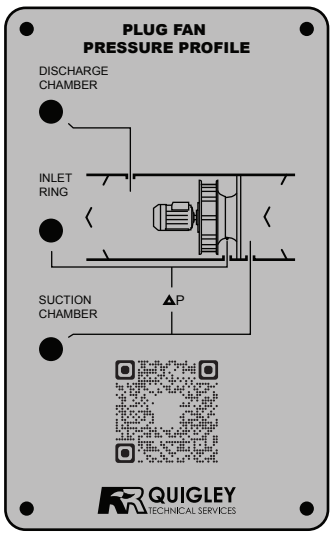
FAN HUB PRESSURE PLATE



INSTALLATION GUIDE

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APPLICATION

This stainless steel pressure reference plate provides a stable, long-term solution for monitoring the static pressure profile of an air handling system equipped with a plug fan.

With the three static pressure ports plumbed to reference fan discharge, fan hub inlet ring and fan suction pressure; multiple aspects of system performance can be derived and utilised during commissioning, for ongoing BMS monitoring and for fault diagnosis.

FLOW CALCULATION

Utilising the static pressure measured at both the fan hub inlet ring and the suction chamber, the total volumetric flow rate of the fan can be calculated using the following formula:

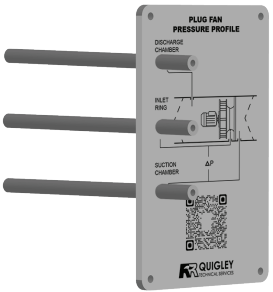
Air Volume [Litres/sec] =

$$\frac{(\mathbf{k} \cdot \sqrt{(\text{suction [Pa]} - \text{inlet ring [Pa]})})}{3.6}$$

*Where **k** is the model specific, fan hub nozzle coefficient, published by the fan manufacturer. Typically, the published coefficient is for a flow rate in m^3/hr, which is then divided by 3.6 to convert to L/s. The units used may vary between manufacturers however.

INSTALLATION

Your package should include the following items necessary for correct installation:



x1 fan hub pressure plate

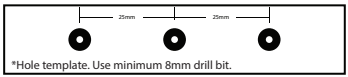
x6 cable tie clips

x6 cable ties

x4 self tapping, philips drive sheet metal screws

0.5m vinyl tubing
[joiner tube]

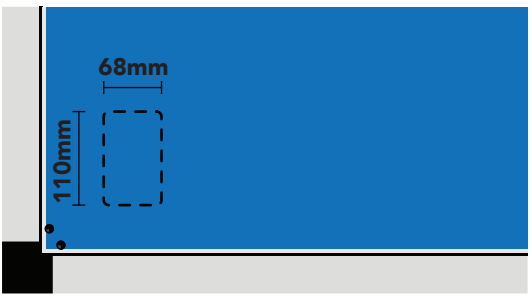
5m poly tubing



x1 adhesive drill template

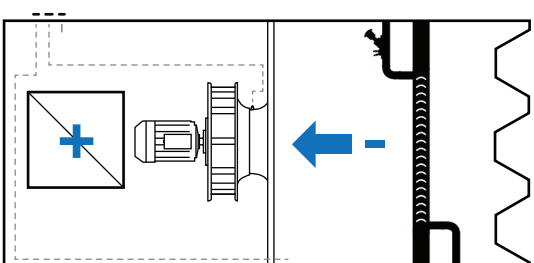
1.

Identify a flat, unoccupied location on the external surface of the AHU that features sufficient clearance [110 x 68mm] to accommodate the pressure plate.



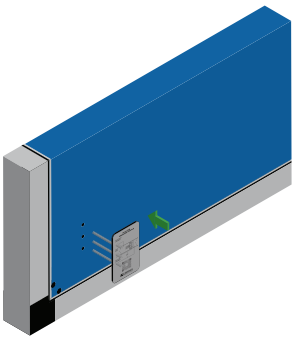
2.

Ensure fan is de-energised and isolated. Open AHU and inspect inside. Identify suitable paths to run lengths of the poly tube from the plate location out to the discharge chamber, inlet ring nipple and suction chamber.



3.

Using a spirit level or set-square, apply adhesive drill template sticker at the nominated location, ensuring square alignment.

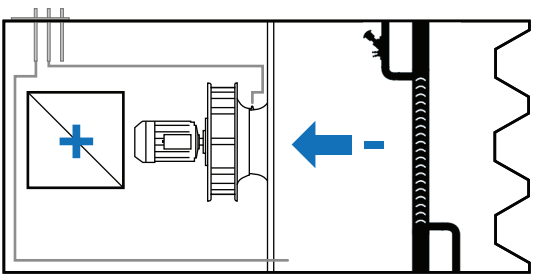


Drill 3 x holes with centres as indicated on template. Minimum drill diameter = **8mm.**

Peel protection from pressure plate backing tape, insert 3 x long-ended stainless ports into drill holes and adhere plate to AHU. Fasten using self-tapping screws provided.

4. Final Step

Ensure fan is de-energised and isolated. Run lengths of vinyl tube as determined in STEP 2. Secure tube to AHU interior panelling using 3M cable tie clips and ties provided. Connect tubes to correct pressure plate ports. Fan can then be re-energised and balancing works commenced.



R & R Quigley Technical Services has been providing air balancing and commissioning services to the construction industry for over 30 years.

During that time, we have developed numerous pressure measurement tools and aids to improve the speed and accuracy of the HVAC commissioning process.

For more information, or to contact us regarding our commissioning services, please visit our website:

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