

# Troubleshooting Regulators: A Quick Guide

Experiencing pressure control issues? Use this step-by-step guide to troubleshoot some of the most common problems associated with pressure regulators.

**1 Confirm you have the correct regulator for your application.**

Do you need to control your downstream process pressure?

Do you need to control your upstream process pressure?

**Then you need a pressure-reducing regulator.**

**Then you need a back-pressure regulator.**

If you determined you have the right regulator, **move on to Step 2.**

If not, consult your supplier.

**2 Identify your issue.**

Is pressure **dropping** below target pressure?

Is pressure **rising** beyond target pressure?

Unwanted pressure drop (or **droop**) is commonly caused by one of two things:

- An undersized regulator
- Incorrectly set pressure spring and range

**Supply Pressure Effect (SPE)** is a change in outlet pressure due to a change in inlet pressure. If inlet pressure decreases, a corresponding outlet pressure increase will occur.

**Creep** happens when contamination creates a small gap between the regulator's seat and poppet. This results in unwanted pressure increase.

**3 Explore your options.**

If you have identified **droop** as your potential issue:

- Select a set pressure range closer to the required set pressure
- A regulator with a larger flow coefficient can help prevent unwanted outlet pressure drop

• A **dome-loaded regulator** may be a better option. This type is more resistant to flow changes and can help better maintain pressure in applications where flow varies.

If you have identified **SPE** as your issue:

- A **balanced poppet design** can help minimize the area where high inlet pressure can have an impact, mitigating SPE
- Installing two single-stage regulators in a series or combining two regulators into one assembly can mitigate SPE in most applications

If you have identified **creep** as your issue:

- Installing an inline filter upstream of the regulator can reduce contamination
- Installing a relief valve can protect downstream processes from damaging overpressurization

**Have you determined an alternate regulator may help in your application? Contact your supplier. At Swagelok, our regulator specialists can help guide you toward the right solution.**

**SPEAK WITH PRESSURE REGULATOR SPECIALISTS.**

