

IWAKI Air Pump

APN-240

Instruction Manual

 Read this manual before use of product

Thank you for selecting an IWAKI APN-240 air pump. This instruction manual deals with "*Safety Instructions*", "*Outline*", "*Installation*", "*Operation*" and "*Maintenance*" sections.

Please read through this instruction manual to ensure the optimum performance, safety and service of your pump.

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This instruction manual should be kept on hand by the end user for quick reference.

Contact us or your nearest dealer if you have any questions.



Important Instruction

For the Safe and Correct Handling of the Pump

- "Safety Instruction" section deals with important details about handling of the product. Before use, read this section carefully for the prevention of personal injury or property damage.
- Observe the instructions accompanied with "WARNING" or "CAUTION" in this manual. These instructions are very important for protecting pump users from dangerous situations.
- The symbols on this instruction manual have the following meanings:

 WARNING	Nonobservance or misapplication of the contents of "Warning" section could lead to a serious accident which may result in death.
 CAUTION	Nonobservance or misapplication of the contents of "Caution" section could lead to personal injury or property damage.

Types of Symbols

	Indicates a prohibited action or procedure. Inside or near this circle, a concrete and practical image of the activity to be avoided is depicted.
	Indicates an important action or procedure which must be performed or carried out without fail. Failure to follow the instructions herein can lead to malfunction or damage to the pump.

Export Restrictions

Technical information contained in this instruction manual might be treated as controlled technology in your countries, due to agreements in international regime for export control.

Please be reminded that export license/permission could be required when this manual is provided, due to export control regulations of your country.

Safety Instructions

WARNING

- **Turn off power before service**

Risk of electrical shock. Be sure to turn off power to stop the pump and related devices before service is performed.



Electrical shock

- **Do not use the pump in any condition other than its intended purpose**

The use of the pump in any conditions other than those clearly specified may result in failure or injury. Use this product in specified conditions only.



Prohibited

- **Do not modify the pump**

Alterations to the pump carries a high degree of risk. It is not the manufacturer's responsibility for any failure or injury resulting from alterations to the pump.



No remodeling

- **Wear protective clothing**

Always wear protective clothing such as an eye protection, chemical resistant gloves, a mask and a face shield during disassembly, assembly or maintenance work.



Wear protectors

- **Use specified power only**

Do not apply power other than that specified on the nameplate. Otherwise failure or fire may result. Ensure the pump is properly grounded.



Prohibited

CAUTION

- **Qualified personnel only**

The pump should be handled or operated by a qualified personnel with a full understanding of the pump.



Prohibited

- **Ventilation**

Fumes or vapours can be hazardous with certain solutions. Ensure proper ventilation at the operation site.



Caution

- **Do not install or store the pump:**

1. Where ambient temperature falls below 0°C or exceeds 40°C.
2. Under a flammable/corrosive atmosphere.



Prohibited

- **Spill precautions**

Ensure protection and containment of solution in the event of plumbing or pump damage (secondary containment).



Caution

- **Keep electric parts and wiring dry**

Risk of fire or electric shock. Install the pump where it can be kept dry.



Prohibited

Safety Instructions



CAUTION

- **Do not use a damaged pump**

Use of a damaged pump could lead to an electric shock or death.



Prohibited

- **Stop operation**

If you notice any abnormal or dangerous conditions, suspend operation immediately and inspect/solve problems.



- **Preventative maintenance**

Follow instructions in this manual for replacement of wear parts. Do not disassemble the pump beyond the extent of the instructions.



- **Do not damage the power cable**

Do not pull, knot, or crush the power cable. Damage to the power cable could lead to a fire or electrical shock if cut or broken.



Electrical shock

- **Do not use the pump in a wet location**

The pump is not waterproof. Use of the pump in wet or extremely humid locations could lead to electric shock or short circuit.



Prohibited



CAUTION

- **Install a GFCI (earth leakage breaker)**

An electrical failure of the pump may adversely affect other devices on the same line. Purchase and install a GFCI (earth leakage breaker) separately.



Electrical shock

- **Damaged power cable**

Do not use any damaged power cable for the prevention of a fire or electrical shock. The cable is not replaceable, so that the whole pump unit needs to be replaced when the cable is damaged.



Electrical shock

- **Disposal of a used pump**

Dispose of any used or damaged pump in accordance with local rules and regulations. See page 22 to comply with the European Directive 2012/19/EU on waste electrical and electronic equipment.



- **Grounding**

Risk of electric shock! Always properly ground the pump. Conform to local electric codes.



Grounding

Before use, check the specification, limitation and hazardous nature of the pump.

1. Unpacking & Inspection

Open the package and check that the product conforms to your order. If any problem or inconsistency is found, immediately contact your distributor.

1. Check the nameplate to see if the information such as model codes, discharge capacity and discharge pressure are as ordered.

Iwaki Air Pump	
MODEL	
MAX.CAPACITY	L/min
MAX.PRESSURE	MPa
MAX.VACUUM	kPa
VOLTAGE	V
CURRENT	A
POWER CONSUMPTION	W
FREQUENCY	Hz
INDOOR USE ONLY	Year
MFG.No.	
IWAKI CO.,LTD. MADE IN JAPAN	
5-6-1 Kanda-Sudacho 2-chome Chiyoda-ku Tokyo Japan	

Spec label for the European market

Iwaki Air Pump	
MODEL	
MAX.CAPACITY	ℓ /min
MAX.PRESSURE	MPa
MAX.VACUUM	kPa
VOLTAGE	V
CURRENT	A
POWER CONSUMPTION	W
FREQUENCY	Hz
INDOOR	
MFG.NO.	
IWAKI CO.,LTD. TOKYO JAPAN	

Spec label for any area other than the European market

*The CE marking on our product(s) is for us to market the product(s) into the European market, however, the CE marking does not ensure any safety or conformity of the product(s) outside the European market.

When the pump is incorporated into the equipment marketed in the European market, such equipment must meet all the requirements of applicable directives.

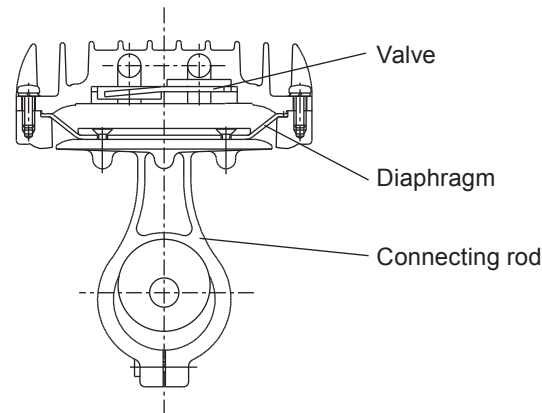
In such a case, any person who places the equipment on the market must carry a CE mark on the equipment as a manufacturer.

2. Check for transit damage, deformation and loose bolts.

2. Operating principle

The APN-240 is a diaphragm type air pump and is designed to be built into various devices.

The rotary motion of the motor is converted through a connecting rod to the reciprocation of the diaphragm in the pump chamber, where gas is transferred from the inlet to outlet.



3. Identification code

APN - S 240 N A N X - 1 - 02

a b c d e f g h

a. Pump head

No code : Single head

S : Dual-head with In-line tubing

P : Dual-head with parallel tubing

b. Series code

c. Intended use

N : Vacuum/Compression

M : Vacuum

d. Wet ends

A : ADC12

e. Diaphragm

N : NBR

f. Pump connection

No code : Tube (14mm O.D.)

X : G1/4 female thread or Rc1/4 (S type)

g. Power voltage

1 : 100VAC

2 : 200VAC

3 : 115VAC

4 : 220/240VAC

E4 : 220/240VAC (3-core cabtyre cable)

h. Special specification

No code : Standard

01-99 : Special design

4. Specifications

■ Pump

■ Pump						50/60Hz
Type	Max. air flow (L/min)	Max. discharge pressure (MPa)	Max. vacuum (kPa) abs.	Connection	Weight (kg)	Lowest starting temp. (°C)
APN-240NAN _/X	30/34	0.2	41.3	14mm O.D. or G1/4 female thread	7	0
APN-240MAN _/X	32/36	-	21.3			
APN-P240NAN _/X	60/68	0.2	41.3			
APN-P240MAN _/X	64/72	-	21.3			
APN-S240MANX	32/36	-	6.66	Rc1/4	10	5

NOTE 1. The vacuum pumps (with the intended use code of "M") must be used for a vacuum use only. Do not use these pumps for a compression use.

The APN-P model (dual-head with parallel tubing) must be used at or below 0.2MPa when they are used for a compression use.

NOTE 2. Allowable gas temperature range is 0-40°C (APN-S240MANX-1: 5-40°C).

NOTE 3. Allowable ambient temperature range is 0-40°C. Observe the lowest starting temperature at the start of operation.

NOTE 4. The max air flow, discharge pressure and vacuum are based on the operation with ambient air of 20°C and may change with gas/room temperature.

■ Motor

Type	Power consumption (W)				Rated output (W)	Rated current (A)			
	100V	115V	200V	220/240V	100/115/200/220/240V	100V	115V	200V	220/240V
APN-240NAN _/X	94/107W (50/60Hz)	107W (60Hz)	94/107W (50/60Hz)	100W (50Hz)	60W	1.2/1.2A (50/60Hz)	1.0A (60Hz)	0.6/0.6A (50/60Hz)	0.54A (50Hz)
APN-240MAN _/X									
APN-P240NAN _/X	170/200W (50/60Hz)	200W (60Hz)	170/200W (50/60Hz)	190W (50Hz)	90W	1.8/2.0A (50/60Hz)	1.7A (60Hz)	0.9/1.0A (50/60Hz)	1.0A (50Hz)
APN-P240MAN _/X									
APN-S240MANX									

■ Gas contact materials

Parts	Material	APN-240/-S240/-P240 N/M A N
Pump head		ADC12
Diaphragm		NBR
Valve		FKM
Valve seat		ADC12
Retainer plate		ADC12
Screw		SUS304 equivalent
Fitting/Connector		C3604BD
O ring		NBR

ADC12 : Aluminium die casting

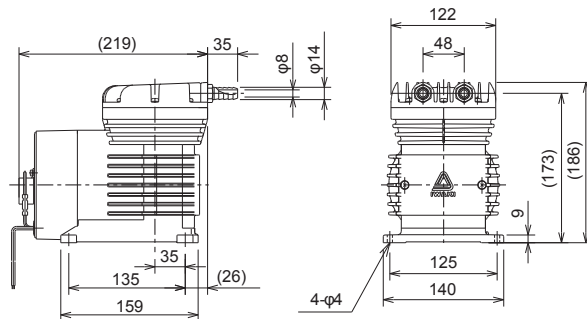
NBR : Nitrile Butadiene Rubber

FKM : Fluorine-contained rubber

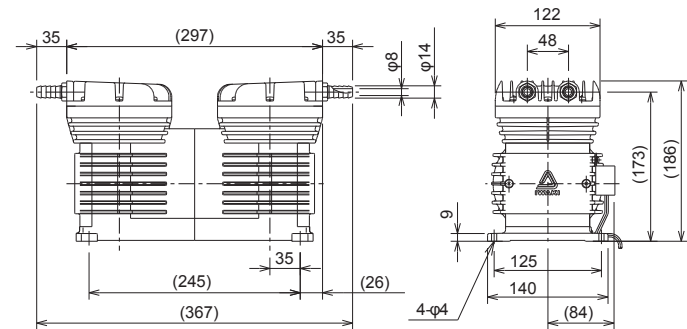
C3604BD: Brass

5. Outer dimension

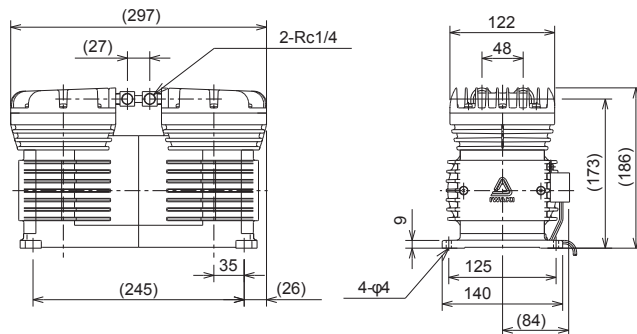
■ APN-240 N/M A N _/X



■ APN-P240 N/M A N _/X

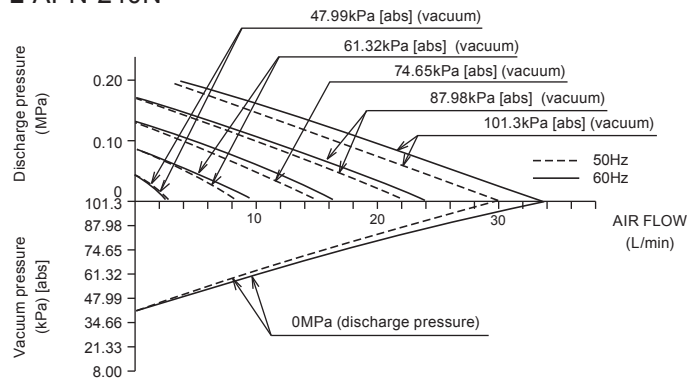


■ APN-S240 M A N X

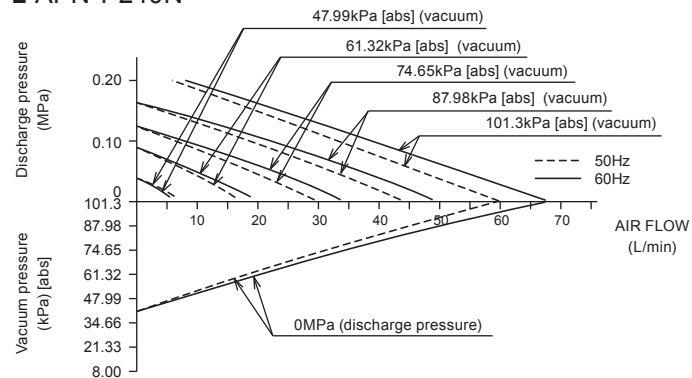


6. Performance curve

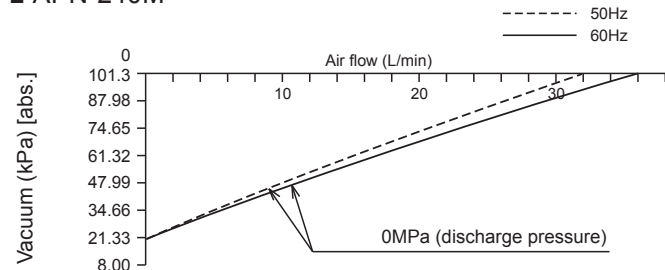
■ APN-240N



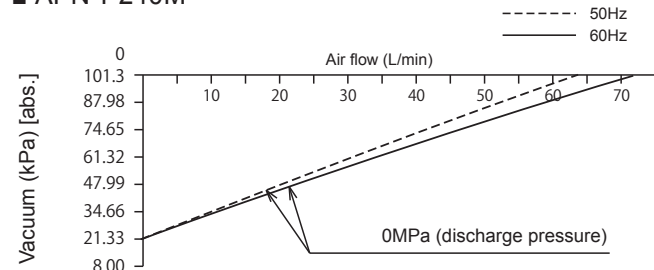
■ APN-P240N



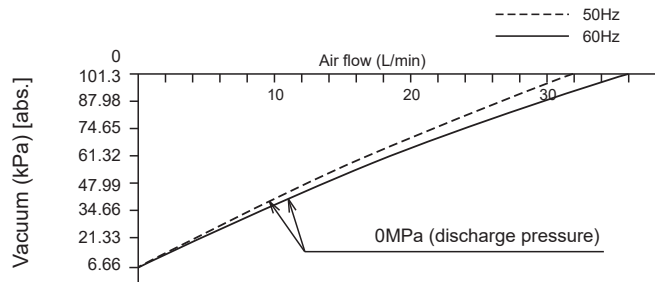
■ APN-240M



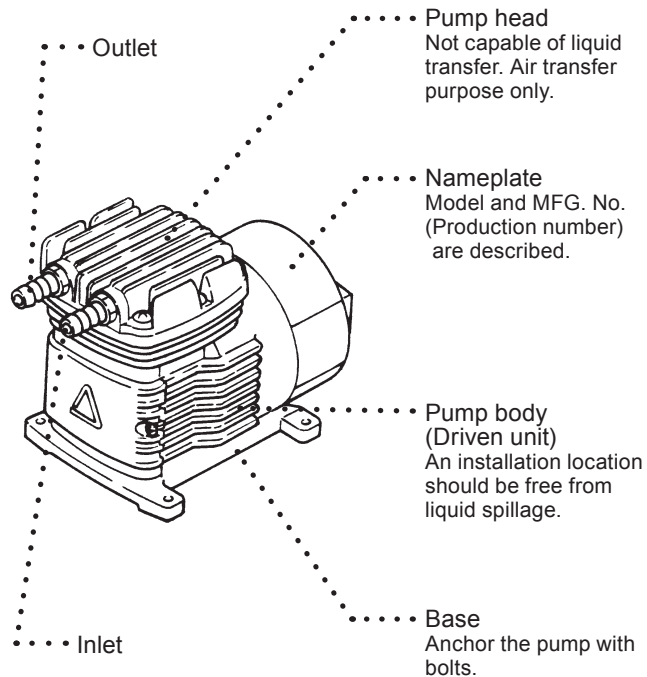
■ APN-P240M



■ APN-S240M

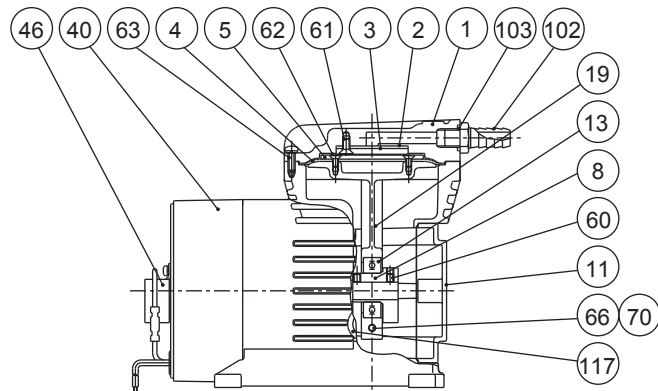


7. Overview & Label



8. Part names & Structure

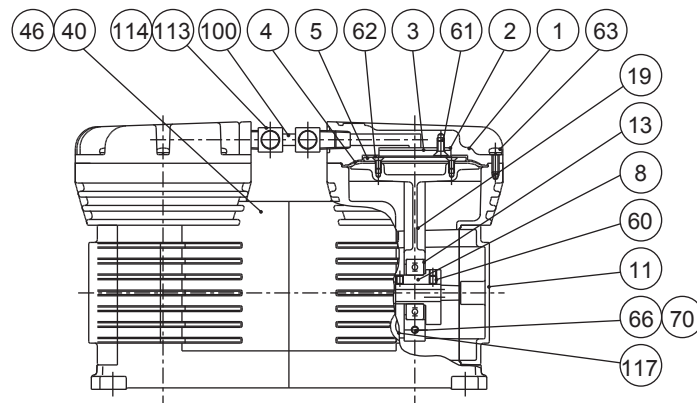
■ APN-240 N/M A N _/X



#	Part names	Q'ty	#	Part names	Q'ty
1	Pump head	1	46	Capacitor	1
2	Valve	1	60	M5×8 set screw	2
3	Valve seat	1	61	M5×10 screw	2
4	Diaphragm	1	62	M4×10 screw	4
5	Retainer plate	1	63	M5×14 screw with SW	10
8	Eccentric	1	66	M5×18 screw	1
11	Bracket cover	1	70	M5 spring washer	1
13	Bearing	1	*102	Fitting	2
19	Connecting rod	1	*103	O ring	2
40	Motor	1	117	Cap	1

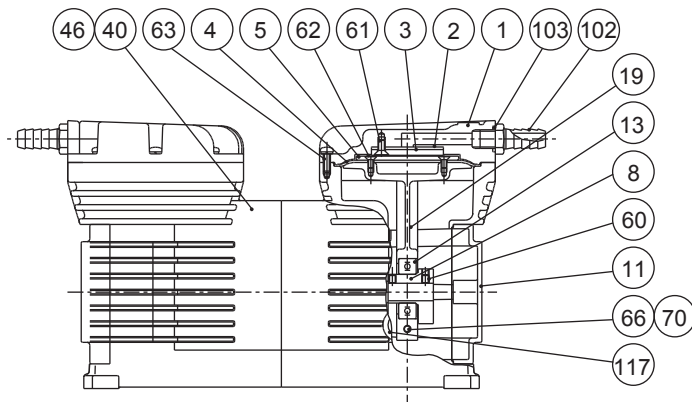
*The parts marked with * are provided to the pumps with tube connection.

■ APN-S240 M A N X



#	Part names	Q'ty	#	Part names	Q'ty
1	Pump head	2	60	M5×8 set screw	4
2	Valve	2	61	M5×10 screw	4
3	Valve seat	2	62	M4×10 screw	8
4	Diaphragm	2	63	M5×14 screw with SW	20
5	Retainer plate	2	66	M5×18 screw	2
8	Eccentric	2	70	M5 spring washer	2
11	Bracket cover	2	100	Hose	1
13	Bearing	2	113	Connector	2
19	Connecting rod	2	114	Elbow	2
40	Motor	1	117	Cap	2
46	Capacitor	1			

■ APN-P240 N/M A N _/X



#	Part names	Q'ty	#	Part names	Q'ty
1	Pump head	2	46	Capacitor	1
2	Valve	2	60	M5×8 set screw	2
3	Valve seat	2	61	M5×10 screw	4
4	Diaphragm	2	62	M4×10 screw	8
5	Retainer plate	2	63	M5×14 screw with SW	16
8	Eccentric	2	66	M5×18 screw	2
11	Bracket cover	2	70	M5 spring washer	2
13	Bearing	2	*102	Fitting	4
19	Connecting rod	1	*103	O ring	4
40	Motor	1	117	Cap	2

*The parts marked with * are provided to the pumps with tube connection.

Installation

1. Before Installation

Read through instructions in this section to ensure the optimum performance, safety and service of your pump.



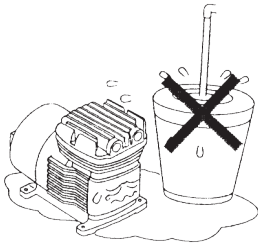
CAUTION

- **Do not operate the pump in a flammable atmosphere**

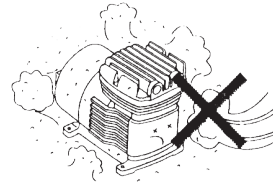
Do not place explosive or flammable material near the pump.

- **Do not use a damaged pump**

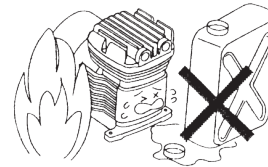
Use of a damaged pump could lead to an electric shock or death.



- Install the pump where it can be kept dry. Avoid using wet gas, or internal condensation will build up and consequently result in the short lives of the valve and diaphragm.

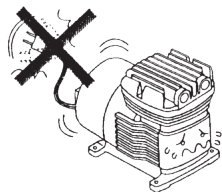


- Do not use the pump in a dusty place. Be sure to provide the inlet with a filter to prevent foreign matters from getting into the pump. Otherwise, the pump performance may reduce or the lives of the valves and diaphragm may remarkably shorten.

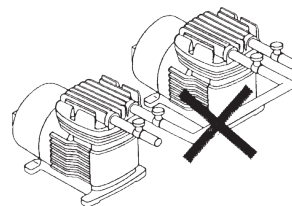


- Do not install the pump in a corrosive or flammable gas atmosphere. Keep good ventilation in a working area.
- Ambient temperature should not fall below 0°C or exceed 40°C (APN-S240MANX-1: 5-40°C). Observe the allowable gas temperature range of 0 and 40°C.

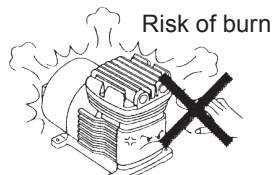
Installation



- Observe the rated voltage specified on the name plate. Applying any voltage than the rated one may result in failure.

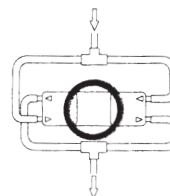


- Do not tube two or more pumps in series. It may prevent the motor from starting and lead to a burnout.



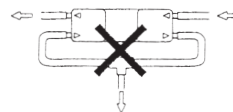
Risk of burn

- Surface temperature may rise high in operation. Do not touch the pump body directly or place the objects which may be deformed by heat close to the pump.



Parallel tubing

- The APN-P240 pump (dual-head type with parallel tubing) must be plumbed in parallel. No series tubing is allowed.



In-line tubing

Installation

2. Installation/ Tubing/ Electrical wiring



WARNING

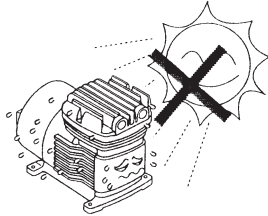
If you notice any abnormal or dangerous conditions, suspend operation immediately and inspect/solve problems.

2.1 Installation

1. Installation location

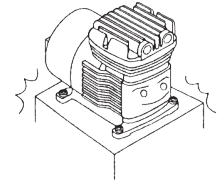
This pump is designed to be built into equipment under proper protection.

- Do not install the pump in direct sunlight, wind & rain.
- Select a level location, free from vibration, that won't hold liquid.
- Keep good ventilation. The pump should always be free from the possibility of getting wet.
- Ambient temperature should not fall below 0°C or exceed 40°C.
- Ambient humidity should not fall below 35%RH or exceed 90%RH.
- Allow sufficient space around the pump for easy access and maintenance.



2. Pump fixation

Set the pump baseplate on a concrete foundation and fasten anchor bolts tightly to prevent the pump from vibrating during operation.



CAUTION

Do not install the pump on an unstable place.

3. Tube preparation

Cut the tube ends flat beforehand.

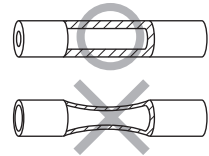
2.2 Tubing

1. The short tubing with the minimum bends is optimal to reduce resistance.
2. Use the vinyl tubes sustainable under the maximum possible pressure.



CAUTION

Do not have tubing bent or pressed. Otherwise, the tube end may break.



Installation

3. Select proper tube size, otherwise liquid leaks and failure may result.
4. Install valves on both discharge and suction lines.
 - Suction valve:
For adjustment of an air flow and a vacuum.
5. Push the tubes into the inlet and outlet as far as they will go.

NOTE: If the suction line connection is imperfect, the pump entrains air and so the full performance will not be achieved.

2.3 Electrical wiring

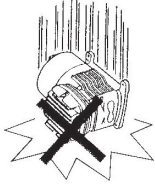
Electrical wiring must be performed by a qualified electrician. It is not the manufacture's responsibility for personal injury or property damage resulting from unauthorized service. Contact us or your nearest distributor for wiring as necessary.

■ Before wiring

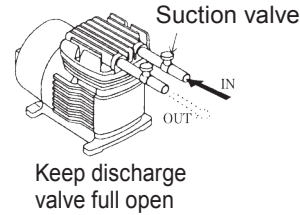
1. Check that the main power is turned off.
2. Electrical work should be performed in accordance with local electric codes, with an appropriate wire gauge or so.
3. Apply the specified power voltage. See the spec label.
4. When an earth leakage breaker is used and has tripped, always investigate and solve root causes. Be sure to unplug the pump before investigation is performed.

Operation

1. Before operation

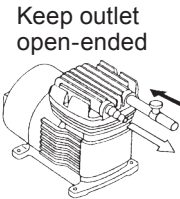


- Use care handling the pump. Do not drop. An impact may affect pump performance.

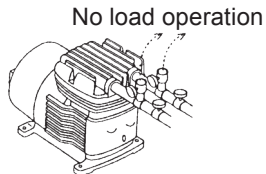


- Always use a suction valve to adjust an air flow.

- The pump can not start with full discharge/suction pressure. Remove pressure before operation.



- The APN-240M/-S240M is used for vacuum application only. The outlet must be open-ended to the atmosphere.

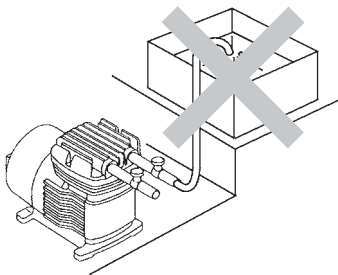


- After a long period of stoppage, pump performance at the beginning of operation becomes occasionally unstable. In this case, warm the pump up for 10 minutes with no discharge line pressure.



- If the compressed air (higher pressure than atmospheric pressure) is transferred to the pump, sharp deterioration to the lives of the valve, diaphragm and bearing may result. Always keep atmospheric or lower pressure in the suction line.

Operation



- Injection point must be below the pump position. Or siphon action/back flow may result.

- Do not clean the pump or nameplate with a solvent such as benzine, alcohol or thinner. This may discolour the pump or erase printing. Use a dry or damp cloth or a neutral detergent.

2. Pump operation

■ Start-up

1. Before pump operation, check that each tube connection is secured.
2. Check that a suction line is connected to the inlet and a discharge line to the outlet.

⚠ CAUTION

If a suction line and a discharge line are connected the other way around, pumping process is inverted.

3. Check that the pump is firmly fixed on a mounting position.

Operation

■ Operation

Operate the pump according to the following steps.

No.	Procedure	Points to be Checked
1	Check tubing, wiring and voltage.	<ul style="list-style-type: none"> • Check installation, tubing and wiring are properly done and wiring system is fused. • Check the spec label to see if power supply voltage is correct.
2	Open valves.	<ul style="list-style-type: none"> • Fully open both discharge and suction lines.
3	Supply power to the pump.	<ul style="list-style-type: none"> • Smooth starting may not be obtained when ambient temperature is 10°C or below. In this case, run the pump with no discharge line pressure for a few minutes to warm it up.
4	Adjust air flow.	<ul style="list-style-type: none"> • Provide a running-in period before full scale operation. • Always adjust an air flow by a suction valve.

5	Check the operation.	<ul style="list-style-type: none"> • After starting, check a pressure gauge to see if suction and discharge line pressure are correct and an air flow meter to see if the specified air flow is obtained. • Keep a suction line pressure at or below atmospheric pressure. • In case electric power has failed while the pump is running, switch off main power. Otherwise, the motor may not restart or may burn out depending on a line pressure at the time of power recovery.
---	----------------------	--

■ Stop and Storage

- Before a long period of stoppage (1 week or more):
 - Release pressure from the pump/tubing and turn off the main power.
 - Keep the inside of the pump head free from residual gas.
- Do not store the pump:
 - Where ambient temperature falls below 0°C or exceeds 40°C.
 - Under a flammable or corrosive atmosphere.
 - Under heavy dust or high humidity.
 - Under direct sunlight or wind & rain.
 - Under vibration.

Maintenance

1. Troubleshooting

If you notice any abnormal or dangerous conditions, suspend operation immediately and inspect/solve problems. Contact us or your nearest distributor as necessary.

Phenomenon						Measures
Causes	Pump does not run.	Pump stops running.	Thermal protector stops operation	Poor air flow or discharge pressure	Pump makes noise.	
No power distribution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Check wiring.
Motor trouble (disconnection or capacitor failure)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace the motor.*
Wrong tubing or poor connection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Check and fix tubing.
Pump head mounting screws are loose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tighten the screws.
Diaphragm insertion is loose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tighten diaphragm.
Diaphragm is damaged.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace diaphragm.
Filter is clogged.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Remove foreign matters.
Valve is worn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace the valve.
Loose pump head/diaphragm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Secure them.
Eccentric shaft has worn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace the connecting rod unit.*
Connecting rod bearing has worn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace the connecting rod unit.*
Motor bearing has worn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace the motor.*
Voltage reduction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Increase voltage to the rated level.
Higher suction pressure than atmospheric	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Reduce suction pressure.
Over pressure (discharge line)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	APN-S240 must have open-ended outlet.
Room temperature has exceeded 40°C.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Observe the max allowable room temp.
Pump starts with pressurized air line.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Remove pressure and run the pump.

Contact us for the measures marked with *.

2. Maintenance & Inspection

Handling of the pump, maintenance and inspection should be carried out within the descriptions of this instruction manual.

It is not the manufacturer's responsibility for personal injury or property damage resulting from unauthorized service. Contact us or your nearest distributor as necessary.

■ Daily inspection

Check the following points every day. If you notice any abnormal or dangerous conditions, suspend operation immediately and remove problems according to the troubleshooting section. When wear parts come to the life limit, replace them by new ones. Contact your distributor for detail.

No.	Check that:	Measure
1	pump operation is normal.	<ul style="list-style-type: none"> • Apply correct voltage and amperage. • Adjust discharge/suction pressure.
2	there is no noise or vibration problem.	<ul style="list-style-type: none"> • Unusual noise/vibration may occur when pump operation is not normal.
3	there is no air leak or air ingress from pump parts and tubing connections.	<ul style="list-style-type: none"> • Retighten connections.

Maintenance

■ Wear parts

If pump performance has remarkably reduced, replace diaphragms and valves with new ones. Wear part duration varies with the pressure, temperature and characteristics of gas. Values in the table below are collected in continuous operation at the rated voltage and 5-40°C gas temperature.

	Application	Life span		
		Valve	Diaphragm	Bearing
APN-240M /-P240M	101.3-21.3kPa (abs.)	8000hr	4800hr	8000hr
APN-S240M	101.3-6.66kPa (abs.)			
APN-240N /-P240N	0.1MPa or below		3200hr	4000hr
	0.1-0.2MPa		4800hr	8000hr
	101.3-41.3kPa (abs.)			

*The above lives are reference values and not warranted.

*Contact us for the bearing replacement.

3. Wear part replacement

For a long period of operation wear parts need to be replaced periodically.



CAUTION

- **Turn off power before service**

Risk of electrical shock. Be sure to turn off power to stop the pump and related devices before service is performed.

- **Do not touch the pump or pipe with bare hands**

Risk of burning. The surface temperature of the pump or pipe gets high in or right after operation.

- **Wear protective clothing**

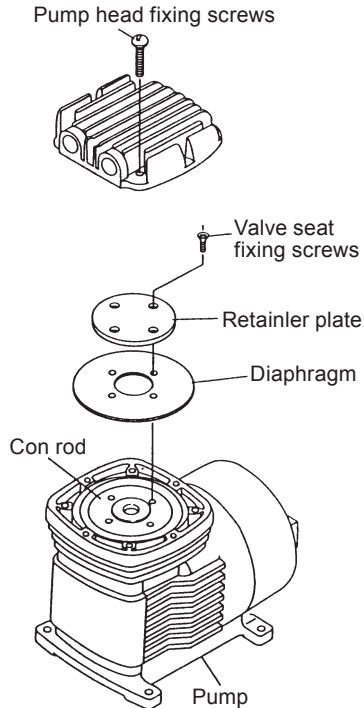
Always wear protective clothing such as an eye protection, chemical resistant gloves, a mask and a face shield during disassembly, assembly or maintenance work.

See page 10 the "**8. Part names & Structure**" section as necessary.

Maintenance

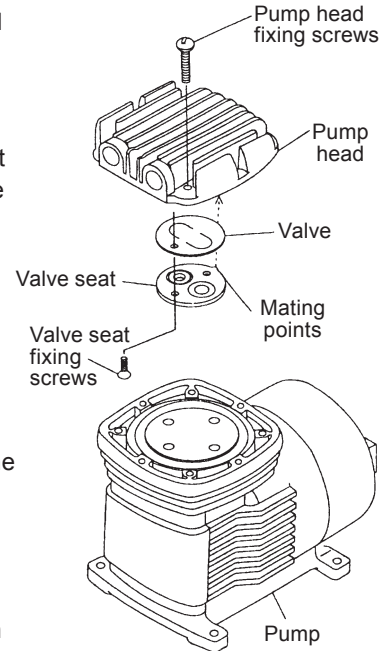
■ Diaphragm replacement

1. Unscrew all the pump head fixing screws and take out the pump head.
2. Remove the four valve seat fixing screws and remove the retainer plate and the diaphragm.
3. Place the new diaphragm and then the retainer plate onto the connecting rod.
4. Apply the LOCTITE® 222 to the four screws and tighten by $1.96\text{N}\cdot\text{m}$ so as to secure the retainer plate and the diaphragm to the connecting rod.
5. Push down the diaphragm until it bottoms out, and then mount and secure the pump head onto the pump with the screws by $2.94\text{N}\cdot\text{m}$.



■ Valve replacement

1. Unscrew all the pump head fixing screws and take out the pump head.
2. Unscrew the two valve seat fixing screws to remove the valve seat and the valve.
3. Replace the new valve in the pump head in place.
4. Replace the new valve seat in place and tighten it by $1.96\text{N}\cdot\text{m}$ so as to secure the valve and the valve seat to the pump head.
5. Push down the diaphragm until it bottoms out. Tighten the pump head fixing screws diagonally and evenly by $2.94\text{N}\cdot\text{m}$ to secure the pump head onto the pump.



EC DECLARATION OF CONFORMITY

A copy of the original Declaration of Conformity

(SUPPLIER'S NAME)

WE
IWAKI CO.,LTD.

(ADDRESS)

6-6 2-CHOME KANDA-SUDACHO CHIYODA-KU TOKYO JAPAN

(PRODUCT)

DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE PRODUCTS
AIR PUMP

(MODEL NAME)

APN SERIES AC TYPE

TO WHICH THIS DECLARATION RELATES ARE IN CONFORMITY
WITH THE FOLLOWING STANDARDS OR DIRECTIVES AS FAR AS APPLICABLE

(DIRECTIVES)

MACHINERY DIRECTIVE 2006/42/EC (ANNEX IIA)
RoHS DIRECTIVE 2011/65/EU

(STANDARDS)

EN ISO12100: 2010 EN1012-1: 2010
EN IEC63000: 2018 EN1012-2: 1996 + A1: 2009

(A PERSON WHO IS AUTHORISED TO COMPILE THE TECHNICAL FILE
IN THE COMMUNITY)

IWAKI EUROPE GMBH
SIEMENSRING 115 D-47877 WILlich GERMANY

NOTE: THIS DECLARATION BECOMES INVALID IF TECHNICAL OR OPERATIONAL
MODIFICATIONS ARE INTRODUCED WITHOUT THE MANUFACTURER'S
CONSENT.



TSUTOMU SAWADA
DEPUTY SENIOR GENERAL MANAGER,
QUALITY ASSURANCE HEAD OFFICE

Tokyo, Sep. 13, 2021

(PLACE AND DATE OF ISSUE)

(NAME AND SIGNATURE OR EQUIVALENT MARKING OF AUTHORIZED PERSON)

DOCUMENT NO. IS-51K-541-3

Waste Electrical and Electronic Equipment (WEEE)



In accordance with the European Directive 2012/19/EU on waste electrical and electronic equipment, this product features the crossed-out wheeled bin symbol. When this product is disposed of in household wastes, toxic components included in it can cause major environmental and human health problems. Use appropriate waste collection systems for recovery and recycling. Contact your local distributor or nearest Iwaki company for the detailed collection systems.



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