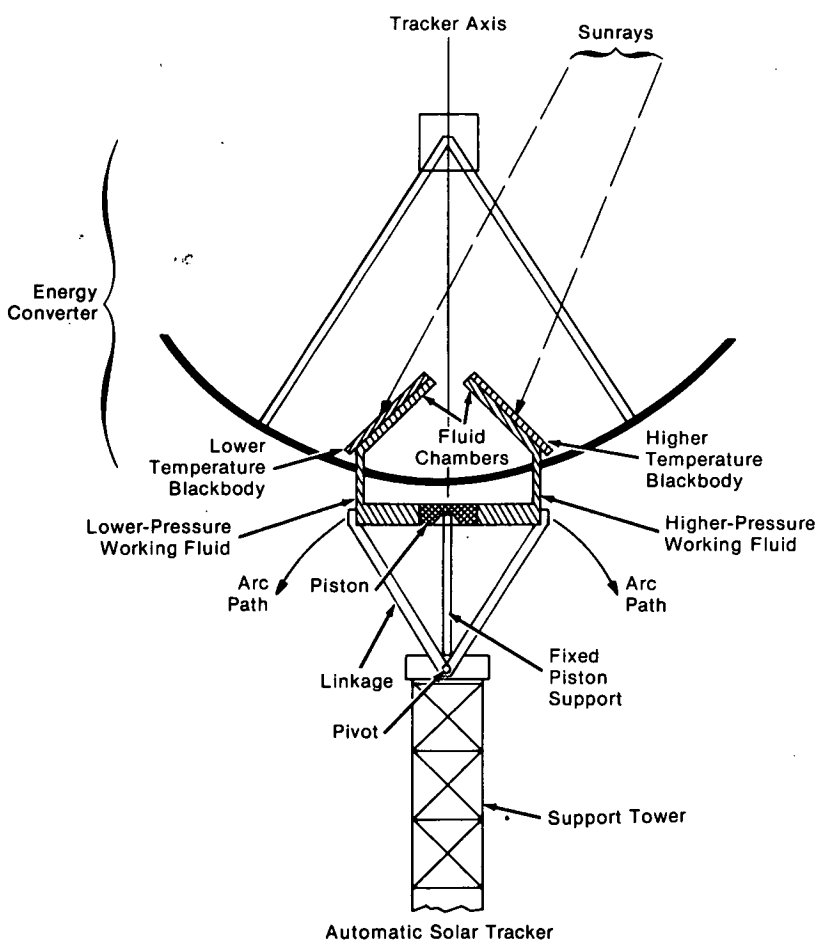
NASA TECH BRIEF

NASA Pasadena Office

Automatic Solar Tracker

A new solar tracker requires no servo power and needs minimal maintenance. It uses solar energy directly to keep the axis of a Sunfall collector pointed at the Sun. The tracking mechanism uses differential pressure of a condensable fluid such as Freon against a fixed piston to equalize the radiant energy on a pair of blackbody elements. The blackbody elements are used to heat the fluid to generate the expansion.

The illustration shows the tracker with a typical energy converter attached. The tracker axis is pointing slightly away from the Sun, and the radiant energy falls more directly on the blackbody near the Sun. This blackbody rises in temperature, heating the working fluid in contact with it. The working fluid on the warmer side expands against the piston more than the fluid on the cooler side. This causes the tracker axis to move toward the warmer side until both blackbodies receive equal radiant energy and the axis of the tracker points directly at the Sun.



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(continued overleaf)

Note:
Requests for further information may be directed to:

Technology Utilization Officer
NASA Pasadena Office
4800 Oak Grove Drive
Pasadena, California 91103
Reference: TSP75-10237

Patent status:
NASA has decided not to apply for a patent.

Source: Bruce L. Conroy of
Caltech/JPL
(NPO-13630)

Categories: 03 (Physical Sciences)
06 (Mechanics)