

Installation, Troubleshooting, and Exploded Views



IMPORTANT: Read and save this guide for future reference. This guide to be left with equipment owner.

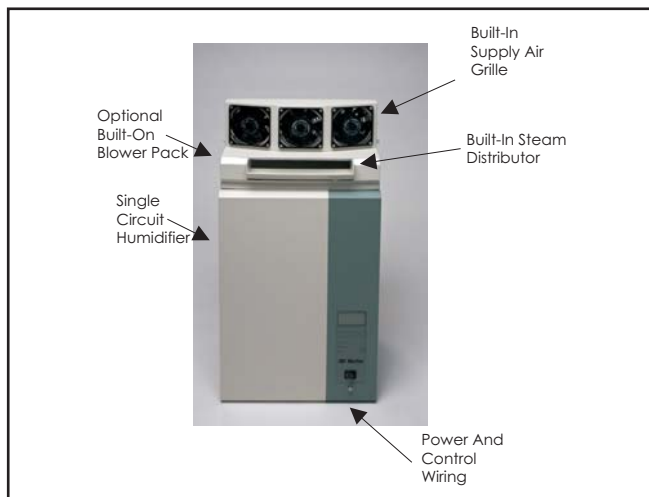
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BLOWER PACK OPERATION

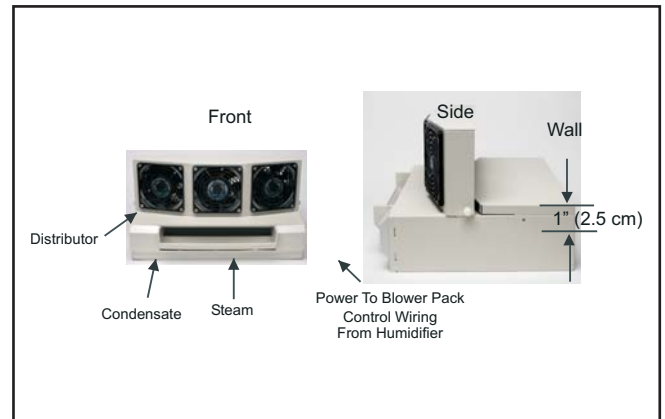
1. Blower packs are an optional accessory used to directly distribute steam to localized areas or in structures that do not have a built-on air distribution system.
2. Blower packs are available for remote mounting or built-on and are field piped to the humidifier. (Built on Blower Packs are available with NHTC & NHPC humidifiers only.)
3. All blower packs consist of a steel cabinet containing; blower/motor powered by a 115 Vac single phase supply (208, 277, 440-480 and 550-600 Vac version available), plastic steam distribution, adjustable air supply. Control thermostat, mounted on the steam distributor, starts the fan when steam is generated.
4. Refer to Overhead and Frontal Clearance table for blower pack requirements. Minimum clearance for the sides of the unit is 4 feet.
5. Steam distributors on blower packs have hot surfaces that could result in burns if touched. If space allows, we recommend mounting at least 8 feet above the floor (see Figure #2).
6. Do not use blower packs as ducted blowers. The air volume from a blower pack is not sufficient to absorb the steam generated in the confines of a duct system.

Figure #1
NHTC/NHPC Series Humidifier with Built-on Blower Packs



7. It is recommended that balancing valves be used on the steam supply lines to multiple blower packs for equal loading.

Figure #2
Blower Pack



REMOTE MOUNTED BLOWER PACKS - WALL MOUNTING

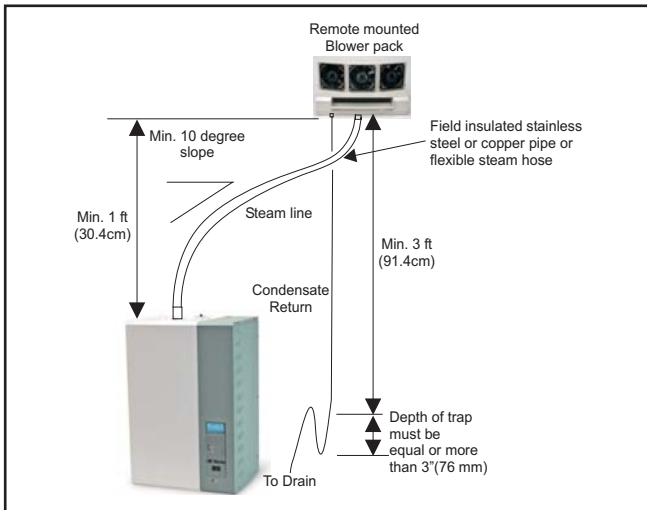
1. Steam and condensate line connections are on the bottom of the blower pack. The condensate connection is 3/8" and the steam lines are 7/8" or 1 1/2" depending. The knock out for the appropriate steam connection must be removed prior to mounting on the wall. To remove knock out place unit on its side, on a soft surface, and with a hammer and a piece of pipe or screwdriver knock out center of the steam inlet connection.
2. To wall mount the Remote Blower Pack use 2 #12 x 3" long wood screws, supplied by others. These screws must be fastened securely on a 2 x 4 wood stud or equivalent support. If any spacer material is used between the bracket and the structural material such as drywall, increase the fastener accordingly. In addition, install a single field supplied fastener in the center hole in the back of the unit to prevent the unit from being bumped off the support screws.

REMOTE MOUNTED BLOWER PACKS - STEAM LINE

* PRIOR TO CONNECTING THE STEAM HOSE ENSURE KNOCK OUT HAS BEEN REMOVED.

1. Field-supplied hard copper tubing or stainless steel tubing with 1/2" thick (min.) insulation is recommended for steam supply, with NORTEC supplied steam hose coupling used to make connection to the humidifiers. See Figure #3.
2. Do not install electric zone valves on steam lines. Improper adjustment will over-pressurize the humidifier.

Figure #3
Steam Line Installation



3. NORTEC steam supply hose or field-supplied tubing should be sloped downwards from the blower pack to the humidifier. Slope should be at least 2" in 12" (10 degree slope) to promote condensate run back. See Figure #4. If upward slope is used from the blower pack to the humidifier, the slope should be at least 1/2" in 12" to promote condensate removal at the blower pack. If this slope is not possible, condensate must be removed before the blower pack. See Figure #5.
4. Minimize the length of steam line and keep it as straight as possible, minimizing bends. Avoid using 90° elbows. Wherever possible, use long radius turns (using tube bender on oversized copper or pairs of 45° elbows). This will reduce the condensate generated by heat loss. This will also reduce the back

pressure and avoid the need to install an extended water trap.

5. Ensure that the steam hose does not kink or sag. The steam hose becomes more flexible when hot. The hose should be supported to prevent water traps. Only use steam hose for connection or steam line runs of 5 feet or less. See Figure #4.
6. To ensure odor-free steam, always use NORTEC steam hose. Check steam hose and hose couplings periodically for cracks, breaks, kinks. Replace as required. DO NOT substitute hose. NORTEC is not responsible for health effects or damage from substituted hose.
7. For GS, SE, and NH Series using large size remote mounted blower packs (>50 lbs/hr) use 1 5/8" O.D. (Nominal 1 1/2") copper tubing. For steam runs longer than 20 ft, use insulated nominal 2" copper to ensure draining of condensate.

Figure #4
Steam Hose Installation

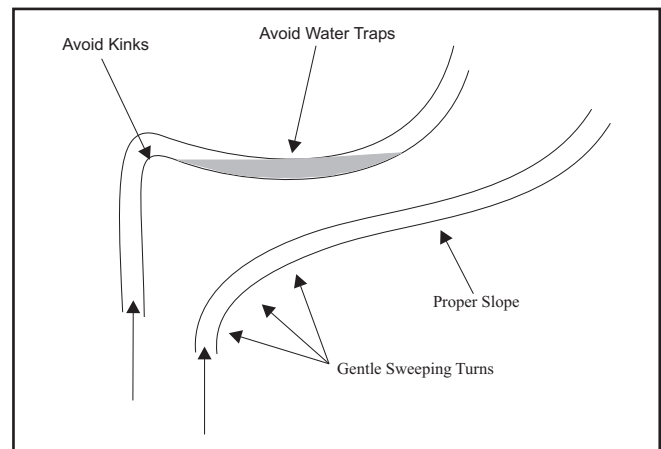
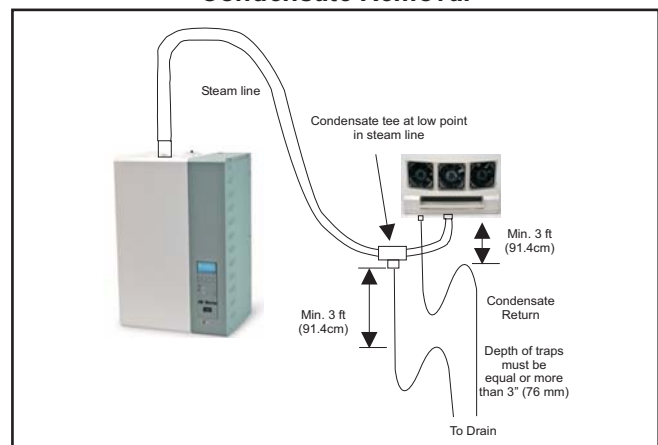


Figure #5
Condensate Removal

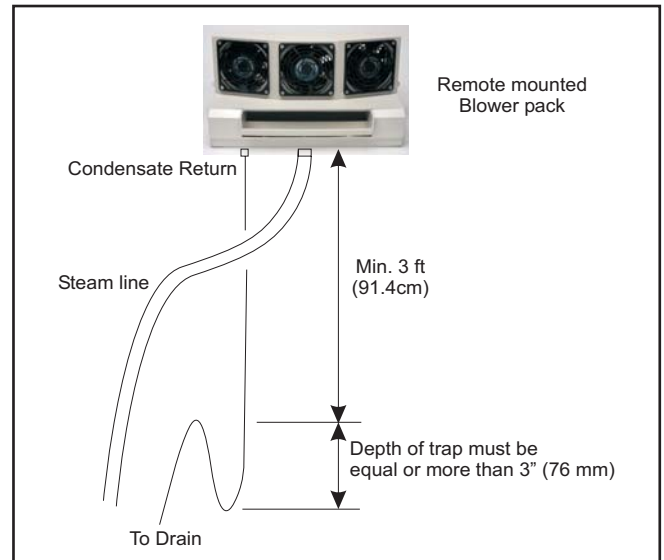


8. For electric humidifiers (NHTC & NHPC only) using a small size blower pack (<30 lbs/hr), steam lines require 7/8" O.D. (Nominal 3/4") copper tubing. For steam runs longer than 20 ft, use insulated nominal 1" copper to ensure draining of condensate.
9. When using the GS, SE, NHDI/NHSC Humidifiers and RO / DI water supply, all steam lines should be in stainless steel.
10. Do not use plastic pipe for steam distribution or hose other than NORTEC supplied. Substitution will void warranty.
11. If steam line is routed below the blower pack, or if the blower pack is lower than the humidifier, a condensate trap "tee" will be required to remove water at this low point. Run the condensate from the trap to the nearest drain lower than the blower pack. See Figure #5.
12. Do not run the steam line more than 1 foot per lb/hr output. Example, 10 lbs/hr should not have a steam run longer than 10 feet. If long runs are unavoidable, the humidifier should be sized larger to compensate for condensate losses and insulated stainless steel or copper should definitely be used.

CONDENSATE RETURN LINES

1. NORTEC blower packs have built-in connections for draining off condensate. These condensate lines must be connected to the nearest floor drain, back to the unit (NHTC & NHPC, NHSC/DI only) or a condensate pump when using short condensate runs. (Available from unit).
2. Always incorporate a trap in routing of condensate return lines. Condensate that accumulates in trap will prevent possibility of steam escaping. Depth of the trap must be equal or more than 3" (76 mm) See Figure #6.
3. Ensure the trap is 3' minimum under the blower pack and as close to the floor drain as possible.

Figure #6
Condensate Return Line Trap



PRIMARY VOLTAGE CONNECTION

1. All blower packs for SE and GS unit are wired by others to be powered by an independent circuit.
2. A control thermostat, mounted on the steam distributor, cc starts the fan when steam is generated.
3. NH Series remote mounted blower packs wired to a humidifier or independent circuit require field wiring between two primary voltage terminal blocks and two low voltage control (class 1 circuit wiring required) terminal strips; one of each located in humidifier and remote blower pack cabinet. To properly access the primary block on the humidifier, it may be necessary to remove the top. To connect the primary and control (class 1 circuit wiring required) wiring, the wiring is fed through the grommet provided in the bottom of the blower pack.
4. Field wiring of remote blower packs must conform to national and local electrical codes. Refer to wiring diagram supplied at the back of this manual (See page 9).
5. For NH Series use approved wire for power connection from two pole terminal block of remote blower pack to additional two pole terminal block inside electrical section of humidifier.

6. For NH Series use approved wire to connect from ground clamp of remote mounted blower pack to ground clamp provided in the electrical section of humidifier.

PRIMARY VOLTAGE SUPPLY WIRING FROM HUMIDIFIER(S) TO BLOWER PACK

1. All blower packs are wired by factory if built-on, and to be powered from the humidifier.
2. All built-on blower packs are factory wired to the humidifier. Primary voltage wiring to the humidifier, as described in electrical primary voltage supply wiring, is all that is required to power the humidifier and blower packs.

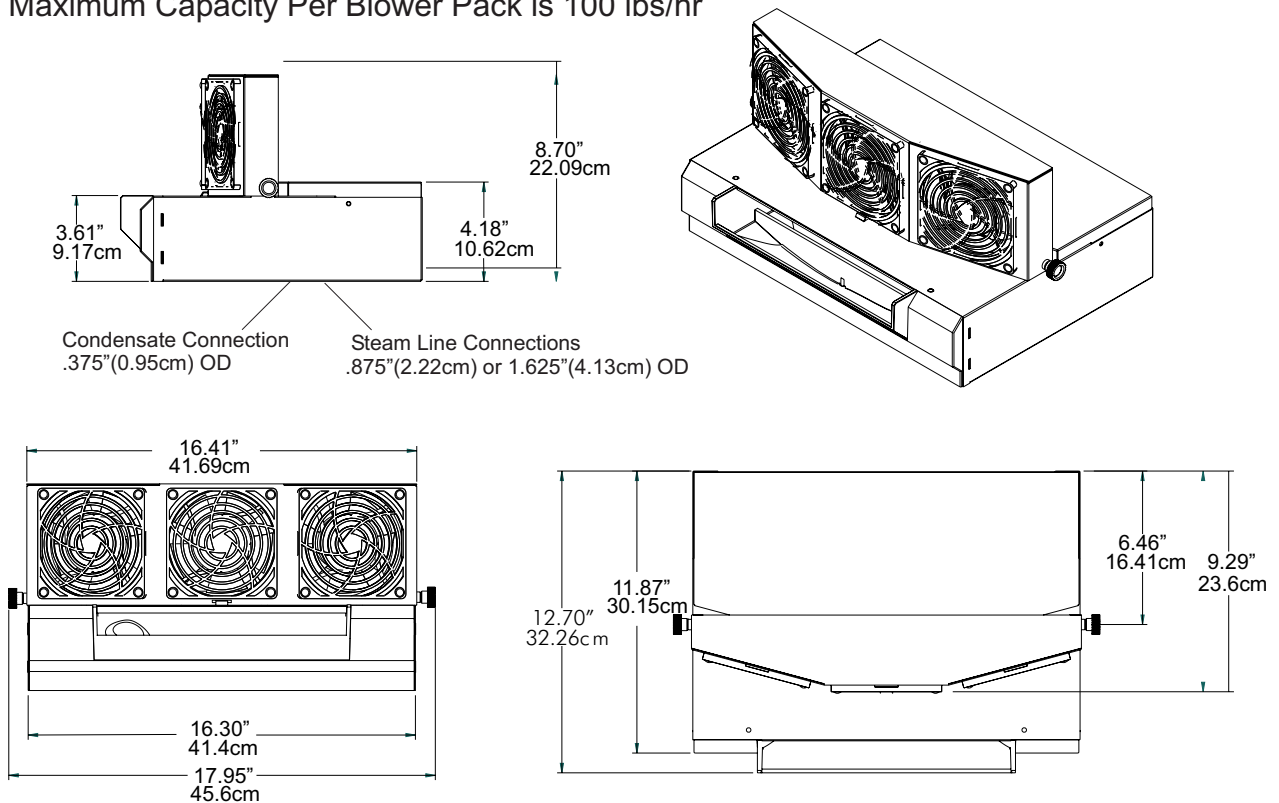
Overhead And Frontal Clearances For Blower Packs

Model	Min. No. Of Blower Packs	Min. Overhead Clearance Inches (cm)	Min. Front Clearance Inches (cm)
005	1	18 (45)	30 (76)
010	1	18 (45)	30 (76)
020	1	18 (45)	36 (91)
030	1	18 (45)	72 (183)
050	1	36 (91)	84 (213)
075	1* (2 Recommended)	42 (106)	144 (366)
100	1* (2 Recommended)	48 (122)	156 (396)
150	2* (4 Recommended)	42 (106)	144 (366)
200	2* (4 Recommended)	48 (122)	156 (396)

* Remote mounted only. Four remote mounted blower packs are recommended on the 200 model.

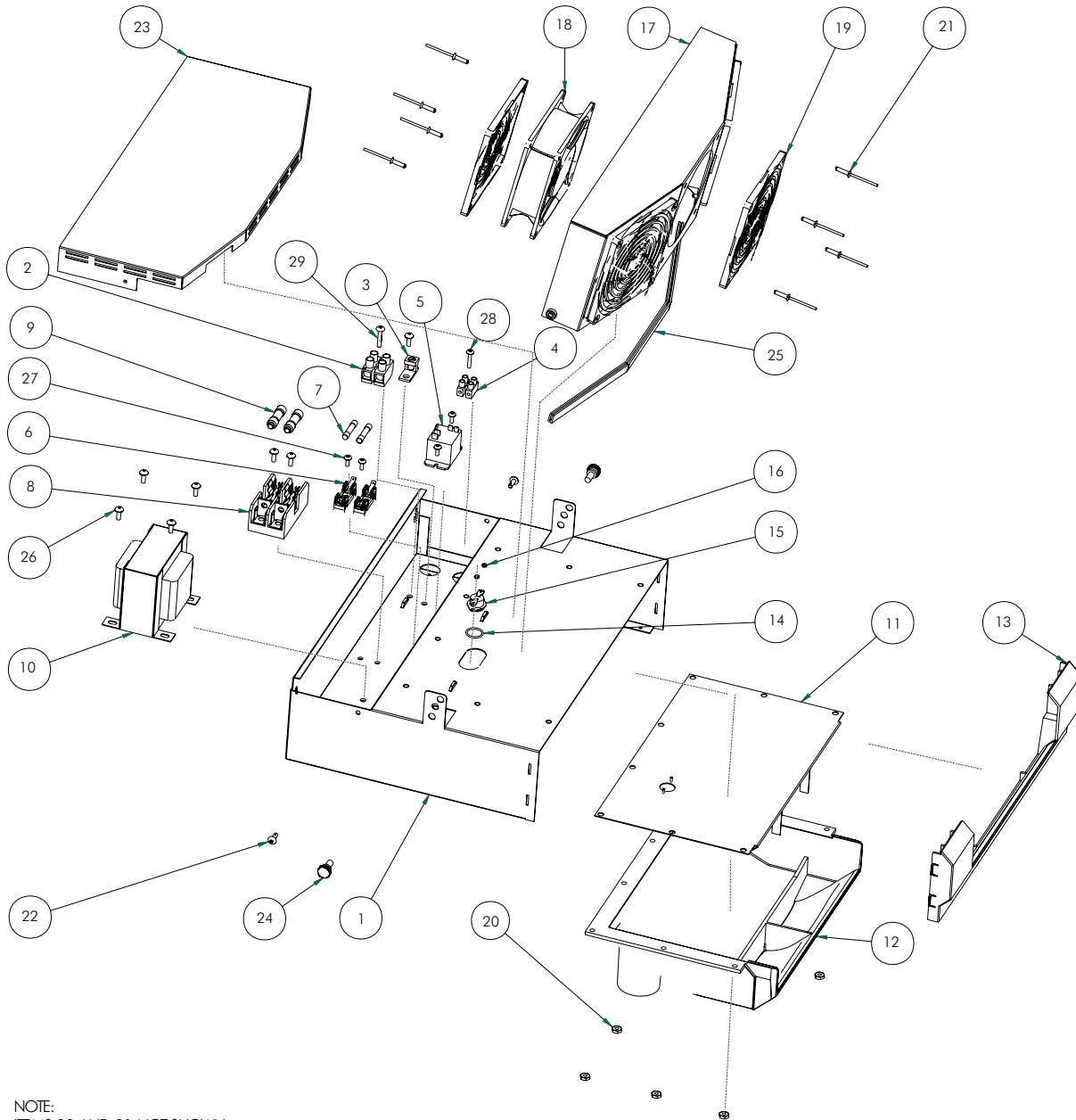
Nominal conditions 72° F, 35% RH.

Blower Pack Weight 120V model 12.5 lbs (5.68 kg). All other models 18 lbs (8.18 kg)
Maximum Capacity Per Blower Pack is 100 lbs/hr



Note: Add 8.70" (22.2cm) to the over all unit height for BOBP for NHTC/NHPC Only

EXPLODED VIEW OF THE BLOWER PACK



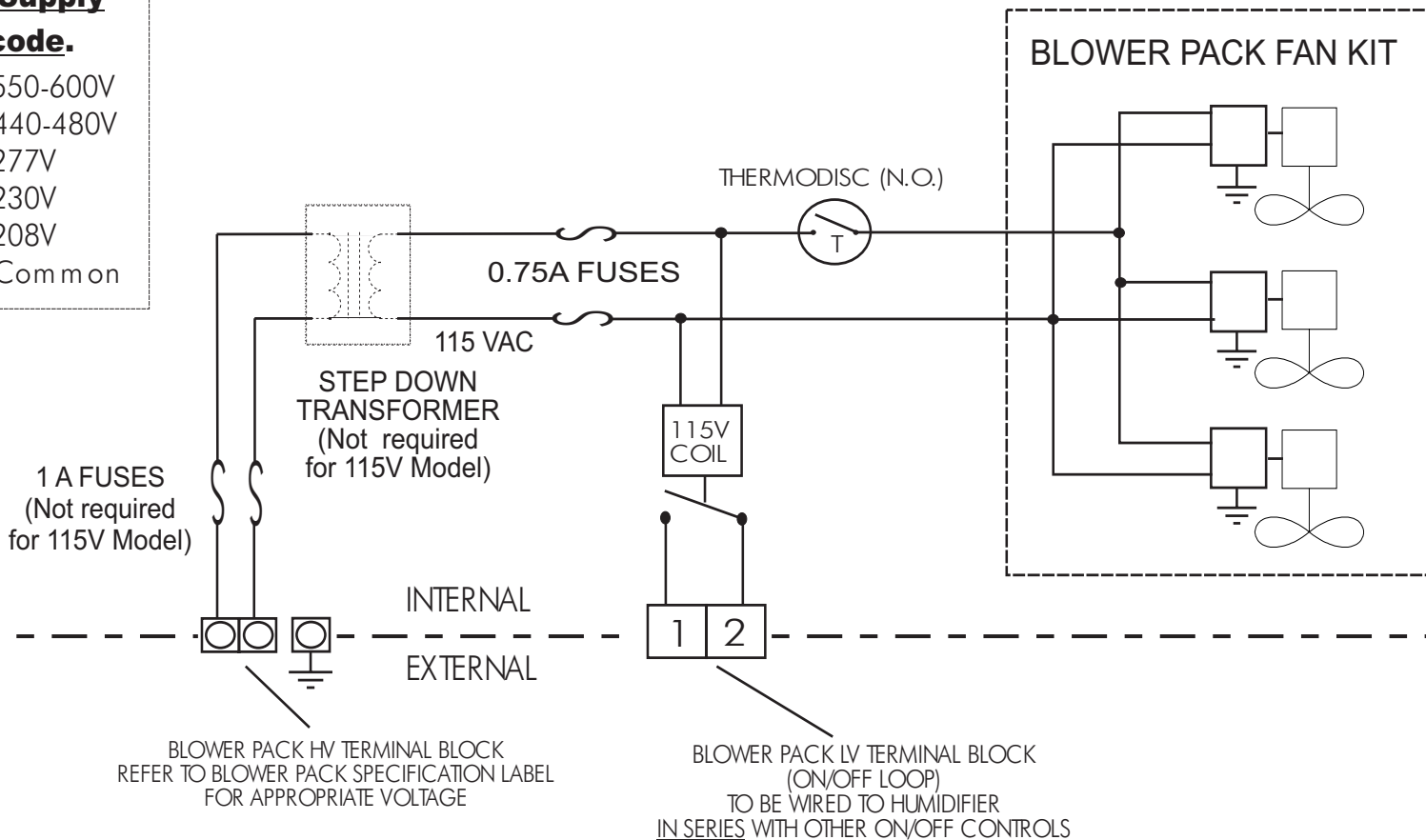
NOTE:
 ITEMS 30 AND 31 NOT SHOWN.
 ITEM 30 CAN REPLACE ITEM 18 AND ITEM 31 CAN REPLACE
 ITEM 10 IN DIFFERENT WORKING CONFIGURATIONS.

OPTIONAL BLOWER PACK REPLACEMENT PARTS FOR NH, SE, GS models			
Item	Part Number	Description	Qty
1	2522174	Cabinet, Shell, Blower Pack	1
2	1473002	Terminal Block 2 Pole - WECO P/N 327-FU	1
3	1323020	Ground Clamp	1
4	1323082	Terminal Strip 2 Pole	1
5	2522070	Relay 30A 115V SPDT	1
6	1453055	Fuse Holder for MDA, S.O Term	2
7	2524202	Fuse 0.75amp 250V 0.25x1.25 slow blow	2
8	2524083	Fuseblock 2 pole for 2524082	1
9	2524082	Fuse 1 amp 600V, HCTR Slow Blow (Edison)	2
10	2522064	TX 100VA 115-208 230 277	1
11	2522177	Plate SS, Distributor, Blowerpack	1
12	2522179	Distributor plastic Blower Pack	1
13	2522178	Distributor Faceplate Blower Pack	1
14	1475005	Thermostat O-Ring	1
15	1073005	Thermostat Control (Non-Reset)	1
16	2524056	Hex Nut #2-56,Steel Zn plated	2
17	2522176	Cabinet, Fan Housing, Blowerpack	1
18	2522065	Fan Box 115V 110CFM 120x120x38mm	3
19	1504281	Fan cover 4in	6
20	1708808	Hex Nut #10-32,SS	8
21	2524080	Screw Selftapping, lin, #10-32, Philips Flat Head	24
22	1325032	Screw 8-32 x 0.5 TA	2
23	2522175	Cabinet, Cover, Blower Pack	1
24	2522200	Thumb screw .250-20 x .5" lg, nylon	2
25	2524057	Fan Box 115V 130CFM 120x120x38mm	1
26	2524204	TX 100VA 115-380V, 50-60 Hz	1
27	1328650 (1)	RW25 Rubber Extrusion	1

Blower Pack

**Transformer
Primary Supply
Color code.**

Orange	550-600V
Yellow	440-480V
Brown	277V
Red	230V
Black	208V
White	Common



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WIRING DIAGRAM - BLOWER PACK

INTERNAL WIRING/EXTERNAL CONNECTIONS

Wiring Diagram 2524117 Rev.B March 26, 2007

LIMITED WARRANTY

AXAIR NORTEC INCORPORATED and/or AXAIR NORTEC LIMITED (hereinafter collectively referred to as THE COMPANY), warrant for a period of two years from date of shipment, that THE COMPANY's manufactured and assembled products, not otherwise expressly warranted, are free from defects in material and workmanship. No warranty is made against corrosion, deterioration, or suitability of substituted materials used as a result of compliance with government regulations.

THE COMPANY's obligations and liabilities under this warranty are limited to furnishing replacement parts to the customer, F.O.B. THE COMPANY's factory, providing the defective part(s) is returned freight prepaid by the customer. Parts used for repairs are warranted for the balance of the term of the warranty on the original humidifier or 90 days, whichever is longer.

The warranties set forth herein are in lieu of all other warranties expressed or implied by law. No liability whatsoever shall be attached to THE COMPANY until said products have been paid for in full and then said liability shall be limited to the original purchase price for the product. Any further warranty must be in writing, signed by an officer of THE COMPANY.

THE COMPANY's limited warranty on accessories, not of AXAIR NORTEC's manufacture, such as controls, humidistats, pumps, etc. is limited to the warranty of the original equipment manufacturer from date of original shipment of humidifier.

THE COMPANY makes no warranty and assumes no liability unless the equipment is installed in strict accordance with a copy of the catalog and INSTALLATION manual in effect at the date of purchase and by a contractor approved by THE COMPANY to install such equipment.

THE COMPANY makes no warranty and assumes no liability whatsoever for consequential damage or damage resulting directly from misapplication, incorrect sizing or lack of proper maintenance of the equipment.

THE COMPANY retains the right to change the design, specification and performance criteria of its products without notice or obligation.

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