

Valve Springs



Atomic Performance Products have available a range of heavy duty valvetrain weapons for the Ford SOHC and DOHC 6 cylinder engines. Our range includes H/Duty and Race Springs, Titanium and chrome moly retainers, machined chrome moly valve locks, stainless steel valves and anti pump-up lifters.

Valve Springs

Standard valve springs suffer from varying seat pressures from new and once subjected to cyclic operation (even for a short time) can lose tension rapidly. This loss of tension can lead to "valve float", a condition whereby the valve is not returned cleanly to the valve seat, allowing it to bounce which releases vital cylinder pressure. The resultant loss of pressure creates a misfire, followed by either erratic idling and/or stalling.

All valve springs lose tension after being installed - and because the original Ford valve springs are quite weak, even a small loss of tension can bring about this condition. Turbo boost pressure also works against valve spring tension on the inlet valves - the DOHC Ford 6 cyl inlet valve has an area of 3.5 sq inches approx, so for every pound of boost, roughly 3.5 lbs of valve spring tension is deducted from the spring pressure. For example, if the spring has 50lbs of seat pressure and the engine has 7 pounds of boost, the net effect is that valve spring tension is reduced by 24.5 lbs to only **25.5 lbs of seat pressure**, which is inadequate for almost all applications.

All Atomic H/Duty and Race Series springs are **conically wound** to accurately fit both the spring seat base and the smaller OD retainer. They are not just the inner spring out of a Chev or Ford V8 set, nor are they repackaged Ford DOHC V8 or Typhoon/Tornado springs (which fatigue just as quickly as the originals) but are custom wound from premium quality USA made nickel chrome vanadium spring steel, heat treated, shot peened, scragged and packed in matching sets of either 12 or 24 for use in all 4.0L SOHC and DOHC 6 cyl engines. Suitable for use with either standard or Atomic camshafts, no expensive cylinder head machining is required and the standard valve spring retainers, seals and locks can be retained.

Changing valve springs on the Ford DOHC engine has become quite a bit easier with the release of the **Atomic on-car valve spring removal tool - part #100704**. Rather than having to remove the cylinder head to gain access to the valve springs or using levers and collars to change the springs on the car, our patented tool allows **all valve springs per cylinder** to be changed simultaneously - the entire job can be undertaken in only a matter of hours. No special skills are required and the possibility of dropping a valve collet into the engine is substantially reduced. Please refer to our [Tools and Tricky bits](#) section for further information.



DOHC Engine - High Performance Street/Race Applications

#306800 - Extreme Duty Valve Springs to suit Ford DOHC 6 Cylinder Engines

- Tension: 80 lbs at 1.490"
- Tension at .500" valve lift: 175 lbs
- Coil bind: 23.5mm/220 lbs
- Recommended for boost levels not exceeding 1.8 bar (27lbs)
- Uses standard retainers or Atomic

DOHC Engine - Ultra High Performance Street and Race Applications

Atomic Ovate Race Valve Springs to suit Ford 4.0L DOHC 6 Cylinder Engines

If you are looking for the ultimate in high performance valve springs for high boost/high rev DOHC applications, then look no further than our Race Series Ovate wire springs. Designed for extreme high performance street and all-out race applications, Atomic springs are made from triple heat treated Ovate wire and provide high seat and nose pressures whilst providing extreme durability.

Ovate wire is the latest technology in spring steel wire profile and is used extensively in the USA in NASCAR, Winston Cup and Drag race applications. Ovate wire is not circular in cross section, but is elliptical (across the horizontal plane) to provide high spring pressures whilst allowing clearance for high lift camshafts. Special triple heat treatment is required to ensure consistent tempering across the entire spring section and, combined with specialised tooling required to produce the wire form, Ovate springs are quite a bit more expensive than conventionally formed wire springs. They are however, the only choice when used in short installed height, high lift, high boost, highly stressed street/race applications.

#306801 - Ovate Race Valve Springs to suit Ford DOHC 6 Cylinder Engines

- Tension: 90 lbs at 1.490"
- Tension at .500" valve lift: 195 lbs
- Coil bind: 22.3mm/ 248 lbs
- Suitable for use to 2.4 bar boost (35lbs)
- Uses standard retainers or Atomic

#306801-K - Ovate Race Valve Springs and titanium retainers to suit Ford DOHC 6 Cyl Engines

This kit comprises #306801 springs and #306851 Titanium retainers a reduced price compared to buying the parts individually.

#306802 - Ovate Race Valve Springs to suit Ford DOHC 6 Cylinder Engines

- Tension: 110 lbs at 1.490"
- Tension at .500" valve lift: 210 lbs
- Coil bind: 22.3mm/ 265 lbs
- Suitable for greater than 3.0 bar boost (44lbs)
- Uses standard retainers or Atomic

SOHC Engine - High Performance Street/Race Applications

#306810-kit H/D Dual Valve Springs and Retainers to suit AU Ford SOHC 6 Cylinder Engines

This kit is designed to fit late model SOHC Ford cylinder heads fitted with 7mm valve stems. Our dual spring package fits without the need to machine the spring seats and includes chrome moly retainers that accept the stock multi-groove locks.

- Tension: 125 lbs at 1.780"
- Tension at .500" valve lift: 295 lbs
- Recommended for boost levels to 2.3 bar (34 lbs)

#306811-kit H/D Dual Valve Springs and Retainers to suit EB-EL Ford SOHC 6 Cylinder Engines

This kit is designed to fit early model SOHC Ford cylinder heads fitted with Imperial sized valve stems. Our dual spring package fits without the need to machine the spring seats and includes chrome moly retainers and matching valve locks.

- Tension: 125 lbs at 1.780"
- Tension at .500" valve lift: 295 lbs
- Recommended for boost levels to 2.3 bar (34 lbs)