

Heat - HarvestTM
Operating & Installation Manual

OPERATING AND INSTALLATION MANUAL

HEAT HARVESTER SYSTEMS are extremely efficient and almost silent in operation. The unobtrusive Air turbines destratify and balance room temperature, generating a vertical air column which conditions the room environment and reduces the energy consumption of a heating system by as much as 35% – 50%.

Included in this manual:

1. Technical information
2. Exploded view of the HEAT HARVESTER SYSTEM
3. General Installation and Operating guidelines
4. Placement of the HEAT HARVESTER SYSTEM
5. Hanging the HEAT HARVESTER SYSTEM
6. Suspended Ceiling Kit Assembly Instructions
7. Safety Information and Warnings

IMPORTANT

This manual must be read carefully and fully before attempting to hang, fit, or operate the HEAT HARVESTER SYSTEM.

Note: When installing or operating the HEAT HARVESTER, always ensure that any items of loose clothing are kept clear of the air intake at the top of the system to prevent damage to the unit or injury.

I. TECHNICAL INFORMATION

There are three fan motor wattages in the HEAT HARVESTER range, each suitable for a different floor to ceiling height. The model number states the ceiling height/wattage for the model as follows:

ELECTRICAL SUPPLY

230V AC single phase

MODEL NUMBER - SERIAL NUMBER - MANUFACTURE INFORMATION

Model No.	Motor Part No.	Hertz	Wattage	RPM	VFR (m ³ /hr)
Model 5/25	= FP-108 HH (S2 B)	50/60 Hz	25 W	1250	456
Model 8/35	= FP-108 HH (S1 B)	50/60 Hz	35 W	1650	540
Model 12/75	= FP-108 HH (XS B)	50/60 Hz	75 W	2250	858

HEAT HARVESTER SYSTEM (Each Unit)

Weight – 5.4kgs

Height – 56cm (22")

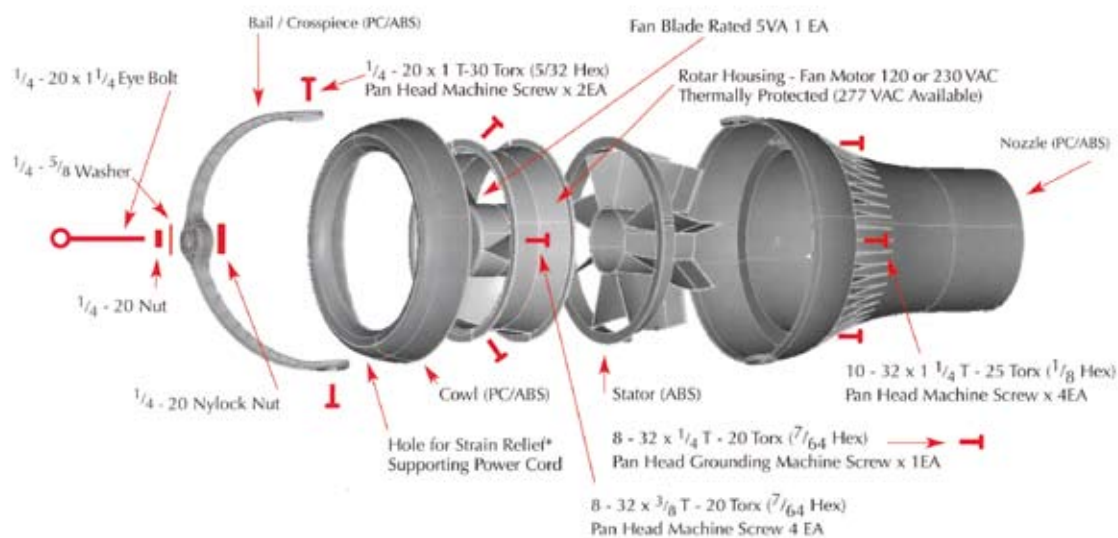
Max Diameter – 33cm (13")

The HEAT HARVESTER SYSTEM has an outer shell of Recyclable PC/ABS plastic resin (Polycarbonate/Acrylonitrile Butadiene Styrene).

The Inner Stator is also Recyclable ABS.

The Outer Shell, Stator and Fan Blade are Fire Rated 5VA Materials.

2. EXPLODED VIEW



3. INSTALLATION/OPERATING GUIDELINES

Power cord

The power cord is a 3 core 18 AWG 300V AC rated electrical cord.

The three wires in the power cord are colour coded to ensure proper wiring as follows:

BROWN = LIVE

BLUE = NEUTRAL

YELLOW/GREEN = EARTH

The cord is attached to the Fan motor via two power leads with insulated ¼” quick connects.

UNMARKED motor lead = LIVE

MARKED "N" motor lead = NEUTRAL

GROUND/EARTH is attached to a boss outside of the motor housing with a Star Ring # 10 Terminal and 8-32 x ¼” machine screw.

The cord is secured in the housing by a strain relief and knotted inside the housing for additional security.

Power Outlets (Female Connectors) to supply power to the HEAT HARVESTER SYSTEM should always be installed by a qualified electrician or similarly qualified person in accordance with nation and local electrical codes.

The HEAT HARVESTER SYSTEM uses very little current (less than 1 amp) thus multiple outlets may be installed on one circuit. Outlets are available in many configurations, check with the local Electrical Contractor to determine preferred type for the facility. Outlets should generally be mounted vertically unless a “twist/locking” type is being used. Facilities with Fire suppression systems installed often have a master cutoff switch to Shut-off all power in the event of a fire or emergency. The electrical circuits for the HEAT HARVESTER SYSTEM should be wired through that Shut-off. Always use and review the Local Electrical Codes when installing the HEAT HARVESTER SYSTEM in ANY Facility.

DO NOT wire the HEAT HARVESTER SYSTEM into the Lighting Circuit, as the system will cycle on and off with the lights, greatly reducing the systems effectiveness.

The HEAT HARVESTER SYSTEM is designed to operate 24 Hours-a-Day, 7 Days-a-Week (24/7) for maximum energy saving.

Procedure for Wiring the plug to the power cord

Use **CAUTION** when wiring/attaching the Plug (Male Connector) to the HEAT HARVESTER SYSTEM when using any Electrical Device.

Plug should be rated for 230V AC or greater and fit properly into Outlet (Female Connector) being used to deliver power. When fitting a plug always ensure that all relevant local regulations/electrical codes are understood and followed with care - **if in any doubt seek expert guidance.**

1. To avoid electrical shock, **DO NOT** plug device into energized outlet until all exposed wires, and connecting terminals, are enclosed by Plug Housing. See Plug Manufacturer's Instructions.
2. Locate the (3) stripped wires on the 300V AC Rated Power Cord attached to the HEAT HARVESTER SYSTEM where the outer cord insulation jacket has been removed. Wires are coded as follows:
3. Brown is Positive/LIVE (the energized/electrified conductor)
Blue is Neutral "N" (the conductor used for a return current path)
Yellow/Green or Green is Ground/Earth (the conductor to connect to the Earth).
4. Using the Plug Manufacturer's Instructions, locate the proper positions to attach the colour-coded wire to the appropriately labelled terminals on the plug.
5. Tighten all connections. Re-assemble plug in accordance with Plug Manufacturer's Instructions.

Always hold the HEAT HARVESTER SYSTEM unit by the Bail/Crosspiece to avoid injury from moving parts.

To confirm electrical continuity, if possible. Plug the HEAT HARVESTER SYSTEM into an energized outlet, similar to the outlet installed in the ceiling, on the ground before permanently mounting the HEAT HARVESTER SYSTEM at the underside of roof level.

NOTE: The HEAT HARVESTER SYSTEM can be wired directly to a junction box but only by a qualified electrician or similarly qualified person. Always ensure that all relevant local regulations/electrical codes are understood and followed with care - **if in any doubt seek expert guidance.** Check Local Electrical Codes. The preferred system is a design with a plug for easy service and cleaning (see Cleaning). A fused spur on/off switch must be installed in the circuit to be able to disable power to prevent electrical hazard when servicing the appliance.

BAIL aka HANDLE or CROSSPIECE

The Bail is attached with two ¼” x 20 x I TORX® head machine screws. The screws can be loosened to adjust the bail to the vertical so that it can be suspended from the ceiling on the provided Eyebolt, which is installed through an 8mm (5/16”) hole in the bail with locking nuts and washers.

NOTE: The Bail may be angled, as it is ratcheted for special situations where vertical air column is undesirable and an angled column would be more effective.

4. PLACEMENT OF THE HEAT HARVESTER SYSTEM

The HEAT HARVESTER SYSTEM performs best when installed as close to the ceiling or underside of roof as possible such that the air stream/exhaust from the nozzle is unimpeded to the floor. This will insure maximum circulation and Thermal Equalization. Each System is designed to cover approximately 100m² from its designed ceiling height, which is about a 10m (30ft) diameter circle. The density of the placement is a direct relationship to effectiveness, performance and savings.

Mezzanine Floors, office location, machinery, people placement, plumbing, lighting systems, duct work, electrical systems, natural light/air systems, indoor cranes doors, windows, ventilation and fire suppression systems are all factors to be taken into account in properly locating the HEAT HARVESTER SYSTEM in the ceiling.

Floor Plans – Sketch out the floor plan of the facility, divide it graphically into 100m² squares and closely as possible place an HEAT HARVESTER SYSTEM in the centre of each square of the grid.

Mezzanines – The HEAT HARVESTER SYSTEM can be hung over or near the Mezzanine at an angle to throw accumulated heat out to a larger space below. This will remove heat and balance room temperature between Mezzanine and lower levels.

Office – Use smaller models to control individual office spaces, or larger units to control common areas, eliminate hot and cold spots, create circulation, eliminate electrical space heaters and reduce employee temperature related issues.

Machinery – Machinery and work processes that are sensitive to temperature change will benefit when the HEAT HARVESTER SYSTEM is operating. The flow of the air should be directed to a place that will allow circulation but not interfere with the production process.

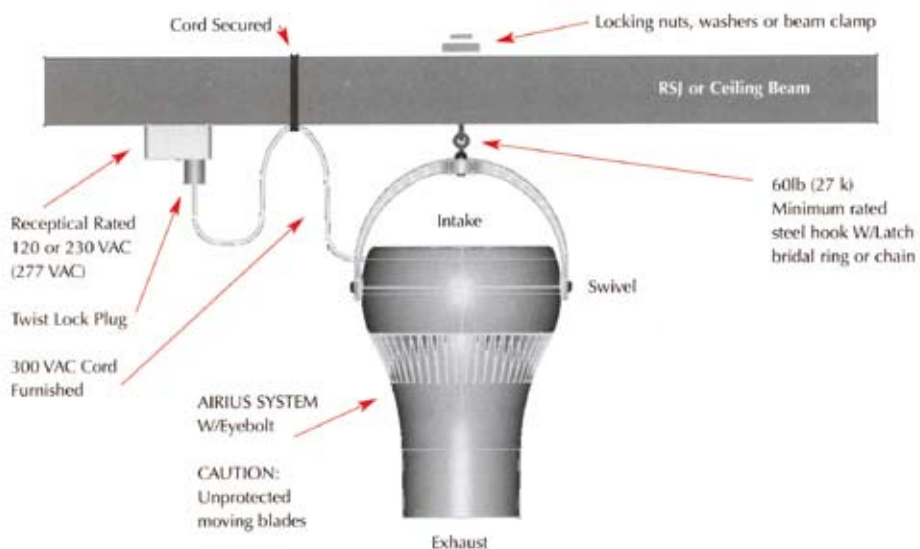
People – Although the air movement is very gentle at floor level, most people are not comfortable in direct air flow, therefore the HEAT HARVESTER SYSTEM can be directed to a space near the person, but not directly on them. This balanced, equalised air will provide a better working environment.

DO NOT mount the HEAT HARVESTER SYSTEM directly in front of or over a heat source.

Natural lighting/air systems (sky lights, ceiling vents) – **DO NOT** mount the HEAT HARVESTER SYSTEM where it can get wet or be exposed to long-term moisture. Mounting the HEAT HARVESTER SYSTEM in a high sealed sky light is an excellent way of recovering heat.

Doors, Windows, Ventilation – The HEAT HARVESTER SYSTEM can reduce drafts, fogging and heat loss. However the HEAT HARVESTER SYSTEM cannot overcome the accumulated effects of not controlling the opening and closing of these portals. **DO NOT** mount the HEAT HARVESTER SYSTEM directly in front of a window or vent that is always open unless cooling is the desired result.

5. HANGING THE HEAT HARVESTER SYSTEM



The heat harvester system hanging/ mounting guidelines

The HEAT HARVESTER SYSTEM is normally designed to be hung vertically as high in the ceiling or underside of roof of the facility as possible with the nozzle pointing to the floor for the maximum thermal equalization.

The HEAT HARVESTER SYSTEM should be on professionally installed hardware, capable of supporting a minimum of four times the weight, (5.4kgs) of the HEAT HARVESTER SYSTEM unit. Example - 7mm (¼”) diameter steel bolt is rated at 27kgs (60 lb) load.

A feature of the HEAT HARVESTER SYSTEM is its flexibility. Hardware that may be used to hang the unit includes, but is not restricted to: Hooks, chains, cables, carabiners, bridal rings, beam clamps and bolts. Roof structure, building construction, electrical outlets/service, and accessibility will define that appropriate hardware for each installation.

After insuring the HEAT HARVESTER SYSTEM is firmly attached and after REMOVING YOUR HANDS FROM THE UNIT, ONLY THEN is it safe to plug the unit into the power source using the approved plug to confirm function and connectivity.

NOTE: SECURE the power cord to the ceiling structure as added security. The Cord will act as a safety leash and by securing it the possibility of the plug accidentally coming out of the outlet in the future is greatly reduced. A 20kgs (50 lb) rated Zip-T, several wraps of electrical tape, or mechanics wire are examples of securing the power cord.

6. HEAT HARVESTER SYSTEM SUSPENDED CEILING KIT ASSEMBLY INSTRUCTIONS

TOOLS REQUIRED: PHILLIPS SCREW DRIVER

1. Remove all components from packing materials. Using the box the HEAT HARVESTER SYSTEM arrived in, open end up and place the 600mm x 600mm flat AIR INTAKE GRID over the open end of the box face down.
2. Insert the HEAT HARVESTER SYSTEM into the centre hole so that the nozzle extends below the AIR INTAKE GRID and the power cord is hanging over the edge.
3. Place DOME over HEAT HARVESTER SYSTEM and align it with the screw holes. **Note cut out for power cord on Dome edge.** Dome should seat into rim designed for it on the base, if necessary gently push the dome edge in until it seats into the lip.
4. Insert the Four (4) Phillips screws 10/32” x 5/8” (provided) into holes and tighten, **DO NOT** force screws, as galling or stripping will occur. Inserts are brass, screws will go in easily when aligned properly.

5. The Base is designed to replace a 600mm x 600mm ceiling tile. If replacing a 600mm x 1200mm tile please use additional piece of 600mm (2ft) T-bar suspension material to finish the edge. This will provide additional strength and rigidity to the existing suspension system.
6. The Base has four tabs located at each corner that can be drilled for additional ceiling support wires to be added if desired.

7. THE HEAT HARVESTER SYSTEM SAFETY INFORMATION AND WARNING!

Each HEAT HARVESTER SYSTEM is earthed to eliminate risk of electrical shock.

WARNING! TO PREVENT ELECTRICAL SHOCK AND/OR INJURY

- **UNPLUG UNIT** from power source before you move unit, service unit, or remove housing.

WARNING! TO REDUCE THE RISK OF DAMAGE, FIRE OR ELECTRICAL SHOCK:

- **DO NOT** use this product with any solid-state speed control device.
- **DO NOT** carry this product by the cord.
- **DO NOT** use the cord as a handle.
- **DO NOT** use the cord to attach or hang the product
- Be sure to grasp the plug, not the cord, when disconnecting this unit from an electrical outlet.
- **DO NOT** use the product if it has a damaged cord, faulty plug, or any broken housing components.
- If supply cord, plug, or housing is damaged, it must be replaced by the manufacturer, its service agents or similarly qualified persons to avoid a hazard.
- **DO NOT** expose this product to rain or direct moisture.
- **DO NOT** immerse product into water.
- **DO NOT** allow water to drip into the motor housing.
- **DO NOT** install outdoors or in an area open to the weather.

CAUTION! NORMALLY THE HEAT HARVESTER SYSTEMS HAVE AN UNGUARDED IMPELLER/FAN BLADE

- **Spinning blades may inflict eye or other physical injury.**

DO NOT use these products in location readily accessible to people or animals, as blades may inflict injury when moving or stationary or in locations where loose items hang near the intake.

To reduce the risk of injury to persons, install product so that the moving fan blade or lowest moving part is at least 2.4m (8ft) above the floor or grade level.

DO NOT POSITION NEAR:

- Furnaces, fireplaces, stoves, or other high temperature heat sources.
- **DO NOT** position product under infra-red heat sources.
- **DO NOT** position the unit close to other objects that will interfere with fan operation.
- **DO NOT** allow fan blades to come into contact with other objects.

The motor is thermally protected, **overheating (110 C°) will cause the motor to stop operating.**

The motor may restart once normal operating temperatures (90 C°) are achieved.

IF MOTOR FAILS TO RESTART:

- Disconnect motor from electrical source and contact Monodraught Ltd.

SERVICE AND INSTALLATION

No lubrication is required as bearings are sealed. Bail adjustments can be made with a T-30 TORX® driver/wrench, or a 5/32" Hex wrench may be used. Other tools: T-20 (7/64" H) TORX®.

The HEAT HARVESTER SYSTEM is designed to be used with only the electrical voltage identified on the label. Any other voltage could damaged the motor and create an electrical hazard.

Assembling suspended ceiling model: see additional instructions for unit included within this manual.

IMPORTANT!

- Please install with hanging device or fastener rated for a minimum of 27kgs (60 lb).
- Use care when positioning the unit.
- Make sure the airflow is unobstructed into the top of the unit and that the downward airflow is unobstructed and allowed to reach the floor to maximize performance.
- Install product so that the bottom of the moving fan blade or the lowest moving part is at least 2.4m (8ft) above the floor or grade level. Model numbers reference recommended ceiling height.

CLEANING

- **UNPLUG UNIT** from power source first to prevent electrical shock and to reduce injuries from spinning blades.
- **DO NOT** use petroleum products, thinners, solvents, ammonias, alcohols, or other chemical, to clean any part of the HEAT HARVESTER.

NOTES

HARVESTER SYSTEM Warranty

Heat Harvester carries a **12 month guarantee** from the date of purchase against any defective materials or workmanship.

In the case of defect or failure, the Heat Harvester must be returned properly packed and protected to Monodraught Limited, Halifax House, Cressex Business Park, High Wycombe, Bucks, HP12 3SE, stating delivery date, delivery address, installation address, Monodraught's Order Reference N° or Document N°, and details of the defect. On safe receipt, the Heat Harvester will be replaced free of charge to the address given.

This warranty is invalid if the Heat Harvester has been misused or interfered with in any way and/or has not been installed correctly in accordance with this Operating and Installation Manual.



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