



THE NEW YORK BLOWER COMPANY
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INSTALLATION MAINTENANCE, OPERATING INSTRUCTIONS

IM-300

HORIZONTAL UNIT HEATERS

A WORD ABOUT SAFETY

Air moving equipment involves electrical wiring, moving parts, sound, and air velocity or pressure which can create safety hazards if the equipment is not properly installed, operated and maintained. To minimize this danger, follow these instructions as well as the additional instructions and warnings on the equipment itself.

All installers, operators and maintenance personnel should study AMCA Publication 410, "Recommended Safety Practices for Air Moving Devices", which is included as part of every shipment. Additional copies can be obtained by writing to The New York Blower Company, 7660 Quincy St., Willowbrook, IL 60527.

ELECTRICAL DISCONNECTS

Every motor driven fan should have an independent disconnect switch to isolate the unit from the electrical supply. It should be near the fan and must be capable of being locked out by maintenance personnel while servicing the unit, in accordance with OSHA procedures.

MOVING PARTS

All moving parts must have guards to protect personnel. Safety requirements vary, so the number and type of guards needed to meet company, local and OSHA standards must be determined and specified by the user. All unit heaters employ a welded-wire motor mount/guard. Never start a fan without having all safety guards installed. Check regularly for damaged or missing guards and do not operate any fan with guards removed. Fans can also become dangerous because of potential "windmilling", even though all electrical power is disconnected. Always block the rotating assembly before working on any moving parts.

SOUND

Some fans can generate sound that could be hazardous to exposed personnel. It is the responsibility of the system designer and user to determine sound levels of the system, the degree of personnel exposure, and to comply with applicable safety requirements to protect personnel from excessive noise.

AIR PRESSURE AND SUCTION

In addition to the normal dangers of rotating machinery, fans present another hazard from the suction created at the fan inlet. This suction can draw materials into the fan. It can also be extremely dangerous to persons in close proximity to the inlet, as the forces involved can overcome the strength of most individuals. Inlets should be screened to prevent entry and discharge of solid objects.

RECEIVING AND INSPECTION

The unit heater and accessories should be inspected on receipt for any shipping damage. Turn the propeller by hand to see that it rotates freely and does not bind. Check adjustable front louvers for free operation. Optional thermostat ships in the carton with the unit heater.

F.O.B. factory shipping terms require that the receiver be responsible for inspecting the equipment upon arrival. Note damage or shortages on the Bill of Lading and file any claims for damage or loss in transit. **nyb** will assist the customer as much as possible; however, claims must be originated at the point of delivery.

HANDLING AND STORAGE

Unit Heaters should be lifted by the panel mounting flanges only. Never lift a unit heater by the propeller, louvers, wire guard, motor bracket or any part not designed for lifting.

Whenever possible, unit heaters and accessories should be stored in a clean, dry location to prevent rust and corrosion of steel components. If outdoor storage is necessary, protection should be provided. The unit should be covered to prevent the accumulation of dirt and moisture. Cover motors with waterproof material.

INSTALLATION

The key to successful unit heater operation is piping. Illustration 1, page 3, shows the piping and controls required for typical unit heater installations. A drip line and trap should parallel the coils unless the coils are located close to a drip line on the main. Swing-type expansion connections should be used from the main to the branch and from the branch to the coils. By placing unions and shutoff valves on both sides of the coils and traps, an individual coil or trap may be removed without shutting down the entire system.

Condensate (return) piping should include a stub pipe or "dirt pocket", at least 8" long, directly below the coil. This is simply a settling spot for dirt and scale, and should be periodically emptied. The strainer, with the dirt pocket, keeps extraneous matter from the mechanism of the trap. Boilers, pipes and coils are apt to contain small particles of scale, weld spatter or thread turnings. The strainer in the condensate line is intended primarily to pick up this sort of material, dirt, pipe dope, etc., that find their way into the system during installation. The element should be removed from the condensate strainer assembly after the system is firmly in operation. It should not be replaced. The strainer on the supply side of the coil is adequate for the entire system. A steam trap must be installed below the coil.

On high pressure systems, over 20 psig, it is desirable to provide more air venting capacity than is incorporated in the trap. This may be done in one of two ways: (1) With an "air eliminator", which is a thermostatic vent and should be used only if it can be guaranteed to operate at the elevated temperature corresponding to the steam temperature, and (2) By means of a petcock left continuously open. The lost steam is far less costly than the damage done to coils by inadequate venting. Improper venting of high pressure systems is a major cause of coil problems. The high temperature gases entrained in the steam, if not eliminated, may combine with the condensate to form acids.

START-UP

Safe operation and maintenance includes the selection and use of appropriate safety accessories for the specific installation. This is the responsibility of the system designer and requires consideration of equipment location and accessibility as well as adjacent components. All safety accessories must be installed properly prior to start-up.

Safe operating speed is a function of system temperature and propeller design. Do not under any circumstances exceed the fan speed published in the **nyb** bulletin, which is available from your **nyb** field sales representative.

Procedure

1. Inspect the installation prior to starting the fan. Check for any loose items or debris that could be drawn into the fan or dislodged by the fan discharge. Turn the propeller by hand to check for binding.
2. Check the tightness of all setscrews, nuts and bolts and mounting hardware.
3. Check all piping and control valves.
4. Install all safety guards. Verify that the supply voltage is correct and wire the motor. "Bump" the starter to check for proper propeller rotation.
5. Setscrews and mounting hardware should be rechecked after a few minutes, eight hours and two weeks of operation.

MAINTENANCE

nyb unit heaters are manufactured to high standards with quality materials and components. Proper maintenance will ensure a long and trouble-free service life.

Do not attempt any maintenance unless the electrical supply has been completely disconnected and locked. The propeller can windmill despite removal of all electrical power. The rotating assembly should be blocked securely before attempting maintenance of any kind.

Properly installed, unit heaters require very little maintenance. The unit should be inspected periodically to prevent the build-up of foreign material on the STEELFin coil and fan. The severity of the environment will determine the frequency of inspection. An accumulation of dirt on the coil's fins reduces the heating capacity of the unit. The easiest and most economical method of cleaning the coil is the use of a high pressure air hose. Any build-up of foreign material on the fan should also be removed since it can cause fan unbalance which creates vibration.

All motors used on Horizontal Unit Heaters are permanently lubricated and do not require grease. A final check on the

tightness of all setscrews, nuts, and bolts completes the maintenance routine.

REPLACEMENT PARTS

It is recommended that only factory-supplied replacement parts be used. **nyb** parts are built to be fully compatible with the original equipment, using specific alloys and tolerances. These parts carry a standard **nyb** warranty.

When ordering replacement parts, specify the part name, **nyb** shop control number and unit size. Most of this information is on the nameplate attached to the unit.

When Ordering Replacement Parts

Example: Part: Propeller
Shop/control number: B-10106-100
Unit/Size: A-270

For assistance in selecting replacement parts, contact your local **nyb** representative or visit: <http://www.nyb.com>.

LIMITED PRODUCT WARRANTY

All products are warranted by **nyb** to be free from defects in materials and workmanship for a period of one (1) year after shipment from its plant, provided buyer demonstrates to satisfaction of **nyb** that the product was properly installed and maintained in accordance with **nyb's** instructions and recommendations and that it was used under normal operating conditions.

This warranty is limited to the replacing and/or repairing by **nyb** of any part or parts which have been returned to **nyb** with **nyb's** written authorization and which in **nyb's** opinion are defective. Parts not manufactured by **nyb** but installed by **nyb** in equipment sold to the buyer shall carry the original manufacturer's warranty only. All transportation charges and any and all sales and use taxes, duties, imports or excises for such part or parts shall be paid for by the buyer. **nyb** shall have the sole right to determine whether defective parts shall be repaired or replaced.

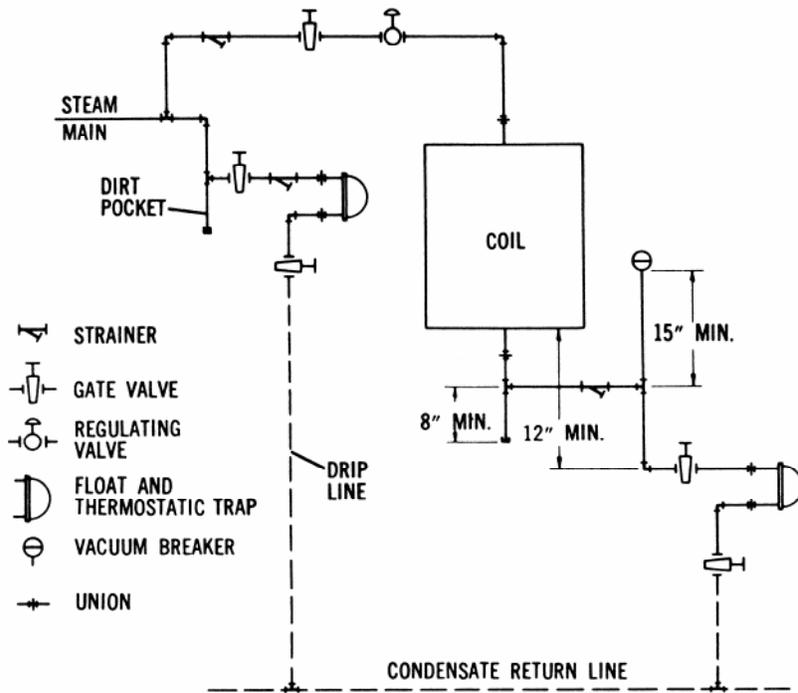
This warranty does not cover any customer labor charges for replacement of parts, adjustments or repairs, or any other work unless such charges shall be assumed or authorized in advance, in writing, by **nyb**.

This warranty does not cover any product which, in the judgment of **nyb**, has been subject to misuse or neglect, or which has been repaired or altered outside **nyb's** plant in any way which may have impaired its safety, operation or efficiency, or any product which has been subject to accident.

This warranty shall be null and void if any part not manufactured or supplied by **nyb** for use in any of its products shall have been substituted and used in place of a part manufactured or supplied by **nyb** for such use.

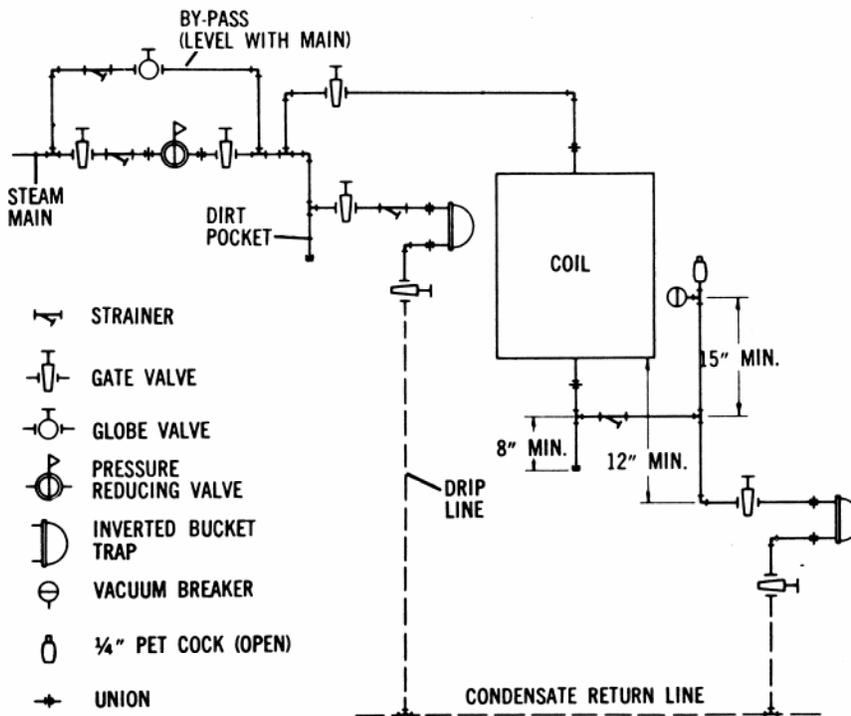
There are no warranties, other than those appearing on the acknowledgement form **INCLUDING NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE**, given in connection with the sale of the goods sold hereunder. The buyer agrees that his sole and exclusive remedy, and the limit of **nyb's** liability for loss from any cause whatsoever, shall be the purchase price of the goods sold hereunder for which a claim is made.

ILLUSTRATION 1 Piping for Typical Unit Heater Installation



Low Pressure 0 - 20 lbs.

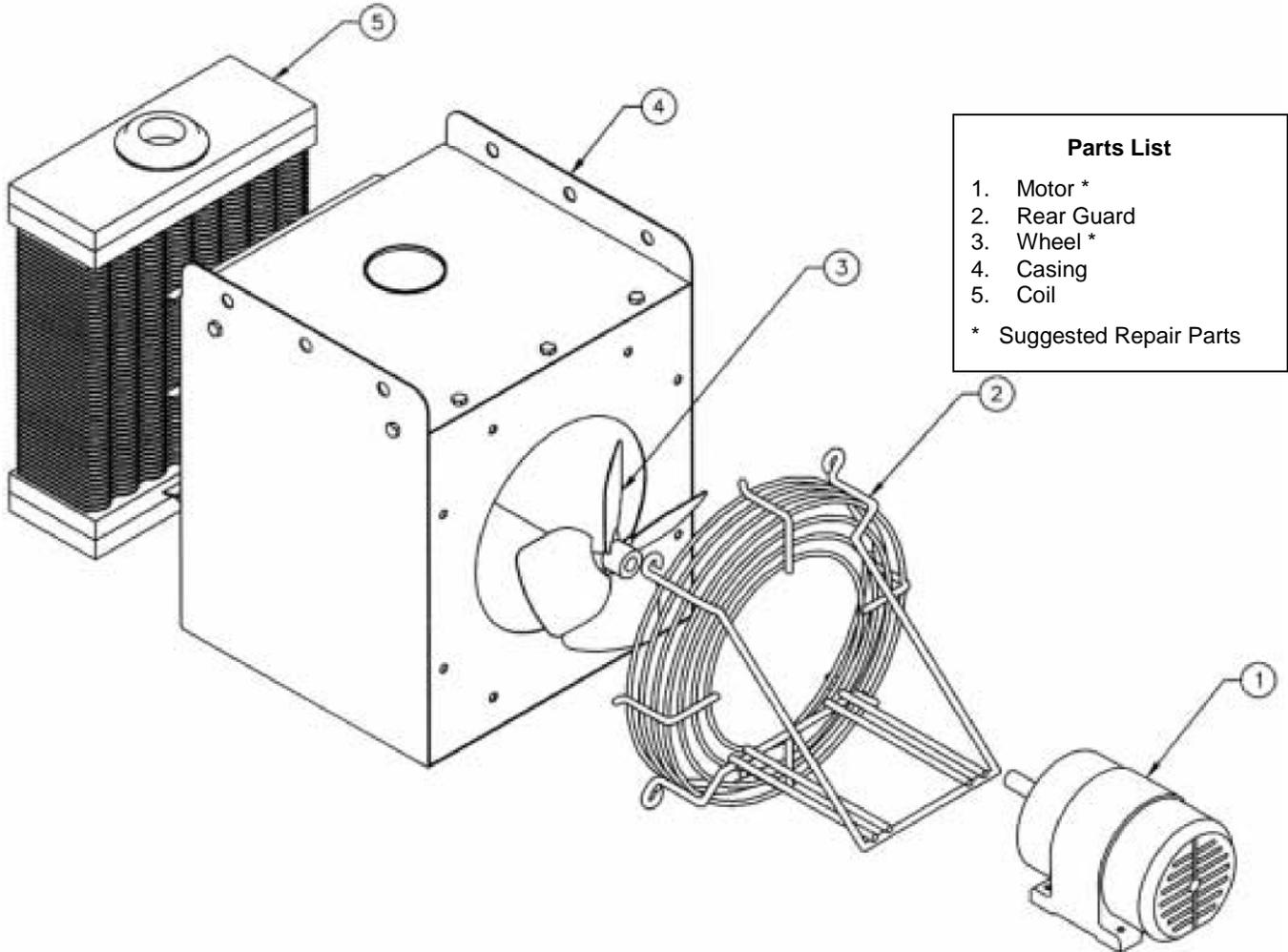
Typical connections - multiple coil arrangements require each coil to be connected as shown.



High Pressure 20 or more lbs.

Typical connections - multiple coil arrangements require each coil to be connected as shown, except for the pressure reducing valve and by-pass line which is used only once ahead of a system.

HORIZONTAL UNIT HEATERS



Parts List

1. Motor *
 2. Rear Guard
 3. Wheel *
 4. Casing
 5. Coil
- * Suggested Repair Parts

When Ordering Replacement Parts

Example: Part: Propeller

Shop/control number: B-10106-100

Unit/Size: A-270

For assistance in selecting replacement parts,
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