



Solder Paste Handling Guidelines

When solder paste is received, either in jars or in cartridges, a label should be applied to each piece and the date entered when they were put into a refrigerator at 5 - 10°C. NEVER FREEZE SOLDER PASTE.

Solder paste has to return to ambient temperature before use, thus sufficient paste should be removed 24 hours prior to being required for production. When paste is removed from the refrigerator the date and time of removal should be marked on each label.

See additional instructions for storage recommendations for solder paste in cartridges and ProFlow cassettes.

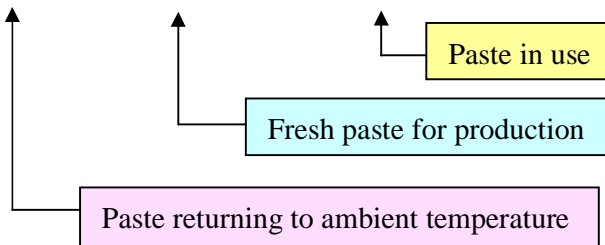
Stock rotation is important and a first in first out system of rotation should be operated in the refrigerator.

Once paste has been removed from the refrigerator, ideally it should never be returned. Once paste has returned to ambient temperature it is fit for use, and from the label one can readily see when it has spent sufficient time returning to ambient. Paste which has returned to ambient temperature, in general has one month of useful shelf life.

A systematic approach can be achieved by employing a rack system as shown below.

Date to fridge	/	/
Date from fridge	/	/
Time from fridge.....		

Design of label



In the left rack pots are placed so as to return to ambient.

After 24 hours from the removal time marked on the label, the pots are placed in the centre rack for use in production.

In the third rack a working pot can be used for paste which is currently in use, and placed in this pot whilst the stencil or machine is being cleaned or overnight between shifts.

This is the paste which should always be used first, and top-ups from the fresh paste added to it in the printer. This jar must always be cleaned after each use.

When handling solder paste, personal protective measures as advised by your Health and Safety department should always be adhered to.

Never put used paste back in a jar containing fresh paste



When using paste in jars, before placing the paste in the printer, the paste must be well stirred with a slow folding type action. Do not vigorously stir as this will damage the paste. Stir until the paste drops off the blade of the spatula being used to stir.

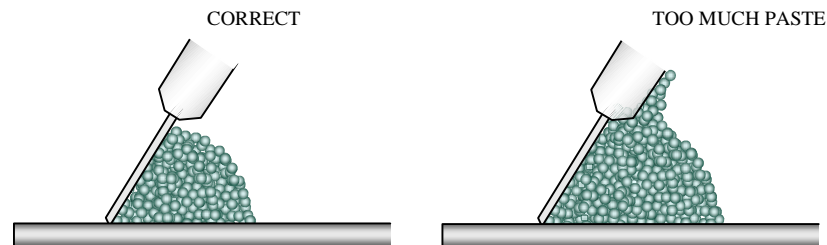
Whilst working with solder paste it is recommended that you use protective gloves and wear safety glasses.

Always ensure part-used jars of fresh paste have the seal cap replaced and the lid screwed firmly in place.

If a solder paste conditioning machine is used, then the paste can be taken straight from the refrigerator and spun for approx. 3 minutes, then used immediately in the printer



When applying paste to the stencil, deposit a bead of paste about the size of your thumb over the length of the blade. Be careful not to apply too much paste as it will stick up in the housing of the blades and give poor paste release from the blades and cause excess paste to ooze from sides of the blades causing excessive tramlines.



Always use plastic tools whilst working with solder paste on stencils as metal tools can cause damage to the stencil.

Ensure that stencils and blades are properly cleaned and inspected for any damage before commencing printing and should also be cleaned at the end of any shift. Whilst cleaning the stencil in the printer during production, by either automatic or manual methods, it is imperative that solvent does not come in contact with the solder paste, as this will alter the properties of the paste.

Whilst cleaning the stencil by manual methods it is recommended that the paste is placed in the “paste in use” jar.

At the end of the shift if the paste on the stencil appears to be in good condition, place it in the “paste in use” jar ready for the beginning of the next shift or day. If the paste appears to be very wet and thin – shear thinned – then place it in an empty paste jar ready for disposal. At the end of the week it is recommended that all paste in use on the stencil is disposed of.

Paste for disposal should be properly disposed of by a locally environmentally approved disposal contractor

Guidance for the Use of Solder Paste from Semco Cartridge

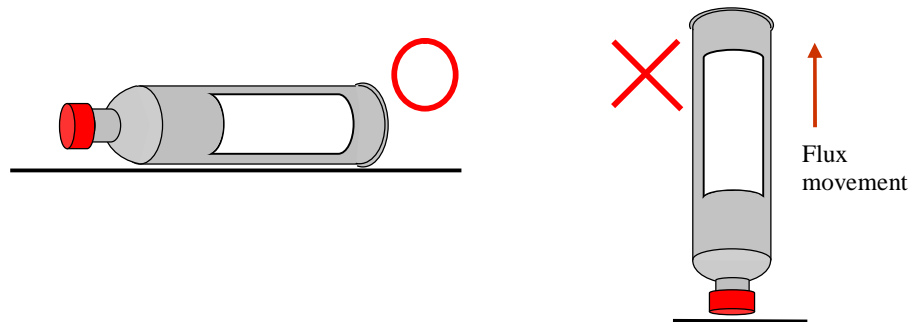
1. Storage

Temperature : 5 ~ 10°C in refrigerator.

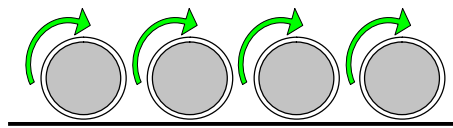
*Caution : As the nature of solder paste, which is a mixture of two components, solder and flux, with extremely large differences in specific gravity, it is inevitable that flux tends to separate from solder powder when the cartridge is kept static for a long time.

In order to moderate the flux separation, it is highly recommended to;

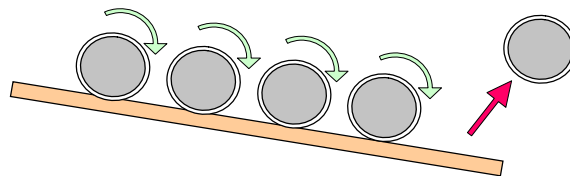
- Lay each cartridge in the horizontal way and do not store in the vertical way as movement stroke of flux within the cartridge becomes larger.



- Rotate the cartridge 1/2 turn periodically.



Or, by having slopes shelves in the refrigerator, it makes it much easier to turn the cartridge.



DO NOT FREEZE THE PASTE



2. Preparation for printing

1) Temperature

After taking the solder paste out of the refrigerator, in which the temperature is controlled between 5 and 10°C, wait for the paste temperature to come back to room temperature.

*Caution: If some flux separation is observed on the top side of the cartridge, leave it upside down at room temperature for a couple of hours so that the flux can move back into the paste.

Do not heat the paste.

2) Stirring

In order to optimize the viscosity and have better homogeneity of the flux, it is recommended to knead the solder paste dispensed on the stencil.

*Remark: We also recommend the use of an automatic paste conditioning equipment to pre-mix the solder paste in the cartridge before dispensing.

Should you need any further information, please do not hesitate to let us know.

3. Handling of the remaining paste

The solder paste left unused in the cartridge should be tightly capped and stored in the refrigerator in the same manner as described at '1. Storage'.

When using the solder paste remaining in the cartridge, follow the same instruction given at '2. Preparation for printing'.

4. Shelf life

- 1) 5 ~ 10°C : 6 months from manufacturing date
- 2) At 20°C : 1 month from manufacturing date
- 3) At 30°C : 1 month from manufacturing date

* Manufacturing date can be obtained from the lot number

ex. Lot No. 2 07 21 2

→	No. of lot	: 2nd
→	Date	: 21st
→	Month	: July
→	Year	: 2002

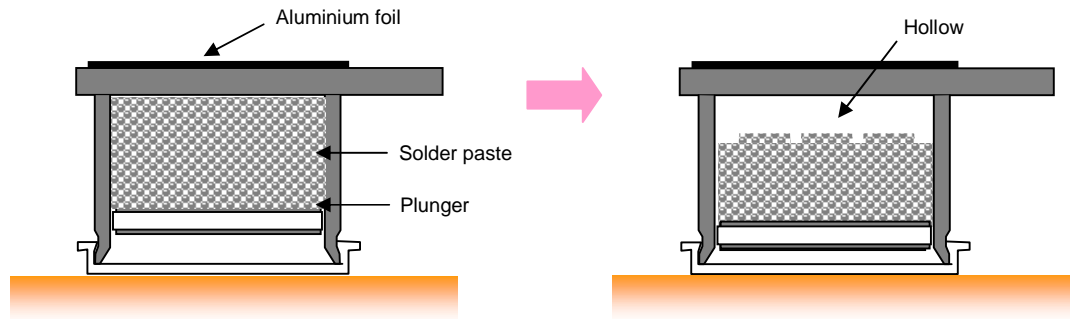
*Caution : It is highly recommended to use as fresh material as possible to avoid severe flux separation.

Guidance for the use of ProFlow Cassettes

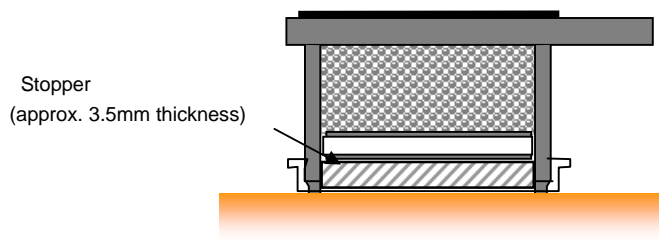
When we transport solder pastes in ProFlow cassettes, the aluminium foil seal comes facing upwards.

This is because the flux of the solder paste, in the holes of the cassette are in contact with the adhesive on the foil and deteriorates the adhesion of the aluminium foil seal. This is possibly because the adhesive used for this aluminium foil, which is supplied by Semco, is not solvent resistant, and which finally leads to the flux leakage.

When the cassette is transported with the aluminium foil side up to prevent the flux leakage, the solder paste may lower within the cassette due to its own weight, and in the case of unusually strong vibration or shock during transportation, can result in it creating a hollow between the paste and the punched plate.



Thus, we have started to use an additional stopper material, which physically prevents the paste from lowering.



Storage of ProFlow cassettes after delivery, should also be in a refrigerator at 5 - 10°C and stored with the aluminium foil seal upwards and a storage label applied. Before use, cassettes should be removed from the refrigerator 24 hours prior, to enable the paste to return to ambient temperature.

When ready to use, remove the cap and stopper plate, lay the cassette foil downwards on a firm flat surface and press with your thumbs along the piston to ensure full contact of the paste on the foil and to eliminate any hollows which may have appeared.

Remove the foil seal and insert the cassette into the ProFlow head.

Remember to dispose of all foils and empty cassettes in an environmentally approved manner.

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