The Most Important Factors for Choosing Valve Springs

The three most common factors that should be considered are installed height, camshaft type, and cylinder head valve spring pocket dimensions. Each consideration is equally critical to choosing the correct valve spring for your application.

To begin, your installed height should always be measured. This is important because the height at which a valve spring is installed can dramatically increase or decrease its rated coil bind clearance and opened/closed pressures. As this can lead to valve spring or camshaft failure, it is vital that you choose the correct spring for the installed height that your cylinder heads can accommodate.

The next consideration is camshaft type. In short, your valve spring pressure rating must be appropriate to the type of camshaft that you are using. Failure to run the correct pressure for the cam type will almost certainly result in engine damage. See the table below for general spring pressure guidelines based on cam type.

Cam Type	Seat pressure (pounds)	Open pressure (pounds)
Hyd/solid flat tappet	100-130+	270-350+
Hydraulic roller	105-135+	280-350+
Solid roller (street)	150-180+	450-600+
Solid roller (race)	190-300+	600-1000+

Valve spring pressures by camshaft/lifter type.

Finally, note the physical diameter of the spring. Cylinder heads have pockets that can only accept certain diameter valve springs without machine work. To help circumvent the need for machine work, some manufacturers offer a wide selection of valve springs, as well as valve spring locators and shim kits to simplify the installation process.