

SURE MARINE SERVICE INC.

This troubleshooting guide was written specifically for

Seaward / Princess / Hillerange stoves *manufactured prior to September 2007*

It is applicable to many other brands of RV & marine stoves including many Magic Chef, Wedgewood, Kenyon, & early Gas Systems ovens.

Starting in mid 2007 Seaward redesigned their oven controls, eliminating the mercury control valve and making this troubleshooting guide not applicable.



Post mid-2007 design. This troubleshooting guide is not written for stoves with this exact pilot configuration.

It is only meant as a guide & does not cover every possible issue.

Feel free to contact Sure Marine if you require assistance or parts at (206) 784-9903.

The basic oven components are the oven thermostat, the mercury control valve, the pilot assembly and the main oven burner

Later versions are also equipped with an oven thermocouple & safety valve.

All Seaward / Princess / Hillerange stoves built after 1993 should have an oven thermocouple & safety valve.

Stoves built between 1984 & 1993 might have an oven thermocouple & safety valve.

If simply turning the oven control knob allows gas to exit the pilot assembly there would be no 'oven thermocouple'.

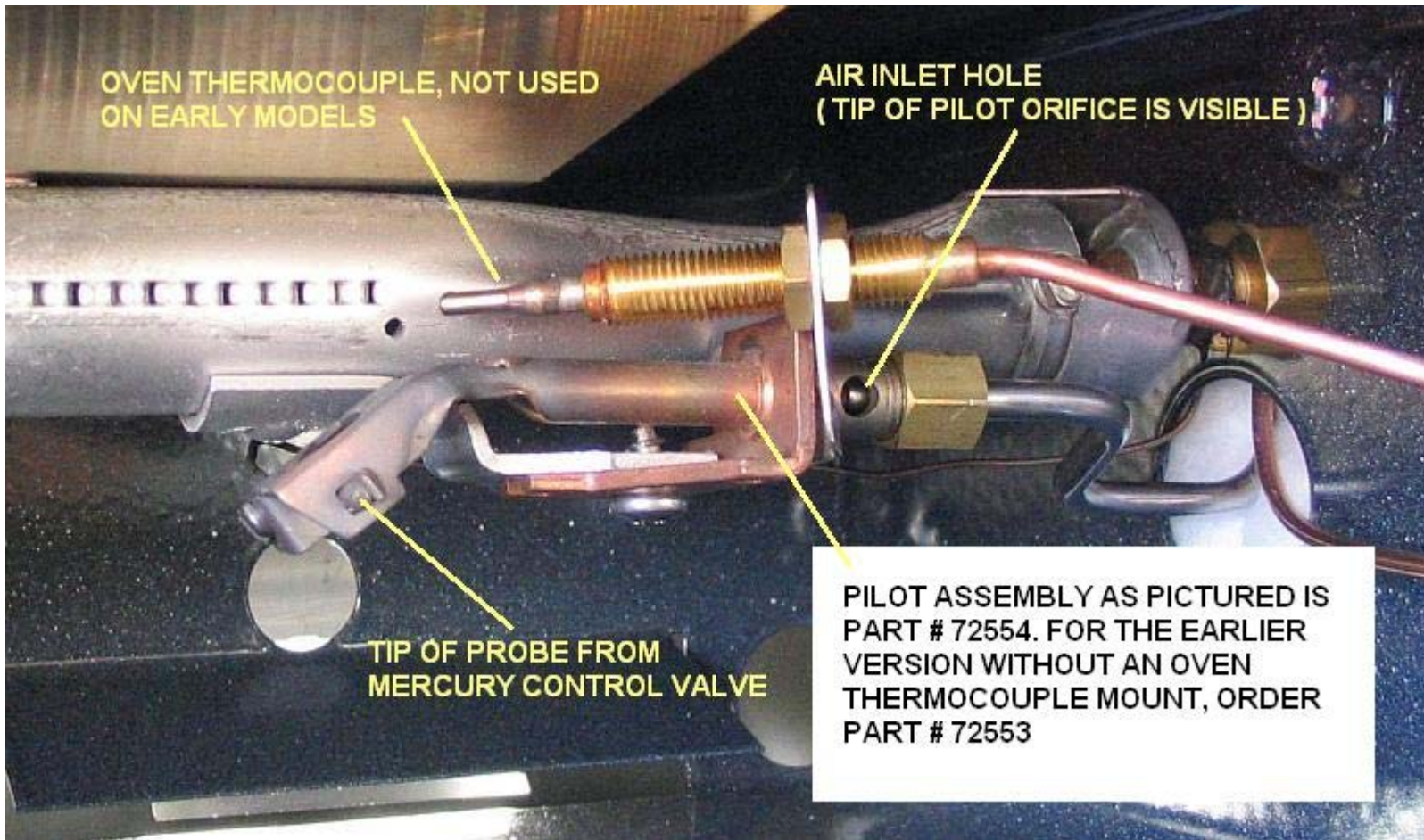
Most stoves built prior to 1984 would operate this way.

If you do have an oven thermocouple, you would need to depress a button in order to light the pilot.

Generally you need to hold the button for about 10 seconds after the pilot is lit, then release the button and the pilot stays on.

The 'safety valve' and 'oven thermocouple' only effect the pilot staying lit,

so if you can get your pilot light to stay lit these parts are not the issue.



If your stove is equipped with an 'oven thermocouple', you should be able to see a threaded probe mounted directly above the pilot flame.

If you are having trouble getting the pilot to stay lit after you release the push button, verify that the tip of the probe is covered

with flame in the 'low pilot mode'.

If the probe is in the flame, but the pilot flame goes out as soon as you release the button, there are a few possible causes.

The thermocouple could be defective. (a thermocouple is an electrical device that generates a small voltage when heated.)

The electromagnet inside the safety valve could be defective. (The safety valve has the push button you need to depress when lighting the pilot).

You could have a bad connection between the thermocouple & safety valve (loosens with a 5/16" wrench, wire brush end & reassemble. Don't over tighten)

The 'oven thermostat' monitors the oven temperature using a sensing probe usually located in the top rear of the oven.

It compares the oven temperature to the temperature you have selected with the oven dial.

It modulates the pilot flame height up to 'high pilot' when there is need for more heat, & down to 'low pilot' when the oven is at temperature.

That is basically all it does.

In the "oven off" position it also blocks gas going to the 'mercury control valve'.

During normal operation, the only component physically blocking gas to the main burner is the 'mercury control valve'

The 'mercury control valve' monitors the pilot height using a small probe mounted in the end of the pilot assembly.

When it senses a large pilot flame (oven thermostat has sensed a need for more heat), the 'mercury control valve' opens and allows gas to flow to the 'main oven burner'.

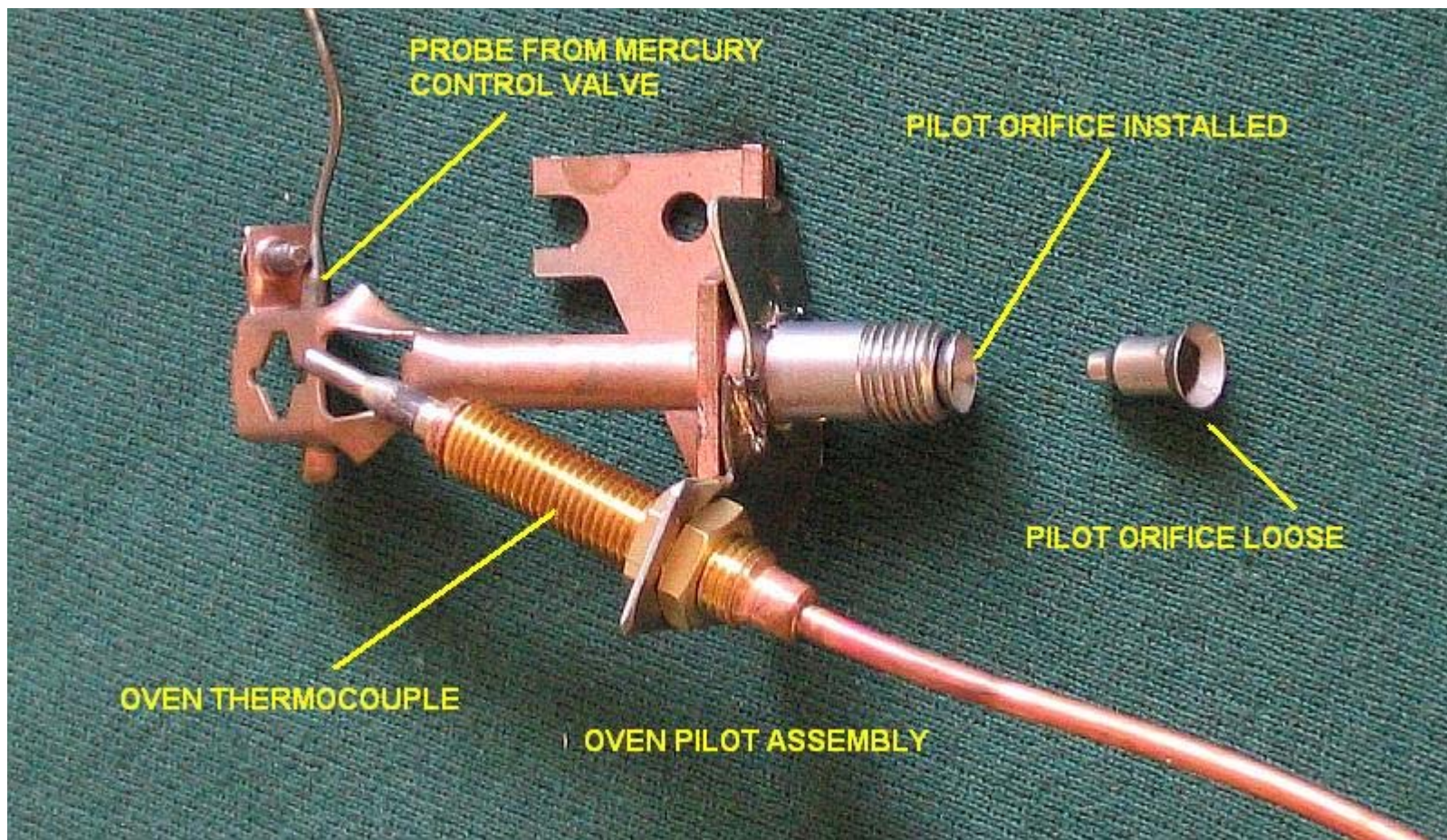
The 'mercury control valve' itself is normally located directly behind the thermostat, but in early stoves it can be mounted in the wall of the oven.

It is often replaced by the customers due to a misdiagnoses of an oven problem.

The 'mercury control valve' acts as a safety feature, if there is no pilot flame present in the oven, it prevents a large amount of gas from entering the oven cavity.

If you can get the pilot to light, and you can get the main burner to come on, but periodically everything, including the pilot light goes out, you probably have dirt in the pilot orifice.

The pilot orifice is located at the inlet to the pilot assembly behind the 3/16" compression nut (requires 7/16" wrench).

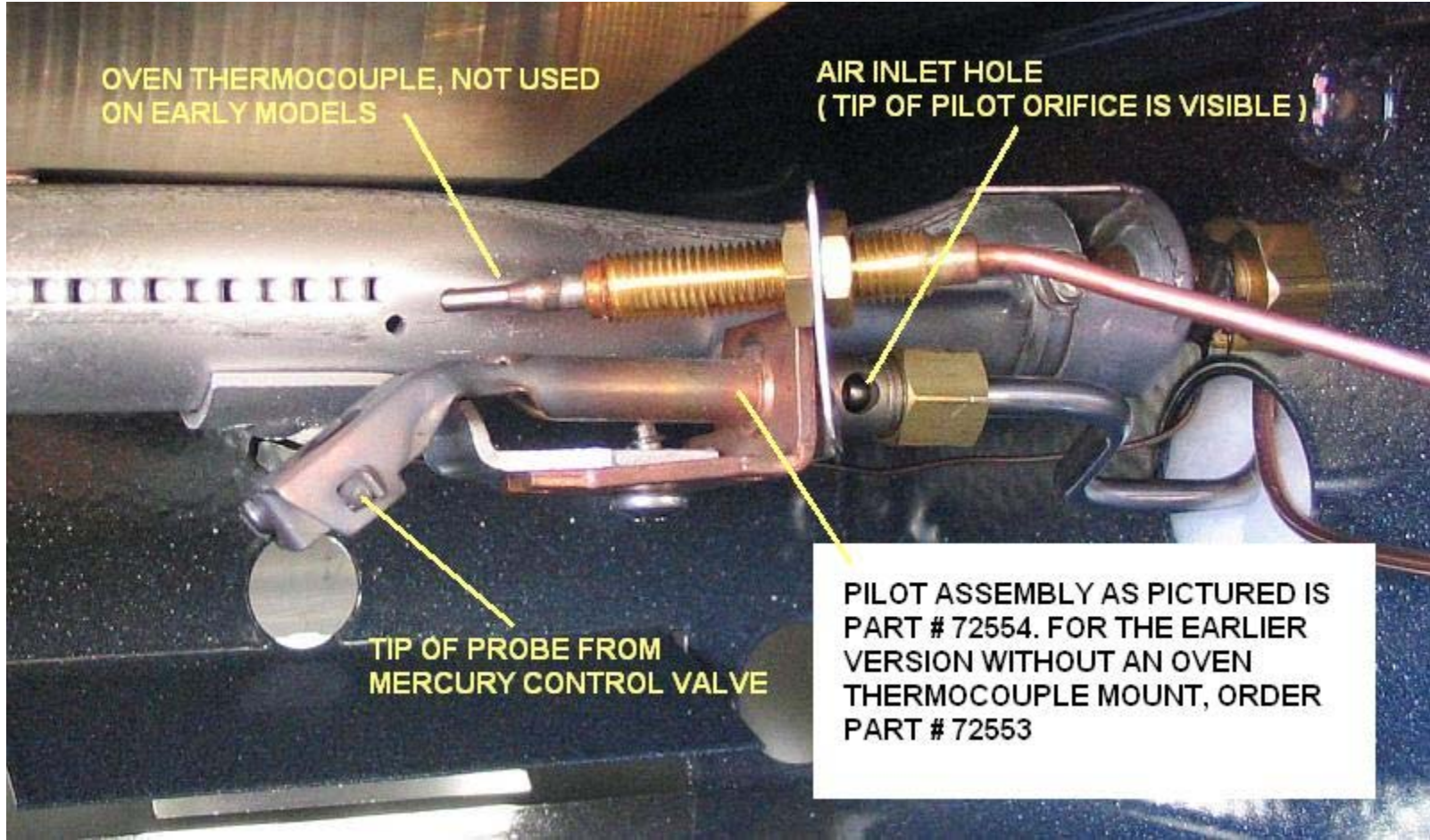




This problem could also be caused by a bent pilot assembly, low gas pressure or a sticking propane regulator. If running a top burner while operating the oven eliminates the problem it would point towards a sticking propane regulator.

If your stove is equipped with an 'oven thermocouple', verify that the thermocouple's probe is directly over the flame in 'low pilot' mode.



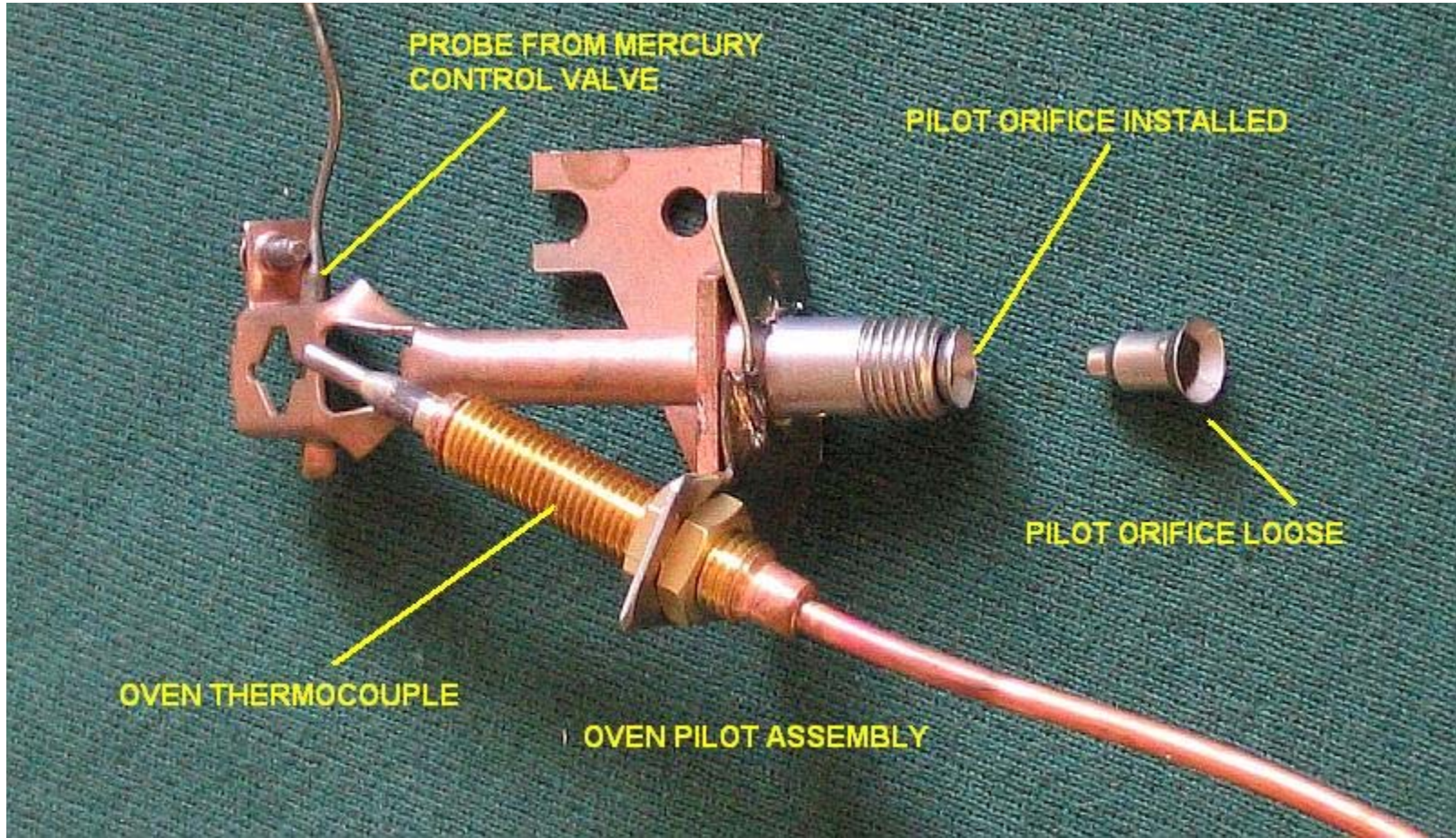


OVEN THERMOCOUPLE, NOT USED
ON EARLY MODELS

AIR INLET HOLE
(TIP OF PILOT ORIFICE IS VISIBLE)

TIP OF PROBE FROM
MERCURY CONTROL VALVE

PILOT ASSEMBLY AS PICTURED IS
PART # 72554. FOR THE EARLIER
VERSION WITHOUT AN OVEN
THERMOCOUPLE MOUNT, ORDER
PART # 72553



PROBE FROM MERCURY
CONTROL VALVE

PILOT ORIFICE INSTALLED

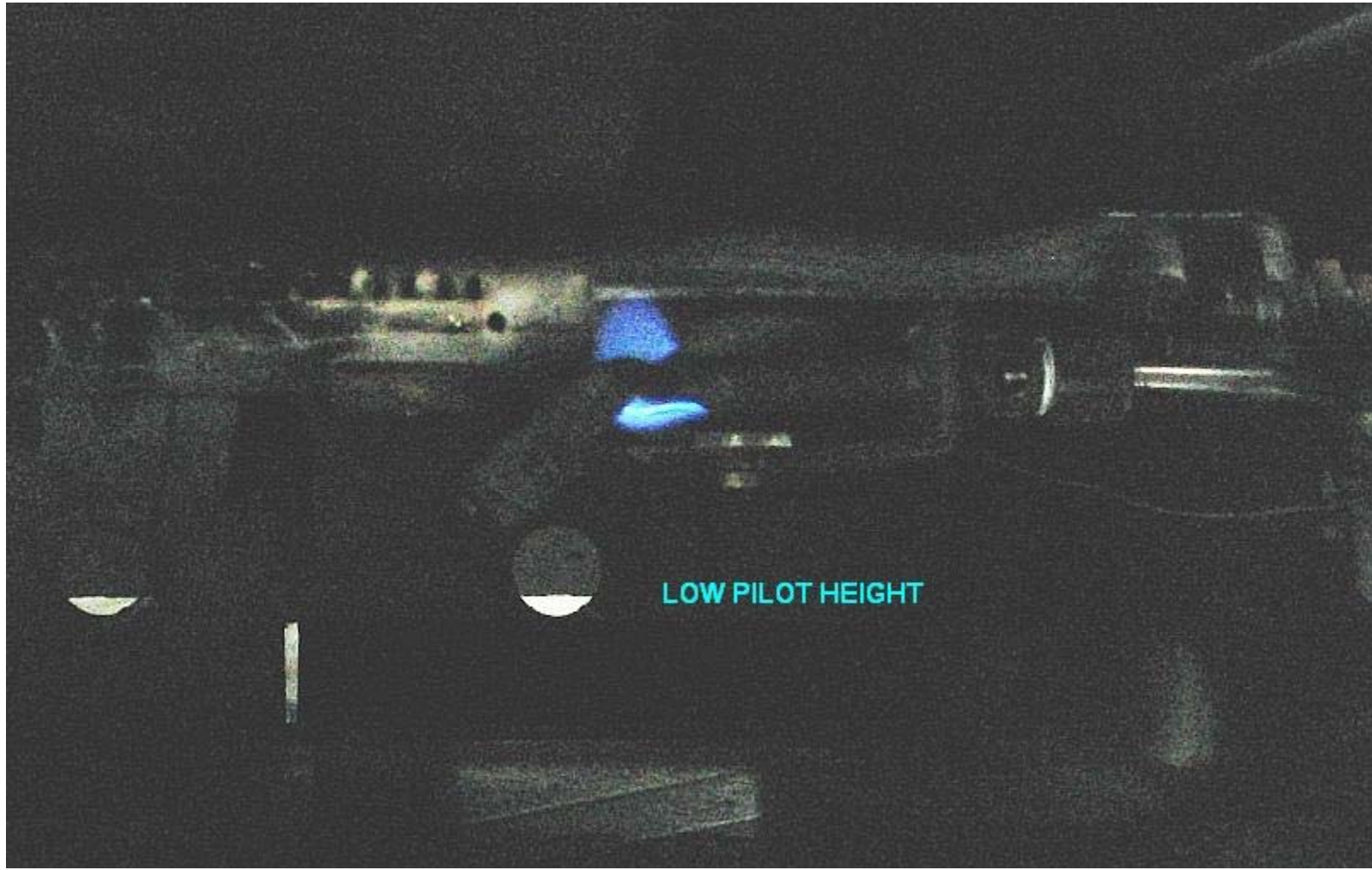
PILOT ORIFICE LOOSE

OVEN THERMOCOUPLE

OVEN PILOT ASSEMBLY



PILOT ORIFICE #70392. REPLACES ALL
PREVIOUS STYLES.
FOR CNG ORDER 70393



LOW PILOT HEIGHT

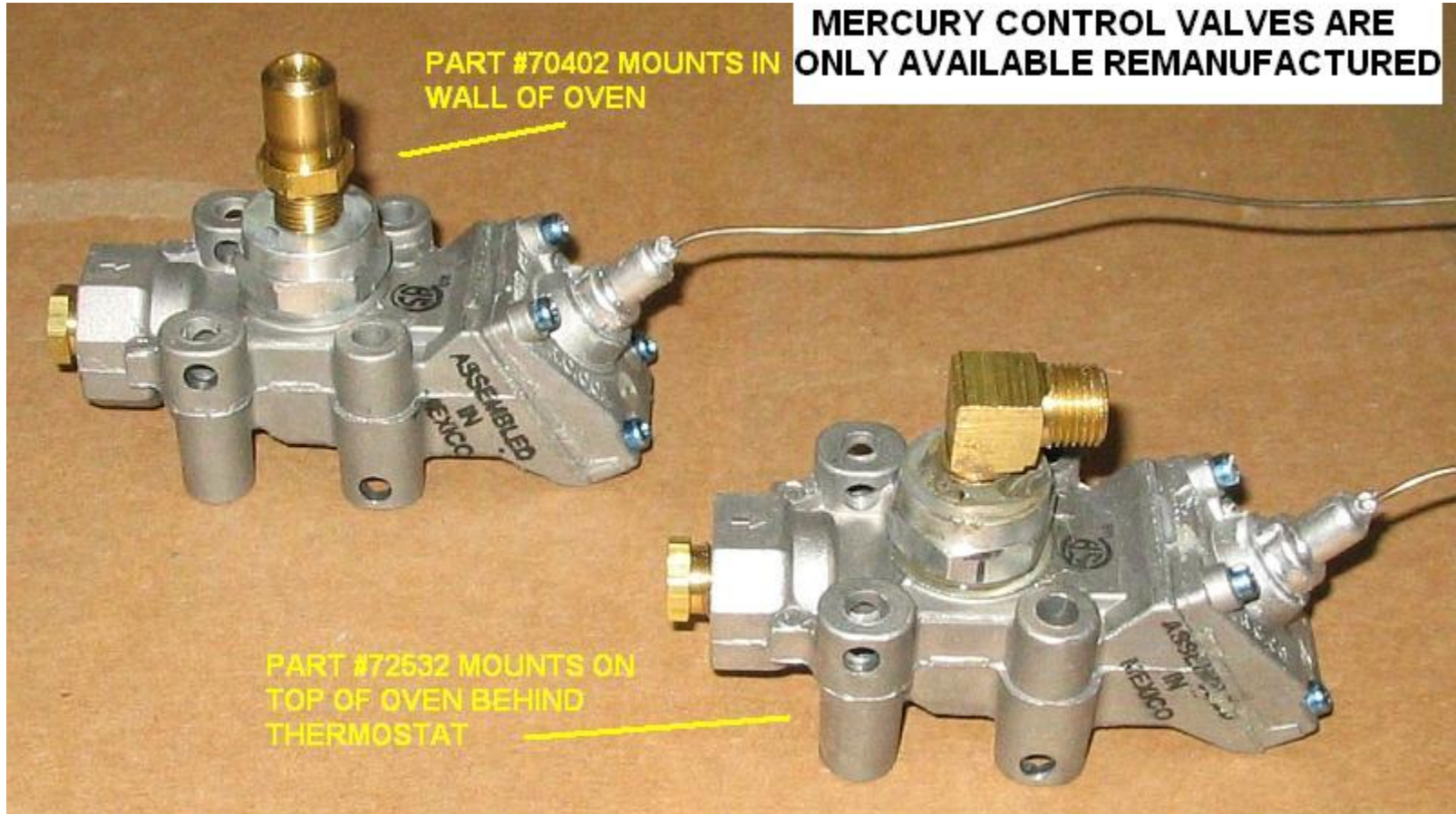


HIGH PILOT HEIGHT

MERCURY CONTROL VALVES ARE ONLY AVAILABLE REMANUFACTURED

PART #70402 MOUNTS IN WALL OF OVEN

PART #72532 MOUNTS ON TOP OF OVEN BEHIND THERMOSTAT

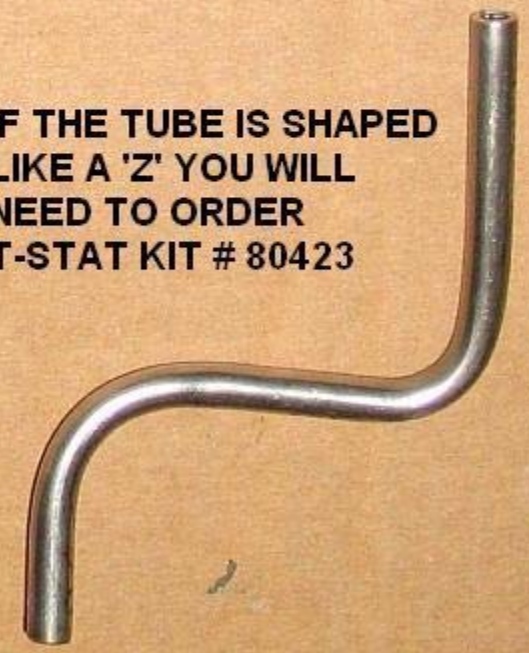




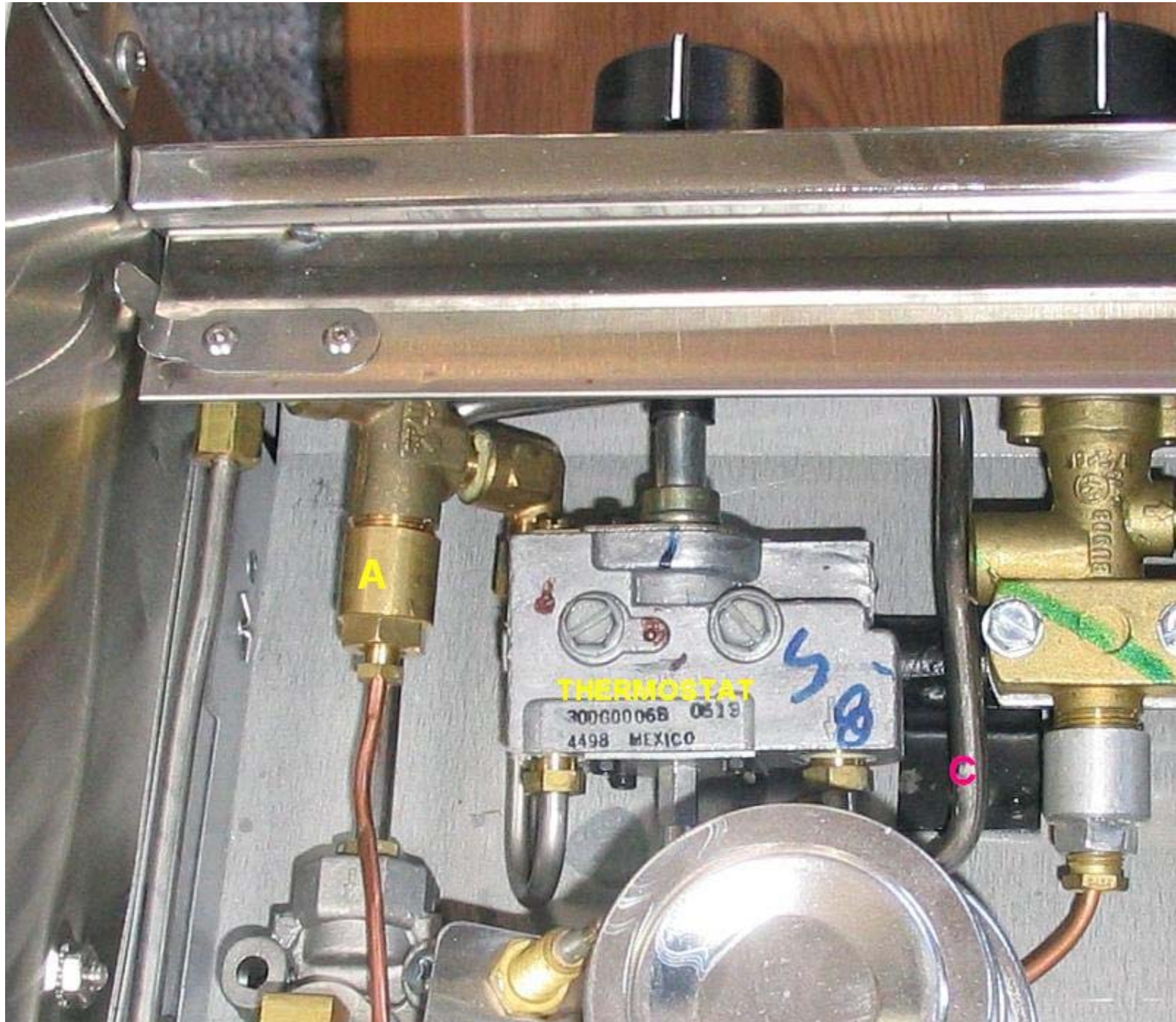
**IF THE TUBE IS SHAPED LIKE A
'G' YOU WILL NEED TO ORDER
T-STAT KIT # 80424**

**SEVERAL STYLES OF OVEN
THERMOSTATS ARE
DISCONTINUED. IF YOUR
THERMOSTAT DOES NOT LOOK
LIKE PART # 70400 (PICS. BELOW)
WE WILL NEED TO ADAPT THE
GAS LINES. PHOTOS OF YOUR
SETUP ARE HELPFUL.**

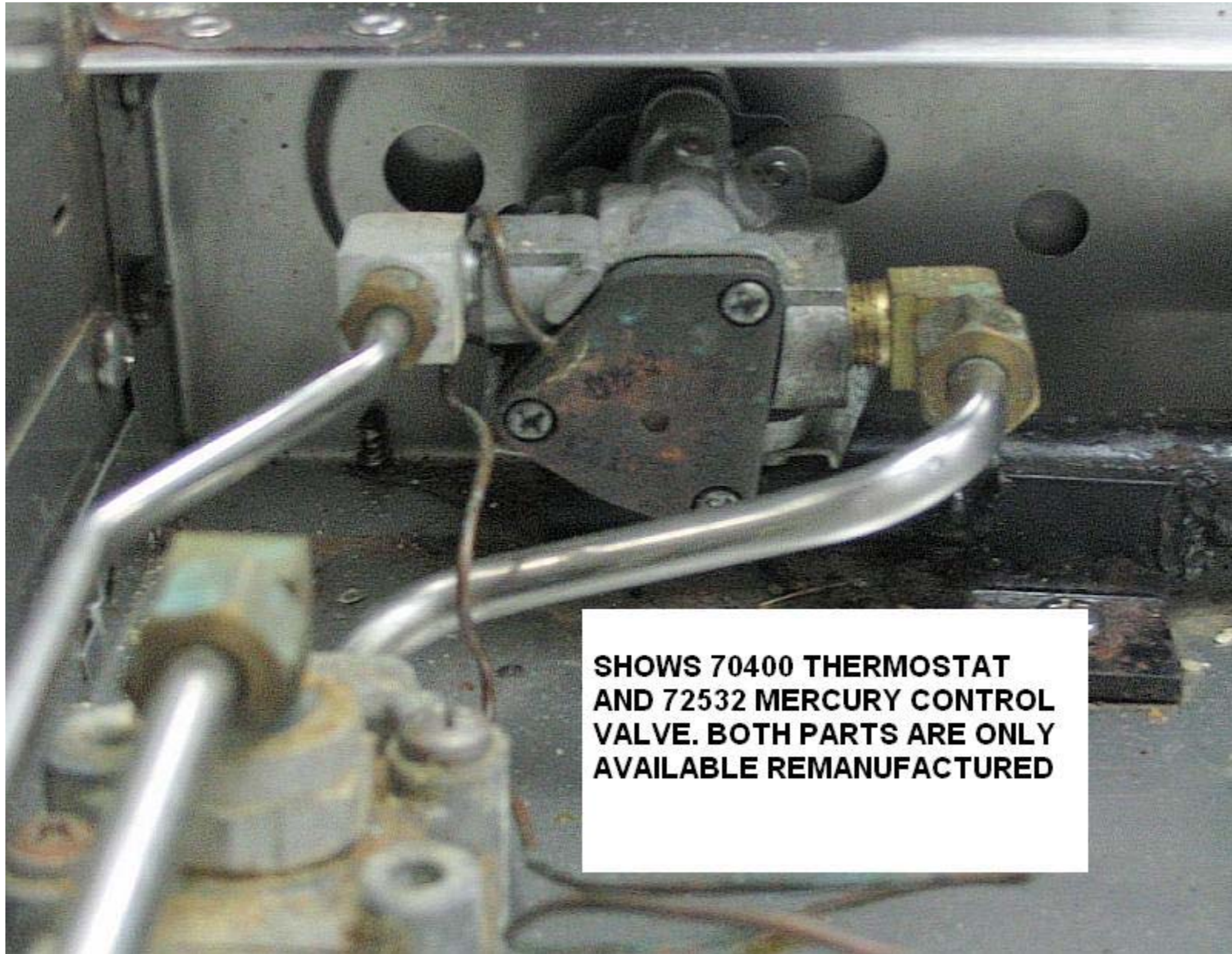
**IF YOU NEED TO ORDER A REPLACEMENT
OVEN THERMOSTAT, WE NEED TO KNOW THE
SHAPE OF THE LARGE TUBE LEAVING THE
BACK OF THE THERMOSTAT & GOING TO THE
MERCURY CONTROL VALVE. THIS TUBE WILL
NEED TO BE REPLACED ALSO.**



**IF THE TUBE IS SHAPED
LIKE A 'Z' YOU WILL
NEED TO ORDER
T-STAT KIT # 80423**







**SHOWS 70400 THERMOSTAT
AND 72532 MERCURY CONTROL
VALVE. BOTH PARTS ARE ONLY
AVAILABLE REMANUFACTURED**

Sure Marine Service Inc.

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800-562-7797, 206-784-9903, Fax: 206-784-0506**