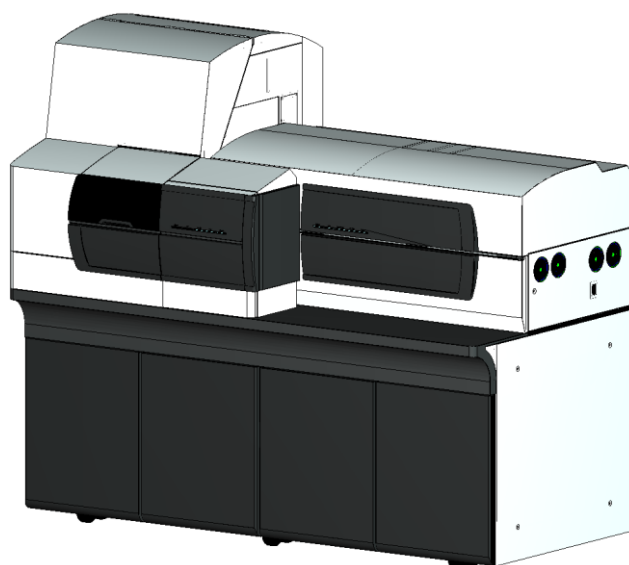


Imaging Mass Microscope iMScope TRIO

Pre-Installation Requirements

(Installation Preparations/Confirmation)



 **SHIMADZU CORPORATION**
KYOTO JAPAN

ANALYTICAL & MEASURING INSTRUMENTS DIVISION

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1. Introduction

These Pre-Installation Requirements describe prior preparation required at the customer's site in order to facilitate installation of the iMScope TRIO. Please make sure that the content of this document is carefully observed to ensure that the instrument function stably, providing data acquisition with a high degree of reliability.

2. Installation Conditions

Be sure to read the installation precautions described below to keep the instrument stable and obtain reliable acquisition results. Also, follow the precautions given in the Safety Precautions of the instruction manual that came with the instrument.

2.1 Carry-in route

The instrument can be moved because there are six casters on the instrument underside. Refer to the instrument dimensions described in 2.2 Example installation so that delivery can be carried out without problems. Also check the following points. It is recommended to have the carrier check before carrying-in.

- If using an elevator, the inside dimension should be at least 2,050 mm in depth, 1,100 mm in width, and 1,800 mm in height. Also, the frontage should be 1,100 mm in width and 1,800 mm in height.
- If the instrument is carried in with a crane, prepare an approach route and the stopping place of the crane, and the carry-in entrance to the building.
- Passage and the corners in the building should have the sufficient width and height to move the instrument.

2.2 Example installation

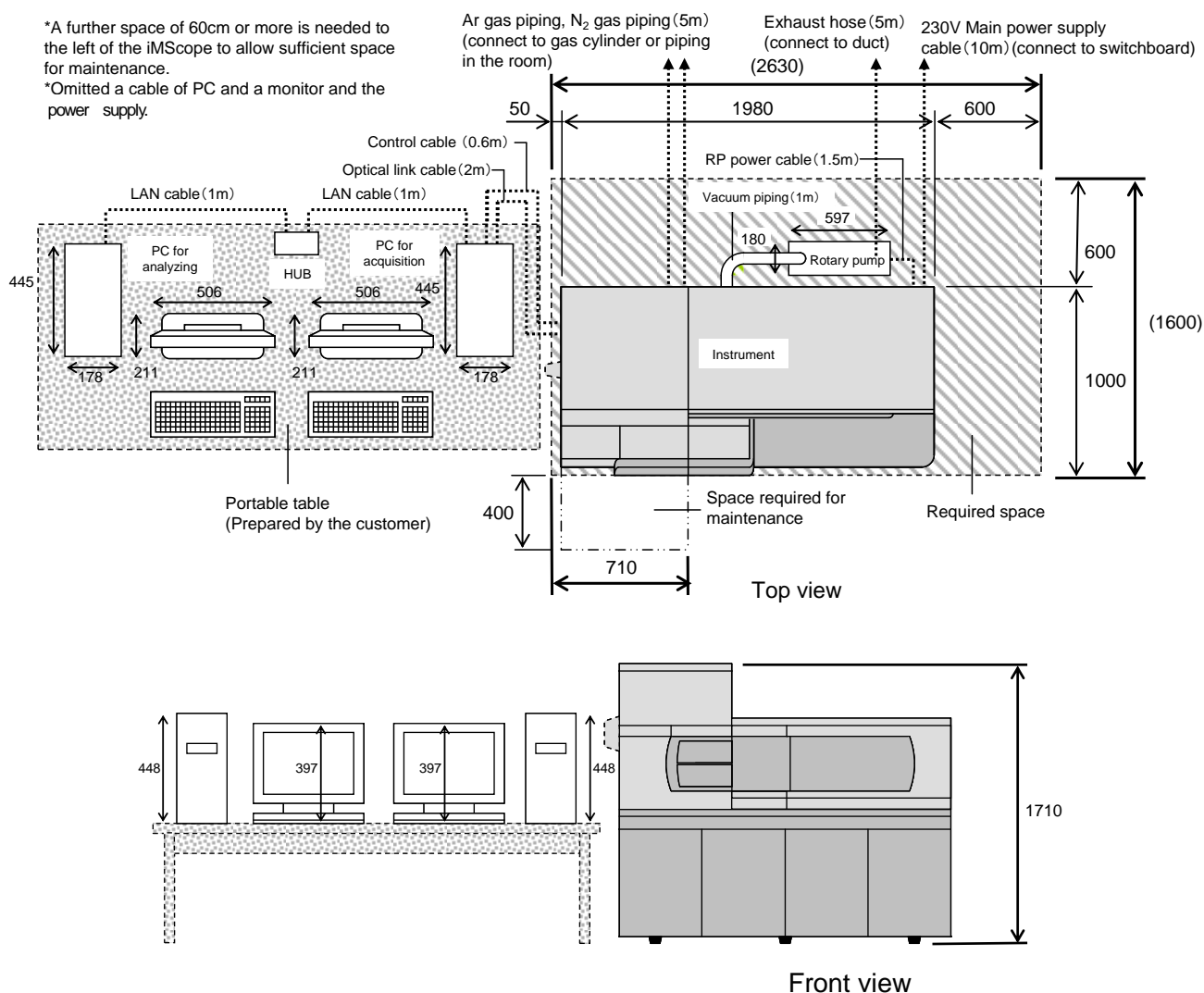


Fig.1 Example of installation layout (Front view and Top view) [mm]

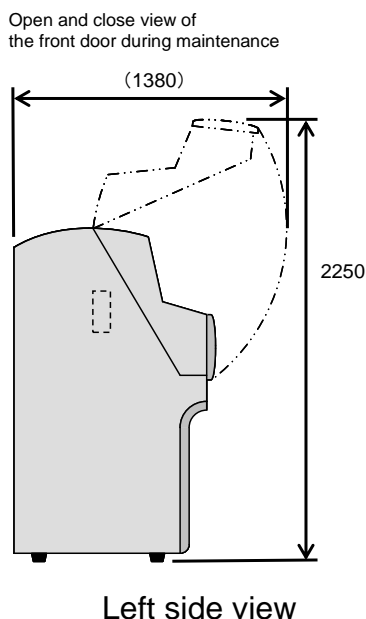


Fig.2 Example of installation layout (Left side view)

Table1 Dimensions and Weight

Item number	Item name	Dimensions (mm)			Weight (kg)
		W	D	H	
1	iMScope TRIO	1980	1000	1710	900
2	Rotary pump E2M28	597	180	276	40
3	Monitor	See the respective instruction manual.			
4	PC				

- In the example installation given in Fig.1, a separate PC system desk has been prepared, with the PC system placed on it.
- The PC can only be placed on the left side of iMScope TRIO unit.
- Install the PC within 0.6 m from the iMScope TRIO.
- As the iMScope TRIO unit weights 900 kg, install on a floor that is able to stand load capacities of 900 kg in weight or more.
- An additional space of 60cm or more is needed behind and to the right-hand side of the iMScope TRIO. A further space of 60cm or more is needed to the left of the iMScope TRIO to allow sufficient space for maintenance. Place equipment that can be readily moved, such as the PC system given in the example, to the left of the iMScope TRIO unit, and ensure a space of 60cm or more between the iMScope TRIO unit and walls or other immovable objects.
 - Space behind iMScope TRIO unit : 60 cm or more
 - Space to right of iMScope TRIO unit : 60 cm or more
 - Maintenance space to left of iMScope TRIO unit : 60 cm or more
- Front panel may be opened for maintenance. As referring to the figure of the example installation, place only equipment that can be readily moved on the area where there is a possibility of interference with the front panel.
- Place rotary pump on a firm floor surface at a distance where it can be connected to the iMScope TRIO unit by attached piping. (Extending piping to a distance greater than this will prevent assurance of unit performance.) Ensure a distance of 60 cm or more between the back of the iMScope TRIO and the wall, as the rotary pump will be placed on the floor behind the iMScope TRIO.
- It is recommended to place the rotary pump on a stand so that oil change can be easily performed.

2.3 Ambient requirements

This instrument is intended for precision measurement. Sufficient consideration must be given to preparing its installation environment as a given level of performance can not be guaranteed if installation conditions are not met.

Temperature	<p>Constant temperature of 18 to 28°C (at all times, both day and night)</p> <p>Please ensure temperature does not fluctuate during the day or night. This will ensure maintenance of unit precision. Place unit away from direct sunlight and in a location where it will not come into direct contact with airflows from air conditioners.</p> <p>Temperature stability:</p> <ul style="list-style-type: none"> + - 1.5° C (Term - less than 1° C / 1 Hour) + - 0.5° C (Term - more than 1° C / 1 Hour) + - 1.5° C (Term – Rapid change within 10 minutes cycle) <p>(Reference) Heat discharge of this instrument: around 2,000 kcal/h</p>
Humidity	40 to 70% (with no condensation)
Install location	This instrument weighs 900 kg. Install it on a flat floor that can withstand a weight of 900 kg or more. Ensure that there is around 2.7 m × 1.6 m of space for installation and that the room can withstand the weight of the instrument. The position for installation of this instrument must be at least 2.3 m high. Including space for working, provide a W4 m × D3 m × H2.3 m site.
Ventilation	This instrument uses flammable solvents for auto tuning, and uses large amounts of nitrogen gas. Therefore, using the instrument in an insufficiently ventilated room may cause oxygen deficiency. Prepare equipment that provides sufficient ventilation.
Exhaust	Be sure to install duct equipment such as a draft chamber for the exhaust gas from the rotary pump.
Other	<ul style="list-style-type: none"> • Install in a room with minimal dust. This instrument uses a high voltage, and dust may cause electrical discharge, damage or malfunction. A buildup of dust in the fan also may cause overheating. • To maintain high performance, install in a room with minimal disturbing elements such as vibration, electromagnetic wave noise and corrosive gases. • Be sure to read “Safety Instructions” of the instruction manual before using this instrument.

2.4 Required power supply

- For safety reasons use a power supply equipped with a ground fault interrupter.
- The iMScope TRIO unit uses **AC230V, 20A, 50/60Hz (single phase) and AC100 V, 15 A, 50/60 Hz (single phase)**. Avoid sharing power source with other equipment.
- A cable terminal supplying AC230V to the iMScope TRIO must be connected to a circuit breaker or to a power outlet using 3-point power plug. (Refer Fig3.)

- To avoid electric shock, ensure grounding at power supply ground terminal has a resistance of 100 ohm or less.
- To assure performance, keep voltage fluctuation within $\pm 5\%$ and frequency stability within ± 0.5 Hz.
- In the country where power supply voltage is not AC100V, use a step-down transformer on the AC100V power-supply line. Refer Fig.5 to install the step-down transformer

<Step-down transformer>

Part number	Description	Remarks
225-25315-41	STEP-DOWN TRANSFORMER 1.5KVA	The Step-down transformer and cables are included. Please prepare a plug.

*The number 225-25315-41 refers to the Shimadzu Corporation part number.

If power supplies of the above specifications are not available, alterations to room power supply capacity will be necessary.

Required power supplies for each unit of the iMScope TRIO system are shown in Table 2.

Table2 required power supplies for each unit

Unit	Voltage	Current	Cable length	figure
iMScope TRIO	AC230V 50/60Hz (single phase)	20 A	10 m	Fig.3
	AC100V 50/60Hz (single phase)	15 A	2.5 m	Fig.4
PC	See the respective instruction manual.			
Monitor				

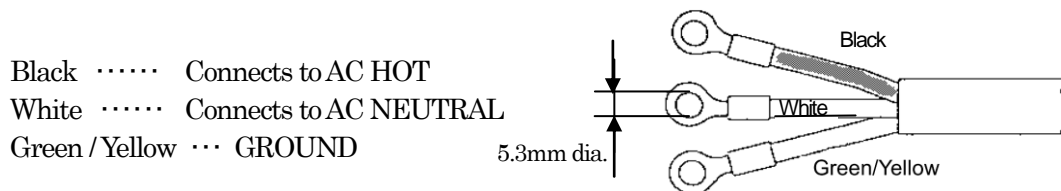


Fig.3 Configuration of AC230V power supply cable connection-terminal
(requires connection to circuit breaker or 3-point power plug)

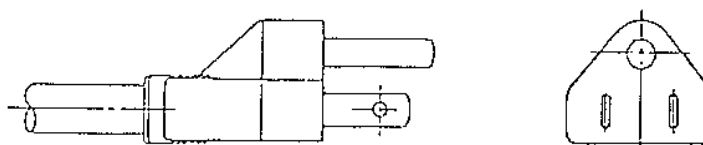


Fig.4 Configuration of AC100V power supply cable terminal

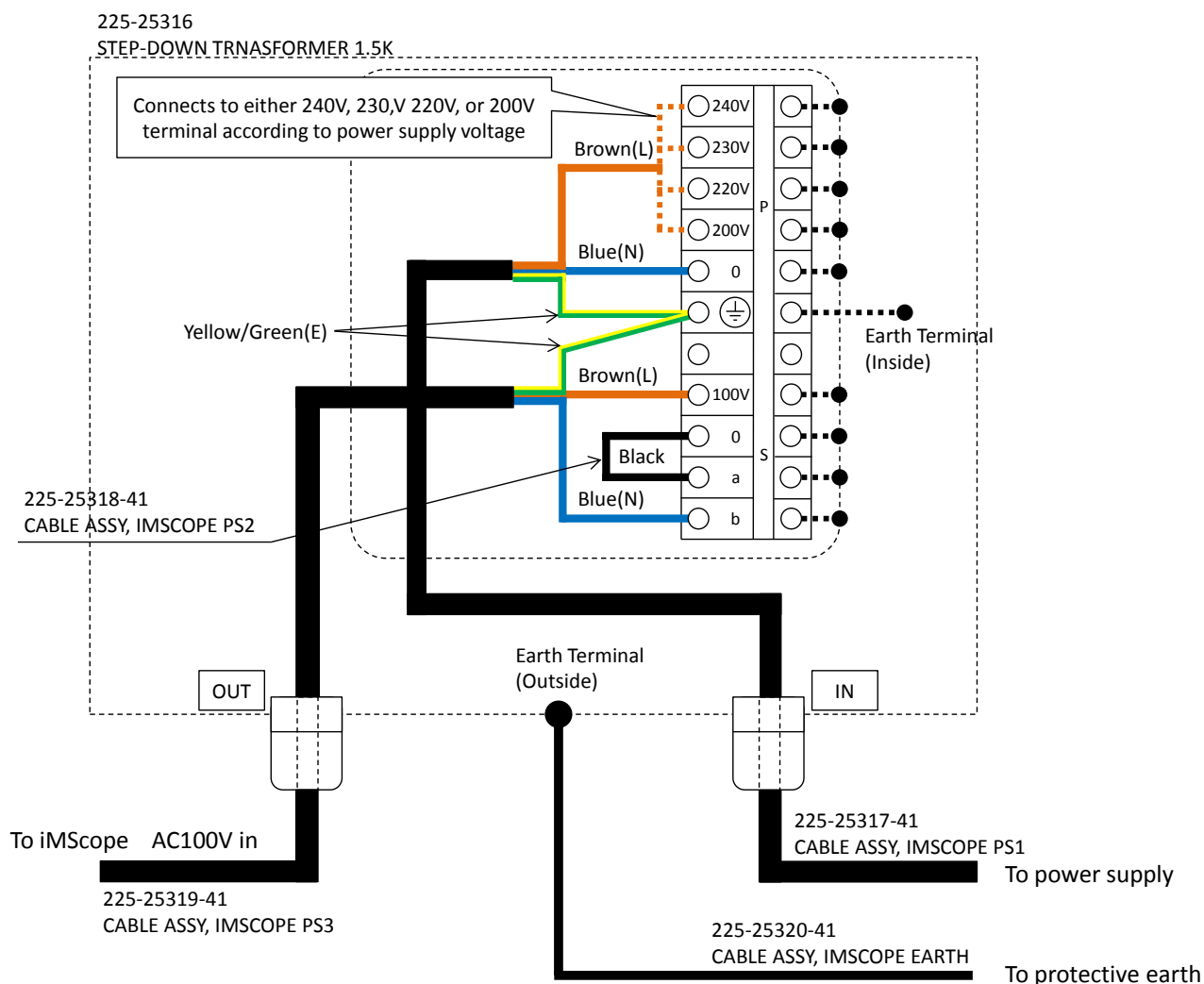


Fig.5 How to install the step-down transformer, TBX-1.5KKV

2.5 Gas

Nitrogen gas (N_2) and argon gas (Ar) are used for iMScope TRIO. Purities and pressures for each gas are as follows:

Table3. Gas purities and pressures

Type	Gas		Pressure supplied to iMScope TRIO
	Purity		
Nitrogen gas (N_2)	99% or greater (In case of nitrogen gas generator 97.0 % or greater)		690~800kPa
Argon gas (Ar)	99.99% or greater		200~500kPa

2.5.1 Nitrogen gas

The method of supplying nitrogen gas, there is a method to use liquid nitrogen, nitrogen gas cylinder, nitrogen gas generator. This instrument does not use nitrogen gas other than stopping or adjustment. Therefore recommend use the nitrogen gas cylinder or liquid nitrogen. The nitrogen gas generator does not absolutely require. Please note that operating hours may be shortened depending on the flow rate of the drying gas if using a nitrogen gas cylinder. As an approximate standard, assuming a 47L cylinder releasing the gas at a maximum flow rate, this single cylinder would sustain the flow for approximately 5 hours. (For approximately two times of auto tuning)

Furthermore, as the flow rate of drying gas is large, gas pressure may be smaller than expected if gas supply pipings are long as in the case of centered gas supplies. Please take care with gas supply pipings and pipe inner diameters as this may prevent normal control of the gas.

(a) If supplying gas generated from liquid nitrogen

Take adequate precautions with pipe resistance and other factors as sufficient secondary pressure cannot be obtained when using nitrogen gas generated from liquid nitrogen. Prepare a PTFE pipe with an outer diameter of 6mm and an inner diameter of 4mm or larger.

For details, refer the Pre-Installation Requirement of nitrogen generator. Various other models are available.

- System Instruments Co., Ltd. <http://www.sic-tky.com/>.
- AIR-TECH Co., Ltd. <http://www.airtech-corp.com/>
- PeakScientific Co., Ltd. <http://www.peakscientific.com/>

(b) If using a nitrogen gas cylinder

Prepare the following pressure regulator and pipes given below, or equivalent products, if using a nitrogen gas cylinder.

<Pressure regulator>

Part number	Description	Requirement	Remarks
221-35999-01*	Pressure Regulator, for N2	1 pc	Koike Sanso Kogyo Co., Ltd.

*The number 221-35999-01 refers to the Shimadzu Corporation part number.

<Piping between pressure regulator and iMScope TRIO>

The following gas supply tubes are available from Shimadzu. Please specify when ordering.

Part number	Description	Remarks
225-09933-91	Gas supply tube, external	Length : 5 m

(c) if pre-existing nitrogen gas generator is used

If the diameter of pipes leading is 1/4 inch when using an existing nitrogen generator, please use the following adaptor.

<Union>

Part number	Description	Requirement
035-60725-07*	Half Union KQ2H07-M5	1 pc

* The number 035-60725-07 refers to Shimadzu Corporation part number.

In addition to the above part, use the following from the selection of standard accessories.

<Standard accessories>

- #62 Adaptor ASSY (length 1m) (P/N: 225-15189-91*) 1pc

*The number 225-15189-91 refers to Shimadzu Corporation part number.

2.5.2 Argon gas

Use an argon gas cylinder to supply argon gas. Only a trace amount of argon gas is used (maximum consumption 5mL/min). As an approximate standard, and assuming a 3L cylinder with a maximum flow rate, a single cylinder will last for approximately 2 months. Gas pressure may be smaller than expected if gas supply pipings are long. Please take care with gas supply piping length and pipe inner diameter as this may prevent normal control of the gas.

Prepare the following pressure regulator and pipes given below, or equivalent products, if using an argon gas cylinder.

<Pressure regulator>

Part number	Description	Requirement	Remarks
221-35999-01*	Pressure Regulator, for N2	1 pc	Koike Sanso Kogyo Co., Ltd.

*The number 221-35999-01 refers to the Shimadzu Corporation part number.

<Pipes>

The following gas supply tubes are available from Shimadzu.

Please specify when ordering.

Part number	Description	Remarks
225-09933-91	Gas supply tube, external	Length : 5 m



In addition to the above part, use the following from the selection of standard accessories.

#12 External pipe joint (P/N:225-15157-91*) 1pc

#13 Union, SS-3MO-61 (P/N:035-57501-32*) 1pc

* The numbers 225-15157-91 and 035-57501-32 refer to Shimadzu Corporation's own parts' numbers.

2.5.3 General precautions

- Take care when supplying gas by centered gas supply as other instruments being used may be affected by the amount of gas supplied.
- If using a cylinder, please use 5m or shorter pipes in general carrier gas piping. If gas supply lines are long, the prescribed gas pressure may not be supplied to the iMScope TRIO due to pipe resistance. It is furthermore necessary to raise the cylinder's secondary pressure higher than the prescribed pressure so as to ensure prescribed pressure for the iMScope TRIO.

2.5.4 Precautions when using high pressure gas cylinder

General precautions when using gas cylinders

1. Install the gas cylinder in a well-ventilated area outside the room, away from direct sunlight, and use piping to run the gas into the room.
2. Never allow the gas cylinder to reach 40 °C or a higher temperature. Additionally, ensure that there are no open flames within 2 m of the gas cylinder.
3. When using high pressure gas pay sufficient attention to ventilation and use soapy water or other methods to check for leaks before starting work. When using flammable gases, in particular, do not smoke or allow open flames within 5m of the equipment that uses the gas. Have a usable fire extinguisher ready.
4. Secure the gas cylinder with means such as a rope so that it does not topple or fall.
5. Use oil-less pressure release valve. Do not use valves that oil has adhered to within piping that comes into contact with gas, or in other areas.
6. Immediately shut off cylinder source valve when finished using gas.

2.6 Exhaust

The unit emits exhaust gas from the rotary pump and vapor from mobile phase solvents.

Long-term inhalation of these is very harmful to the health.

In order to keep the site clean, it is necessary to direct these gases to a draft chamber or other such exhaust facility. Five-meter exhaust hoses are supplied with the unit for rotary pump and drain container discharge. Hoses from the rotary pump and the drain container must be separately connected to exhaust ducts. A typical draft chamber can be used.

[Example:] Draft chamber: 20m³/min.

Be sure to install the oil return kit to suppress the decrease in oil in the rotary pump and clean the exhaust gas from a rotary pump.

< The parts which are require for the exhaust from a rotary pump >

The following options for the exhaust gas from the rotary pump are available from Shimadzu.

Please specify when ordering.

Part number	Part name	Description
225-05990-92	RP oil return kit	Kit for E2M28
018-31511	SLEEVE,PTFE 15X22 CL	Hoses for E2M28, length 1m

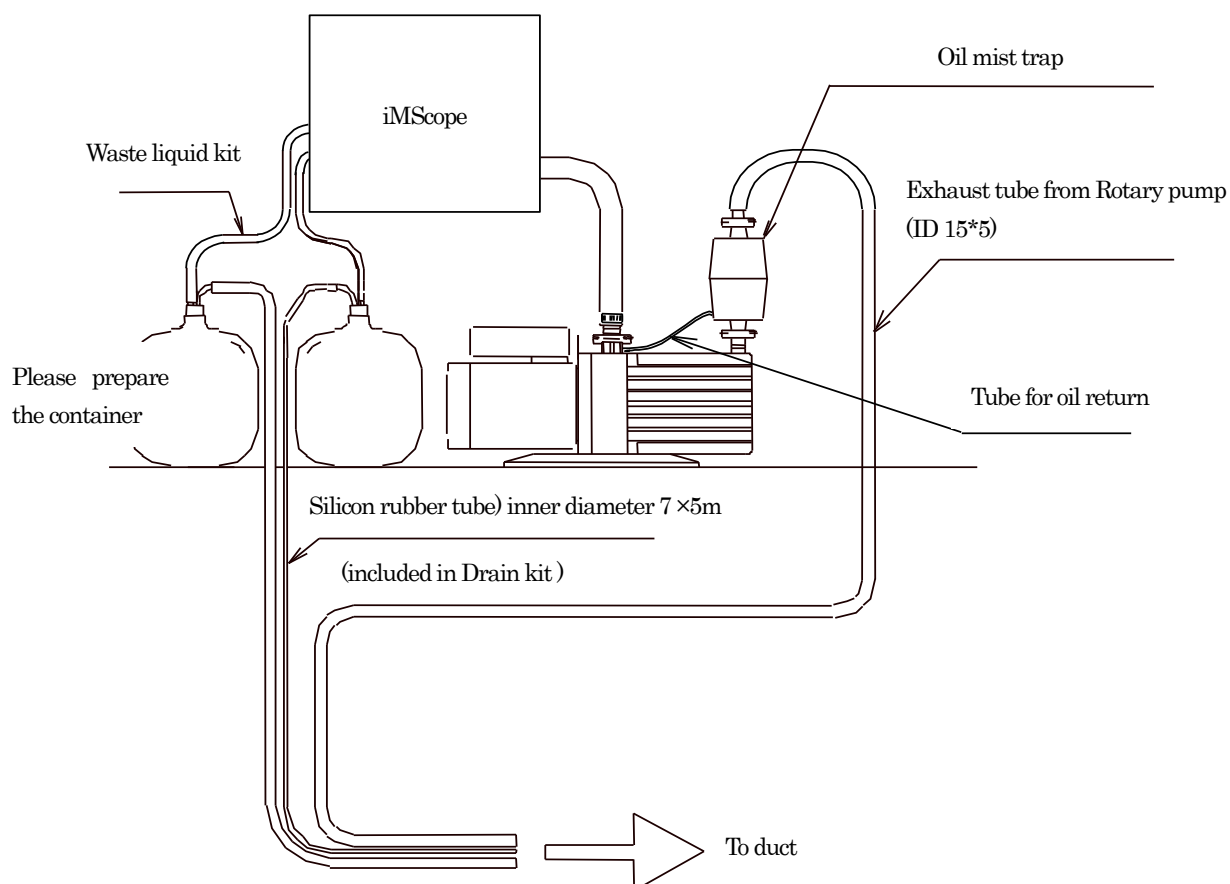


Fig6 example of exhaust piping

2.7 Other items to be prepared

After installation, our field engineers will immediately begin to obtain adjustment acceptance data in order to confirm normal operation of the unit.

Please prepare the following items in advance as they will be required in the operational check.

- (1) Gas

Nitrogen gas N ₂	Purity 99% or greater (In case of nitrogen gas generator 97.0 % or greater)
Argon gas Ar	Purity 99.99% or greater

- (2) Standard sample for instrument adjustment

Standard sample	225-06613-08	TFANa (sodium trifluoroacetate), 200mL
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- (3) Standard sample for Sensitivity check

Standard sample	(will be informed in detail)
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To perform data acquisition using a sample prepared by the customer, the following items are required in addition to the general laboratory apparatuses. Please prepare the following items prior to lectures after delivery of iMScope TRIO.

If the customer requested to use a sample prepared by the customer during lectures, read “4.2 About making your samples for iMScope TRIO” before preparing. Preparing multiple glass slides with sections on them is useful for practicing the spray coating.

- (4) Environment for spray coating of the matrix

Airbrush	This is necessary for spray coating of the matrix.
Draft chamber	We recommend you use a draft chamber during the process of spray coating of the matrix to prevent dispersion of the spray solution of the matrix.
Dustproof / Gasproof mask	We recommend you use a Dustproof / Gasproof mask during the process of spray coating of the matrix to prevent inhaling the spray solution.

- (5) Environment for vapor deposition-coating of the matrix(if matrix vapor deposition equipment is used)

Matrix Vapor Deposition System	This is necessary for vapor depositing of the matrix. Recommended product : Shimadzu , iMLayer
Table for the vapor deposition equipment	This needs to be prepared separately.
Draft chamber	If inside of the vapor deposition equipment is contaminated by the matrix, a large amount of matrix dust may fly up when the cover is opened. We recommend that the vapor deposition equipment be installed on the draft chamber to prevent dispersion of the dust.
Dustproof / Gasproof mask	If inside of the vapor deposition equipment is contaminated by the matrix, a large amount of matrix dust may fly up when the cover is opened. We recommend you use a Dustproof / Gasproof mask to prevent inhaling the dust.

- (6) Consumable parts

Multimeter	This is required to distinguish which is the right side of the ITO coated glass slide. Any type of tester will acceptable as long as it can measure the resistance value. (Required measuring range: a few ohms to several megohms)
ITO coated glass slide	Acquisition cannot be properly performed with a normal glass

slide. Use a glass slide with conductive surface.

**Recommended product : SIGMA-ARDRICH, 578274-25P
(Pack of 25 slides)**

Air duster

This is necessary for removing dust when introducing the sample to the instrument. Use the one that does not emit any liquid.

(Reference) The following is a list of general laboratory apparatus required after preparing a section of a sample.

(1) Matrix spray coating

Gloves

Matrix

DHB, 9-AA, CHCA, etc

Scoopula

10mL Tube

For preparing the matrix solution.

Electric balance

For measuring the matrix.

Pipette and pipette tips

100 – 1000uL

Matrix solvent

HPLC-grade methanol (This is also used for cleaning airbrush), Milli-Q ultrapure water, TFA

Vortex mixer

For agitating the matrix solution

Ultrasonic cleaner

For agitating the matrix solution

Power extension cord
for airbrush

This is required if the airbrush power cable is too short.

Cloth

Kimwipe, etc

Black mat

This is used as a guide for measuring the coating thickness.
(not indispensable)

Aluminum foil, Tape, Scissors

This is used for masking a part of the glass slide.

(2) Vapor deposition coating of the matrix

Matrix

DHB, 9-AA, CHCA

Scoopula

Timer

In case that the vapor deposition equipment does not have a timer function.

Customer pre-check list

_____ (YYYY)

_____ (MM)

_____ (DD)

The sheets on the following pages are a checklist for each of the installation conditions that have been described in this document. Please fill out the checklist yourself and pass it on to the appropriate personnel at Shimadzu.

Customer: _____

Address: _____

TEL: _____

FAX: _____

Checked by Shimadzu

Name: _____

Item	Condition	Required item (* refers to Shimadzu part number)	Check	
1.Carry-in route	<ul style="list-style-type: none"> • The instrument must be movable in the building. • (If using a crane) Sufficient space on the carry-in route, the stopping place of the crane, and the carry-in entrance to the building is available. 		<input type="checkbox"/>	
2.Installatin room	Temperature	18 to 28°C *at all times, both day and night Temperature stability : 1) + - 1.5° C (Term - less than 1° C / 1 Hour) 2) + - 0.5° C (Term - more than 1° C / 1 Hour) 3) + - 1.5° C (Term – Rapid change within 10 minutes cycle) *Place unit away from direct sunlight and in a location where it will not come into direct contact with airflows from air conditioners. *(Reference) Heat discharge of this instrument: around 2,000 kcal/h	(Depending on the situation) <ul style="list-style-type: none"> • Air conditions • Curtains at the entrance of the installation room • Screen to avoid direct contact with airflows from air conditioners 	<input type="checkbox"/>
	Humidity	40 to 70% (with no condensation)		<input type="checkbox"/>
	Installation space <ul style="list-style-type: none"> • Space for iMScope TRIO • Strength • Portable table for PC and monitor • Stand for RP 	W D H 2700mm×1600mm×2300mm Ability to withstand weight loads adequately. (900kg) Refer to the example installation. The table must be wide enough so that 2 PCs can be placed. *Must be moveable *The table must be place within 1m to the left from the instrument. Height can be raised at least 15 cm.	<ul style="list-style-type: none"> • Portable table for PC and monitor (Must be movable) 	<input type="checkbox"/>
	Miscellaneous <ul style="list-style-type: none"> • Ventilation • Interference factors 	Must be able to ventilate room well Dust and fine particles should be minimal. Vibration, magnetic field noise, and other disturbances should be minimal.	(Depending on the situation) <ul style="list-style-type: none"> • Fan and/or ventilation opening • Curtains at the entrance of the installation. 	<input type="checkbox"/>
3.Power supply	Power supply fluctuation (guaranteed performance) <ul style="list-style-type: none"> • Voltage fluctuation • Frequency fluctuation 	<ul style="list-style-type: none"> • Within ±5% of voltage rating • 50/60Hz, ±0.5Hz 		<input type="checkbox"/>

Item		Condition	Required item (* refers to Shimadzu part number)	Check
	Power capacity • For iMScope TRIO • For PC, Monitor • Ground (ground resistor)	• AC230V 20A 50/60Hz *Avoid sharing power source with other equipment. • AC100V 15A 50/60Hz *In the country where power supply voltage is not AC100V, use a step-down transformer on the AC100V power-supply line. • Depends on configuration *Use a power supply equipped with a ground fault interrupter. • Less than 100 ohms	• Step down transformer : STEP-DOWN TRANSFORMER 1.5KVA P/N 225-25315-41* (Depending on the situation) • Power plug for Step Down transformer • Extension cable for 100V line	<input type="checkbox"/>
	Terminals • For iMScope TRIO • For PC, Monitor	• AC230V: 10m AC100V: 2.5m • Depends on configuration	(Depending on the situation) • 3-point power plug for 230V • Power strip for PC, Monitor	<input type="checkbox"/>
4.Gas	N ₂ (nitrogen gas) • Purity • Supply pressure to iMScope TRIO • Distance from gas supply source	• 99% or greater (In case of nitrogen gas generator 97.0 % or greater) • 690~800kPa • Must be within 5m from the center of instrument rear. (Use 5m pipes.)	(If using gas cylinders) • Gas cylinder (47L cylinder is recommended) • Securing means such as a gas cylinder holder (for two cylinder including spare cylinder) • Handle for opening and closing the gas cylinder (if the gas cylinder does not have a handle) • Pressure regulator : PPR-N2 P/N 221-35999-01* • Pipes : Gas supply tube, external P/N 225-09933-91* (If supplying gas generated from liquid nitrogen) • Supply through PTFE pipe with an outer diameter of 6mm and an inner diameter of 4mm or larger.	<input type="checkbox"/>
	Ar (argon gas) • Purity • Supply pressure to iMScope TRIO	• 99.99% or greater • 200~500kPa	(If using gas cylinders) • Gas cylinder (3 - 47L cylinder is recommended)	<input type="checkbox"/>

Item	Condition	Required item (* refers to Shimadzu part number)	Check	
	<ul style="list-style-type: none"> Distance from gas supply source 	<ul style="list-style-type: none"> Must be within 5m from the center of instrument rear. (Use 5m pipes.) 	<ul style="list-style-type: none"> Securing means such as a gas cylinder holder (for two cylinder including spare cylinder) Handle for opening and closing the gas cylinder (if the gas cylinder does not have a handle) Pressure regulator : Same as for N2 nitrogen gas Pipes: Same as for N2 nitrogen gas 	
5.Exhaust	<ul style="list-style-type: none"> Exhaust from rotary pump Solvent vapor emission from drain Drying gas emissions 	<ul style="list-style-type: none"> Discharge evacuation gases to a draft chamber or other such exhaust facility. (Five-meter exhaust hoses are supplied with the instrument. Use of Five-meter hoses is recommended, however, if it is too short, prepare longer hoses.) Be sure to install the oil return kit to rotary pump. 	<ul style="list-style-type: none"> Evacuation facilities such as a draft chamber RP oil return kit P/N 225-05990-92* Evacuation hose SLEEVE,PTFE 15X22 CL P/N 018-31511* Container 	<input type="checkbox"/>
6.Miscellaneous	Adjustment acceptance	<ul style="list-style-type: none"> Standard samples for instrument adjustment and sensitivity check are required. CD-R (Blank) for installation data record is required. 	<ul style="list-style-type: none"> TFANa 200mL P/N 225-06613-08* Standard sample (will be informed in detail) CD-R (Blank) 	<input type="checkbox"/>
	Environment for spray coating of the matrix	<ul style="list-style-type: none"> Airbrush is required. Also use of a draft chamber and Dustproof / Gasproof mask are recommended. 	<ul style="list-style-type: none"> Airbrush Draft chamber Dustproof / Gasproof mask 	<input type="checkbox"/>
	Environment for vapor deposition-coating of the matrix	<ul style="list-style-type: none"> Table for the vapor deposition equipment Also use of a draft chamber and Dustproof / Gasproof mask are recommended. 	<ul style="list-style-type: none"> Matrix Vapor Deposition System (See the Pre-Installation of Matrix Vapor Deposition System) Draft chamber Dustproof / Gasproof mask 	<input type="checkbox"/>
	Sample used for lectures	<ul style="list-style-type: none"> If the customer requested to use a sample prepared by the customer during lectures, read “4.2 About making your samples for iMScope TRIO” before preparing. 	<ul style="list-style-type: none"> on the ITO-coated microscope slide (Prepared by the customer) 	<input type="checkbox"/>
	Other required item	<ul style="list-style-type: none"> Realtime Analysis PC and Postrun Analysis PC are sold separately. Please prepare the items we recommend. One hub and two LAN cables are 	<ul style="list-style-type: none"> A set of Realtime Analysis PC PC (1pc.) Display(1pc.) 	<input type="checkbox"/>

Item		Condition	Required item (* refers to Shimadzu part number)	Check
		required to connect the above two PCs. Please choose a length of the LAN cable depending on placement of the PC.	<ul style="list-style-type: none"> ▪ A set of Postrun Analysis PC PC (1pc.) Display(1pc.) ▪ Hub 1pc ▪ LAN cable(Strait) 2pc 	
	Others, Consumable parts	<ul style="list-style-type: none"> ▪ Multimeter is required to distinguish which is the right side of the ITO coated glass slide. ▪ ITO-coated microscope slides and air duster are consumed regularly. Please prepare the air duster that does not emit any liquid. 	<ul style="list-style-type: none"> ▪ Multimeter (available for measuring resistance value) ▪ ITO-coated microscope slides : (Recommended product) SIGMA-ARDRICH 、 578274-25P P/N 046-25211-02* ▪ Air duster (The one that does not emit any liquid) : 	<input type="checkbox"/>

4. Remarks

4.1 About making your samples for iMScope TRIO

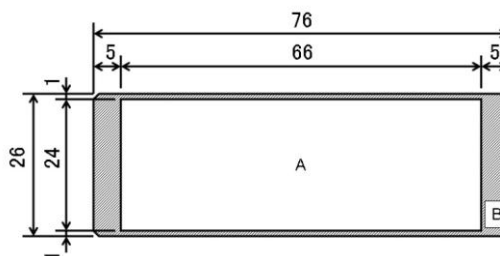
(a) Back and Front of the Slide glass

The slide glass to use in the iMScope TRIO is thing called ITO glass. One side of the ITO-glass is coated with Indium TinOxide to make it conductive. Prepare a commercial ITO coated glass slide (26 × 76 mm, 1.0-1.2 mm thick, e.g.ALDRICH #578274).

Affix the sample to the conductive side of the glass slide. It is possible to determine which surface of the glass slide is conductive by measuring resistance with an instrument such as a tester.

(b) The Place to Mount Sections

Avoid the outermost 5 mm of either side and the outermost 1 mm (sectionB) of either end when affixing the sample. Because of the instrument composition, we can not analyze that part.



(c) Section Thickness

To avoid the section damage and the instrument trouble, we ask you to slice the tissue within 1mm thickness. In general, you can obtain better results with thinner sections. So, we recommend you to slice tissues within 10 μ m thick.

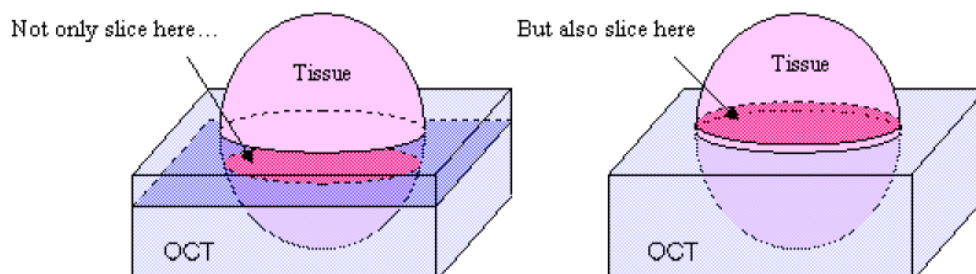
(d) Frozen Section Attachment

When you mount frozen sections on to the ITO-glass, please make sure those sections are firmly stuck to the glass. If a part of the section is separated from the ITO-glass, you can NOT obtain any signals from that part. When you mount the frozen sections to the ITO-glass, please follow the method below.

Mount the frozen sections to the ITO-glass→ Touch the back of the ITO-glass with your finger→ Thaw the section (this step makes the sections to stick firmly to the ITO-glass)→ Refreeze immediately.

(e) Others

If you wish to use embedding agent, we recommend 2% carboxymethyl cellulose (CMC) in water. The typical resin agent such as OCT (Optimal Cutting Temperature) compound causes sensitivity decline because the polymer adherents to the sections. If you cannot avoid using OCT, we ask you to make sections outside the OCT as well.



If you wish to detect Lipids from sections, do not wash the sections with organic solvents, such as Methanol or Xylene. The wash causes remarkable sensitivity decline.