

# Service Information

MACHINE TYPE: YS series mounters  
 SOFTWARE VERSION: V30  
 CLASSIFICATION: Machine setting, specification and troubleshooting

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## YS series simultaneous pickup tolerance setting modification

When simultaneous pickup was performed using different sized electronic feeders, pickup error used to occur occasionally. To remedy this condition, the default setting of simultaneous pickup range tolerance ([Simul. Pick Area XY] > [Maximum X (mm)]) has been modified from "0.000" to "0.250". This document describes details of the modification and how to modify the setting manually.

### Update history

Revision No.	Updated contents	Issued date
-000	(First release)	25 June 2012

### Warning

- Make sure to use this document under the instruction of a YAMAHA service engineer or those who completed necessary maintenance training.
- YAMAHA is not responsible for any problems caused by the misuse of the document.
- This document contains editing of the system data that can affect the operating condition of the machine. Make sure to thoroughly understand the contents of the document and perform the service work on your own responsibility.

### Safety note

Strictly follow the precautions in the "Safety" section in the machine user's manual.

### Disclaimer

This document contains the preliminary information subject to change in the future.

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## 1 Overview of modified setting and applicable machine software versions

### 1.1 Modified factory default setting

The [Simul. Pick Area XY] > [Maximum X (mm)] setting (selected from [Machine] button > [VmSpec] window > [Machine Data] > [Mechanical] > [Position]) has been changed from "0.000" to "0.250" as factory default.

The image shows a tree view on the left with 'Position' selected. To the right, two tables are shown, one above the other, with a yellow arrow pointing from the top table to the bottom table. Both tables have columns for 'Maximum X (mm)' and 'Maximum Y (mm)'. The top table shows 'Simul. Pick Area XY' with values 0.000 and 0.000. The bottom table shows the same setting with values 0.250 and 0.000.

	Maximum X (mm)	Maximum Y (mm)
Simul. Pick Area XY	0.000	0.000

	Maximum X (mm)	Maximum Y (mm)
Simul. Pick Area XY	0.250	0.000

### 1.2 Applicable machine software versions

Factory installed versions **V3.28STD R1.000 and after** (first released 15 February 2012) incorporate the modification described in "1.1 Modified factory default setting".

#### Note

Note that upgrading a previous version to V3.28STD R1.000 after shipment doesn't update the [Maximum X (mm)] setting automatically.

#### Note

You don't have to upgrade the application software just for the purpose of updating the [Maximum X (mm)] setting.

#### Note

As for versions **V3.28STD R1.000 to before V3.28STD R4.000**, only the [Maximum X (mm)] setting for [Table A] is set to "0.250" and the setting for [Table B] remained "0.000" by default. Please check the setting for [Table B] and correct to "0.250" as necessary.

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## 2 Why the setting modification is necessary

On YS series mounters, when simultaneous pickup was performed using different sized electronic feeders, pickup error used to occur occasionally. The following describes how the errors occurred and remedy with the new simultaneous pickup tolerance setting.

### 2.1 Conditions to execute simultaneous pickup

YS series mounters execute simultaneous pickup according to the below mentioned conditions. Whether [Maximum X (mm)] is set to 0.000 or not will change the conditions as the same way as YG series and previous mounters.

Software version	[Maximum X (mm)] setting	X pickup offset limit to execute simultaneous pickup	Remarks
Before modification: Before V3.28STD R1.000	0.000	Within 1/3 of the part's width across corners	Allowable X pickup offset for 0603 components is 0.22mm.
After modification: V3.28STD R1.000 and after	0.250	Whichever smaller, 1/3 of the part's width across corners or 0.25mm	

### 2.2 Difference between CL feeders and electronic feeders

#### ■ Pneumatic driven CL feeders for previous mounters

Pickup positions (part's center) of larger than 8mm feeders (12mm, 16mm, 24mm, 32mm...) are the same as those of 8mm feeders.

#### ■ Electronic feeders for YS series mounters

Pickup positions (part's center) of larger than 8mm feeders depart from those of 8mm feeders in X direction. Such pickup position offsets by feeder size have been registered as VmSpec settings.

When the [Maximum X (mm)] value of the YS series mounter is "0.000", depending on feeder sizes and parts sizes, different sized feeders may be assigned to perform simultaneous pickup. In this case since pickup position offsets of relevant feeders are involved, parts on certain feeders are picked at off-centered position, possibly resulting in errors.

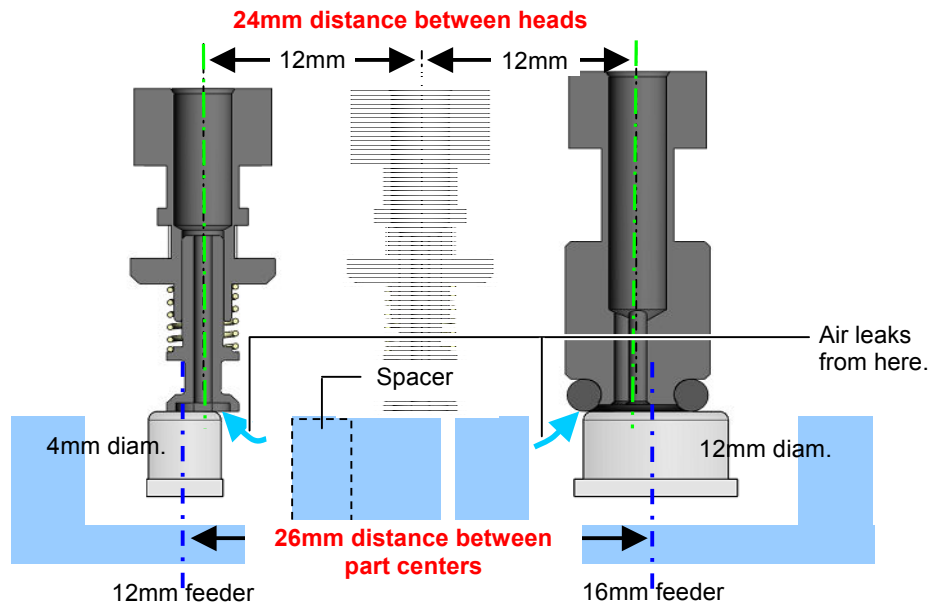
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### 2.3 Example: Simultaneous pickup using adjacent 12mm and 16mm feeders

Distance between pickup positions of adjacent 12mm and 16mm feeders are 26mm, which means 2mm of X offset exists against the head-to-head distance of 24mm.

■ When the [Simul. Pick Area XY] > [Maximum X (mm)] setting is “0.000”

1/3 of width across corners of a 4mm diam. part is 1.333mm and that of a 12mm diam. part is 4mm, either of which is the pickup offset limit to execute simultaneous pickup. Since pickup offset at each head is 1mm, which is smaller than both values, simultaneous pickup will be executed. Nevertheless if executed, air leaks at the nozzle tip of each head, possibly resulting in frequent pickup errors.



■ When the [Simul. Pick Area XY] > [Maximum X (mm)] setting is “0.250”

Since [Maximum X (mm)]: “0.250” is smaller than either of 1/3 of width across corners of the relevant parts, “0.250” serves as pickup offset limit. Since pickup offset at each head is 1mm, which is larger than “0.250”, simultaneous pickup won’t be executed.

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## 2.4 Errors related to simultaneous pickup using different sized feeders

When the below mentioned errors occur frequently, it may be related to simultaneous pickup using different sized feeders. To remedy the conditions, check the [Simul. Pick Area XY] > [Maximum X (mm)] setting and if "0.000" is entered, correct to "0.250" (see "3 Modify the simultaneous pickup tolerance setting manually"). This will disable error-prone simultaneous pickup and enable sequential pickup where the part is picked up at its center.

- **Simultaneous pickup in automatic operation fails but pickup of the same parts in the [Parts Adjust] mode is performed properly.**

Pickup offsets due to simultaneous pickup causes pickup error. But in the [Parts Adjust] mode, pickup of the parts is performed part by part at the part's center thus no error occurs.

- **Pickup error occurs but retry operation succeeds.**

In attempting simultaneous pickup with different sized feeders, pickup error due to pickup offsets occurs. But in retry operation, sequential or one by one pickup is executed successfully where pickups are performed at each part's center.

- **Image recognition fails frequently during automatic operation but it succeeds in the [Parts Adjust] mode.**

After simultaneous pickup and parts image recognition process, errors including "Ea00030 ELLEGAL RESULT ERROR" or "Ea00003 COMPONENT DETECTION ERROR" may occur.

When parts are picked at their off-centered position due to pickup offsets in simultaneous pickup, parts image recognition may fail because the parts are captured deviated from the center beyond acceptable range.

### Tip

You can check pickup condition of simultaneous pickup in the step operation mode where the head stops at pickup lower end of each step.

## 3 Modify the simultaneous pickup tolerance setting manually

### 3.1 Before modifying the setting

#### 3.1.1 IMPORTANT: Explain the need and adverse effect to the customer

- **Possible increase in cycle time**

Setting [Simul. Pick Area XY] > [Maximum X (mm)] to a more severe setting could result in increased cycle time if the machine had run with the previous setting without major problems. In particular if the customer has run programs using large sized components frequently, cycle time would probably increase.

### Note

Even if the customer hasn't so far experienced noticeable simultaneous pickup errors, recognition error or unstable placement related to simultaneous pickup, they may experience those errors in the future. Thus we recommend modifying the pickup tolerance setting.

### Note

If the customer doesn't agree to modify the setting with all advantages and drawbacks considered, keep the previous setting unchanged.

#### 3.1.2 Back up the machine system data

Before modifying the VmSpec data, back up the machine system data.

### Note

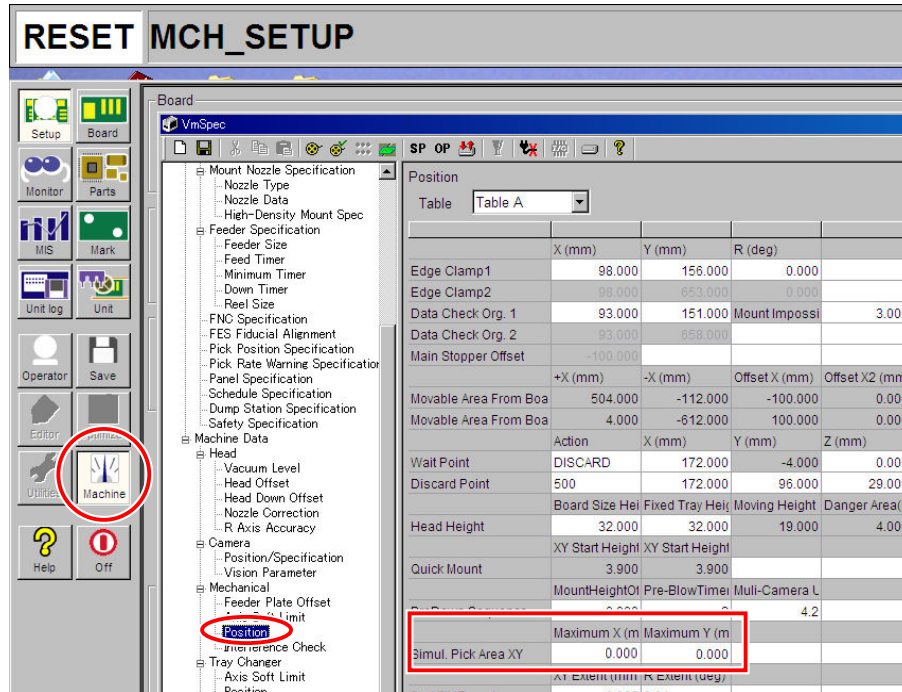
For information about the system data backup procedures, see the machine user's manual.

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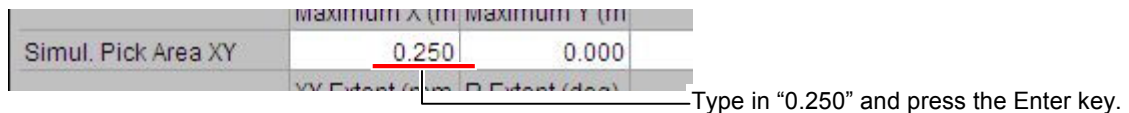
## 3.2 Modify the setting in the VmSpec window

### Step 1 Open the VmSpec window.

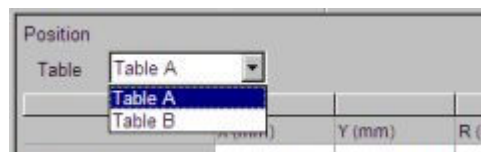
Select [Machine] button to open the [VmSpec] window. Then find the setting to modify: [Simul. Pick Area XY] > [Maximum X (mm)] under [Machine Data] > [Mechanical] > [Position].



**Step 2 Change the [Simul. Pick Area XY] > [Maximum X (mm)] setting from “0.000” to “0.250”.** Double-click the cell and type in “0.250”. Then press the Enter key.



**Step 3 For YS24 and YS24X, set [Table] to “Table B” and repeat step 2 to change the setting.**



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**Step 4 Save the modified setting and close the VmSpec window.**

**Note**

To enable the new setting, reload board data or restart the machine system.

**Step 5 Back up the machine system data**

Since the VmSpec data has been modified, back up the machine system data.

**Step 6 Reregister the machine in appropriate offline software.**

For information about the registration procedures, see the user's manual of the offline software.

**Step 7 Optimize the board data.**

After modifying the simultaneous pickup tolerance setting, if the machine cycle time increases noticeably due to redundant head pickup motions, we encourage you to optimize the board data to minimize the increase in cycle time.

**Tip**

When the simultaneous pickup tolerance setting has been modified, to minimize possible increase in cycle time, it is recommended to reregister the machine to the P-Tool system and optimize board data.