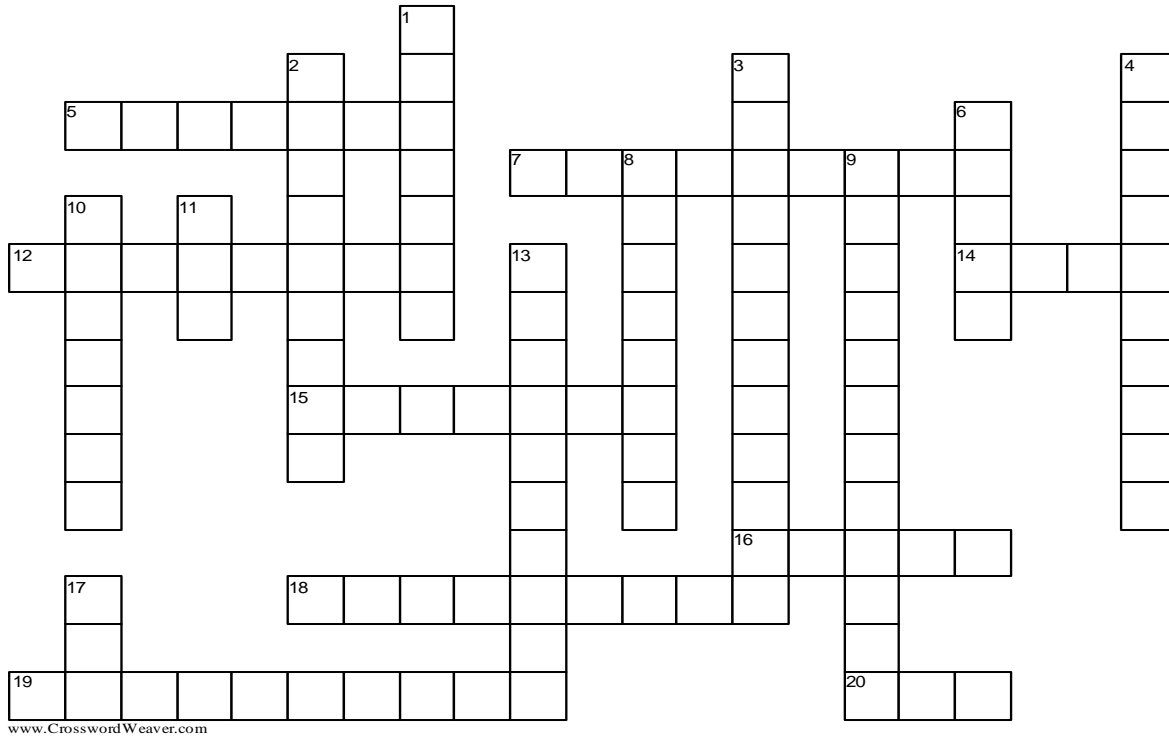


Advanced Engine Performance Diagnosis 8th Edition

Chapter 5

Digital Storage Oscilloscope Operation and Use



ACROSS

- 5 An _____ trigger is a signal from an external source that starts the waveform display on an oscilloscope, often used to synchronize the scope with specific events such as the ignition firing in an engine.
- 7 A measurement of how long a signal is on (active) compared to the total cycle time. It is usually expressed as a percentage. A 60% duty cycle means the signal is on 60% of the time and off 40% of the time.
- 12 A _____ transducer is a sensor that converts pressure into an electrical signal, which can then be measured and displayed on an oscilloscope.
- 14 The _____ base is the horizontal scale on an oscilloscope, representing time. It is adjusted to allow the technician to see a waveform over a specific time duration.
- 15 A _____ ray tube is a vacuum tube used in older oscilloscopes to display waveforms. It has been replaced by digital display technologies in modern equipment.
- 16 The _____ width is the duration of time a signal is on (active) during each cycle, typically measured in milliseconds. This is often used to measure fuel injector on-time.
- 18 The grid on an oscilloscope's display screen used to measure the amplitude and time of the waveform being observed.
- 19 A setting on an oscilloscope that displays both the AC and DC components of a signal. It is the most commonly used setting for viewing signals in automotive applications.
- 20 A method of controlling the amount of power delivered to a load by varying the width of the pulses in a pulse train. The average power delivered is proportional to the pulse width (abbreviation).

DOWN

- 1 The input to an oscilloscope. Different channels allow the oscilloscope to display waveforms from multiple sources simultaneously.
- 2 The number of cycles a signal completes per second, measured in hertz (Hz).
- 3 An instrument used to display and analyze the waveform of electrical signals. It shows how the voltage of a signal varies over time.
- 4 A series of electrical pulses that repeat in a regular pattern. It is commonly used in ignition and fuel injector signals in automotive applications.
- 6 A unit of frequency measurement, representing the number of cycles per second.
- 8 The _____ level is the voltage at which the oscilloscope begins to display a waveform. The signal must reach this voltage for the scope to trigger and start displaying the pattern.
- 9 A device that is clamped around a wire to measure the current flowing through it without breaking the circuit.
- 10 The _____ slope refers to the direction (rising or falling) of the signal that will cause the oscilloscope to begin displaying the waveform.
- 11 An oscilloscope that digitizes and stores waveforms for analysis. This allows for the playback and detailed examination of signals (abbreviation).
- 13 A setting on an oscilloscope that allows only the alternating current (AC) signal to be displayed, filtering out any direct current (DC) components.
- 17 A _____ connector is a type of connector used to attach probes to oscilloscopes or other test equipment.