Flying probe tester APT-9411 series

Vacuum unit
VC-9500 Operator's Guide

TAKAYA

Preface

The Vacuum unit *VC-9500* is one of options designed for the Takaya Fixtureless tester *APT-9411* Series and the sister models. If the *VC-9500* is integrated into the tester, you may have better probing contact because it can more or less correct a warpage of the boards under test.

Please read this manual thoroughly before using this option. Then keep this manual handy for answers to any questions you may have.

If you have any questions or thoughts you would like to share with us – we would like to hear from you.

(NOTE)

1. The design of the product and software are under constant review and while every effort is made to keep this manual up to date, we reserve the rights to change specifications and equipment at any time without prior notice.
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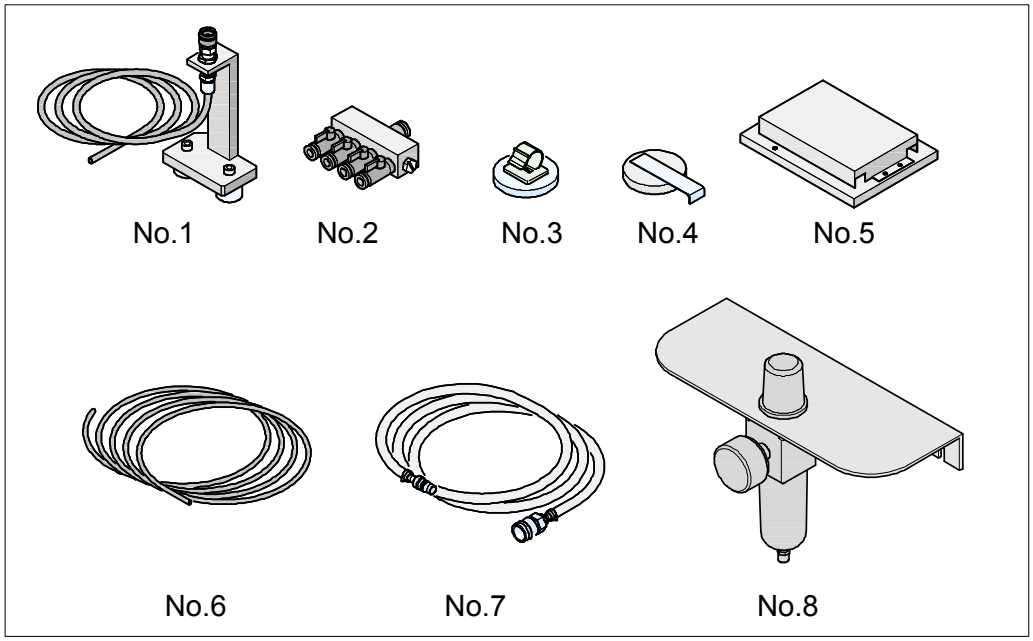
Introduction

Safety symbols

Symbol	Explanation
	Calls attention to a procedure, practice, or condition that could possibly cause serious accident or death.
	Calls attention to a procedure, practice, or condition that could possibly cause bodily injury or damage to the product.
	Calls attention to a procedure, practice, or condition that could possibly damage to the product.
	Calls attention to general instruction. Failing to follow this could loss of data stored on disks causes possibly misjudge the unit under test, or damage to the product.
	Calls attention to “One-point advice” which should be useful when you are at a loss to operate the products.

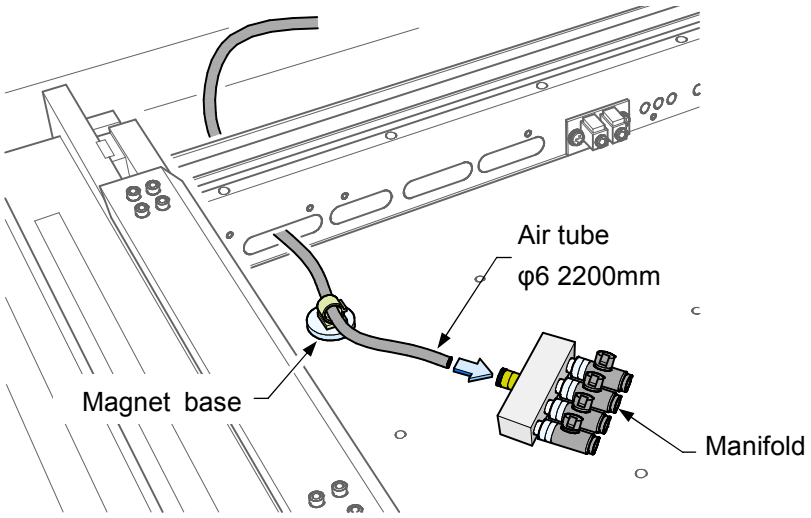
Configuration

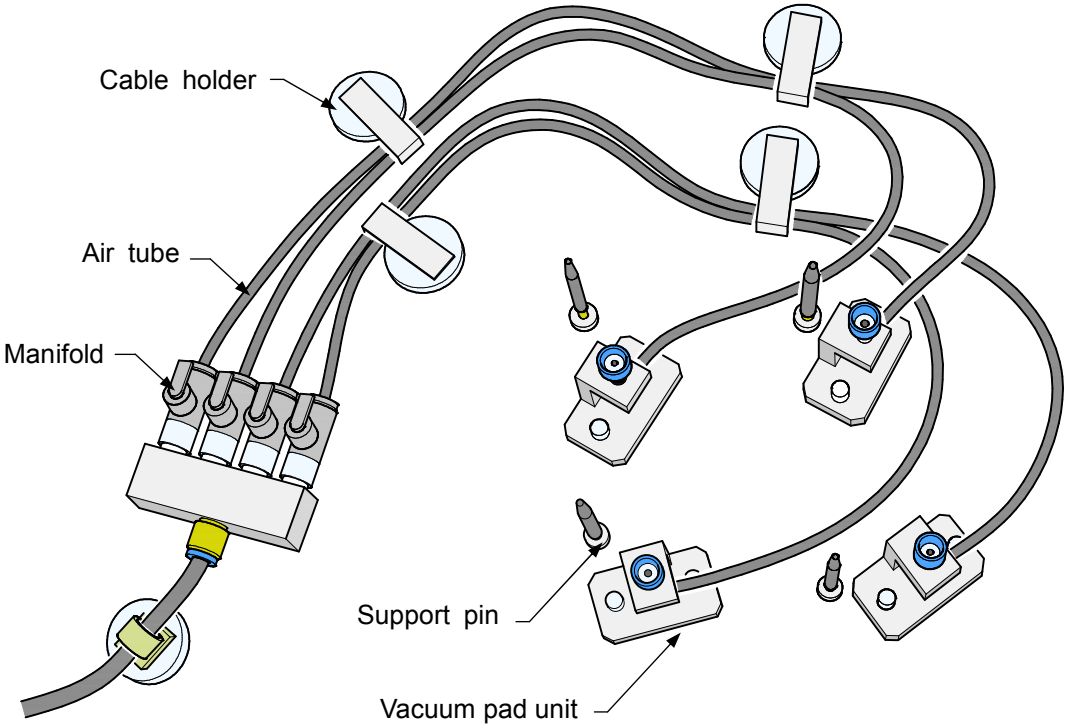
The VC-9500 is composed of following components.



[Fig.1]

No.	Name	Type	Q'ty	Remarks
1	Vacuum pad unit		4	With air tube
2	Manifold		1	
3	Magnet base		1	
4	Cable holder	SA941-46616P0	4	
5	Vacuum ejector unit		1	
6	Air tube	Φ6, 2200mm	1	
7	Air hose	5m	1	
8	Filter regulator unit		1	





[Fig.2] Example of use

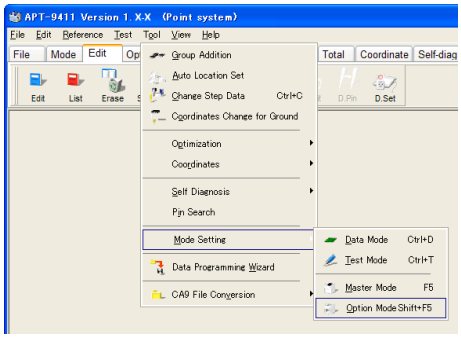
System Setting

When the VC-9500 is used for the first time, Option mode in the APT-9411 software requires initial setup by users. This setting will be saved in Master.mdt file in the system directory.
In addition, the use of the VC-9500 is user-settable every test program in Data mode.

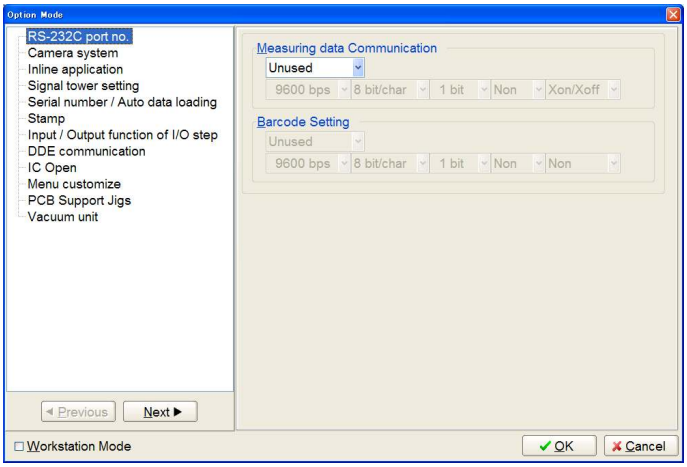
Initial setup in Option mode

[Operating procedures]

1) Click on the Menu bar to select “Option Mode”, and it displays Option Mode window.

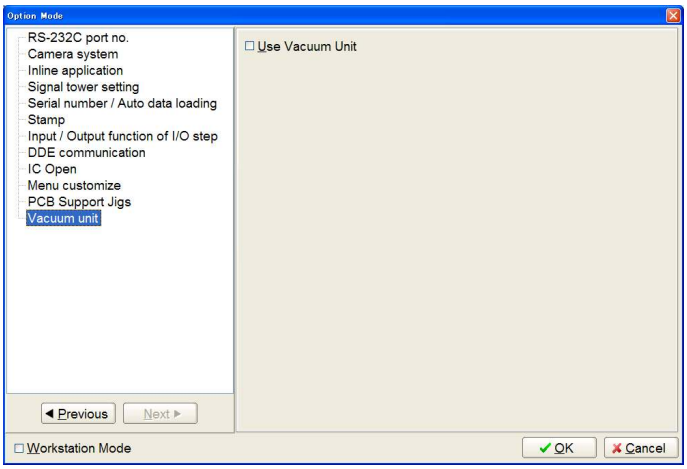


[Fig.3] Tool > Mode setting > Option Mode



[Fig.4] Option Mode

2) Click “Vacuum unit” on the left of the Option Mode window and select the box “Use Vacuum Unit”. Then click the OK button to get the display back to the Main window.

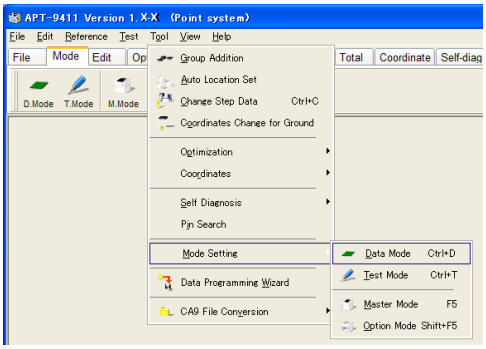


[Fig.5]

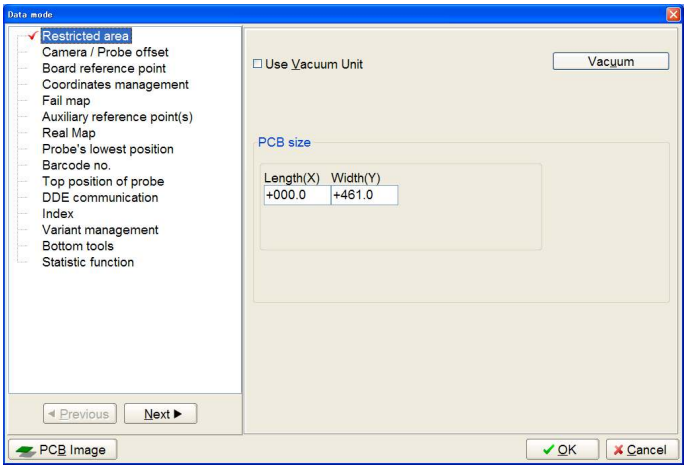
Setup in Data mode

[Operating procedures]

1) Click on the Menu bar to select “Data Mode”, and it displays Data Mode window. (Refer to Fig.6,7)



[Fig.6] Tool > Mode setting > Data Mode



[Fig.7] Data Mode

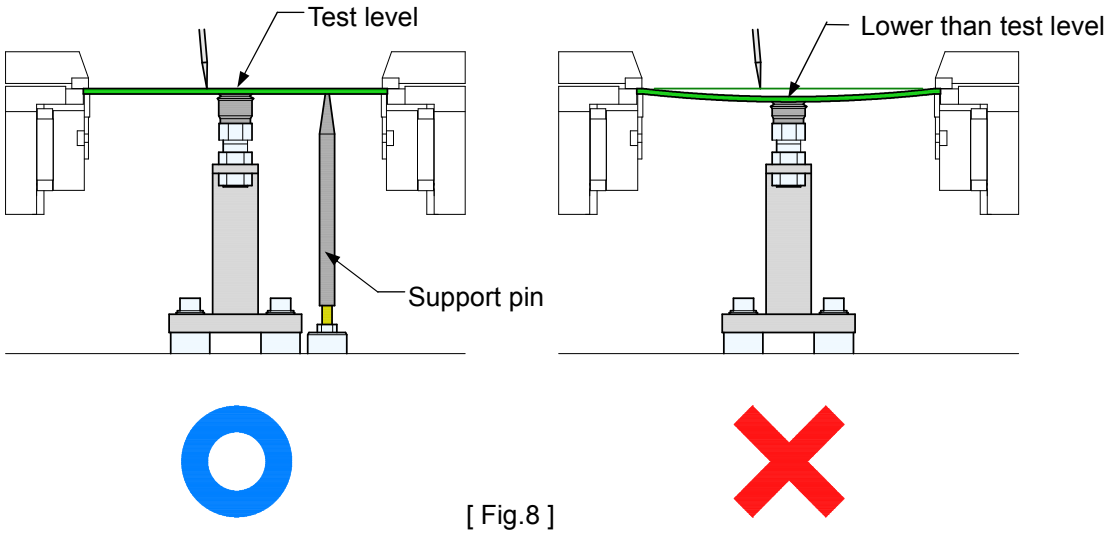
2) Click “Restricted area” on the left of the Data Mode window and select the box “Use Vacuum Unit”. In addition, if you click “Vacuum” button at the top right corner on the display, you can demonstrate the operation check as many times as needed. Click the OK button to get the display back to the Main window.

Precautions

The VC-9500 is activated (sticks to the UUT to pull it down) when the supporter goes up and releases the UUT when the supporter goes down. Appearing below is some precautions to know when the VC-9500 is used on the tester.

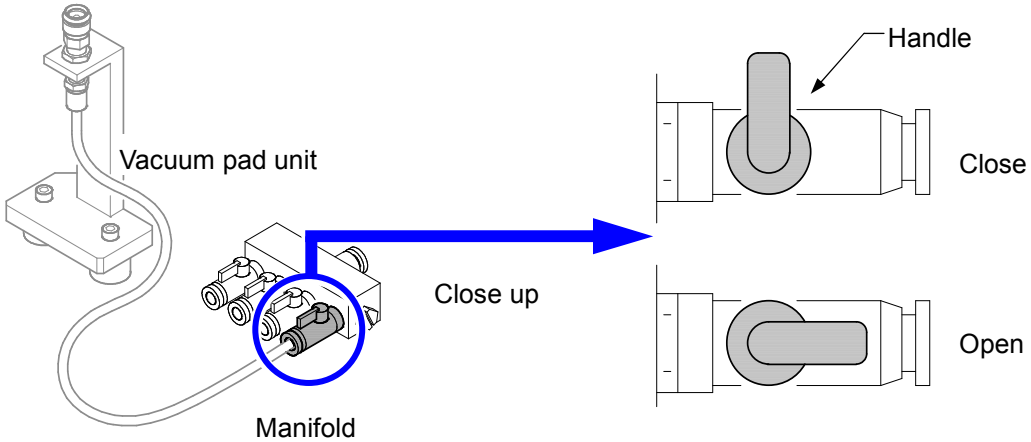
1. To activate the VC-9500 correctly, it is absolutely necessary to provide air that fulfills the condition below.
   Primary air pressure : 0.65MPa
   Air consumption : 60NL/min

2. Once the VC-9500 has been turned on, normally the UUT is pulled down a little lower than the testing level. You should put a support pin closer to each vacuum pad to keep the UUT in a horizontal position.



[Fig.8]

3. All Vacuum pad units must always stick to the UUT properly when the Vacuum ejector unit operates. In case that any of Vacuum pad units is not used, make sure to close the valve on the manifold by the handle.



[Fig.9]

4. The rubber head diameter of the vacuum pad unit is 10Φ. So you should lay the vacuum pad unit so that the rubber head touches the flat surface on the UUT where is wider than 10Φ. (Refer to Fig.10, 11)

Maintenance

This section describes the procedures for replacing “Rubber pad” on the top of Vacuum pad unit and for cleaning the vacuum filter used in the Vacuum ejector unit.

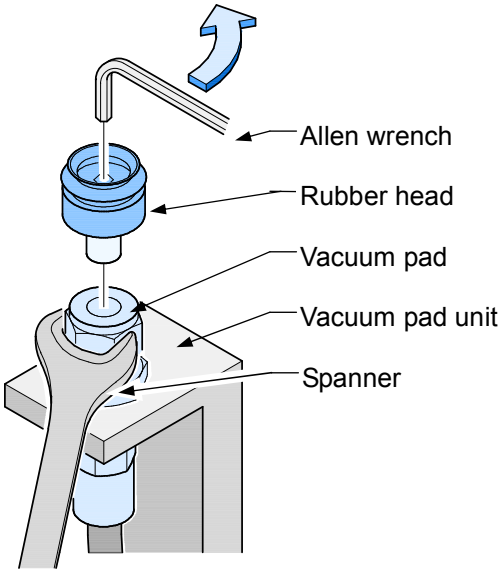
WARNING

Make sure that the tester is powered off and unplugged before starting your operation. Otherwise it could possibly cause bodily injury or mechanical trouble.

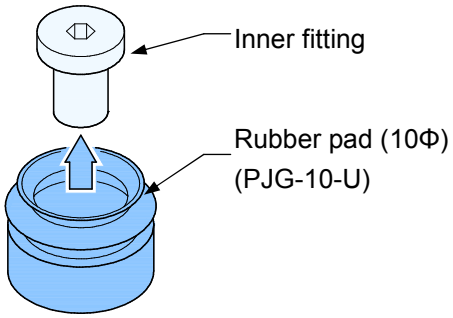
Rubber pad replacement

[Operating procedures]

1) Use your Allen wrench to remove the rubber head by turning the inner fitting counterclockwise while fastening the vacuum pad unit with a spanner. (Refer to Fig.10)
2) Separate the inner fitting from the rubber head and replace the rubber pad with a new one. (Refer to Fig.11)
3) Install the rubber head again by the Allen wrench while fastening the vacuum pad unit with a spanner. In this case, make sure not to put any foreign material inside the vacuum pad unit.



[Fig.10]



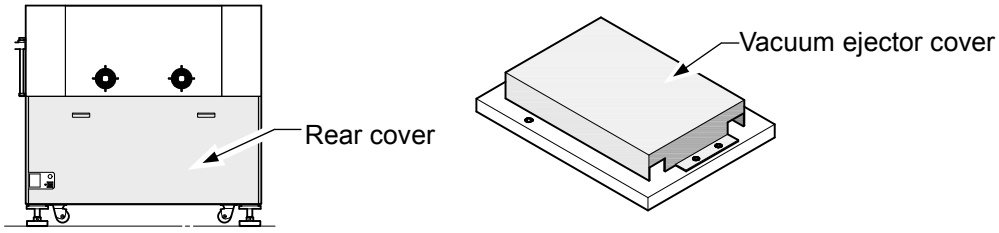
[Fig.11]

Filter cleaning

Make sure to check the filter inside the Vacuum ejector periodically to keep it as clean as possible. If the filter was plugged up (ex. flux, dust so on), it gives ill effect to the performance of the vacuum ejector unit.

[Operating procedures]

1. Remove the rear cover and open the vacuum ejector cover. (Refer to Fig.12)

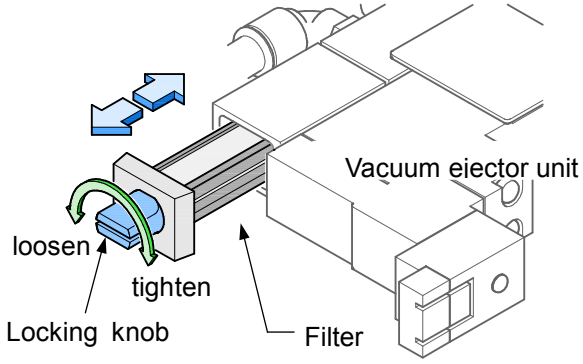


[Fig.12]

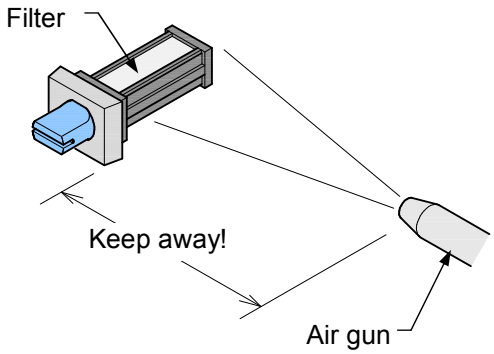
2. Loosen the locking knob to remove the filter from the vacuum ejector unit. (Refer to Fig.13)

3. Use your air gun to clean the filter. (Refer to Fig.14)
   (NOTE) When the filter was too dirty to clean, it is recommended to replace it with a new one. In addition, make sure to handle the filter with care, because it is soft and easy to get damages.

4. Put the filter back in the vacuum ejector unit and fix it with the locking knob. (Refer to Fig.14)



[Fig.13]



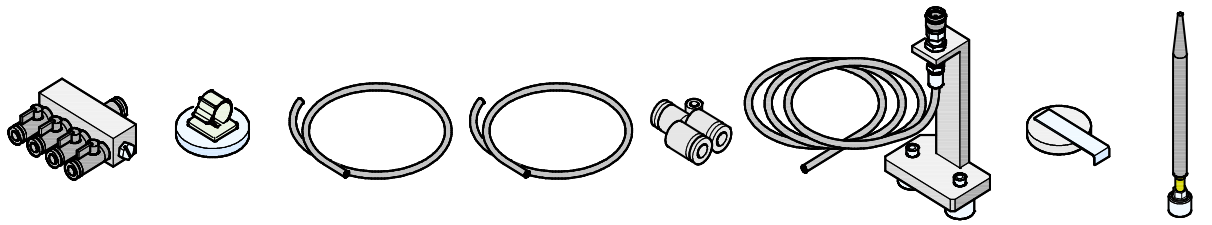
[Fig.14]

5. Close the vacuum ejector cover and put the rear cover on the tester.
   (NOTE) Make sure not to put any foreign material inside the vacuum ejector unit while you are cleaning it.

Vacuum pad extension unit

Although the VC-9500 is equipped with four (4) Vacuum pad units as standard, you can increase up to eight (8) Vacuum pad units as needed. This section describes “Vacuum pad extension unit” as option in case you need it.

Unit		Contents				
		No,	Name	Type	Q’ty	
Vacuum pad extension unit	Extension manifold kit	1	Manifold (*1)		1	
		2	Magnet base			
		3	Air tube	φ6		300mm
		4	Air tube	φ6		200mm
		5	Air connect	KQU06-00		
	Vacuum pad	6	Vacuum pad unit		1-4 (*2)	Air tube
		7	Cable holder			
		8	Support pin	SP-098		



No.1 No.2 No.3 No.4 No.5 No.6 No.7 No.8

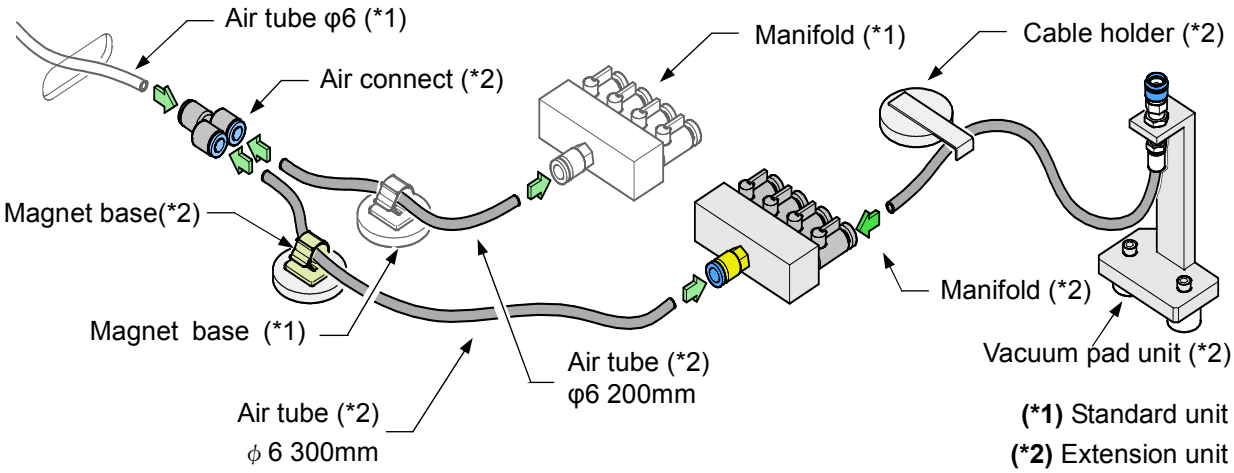
(*1) The number of the air joint (Air Open/close type) installed on the manifold depends on the Vacuum pad unit to be added.

(*2) The number of Vacuum pad extension unit is user’s option.

[Operating procedures]

Add the Vacuum pad extension unit on the tester as described below.

1) Connect all components as illustrated in Fig.15.



[Fig.15]

2) Connect the Vacuum pad units to the manifold.

3) Set the cable holders on any proper position to hold the air tube down.

4) All that you need to do is completed.

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