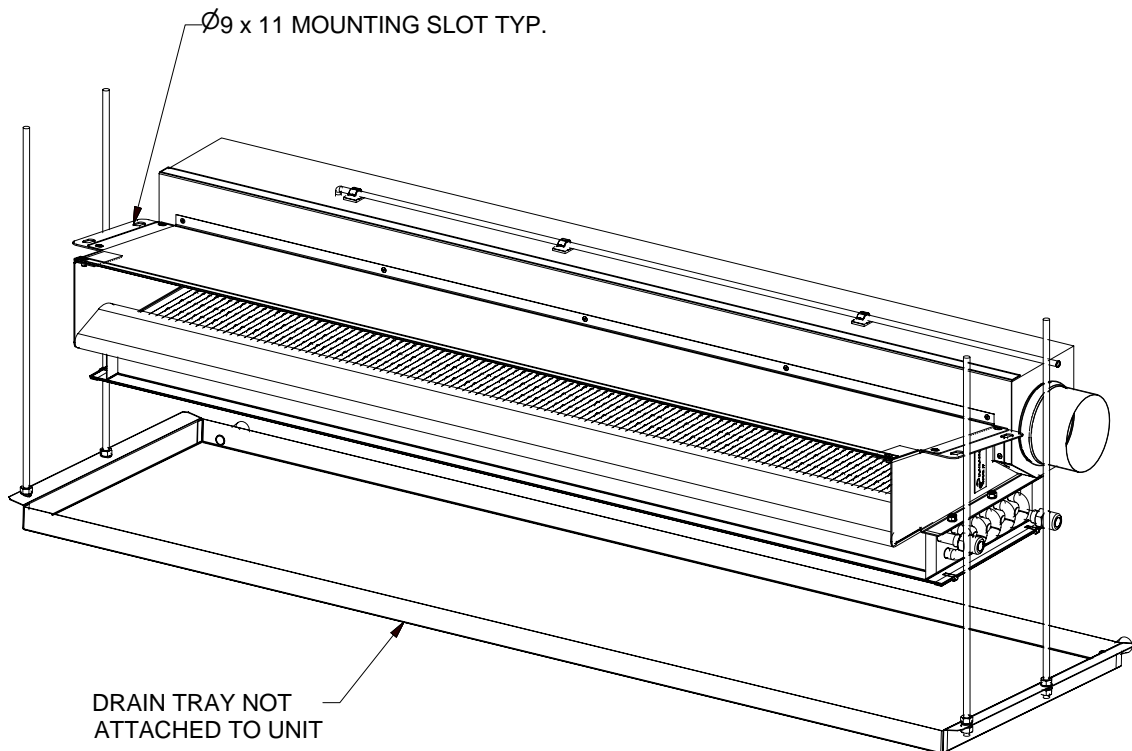




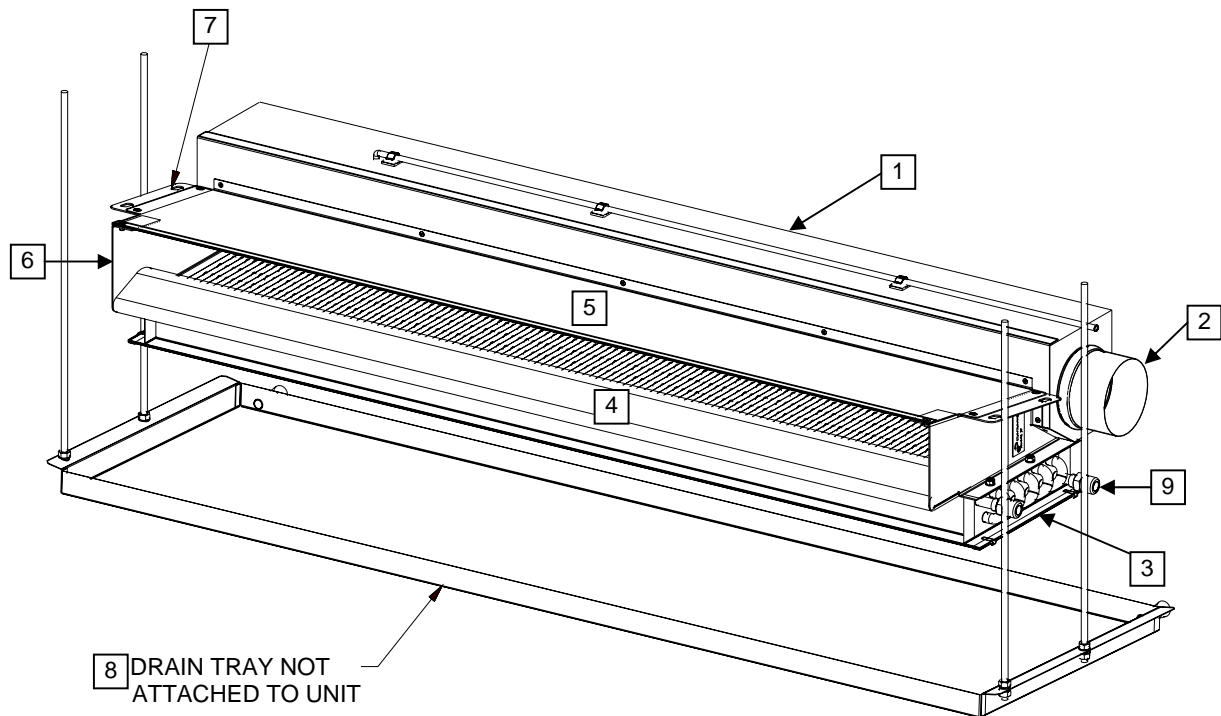
INSTALLATION & MAINTENANCE INSTRUCTIONS



HM30.02 - Horizontal Induction Terminal Unit

DESCRIPTION

STARLINE HM30 horizontal mounted induction terminal units are designed for horizontal (Bulkhead) installation with horizontal air discharge, and are manufactured to suit three coil heights and nine unit lengths (Refer Table A).



- | | | |
|------------------------------|-------------------|-------------------------|
| 1. Primary air plenum | 4. Mixing Chamber | 7. Mounting brackets |
| 2. Primary air spigot Ø100mm | 5. Back Plate | 8. Condensate drip tray |
| 3. Heat exchanger coil | 6. End Plates | 9. ½" BSP Male Fittings |

UNIT CONSTRUCTION

As shown in the above figure, each induction unit is comprised of:

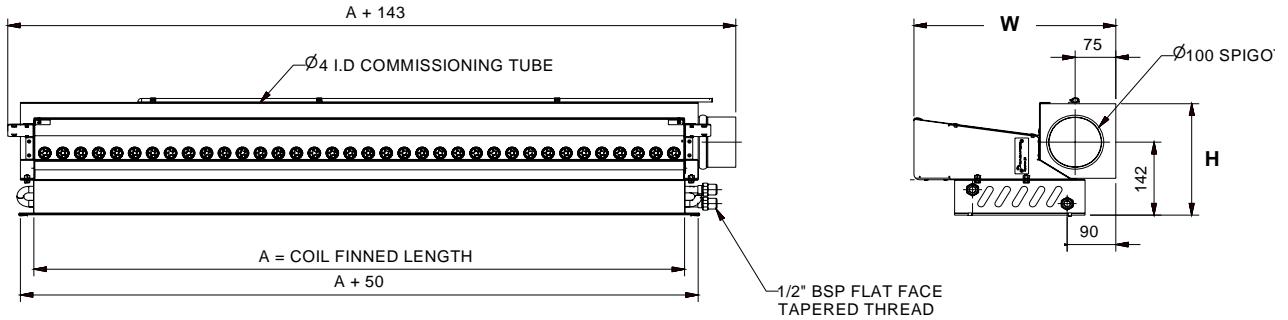
- Primary air plenum (1), which accommodates an array of primary air nozzles, a Ø100mm primary air spigot (2) and a Ø4mm air pressure commissioning tube.
- Air entrainment / mixing chamber (4), comprised of a fixed back plate (5), two end plates (6) and a profiled sidewall section at the air outlet opening.
- Heat exchanger coil (3), of aluminium finned 1/2" copper tube with 1/2" BSP male flat face tapered thread water inlet / outlet (9) fittings. The heat exchanger coil (3) is attached to the air entrainment / mixing chamber by M6 bolts, secured into the end plates (6).
- A condensate drip tray (8) that incorporates two 1/2" condensate water outlets is supplied loose, to be assembled to the unit at site.

STARLINE HM30 units are suitable for a wide variety of air and water handling configurations that must be designated prior to manufacture.

Water connection handings can be reversed in the field by removing, reversing and replacing the secondary heat exchanger coil to the preferred side of the unit.

Primary air spigot handing must be designated prior to manufacture as it cannot be reversed in the field.

PHYSICAL DATA



PHYSICAL DATA (Table A)

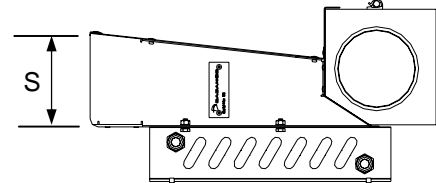
Unit Model	Coil Finned Length A (mm)	Air Plenum Length L (mm)	Overall Length (mm)	H = Unit Height (mm) Without Drip Tray			W = Unit Width (mm)		
				6 Tube	8 Tube	10 Tube	6 Tube	8 Row	10 Tube
HM30 -1500.--	1500	1550	1643						
HM30 -1400.--	1400	1450	1543						
HM30 -1300.--	1300	1350	1443						
HM30 -1200.--	1200	1250	1343						
HM30 -1100.--	1100	1150	1243	230	230	230	380	444	507
HM30 -1050.--	1050	1100	1193						
HM30 -1000.--	1000	1050	1243						
HM30 - 900.--	900	950	1043						
HM30 - 800.--	800	850	943						
HM30 - 700.--	700	750	843						

UNIT WEIGHTS (Table B)

Unit Model	Unit Weight (kg)		
	6 Tube HM30.02-A.262	8 Tube HM30.02-A.282	10 Tube HM30.02-A.102
HM30 -1500.--	24.9	25.8	41.1
HM30 -1400.--	23.2	24.0	38.4
HM30 -1300.--	21.5	22.3	35.6
HM30 -1200.--	19.0	20.6	32.9
HM30 -1100.--	17.4	18.9	30.2
HM30 -1050.--	16.5	18.0	28.4
HM30 -1000.--	15.7	17.2	27.4
HM30 - 900.--	14.0	15.5	24.7
HM30 - 800.--	13.5	13.7	22.0
HM30 - 700.--	11.6	12.0	19.2

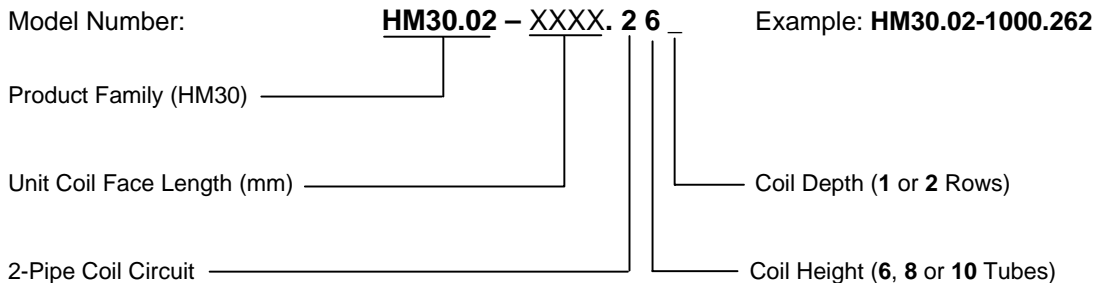
Supply Air Opening Size

Unit Size	S
HM30.02-A.262	121mm
HM30.02-A.282	121mm
HM30.02-A.102	132mm



NOTE: Unit weights vary slightly for 1 and 2 row coil and insulated & uninsulated plenum. Refer to Dadanco for specific operating weights for individual unit configurations.

UNIT NOMENCLATURE



OPTIONS

Available product options (Specify at time of order)

- Left or Right Hand chilled water connections (as viewed looking into the coil face).
- Left or Right Hand primary air spigot connection (as viewed looking into the coil face).
- 6, 8 or 10 Tube High heat exchanger coil
- Secondary heat exchanger coil lengths from 700 – 1500mm
- 1 or 2-row secondary heat exchangers
- Bottom or Rear primary air spigot location

INSTALLATION

UNIT AS DELIVERED

Each unit is delivered by Dadanco individually packed in a carton containing: -

- The heat exchanger coil secured in place
- The lint screen fitted to the air entry side of the heat exchanger coil.
- All nozzles fitted.
- A 4mm plugged sampling tube to measure the pressure in the primary air plenum.
- 1/2" BSP male flat face tapered thread connections on the coil inlet and outlet
- Drain tray supplied loose for fitment at site

If insulation is nominated at the time of ordering, the primary air plenum will be constructed from foil faced rigid cellular insulation material. The insulated plenum will be factory fitted with the primary air spigot, eliminating the flexibility of choosing primary air inlet unit handing at site.

INSTALLER TO PROVIDE

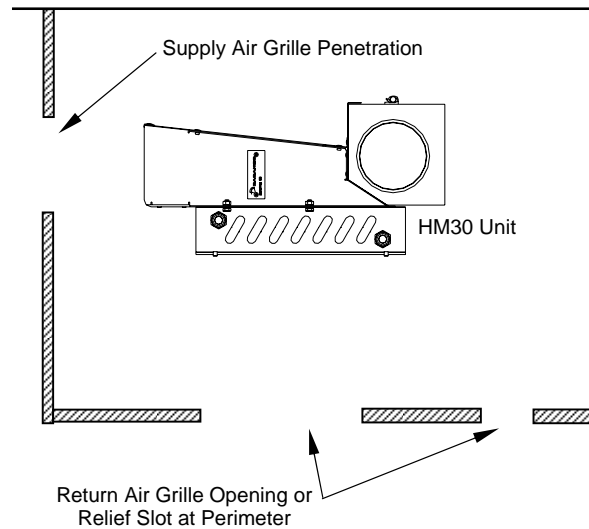
The installer is to provide the following: -

- A mounting system or frame. This should allow the unit to be suspended from above and for the air discharge opening to align to the supply air grille or grille neck without any significant gaps.
- Condensate drainage from the drip tray outlet, where required (Drain to waste).
- Secondary water flow and return piping with isolation valves (both lines) and flow control valves.
- Primary air volume control / balancing device for each primary air flexible duct takeoff.
- Insulation to the primary air plenum and condensate tray if required and not provided during unit manufacture.

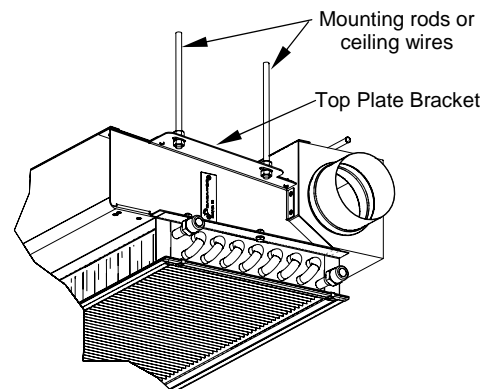
INSTALLING THE UNIT

To prepare the STARLINE HM30 induction unit for mounting and connection, carry out the following procedures: -

- Determine the orientation of the air and water connections.
- Ensure there is adequate space within the unit enclosure or bulkhead for the installation of the unit. Check that this space is clear of other services.
- Check the installation space for the unit, to ensure adequate clearance to remove the lint screen during maintenance, and to make piping and duct connections. The space for the lint screen removal will provide adequate air entry space to the heat exchanger coil.
- Ensure the return air path to the unit is clear and does not restrict airflow to the unit.
- Position the unit in the ceiling space or bulkhead with the supply air opening aligned to the penetration for the supply air grille.
- Return air opening should be provided by a return air grille in the bulkhead beneath the HM30 unit or by a 50-75mm relief slot at the perimeter.

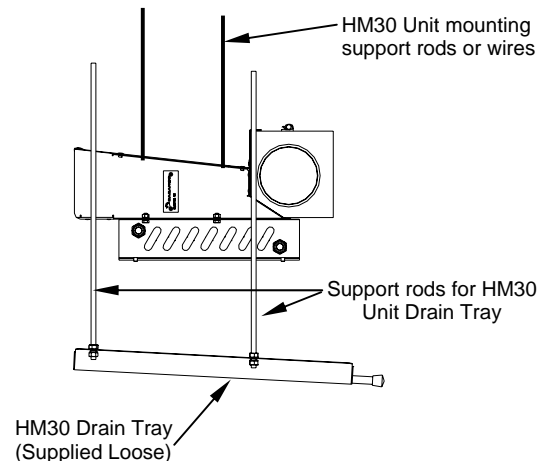


- Secure the HM30 unit in the ceiling space to the supporting frame or slab above with threaded rods or ceiling wire.
- Install the mounting rods to the 9mm mounting slots provided in the top plate bracket of the HM30 unit mixing chamber.
- Ensure the HM30 unit is installed in a level attitude with proper alignment to the supply air grille penetration.
- Install the HM30 drain tray (supplied loose) with threaded rods, washers and nuts.
- Secure one end of the rods to the 9mm mounting points provided on the drain tray flange and the other end to the unit mounting frame, ceiling member or slab above. **NOTE:** Drain tray rods do not connect to HM30 unit body.
- Position the drain tray as shown with fall to the rear of the unit if condensate drain lines are to be used.
- Connect the unit drain tray outlets to the condensate drainage system using 1/2" drain tube.



NOTE: Take care in removing the sealing caps from the drain connections. Remove the caps using a twisting movement. If excess force is used in connecting the drain, ensure that the sealant has not been disturbed, which could result in a water leak occurring. If there is any doubt, remove the tray drain stub, apply new sealant, and re-install.

Note. Should the air conditioning design not require condensate drainage, leave the sealing caps of the condensate outlets in place.

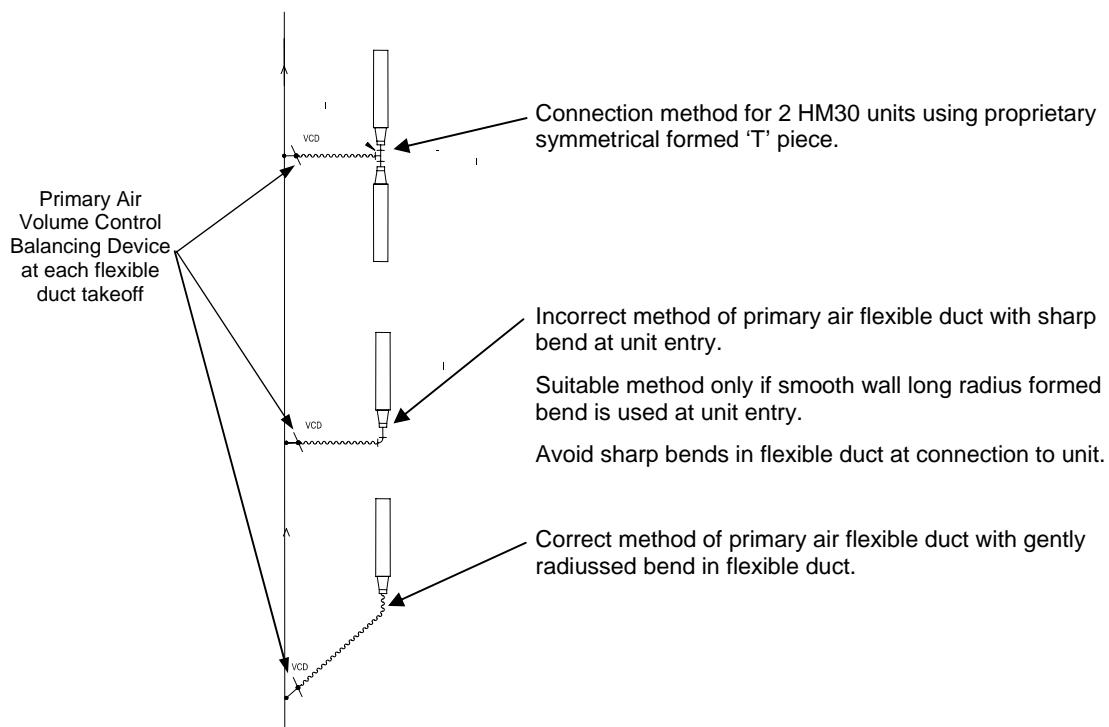


- Connect the primary air flexible duct to the Ø100mm spigot of the primary air plenum.

Primary air inter-connecting flexible duct should be a minimum of 1000mm straight or slightly radiussed 100mm diameter flexible duct between the primary air duct trunk and the primary air spigot of the HM30 unit.

Where rigid primary air duct is used, flexible connecting duct can be of a shorter length with a straight approach to the unit inlet from the nearest radiussed bend in the rigid ductwork.

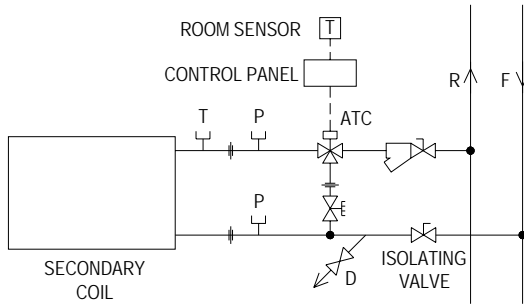
NOTE: Do Not install flexible duct with sharp bends or restrictions upstream of the HM30 unit primary air spigot connection and plenum.



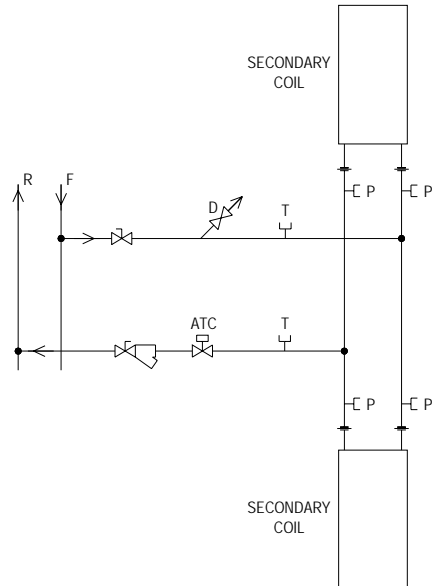
- Make a vapour tight seal with approved tape at the duct insulation and plenum spigot joint.

- Install the chilled water piping and valves as indicated on the working drawings. Connect the unit water inlet / outlets to the water reticulation system.

Single Unit Connection



Dual Unit Connection



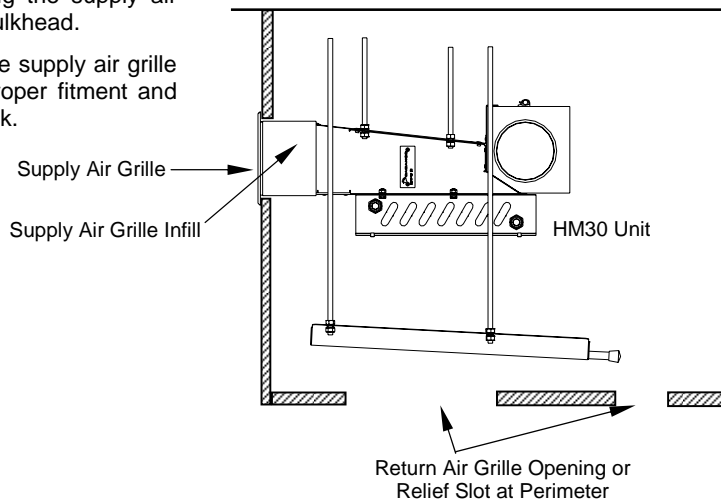
NOTE: It is recommended that the unit be connected with readily removable pipe lengths or flexible hoses to permit disconnection and removal of the coil, should this be required during maintenance.

- Ensure that the secondary chilled water piping is aligned with the coil and the coil connection stubs. Use the correct tools to grip the flare nuts and union and apply only sufficient force to make the joint.

Failure to correct any misalignment of the water inlet outlet connections may result in water leaks through cracked water pipe connections. This will void the warranty on the secondary heat exchanger coil.

- Complete the installation by installing the supply air grille and infill to the HM30 unit and bulkhead.

Infill piece between HM30 unit and the supply air grille neck should be site measured for proper fitment and minimal air leakage from the grille neck.



- Install return air grille if required.

COMMISSIONING

The only way to accurately commission the primary air flow to the HM30 Induction Terminal Unit is to measure the static pressure in the plenum. To achieve this, remove the plug from the commissioning extension tube and connect the pressure differential instrument (Manometer) onto the commissioning tube.

NOTE: Do not attempt to measure the static pressure back from the unit at the start of a flexible duct connection. Measure only at the provided commissioning point.

To obtain the designed primary air and total air flow rate, adjust the damper / volume control device as necessary to obtain the specified design primary air plenum pressure to achieve the required primary air flow.

The primary air quantity can be obtained from the pressure/air flow table or curve supplied for the unit size.

Replace the rubber plug to seal the test point opening on completion.

NOTES:

Do not attempt to confirm total supply air quantities using a balancing hood measurement method. The airflow from the HM30 unit is a low velocity, low pressure air stream that is well below the accuracy range of restriction imposing measurement hoods. Resistance imposing balancing hoods are not recommended for validating total air quantity.

Do not attempt to confirm the primary air flow quantity by conventional Pitot-traverse methods in the primary air ductwork. Low duct velocities and boundary layer measurement inaccuracies do not permit accurate measurements of duct velocities for primary air installations in small ducts.

For secondary water flow commissioning, a suitable balancing valve should be installed in order to measure and adjust the secondary water flow to the designed/specified value. Adjust the balancing valve in order to achieve the specified flow rate per unit, according to the unit schedule.

MAINTENANCE

In normal operating conditions the minimum required maintenance involves the heat exchanger coil, the lint screen and the condensate drain tray and consists of:

- Visual inspection to comply with AS3666.2 or local regulations, for grime, lint, bacterial growth, etc., on the heat exchanger coil and in the condensate drain tray. If found, such deposits must be removed using appropriate cleaning methods.
- Yearly mechanical cleaning of heat exchanger coil and lint screen (e.g. vacuuming, brushing).
- Inspect the nozzles for any depositions of dust. Remove and clean nozzles if dirt deposits are found.
- Four yearly chemical cleaning (e.g. washing with health safe chemicals and clean water rinsing).

To remove the lint screen:

- a) Gain access to the underside of the unit through the return air grille or access panel provided by builder.
- b) Remove lint screen clips from coil end frames to free lint screen from secondary coil frame.
- c) Move lint screen clear of secondary coil surface and remove through the access opening.
- d) Replace lint screen in the opposite manner by positioning the lint screen aligned to the corners of the secondary heat exchanger and re-install metal lint screen metal clips.

To remove the heat exchanger coil, ensure the water supply is isolated at the unit, disconnect the water inlet / outlets, remove the lint screen as described above, undo the four fixing bolts on the heat exchanger coil and lift the coil clear.

After the coil has been replaced, refit the four fixing bolts, reconnect the water inlet / outlets, reinstall the lint screen and balance the secondary water flow to the specified value.

DISCLAIMER: While every effort is made to ensure the details contained herein are kept up to date, in the interest of ongoing product development DADANCO reserves the right to alter the information without notice.