HAKKO 153·154 Lead forming tool

- Lead cutter and former for axial components
- Lead cutting operation for taped components can be continuously performed using the same size settings once they are made
- Possible to use together with 152B (motor drive)

Specifications

Model No.	153-1	154-1
Forming size	5.6mm pitch	5mm pitch
Max.diameter of lead wire	Φ0.8mm (MAX.)	Φ0.5mm (MAX.)
Lead wire	For annealed copper lead wire only	
Outer width of tape	85mm (MAX.)	
Taping pitch	5mm	
Dimensions	125(W)×130(H)×110(D)mm	
Weight	2kg	

* Square lead wire is not adapted.
* Weight (w/ handle, clamp)

Features

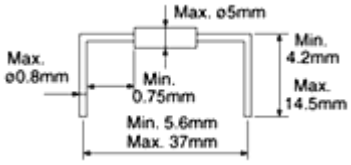
Cutting and forming for tape-type axial components and annealed copper lead wire

- Easy to use - simply set the taped components in place and turn the handle. Ideal for processing tape-type components.
- Improved, longer-life cutting blade for a clean, smooth cut.
- Sealed bearings for longer service life and greater durability and efficiency.
- Can be used for forming and cutting, forming only, or cutting only.

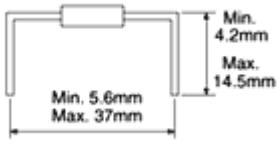
Components with lead frame (multangular lead) are unsuited.

HAKKO 153

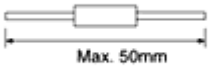
Cutting and forming



Forming

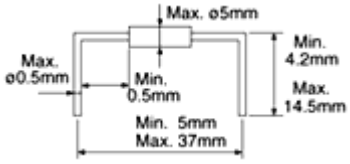


Cutting

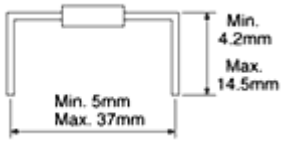


HAKKO 154

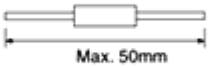
Cutting and forming



Forming



Cutting



Replacement Parts

	Part No.	Name	Specifications
	A1098	Bending wheel guide (P)	for 153
	A1099	Bending wheel guide (H)	for 153
	A1100	Bending wheel (H)	for 153
	A1101	Bending wheel (P)	for 153
	A1102	Bending wheel guide (H)	for 154
	A1103	Bending wheel guide (P)	for 154
	A1104	Bending wheel (H)	for 154

	A1105	Bending wheel (P)	for 154
	A1106	Cutting blade	for 153/154
	A1094	Cutting wheel guide (H)	for 153/154
	A1095	Cutting wheel guide (P)	for 153/154
	A1096	Cutting wheel (H)	for 153/154
	A1097	Cutting wheel (P)	for 153/154
	B1387	Main shaft	for 153/154/153

POINT ADVICE We recommend to replace the P side and H side at the same time when you need to change wheel guide or wheel.

POINT ADVICE If the parts cannot be removed from the shaft, a burr may have been formed on the shaft due to overtightening the screws. In this kind of situation, please send for repairs.

Maintenance / Troubleshooting

Troubleshooting HAKKO 153/154

Case 1: Lead bending becomes inadequate.

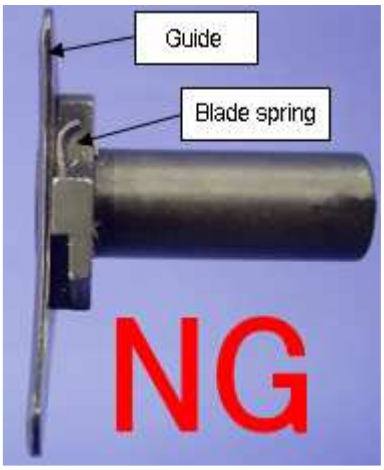
Cause: Blade spring in the bending wheel guide is worn out from age or

is deformed due to use of leads thicker than those determined by the specifications.

For the maximum applicable lead diameters, see the table below.

	HAKKO 153	HAKKO 154
Maximum applicable lead diameters	ø0.8	ø0.5

Bending wheel guide with deformed blade spring



New bending wheel guide

Solution: Replace the bending wheel guide with a new one.

Replacement parts list for HAKKO 153/154

POINT ADVICE

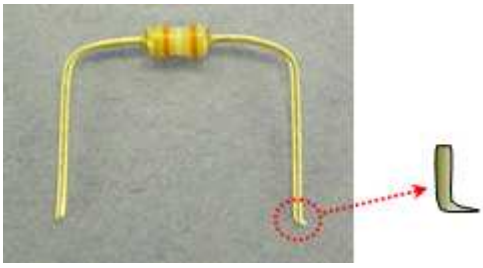
It is advisable to replace both H-side and P-side bending wheels at the same time even when only either one of them requires replacement.

Case 2: Leads get twisted. Why?

The probable cause is the deterioration of the bending wheel and bending wheel guide. Replace them with new ones.

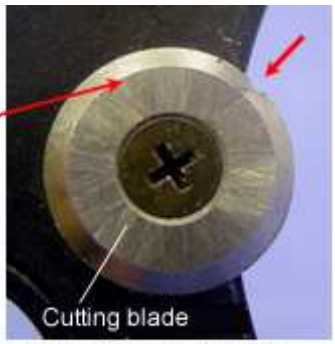
Replacement parts list for HAKKO 153/154

Case 3: Burrs are left at cut end faces. Why?



The probable cause is a chipped cutting blade or the deterioration of the bending wheel and bending wheel guide (See the photo below).
Replace them with new ones.

Replacement parts list for HAKKO 153/154



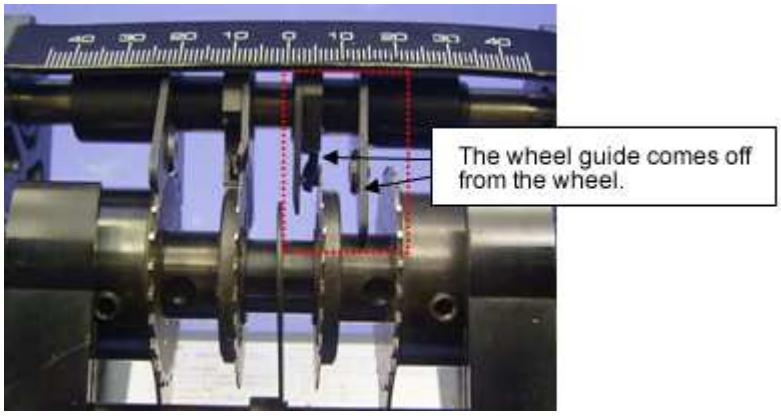
The blade becomes chipped with age, or due to the cutting of leads that are not compliant with the specifications.

When it is worn out, the tip of blade becomes thin on the whole.

When it is worn out, the curve at the guide front edge on the whole becomes deeper.

If the backlash is too large when the cutting wheel guide is attached to the cutting wheel, they are worn out. Wear causes gaps and excessive backlash.

Case 4: Bending wheel guide comes off.



There are two major suspected causes.

Cause 1: The handle was turned in a reverse direction during the work.
Cause 2: The unit is being used for the cutting of leads that are not compliant with the specifications.

Cause 1: The handle was turned in a reverse direction during the work.

Cause: It is suspected that the handle was turned in the reverse direction to release a lead caught in the unit during the work.

Solution: Check if the bending wheel and bending wheel guide are not deformed as shown in the photo below.

When deformed
Replace them with new ones.

When not deformed
Dismount the bending wheel guide from the bending wheel and then put them together again. If the wheel guide still continues to come off, replace the bending wheel and bending wheel guide.

POINT ADVICE When you want to stop the work, cut the tape where appropriate, and finish the cutting and forming of all leads remaining in the lead former.

POINT ADVICE When the parts cannot be removed from the shaft, burrs are thought to have been formed on the shaft due to excessive tightening of screws. In this case, send the unit for repair.

Cause 2: The unit is being used for the cutting of leads that

are not compliant with the specifications.

Cause: **It is likely that the leads being cut are different from those normally used due to production changeover, or that cutting is being performed on leads that are not compliant with specifications.**

Solution: Check if the lead is compliant with the specifications of HAKKO 153/154 and if the bending wheel and bending wheel guide are not deformed.

When the lead is not compliant with the specifications but no part deformations are found
Refer to the table below and change the lead to that which is compliant with the specifications.

POINT ADVICE

If the unit is continuously cutting leads that are not compliant with the specifications, the bending wheel teeth become crooked. This can cause a wheel-off or deformation of the blade spring.

	HAKKO 153	HAKKO 154
Type of applicable lead wire	Annealed copper lead Lead frames (square-shaped lead) are not applicable.	
Maximum applicable lead diameters	ø0.8	ø0.5

When the lead is not compliant with the specifications and the parts (bending wheel/bending wheel guide) are deformed
Replace the parts with new ones and change the lead with one which is compliant with the specifications.

Replacement parts list for HAKKO 153/154

POINT ADVICE

It is advisable to replace the bending wheels and bending wheel guides on both H and P sides simultaneously.

Bending wheel with crooked wheel teeth

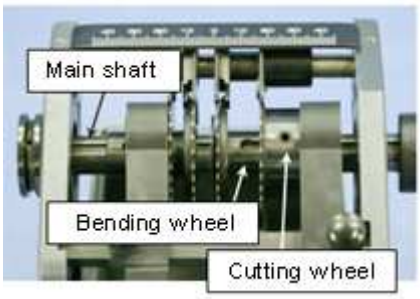
Bending wheel guide with deformed blade spring

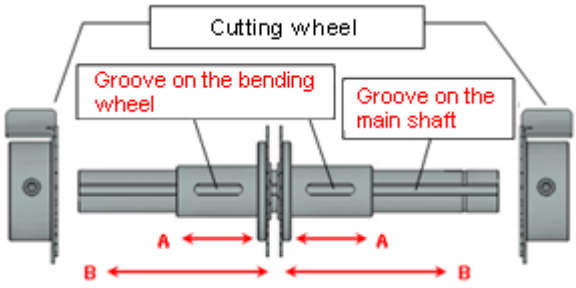
If the unit is used with leads that are not compliant with the specifications, the bending wheel becomes deformed as shown in the photo and eventually causes the dislocation.

Comparison with new parts using photo image

Case 5: Adjustment of parts such as bending wheels and cutting wheels is becoming increasingly more difficult. Why?

The probable cause is the deterioration of shaft and bending wheel.
If the unit must be adjusted often due to the frequent changes of pitches to form (e.g. after each set of work), the grooves on the main shaft and bending wheel (where the screws touch) are scratched, and the unit will not operate smoothly.





1. When the cutting wheel does not operate smoothly

Burrs are formed on the part of the bending wheel where the cutting wheels can traverse (A).
Polish the part around the groove on the bending wheel with a file.
*To file the groove on the bending wheel, first remove it from the main shaft.

2. When the bending wheel does not move smoothly

Burrs are formed on the part of main shaft where the bending wheels can traverse (B). Polish the part around the groove on the main shaft with a file. If the movement does not improve, the shaft may be bent.
Replace it with a new one.
* To file the main shaft, first remove it from the Lead Former.