User Bulletin

Number 48
Synergy® Peptide Synthesizer
Jaws Seals and Gaskets

March 1995 (updated October 2001)

SUBJECT: Maintaining and Changing Synergy Jaw Seals and Gaskets

Jaw seals (P/N 004183) and gaskets (P/N 004498) on the Synergy® Peptide Synthesizer must be in good condition for optimum instrument performance. Worn seals or gaskets, dirt, or contamination can cause leaks. If the Synergy controller detects a leak at the jaws while pressure testing the AAC, synthesis stops.

Occasional inspection of the jaw seals and gasket helps avoid these problems. Inspect these parts every month for signs of wear, such as cracks, discoloration, or deformation. Replace worn parts annually or when defects are detected. If the parts are not due for replacement and show no indications of wear, you may continue to use them on the instrument after they have been cleaned.

WARNING **Personal Injury Hazard.** ***The autosampler jaws are operated by a pneumatic valve under high pressure. Painful injury can occur if the jaws close on fingers or hands. Before working on the autosampler assembly, close the main supply valve on top of the external gas tank and turn off the instrument power.***

Routine Cleaning of Jaw Seals and Gaskets

1. Close the main supply valve on top of the external gas tank.
2. Turn off the Synergy power switch.
3. Remove the amino acid column wheel from its position on Synergy.
4. Dip a cotton swab into methanol once and squeeze out excess methanol.
5. Run the cotton swab around both the top and bottom jaw seal and gasket.

   If the cotton swab comes away heavily soiled, the seals or gaskets may be worn and need replacement. Follow the procedure presented in this User Bulletin (page 2) to remove the upper and lower jaw seals.
6. If the jaw seals and gaskets need no further attention, turn on the Synergy power switch and open the main supply valve on top of the external gas tank.
7. Verify that the tank regulator setting returns to its original position.

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Removal of Jaw Seals and Gaskets

You can remove jaw seals and gaskets from Synergy with the T-5699 Tool. Figure 1 illustrates how this tool inserts into the jaw seals on Synergy.

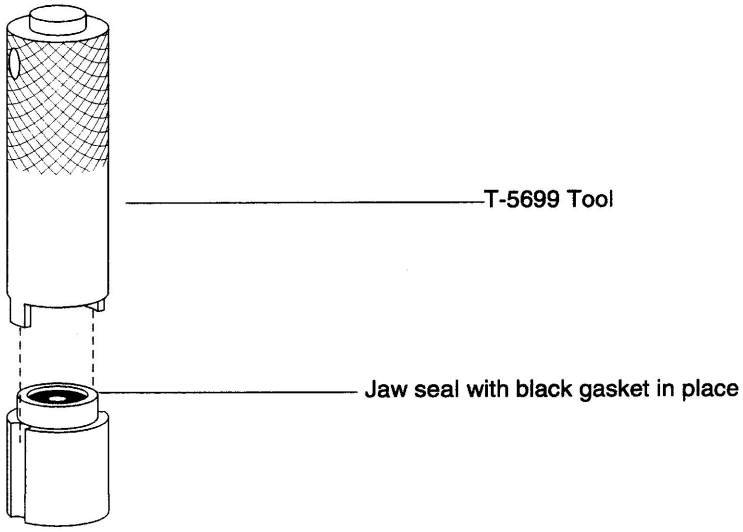

Figure 1. T-5699 Tool inserted into a jaw seal

To remove the upper and lower jaw seals from the autosampler jaws

1. Close the main supply valve on top of the external gas tank.
2. Turn off the Synergy power switch.
3. Remove the amino acid column wheel from its position on Synergy.
4. Insert the T-5699 Tool into the lower jaw seal (Figure 2).

   You may need to turn the T-5699 Tool until its prongs engage the grooves on the jaw seal assembly, as illustrated by the dotted lines in Figure 1.

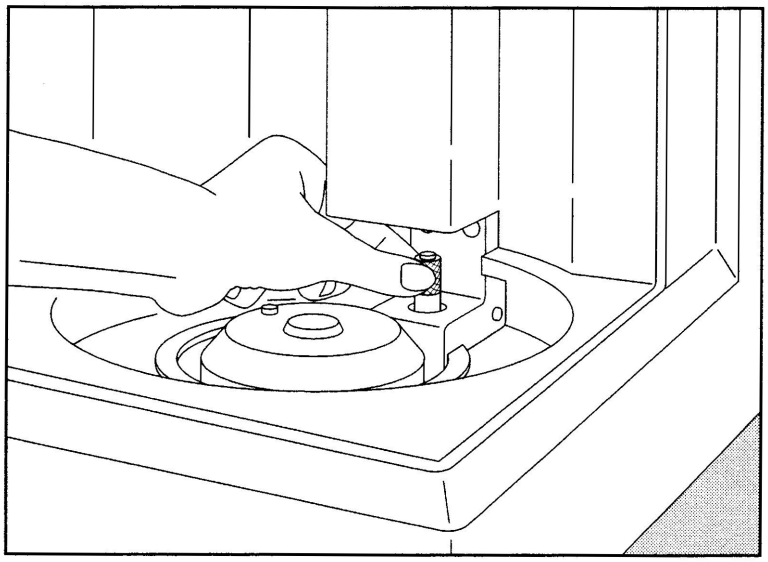

Figure 2. Inserting T-5699 Tool into lower jaw

5. Turn the T-5699 Tool counter-clockwise until the lower jaw seal comes free of the instrument (Figure 3).

   You may need to use the small bar that is supplied with the T-5699 Tool to break the seal free.

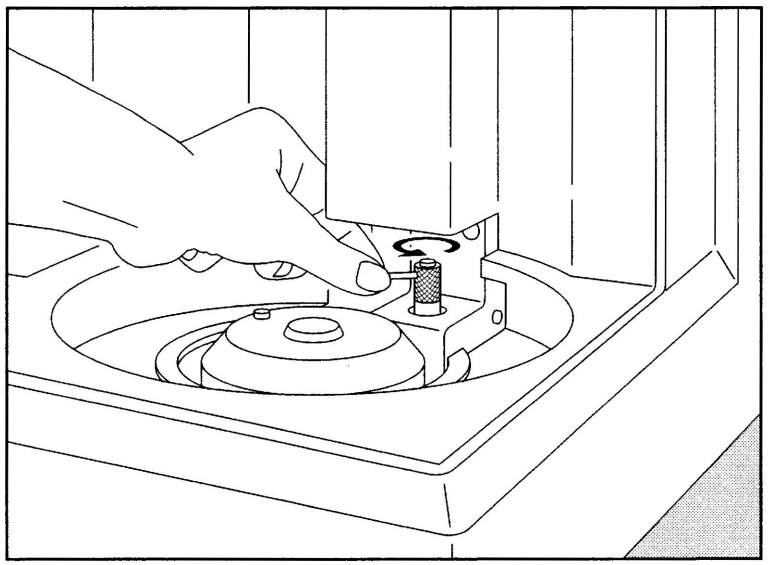

Figure 3. Turning the T-5699 Tool to remove the lower jaw seal

6. Insert the T-5699 Tool into the upper jaw seal (Figure 4).

   Turn the T-5699 Tool until its prongs engage the grooves on the jaw seal assembly.

7. Turn the T-5699 Tool in the reverse direction used to remove the lower jaw seal. Use the small bar to help break the seal, if necessary.

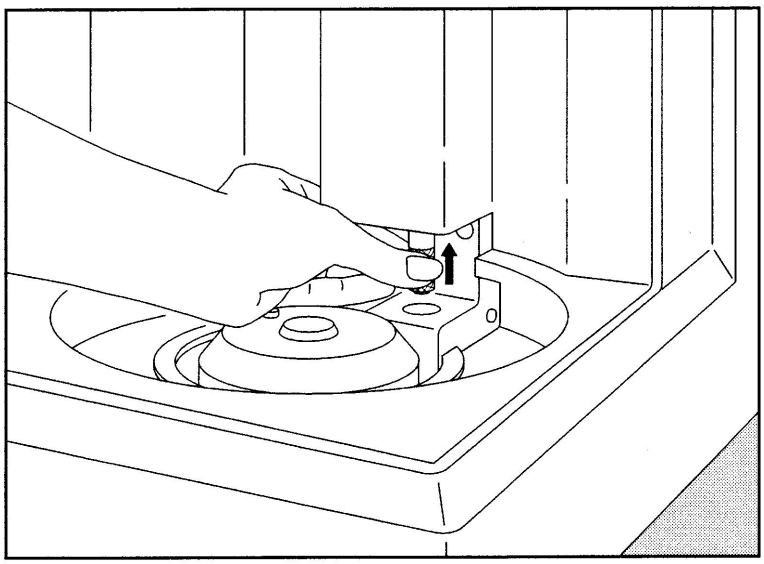

Figure 4. Inserting the T-5699 Tool to remove the upper jaw seal

To inspect and clean the jaw seals and gaskets

1. Once the jaw seal is removed from the instrument, gently and carefully pry the gasket from the end, to avoid damaging either part.
2. Inspect the gaskets and seals for cracks, discoloration, deformation, or other signs of wear.

   When necessary, discard worn parts and replace them with new parts to ensure leak-free operation.
3. Use only methanol to clean the parts and allow them to dry before reassembling the autosampler jaws.

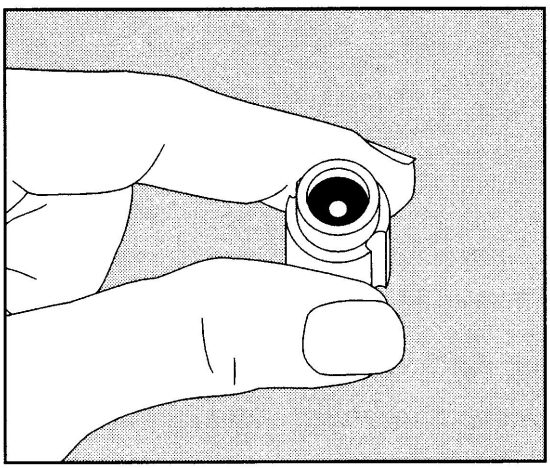

Figure 5. View of gasket in place on jaw seal

To reassemble autosampler jaws

1. Replace clean or new gasket in the lower and upper jaw seals (Figure 5).

   Use the rounded protuberance at the end of the T-5699 Tool to seat the gasket into the seal.

2. Use the T-5699 Tool to replace the upper and lower jaw seals. Turn the tool in the reverse direction used to remove the seals.
3. Turn on the Synergy power switch and open the main supply valve on top of the external gas tank.
4. Verify that the tank regulator setting returns to its original position.
5. Perform the Leak Self Test described in Section 4 of the *Synergy User's Manual* to check the entire pressure system for leaks.

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