LEGALETT

FUNCTIONAL CHECK FOR WATER COIL UNITS

FUNCTIONAL CHECK TO BE PERFORMED BY A QUALIFIED PERSON - with Product Data Sheet (PDS) in hand for unit. If any faults are found, complete entire functional check again after repairs.				
(1)	Check if correct line voltage is supplied to unit between L1 and L2 or N. Compare to PDS and fan markings	No	 Incorrect breaker (wrong voltage) Tripped breaker or local disconnect off (no voltage) 	
Yes				
(2)	Check that control voltage is correct between thermostat terminals 1 and 2. Refer to PDS.	No	- Blown insert fuse - Faulty transformer	
	Yes			
(3)	Actuate each room thermostat individually (turn other zones off), referring to Owner's Certificate or Design Drawing and insert zone legend (if applicable), and check for control voltage at the corresponding actuator for each zone. Refer to PDS for terminal numbers for each zone.	No	- Faulty wiring - Dead room thermostat battery (if applicable) - Faulty room thermostat	
	Yes			
(4)	After a delay of up to 5 minutes, check that the control valve has been actuated - coloured indicator in actuator dissapears (MMA) or appears (Danfoss) in response to applied control voltage. Refer to steps 5 and 6 for concurrent water temperature and fan voltage review.	No	- Faulty actuator	
	Yes			
(5)	Check for hot water at inlet pipe of each individual heat exchanger, prior to heat being present at the outlet pipe. The inlet and outlet water temperatures at main inlet and outlet pipes for an operating unit should be less than 12°C (22°F) apart (use a clamp-on thermocouple, availabe from Legalett). A higher difference indicates low flow, excessive inlet water temperature or an extremely cold slab. Complete steps 4-6 for each zone individually (all other zones off) and again with all zones on.	No	 Faulty recirculation pump Faulty hot water supply system - low/no flow in all zones Valve obstruction - low/no flow in one zone Isolation valve closed Air lock in system Inlet and outlet lines are reversed (unit may cycle) 	
Yes				
(6)	Check that voltage is applied to fan by insert internal thermostat in response to hot water at inlet pipe, and disconnected when heat in box has been dissipated. Test required for one zone only. Refer to PDS.	No	 Insert internal thermostat out of adjustment - see below Faulty insert internal thermostat Insert internal thermostat wiring reversed (fan stops in response to heat) 	
	Yes			
	 Insert Internal Thermostat Adjustment Procedure Place internal thermostat bulb in 40°C (104°F) water. (30°C (86°F) for 2009 and older units) If internal thermostat does not apply voltage to the fan, adjust the internal thermostat so that it applies voltage to the fan at the above temperature and disconnects voltage from the fan at 3°C (6°F) less. 5° of screw adjustment is approximately 1°C (2°F). Note that internal thermostat response may take several minutes Insulative floor coverings may require a higher setting - turn 1/4 turn clockwise Geothermal energy supply may require a lower setting - turn 1/4 turn counter-clockwise 			
(7)	Check that the fan responds to voltage applied by the insert internal thermostat, is running within 15% of the rated speed (use an optical tachometer, available from Legalett) and is not overheating. Refer to markings on fan1 stands for RPM.	No	 Faulty capacitor (causes overheating, slow fan speed, or failure to start) - one capacitor lead must be disconnected to measure capacitance, using Canadian Tire 52-0052-2 or equivalent digital voltmeter with capacitance scale Fan internal overheat protection tripped - cycle power Faulty fan 	
	Unit is functioning properly, continue to			
	Troubleshooting Guide if problem is not resolved			