Chuck Installation Manual

Fully Automatic Cannular Canning Machine
Single Lane

KegLand Distribution PTY LTD

www.KegLand.com.au

All Fully Automatic Cannular Canning Machines – Single Lane are calibrated and fitted with a B64 Chuck. The reason being is that the B64 can ends have a wider tolerance range compared to VISY/CDLE or Super Can ends. Meaning that you will save money in the long term with maintenance costs being heavily reduced and a greater consistency of cans that are within specification as a result of wider double seam tolerances.

If you have damaged your B64 chuck or intend to use VISY/CDLE Can ends then please use this guide install a new chuck and calibrate the Single Lane Canning Line to achieve correct double seam specification and a Hermetic Seal.

If you intend to use VISY/CDLE Can ends then you will need to install a VISY/CDLE Chuck (KL

1.0 Changing the Chuck

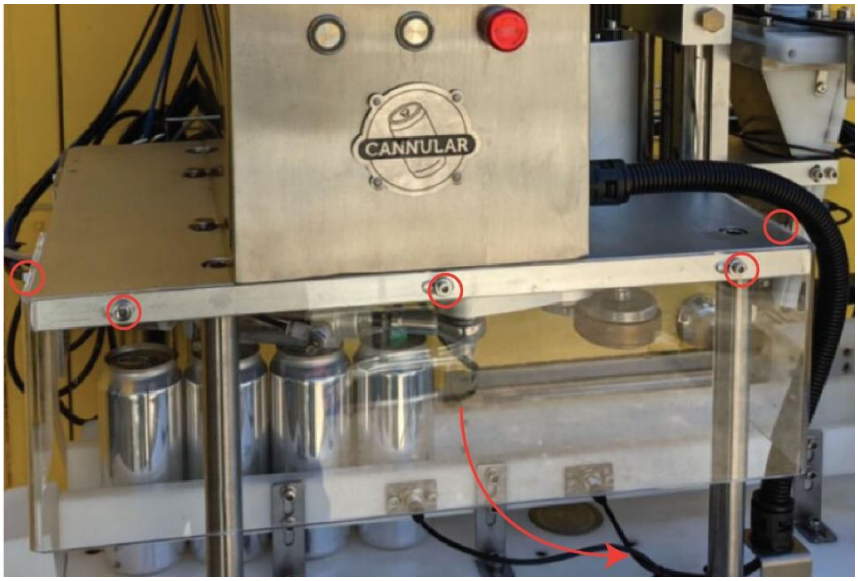
To remove the B64 chuck which the Single Lane Cannular is supplied with it is easiest to first remove the front splash guard and the 1st Operation Roller to get easier access to the chuck.

1.2Disconnect Air Supply and Power

Before working on the Single Lane Cannular, it is a good idea to turn power off to the unit disconnect the air supply into the unit for safety. This will also be necessary to manually move the 1st and 2nd Operation Actuation Arms to bring the machine into specification once you have swapped the chuck.

1.3Remove the Front Splash Guard

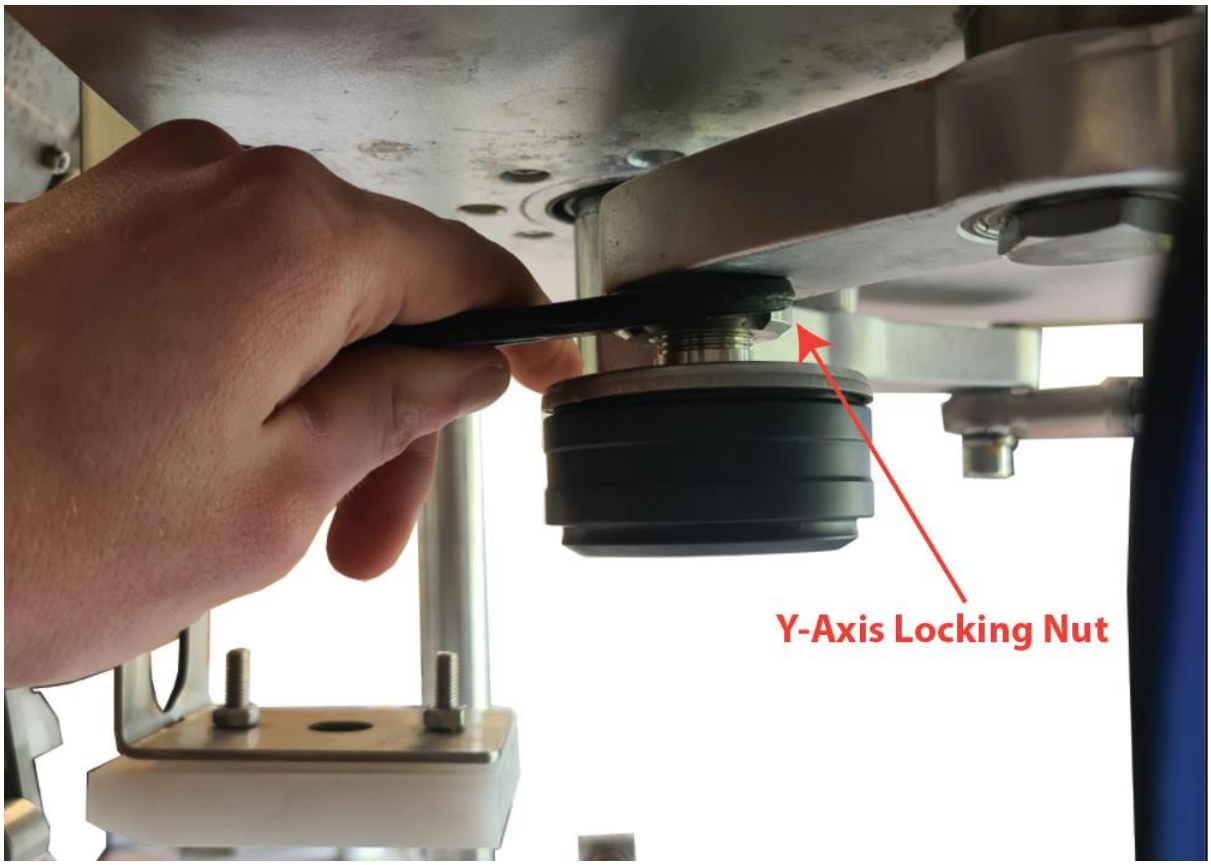
Undo the allen bolts which hold the splash guard in position on the frame and then remove the splash guard



1.4 Remove the 1st operation roller.

To gain access to the chuck it is best to remove the 1st Operation Roller.

To do this, loosen the locking nut with the hook spanner supplied with the machine as shown below and then loosen the roller from the actuation arm until it is removed from the machine.



1.5 Remove the Chuck

Remove the chuck by holding the drive shaft with the 19mm spanner and hook spanner which was provided with the machine.

This is a reverse thread. To loosen the chuck rotate it counter clockwise using the ring spanner as shown below:

1.6 Install your Replacement or VISY Chuck

Install your chuck onto the thread of the drive shaft ensuring that the spring assembly has been installed into the chuck in the orientation below, such that the spring inserts into a bung on either end:

Firmly Tighten the chuck onto the driveshaft with the hook spanner while holding the drive shaft in position with a spanner

1.7 Reinstall the 1st Operation Roller onto the 1st Op Actuation Arm

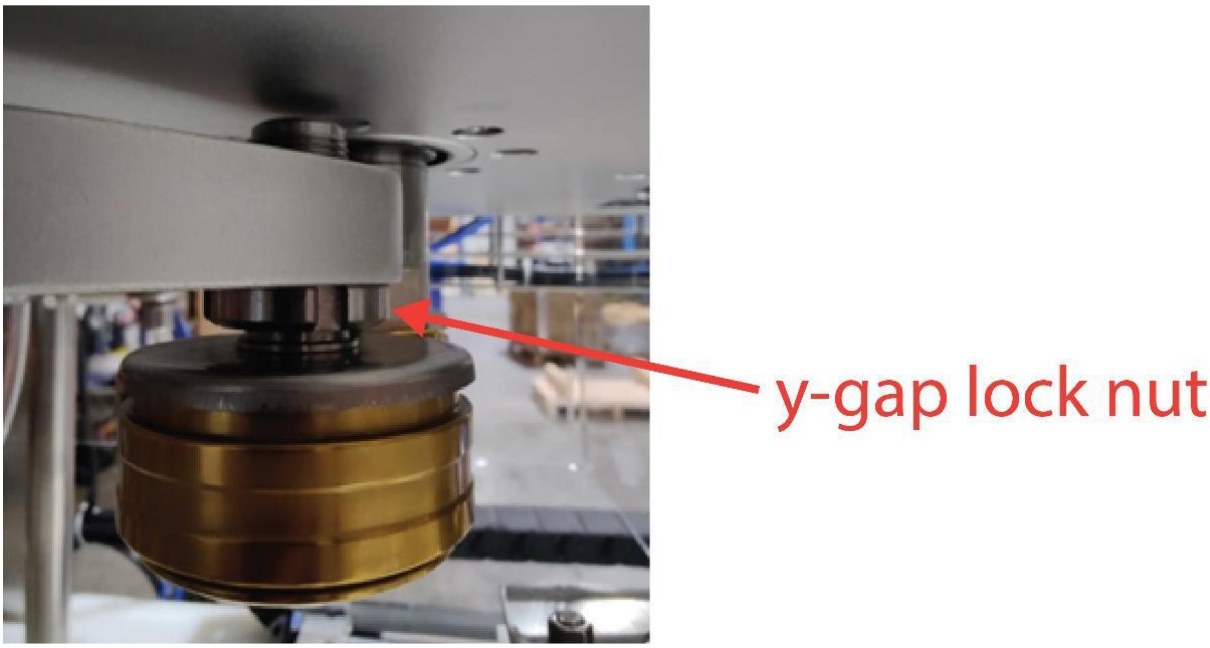
After you install the chuck and reinstall the 1st Op Roller onto the Single Lane Cannular you will then need to adjust the 1st Operation and 2nd Operation Roller Positions relative to the chuck to bring the machine into specification.

To do this follow the instructions below:

2.0 Adjust 1st Op and 2nd Op Roller Height (y-Gap)

Undo the lock nut on the thread above the 1st Operation Roller.
Then adjust the height of the roller by rotating the thread clockwise or counter clockwise to the desired height of the roller relative to the chuck. Then set the height by tightening the lock nut firmly.

After adjusting the roller height and before operating the Cannular it is vital that you check that the roller does not make contact with the chuck. To confirm this, disconnect the air supply to the unit. Then manually push the roller towards the chuck (so that the piston is fully actuated) then spin the roller with your hands to make sure it does not hit the chuck.



3.0 Adjust 1st Op and 2nd Op Roller X-Gap

Before adjusting the x-axis gap of the roller, you must disconnect the air supply to the unit.
With the air disconnected manually push the roller towards the chuck.

Loosen the lock nut while holding the piston in position with the provided spanner.

Tighten or loosen the lock nut on the thread to adjust the stroke length of the piston. This stroke length will correlate with how close the roller ends up to the chuck.

For example, a longer stroke length (less thread visible behind the piston) will result in the roller being closer to the chuck.

After adjusting the roller gap and before operating the Cannular it is vital that you check that the roller does not make contact with the chuck. To confirm this, disconnect the air supply to the unit. Then manually push the roller towards the chuck (so that the piston is fully actuated) then spin the roller with your hands to make sure it does not hit the chuck.

4.0 Roller Gap Settings for Double Seam Specification

The x and y gap settings for the 1st Operation Roller and 2nd Operation roller are the same for a B64 and VISY Chuck. The measurements below are a good starting point to bring the machine into specification however it is essential that you check seam measurements to ensure a hermetic seal.

1st Op Roller Y-Gap = 0.05 mm (As close as possible without touching the chuck)

1st Op Roller X-Gap = 0.6 mm

2nd Op Roller Y-Gap = 1.30 mm

2nd Op Roller X-Gap = 0.3 mm

4.1 The Double Seam Process – Seam Measurements

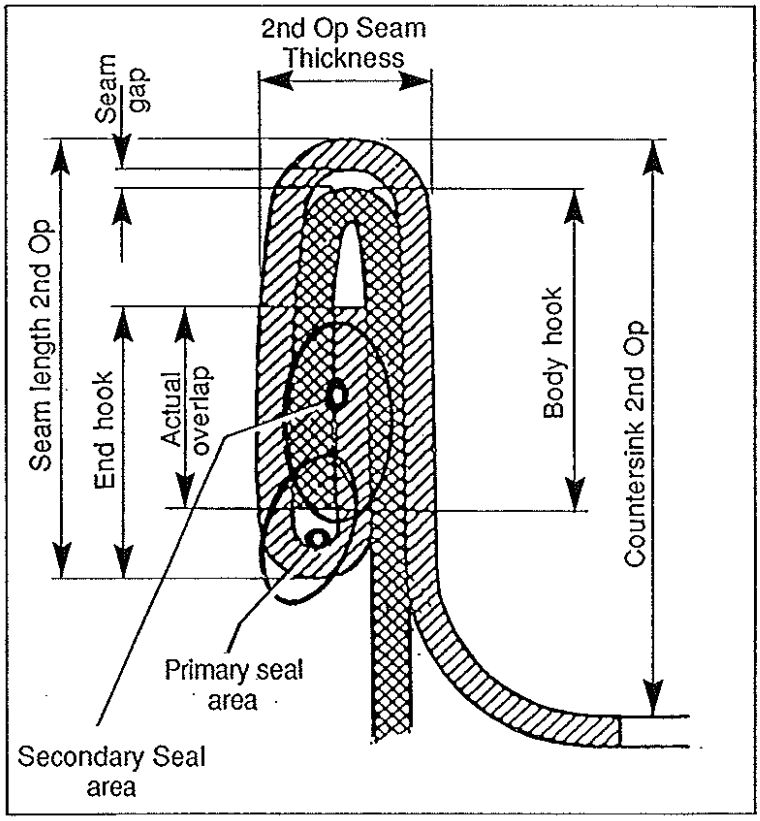
In a large commercial operation, you would normally check and confirm all critical parameters of 2nd operation seam thickness, seam gap, actual overlap, bodyhook butting and tightness rating irrespective of the component material gauge and diameters.

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

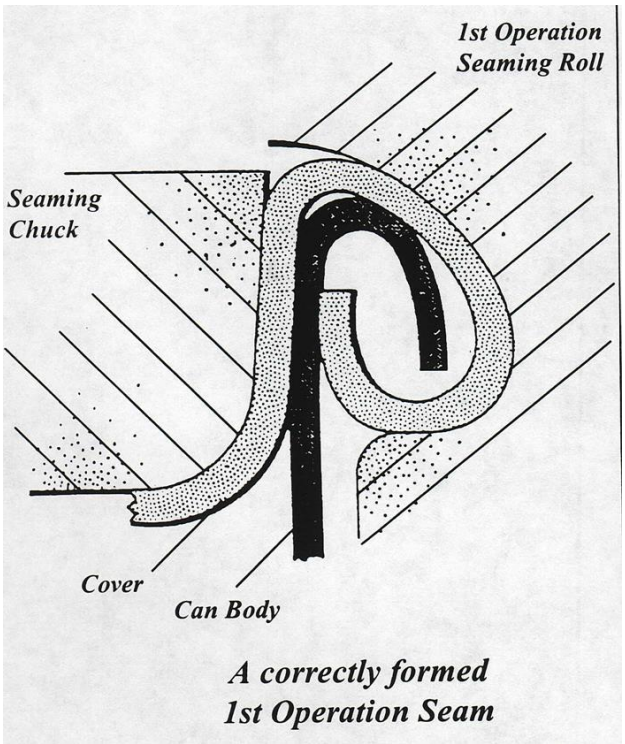
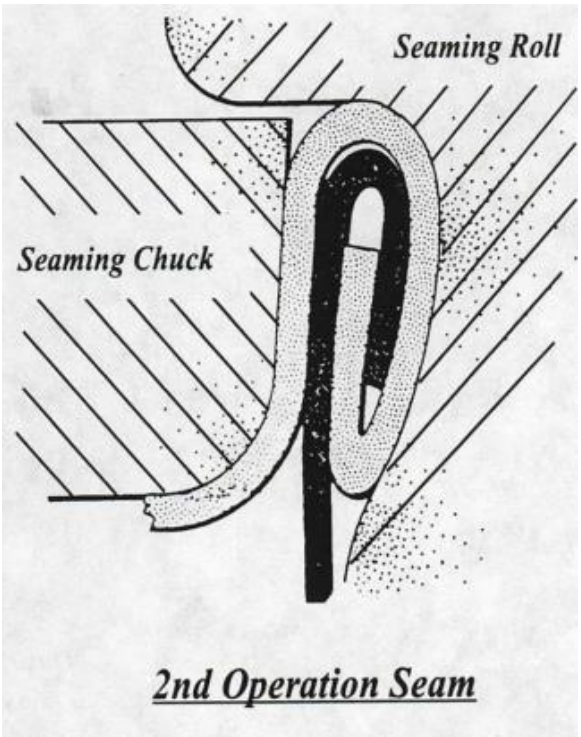


IMAGE 2 – 2nd Operation



Actual Overlap

This process will determine that you have sufficient overlap. Ideally if you have a set of callipers, 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)

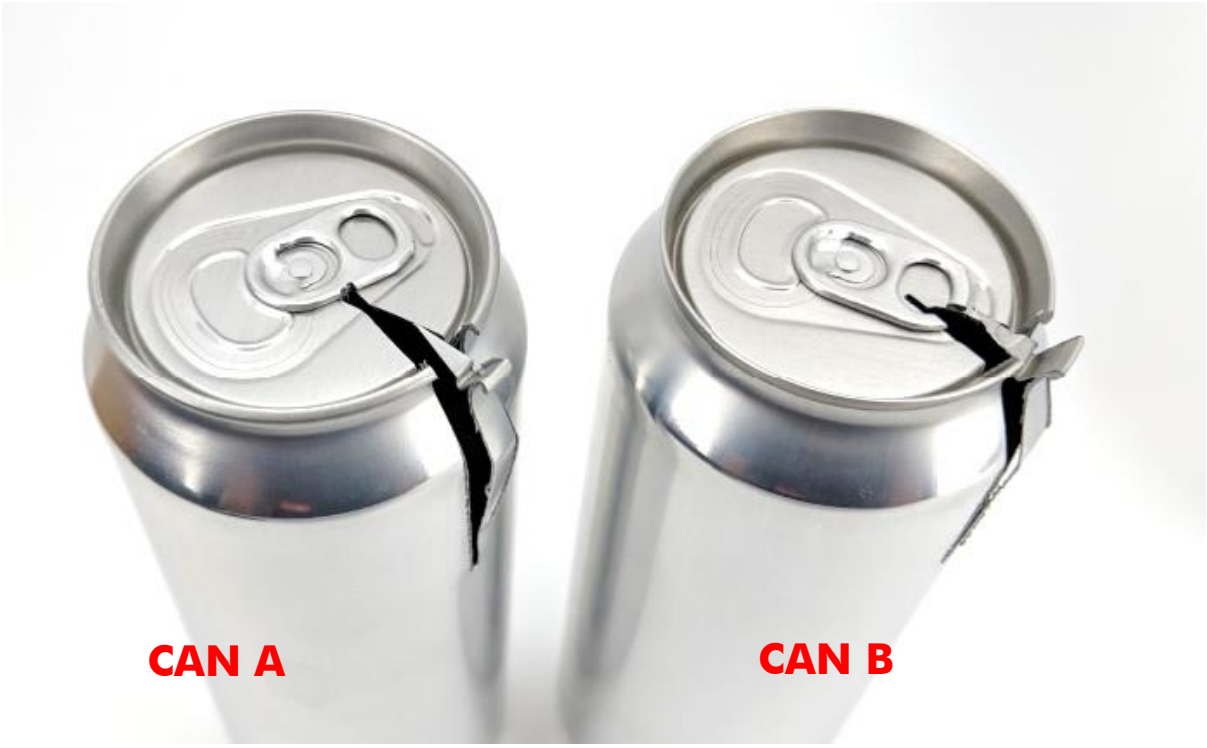
RIGHT: First and second operation completed (we will refer to this as Can B)

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.



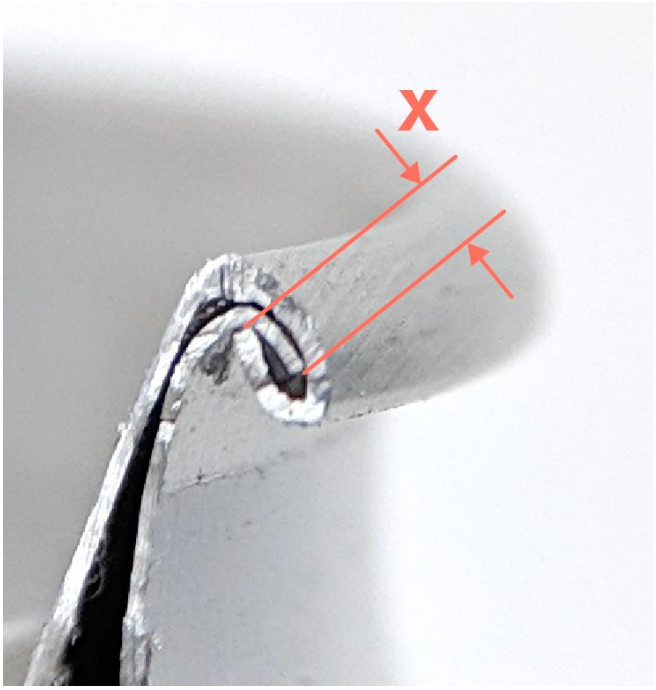
STEP 3

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.

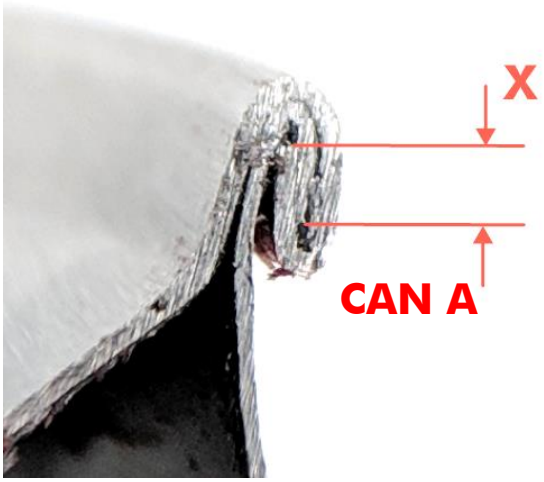
In order to get a good seal, you need some overlap. Ideally this overlap after operation 1 will be more than 0.4mm. This is the distance between the bottom of the body hook and the top of the cover hook shown as X in the image to the right. This should meet the minimum requirement.



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 callipers 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.