Cannular Compact Semi-Auto Canning Machine

Instruction Manual

KL15769

KegLand Distribution PTY LTD

www.KegLand.com.au

WARNING

ALUMINIUM CANS SHOULD ONLY BE USED TO STORE BEER. THEY HAVE NOT BEEN TESTED WITH OTHER BEVERAGES SUCH AS WINE OR SPIRITS.

WARNING

DO NOT OPERATE THE CANNULAR WITHOUT FIRST CONFIRMING THE CANNULAR IS IN SPECIFICATION ACCORDING TO THE SPECIFIC CHUCK USED. CONFIRM THE ROLLERS DO NOT CONTACT THE CHUCK PRIOR TO OPERATION OF THE MACHINE BY MANUALLY TURNING THE CHUCK OR FLYWHEEL THROUGH A FULL CYCLE.

WARNING

ENSURE THE CANNULAR IS UNPLUGGED BEFORE PLACING ANY BODY PART NEAR ANY MOVING PARTS OR WHEN MANUALLY ROTATING THE MOTOR OR THE CHUCK. THERE IS A RISK OF SERIOUS INJURY OR DAMAGE TO THE MOTOR IF THE CANNULAR IS PLUGGED IN WHILE MAKING ANY ADJUSTMENTS.

WARNING

AVOID CONTACT OF ANY ELECTRICAL COMPONENTS WITH LIQUID.

Getting Started

Immediately upon unpacking the Cannular inspect the unit for any signs of damage and do not operate the Cannular if any damage is observed.

The Cannular has been designed to suit cans available from KegLand and comes standard with a B64 chuck which is compatible with cans available from KegLand. It is however, possible to setup the Cannular to seam a wide range of can heights and diameters by setting up the machine differently. For different can sizes you will need to adjust the rollers and change the chuck to suit the specific non-KegLand can end.

If you are using cans from a different supplier we do not offer dies or information about machine setup for cans that we do not sell. You will need to get specification and machine setup information from your can supplier.

A 24V Power supply rated to a minimum of 20amps with a standard Anderson Plug is required to run the Cannular. If you do not have a power supply they are stocked on our website. **Only the un-wired 20A power supply or 24V 12.5A DC power supply should be used with the Semi-Auto Cannular.**

- 24V DC (20Amp) Power Supply With Anderson Plug – un-wired (KL10856)
- 24V DC Power Supply – For Semi-Auto/Manual Cannular and Maltzilla (KL17343)

These power supplies are sold separately.

The Cannular is a portable light weight canning machine. The feet are designed to grip the bench top, however, if you are planning to use the Canning machine for an extended period of time in the same position we recommend clamping or mounting the machine to your bench top.

The Cannular can be mounted to a bench by drilling a screw through the mounting brackets on the bottom of the Cannular.

Your Cannular is calibrated and set up at the factory to seam KegLand 500mL B64 cans (KL05449, KL18517 and KL15684), however, due to an extended transit time it may have shifted out of specification during its journey. Before making any adjustments to the seamer follow the following initial start-up instructions:

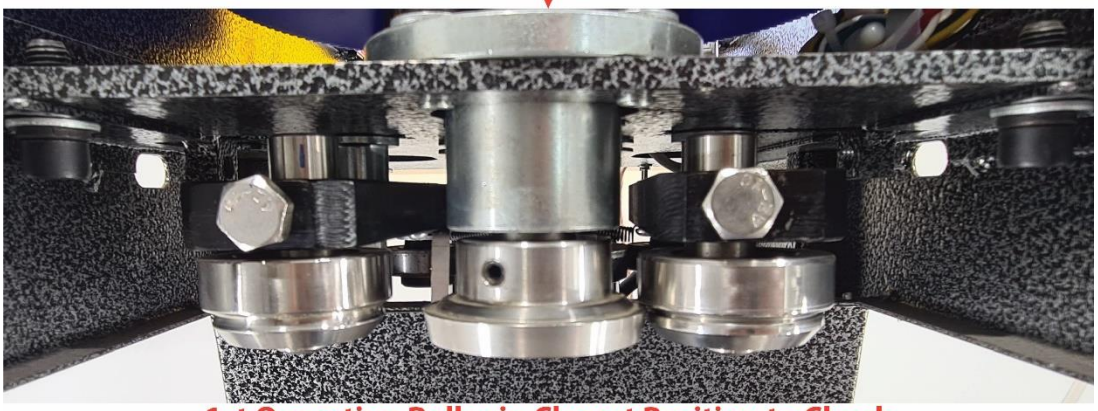
1. Remove the top of the Cannular to improve access to the chuck, rollers and flywheel.
2. With the Cannular unplugged from the power supply, turn the flywheel or the chuck clockwise until both rollers have completed their full rotation to ensure that neither of the rollers contact the chuck at any point. For a visualisation of this refer to the image on page 5. If either roller contacts the chuck then adjust the position of the rollers according to the measurements on pages 14-16

IMPORTANT: Under no circumstances allow the rollers to come into contact with the chuck. As these are both made from hardened steel and both require high tolerances. Both chuck and rolls can quickly get damaged if they are to come into contact.

3. Once you have confirmed that the rollers do not contact the chuck, fill a can with soda water or any other carbonated beverage, and place the lid on the full can.
4. Adjust the height of the table to suit the size of the can, place the can on the table and plug the Cannular into the power supply.
5. Before raising the table ensure that the rollers are at their starting position. This can be done easily by making sure the power on/off switch is in the on position (depressed). Then press the operation button. The cannular will run through its full operation and return to its starting position.
6. Raise the table and ensure the can and can lid are held firmly into the chuck.
7. Press the operation button (with the power on/off switch in the on position)
8. After the Cannular has run through its full operation and has returned to its resting position, lower the table, remove the can and inspect the seam for leaks.
9. If it is determined that the seam leaks then calibrate the Cannular according to the instructions on pages 14-27.

We recommend customers check the specifications on the seam every 50,000 cans or once a year to ensure the cans remain within allowable tolerances.

1st and 2nd Operation Rollers in Furthest Position from Chuck (Start)



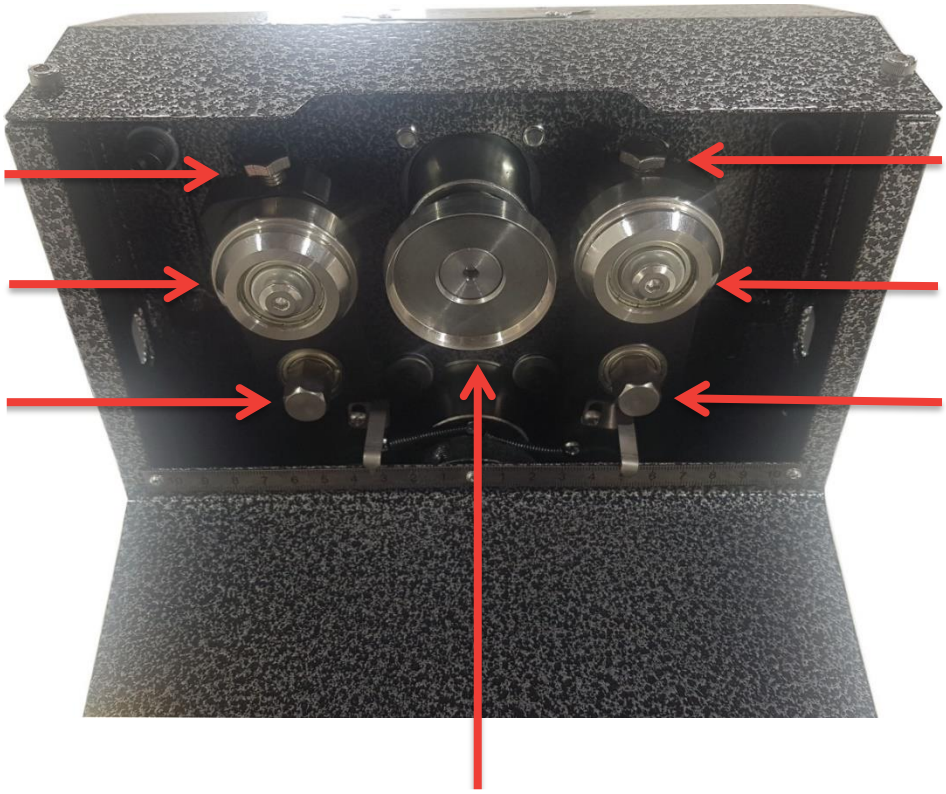
1st Operation Roller in Closest Position to Chuck

1st and 2nd Operation Rollers in Furthest Position from Chuck (Middle)

2nd Operation Roller in Closest Position to Chuck


CANNULAR
Table
Turn table support
Coupling Nut
Turntable Lever


Operation Switch
(Momentary)
Power Switch
(On/Off)



Power/Operation Buttons

When the power (On/Off) switch is not depressed, pressing the operation (momentary) switch will cause the motor to nudge the rollers. This is good for getting a roller closer to the chuck for adjustment.

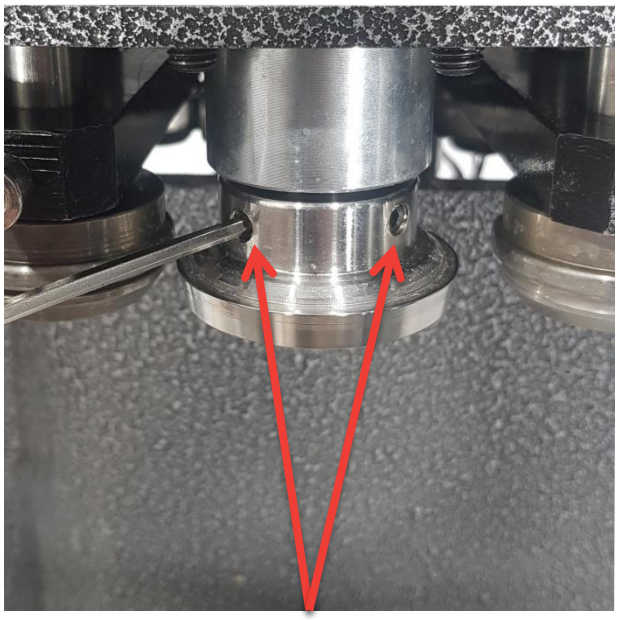
When the power (On/Off) switch is depressed, pressing the operation (momentary) switch will cause the motor to run through its full rotation. Ensure the Cannular is in specification before pressing this combination.

Changing and Adjusting the Chuck

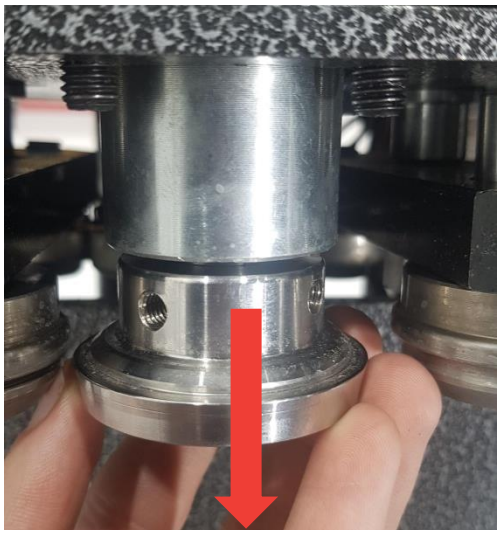
The Cannular is setup out of the box with a chuck that is suitable for B64 can ends. This chuck is compatible with cans available from KegLand. If you wanted to use a non-KegLand can and can end then you will need to adjust the rollers and change the chuck to suit the specific can end you are using. You will need to get specification and machine setup information from your can supplier and they may use a non-B64 chuck which may need to be sourced from the supplier you sourced the cans from.

If you were using VISY or CDLE/CDL can ends then you will need to buy a VISY chuck which is stocked on our website (KL14670).

To change the chuck, unscrew the two grub nuts shown to the right using a 3mm Allen key. and pull downwards to remove the chuck from the drive shaft. This may require a bit of force.

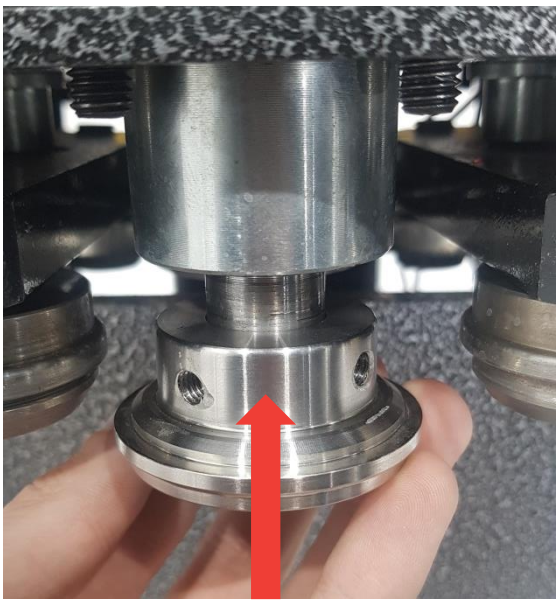


Loosen Grub Screws

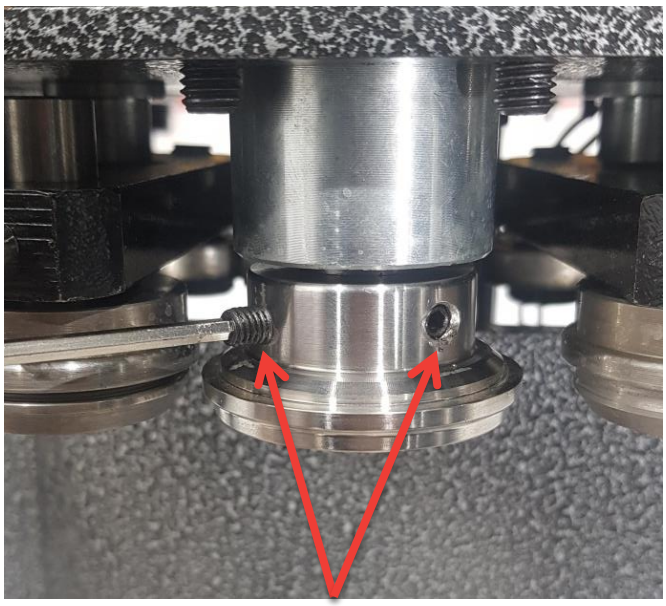


Pull downwards

Then push the required chuck as far up as it goes onto the drive shaft and fasten in place with the two grub nuts. Make sure to tighten the grub screws very well to ensure the Cannular stays in specification.



Push as far up as possible



Tighten Grub Screws

Calibrating to Achieve Correct Double Seam Specification on B64 Can ends

Ensure that the correct chuck for your particular can end is installed and tightened onto the drive shaft.

Start by unplugging the Cannular machine from the power supply. The rollers can be adjusted with the top cover on; however, it may make it easier to access the adjustment nuts with the top cover removed.

Bottom Die (Turn Table) Height Adjustment

Warning! Do NOT install any table or table spacer other than the table provided with the Semi-Automatic Cannular (KL17879). The height of the table of the Semi-Automatic Cannular can be raised or lowered to suit many different can heights, a table spacer is not required and should never be used on this model.

Using an Allen key or a steel rod undo the coupling nut on the base of the turn table support. Turn the Allen or steel rod counter clockwise to undo the coupling nut. You can apply force in the opposite direction to the lever to prevent it rotating as you undo the coupling nut. Turn the table support counter-clockwise to raise and clockwise to lower the turn table support.

Left: Loosening coupling nut

Right: Tightening coupling nut

Gradually raise the turn table support by rotating it in a counter-clockwise direction until firm pressure holds the can against the chuck. The can should be held firmly in place but should not buckle under the pressure. Once you are happy with the position of the table, tighten the coupling nut firmly using an Allen key.

Table Position Adjustment

It is possible that at some stage your table may have come out of alignment. In this case you will need to use a 5mm Allen key to re-position the turn table.

The issue will be noticeable if you raise the turntable and the can collides with the top die/chuck.

NOTE: The quality of the seam is greatly dependent on the can coming in contact with the chuck concentrically.

If your can is not raised up against the chuck concentrically you may notice your seam leaking and/or the can buckling, particularly on the second operation (see right).

If the buckling occurs on the second operation then please check your can is being raised straight up and completely concentric with the chuck.

Small adjustments to the turn table position

To make small adjustments to the turn table position.

1. Undo (turn counter-clockwise) the coupling nut on the turn table using an Allen key.
2. Use two fingers to move the turn table slightly in the desired direction while re-tightening (turn clockwise) the coupling nut on the base of the turn table.

3. Check the can now lifts concentrically

Large adjustments to the turn table position

If larger adjustments are required to the position of the turn table.

1. Unplug the power from the machine and tip it on its back
2. Use the 5mm Allen key to undo the three bolts that secure the turn table to the base of the machine

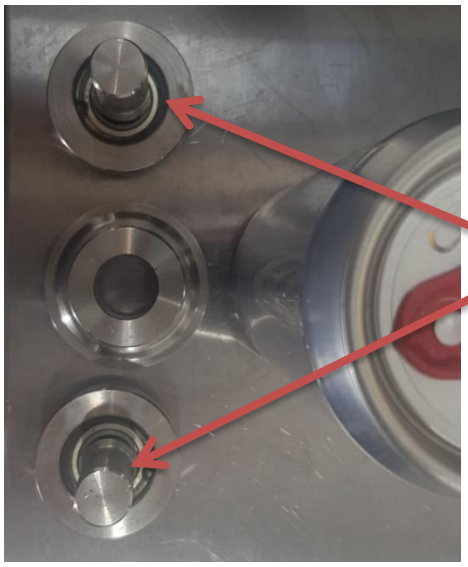
3. Adjust the position of the turn table so that the can is completely concentric with the chuck when it is raised.
4. Once you are satisfied with the position of the turn table do up the three bolts with the Allen key

Setting up the rollers for Tin Cans

Both rollers on the Semi-Auto Cannular have detented rollers, such that they can be rotated around the drive shaft 360 degrees to allow wide diameter cans to be seamed such as tin cans.

The correct detention setting differs according to the size of the can used. The Cannular is setup out of the box to be used with Aluminium cans and hence this won't need to be changed unless you plan on using tin cans.

For aluminium cans set the detention so that the roller is at its closest detention position to the chuck as shown below.



Drive shaft at closest position to chuck and rollers at furthest position from chuck

For larger tin cans set the detention so that the roller is at its furthest detention position from the chuck as shown below.

Drive shaft at furthest position from chuck and rollers at closest position to chuck

Note: The rollers have been removed from the machine in the above diagram for explanatory purposes only.

Generally once this has been set and tightened it will not need to be adjusted.

1st Op Roll Height and Gap Adjustment

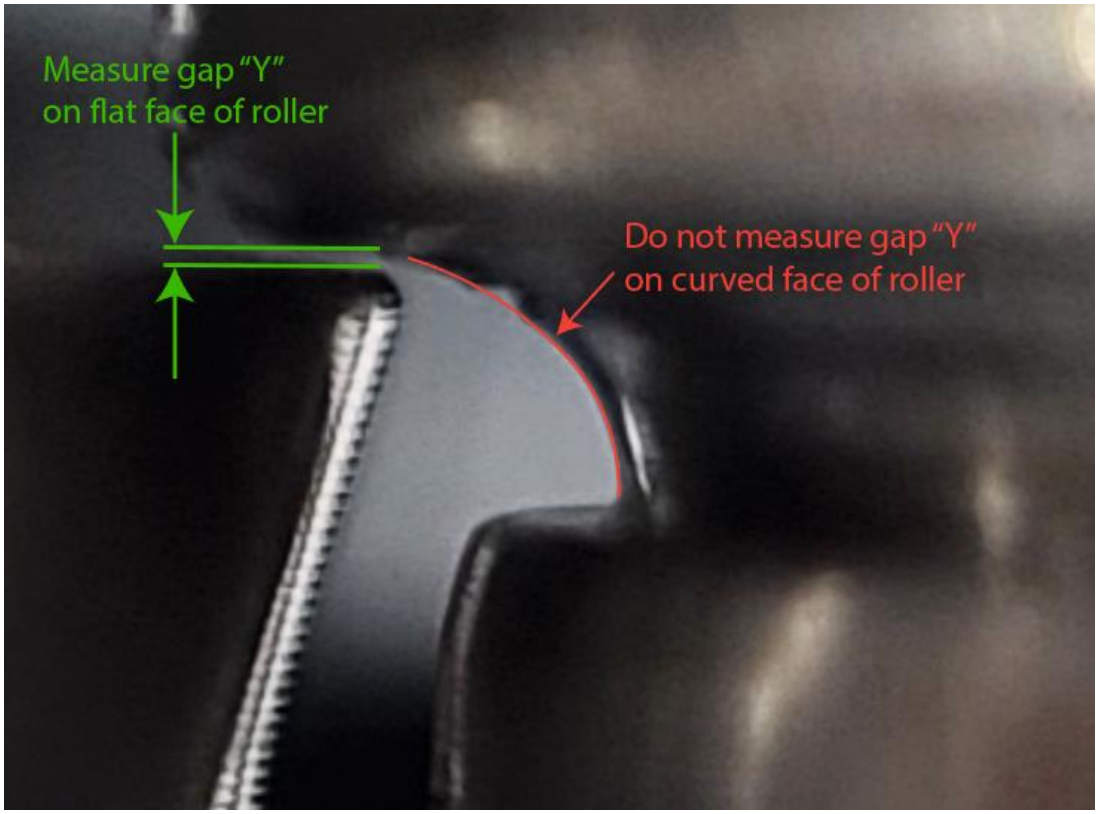
The right roller undertakes the 1st Operation on the Semi-automatic Cannular.

To ensure you get the can within the specification it's vital that the 1st and 2nd Op rolls are correctly adjusted. In order to carry out these adjustments on the machine it's recommended that you use a feeler gauge set (KL13420)

Always adjust the gap "Y" first, as gap "X" will change any time you change gap "Y".

Set the 1st Op Roller height (y-axis)

1. Unplug the power from the machine
2. Turn the chuck clockwise until the 1st roller is at its closest position to the chuck. **NEVER turn the chuck anti-clockwise as you can damage the motor if you do.**
3. Using a 14mm spanner or socket, loosen the y-axis adjustment nut.
4. Slide the roller vertically along the drive shaft to set the gap "Y" at 0.05 mm. The best results can be achieved when the 1st operation roller is as close as possible to chuck in the y-axis without touching the chuck. Ensure that the gap "Y" is measured from the flat face of the roller to the top of the chuck (as shown below).

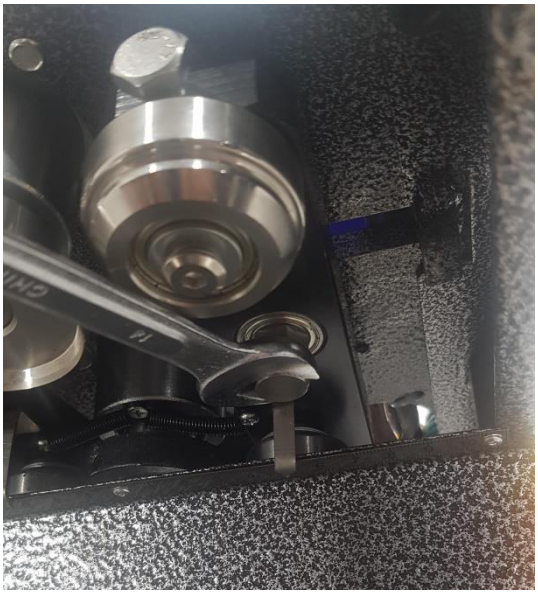


To ensure the "Y" gap is measured on the flat face of the roller you may need to increase the x-gap slightly such that the curved face is further away from the chuck.

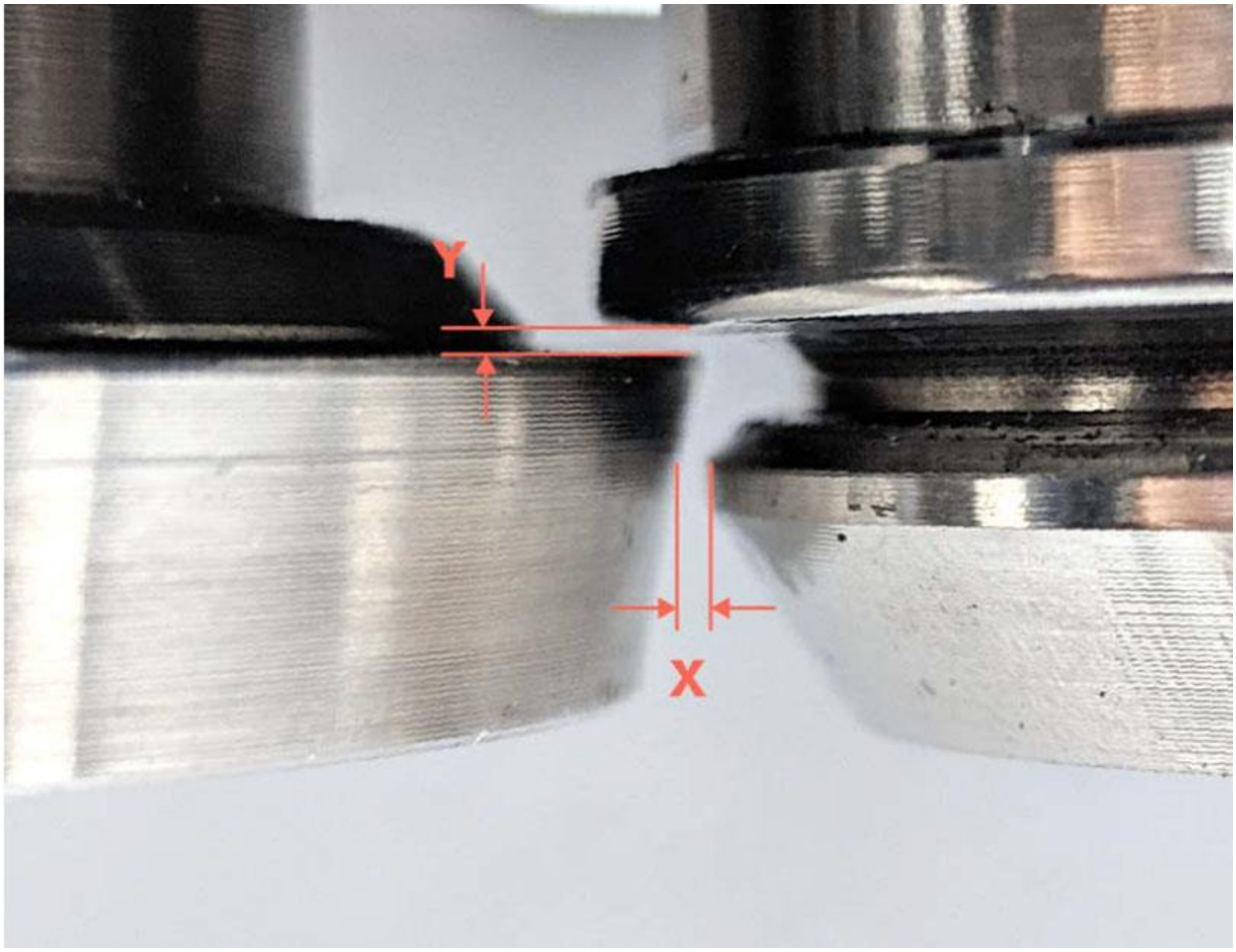
5. Tighten the y-axis adjustment nut firmly once at the correct gap "Y" size to fix the roller in position

Set the 1st Op Roller Gap (x-axis)

1. With the roller at its closest position to the chuck using a 14 mm spanner or socket, loosen the x-axis adjustment nut.
2. Adjust the position of the roller so the gap "X" between the chuck and the 1st Op roller is 0.6mm +/- 0.1mm. **Ensure that you have the feeler gauge flush with the face of the chuck. The feeler guage should be placed on the same angle as the chuck when taking a gap "X" measurement, not vertical.**



3. Tighten the x-axis adjustment nut firmly once at the correct gap “X” size.
4. NOTE: The gap “X” may change as you tighten the x-axis adjustment nut. To prevent this, you should tighten the nut from the side of the machine to prevent the arm



holding the roller being torqued as you tighten it.

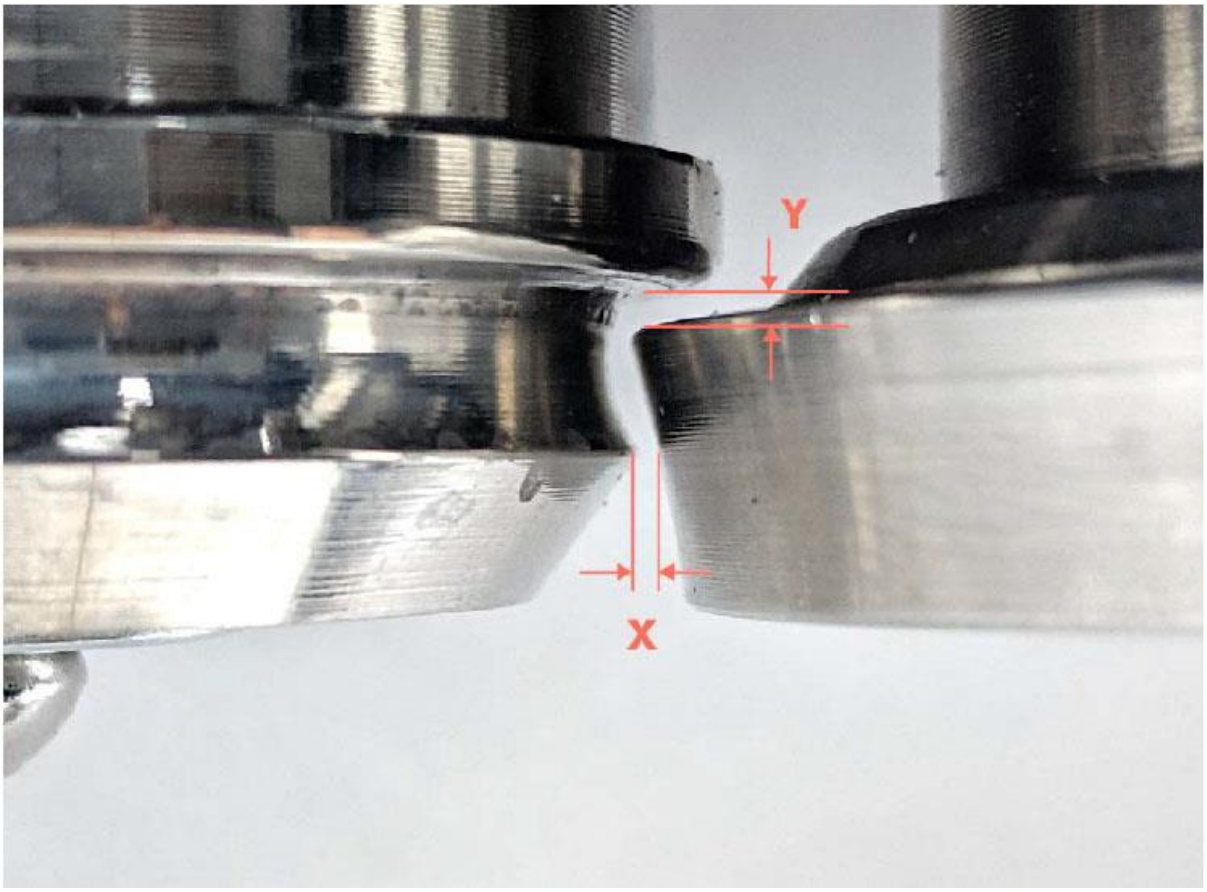
2nd Op Roll Height and Gap Adjustment

The left roller undertakes the 2nd Operation on the Semi-Automatic Cannular.

Similarly to setting up the 1st op roller height and gap do the same thing with the 2nd Op roll, ensuring that adjustments are made when the 2nd Op roll is at its closest position to the chuck.

The gap “Y” on the 2nd Op Roll should be 1.35mm +/- 0.05mm

The gap “X” on the 2nd Op Roll should be 0.3mm +/- 0.1mm



Fine Adjustments to the x-axis

Fine adjustments can be made to the x-axis of both the first and second operation rollers.

It is best to use the x-axis adjustment nut to make large adjustments to the x-axis position of each roller such as to get the roller in its closest position to the chuck.

Once the roller is at its closest position to the chuck it easier to make fine adjustments to the x-axis by utilising the fact that both the rollers on the Semi-Auto Cannular have detented rollers, such that they can be rotated around the drive shaft 360 degrees to give a greater degree of fine adjustment in the x-axis.

1. Loosen the y-axis adjustment nut just enough that the roller is still held in position in the y-axis

2. Insert a 4mm Allen key into the hex socket on the underside of the roller
3. Loosen the hex socket slightly by turning the Allen key counter clockwise

   Be careful not to loosen too far as this hex screw holds the roller to the shaft and hence loosening too far will result in the roller falling off the shaft.

4. As it loosens the roller will move either closer or further away from the chuck depending on the position of the roller relative to the shaft. If you find the roller is not moving as you loosen this hex socket this is an indication that you need to loosen the y-axis adjustment nut further to allow the shaft to move. The image below shows how the roller can rotated around the drive shaft 360 degrees when the shaft is in a fixed position.

5. This will allow you to perform fine movements of the roller towards or away from the chuck.
6. Once you have the roller in the correct x-position, confirm that your gap “Y” is correct and then tighten the y-axis adjustment nut to lock the roller in this position.
7. Then tighten the hex socket on the bottom of the roller.

Check Your Rollers Spin

In order for the Cannular canning machine to work efficiently the rolls must be able to spin. Ensure the Allen key bolts on the underside of the rolls are done up tightly but once you have done this, rotate the rolls with your finger to ensure they can still turn without much resistance.

IMPORTANT: After you have adjusted the rollers manually turn the chuck clockwise such that the two rollers run through a full rotation and make sure that the rollers never come into contact with the chuck at any point in time.

After you have moved the rollers in to position it is best to assess the actual overlap, seam width and seam height (Described on pages 20-27). This will allow the quality of the seam to be assessed, such that it can be determined whether the seam parameters (actual overlap, seam width and seam length) are within their specified ranges for forming a high pressure, leak free seam.

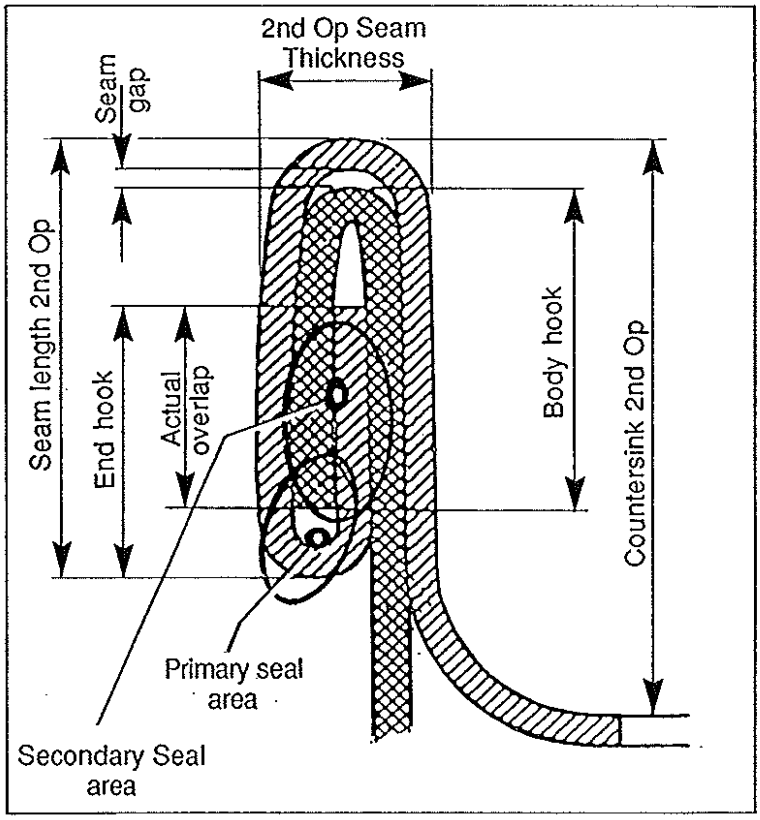
The Double Seam Process

In a large commercial operation you would normally check and confirm all critical parameters of 2nd operation seam thickness, seam gap, actual overlap, bodyhook butting and tightness rating irrespective of the component material gauge and diameters.

With that said, close to the same can seaming confidence level can be reached by confirming these three parameters that are easier for the operator to check without specialised tools:

1. Actual Overlap
2. 2nd Op Seam Thickness
3. Seam Length 2nd Op

1 and 2 above in particular are the most important.



The forming process is carried out in two operations known as the 1st operation and 2nd operation cycles. The 1st and 2nd operation seaming roller profiles are very different to each other as each profile has a totally different function.

The forming of the 1st operation seam is the most important operation as this operation takes the end curl and can flange and begins the forming process. It's the formation/dimension of this 1st seam that controls the effectiveness of the 2nd operation seaming roll profile in achieving a hermetic seal.

The sole function of the 2nd operation seaming operation is the compression of the previously formed 1st operation double seam.

Despite the 1st operation being the most important, if the 2nd operation roller is out of specification it can also result in the seam not sealing. The x and y measurements of the 2nd operation roller effects both the seam width and length.

Hence, it is important that both rollers are at their respective correct positions for the seamer to be in specification.

IMAGE 1 – 1st Operation

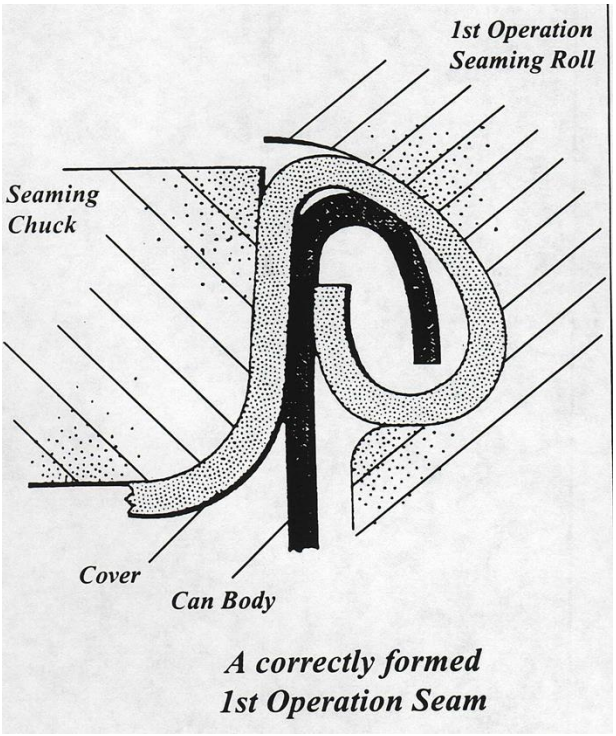
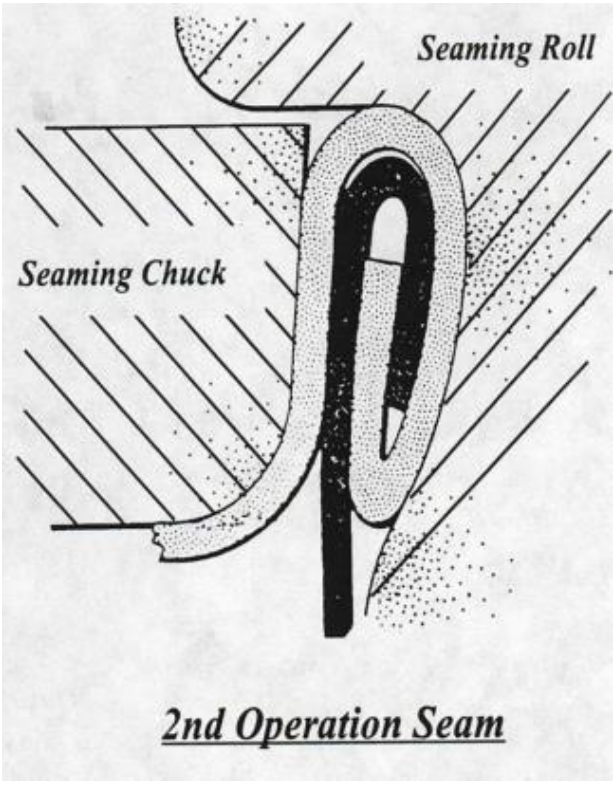


IMAGE 2 – 2nd Operation



Actual Overlap

This process will determine that you have sufficient overlap. Ideally if you have a set of calipers, it is best to measure how much overlap you have. Having an overlap is absolutely critical to getting a sufficient seal. This step will require good eyesight and/or a steady hand, so if your eyesight is not exceptional, it would be worth getting some assistance from someone else.

STEP 1

Using the Cannular can seamer, prepare two test cans. Seam the first can using just the first operation seam. With the second can, use both the first and second operation to finish the seam. You should have two individual cans that look like this below:

LEFT: First operation only (we will refer to this as Can A)

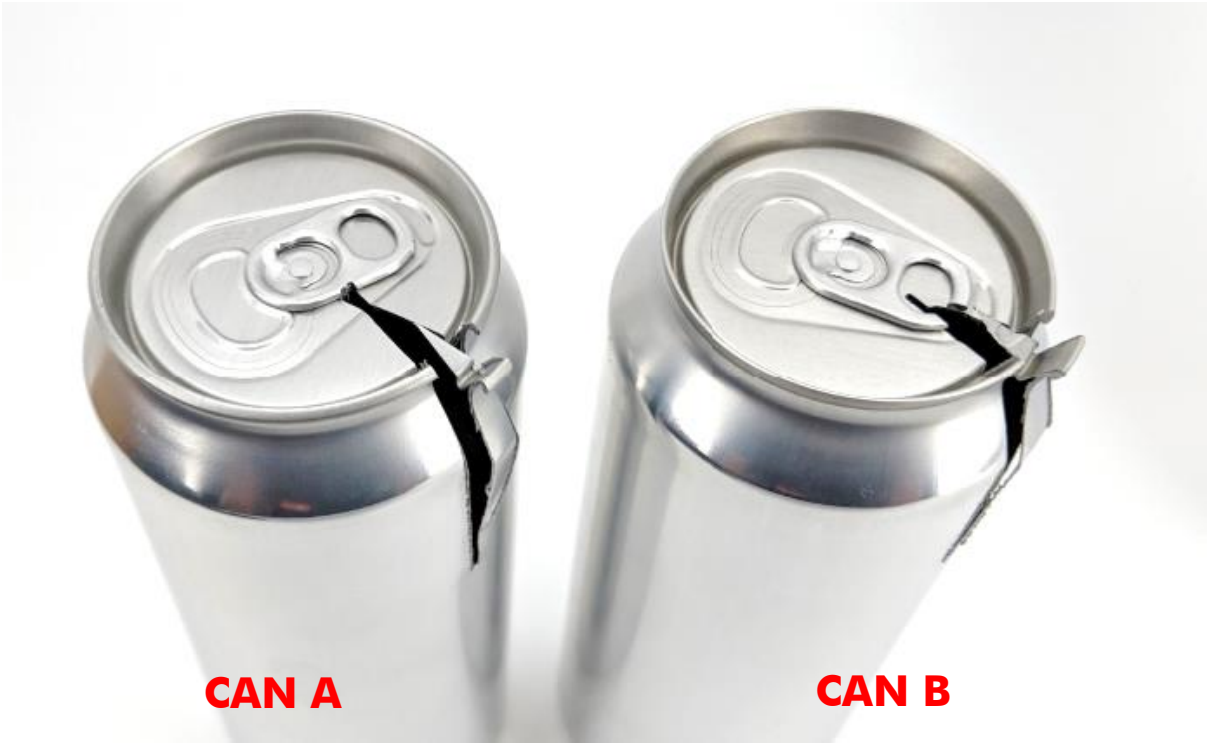
RIGHT: First and second operation completed (we will refer to this as Can B)

STEP 2

Cut a wedge out of the top of the can using an angle grinder. We recommend the use of a 1mm cutting disk for your angle grinder or if you do not have an angle grinder then a hack saw will do the job adequately.

WARNING:

Please take appropriate safety precautions when using power tools.



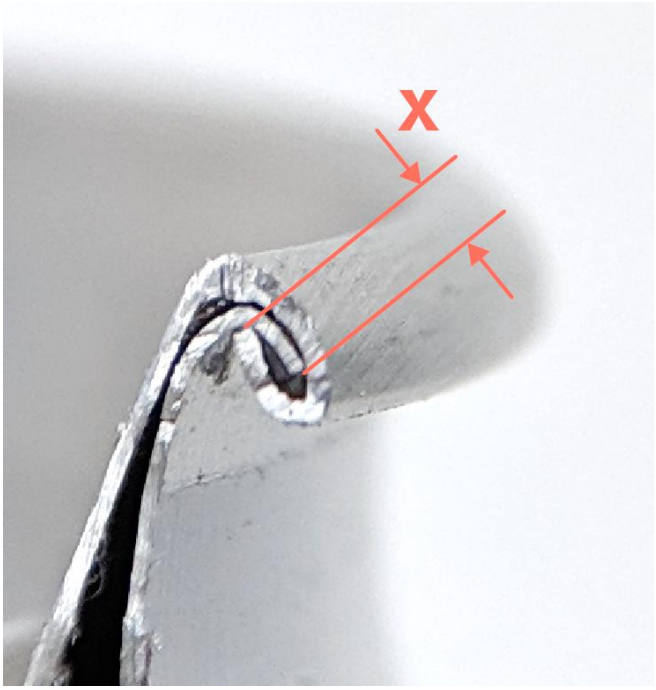
STEP 3

Using a knife scrap the cut clean. This can also be done with some fine sand paper.

STEP 4

Look closely at the Can A to examine the overlap. It's extremely important that you can visually see overlap in this section.

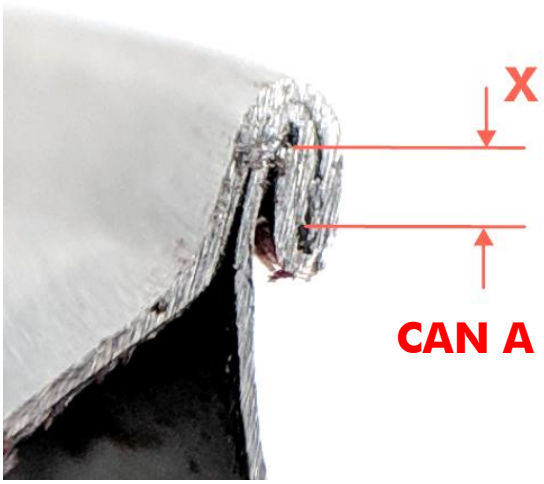
In order to get a good seal, you need some overlap. Ideally this overlap after operation 1 will be more than 0.4mm. This is the distance between the bottom of the body hook and the top of the cover hook shown as X in the image to the right. This should meet the minimum requirement.



If you determine that the actual overlap between the can body and can end is less than 0.4mm following the first operation, make sure that your 1st operation roller is in the correct position.

STEP 5

Similar to step 4 examine the overlap of the final seam following first and second operation. This can be more difficult to see as the seam has already been finished. It can make it easier to see this overlap if you gently pry open the can seam slightly with a sharp object but without making significant dimensional changes. This might make it slightly easier to see the start and finish of the cover hook and body hook.



This measurement should be at least 0.4mm however if this measurement is over 1mm it is ideal.

If you find that the actual overlap from the first operation seam is good however the overlap in the final seam is poor this may be an indication that the 2nd operation roller is not in its correct position. Hence, both actual overlap from the first operation and overlap following second operation should be assessed.

2nd Op Seam Thickness

The second op seam thickness is quite easy to measure using calipers.

Using Can B, take the average of 4 measurements around the circumference of the can. The average of these 4 measurements should be between 1.2-1.3mm.

If your measurement is smaller than this range you might find that you may have not achieved sufficient actual overlap or the 2nd operation roller is too close to the chuck. You should re-examine the actual overlap again and measure the gaps on the second operation roller again.

If your measurement is too large then the 2nd operation roller may be too far away from the chuck or too close to the chuck. If the 2nd operation roller is too close to the chuck it can cause springback which can result in the seam width becoming thicker.

Seam Length 2nd Op

Second op seam length is a good indicator that you have a correctly formed seam and it's also a good indication that your rollers are set to the correct height.

Using calipers check your seam length. This should ideally be about 2.3-2.4mm in length as shown in the image below. With that said a tight and high pressure seal can still be achieved if this seam length is even as long as 3.3mm as long as you still have sufficient actual overlap.

A short seam length can be an indication that the 1st operation roller is too close to the chuck or that the 2nd operation roller is too far from the chuck in the y-direction.

A very long seam can be an indication that the 2nd operation roller is too close to the chuck in the y-direction. If the seam is too long it can result in the actual overlap separating and the seam no longer sealing.