

## TECH TIPS:

Porsche Factory valve springs were designed for a range of performance that is acceptable for cost effect manufacturing at commercially acceptable rpm and power levels. When stock power levels are no longer the goal your Factory valve springs will not tolerate the valve train stresses.

The Aasco valve springs are designed and manufactured to accommodate the following parameters:

1. The primary purpose of a valve spring is to keep the rocker arm during acceleration and deceleration in contact with the motion described by the lobe shape and hold the valve closed against the seat.
2. The design of the spring fits the existing part without inducing unnecessary wire stresses within space availability of 901,930,964,993 engines and will significantly increase the natural frequency to accommodate the harmonics of contemporary cam design and accompanying lifts of up to 13mm.
3. The quality of the wire and manufacturing will provide a safety margin for unintended over revs that will far exceed the stock parts.

## FAQ'S:

Do I need Aasco Springs?

*If you intend to use your Porsche in the upper region of the engines RPM range for street performance or track days you will need it both for performance and insurance against the serious consequences of a valve train high speed failure.*

What are the differences between Aasco springs and Factory Parts?

1. *Materials and processing with the attenuation of racing components and not mass production*
2. *Wire selection and spring rate. The Aasco spring has a rate of 360lbs per inch vs Porsche's at 315lbs per inch.*
3. *The Aasco has a minor interference between inner and outer wires to dampen Harmonic surge. Maximum valve acceleration occurs when the cam starts up the flank after the clearance ramp and the spring force is rather low at this stage and the same can be said for the deceleration on the closing side which has a tremendous influence on valve float. The slight dampening with the coils help this frequency without increasing the overall spring rate excessively.*
4. *The Aasco spring is constant rate the Porsche early springs are variable rate and reach solid height with a large gap between the wire, and unequal solid heights between the inner and outer allowing them to surge and not dampen by*

*proximity. The Aasco will stay square dampen by proximity and reach solid height both inner and outer at the same time.*

- 5. At an installed height of 34mm (spring without retainers and perch) 75lbs of seat pressure and the capability of 13mm of lift we have a nose pressure of 270lbs 1.25mm from coil bind. The Porsche spring will also give 75lbs of seat pressure but will only allow 11.8mm of lift at 1.25mm from coil bind.*
- 6. Over the years the 911 has changed and just a little before the 964 evolution the factory spring grew slightly and the valve retainers increased to accommodate the winding size. Later years the valve stems where reduced to 8mm from 9mm. We have the necessary components available to assure proper fitment for both early and late model cars, also Aasco recommends that our Titanium retainers and Steel spring bases be used to alleviate any additional measuring and machine work. A side benefit is the Tia retainer can provide up to a 10 grams reduction in sprung mass which embodies current scientific trends in valve train technology, and yet retain excellent strength in performance applications.*