

# TABLE OF CONTENTS

---

<b>ENGINE .....</b>	<b>03-02-1</b>
ENGINE LEAK VERIFICATION FLOW CHART .....	03-02-11
<hr/>	
<b>FUEL AND OIL SYSTEMS.....</b>	<b>03-03-1</b>
<hr/>	
<b>TRANSMISSION AND BRAKE SYSTEMS.....</b>	<b>03-04-1</b>
<b>TRANSMISSION.....</b>	<b>03-04-1</b>
<b>BRAKE SYSTEM .....</b>	<b>03-04-7</b>
HYDRAULIC BRAKE .....	03-04-7
<hr/>	
<b>ELECTRICAL SYSTEM.....</b>	<b>03-05-1</b>
<hr/>	
<b>SUSPENSION AND TRACK .....</b>	<b>03-06-1</b>

# ENGINE

The following chart is provided to help in diagnosing the probable source of troubles. It should be used as a guideline. Some causes or corrections may not apply to a specific model.

<b>SYMPTOM</b>	<b>ENGINE BACKFIRES.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check spark plugs.</b> a. Carbon accumulation caused by defective spark plug(s). <i>Clean carbon accumulation and replace spark plugs.</i>
	<b>2. Check ignition timing.</b> a. Timing is too advanced. <i>Set timing according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>3. Check carburetor.</b> a. Fuel passages obstructed. <i>Clean carburetor and install new filter(s).</i> b. Fuel level too low. <i>Adjust float level according to specifications.</i>
	<b>4. Check cooling system.</b> a. Low antifreeze level. <i>Adjust antifreeze level. Then check clamps or hoses.</i> b. Defective tank cap. <i>Replace cap.</i> c. Air in system. <i>Bleed system.</i>

<b>SYMPTOM</b>	<b>ENGINE SUDDENLY TURNS OFF AT HIGH RPM AND/OR WITH LIGHT LOAD.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check that all 3 ground wires are well connected.</b>

## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

SYMPTOM	ENGINE SUDDENLY TURNS OFF.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Perform engine leak test. Refer to ENGINE LEAK VERIFICATION FLOW CHART. Check possible piston seizure.</b> a. Damaged gasket and/or seal. <i>Replace defective parts.</i>
	<b>2. "Four-corner" seizure of piston(s).</b> a. Accelerating too fast when engine is cold. Piston expands faster than cylinder. <i>Replace piston(s). Ask driver to refer to warm-up procedure in Operator's Guide.</i>
	<b>3. Piston(s) seizure on exhaust side (color on piston dome is correct).</b> a. Kinked fuel tank vent tube. <i>Relocate fuel tank vent tube.</i> b. Leaks at fuel line connections or damaged fuel lines. <i>Replace defective lines.</i> c. Fuel does not flow through carburetor(s) (foreign particles in needle area and/or varnish formation in carburetor(s)). <i>Clean carburetor(s) and install new filter(s).</i> d. Spark plug heat range is too warm. <i>Install spark plugs with appropriate heat range (refer to TECHNICAL DATA 10).</i> e. Improper ignition timing. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i> f. Restriction in exhaust system. <i>Replace.</i> g. Compression ratio is too high. <i>Install genuine parts.</i> h. Carburetor calibration is too lean. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i> i. Improper reed valve adjustment or damage. <i>Adjust according to specifications (refer to 699 AND 809 ENGINES TYPES 04-02) and/or install Bombardier's recommended reed valve.</i> j. Poor oil quality. <i>Use BOMBARDIER-ROTAX oil.</i> k. Leaks at air intake silencer. <i>Replace air intake silencer grommets.</i>
	<b>4. Melted and/or perforated piston dome; melted section at ring end gap.</b> a. When piston reaches TDC, mixture is ignited by heated areas in combustion chamber. This situation is due to an incomplete combustion of a poor oil quality. <i>Clean residue accumulation in combustion chamber and replace piston(s). Use BOMBARDIER-ROTAX injection oil.</i> b. Spark plug heat range is too high. <i>Install recommended spark plugs (refer to TECHNICAL DATA 10).</i> c. Ignition timing is too advanced. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i> d. Inadequate fuel quality. <i>Use appropriate fuel.</i> e. Carburetion is too lean. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>

## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

	<p><b>5. Seized piston all around the circumference (dry surface).</b></p> <p>a. Lack of oil, damaged oil line or defective injection pump. <i>Replace defective part(s).</i></p>
	<p><b>6. Grooves on intake side of piston only.</b></p> <p>a. Oil film eliminated by water (snow infiltration in engine). <i>Replace piston(s) and check if intake system leaks.</i></p>
	<p><b>7. Piston color is dark due to seizure on intake and exhaust sides.</b></p> <p>a. Cooling system leaks and lowers coolant level. <i>Tighten clamps or replace defective parts. Add antifreeze in cooling system until appropriate level is reached.</i></p> <p>b. Accumulation of foreign particles in needle and/or main jet area. <i>Clean carburetor(s).</i></p>
	<p><b>8. Cracked or broken piston(s).</b></p> <p>a. Cracked or broken piston(s) due to excessive piston/cylinder clearance or engine overrevving. <i>Replace piston(s). Check piston/cylinder clearance (refer to TECHNICAL DATA 10). Adjust drive pulley according to specifications (refer to TECHNICAL DATA 10) and/or clean pulley sheaves if they are contaminated with greasy particles.</i></p>
	<p><b>9. DPM manifold air vent is obstructed.</b></p> <p>a. Carburetion is too lean. <i>Ensure proper air vent.</i></p>

<b>SYMPTOM</b>	<b>PISTON RING AND CYLINDER SURFACES ARE GROOVED.</b>
CONDITION	NORMAL USE.
Test/Inspection	<p><b>1. Check oil quality.</b></p> <p>a. Poor oil quality. <i>Use BOMBARDIER-ROTAX injection oil.</i></p>
	<p><b>2. Check injection pump and its hoses.</b></p> <p>a. Inadequate injection pump adjustment and/or defective hoses. <i>Adjust pump according to specifications (refer to ENGINE 04) and/or replace hoses.</i></p>

## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

SYMPTOM	ENGINE DOES NOT OFFER MAXIMUM POWER AND/OR DOES NOT REACH MAXIMUM OPERATING RPM.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check spark plug condition.</b> a. Fouled spark plugs. <i>Replace.</i>
	<b>2. Check if there is water in fuel.</b> a. There is water in fuel. <i>Drain fuel system, then fill it with appropriate fuel.</i>
	<b>3. Check items listed in ENGINE RUNS OUT OF FUEL (refer to fuel and oil system subsection 03).</b>
	<b>4. Check carburetor adjustments and cleanliness.</b> a. Inadequate carburetor adjustments or dirt accumulation. <i>Adjust according to specifications (refer to TECHNICAL DATA 10) or clean.</i>
	<b>5. Check drive belt.</b> a. Worn belt. <i>Replace belt if width is 3 mm (1/8") less than nominal dimension (refer to TECHNICAL DATA 10).</i>
	<b>6. Check track adjustment.</b> a. Too much tension and/or improper alignment. <i>Align track and adjust its tension to specifications (refer to TECHNICAL DATA 10).</i>
	<b>7. Check drive pulley.</b> a. Improper calibration screw adjustments (TRA pulley) and/or worn bushing(s). <i>Adjust according to specifications (refer to TECHNICAL DATA 10) and/or replace bushing(s).</i>
	<b>8. Check driven pulley.</b> a. Worn bushing and/or spring tension. <i>Replace spring and/or adjust its tension according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>9. Check exhaust system.</b> a. Restriction or exhaust system leaks. <i>Replace or reseal with Ultra Copper.</i>
	<b>10. Check ignition timing.</b> a. Decrease in power due to retarded ignition. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>11. Check engine compression.</b> a. Worn piston(s) and ring(s). <i>Replace (refer to TECHNICAL DATA 10 for specifications).</i>
	<b>12. Check engine cooling system.</b> a. Antifreeze level is low, cap fails to pressurize system or air circulates through lines. <i>Adjust level, replace cap or bleed cooling system.</i>
	<b>13. Check reed valve.</b> a. Improper tightness and/or opening. <i>Replace or adjust. Refer to proper engine subsection.</i>

## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

SYMPTOM	ENGINE DETONATION AT MAXIMUM RPM.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check which type of fuel is used.</b> a. Octane number is too low and/or alcohol level is too high. <i>Use recommended fuel type.</i>
	<b>2. Check spark plug type.</b> a. Improper spark plug heat range. <i>Install recommended spark plugs (refer to TECHNICAL DATA 10).</i>
	<b>3. Check exhaust system.</b> a. Too much restriction. <i>Replace.</i>
	<b>4. Check ignition timing.</b> a. Timing is too advanced. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>5. Check carburetion.</b> a. Fouled and/or improper carburetor components. <i>Clean or replace according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>6. Check compression ratio and combustion chamber volume.</b> a. Compression ratio is too high. <i>Install genuine parts.</i>

## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

SYMPTOM	ENGINE TURNS OVER BUT FAILS TO START.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check switches.</b> a. Ignition switch, emergency cut-out switch or tether switch is in the OFF position. <i>Place all switches in the RUN or ON position. If it still does not work, connect DESS switch BK/GN and BK/WH wires together (harness side).</i>
	<b>2. Check fuel valve.</b> a. Fully open fuel valve.
	<b>3. Check fuel level.</b> a. Mixture not rich enough to start cold engine. <i>Check fuel tank level and use choke.</i>
	<b>4. Check spark plug.</b> a. Defective spark plug (no spark). <i>Replace spark plugs.</i>
	<b>5. Check amount of fuel on spark plug.</b> a. Flooded engine (spark plug wet when removed). <i>Do not overprime or overchoke. Remove wet spark plugs, turn ignition switch to OFF and crank engine several times. Install clean dry spark plugs. Start engine following usual starting procedure.</i>
	<b>6. Check fuel lines.</b> a. No fuel to the engine (spark plugs dry when removed). <i>Check fuel tank level; turn fuel valve on if applicable; check fuel filter, replace if clogged; check condition of fuel and impulse lines and their connections.</i>
	<b>7. Check engine compression.</b> a. Insufficient engine compression. <i>Replace defective part(s) (ex.: piston(s), ring(s), etc.).</i>
	<b>8. Check DPM pump hose.</b> a. Oil from crankcase obstructs DPM pump hose. <i>Drain oil from hose and pump.</i>

## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

SYMPTOM	IRREGULAR ENGINE IDLE.
CONDITION	NORMAL USE AFTER ENGINE WARM UP.
Test/Inspection	<b>1. Check choke.</b> a. Choke plunger may be partially opened. <i>Readjust.</i>
	<b>2. Check carburetor adapter.</b> a. Air enters through a crack. <i>Replace.</i>
	<b>3. Check air screw position.</b> a. Inadequate fuel/air mixture. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>4. Check ignition system trigger coil air gap.</b> a. Air gap is too large. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>5. Check dimension of pilot jet.</b> a. Inadequate fuel/air mixture. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>6. Check reed valve.</b> a. Improper tightness and/or opening. <i>Replace or adjust. Refer to proper engine subsection.</i>
	<b>7. Perform engine leak test.</b> a. Leaking gaskets allow air to enter in engine. <i>Replace defective parts.</i>
	<b>8. DPM manifold air vent is obstructed.</b> a. Carburetion is too lean. <i>Ensure proper air vent.</i>



## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

SYMPTOM	HIGH ENGINE OPERATING TEMPERATURE.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check temperature gauge sensor.</b> a. False reading. <i>Check terminal connections. If problem still persists, replace sensor.</i>
	<b>2. Verify antifreeze level and check if there is air infiltration in the system or if there are leaks in gasket areas.</b> a. Low antifreeze level or air in system. <i>Add antifreeze until recommended level is reached, bleed system and/or tighten clamps at fitting.</i>
	<b>3. Check if antifreeze flows through system properly.</b> a. Foreign particles and/or broken coolant pump impeller. <i>Clean cooling system and/or replace coolant pump impeller.</i>
	<b>4. Check antifreeze concentration.</b> a. Antifreeze concentration is too high. <i>Adjust concentration according to Bombardier's recommendations.</i>
	<b>5. Check tank cap.</b> a. Cap does not hold pressure. <i>Replace.</i>
	<b>6. Check carburetion.</b> a. Improperly adjusted or inadequate carburetor components. <i>Adjust according to specifications (refer to TECHNICAL DATA 10) or replace inadequate component(s).</i>
	<b>7. Check cylinder head gaskets.</b> a. Worn gaskets. <i>Replace.</i>
	<b>8. Check ignition timing.</b> a. Ignition timing is too advanced. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>9. Check if there are leaks at air intake silencer and/or engine crankcase.</b> a. Leak(s). <i>Repair or replace.</i>
	<b>10. Check condition and heat range of spark plugs.</b> a. Melted spark plug tip or inadequate heat range. <i>Replace.</i>

## Section 03 TROUBLESHOOTING

### Subsection 02 (ENGINE)

<b>SYMPTOM</b>	<b>ENGINE EQUIPPED WITH RAVE VALVE DOES NOT REACH ITS FULL OPERATING RPM (500 TO 1000 RPM SLOWER).</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check RAVE valve pistons.</b></p> <p>a. Valve piston(s) is (are) too far out. <i>Screw valve piston(s) to bottom.</i></p> <p><b>2. Check RAVE valve stems.</b></p> <p>a. Bent RAVE valve stem(s). <i>Replace.</i></p> <p><b>3. Check RAVE valves.</b></p> <p>a. Jammed valve(s). <i>Clean.</i></p> <p><b>4. Check tension of RAVE springs.</b></p> <p>a. Inadequate spring tension. <i>Replace.</i></p> <p><b>5. Check RAVE pressure holes.</b></p> <p>a. Clogged holes. <i>Clean.</i></p> <p><b>6. Check clamps or sleeves.</b></p> <p>a. Damaged clamp(s) or sleeve(s). <i>Replace.</i></p> <p><b>7. Check exhaust tightness.</b></p> <p>a. Exhaust system is leaking leading to a too low back pressure. <i>Replaces parts and reseal.</i></p>

<b>SYMPTOM</b>	<b>ENGINE EQUIPPED WITH RAVE. ENGINE HESITATES AT MID-SPEED AND REACHES MAXIMUM PERFORMANCE ONLY AFTER A WHILE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check RAVE valve spring(s).</b></p> <p>a. Spring tension is too weak or spring(s) is (are) broken. <i>Replace.</i></p> <p><b>2. Check RAVE valve cover red adjustment screws.</b></p> <p>a. Adjustment screw(s) is (are) too loose. <i>Adjust according to ASSEMBLY PROCEDURE in appropriate engine subsections.</i></p> <p><b>3. Check RAVE valve movement (RAVE movement indicator P/N 861 7258 00).</b></p> <p>a. Valve(s) is (are) stuck in open position. <i>Clean.</i></p>

<b>SYMPTOM</b>	<b>REWIND STARTER ROPE DOES NOT REWIND.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check rewind spring.</b></p> <p>a. Broken spring. <i>Replace spring.</i></p>

## Section 03 TROUBLESHOOTING

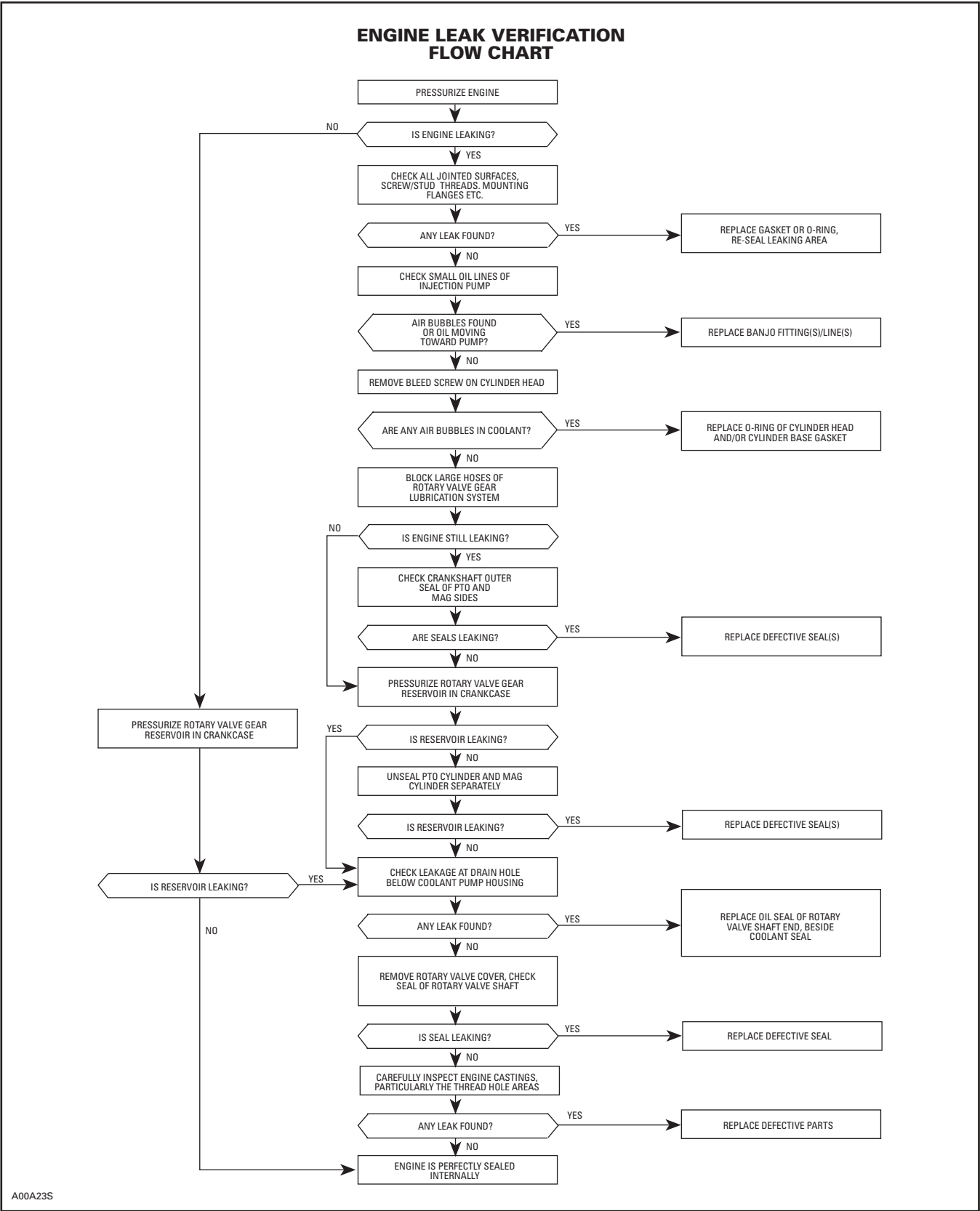
### Subsection 02 (ENGINE)

<b>SYMPTOM</b>	<b>REWIND STARTER PAWL DOES NOT ENGAGE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check stopper spring.</b> a. Broken stopper spring. <i>Replace.</i>
	<b>2. Check pawl and pawl lock.</b> a. Pawl and pawl lock have stuck together because of heat. <i>Replace.</i>
	<b>3. Check pawl and rope sheave.</b> a. Pawl and rope sheave have stuck together because of heat. <i>Replace.</i>

<b>SYMPTOM</b>	<b>ENGINE PINGING.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check fuel lines.</b> a. Bent fuel lines (preventing fuel from flowing through). <i>Relocate or replace fuel lines.</i>
	<b>2. Check if carburetor(s) is (are) clean.</b> a. Dirt prevents fuel from flowing through. <i>Clean.</i>
	<b>3. Check ignition timing.</b> a. Timing is too advanced. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>4. Check compression ratio.</b> a. Compression ratio is too high. <i>Replace inadequate part(s) to obtain manufacturer's recommended compression ratio or use a higher grade fuel.</i>

<b>SYMPTOM</b>	<b>ENGINE GENERATES A LOT OF VIBRATIONS.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check engine supports and stopper.</b> a. Loose and/or broken supports or interference between support(s) and chassis. <i>Retighten to specification (refer to TECHNICAL DATA 10) or replace.</i>
	<b>2. Check drive pulley (refer to: vibrations coming from drive pulley).</b>
	<b>3. Check carburetor synchronization.</b> a. Throttle slide heights are adjusted differently and/or throttle slide openings are unsynchronized. <i>Adjust throttle slide heights and throttle cable.</i>

**ENGINE LEAK VERIFICATION FLOW CHART**



A00A23S

# FUEL AND OIL SYSTEMS

The following chart is provided to help in diagnosing the probable source of troubles. It should be used as a guideline. Some causes or corrections may not apply to a specific model.

<b>SYMPTOM</b>	<b>HIGH FUEL CONSUMPTION OR RICH MIXTURE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check fuel tank.</b></p> <p>a. Perforated fuel tank. <i>Replace fuel tank.</i></p>
	<p><b>2. Check fuel pump reservoir and carburetor fittings.</b></p> <p>a. Leaking fittings. <i>Replace defective part.</i></p>
	<p><b>3. Check choke adjustment.</b></p> <p>a. Fuel flows through choke circuit while engine runs. <i>Readjust choke.</i></p>
	<p><b>4. Check float height in carburetor(s).</b></p> <p>a. Fuel level is too high in float bowl(s). <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i></p>
	<p><b>5. Check needle valve.</b></p> <p>a. Foreign particles prevent needle valve(s) from closing and/or worn seating area. <i>Clean or replace needle valve(s), then clean seating area.</i></p>

<b>SYMPTOM</b>	<b>FUEL LEAKS IN ENGINE BASE WHEN ENGINE IS STOPPED.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check items 3, 4 and 5 of HIGH FUEL CONSUMPTION.</b></p>
	<p><b>2. Check fuel pump diaphragm.</b></p> <p>a. Cracked diaphragm. <i>Replace.</i></p>

## Section 03 TROUBLESHOOTING

### Subsection 03 (FUEL AND OIL SYSTEMS)

SYMPTOM	ENGINE LACKS POWER OR STALLS AT HIGH RPM.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check fuel tank vent hose.</b> a. Kinked or clogged hose. <i>Relocate or replace.</i>
	<b>2. Check fuel filter.</b> a. Clogged filter. <i>Replace.</i>
	<b>3. Check fuel lines.</b> a. Kinked or clogged lines. <i>Relocate or replace.</i>
	<b>4. Check fuel pump flow.</b> a. Dried diaphragm. <i>Replace.</i>
	<b>5. Check if carburetor(s) is (are) clean.</b> a. Varnish. <i>Clean.</i>

SYMPTOM	HIGH INJECTION OIL CONSUMPTION.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check oil injection pump adjustment.</b> a. Oil injection pump adjusted too rich. <i>Adjust.</i>
	<b>2. Check injection pump identification.</b> a. Wrong pump installed. <i>Replace with the appropriate pump. Refer to OIL INJECTION SYSTEM 04-05.</i>
	<b>3. Check injection oil lines and their fitting.</b> a. Leaking lines and/or cover. <i>Replace defective part(s).</i>
	<b>4. Check injection pump cover gasket.</b> a. Worn gasket. <i>Replace.</i>
	<b>5. Pressurize crankcase rotary valve gear reservoir.</b> a. Leaking gasket(s). <i>Replace gasket(s).</i>

**Section 03 TROUBLESHOOTING**  
Subsection 03 (FUEL AND OIL SYSTEMS)

<b>SYMPTOM</b>	<b>ENGINE RUNS OUT OF FUEL (OR LEAN MIXTURE).</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check fuel filter ball located in fuel tank. Ball must move freely.</b></p> <p>a. Corrosion due to oxidation at installation. <i>Replace fuel filter.</i></p> <p><b>2. Check if lines are perforated or kinked and make sure they do not leak at fittings.</b></p> <p>a. Lines are too big for their fittings or are improperly routed. <i>Replace or properly relocate lines.</i></p> <p><b>3. Check fuel pump outlet flow.</b></p> <p>a. Dirt clogging fuel pump lines or torn membrane. <i>Clean or replace fuel pump.</i></p> <p><b>4. Check carburetor needle valve(s).</b></p> <p>a. Dirt (varnish, foreign particle) clogging fuel line inlets. <i>Clean.</i></p> <p><b>5. Check main jet.</b></p> <p>a. Dirt (varnish, foreign particle) accumulation at main jet. <i>Clean.</i></p> <p><b>6. Check float height in carburetor bowl(s).</b></p> <p>a. Running out of fuel at high speed because float height is too low. <i>Adjust float height according to specifications.</i></p>

<b>SYMPTOM</b>	<b>DPM SEEMS TO BE DEFECTIVE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check 1 A fuse.</b></p> <p>a. Burnt fuse or corroded terminals. <i>Clean or replace fuse.</i></p> <p><b>2. Fuel mixture is too rich or too poor.</b></p> <p>a. Possible damage to DPM. <i>Unplug 1 A fuse while engine is running. The carburetion is now identical to that of carburetors without a DPM provided, of course, that all pipe fittings are tight and that solenoids are in good condition, None must be half-open. If problem is resolved, DPM is faulty.</i></p>

# TRANSMISSION AND BRAKE SYSTEMS

The following charts are provided to help in diagnosing the probable source of troubles. It should be used as a guideline. Some causes or corrections may not apply to a specific model.

## TRANSMISSION

<b>SYMPTOM</b>	<b>THE SNOWMOBILE ACCELERATES SLOWLY, ESPECIALLY WHEN IT IS STOPPED.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check drive belt condition.</b></p> <p>a. Belt is too narrow (drive belt engagement is higher in drive pulley). <i>Replace belt if width is less than specified in DRIVE BELT 05-02.</i></p> <p><b>2. Check distance between pulleys and/or drive belt deflection.</b></p> <p>a. Distance is too small between pulleys or deflection is too high (drive belt engagement is higher in drive pulley). <i>Adjust distance between pulleys and/or drive belt deflection according to specifications (refer to TECHNICAL DATA 10).</i></p> <p><b>3. Check driven pulley sliding half play.</b></p> <p>a. Jammed sliding half. <i>Replace.</i></p> <p><b>4. Check spring tension of driven pulley sliding half.</b></p> <p>a. Sliding half rotation is accelerated when spring tension is too weak. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i></p> <p><b>5. Refer to VIBRATIONS ORIGINATING FROM DRIVEN PULLEY and check items listed.</b></p> <p><b>6. Check drive pulley spring tension.</b></p> <p>a. Spring tension is too weak. <i>Replace.</i></p>

<b>SYMPTOM</b>	<b>ENGINE MAXIMUM RPM IS TOO HIGH AND TOP SPEED IS NOT REACHED.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check items 1, 2 and 3 of THE SNOWMOBILE ACCELERATES SLOWLY, ESPECIALLY WHEN IT IS STOPPED.</b></p> <p><b>2. Check driven pulley spring tension.</b></p> <p>a. Spring tension is too stiff. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i></p> <p><b>3. Check position of the calibration screws. (TRA drive pulley)</b></p> <p>a. Selected numbers are too high. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i></p> <p><b>4. Refer to VIBRATIONS ORIGINATING FROM DRIVEN PULLEY and check items listed.</b></p>



## Section 03 TROUBLESHOOTING

### Subsection 04 (TRANSMISSION AND BRAKE SYSTEMS)

<b>SYMPTOM</b>	<b>LOOSENESS IS FELT IN DRIVE SYSTEM WHEN ACCELERATING/DECELERATING.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check drive chain tension.</b> a. Drive chain is too loose. <i>Adjust.</i>
	<b>2. Check play of driven pulley splines.</b> a. Worn splines. <i>Replace.</i>


<b>SYMPTOM</b>	<b>VIBRATIONS ORIGINATING FROM DRIVE PULLEY.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check drive belt.</b> a. Belt width is uneven at many places. <i>Replace.</i>
	<b>2. Check tightening torque of drive pulley screw.</b> a. Moving governor cup. <i>Retighten screw.</i>
	<b>3. Spring cover screws.</b> a. Spring cover moves and restrains sliding half movement. <i>Retighten screws.</i>
	<b>4. Check spring cover (TRA TYPE) and/or outer half bushings.</b> a. Excessive gap between bushings and inner half shaft, thus restraining sliding half movements. <i>Replace bushing(s).</i>
	<b>5. Check sliding half slider shoes.</b> a. Worn slider shoes. <i>Replace.</i>

<b>SYMPTOM</b>	<b>VIBRATIONS ORIGINATING FROM DRIVEN PULLEY.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check sliding half play.</b> a. Sliding half runout. <i>Replace sliding half bushing.</i>
	<b>2. Check sliding half and fixed half straightness.</b> a. Sliding half/fixed half runout. <i>Replace.</i>
	<b>3. Check cam slider shoes.</b> a. One or two slider shoes out of three are broken. <i>Replace.</i>

**Section 03 TROUBLESHOOTING**  
Subsection 04 (TRANSMISSION AND BRAKE SYSTEMS)

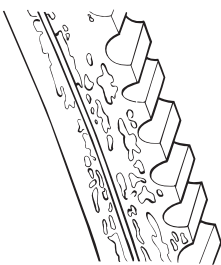
<b>SYMPTOM</b>	<b>PULLEYS DO NOT DOWN SHIFT PROPERLY.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check driven pulley spring tension.</b> a. Spring tension is too weak. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i>
	<b>2. Refer to VIBRATIONS COMING FROM DRIVEN PULLEY and check items listed.</b>
	<b>3. Check drive pulley bushings (cleanliness, wear, etc.).</b> a. Bushings stick to fixed half pulley shaft. <i>Clean or replace.</i>
	<b>4. Check driven pulley spring tension.</b> a. Spring tension is too weak. <i>Replace.</i>

<b>SYMPTOM</b>	<b>IN REVERSE ENGINE BOGS AND DRIVEN PULLEY OPENS TOO FAST (DRIVE BELT IS LOW IN DRIVEN PULLEY).</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check pulley distance and alignment.</b> a. Improper adjustment. <i>Adjust according to specifications (refer to PULLEY DISTANCE AND ALIGNMENT 05-05) and make sure that engine stopper is resting against engine.</i>

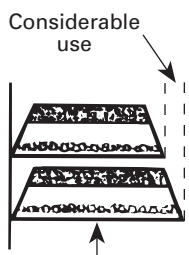
<b>SYMPTOM</b>	<b>UNEVEN BELT WEAR ON ONE SIDE ONLY.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>   <p>A00D09Y</p>	<b>1. Check tightening torque of engine mount bolts.</b> a. Loose engine mount. <i>Tighten engine mount nuts/bolts equally.</i>
	<b>2. Check pulley alignment.</b> a. Pulley misalignment. <i>Align pulleys.</i>
	<b>3. Check drive belt contact area on pulleys.</b> a. Rough or scratched pulley surfaces. <i>Repair or replace pulley half.</i>
	<b>4. Check driven pulley sliding half play.</b> a. Driven pulley bushing worn. <i>Replace bushing.</i>

## Section 03 TROUBLESHOOTING

### Subsection 04 (TRANSMISSION AND BRAKE SYSTEMS)

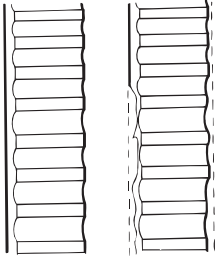
<b>SYMPTOM</b>	<b>BELT GLAZED EXCESSIVELY OR HAVING BAKED APPEARANCE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b> 	<b>1. Check if drive pulley bushings are worn.</b> a. Insufficient pressure on belt sides. <i>Replace bushing.</i>
	<b>2. Check condition of drive pulley fixed half shaft.</b> a. Rusted drive or driven pulley shafts. <i>Clean shaft with fine steel wool.</i>
	<b>3. Check if pulley halves are clean.</b> a. Oil on pulley surfaces. <i>Clean pulley halves.</i>
	<b>4. Check pulley calibration.</b> a. Improper pulley calibration. <i>Calibrate according to specifications.</i>


A00D0AY

<b>SYMPTOM</b>	<b>BELT WORN EXCESSIVELY IN TOP WIDTH.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b> Considerable use 	<b>1. Check drive pulley.</b> a. Excessive slippage due to irregular outward actuation movement of drive pulley. <i>Carry out drive pulley inspection.</i>
	<b>2. Check drive belt identification number.</b> a. Improper belt angle (wrong type of belt). <i>Replace belt with an appropriate drive belt.</i>
	<b>3. Check drive belt width.</b> a. Considerable use. <i>Replace belt if less than specified in DRIVE BELT 05-02.</i>

A00D0BY


**Section 03 TROUBLESHOOTING**  
Subsection 04 (TRANSMISSION AND BRAKE SYSTEMS)

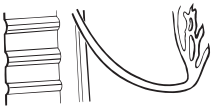
<b>SYMPTOM</b>	<b>BELT WORN NARROW IN ONE SECTION.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check if parking brake is released.</b></p> <p>a. Parking brake is engaged. <i>Release parking brake.</i></p> <p><b>2. Check track tension/alignment.</b></p> <p>a. Frozen or too tight track. <i>Liberate track from ice or check track tension and alignment.</i></p> <p><b>3. Check drive pulley.</b></p> <p>a. Drive pulley not functioning properly. <i>Repair or replace drive pulley.</i></p> <p><b>4. Check idle speed.</b></p> <p>a. Engine idle speed too high. <i>Adjust according to specifications.</i></p> <p><b>5. Check drive belt length.</b></p> <p>a. Incorrect belt length. <i>Replace belt with an appropriate drive belt (refer to TECHNICAL DATA 10).</i></p> <p><b>6. Check distance between pulleys.</b></p> <p>a. Incorrect pulley distance. <i>Readjust according to specifications.</i></p> <p><b>7. Check belt deflection.</b></p> <p>a. Deflection is too small. <i>Adjust according to specifications.</i></p>
	
A00D0CY	


<b>SYMPTOM</b>	<b>BELT SIDES WORN CONCAVE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check pulley half surfaces.</b></p> <p>a. Rough or scratched pulley half surfaces. <i>Repair or replace.</i></p> <p><b>2. Check drive belt identification number.</b></p> <p>a. Unspecified type of belt. <i>Replace belt with an appropriate drive belt (refer to TECHNICAL DATA 10).</i></p>
	
A00D0DY	

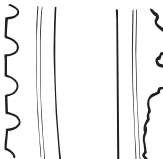
## Section 03 TROUBLESHOOTING

### Subsection 04 (TRANSMISSION AND BRAKE SYSTEMS)

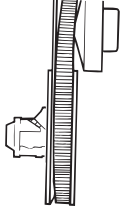
<b>SYMPTOM</b>	<b>BELT DISINTEGRATION.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>  <small>A00D0EY</small>	<b>1. Check drive belt identification number.</b> a. Excessive belt speed. <i>Using unspecified type of belt. Replace belt with proper type of belt (refer to TECHNICAL DATA 10).</i>
	<b>2. Check if pulley halves are clean.</b> a. Oil on pulley surfaces. <i>Clean pulley surfaces with fine emery cloth and wipe clean using Loctite Safety Solvent (P/N 413 708 200) and a cloth.</i>

<b>SYMPTOM</b>	<b>BELT EDGE CORD BREAKAGE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>  <small>A00D0FY</small>	<b>1. Check pulley alignment.</b> a. Pulley misalignment. <i>Align pulley according to specifications (refer to TECHNICAL DATA 10).</i>

<b>SYMPTOM</b>	<b>FLEX CRACKS BETWEEN COGS.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>  <small>A00D0GY</small>	<b>1. Check drive belt condition.</b> a. Considerable use, belt wearing out. <i>Replace.</i>

<b>SYMPTOM</b>	<b>SHEARED COGS, COMPRESSION SECTION FRACTURED OR TORN.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>  <small>A00D0HY</small>	<b>1. Check drive belt rotational direction.</b> a. Improper belt installation. <i>Replace.</i>
	<b>2. Check if drive belt rubs against components.</b> a. Belt rubbing on stationary object. <i>Relocate components.</i>
	<b>3. Check drive pulley.</b> a. Violent engagement of drive pulley. <i>Check drive pulley engagement speed, drive pulley bushings and components.</i>

**Section 03 TROUBLESHOOTING**  
Subsection 04 (TRANSMISSION AND BRAKE SYSTEMS)

<b>SYMPTOM</b>	<b>BELT "FLIP-OVER" AT HIGH SPEED.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check pulley alignment.</b></p> <p>a. Pulley misalignment. <i>Align pulley according to specifications (refer to TECHNICAL DATA 10).</i></p>
	<p><b>2. Check drive belt identification number.</b></p> <p>a. Using unspecified type of belt. <i>Replace belt with an appropriate drive belt.</i></p>

## BRAKE SYSTEM

### HYDRAULIC BRAKE

<b>SYMPTOM</b>	<b>SPONGY BRAKE CONDITION.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<i>Replace brake fluid and bleed system. If problem still occurs, replace master cylinder.</i>

<b>SYMPTOM</b>	<b>BRAKE FLUID LEAKING.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check for loosen hose connectors.</b> <i>Replace copper washers and retighten.</i></p> <p><b>2. Check for damaged hose, master cylinder and caliper.</b> <i>Replace part(s) and check for proper mounting.</i></p>

<b>SYMPTOM</b>	<b>BRAKE SYSTEM IS NOISY.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check brake pad thickness.</b></p> <p>a. Pads are worn up to wear Warner. <i>Replace.</i></p>

# ELECTRICAL SYSTEM

The following chart is provided to help in diagnosing the probable source of troubles. It should be used as a guideline. Some causes or corrections may not apply to a specific model.

<b>SYMPTOM</b>	<b>STARTER DOES NOT TURN.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check fuse.</b></p> <p>a. Burnt fuse. <i>Check wiring condition and replace fuse.</i></p> <p><b>2. Check continuity of starter switch contact points.</b></p> <p>a. Poor contact of starter switch contact points. <i>Repair or replace switch.</i></p> <p><b>3. Check continuity between starter switch and solenoid.</b></p> <p>a. Open circuit between starter switch and solenoid switch. <i>Repair.</i></p>

<b>SYMPTOM</b>	<b>STARTER TURNS; BUT DOES NOT CRANK THE ENGINE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check battery capacity.</b></p> <p>a. Shorted battery cell(s). <i>Replace.</i></p> <p><b>2. Check battery charge.</b></p> <p>a. Weak battery. <i>Recharge battery and verify recharge system and wires.</i></p> <p><b>3. Check wire connection.</b></p> <p>a. Inadequate connection (too much resistance). <i>Clean and reconnect.</i></p> <p><b>4. Check solenoid switch contact disc.</b></p> <p>a. Burnt or poor contact of solenoid switch contact disc. <i>Replace solenoid switch.</i></p> <p><b>5. Check continuity of solenoid switch pull-in winding.</b></p> <p>a. Open circuit of solenoid switch pull-in winding. <i>Replace solenoid switch.</i></p> <p><b>6. Check brushes.</b></p> <p>a. Poor contact of brushes. <i>Replace brushes.</i></p> <p><b>7. Check commutator.</b></p> <p>a. Burnt commutator. <i>Turn commutator on a lathe. Respect outer diameter wear limit. Refer to ELECTRIC STARTER 06-05.</i></p>

## Section 03 TROUBLESHOOTING

### Subsection 05 (ELECTRICAL SYSTEM)

	<p><b>8. Check height of commutator mica.</b></p> <p>a. Commutator mica too high. <i>Undercut mica.</i></p>
	<p><b>9. Check field coil resistance.</b></p> <p>a. Shorted field coil. <i>Repair or replace yoke.</i></p>
	<p><b>10. Check armature resistance.</b></p> <p>a. Shorted armature. <i>Repair or replace armature.</i></p>
	<p><b>11. Check tension of brush springs.</b></p> <p>a. Weak brush spring tension. <i>Replace springs.</i></p>
	<p><b>12. Check yoke assembly magnets.</b></p> <p>a. Weak magnets. <i>Replace yoke assembly.</i></p>
	<p><b>13. Check if bushings are worn.</b></p> <p>a. Worn bushings. <i>Replace bushings.</i></p>

<b>SYMPTOM</b>	<b>STARTER TURNS, BUT OVERRUNNING CLUTCH PINION DOES NOT MESH WITH RING GEAR.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check clutch pinion gear.</b></p> <p>a. Worn clutch pinion gear. <i>Replace clutch.</i></p>
	<p><b>2. Check clutch.</b></p> <p>a. Defective clutch. <i>Replace clutch.</i></p>
	<p><b>3. Check movement of clutch on splines.</b></p> <p>a. Poor movement of clutch on splines. <i>Clean and correct.</i></p>
	<p><b>4. Check clutch bushing.</b></p> <p>a. Worn clutch bushing. <i>Replace clutch.</i></p>
	<p><b>5. Check starter bushings.</b></p> <p>a. Worn starter bushing(s). <i>Replace bushing(s).</i></p>
	<p><b>6. Check ring gear.</b></p> <p>a. Worn ring gear. <i>Replace ring gear.</i></p>



**Section 03 TROUBLESHOOTING**  
Subsection 05 (ELECTRICAL SYSTEM)

<b>SYMPTOM</b>	<b>ELECTRIC STARTER KEEPS TURNING WHEN ENGINE IS STARTED.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check clutch.</b> a. Jammed clutch pinion gear. <i>Replace or clean.</i>
	<b>2. Check movement of clutch on splines.</b> a. Clutch is stuck on splines. <i>Clean.</i>
	<b>3. Check starter brackets.</b> a. Broken bracket(s). <i>Replace bracket(s).</i>
	<b>4. Check ignition switch.</b> a. Ignition switch does not return to its ON position or is short-circuited. <i>Adjust switch position. Face nut is too far in.</i>
	<b>5. Check starter relay.</b> a. Shorted starter relay winding(s). <i>Replace starter relay.</i>
	<b>6. Check starter relay contacts.</b> a. Melted starter relay contacts. <i>Replace starter relay.</i>
	<b>7. Check starter relay.</b> a. Starter relay returns poorly. <i>Replace starter relay.</i>

<b>SYMPTOM</b>	<b>NOISE OCCURENCE WHEN STARTING ENGINE.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check if ring gear is well-mounted to drive pulley inner half.</b> a. Loose and/or broken bolts. <i>Retighten bolts using thread locker or replace ring gear and drive pulley inner half.</i>

<b>SYMPTOM</b>	<b>REGULATOR BLACK WIRE IS MELTED (HARNESS SIDE).</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check that big ground wire at battery is well connected to chassis.</b> a. Corroded and/or loose connection(s). <i>Clean and/or retighten.</i>

## Section 03 TROUBLESHOOTING

### Subsection 05 (ELECTRICAL SYSTEM)

<b>SYMPTOM</b>	<b>OPTIONAL ELECTRIC STARTER DOES NOT WORK WHEN TURNING IGNITION SWITCH.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check connection of BLACK wire (solenoid ground) in 3-wire housing coming from magneto (white housing).</b> a. Corroded and/or loose connection(s). <i>Clean and/or retighten.</i>

<b>SYMPTOM</b>	<b>ELECTRIC STARTER SOMETIMES DOES NOT WORK WHEN TURNING IGNITION SWITCH.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check battery cables and starter wires.</b> a. Corroded and/or loose connection(s). <i>Clean and/or retighten.</i>
	<b>2. Check fuse.</b> a. Oxidized or burnt fuse. <i>Clean or replace.</i>
	<b>3. Check wiring harness connections.</b> a. Oxidized connections. <i>Clean or replace defective terminals.</i>
	<b>4. Check ignition switch.</b> a. Defective contacts in ignition switch. <i>Replace.</i>
	<b>5. Check solenoid of electric starter.</b> a. Shorted solenoid wiring harness or eroded contact washer. <i>Replace.</i>

**Section 03 TROUBLESHOOTING**  
Subsection 05 (ELECTRICAL SYSTEM)

<b>SYMPTOM</b>	<b>ENGINE DOES NOT START — NO SPARK AT SPARK PLUG.</b>
<b>CONDITION</b>	AT ENGINE CRANKING.
<b>Test/Inspection</b>	<p><b>1. Verify spark plug condition.</b> a. Defective, improperly set, worn-out, fouled. <i>Identify source of problem and correct. Replace spark plugs.</i></p> <p><b>2. Verify spark plug cap resistance with an ohmmeter.</b> a. Defective part. <i>Replace cap.</i></p> <p><b>3. Verify if problem originated from electrical system wiring harness and/or accessories and/or ignition cut-out switches by unplugging the 3-wire connectors between the magneto/generator and the vehicle wiring harness. Check condition of connectors.</b> a. Heating, rotating or sharp part in contact with harness. Improper harness routing. Defective switch(es). Corroded connector terminals. <i>Replace or repair damaged wires. Reroute where necessary. Replace defective switch(es). Clean terminals and apply silicone dielectric grease.</i></p> <p><b>4. Verify trigger coil resistance with an ohmmeter and connector condition.</b> a. Defective coil. Corroded connector terminals. <i>Replace defective coil. Clean terminals and apply silicone dielectric grease.</i></p> <p><b>5. Verify condition of ignition coil.</b> a. Mechanically damaged part. Vibration problem. Electrically damaged part. <i>Tighten mounting screws. Replace ignition coil.</i></p> <p><b>6. Verify condition of ignition generator coils.</b> a. Mechanically damaged part. Vibration problem. Electrically damaged part. <i>Tighten mounting screws. Replace coils.</i></p> <p><b>7. Verify MPEM.</b> a. Mechanically damaged part. Vibration problem. Electrically damaged part. <i>Tighten mounting screws. Replace MPEM, retest and verify ignition timing.</i></p>

<b>SYMPTOM</b>	<b>CDI MODULE DOES NOT WORK.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check that high tension coil wires do not touch any metal parts.</b> a. Short circuit. <i>Isolate and reroute wires.</i></p>

<b>SYMPTOM</b>	<b>ENGINE STALLS.</b>
<b>CONDITION</b>	AT LOW SPEED.
<b>Test/Inspection</b>	<b>1. Verify items 4, 5 and 6 above.</b>

## Section 03 TROUBLESHOOTING

### Subsection 05 (ELECTRICAL SYSTEM)

<b>SYMPTOM</b>	<b>IRREGULAR ENGINE SPEED.</b>
<b>CONDITION</b>	AT HIGH SPEED.
<b>Test/Inspection</b>	<b>1. Verify items 4, 5 and 6 above.</b>
<b>CONDITION</b>	AT LOW SPEED.
<b>Test/Inspection</b>	<b>1. Verify items 4 and 5 above and trigger coil/flywheel protrusion air gap.</b> a. Air gap too large. <i>Readjust air gap.</i>

<b>SYMPTOM</b>	<b>ENGINE IS MISFIRING — ERRATIC SPARK AT SPARK PLUG.</b>
<b>CONDITION</b>	RIDING ON WET SNOW.
<b>Test/Inspection</b>	<b>1. Verify if spark plug wires and/or spark plug cap seals are sealing out moisture.</b> a. Defective wires and/or seals. <i>Replace defective part.</i>
	<b>2. Verify if ignition system wiring harness connectors are in good condition and/or are sealing out moisture.</b> a. Loose connectors, corroded terminals or defective parts. <i>Clean terminals and apply silicone dielectric grease. Replace defective parts.</i>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Verify misfiring by observing flash of stroboscopic timing light; unplug connectors between magneto/generator and vehicle wiring harness to isolate problem. Check condition of connectors.</b> a. Defective spark plug(s) and/or cable(s)/cap(s). Defective electrical system wiring harness and/or accessories and/ignition cut-out switches. Condition of connector terminals. <i>Replace defective parts and/or repair damaged wires. Replace defective switch(es). Clean terminals and apply silicone dielectric grease.</i>
<b>CONDITION</b>	RIDING IN DEEP AND THICK SNOW.
<b>Test/Inspection</b>	<b>1. Perform all verifications outlined under ENGINE DOES NOT START — NO SPARK AT SPARK PLUG.</b>
	<b>2. Verify spark plugs. Proceed with spark plug analysis in order to identify source of problem.</b> a. Defective and/or worn spark plug(s) and/or cable(s) and/or cap(s). <i>Replace defective part(s). Proceed with ignition system testing procedures. Perform engine analysis.</i>

**Section 03 TROUBLESHOOTING**  
Subsection 05 (ELECTRICAL SYSTEM)

<b>SYMPTOM</b>	<b>FOULED (BLACK) SPARK PLUG TIP.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check carburetor(s).</b> a. Carburetion is too rich. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i></p> <p><b>2. Check injection oil consumption.</b> a. Injection pump flow is too high. <i>Adjust according to specifications or replace.</i></p> <p><b>3. Check oil quality.</b> a. Poor oil quality that creates deposits. <i>Use BOMBARDIER-ROTAX injection oil.</i></p> <p><b>4. Check engine compression.</b> a. Leaking piston ring(s). <i>Replace.</i></p>

<b>SYMPTOM</b>	<b>SPARK PLUG TIP(S) IS (ARE) LIGHT GREY.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Refer to ENGINE SLOWS DOWN OR STOPS AT HIGH RPM and check items listed.</b></p> <p><b>2. Check spark plug heat range.</b> a. Spark plug heat range is too high. <i>Replace by Bombardier's recommended spark plug (refer to TECHNICAL DATA 10).</i></p> <p><b>3. Check if air intake silencer leaks.</b> a. Air surplus coming from opening(s) located between halves. <i>Seal.</i></p> <p><b>4. Check carburetor adapter collars.</b> a. Loose collar(s). <i>Tighten.</i></p> <p><b>5. Check carburetor adapter(s).</b> a. Cracked or deformed adapter(s). <i>Replace.</i></p>

## Section 03 TROUBLESHOOTING

### Subsection 05 (ELECTRICAL SYSTEM)

SYMPTOM	RER (ROTAX ELECTRONIC REVERSE) DOES NOT WORK.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check idle speed.</b> a. Wrong idle speed. <i>Adjust according to specification (refer to TECHNICAL DATA 10).</i>
	<b>2. Check spark plug.</b> a. Faulty spark plug. <i>Replace.</i>
	<b>3. Check drive belt deflection.</b> a. Wrong deflection. <i>Adjust according to specification (refer to TECHNICAL DATA 10).</i>
	<b>4. Check carburetor synchronization and air screw adjustment.</b> a. Wrong adjustment. <i>Adjust according to specification (refer to TECHNICAL DATA 10) and read carburetor subsection.</i>
	<b>5. Check electrical connections.</b> a. Bad electrical connections or damaged wires. <i>Clean or replace.</i>
	<b>6. Check MPEM.</b> a. Faulty MPEM. <i>Replace.</i>

SYMPTOM	HEADLAMP NOT LIGHTING.
CONDITION	WHITE BULB.
Test/Inspection	<b>1. Check bulb.</b> a. Gas leak. <i>Replace bulb.</i>
CONDITION	BROKEN ELEMENT.
Test/Inspection	<b>1. Check for loose headlamp housing and bulb socket.</b> a. Vibration problem. <i>Tighten headlamp mounting screws. Lock bulb in socket. Replace bulb.</i>
CONDITION	MELTED FILAMENT (ENDS OF ELEMENT HOLDER) AND BLACK BULB.
Test/Inspection	<b>1. Check voltage at headlamp at different speeds. It must not be above 15 Vac.</b> NOTE: If quartz halogen bulb is involved, ensure that proper voltage regulator is installed. a. Excessive voltage in lighting circuit. <i>Replace voltage regulator and ensure proper grounding. Retest.</i>

**Section 03 TROUBLESHOOTING**  
Subsection 05 (ELECTRICAL SYSTEM)

<b>SYMPTOM</b>	<b>HEADLAMP DIMMING.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check voltage at headlamp at different speeds. It must not be below 11 Vac.</b> a. Insufficient voltage in lighting circuit. <i>Replace voltage regulator and retest.</i></p> <p><b>2. Visually inspect wiring harness for damaged and/or melted wires and/or bad wire terminal crimping and/or connections.</b> a. Heating, rotating or sharp part in contact with harness. Improper harness routing. <i>Repair/replace damaged wires and/or terminals. Reroute harness where necessary.</i></p> <p><b>3. On manual start models: Verify regulator ground.</b> a. Rusted or loose retaining screws. <i>Clean, apply lithium grease (LMZ1) and firmly tighten screws.</i></p> <p><b>4. Verify if there is an interconnection between AC and DC current.</b> b. Faulty installation of optional equipment. <i>Find optional equipment connected directly to DC ground (BK wire or chassis) or to any DC hot wire (RD, RD/BL). Disconnect and reconnect to AC current (YL and YL/BK wires).</i></p> <p><b>5. Verify if optional electric accessories are overloading the magneto/generator.</b> a. Excessive electrical load to magneto/generator. <i>Reduce the electrical load by removing excess accessories. Reconnect as recommended by manufacturer.</i></p> <p><b>6. Hot Grips brand: Verify if they were connected in parallel by mistake.</b> a. Excessive electrical load to magneto/generator. <i>Reconnect as recommended by manufacturer.</i></p> <p><b>7. Bombardier heating grips: Verify if the return wires of the elements were grounded to the chassis by mistake.</b> a. Faulty installation of optional equipment. <i>Reconnect as recommended by manufacturer.</i></p> <p><b>8. Verify if heating grips installation overloads the magneto/generator capacity.</b> a. Excessive electrical load to magneto/generator. <i>Reduce the electrical load by removing accessories.</i></p>

## Section 03 TROUBLESHOOTING

### Subsection 05 (ELECTRICAL SYSTEM)

SYMPTOM	FALSE FUEL AND/OR TEMPERATURE GAUGE READINGS.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Verify if gauge was connected on DC current by mistake (in case of optional installation).</b> a. Faulty installation of optional equipment. <i>Find optional wires connected directly to DC ground (BK wire to chassis) or to any DC hot wire (RD, RD/BL). Disconnect and reconnect to AC current (YL and YL/BK wires).</i>
	<b>2. Verify sender unit for free movement and/or correct arm position.</b> a. Defective or damaged part. <i>Correct or replace sender unit.</i>
	<b>3. Verify sender unit/gauge wiring harness condition.</b> a. Heating, rotating or sharp part in contact with harness. Improper harness routing. <i>Replace or repair damaged wires. Reroute where necessary.</i>

SYMPTOM	WITH ENGINE IDLING NO ELECTRICAL ACCESSORIES WORK.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check idle speed.</b> a. Too low idle speed. <i>Readjust to specifications.</i>
	<b>2. Verify regulator.</b> a. Faulty regulator. <i>Replace.</i>

SYMPTOM	BRAKE LIGHT REMAINS ON.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check if bulb is properly installed.</b> a. Bulb is not installed correctly (contact elements are reversed). <i>Install bulb correctly.</i>
	<b>2. Check brake switch.</b> a. Switch contact remains closed. <i>Replace brake switch.</i>



**Section 03 TROUBLESHOOTING**  
**Subsection 05 (ELECTRICAL SYSTEM)**

<b>SYMPTOM</b>	<b>REAR LIGHT BULB FLASHES.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check bulb tightness in housing.</b></p> <p>a. Looseness at bulb contact elements. <i>Install bulb correctly.</i></p>
	<p><b>2. Check if rear light is properly connected.</b></p> <p>a. Connector housing is partially connected. <i>Install connector housing properly.</i></p>
	<p><b>3. Check continuity of wires.</b></p> <p>a. Corroded terminals and/or broken wires. <i>Replace terminal(s) or crimp defective wires.</i></p>

<b>SYMPTOM</b>	<b>TACHOMETER DOES NOT WORK.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check continuity of wires.</b></p> <p>a. Corroded terminals and/or broken wires. <i>Replace terminal(s) or crimp defective wires.</i></p>
	<p><b>2. Check tachometer part number.</b></p> <p>a. Models with 360 W magneto have a different tachometer. <i>Replace with appropriate one.</i></p>

<b>SYMPTOM</b>	<b>HIGH BEAM PILOT LAMP LIGHTS UP WHEN LOW BEAM IS SELECTED.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check proper connections.</b></p> <p>a. YELLOW wire connected to pilot lamp. Mixed-up connections with heating element pilot lamps. <i>Reconnect a YELLOW/BLACK wire to pilot lamp. YELLOW wires are connected to heating element pilot lamps.</i></p>

# SUSPENSION AND TRACK

The following chart is provided to help in diagnosing the probable source of troubles. It should be used as a guideline. Some causes or corrections may not apply to a specific model.

<b>SYMPTOM</b>	<b>SUSPENSION IS TOO LOW.</b>
CONDITION	NORMAL USE.
Test/Inspection	<p><b>1. Check condition of spring.</b></p> <p>a. Spring is weaken or broken. <i>Replace spring.</i></p>
	<p><b>2. Check preload of spring.</b></p> <p>a. Low spring preload. <i>Increase preload to the recommended position.</i></p>

<b>SYMPTOM</b>	<b>REAR SUSPENSION BOTTOMS OUT.</b>
CONDITION	NORMAL USE.
Test/Inspection	<p><b>1. Check rear spring preload or rear arm spring preload.</b></p> <p>a. Spring tension is too low. <i>Increase rear arm spring preload.</i></p>

<b>SYMPTOM</b>	<b>SLIDER SHOES WEAR OUT PREMATURELY.</b>
CONDITION	NORMAL USE.
Test/Inspection	<p><b>1. Check track tension.</b></p> <p>a. Pressure is too great on slider shoes. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i> <i>Replace defective parts.</i></p>

<b>SYMPTOM</b>	<b>TRACK CLEATS BECOME BLUE.</b>
CONDITION	NORMAL USE.
Test/Inspection	<p><b>1. Check track tension.</b></p> <p>a. Pressure is too great on cleats. <i>Adjust according to specifications (refer to TECHNICAL DATA 10).</i></p>
	<p><b>2. Check slider shoes and/or suspension retaining screws.</b></p> <p>a. Worn slider shoes or lost retaining screws. <i>Replace defective parts and/or tighten loose screws.</i></p>

## Section 03 TROUBLESHOOTING

### Subsection 06 (SUSPENSION AND TRACK)

SYMPTOM	NOISE OR VIBRATIONS ORIGINATING FROM THE TRACK.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check slide suspension retaining bolts.</b> a. Missing bolt(s) allowing movement of certain components which in turn interfere with track rotation. <i>Replace missing bolt(s).</i>
	<b>2. Check condition of idler wheel(s).</b> a. Idler wheel rubber is damaged. <i>Replace.</i>
	<b>3. Check guide cleats.</b> a. Top portion of guide cleat(s) is bent. <i>Replace.</i>
	<b>4. Check sprockets.</b> a. One or various teeth of drive shaft sprockets are broken. <i>Replace sprocket(s).</i>
	<b>5. Check track rods and/or internal traction teeth.</b> a. One or various track rods and/or teeth are broken. <i>Replace track.</i>

SYMPTOM	DERAILING TRACK.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check track tension.</b> a. Track is too loose. <i>Adjust.</i>
	<b>2. Check if track and slider shoes are properly aligned.</b> a. Improper alignment. <i>Adjust.</i>

SYMPTOM	REAR SUSPENSION IS TOO STIFF.
CONDITION	NORMAL USE.
Test/Inspection	<b>1. Check track tension.</b> a. Track is too tight. <i>Adjust.</i>
	<b>2. Check if axles are properly lubricated.</b> a. Improper lubrication and/or contaminated grease (sticky oil sludge). <i>Clean and/or lubricate.</i>
	<b>3. Check rear spring preload.</b> a. Too much preload. <i>Adjust to recommended position.</i>

**Section 03 TROUBLESHOOTING**  
Subsection 06 (SUSPENSION AND TRACK)

<b>SYMPTOM</b>	<b>WHEN HANDLEBAR IS TURNED, SNOWMOBILE UNDERSTEEERS.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check ski runner condition.</b></p> <p>a. Worn ski runners. <i>Replace.</i></p>
	<p><b>2. Check tension of ski spring adjustment cams.</b></p> <p>a. Insufficient ski pressure on the ground. <i>Increase spring preload.</i></p>
	<p><b>3. Check if front arm stopper strap is too long.</b></p> <p>a. Insufficient ski pressure on the ground. <i>Shorten stopper strap.</i></p>
	<p><b>4. Check front arm spring tension.</b></p> <p>a. Insufficient ski pressure on the ground. <i>Loosen spring tension.</i></p>

<b>SYMPTOM</b>	<b>HANDLEBAR IS DIFFICULT TO TURN.</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<p><b>1. Check position of ski spring adjustment cams.</b></p> <p>a. More pressure on the ground when cam increases spring preload. <i>Reduce ski spring preload.</i></p>
	<p><b>2. Check position of stopper strap.</b></p> <p>a. More weight when stopper strap is short. <i>Lengthen front arm stopper strap.</i></p>
	<p><b>3. Check position of front arm shock adjustment cam(s).</b></p> <p>a. When spring tension is weak, more weight is transferred to the skis. <i>Increase spring preload.</i></p>
	<p><b>4. Check condition of ball joints.</b></p> <p>a. Corrosion restrains movement. <i>Lubricate or replace.</i></p>
	<p><b>5. Check swing arm camber.</b></p> <p>a. Too much ski leg inclination. <i>Adjust camber to specifications.</i></p>
	<p><b>6. Check for proper lubrication.</b></p> <p>a. Components need lubrication. <i>Lubricate. Refer to LUBRICATION AND MAINTENANCE 02.</i></p>

## Section 03 TROUBLESHOOTING

### Subsection 06 (SUSPENSION AND TRACK)

<b>SYMPTOM</b>	<b>THE SNOWMOBILE IS UNSTABLE (IT MOVES FROM LEFT TO RIGHT AND VICE VERSA).</b>
<b>CONDITION</b>	NORMAL USE.
<b>Test/Inspection</b>	<b>1. Check ski runner condition.</b> a. Worn or bent ski runners. <i>Replace ski runners.</i>
	<b>2. Check ski alignment.</b> a. Improper ski alignment. <i>Align skis in order to obtain proper toe-out (opening) (to adjust, refer to STEERING SYSTEM 08).</i>
	<b>3. Check if bushings are too loose in steering system.</b> a. Bushings are too loose. <i>Replace.</i>
	<b>4. Check ski pressure.</b> a. <b>NOTE:</b> If all parts are in good condition and the customer still complains about an unstable snowmobile, consider the installation of optional Proactive Control System.