

## THE REASON

- Over long periods of non usage, oil can drain from inside of the Lifter. This may cause a rattling sound.
- Incorrect or contaminated engine oil will cause rattling or “pump up” in the hydraulic functioning system.
- Cracks on top of the bucket in a radial pattern can be due to lack of Lifter rotation in the housing or oil starvation.
- Worn Valve Guides can cause Lifter misalignment which applies axial load to the upper sections of the Valve. This results in failure below the collet-line and a full Cylinder Head replacement is needed.
- Camshaft wear can be caused by either oil starvation, damage or age of the Valves and Lifters.

## THE SOLUTION

- Do not re-use worn Lifters.
- Lifters are supplied in air tight containers and should remain in an upright position to stop system drainage.
- Examine the Camshaft for profile differences and the Lifter housing tracks for wear. Replace components if necessary.
- New Lifters need to settle for 12 hours after installation.
- Replace the Lifters, Valves and Guides after timing failure.
- Pumping the BGA Lifter before installation inserts air into the hydraulic system and reduces performance.
- Replace the Rocker Arms if the bearing surface is worn.
- Always break in new Lifters and Camshafts together.

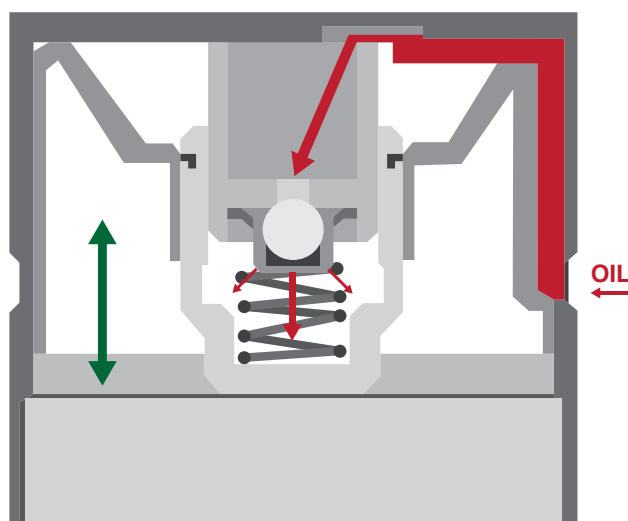
**!** CONTINUED TECHNICAL RESEARCH, DEVELOPMENT AND IMPROVEMENTS MEAN THE MODERN HYDRAULIC LIFTERS ARE MORE RELIABLE AND HAVE A LONGER SERVICE LIFE.

## HYDRAULIC LIFTERS

### General replacement advice

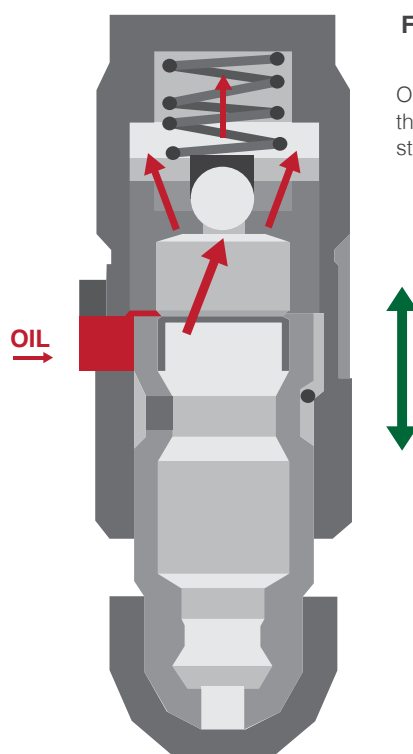
**FIGURE 1:**

Oil flow and operation of the bucket style Hydraulic Lifter.



**FIGURE 2:**

Oil flow and operation of the cylindrical or “bullet” style Hydraulic Lifter.



BGA products are to be replaced by an experienced automotive installer. This information is to be used as reference only. Always seek manufacturer specification.