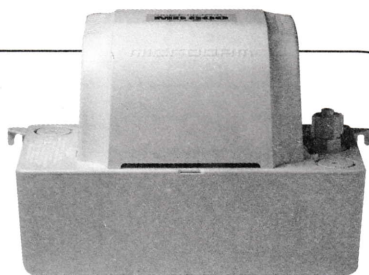


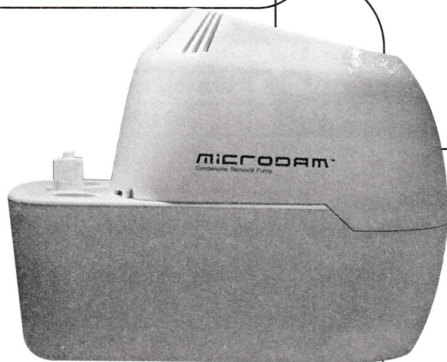
Silent, Modern, & Reliable



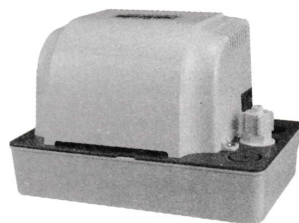
Apollo Pump
- MD200W, MD300W, & MD400W



Poseidon Pump
- MD400, MD600, & MD800



Hercules Pump
- MD1000, MD1200, & MD1500



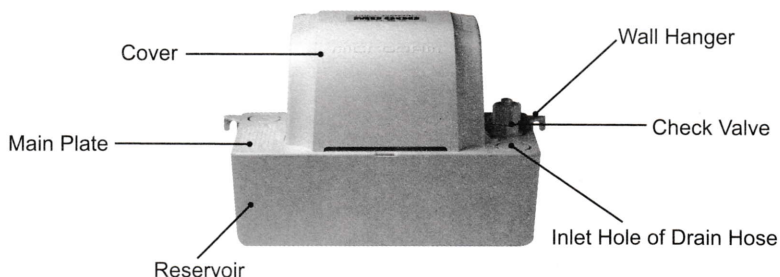
Titan Pump
- MD600CE, MD600C, & MD800C

Smart Guard for Your Comfortable Place!

Please read this user guide carefully before attempting to install, operate or service the MICRODAM pump. Know the pump application, limitations and potential hazards. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage. Retain this user guide for future reference. Installation, connections, and after-sale service are to be made by a qualified person.

MICRODAM™ condensate removal pumps are designed to automatically remove the drainage liquid produced by air-conditioner evaporative coil. Our pumps can be also used for other types of fresh water removal from refrigeration equipments, dehumidifiers, water dispensers, etc. where gravity drainage is impossible.

NAME OF EACH COMPONENT



GENERAL FEATURES OF MICRODAM™

- Fully Automatic Operation
- Flame Retardant & High Impact Plastic Construction
- Low Noise Motor with Thermal Protector
- Stainless Steel Shafts Adopted
- 90° Turn Check Valve for Easy Servicing
- Various Design for Various Installation Site

▲ WARNING ▲

1. DO NOT USE TO PUMP FLAMMABLE OR EXPLOSIVE FLUIDS SUCH AS GASOLINE, FUEL OIL, ALCOHOL, ETC.
2. DO NOT USE IN EXPLOSIVE ATMOSPHERES.
3. DO NOT USE TO PUMP HOT WATER OVER 40℃.
4. DO NOT HANDLE PUMP WITH WET HANDS OR WHEN STANDING ON A WET OR DAMP SURFACE, OR IN WATER.
5. TO REDUCE THE RISK OF ELECTRICAL SHOCK, BE CERTAIN THAT THE PUMP IS CONNECTED TO A PROPERLY GROUNDED GROUNDING TYPE RECEPTACLE.
6. CONNECT THE PUMP ONLY TO THE POWER SUPPLY SPECIFIED ON THE NAMEPLATE OF THE PUMP.
7. IN ANY INSTALLATIONS WHERE PROPERTY DAMAGE AND/OR PERSONAL INJURY MIGHT RESULT FROM AN INOPERATIVE PUMP, A BACKUP SYSTEM AND/OR ALARM SHOULD BE USED.
8. DO NOT TWIST THE DRAIN HOSE AND THE DISCHARGE HOSE.
9. BEFORE ANY MAINTENANCE OR REPAIR OF THE PUMP, PLEASE DISCONNECT THE PUMP FROM THE POWER SUPPLY TO AVOID AN ELECTRICAL SHOCK.
10. PLEASE AVOID CHILDREN'S APPROACH TO THE PUMP.
11. PLEASE KEEP IN MIND THAT THE PUMPS ARE NOT SUBMERSIBLE PUMPS.
12. EVERY INSTALLATION OR AFTER-SALES SERVICE SHOULD BE DONE BY QUALIFIED SERVICE TECHNICIAN.
13. THE INTERMITTENT RATINGS OF THESE PUMPS ARE NOT LONGER THAN 5 MINUTES.

SPECIFICATIONS OF EACH MODEL

Poseidon Pump - Standard Medium Size Model

Model	Power Supply	Performance (ℓ/hr@Height in Meter)					Maximum Head	Amps	Watts	Tank Capacity
		0	2	4	6	8				
MD400	115V 60Hz / 230V 60Hz	240	213	195	–	–	4.5m	0.72A	74	1.8ℓ
	230V 50Hz	237	207	192	–	–	4.0m	1.01A	85	
MD600	115V 60Hz / 230V 60Hz	282	249	234	123	–	6.0m	0.89A	87	1.8ℓ
	230V 50Hz	264	222	207	–	–	5.5m	1.60A	117	
MD800	115V 60Hz / 230V 60Hz	324	279	261	159	159	8.0m	1.25A	125	1.8ℓ
	230V 50Hz	276	240	225	99	–	6.6m	2.48A	195	

Titan Pump - Medium Size Model with Low Profile Reservoir

Model	Power Supply	Performance (ℓ/hr@Height in Meter)					Maximum Head	Amps	Watts	Tank Capacity
		0	2	4	6	8				
MD600C	115V 60Hz / 230V 60Hz	285	249	228	120	–	6.0m	0.89A	85	0.8ℓ
MD800C	115V 60Hz / 230V 60Hz	312	272	255	153	148	8.0m	1.25A	117	0.8ℓ
MD600CE	230V 50Hz	258	225	207	84	–	6.0m	0.64A	75	0.8ℓ

Apollo Pump - Compact Model for Wall Split Air Conditioner Only

Model	Power Supply	Performance (ℓ/hr@Height in Meter)					Maximum Head	Amps	Watts	Tank Capacity
		0	1	2	3	4				
MD200W	115V 60Hz / 230V 60Hz	168	157	150	–	–	2.5m	0.29A	32	0.8ℓ
MD300W	115V 60Hz / 230V 60Hz	177	166	162	60	–	3.0m	0.35A	34	
	230V 50Hz	147	137	132	–	–	2.4m	0.44A	42	0.8ℓ
MD400W	115V 60Hz / 230V 60Hz	198	190	186	162	114	4.0m	0.66A	43	
	230V 50Hz	186	165	150	110	–	3.0m	1.12A	71	

Hercules Pump - Jumbo Size Model

Model	Power Supply	Performance (ℓ/hr@Height in Meter)					Maximum Head	Amps	Watts	Tank Capacity
		0	5	10	12	15				
MD1000	115V 60Hz / 230V 60Hz	400	308	171	–	–	10.0m	0.91A	240	3.8ℓ
	230V 50Hz	361	280	160	–	–	9.0m	0.72A	150	
MD1200	115V 60Hz / 230V 60Hz	426	342	190	170	–	12.0m	0.91A	240	3.8ℓ
	230V 50Hz	402	312	165	130	–	11.0m	0.72A	150	
MD1500	115V 60Hz / 230V 60Hz	486	399	255	190	170	15.0m	0.99A	250	3.8ℓ
	230V 50Hz	432	328	171	162	–	14.0m	0.98A	180	

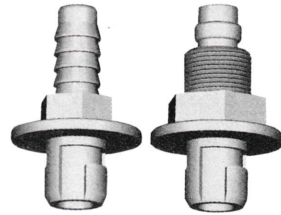
⚠ The above models and specifications can be changed without a notice for functional improvements.

INSTALLATION GUIDE

- (1) Carefully unpack the unit and check for damage. Make sure that all of the required parts are included.
The units are thoroughly tested before packing to insure safe delivery and operation. If there is any sign of damage due to shipment, return it to the place of purchase for repair or replacement.
- (2) Select a mounting location near the appliance. The pump must be mounted horizontally. Run flexible tubing or pipe from evaporator drain into the inlet hole of pump. Be sure inlet piping is sloped downward to allow gravity flow.
- (3) Connect outlet piping (3/8" I.D.) with the check valve. From condensate unit, extend outlet piping straight up as high as necessary, but not higher than the maximum head of the pump. Be sure that the outlet piping is not twisted or clogged.

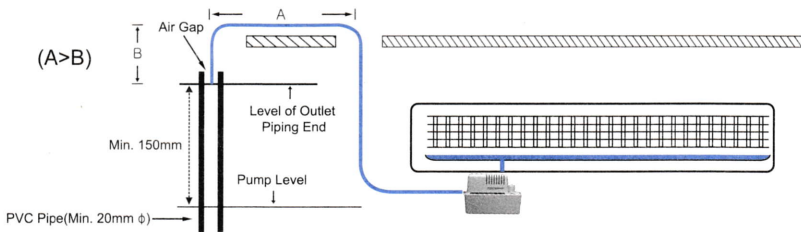
<Tip> How to Use the Check Valve

- ① For Un-installation
→ Turn an angle of 90° to the anti-clockwise direction
→ Take the check valve off from the hole
- ② For Installation
→ Put the check valve into the hole
→ Turn an angle of 90° to the clockwise direction



- (4) In order to avoid siphoning action & running the pump dry, always connect the outlet piping to a drain at a higher level than the pump itself.

<Tip> To Avoid the Siphoning Action



- (5) ⚠ Make sure that the power source voltage matches with the pump's requirement. Connect the pump's power cord to a constant source of power (not a fan or other device that runs intermittently). Do not connect or link the air conditioner's power cable directly to the pump's power cable. Use the power plugs respectively. If the pump's power cable should be extended, use a cable of same specification. All wiring should be done by qualified service technician.
- (6) When all the above tasks are done, please perform a trial operation. Pour water into the pump's reservoir and check if the pump works properly.

<Tip> About Safety Switch

- ☞ The purpose of the safety switch is to prevent an overflow while the pump is not properly working due to various reasons.
- ☞ The lead wires of safety switch originally coming from our factory are set to shut down the Heating/AC circuit. For this, the lead wires should be connected in series with the Low Voltage Thermostat Circuit.
- ☞ All wiring should be done by qualified service technician. Please refer to local codes in your area.

SERVICE & MAINTENANCE INSTRUCTIONS

- (1) ⚠ Before attempting to service or disassemble any component, make sure that the unit is disconnected from the power source.
- (2) Take off the drain hose from the inlet hole. Uninstall the check valve from the main plate. Disassemble the outlet piping from the check valve with care not to spill the water inside of the outlet piping over the floor or the pump. Clean the check valve and be sure that the ball inside of check valve moves freely.
- (3) Disassemble the cover and reservoir from the main plate.
- (4) Be sure the floats move freely. Clean as necessary.
- (5) Clean the reservoir with warm water and mild soap.
- (6) Check the inlet and outlet piping. Clean as necessary. Be sure there are no kinks in the line that would inhibit flow.
- (7) After the servicing, assemble the unit by the reverse order.
- (8) In case of a long-term break, remove water from the outlet piping and the reservoir.

TROUBLESHOOTING

The unit does not run.	<ol style="list-style-type: none"> a) Check the power supply. b) Check the appliance to see if the condensation is actually being produced. c) Make sure the inlet piping is not clogged. If it is clogged, the appliance may eventually be damaged.
The unit makes loud noises when running.	<ol style="list-style-type: none"> a) Make sure the inside of reservoir is clean. b) Make sure there is no siphoning action.
The unit runs but does not pump the liquid out.	<ol style="list-style-type: none"> a) Check the highest point of the outlet piping does not exceed the maximum delivery head of the pump. b) Check the inside of outlet piping is clean. c) Inspect the check valve following the maintenance instructions.
Liquid drains back into the pump from the outlet piping.	<ol style="list-style-type: none"> a) The check valve may have debris in it. Clean the check valve following the maintenance instructions.
Liquid leaks from around the check valve.	<ol style="list-style-type: none"> a) Make sure the outlet piping is tightly connected with the check valve. b) Make sure the check valve is fastened properly. c) If the o-ring under the check valve is damaged, replace with a new one.

LIMITED WARRANTY

MICRODAM condensate removal pump is warranted against defective materials and workmanship for a period of 12 months. Any product that should fail for either of the above two reasons and is still within the warranty period will be repaired or replaced at the option of Sungshin Hasco, Ltd. as the sole remedy of buyer.

For our customers located outside of Korea (R.O.K), please return the defective unit to any authorized local distributor or dealer with a brief written explanation of the problem. If there are no apparent signs of customer abuse, unit will be repaired or replaced. If dispute arises over replacement of the pump, the distributor or dealer is to segregate such items and hold for inspection by a representative of Sungshin Hasco, Ltd. or notify factory with details of the problem for factory disposition and settlement of warranty claim.

DISCLAIMER : The foregoing warranty is an exclusive warranty in lieu of any other express warranties. Any implied warranties (including, but not limited to any implied warranty of merchantability or fitness for a particular purpose) to the extent either applies to a pump shall be limited in duration to the periods of the express warranties given above.

Warranty will be VOID if any of the following conditions are found :

1. Sealed motor housing opened.
2. Product connected to voltage other than indicated on nameplate.
3. Cord cut off to a length less than three feet.
4. Pump allowed to operate dry (fluid supply cut off).
5. Pump used to circulate anything other than fresh water at approximately room temperature.
6. Any type of product abuse by customer.

Any oral statements about the product made by the seller, the manufacturer, the representatives or any other parties, do not constitute warranties, shall not be relied upon by the user and are not part of the contract for sale. Seller's and manufacturer's only obligation, and buyer's only remedy, shall be the replacement and/or repair by the manufacturer of the product as described above. Neither seller nor the manufacturer shall be liable for any injury, loss or damage, direct, incidental or consequential (including, but not limited to incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss), arising out of the use or the inability to use the product and the user agrees that no other remedy shall be available to it. Before using, the user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith. We recommend each pump be used with a GFCI (Ground Fault Circuit Interrupter).

NO MORE BUCKET !

MICRODAM™ CONDENSATE REMOVAL PUMPS ARE HERE FOR YOU.



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