ENGINE SPEED	TEST	COMPONENT CONDITION	READ/OBSERVE	CORRECT READINGS	CHECK SEQUENCE—FAULT LOCATION
START	Cranking voltage	Battery; Starting system	Voltmeter	10·2 volts minimum at the battery	Battery—Starter Motor—Connection/Cables—Alternator
(CRANKING)	Cranking Coil output	Coil; Ign. Primary circuit	Scope Trace	16 kv. max. 14 kv. min.	Ignition coil—Battery—Condenser—Resistance in distributor wiring and/or points—Ignition switch
	Cranking vacuum	Engine	Vacuum Gauge	16-18 in. hg. even pulse	Hoses and connections—Valve tappet clearance—Servo—Inlet manifold system leaks—Valves or seats—Piston rings
IDLING	Idle Speed	Carburetter idle setting	Tachometer	750 r.p.m. (Standard trans.) 650 r.p.m. (Automatic trans.)	Carburetter adjustment—Hoses and connections—Servo—Carburetter mechanical condition—Engine condition
	Dwell	Distributor/drive; Points	Dwell Meter; Scope	33°–37°	Breaker points—Distributor and drive mechanical condition
	Initial Timing	Spark Timing Setting	Timing light	5° B.T.D.C. (Static) 10° B.T.D.C. (1,000 r.p.m.)	Distributor adjustment
	Fuel Mixture	Carburetter float level and needle position	Exhaust Gas Analyser	2–4% c.o. at idle when hot	Carburetter float level and needle position—Hoses and connections—Manifold system leaks—Servo—Spark plugs—Ignition timing
	Manifold Vacuum	Engine Idle Efficiency	Vacuum Gauge	16 to 18 in. hg.	Hoses and connections—Inlet manifold system leaks—Valves or seats—Piston rings
CRUISE (1,000 r.p.m.)	Dwell Variation	Distributor mechanical	Dwell Meter	Variation of 3° maximum	Distributor and drive mechanical condition
	Coil Polarity	Ignition circuit polarity	Scope Trace	Pattern inverted	Ignition circuit connections—Ignition coil—Battery or charging system polarity reversed
	Cam Lobe Accuracy	Distributor Cam	Scope Trace	2° max. Variation	Distributor cam defective
	Secondary Circuit	Plugs; Leads; Cap; Rotor	Scope Trace	Standard pattern	Spark plugs and leads—Breaker points—Distributor cap towers—Hoses and connections—Servo—Coil
	Coil and Condenser Condition	Coil Windings; Condenser	Scope Trace	Lack of oscillation in Intermediate Section	Ignition coil—Condenser
	Breaker Point Condition	Points Closing/Opening/Bounce	Scope Trace	Unusual Dwell Section	Breaker points—Condenser
	Spark Plug Firing Voltage	Fuel Mixture; Compression; Plug/Rotor Gaps	Scope Trace	Abnormal Spark Plug Firing Voltage Voltage at Rotor Caps—4 kv. max.	Spark plugs and leads—Breaker points—Ignition timing—Distributor cap and rotor—Carburetter float level or needle position—Hoses and connections—Servo
	Engine/Cylinder Balance/ Power Drop	Cylinder compression	Tachometer/Cylinder Leak Tester (150 r.p.m. scale)	Max. variation/cylinder 40 r.p.m. Complete cut 170 r.p.m.	Valve tappet clearance—Valves and seats—Piston rings
ACCELERATE	Spark Plugs Under Load	Spark Plugs	Scope Trace	Abnormal Scope Firing Lines under Load 10 kv./plug maximum	Spark plugs and leads—Carburetter float level or needle position—Hoses and connections—Servo
TURNPIKE (2,500 r.p.m.)	Timing Advance	Distributor Mech.	Timing light advance Meter	5° B.T.D.C. (Static) 10° B.T.D.C. (1,000 r.p.m.)	Distributor mechanical condition, centrifugal weights and springs
	Maximum Coil Output	Coil; Condenser; Ign. Primary	Scope Trace	Standard pattern minimum reserve $\frac{3}{8}$ more than requirement	Ignition coil/condenser—H.T. circuit insulation—Charging circuit—Battery
	Secondary Circuit Insulation	H.T. Cables, Cap, Rotor	Scope Trace	Standard pattern	H.T. leads—Distributor cap and rotor—Coil tower
	Charging Voltage	Alternator—Alternator control unit	Voltmeter	14·5 volts steady reading	Alternator—Alternator control unit
	Exhaust Restriction	Exhaust system	Vacuum Gauge	No variation in reading at constant speed for 10 sec.	Exhaust system