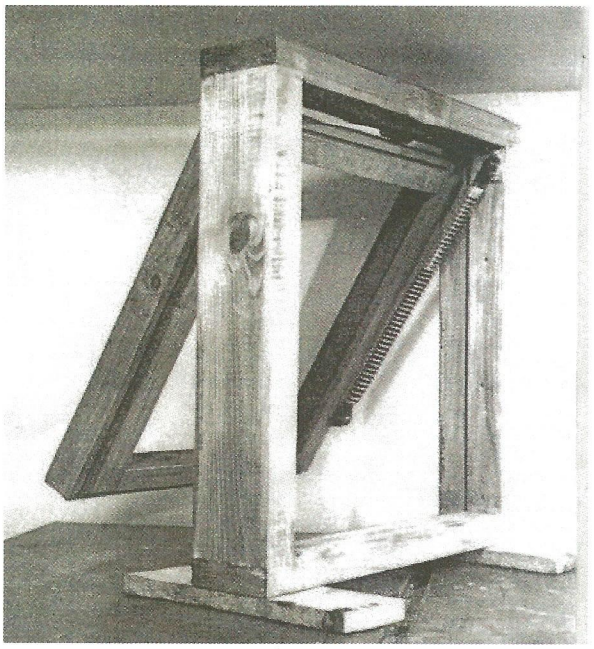
Environmentally friendly

due to working by the use of natures own materials : expands +retracts by heating +cooling of wax, which consists of plant oils
(= harmless to humans even if licked, as opposed to electricity failures)



THERMACT

Thermostat + motor all in one...

Thermact is a thermo-hydraulic cylinder based on wax's difference in volume between its solid state and its liquid state. A cylinder is filled with wax, and at one end the cylinder has got a immersion piston. As the wax expands the piston is pushed out, resulting in a linear movement with a stroke length of up to 200 mm (approx.8") which

adds a pressure force **of up to 80 Kg (=176 Lbs)**

When the wax contracts the piston will have to be pushed back

by an EXTERNAL compressive force of at least 8 kg (18 Lbs).

The force can be supplied either by the weight of whatever is being lifted or by a fixed spring (see illustration).

THERMACT is driven exclusively by thermal energy absorbed from or released to the surrounding medium. This results in savings on both energy and on installation works and costs.

Advantages using THERMACT

- no induction of external energy
- extremely simple to install
- large piston force compaired to size of cylinder
- totally sparkles i.e. no danger of fire or explosions
- inexpensive compaired with other linear actuators

THERMACT is usually required to perform in atmospheric air, but can also function in non-corrosive gasses and liquids. The medium must not however corrode nitrile rubber, which is the material our sealing rings are made of. In water from Water-works problems can also arise due to calcium deposits on the piston causing leaking.

Thermact's piston movement in relation to temperatures follows a hysteresis curve as shown down to the left. The arrows indicate the reaction due to rising or falling temperature in the medium.

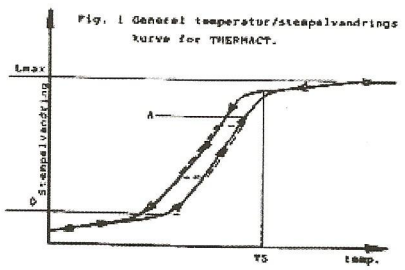
When temp TS is reached the piston movement per added degree is significantly decreased.

The wax is now fluid, which creates only minor further expansion.

Piston movement is locked mechanically at L-max. Movement under 0-line should not be utilised as the wax approaches total solidification, thus inhibiting all piston movements.

Under line A the piston movement should NOT be blocked, as it will lead to an increased pressure in the cylinder that may damage it.

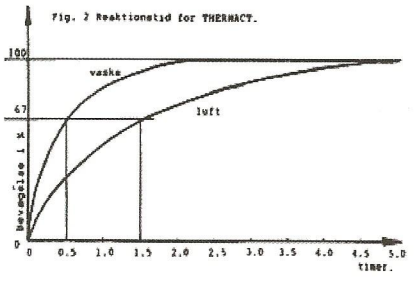
If piston movement is impeded above line A, there is a max-temperature for each wax-mixture available – see the next page.



THERMACT responds slowly to small changes in the surrounding temperature and faster to faster changes.

It can alter right from 2-3 min. until start-opening right up to 11 hour for 2/3 max-movement to occur in atmospheric air.

The reaction is always faster in liquids !! See Fig.2 to the right.



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