

SK00-6839-DI-001-02

No.140714

ULVAC

**Model BW-04B**

**Model BW-06B**



**Water-Cooled Baffle**



**Instruction Manual**


*Read this manual before operation and keep it at hand for immediate reference.*

**Components Division,  
ULVAC, Inc.**

## Safety Precautions

-  Read "Safety Precautions" before operation and use the baffle correctly.
-  Cautions given here are for safe and correct operation of ULVAC vacuum pumps. Cautionary notations are classified into "DANGER", "WARNING" and "CAUTION" to call operator's attention to safe operation. Always comply with them, which are all important for the safety of the operator and equipment.
- DANGER** Failure to comply with DANGER involves a possibility of impending loss of life or serious personal injury.
- WARNING** Failure to comply with WARNING involves a possibility of loss of life or serious personal injury.
- CAUTION** Failure to comply with CAUTION involves a possibility of personal injury or physical damage to equipment.

 <b>DANGER</b>	<p>Do not run the vacuum pump with the exhaust port plugged or with a device that interferes with gas passage installed on the exhaust port side. Pressure in the vacuum pump may rise until the casing or oil level gauge may be ruptured or the motor may be under overload.</p> <p>When cleaning the pump with organic solvent, comply with the Law of Labor Safety and Hygiene, Rules for Prevention of Intoxication with Organic Solvent, and other rules.</p> <p>Ventilate your room according to laws and regulations to avoid oxygen deficiency.</p>
 <b>WARNING</b>	<p>Nobody except qualified engineers is allowed to disassemble or repair the baffle. You may get burned by ignition or malfunction.</p> <p>Whenever conducting inspection or repair, turn off the power switch. The vacuum pump may start all of a sudden and you may get injured.</p> <p>Ground the pump securely and install a dedicated earth leakage breaker. You may get electric shock in case of failure or electric leak.</p> <p>Make wiring arrangement correctly according to the</p>

	Electrical Equipment Technical Standard and your in-house regulations. Incorrect wiring arrangement can lead to electric shock or personal injury.
 <b>CAUTION</b>	When the vacuum pump is used for pumping toxic gas or combustible gas, the gas may leak from the pump body, except through the exhaust port of the pump. Take appropriate actions according to the type of gas.
	If the pump is used for pumping in toxic gas, not only the pump body but also the pump oil will be contaminated with toxic gas. Be careful in maintenance.
	Do not touch the main shaft, shaft joint, V-pulley, V-belt and other rotating parts when the vacuum pump is running. You may get injured.
	Do not cover the electric motor or vacuum pump with a blanket or cloth. They may be overheated, resulting in ignition.
	Do not touch the electric motor, vacuum pump or piping when the vacuum pump is running or when the pump body is hot immediately after shutdown. You may get burned with intense heat.
	If the vacuum pump stops running or if any trouble is found, immediately turn off the power switch to prevent accidents and contact your local ULVAC representative for inspection and repair.

\* After reading this manual, keep it at hand for immediate reference.

## 1. Water-Cooled Baffle

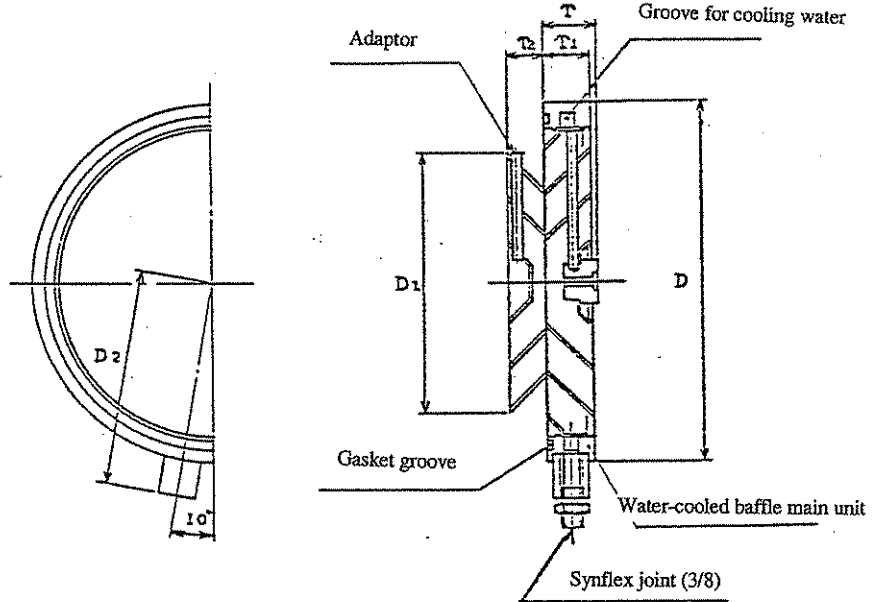
### 1.1 Specifications

Table 1 gives the specifications of the Model BW-04B and Model BW-06B water-cooled baffles.

Table 1

#### Accessories

- Standard baffle accessories
  - 1. Connection bolt 1 pc.
  - 2. M4 nut 1 pc.
- Adaptor accessories
  - 1. Adaptor mounting jig 3 pcs.
  - 2. M4 × 5L screw 3 pcs.



Specifications \ Nominal	SW-04B	SW-06B
D	149	199
D <sub>1</sub>	97	145
D <sub>2</sub>	94.5	119.5
T	28	28
T <sub>1</sub>	25	25
T <sub>2</sub>	20	20
Gasket groove	120φ × 130φ × 3	175φ × 185φ × 3
Synflex joint	Male connector CIN-3/8-PT3/8	Male connector CIN-3/8-PT3/8
Cooling water requirements	0.7 L/mm (3 kg/cm <sup>2</sup> G)	1 L/mm (3 kg/cm <sup>2</sup> G)
Conductance	940 (20° Cair) L/sec	2,200 (20° Cair)L/sec
Weight		

Note: Gaskets (O-rings) JIS B2401 V-120 (BW-04B) and JIS B2401 V-175 (BW-06B) are included.

#### 1. Material

Main unit made of SUS304, baffle made of copper (shot peening treatment), adaptor copper (Ni No. 1 plating)

#### 2. Can also be used for the one-stage 6-inch or 4-inch pump.

#### 3. Use soft water for the cooling water.

The water-cooled baffle body is made of SUS-304 and the conical looper surface is treated by shot peening. It is not plated, but the adaptor is plated with nickel.

## 2. Installing the adaptor

### 2.1 Setting up on the ULK oil diffusion pump.

The water-cooled baffle can reduce the rate of backflow from the oil diffusion pump by about 2 digits (from  $10^{-2}$  mg/cm<sup>2</sup>·mm to  $10^{-4}$  mg/cm<sup>2</sup>·mm). The rate of backflow from the oil diffusion pump can be reduced by about 3 digits (from  $10^{-2}$  mg/cm<sup>2</sup>·mm to  $10^{-5}$  mg/cm<sup>2</sup>·mm)

The BW-04B and BW-06B water-cooled baffles are designed for the Model ULK diffusion pump. Fig. 1 shows the baffle main body installed in position.

Install it as shown in the figure below.

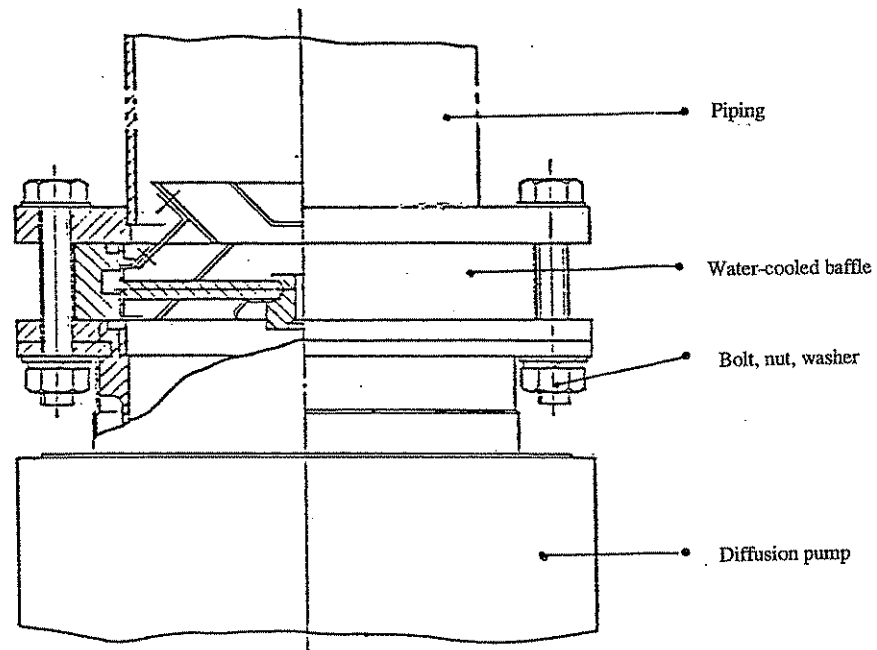


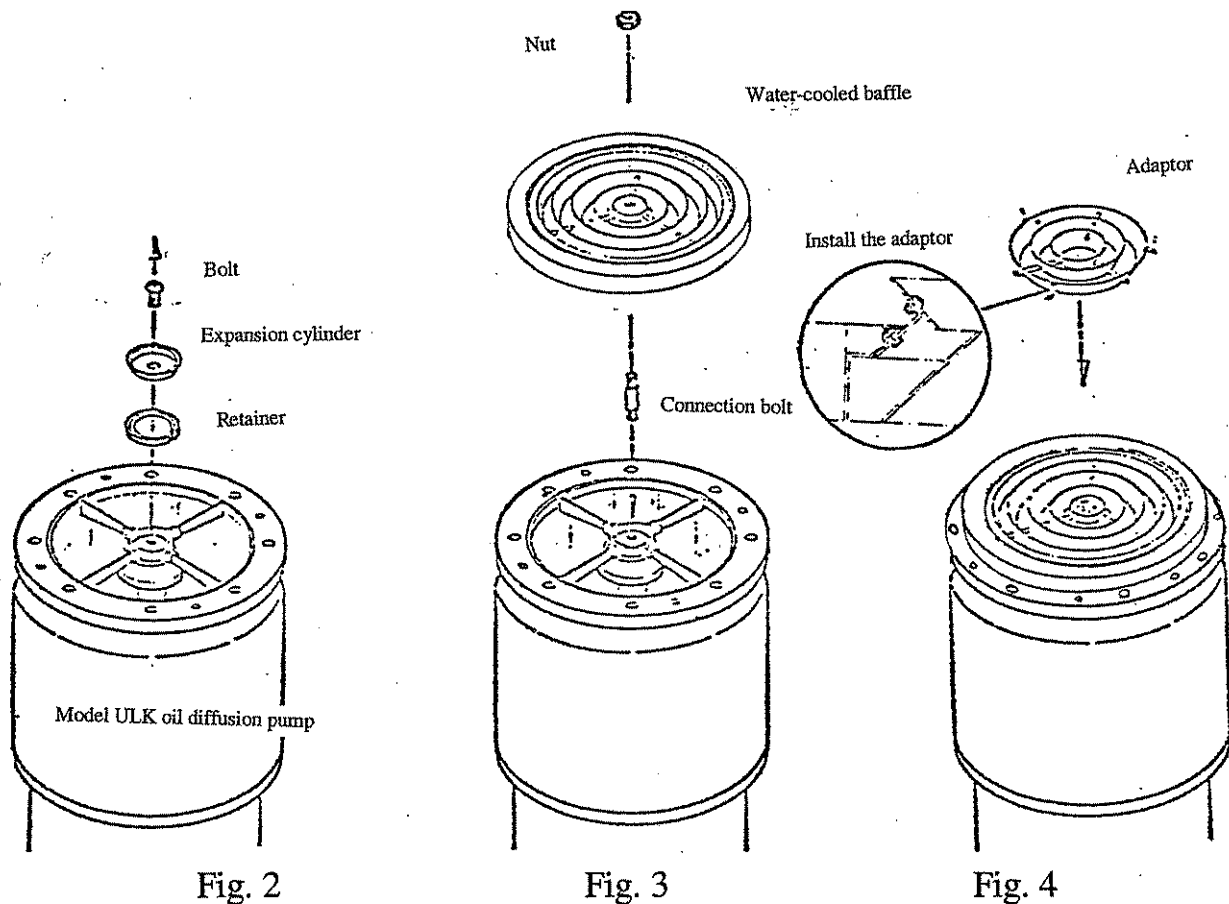
Fig. 1

- (1) Remove the cold cap setscrew that is set at the center of the intake port of the Model ULK oil diffusion pump and then remove the expansion ring and retainer. (Fig. 2 shows the exploded view.)
- (2) Insert the connection bolt that connects the cold cap and baffle into the screw hole and set it.
- (3) Insert the center shaft of the baffle into the hole.  
Tighten the connection bolt shown in (2) using the nut. (Fig. 3 shows the exploded view).

- (4) To install the adaptor to the water-cooled baffle, tighten the adaptor (optional) to the baffle shield plate using three bolts. (Fig. 4 shows the exploded view).

This completes the setting of the baffle.

- (5) After incorporating the baffle in a system along with the pump, connect the water cooling pipe to the baffle.



## 2.2 Setting up in Commercially Available Pump

When using the water-cooled baffle for a commercially available pump, set the adaptor in the baffle main unit and install the baffle to the pump intake port. The inside diameter of the baffle is larger than the pipe diameter specified by the JIS standard, but the Model BW-04B can be set to a 4-inch diameter pipe and the Model BW-06B to a 6-inch diameter pipe respectively. Both O-rings and rectangular rings can be used for the gasket.



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\*The environmental protection validity date is not the product warranty period.

Table1. Making format for names and contents of hazardous substances or elements

Name of parts	Hazardous substances or elements					
	Pb	Hg	Cd	Cr <sup>6+</sup>	PBB	PBDE
Body	○	○	○	○	○	○

○: indicating that content of the hazardous substance or element in all homogeneous materials of the part does not exceed the requirements for concentration limits specified by SJ/T11363-2006.  
×: indicating that content of the hazardous substance or element in, at least one kind of, homogeneous materials of the part exceeds the requirements for concentration limits specified by SJ/T11363-2006. Producer may further explain the technical excuse to the items marked with “X” perspecific conditions here.