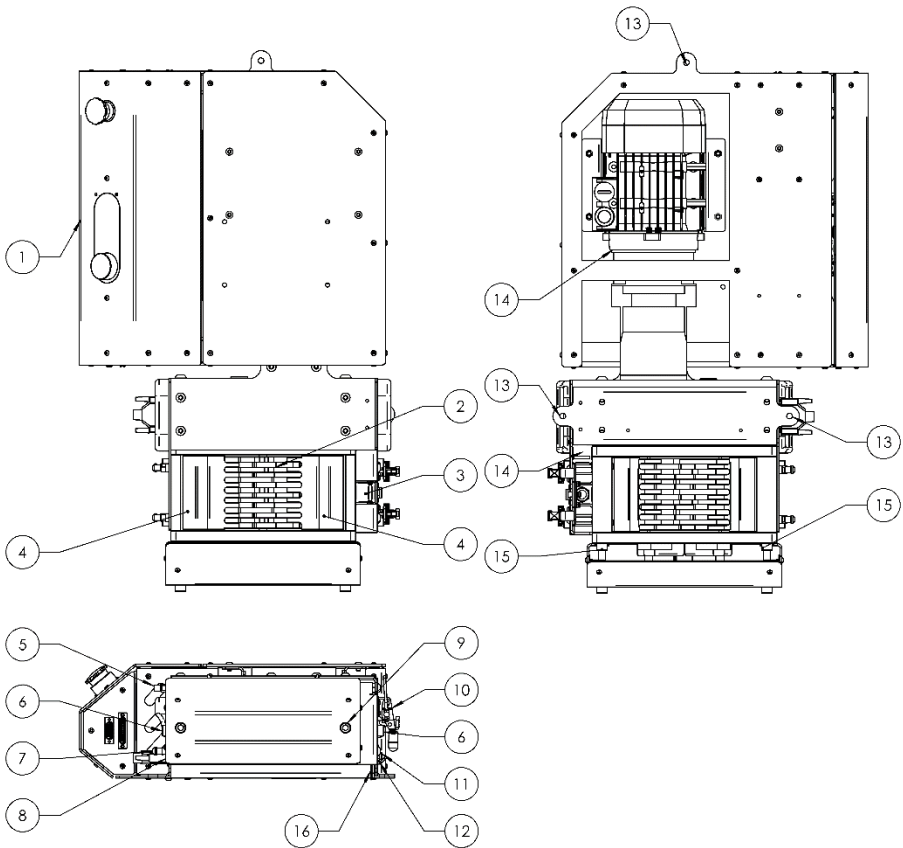
- 10) Conveyor belt
- 11) Thumb screw for fixing the belt cover
- 12) Hooks for toggle clamps
- 13) Safety sensor actuator

Only for GP20 Granulators

- 14) Granule guard

Read more about installing the Hopper in chapter [3.3.2](#)

2.1.2. GP20 SHREDDER OVERVIEW



- 1) Control box
- 2) Shredder blades
- 3) Hopper detection sensor
- 4) Scraper comb
- 5) Positioning pin for hopper
- 6) Bolts for fixing scraping combs
- 7) Positioning pin for container
- 8) Control box connector
- 9) Bolts for front cover (for removing/installing shredder blades)

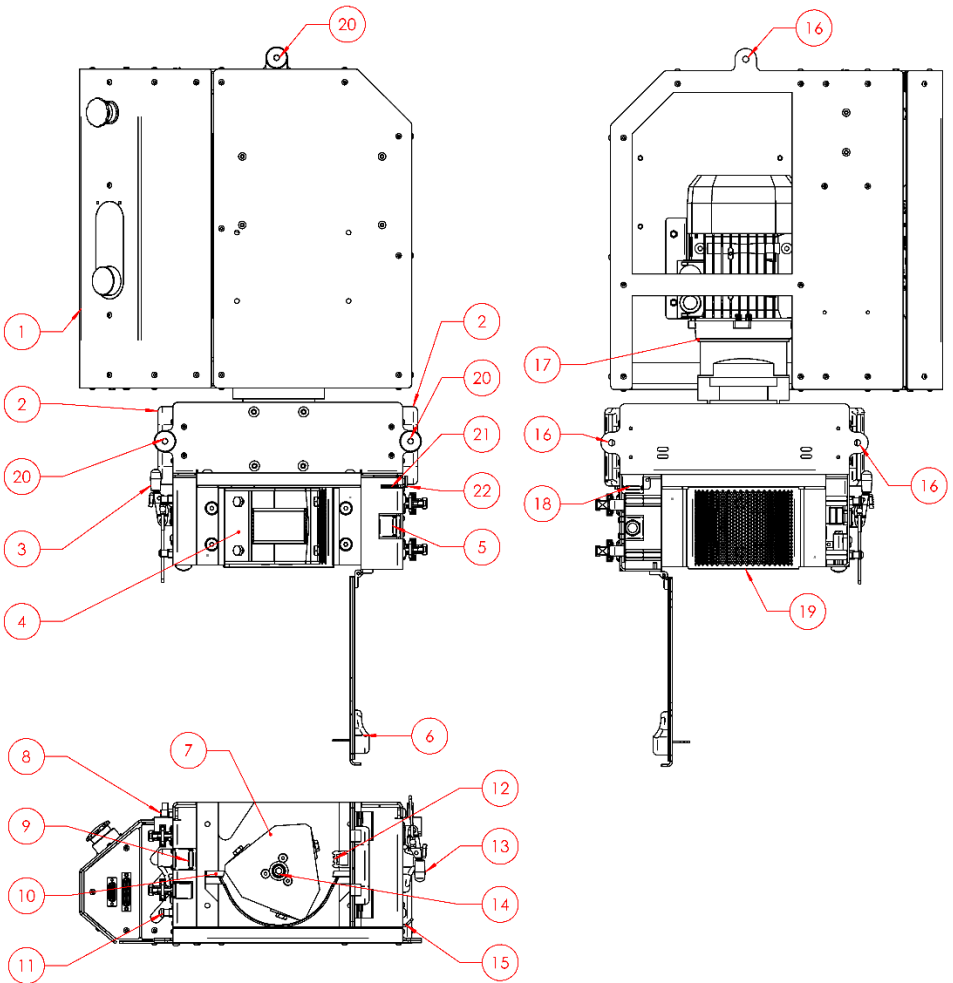
- 10) Toggle clamps
- 11) Thumb screw for safety actuator
- 12) Hooks for toggle clamp of Container or GP20 Granulator
- 13) Positioning holes for Trolley or GP20 Granulator
- 14) Motor
- 15) Bolts for front plate (for removing / installing shredder blades)

Only used for GP20 Hybrids

- 16) Safety sensor actuator for GP20 Granulator

Read more about installing the GP20 Shredder in chapter [3.2.2](#)

2.1.3. GP20 GRANULATOR OVERVIEW



- 1) Control box
- 2) Handlebar
- 3) Toggle clamp
- 4) Rotary knife

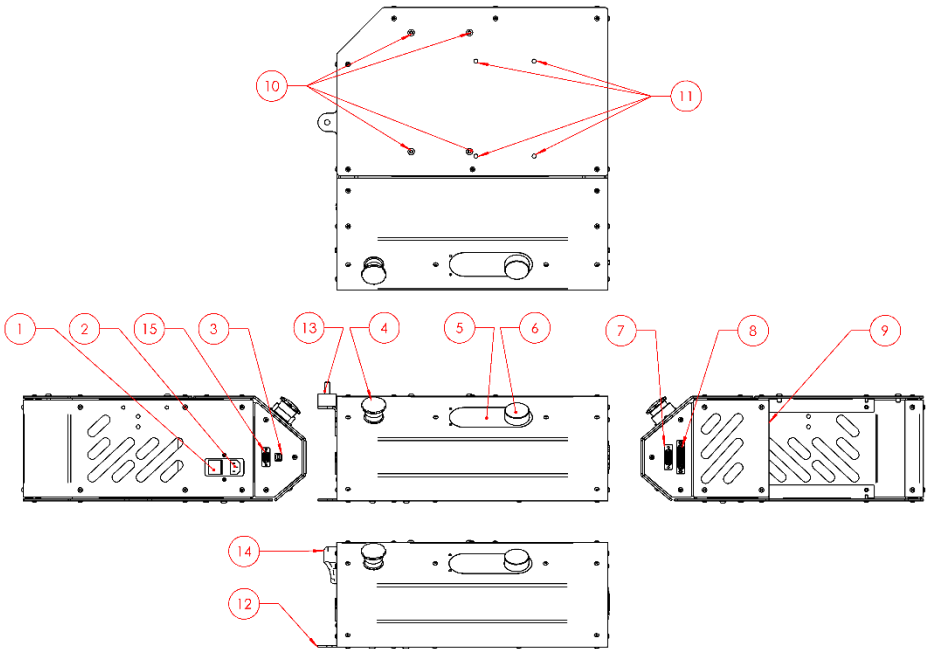
- 5) Hopper detection sensor (or GP20 Shredder detection sensor for GP20 Hybrid setup)
- 6) Door handle
- 7) Rotor
- 8) Positioning pins for hopper
- 9) Door detection sensor
- 10) Granulator stationary knife
- 11) Positioning pins for Container
- 12) Actuator for door detection sensor
- 13) Toggle clamps for hopper (or GP20 Shredder for GP20 Hybrid setup)
- 14) Bolt for removing/installing the Rotor
- 15) Hook for Container toggle clamps
- 16) Positioning holes for Trolley
- 17) Motor
- 18) Container detection sensor
- 19) Filter screen

Only for GP20 Hybrid:

- 20) Positioning pin for GP20 Shredder
- 21) Actuator for GP20 Shredder detection
- 22) Thumb screw for GP20 Shredder detection

Read more about installing the GP20 Granulator in chapter [3.2.3](#)

2.1.4. CONTROL BOX OVERVIEW

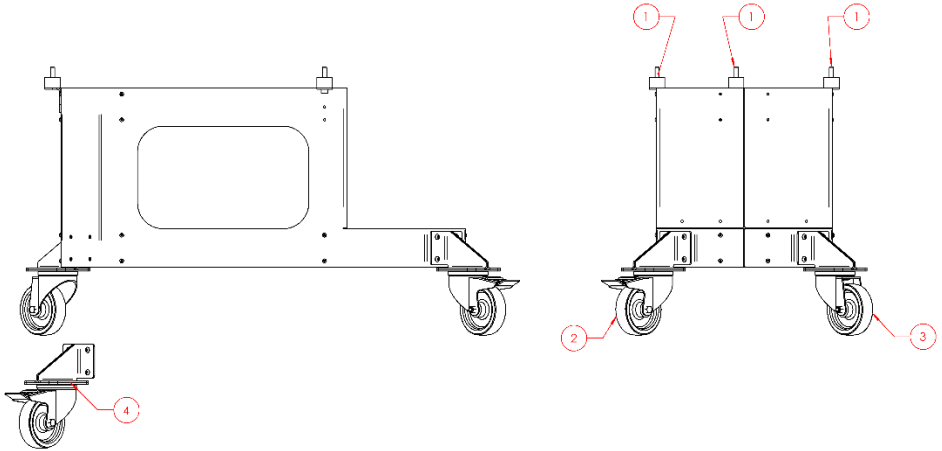


- 1) Power switch
- 2) Power inlet
- 3) USB port
- 4) Emergency button
- 5) User Interface
- 6) Control knob
- 7) Hopper port
- 8) Safety circuit port
- 9) Motor cable port
- 10) Mounting holes (only used for GP20 Shredder)
- 11) Mounting holes (only used for GP20 Granulator)
- 12) Positioning hole for Trolley (or Control box / Granulator in GP20 Hybrid mode)
- 13) Positioning pin (Only used in GP20 Hybrid mode)

14) Handlebar (Only used for GP20 Shredder or GP20 Granulator)

15) Machine link port (Only used in GP20 Hybrid mode)

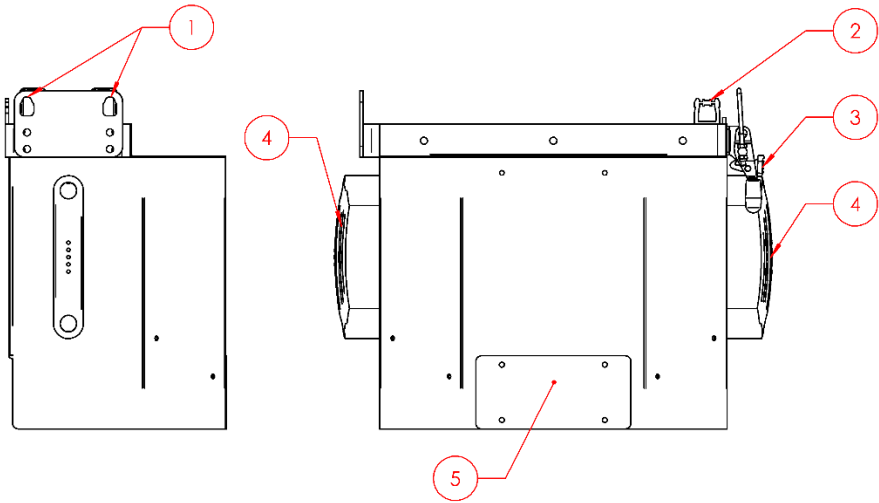
2.1.5. TROLLEY OVERVIEW



- 1) Positioning pins for GP20 Shredder or GP20 Granulator
- 2) 2x Wheel with brakes
- 3) 2x Wheel without brakes
- 4) Wheel assembly

Read more about installing the Trolley in chapter [3.2.1](#)

2.1.6. CONTAINER OVERVIEW



- 1) Positioning slots for GP20 Granulator or GP20 Shredder
- 2) Actuator for GP20 Shredder or GP20 Granulator safety sensor
- 3) Toggle clamps
- 4) Handlebar
- 5) Container lid

Read more about installing the Container in chapter [3.3.1](#)

2.2. ACCESSORIES

2.2.1. GENERAL ACCESSORIES

- 1x Hopper
- 1x Trolley
 - 2x Wheel assembly without brake
 - 2x Wheel assembly with brake
 - 16x Button head screw M6 x 20
 - 16x M6 washer
 - 16x M6 lock nut
- 1x Container
- 10mm wrench
- 13mm wrench
- 4mm Allen key
- 8mm Allen key

2.2.2. GP20 SHREDDER ACCESSORIES

- 1x Power cable
- 1x USB cable
- 2x Safety circuit cable
- 2x Scraper combs
- 4x Hexagon head screws M6 x 20
- 4x Button head screws M6 x 20
- 3x M8 lock nut
- 3x M8 washer

2.2.3. GP20 GRANULATOR ACCESSORIES

- 1x Power cable
- 1x USB cable
- 2x Safety circuit cable
- 4x Hexagon head screws M6 x 20
- 4x Button head screws M6 x 20
- 3x M8 lock nut
- 3x M8 washer
- 1x Rubber rotor blocker
- 1x Granule guard

2.2.4. GP20 HYBRID ACCESSORIES

- 1x Machine link cable
- 3x Positioning studs
- 3x Hexagon head screws M8 x 14
- 3x M8 washer

2.2.5. OPTIONAL ACCESSORIES

- 2 teeth shredder blades
- 3 teeth shredder blades
- 7 teeth shredder blades

2.3. TECHNICAL SPECIFICATIONS

Internal	3.5mm filter screen
	14 blades (Combination of 2, 3 and 7 teeth blades are possible)
Intelligent Features	Smart control
	Material specific settings
Energy consumption granulator	AC 220-240Vac 50/60Hz – 1200 Watt
Energy consumption shredder	AC 220-240Vac 50/60Hz – 1200 Watt
Energy consumption granulator (USA)	AC 110-120Vac 50/60Hz – 1500 Watt
Energy consumption shredder (USA)	AC 110-120Vac 50/60Hz – 1500 Watt
Dimensions	95 x 75 x 145 cm
Dimensions of top hopper opening	120 x 114 mm
Weight GP20 Hybrid	125 kg
Weight GP20 Shredder	85 kg
Weight GP20 Granulator	70 kg
Cleaning Rating	9/10 (compared to SHR3D IT)

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.

Before the main assemblies can be joined together, the GP20 Shredder and the GP20 Granulator have to be assembled first.

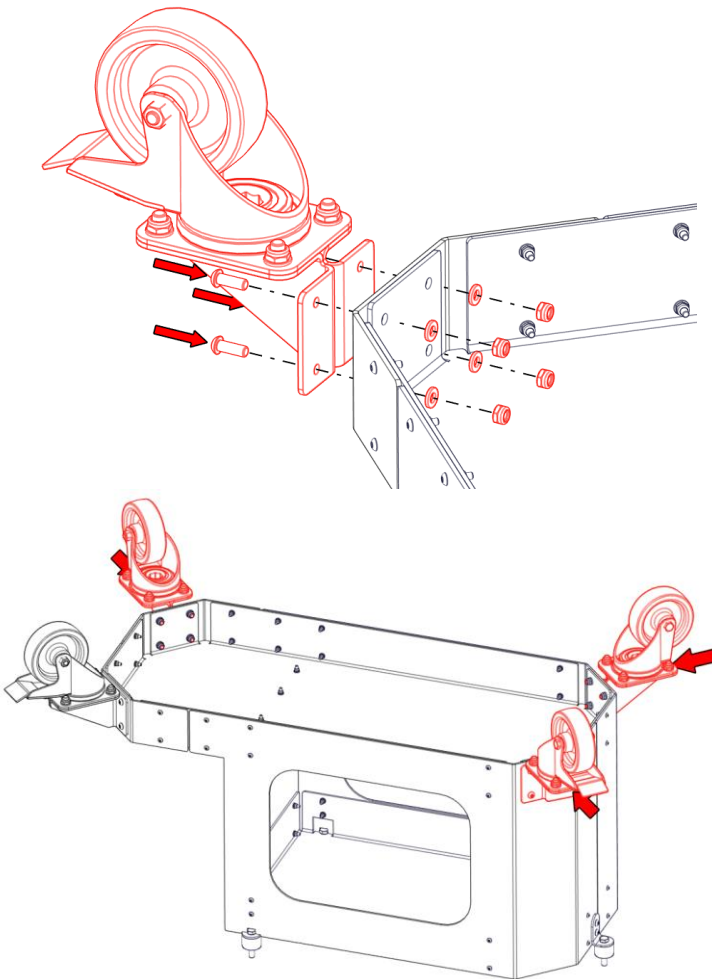
3.1. QUICK USER GUIDE

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 GP20 accessory box, or you can download it from www.3devo.com/manuals

3.2. INSTALLATION INSTRUCTIONS

3.2.1. INSTALLATION INSTRUCTIONS TROLLEY

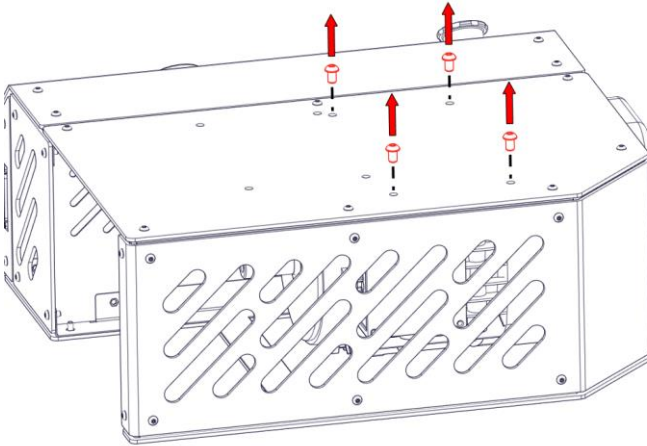
Step 1) Mount the *Wheel assemblies* to the *Trolley* using 4x button head screws M6 x 20, 4x washers and 4x lock nuts per *Wheel assembly*. The two *Wheel assemblies with brakes* should be positioned along the longest side of the *Trolley*. Do not tighten the bolts all the way yet.



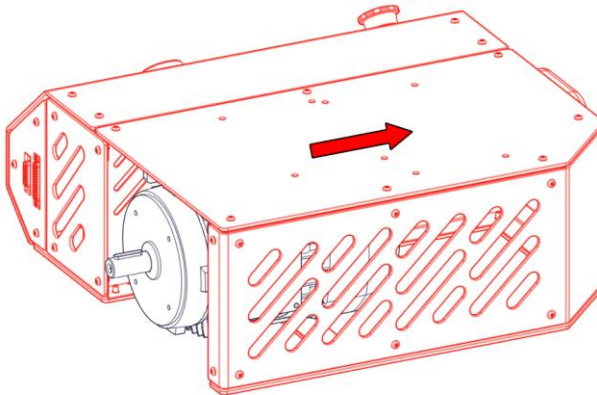
Step 2) If all the *Wheel assemblies* are in place, tighten the bolts fully

3.2.2. INSTALLATION INSTRUCTIONS GP20 SHREDDER

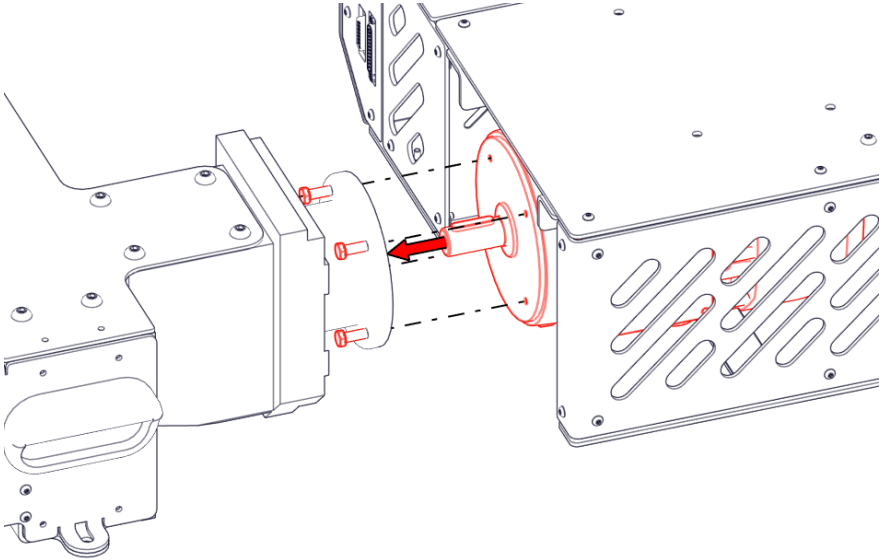
Step 1) Remove the four bolts on top of the *Control box / Shredder* assembly



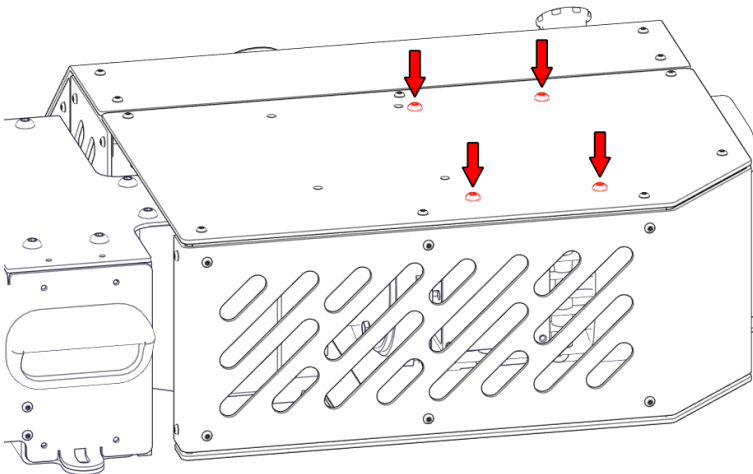
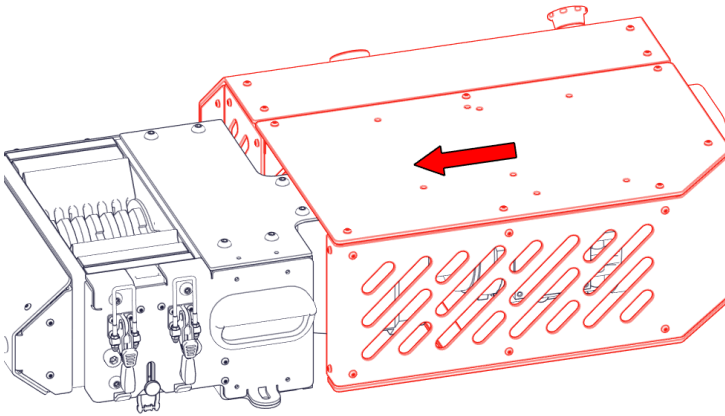
Step 2) Slide the *Control box / Shredder* away from the motor to create space around the motor flange.



Step 3) Mount the motor on the *Shredder compartment* and secure the two items with 4x hexagon head screws M6 x 20 (10mm wrench)



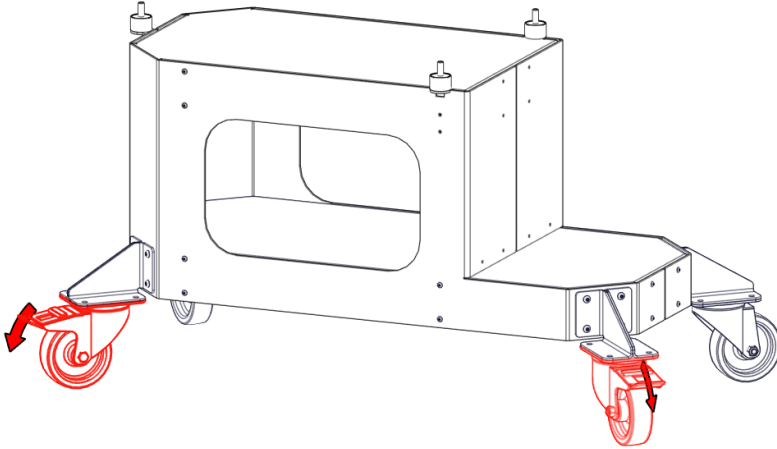
Step 4) Slide the Control box / Shredder back on and attach the *Control box / Shredder* to the motor using 4x button head screws M6x20 (4mm Allen key)



Step 5) Insert the *Scraper combs* in the *Shredder compartment* and tighten the 4 bolts on the sides using an 8mm Allen key. This will secure the *Scraper combs* in place. More information about this can be found in chapter [3.5.2.1](#).

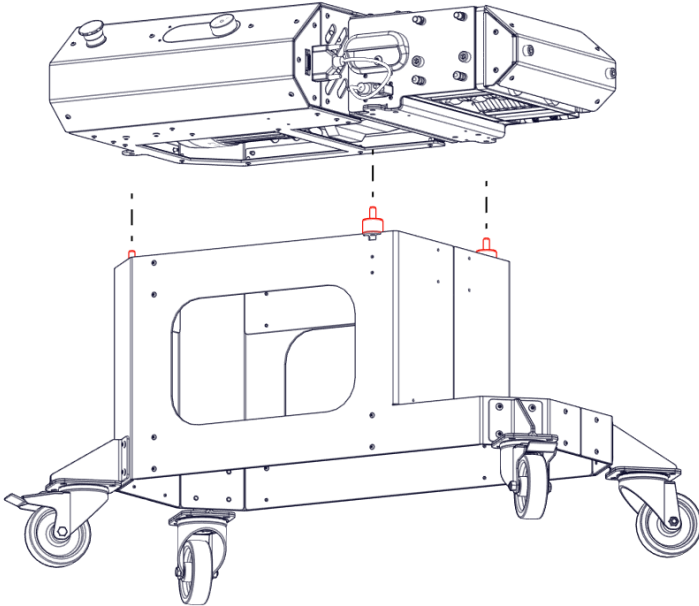
Step 6) Place the *Trolley* on a flat and stable place on the floor close to a power socket. Make sure the fuses are rated on at least 15A.

Step 7) Make sure the brakes on the wheels are secured.

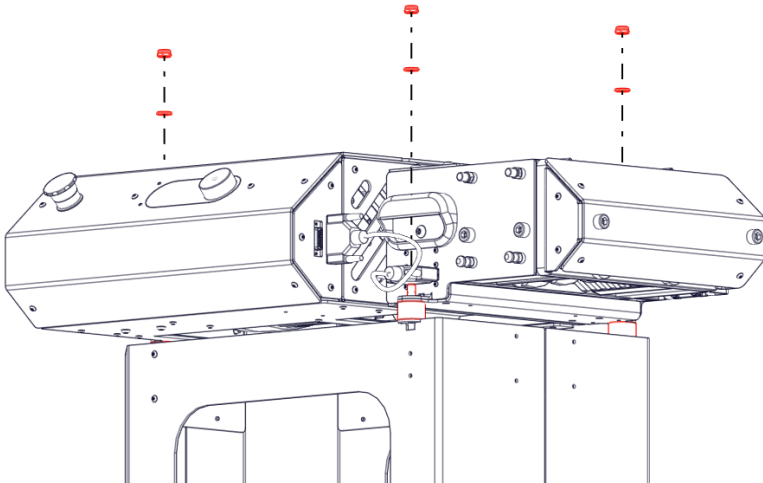


Locate the three mounting holes on the bottom of the *GP20 Shredder*. The holes should be positioned on the three threaded positioning studs on top of the *Trolley*

Step 8) Carefully lift the *GP20 Shredder* with two persons on top of the threaded positioning studs of the *Trolley*.

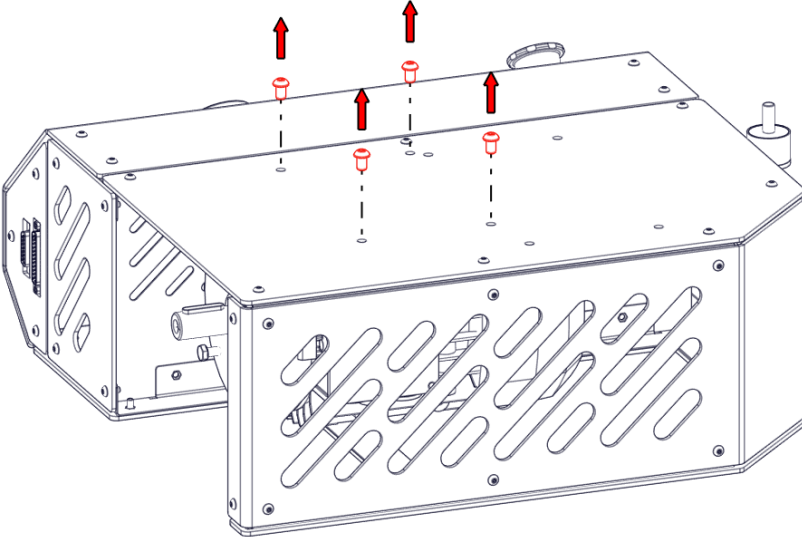


Step 9) Secure the *GP20 Shredder* in place by placing M8 washers and nuts on the threaded positioning studs

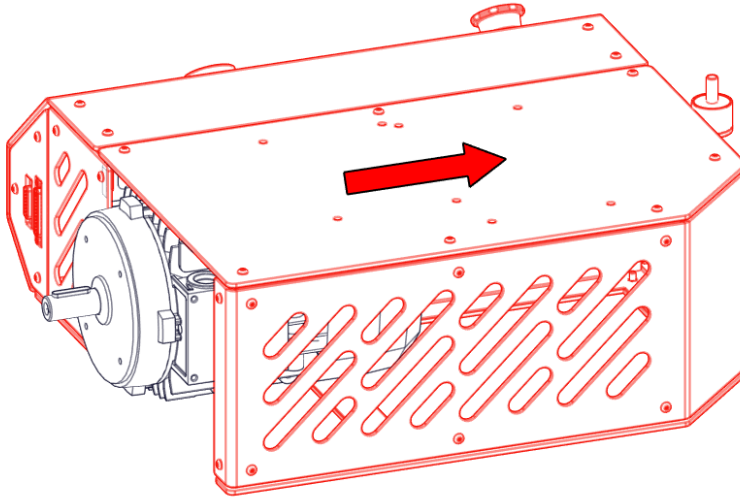


3.2.3. INSTALLATION INSTRUCTIONS GP20 GRANULATOR

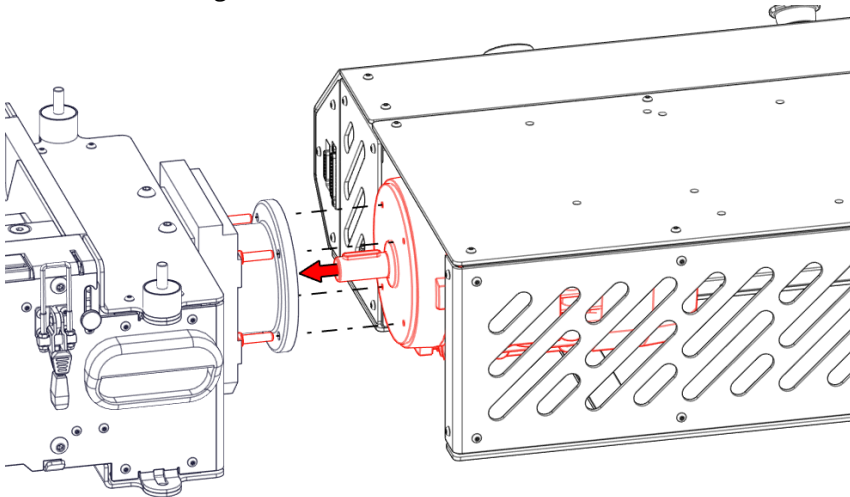
Step 1) Remove the four bolts on top of the *Control box / Granulator* assembly.



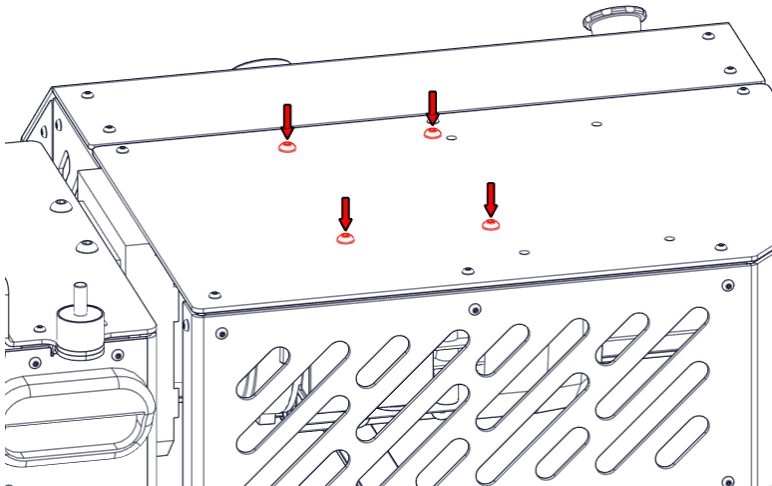
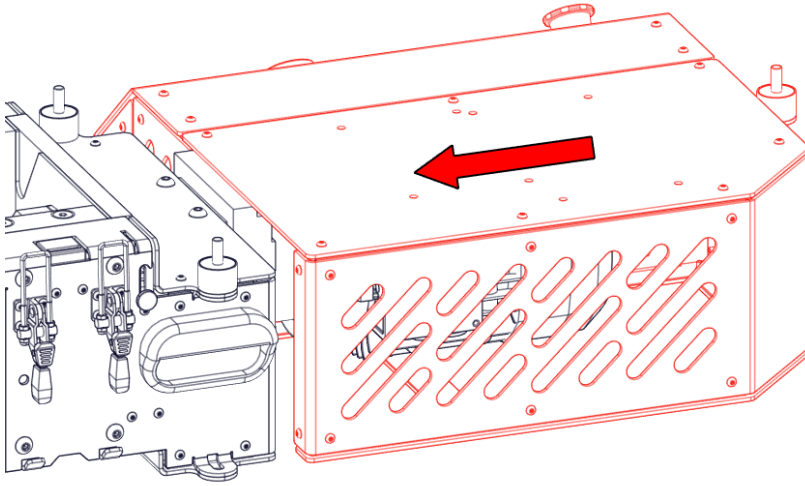
Step 2) Slide the *Control box / Granulator* away from the motor to create space around the motor flange.



Step 3) Mount the motor on the *Granulator compartment* and secure the two items with 4x hexagon head screws M6 x 20 (10mm wrench)

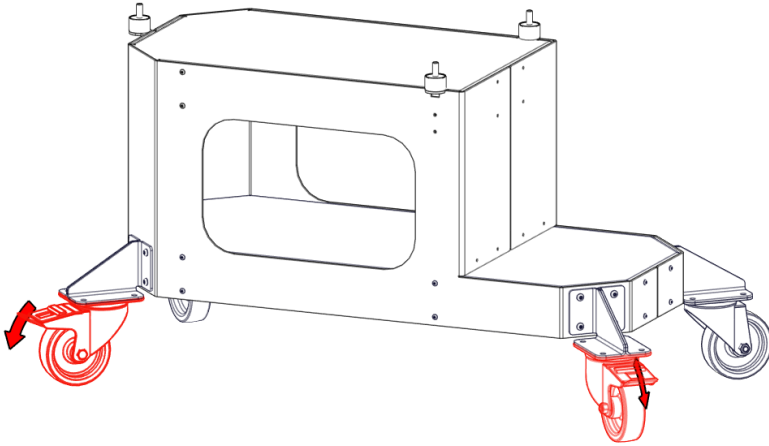


Step 4) Slide the *Control box / Granulator* back on and attach the *Control box / Granulator* to the motor using 4x button head screws M6 x 20 (4mm Allen key).



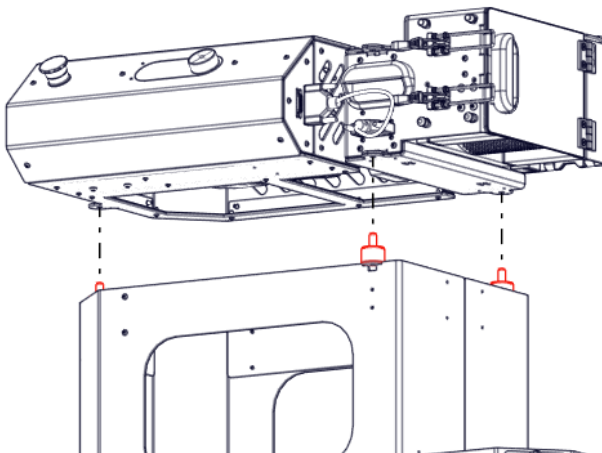
Step 5) Place the *Trolley* on a flat and stable place on the floor close to a power socket. Make sure the fuses are rated on at least 15A

Step 6) Make sure the brakes on the wheels are secured.

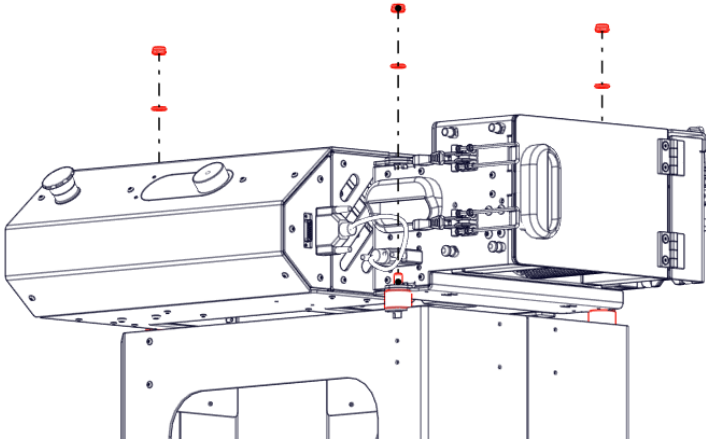


Step 7) Locate the three mounting holes on the bottom of the *GP20 Granulator*. The holes should be positioned on the three threaded positioning studs on top of the *Trolley*

Step 8) Carefully lift the *GP20 Granulator* with two persons on top of the threaded positioning studs of the *Trolley*.



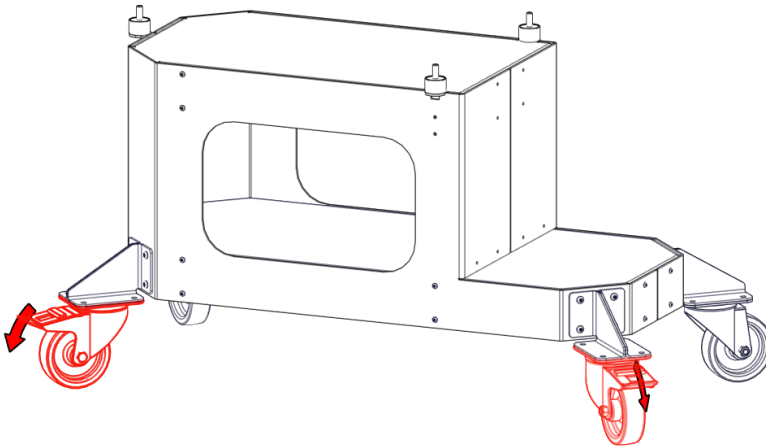
Step 9) Secure the *GP20 Granulator* in place by placing M8 washers and nuts on the threaded positioning studs.



3.2.4. INSTALLATION INSTRUCTIONS GP20 HYBRID

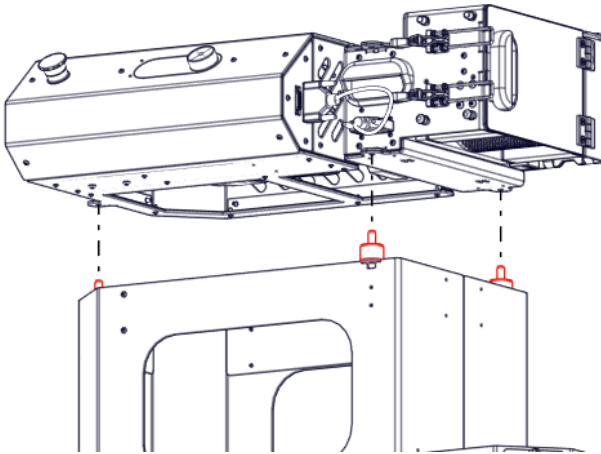
Step 10) Place the *Trolley* on a flat and stable place on the floor close to a power socket. Make sure the fuses are rated on at least 15A

Step 11) Make sure the brakes on the wheels are secured.

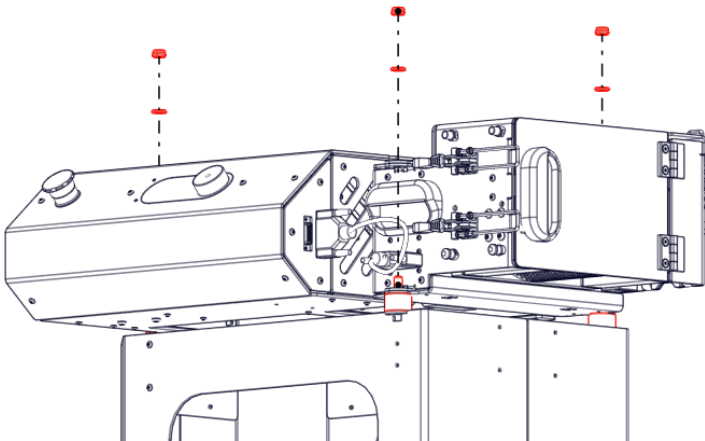


Step 12) Locate the three mounting holes on the bottom of the *GP20 Granulator*.
The holes should be positioned on the three threaded positioning studs on top of the *Trolley*

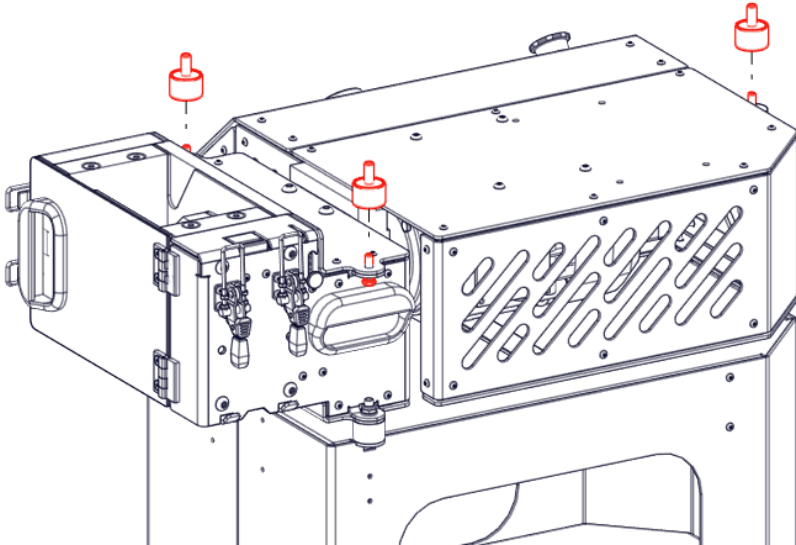
Step 13) Carefully lift the *GP20 Granulator* with two persons on top of the threaded positioning studs of the *Trolley*.



Step 14) Secure the *GP20 Granulator* in place by placing M8 washers and nuts on the threaded positioning studs.

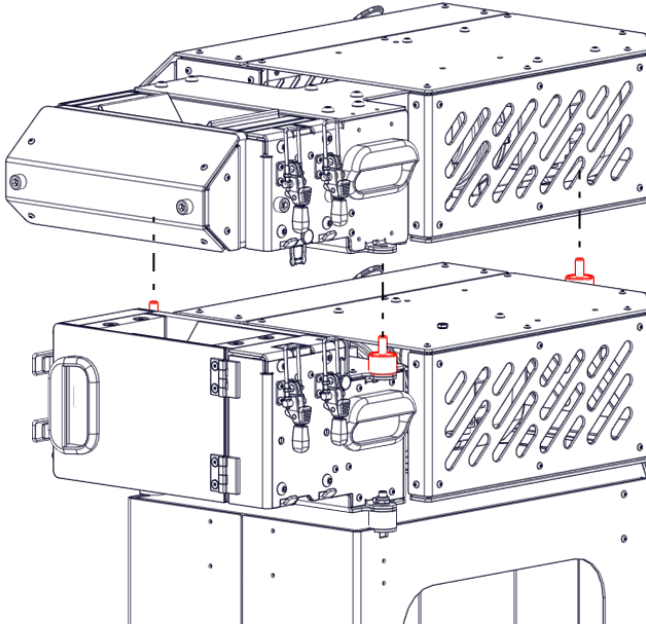


Step 15) Prior to placing the *GP20 Shredder*, mount three positioning studs on the *GP20 Granulator* using three M8 x 14 hexagon bolts and three washers.

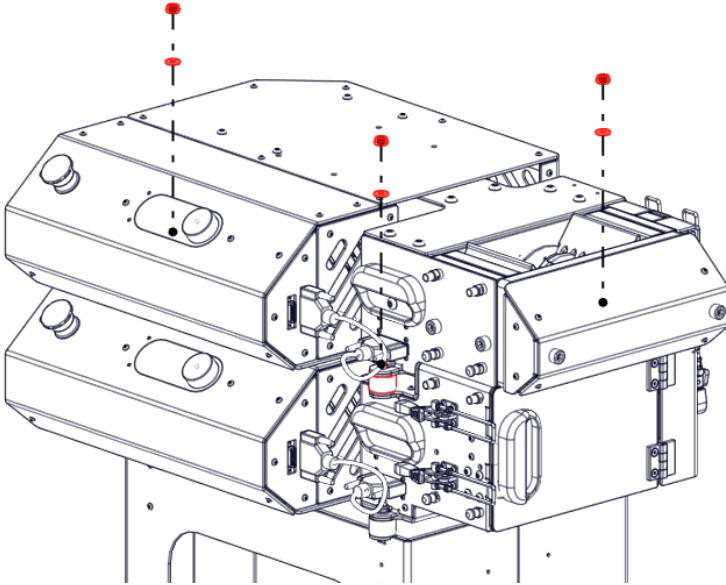


Step 16) Locate the three mounting holes on the bottom of the *GP20 Shredder*. The holes will be positioned on the three threaded positioning studs on top of the *GP20 Granulator*.

Step 17) Carefully lift the GP20 Shredder with two persons on top of the threaded positioning studs of the GP20 Granulator

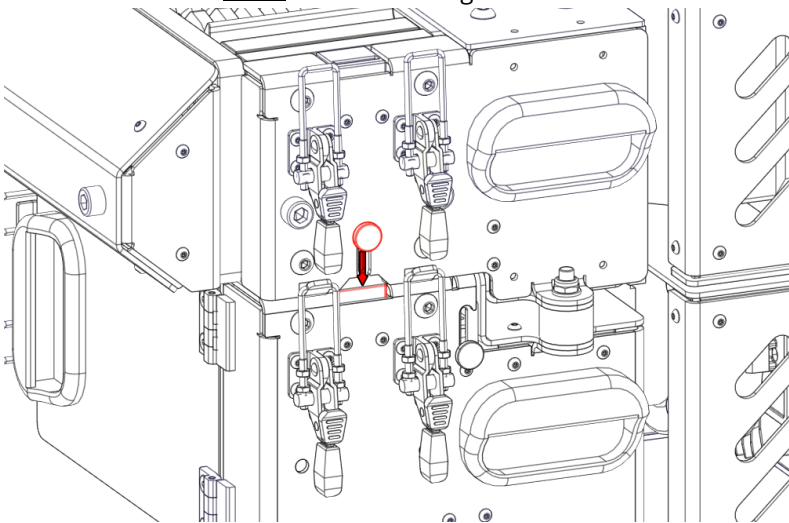


Step 18) Secure the GP20 Shredder in place by placing M8 washers and nuts on the threaded positioning studs

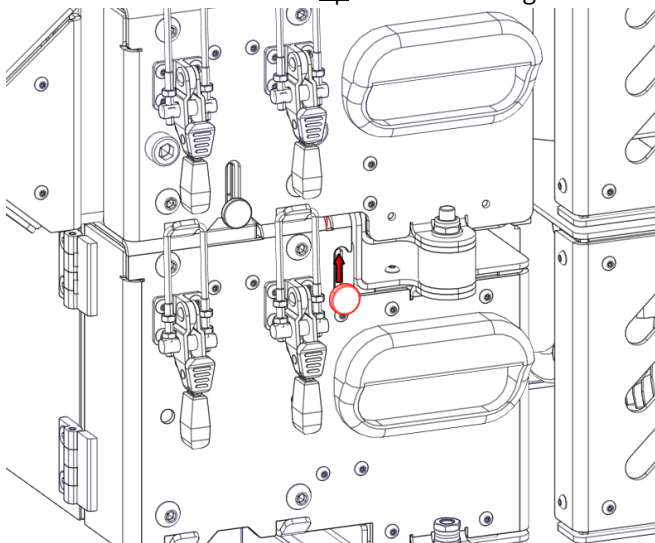


For Hybrid mode, the safety switches must be configured correctly.

Step 19) Loosen the thumbscrew as shown below. Slide the safety actuator from the GP20 Shredder down until it clicks. Tighten the thumb screw.

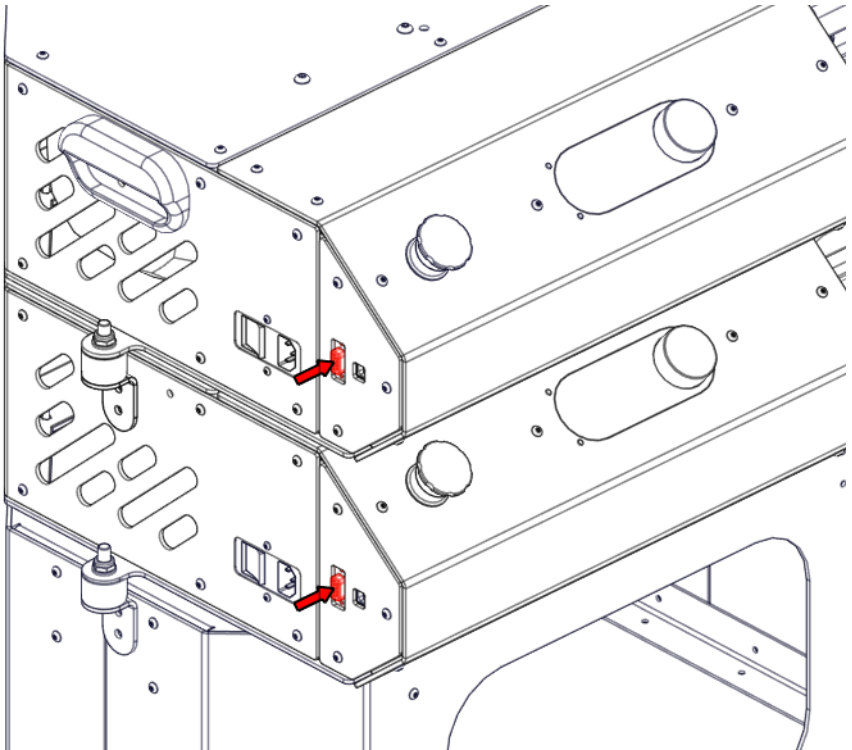


Step 20) Loosen the thumb screw of the Granulator like shown below. Slide the safety actuator from the GP20 Granulator up until it clicks. Tighten this thumb



screw as well.

Step 21) Use the “Machine link cable” to connect both machines.



Step 22) Place the Container as instructed in chapter [3.3.1](#)

Step 23) Place the Hopper as instructed in chapter [3.3.2](#)

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 the GP20 Hybrid has contaminations from previous material runs, and the machine is used for recycling purposes, make sure to properly clean the machine prior to using it again. More information about cleaning the machine can be found in chapter [3.3.3](#).

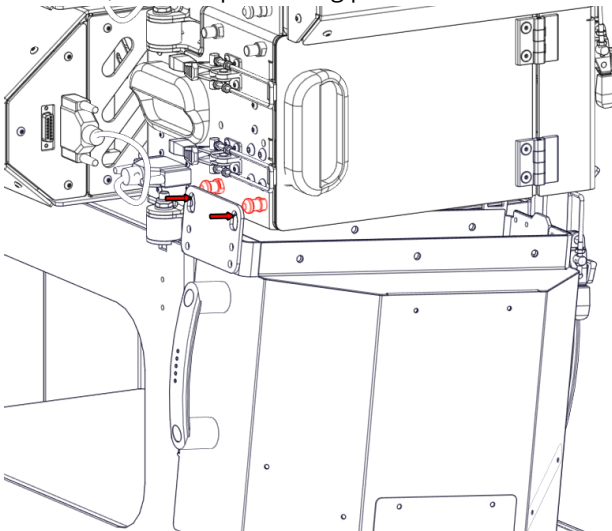
Break the material down to chunks that fit through the hopper opening. The smaller the chunks, the easier the shredder can process the material.

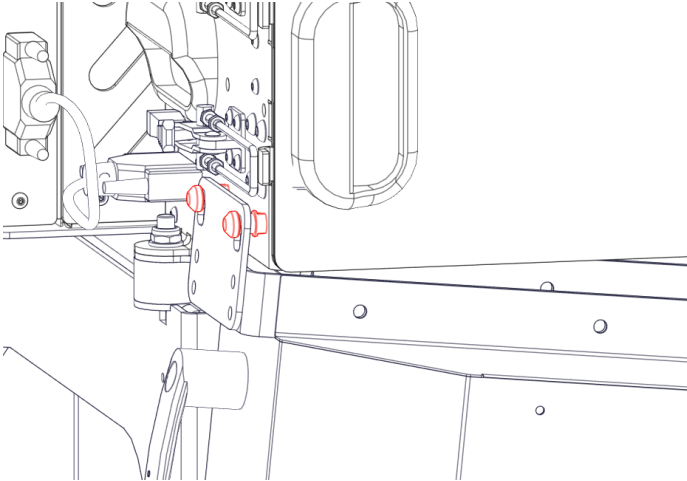
3.3.1. MOUNTING THE CONTAINER

The Container ensures the following;

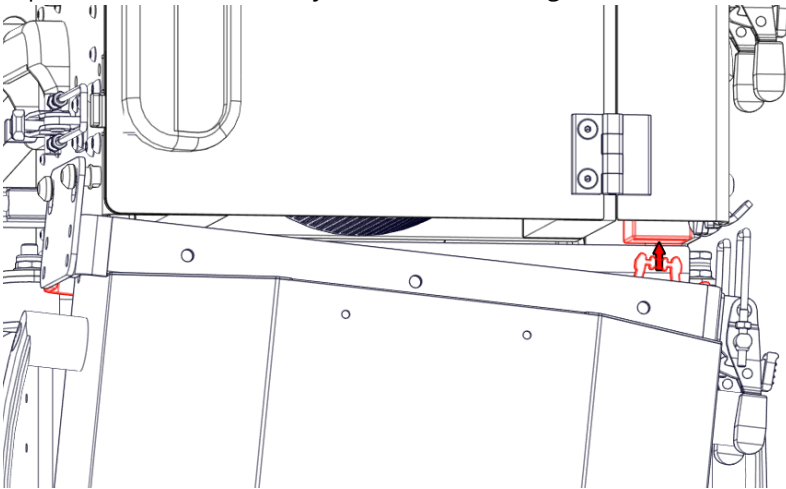
- Collecting output material
- Removing access to danger zones of the machine
- Keeping the filter screen in place (Only applies when placed underneath the *GP20 Granulator*)

Step 1) Place the *Container* underneath the *GP20 Granulator* OR *GP20 Shredder*. This is done by hooking the mounting slots, on the left side of the *Container*, over the positioning pins of the *GP20 Granulator* OR *GP20 Shredder*.



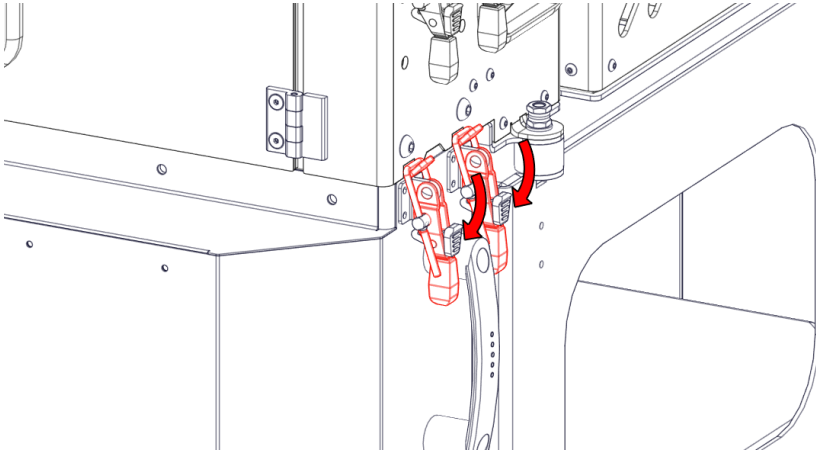


Step 2) Insert the safety actuator in the designated slot.



Step 3) Place the U-shaped brackets on the right side of the *Container* around the hooks of the *GP20 Granulator* OR *GP20 Shredder* and fasten the toggle clamps. Before applying any power to the toggle clamps, ensure that the mounting slots of the *Container* are all the way to the left side of the

positioning pins of the *GP20 Granulator OR GP20 Shredder*.



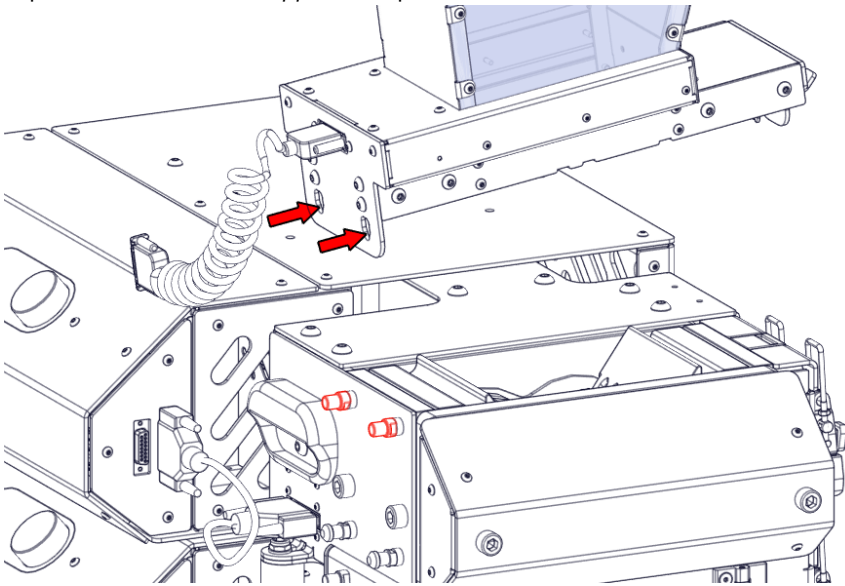
3.3.2. MOUNTING THE HOPPER

The hopper can be easily installed and removed.

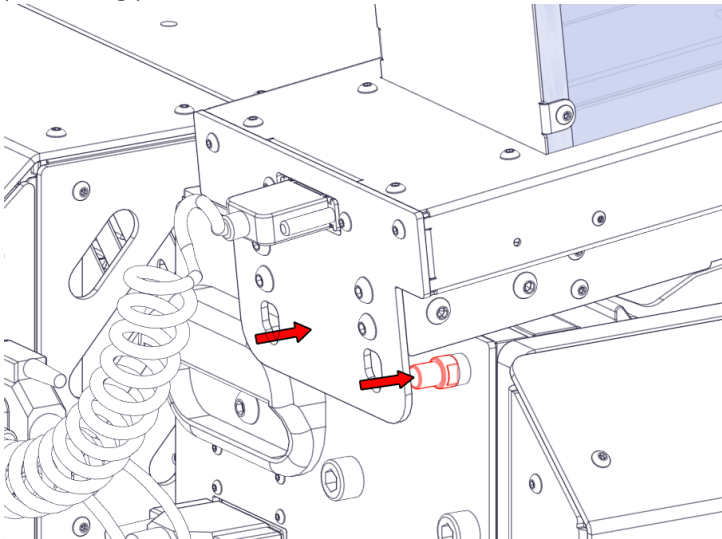
⚠ WARNING

Turn off the power switch when the hopper cable needs to be connected or disconnected.

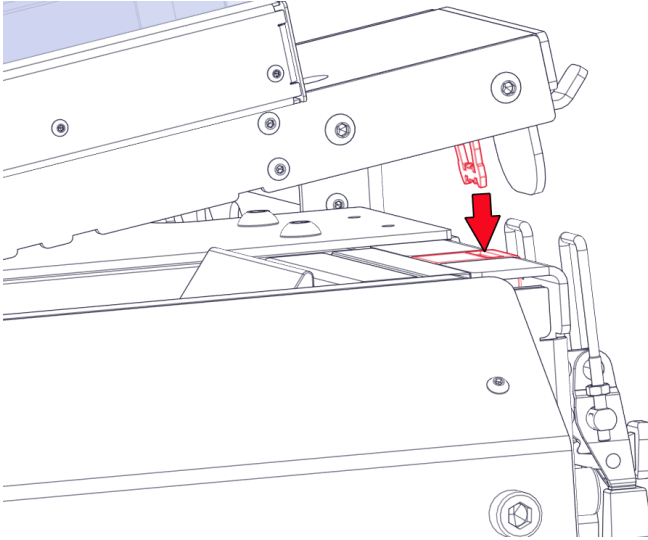
Step 1) Place the *Hopper* on top of the *GP20 Granulator OR GP20 Shredder*.



Step 2) Hook the mounting slots on the bottom of the Hopper to the positioning pins of the *GP20 Granulator OR GP20 Shredder*.

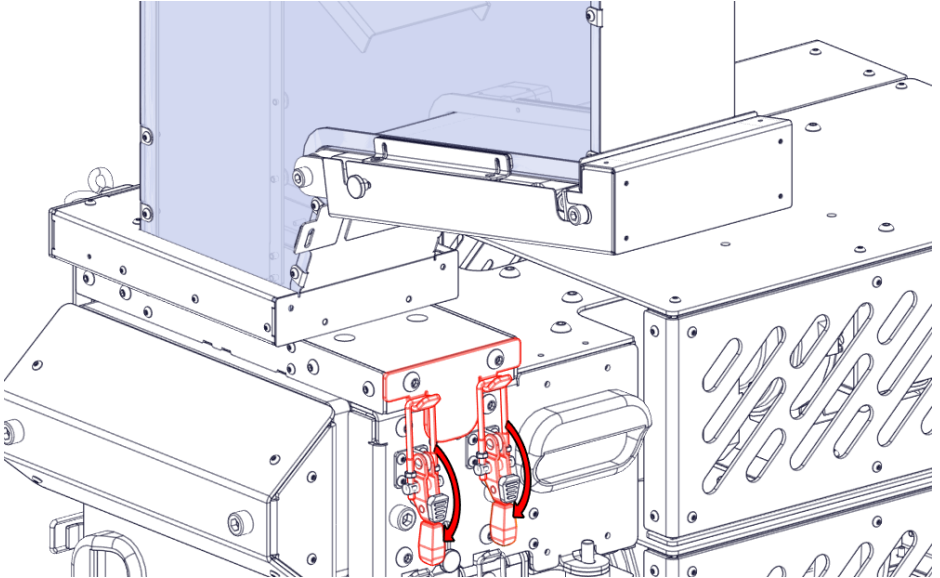


Step 3) Insert the safety actuator carefully into its designated slot.

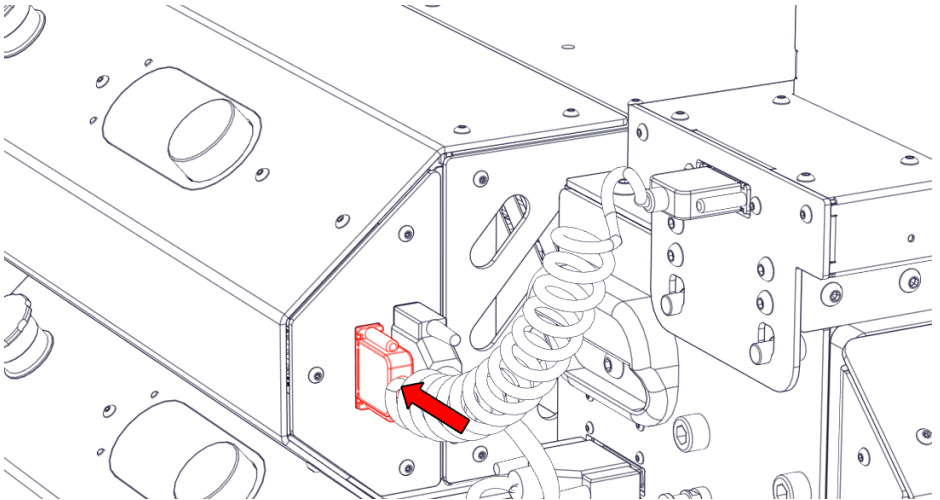


Step 4) Place the U-shaped brackets of the *GP20 Granulator* OR *GP20 Shredder* around the hooks of the *Hopper*. Before applying any power to the toggle clamps, ensure that the mounting slots of the *Hopper* are all the way to

the right side of the positioning pins of the *GP20 Granulator OR GP20 Shredder*.



Step 5) Insert the connector of the cable attached to the *Hopper* in the *Control Box / Shredder*



Removing the hopper is useful in the following situation:

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- Resolving an obstruction in the hopper
- Machine is overloaded
- Gaining access to the machine during the cleaning process.

3.3.3. CLEANING THE GP20 SHREDDER

WARNING

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

- Step 1) Remove the Hopper from the machine
- Step 2) Remove the Container from the machine

WARNING

Always wear cut resistant gloves when working around and inside the cutting chamber.

- Step 3) Remove the Scraper combs as shown in chapter [3.5.2.1](#)
- Step 4) Clean the scraper combs and the cutting chamber using the following tools:
 - Vacuum cleaner
 - Pressurized air
 - Brush
 - Screwdriver,
 - Tweezer (or similar object)

- Step 5) Optional:
 - a. to thoroughly clean cutting chamber of the shredder, you can take the shredder blades out as shown in chapter [3.5.2.2](#)
 - b. Clean the shredder blades, shredder spacers
 - c. Carefully reinstall the shredder blades and shredder spacers and reinstall the front plate.

3.3.4. CLEANING THE GP20 GRANULATOR

- Step 1) If applicable, let the machine run until all the remaining material inside the GP20 Granulator is processed. This can be heard by the decreasing noise or checked by regularly turning off the machine and checking the Container.

 **WARNING**

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

- Step 2) Remove the Hopper from the machine
- Step 3) Remove the Container from the machine

 **WARNING**

Always wear cut resistant gloves when working around and inside the cutting chamber.

- Step 4) Open the granulator door to gain access to the cutting chamber
- Step 5) Remove filter screen. More information about this can be found in chapter [3.5.3.2](#)
- Step 6) Optional: for thorough cleaning, also remove the Rotor. More information about this can be found in chapter [3.5.3.3](#)
- Step 7) Clean the cutting chamber using the following tools:
- Step 8) Vacuum cleaner
- Step 9) Pressurized air
- Step 10) Brush
- Step 11) Screwdriver,
- Step 12) Tweezer (or similar object)
- Step 13) Finally clean the granulator compartment and reinstall the filter.

3.4. USER INTERFACE INSTRUCTIONS

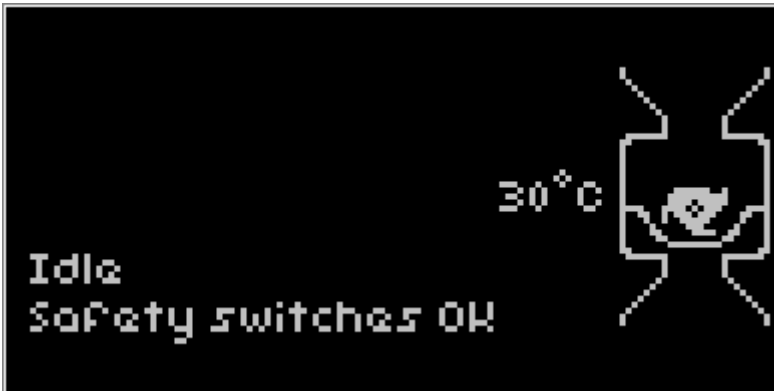
3.4.1 STARTING THE GP20 GRANULATOR

Step 1) Make sure all components are locked into place, as explained in chapter [3.3](#)

Step 2) Plug in the power cable. (Make sure the voltage of the power supply matches the voltage indicated on the sticker next to the power socket.)

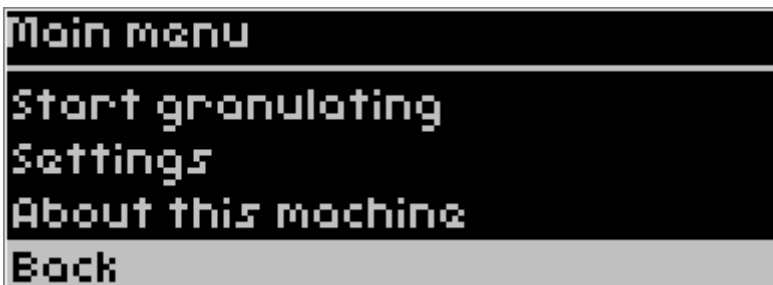
Step 3) Press the on switch.

The display will show the home screen, where the status of the machine is shown, as well as the temperature of the granulating chamber.



Step 4) Adjust the hopper, as explained in paragraph [3.5.1.1](#)

Step 5) Press the button to enter the menu and press "Start Granulating". Confirm by clicking "Yes", and subsequently the granulator will start.



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- Step 6) Feed the material or parts into the hopper. Make sure the parts are not too big to be fed into the opening of the granulator.
- Step 7) Press "Stop Granulating" in the main menu if you are finished granulating. It is advised to only do this if the granulating chamber is completely empty, which can be detected based on the sound the process is making.

3.5. ADJUSTING AND MAINTENANCE

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

3.5.1. HOPPER ADJUSTMENTS

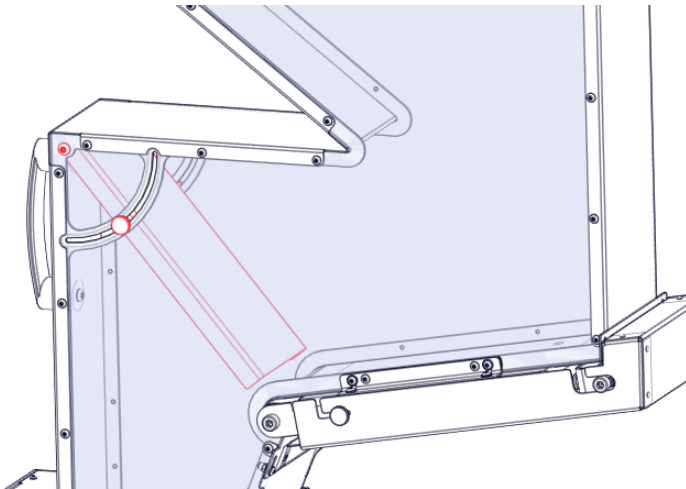
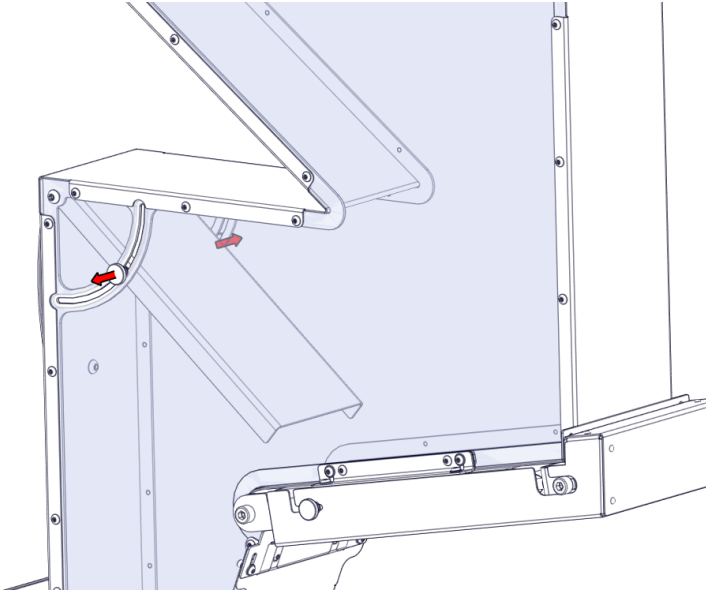
3.5.1.1. ADJUSTING THE FEEDING APERTURE

The feeding aperture of the hopper can be adjusted to control the amount of material that is allowed to pass through to the machine. Excess material remains in the feeding area until the path is cleared. The size of the feeding aperture depends on;

- the size of the input material and;
- the amount of material that can be fed at once to the machine.

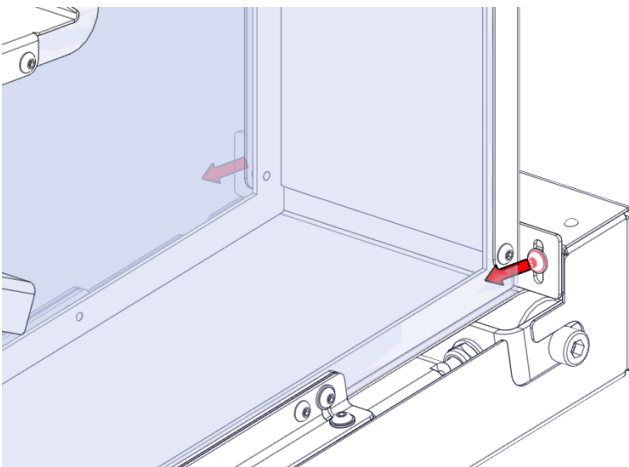
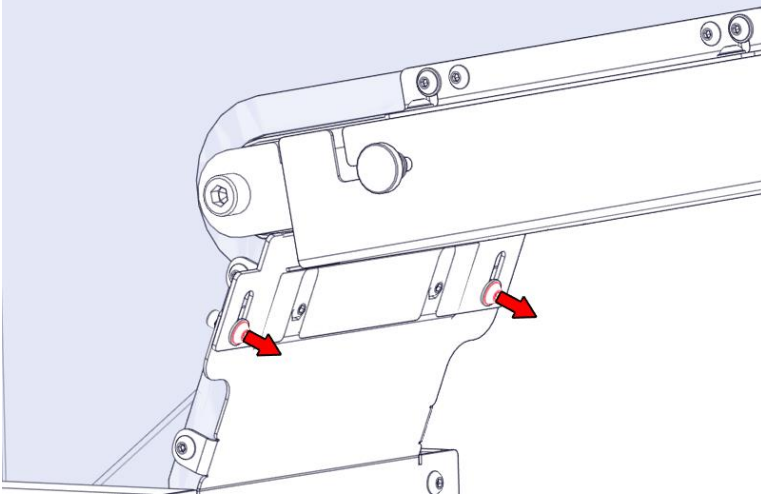
If you only have a *GP20 Granulator*, the hopper has an additional barrier that prevents upward flying material. This barrier reduces the pass-through size at the bottom of the hopper. To minimize the chance of blockages, it is advised not to set the feeding aperture larger than the aperture at the bottom of the hopper.

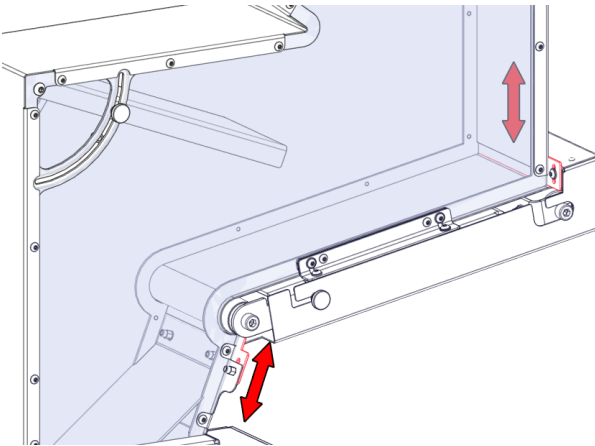
To adjust the feeding aperture, simply loosen the thumb screws on both sides of the hopper and set the plate to the desired position. Finally, tighten the thumb screws to fix the plate in place.



3.5.1.2. ADJUSTING THE BELT SCRAPERS

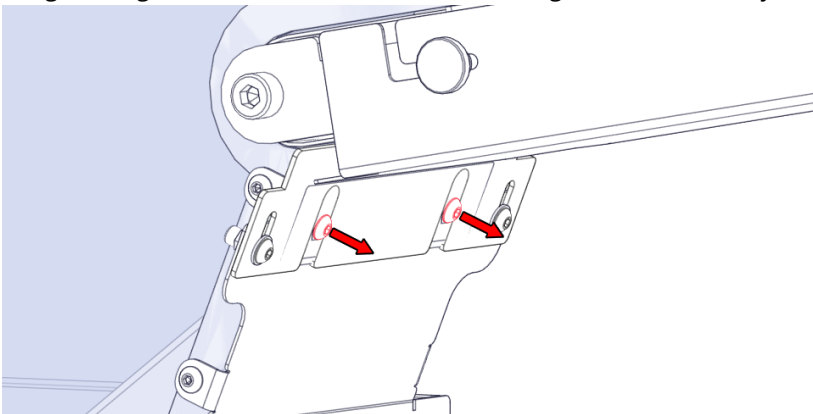
The conveyor belt can be customized by for example adding flaps. The belt scrapers will need to be adjusted accordingly to prevent the conveyor belt from being blocked. Simply loosen the two screws of each belt scraper and set to the desired distance. Finally, retighten the bolts.

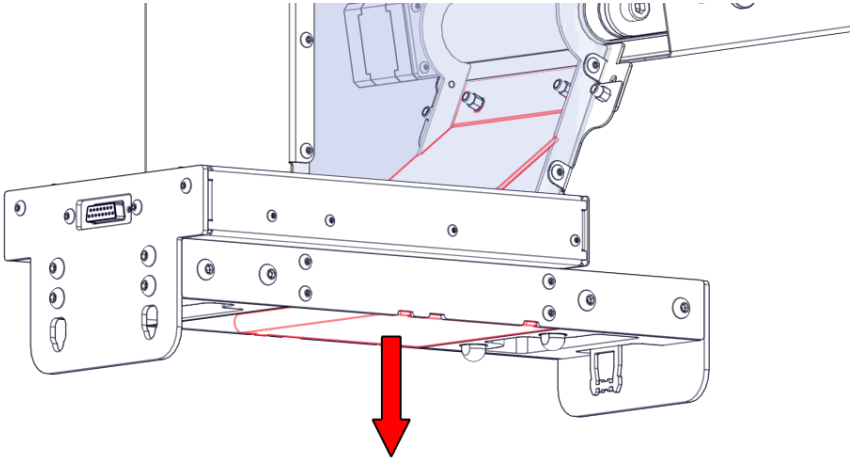




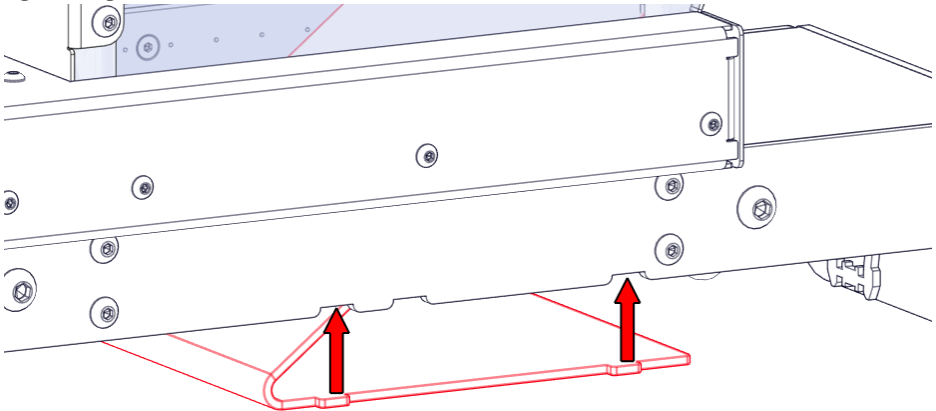
3.5.1.3. REMOVING AND INSTALLING GRANULE GUARD

If you have a GP20 Granulator without a GP20 Shredder, the hopper should have a granule guard installed. The granule guard stops granules from flying up. When the granule guard is not installed, the rotor will “scoop” all of the plastics out of the cutting chamber after which all the plastic will fall down at once. When removing the granule guard unscrew the two M4 bolts using a 2.5mm Allen key.





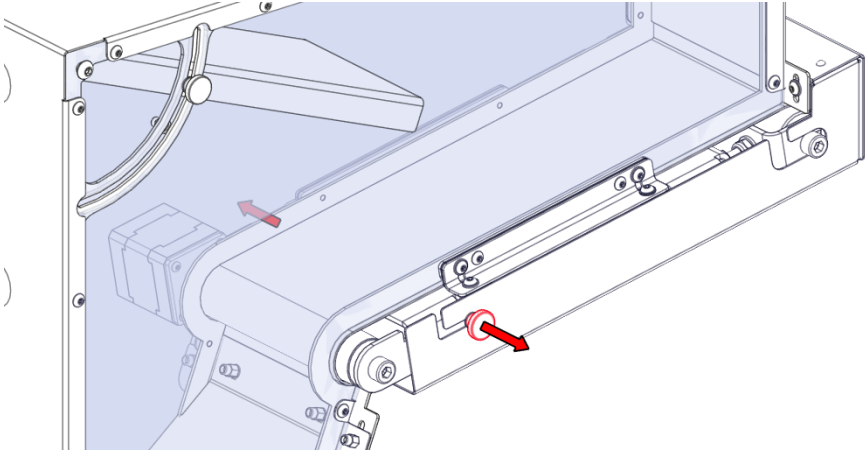
When reinstalling, keep in mind to insert the tabs inside the cut-outs before tightening the screws.



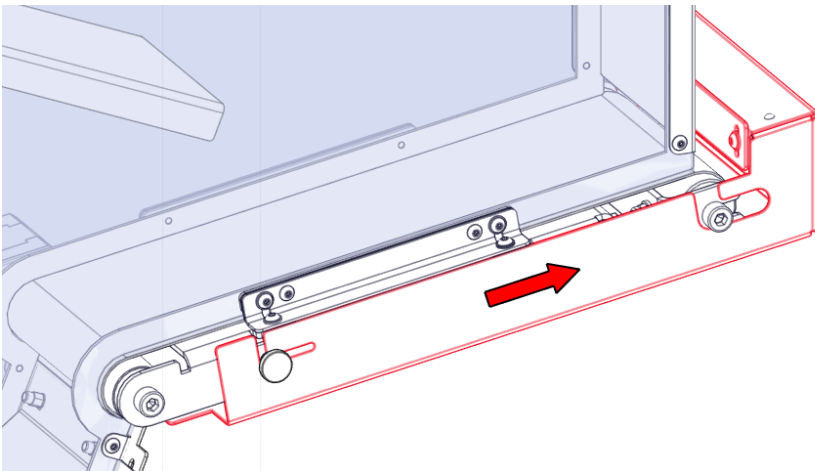
3.5.1.4. REMOVING THE BELT COVER

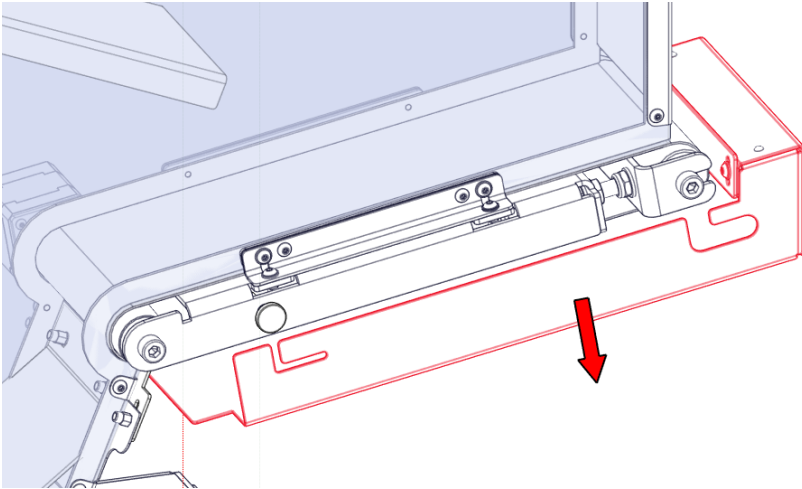
The belt cover can be removed to gain access to the belt. This can be useful when the belt requires cleaning.

Step 1) Untighten, the thumb screws partially



Step 2) Remove the cover by first sliding the cover horizontally followed by a vertical movement down.





3.5.2. GP20 SHREDDER CUTTING CHAMBER

In this chapter, all necessary information will be provided regarding adjustments and maintenance to the cutting chamber of the GP20 Shredder.

⚠WARNING

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

⚠WARNING

Always wear cut resistant gloves when working around and inside the cutting chamber.

3.5.2.1. REMOVING AND INSTALLING SCRAPER COMBS

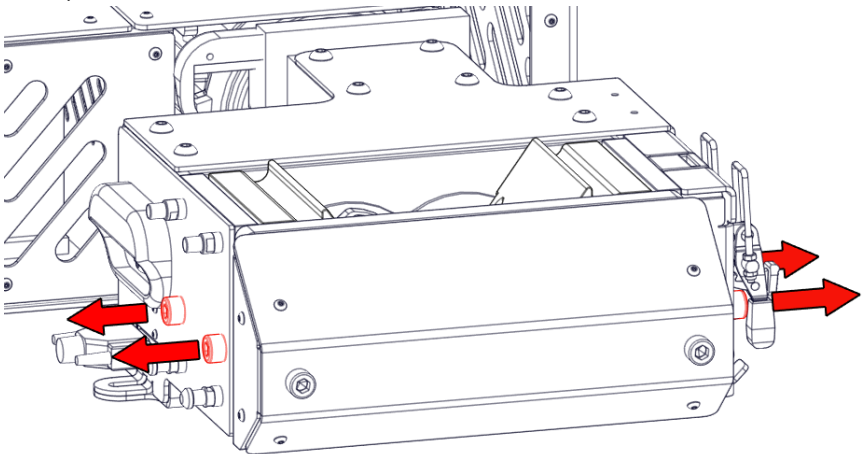
The scraper combs serve a few important functions during the shredding process;

- Preventing material from wrapping around the shredder spacers and therefore;
- Preventing the machine from overloading due to material wedging
- Self-cleaning the cutting chamber
- Preventing material to come back up

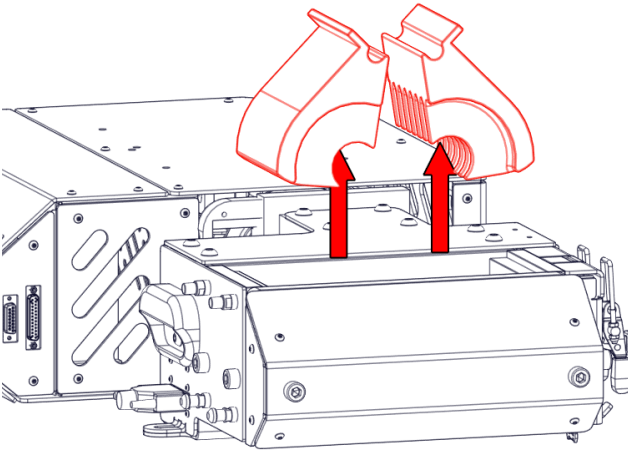
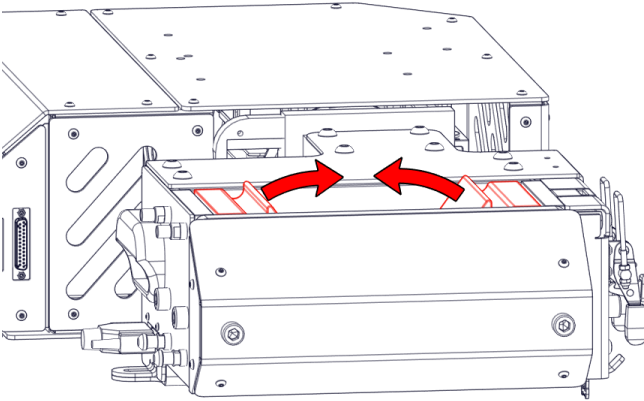
It is advised to remove the Scraper combs prior to cleaning the cutting chamber of the GP20 Shredder.

Step 1) Remove the hopper from the machine.

Step 2) Each scraper comb is fixed in place with two bolts. These bolts can be found on the outside of the machine. Loosen all four bolts (two per scraper comb).

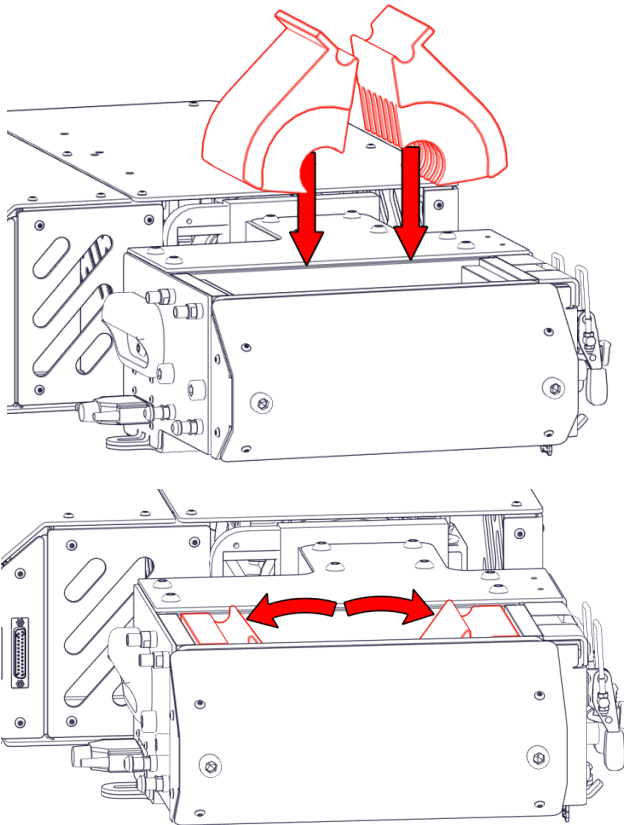


Step 3) Carefully pull the scraper comb up and lift it out.

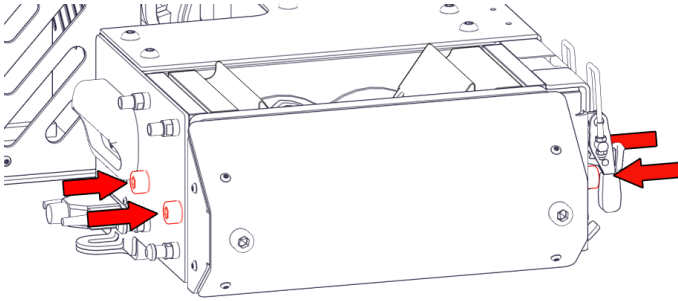


For installing the Scraper combs, the same steps can be done in reverse as shown above.

Step 1) Lower the Scraper combs inside of the machine.

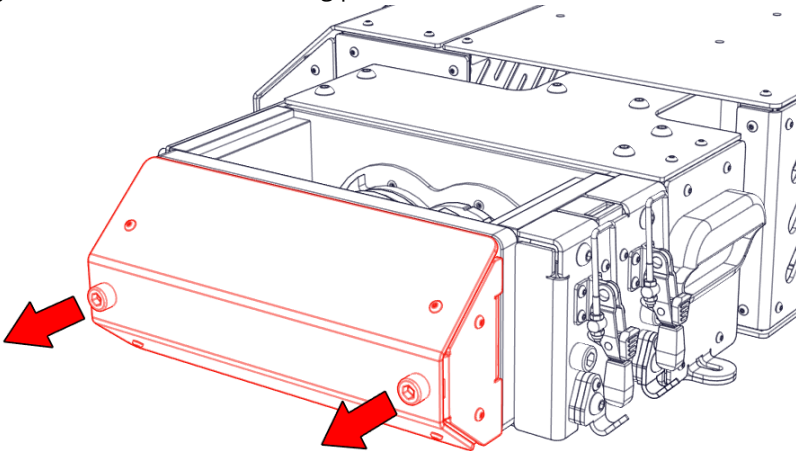


Step 2) Tighten the bolts on the side using an 8mm Allen key. This will keep the scraper combs in place. Don't tighten it too.

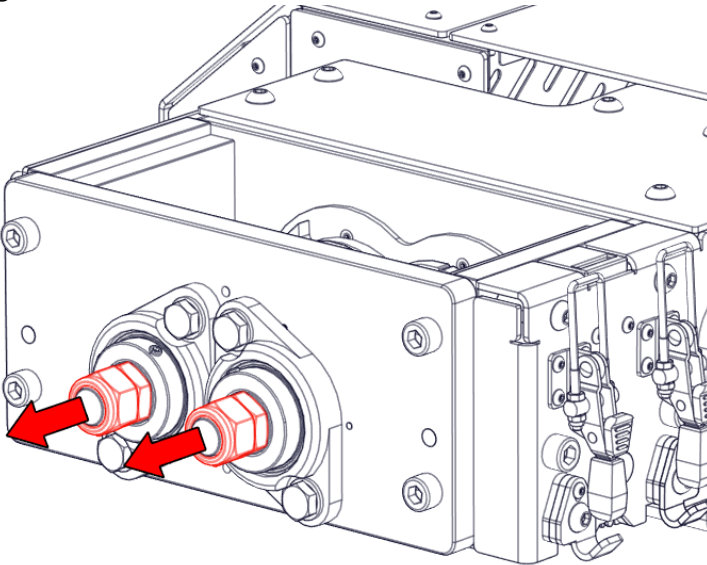


3.5.2.2. REMOVING AND INSTALLING SHREDDER BLADES

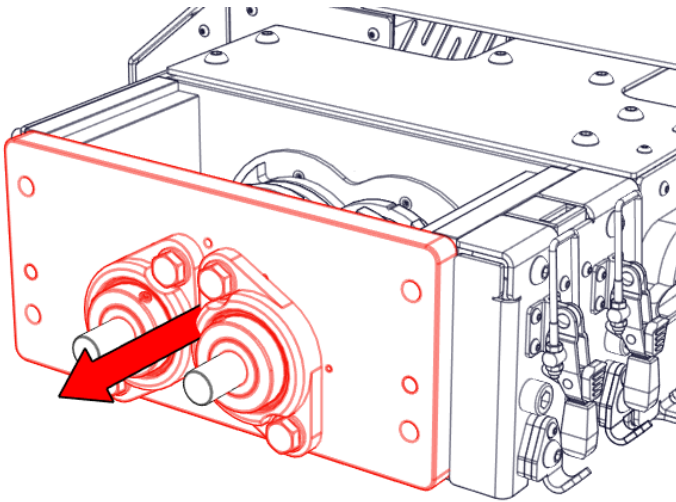
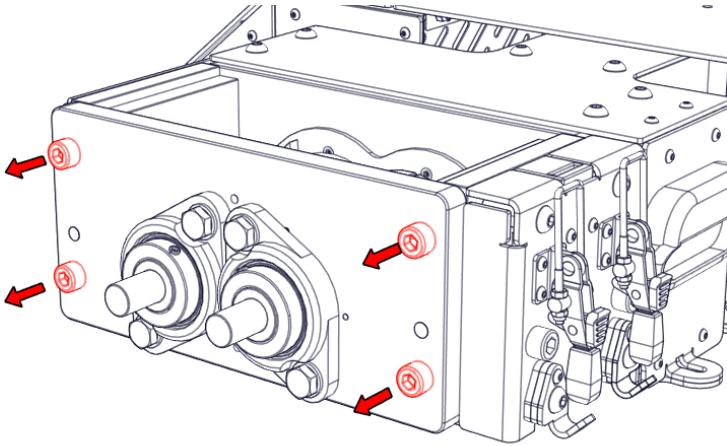
- Step 1) Remove the scraper combs as explained in the previous chapter.
- Step 2) Unscrew the two bolts on the front of the machine using an 8mm Allen key and remove the black casing plate.



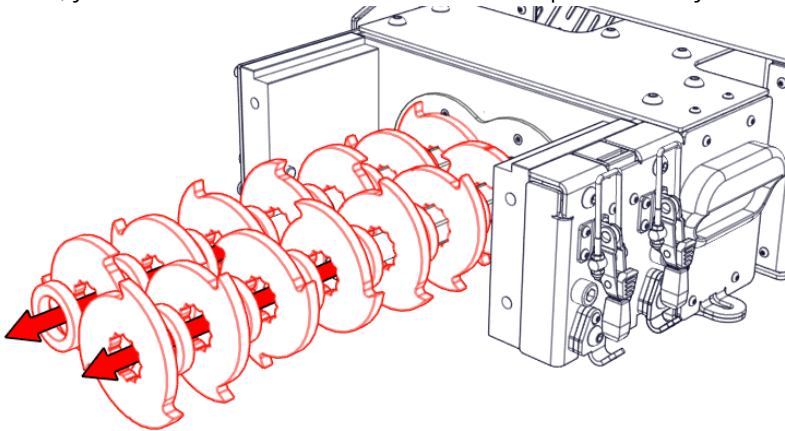
Step 3) The ends of the shredder shafts are now exposed. Remove all four hexagon nuts from both shafts.



Step 4) Unscrew the four bolts using an 8mm Allen key and slide the front plate towards you.



Step 5) Now, you can remove the shredder blades and spacers one by one.

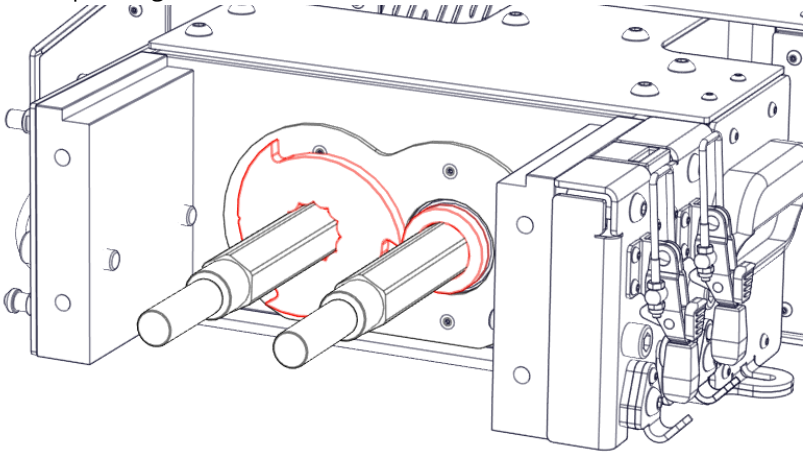


CAUTION

*Before reinstalling the shredder blades, it is very important to make sure that the shredder shafts, all shredder blades and shredder spacers are cleaned properly. If dust or contaminant get stuck between the blades, the right clearance cannot be ensured which may result in **extreme damage** to the shredder blades and scraper combs.*

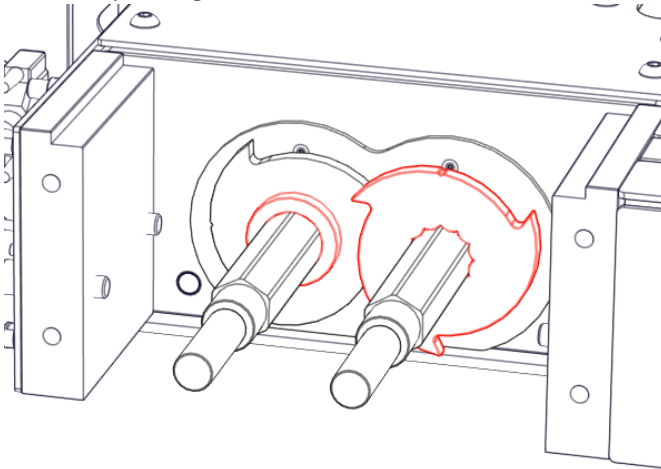
When the shredder shafts, shredder blades and shredder spacers are properly cleaned, the blades can be reinstalled

Step 1) Start by sliding a shredder blade on the left shaft. Make sure the teeth are pointing in the clockwise direction.



Step 2) Slide one shredder spacer on the right shaft opposing the shredder blade

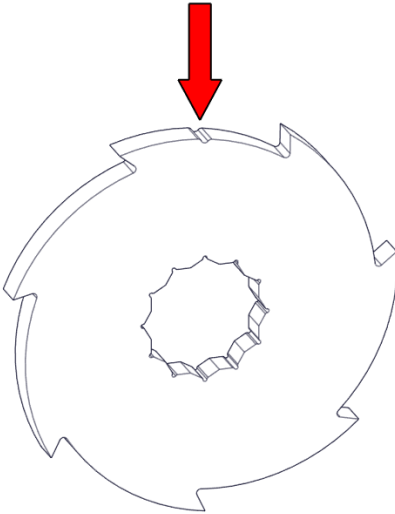
Step 3) Slide another shredder blade on the right shaft. Make sure the teeth are pointing in the counterclockwise direction.



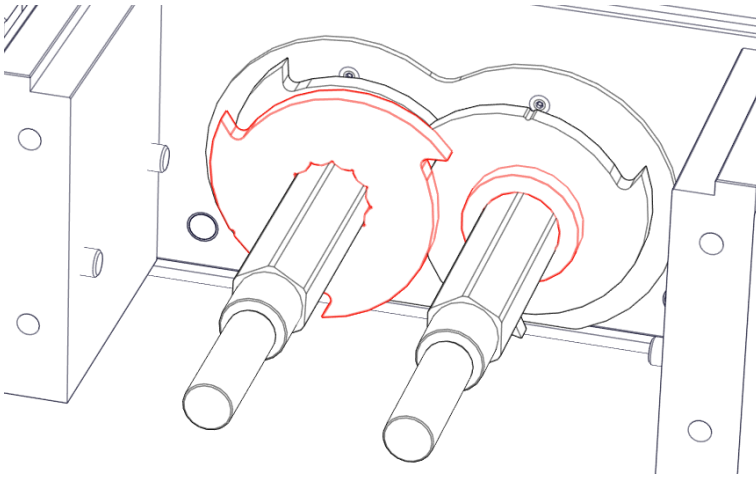
Step 4) Slide a shredder spacer on the left shaft opposing the shredder blade.

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Step 5) In case of the 7 teeth-blade: In order to keep track of the rotational configuration of the stacked blades, it is advised to use the small cut-out located on the outer contour of the shredder blade for your reference.

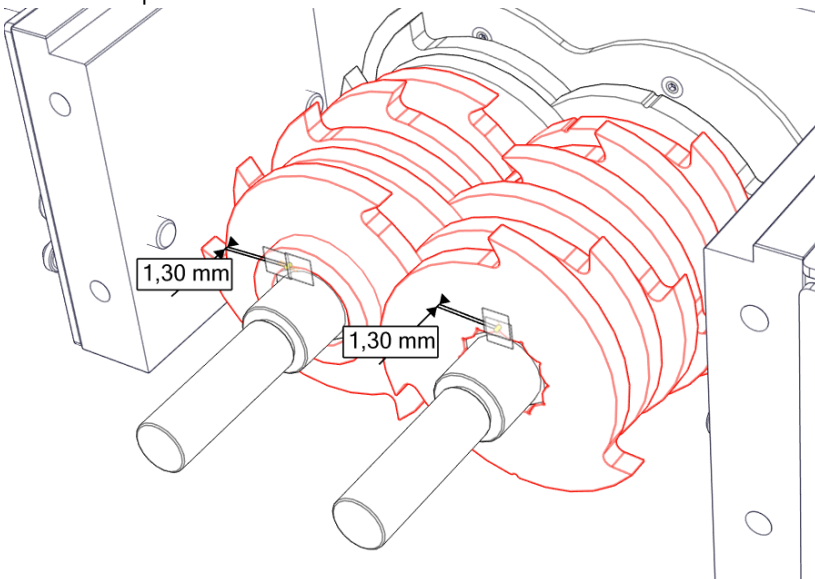


Step 6) The recommended configuration for 7 teeth blades is to stack each subsequent blade one-sixth turn with respect to the previous blade of the same shaft. In case of a 3-teeth-blade: use steps of 30 degrees ($1/12^{\text{th}}$ of a turn). These sequential turns can be done either clockwise or counterclockwise as long as it is done consistently for both shafts.

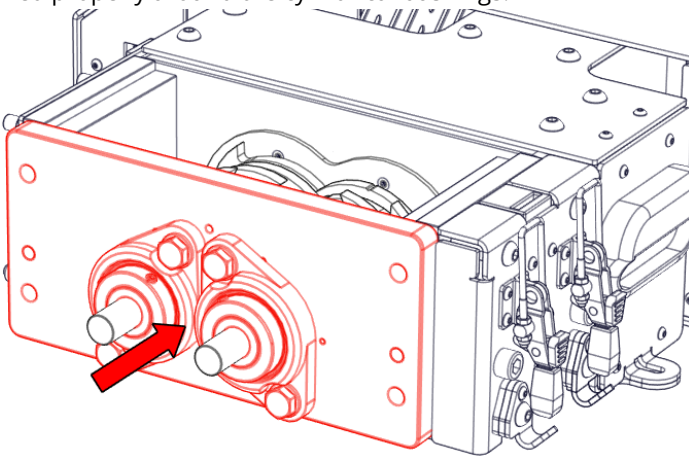


Step 7) Repeat step 1 until 4 until all blades are placed.

Step 8) The hexagon shaped part of the shaft should be completely covered with shredder blades and spacers. In the illustration below, the blade and spacer have an 1,3mm overlap. The overlap may vary as long as there is some overlap.

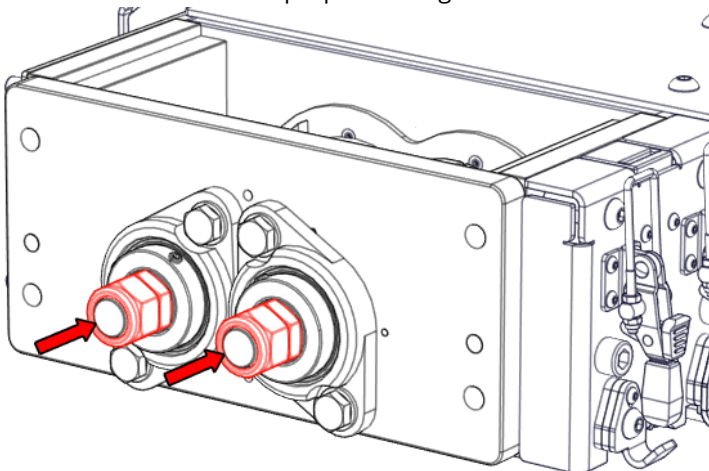


Step 9) Slide the front plate back on the shafts. Make sure the front plate is cleaned properly around the cylindrical bushings.

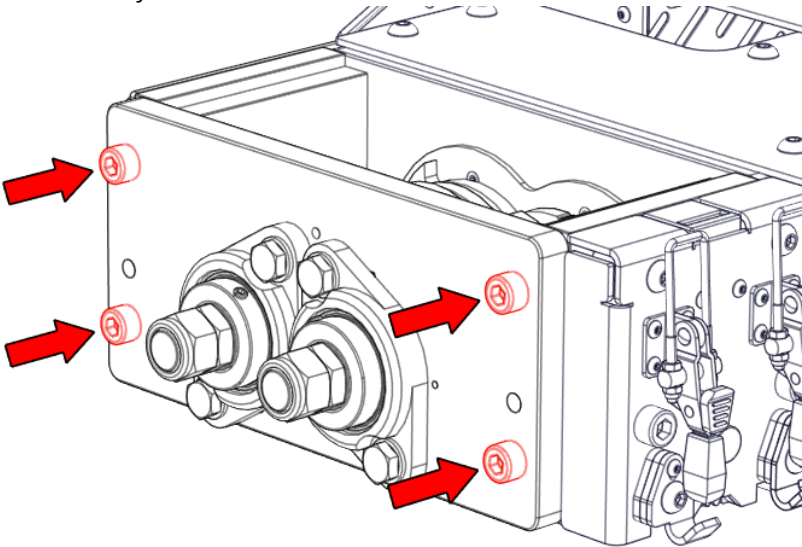


Step 10) Start by placing one thin nut per shaft and tighten the nuts a little bit at a time. Even tightening is important to avoid imbalances in the stacked blades.

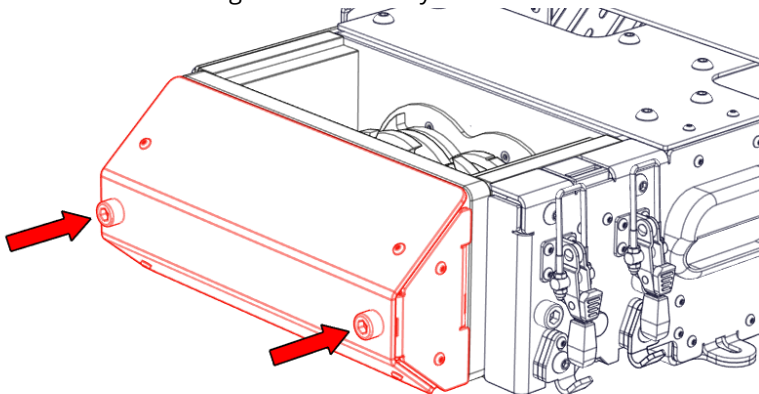
Step 11) If both thin nuts are tightened and there is no play in the shredder blades, the nylon locking nuts can be placed and tightened against the thin nuts. This ensures a proper holding force for the stacked blades.



Step 12) Screw in the four bolts in the corners of the front plate using a 8mm Allen key.



Step 13) Mount the black casing plate back on the machine by screwing in the two bolts also using a 8mm Allen key.

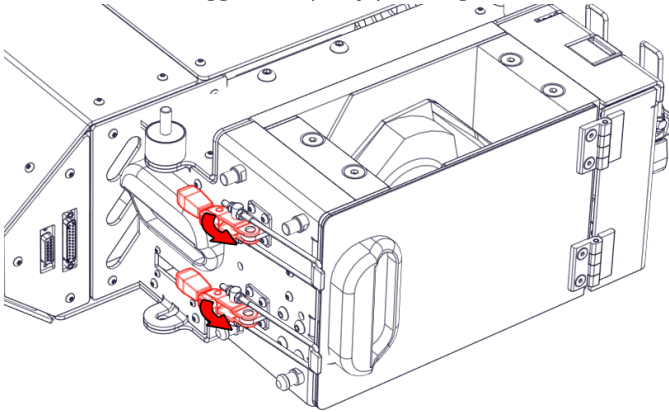


3.5.3. GP20 GRANULATOR CUTTING CHAMBER

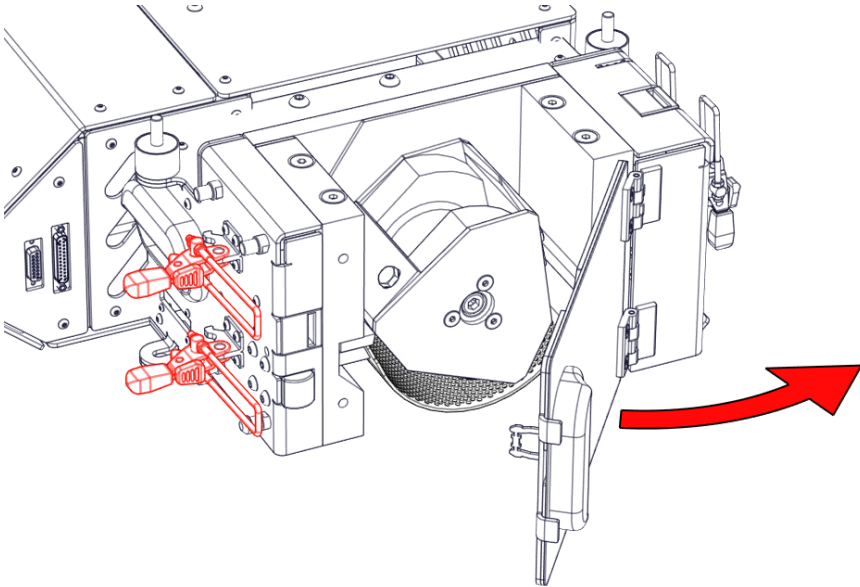
In this chapter, all necessary information will be provided regarding adjustments and maintenance to the cutting chamber of the GP20 Granulator.

3.5.3.1. OPEN GRANULATOR DOOR

The granulator door is locked in place with two toggle clamps. Release the safety hooks from the toggle clamps by pressing the red lever.



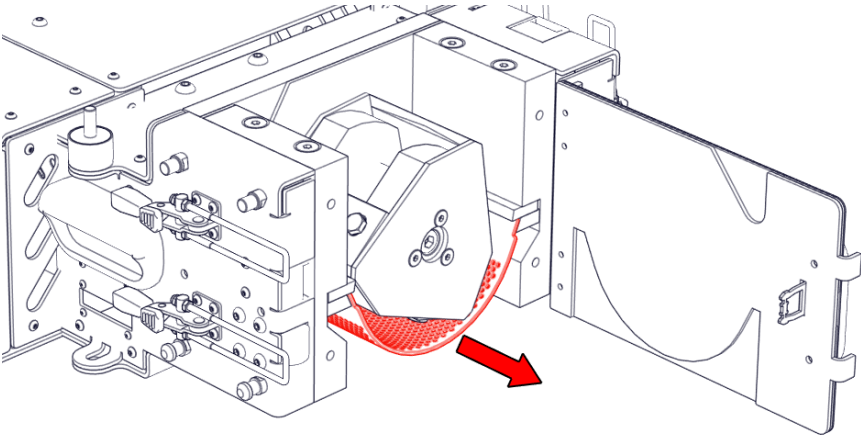
Now, open the toggle clamps and the granulator door will be pushed open by a spring loaded element. The door is pushed open to ensure that the safety sensor will be disengaged.



3.5.3.2. REMOVING AND INSTALLING FILTER SCREEN

If the granulator door is opened as instructed in chapter [3.5.3.1](#) and the Container is removed from the machine, the filter screen can be removed from the GP20 Granulator. Simply slide the filter screen towards you.

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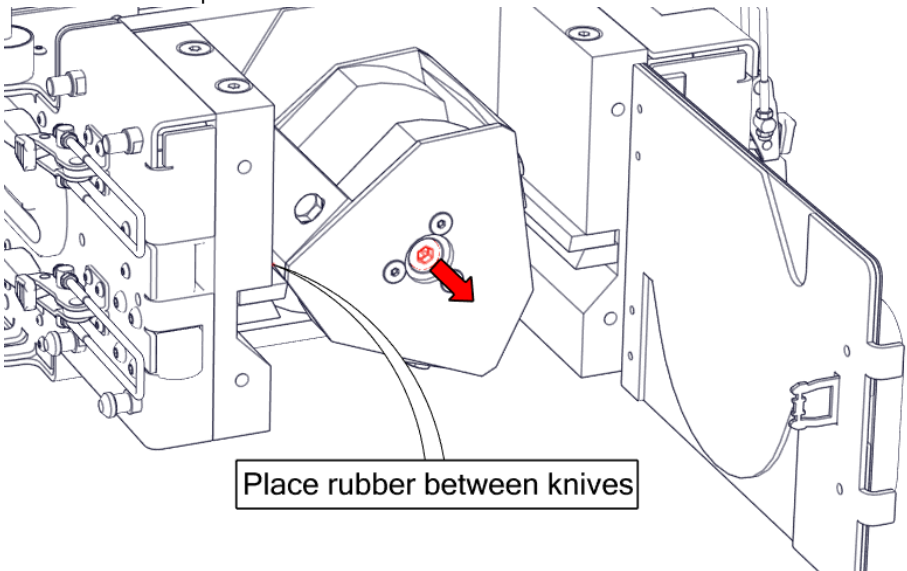


3.5.3.3. REMOVING AND INSTALLING GRANULATOR ROTOR

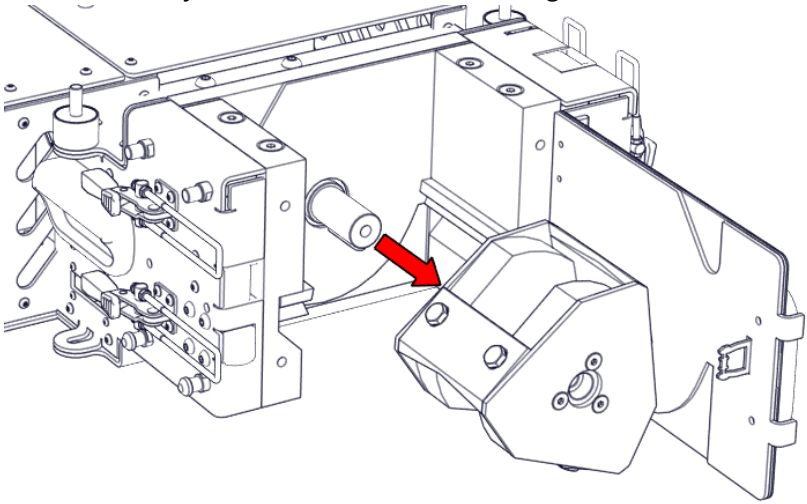
WARNING

Always wear cut resistant gloves when working around and inside the cutting chamber.

- Step 1) Open the granulator door. More information about this in chapter [3.5.3.1](#)
- Step 2) Remove the Container.
- Step 3) Remove the Filter screen as instructed in chapter [3.5.3.2](#)
- Step 4) Block the rotor by placing a piece of rubber between the rotary and stationary knives. Use an 8mm Allen key to unscrew the bolt that locks the rotor in place.

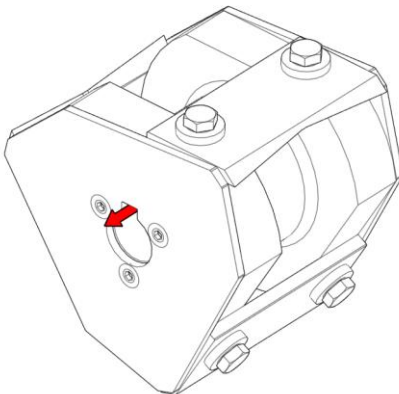


Step 5) Carefully slide the rotor out of the cutting chamber.

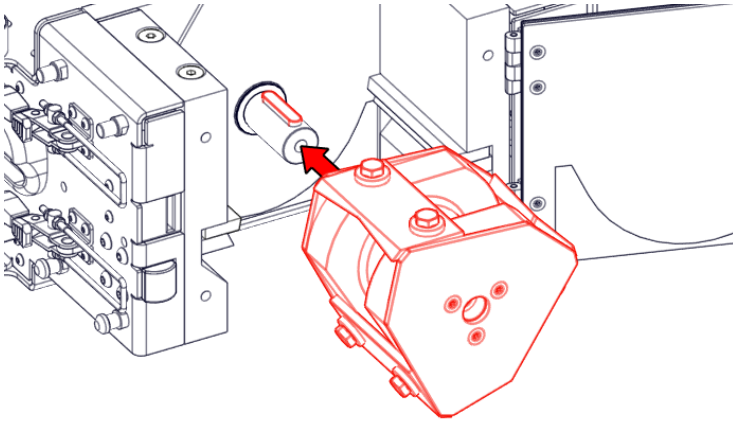


Step 6) When installing the rotor, it is important to properly clean the cutting chamber first to ensure proper alignment of the rotor.

Step 7) Locate the keyway inside of the hole of the rotor



Step 8) Locate the key inside of the shaft



- Step 9) Slide the rotor fully on the drive shaft
- Step 10) Insert the bolt through the hole in the center of the rotor and tighten it.
- Step 11) Manually turn the rotor to verify that the rotor runs smoothly.

3.5.3.4. ADJUSTING/REPLACING THE GRANULATOR KNIVES

 **WARNING**

Always wear cut resistant gloves when working around and inside the cutting chamber.

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.

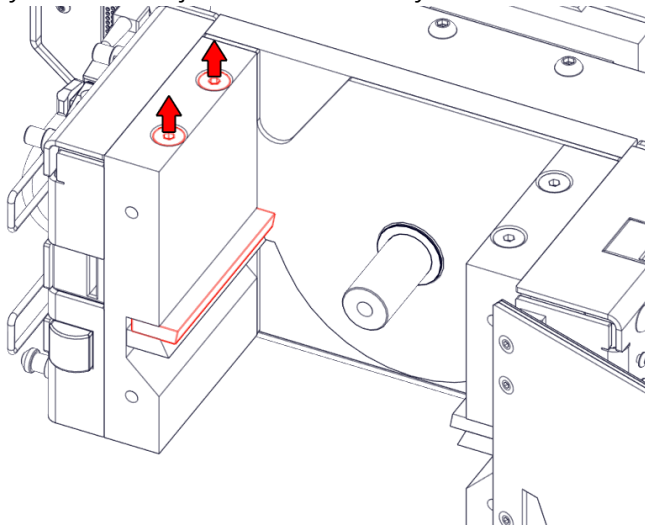
In this case replacing or adjusting them is necessary to have the optimal efficiency.

To ensure an equal gap between the rotary knives and the stationary knives, it is important that the cutting edges of all the rotary knives are on the same imaginary cylindrical cutting face. The easiest way to do this is to;

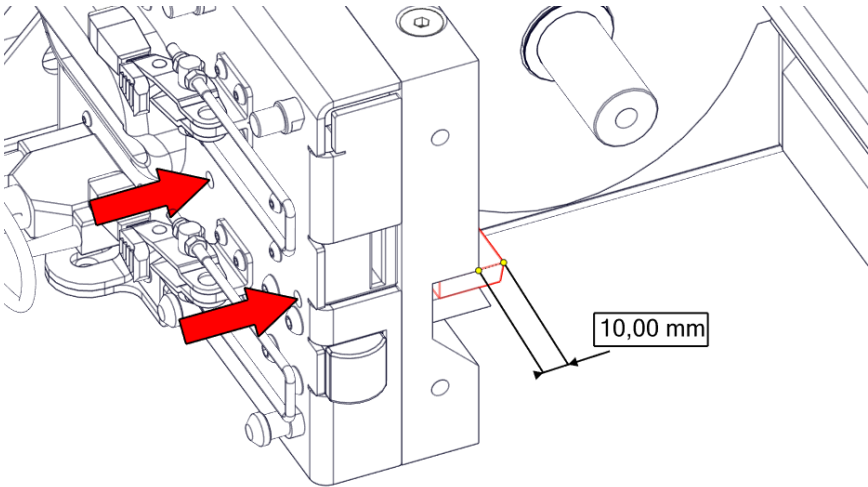
Step 1) In the case of a GP20 Hybrid, the GP20 Shredder should be lifted off GP20 Granulator first in order to gain access to the bolts responsible for holding the stationary knives in position

Step 2) The initial position of the left stationary knife is important. If it is too much to the left, the rotary knives can crash into the filter screen. If it is too much to the right, the gap between the rotary knives and filter screen will be too big reducing cutting efficiency. Loosen the two M8 bolts using a

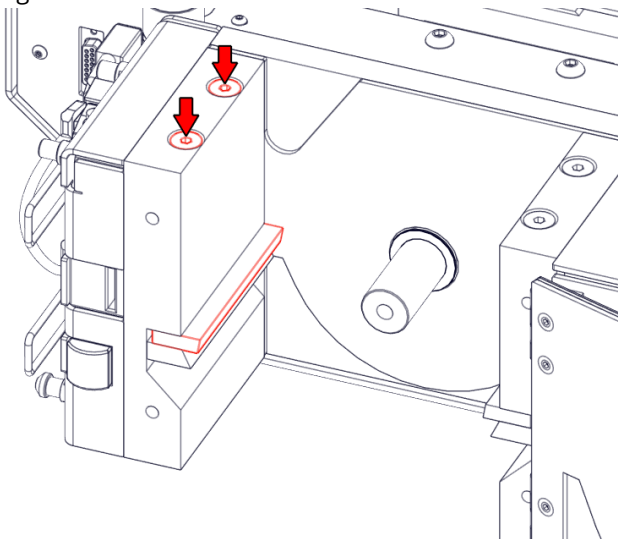
5mm Allen key in order to adjust the left Stationary knife.



Step 3) Adjust the position of the left Stationary knife by tightening or untightening the set screws from the side using a 3mm Allen key. A good starting point is to offset the cutting edge of the stationary knife by 10mm with respect to the block it is mounted on. Use the two set screws to carefully manipulate the left stationary knife.



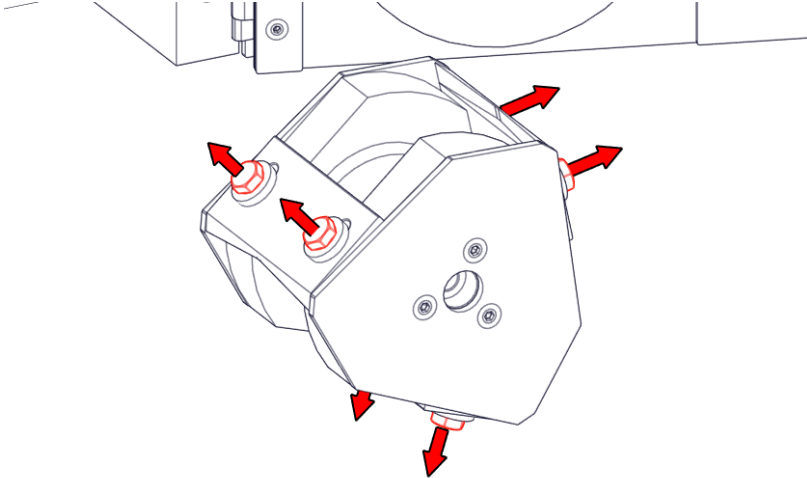
Step 4) Fix the left stationary knife in position by tightening the two bolts on top of the machine. Make sure the stationary knife does not move while tightening.



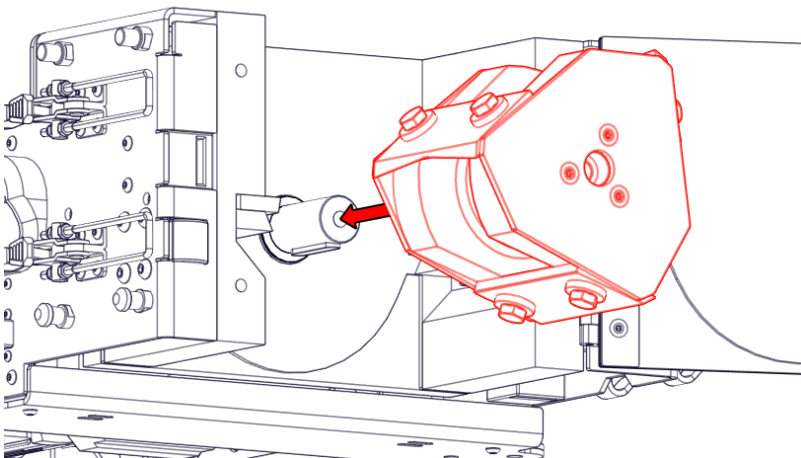
The left stationary knife can now be used as a reference for adjusting the rotary knives

Step 5) Remove the rotor as instructed in chapter [3.5.3.3](#)

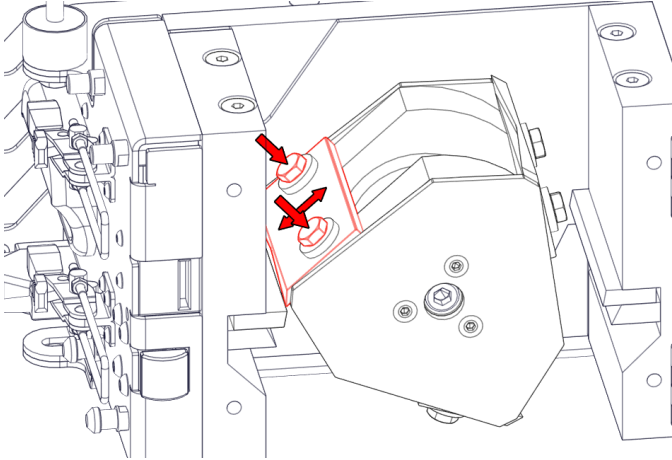
Step 6) Slightly loosen the hexagon bolts of the rotary knives so that the rotary knives are free to slide along the surface.



Step 7) Place the rotor with the free moving rotary knives back in the machine and lock it on the shaft.



Step 8) Manually turn the rotor so that the cutting edge of one rotary knife is touching the cutting edge of the left stationary knife. Use a thin piece of paper or set the right gap between the rotary knives and the left stationary



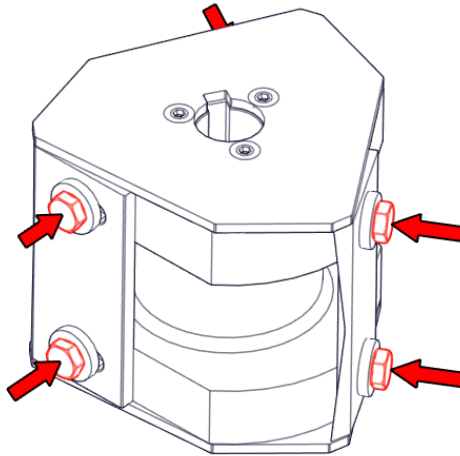
knife.

Step 9) Carefully tighten the bolt

Step 10) Do the same for the other rotary knives

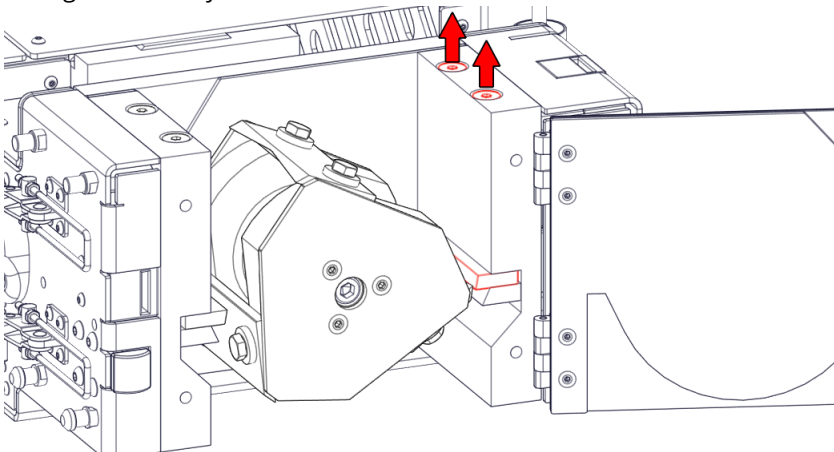
Step 11) Insert the filter screen to check that the knives are not scraping along the filter screen. If everything is correct, remove the filter screen again.

Step 12) Carefully remove the Rotor again and place it on a workbench.
Now, fully tighten all the bolts.

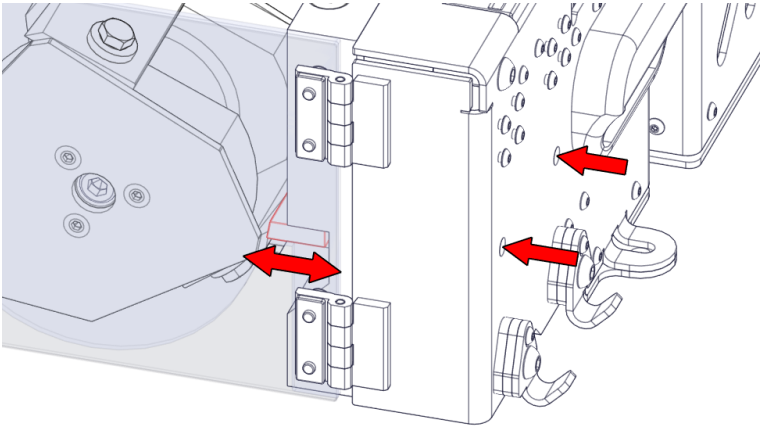


Step 13) Place the rotor back in the machine

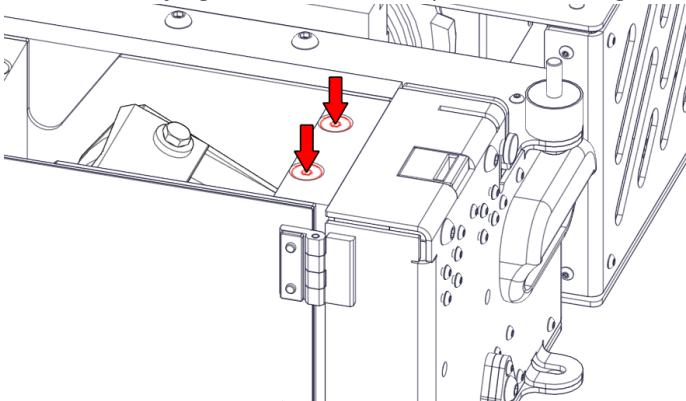
Step 14) Loosen the two M8 bolts using a 5mm Allen key in order to adjust the right stationary knife.



Step 15) Use a 3mm Allen key on the right side of the machine to adjust the right stationary knife with respect to the rotary knives. Use a thin piece of paper to set the right gap.



Step 16) Carefully tighten the bolts on top without moving the stationary

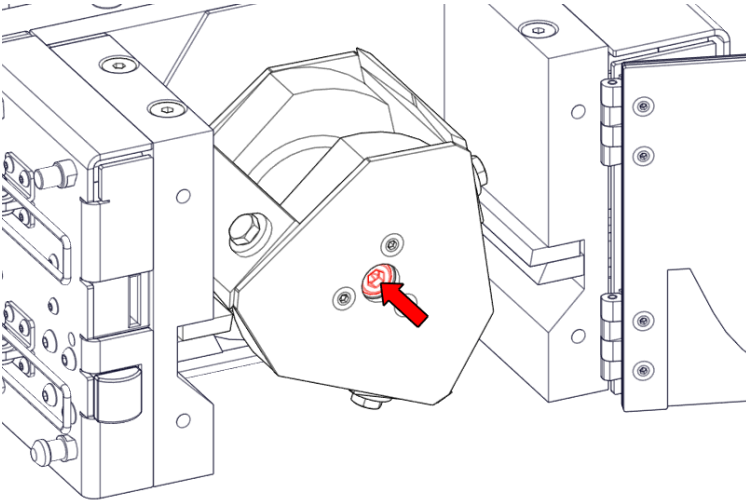


knife.

Step 17) Check the gaps by manually turning the rotor. Place the filter screen and check for any collisions with the knives.

Step 18) If everything is correct, fix the rotor in place with a M10x70 bolt using an 8mm Allen key.

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4. TROUBLESHOOTING

Troubleshoot information about most common problems.

4.1. ISSUE SITUATIONS

Issue	Probable cause	Measures
The material is stuck in the hopper, and the hopper conveyor belt is not able to carry the material into the machine.	The conveyor belt does not have enough grip on the material.	Fill the hopper less full, adjust the feed aperture, or add flaps to the conveyor belt, by sticking pieces of tape on the belt.
The output regrind is contaminated.	The machine was not cleaned properly, or the input parts were dirty.	Clean the machine as explained in chapter 3.3.3 and chapter 3.3.4
The parts are floating over the shredder knives and not being grabbed.	The parts are too big, round or light for the chosen shredder knives.	Change the type of knives in the shredder, or decrease the part size.

4.2. SAFETY BEFORE MOTOR START MESSAGES

Safety switch	Information	Measures
Door panel not secured	Please close the door, properly secure the clip and start again via the main menu.	See chapter 3.5.3.1 for further instructions.
Emergency stop pressed	Please rotate the red emergency button clockwise and restart the machine via the main menu.	The red emergency switch located next to the display is pressed in.
Hopper not secured	Please mount the hopper, properly secure the clips and start again via the main menu.	See chapter 3.3.2 for further instructions.
Left shredder comb not placed	Place the left comb between the knives, place hopper and restart the machine via the main menu.	See chapter 3.2.2 for further instructions.
Right shredder comb not placed	Place the right comb between the knives, place hopper and restart the machine via the main menu.	See chapter 3.2.2 for further instructions.
Outlet not secured	Please attach the outlet, properly secure the clips and restart the machine via the main menu.	
Machine link safety issue	Fix any safety issues on the linked machine and check the machine link cable connection.	

4.3. RUNTIME ERROR MESSAGES

Runtime errors that may occur during machine usage. For errors that are not shown below, please make sure that the latest firmware is installed. If problems persist, contact support for more information: support.3devo.com

Error message	Information	Comments
Stopped: no material	The machine was stopped, insufficient material is being fed through the hopper.	To save energy consumption the machine automatically stops if no material is being fed.
Configuration data too new	This firmware is too old to load the configuration, please update. If you continue, all saved configuration data will be erased.	Check support.3devo.com to download the firmware and see further instructions.
Initialization failed	Failed to initialize the hopper. Is the hopper connector plugged in?	
Initialization failed	Failed to initialize the hopper. Firmware might be too old for this machine.	Check support.3devo.com to download the firmware and see further instructions.
Initialization failed	Failed to initialize the interface board.	Contact us via support.3devo.com
Machine was reset	This is expected when the serial port is opened, or firmware has been uploaded.	This indicates whether the machine restarted by accident. If the machine restarts due to a firmware upgrade for example, this message can be ignored.
VFD – no communication	Could not communicate with the VFD motor controller.	Make sure the latest firmware is installed or contact the manufacturer to resolve this situation. Check support.3devo.com .

VFD - not found	No valid response from the VFD motor controller received.	Make sure the latest firmware is installed or contact the manufacturer to resolve this situation. Check support.3devo.com .
VFD - not supported model	Unsupported VFD motor controller model detected.	Make sure the latest firmware is installed or contact the manufacturer to resolve this situation. Check support.3devo.com .
Error has occurred	The external supply voltage is too low or absent.	First check if the voltage of the machine matches your power outlet. This issue usually happens if a USB cable is plugged in, but the machine is off, or the power plug is not plugged in. Please check these last points.
Error has occurred	VFD motor current limit reached.	Either too much material was being fed, or the material is too thick/strong. Decrease the amount of material being fed or decrease the size of the parts.
Error has occurred	Motor obstruction retries maximum reached.	The motor is obstructed too much in a short period. The material might be too big/tough or feed in lesser quantities.
Error has occurred	Thermistor is not connected.	Contact us via support.3devo.com .
Error has occurred	Motor too hot.	This might happen if the machine is running for an extended amount of time, in a warm environment. If it happens very often, please

		contact us via support.3devo.com .
Error has occurred	Failure reading a thermocouple.	Contact us via support.3devo.com .
Error has occurred	Could not communicate with the VFD. Power might be off.	Try turning the machine off and on again. Contact us via support.3devo.com .
Error has occurred	VFD communication fault.	Try turning the machine off and on again. Contact us via support.3devo.com .
Error has occurred	VFD controller fault.	May happen during an overload condition of the motor. If this happens frequently, contact us via support.3devo.com .
Error has occurred	The internal supply voltage was unstable. This is expected when the USB cable is plugged in.	Check if the power cord is properly connected and the power switch is on.
Error has occurred	Motor not running or running much too slow.	Check for any obstructions. Contact us via support.3devo.com .
Error has occurred	Failure communicating with hopper.	Check if the cable to the hopper is connected properly. Contact us via support.3devo.com .
Error has occurred	Failure reading hopper sensor.	Contact us via support.3devo.com .
Error has occurred	Emergency stop button is pressed.	Please rotate the red emergency button clockwise and restart the machine via the main menu.
Error has occurred	Hopper no longer secured.	As a safety mechanism, machine will not start if the hopper is not connected

		properly. See chapter 3.3.2 for further instructions.
Error has occurred	Outlet no longer secured.	As a safety mechanism, machine will not start if the outlet is not connected properly.
Error has occurred	Door panel not secured.	As a safety mechanism, machine will not start if the door is not closed properly. See chapter 3.5.3.1 for further instructions.

Error has occurred	Linked machine safety error, or machine link connection problem.	As a safety mechanism, machine will not start if the granulator and shredder are not connected properly.
Error has occurred	Contactors are not enabled.	Contact us via support.3devo.com .
Error has occurred	Contactors are fused together.	The contactor fused message may occur when the contactor is worn out or after power outage. Contact us via support.3devo.com .

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 support.3devo.com.

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