

# **INSTRUCTION MANUAL**

## **WATER-COOLED BAFFLE**

**BW-10 BW-14**

**BW-20 BW-22**

**BW-36 BW-52**

<p>Before using this product, be sure to read this operation manual. Keep this manual with care to use at any time.</p>
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**ULVAC, Inc.**

**Components Division**

**<http://www.ulvac.co.jp/>**

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## **【Before using this product】**

We thank you very much for purchasing our product.

You are kindly requested, upon delivery of this product, to check that the delivered product is exactly what you have ordered and it has no damage caused by transport or the like.

This manual gives description on operation and maintenance procedure appropriate to use this product in safe and effective way. Please read this manual beforehand to correctly use the Dust filter.

You are requested to install and operate this product in compliance with the laws and regulations relating to the safety, e.g. Fire Defense Law, Electric wiring regulation and so on in the country and region you use this product. Consequently you shall be requested to attend general safety lectures officially effective in the area, such as electrical safety, Cargo handling safety and so on. Note that any person not attended such lectures shall be restricted from handling this product. Operators shall need to attend such kind of training and have special knowledge, skill and title regarding the electricity, machinery, cargo, vacuum and so on.

This product is designed to conform to regulations valid at the time of issue of this manual and its conformity is not ensured if any of regulations shall be changed in the future.

The performance and safety of this product might not be ensured if any of the devices put together did not conform to same regulations or this product itself was modified. ULVAC shall be not liable to guarantee performance and safety in such cases above. Any modification of this product by the user is out of the scope of guarantee by us and not be guaranteed in any manner.

Be sure to clear any energy sources, e.g. electricity, coolant and so on of this product before installing or removing this product.

Please note that any of the parts used in this product shall keep the performance at the time of the shipment but shall not survive eternally. Any of the parts cannot, under any application supposed under socially-accepted idea, help but inevitably deteriorate its performance and get easily result in causing trouble of this product. You are kindly requested consequently to take your application situation into consideration and help yourself to implement the protective maintenance so as to avoid troubles.




Through implementation of the protective maintenance, you shall reduce occurrence of the trouble due to wear and/or failure of the part and bring reducing the occurrence of the downtime caused by this product trouble and fire as well as a risk of affecting the another process.

We would like to ask you again to establish the protective maintenance plan as well as conduct the part replacement and overhaul in accordance with such a plan.

Please do not hesitate to contact our sales office or agency closest to you or the Components Division if you had any question or unclear on the use.

## Safety symbol mark

We display symbol marks regarding the safety in this manual and on this product to make clear items to observe. Descriptions attached to the symbol are classified as illustrated below;


 <b>DANGER</b>	<p>If the user makes a mistake in handling, it indicates an imminent possibility that the user is subject to death or heavy injury.</p>
 <b>WARNING</b>	<p>If the user makes a mistake in handling, it indicates a possibility that the user is subject to death or heavy injury.</p>
 <b>CAUTION</b>	<p>If the user makes a mistake in handling, it indicates a possibility that the user is subject to moderate injury or it leads to significant damage of the machine. It indicates a possibility that damage of the machine is caused and the normal operation is impaired.</p>


## Safety Precautions

Descriptions are given as the method to keep away from danger and actions that must be restricted on the use of the product.

Use of this product and this Instruction Manual.

<b>IMPORTANT</b>	<p>Description shall be given where there is particular information to notice for the operation or maintenance work of the product.</p>
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 <b>WARNING</b>	<p>Do not run the Pump on blocking the exhaust outlet or putting any device that might hamper gas passage onto the outlet. There is a risk that the pressure inside the Vacuum pump rises up to cause break or oil leak of the casing or Oil level gauge resulting in overload of the motor.</p>
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 <b>DANGER</b>	<p>When you clean up this product with organic solvents, please be based on laws and ordinances such as the Occupational Safety and Health Act or the Ordinance on the Prevention of Organic Solvent Poisoning concerned. Because lack of oxygen might be caused, please ventilate the room enough based on laws and ordinances enough.</p>
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**WARNING**

Please do not disassemble or repair it other than repair engineers.

**WARNING**

Please carry out the leak test on connection points before use.  
There is a possibility that the leakage happens in the case that vacuum pump exhausts toxic or flammable gases.

**WARNING**

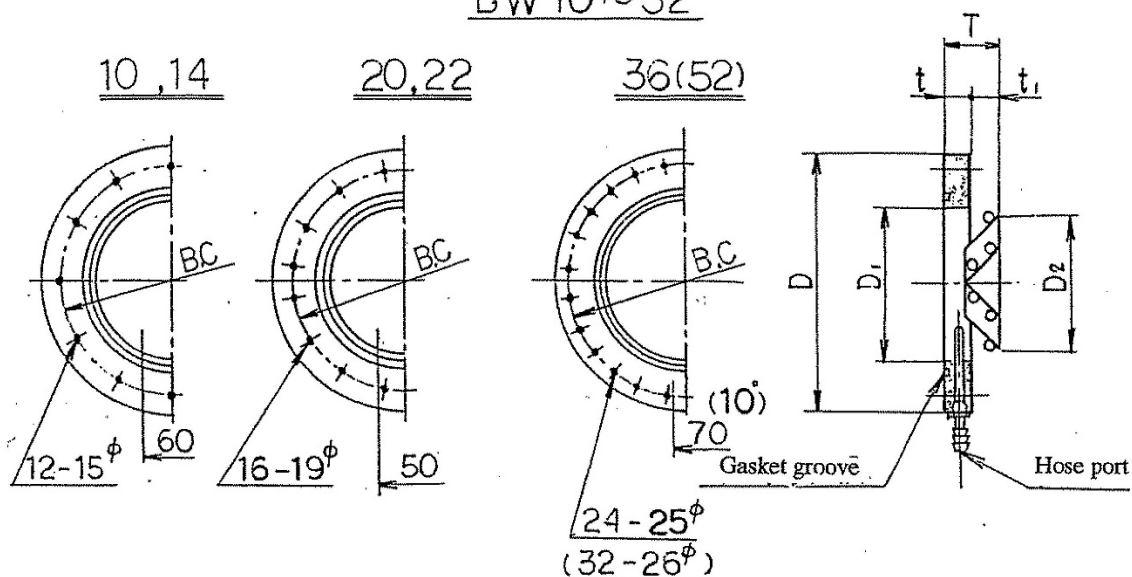
When you use it for the exhaust of the poisonous gas, the contact points of the gas such as an element or the main case become harmful. Please note it at the time of the maintenance.

**CAUTION**

When you find an abnormality, to prevent an accident, please stop using it immediately and ask the nearest ULVAC branch for check and repair by all means.

## Water-cooled baffle

BW 10~52



Specifications	Nomianl		
	B W		
	10	14	20
D	φ350	φ450	φ625
D1	φ260	φ360	φ508
D2	φ240	φ336	φ490
B · C	φ320	φ420	φ585
T	39	45	152
t	22	22	24
t1	17	23	128
Gasket groove	φ291×φ275×4.5	φ396×φ380×4.5	φ554×φ530×7
Hose Port	Rp3/8	Rp3/8	Rp3/8
Cooling water requirements	2~4 L/min	2~4 L/min	3~9 L/min
Conductance (L/sec)	3130	5000	13000
Weight (Kg)	7.6	11.0	22

Specifications	Nomianl		
	B W		
	22	36	52
D	φ680	φ1065	φ1480
D1	φ570	φ924	φ1340
D2	φ550	φ890	φ1290
B · C	φ640	φ1015	φ1430
T	101	113	165
t	26	28	35
t1	75	85	130
Gasket groove	φ609×φ585×7	φ974×φ950×7	φ1389×φ1360×8.5
Hose Port	Rp3/8	Rp3/8	R p3/8
Cooling water requirements	3~9 L/min	5~9 L/min	5~13 L/min
Conductance (L/sec)	14000	54000	75000
Weight (Kg)	28	66	200

Material : Main unit ..... Mild steel , Nickel plated

Baffle ..... Copper , Ni plated(BW-22,36,52 are mild steel,plated with nickel)

### I Overview

This Baffle is a component installed directly above the intake port of an oil diffusion pump or oil diffusion ejector pump to prevent backstreaming of oil vapor from the vapor pump, thereby creating a vacuum with little oil vapor.

It has a sufficiently high conductance to attain a pumping speed more effectively.

It has been subjected to surface treatment to minimize outgas from the surface so that it can be used in a high vacuum.

## II Installation

### 1. Inspection

Upon unpacking the case, check the following.

- (1) Is the baffle the correct model you ordered?
- (2) Are the specified accessories, such as adaptor, O-ring, etc., included?
- (3) Is any part damaged in transit?

If any problem is found, contact your local ULVAC representative or ULVAC, Inc., Japan.

### 2. Installation

- (1) After cleaning the water-cooled baffle with organic solvent, allow it to dry up.  
Clean up the baffle in the same manner also when an adaptor is necessary.
- (2) After installing the baffle to the pump intake port and placing the water-cooled baffle on it, fix the pump and water-cooled baffle using through-bolts. When installing the BW-10 or 14 to ULK-10A or 14A, fix them after placing the adaptor in between the pump and water-cooled baffle. When installing to the PBL-10, 14 or 20, remove the standard baffle.

Note 1 : Wear nylon gloves when handling O-rings or parts exposed to high vacuum.

Note 2 : Do not apply low vapor pressure grease like Apiezon L to the O-ring surface.

Note 3 : Tighten two opposing bolts in sequence with appropriate torque.

Note 4 : Be careful not to scar the seal surface and nor catch a foreign object between the seal and other part.

### 3. Cooling water piping

- (1) Make piping arrangement using suitable hose or tube.
- (2) Cooling water pressure requirement is 3 kg/cm<sup>2</sup> G.

Note 1 : Cooling water temperature should preferably be not higher than 20°C.

Feed cooling water of as low temperature as possible.

Note 2 : Use soft water for cooling. IF circulating water contains many water scales, install a stainer.

Note 3 : If the baffle is cooled with cold medium, the surface temperature of the baffle may become lower than the fluid point of oil. In such a case, the trapped oil does not return to the pump, resulting in lack of oil.

### 4. Maintenance

- (1) When changing the oil of the oil diffusion pump or oil diffusion ejector pump or when conducting overhaul of them, remove the water-cooled baffle and clean it with organic solvent.
- (2) Cleaning of the water-cooled baffle is recommended also when pump oil has deteriorated due to overgeating or other.
- (3) Check to see if there is any water leak.

### 5. Warranty Terms

- (1) This baffle is warranted free from defects for of twelve(12) months from the date of acceptance.
- (2) If any trouble imputable to defects in material or workmanship occurs within the warranty period, ULVAC will correct either by replacement or repair of defective parts.  
Normal operating state means the following.
  - a) Operating atmospheric air temperature is 10 to 40°C.
  - b) Exhaust gas is dry air or dry nitrogen.
  - c) Operation in accordance with the instruction manual.
- (3) Troubles imputable to the following are not covered by this warranty.
  - a) Acts of God or force majeure, such as fire, earthquake, flood, etc.
  - b) Special atmosphere, such as salty air, pollution, etc.
  - c) Operation not in conformity with the instruction manual (utilities, inspection, maintenance, etc.)
  - d) Troubles deemed by ULVAC engineer not suited to the operating conditions of this product.

## ULVAC Components / Certificate of Decontamination

This is a certificate of decontamination for repair and inspection request of ULVAC Components. All material must be certified as decontaminated and this certificate must be submitted to your closest local ULVAC service center or sales office prior to shipment.

Please consult with your closest local ULVAC service center or sales office if our components are used with toxic gases or contaminated with reactive products or substances produced by reaction.

Product model:

Model:

Serial No.:

Application:

Remarks:

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Contaminant (Check an applicable box.)

- ☐ I guarantee that above returned item(s) is not contaminated with harmful substances.
- ☐ Above returned item(s) is contaminated with the following harmful substances.

	Name of contaminant (molecular formula)	Characteristics
1		
2		
3		
4		
5		

To: ULVAC

Attn: \_\_\_\_\_

Date:        /        /        (YYYY/MM/DD)

Your company

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Division

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Contact

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Phone

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Fax

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E-mail

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Please pack returned item(s) carefully before shipment. Any accident occurred during transportation to us **and during disassembly** caused by contaminant is under your responsibility. It is also to be understood that ULVAC may decline to repair returned item(s) depending on the type of contaminant and degree of contamination, and return it to you.

To be filled in by ULVAC	Received by	
Request for SDS: Yes/No		
ULVAC job No.		

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<http://www.ulvac.co.jp/>

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