DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING PERMIT

This is to certify that WEST PORTLAND CONGREGATION OF JEHOVAH'S WITNESSES

Located At 355 CANCO RD

CBL: 161- B-043-001

Job ID: 2012-02-3343-ALTCOMM

has permission to Replace Air Conditioning with American Standard 5 ton split HVAC system w/Honeywell ventilation provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.	A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

MB 6/29/12

Fire Prevention Officer **Code Enforcement Officer / Plan Reviewer**

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application
389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No:	Date Applied:	CBL:	
2012-02-3343-ALTCOMM **2012-44941 HVAC**	**6/13/2012**	**161- B-043-001**	
Location of Construction: **355 CANCO RD**	Owner Name: **WEST PORTLAND CONGREGATION OF JEHOVAH'S WITNESSES**	Owner Address: **355 CANCO RD** **PORTLAND, ME 04103**	Phone:
Business Name:	Contractor Name: **NATHAN E. PERKINS**	Contractor Address:	Phone: **625-3552**
Lessee/Buyer's Name:	Phone:	Permit Type: **HVAC**	Zone: **R-3**
Past Use: **Place of Worship**	Proposed Use: **Same: Place of Worship – to install American Standard cooling system**	Cost of Work: **$30,000.00** Fire Dept: ___ Approved ___ Denied ___ N/A Signature: Capt. Finn	CEO District: Inspection: Use Group: A-3 Type: HVAC Signature: JMB 6/29/12
Proposed Project Description: **HVAC**		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Lannie			

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building Permits do not include plumbing, septic or electrial work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
___ Shoreland	___ Variance	___ Not in Dist or Landmark
___ Wetlands	___ Miscellaneous	___ Does not Require Review
___ Flood Zone	___ Conditional Use	___ Requires Review
___ Subdivision	___ Interpretation	___ Approved
___ Site Plan	___ Approved	___ Approved w/Conditions
___ Maj ___ Min ___ MM	___ Denied	___ Denied
Date: OK 6/13/12	Date:	Date:

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the appication is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT ADDRESS DATE PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

Electrical and final inspection

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.

Job ID: 2012-02-3343-ALTCOMM **Located At:** 355 CANCO RD **CBL:** 161- B-043-001

Conditions of Approval:

Fire

1. Installation shall comply with City Code Chapter 10.
2. Fuel-fired boilers shall be protected in accordance with NFPA 101, *Life Safety Code*.
3. Installation shall comply with NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*;
4. NFPA 31, *Standard for the Installation of Oil-Burning Equipment*;
5. NFPA 54, *National Fuel Gas Code*;
6. NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*;
7. NFPA 91, *Standard for Exhaust Systems for Air Conveying Vapors, Gases, Mists, and Noncombustible Particulate Solids*;
8. NFPA 70, *National Electrical Code*; and the manufacturer's published instructions.

Building

1. Application approval based upon information provided by the applicant or design professional. Any deviation from approved plans requires separate review and approval prior to work.
2. Equipment shall be installed in compliance with the manufacturer's specifications and the UL listing.
3. The installation must comply with the State of Maine Gas Regulations.
4. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.

FILL IN AND SIGN WITH INK

APPLICATION FOR PERMIT
HEATING OR POWER EQUIPMENT

RS

2012-4-994/SP
Child

To the INSPECTOR OF BUILDINGS, PORTLAND, ME.

The undersigned hereby applies for a permit to install the following heating, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

161-B-043-001

Location / CBL 355 Canco Rd Use of Building Place of Worship Date 6-13-12

Name and address of owner of appliance West Portland Congregation of Jehovah's Witnesses
355 Canco Rd Portland, Me

Installer's name and address NATHAN E Perkins

Telephone 207-625-3552

Location of appliance:
- ☐ Basement
- ☒ Floor
- ☒ Attic
- ☐ Roof

Type of Fuel:
- ☒ Gas
- ☐ Oil
- ☐ Solid

Appliance Name: First Co., American Standard

U.L. Approved ☒ Yes ☐ No

Will appliance be installed in accordance with the manufacture's installation instructions? ☒ Yes ☐ No

IF NO Explain: _____

The Type of License of Installer:
- ☐ Master Plumber # _____
- ☐ Solid Fuel # _____
- ☐ Oil # _____
- ☒ Gas # PNT1283
- ☒ ~~Other~~ _____

Type of Chimney: N/A
- ☐ Masonry Lined
  Factory built _____
- ☐ Metal
  Factory Built U.L. Listing # _____
- ☐ Direct Vent
  Type _____ UL# _____

Type of Fuel Tank N/A
- ☐ Oil
- ☐ Gas

RECEIVED
JUN 13 2012
Dept. of Building Inspections
City of Portland Maine

Size of Tank _____

Number of Tanks _____

Distance from Tank to Center of Flame N/A feet.

Cost of Work: $ 30,000

Permit Fee: $ 320

Approved

Fire: _____

Ele.: _____

Bldg.: _____

Approved with Conditions

☐ See attached letter or requirement

_____ Inspector's Signature

_____ Date Approved

Signature of Installer _____

White - Inspection Yellow - File Pink - Applicant's Gold - Assessor's Copy

American Standard
HEATING & AIR CONDITIONING

4TTB3060D-SPC-106.00

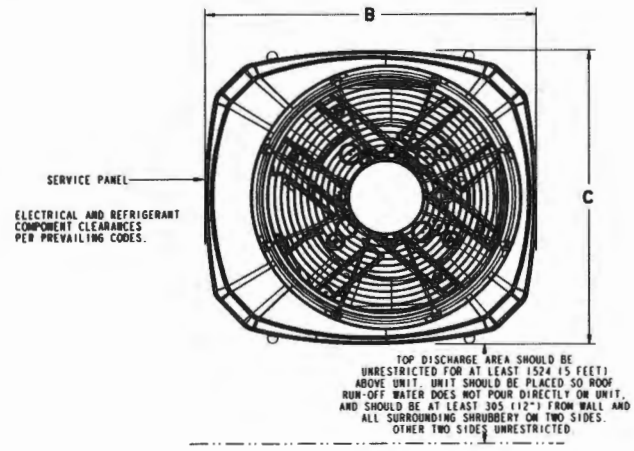
TAG: _____

SPECIFICATION

5 Ton Split System Cooling — 1 Phase

4TTB3060D

NOTE: All dimensions are in mm/inches.



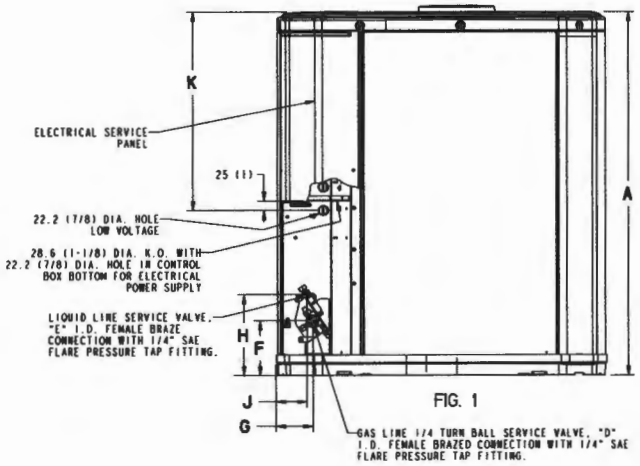


FIG. 1

From Dwg. D153074

Product Specifications

OUTDOOR UNIT ①②	4TTB3060D1000B
POWER CONNS. — V/PH/HZ ③	200/230/1/60
MIN. BRCH. CIR. AMPACITY	35
BR. CIR. PROT. RTG. - MAX. (AMPS)	60
COMPRESSOR	DURATION® Scroll
NO. USED - NO. SPEEDS	1 - 1
VOLTS/PH/HZ	200/230/1/60
R.L. AMPS ⑦ - L.R. AMPS	26.8 - 134
FACTORY INSTALLED	
START COMPONENTS ⑧	NO
INSULATION/SOUND BLANKET	NO
COMPRESSOR HEAT	NO
OUTDOOR FAN	PROPELLER
DIA. (IN.) - NO. USED	27-1/2" - 1
TYPE DRIVE - NO. SPEEDS	DIRECT - 1
CFM @ 0.0 IN. W.G. ④	4342
NO. MOTORS - HP	1 - 1/5
MOTOR SPEED R.P.M.	835
VOLTS/PH/HZ	200/230/1/60
F.L. AMPS	0.93
OUTDOOR COIL — TYPE	SPINE FIN™
ROWS - F.P.I.	1 - 24
FACE AREA (SQ. FT.)	24.93
TUBE SIZE (IN.)	3/8
REFRIGERANT	
LBS. — R-410A (O.D. UNIT) ⑤	8 LBS., 0 OZ.
FACTORY SUPPLIED	YES
LINE SIZE - IN. O.D. GAS ⑥	7/8
LINE SIZE - IN. O.D. LIQ. ⑥	3/8
CHARGING SPECIFICATION	
SUBCOOLING	10°F
DIMENSIONS	H X W X D
CRATED (IN.)	42.4 x 35.1 x 38.7
WEIGHT	
SHIPPING (LBS.)	261
NET (LBS.)	226

① Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.
② Rated in accordance with AHRI standard 270.
③ Calculated in accordance with Natl. Elec. Codes. Use only HACR circuit breakers or fuses.
④ Standard Air — Dry Coil — Outdoor
⑤ This value approximate. For more precise value see unit nameplate.
⑥ Max. linear length 60 ft.; Max. lift - Suction 60 ft.; Max lift - Liquid 60 ft. For greater length consult refrigerant piping software Pub. No. 32-3312-0* (* denotes latest revision).
⑦ This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.
⑧ No means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter.

MODELS	BASE	FIG.	A	B	C	D	E	F	G	H	J	K
4TTB3060D	4	1	943 (37-1/8)	946 (37-1/4)	870 (34-1/4)	7/8	3/8	152 (6)	98 (3-7/8)	219 (8-5/8)	86 (3-3/8)	508 (20)

A-WEIGHTED SOUND POWER LOVEL [dB(A)]									
MODELS	SOUND POWER LEVEL [dB(A)]	A-WEIGHTED FULL OCTOAVE SOUND POWER LEVEL Db - [dB(A)]							
		63	125	250	500	1000	2000	4000	8000
4TTB3060D	80	47.3	55.7	69.0	72.7	75.8	69.4	62.2	53.3

Note: Rated in accordance with AHRI Standard 270-2008

Mechanical Specification Options

General
The 4TTB3 - D model is fully charged from the factory for up to 15 feet of piping. This unit is designed to operate at outdoor ambient temperatures as high as 115°F. Cooling capacities are matched with a wide selection of air handlers and furnace coils that are AHRI certified. The unit is certified to UL 1995. Exterior is designed for outdoor application.

Casing
Unit casing is constructed of heavy gauge, G90 galvanized steel and painted with a weather-resistant powder paint on all louvers, panels, prepaint on all other panels. Corrosion and weather-proof CMBP-G30 DuraTuff™ base.

Refrigerant Controls
Refrigeration system controls include condenser fan, compressor contactor and high pressure switch. High and low pressure controls are inherent to the compressor. A factory installed liquid line drier is standard.

Compressor
The Duration® compressor features internal over temperature and pressure protection and total dipped hermetic motor. Other features include: centrifugal oil pump and low vibration and noise.

Condenser Coil
The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

Low Ambient Cooling
As manufactured, this unit has a cooling capability to 55°F. The addition of an evaporator defrost control permits operation to 40° F. The addition of an evaporator defrost control with TXV permits low ambient cooling to 30° F.

Accessories
Thermostats — Cooling only and heat/cooling (manual and automatic changeover). Sub-base to match thermostat and locking thermostat cover.

Evaporator Defrost Control — See Low Ambient Cooling.

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www.americanstandardair.com

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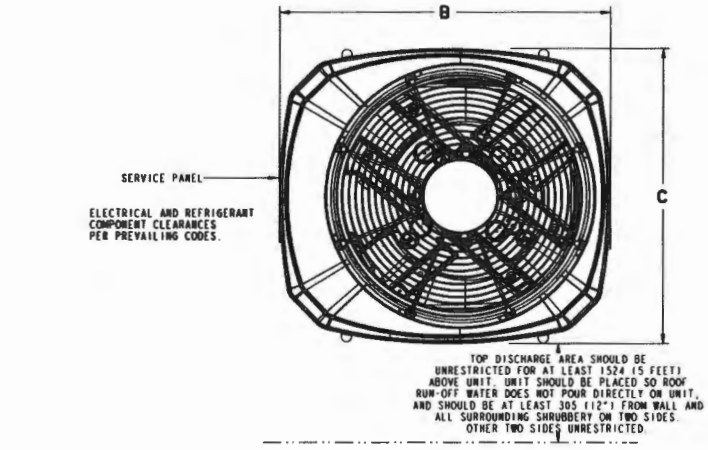
HEATING & AIR CONDITIONING

4TTB3024E-SPC-101.00

TAG: _____

SPECIFICATION

NOTE: All dimensions are in mm/inches.



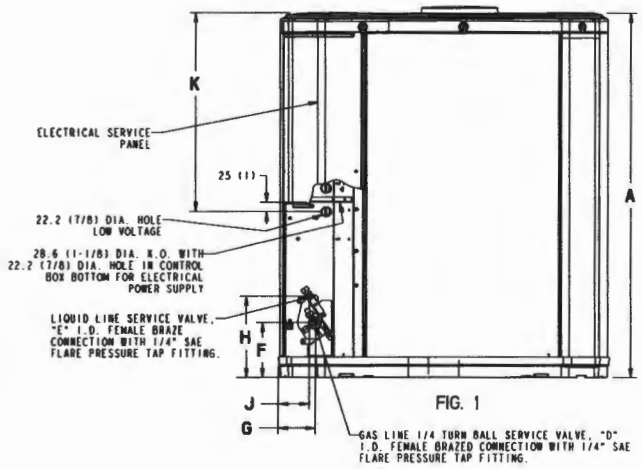


FIG. 1

From Dwg. D153074

2 Ton Split System Cooling — 1 Phase

4TTB3024E

Product Specifications

OUTDOOR UNIT ①②	4TTB3024E1000A
POWER CONNS. — V/PH/HZ ③	208/230/1/60
MIN. BRCH. CIR. AMPACITY	12
BR. CIR. PROT. RTG. - MAX. (AMPS)	20
COMPRESSOR	DURATION®
NO. USED - NO. SPEEDS	1 - 1
VOLTS/PH/HZ	208/230/1/60
R.L. AMPS ⑦ - L.R. AMPS	8.9 - 48.5
FACTORY INSTALLED	
START COMPONENTS ⑧	YES
INSULATION/SOUND BLANKET	YES
COMPRESSOR HEAT	NO
OUTDOOR FAN	PROPELLER
DIA. (IN.) - NO. USED	23 - 1
TYPE DRIVE - NO. SPEEDS	DIRECT - 1
CFM @ 0.0 IN. W.G. ④	2745
NO. MOTORS - HP	1 - 1/8
MOTOR SPEED R.P.M.	825
VOLTS/PH/HZ	200/230/1/60
F.L. AMPS	0.74
OUTDOOR COIL — TYPE	SPINE FIN™
ROWS - F.P.I.	1 - 24
FACE AREA (SQ. FT.)	12.89
TUBE SIZE (IN.)	3/8
REFRIGERANT	
LBS. — R-410A (O.D. UNIT) ⑤	5 LBS., 8 OZ.
FACTORY SUPPLIED	YES
LINE SIZE - IN. O.D. GAS ⑥	5/8
LINE SIZE - IN. O.D. LIQ. ⑥	3/8
CHARGING SPECIFICATION	
SUBCOOLING	10°F
DIMENSIONS	H X W X D
CRATED (IN.)	34 x 30.1 x 33
WEIGHT	
SHIPPING (LBS.)	196
NET (LBS.)	169

① Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.
② Rated in accordance with AHRI standard 270.
③ Calculated in accordance with Natl. Elec. Codes. Use only HACR circuit breakers or fuses.
④ Standard Air — Dry Coil — Outdoor
⑤ This value approximate. For more precise value see unit nameplate.
⑥ Max. linear length 60 ft.; Max. lift - Suction 60 ft.; Max lift - Liquid 60 ft. For greater length consult refrigerant piping software Pub. No. 32-3312-0* (* denotes latest revision).
⑦ This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.
⑧ No means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter.

MODELS	BASE	FIG.	A	B	C	D	E	F	G	H	J	K
4TTB3024E	3	1	730 (28-3/4)	829 (32-5/8)	756 (29-3/4)	5/8	3/8	143 (5-5/8)	92 (3-5/8)	210 (8-1/4)	79 (3-1/8)	508 (20)

A-WEIGHTED SOUND POWER LOVEL [dB(A)]									
MODELS	SOUND POWER LEVEL [dB(A)]	A-WEIGHTED FULL OCTOAVE SOUND POWER LEVEL Db - [dB(A)]							
		63	125	250	500	1000	2000	4000	8000
4TTB3024E	78	47.9	60.5	64.1	71.2	71.2	69.0	58.2	51.5

Note: Rated in accordance with AHRI Standard 270-2008

Mechanical Specification Options

General
The 4TTB3 - D model is fully charged from the factory for up to 15 feet of piping. This unit is designed to operate at outdoor ambient temperatures as high as 115°F. Cooling capacities are matched with a wide selection of air handlers and furnace coils that are AHRI certified. The unit is certified to UL 1995. Exterior is designed for outdoor application.

Casing
Unit casing is constructed of heavy gauge, G90 galvanized steel and painted with a weather-resistant powder paint on all louvers, panels, prepaint on all other panels. Corrosion and weather-proof CMBP-G30 DuraTuff™ base.

Refrigerant Controls
Refrigeration system controls include condenser fan, compressor contactor and high pressure switch. High and low pressure controls are inherent to the compressor. A factory installed liquid line drier is standard.

Compressor
The DURATION® compressor features internal over temperature and pressure protection and total dipped hermetic motor. Other features include: Centrifugal oil pump and low vibration and noise.

Condenser Coil
The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

Low Ambient Cooling
As manufactured, this unit has a cooling capability to 55°F. The addition of an evaporator defrost control permits operation to 40° F. The addition of an evaporator defrost control with TXV permits low ambient cooling to 30° F.

Accessories
Thermostats — Cooling only and heat/cooling (manual and automatic changeover). Sub-base to match thermostat and locking thermostat cover.

Evaporator Defrost Control — See Low Ambient Cooling.

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www.americanstandardair.com

HBXB-HW & MBXB-HW SERIES FAN COIL UNIT

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

****WARNING TO INSTALLER, SERVICE PERSONNEL AND OWNER****

Altering the product or replacing parts with non authorized factory parts voids all warranty or implied warranty and may result in adverse operational performance and/or a possible hazardous safety condition to service personnel and occupants. Company employees and/or contractors are not authorized to waive this warning.

GENERAL

The manufacturer assumes no responsibility for equipment installed in violation of any code requirement.

These instructions give information relative to the installation of these fan coil units only. For other related equipment refer to the proper instructions.

Material in this shipment has been inspected at the factory and released to the transportation agency in good condition. When received, a visual inspection of all cartons should be made immediately. Any evidence of rough handling or apparent damage should be noted on the delivery receipt and the material inspected in the presence of the carrier's representative. If damage is found, a claim should be filed against the carrier immediately.

FAN COIL UNIT

The installer must adhere strictly to all local and national code requirements pertaining to the installation of this equipment.

These units are designed to be installed in either an upflow or horizontal position.

******** WARNING ********

Extreme caution must be taken that no internal damage will result if screws or holes are drilled into the cabinet.

All fan coil units are U.L. listed for installation with zero inches clearance to combustible materials. This includes the unit cabinet, discharge plenum and connecting ducts. Sufficient clearance must be provided at the front of the unit to allow access to electrical controls and removal of the motor / blower assembly for servicing. This clearance distance should be approximately the same depth as the fan coil unit.

******** WARNING ********

Unit must not be operated during building construction due to excessive airborne dust and debris. The unit must not be operated under any circumstances without an air filter in place.

HORIZONTAL APPLICATION

The HBXB-HW & MBXB-HW fan coil units are factory assembled for horizontal left side down application without any modification required. To convert to horizontal right side down, remove horizontal drain pan and A-coil assembly, flip horizontal drain pan over to right side and reinstall horizontal drain pan and A-coil into cabinet. Secure forward edge of horizontal drain pan with angle bracket. The unit should be leveled in such a way that there is slope toward the condensate drain nipple to assure positive drainage.

AIR DISTRIBUTION DUCTS

All duct work must be installed in accordance with National Fire Protection Association Codes 90A and 90B. Ducts should be adequately insulated to prevent condensation during the cooling cycle and to minimize heat loss during the heating cycle. All return air must be filtered to prevent dirt buildup on the coil surface. If there is no ducted return, applicable installation codes may limit the unit to installation only in a single story residence. In many cases it is acceptable to use ducting of the same size as the fan coil connections. However, unique arrangements or long duct runs must be confirmed by a local professional. The manufacturer will not be responsible for misapplied equipment.

ELECTRICAL

All wiring must comply with local and national code requirements. Units are provided with wiring diagrams and nameplate data to provide information required for necessary field wiring.

These units may be provided with a Class 2 transformer for 24-volt control circuits. Should any add-on equipment also have a Class 2 transformer furnished, care must be taken to prevent interconnecting outputs of the two transformers by using a thermostat with isolating contacts.

******** WARNING ********

Any devices such as fan switches or thermostats that have been furnished by the factory for field installation must be wired in strict accordance with the wiring diagram that is supplied with the unit. Failure to do so could result in damage to components and will void all warranties.

INSTALLATION PRECAUTIONS

Installation of this fan coil should only be performed by properly trained personnel to ensure proper installation and the safety of the installer. The following are some precautions to be followed for typical installations.

- Always use proper tools and equipment.
- No wiring or other work should be attempted without first ensuring that the fan coil is completely disconnected from the power source and locked out. Always verify that a good ground connection exists prior to energizing any power sources.
- Always review the nameplate on each unit for proper voltage and control configurations. This information is determined from the components and wiring of the unit and may vary from unit to unit.
- When soldering or brazing to the unit, it is recommended to have a fire extinguisher readily available. When soldering close to valve packages or other components, heat shields or wet rags are required to prevent damage.
- When the fan coil unit is in operation components are rotating at high speeds.

****** WARNING ******

Do not touch any rotating component with any object. Damage to the equipment and personal injury can occur.

- Units must be installed level to ensure proper drainage and operation.
- Check unit prior to operation to ensure that the condensate water will drain toward the drain connection. An overflow drain or an auxiliary drain pan under the fan coil may be required as a back up to a clogged primary drain.
- Be sure that the drain pan is free from foreign material prior to start up.
- Check filter media installation to ensure that it is installed correctly. Use the directional arrows or other information on the filter to determine the proper flow direction.
- Ensure that the air distribution system does not exceed the external static rating of the unit.

COOLING COIL PIPING

The HBXB-HW & MBXB-HW fan coil units are supplied with a direct expansion refrigerant coil. The suction and liquid refrigerant lines must be sized in accordance with the outdoor unit manufacturer's recommendations.

Condensate drain lines must be installed with adequate slope away from the unit to assure positive drainage. Since the drain pan is located on the suction side of the blower, a negative pressure exists at the drain pan and a minimum trap of 1-1/2 inches must be provided in the drain line to assure proper drainage.

NOTE: *If a Condensate Overflow Shut-off Switch, that is designed to be installed in the drain line, is used in place of a secondary drain line, then the cut-off switch should be located in the primary drain line between the fan coil unit and the P-trap.*

HOT WATER COIL PIPING PRECAUTIONS

- Flush all field piping prior to connection to remove all debris.
- Use wet cotton rags to cool valve bodies when soldering.
- Open all valves (midway for hand valves, manually open on motorized valves) prior to soldering.
- When soldering to bronze or brass, heat the piping while in the socket/cup and begin introducing the solder when the flux boils rapidly. Avoid direct flame into the solder joint.
- Heat can only be applied to the cup of the valve body for a minimal time before damage occurs (even with the use of wet rags.
- Avoid rapid quenching of solder joints as this will produce joints of inferior quality.
- Connect all piping per accepted industry standards and observe all regulations governing installation of piping systems. When all connections are complete the system must be pressure tested. Repair any solder joint leaks and gently tighten any leaking valve packing nuts and piping accessories as required. Hydronic systems are not designed to hold pressurized air and should only be tested with water.

****** WARNING ******

When connecting piping to fan coil units, do not bend or reposition the coil header tubing for alignment purposes. This could cause a tubing fracture resulting in a water leak when water pressure is applied to the system.

HOT WATER COIL PIPING

Refer to Flow Control Module installation instructions for proper pump installation, if used.

The hot water coil connections are 3/4 inch nominal (7/8" OD) copper except the 60HBXB-HW or MBXB-HW is 1 inch nominal (1-1/8" OD). The hot water supply to the fan coil should be on the right when facing the fan coil upright and from the front.

****** WARNING ******

An expansion tank may be required if a back-flow preventer is installed in the system.

All piping between the water heater and fan coil unit should be copper and should not exceed 200 feet of total piping. It is recommended that 3/4" nominal (7/8" OD) piping should be used on 18 to 48HBXB-HW or MBXB-HW units and 1" nominal (1-1/8" OD) on 60HBXB-HW or MBXB-HW units to prevent excessive head pressure losses. (Consult the factory for other piping applications.)

It is also recommended that all piping be adequately insulated to prevent freezing when piping is run in an unconditioned space.

Solder Connections - All copper joints in the water lines must be made with **low temperature - non lead solder.**

"T" Connections (at the water heater)-

Water lines to and from the fan coil unit must be taken from the horizontal connection of the "T" fittings in the vertical hot and cold water supply lines at the water heater. This ensures that any air in the system will be purged each time water is used in the dwelling.

Isolation Valves - Two valves are recommended to be installed within

the circulating loop to permit servicing of the system if required and to assist in purging the system.

NOTE: *Hot water coil freeze protection is available for applications where the fan coil is located in ambient air locations (attics, crawl spaces, etc.) or within structures that may be unoccupied during freezing conditions. Consult the factory for additional information.*

OPERATION AND MAINTENANCE

Pre-start Check

- Check that supply voltage matches nameplate data.
- Ensure that the unit is properly grounded.
- With power off, check blower wheel set screw for tightness and ensure that the blower wheel rotates freely and quietly. Remove the motor blower shipping brace on the 60HBXB-HW or MBXB-HW blower assembly.
- Check that the water coil, valves and piping have been leak checked and insulated as required.
- Ensure that all air has been vented from the hot water coil.

NOTE: *It may require purging several gallons of water so have a means of discarding the water.*

- Install all panels.

****** WARNING ******

- ***Always wear eye protection.***
- ***When fan coil is operating, some components are operating at high speeds. Personal injury can result from touching these items with any object***
- ***All electrical and service access panels must be returned and secured in their proper place.***
- ***Clear surrounding area of all tools, equipment and debris.***
- ***Check the entire unit to ensure it's cleanliness.***

NOTE: *The blower door must be in place for the unit to operate due to the door safety switch.*

- Install any filters which may have been removed during the installation process.

Start-up and Maintenance

Before start-up, all of the components should be given a thorough check. Optimal operation of this equipment requires cleanliness. Often after installation of this equipment additional construction activities occur. Care must be taken to protect the equipment from debris during these construction phases.

****** WARNING ******

The manufacturer does NOT WARRANT equipment subjected to abuse. Metal chips, dust, drywall tape, paint over spray, etc. can void warranties and liability for equipment failure, personal injury and property damage.

****** WARNING ******

To prevent pump damage, the fan coil unit should not be energized for heating until the hot water coil and all water lines have been purged of air.

HEATING CYCLE START - UP

1) Fill the water heater. Open a hot water faucet while filling the water heater to vent the air. When the tank is full and all the air is purged, close the faucet.

****** WARNING ******

Hot water can cause scalding. A hot water mixing valve can be applied to the system to temper domestic water draw.

2) Ignite the water heater and set the thermostat to 140 degrees.

3) Purge the air handler's hot water coil and lines.

NOTE: *It may require purging several gallons of water so either have a bucket available or a means of discarding the water.*

Close valve number 2 and open valve number 3. (See figure 1) Next, open the air bleed valve. When all of the air is purged from the lines close valve number 3 and open valve number 2. After all the air is purged from the coil and lines, open both valve number 2 and 3 and close the air bleed valve.

4) Switch the room thermostat to the **"Heat"** position and raise the temperature setting to a position approximately ten degrees above room temperature.

NOTE: *The door switch must be activated to operate the unit.*

NOTE: *The heating cycle has a time delay relay to delay the blower on a call for heat.*

The pump should energize and begin circulating the hot water through the coil. If the pump is operating properly and the water temperature in the water heater has reached the set point, then the hot water inlet at the fan coil unit will be hot. If the pump is running but hot water is not circulating, open the air bleed valve long enough to purge any remaining air from the hot water lines and coil. This will allow the pump to begin circulating hot water.

5) The water heater thermostat should be adjusted so that the water temperature entering the hot water coil is as close to 140 degrees as possible with the system energized and operating long enough for all temperatures to stabilize.

Honeywell

VNT5200H1000

Ventilation System

SPECIFICATION DATA

VNT5200H Capacities and Performance

Part Number:	VNT5200H1000
Product Weight:	50 lbs (22.68 Kg)
Input Voltage:	120 VAC; 60 Hz.
Input Current:	1.5 A
Output Power to Terminals:	5 VDC, 1.0 A
Operating Ranges:	
Temp:	34–135 °F (1.1–57.2 °C)
Humidity:	0-99% RH
CFM:	50–220
Type of Heat Exchanger:	Cross-flow (Polypropylene)
Exchange Surface:	150 sq. ft.
Heat Core Dimensions:	
Width:	15 in. (381 mm)
Height:	12 in. (305 mm)
Length:	12 in. (305 mm)
Filter Dimensions:	
Height:	12 in. (305 mm)
Width:	15 in. (381 mm)
Shipping Specs:	
Length:	27.5 in. (698 mm)
Height:	18.4 in. (468 mm)
Width:	25.8 in. (656 mm)
Weight:	57.5 lbs (26.08 Kg)
Defrost Type:	Evacuation
Drain Tubing Diameter	1/2 in. (12.7 mm)

Flexible Duct (2):
6 in. round for inlet and outlet. Flexible vinyl, compatible for connection to rigid or flexible ducting with sheet metal screws and/or tape.

Cabinet:
20 gauge galvanized steel powder-coat painted.

Certification:
HVI, cCSAus, CSA 22.2 N°113

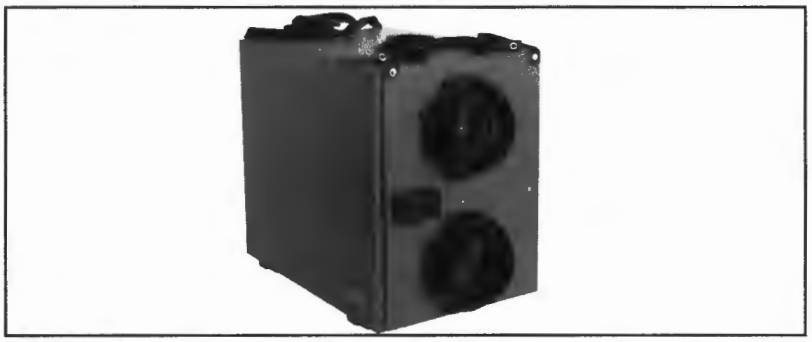
Conforms to UL Std. 1812.

Install the unit according to National Electric Codes.

For more information call 1-800-468-1502 or visit our website at customer.honeywell.com.

ENERGY STAR

This product earned the ENERGY STAR® by meeting strict energy efficiency guidelines set by Natural Resources Canada and the US EPA. It meets ENERGY STAR requirements only when used in Canada.



Dimensions and Clearances

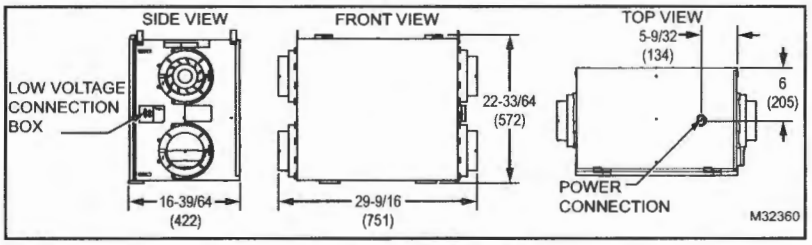


Fig. 1. Dimensions in in. (mm) and clearances.

The Honeywell Ventilation System provides improved indoor air quality through its high performance and efficiency.

Features

- 2 operating modes (Intermittent and Continuous Ventilation)
- Variable speed
- Compact installation
- Sloped drain pan
- Backward inclined motor blades
- Permanent lubrication of PSC motors
- Door opens downward
- No obstruction around the drain pan
- Simple electronic control
- Easy access to the control connection box
- Detachable 6 inch (dia.) collar system
- Proportional defrost
- Speed control balancing system
- Simplified mounting system
- Lifetime limited warranty on the HRV core
- 10-year limited warranty on ventilation motors
- 5-year warranty

C US

HVI CERTIFIED

68-3075EF-01

Removable Duct Collars

Spend less time on the ladder by easily connecting the duct-work to the collars away from the unit before it's hung, and then sliding the collars back into place once ducted.

Intuitive Balancing

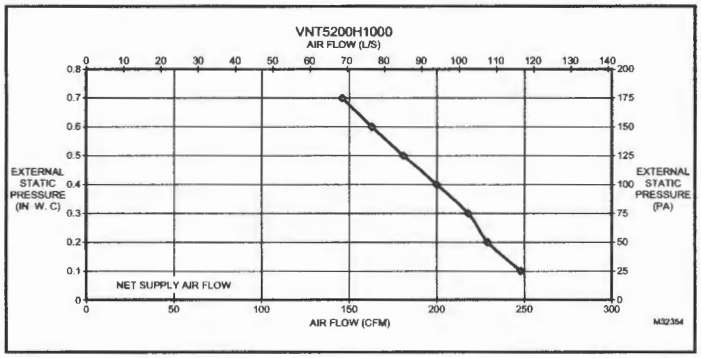
Two variable-speed motors — one for each air stream — work with the integrated speed control so installers can adjust the speed of each motor up and down to easily balance the system. This eliminates the need for adjusting dampers.

Adjustable Hanging Straps

Just like tightening or loosening straps on a backpack, these straps make it easy to raise, lower and level the unit into place

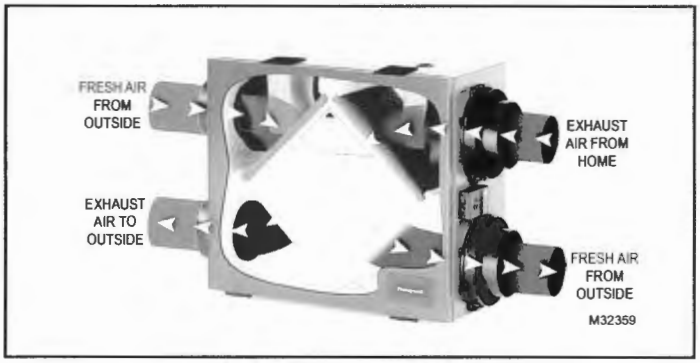
Ventilation Performance VNT5200H

External Static Pressure		Net Supply Air Flow	
Pa	in w.c.	L/s	CFM
25	0.1	117	248
50	0.2	108	229
75	0.3	102	218
100	0.4	94	200
125	0.5	85	181
150	0.6	77	163
175	0.7	69	146



Push Through—Operation System

Outside air is pushed through the heat exchanger, which acts as a noise reducer. This process is very silent and provides you with better home comfort.



Proportional Defrost—Operation System

The defrost energy is controlled by the outdoor air temperature. The motor speed essentially increases as outdoor temperature drops to provide increased defrost capability.

WARNING: Installation must be performed by a qualified service technician and must comply with local codes. Remove power to the device before installing or servicing the device. Failure to connect the device according to these instructions may result in damage to the device or the controls.

Energy Performance VNT5200H

	Supply Temperature		Net Supply Air Flow		Average Power	Sensible Recovery	Apparent Sensible
	°C	°F	L/s	CFM	Watts	Efficiency (%)	Effectiveness (%)
Heating	0	32	55	118	106	61	71
	0	32	75	160	132	58	65
	0	32	87	185	150	55	62
	-25	-13	57	120	105	58	72

Automation and Control Solutions

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Golden Valley, MN 55422

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68-3075EF—01 M.S. 10-11
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Honeywell

VNT5200H1000

Système de ventilation

DONNÉES TECHNIQUES

Capacités et performance du système de ventilation VNT5200H

Référence de pièce : VNT5200H1000

Poids du produit : 22,68 kg (50 lb)

Tension d'entrée : 120 V c.a., 60 Hz

Courant d'entrée : 1,5 A

Courant de sortie vers les bornes : 5 V c.c., 1,0 A

Plages de fonctionnement :
Température : 1,1 à 57,2 °C (34 à 135 °F)
Humidité : 0-99 % d'HR

PI²/MIN : 50–220

Type d'échangeur de chaleur : Débit croisé (polypropylène)

Surface d'échange : 150 pi²

Dimensions du noyau de récupération de chaleur :
Largeur : 381 mm (15 po)
Hauteur : 305 mm (12 po)
Longueur : 305 mm (12 po)

Dimensions du filtre :
Hauteur : 305 mm (12 po)
Largeur : 381 mm (15 po)

Caractéristiques d'expédition :
Longueur : 698 mm (27,5 po)
Hauteur : 468 mm (18,4 po)
Largeur : 656 mm (25,8 po)
Poids : 26,08 kg (57,5 lb)

Type de dégivrage : Évacuation

Diamètre du tube de vidange : 12,7 mm (1/2 po)

Conduit flexible (2) :
Rond de 6 po pour entrée et sortie. Vinyle flexible compatible pour un raccordement à des conduits rigides ou flexibles avec vis à tôle et/ou ruban adhésif.

Armoire :
Acier galvanisé calibre 20 à revêtement de peinture par pulvérisation.

Certifications :
HVI, cCSAus, CSA 22.2 N°113

Conforme à la norme UL 1812.

Installer l'unité conformément au code électrique en vigueur.

Pour plus d'informations, appeler le 1-800-468-1502 ou visiter notre site Web à customer.honeywell.com.

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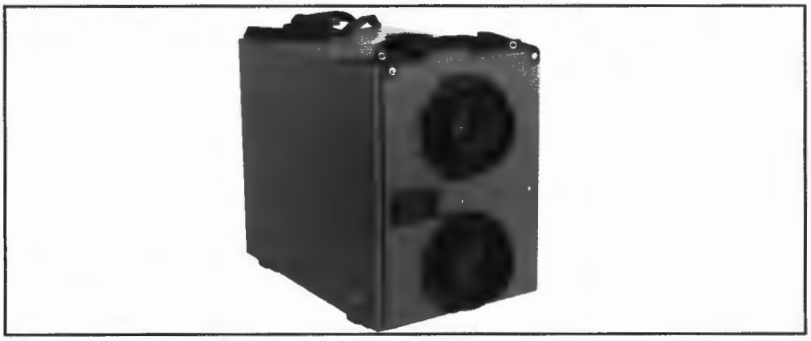


Dimensions et dégagements

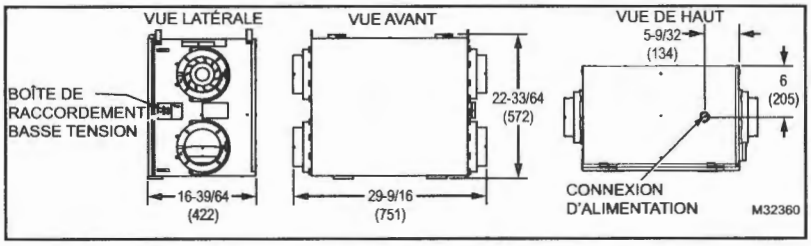


Fig. 1. Dimensions en po (mm) et dégagements.

Le système de ventilation Honeywell améliore la qualité de l'air intérieur grâce à sa performance et son efficacité élevés.

Caractéristiques

- 2 modes de fonctionnement (ventilation intermittente et continue)
- Vitesse variable
- Installation compacte
- Bac de vidange incliné
- Pales inclinées vers l'arrière
- Lubrification permanente des moteurs à condensateur permanent
- Ouverture vers le bas de la porte
- Pas d'obstruction autour du bac de vidange
- Commande électronique simple
- Accès facile à la boîte de raccordement
- Système de collier détachable de 6 po (de dia.)
- Dégivrage proportionnel
- Système d'équilibrage à régulation de vitesse
- Système de montage simplifié
- Garantie limitée à vie sur le noyau de ventilation à récupération de chaleur
- Garantie limitée de 10 ans sur les moteurs de ventilation
- Garantie de 5 ans

ENERGY STAR

Le présent produit est homologué ENERGY STAR® parce qu'il respecte des exigences rigoureuses en matière d'efficacité énergétique établies par Ressources naturelles Canada et la EPA des États-Unis. Il répond aux exigences ENERGY STAR uniquement lorsqu'il est utilisé au Canada.

Colliers de conduit amovibles

Permettent de passer moins de temps sur l'échelle grâce à une connexion facile des conduits aux collets à l'écart de l'unité avant la suspension, puis en faisant glisser les collets en place une fois le raccordement des conduits réalisé.

Équilibrage intuitif

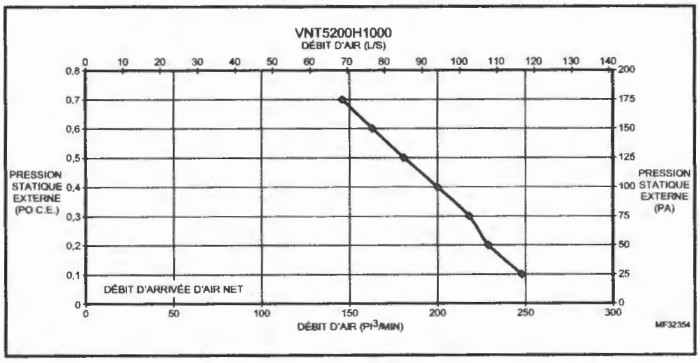
Deux moteurs à vitesse variable, un pour chaque flux d'air, fonctionnent avec la commande de vitesse intégrée pour que les installateurs puissent augmenter ou réduire la vitesse de chaque moteur pour équilibrer le système. Plus besoin de régler les registres.

Brides de suspension réglables

Comme avec le serrage et le desserrage des sangles d'un sac à dos, ces brides permettent de facilement relever, abaisser ou mettre l'unité à niveau.

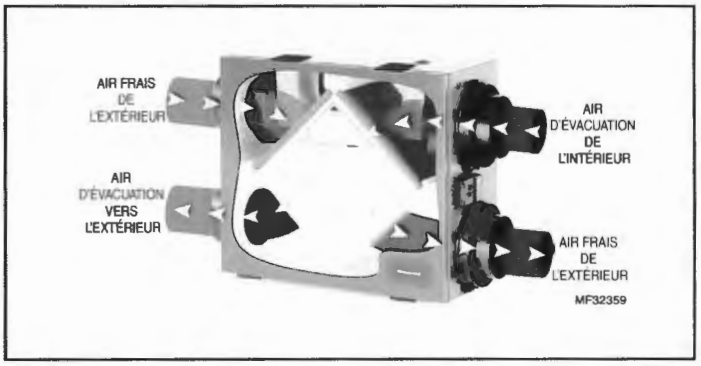
Performance de ventilation du VNT5200H

Pression statique externe		Débit d'air d'arrivée net	
Pa	po c.e.	l/s	PI³/MIN
25	0,1	117	248
50	0,2	108	229
75	0,3	102	218
100	0,4	94	200
125	0,5	85	181
150	0,6	77	163
175	0,7	69	146



Système de fonctionnement à cheminement

L'air extérieur est poussé par l'échangeur de chaleur qui agit comme un réducteur sonore. Ce processus est très silencieux et offre un confort supérieur.



Dégivrage proportionnel – Système de fonctionnement

L'énergie de dégivrage est contrôlée par la température de l'air extérieur. La vitesse du moteur augmente essentiellement lorsque la température extérieure chute pour fournir une augmentation des capacités de dégivrage.

AVERTISSEMENT : L'installation doit être effectuée par un technicien d'entretien qualifié et conformément aux codes locaux en vigueur. Couper l'alimentation vers l'appareil avant d'installer ou de réparer cet appareil. Un raccordement de cet appareil non conforme à ces instructions peut endommager l'appareil ou les commandes.

Performance énergétique VNT5200H

	Température d'alimentation		Débit d'air d'arrivée net		Puissance moyenne	Récupération sensible	Apparente sensible
	°C	°F	l/s	PI³/MIN	Watts	Efficacité (%)	Efficacité (%)
Chauffage	0	32	55	118	106	61	71
	0	32	75	160	132	58	65
	0	32	87	185	150	55	62
	-25	-13	57	120	105	58	72

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