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Hollis

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[54] **SYSTEM FOR DETERMINING THE APPROPRIATE STATE OF A FLOW CONTROL VALVE AND CONTROLLING ITS STATE**

5,195,467 3/1993 Kurz 123/41.1

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[52] U.S. Cl. **123/41.1; 236/34.5**

[58] Field of Search 123/41.08, 41.09, 123/41.1, 41.31; 236/34.5

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[57] ABSTRACT

A temperature control system in a liquid cooled internal combustion engine equipped with a radiator controls the state of a flow control valve for controlling flow of a temperature control fluid through a passageway leading to the radiator. Sensors detect the temperature of the temperature control fluid, t1, and the ambient air temperature, t2. An engine computer receives signals from the sensors, produces control signals based on both of the sensor signals, and sends the control signals to the flow control valve to control the state of the valve. The values t1 and t2 define a mathematical function of t1=f(t2) which forms a two-dimensional curve on an orthogonal coordinate system having axes t1 and t2. The curve divides the coordinate system into two regions, one on either side of the curve. The engine computer control signals prevent flow through the valve when coordinate pairs of t1 and t2 lie on a first region of the coordinate system and allow the flow when coordinate pairs of t1 and t2 lie on a second region of the coordinate system.

25 Claims, 36 Drawing Sheets

