

## Choosing the right pressure gauge

The pressure gauge you select for your spray equipment can be a friend or foe. The wrong gauge can lead you astray. The right gauge will give you accurate information about the performance and condition of your spray equipment.

### Glycerine-filled gauges

You need a pressure gauge which is accurate and will work for many years. For this reason, buy a gauge that is glycerine-filled. The glycerine not only protects the mechanism but dampens the action.

An undampened gauge on a piston pump will flicker up and down every time the piston moves, until it breaks or the needle drops off – at which point it will be useless.

### Working pressure

Pressure gauges can measure pressure in three different ways:

- Pounds per square inch (psi);
- kilopascals (kPa); or
- 100 kilopascals (Bar)

The better gauges will tend to have both psi and either kPa or Bars.

### Approximate conversions

15 psi = 100 kPa = 1 bar  
30 psi = 200 kPa = 2 bar  
45 psi = 300 kPa = 3 bar  
100 psi = 700 kPa = 7 bar

### Pressure range

Pressure gauges cover a varying range of pressures: 0-10 bar, 0-100 bar, etc. You need to select the range which will accurately report your required working pressure. The ideal is to have a gauge which will show your required working pressure at the half way point on the scale. If your ideal pressure is 4 bar, you want a pressure gauge with a range of 1-10 bar.

### Different gauges for different pressures

If you use your pump for both high and low pressure spraying jobs then it might be advisable to have two gauges. Fit them so that one can be turned off if it is not needed.

### Gauge placement

Gauge placement is important. You want the gauge to read what is happening down near the nozzles. A gauge placed near the pressure relief valve will usually give a higher reading. Isolate the gauge with a tap or valve.

### Pressure and nozzles

The pressure at which you operate your spray equipment will be determined by the type and size of nozzles you use. Nozzles are manufactured to work within a specific pressure range. Within that range droplet size and flow rates are known and documented by the nozzle manufacturers.

**Make sure the pressure gauge you use is scaled to accurately reflect the capability of your nozzles and pump.**



Using nozzles outside the pressures they were designed for will give unpredictable results. The aim of spraying is to spread a small amount of chemical over a large area of foliage or ground. Wasted spray is expensive and unnecessary. On the other hand too little spray will result in poor control. A good pressure gauge and regular calibration checks will help ensure a consistently good result.

### **Diagnosing problems**

Your pressure gauge can highlight pump and relief valve problems and also indicate when nozzles are becoming worn and unserviceable. As nozzles wear, the orifice increases in size allowing more spray to pass through. You can recognise this when the pressure gauge shows less pressure and a vatfull of spray will no longer cover the same area.

When the nozzle orifice increases, droplet size usually increases. More spray and larger drops mean less efficient and effective coverage, and more wastage. A good pressure gauge and regular equipment calibration will ensure cost-effective spraying.

A pressure gauge is very important in ensuring you get a predictable and regular spray result.