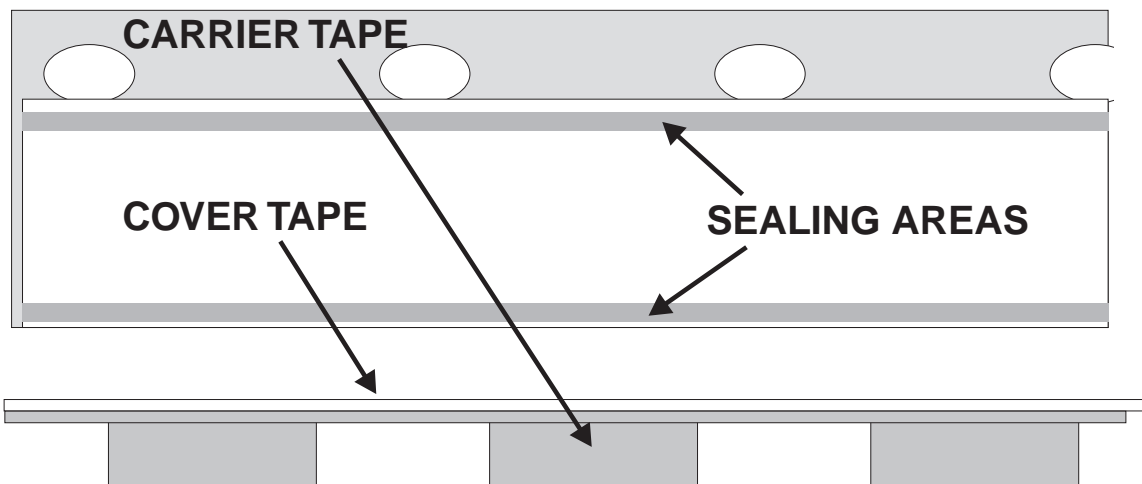


**PSA COVER TAPE**

C. Serre / S. Chamard

**What is a cover tape and what is a carrier tape?:**

The tape is composed of both the carrier and the cover tape (refer to drawing below).



The carrier tape is the tape in which the pockets containing the devices are embossed.

The cover tape is the tape that is sealed to the carrier tape in order to avoid the devices to jump out of the pockets.

**Two types of cover tape exist :**

- Heat Activated Adhesive cover tapes (H.A.A.) : This cover tape is thermally sealed to the carrier tape. This cover tape is also commonly called "Hot sealed cover tape".
- Pressure Sensitive Adhesive cover tapes (P.S.A.) : This cover tape is stuck to the carrier tape using glue such as in Post-it. This cover tape is also called "Cold sealed cover tape".

**How could you recognize PSA tape from HAA tapes?**

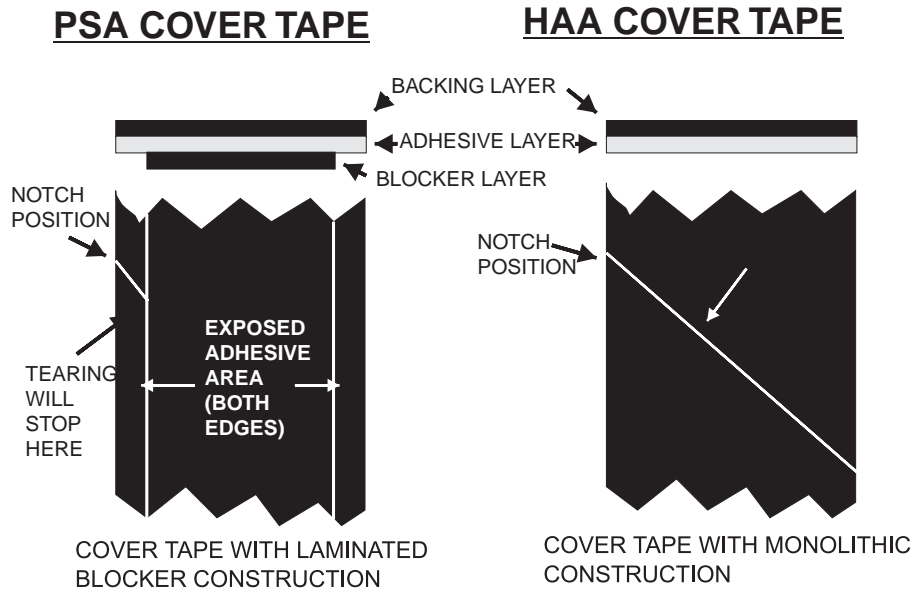
Put your finger on the sealing areas of the tape. If it feels sticky, the tape used is PSA type.

## APPLICATION NOTE

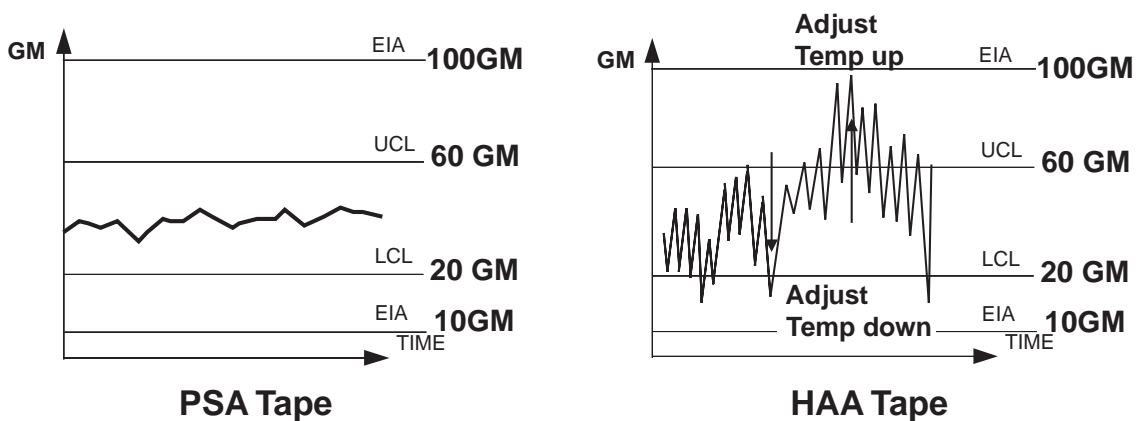
SGS-THOMSON Microelectronics introduced the PSA cover tape three years ago anticipating the trend of the market that is now to switch from HAA to PSA cover tape.

The reasons of this change are the followings :

- To withstand new generation of fast pick & place machines
- To eliminate cover tape tearing or breaking. This is due to the co-laminated structure of the PSA cover tape. As described in the previous drawing, the PSA cover tape is made of two tapes.



- To get adhesive peel forces more regular. Hence improved quality and more consistent adhesion to the carrier tape



*. PEEL STRENGTH IS CONSISTENT OVER TIME WITH PSA.  
. SMALL STANDARD DEVIATION WITH PSA*

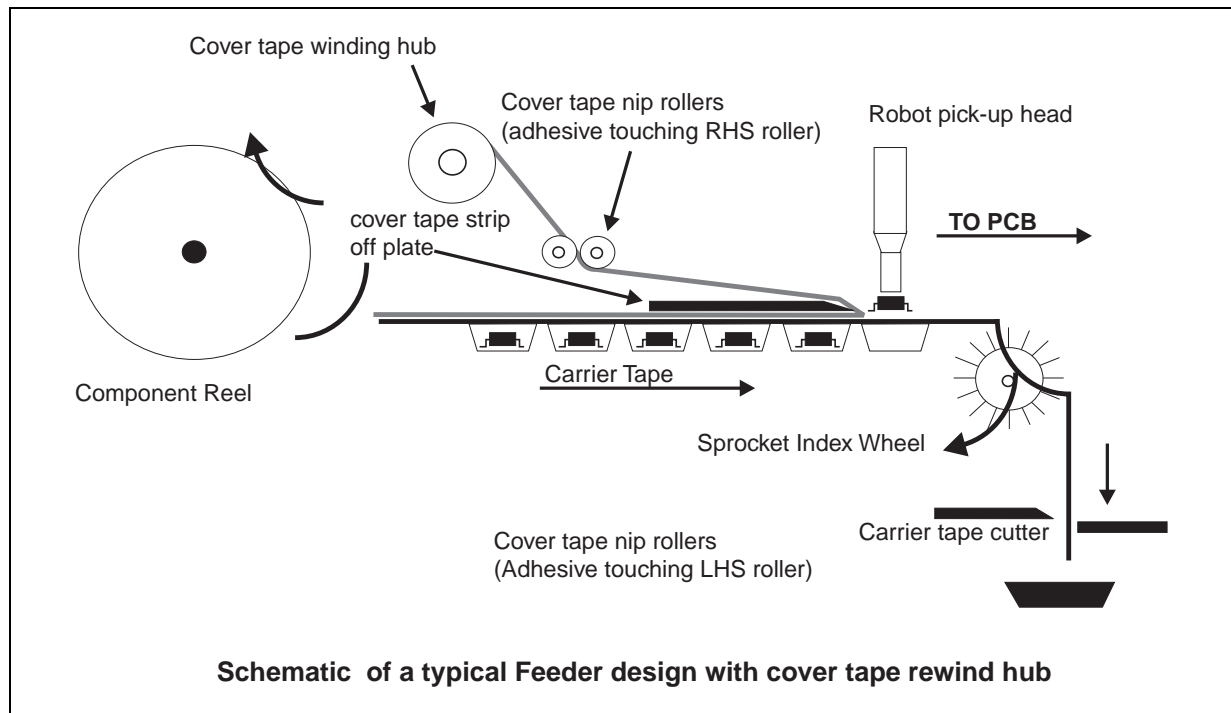
- To eliminate any risk of delamination between the cover tape and the carrier tape during shipment, handling and storage.
- PSA cover tape provides a static-dissipative or conductive surface against the devices, rather than the sealing polymer characteristic of HAA cover tape.

Three years after the implementation of this new cover tape technology most of our customers are using PSA cover tape packed products successfully, and your company probably too. Most equipments works well with PSA, but we would like to highlight two types of minors problems encountered with pick & place machines when using PSA cover tape.

Those problems were linked to the technology of the pick & place feeders.

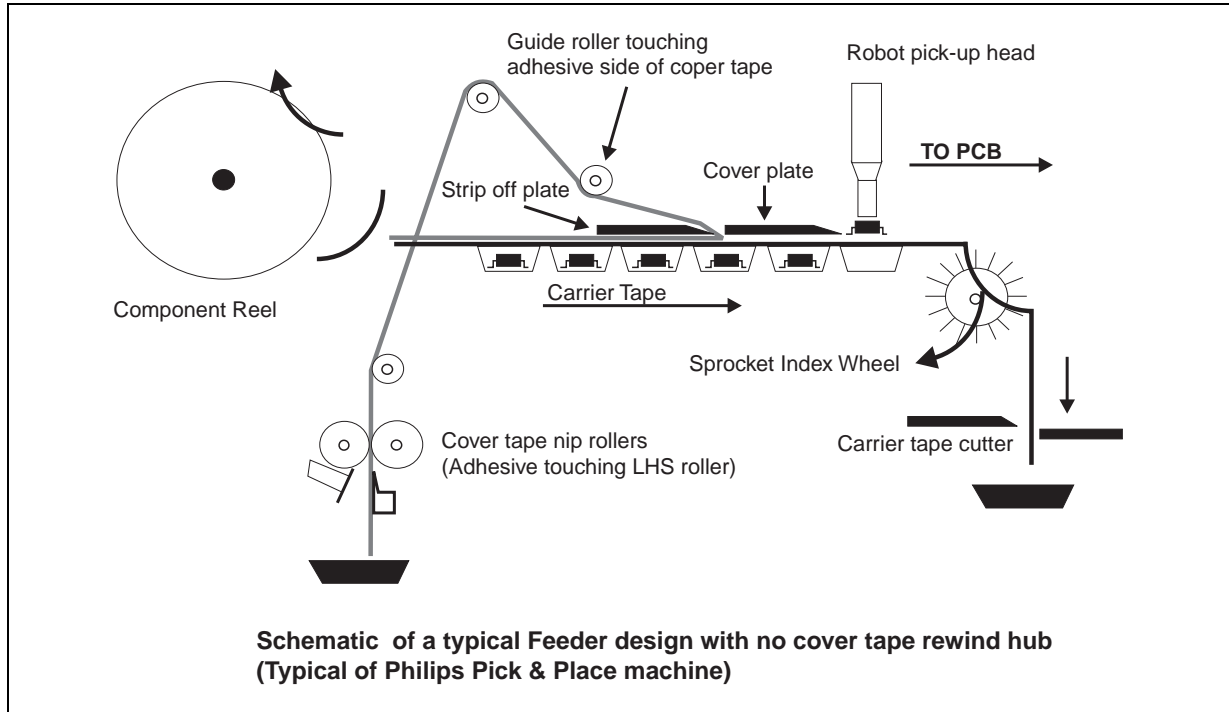
### Two types of feeders exist :

- Take-up reel feeders



## APPLICATION NOTE

### ■ Gear feeders



You will find below the list of pick & place machines suppliers and their associated feeder technologies :

MANUFACTURER	COUNTRY	DESIGN
Fuji	Japan	Reel
Panasonic	Japan	Reel
Sanyo	Japan	Reel
Murata	Japan	Reel
Universal	US	Reel
Quad	US	Reel
Siemens	Germany	Reel

MANUFACTURER	COUNTRY	DESIGN
Philips	Holland	Gear
Zevatech	US	Reel
Yamaha	Japan	Gear
Tescon	US	Reel
Amistar	US	Reel
TDK	Japan	Reel

The PSA cover tape may generate some **jamming** when using machines with **gear feeders**.

The cover tape remains stuck to the roller guides or to the cover tape nip roller. This problem is restricted to the small width of cover tapes used in conjunction with 8, 12 and 16mm carrier tapes. The root causes of the jamming are the followings :

- The design of the feeders does not allow the use of PSA cover tape.
- Usually the quantity of small devices placed on a board is more important compared to the quantity of big devices. The risk of clogging of the feeders is then higher with the small width of cover tapes containing the small devices than with the bigger devices.

**This problem can be solved by two ways :**

- By upgrading the feeder with a kit supplied by the pick & place machine supplier.  
(Two suppliers get this problem : Philips & Yamaha. Please contact directly your local representative of Philips or Yamaha in order to get the kits.)
- By a containment action of your maintenance department. An adhesive PTFE (Teflon TM) film can be stuck on the guide rollers or a silicon-based coating can be sprayed on the parts in contact with the cover tape.

The second problem may occurs with **take-up reel feeders**. All the width of cover tapes may generate some difficulties when people try to remove the cover tape from the take-up reel. This is due to glue deposit from the PSA cover tape on the internal side of the take-up reel flanges.

**This problem can be solved by several ways :**

- By increasing the preventive maintenance frequency of the take-up reel cleaning
- By spraying a siliconed based coating on the internal side of the take-up reel flanges.
- By taking care of using the right take-up reel width.

If you still get problems do not hesitate to contact your ST sales representative.

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