

Rotary Wiper

RW-V2

Instruction Manual

(Original Instruction)



It is suggested to read the whole articles before using for safe operation
and in order to be free from unnecessary malfunction and trouble.
It is also suggested to keep this instruction in proper place for in case.

P.M.T.

This is the product to observe visually inside the machine. It is installed on the inside surface of the machine window. Round glass spins fast by pneumatic source, and its centrifugal force splashes coolant and cutting chips off the glass instantly, thus the clear vision is supplied.

1. Caution for Safe Use

It is requested to keep the followings for the safety and proper use;

- 1 . This product has a "Spin Disc" which spins at high speed. Do not touch it by any part of a body nor any kind of tools while it is rotating. That may cause the breakage of the glass which is very dangerous.
- 2 . This product is driven by air. Maximum rated air pressure is 0.5MPa. Do not supply it with any higher pressure than that because it will raise the rotation speed excessively higher which is very dangerous.
- 3 . Revolution speed can be adjusted by the Speed Controller. However, do not use at higher speed than needed. (→ 6-3 Adjustment of revolution speed)
- 4 . While working, wear the safety glasses, cap, gloves and long sleeve clothes.
- 5 . Wear the earplugs if the working noise of this product is felt annoying.
- 6 . Make up the system that nobody can open the machine window while the Spin Disc is rotating.
- 7 . Install this product on the place that upper half of human body can enter so the maintenance work can be done easily.
- 8 . This product does not equip the structure to cut the air source. Prepare the air cut device (with the system of locking and residual pressure relief) at the machine side.
- 9 . Stop the rotation of Spin Disc when doing the maintenance work for it.
10. This product should not be disassembled and should not be handled in the way not written in this instruction manual.

2. Caution for Transportation and Carriage

1. Rotary Wiper is packed carefully to avoid the breakage of glass, and damage to the parts related to the rotation of Spin Disc. When shipping Rotary Wiper only without installing to the machine, ship it in the packing condition as originally received.
2. When shipping with the machine, after installed to the machine's window, it is suggested to leave the Base part fitted with the machine's window, and to transport all the rest parts (Main Body fitted with Spin Disc) separately from the Base part, and in the same package as received.
This is to eliminate the possible damage to the glass and the area related to the rotation of Rotary Wiper.
3. When carrying and handling this product, hold it by both hands so as not to drop it.

3. Unpacking

A glass is used for this product. Be careful when opening a package not to damage the glass and/or any critical part related to the rotation. Make sure all the following parts are in the package.



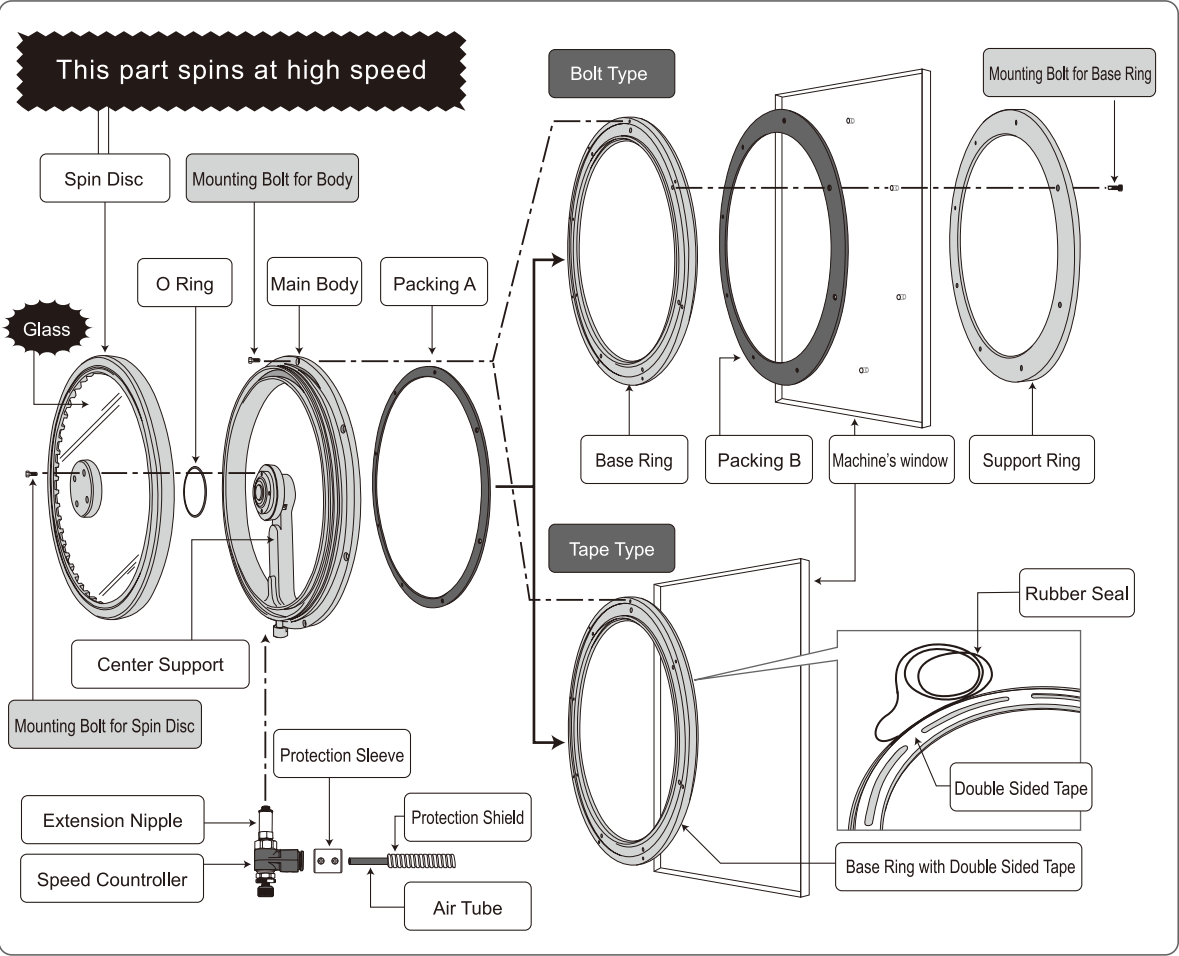
<Rotary Wiper>



<Accessories>

- ① Rubber Seal (For Tape Type only)
- ② Air Tube with Protection Shield
- ③ Protection Sleeve
- ④ Hex Wrench 2mm/2.5mm/3mm

4. Construction and Name of each component



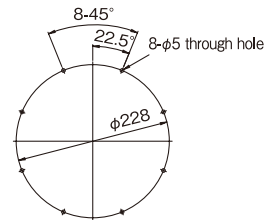
5. Installation

5-1. Installation of Base Ring onto the machine's window

Install the Base Ring to the inside of machine's window at first. The way of installation is different between Bolt Type and Tape Type.

● Installation for Bolt Type

- 1 Decide the position of Base Ring for installation, and drill holes according to the illustration.



- 2 Remove 8 bolts for base ring, and a Support Ring and Packing B are separated.

- 3 Remove 8 bolts for body, and a Base Ring and Packing A are separated.

- 4 Install the Support Ring, Packing B, and Base Ring to the machine's window as appeared on the illustration (P.03). In case the thickness of window is less than 6.0mm, use the bolts supplied originally.

If it is thicker than 6.5mm, the length of the supplied bolt is not enough, so figure out the length of bolt required (L) according to the equation below and purchase separately.

Bolts need to be tightened firmly for good seal effect.

Hex socket head bolt M4 × L (8pcs)

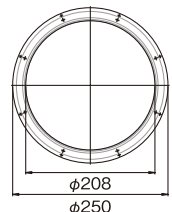
$t+6 \leq L \leq t+11$ (t: thickness of machine's window)

● Installation for Tape Type

- 1 Remove 8 bolts for body, and a Base Ring and Packing A are separated.

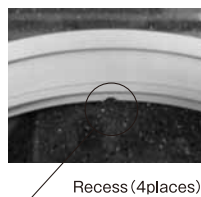
- 2 Clean the inside surface of window before installation to remove any oil or sludge or dirt which might affect the adhesion between the window and tape. Be advised that the product may fall from the window if it is not cleaned enough.

- 3 Decide the position of Base Ring on the window, and do marking there for the subsequent installation. (Refer to the right drawing.)



4 Hereafter(**5~10**) , the machine's window has to be removed from the machine and laid on the horizontal and flat place where cleaned up to operate the subsequent procedures properly and to obtain maximum adhesion.

5 Peel off a paper from the tape fitted with the Base Ring, and install the Base Ring to the machine's window at the place you marked. Base Ring should be installed so that the four recess supplied internal wall of Base Ring would be pointing noon, 3 o'clock, 6 o'clock and 9 o'clock.
Tape has strong adhesion. It will really be hard to peel off a tape if it once create even a little contact to whatever the material. So, enough attention should be paid for installation. Carry out the installation where temperature is over 10°C for sufficient adhesion.



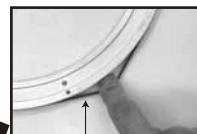
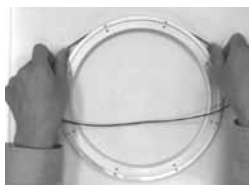
6 Press fit the Base Ring to the machine's window.
Press a portion to portion by leaning some of body weight over a hand as shown on the picture.



7 After pressed whole area around, leave the window remain laid for more than 24 hours to get maximum adhesion.
During this process, keep the temperature always over 10°C, and keep avoid any shock or vibration, which might affect the adhesion.

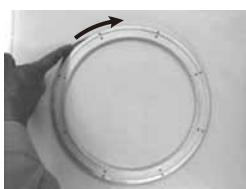
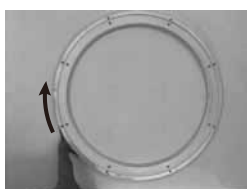
After 24 hours passed,

8 Set the Rubber Seal all around the Base Ring. At the end of this process, remain your finger hooked the Rubber Seal.

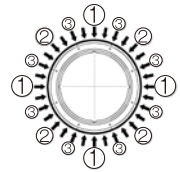


remain finger hooked

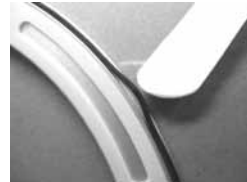
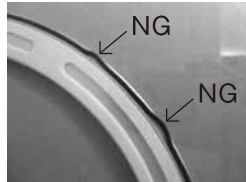
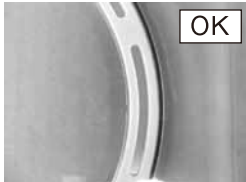
To even the tension of the Rubber Seal for all around, trace along the outside of the Base Ring with the finger 2 to 3 turns with keeping the finger hooked the Rubber Seal. Be sure to do this process.



- 9** Press-insert the Rubber Seal into the gap between Base Ring and Machine's Window by a spatula that has no sharp edge. Do this operation in the order of ①, ②, ③, ... as shown in the figure so that the Rubber Seal will be fixed with even tension for all around.



- 10** Turn the Machine's Window upside down to confirm visually that the Rubber Seal is fixed tightly in the gap. If there is loose part, press there by the spatula to fix it properly in place. Then this section is finished.

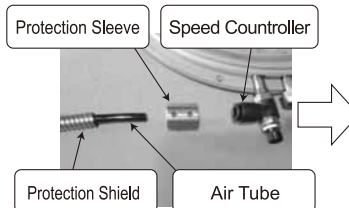


5-2. Installation of Main Body

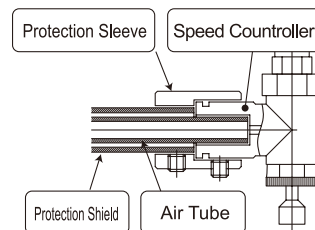
- 1** Mount the packing A on to the Base Ring installed already.
- 2** Mount the Main Body fitted with a Spin Disc onto the Base Ring so the center support stands upright, and secure both by tightening the mounting bolts. Tighten the bolts firmly for good seal effect.

5-3. Connection of Air Tube

- 1** Let the Tube into the Protection Sleeve from the side of which internal diameter is smaller. Then insert the Tube fully into the Speed Controller.



- 2** Fit the Protection Sleeve with the Speed Controller. Do not press it too much against the Speed Controller as the Tube may come off by functioning the unlock structure. Next, fit the Protection Shield in the Protection Sleeve. Finally tighten two set screws lightly to secure them.



- 3** The other end of Air Tube is to be connected to the source of air supply. Size of air hose is 6mm×4mm(OD×ID) and made of polyurethane. Connect the Tube to a suitable fitting.

That's all for installation. Go on to the next step.

6. How to Use

6-1. Operation

- 1 Supply the air (less than 0.5MPa) to the product. Spin Disc starts rotating. It reaches to the adjusted revolution speed within about 1 min. (Be advised that the default setting is $2,000 \pm 200 \text{ min}^{-1}$.) Then the coolant and cutting chips are splashed away and the inside of the machine is clearly viewed by eye.

1. Due to the structure, if the Spin Disc is not rotating or the rotation speed is extremely slow, coolant will easily enter into the gap between the Main Body and Spin Disc. And if such a condition continues for a long time, coolant may be soaked in the Double Sided Tape, and in the worst case, the Main Body may fall out of the machine window. Always keep the Spin Disc rotating while the coolant is splashing.
2. In case the Spin Disc sticks due to the clogging of cutting chips, take the Spin Disc off and remove those sludge. Be sure to stop the air source in doing it. If the air source is not stopped, Spin Disc may suddenly start rotating that causes injury or breakage of the product. (→ 7-2. Disassembly cleaning)

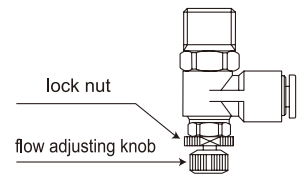
6-2. Stop of operation

- 1 To stop the rotation of Spin Disc, shut off the air at machine side. Do not touch it until it stops completely that takes a while.

6-3. Adjustment of revolution speed

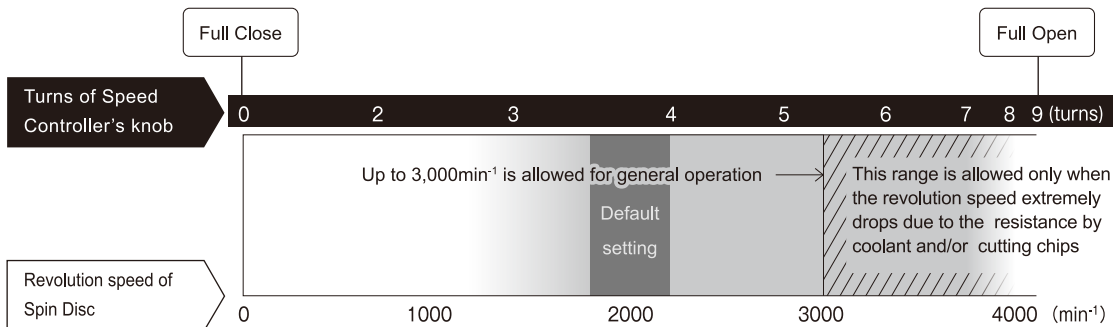
When the splash of coolant/cutting chips is severe, the air flow at default setting may not be able to rotate the Spin Disc sufficiently, and that will not give the clear view. In that case, revolution speed of Spin Disc can be adjusted by Speed Controler.

1 Rotation speed can be changed by the Speed Controller as shown right. Loosen the lock nut first, and then, turn the knob to right to reduce the speed, and to left to increase it. Digital tachometer is to be used to measure the revolution speed of Spin Disc. If such a device is not available, refer to "Turns of knob of Speed Controller" below. After adjustment, be sure to tighten the lock nut.



- Please note that the revolution speed does not exceed $3,000\text{min}^{-1}$ under the no-load condition (that no resistance by coolant/cutting chips is on to the Spin Disc).
- In case that the resistance of coolant/cutting chips is extremely severe, over $3,000\text{min}^{-1}$ is allowed. However, it generates more noise and more vibration. So the place of installation must be rigid enough, and also do not use like that so frequently.
- In any time, do not use this product with higher revolution speed than necessary. That will cause not only unpleasant noise and vibration but also waste of the air.

Revolution speed of Spin Disc Reference of adjustment



7. Cleaning

Depending on the conditions of use and environment, after certain period of use, the glass of product gets dirty and the chips or sludge will be piled up on the upper part of the product, and that can cause problems with the use. In order to use this product properly, it is necessary the following maintenance work.

7-1. Daily Cleaning of Glass

- 1** Before starting maintenance work, be sure to stop air source, and confirm no residual pressure exists.
- 2** Clean the glass surface with a soft cloth moistened with water or hot water. Neutral detergent and glass cleaner can also be used. If it is heavily soiled, wipe it by a soft cloth with thinner.

7-2. Disassembly Cleaning

Carry out the following cleaning work when the dirt is severe, when the Spin Disc does not rotate smoothly, when there is abnormal noise, etc.

- 1** Before starting maintenance work, be sure to stop air source, and confirm no residual pressure exists.
- 2** Remove the 8 bolts to remove the Main Body with the packing A. Base Ring should stay with the machine's window. Place the Main Body at flat place.
- 3** Remove 4 bolts to remove the Spin Disc from the Main Body. O Ring will be come off too. It should not be lost as it has to be used again when the Spin Disc is put back to the Main Body.
- 4** Clean the Spin Disc by water and using a sponge or any soft adequate material. Hot water, neutral cleaner, and/or any regular glass cleaner available on the market can be used for this work. When the stain or dirt etc remaining on the glass is stiff with coolant residue and hard to be removed, it is reoommended to try a soft cloth soaked with a thinner.
- 5** Clean the Main Body. Remove the dirt by a cloth or soft brush with hot water or thinner. Remove carefully all the dirt, sludge etc from the Main Body, especially from the outer groove of Main Body.

CAUTION:Be careful for the operation not to have a water or any chemical agent go to the center part related to the rotation. It may affect the bearing and it causes the malfunction with the rotation.
- 6** Wipe a Spin Disc and a Main Body with a dry cloth.
- 7** Put the O Ring back to the groove of center part, and then put the Spin Disc back onto the center part of Main Body. Secure it by 4 bolts.
- 8** Mount Packing A to the Base Ring, and mount the Main Body to the Base Ring by 8 bolts.
- 9** Finally, turn the Spin Disc lightly by hand and make sure that it spins normally without contact with the Main Body.

8. Others

1. Condition of keeping

If you do not use this product for a long time, put it in a plastic bag and keep it indoors at a temperature of 5~40°C, away form direct sunlight and humidity and dust environment.

2. Condition of use

This product is allowed to use only indoor of 5°C to 40°C temperature.

3. Way of disposal

When this product is disposed, deal with it according to the law there.

When breaking the glass of Spin Disc, put it in a plastic bag to avoid scattering its pieces.

9. Specification

Product	Product name		Rotary Wiper
	Model name		RW-V2
	Driven by		Air
Type	Bolt type	w/tube 2.5m	RW-V2-25
		w/tube 5m	RW-V2-50
	Tape type	w/tube 2.5m	RW-V2-T25
		w/tube 5m	RW-V2-T50
Way of installation	Bolt type		M4 bolt × 8 pcs.
	Tape type		Strong double sided tape
Dimensions (mm) ※1	Maximum dimension (Not included projection parts, tube)		φ250 × 39.5
	Window diameter		φ208
	Mounting flange part (O.D. × I.D.)		φ250 × φ208
	Bolt holes to be drilled through machine's window (Bolt type)		φ5 (for M4) × 8 pcs. PCD228
Weight (g)	Body (Not included tube)		1,500
Material	Parts for structure		Aluminum
	Window		Strengthened glass
Air tube (w/protection shield)	Material		Polyurethane
	Diameters (O.D. × I.D.)		φ6mm × φ4mm
	Length		2.5m or 5m
Coolant adaptable	Type		Oily coolant and water soluble coolant
Air pressure	Max rated pressure		0.5MPa
Revolution speed of Spin Disc (min ⁻¹)	Default		2,000 ± 200
	General range		1,500 ~ 3,000
Noise level ※2	Generally (at 2,000min ⁻¹)		Under 70dBA
	Max. (at 4,000min ⁻¹)		Under 77dBA
Others	This product does not contain following substances. ・Asbestos ・Hexavalent chromium compound ・Lead compound		

(※1) Major dimensions of this product are identical with the previous model, 'RW-V1'. Thus you can directly replace from 'RW-V1(Bolt type)' to this product, 'RW-V2(Bolt type)'.

(※2) Measuring condition: Installed in 10mm thick acrylic box, 0.45m high from the floor. Microphone set 1m distance.

10. About CE marking

This product has been implemented "Declaration of Incorporation" as "partly completed machinery" prescribed in 2006/42/EC of European Machinery Directive after confirming all the necessary safety issues.

Being an "Incorporated Product", there is no CE marking on this product itself according to the regulation of this directive.

Declaration of Incorporation (DoI)

We

Company name:	Pioneer Machine Tools, Inc.
Address:	1-88-2, Okawa, Akanabe, Gifu city, Gifu, 500-8282, Japan

declare that the DoI is issued under our sole responsibility and belongs to the following product:

Apparatus model/Product:	Rotary Wiper
Type/Model:	RW-V2

The object of the declaration described above is applied and fulfilled below essential requirements:

Machinery Directive 2006/42/EC	
<Applied>	<Fulfilled>
1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6, 1.3.2, 1.3.3, 1.3.4, 1.3.6, 1.3.7, 1.3.8, 1.3.9, 1.5.3, 1.5.4, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.13, 1.6.1, 1.6.3, 1.7.1, 1.7.2, 1.7.3 and 1.7.4	1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.3.2, 1.3.4, 1.5.4, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.13, 1.7.1, 1.7.2, 1.7.3 and 1.7.4

The following standard and its reference standards have been applied:

EN ISO 12100:2010	EN ISO 4414:2010
other relevant standards.	

The relevant technical documentation is compiled in accordance with part B of Annex VII; this documentation, or parts of it, will be transmitted by post or by electronic means, in response to a request by the national authorities.

The person authorized to compile the technical file (documentation)

Company name or Name:	THD-Technischer Handel-Deutschland GmbH
Address:	Spiesheimer Weg 19, 55286 Woerrstadt, Germany

This partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Machinery Directive, where applicable.

Signed for and on behalf of:

Gifu city, Gifu, Japan	2018-08-23
Place of issue	Date of issue

P.M.T.

JAPAN

Pioneer Machine Tools, Inc.

1-88-2 Okawa Akanabe,
Gifu City 500-8282, Japan
TEL.81-58-274-1990
FAX.81-58-273-7291
E-mail:pmtsales@pmt-pioneer.com
http://www.pmt-pioneer.com

U.S.A

PIONEER N.A.

641 Fargo Ave., Elk Grove Village,
IL 60007, USA
TEL.847-593-6000
FAX.847-593-6005
E-mail:sales@PioneerNA.com
https://www.PioneerNA.com

Germany

THD GmbH

Spiesheimer Weg 19, D-55286,
Woerrstadt, Germany
TEL.49-(0)6732-9379-0
FAX.49-(0)6732-9379-29
E-mail:info@thdgmhb.de
http://www.thdgmhb.de