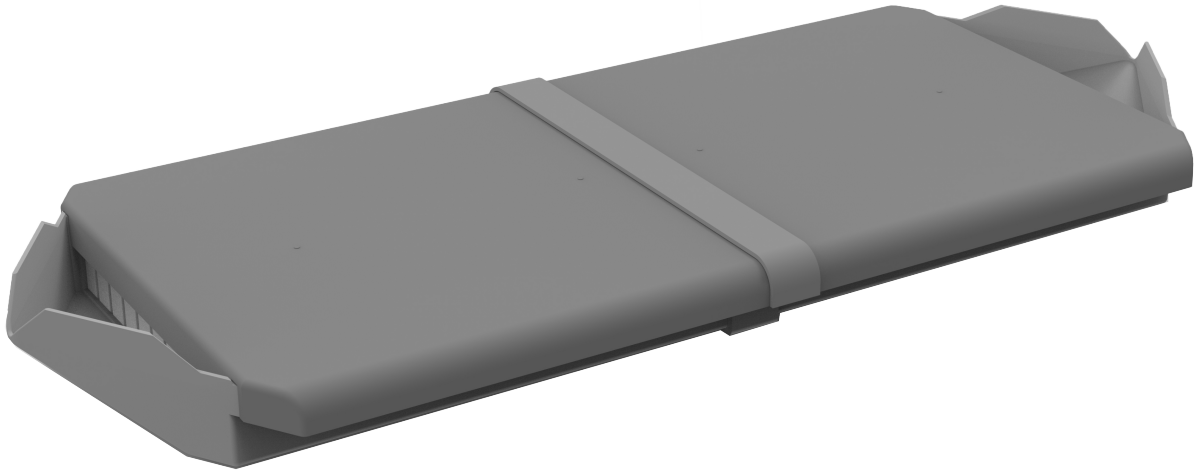


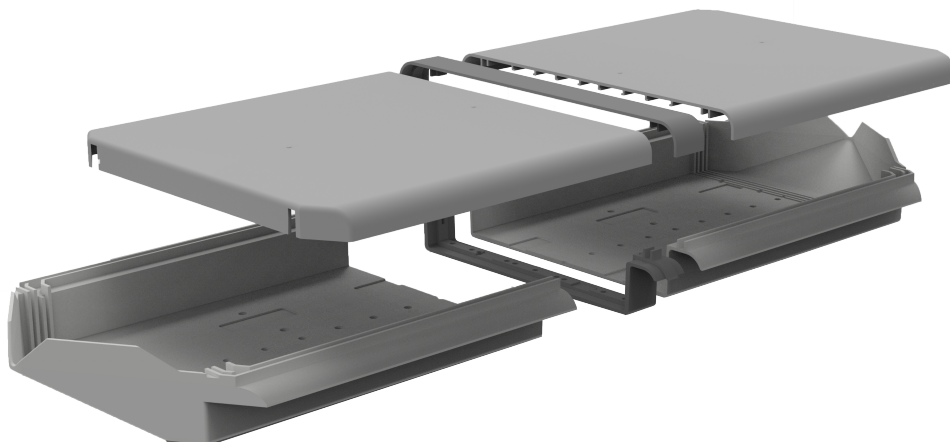
# SP-8x20 User's Guide



The SP-8x20 is a daylight processing system for sheet film up to 8" x 20".

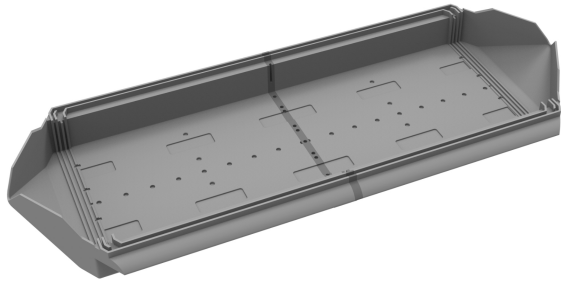
- It can process:
  - 1 sheet of 8 x 20
  - 2 sheets of 8 x 10
  - 4 sheets of 5 x 7
  - Any size glass plate smaller than 8 x 20
- Requires only 600 ml of chemistry.
- Rock/tilt for agitation.
- No complicated frames/holders required; uses hold down tabs mounted on the lid and surface tension of the processing chemistry.

Disclaimer: The SP-8x20 is built by gluing two SP-8x10 systems together using 3D printed splices. The resulting contraption is *almost* as strong as a solid molded part but imperfections and cosmetic blemishes are to be expected.

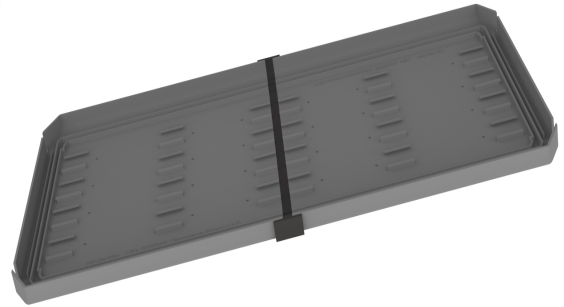


## Parts list:

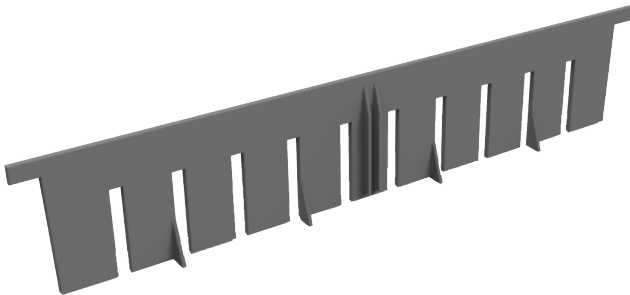
Each SP-8x20 includes the following. *Note: production parts are black. We use 3D renderings because it's easier than trying to photograph shiny black things.*



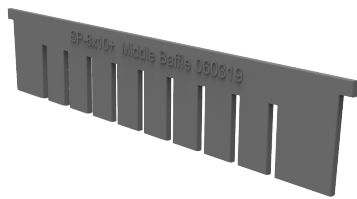
Tray (1) Note the three slots for the baffles on each end.



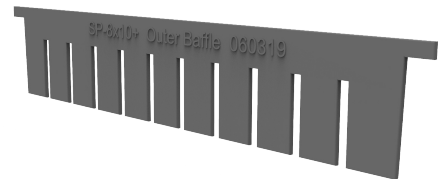
Lid (1) Note the 20 sets of slots for the tabs.



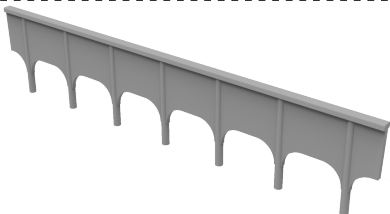
Inner Baffle (2)  
Fits in the tray, closest to the film and **MUST** be installed with the extrusions to the inside. If it doesn't seem to fit, you're doing it wrong.



Middle Baffle (2)  
Fits between the other two baffles. Too thick to fit anywhere else.



Outer Baffle (2)  
Installs nearest the fill/drain spout.



Center Divider: (1)  
Fits in the tray. Use **ONLY** for 5x7 or 8x10 when **NOT** using the center hold down tabs.

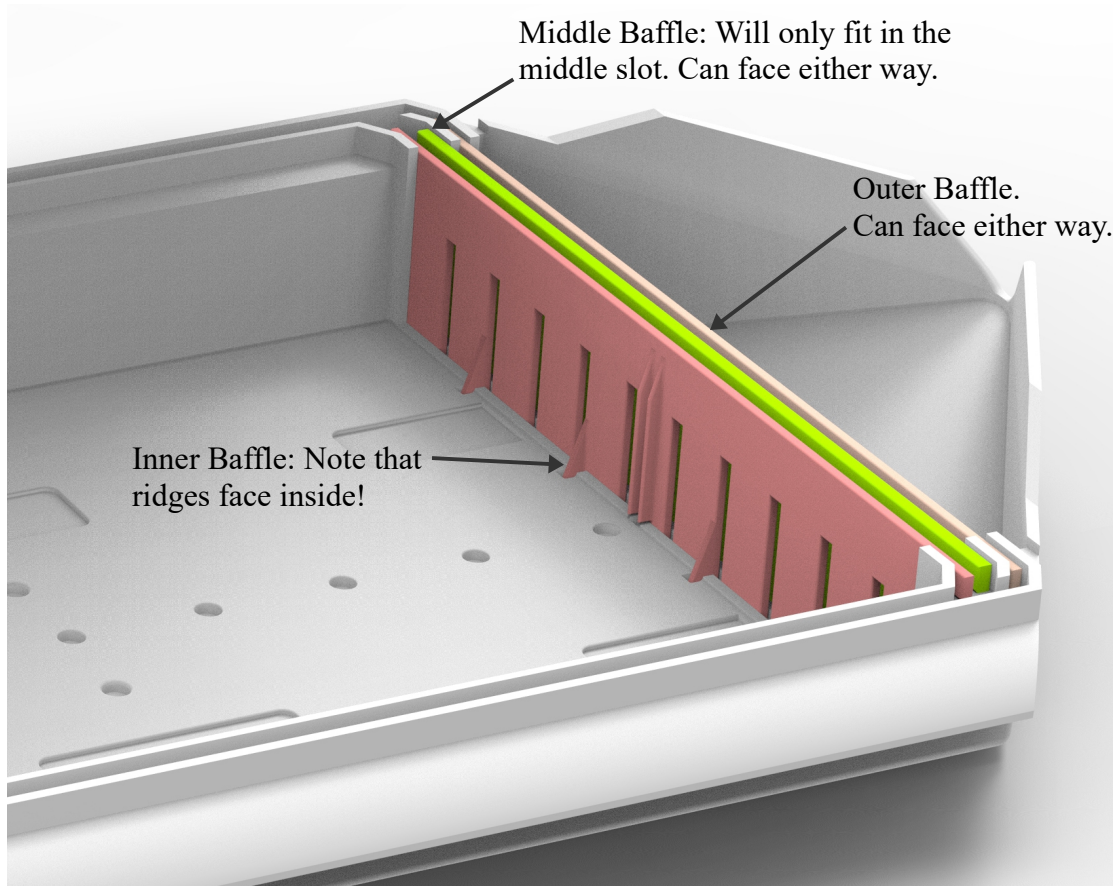


End tabs: (8)  
These fit on the ends of the lid and should be installed for all sizes of film.



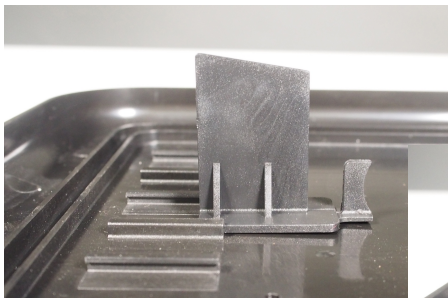
Center tabs: (12)  
Fits in the middle and center of the lid. Use **ONLY** for 5x7 and 8x10 (optional).

## Configuration:

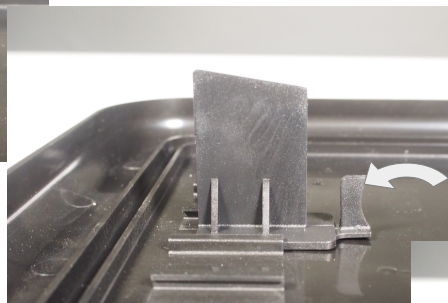


Obvious comment: You must install the baffles on both ends or your tray will not be light tight.

## Hold down Tab Installation:

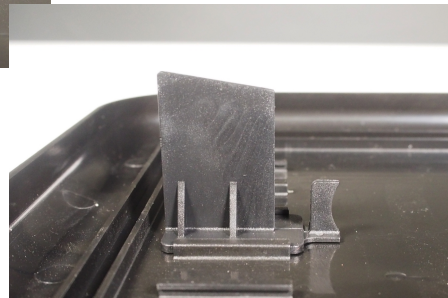


Start by aligning tab in the desired slot and sliding it into place.



The release lever will flex slightly forward.

It will “snap” into place when the tab is properly installed as shown below.



To Remove: gently squeeze the release lever toward the body of the hold down tab and slide the tab out of the slot.

## Hold Down Tab Configurations:

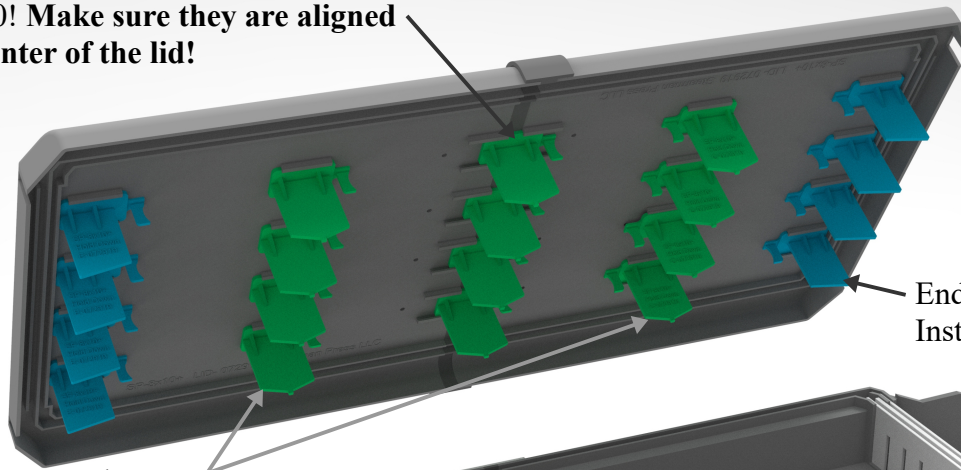
Install the correct combination of tabs for the format being processed. (Remember that there are two different styles of tabs):

1. 8x20 – Install only the end tabs (8).
2. 8x10 – Install both the end tabs (8) and the center tabs (4).
3. 5x7 – Install all tabs.

### Options:

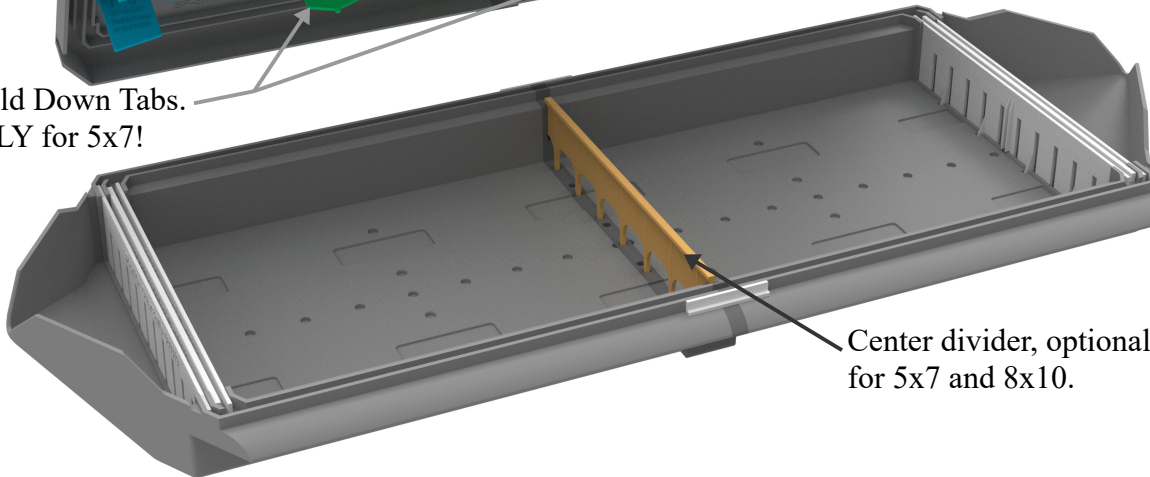
1. 8x20 – forget the hold down tabs, just rely on the surface tension (see Theory of Operation).
2. 8x10 – Use the Center Divider instead of the hold down tabs.
3. 5x7 – Use the Center Divider instead of the Center hold down tabs. You **MUST** use the Middle Hold down tabs with 5x7!

Center Hold Down Tabs. Install **ONLY** for 5x7 or 8x10! **Make sure they are aligned with the center of the lid!**



End Hold Down Tabs. Install for all formats.

Middle Hold Down Tabs. Install **ONLY** for 5x7!



Center divider, optional for 5x7 and 8x10.

## **Loading Film:**

*We strongly recommend that you practice with scrap film before loading in the dark!*

*Be sure to configure the tray lid before turning out the lights!*

*If using the Center Tabs, be sure they align with the holes in the tray!*

*Do not use the middle row of hold down tabs for 8x10 or 8x20!*

*Do not use the center row of hold down tabs for 8x20!*

1. Loading the film:
  - a. 8x20 – Just drop it in the center of the tray.
  - b. 8x10 - Locate each sheet next to the baffles at opposite ends of the trays. The extrusions on the Inner Baffle will keep it far enough from the edge to avoid the tips of the hold down tabs.
  - c. 5x7 - (Be sure to install the Center tabs in the lid.)
    1. Install the Center Divider (yes, even if you have the Center tabs installed.)
    2. Position one sheet each against each of the Inside Baffles.
    3. Position one sheet on each side of the Center Divider.
    4. Carefully remove the Center Divider and install the lid.
2. **Pre-wet: after loading the film and putting on the lid, add 600ml of water.**
3. **When filling the SP-8x20, we recommend leaving the tray flat and adding liquid to each end simultaneously. Of course, be careful not to dislodge the lid.**
4. Lift the ends of the tray slightly to slosh the water around for 30-60 seconds and then drain it. The film will now be stuck to the bottom of the tray and ready for developer.
5. Simultaneously, pour 300 ml of chemistry into each end of the tray! (600 ml total.)
6. Immediately lift one end (fill/drain end) of the tray about 1” (25 mm) and then set it down. This is to insure the chemistry is mixing/evenly distributed.
7. Agitation: lift one of the long sides of the tray up about 1” (25mm) and then let it back down. Repeat randomly during the agitation interval. You'll need to experiment and see what works best for you.
8. To empty the tray, grip the side flanges with both hands and pour out the liquid.

## Theory of Operation:

### Film sinks

Not too surprising since film has a density of around  $1.5 \text{ g/cm}^3$ ; water has, by definition, a density of  $1.0 \text{ g/cm}^3$ , so film will sink. (Photo chemistry is pretty close to  $1.0 \text{ g/cm}^3$ .)

### Wet film is flat film

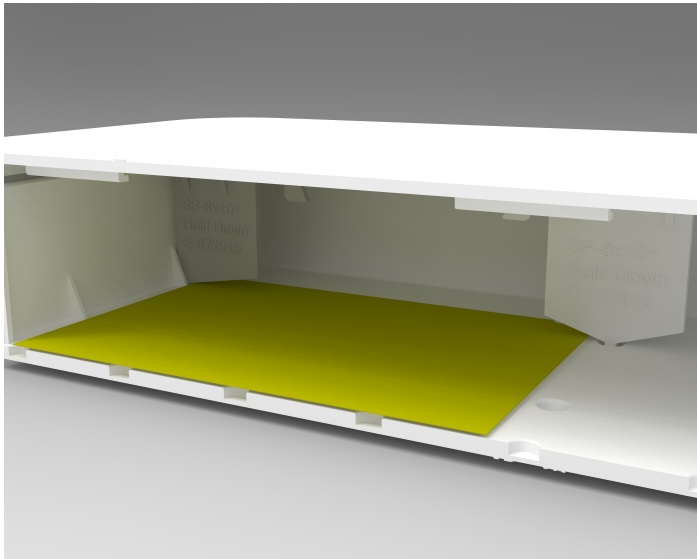
All the film we've seen will lay flat when wet. Even twenty year old sheets with curly edges flatten right out. This means that once the film is submerged, it will lay flat and stay submerged. By filling the tray with plain water (pre-wetting), we force the film to flatten out.

### Surface tension is our friend

When we drain the liquid, the surface tension of the liquid trapped under the film will cause it to stick to the bottom of the tray. Now when we add the developer, it will flow evenly across the face of the film. The SP-8x20 has a special texture on the bottom of the tray to increase the surface tension but still allows liquid to flow underneath during agitation.

Of course, you need to make sure the film stays under water in the beginning. Ansel did this by pushing it down with his finger tips, we designed a system of removable hold down tabs as shown in Figure 1. This is cutaway view of a 5x7 sheet.

The angle of the tabs will force the film to stay under the solution without touching the emulsion. The tabs also allow the film to slide around, improving agitation.



The hold down tabs perform several functions:

1. They hold the film down as you fill the tray with liquid, making sure the entire surface is wetted.
2. They keep the film under the solution during agitation, especially if you get a bit aggressive.
3. They keep sheets separate from each other.

Note: we have found that the tabs are generally not needed for 8x10 and larger. You can probably get away without the end/center tabs with 5x7 (but you must use the middle tabs to keep the sheets apart.)

### More info:

Visit our websites and online store:

<https://shop.stearmanpress.com>

<https://www.stearmanpress.com>

email: [info@stearmanpress.com](mailto:info@stearmanpress.com)