

10.1 TROUBLESHOOTING CHART

PROBLEM	POSSIBLE CAUSE	REMEDY
HARD STARTING	Incorrect external timing to engine.	Consult engine manufacturer's specification for ignition timing. Correct as required.
	Incorrect internal timing.	Consult Champion Aerospace Manual L-1363, Section 7.10 for internal timing specifications. Correct as required.
	Point gap setting incorrect.	Consult Champion Aerospace Manual L-1363, Section 7.10 for point gap specifications. Correct as required.
	Faulty impulse coupling.	Consult Champion Aerospace Manual L-1363, Section 3.3.4, for impulse coupling specifications and inspection procedures.
	Over torqued impulse coupling nut.	Torque nut to 120 - 180 in-lbs on magnetos with attached drive gears. There must be .010 to .020 in. play between drive gear and impulse coupling. Correct as necessary.
	Worn pawls or stop pin.	Inspect pawls and stop pin for wear. Correct as necessary.
	Impulse coupling fails to return to unwound position.	Inspect impulse coupling nut for torque.
	Fouled spark plugs.	Clean spark plugs according to manufacturer's specification.
	Incorrect spark plug gap.	Re-gap spark plug to manufacturer's specifications.
	Faulty ignition switch.	Inspect ignition switch for possibility of intermittent grounding and proper operation. Repair or replace as necessary.
	Corrosion on harness lead contacts.	Consult manual L-1499 for proper cleaning and inspection procedures. Correct as required.
	Broken rotor shaft at cam slot.	Consult Champion Aerospace Manual L-1363, Section 3.3.3.C.
Magneto Internal Component Failure:	Consult Champion Aerospace Manual L-1363, Section 3, for specifications and inspection procedures.	

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L-1363J

PROBLEM	POSSIBLE CAUSE	REMEDY
HARD STARTING (Cont.)	Incorrect external timing to engine.	Consult engine manufacturer's specification for ignition timing. Correct as required.
	Incorrect internal timing.	Consult Champion Aerospace Manual L-1363, Section 7.10 for internal timing specifications. Correct as required.
	Point gap setting incorrect.	Consult Champion Aerospace Manual L-1363, Section 7.10 for point gap specifications. Correct as required.
	Faulty impulse coupling.	Consult Champion Aerospace Manual L-1363, Section 3.3.4, for impulse coupling specifications and inspection procedures.
	Over torqued impulse coupling nut.	Torque nut to 120 - 180 in-lbs on magnetos with attached drive gears. There must be .010 to .020 in. play between drive gear and impulse coupling. Correct as necessary.
	Worn pawls or stop pin.	Inspect pawls and stop pin for wear. Correct as necessary.
	Impulse coupling fails to return to unwound position.	Inspect impulse coupling nut for torque.
	Fouled spark plugs.	Clean spark plugs according to manufacturer's specification.
	Incorrect spark plug gap.	Re-gap spark plug to manufacturer's specifications.
	Faulty ignition switch.	Inspect ignition switch for possibility of intermittent grounding and proper operation. Repair or replace as necessary.
	Corrosion on harness lead contacts.	Consult manual L-1499 for proper cleaning and inspection procedures. Correct as required.
	Broken rotor shaft at cam slot.	Consult Champion Aerospace Manual L-1363, Section 3.3.3.C.
	Magneto Internal Component Failure:	Consult Champion Aerospace Manual L-1363, Section 3, for specifications and inspection procedures.
Points	Inspect for excessive burning, pitting, corrosion gap setting and general operation. Replace as necessary.	
Cam	Inspect cam for excessive wear or unevenness that could cause "point spread". Correct as necessary.	
Condenser	Inspect for faulty P-lead connection, P-lead stud for over-torqued condition, damaged pigtail connector and damaged grounding. Replace as necessary.	

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PROBLEM	POSSIBLE CAUSE	REMEDY
ROUGH RUNNING (Cont.)	Points	Inspect for excessive burning, pitting, corrosion, gap setting and general operation. Replace as necessary.
	Cam	Inspect cam for excessive wear or unevenness that could cause "cam spread". Correct as necessary.
	Condenser	Inspect for faulty P-Lead connection, P-lead stud for over torqued condition, damaged pigtail connector and damaged grounding. Replace as necessary.
	Coil	Inspect for cracks, damage to high tension strap or pigtail connector and integrity of windings. Replace as necessary.
	Distributor Gear	Inspect electrode finger for looseness, gear teeth, shaft. Inspect carbon brush for damage. Replace as necessary.
	Distributor Block	Inspect distributor towers for evidence of abrasion or excessive burning. Examine rotor gear bushings for wear. Replace as necessary.
	Rotor shaft at cam slot	Consult Champion Aerospace Manual L-1363, Section 3.3.3.C.
	Excessive heat.	Inspect baffling or cooling air duct. Correct as necessary.
	Faulty fuel delivery system.	Consult engine manufacturer's operations manual for proper operation and performance. Correct as required.
	Faulty induction system.	Inspect for leaks and faulty valve operation. Consult engine manufacturer's specifications for proper operation and performance
	Faulty exhaust system.	Inspect for obstructions in exhaust pipes and mufflers, faulty valve operation. Consult engine manufacturer's specifications for proper operation and performance.
ROUGH RUNNING OR VIBRATION IN SPECIFIC RPM RANGE	Propeller out of track or unbalanced.	Consult propeller manufacturer's manual for specifications. Correct as necessary.
	Propeller imbalanced or installed incorrectly.	Correct as necessary.
	Propeller/Engine harmonic resonance.	Consult airframe manufacturer's operations manual. Correct as necessary.
	Magneto Internal Component Failure:	Consult Champion Aerospace Manual L-1363, Section 3 for specifications and inspections procedures.
	Points	Inspect for excessive burning, pitting, corrosion, gap setting and general operation. Replace as necessary.

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PROBLEM	POSSIBLE CAUSE	REMEDY
EXCESSIVE RPM DROP DURING MAGNETO CHECK (Cont'd)	Faulty ignition lead.	Consult Champion Aerospace Harness Maintenance Manual L-1499 for ignition lead troubleshooting information. Correct as required.
	Corrosion on harness lead contacts.	Consult Champion Aerospace Harness Maintenance Manual L-1499 for proper cleaning and inspection procedures. Correct as required.
MAGNETO WILL NOT FIRE	Faulty ignition switch.	Inspect ignition switch for possibility of intermittent grounding and proper operation. Repair or replace as necessary.
	Faulty condenser.	Consult Champion Aerospace Manual L-1363, Section 3.3.7. Inspect for faulty P-lead connection, broken P-lead stud, damaged pigtail connector, and damaged grounding. Replace as necessary.
	Point gap setting incorrect.	Consult Champion Aerospace Manual L-1363, Section 7.10, for point cap specifications. Correct as required.
	Retard contact point circuit inoperative.	Inspect and correct as required.
	Broken rotor shaft at cam slot.	Consult Champion Aerospace Manual L-1363, Section 3.3.3.C.
MAGNETO "HOT"	Faulty ignition switch.	Inspect ignition switch for possibility of intermittent grounding and proper operation. Repair or replace as necessary.
	Broken "P" lead wire.	Repair as necessary.
POWER LOSS	Incorrect external timing to engine.	Consult engine manufacturer's manual for specifications of ignition timing. Correct as required.
	Faulty Tachometer	Consult engine manufacturer's manual for specifications of ignition timing. Correct as required.
	Broken rotor shaft at cam slot.	Consult Champion Aerospace Manual L-1363, Section 3.3.3.C.
MOUNTING FLANGE BROKEN	Hold down clamp over torqued.	Torque hold-down clamps to 190-220 in-lbs.
	Hold down clamps torqued unevenly.	When magneto is reinstalled, be sure clamps are tightened with even pressure.
	Magneto gasket residue on accessory case mounting pad.	Be sure mounting face is free of gasket residue.
POINTS BURNED EXCESSIVELY	Faulty condenser.	Consult Champion Aerospace Manual L-1363, Section 3.3.7, for testing procedure. Replace as necessary.
	Improper spark plug gap.	Re-gap plugs according to manufacturer's specifications.
	Fouled spark plug.	Clean spark plug according to manufacturer's specifications.

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