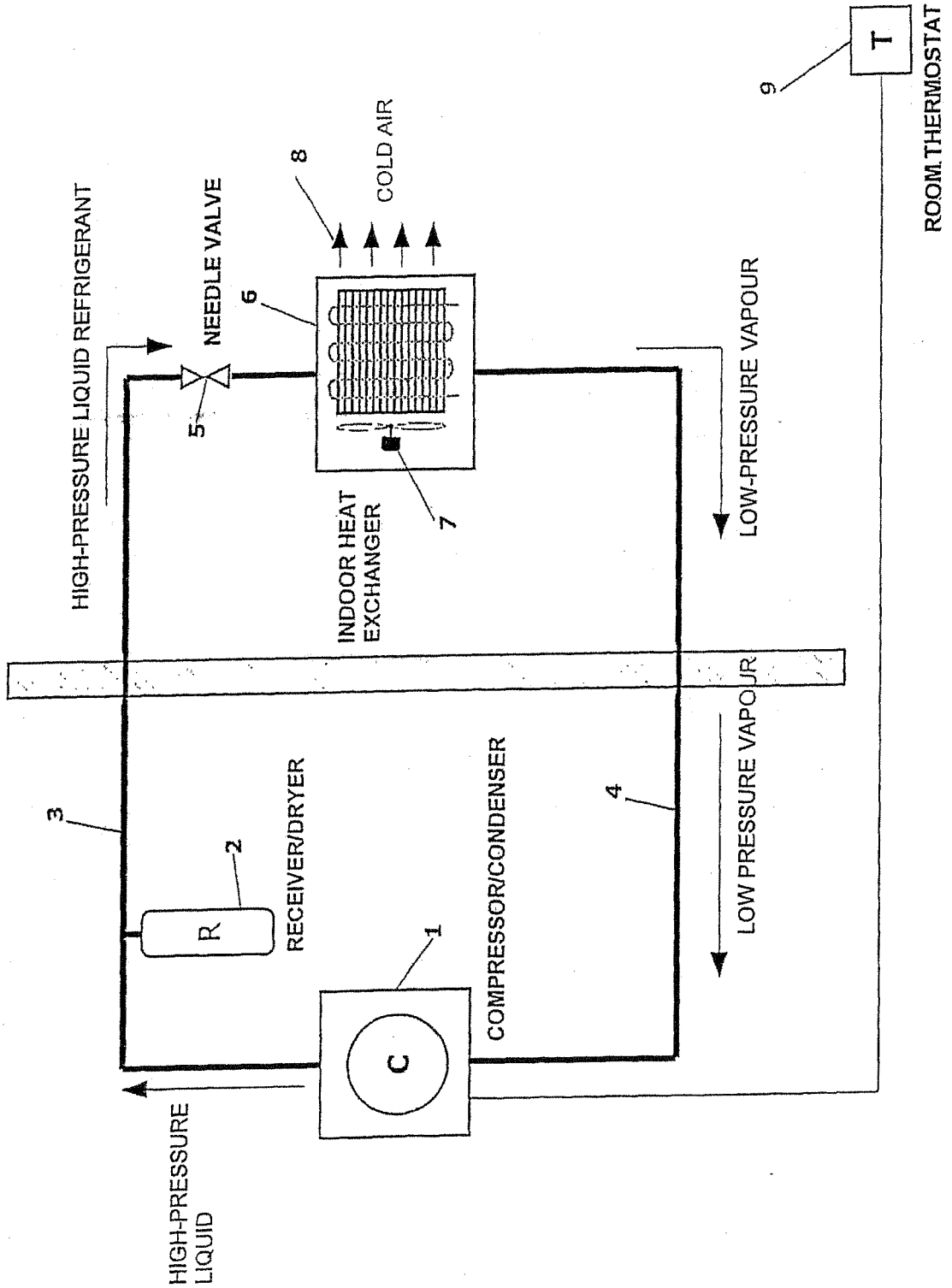


Figure 1 (Prior Art)

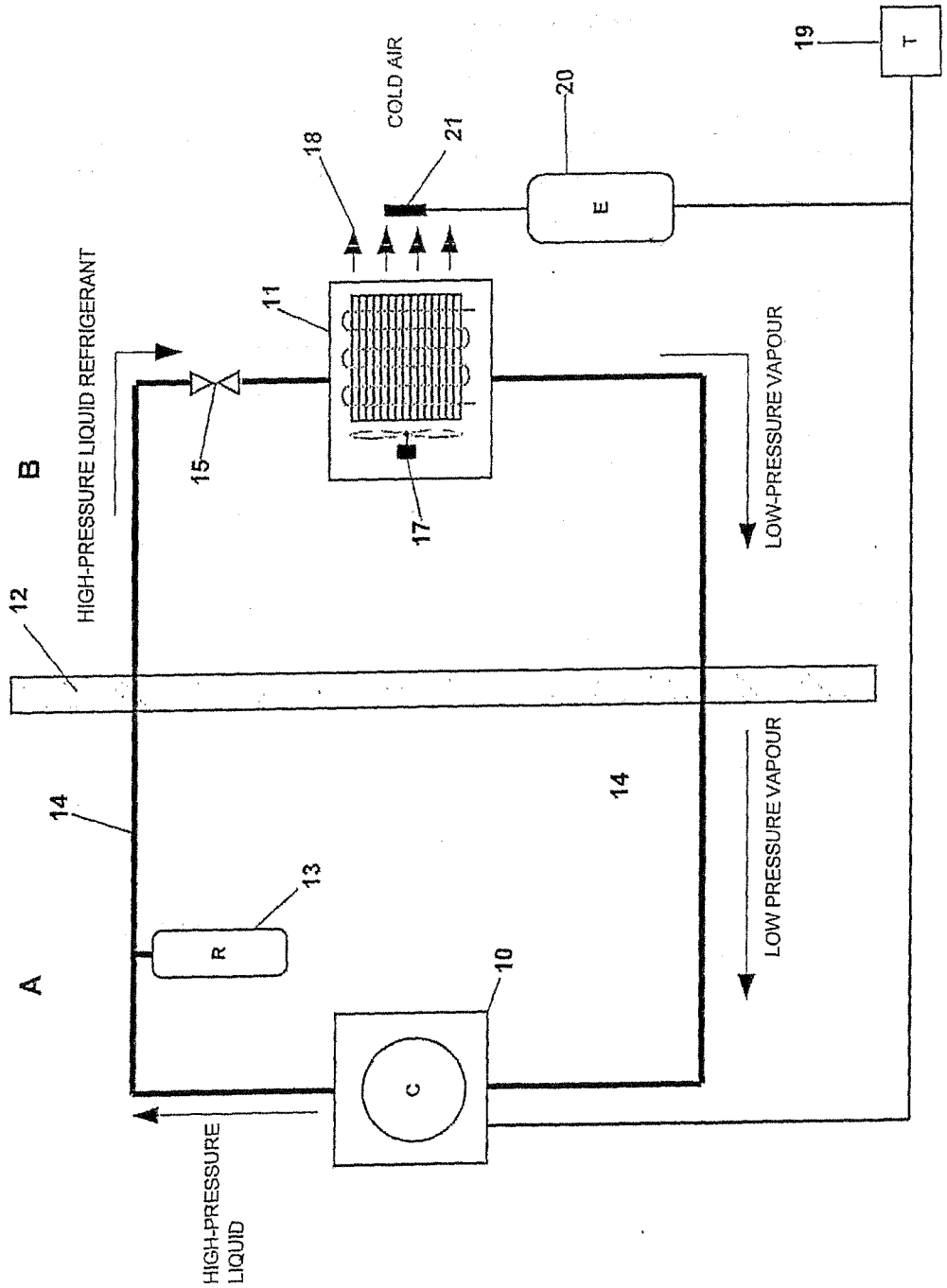

A
B
HIGH-PRESSURE LIQUID REFRIGERANT
HIGH-PRESSURE LIQUID
LOW PRESSURE VAPOUR
LOW-PRESSURE VAPOUR
COLD AIR
C
R
E
T
10
11
12
13
14
14
15
17
18
19
20
21

Figure 2

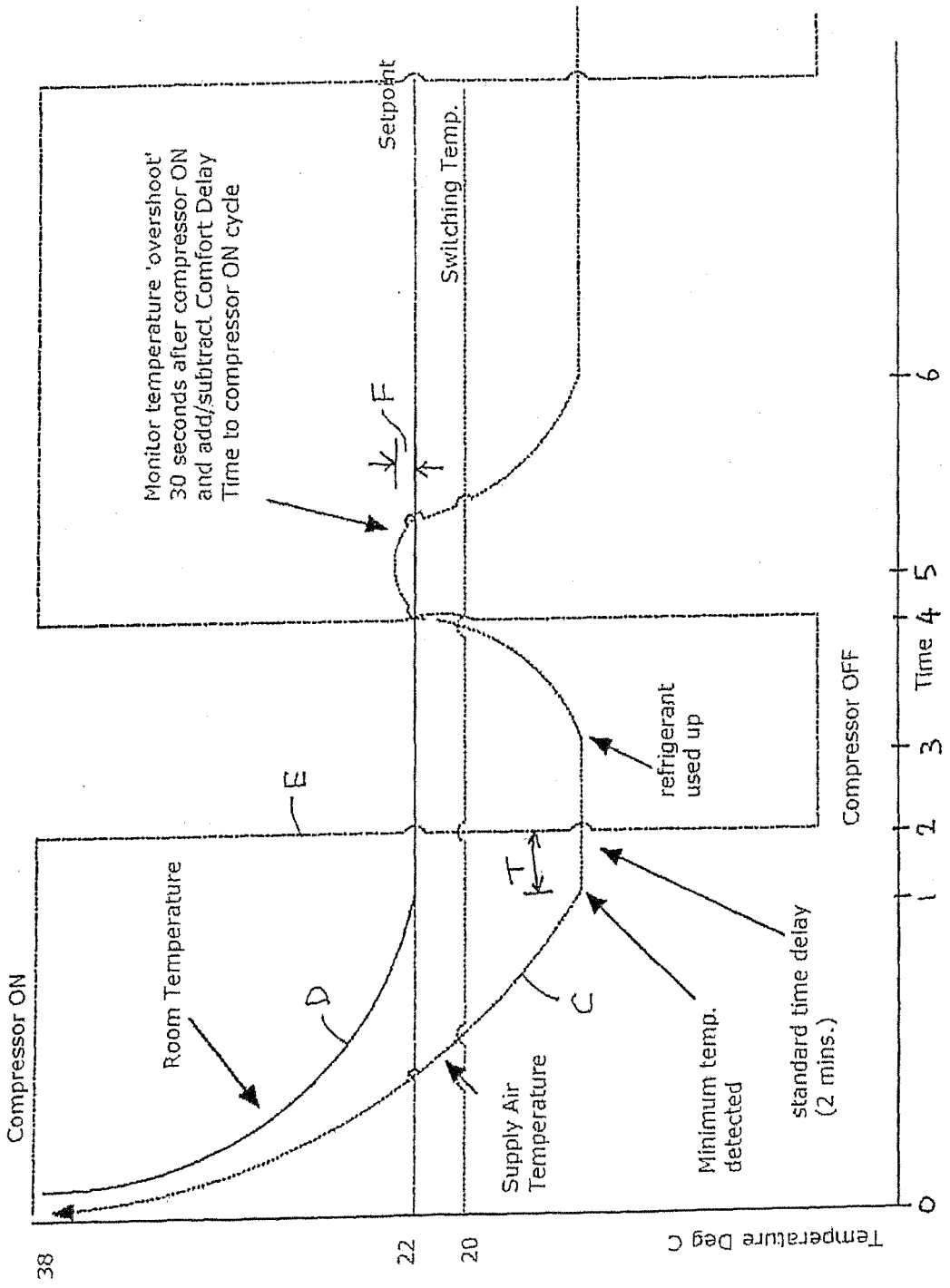
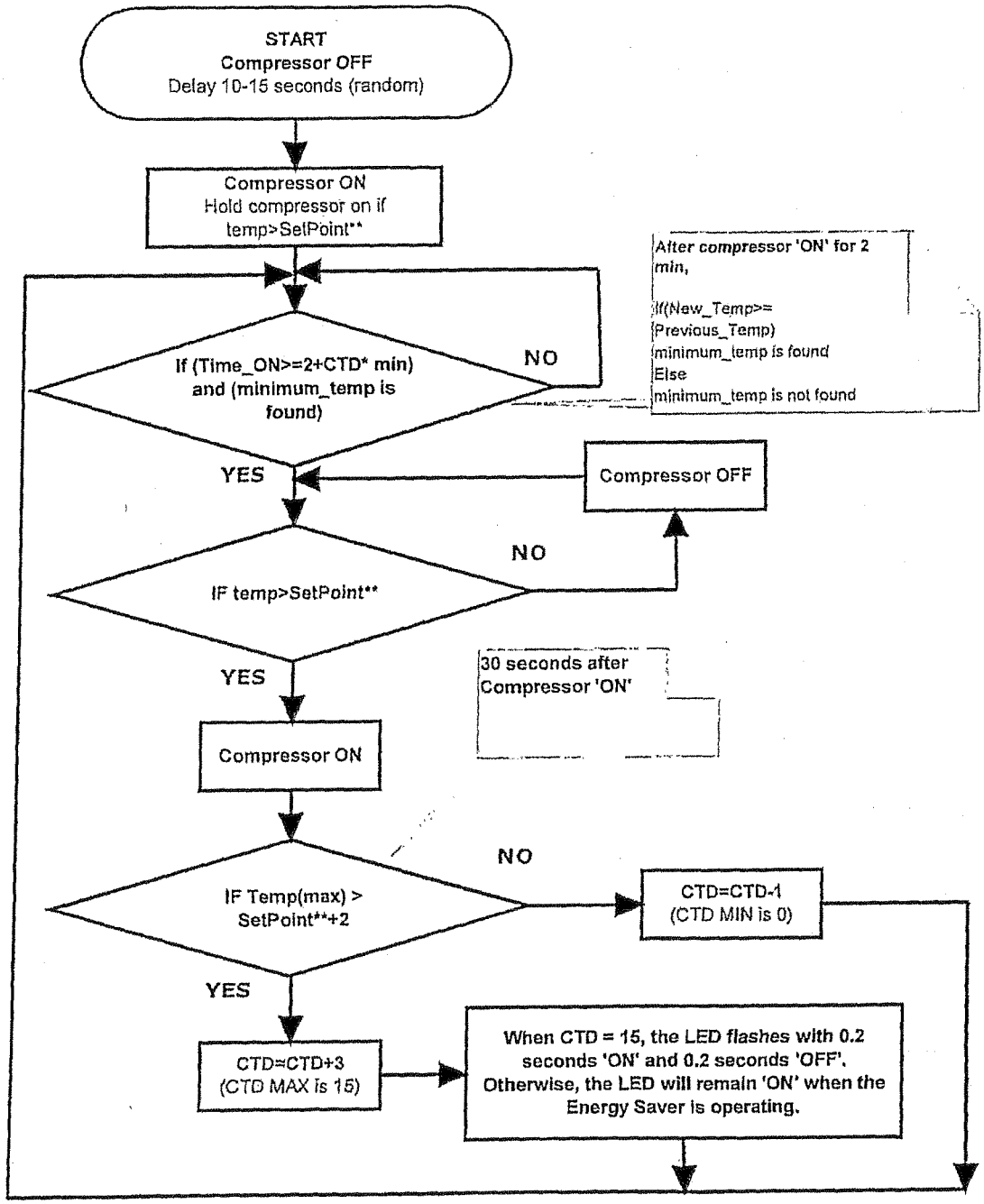

Compressor ON
Room Temperature
D
E
C
T
Supply Air Temperature
Minimum temp. detected
standard time delay (2 mins.)
refrigerant used up
Compressor OFF
Monitor temperature 'overshoot' 30 seconds after compressor ON and add/subtract Comfort Delay Time to compressor ON cycle
F
Setpoint
Switching Temp.
38
22
20
Temperature Deg C
0
1
2
3
4
5
6
Time

Figure 3

ENERGY SAVER DESIGN FLOW CHART



NOTES
1. *CTD: Comfort Time Delay, initially is zero and maximum value is 15.
2. **Setpoint: 16° C., 20° C., 23° C. and 24° C. switch selectable
3. Monitor supply air temperature every second
4. Compressor ON = relay de energised.

Figure 4

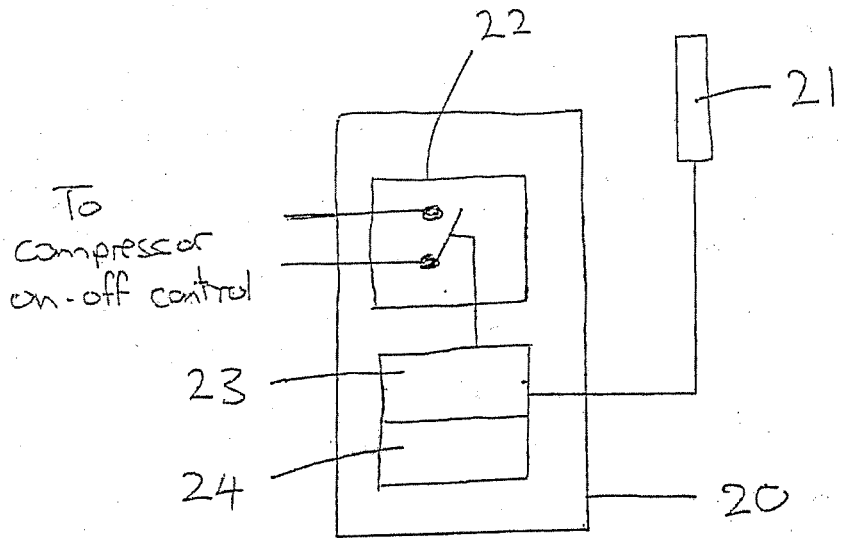


Figure 5

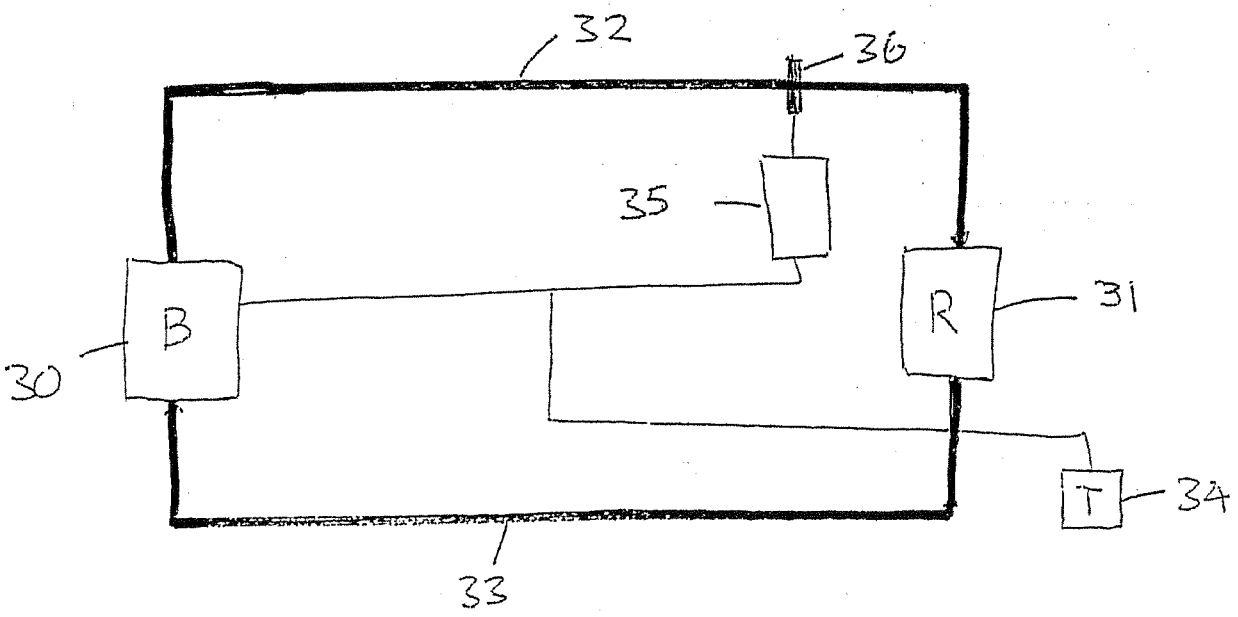


Figure 6

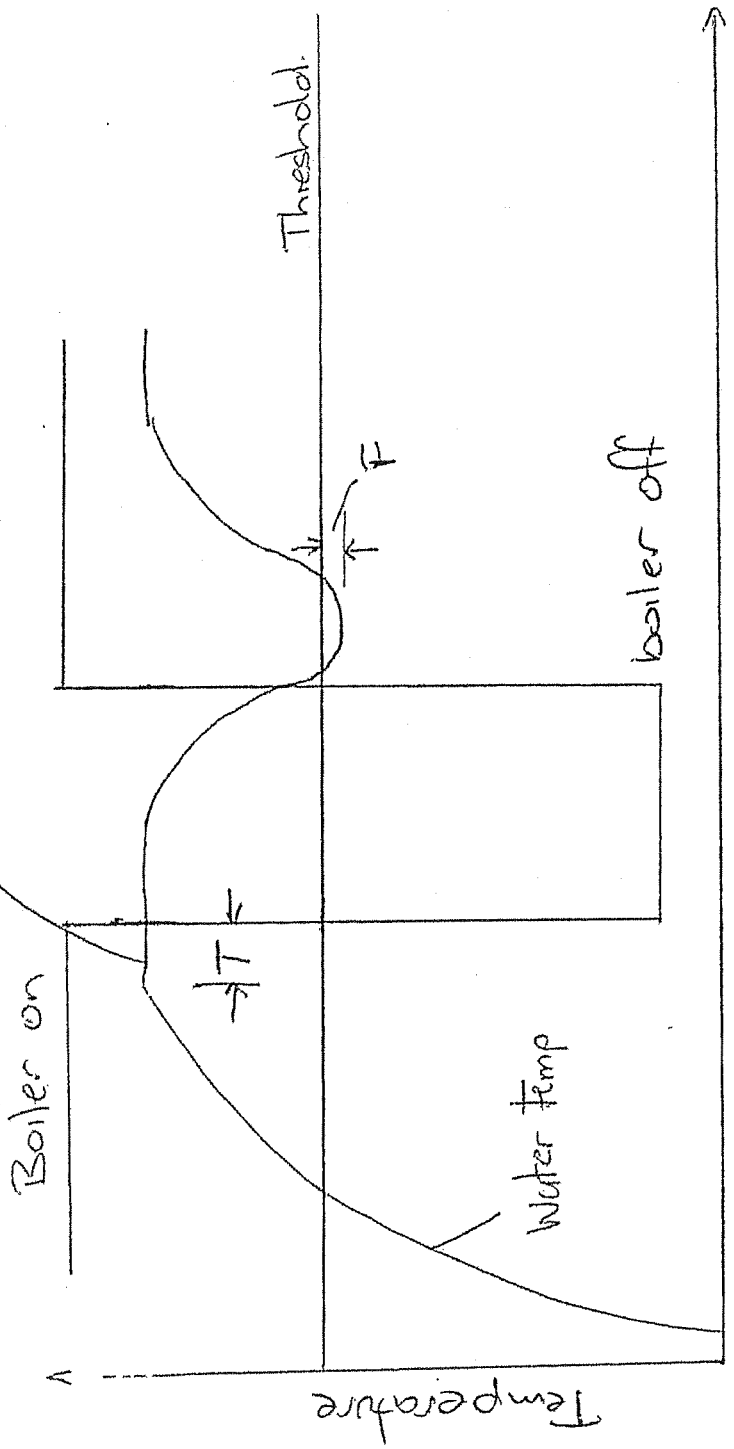

Threshold
water steady state temp
boiler off
Boiler on
Water temp
Temperature
Time

Figure 7