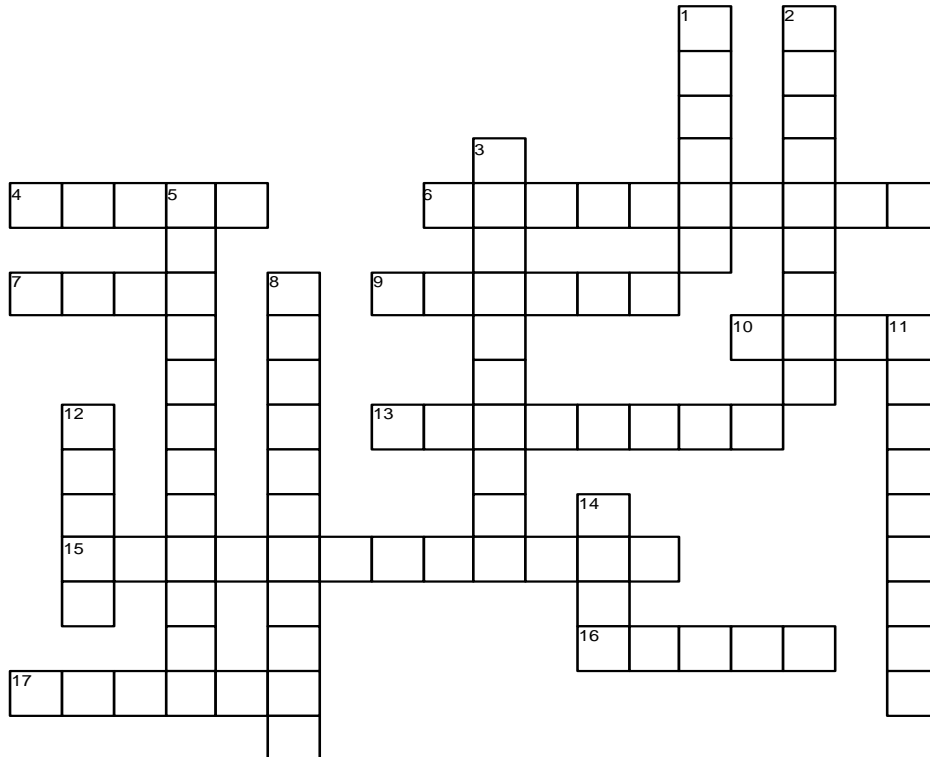


Automotive Electrical and Engine Performance 9th Edition

Chapter 39 - Turbocharging and Supercharging



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ACROSS

- 4 The increase in air pressure supplied to the engine by a turbocharger or supercharger, allowing more air to enter the combustion chamber and enhancing power.
- 6 _____ Efficiency: A measure of how effectively the engine fills its cylinders with air-fuel mixture compared to the theoretical maximum capacity.
- 7 _____ Valve: Another name for a blow-off valve, used to relieve excess turbocharger pressure when the throttle closes.
- 9 _____ Valve: A valve used in supercharged engines to redirect excess air back into the intake system, controlling boost pressure.
- 10 _____-off Valve: A valve used to release excess boost pressure to prevent compressor surge when the throttle is closed.
- 13 _____ Displacement: A type of supercharger that delivers a constant volume of air with each rotation, improving low-speed performance.
- 15 An exhaust-driven air compressor that increases engine power by forcing more air into the combustion chamber.
- 16 _____ Lag: The delay between pressing the accelerator and the turbocharger providing boost pressure, caused by the time it takes for exhaust gases to spin the turbine.
- 17 _____ Density: The mass of the air-fuel mixture in the cylinder; higher charge density results in greater combustion force and power.

DOWN

- 1 _____ Induction Systems: Systems such as turbochargers or superchargers that force air into the engine to increase performance.
- 2 _____ (Normally) Aspirated: Engines that draw in air using atmospheric pressure without assistance from a turbocharger or supercharger.
- 3 _____ Bypass Valve: Similar to a BOV, it redirects air to the intake side of the turbocharger to prevent over-compression and reduce turbo lag.
- 5 A mechanically driven air compressor that increases engine power by forcing air into the combustion chamber.
- 8 A cooling device located between the turbocharger and intake manifold, reducing the temperature of compressed air and increasing its density.
- 11 A valve that controls the flow of exhaust gases to the turbocharger, regulating boost pressure to prevent engine damage.
- 12 _____ Supercharger: A type of positive displacement supercharger that pumps air by trapping it between lobes.
- 14 _____ Valve: A valve that releases pressure from the intake system when not needed, preventing over-pressurization.