

 YORK®	Mobile HEPA Air Handling Unit
Installation, Operation and Maintenance Manual	FROM NO : 6D7T-C03A-NA-EN REV: A

Mobile HEPA Air Handling Unit



Caution

To ensure safe operation, please carefully read all the terms and precautions.

Safety Instructions

Warning

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Caution

It describes operating procedures, conventions, etc., or the parts need to be highlighted.

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Introduction

1.1 Description

YORK® Mobile HEPA Air Handling Unit YMU series is a movable, self-contained high efficiency particulate air (HEPA) filtration system with an ultraviolet (UV) lamp that helps to disinfect the air.

It can be used as complete exhausting system to create a negative pressure isolation room for possible use with people known or suspected of having virus or other infectious diseases.

Also it can be used as a clean air recirculation system in clinics, waiting rooms, nursing homes and other high human traffic areas to purify and disinfect the indoor air. It can deliver up to 1500/2500 CMH to provide a large number of room air changes per hour to minimize the spread of airborne diseases to patients and health care workers.

The air passes through the HEPA filter with microorganism purification rate 99.99% @ 0.3µm, and UV lamp will emit 254nm wave length UV lights, and absorbed by biological organism DNA/RNA and proteins, causing rupture of cell walls and death of organism, hence will lead to disinfection purpose. The purified and disinfected air may be exhausted directly to the exterior by connecting flexible ducting to the 200mm diameter collar located on the back of the unit, or recirculate in the room.

1.2 Features

◆ Low cost Isolation Room

An easy and economical solution for creating a negative pressure isolation room. Simply roll the YORK® Mobile HEPA Air Handling Unit into a standard room, connect flexible ducting to the 200mm flanged collar for 100% exhaust and vent the purified air to the exterior through a window or wall.

◆ Mobility

With wheels easily movable around in rooms.

◆ H13 grade HEPA Filter

Microorganism purification rate 99.99% @ 0.3µm.

H14 grade filter as option.

◆ UV Sterilization

UV lamp provided as standard offering, helps kill bacteria/virus to disinfect.

◆ Smart Control

Screen touch with on/off, Manual/Auto, Timer, UV on/off, speed control etc.

◆ Easy Maintenance

HEPA size standard, easy to obtain.

HEPA replacement indication available.

Access door open without tool for maintenance.

◆ Flexible Application

100% exhaust and 100% supply flexible switchable.

200mm diameter round duct collar provided as standard offering.

♦ Room Air Changes Per Hour

(ACH)

Up to 12 ACH in 125 m³ / 208 m³ respectively for 2 models.

♦ EC Motor

High efficiency with 10 speeds adjustable, low noise and energy saving.

1.3 Applications

- ♦ Negative pressure isolation room
- ♦ Commercial building isolation room
- ♦ Emergency room
- ♦ Waiting room
- ♦ Nursing home
- ♦ Clinics
- ♦ And more places of high human traffic, like physician offices, addiction recovery center, correctional facilities, and homeless shelters.

inspected for exterior shipping damage immediately upon arrival. If any damage is observed, a claims report should be completed and promptly filed with the responsible carrier.

2.1.2 Check the packing list

- YMU main unit	1
- Exhaust panel with 200mm collar	1
- Cross recessed pan head screws M4x10	10
- Power cord 3m	1
- Flange nut M4	10
- Eyebolt M10	4

2.1.3 Remove all the packing material, examine the unit for internal damage. If damage is discovered inside the packaging, file a claim with the responsible carrier immediately. The shipping components list and actual material received should be compared and any shortages reported to YORK® immediately.

2.1.4 Screw the four (4) eyebolts on four (4) top corners, ensure every eyebolts are tightened, use hoist to hang the unit from the pallet on ground with ropes through the lifting eyes.

Installation

2.1 Unpacking Instruction

2.1.1 The YORK® Mobile HEPA Air Handling Unit is shipped in a carton box on a pallet, The module should be

 Warning

To reduce the risk of fire, electrical shock, or injury to persons, observe the following:

1. Installation work and electrical wiring in accordance with all applicable codes construction.
2. When cutting or drilling into a wall or other hidden utilities.
3. equipment should be performed by an authorized technician trained and and maintenance of clean air equipment.in this manual that can be performed by the owner.
4. Before servicing the unit,switch power off at service panel and lock service panel to prevent power from being switched on accidentally, and follow proper procedures as necessary.
5. Use this unit only in the manner intended by the manufacturer.

2.2 Assembly

2.2.1 Place the YORK® Mobile HEPA Air Handling Unit its final operating position.

2.2.2 The unit can be used both for negative pressure room application and air recirculation inside room application. If used for negative pressure application (air exhaust), first find the top rear blind plate and unscrew the eight (8) bolts of the plate, take it down, then one person hold the front top grille plate, another person loosen the eight (8) nuts from inside of the front top grille plate, take it down. Use the reverse method to assemble the blind plate in the front position, just to block the air from flowing into the room. Connect the exhaust panel (with 200mm flanged collar on it) to the top rear position by screwing 8 bolts (bolts supplied as accessory) on the unit. Finally connect the flexible exhaust to the collar and fasten the ducting to collar by a round hose clamp (by others).

If used for recirculation purpose, the unit requires no assembly.

2.2.3 Lock the wheel locks on the casters to keep the unit from accidental repositioning.

Operation

3.1 Initial Start-Up

3.1.1 Connect the power cord to a standard 220-240 Volt, Single Phase, 50 Hertz, grounded power source. Assure that the circuit is sized to provide sufficient amperage.

3.1.2 Find the power “ON/OFF” rocker switch on the right side of the unit.

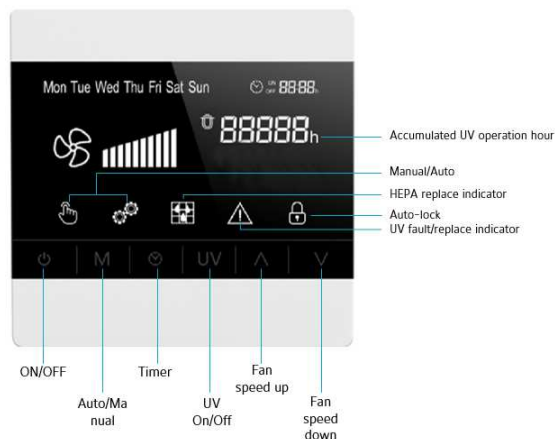
3.1.3 Turn the YMU Mobile HEPA Air Handling Unit on by pressing downward on the raised portion of the rocker switch.

3.1.4 On the LED control panel, there are weekday, time and timer icons

displayed. Press the “ON/OFF” icon 

on the control panel to turn on the unit, the unit will start to work with the mode set from of last shutdown, the factory setting is “Manual and low

speed” mode.



3.2 Auto-Manual Function

3.2.1 Function when the unit is in operation, every touch on the “Auto/Manual” icon  will switch

between “Auto”  and “Manual” , the indicators will be on accordingly.

3.3 Time setting and timer

3.3.1 Time setting: When the unit is or isn’t in operation, touch the timer icon  and hold until the minutes digits “mm” flickers, touch the  or  icons to adjust the minutes, then touch  icon, the hour digits “hh” will flicker, touch the  or  icons to adjust the hours. Touch  icon the weekday will flicker and touch the  or  icons to adjust the weekday.

3.3.2 Timer setting: When the unit is in operation, touch the timer icon  and hold until “hh:mm” is on and  and “ON” indicators are flickering, touch  or  icons to adjust the timing for starting up the unit. Every touch will add or minus 30 minutes, then touch  and hold until  and

“OFF” indicators are flickering, use the same approach to set the scheduled shutdown time. The set time for start up and shut down is valid in 1 day.

3.3.3 Cancel timer: When the unit is in operation, touch the timer icon 

and hold until “hh:mm” is on and  and “ON” indicators are flickering, touch  or  icons to adjust the timing for starting up to “00:00”, then touch  and hold until  and “OFF” indicators are flickering, use the same approach to set the scheduled shutdown time to “00:00”.

3.4 Air speed adjustment

3.4.1 When selecting manual mode, touch  or  icons the increase or decrease the air speed by one level. Touch and hold the icons for more than 1 second will lead to speed level increasing or decreasing by two levels. When in “Auto” mode, speed adjustment not available.

3.5 Auto-lock

3.5.1 If activated “Auto-lock” function, the control panel will be locked after no control or touch after 30 seconds.

3.5.2 Unlock: touch and hold on “UV” icon for 5 seconds will unlock the control panel.

3.6 UV lamp replacement indication

3.6.1 When the unit is in operation, touch “UV” icon for 5 seconds, the accumulated operation hour for UV lamp will show, touch  or  to adjust the time, each hit will increase or

decrease by 5 days (120 hours), adjustment range is 0 – 99999 hours.

3.6.2 When the UV is in operation, the operation will be counted in, if the time exceeds the tolerance or the unit

receives UV lamp fault, then the 

indicator will be on to remind user to replace UV lamp or check the UV fault.

3.6.3 Touch  icon for 10 seconds to

clear the  indicator remind, system

will start time accumulated counting from 0.

3.7 HEPA replacement

indication

3.7.1 If the air resistance of the HEPA

Room size (L x W x H) m	3 x 5 x 2.6	4 x 5 x 2.6	5 x 6 x 2.6	6 x 8 x 2.6	7 x 8 x 2.8	7 x 11 x 2.8	8 x 12 x 2.8	10 x 12 x 2.8
Room volume (m ³)	39	52	78	124.8	156.8	215.6	268.8	336
YMU-1500	38 ACH	29 ACH	19 ACH	12 ACH	10 ACH	7 ACH	6 ACH	4 ACH
YMU-2500	64 ACH	48 ACH	32 ACH	20 ACH	16 ACH	12 ACH	9 ACH	7 ACH

Table 1: Max Air Change per Hour (ACH) under max air speed.

3.9 Exhaust mode

3.9.1 3.9.1 Assemble the exhaust ducting and modify the plates as stated in section 2.2.2.

3.9.2 It is recommended that rooms used for negative pressure isolation should be single patient rooms with negative pressure relative to the corridor or other areas connected to the room. The minimum difference necessary to achieve and maintain negative pressure that will result in airflow into the room is 2.5Pa (a higher

filter reaches the preset tolerance, the

HEPA replacement indicator  will be on and flickering.

3.8 Recirculation Mode

3.8.1 The YORK® Mobile HEPA Air Handling Unit is set at the factory on the 100% air recirculation mode

3.8.2 The room air change rate of the unit will depend on both unit operation air speed and the size of the room. See table 1 for representative room air changes per hour (ACH).

pressure is preferred).

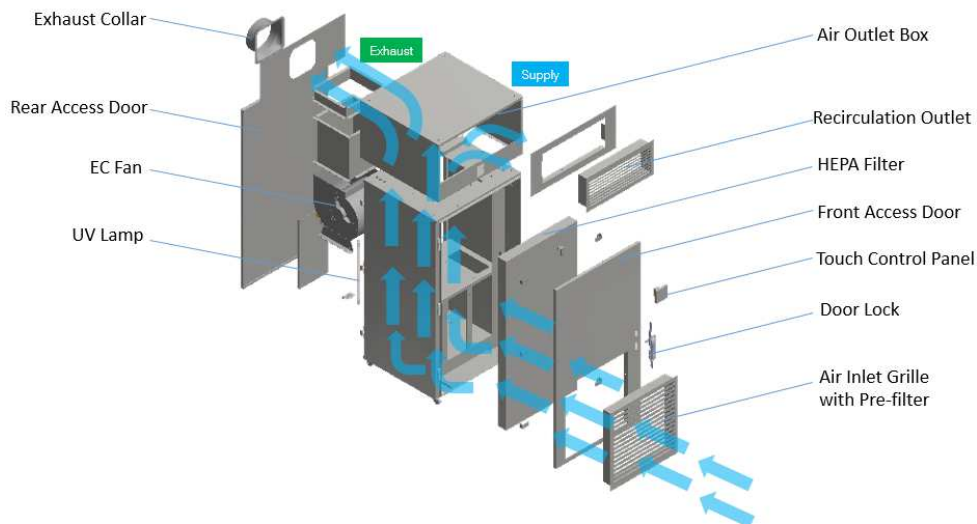
3.9.3 It is recommended that the unit be set on the high-speed setting when operating in this mode to achieve maximum exhaust and negative pressure.

3.9.4 The equipment may not be able to achieve or maintain negative pressure due to building ventilation of rooms or air leakage. The room should be inspected for air leakage through doors, windows, plumbing and wall penetrations. Appropriate corrective action should be taken to seal the leaks.

Maintenance & Service

4.1 Parts Identification

Mobile HEPA Air Handling Unit UV



Caution

Proper protective equipment and measures must be used at all times during unit cleaning and maintenance.

Check with your safety office to assure the cleaning solutions, protective equipment (disposable hospital gown, HEPA respirator, protective gloves) and protocols followed comply with your facility's guidelines.

Caution

Disconnect the unit from the electrical power source before attempting service. Do not work inside the YORK® mobile HEPA air handling unit with the UV light on .

4.2 Cleaning the unit

4.2.1 Periodic Cleaning of the unit may be done with a mild disinfecting soap and water solution

4.2.2 Exterior cabinet cleaning must be performed with the unit running. Wipe the exterior of the unit with a damp sponge or cloth, paying particular

attention to the prefilter intake grille.

4.3 Pre-filter cleaning

4.3.1 The pre-filter should be cleaned every 60 to 90 days. Regularly cleaning the pre-filter will maximize the life of HEPA filter. Wipe the unit as described in previously.

4.4 HEPA Filter replacement

4.4.1 HEPA filters should be maintained meticulously and should be carefully installed by adequately trained personnel wearing an appropriate respirator. A regular maintenance program should include procedures for installation, removal and disposal of filter elements and a program to monitor the HEPA filter for possible leakage and for filter loading.

4.4.2 The expected HEPA filter life should range from 18 months to 24 months depending on the environment and pre-filter maintenance schedule. The filter indicator light will give a warning of filter loading by flickering, then HEPA filter should be changed.

4.4.3 Press the front access door lock bottom button, the lock handle will pop out, rotate the handle counter-clockwise to open the front access door, rotate the 7 clip fasteners around the HEPA filter until the HEPA filter is unfastened, take out the HEPA filter and put a new HEPA filter into the unit, rotate the clip fasteners back to fasten the HEPA filter. Close the front access door and rotate the handle clockwise until vertical position, press the handle until the door is locked.



Warning

Always shut off the power when replacing the HEPA filter to avoid any electric injuries.

Caution

Touching the face of the HEPA filter could cause damage to the HEPA filter media resulting in the need of professional repair or replacement.

4.5 UV lamp replacement

4.5.1 When the accumulated UV lamp reaches to 12000 hours, the replacement indicator will be on, user shall replace the UV lamp to ensure effective sterilization effect.

4.5.2 Press the rear access door lock bottom button, the lock handle will pop out, rotate the handle counter-clockwise to open the rear access door, dismantle the UV shielding plate by unscrewing the four (4) bolts and put aside. Unplug the power cord of the UV lamp, remove the two (2) protective rubber rings. Put the new UV lamp through the two (2) protective rubber rings, plug in the UV lamp to the UV power cord and fix the UV lamp with the rubber rings. Assemble the UV shielding plate back with screw, close the rear access door and lock it.

4.5.3 Press the front door lock bottom button, the lock handle will pop out, rotate the handle counter-clockwise to open the front access door, rotate the 7 clip fasteners around the HEPA filter until the HEPA filter is unfastened, take out the HEPA filter and put HEPA filter into the unit, rotate the clip fasteners back to fasten the HEPA filter. Close the front access door and rotate the handle clockwise until vertical position, press the handle until the door is locked.

4.6 Cleaning the unit

4.6.1 If an existing unit is to be

placed into storage for an extended period of time, or to move to another place for different applications, decontamination must be conducted before the unit put into use.

4.6.2 Decontamination process include the unit disinfection, pre-filter cleaning, and HEPA filter replacement.

Trouble-shooting

5.1 Inoperative Air Flow

5.1.1 Confirm the power cord is plugged into the building receptacle and power is present.

5.1.2 Confirm that the unit power switch is turned "ON".

5.1.3 Check switch and internal wiring per Wiring Diagram (Section 6). Replace or repair faulty component(s).

5.1.4 Check the motor and replace if necessary.

5.2 Low Air Flow

5.2.1 Check pre-filter for obstruction and remove obstruction as necessary.

5.2.2 Replace dirty pre-filter media.

5.2.3 Switch the speed control to the next higher airflow setting.

5.2.4 Check power supply for proper voltage, amperage and distribution frequency.

5.2.5 Check for down-stream obstructions or erratic isolation room ventilation balance.

5.2.6 Replace HEPA filter if the air velocity remains low.

5.3 High Air Flow

5.3.1 Adjust the speed control down to the next lowest setting

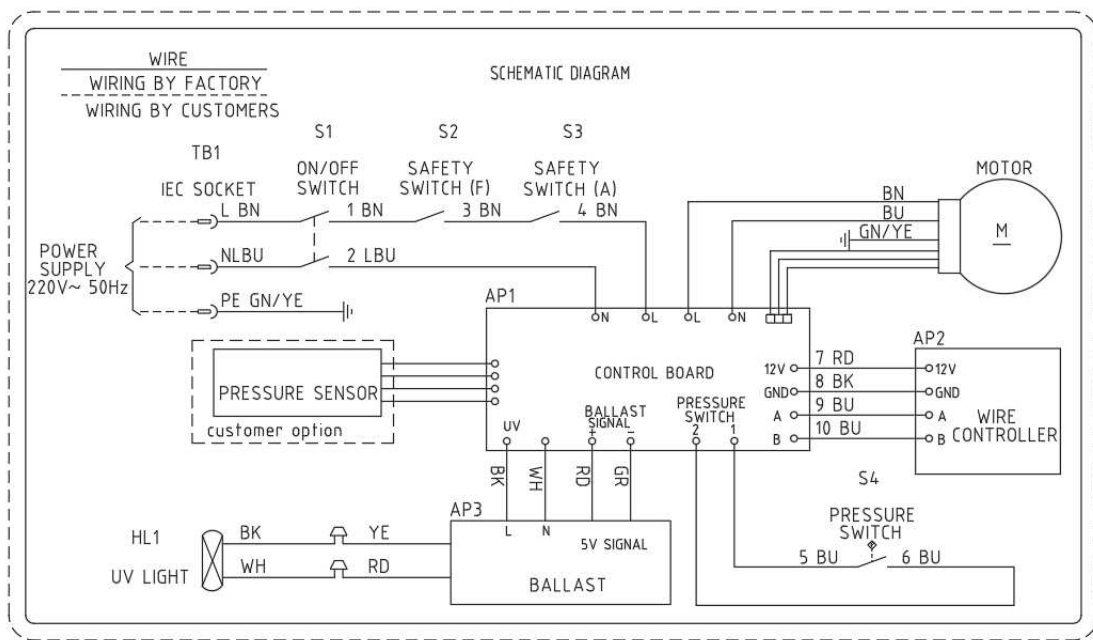
5.3.2 Assure all filters are properly in place.

5.4 Excessive Contamination

5.4.1 Replace HEPA filter.

5.4.2 Assure the HEPA filter is installed properly.

Wiring Diagram



Mobile HEPA Wiring

Specification

Category	YMU-1500	YMU-2500
Power supply	220-240V, 50/60Hz, 1Ph	
Air flow	700-1500CMH	1500-2500 CMH
Power	275 W	400 W
Applicable area(12 x ACH)	125 m ³	208 m ³
HEPA material / grade	PTFE material, H13 grade, H14 as option.	
Fan	EC centrifugal fan, 10 speeds adjustable	
Unit weight	106kg	112kg
Unit Dimension(H*W*D)	1712*680*626 mm	1762*720*626 mm

Replacement Parts

Product	SAP	Describe	QTY
YMU1500	5941347	HEPA-H13-570×1170×69	1
	5942601	ULTRAVIOLET LAMP TUBE, MODEL: GPH436T5L	1
YMU2500	5999387	HEPA filter-H13-610×1220×69	1
	5942601	ULTRAVIOLET LAMP TUBE, MODEL: GPH436T5L	1

Limited Warranty

9.1 Unless otherwise set forth in the Sales Confirmation, Seller warrants to Buyer, for a period of twelve (12) months following the date of delivery to the Delivery Location (the “Warranty Period”), that the Goods will be free from defects in material and workmanship. Notwithstanding the foregoing, the Warranty Period for consumable Goods shall in no event exceed recommended replacement intervals set forth in the Instructions (hereinafter defined). If, prior to the expiration of the Warranty Period, Buyer informs Seller in writing of any breach of this limited warranty, then Seller may repair or replace the Goods that gave rise to such breach or, in Seller’s sole and exclusive discretion, refund the amounts that Buyer paid for such Goods.

9.2 The foregoing limited warranties do not apply to (i) any defect in Goods not manufactured by Seller, and (ii) any Goods manufactured according to Buyer’s specifications

9.3 Buyer shall bear the costs of access, de-installation, re-installation and transportation of the Goods to Seller and back to Buyer. Any repair or replacement pursuant to this limited warranty shall

not extend the Warranty Period. Seller does not warrant the Goods, or any repaired or replacement parts, against normal wear and tear. This limited warranty and remedy are expressly conditioned upon: (i) Buyer’s payment of the purchase price in full, (ii) Buyer giving written notice of the defect, reasonably described, to Seller within ten (10) days of the time when Buyer discovers or ought to have discovered the defect, (iii) the storage, installation, operation, use and maintenance of the Goods in compliance with the published specifications and instructions provided by Seller or its suppliers or subcontractors (the “Instructions”), (iv) the existence of proper records of Buyer’s operation and maintenance of the Goods during the Warranty Period, (v) Buyer providing Seller with a reasonable opportunity to examine the Goods and the aforementioned records, and (vi) the absence of any unauthorized modification or repair of the Goods.

9.4 Before any test may be used to evaluate the Goods, Buyer shall: (i) provide Seller with reasonable written notification of such test, (ii) allow Seller to be present during such test, and (iii) receive Seller’s consent to the conditions of such test, which consent will not be unreasonably withheld. If a test is

performed on the Goods, and Seller has not consented to the conditions of such test, then this limited warranty shall be void.

9.5 Except as expressly set forth herein, YORK makes no other warranties, express

or implied, including, but not limited to, any implied warranties of merchantability, noninfringement or fitness for a particular purpose which are hereby disclaimed to the extent permitted by applicable law.



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* Johnson Controls reserves the right to change product designs without prior notice.

** The specific product performance is agreed by the parties in the contract. This manual is for reference only.

*** Thank you for using our products.



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