Rotax Engine Troubleshooting Sequence — 2-Cycle

FAULT-TRACING		PROBABLE FAULT
Does gas reach the carburetor?	**NO →**	• Fuel tank empty • Blockage in tank cap vent • Blockage in fuel cock • Blockage in fuel line • Float Needle valve blocked • Blockage in fuel filter • Broken or improperly installed fuel pump
YES ↓		
Does gas reach the engine?	**NO →**	• Blockage in Carburetor
YES ↓		
Does the carburetor keep flooding?	**YES →**	• Float stuck • Float leaks • Needle valve does not seat properly
NO ↓		
Has the engine become wet with fuel?	**YES →**	• Too much use of choke or primer • Faulty ignition system • Incorrect fuel mixture
NO ↓		
Is there a spark at the spark plug?	**NO →**	• Poor contact between ignition coil & ignition cable. • Ignition cable broken or short-circuiting • Faulty ignition coil • Ignition switch in off position or faulty wiring • Spark plug gap too large • Bridging between electrodes • Insulator broken or wet • Spark plug oily — replace spark plug
YES ↓		
Is the engine difficult to start?	**YES →**	• Incorrect ignition timing • Float needle does not seat properly • Air filter blocked • Fault in carburetor • Incorrect rotary valve timing. • Water in fuel • Engine flooded • Choke lever is not on • Improper adjustment of pilot air regulating screw • Air leaks in crankcase or intake system • Leaking or blown head gasket • No compression • Spark plug fouled, inoperative or has improper gap • Excessive prop loading • Improper preload in gearbox
NO ↓		
Does the engine kick back, back fire & not start?	**YES →**	• The flywheel key is missing or sheared • Improper ignition timing
NO ↓		
Does the engine have good spark but only runs on one cylinder?	**YES →**	• Faulty ignition timing • Broken spark plug cap • Spark plug fouled or improperly gapped • Blown head gasket • Leaking cylinder head • Low or no compression • Air leak in crankcase or intake system
NO ↓		
Does the engine crank over easily on one or both cylinders?	**YES →**	• Scored piston • Blown head gasket • Spark plug is loose • Head bolts not torqued • Excessive ring end gap
NO ↓		
Does the engine not crank over and the flywheel not rotate?	**YES →**	• Piston seized • Engine was improperly assembled after repair • Foreign material in crankcase • Connecting rod broken • Crankshaft seized to bearing or broken • Piston rings rusted to cylinder • Flywheel seized to stator plate • Fan bearing locked up
NO ↓		
After engine starts will it not idle or does it miss at low speed?	**YES →**	• Spark plugs improperly gapped, fouled, or inoperative • Improper fuel mixture • Dirty carburetor or plugged jets, idle speed too low 2000 RPM • Air regulating screw out of adjustment • Worn piston, rings or cylinder which cause low or loss of compression • Blown or leaking head gaskets • Air leaks in crankcase or intake • Improper ignition timing
NO ↓		
Does the engine idle well, but die down when applying throttle — no acceleration?	**YES →**	• Improper slide without notched window and drilled bottom • Fuel level in float bowl is set too low • Improper ignition timing • Spark plugs improperly gapped, fouled or inoperative • Improper adjustment of pilot air regulating screw (too lean) • Blockage in fuel line • The fuel pump is inoperative due to punctured diaphragm or impulse line leaking
NO ↓		

FAULT-TRACING (Con't)		PROBABLE FAULT
Is the engine slow to accelerate/low top RPM?	**YES →**	• Improper slide without notched window and drilled bottom • Spark plugs improperly gapped, fouled, or inoperative • Main jet is too rich • Excessive prop loading • Float level is too high • Scored piston and cylinder • Blown or leaking head gasket
NO ↓		
Does the engine surge, slow down, cough or spit, run lean at all speeds?	**YES →**	• Float level is too low • Carburetor is dirty • Main jet is too lean • Carburetor inlet needle and the seat are blocked • Carburetor is loose on flange or the rubber flange leaks • Blocked fuel line • Air leaks in fuel line • The fuel pump is inoperative due to punctured diaphragm or impulse line is leaking
NO ↓		
Does the engine run rough, vibrate excessively and smoke?	**YES →**	• Main jet is too rich • Chokes are not fully off • Water in fuel • Float level is too high • Carburetor is blocked • Exhaust system is blocked • Engine mount or mount bolts not secured • Prop out of balance
NO ↓		
Does the engine run well at high RPM?	**NO →**	• Air cleaner dirty • Needle jet worn • Too much oil in fuel • Improper ignition timing • Exhaust port or exhaust pipe blocked • Needle position incorret • Fuel filter blocked • Dirt in carburetor • Dirt in needle valve • Carburetor not secured properly • Faulty fuel pump • Spark plug loose or dirty • Incorrect heat range of spark plug • Ignition cable loose or poorly insulated • Piston rings stuck • Crankshaft oil seal worn • Low fuel octane • Heavy carbon deposits in cylinder ports • Cylinder bore worn • Spark plugs improperly gapped, fouled or inoperative • Spark plug connector broken • Carburetor either too rich or too lean • Excessive prop loading
YES ↓		
277, 377, 447, 503 Does the engine overheat?	**YES →**	• Fan belt loose • Excessive prop loading • Improper engine timing • Fuel mixture too lean • Fuel octane rating too low • Blocked or dirty fuel line/fuel filter • Carbon build up on combustion chamber, exhaust port or piston dome • Carburetor out of adjustment • Engine is dirty or cooling fan is clogged • Engine monitoring instruments are defective
NO ↓		
532, 582, 618 Does the engine overheat?	**YES →**	• Liquid quantity low • Radiator or tubes blocked • Water pump impeller defective • Air in system • Thermostat stuck
NO ↓		
Does the engine suddenly just stop?	**YES →**	• Piston seizure • Carburetor icing
NO ↓		
Does the engine continue to run after switch shut off?	**YES →**	• Improper wiring • Spark plug heat range too hot • Carbon build-up on combustion chamber exhaust port or piston dome