

Diagnose a loop in this order

Tuning last

Every time

1

Measurement

Clean signal? Correctly ranged? Right for the duty?

2

Valve

Strokes smoothly? Travel at normal load? Positioner calibrated?

3

Design

Is the loop structure right for the disturbances it sees?

4

Tuning

Only once the three above are sound

No combination of P, I and D removes hysteresis or stiction. You only chase it — and the tuning hides the fault until it resurfaces as scrap or a trip.