

TEMPERATURE GUIDELINES

REXA ELECTRAULIC™ ACTUATORS and drives are fluidic devices that use oil as an energy transfer medium. A positive displacement gear pump converts the motor rotation to constant flow of the liquid. The output thrust or torque of the unit is directly related to the pressure of the liquid. Although the gear pump will develop the nominal working pressure (2000 psi) over a wide range of liquid viscosity, conventional hydraulic oil has shown to be too thin. A fluid that exhibits the correct properties is automotive oil (Castrol Syntec SAE 5W-50). When coupled with the standard cartridge heater, automotive oil is applicable to most ambient temperatures.

The chart below shows the temperature ranges for the recommended automotive oil. This is for a speed setting between 60% and 100%. A speed setting below 60% may allow operation at somewhat lower temperatures than specified. Three ranges are identified:

TR 1: *The standard oil and the cartridge heater;*

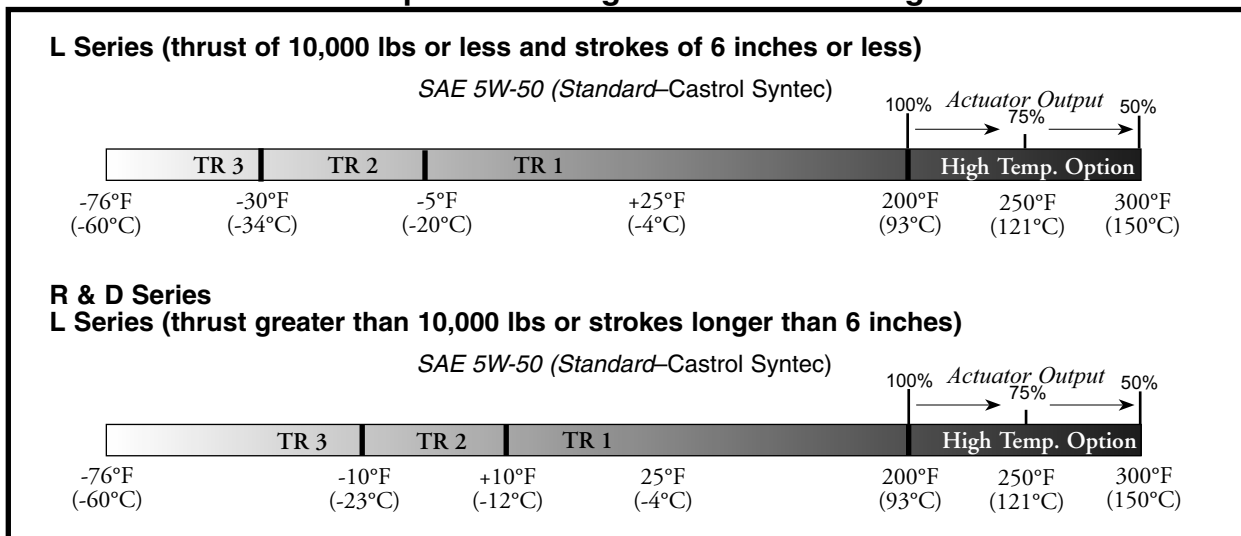
TR 2: *One inch of thermal insulation covering the entire unit is recommended;*

TR 3: *Heat tracing should be provided in conjunction with a one inch covering of thermal insulation.*

At ambient temperatures above 200°F (93°C), the rated output is linearly reduced according to the chart.

For electrical power sensitive installations, the cartridge heater is not required for the standard oil at ambient temperatures above 25°F (-4°C).

Ambient Temperature Range for Various Configurations



Many outside factors, such as wind velocity and solar heat load, can affect the determination of "ambient temperature". Provisions should be made to compensate for outside influences. A unit exposed to high wind conditions may require a simple barrier to reduce heat convection. Solar heating can produce high temperatures on exposed metal surfaces. A sun shade will greatly reduce these temperatures. Proximity to high process temperatures may cause a radiated heat load. A sheet of aluminum will stop this source. The immediate vicinity around a power plant is usually warmer than the local temperature. Most drive installations are not subjected to the predicted temperature conditions.

The wide temperature range for REXA actuators and drives make most installations straightforward. Only in extreme ambient temperatures should these steps be considered. Forethought and consultation with your local representative can provide the best approach for your specific environment.