



NEW  
RELEASE  
INFORMATION  
Vol.346

# VALVE SPRING

**Renewed!**  
**VQ35 :**  
**suited for high cam lift!**



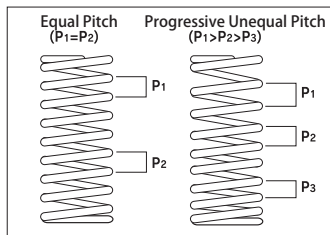
Photo:VQ

**New-product!**  
**1JZ, 2JZ:**  
**Applicable for STD base-circled camshafts & stock!**

## Renewal & long-awaited new lineup!!

TOMEI's R&D concept on production technology, such as materials used, surface treatments and much more, is always refined and of the latest technology in the industry. Our strict thorough quality control methods and testing methods are applied to each Valve Spring off the production line. High power generating engines which operate at high engine speeds require precision durable valve springs to suit the aggressive performance camshaft profiles that are used.

### Multi Coil Unequal Pitch Springs

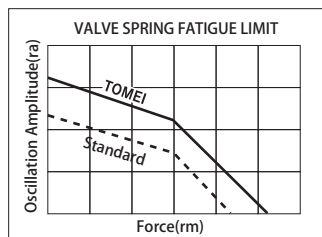


By combining several steps of spring rates into the one spring and vibration frequency becomes amazingly high. This greatly minimizes resonance and the chances of surging.

### Warm Setting

The process that is adding higher loads beyond the actual limits to the highly heated spring. This will modify its shape and keep it permanently fixed. We succeeded in securing the highest performance over a long period of time while preventing sagging.

### Nitriding



The surface treatment method for making nitrogen permeates the spring and gives it large surface compression repulsion. This method was chosen to raise the fatigue limit to suit the demands of running high lift camshafts. The dangers of spring failure is greatly reduced with the 1.5 times increase in the springs fatigue limit with the combined use of Oil tempered chromium-silicone alloy steel wire and Nitriding. This is how our valve springs are suitable for use on extreme engine speed conditions of super-high revs exceeding 10,000 RPM which had not been previously possible with high lift camshafts.

### Advanced Oil Tempered Chromium-silicone Alloy Steel Core

Oil tempered chromium-silicone alloy steel wire is used which is considered to be the best material for springs for performance applications and evolved it even further. Combined with a new optimized design, not only did we make it tougher, we also succeeded in suppressing valve jumps or bounce even when raising the engines speeds RPM limit.

### Shot Peening

A process that strikes many small steel balls onto the surface of the spring at high speeds is made to enhance the surface of the spring to raise its fatigue limit. Although it has been carried out earlier during the manufacturing process.

APPLICATION	P/N	JPY	NOTES
VQ35DE/HR	163063	<b>39,000</b>	Oval wire core suited for high cam lift
1JZ-GTE	163061	<b>36,000</b>	Applicable for STD base-circled camshafts & stock Outer Shim system
2JZ-GTE	163062		Oval wire core. Applicable for STD base-circled camshafts & stock Outer Shim system

### SPEC

	DIA METER (mm)	FREE LENGTH (mm)	SET LENGTH (mm)	COMPATIBLE LIFT (mm)	LIFT LENGTH (mm)	COMPRESSED LENGTH (mm)	SET LOAD (kgf)	LIFT LOAD (kgf)	MATERIAL	PROCESS	COLOR
VQ35DE/HR	3.05×3.80	46.2	37.0	~11.5	25.5	21.5	21.8±7%	57.5±7%	NHK620	Nitride	Yellow
1JZ-GTE	Φ3.90	41.0	34.5	~10.25	24.5	22.5	21.7±7%	74.5±7%	SWOSC-VX	Nitride	Blue
2JZ-GTE	3.40×4.25	41.6	34.5	~10.25	24.5	21.5	26.2±7%	72.1±7%	NHK507	Nitride	L Blue

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