



## Vapor Temperature Indicator for Rotary Evaporator

Model

# TA300

### Instruction Manual

- Second Edition -

This document is the exclusive instruction manual to the vapor temperature indicator TA300 model installed on the RE300 model rotary evaporator. Please use this document together with the instruction manual of the rotary evaporator as for the operating instructions of device.

- Thank you for purchasing "vapor temperature indicator, TA300" of Yamato Scientific Co., Ltd.
- To use this unit properly, read this "Instruction Manual" thoroughly before using this unit. Keep this instruction manual around this unit for referring at anytime.



**WARNING!**

Carefully read and thoroughly understand the important warning items described in this manual before using this unit.

**Yamato Scientific Co. LTD.**

This paper has been printed on recycled paper.

# Contents

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◆ <b>Installation .....</b>	<b>1</b>
• Contents in the Package .....	1
• Installation Method .....	1
◆ <b>Appearance Diagram .....</b>	<b>4</b>
◆ <b>Operation Method .....</b>	<b>5</b>
◆ <b>Handling Precautions .....</b>	<b>6</b>
◆ <b>Maintenance Method.....</b>	<b>6</b>
• Daily Inspection and Maintenance .....	6
◆ <b>Long storage and disposal.....</b>	<b>7</b>
• When not using this unit for long term / When disposing .....	7
◆ <b>In the Event of Failure... ..</b>	<b>8</b>
• Safety Device and Error Code.....	8
• Trouble Shooting .....	8
◆ <b>After Service and Warranty .....</b>	<b>9</b>
◆ <b>Specification .....</b>	<b>10</b>
◆ <b>Wiring Diagram.....</b>	<b>10</b>
◆ <b>Replacement Parts Table.....</b>	<b>11</b>
◆ <b>Reference.....</b>	<b>12</b>
• List of Dangerous Substances .....	12
◆ <b>Installation Standard Manual.....</b>	<b>13</b>

## Contents in the Package

Please check the contents in the package before installing the TA300 to the rotary evaporator.  
Please contact our selling office or sales office if any components or parts are missing.

Contents			
No.	Name	QTY	Notes
1	Vapor temperature indicator TA300 (main unit)	1	
2	Attaching screw	3	M4 tapping screw (2), M4 flat head screw (1)
3	Bracket to vacuum controller	1	SUS
4	Sensor for measurement of vapor temperature	1	Resin attaching screw to glass unit and silicone packing are attached.
5	Instruction manual	1	

## Installation Method

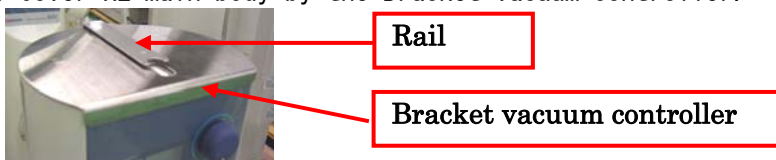
### 1) Fixation of TA300

Unpack the unit and install it at level area.

- ① Tear the seal from screw hole of RE main body,



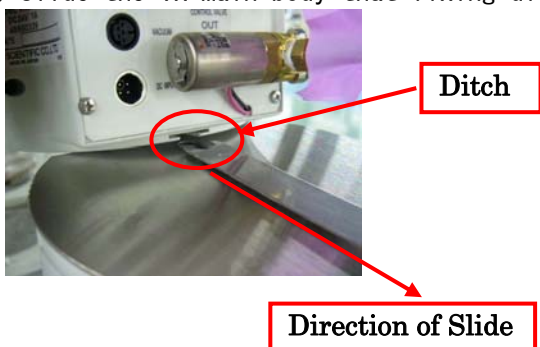
- ② Cover RE main body by the Bracket vacuum controller.



- ③ Fix the Bracket vacuum controller by flat head screw (M4) and tapping screw (M4).



- ④ Slide the VR main body that fixing ditch of VR with the rail of Bracket vacuum.



(Note) Both surface VR and RE make same position.

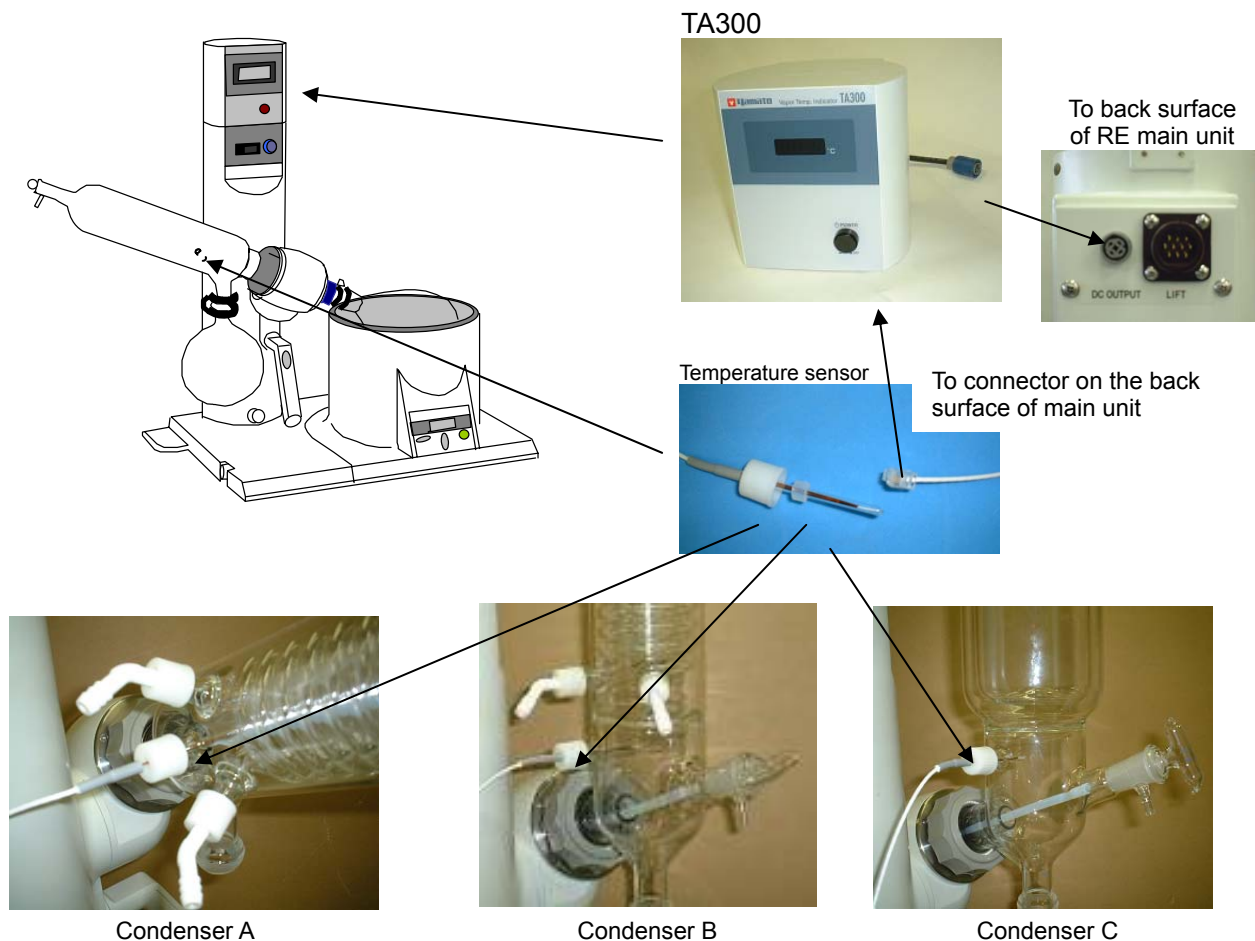
※ When there are detached, do the above procedure from 4 to 1.



## Installation Method

### 2) TA300 connection

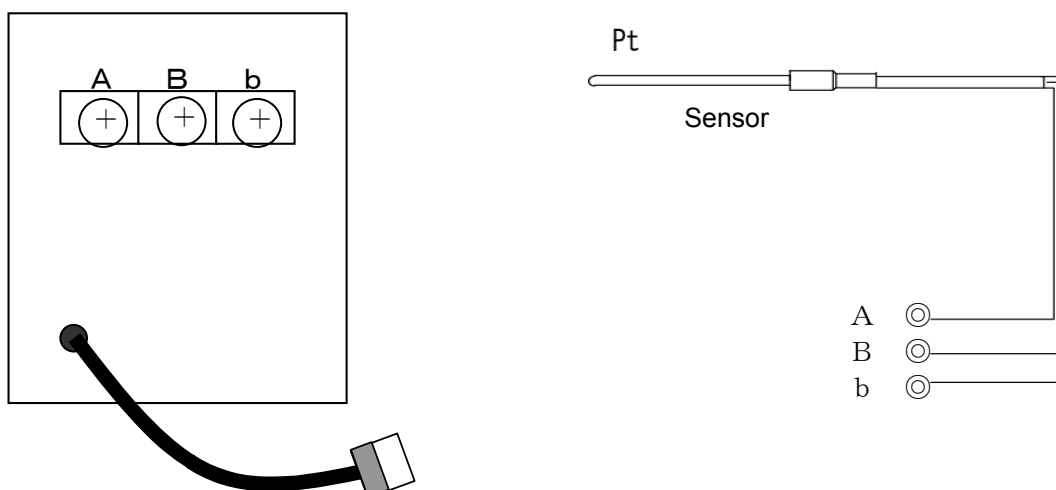
Connect the DC24V power cable to the RE main unit. Connect the vapor temperature sensor to the condenser. Hose piping is not required.



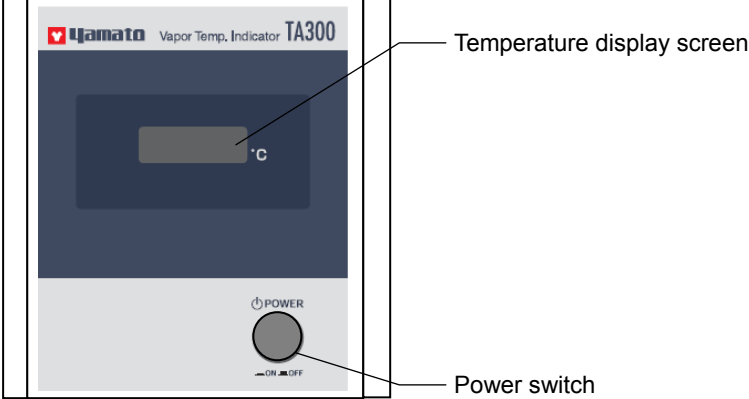
### 3) Sensor wiring

Connect the sensors to the sensor terminals of corresponding number respectively by using a cross slot screwdriver.

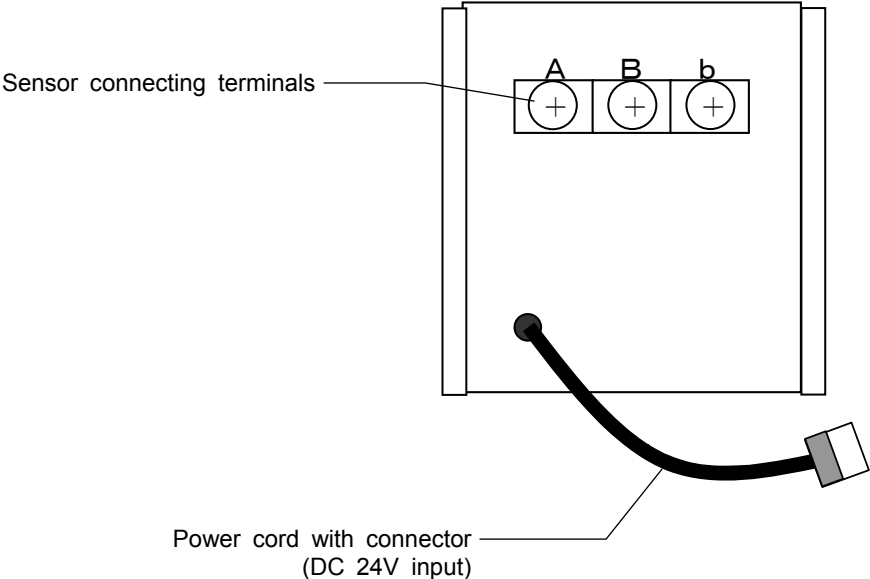
Sensor terminals on the back surface



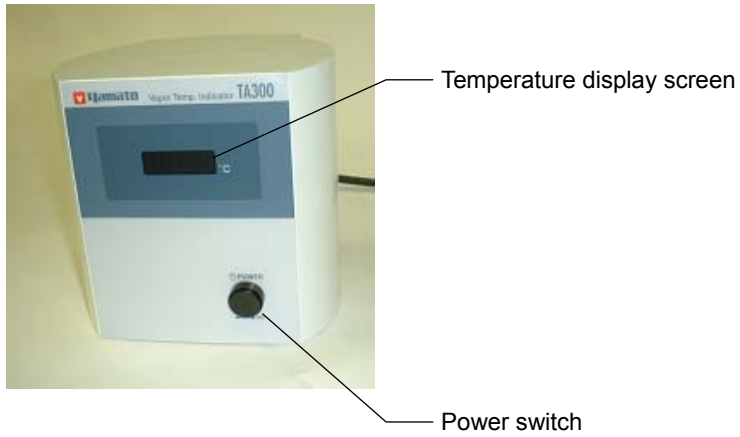
Front view



Rear view




- 1) Turn on the power of RE main unit and start operation.
- 2) Turn on the power switch of operation panel on the TA300. The screen displays the current evaporating temperature by in increments of 0.1°C.




## Handling Precautions

### **WARNING!**


#### Substances that cannot be used

-  Never use explosive substances, flammable substances and substances that include explosive or flammable ingredients in this unit. Explosion or fire may occur. (Refer to page 12 "List of Dangerous Substances".)

#### If a problem occurs


-  If smoke or strange odor should come out of this unit for some reason, turn off the power switch right away, and then disconnect the power cord. Immediately contact a service technician for inspection. If this procedure is not followed, fire or electrical shock may result. Never perform repair work yourself, since it is dangerous and not recommended.

#### Do not disassemble or modify this unit

-  Do not disassemble or modify this unit. Fire or electrical shock or failure may be caused.

### **CAUTION!**

#### During a thunder storm

-  During a thunderstorm, turn off the power switch immediately, and then disconnect the power cord. If this procedure is not followed, fire or electrical shock may be caused.

## Maintenance Method

### Daily Inspection and Maintenance

For the safety use of this unit, please perform the daily inspection and maintenance without fail.

### **WARNING!**

- Be sure to disconnect the power cord during inspection or maintenance of device.
- Do not disassemble the device.

### **CAUTION!**

- Wipe the dirt with soft cloth wrung out with mild detergent. Do not use benzene, thinner or cleanser, or do not scrub it with a scrubbing brush. Deformation, deterioration or discoloration may result in.



### When not using this unit for long term / When disposing

#### **CAUTION!**

##### When not using this unit for long term...

- Turn off the power and disconnect the power cord.

#### **WARNING!**

##### When disposing...

- Keep out of reach of children.

#### ***Environmental protection should be considered***

We request you to disassemble this unit as possible and recycle the reusable parts considering to the environmental protection. The feature components of this unit and materials used are listed below.

Component Name	Material
<b>Exterior Parts</b>	
Outer covering	ABS resin
<b>Electrical Parts</b>	
Switches	Composite of resin, copper and other
Display unit	Composite of ABS resin, glass fiber and other
Power cord and connector	Composite of resin coating, copper, nickel and other
Wiring material	Composite of flame-resistant vinyl, copper and nickel
Sticker	Resin material

## Safety Device and Error Code

### Error Code:

Check the error code and stop the operation immediately.

Error Display	Cause/Solution
E r r O	<b>Memory error</b> Display unit failure. Make a call for service.
- - - -	<b>Sensor trouble detection</b> Contact failure or disconnection of sensor. Make a call for service.
- - - -	<b>Sensor trouble detection</b> Contact failure of sensor. Make a call for service.

## Trouble Shooting

Phenomenon	Check point
Device does not start after turning on the power switch.	<ul style="list-style-type: none"> <li>• Check if the power source is turned to on.</li> <li>• Check if the power cable is securely plugged.</li> <li>• Check if a power failure occurs.</li> </ul>

In the case if the error other than listed above occurred, turn off the power and disconnect the power cord immediately. Contact the shop of your purchase or nearest Yamato Scientific Service Office.

### In Case of Request for Repair

If the failure occurs, stop the operation, turn OFF the power switch, and unplug the power plug. Please contact the sales agency that this unit was purchased, or the Yamato Scientific's sales office.

#### < Check following items before contact >

- ◆ Model Name of Product
  - ◆ Production Number
  - ◆ Purchase Date
  - ◆ About Trouble (in detail as possible)
- } See the production plate attached to this unit.

### Minimum Retention Period of Performance Parts for Repair

The minimum retention period of performance parts for repair of this unit is 7 years after discontinuance of this unit.

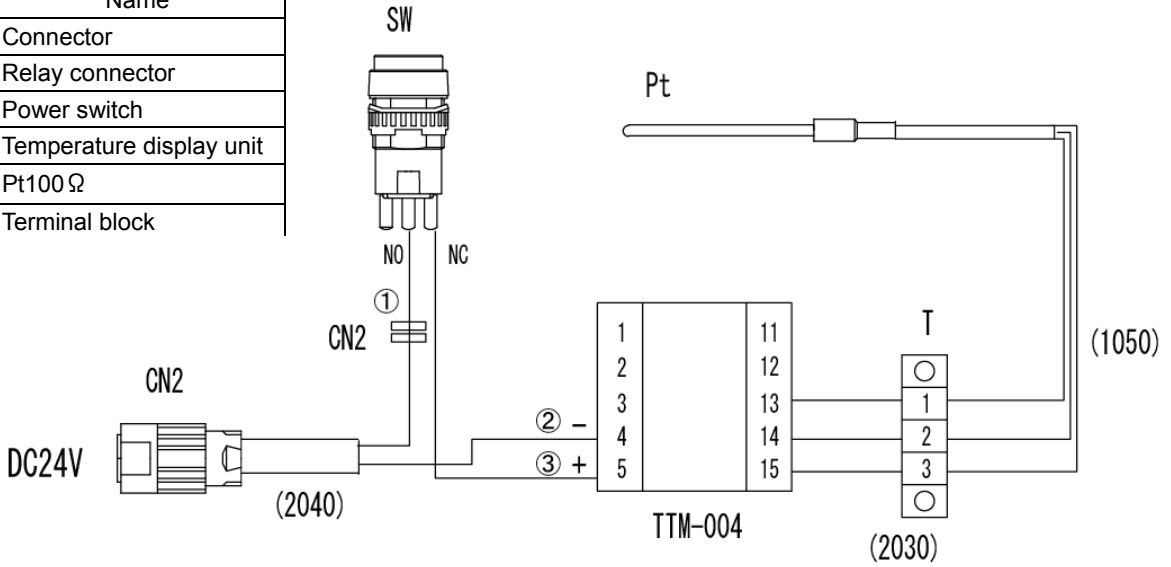
The "performance part for repair" is the part that is required to maintain this unit.

# Specification

Product name		Vapor temperature indicator
Model		TA300
Supported models		RE300
Configuration	Power switch	Push-button
	Display unit	Digital LED display
	Vapor temperature sensor	Pt100Ω glass tube coating, resin nut attached
Performance / Function	Display part	LED display
	Outer covering	ABS resin coating
	Temperature display range	-199 to 500°C
	Temperature display resolution	0.1°C
Standard	External dimensions	W × D × H (projection is not included)
	Power supply	DC 24V, 0.5A and below

# Wiring Diagram

Symbol	Name
CN1	Connector
CN2	Relay connector
SW	Power switch
TTM-004	Temperature display unit
TH1	Pt100Ω
T	Terminal block



## Replacement Parts Table

<b>Part Name</b>	<b>Code No.</b>	<b>Specification</b>	<b>Manufacturer</b>
Power switch	LT00015364	AB6M-A1B	Izumi Denki
Temperature display unit	LT00015091	TTM-004 DC24V	Toho Denshi
Vapor temperature sensor	LT00015090	Pt100Ω	Yamato Scientific
Sensor cap	LT00015054	Duracon	Yamato Scientific
Sensor packing	LT00015054	Silicon rubber	Yamato Scientific

## List of Dangerous Substances



Never use explosive substances, flammable substances and substances that include explosive or flammable ingredients in this unit.

### EXPLOSIVE

<b>EXPLOSIVE:</b>	Ethylene glycol dinitrate (nitro glycol), Glycerin trinitrate (nitroglycerine), Cellulose nitrate (nitrocellulose), and other explosive nitrate esters
	Trinitrobenzene, Trinitrotoluene, Trinitrophenol (picric acid), and other explosive nitro compounds
	Acetyl hidroperoxide (peracetic acid), Methyl ethyl ketone peroxide, Benzyl peroxide, and other organic peroxides

### FLAMMABLE

<b>IGNITING:</b>	Lithium (metal), Potassium (metal), Sodium (metal), Yellow phosphorus, Phosphorus sulfide, Red phosphorus, Celluloid compounds, Calcium carbide, Lime phosphate, Magnesium (powder), Aluminum (powder), Powder of metals other than magnesium and aluminum, Sodium hydrosulfite
<b>OXIDIZING:</b>	Potassium chlorate, Sodium chlorate, Ammonium chlorate, and other chlorate
	Potassium perchlorate, Sodium perchlorate, Ammonium perchlorate, and other perchlorate
	Potassium peroxide, Sodium peroxide, Barium peroxide, and other inorganic peroxide
	Potassium nitrate, Sodium nitrate, Ammonium nitrate, and other nitrate
	Sodium chlorite and other chlorites
	Calcium hypochlorite and other hypochlorites
<b>INFLAMMABLE LIQUID:</b>	Ethyl ether, Gasoline, Acetaldehyde, Propylene chloride, Carbon disulfide, and other flammable substances having a flash point of lower than -30°C
	Normal hexane, ethylene oxide, acetone, benzene, methyl ethyl ketone, and other flammable substances having a flash point of -30°C or higher but lower than 0°C
	Methanol, Ethanol, Xylene, Pentyl acetate (amyl acetate), and other flammable substances having a flash point of 0°C or higher but lower than 30°C
	Kerosene, Light oil (gas oil), Oil of turpentine, Isopentyl alcohol (isoamyl alcohol), Acetic acid, and other flammable substances having a flash point of 30°C or higher but lower than 65°C
<b>FLAMMABLE GAS:</b>	Hydrogen, Acetylene, Ethylene, Methane, Propane, Butane, and other flammable substances which assume a gaseous state at 15°C and 1 atm

(Source: Appendix Table 1 of Article 6 of the Industrial Safety and Health Order in Japan)

\* Install the unit according the procedure described below (check special specifications separately).

Model	Serial number	Date	Person in charge of installation (company name)	Person in charge of installation	Judgment
TA300					

No.	Item	Method	Reference operation manual	Judgment
<b>Specifications</b>				
1	Accessories	Check the quantities of accessories with the quantities shown in the Accessory column.	<b>Specification</b>	P.10
2	Installation	<ul style="list-style-type: none"> <li>• Visually check the surrounding area.</li> </ul> Caution: Be careful about surrounding environment.	<b>Installation</b>	P.1
		<ul style="list-style-type: none"> <li>• Keep space.</li> </ul>		
<b>Operation</b>				
1	Start of operation	<ul style="list-style-type: none"> <li>• Start operation.</li> </ul>	<b>Operation Method</b>	P.5
			<b>Handling Precautions</b>	P.6
<b>Description</b>				
1	Description of operation	Explain the operation of each unit to the customer according to this Operation Manual.	<b>All</b>	
2	Error code	Explain error codes and the procedure for resetting them to the customer according to this Operation Manual.	<b>In the Event of Failure...</b>	P.8
3	Maintenance inspection	Explain the operation of each unit to the customer according to this Operation Manual.	<b>Maintenance Method</b>	P.6
4	Completion of installation Information to be entered	<ul style="list-style-type: none"> <li>• Enter the date of installation and the name of the person in charge of installation on the face plate on the unit.</li> <li>• Enter necessary information on the guarantee, and pass it to the customer.</li> <li>• Explain the after-sale service route to the customer.</li> </ul>	<b>After Service and Warranty</b>	P. 9

## Responsibility

Please follow the instructions in this document when using this unit. Yamato Scientific has no responsibility for the accidents or breakdown of device if it is used with a failure to comply. Never conduct what this document forbids. Unexpected accidents or breakdown may result in.

## Note

- ◆ The contents of this document may be changed in future without notice.
- ◆ Any books with missing pages or disorderly binding may be replaced.

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**Model TA300**

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