



DarteGlass
PNEUMATIC MURRINI CHOPPER
MODEL PMC150
KICKING THE LABOR OUT OF CUTTING MURRINI!



DARTEGLASS.COM

Where beauty is just a fuse away!

WARNING:



Read and understand all instructions. Failure to follow warnings, cautions, and/or instructions may result in serious personal injury. Cutter is only to be operated by adults.



PERSONAL SAFETY:

- **Working with glass carries inherent risks and by using this cutter you accept all responsibility for your own safety. Personal safety equipment is necessary to avoid serious injury.**



- Always wear approved eye safety glasses when operating the cutter. Particles, shards and dust can eject at high velocity during operations.



- Cutting glass can create dust, shards and fine particulate matter. Breathing this dust and fine particulate matter can cause many serious respiratory conditions. Always use NIOSH approved respiratory protection while using the cutter.



- The chopper does make a striking noise, when in use. If you are sensitive to it and/or the compressor, wearing hearing protection is recommended.



- Clothing worn should protect you from glass shards and fit to avoid loose items from becoming caught in moving parts.



- Do not wear jewelry which can become entangled in the cutter or materials being cut.



- Stay alert, watch what you are doing and use common sense when operating the cutter. Do not use the cutter while tired or under the influence of drugs, alcohol, or medication.



SAFE WORKING PRACTICES:

- **Keep your work area clean and well lit.** Cluttered and dark work areas invite accidents.
- **Secure the tool to a stable work surface.** Unsecured tooling can move unexpectedly and result in injury and/or damage.
- **Disconnect the air source before servicing the tool.** Accidental starting may cause injury or damage.

- **Keep guards in place.** Never operate the cutter with the clear shield removed or finger guard out of place.
- **Never place any body part inside the guide track.** Always keep your body and clothing away from the moving parts of the tool.
- **Do not operate the tool in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Sparks are always a possibility with moving parts.
- **Keep bystanders, children and visitors away while operating the cutter.** Distractions can cause accidents.



GENERAL TOOL USE AND CARE:

- Do not use the cutter if the foot switch does not operate the piston. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- Disconnect the airline from the cutter before making any adjustments, changing accessories, or storing. Such preventive safety measures reduce the risk of accidentally starting.
- Do not force the cutter.
- Store idle cutter out of the reach of children and do not allow persons unfamiliar with the cutter or these instructions to operate the tool. Cutting tools are dangerous in the hands of untrained users.
- Maintain the cutter. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the cutter operation. If damaged, have the cutter repaired before use. Many accidents are caused by poorly maintained tools.
- Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- Use the cutter in accordance with these instructions and in the manner intended for this particular type of tool, taking into account the working conditions and the work to be performed. Use of the tool for operations different from those intended could result in a hazardous situation.
- Check for damage or missing parts before operating the cutter. Any missing or damaged part must be repaired or replaced to avoid the risk of personal injury.
- Firmly clamp or bolt the cutter to a table, workbench or other suitable surface so the cutter does not move while operating.

SET UP OF THE CUTTER

Pneumatic operation:

This cutter is pneumatically powered and requires an air supply which is dry and oil free with a **maximum pressure of 150 psi**. If your compressor rates higher than 150psi, use an air regulator to adjust and maintain the pressure supplied to the cutter.

The minimum operating pressure is dependent on the size of cane material being cut, thicker material requires more pressure, the recommended minimum starting operating pressure is **80 psi – 90psi**. For thicker diameter cuts, generally, **120psi** works best. Excessive pressure can shock the cane material and cause it to splinter or shatter. An alternative to increasing the pressure, if the material does not cut on the first attempt, is to rotate the piece slightly while holding it at the same length thereby creating several indentations until the material cuts. Annealed cane works best, causing less shattering.

Setting up the cutter:

The cutter ships in sections, which include the following:

- Main unit
- Shield- (with protective covering to be removed)
- Hose
- Bumper pads (4)
- Foot pedal
- 2 Allen wrenches- (one for screws attached to blades, one for the glass stopper/guide)
- 1 channel adapter used to keep the upper blade in a lowered position while rotating or replacing the top blade
- Power Adapter for LED Light
- Sample cut pieces that were tested using your chopper
- Optional catcher box.

If not using the catcher box as the base, the chopper will need to be secured to a stable surface, such as a workbench or similar flat counter, with the base opening extending past the edge of the surface so the cut cane can drop out of the cutter. For a temporary setup you can clamp the base to a suitable surface or permanently attach the base utilizing ¼” bolts through the holes in the cutter’s base. The cutter should not be used without attaching it to a solid surface. Position a container under the extended portion of the cutter to collect the murrine. Optionally you may use the catcher box, if purchased, to secure the cutter.

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHiTlxw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

Glass Stopper and Glass Riser



Glass Stopper

Set the material stop using the enclosed Allen wrench to loosen the set screw, move the stop to the desired length and ensure the “arm” of the stop is not in the middle, but closer to the top of the rod. If the “arm” is set too low, the murrine may become trapped between the “arm” and the cutter blades. Too high and it might interfere with the top blade assembly. This is a newly designed 3D printed stopper, which allows for more flexibility to prevent jams from happening. The arm is more of a guide than a stop! Also, make sure that the arm clears the top blade assembly, when the blade comes down. The stopper can be used in either direction, outside as seen in the picture and inside, by reversing the round holder on the metal shaft.



Glass Riser

The glass riser is a new addition to the PMC150. It is used to assist in chopping 3mm or less round rods. Odd-shaped rods can also be cut, but you will have to test to find the “sweet spot” for your designs. This adapter sits in the feeder ramp of the chopper and has a thumb screw to securely attach to the ramp. With this riser, you can rest your small rods on the riser and utilize just the top blade and one blade at the bottom, similar to using hand nippers.



Adapter attached with thumb screw.



View from the blade side of chopper

For a demonstration, you can watch a video about the riser and stopper here:

<https://youtu.be/-NR9b5Z5jhl>

OPERATING THE LED LIGHT

1. Plug the AC adapter into a 120-volt outlet.
2. Tap on the LED light switch to turn the light on.
3. Press and hold the switch to cycle between full brightness to dim and back again.

OPERATING THE CUTTER

1. Place the cane on the feed ramp and push it inward until it reaches the desired length. **NOTE: Do not** place your finger inside the feed tube at any time, serious injury can occur. **It is important to visually ensure your murrine is perpendicular to the cutter blades for a clean, square cut.** Depending on the shape of your murrine (e.g. straightness, inconsistent diameter) you may have to hold the murrine off the feed ramp to obtain a perpendicular position. Failure to position the cane correctly can result in inaccurate cuts or shocking the cane.
1. Step on the foot pedal using a quick tapping motion to actuate the upper cutter. Leaving the foot pedal depressed will not allow the upper cutter to return to its starting position. You can also hold the foot pedal in your hand or place it on a table and press down with your hand. Just remember, quick presses on the foot pedal, push the piston down more efficiently.
2. Push the cane inward until it reaches the desired length, ensure it is positioned correctly and step on the foot pedal.

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHiTlxw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

3. **The glass stopper** has a rubber coating on it, to help prevent the glass from jamming. Always position the stopper to be on the high side of the cane. It's more of a guide than a stop. The rubber coating will give the stopper a bit of a cushion, should a piece get stuck, you should be able to push it away.
4. Repeat as needed.

MAINTENANCE AND ADJUSTMENTS



Always disconnect the air supply, step on the foot pedal several times and ensure the air is drained from the cutter before attempting any maintenance or adjustments. Failure to remove the air supply can result in serious injury!

Maintenance is typically limited to the occasional rotation of the long-lasting carbide cutter blades like any other glass cutting device. Additionally, check to ensure all screws and fittings are snug with no air leaks.

It is recommended that you mark your blades, where the wear spot is, with a Sharpie, every time you rotate the blades. This will help you keep track of worn areas. Keep in mind that with the PMC150 you will be cutting more glass, at a faster rate. Inspect your blades for flatness, should you start getting uneven cuts. The impact is at a higher velocity than you are used to with hand nippers. If the blades are flat, then rotate!

If you have trouble loosening the screws, use a hair dryer to heat up the screw. There is a drop of Loctite on the threads that might need some heat to allow it to be loosened.

It is recommended that if you have to replace a blade, do so one at a time. There could be spacers/shims that have been applied to a blade that assist in proper alignment to the top and bottom blades. These need to be added to the correct blade, otherwise, your cuts could be off.

If you need to replace the blade set, the same applies.

To access and rotate the blades first remove the clear safety guard by unscrewing the screws on either side. The screws hold the blades using a 4 mm hex wrench. Be sure to properly reinstall any shims which were fitted on the blades when received.

To access the top blade, we have added a small metal channel that holds the piston in the down position. Push on the connected foot pedal to bring the piston down and then slide the stopper (channel piece) into position, as shown. Then you can safely release the foot pedal, and the piston will stay in the down position. Once you have completed the blade rotation/replacement, you simply push down on the foot pedal again and pull the stopper out.



Once stopper is put in place, you will see the top screw and blade from the front of the chopper.

Using the included Allen Wrench, attach a pair of pliers to the end of the wrench, to give you leverage and turn the screw. Remember to heat up the screw, from the other side, if you can't loosen it. It has Loctite and it may be very tight. Only add 1 drop of Loctite to the screw, but only if you are completely replacing the blade, otherwise, just rotate the blade and tighten the screw.

For a video demonstration go to <https://youtu.be/mP4R4zH9B6c>

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHiTlxyw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

The blades are standard 22 mm ($\frac{7}{8}$ ") diameter which can be sourced from many commercial suppliers if replacements are necessary, or you may purchase a replacement kit on the website. Add a drop of Loctite on the screw before tightening. The PMC150 comes with **Leponitt blades** installed.

Note: If purchased from an outside source, be sure that the inside diameter is 6mm. Recently, there have been changes made to the inside diameter by some manufacturers, such as Top Tools, and they will not fit properly on the PMC150.

Check the alignment of the upper and lower cutter whenever maintenance is performed. Manually pull the upper cutter down towards the lower cutter. The two cutting surfaces of the blade should match for a clean cut.

New Shield

Starting in August 2024 we have modified the shield. The original shield was a solid piece of material that fit snugly around the chopper. It worked great, but we had a request from Dale Keating, who teaches Vitrigraph and twisted cane classes. She wanted a shield that had an opening, so that longer pieces of cane could be cut safely. The result was adding a hole in the shield and snapping a plastic plug into place, when not required for long cane. We have dubbed this "The Dale Keating Special".

Note: the shield ships with a protective white plastic sheet. Be sure to remove this sheet before using the shield, so that you can see inside the chopper.



New removable plug for chopping longer cane safely.

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHiTlxw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

Catcher Box

The Catcher Box has a rubber pad glued to the bottom of the box, to catch the Murrini without damaging it.

If you purchase the Catcher box, slide the chopper between the box and the rails, with the polycarbonate shield **facing the front of the catcher, towards the metal plate and handle on the catcher box are located**. Make sure you clear the LED cord (there's a cutout for it) on the side.

Bumper pads are included to be placed on the bottom of the catcher box. This will help stabilize the box and absorb some of the shock from the piston chopping.

New and improved Catcher box. Shorter rails for easier removal of chopped murrini and powder coated to prevent rust and for a more professional look.



**The Shield faces the front of the catcher box, towards the handle.
See the picture above!**

Connecting chopper and compressor to hoses

Connecting to the Chopper

Connect your compressor and adjust the pressure as previously noted. Foot pedal has an industry standard "M" style quick-disconnect hose coupler preinstalled for your convenience.

Cutting action is controlled by a supplied foot pedal to allow for handsfree operation. Stepping on the foot pedal allows air to flow to the cylinder and internal springs return the foot pedal and cylinder to its up position once you raise your foot. The foot pedal has a nonskid base which helps prevent sliding. The standard (larger) foot pedal can also be placed on a table and pressed with the palm of your hand, while the upgraded (smaller) foot pedal can be placed in your hand and pressed with your fingers.



Using the small, upgraded foot pedal:

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHITlxyw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

Push black hose into chopper (blue) connector and foot pedal (black) connector. Be sure to push the hose all the way in. To release the hose, push blue connector on chopper in and pull out the hose. On the foot pedal, push the black connector in and pull out the hose.



On standard large foot pedal, the same applies.

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHITlxw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

The female quick connect from the compressor hose connects to the female connector on the foot pedal, for both the small and large versions.



On the compressor end of the hose, there should be a male quick connector, which then connects into the compressor's female connection. You should be set to go! Set your PSI to 80 to start with and chop. Adjust as needed. Testing your glass at different psi settings will help you find the sweet spot for your glass size. Higher psi for large diameter cane, possibly to 120psi. For small cane, 80psi to 90psi should work for you. If your compressor does not have a built-in regulator and has a PSI higher than 150, you will have to add an external regulator to adjust. The black hose, pedal and piston are only rated at 150psi. Anything higher could potentially damage the chopper.



Something like this:

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHiTxyw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

Compressor

The PMC150 is rated up to 150psi. If your compressor has a larger capacity than 150psi, you will need to add a regulator, so that you can adjust the psi down. If you don't have a compressor and plan on chopping indoors, we highly recommend this compressor from Harbor Freight, which can be found at: <https://www.harborfreight.com/1-gallon-135-psi-ultra-quiet-hand-carry-jobsite-air-compressor-64592.html>.



Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHITlxw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

For a bit more money, the other option is to go with a two-gallon version. Less running, more chopping between air refills.

<https://www.harborfreight.com/2-gallon-135-psi-ultra-quiet-oil-free-hand-carry-jobsite-air-compressor-64596.html>

FORTRESS 2 Gallon, 135 PSI Ultra Quiet Oil-Free Hand-Carry Jobsite Air Compressor

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MAX PSI

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SCFM
@90 PSI

60
dBA

Find YouTube videos at:

<https://www.youtube.com/watch?v=LYsZHITxyw&list=PLKGOJz-icUB9qiSbB6phwv77EqwnVb3-u&index=2>

Recommended quick connectors and air hose for compressor airline to PMC150 foot pedal. Such as these from Harbor Freight



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