

VH-EZT Cylinder Head Temperature (CHT) Management

Ground CHT Management

In moderate to very hot ground temperatures, pilots need to be aware of Cylinder Head Temperature (CHT) Management in this type of aircraft.

The design of the aircraft is very slick, especially in the engine cowl area with minimal airflow into the engine for ground cooling. EZT has a system of Dual Cooling for the Engine. The Cylinders are cooled by ram airflow, however, the Cylinder Heads are liquid cooled by a 50/50 Ethylene Glycol/Water based Radiator cooling system.

EZT's Cylinder Head Temperature is clearly shown on the bottom left of the Dynon D120 EMS (see photo below)

In any taxi phase, pilots must continuously monitor the CHT gauge during ground operations. This is regardless of what the outside temperature is as idling the aircraft at too low an RPM at any ambient temperature can lead to high CHT.

The following situations can very quickly lead to engine overheating in high ambient temperatures and in poor relative wind position:

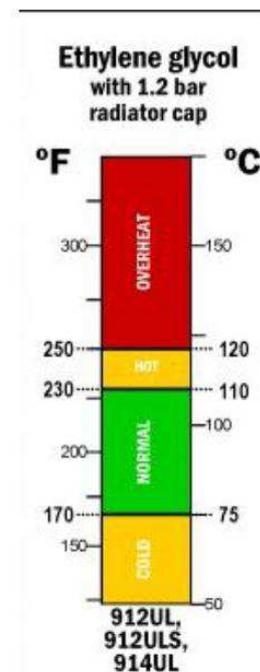
- Not monitoring CHT as you taxi and stand idling
- Extended time on the ground at idling power while holding for T/Off
- Long engine run-ups in nil wind conditions
- Taxying after Continuous Circuits at HIGH Power settings
- Simultaneous use within 1 hour of the last flight
- Extended taxi time Downwind during pre T/Off and after Landing

If you see the CHT in the EZT getting over 110+ degC you will need to take immediate steps to reduce the temperature. If you are on the ground the best thing you can do is get flying as temperatures will come down pretty quickly as you get into the air.

If that isn't possible you must immediately increase idle RPM increase the engine idle speed to help cooling BEFORE the temperature reaches 120C and turn the Aircraft into wind. Increasing the idle speed to **3000 - 3500** rpm will increase airflow over the engine and increase the speed coolant moves through the engine. If it's a windy day, always turn the aircraft into the wind. This will also increase airflow over the engine.

If you are at the holding point advise ATC that you require minimal delay for take-off due to temperatures "**Jandakot tower request minimal take-off delay due temperatures**". They are there to help don't be scared to ask them.

Temperature Range Guide CHT



ROTAX ENGINES

Don't let the temperature rise past 130 deg C and higher. If this happens you should consider returning to the parking bay and shutting down. DO NOT let the CHT get any higher while taxiing back to the bay - ensure high RPM and faster-than-normal (but still be safe) taxi to keep temps down. Notify the Maintenance Officer and JFC Engineering so the coolant levels can be checked. You will also be required to report the maximum temperature reached and duration.

Key points to remember:

- The aircraft throttle should not be left in the closed position (idle stop) on the ground. Idle RPM should be 2400+ RPM to allow sufficient coolant flow through the engine. Higher ground RPM is required on a hot day.
- Perform run-ups into wind
- Don't be afraid to ask ATC (tower) for expedited take-off if your CHT is getting high.
 - Better to make someone else go-around than to boil and lose your coolant.

Airborne CHT Management

If you are in the air and climbing when the CHT gets too high (120 deg C), reduce your pitch attitude and climb at a higher airspeed. If that doesn't help enough then level off and reduce power until the temperatures cools. If you are already in level flight with a high CHT then reduce power. If the temperature still remains too high, reduce the power further and go into a descent to increase the airspeed. If temperatures are still high a precautionary landing at the nearest airport is warranted.

