

Prism paper cutter operator manual



Welcome to the PRISM-HPC paper cutter range!

Please keep this book with the cutter; it is vital for the operators to have immediate access to it at any time!

Remember, a paper cutter can be dangerous if misused, only operators who have read and understood this book should be permitted to use the cutter.

We reserve the right to make changes and improvements to Prism-HPM cutters which may not be covered by this manual. Please check at www.colterpeterson.com for revision information.

1. Technical data

Specification

Model size	78	92	115	137
Main technical parameter				
Maximum cutting width, mm	780	920	1150	1370
Maximum cutting length, mm	780	920	1150	1540
Maximum cutting height, mm	110	120	165	165
Cutting speed, knife cycles per min	40	40	42	42
Maximum clamp force, N	35000	38000	45000	50000
Minimize cutting size, mm	25	30	35	35
With false clamp plate fitted, mm	90	90	110	110
Blade thickness, mm	12.7	12.7	13.7	13.7
Maximum blade height reduction, mm	42	42	60	60
Main motor size, Kw	3	3	4	4
Backgauge motor size, Kw	0.3	0.3	0.3	0.3
Air blower motor size, Kw	0.65	0.65	0.75	0.75
Overall dimensions, mm; Length	2110	2280	2590	3090
Width	2000	2180	2980	3370
Height	1520	1520	1670	1670
Net weight, Kg	2100	2400	3400	4500

2. Installation.

Upon the receipt of machine, first open the box cover, and then remove the four side boards. Check carefully whether there is any damage to the machine caused during the transportation, and check that you have received every item listed on the packing sheet.

Prior to installation, first clean off the oil seal paper, anti-rust oil on the surface of the machine, and add some lubricating oil to any bare surfaces.

When moving the machine within a short distance, first remove the side and main tables from the skid, then lift the frame by screwing the two supplied eye bolts into the rear frame top holes.

(II) Installation

The machine should preferably be placed on a concrete base, and use a level to check the horizontal level. After installing the main frame, check the horizontal level both front to back and left to right. Install the main table into the main frame from behind, and insert the securing bolts loosely into the table underside through the apertures in the main frame.

When placing the table into the main frame, take care that the hand wheel and gear at the bottom of the table do not hit the main frame, as this could cause damage!

Fit rear center leg to support table rear from floor.

Rotate the table supporting leg to adjust the level of table surface and the cutting surface to make them level, and then fasten the nut.

Tighten the jacking bolt at the rear underside of the main table; this should be set to make a rear side gauge at an exact right angle to the rear of the knife horizontally. The front jack bolt should only need adjusting if the side gauge is not square to the knife, as this bolt is set in the factory for the table side to be at a right angle to the knife!

Fasten the table to the main frame with the large bolts, and then install the side tables to the front sides of the main table.

The rakes of the backgauge should be checked and adjusted so as not to collide with the clamp fingers when the backgauge is brought forward to the minimum cut size!



After the installation of all the above parts, make a thorough check and see if there is any looseness of the fixed parts such as a bolt, screw, etc., and check the tightness of other bolt that may have become loose during transportation.

Connecting the power to the cutter.

Please check that the incoming power is correct to the voltage on the machine plate and that the transformer tap is set correctly for the supply voltage inside the main electrical panel! Note; if you have a “high leg” e.g. one that is at a different potential to ground compared to the other two power legs, please connect it to the center terminal, L2.

First test with power connected.

Turn the main disconnect switch for the machine to on (I), turn on the key switch, press the main motor start button then press the stop button once the motor has started to rotate the flywheel, checking it’s direction of rotation compared to the adjacent arrow.

****Change over the two outside main power input wires, L1 & L3 if the direction is incorrect****

Test that the two hand function of the cut buttons is within ½ a second and that the safety curtain arrests downward movement of the knife and clamp.

Proceed to fit a sharp knife (see **Knife change**), ensuring that the mating surfaces on the knife beam and knife are first thoroughly clean.

Setting the size and square-ness.

Now place a pile of good quality paper for the cut testing on the table, and move the backgauge to contact the paper so the front paper edge can be cut.

Set the main clamp force to about ½ pressure.

Step on the clamp foot pedal (see chart II part 2), to lower the clamp to ensure clamping without disturbing the pile prior to operating the cut buttons for all of the following tests.

Press the cut buttons on the front of the main table at the same time (see chart II part 1, part 6).

The clamp descends down to press the paper and the blade will automatically follow to cut the paper. When the blade returns back to the highest position it completes the cutting process, the clamp now also returns back to its original position, and the cut cycle is complete.

To correctly set up the machine for accurate cutting we advise the following sequence.

First adjust the backgauge tilt so that the rake sections are at a right angle top to bottom, to the table.

Check that the front center bolt is tight then set gauge tilt by adjusting the backgauge rear center lifting bolt, note; the rear side bolts should be released first so as not to hold the gauge to the inner sledge at this time.

Once tilt is correct, set the gap between the lower front tips of each rake section to the table surface.

The gap should be set to about 0.05mm (0.002") by adjusting then locking the jacking screws at the upper rear of each rake.

Set the knife to cut to the bottom sheet without making an undue groove in the cutting stick.

For all settings and tests use a 25mm (1") high block of good quality paper, then cut on all sides to give a block about 250mm (10") by 750mm (30").

Once cut, always discard a few top and bottom sheets as these can be slightly off size!

Now check that the table is square to the knife by making test cuts as follows; place the test pile so that the long edge is against the right side gauge.

Set the backgauge size so that about 5mm (or 1/4") will be removed from the front of the pile and then reverse the backgauge slightly away from the rear pile surface.

Now ensure that the pile is knocked up against the side gauge prior to making the cut.

Next flip the pile over, front to back, so as to keep the same pile face against the right side gauge and repeat the above cut process.

Take a sheet from the center of the pile and fold it over so as to compare the length of the two long

edges.

Now check for these to be of equal length, if not adjust the table square-ness by loosening the main table to frame bolts and then adjusting the front and rear jacking bolts to re-square the table to the knife.

Only once the table is set correctly should you proceed to adjust the backgauge for parallelism to the knife!

To adjust the backgauge please cut and compare blocks of paper on left and right side of the backgauge, keeping the paper block slightly away from the side gauges!

Loosen both parallelism bolts lock nuts then loosen one bolt and tighten the other to pull the gauge in the required direction, retightening the lock nuts when finished.

Once you are satisfied that the cutter is fully square, the actual backgauge size to the knife can be set in the computer.

This should again be with a short pile height and checking the center of the pile not top and bottom sheets!

Also place the pile in the center section of the backgauge to reduce any possible square-ness issues!

The computer can be adjusted by entering the **maintenance** section then selecting **calibrate gauge**.

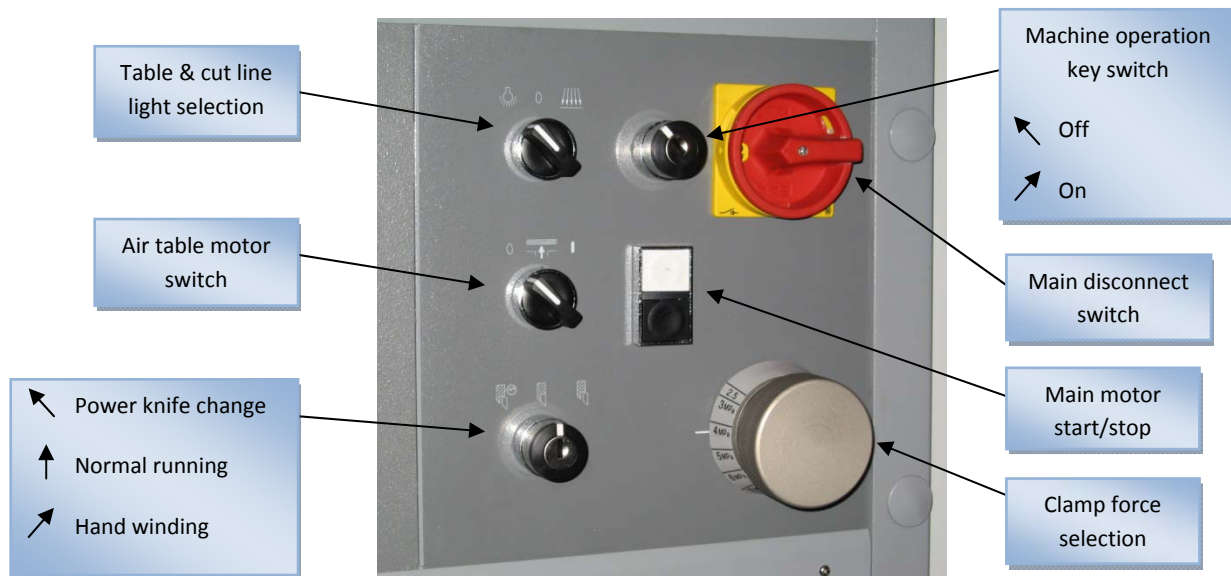
Tip; for best accuracy, cut a pile in half and compare cut size edges, rather than using a rule to measure.

This machine is primarily designed to cut materials such as paper, paper board and soft plastics, if you wish to use it to cut harder materials such as metal foil, glass fiber etc., you should first request advice from Colter & Peterson Inc.

Any danger that is caused by unconventional practice or false usage will absolve the manufacture and the supplier against any legal responsibility.

3. Start-up

First please be sure that no other people are around the machine so that they could be caught by the backgauge moving unexpectedly!



Turn on the main disconnect switch, key switch and then press the main motor start button.

The computer will boot up and then ask questions, you may first be asked for a language selection if more than one is available in the settings, it will then ask if everyone is clear.

If you are ready for the backgauge to move then press the **YES** key to the questions, this will initiate movement and calibration of the backgauge.

Once the backgauge position is displayed the cutter is ready for use.

4. Manual operation

To move the backgauge to a known size simply key in the size, your entry is visible in the “target size” display at the bottom right.

Once you are happy with the entry press the  button and the backgauge will move to the requested size and maintain this size.

By pressing in the hand wheel you can unlock the size and make a change.


Using the + or – keys will allow you to add or subtract from the current target size as well, just press move afterwards to move the gauge to the new size!

By using the forward or reverse buttons the backgauge will gradually speed up in the requested position, also using these buttons will turn off the backgauge lock.

5. Make a new program

To create a new program simply press  then follow the screen prompts to chose a job number and description if required.


You can enter cut positions by keying in the size and entering by pressing yes or simply using the same method as in manual mode to position the gauge and then cutting, the computer will also enter automatically the size for every cut you make!

The  button can be used to change the air table on/off and the current setting will also be stored in the program for each cut.

The option touch button lets you save a size for other functions, try it!

This information is to get you started, for more detail please read the full Microcut instructions chapter.

6. Automatic operation

Once you have finished entering all the cut positions, by pressing  the programmer will return to the first step in the program and move to successive steps after each cut or operation of the move key.

It is possible to change the programmed air status (on/off) simply by pressing the air button during an automatic run, also the other touch screen buttons permit you to make changes to the program.

Using the revue key brings up a list of all the jobs in the memory for you to select the next job to use. The options key gives you more choices regarding the job list!

7. Knife change, only for knife beam with round bolt holes

(1) Knife removal:

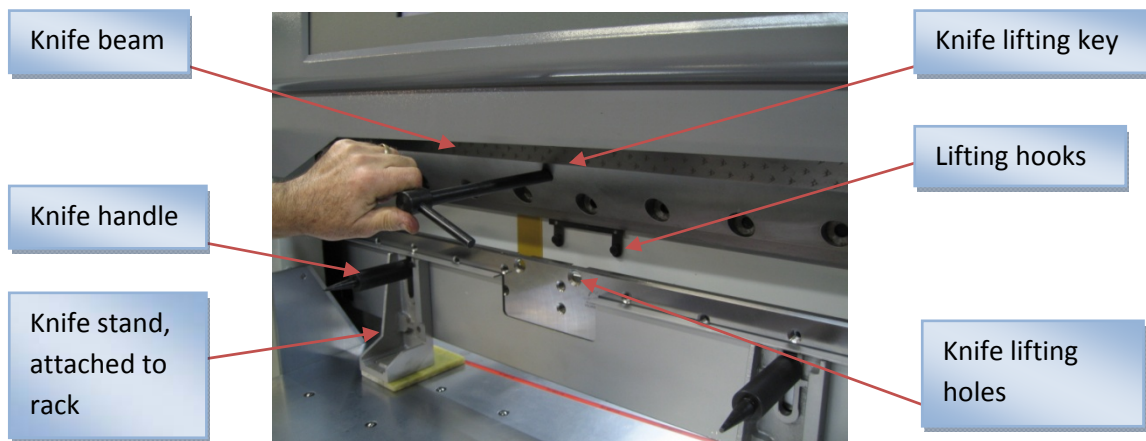
1) Set key switch to power knife change position.

Push the cut buttons with two hands to drive the knife beam to the bottom position.

2) Remove the two knife-holding bolts at the left side.

3) Push the cut buttons again with two hands and raise the knife beam to the top position.

4) Remove all of the remaining knife bolts.



5) Position the knife change rack and stands on the table, then locate the slots in the stands to corresponding bolt holes on the blade (or to the blade indicating marks).

6) Insert the T wrench into the lowering bolt on the knife beam.

7) Rotate the T wrench and lower down the blade until the sides of the blade contact with the front face of the knife stands.

8) Put the knife-change handles through the slot on the stands, then fasten and lock the stands to the blade.

9) Rotate the T handle to lower the lifting hooks some more so they are in the center of the lifting holes in the knife and slide out the blade from the knife beam on the stands.

10) Remove the knife-changing rack with dull knife from the machine and move to an adjacent empty knife box.

11) Put the dull knife into an empty knife box, and take out the handles. The knife must then be firmly fixed to the box.

(2) Refitting sharp knife: see chart VI

1) Attach the knife-changing rack with the knife-changing handles to a sharp blade.

2) Slide the knife out slightly from one side of the box with the handles, so it is possible to measure the knife with the knife height gauge.

3) Measure the height of blade by pressing the gauge to the rear face of the knife to the right of knife-exchanging rack.



Attention: when the blade top is lower than the "Z" spring of the gauge finger, fixed the blade rear surface against the gauge body so that it is measured by the "Z" spring, rather than the main finger, and also use the second row of bolt holes in the knife to secure it to the cast knife beam.

Put the gauge sliding finger close to the top surface of the blade and measure the height of the blade.

4) Push both cut buttons to drive the knife beam to the bottom position. Set the knife height measuring gauge on the table, point the red tip on the gauge to the knife-point aperture on the knife beam, the turn buckle behind the right cover should now be adjusted so that the aperture is opposite the red tip of the gauge, indicating the correct

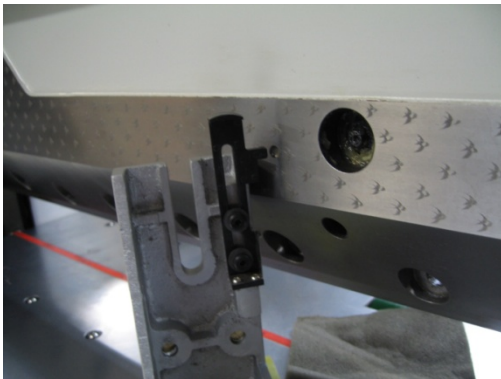
initial adjustment for the sharp knife.

6) Push both cut buttons to return the knife beam to the top position.

7) Place the knife change rack under the knife beam and lower the knife lifting device so as to align the two hooks with the lifting holes in the knife.

8) Push the knife change rack towards the rear so that the knife can be held by the hooks then raise knife up by winding the hooks back up into the knife beam until the hooks are above the lower edge of the knife beam.

9) It is now possible to unscrew the knife handles so that the handles and knife change rack can be removed.



10) Now continue to raise the knife into the beam using the lifting device until the knife has hit the stop position at the top of the knife beam.

11) Fit all possible knife holding bolts and fasten them one by one from center to the two sides.

12) Remove the knife lifting and bolt tools.

13) Push the cut buttons to send the knife beam to the lowest position; it will stop at this position automatically.

14) Fit the two remaining knife holding bolts on the left side, and firmly fasten them.

15) adjust the turn buckle so that the knife is set into the stick correctly, it may also be necessary to adjust the leveling handles at the rear of the frame to achieve this.

16) Push the cut buttons and return the knife beam to the top position.

17) Return the knife change key switch to the run position.

Attention: check the shear bolt when exchanging the knife, and refasten it if loose!

If the shear bolt becomes broken it is recommended that you replace the bolt and then check operation by hand wind method through one cycle before continuing to use the machine.

8. Knife change, only for knife beam with slotted holes

New type to be available soon!

9. Trouble shooting

Power-up; check motor trips, safety switches for shear bolt and hand wind Plexiglas

Cut size; check knife is sharp, clamp force, calibrate backgauge

Backgauge controller; trip button on controller, backgauge motor brush's, encoder

Safety curtain; check for obstructions (paper attached to frame?), clean Plexiglas

Cut/clamp controller; check knife is at top, hand wind to top!, backgauge controller enabling?

Hydraulics; check pump belt, oil level, leaks inside tank, springs in cylinder base

10. Maintenance

The longevity of your new cutter is determined by how you look after it, also being aware of how much work it has to perform is important!

If the cutter works continually for three work shifts in 24 hours it will require maintenance more frequently than if only working intermittently for one shift only in a 24 hour period!

We base the schedules below on a busy single 8 hour shift, 5 days per week.

Because the backgauge drive uses ball-screw technology it requires grease rather than oil, and so the lubrication intervals are longer!

Please be careful to use good quality lubricants and not to substitute with non conforming types!

Grease;

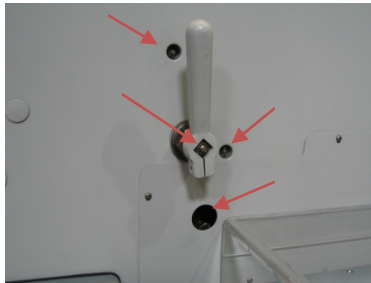
Used for frame and backgauge lubrication where grease nipples are indicated.

Type: Shell R-2 or equivalents.

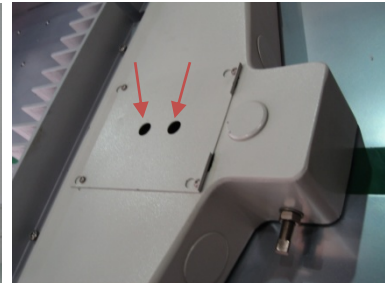
Lubricate each grease point one stroke every two weeks.



Front of cutter, also behind cover!



Rear of frame, 4 each side!



Backgauge, for screw and guide.

Gear box oil;

Located in gearbox fitted to right hand side of main frame.

Drain and refill gearbox to half way up sight glass at box rear.

Type: Shell Omala 329-680, or equivalent.

Quantities: 78 & 92cm Prism
115 & 137 Prism

Approximately 1.8 Pints
Approximately 2.5 Pints

Replace once every two years.

Hydraulic oil;

Used to operate clamp and cutting clutch, located in tank on front lower right side of frame.

Empty out tank with small pump & hose, clean tank sides and pump strainer. Then refill to half way up sight glass on side of tank.

Type: Shell Tellus 46 or equivalents.

Quantity: 78 & 92cm Prism
115 & 137 Prism

Approximately 4.5 gallons
Approximately 8 gallons

Replace once every two years.

11. Index