5. CAD Data Application Guide

This software can import CAD Data and NC data (Numerical Control Data) created by the Mounter / Chip Chooter. In this manual, such Data is called NC data. NC Data is a data file which indicates the coordinates of components. The coordinates can be used to place each Inspection Frame into the Inspection Program. This chapter explains how to apply NC Data.

This is a very useful method for positioning Inspection Frames, but since the size of the frame is not included in the data, some modifications are required.

5-1 Importable File Types

The file formats that can be imported are either one of the following:

1. CSV Format/ Tab Format

This software also supports tab-delimited and comma delimited data.

> (Example)
> 1215,00795,000,1,R123, Partsname 1
> 1210,04455,090,2,C123, Partsname 2
> 3605,04430,000,3,D123, Partsname 3
> 3580,02665,000,4,E567, Partsname 4

This format follows the order "X, Y, W, Z, symbol name, Part Name".

The absolute position in the .XY direction is in 1/100mm units, but when decimal points are included, the data will be interpreted in mm units.

The order will be X, Y, W, Z, symbol, part name, and spaces will be left aligned.

2. Panaformat Type 1

Text format, file starts with a "$" and ends with an "*".

> (Example)
> $
> N001/0G1M0T004X+00000Y+00000Z-00V+W+
> N002/0M004T000X-14760Y-18930Z001V3W7

```
.....................
.....................
N051/0M004T000X-14990Y-18985Z025V1W1
N052/0M000T000X000000Y000000Z025V1W1
N053/0*
```

In the example above, the software imports only X, Y, Z and W data (other data will be ignored).

The numbers that follow W may be 1 = 45 degrees, 2 = 90 degrees, 3 = 135 degrees, and if the W value is 10 or higher, the actual numerical value will define the angle. The W angle rotates clockwise.

3. Panaformat Type 2

Type 2 includes Symbol Names and Part Names in addition to X, Y, Z and W values.

```
(Example)
    % HEADER
    .....................
    % NCDATA
    N0001X0Y0W0Z1PN ()C ()M000100T/0;MARU1515
    N0002X-08340Y+1666'0W000Z001PN (R1234)C (R 01)M000002T0/0;
    .....................
    *
```

4. 22X Data Format

The NC Data format handled in this software conforms to the Panaformat. Of course, other NC Data formats can be used in this program but they must be converted to the same syntax.

```
(Example)
    $
    X20300Y04500W00180Z00062;R121 \RA05010205
    X21100Y11500W00180Z00062;R77 \RA05012005
    X20300Y11500W00180Z00062;R10 \RA05047205
    .....................
    .....................
    *
```

The format follows these rules:
    $...... Data start
    X...... Absolute location in direction X in 1/100mm units (Example: 123.56 X12356)
    Y...... Absolute location in direction Y in 1/100mm units (Example: 345.67 Y34567)
    W......rotation in 90 degree increments (Example: W00180)
    Z.......Part cassette number
    ;...... Symbols, 15 characters or less (Example: ;ABC)

\...... Part Name, 31 characters or less (Example: \RA345)
data is delimited with line breaks
*....... Data end

Symbols and Part Name must be placed after the separators (X, Y, Z, W) and Symbols always precede Part Name. Symbol Names and Part Name must not include ";" or "\".

Symbol Names and Part Name are not a requirement for NC Data. However, Symbols make the program much easier to understand since Symbol Names will be included in the Stamp's information and when showing the inspection result in the Map View, 22X will display the Symbol Name next to the red circle pointing NG. When applying Stamps to the corresponding components, the inclusion of Part Names will allow for a more intuitive matching process. If NC Data contains the Part Name, the Stamp Name will be automatically generated from the Part Name while in Teach Mode.

5-2 Creating Inspection Frames with NC Data

NC Data can be handled according to the following procedures.

▼ 5-2-1 Setting the PCB

Set the PCB for Dimension Alignment and Location Alignment on the Carrier.
The PCB must be completely non-defective.

▼ 5-2-2 Importing Stamps

When using NC Data, a common technique is to create a Stamp beforehand, and apply the Stamp to the components after importing NC Data. Before Importing NC Data, you should Import the Stamps that correspond to the Part Names.

▼ 5-2-3 Importing NC Data

Select **Import Data File** from the **File menu**, and choose the NC Data file. NC Data can be imported for either side A or side B, but the Inspection Frames for the first side must be set and Combine Cells After Import must be completed before importing the other side.

▼ 5-2-4 Angle Adjustment

When NC Data is imported, the Position adjustment window showing the position of the imported NC data will appear. Align it until it is in the same position as the pre-set PCB.