

# Service Information

MACHINE TYPE: FV, CL, CLi, FS, FSi, FS2, FT and electronic feeders  
 CLASSIFICATION: Specification and Tips

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## How to splice component tapes

This document describes how to splice component tapes without removing the currently used component reel from the feeder.

### Update history

Revision No.	Updated contents	Issued date
-000	(First release)	28 November 2012

### Warning

- YAMAHA is not responsible for any problems caused by the misuse of the document.
- Make sure to thoroughly understand the contents of the document and perform the service work described herein on your own responsibility.

### Safety note

Strictly follow the precautions in the “Safety” section in the machine user’s manual.

### Disclaimer

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# Service Information

## 1 Splicing tools and parts

The following lists specialized tools and parts for splicing component tapes.

### 1.1 Splicing tools

Part name	Part number	Q'ty	Remarks
Tape cut jig 2mm	KJ3-MY043-00	1	To cut between 2mm pitch spaced components.
Tape cut jig 4mm A	KJ3-MY044-00	1	To cut at a sprocket hole.
Tape cut jig 4mm B	KJ3-MY045-00	1	To cut between sprocket holes.
Metal tape connector	KJ3-MY046-00	1	To splice with metal joint tapes
Tape connector	KJ3-MY020-10	1	To hold tapes to be spliced

Tape cut jig (marked with identifying letters)



Metal tape connector



Tape connector



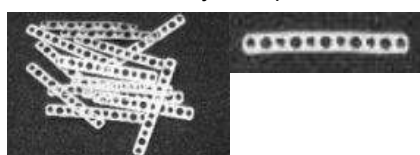
### 1.2 Joint tapes

Part name	Part number	Q'ty	Remarks
Joint tape 8mm	KJ3-MY031-00	1000	For pneumatic and electronic feeders
Joint tape 12mm	KJ3-MY032-00	1000	For pneumatic and electronic feeders
Joint tape 16mm	KJ3-MY033-00	500	For pneumatic and electronic feeders
Joint tape 24mm	KJ3-MY034-00	500	For pneumatic and electronic feeders
Joint tape 32mm	KJ3-MY035-00	500	For pneumatic and electronic feeders
Joint tape 44mm	KJ3-MY036-00	500	For pneumatic and electronic feeders
Joint tape 56mm	KJ3-MY037-00	500	For pneumatic and electronic feeders
Metal joint tape	KJ3-MY038-00	2000	Used with a metal tape connector
Joint tape 8mm-S	KHJ-MD601-00	1000	Compatible with electronic feeder splice sensor
Joint tape 12mm-S	KHJ-MD602-00	1000	Compatible with electronic feeder splice sensor
Joint tape 16mm-S	KHJ-MD603-00	1000	Compatible with electronic feeder splice sensor
Joint tape 24mm-S	KHJ-KD604-00	500	Compatible with electronic feeder splice sensor

Joint tape (blue)



Metal joint tape



Joint tape S (black)



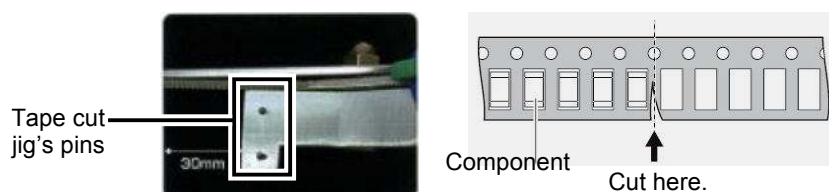
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## 2 How to use blue joint tapes

### 2.1 Cut component tape ends to be joined

#### Step 1 Cut the end of the current component tape.

The component tape on the reel has some empty component pockets at its end. Cut the tape end at immediately after the last occupied pocket. Set the tape cut jig's positioning pins in appropriate sprocket holes and cut the tape.



#### Note

Select a tape cut jig to suit the component tape type.

#### Step 2 Cut the new component tape at its end.

Like in step 1 above, cut the new component tape end at immediately before the first occupied component pocket.

#### Step 3 Arrange the tape ends appropriately before splicing them.

##### Example 1:

Peel the end of the new component tape's cover tape slightly so it can be peeled easily in feeding process. Using a sharp corner of a component tape as a prying tool is recommendable.



##### Example 2:

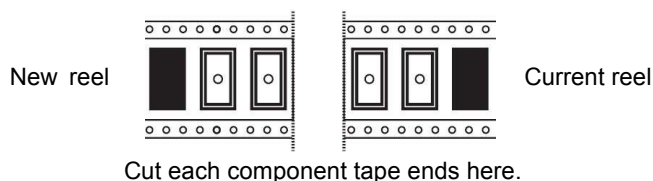
Cut the end of the new component tape's cover tape slightly as shown below. This will work especially for fragile laminated paper tapes.



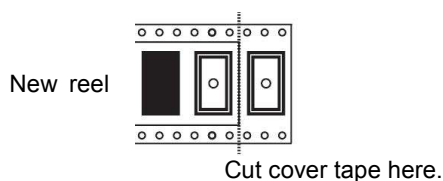
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### Example 3:

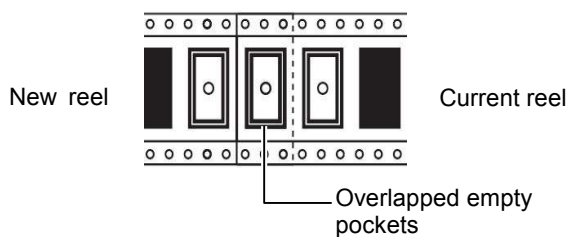
In splicing fairly heavy 12mm or wider tapes, cut the end of the current and new component tapes leaving two empty pockets at each end.



Peel and cut the cover tape end of the new component tape by one empty pocket. Also peel the tip of the new component tape's cover tape like shown in example 1 above.



Fit the exposed empty pocket at the new component tape end to the current tape's last empty pocket from below tightly.



Connect the cover tapes of the current and new component tapes with joint tape.

### Note

The spliced portion with stacked empty pockets becomes thick and might get stuck in the feeder. Check the feeding condition of the spliced portion through the tape guide.

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### 2.2 Connect component tapes with a blue joint tape

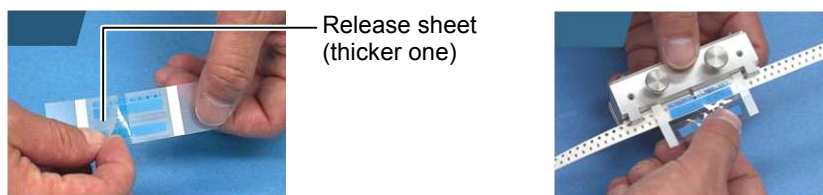
**Step 1** Press the knob of the tape connector to make space to which the component tape is inserted.

**Step 2** Set the current tape on the tape connector with the tape's cover tape facing upward. Align the tape end to the slit of the tape connector and set the tape in that position. When setting the tape, insert the positioning pins through the tape's sprocket holes. Then release the knob to hold the tape.

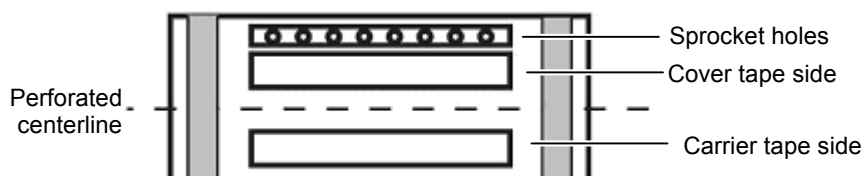


**Step 3** Set the new component tape on the tape connector the same way as step 1 through 2 above.

**Step 4** Connect the tapes on the cover tape side. Strip off the thicker cover film of the joint tape and attach the joint tape on the tapes to be spliced while aligning the sprocket holes.



**Step 5** Turn over the tape connector. Fold the joint tape along the perforated centerline and add pressure to attach the tape on the carrier tape side.

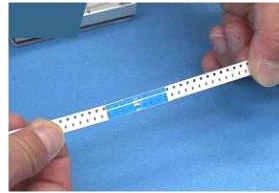


**Step 6** Check that the tapes are joined securely with the joint tape. If not, add pressure on the joined portion further. Then press the knob of the tape connector to unclamp and remove the joined tapes.



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**Step 7** Strip off the thinner cover film of the joint tape and make sure that the tapes are connected securely. Then wind the tape on the new reel and set it on the reel holder.



**Note**

If the joint tape for sprocket holes portion covers the component cover tape due to the component tape design, do not use the joint tape. Otherwise the component cover tape won't be peeled resulting in feeding error.

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## 3 How to use black joint tapes

Black joint tapes are applicable to electronic feeders equipped with the splice sensor.

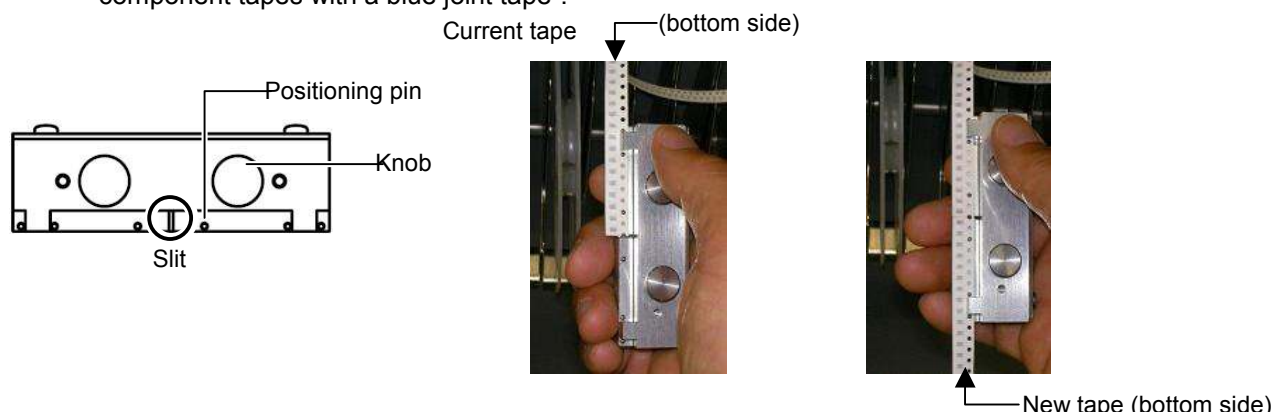
### Note

For procedure to cut the component tape ends to be joined, follow “2.1 Cut component tape ends to be joined”.

### 3.1 Connect component tapes with a black joint tape using the tape connector

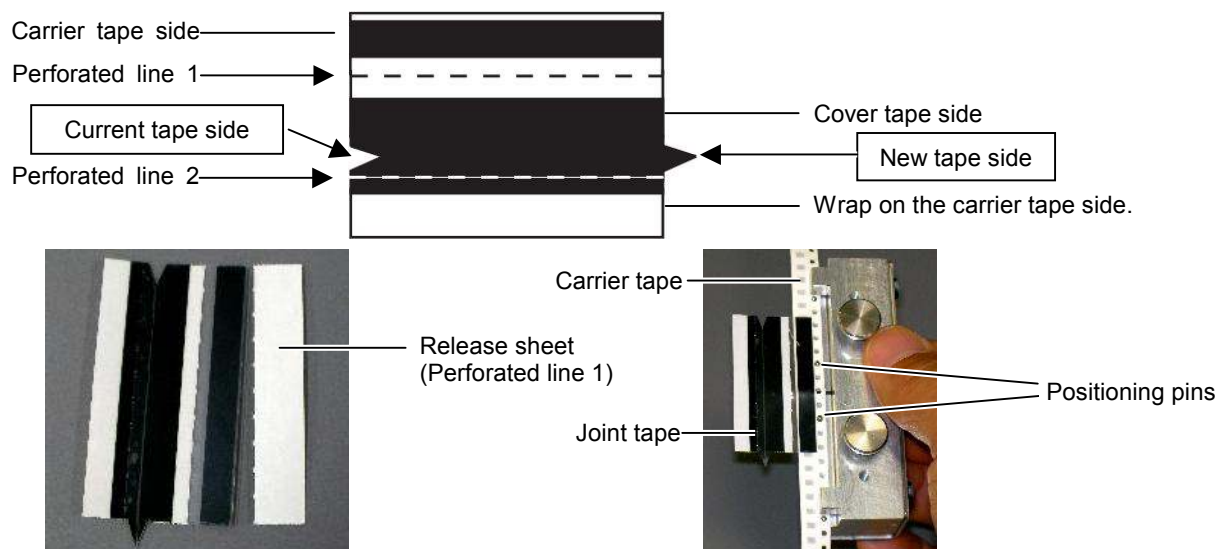
#### Step 1 Set the component tapes on the tape connector with the component tape's cover tape facing downward.

For basic procedure to set a component tape on the tape connector, see “2.2 Connect component tapes with a blue joint tape”.



#### Step 2 Attach the joint tape on the carrier tape side.

Strip off the release sheet (white and wide) of the joint tape on the carrier tape side down to perforated line 1. Fit the joint tape edge against the positioning pins at the middle of the tape connector. Add pressure to attach the joint tape on the carrier tapes.

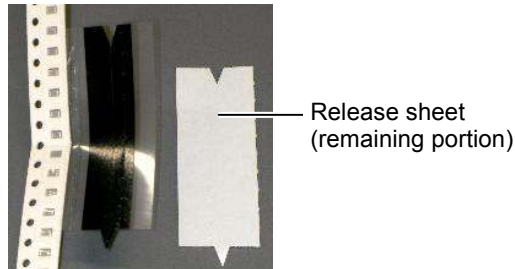




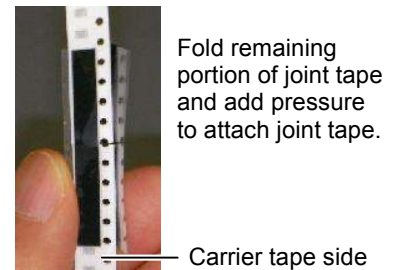
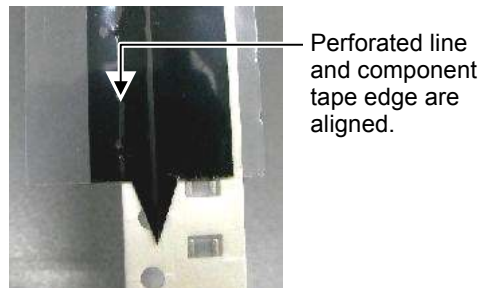
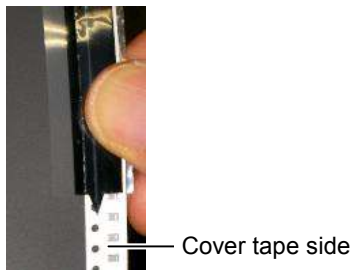
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**Step 3** Press both knobs of the tape connector simultaneously to unfasten and remove the joined component tapes.

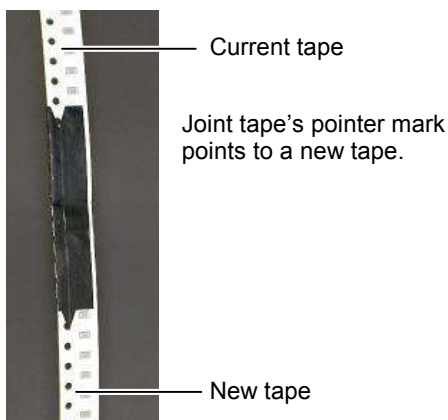
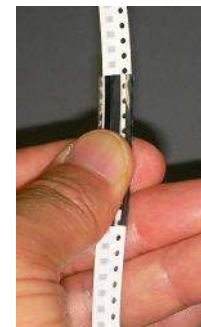
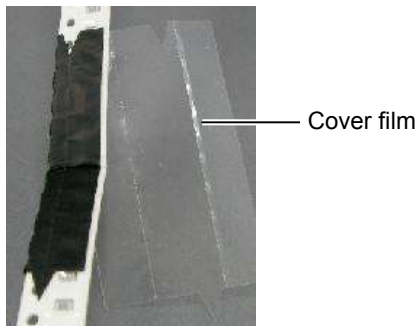
**Step 4** Strip off the remaining release sheet from the joint tape.



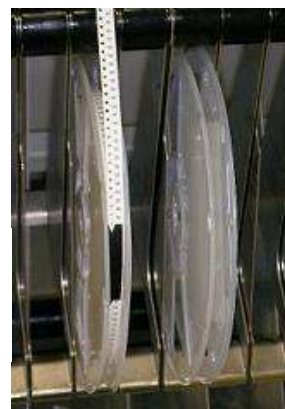
**Step 5** Fold the joint tape along perforated line 1 and attach it on the cover tape side. Then fold the joint tape along perforated line 2 and attach it on the carrier tape side.



**Step 6** Add pressure further on the joint tape to attach it firmly. Strip off the cover film.



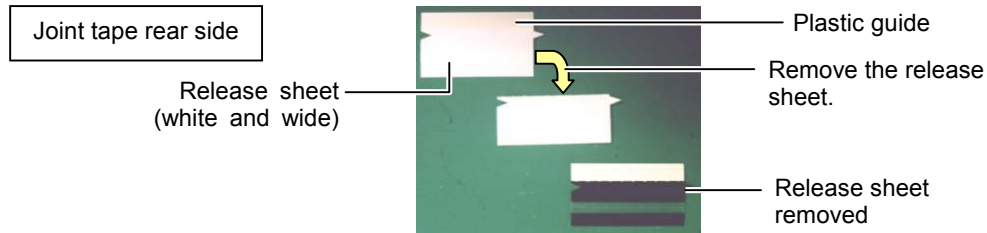
Wind spliced portion of  
component tape  
around new component  
tape reel.



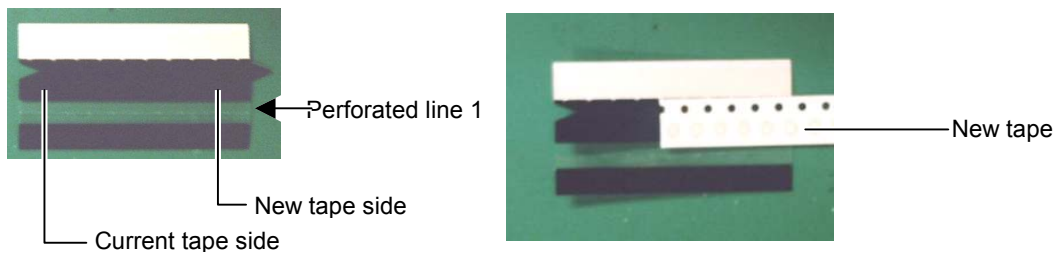
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### 3.2 Connect component tapes with a black joint tape manually

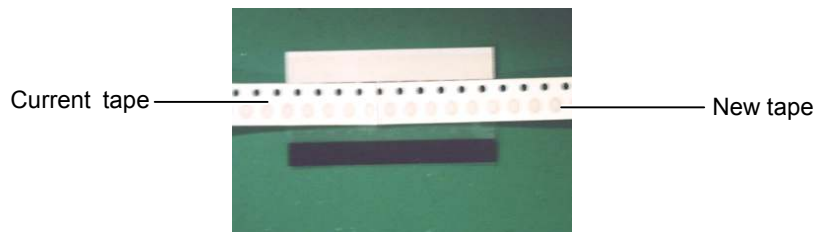
**Step 1** Strip off the white release sheet except its plastic guide portion as shown below.



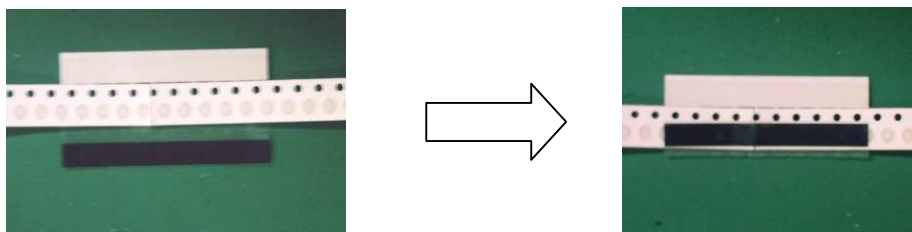
**Step 2** Attach the new component tape on the right half of the joint tape with its cover tape side facing the joint tape, its sprocket-side edge aligned to the plastic guide.



**Step 3** Attach the current component tape on the left half of the joint tape with its cover tape side facing the joint tape, its sprocket-side edge aligned to the plastic guide.

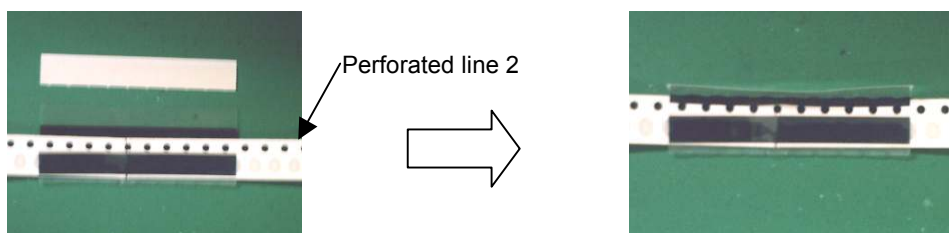


**Step 4** Fold the joint tape along perforated line 1 and add pressure to attach the joint tape on the carrier tape side.



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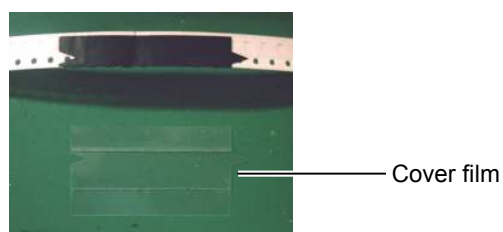
**Step 5** Strip off the plastic guide and fold the joint tape along perforated line 2. Add pressure to attach the joint tape on the carrier tape's sprocket hole side.



**Step 6** Strip off the cover film of the joint tape.

**Note**

When peeling off the cover film, the joint tape may peel off with the cover film. In this case, add pressure on the cover film further so the joint tape is attached on the carrier tapes securely. Then remove the cover film.



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## 4 How to use metal joint tapes

Metal joint tapes are used for 24mm or wider component tapes. Plastic joint tapes designed for specific component tape size are used in conjunction.

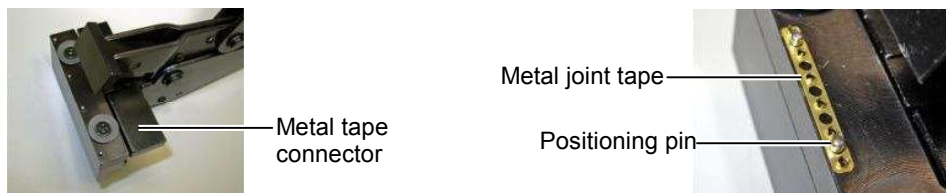
### Note

For procedure to cut the component tape ends to be joined, follow "2.1 Cut component tape ends to be joined".

### Note

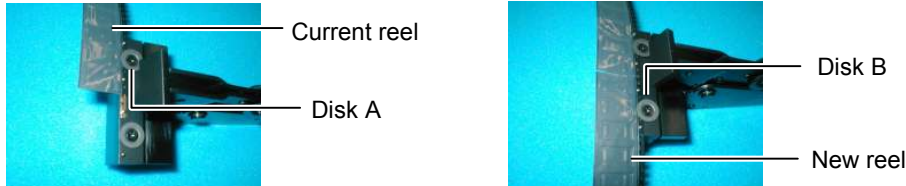
In splicing embossed tapes with metal joints, do not stack the last empty pockets to connect the tapes. Overlapped tape ends become thick and crimping them with metal joints may become impossible.

- Step 1 Set a metal joint tape on the metal tape connector with the tape's flat side facing downward. Use the connector's positioning pins to position the metal joint tape.**



- Step 2 Set a current and new component tapes to connect on the metal tape connector.**

Insert the current tape's end under disk A and align the tape end to the metal joint tape center. Position the tape by inserting the positioning pin through the tape's sprocket hole. Also insert the new component tape's end under disk B and align the tape end to the current tape's end. Position the new component tape by inserting the positioning pin through the tape's sprocket hole.



- Step 3 Crimp the metal joint tape on the component tapes.**

Grip the handles of the metal tape connector firmly (clicking feel changes to heavy gripping feel) then release. The crimping is complete and the metal tape connector opens by itself.

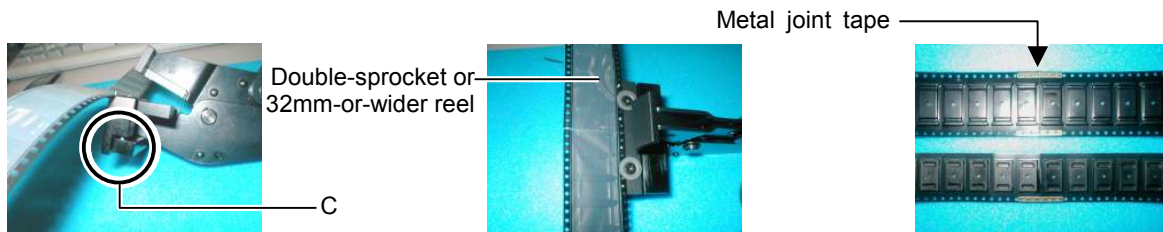


### Note

Be sure to crimp the metal joint tape on the component tape ends completely. Otherwise the metal joint tape on the component tape may get stuck in the tape guide of the feeder.

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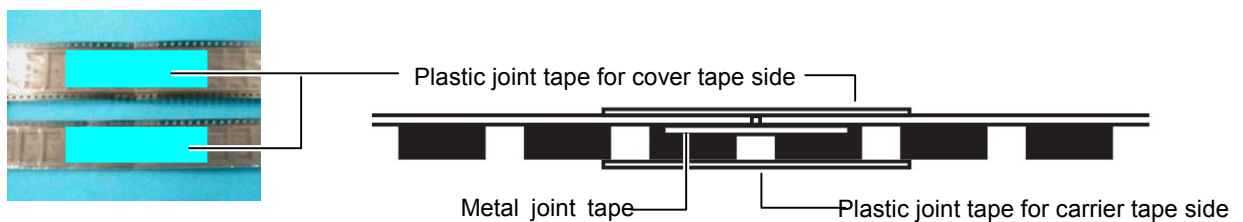
### Step 4 Remove the connected tapes from the metal tape connector.



#### Tip

To splice double-sprocket tapes, connect both edges of the tapes with metal joint tapes by crimping at sprocket holes.

### Step 5 Attach plastic joint tapes designed for the component tape size to connect the tapes. In addition to a metal joint tape(s), attach a plastic joint tape at the connected portion of the tapes on both the cover tape side and the component tape side.



#### Note

Be sure to use a plastic joint tape on the cover tape side of the component tape. If it is difficult to attach a plastic joint tape on the component tape side, use one only on the cover tape side.