

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
NOTICE OF PERMIT

BY ELECTRONIC MAIL  
[barberp2@embarqmail.com](mailto:barberp2@embarqmail.com)

In the matter of an  
Application for Permit  
By:  
Mr. Ed and Ms. Patricia Barber  
Ed Barber Tractor Services LLC  
11036 Tung Grove Road  
Tallahassee, Florida 32317

DEP File No. 0730111-001-AC  
Leon County

Enclosed is Permit Number 0730111-001-AC, issued pursuant to Section 403.087, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Pensacola, Florida.

State of Florida Department  
of Environmental Protection



\_\_\_\_\_  
RICK BRADBURN  
Air Program Administrator

160 Governmental Center, Suite 308  
Pensacola, Florida 32502-5794  
850/595-8300

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were electronically mailed before the close of business on August 11, 2009 to the listed persons.

Clerk Stamp  
**FILING AND ACKNOWLEDGMENT FILED**, on  
this date, pursuant to Section 120.52(7), Florida Statutes,  
with the designated agency Clerk, receipt of which is hereby  
acknowledged.



8/11/09

\_\_\_\_\_  
(Clerk)

\_\_\_\_\_  
(Date)

Copies Furnished to:

Carmen Bourgeois Green, P.E.; Blackhawk Engineering ([carmen@blackhawkengineers.com](mailto:carmen@blackhawkengineers.com))  
DEP Northwest District Branch Office, Tallahassee

Ed Barber Tractor Services LLC  
Barber Yard Trash Facility  
**Facility ID No.:** 0730111  
Leon County

Air Construction Permit  
**Permit No.:** 0730111-001-AC

Permitting and Compliance Authority:  
Department of Environmental Protection  
Northwest District Office  
160 Governmental Center, Suite 308  
Pensacola, FL 32502-5794  
Telephone: 850/595-8300  
Fax: 850/595-8096

Air Construction Permit  
Permit No.: 0730111-001-AC

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# Florida Department of Environmental Protection

Northwest District  
160 Governmental Center, Suite 308  
Pensacola, Florida 32502-5794

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

Permittee:  
Ed Barber Tractor Services LLC

Permit No.: 0730111-001-AC  
Facility ID No.: 0730111  
SIC No(s): 49, 4953  
Project: Air Construction Permit

This permit is for the construction of an air curtain incinerator at the Barber Yard Trash Facility located at Tram Court in Tallahassee, Leon County; UTM Coordinates: Zone 16, 7631.49 km East and 33651.99 km North; Latitude: 30° 23' 24" North and Longitude: 84° 15' 41" West.

STATEMENT OF BASIS: This air construction permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

Referenced attachments made a part of this permit:  
Appendix G-1, General Conditions  
Appendix OM, Operation and Maintenance Manual

**Effective Date:** August 11, 2009  
**Expiration Date:** August 11, 2014

**FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION**

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**Rick Bradburn**  
**Air Program Administrator**

RB/jf/c

**Section I. Facility Information.**

The Air Curtain Incinerator (ACI) is new to this site. Special preparation must be made for a trench type ACI at this site because the site was a borrow pit that used combustible material, such as wood, to refill the pit. A minimum of 20 feet of organic free material will be used to cover the ACI site. A 10-foot deep trench will allow a minimum of 10 feet of cover from the bottom of the trench/pit to the "existing grade" containing potentially combustible material.

**Subsection A. Facility Description.**

This facility consists of an ACI at the seven-acre Barber Yard Trash facility. The incinerator is a McPherson Systems, Inc., Model M40F Air Curtain Destructor with an air volume minimum of 36,000 CFT per minute at the nozzle and a minimum nozzle velocity of 8,000 feet per minute. This unit will be used to dispose of collected yard waste.

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities such as general site and device maintenance.

Based on the permit application received March 9, 2009, this facility is not a major source of hazardous air pollutants (HAP).

**Subsection B. Summary of Emissions Unit ID No(s). and Brief Description(s).**

**E.U.**

<b><u>ID No.</u></b>	<b><u>Brief Description</u></b>
001	Air Curtain Incinerator

*Please reference the Permit No., Facility ID No., and appropriate Emissions Unit(s) ID No(s). on all correspondence, test report submittals, applications, etc.*

**Subsection C. Relevant Documents.**

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action.

These documents are on file with permitting authority:

Permit Application received March 9, 2009  
Additional Information Request dated April 7, 2009  
Additional Information Response received May 15, 2009

## **Section II. Facility-wide Conditions.**

### **The following conditions apply facility-wide:**

1. APPENDIX G-1, GENERAL CONDITIONS, is a part of this permit.
2. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. The permittee shall not cause, suffer, allow, or permit the discharge of air pollutants that cause or contribute to an objectionable odor.  
[Rule 62-296.320(2), F.A.C.]
3. General Particulate Emission Limiting Standards. General Visible Emissions Standard. Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20 percent opacity). EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C.  
[Rules 62-296.320(4)(b)1. & 4., F.A.C.]
4. Special Compliance Tests. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standards contained in a Department rule or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the emissions unit to conduct compliance tests that identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.  
[Rule 62-297.310(7)(b), F.A.C.]
5. General Pollutant Emission Limiting Standards. Unconfined Emissions of Particulate Matter  
No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include:
  - a. Paving where practicable and maintenance of roads, parking areas and yards.
  - b. Application of water or chemicals to control emissions from such activities as vehicular movement and ash handling.
  - c. Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities.
  - d. Removal where practicable of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment, and from buildings or work areas to prevent particulate from becoming airborne.
  - e. Care in handling ash and protecting ash containers from the action of the wind.
  - f. Taking any reasonable precautions during any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling  
[Rule 62-296.320(4)(c)2., F.A.C.]

6. The permittee shall submit all compliance related notifications and reports required by this permit to the Department's Northwest District office.

Department of Environmental Protection  
Northwest District Office  
160 Governmental Center, Suite 308  
Pensacola, Florida 32502-5794

Notification of compliance testing may be submitted by electronic mail to [nwdair@dep.state.fl.us](mailto:nwdair@dep.state.fl.us). A copy of all compliance related notifications shall be sent to the Northwest District Branch Office in Tallahassee at 630-3 Capital Circle NE, Tallahassee FL 32301.

7. The applicant shall retain a Professional Engineer, registered in the State of Florida, for the inspection of this project. Upon completion the engineer shall inspect for conformity to the permit application and associated documents. An application for an operation permit shall be submitted with the compliance test results and appropriate fee when applicable. These are to be submitted within 75 days after initial operation. The permittee shall obtain an operating permit for this source before the expiration of the construction permit if the permittee desires to continue operation.

[Rules 62-210.300(2) and 62-4.050(3), F.A.C.]

8. The Department telephone number for reporting problems, malfunctions or exceedances under this permit is 850/595-8300, extension 1220, day or night, and for emergencies involving a significant threat to human health or the environment is 800/320-0519. For routine business, telephone 850/595-8300, then press 7, during normal working hours.

[Rules 62-210.700 and 62-4.130, F.A.C.]

9. The Department shall be notified upon commencement of construction. The Department shall be notified and prior approval shall be obtained of any changes or revisions made during construction. Projects beyond one year require annual status reports.

[Rule 62-4.030, F.A.C.]

**Section III. Emissions Unit(s) and Conditions.**

**Subsection A. This section addresses the following emissions unit.**

**E.U.**

<b><u>ID No.</u></b>	<b><u>Brief Description</u></b>
001	Air Curtain Incinerator

The incinerator is a McPherson Systems, Inc., Model M40F Air Curtain Destructor with an air volume minimum of 36,000 CFT per minute at the nozzle and a minimum nozzle velocity of 8,000 feet per minute. The blower is powered by a 152 HP Diesel Cummins 6BT 5.9L engine with an 11 ½” PTO. Emissions from this site are estimated at 13 pounds of particulate matter per ton of yard waste burned.

The ACI is consider to be a “below ground” or trench type; however, the trench is built into a minimum of 20 feet of organic free fill placed above existing grade.

This emission unit is subject to the specific requirements of Rule 62-296.401(7), F.A.C., and 40 CFR 60, Subpart CCCC, Standards of Performance for Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units , which is incorporated by reference, Rule 62-204.800(8)(b)76, F.A.C..

**The following specific conditions apply to the emissions unit listed above:**

**Essential Potential to Emit (PTE) Parameters**

**A.1. Capacity.** The operation rate at which compliance with standards shall be demonstrated shall be determined by charging the pit at a representative maximum capacity, i.e., up to the air curtain, with representative material to be burned. The applicant has requested a limit of 5 tons per hour of permitted material to be burned and a maximum of 4,160 tons per year (12 consecutive months). The Department establishes an annual operating capacity limit of 4,160 tons per year of material burned based on the estimated emissions and processing fee paid.

[Rules 62-296.401(7)(b) and 62-4.070, F.A.C., and construction application received March 9, 2009.]

*{Permitting Note: The maximum operating rate is for compliance testing only. The ACI does not operate continuously. The ACI capacity is limited by several factors including the chamber volume, the height of the air curtain, the tons of material that can be burned per year and the operational time restrictions, such as charging not before sunrise and no later than one hour after sunset.}*

**A.2. Methods of Operation.**

**A.2.a.** The only materials that shall be burned in the air curtain incinerator are vegetative material and untreated wood, excluding sawdust. The air curtain incinerator shall not be used to burn any biological waste, hazardous waste, asbestos-containing materials, mercury-containing devices, pharmaceuticals, tires, rubber material, residual oil, used oil, asphalt, roofing material, tar, treated wood, plastics, garbage, or trash or other material prohibited to be open burned as set forth in subsection 62-256.300(2), F.A.C..

[Rules 62-296.401(7)(b)3 and 62-4.070, F.A.C.]

**A.2.b.** Only kerosene, diesel fuel, drip-torch fuel (as used to ignite prescribed fires), untreated wood, virgin oil, natural gas or liquefied petroleum gas shall be used to start the fire in the air curtain incinerator. The use of used oil, chemicals, gasoline or tires to start the fire is prohibited.  
[Rule 62-296.401(7)(b)3., F.A.C.]

**A.2.c.** In no case shall the air curtain incinerator be started before sunrise, and all charging shall end no later than one hour after sunset. After charging ceases, air flow shall be maintained until all material within the air curtain incinerator has been reduced to coals, and flames are no longer visible. A log shall be maintained onsite that documents daily beginning and ending times of charging.  
[Rule 62-296.401(7)(b)5., F.A.C.]

**A.2.d.** An air curtain incinerator shall be attended at all times while materials are being burned or flames are visible within the incinerator.  
[Rule 62-296.401(7)(b)6., F.A.C.]

**A.2.e.** The air curtain incinerator shall be located at least 50 feet from any wildlands, brush, combustible structure or paved public roadway. The pit shall not be dug within a previously active portion of a landfill. If the air curtain incinerator employs an earthen trench, the pit walls (width and length) shall be vertical, and maintained as such, so that combustion of the waste within the pit is maintained at an adequate temperature and with sufficient air recirculation to provide enough residence time and mixing for proper combustion and control of emission. The following dimensions for the pit must be strictly adhered to: no more than 12' wide, between 8' and 15' feet deep, and no longer than the length of the manifold.

The pit shall be constructed above "existing grade" in accordance with appendix B of the attached Appendix OM. A minimum depth of 20 feet of new fill above "existing grade" is to be brought to the site to accommodate the minimum requirements for the earthen pit construction. The bottom of the pit shall be a minimum of ten feet (10') above "existing grade." The above "existing grade" fill shall be free of organic material, trash or debris.  
[Rule 62-296.401(7)(b)2. & 7., F.A.C., and construction application received March 9, 2009.]

**A.2.f.** The material shall not be loaded into the air curtain incinerator such that it will protrude above the air curtain.  
[Rule 62-296.401(7)(b)8., F.A.C.]

**A.2.g.** Ash shall not be allowed to build up in the pit of the air curtain incinerator to higher than one-third (1/3) the pit depth or to the point where the ash begins to impede combustion, whichever occurs first. Pit depth is the height of the air curtain from the incinerator floor.  
[Rule 62-296.401(7)(b)9., and 62-4.070, F.A.C.]

**A.2.h.** In the event the incinerator is repositioned to a different area of the landfill, the permittee shall notify the Department in writing within five calendar days of the date of the move, and shall include a diagram of the new location.  
[Rule 62-4.070 and 62-296.401(7)(b)2, F.A.C., and construction application received March 9, 2009]

**A.3.a Hours of Operation.** This emissions unit shall not operate continuously. In no case shall the ACI be started before sunrise and all charging shall end no later than one hour after sunset. After charging ceases, air flow shall be maintained until all material within the air curtain incinerator has been reduced to coals, and flames are no longer visible.

A.3.b. The applicant has requested a limit on their annual operating hours. The hours of operation for this emissions unit shall not exceed 832 hours/year (12 consecutive months).  
[Rules 62-296.401(7)(b)5., 62-4.160(2) and 62-210.200(PTE), F.A.C., and construction application received March 9, 2009.]

### **Emission Limitations and Standards**

**A.4.a.** Outside of startup periods, visible emissions shall not exceed 10% opacity, six-minute average. During startup periods, which shall not exceed the first 30 minutes of operation, an opacity of up to 35%, averaged over a six-minute period, shall be allowed.  
[Rule 62-296.401(7)(b)1, and 62-204.800(8)(b)76, F.A.C., and 40 CFR 60.2250 (Subpart CCCC)]

**A.4.b.** The general excess emissions rule, Rule 62-210.700, F.A.C., shall not apply to the operation of air curtain incinerators.  
[Rule 62-296.401(7)(b)1. and 62-204.800(9)(f), F.A.C, and 40 CFR 60.2860]

**A.5.** The applicant has requested a Particulate Matter (PM) limit of 27.04 TPY (12 consecutive months). Particulate emissions shall not exceed 27.04 tons per year, as requested by applicant.  
[Rule 62-4.070, F.A.C., and construction application received March 9, 2009.]

*{Permitting Note: This limit is ensured by incinerating less than 4,160 tons of material per year and operating less than 832 hours per year. The PM emission factor of 13.0 pounds per ton is based on the AP2 Table 2.1-12 for trench combustors burning wood.}*

### **Test Methods and Procedures**

**A.6.a.** Visible Emissions (VE) tests are required to show compliance with the standards of the Department. The test results must provide reasonable assurance that the source is capable of compliance at the permitted maximum operating rate. Such tests shall be scheduled within 30 days after initial operation. The Department shall be notified at least 15 days prior to testing to allow witnessing. Results shall be submitted to the Department within 45 days after testing.

A 90-minute EPA Method 9 VE test shall be scheduled within 30 days after initial operation and once during each federal fiscal year (Oct. 1 – Sept. 30) thereafter. The VE tests shall be conducted in accordance with DEP Method 9, incorporated in Chapter 62-297, as follows:

- (1) for one-half hour upon start-up, during the first 30 minutes of operation, to verify compliance with the 35% opacity limitation of Rule 62-297.401(7)(b), F.A.C., and 40 CFR 60.2860
- (2) for one hour subsequent to the half-hour start-up period, to verify compliance with the 10% opacity limitations of Rule 62-297.401(7)(b)1, F.A.C., and 40 CFR 60.2860

Test procedures shall meet all applicable requirements of Chapter 62-297, F.A.C.

[Rules 62-4.070, 62-297.401(9), 62-296.401(7)(c), 62-297.310(7) and (8), F.A.C.]

**A.6.b.** The test reports shall comply with applicable portions of Rule 62-297.310, F.A.C., Test Reports. The Department can require special compliance tests in accordance with Rule 62-297.310(7) F.A.C. Other test methods and alternate compliance procedures may be used only after prior Departmental

approval has been obtained in writing. The test report shall include the charging rate, a description of the materials burned, identification of the starter fuel used, and a copy of the daily operating log for the test day.

[Rules 62-297.310(7) and 62-297.620(1), F.A.C.]

**A.6.c.** Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of rated capacity. If it is impractical to test at capacity, sources may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the Department.

[Rules 62-297.310(2) and 62-4.070, F.A.C.]

### **Training Requirements**

**A.7.** A copy of this permit and a detailed operation and maintenance guide (Appendix OM, Operation and Maintenance Manual) must be available to the operators at all times, and the permittee must provide proper training to all operators before they work at the incinerator. A copy of the operations and maintenance manual and a record of each operator's training shall be maintained at the site and shall be made available to the Department upon request.

[Rule 62-296.401(7)(b)10 and 62-4.070, F.A.C.]

### **Recordkeeping and Reporting Requirements**

**A.8.** A daily operating log shall be maintained, including as a minimum the following information:

1. Date of Operation
2. Time charging began
3. Time charging ended
4. Daily startup and shutdown times for ACI blower engine.
5. Daily operating hours. Operating hours shall be defined as the hours of operation (startup to shutdown) of the ACI engine (blower).
6. Monthly operating hours and most recent total of consecutive 12-month operating hours.
7. Tons of material burned that day.
8. Maintenance performed
9. Any additional comments
10. Operators verification statement and signature

This log shall be maintained at the facility for at least five years and shall be made available to the Department upon request.

[Rules 62-4.070, and 62-296.401(7)(b)5., F.A.C.]

**A.9.** Records of the tons of material burned per year shall also be kept and be available for inspection upon request to demonstrate compliance with the hourly limitation of 5 tons per hour and the annual limitation of 4160 tons per year of material burned.

[Rule 62.4-070, F.A.C., and construction application received March 9, 2009]

**A.10.** Records of the results of all initial and annual visible emission tests shall be kept by the owner or operator in either paper copy or electronic format for at least five years. These records shall be made available to the Department or for an inspector's onsite review upon request.

[Rule 62-296.401(7)(c)3 and 40 CFR 60.2870]

**A.11.** Records of the hours of charging and hours of ACI operation shall be kept by the owner or operator and be available for inspection upon request to demonstrate compliance with daily charging limitation, daily operation limitation and the annual hours of operation limitation.

[Rules 62-4.070, and 62-296.401(7)(b)5., F.A.C.]

**40 CFR 60**

**A. 12.** Applicable portions of 40 CFR 60 Subpart A, General Provisions Requirements, and 40 CFR 60.2245 to 60.2260, Air Curtain Incinerators are referenced and incorporated into this permit.

[Rule 62-204.800(8)(b)76 and 62-4.070, F.A.C.]

**Permit No.:** 0730111-001-AC

Appendix G-1

GENERAL CONDITIONS:

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1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "permit conditions", and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted for the purpose of:
  - a. Have access to and copy any records that must be kept under conditions of this permit;
  - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,
  - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
  - a. A description of and cause of noncompliance; and
  - b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages that may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

**Permit No.:** 0730111-001-AC

Appendix G-1

GENERAL CONDITIONS:

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9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the Department approves the transfer.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurement;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used;
- the results of such analyses.

14. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.



**BLACKHAWK  
ENGINEERING INC.**

STATE CERTIFICATE # 26881

9013 MAHAN DRIVE, SUITE 101, TALLAHASSEE FLORIDA 32309  
PHONE (850) 224-4295 + FAX (850) 386-4295 + EMAIL : SUPPORT@BLACKHAWKENGINEERS.COM

**OPERATION AND MAINTENANCE PLAN**  
**AIR CURTAIN INCINERATOR**

**BARBER YARD TRASH FACILITY**  
**Tram Court, Leon County, Florida**  
**May 2009**

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**Appendix A: Non-Emergency Contact Numbers**

**Appendix B: Burn Pit Specifications**

**Appendix C: Trouble-shooting procedures for Cummins 6BT 5.9-L diesel engine**

**Appendix D: Facility Site Plan**

**Appendix E: Manufacturer's Operation Instructions**





# **BLACKHAWK ENGINEERING INC.**

STATE CERTIFICATE # 26881

9013 MAHAN DRIVE, SUITE 101, TALLAHASSEE FLORIDA 32309  
PHONE (850) 224-4295 + FAX (850) 386-4295 + EMAIL: SUPPORT@BLACKHAWKENGINEERS.COM

## **OPERATION AND MAINTENANCE PLAN AIR CURTAIN INCINERATOR**

### **BARBER YARD TRASH FACILITY Tram Court, Leon County, Florida May 2009**

#### **General**

Site Location: Tram Court, off Tram Road in Section 19, Township 1-South, Range 1-East, Leon County, Florida.

Facility Number: 397-08-YT (Yard Trash Processing Facility)  
0730111 (DEP Air Program Facility ID)

Site Plan: See Appendix D

Equipment: McPherson Systems Inc. Air Curtain Destructor, Model No. M40F. A copy of the manufacturer's operation and maintenance instructions is attached (Appendix E).

#### **Emergency Contacts**

**IN CASE OF EMERGENCY, DIAL 911.**

Non-Emergency Numbers are provided in Appendix A.

#### **Record Keeping**

Owner shall maintain records of the following:

- + Materials received, including date, type, quantity and hauler
- + Information for the DEP Yard Trash Facility annual report, including quantities (by ton) of materials received, processed, and exported
- + Daily log of beginning and ending charging times (charging/loading of the burn pit)
- + Compliance tests (visible emissions)
- + Regulatory inspections and enforcement actions
- + All applicable permits including DEP and local (Leon County) permits
- + Soils and compaction tests for burn pit construction (see Appendix B)

### **Materials Accepted**

This facility accepts yard trash only. Yard trash is defined in F.A.C. 62-701 as “vegetative matter resulting from landscaping maintenance or land clearing operations and includes materials such as tree and shrub trimmings, grass clippings, palm fronds, trees and tree stumps.”

Yard trash will be placed in the areas designated on the site plan prior to disposal in the burn pit. Incoming loads shall be inspected, and any loads that contain unacceptable materials shall be rejected. If any unacceptable wastes are inadvertently received on site, the unauthorized materials shall be handled as noted below.

Acceptable materials include: yard trash consisting of clean, untreated wood waste, trees and tree branches, logs, large brush, clean stumps (free of excess soil), and vegetative material such as leaves and grass clippings.

Unacceptable materials include: treated or painted wood, sawdust, paper, tires, plastics, liquid wastes, and miscellaneous trash and garbage.

### **Site Access and Control Features**

Access to the site is controlled via a gated entrance off Tram Road. All trucks shall enter through this gate. The gate shall be kept locked when the facility is not operating. Fences shall be inspected periodically and maintained as needed.

### **Pit Location and Construction**

The pit shall be located no less than 300' from any occupied structure, and at least 50' from any trees, brush, or combustible material. Refer to the attached site plan.

The pit shall be constructed above grade in accordance with the approved specifications (Appendix B). A minimum of 10' acceptable fill material is required between the bottom of the burn pit and existing grade. Soils and compaction tests showing compliance with the specifications shall be maintained with the facility records.

The dimensions of the pit shall be as follows (see manufacturer's set-up diagram): 40' long (the length of the ACI manifold), 9' wide, and 10' to 15' depth. The pit must be constructed with vertical sides.

If spalling or caving in of the pit walls occurs during operation, the walls must be reconstructed in accordance with the burn pit specifications, or a new pit must be constructed. When use of a pit is terminated, the fill material shall be removed, and the area returned to natural grade.



### **Hours of Operation**

Operation of the Air Curtain Incinerator (ACI) shall not begin before sunrise. Charging of the unit shall be terminated no later than one hour after sunset, or as specified in the DEP permit. After charging ceases, air flow shall be maintained until all material within the ACI pit has been reduced to coals, and flames are no longer visible.

Owner shall contact the Division of Forestry on a daily basis prior to burning, or consult their website, to determine if conditions are favorable for burning that day.

The total hours of burning shall not exceed 832 hours per year, as specified in the DEP permit.

### **Ignition Procedure**

Load the pit half-full with acceptable wood material. Douse the wood with an acceptable starter liquid, putting the majority of the liquid at the front center side of the pit. Ignite the wood at the same point. Allow sufficient time for the fire to begin burning before introducing any air from the ACI. As the fire grows in intensity, gradually bring the blower up to optimum speed.

Only kerosene, diesel fuel, drip-torch fuel (as used to ignite prescribed fires), untreated wood, virgin oil, natural gas or liquefied petroleum gas may be used to start the fire. The use of waste oil, chemicals, gasoline or tires is prohibited.

### **Loading Procedure**

Once the fire reaches full intensity, charging (loading of the pit) may begin. A "stop guide" or restraint should be provided on the loading side of the pit to prevent the loader from getting too close to the pit while charging.

Suitable material shall be added to the pit at the rear of the pit under the ACI manifold. The pit shall not be overloaded; that is, the added material shall not protrude above the top of the air curtain. The charging rate shall not exceed the rate specified in the DEP permit.

### **Operation and Safety Requirements**

- The Air Curtain Incinerator (ACI) shall be attended at all times while it is in use.
- A first aid kit and fire extinguisher shall be kept at the site at all times.
- Any standing water must be removed from the burn pit before beginning operation.



- Ash shall be removed from the pit when it reaches 1/3 of the pit depth, or when it reaches a depth where the ash begins to impede combustion, whichever occurs first. Ash will be reused on site by mixing it with clean fill and recycling it as a soil amendment.

## **Maintenance Schedule**

### **Engine Routine Maintenance:**

#### **Machine Start-up:**

1. Check engine oil and coolant fluid levels, top off as necessary.
2. Clean and inspect air filter, and replace as needed.
3. Check engine for leaks.
4. Examine all belts for wear and tension.

#### **Scheduled Maintenance:**

1. Change engine oil and replace oil filter and fuel filter after 250 hours of operation. Keep spare filters available at all times.
2. Clean debris off radiator.
3. Check alternator belt and adjust as needed.
4. Check cooling system belt for wear and tear.

### **ACI Routine Maintenance:**

#### **Machine Start-up:**

1. Check condition of drive belts.
2. Check PTO driveshaft and fan bearings for grease, re-grease per maintenance schedule.
3. Check for any loose components and any obstructions at the fan inlet.
4. Tap dirt out of air intake housing and check for excessive dirt.

#### **Scheduled Maintenance:**

1. Grease the machine (PTO and fan bearings) daily, or for every eight (8) hours of operation.
2. Inspect the fan periodically for cracks and abnormal wear. This can be accomplished using a flashlight.
3. Inspect air fan belts for wear and tear. Tensions should be adjusted every 250 hours.

## **Trouble-shooting Procedures**

### **Engine Problems:**

Trouble-shooting procedures for the Cummins 6BT 5.9-L diesel engine are found in Appendix C. Refer to the Owner's Manual for complete instructions.



### **Too Much Air Flow:**

It is sometimes thought that more air flow will actually increase the burn rate. This is **INCORRECT**. Modifying the air flow will actually have the opposite effect and reduce the machine's through-put. Additionally it will reduce the machine's ability to meet air quality minimum standards. There is a maximum rate at which wood can burn. Trying to exceed that rate by adding more air to an air curtain burner causes two major problems:

1. It will cool the fire reducing combustion efficiency creating more smoke (carbon dioxide and nitrogen enriched). This will begin a circular effect of further reducing the oxygen and further reducing combustion efficiency. The result is your through-put drops and smoke increases.
2. Increasing the air flow beyond design standards will over pressurize the pit causing larger sized particles to be ejected from the pit. Besides violating the EPA limits for PM (particulate matter) the larger hotter embers ejected will pose a much greater fire hazard.

### **Air Flow Stops:**

1. Cease loading operations immediately.
2. Check engine/air blower to determine the problem. If engine is still running, check PTO to make sure that it is properly engaged.

### **Fire Will Not Start:**

- + Material in the pit has too much air space. To correct this, load heavy waste material, such as logs to pack down the material in the pit.
- + Material in pit is wet or green. Use more accelerant for initial lighting (do not add accelerant after the initial light off, as it may ignite unexpectedly on hot coals). Once lit add material slowly, until you build good heat in the pit.
- + Material in the pit has too much dirt mixed in. Using the loader bucket or rake, drive into the pit, if possible, then lift and drop the material to shake the dirt loose. If this does not work, the pit will have to be cleaned out and repacked.

### **Fire Burning at One End:**

Load finer more combustible materials between the area burning and the area that is not. This will cause the fire to move in that direction. Only load light materials until the fire is burning throughout the pile. Let the fire burn down to ensure the bottom materials are burning; otherwise, they will become trapped under additional loads and will burn very slow.



### **Fire Not Getting Hot:**

If your fire is not getting hot enough, you probably do not have enough material packed on top of the pit. The pit must be packed tight or you will lose your heat into the air.

### **Fire Smoking Too Much:**

- + The most common reason for a smoking fire is too much dirt going into the pit. You must make sure the wood waste material is clean.
- + If you have overloaded the pit you will begin to smother the fire and it will cool down and smoke. Only load fine highly combustible materials in small quantities to bring the temperature back up. Once the fire is burning good, stop loading and let the fire burn down some. It is important that ALL the materials in the pit will be burning. If you load too fast you will smother the fire and starve it for oxygen. This will cause smoke and it will decrease your through-put.
- + A pit that is too wide will smoke, no matter what you do to improve it. The air flow cannot circulate properly over and into a pit that is too wide. You should never attempt to light a fire in a pit that is not built properly.

### **Emergency Procedures:**

Stop loading the pit, stop the air flow by either disengaging the PTO or by shutting down the engine. Dump dirt, sand or water into the fire pit to extinguish the fire.

### **Emissions Testing**

F.A.C. 62-296.401(7) sets forth the following Visible Emissions (VE) standards for Air Curtain Incinerators:

- + Start-up: No more than thirty-five (35) percent opacity, six-minute average, not to exceed thirty (30) minutes of operation.
- + Regular operation: No more than ten (10) percent opacity, six-minute average.

In accordance with F.A.C. 62-296.410(7)(c), a visible emissions test shall be performed prior to submitting the application for an initial air operation permit, and annually thereafter. The test shall be conducted for thirty minutes using EPA Method 9 and as specified in DEP Rule 62-297.310. The DEP shall be notified at least 15 days prior to the test to allow for a DEP representative to be present. Results shall be submitted to DEP within 45 days after testing.



### **Temporary Storage and Transport of Unauthorized Materials**

Unauthorized materials shall be removed from wood piles and placed in designated temporary storage areas or containers.

The following shall be put into suitable containers and immediately removed from the facility if received: treated or untreated biomedical waste, hazardous waste, or any materials containing PCBs (polychlorinated biphenyls) in a concentration of 50 ppm or greater.

Putrescible materials such as food waste, animal carcasses and organic material shall be removed from the site within 48 hours.

Non-putrescible wastes such as tires and construction and demolition debris may be stockpiled in the open in a separate area.

All unauthorized materials shall be removed from the site within ten (10) working days of receipt, and taken to the Leon County landfill or a facility authorized to receive such materials.

The Leon County landfill is located at:

Leon County Solid Waste Collection Center  
7550 Apalachee Parkway  
Tallahassee, Florida 32311  
Phone (850) 606-1800

### **Control of Dust, Litter, Odors and Vectors**

A cover of gravel or crushed rock shall be maintained on the haul roads to reduce airborne dust from truck traffic. Additional gravel shall be added as needed to maintain a dust-free driving surface.

Litter, odors and vectors will be minimized as this facility will not be used to store municipal waste. Putrescible wastes will not be stored on site. If received, they will be removed within 48 hours as specified above. The site will not be attractive to vectors as the primary materials stored will be yard trash, and heavy equipment will be operating at the site during the day.

Water shall not be allowed to stand on the site for long periods of time in order to control mosquitos. The soils on this site have been reworked during its previous use as a borrow pit and C&D pit. Typically, the site is fairly well-drained. If any standing water is observed on the site for more than 72 hours (3 days) after a storm event, the area shall be regraded so as to remove the standing water and provide for positive drainage.



### **Stormwater Runoff**

A DEP stormwater permit was not required for this site because there is no impervious area. The site is relatively flat, with an overall slope from east to west. As noted above, the soils are fairly well-drained. According to the original Leon County permit, stormwater is to be controlled via a berm along the western boundary of the site.

Period grading of the site shall be performed as needed to prevent any standing water. When use of an area is discontinued, it shall be stabilized by seeding and mulching.

### **Closure Plan**

The facility was originally permitted in 1995, with an anticipated life of 20 years. The Barbers intend to operate the facility until the year 2015, when it is anticipated that development of adjacent properties will begin. If no development orders have been approved for adjacent properties at that time, the Barbers may continue to operate the facility until such time as development permits have been issued. The site will be closed in the year 2015 or within one year of the commencement of development of the adjacent parcels, whichever occurs later.

The closure plan for the facility, as originally permitted, is as follows:

“Upon nearing the end of the active life of the facility, final cover shall be placed on sections of the facility that will not be used for temporary storage again. At the end of the useful life, the entire site will be covered. The final cover shall consist of a layer of soil not less than twenty-four (24) inches thick and graded to prevent ponding and excessive erosion. The cover shall be seeded and/or sodded with grass to facilitate cover surface and slope stability and have an elevation equal to the surrounding grade. A cross-section of the final cover appears on the enclosed Closure Detail”.

(Source: DEP Permit Application No. SO37-274280, dated July 25, 1995)

**Burn Pits:** At closure, any burn pits shall be deconstructed, the fill material removed, and the area graded to match surrounding grade. Final cover shall consist of at least six (6) inches top soil. The disturbed area shall then be seeded and mulched with centipede seed. Any yard trash or other acceptable material which has not been incinerated may be buried on site in accordance with the facility's yard trash permit.



**Appendix A**  
**Non-Emergency Contact Numbers**  
**April 2009**

**IN CASE OF EMERGENCY, DIAL 911.**

**Non-Emergency Numbers:**

**Dept. of Env. Protection: (850) 488-3704**

Northwest District Branch Office (NWDT)  
630-3 Capital Circle NE  
Tallahassee, Florida 32301  
(850) 488-3704 / SC 278-3704  
Fax (850) 922-3620 / SC Fax 22-3620

**Fire Department: (850) 891-6600**

Tallahassee Fire Department  
327 North Adams Street  
Tallahassee, FL 32301

<http://www.talgov.com/fire/index.cfm>

**Florida Highway Patrol: (850) 488-8676**

2100 Mahan Dr  
Tallahassee, FL 32308  
Captain Al Wofford, Commander  
Tallahassee Regional Communications Center: (850) 245-7700  
<http://www.flhsmv.gov/index.html>

**Florida Div. of Forestry: (850) 488-1871**

Tallahassee Forestry Center  
Florida Division of Forestry  
865 Geddie Road  
Tallahassee, FL 32304

Ken Weber, Manager  
Email: [weberk@doacs.state.fl.us](mailto:weberk@doacs.state.fl.us)

**Burning Authorizations: (850) 488-1871**

Report a Wildfire: (850) 922-5155

Fire Weather: [http://www.fl-dof.com/fire\\_weather/index.html](http://www.fl-dof.com/fire_weather/index.html)

**Leon Co. Ambulance: (850) 606-2100**

Leon County Emergency Medical Services  
2290 Miccosukee Road  
Tallahassee, FL 32308  
Phone: (850) 606-2100  
Fax: (850) 606-2101  
Chief: Tom Quillin

**Leon County Sheriff: (850) 922-3300**

Mailing Address

Leon County Sheriff's Office  
P.O. Box 727  
Tallahassee, FL 32302

Physical Address

Leon County Sheriff's Office  
2825 Municipal Way  
Tallahassee, FL 32304

Email Addresses

Sheriff Larry Campbell - [campbell@leoncountyfl.gov](mailto:campbell@leoncountyfl.gov)  
General Email - [lcsocpu@leoncountyfl.gov](mailto:lcsocpu@leoncountyfl.gov)  
Webmaster - [lcsohelp@leoncountyfl.gov](mailto:lcsohelp@leoncountyfl.gov)

**Red Cross: (850) 878-6020**

American Red Cross - Capital Area Chapter  
187 Office Plaza  
Tallahassee, Florida 32301

Business Hours:

Monday - Wednesday - Friday

8:30am - 4:30pm

Tuesday - Thursday

8:30am - 9:00pm



*OPERATION AND MAINTENANCE  
APPENDIX A  
MAY 2009*

Phone: (850) 878-6020  
Toll Free: (866) 943-9010  
Fax: (850) 878-3441

<http://www.tallyredcross.org/index.html>

**Tallahassee Police Dept: (850) 891-4200**

Police Department  
234 East Seventh Avenue  
Tallahassee, FL 32303

<http://www.talgov.com/tpd/>



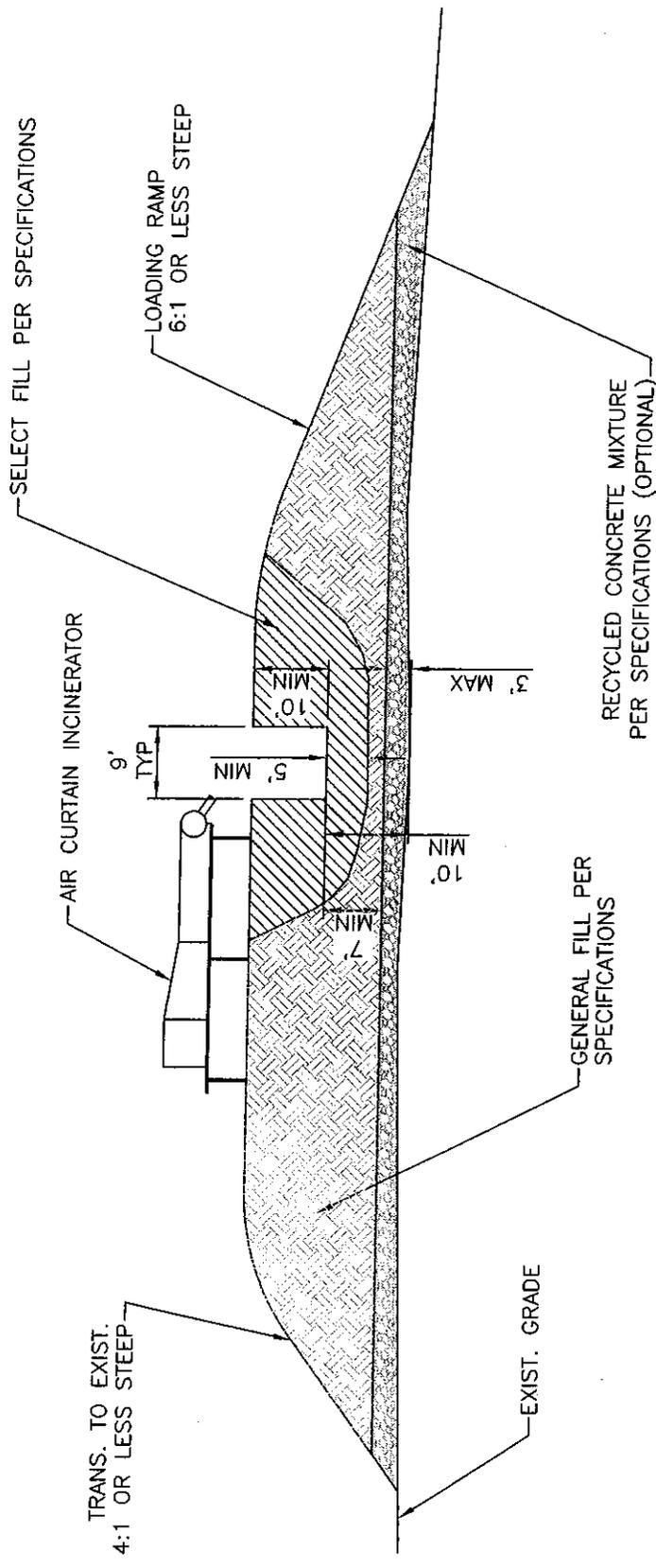
**APPENDIX B**

**BURN PIT SPECIFICATIONS**

## **APPENDIX B**

### **BURN PIT SPECIFICATIONS**

# DRAFT



BARBER YARD TRASH FACILITY

SCALE: N.T.S.

DATE:	5/20/09	
CHECKED BY:	C.B.G.	
DESIGNED BY:	C.B.G.	
REVISED BY:	DATE:	DESCRIPTION:

CARMEN BOURGEOIS GREEN, P.E.  
FLA. LICENSE #4080

BLACKHAWK ENGINEERING, INC.  
STATE CERTIFICATE # 26681

PROJECT NO.:  
DRAWING NO.:  
FIGURE NO.: 1.0

**BLACKHAWK ENGINEERING INC.**

9013 MAHAN DRIVE SUITE 101, TALLAHASSEE, FLORIDA 32309  
PHONE (850) 224-4295 + (850) 222-7645 + FAX (850) 996-4225  
EMAIL: SUPPORT@BLACKHAWKENGINEERS.COM + STATE CERTIFICATE # 26681





BARBER YARD TRASH FACILITY  
 SCALE: NTS  
 DESIGNED BY: C.B.G.  
 CHECKED BY: C.B.G.  
 DATE: 5/209  
 ABOVE-GRADE BURN PIT  
 REVISIONS: DATE: DESCRIPTION

CARMEN BOURGEOIS GREEN, P.E.  
 FLA LICENSE #48890  
 BLACKHAWK ENGINEERING, INC.  
 STATE CERTIFICATE # 28931  
 CARMEN@BLACKHAWKENGINEERING.COM

PROJECT NO. 00814-0001-0001  
 DRAWING NO. 2.0

BURN PIT SPECIFICATIONS:

1. EXISTING GRADE, UPON WHICH PIT IS TO BE CONSTRUCTED, SHALL BE FREE OF ORGANIC MATERIAL AND STICKS, ROCKS AND OTHER FOREIGN MATERIAL GREATER THAN 2" IN DIAMETER.
2. SURFACE SHALL BE SCARIFIED TO A DEPTH OF SIX INCHES SO THAT FILL MATERIAL WILL BOND WITH EXISTING SURFACE. REMOVE ANY ORGANICS OR OTHER UNACCEPTABLE MATERIALS, AND REPLACE WITH CLEAN FILL AS SPECIFIED BELOW. SIMULTANEOUSLY RECOMPACT SCARIFIED MATERIAL WITH PLACED FILL MATERIAL.
3. GENERAL FILL MATERIAL SHALL BE SOIL CLASSIFICATIONS GW, GP, GM, GC, SW, SP, SM, SC, CL AND ML, PER ASTM D-2487, FREE OF ORGANIC MATERIAL, BOULDERS, TRASH AND DEBRIS.
4. IN THE VICINITY OF THE FIRE PIT, SELECT FILL MATERIAL WITH A HIGHER PERCENTAGE OF CLAY SHALL BE USED TO PROVIDE THE VERTICAL WALLS NEEDED FOR THE BURN PIT. SELECT FILL SHALL BE USED TO A DISTANCE OF 5' IN ALL DIRECTIONS FROM THE BURN PIT WALLS, INCLUDING ALL SIDES AND THE PIT BOTTOM. SELECT FILL MATERIAL SHALL BE ASTM D-2487 CLASSIFICATION SC/SM OR CL/ML, WITH 30% OR MORE PASSING THE NO. 200 SIEVE. THE MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, BOULDERS, TRASH AND DEBRIS.
5. CRUSHED RECYCLED CONCRETE MAY BE USED AS FILL MATERIAL IN THE LOCATIONS SPECIFIED ON THE DRAWINGS. IT SHALL NOT BE USED WITHIN 7' OF THE BURN PIT WALLS OR BOTTOM. CRUSHED CONCRETE SHALL CONFORM TO THE FOLLOWING GRADATION SPECIFICATION:

SIEVE SIZE	PERCENT PASSING (DRY WEIGHT)
1-1/2"	100%
3/4"	40 - 75%
1/4"	25 - 50%
NO. 40	5 - 20%
NO. 200	10% MAX.

6. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 12-INCHES LOOSE DEPTH BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE THE OPTIMUM MOISTURE CONTENT.
7. RECYCLED CONCRETE: CRUSHED RECYCLED CONCRETE SHALL BE MOISTURE-CONDITIONED TO WITHIN 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT. PLACE IN HORIZONTAL LIFTS LESS THAN 8 INCHES LOOSE THICKNESS.
8. COMPACT EACH LAYER TO TO AT LEAST 95 PERCENT MAXIMUM DRY DENSITY. PROVIDE DENSITY TESTS FROM AN INDEPENDENT TESTING AGENCY LABORATORY, DEMONSTRATING COMPLIANCE WITH THE THESE COMPACTION REQUIREMENTS.
9. FILL MATERIALS, WITH RESPECT TO MOISTURE, SHALL BE USED IN THE CONDITIONS UNDER WHICH THEY ARE EXCAVATED INSOFAR AS THIS IS PRACTICABLE. MATERIAL WHICH IS TOO WET SHALL BE SPREAD ON THE FILL AREA AND PERMITTED TO DRY, ASSISTED BY HARROWING IF NECESSARY, UNTIL THE MOISTURE CONTENT IS REDUCED TO ALLOWABLE LIMITS. SIMILARLY, IF SOILS ARE TOO DRY, THEY SHALL BE MOISTENED TO THE OPTIMUM RANGE NEEDED TO ACHIEVE THE REQUIRED COMPACTION.
10. A MINIMUM TESTING RATE OF ONE TEST FOR EACH EACH 2500 SQUARE FEET OF BACKFILL LIFT IS REQUIRED, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. A BACKFILL LIFT SHALL NEVER BE CONSIDERED TO BE GREATER THAN ONE FOOT IN THICKNESS.

**DRAFT**

## **APPENDIX C**

# **TROUBLE-SHOOTING PROCEDURES FOR CUMMINS 6BT 5.9-L DIESEL ENGINE**

# Section T - Troubleshooting Logic

## Section Contents

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## Section T - Troubleshooting

### Procedures and Techniques

A thorough analysis of the customer's complaint is the key to successful troubleshooting. The more information known about a complaint, the faster and easier the problem can be solved.

The Troubleshooting Symptoms Charts beginning on Page T-4 are organized so that a problem can be located and corrected by doing the easiest and most logical things first. Complete all steps in the sequence shown from top to bottom.

It is not possible to include all the solutions to problems that can occur; however, these charts should stimulate a thought process that will lead to the cause and correction of the problem.

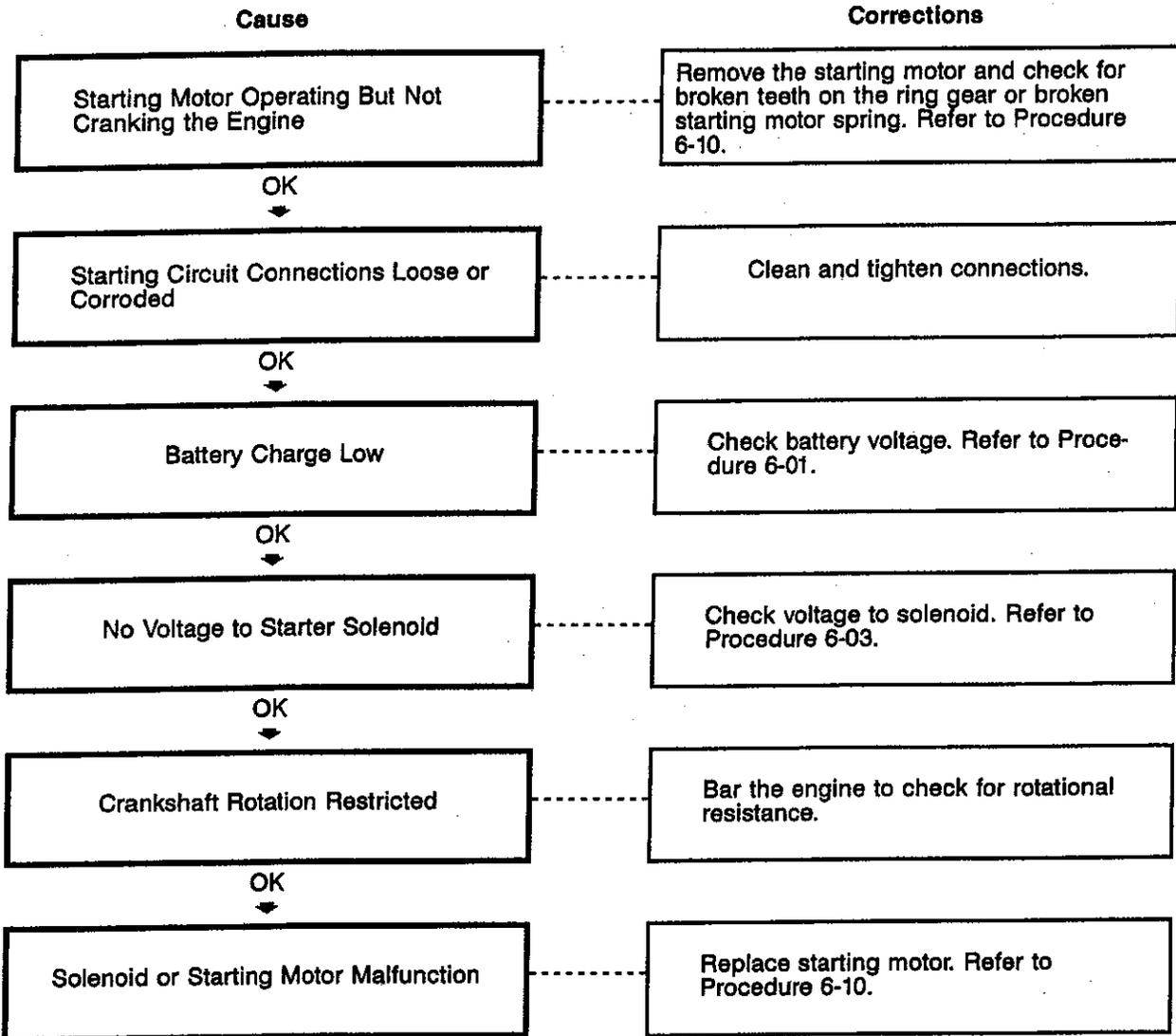
Follow these basic troubleshooting steps:

- Get all the facts concerning the complaint.
- Analyze the problem thoroughly.
- Relate the symptoms to the basic engine systems and components.
- Consider any recent maintenance or repair action that may relate to the problem.
- Double-check before beginning any disassembly.
- Solve the problem by using the logic charts and doing the easiest things first.
- Determine the cause of the problem and make a thorough repair.
- After repairs have been made, operate the engine to make sure the cause of the problem has been corrected.

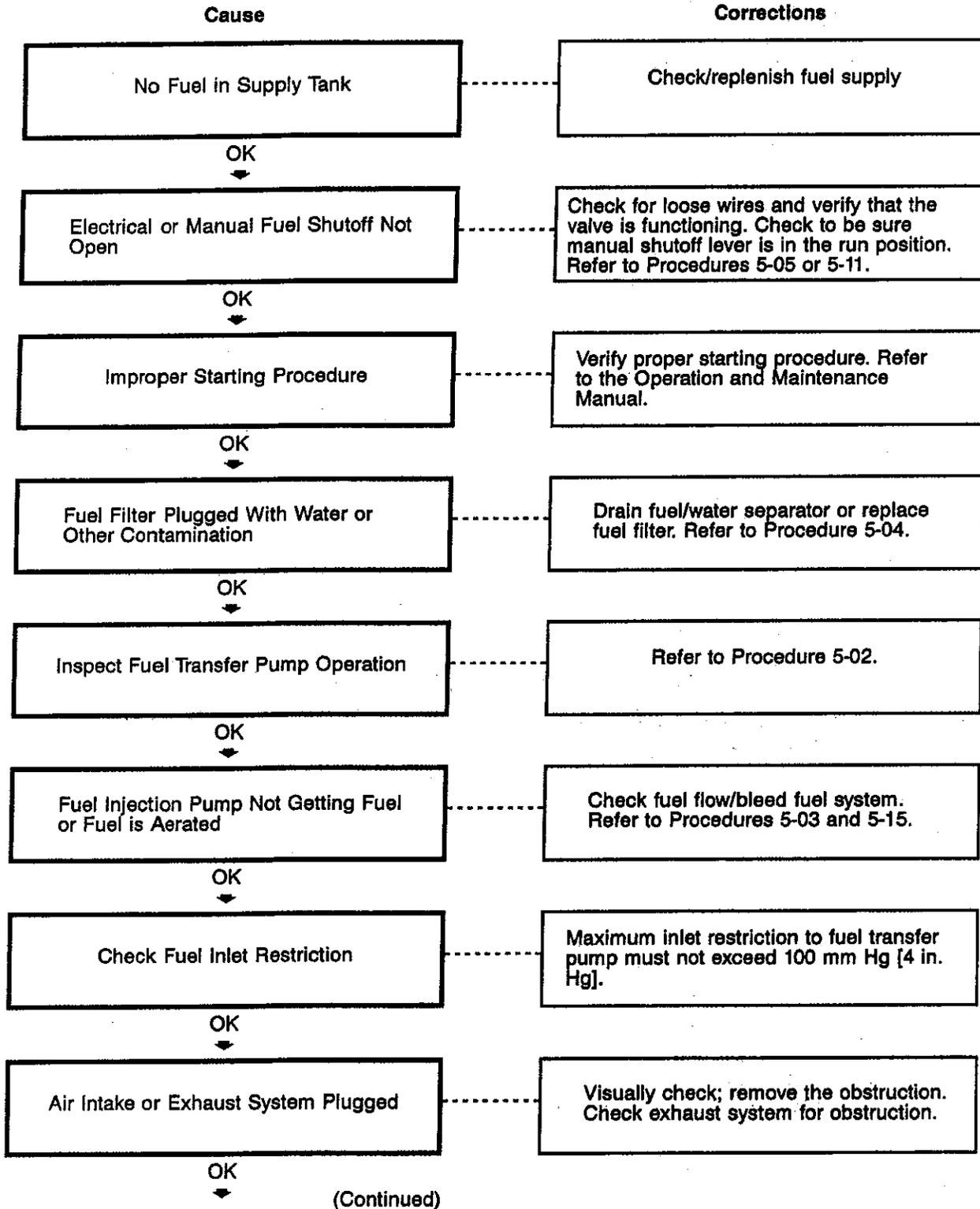
### Troubleshooting Symptoms Charts

Use the charts given on the following pages of this section to help you to diagnose and repair a problem with your engine. Read each row of blocks from top to bottom. Follow the arrows through the chart to identify the corrective action.

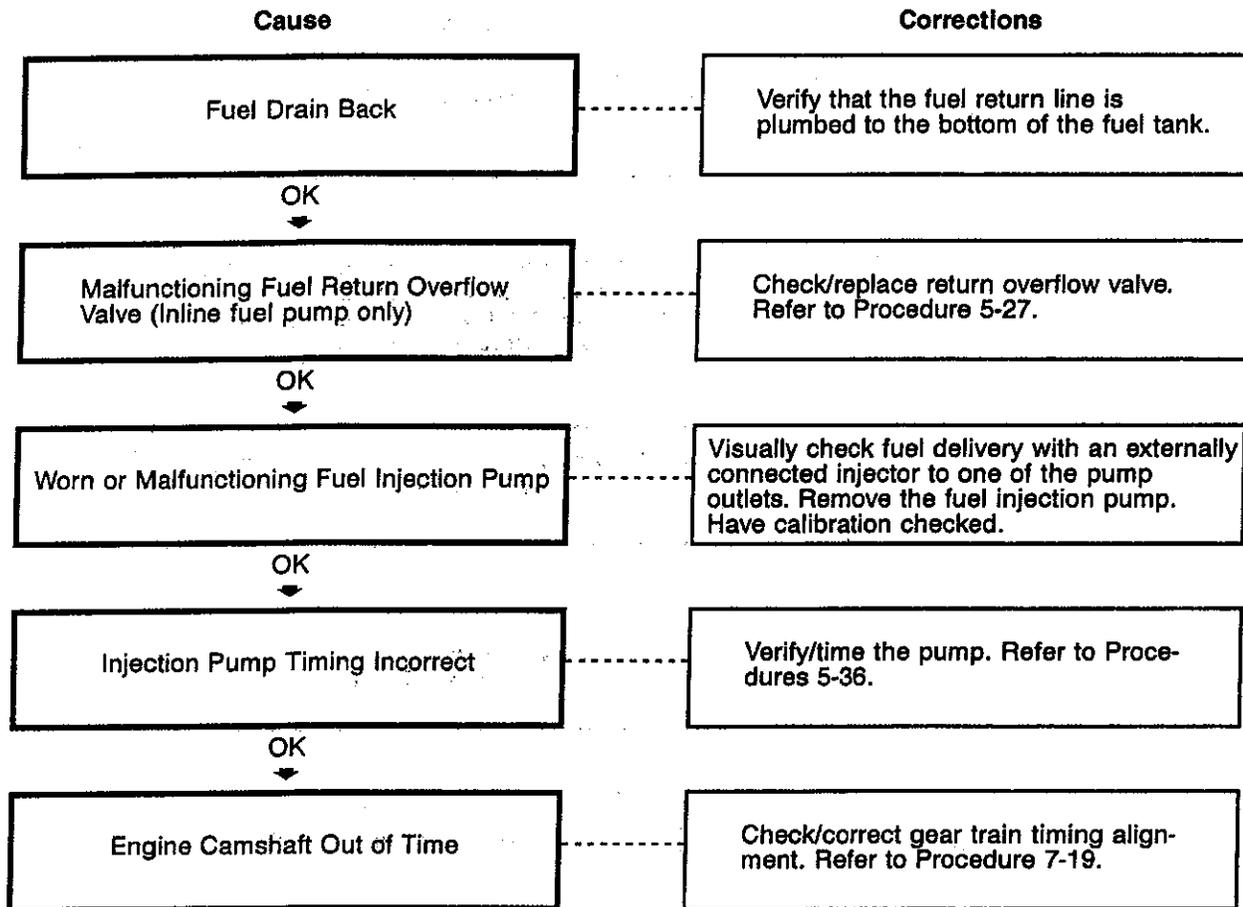
### Engine Will Not Crank Or Cranks Slowly



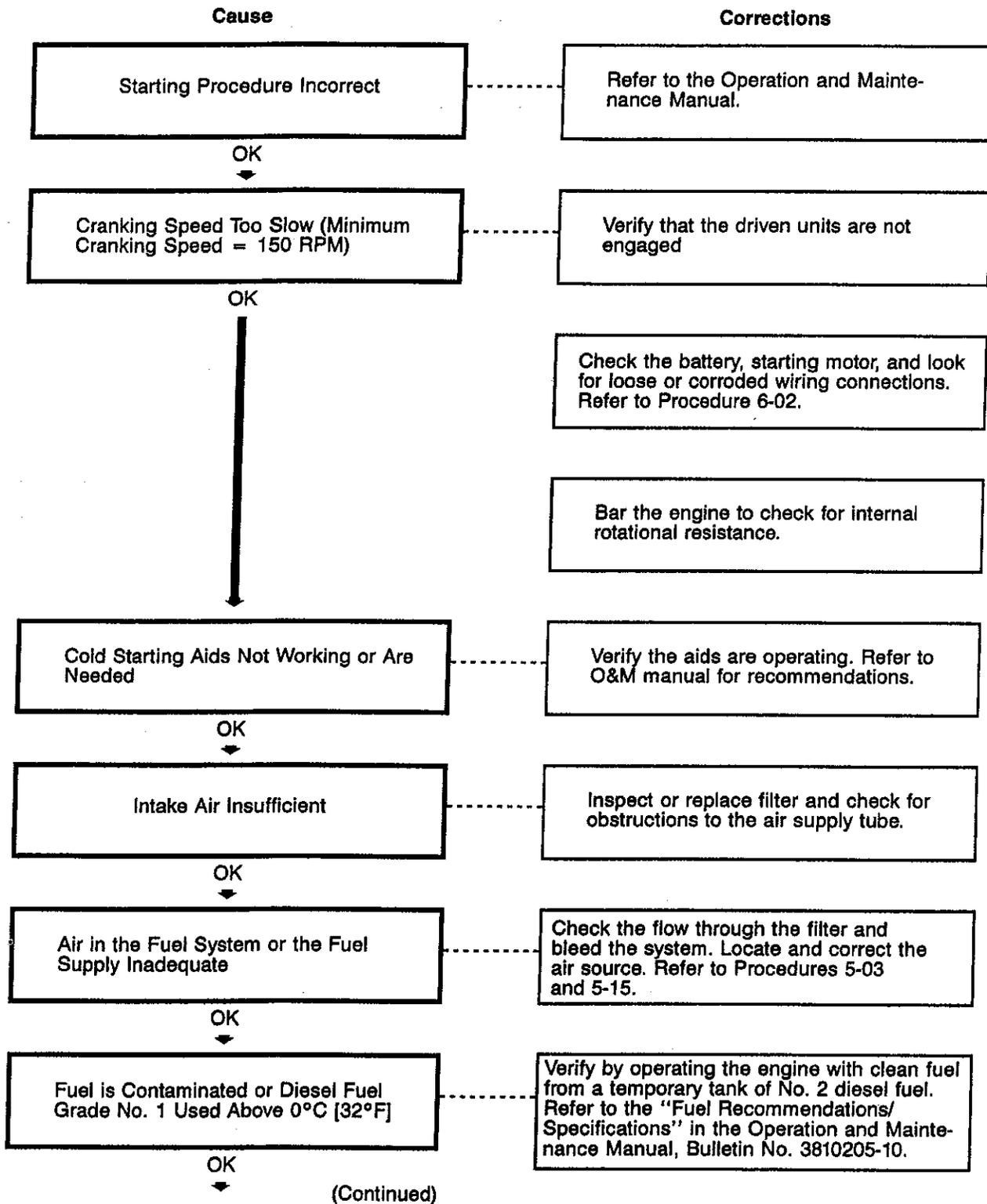
### Engine Cranks But Will Not Start - No Smoke From Exhaust



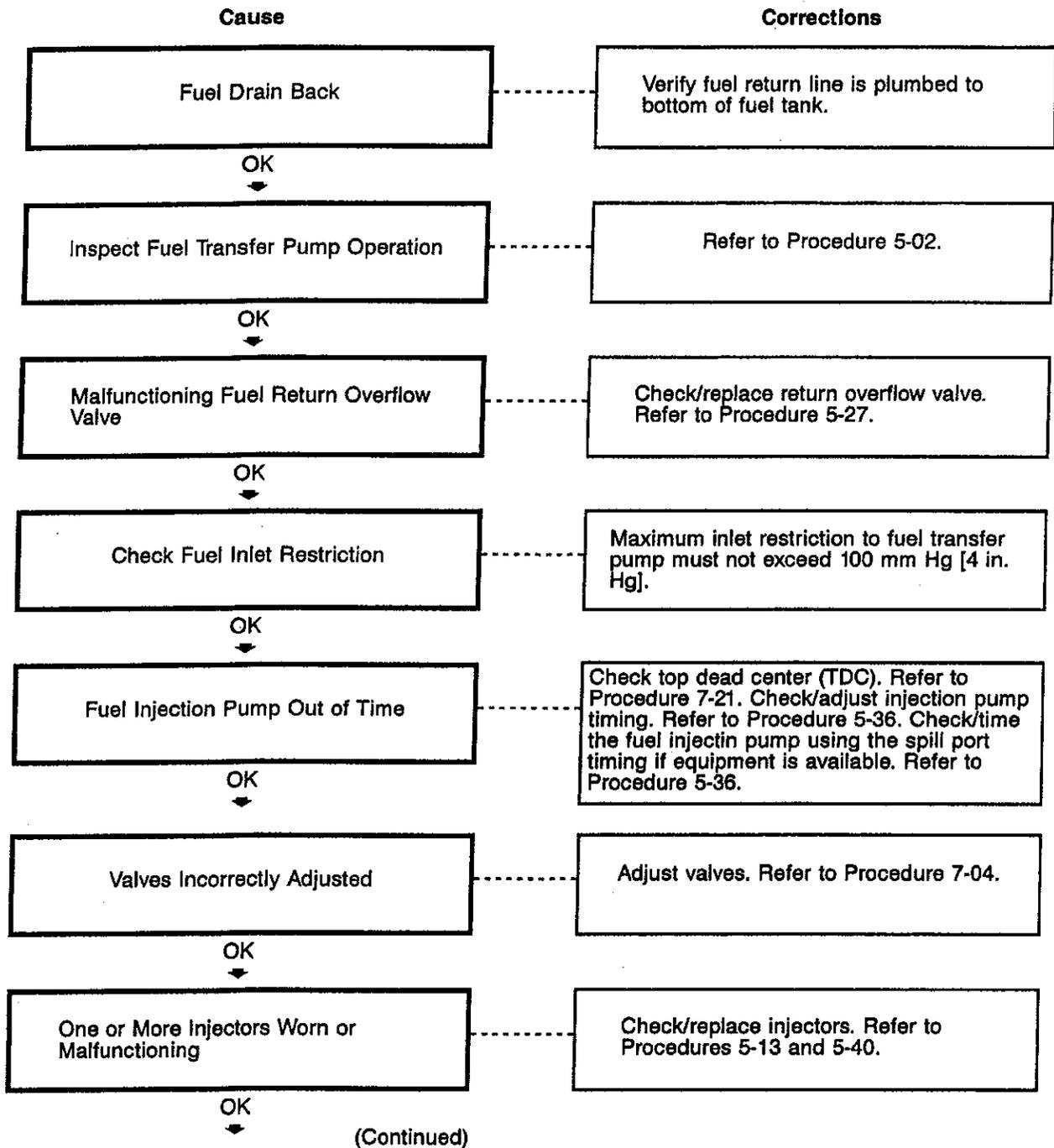
### Engine Cranks But Will Not Start - No Smoke From Exhaust (Continued)



### Engine Hard To Start Or Will Not Start - Smoke From Exhaust



### Engine Hard To Start Or Will Not Start - Smoke From Exhaust (Continued)



### Engine Hard To Start Or Will Not Start - Smoke From Exhaust (Continued)

Cause

Corrections

Engine Compression Low

Perform a compression check to identify the problem. Refer to Procedure 7-01.

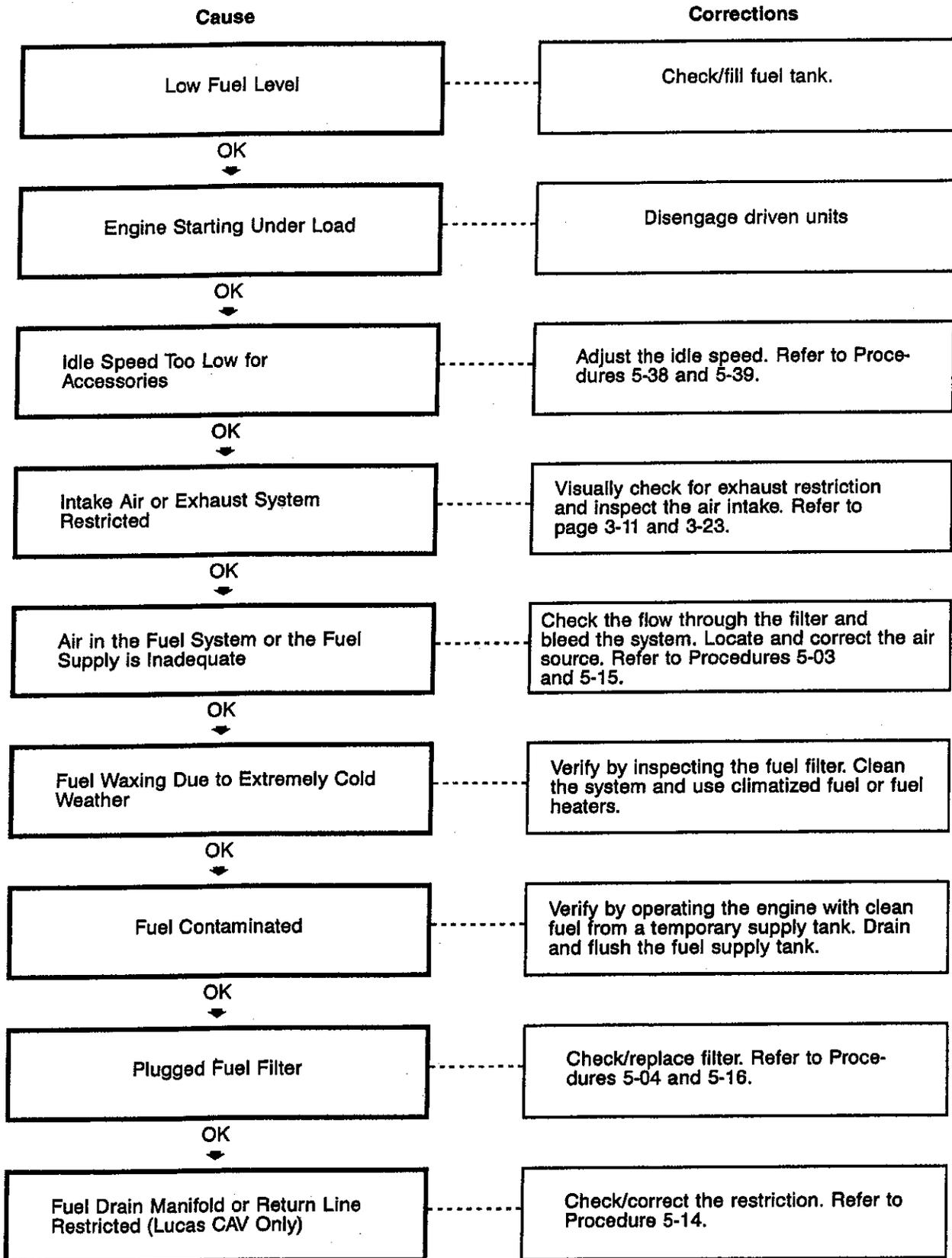
OK



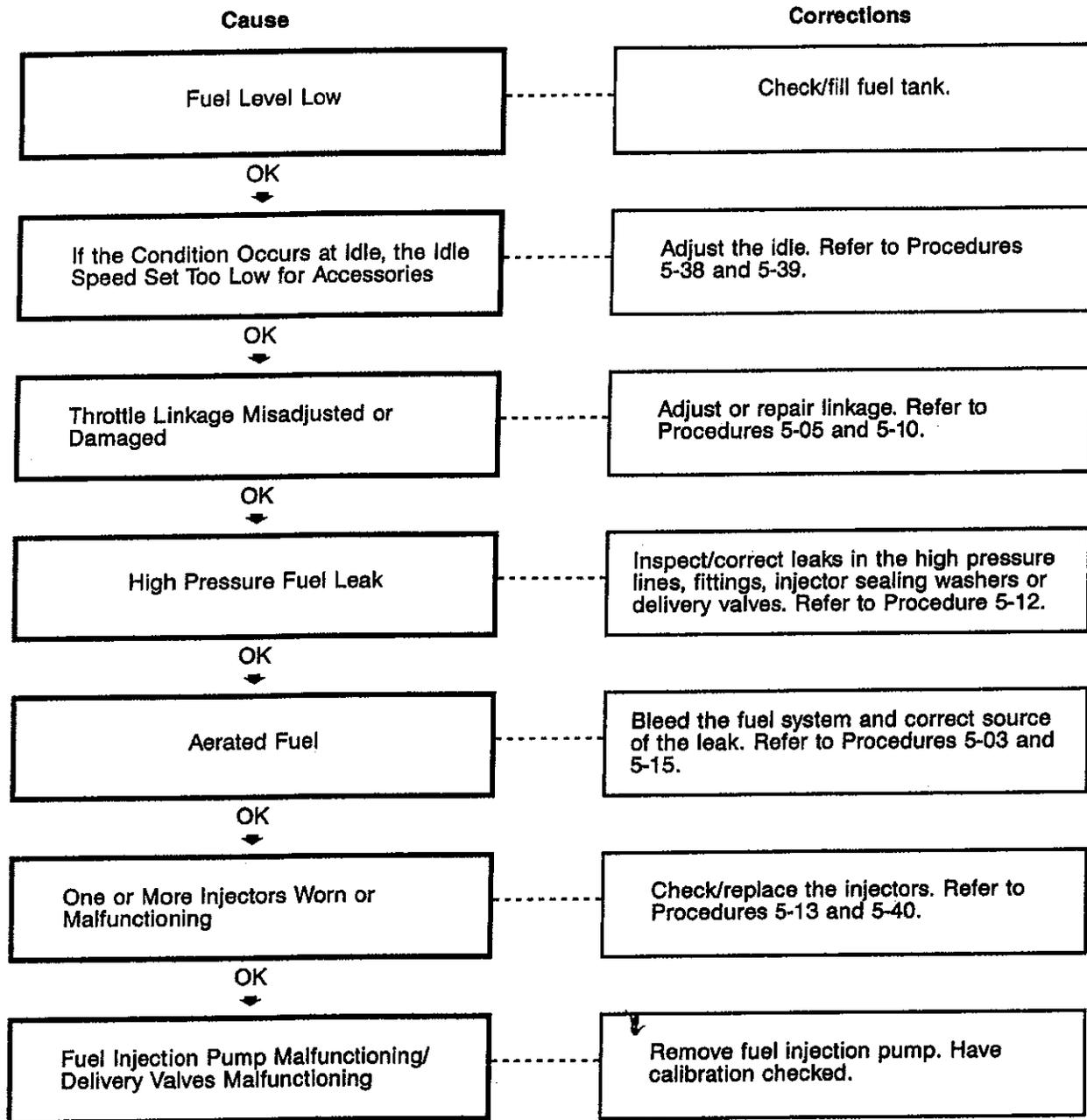
Fuel Injection Pump Malfunctioning/  
Delivery Valves Malfunctioning

Remove fuel injection pump. Have calibration checked.

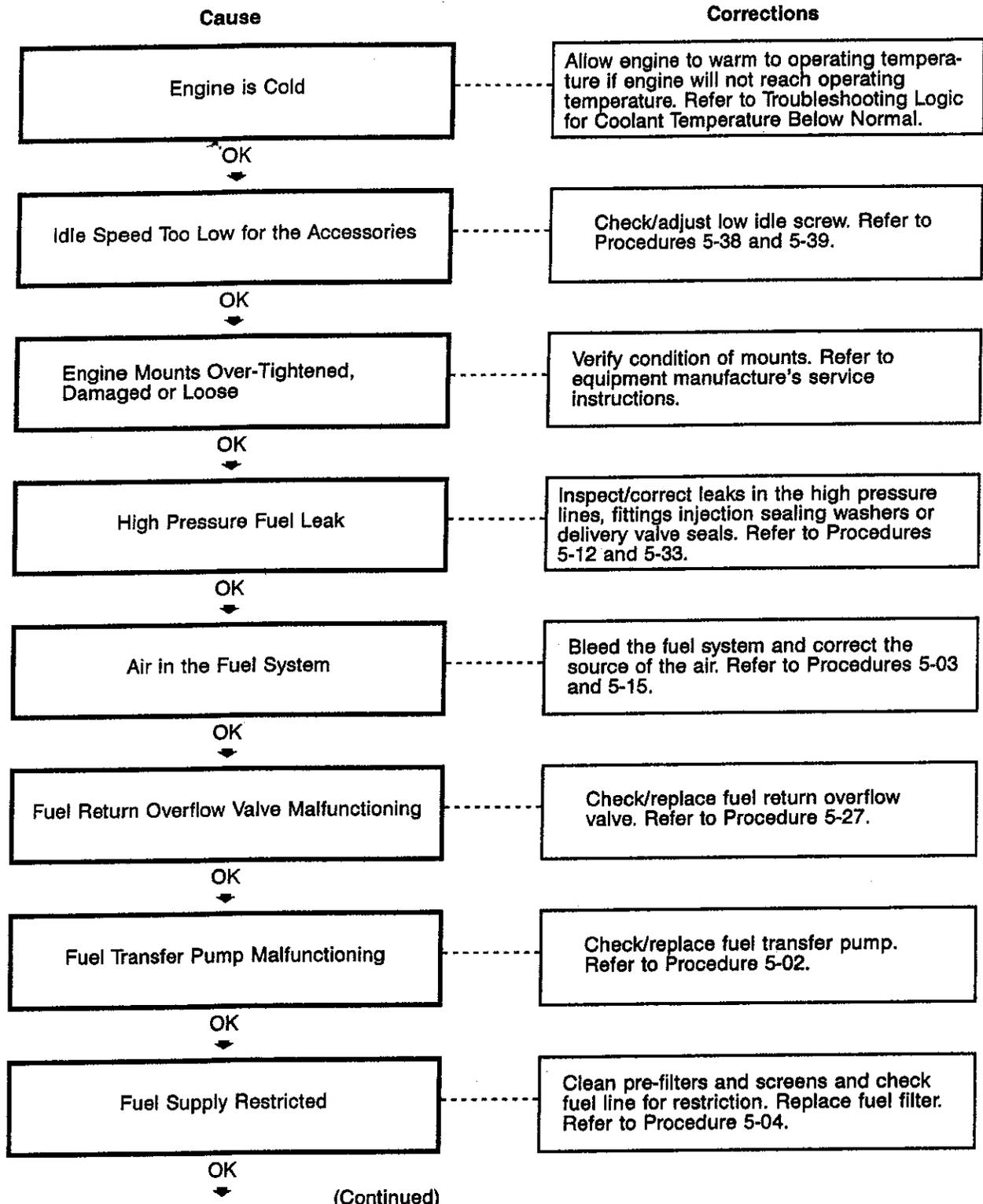
### Engine Starts But Will Not Keep Running



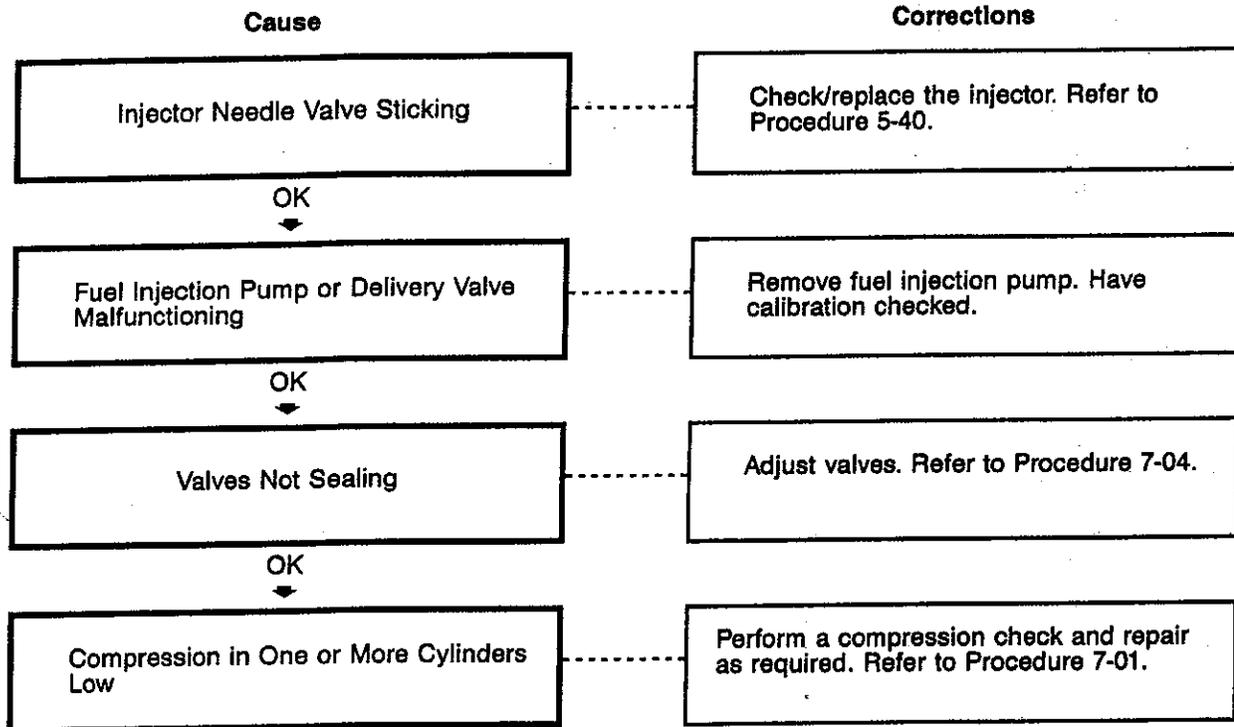
### Engine Surging (Speed Change)



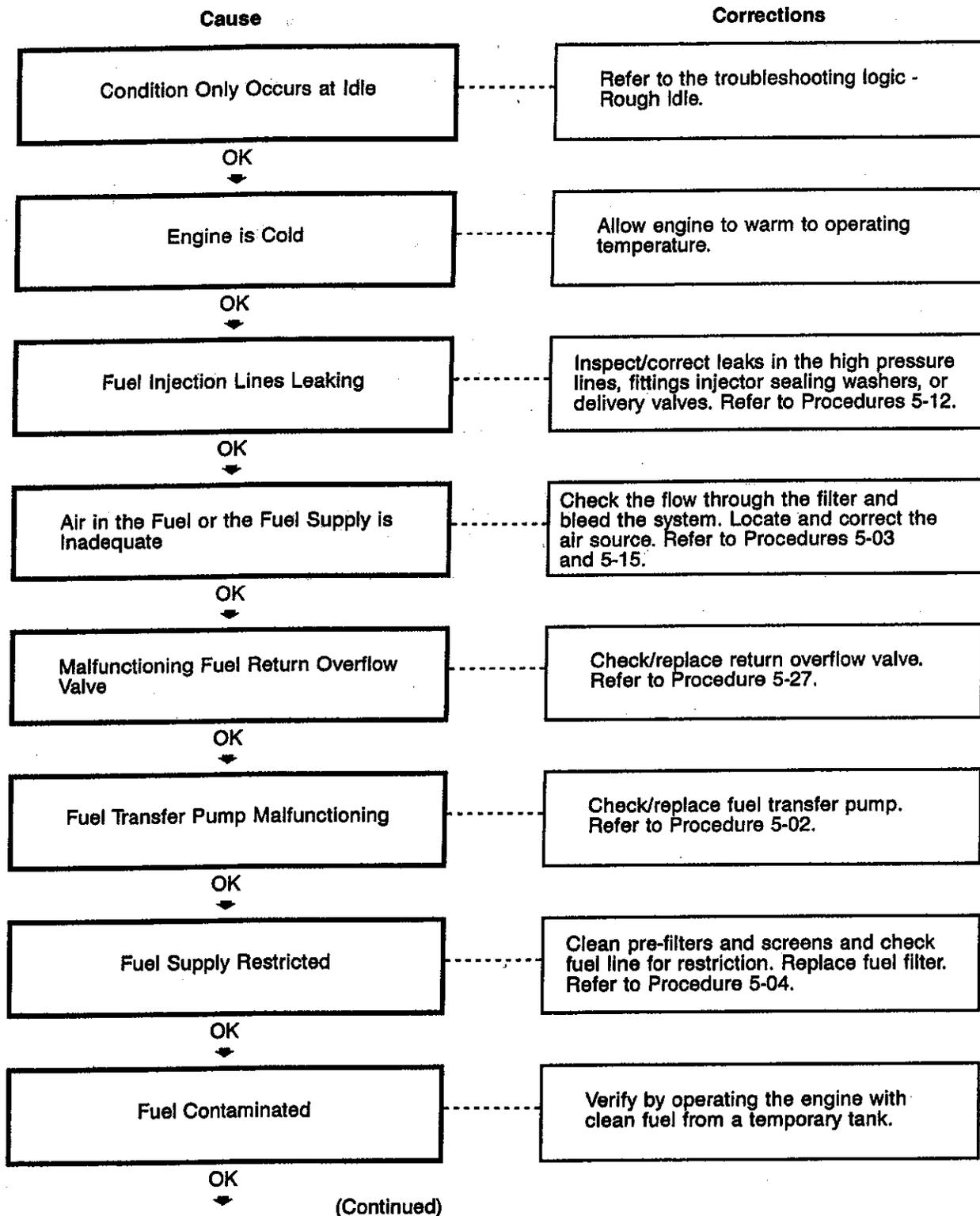
### Engine Idle Rough (Irregularly Firing Or Engine Shaking)



### Engine Idle Rough (Irregularly Firing Or Engine Shaking) (Continued)



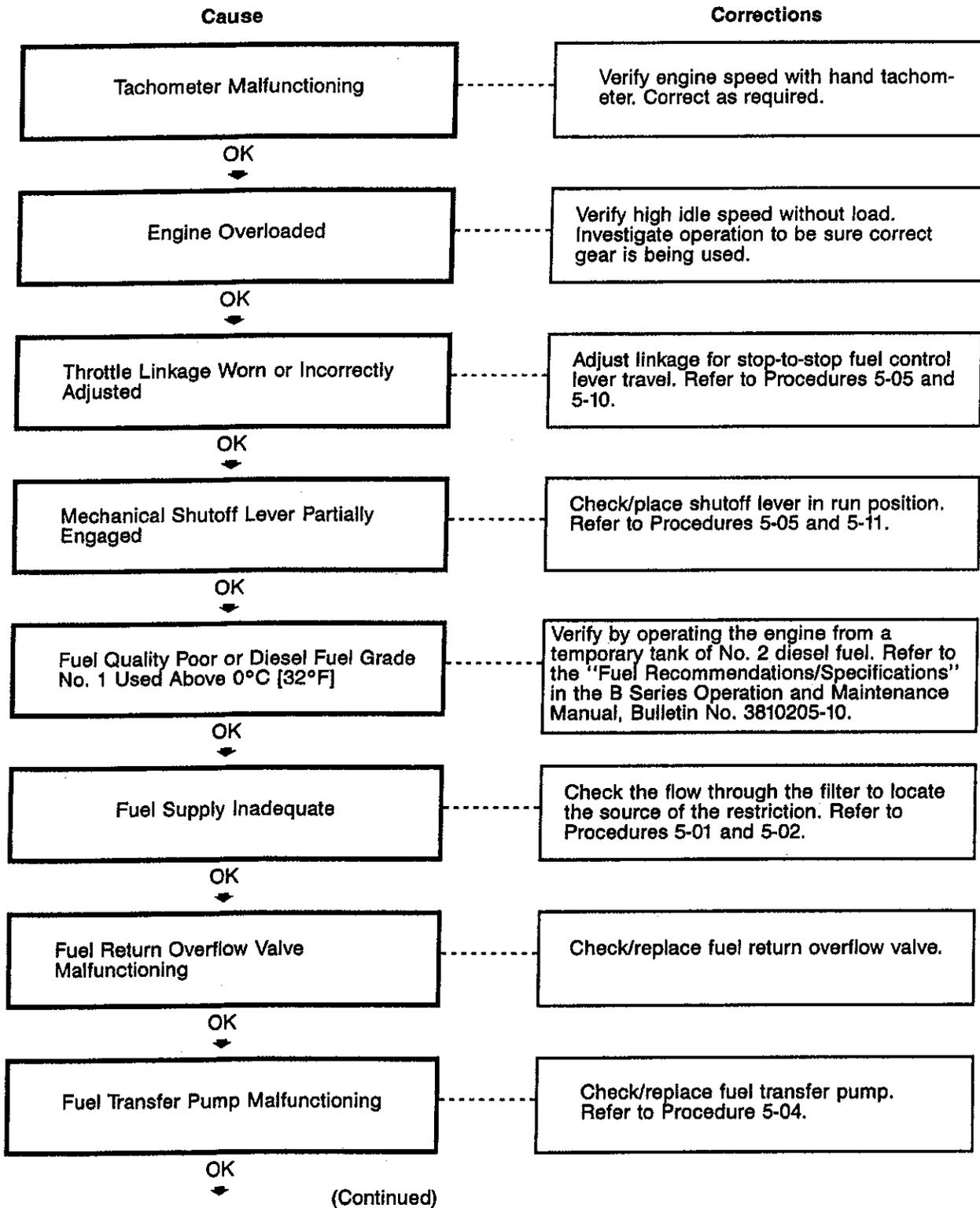
### Engine Runs Rough Or Misfiring



### Engine Runs Rough Or Misfiring (Continued)

Cause	Corrections
Valve Adjustment Incorrect	Check for a bent push rod and adjust valves. Refer to Procedures 7-03 and 7-04.
OK ↓	
Injection Pump Timing Incorrectly Adjusted	Check top dead center (TDC). Refer to Procedure 7-21. Check/adjust injection pump timing. Refer to Procedure 5-36. Check/time the fuel injection pump using the spill port timing if equipment is available. Refer to Procedure 5-36.
OK ↓	
Compression in One or More Cylinders Low	Perform a compression check and repair as required. Refer to Procedure 7-01.
OK ↓	
Injectors Malfunctioning	Check/replace injectors. Refer to Procedures 5-13 and 5-40.
OK ↓	
Injection Pump (Delivery Valves) Defective	Remove fuel injection pump. Have calibration checked.
OK ↓	
Camshaft Out of Time	Check/correct gear train timing alignment. Refer to Procedure 5-36.
OK ↓	
Camshaft or Tappets Damaged	Inspect camshaft and tappets. Refer to Procedure 7-19.

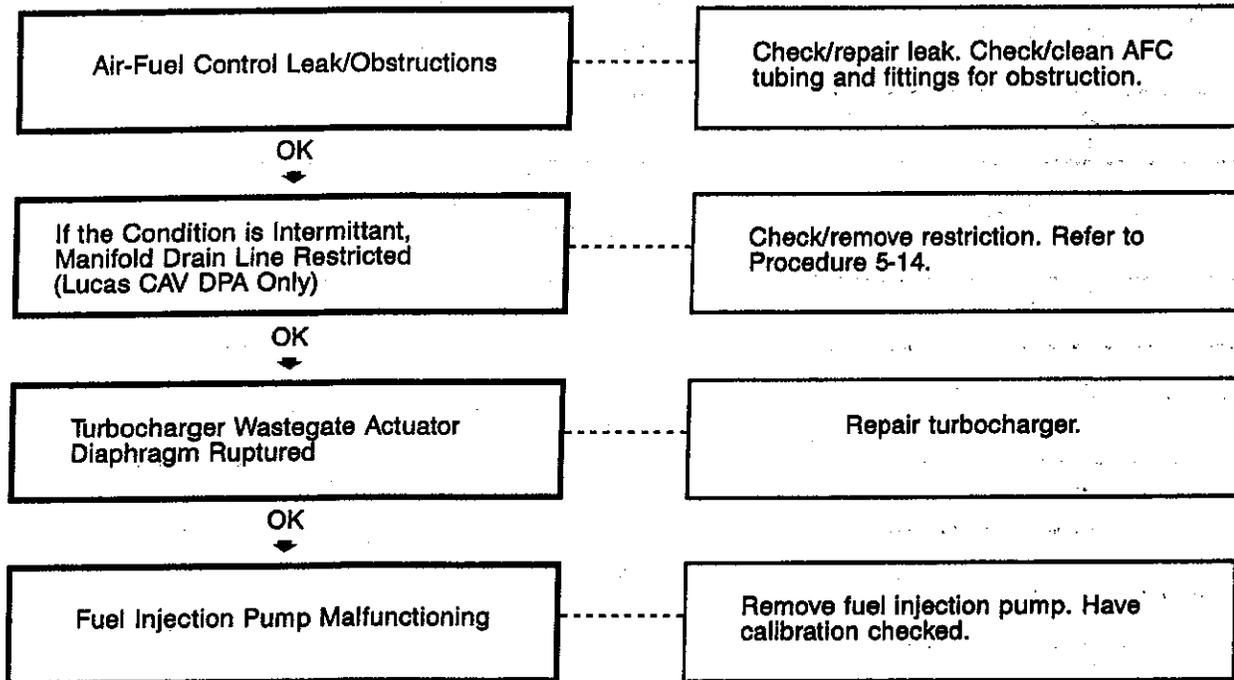
### Engine RPM Will Not Reach Rated Speed



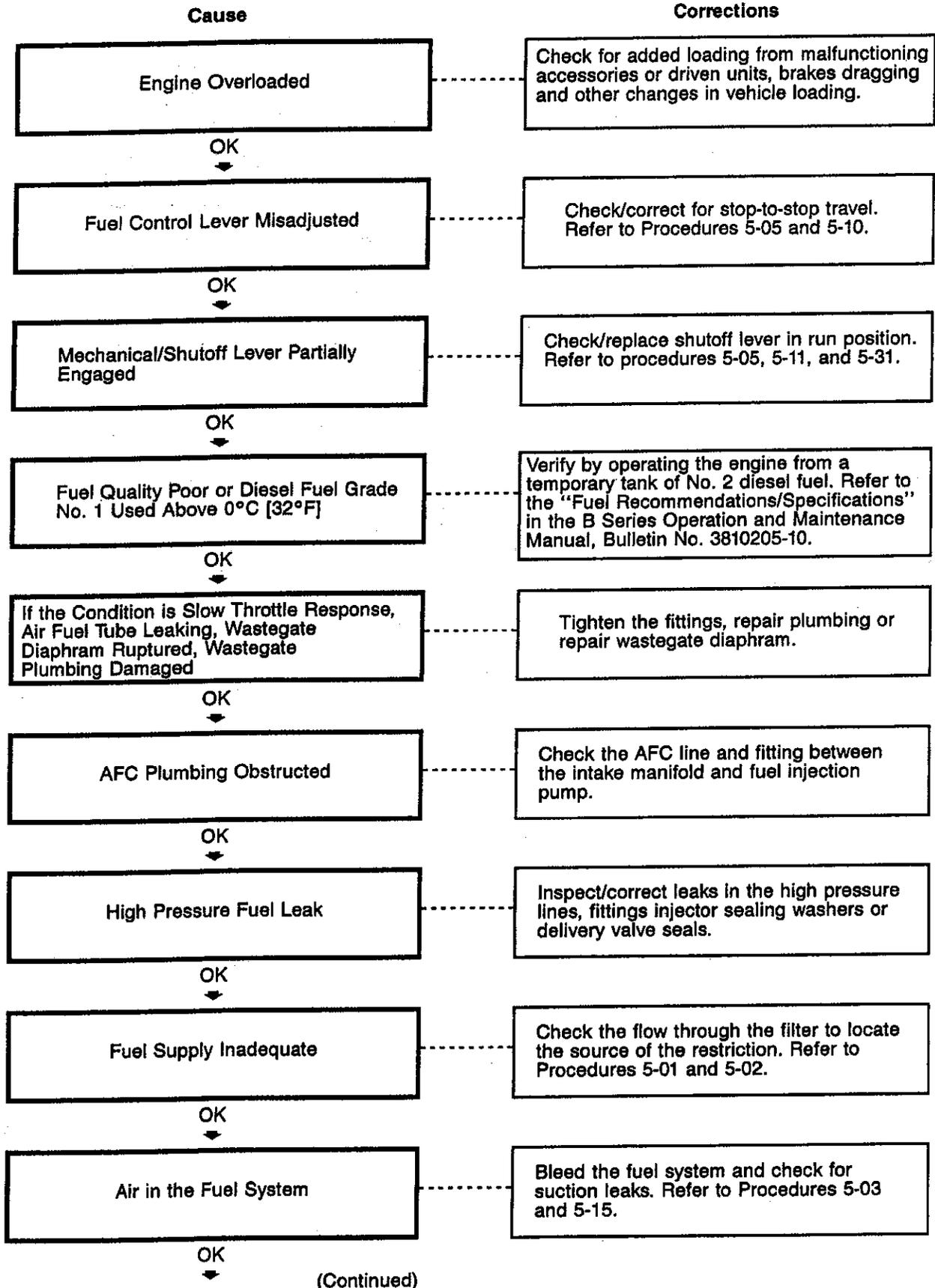
### Engine RPM Will Not Reach Rated Speed (Continued)

Cause

Corrections

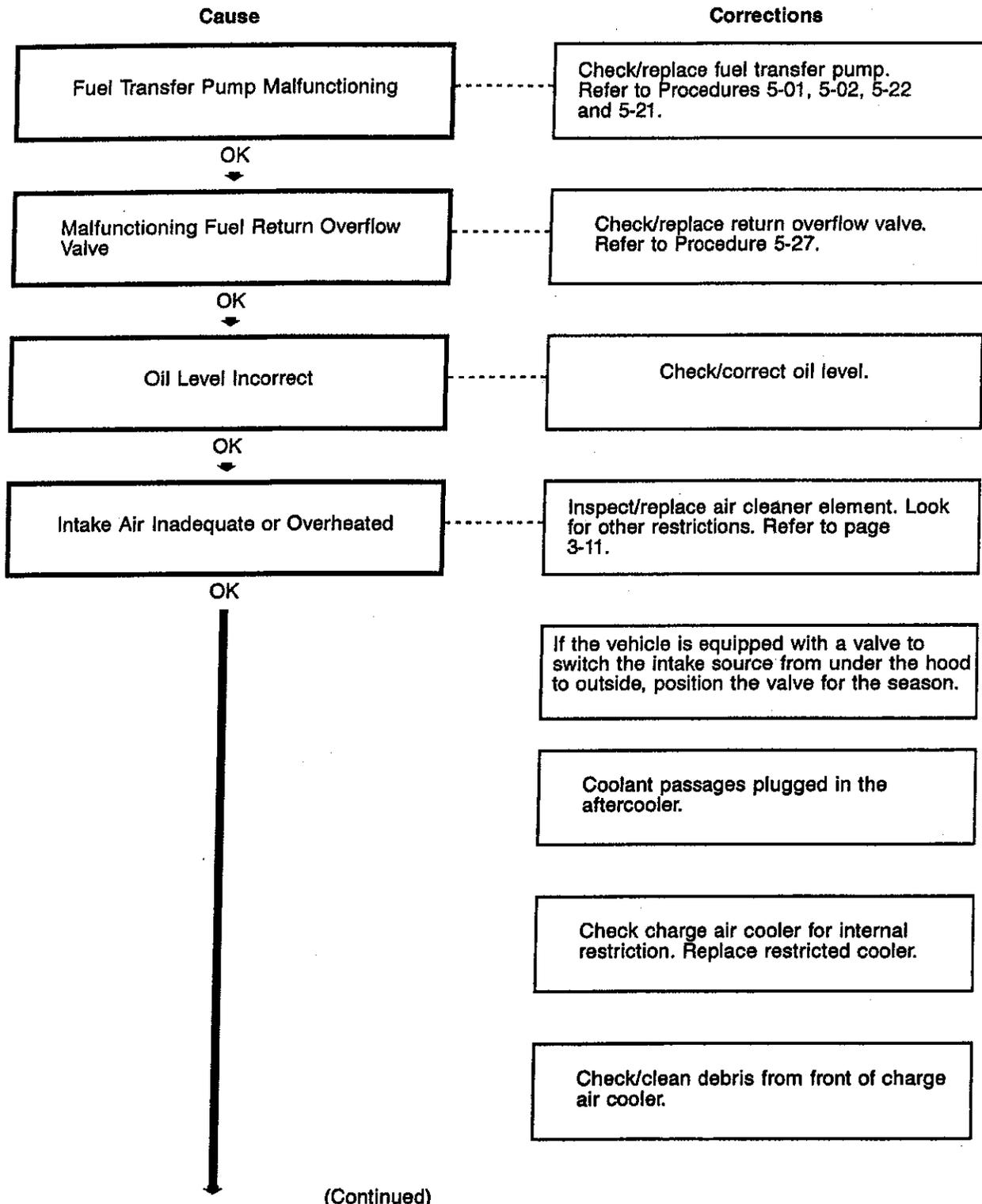


### Engine Power Output Low

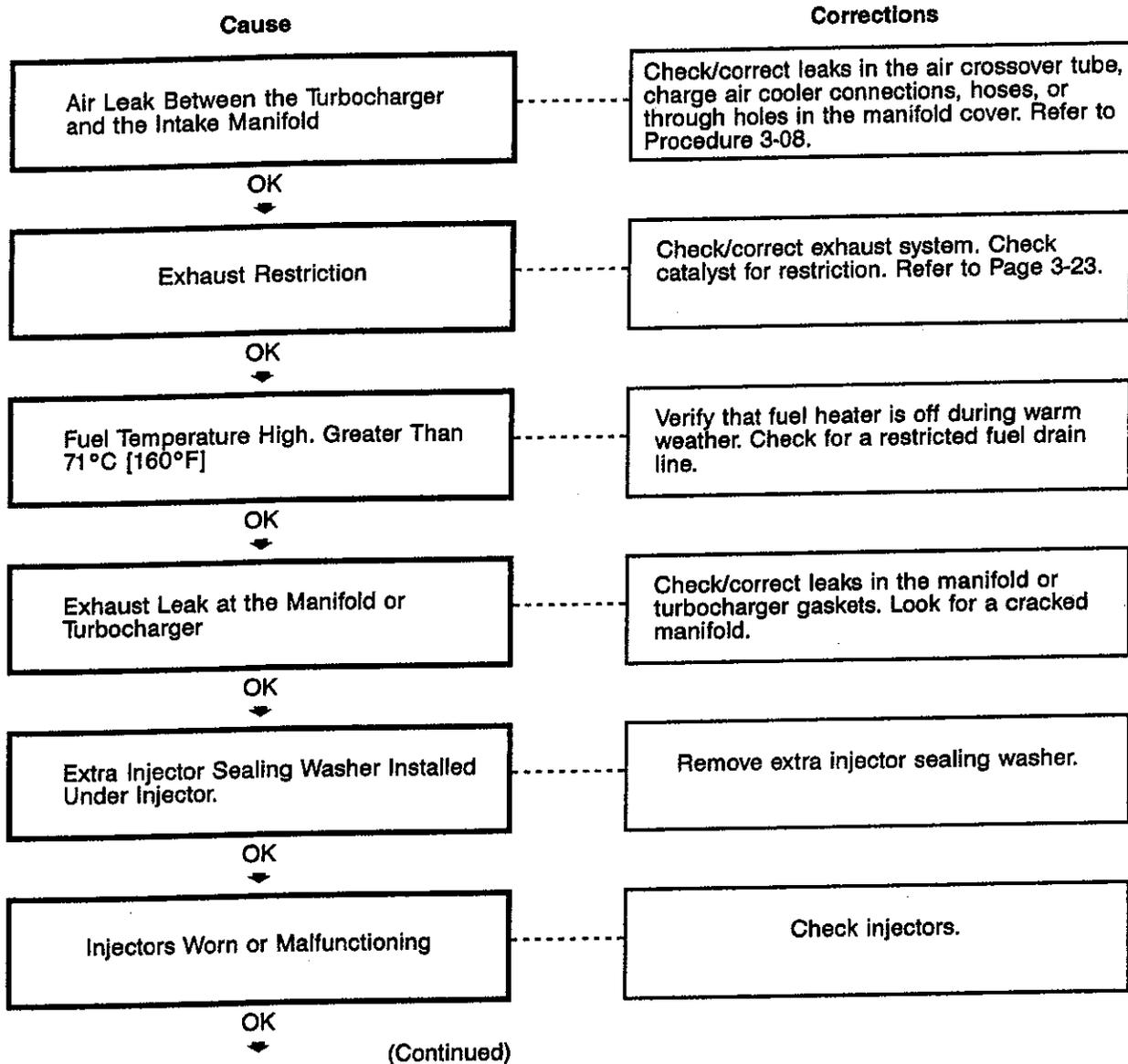


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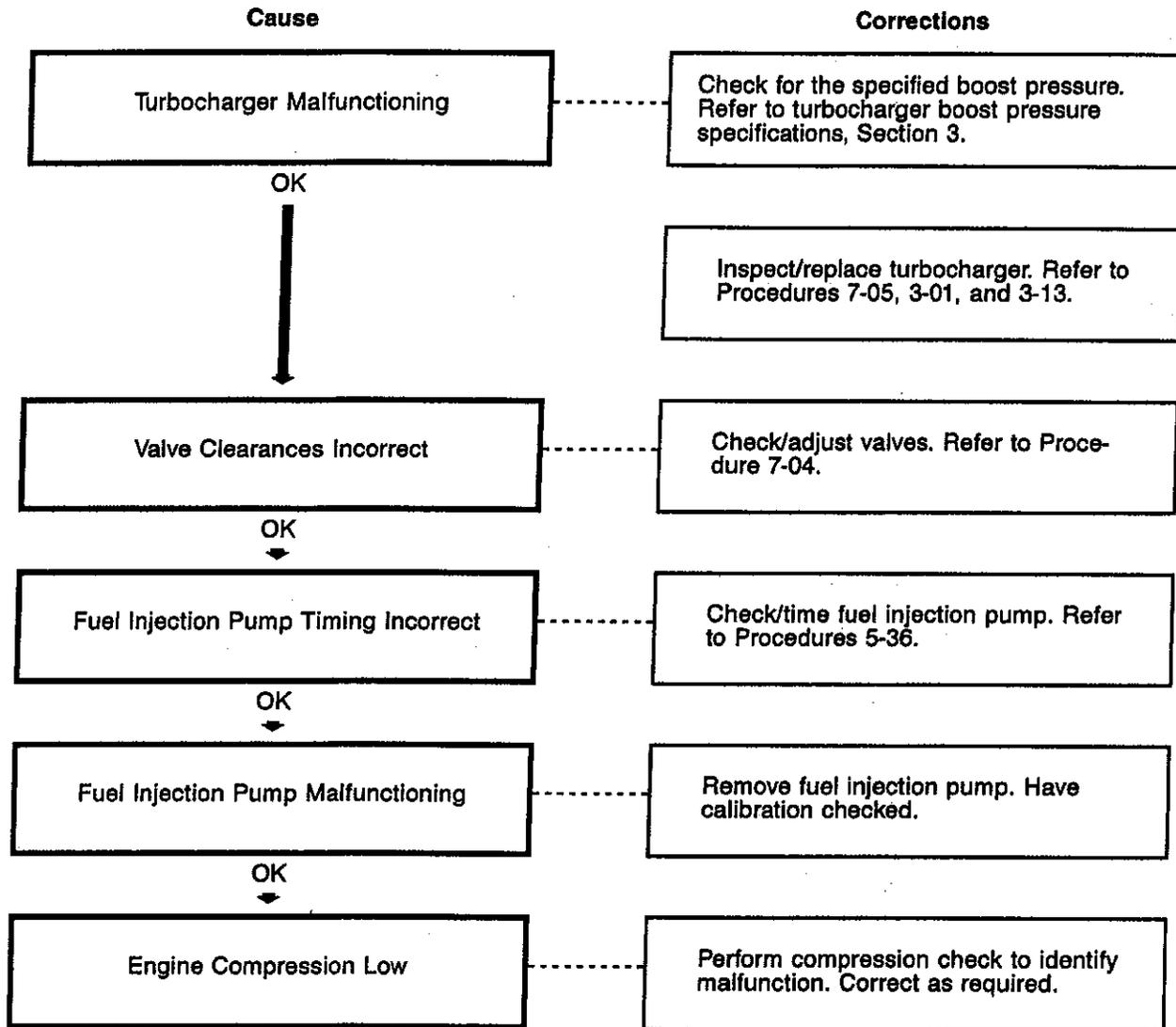
### Engine Power Output Low(Continued)



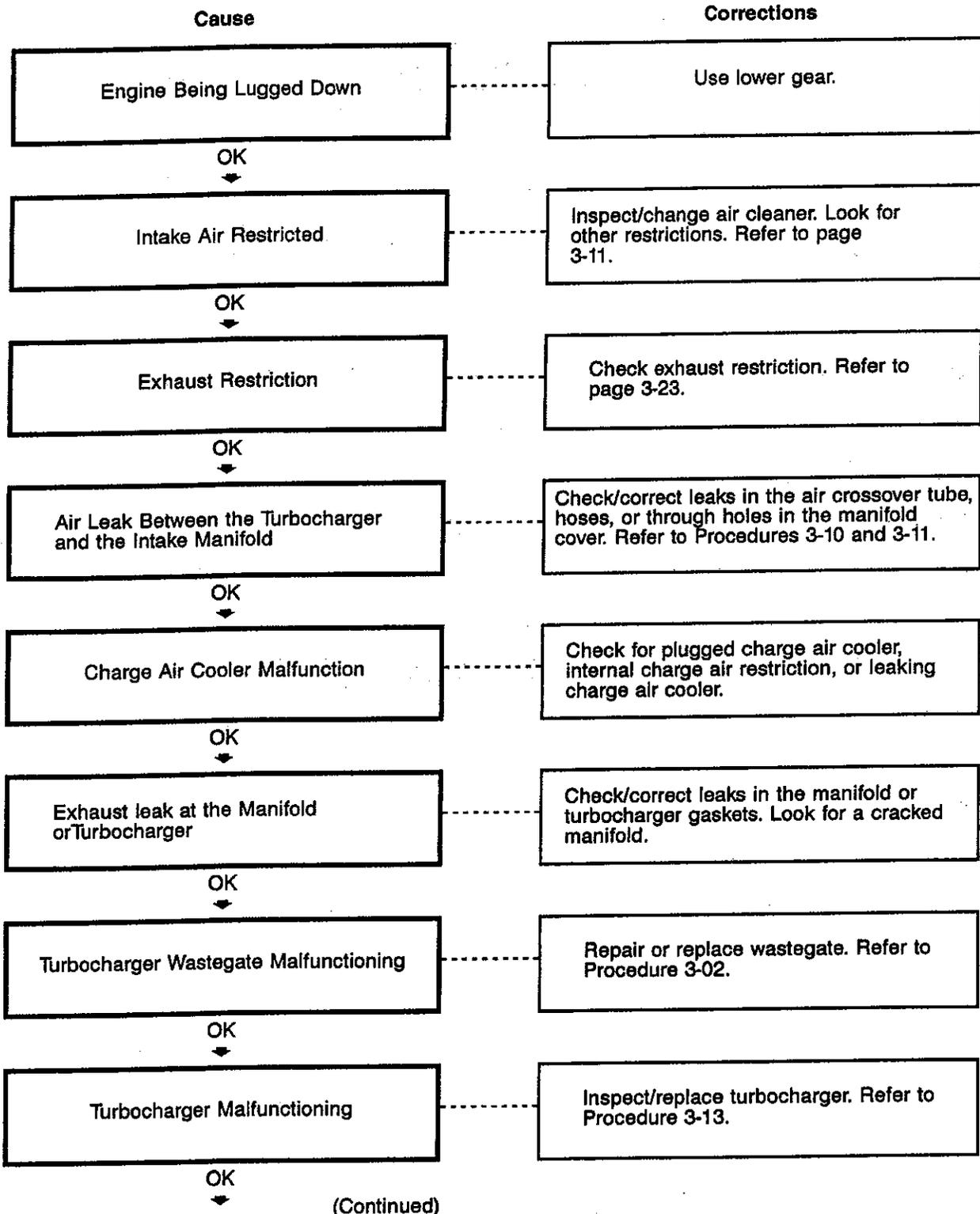
### Engine Power Output Low (Continued)



### Engine Power Output Low (Continued)



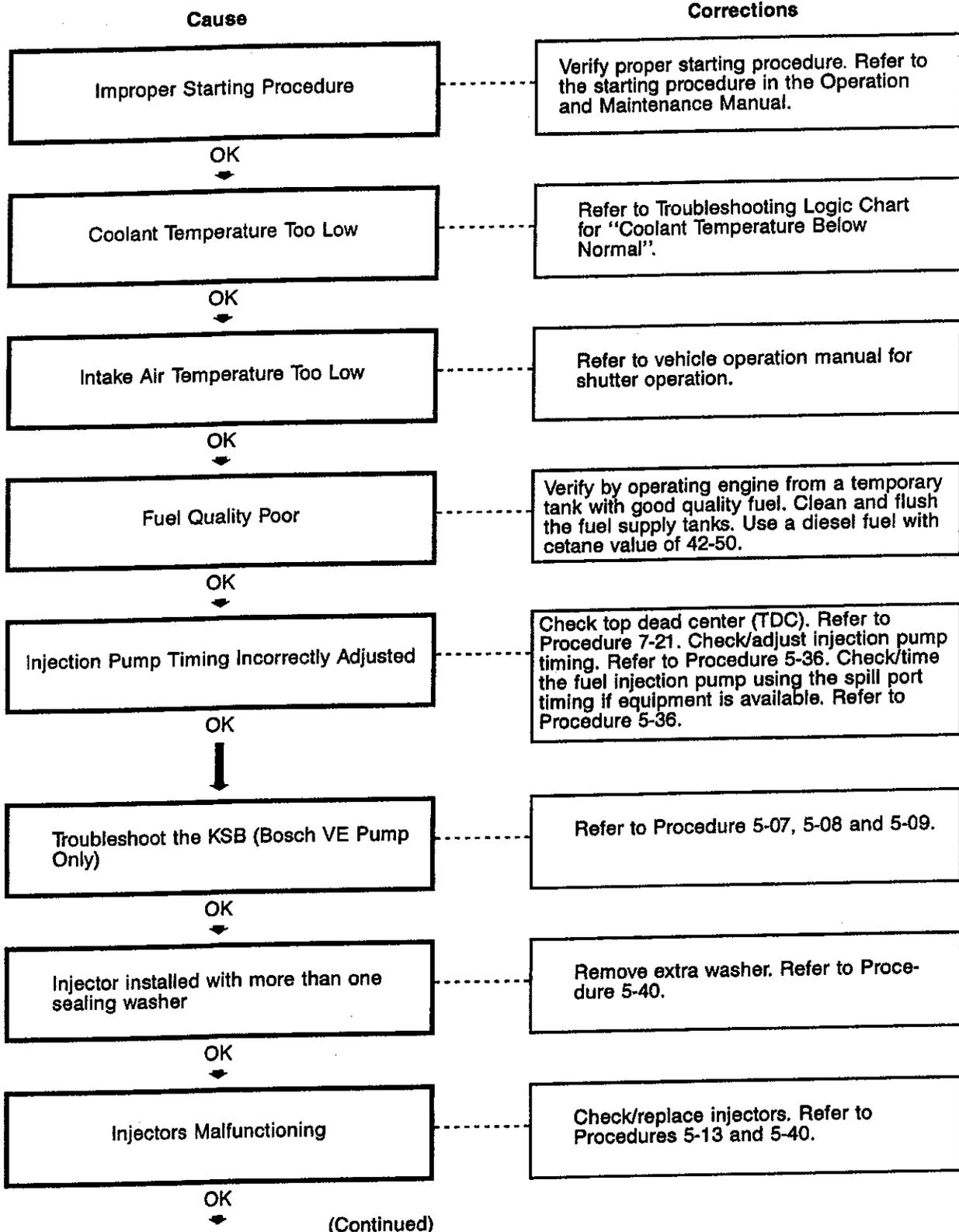
### Exhaust Black Smoke Excessive



### Exhaust Smoke Black Excessive (Continued)

Cause	Corrections
Injector Installed With More Than One Sealing Washer	Remove extra washer. Refer to Procedure 5-40.
OK ↓	
7 mm Injector Installed With a 9 mm Sealing Washer	Remove the injector and install the proper sealing washer. Refer to Procedure 5-40.
OK ↓	
Injectors Malfunctioning	Replace injectors. Refer to Procedure 5-40.
OK ↓	
Fuel Injection Pump Malfunctioning or Overfueled	Remove fuel injection pump. Have calibration checked.
OK ↓	
Piston Rings Not Sealing (Blue Smoke)	Perform a compression check. Correct as required. Refer to Procedure 7-01.
OK ↓	
Fuel Injection Pump Timing Incorrect	Check/time fuel injection pump. Refer to procedure 7-20 and 5-36.

### Exhaust White Smoke Excessive



### Exhaust White Smoke Excessive (Continued)

**Cause**

**Corrections**

Coolant Leaking Into Combustion Chamber

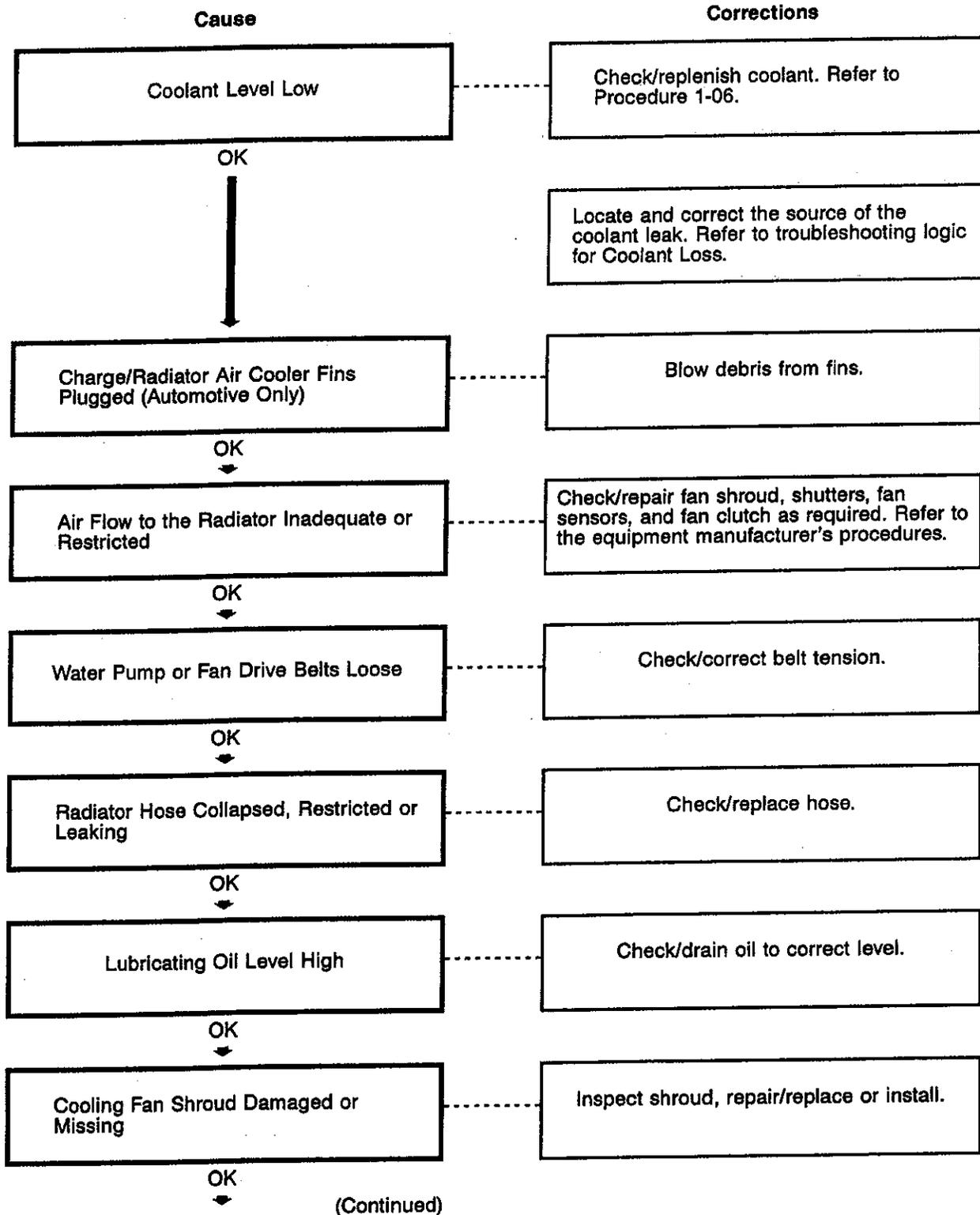
Refer to Troubleshooting Logic for Coolant Loss.

OK  
↓

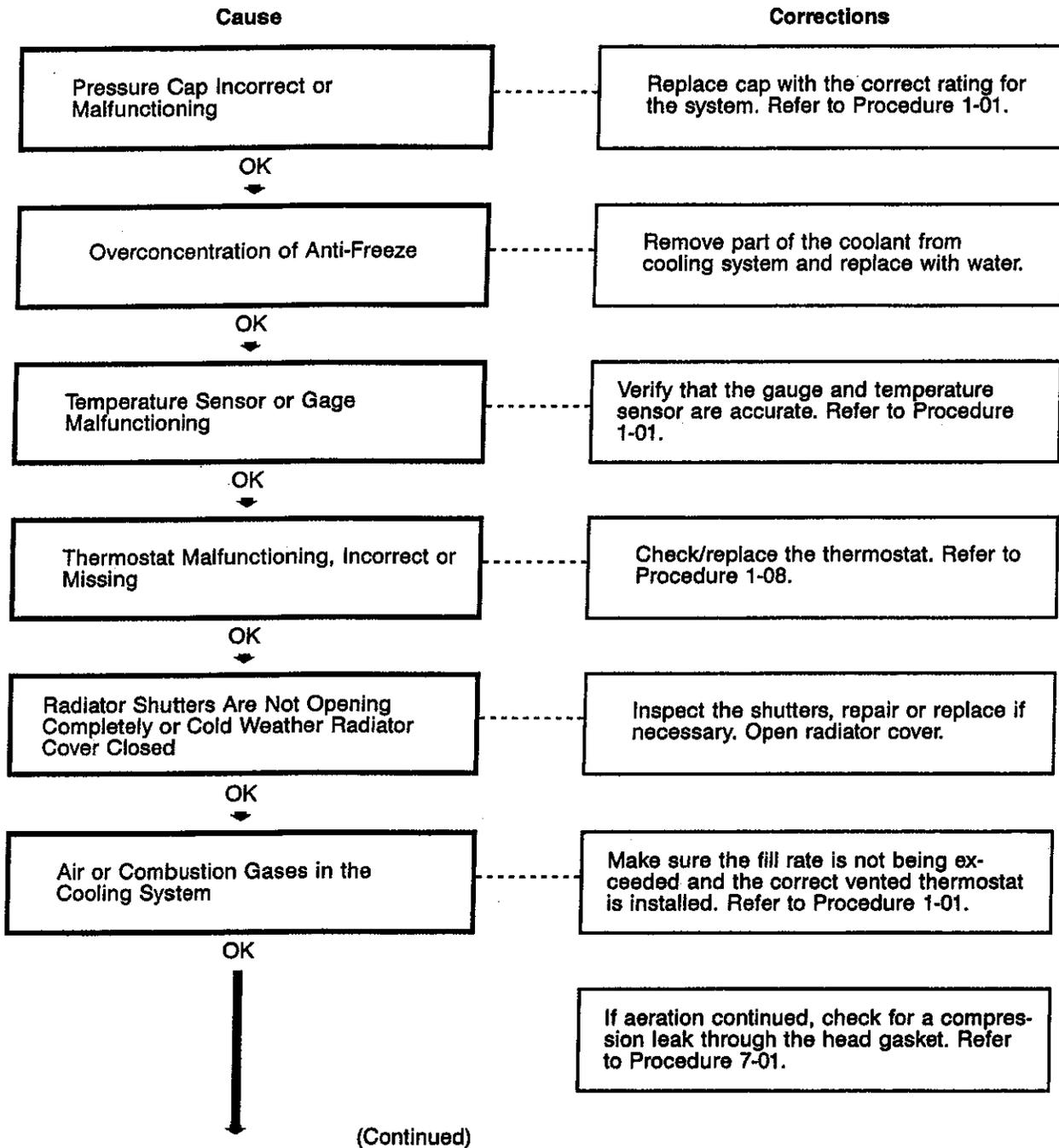
Fuel Injection Pump Malfunctioning/  
Delivery Valves Malfunctioning

Remove fuel injection pump. Have calibration checked.

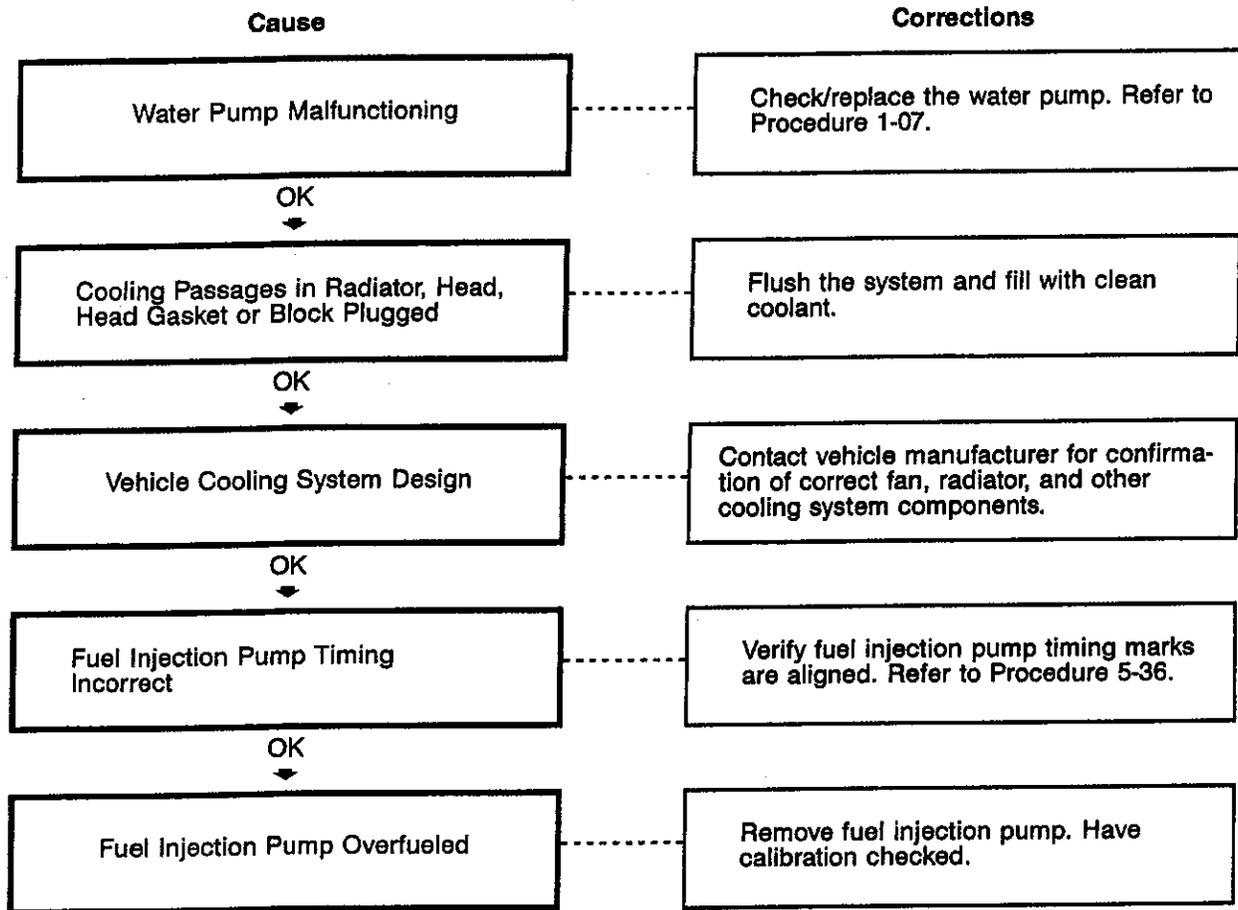
### Coolant Temperature Above Normal - Gradual Overheat



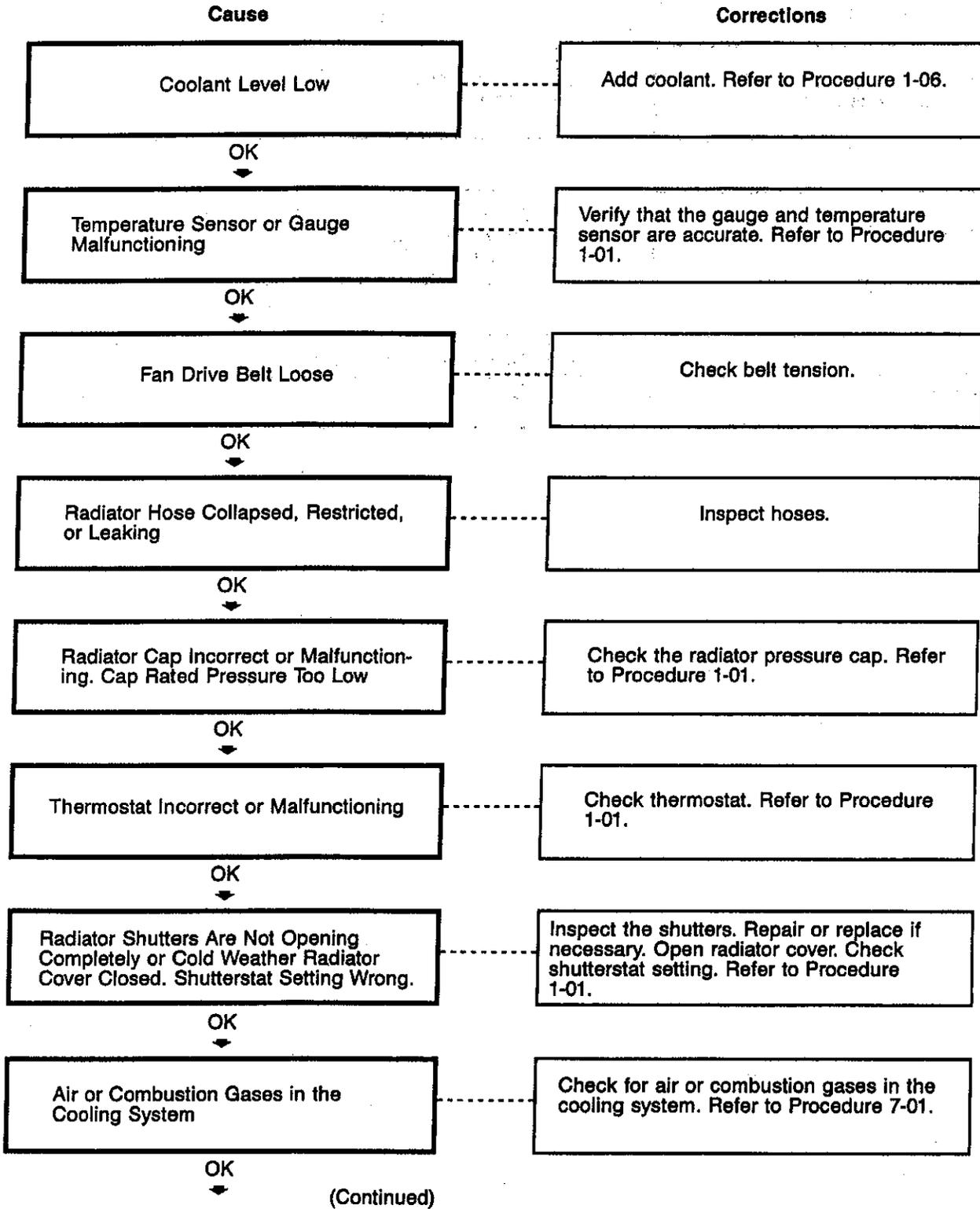
### Coolant Temperature Above Normal - Gradual Overheat (Continued)



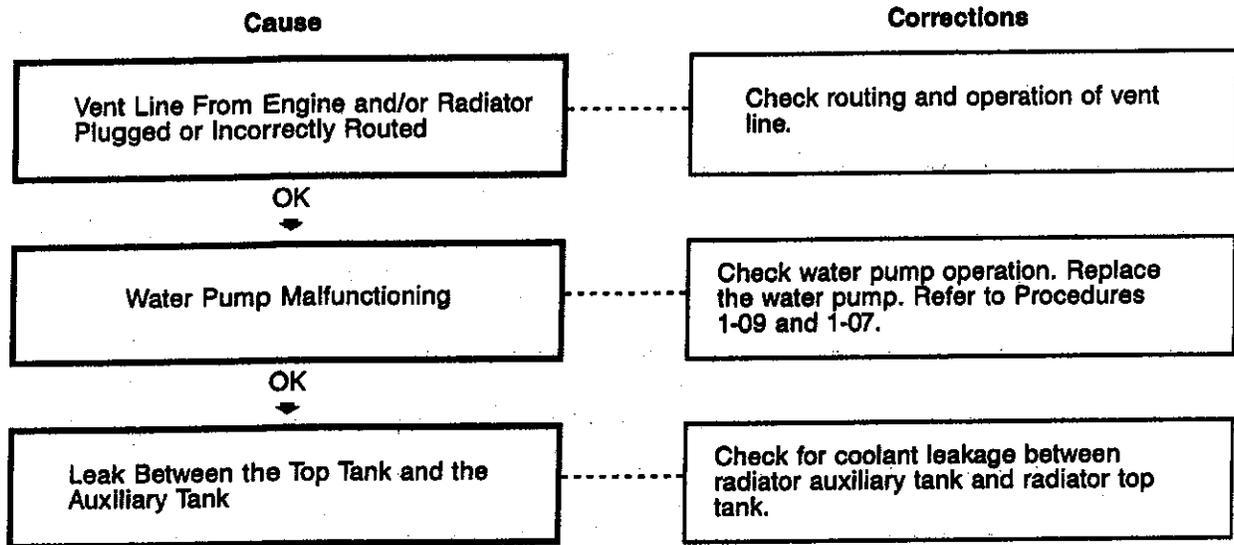
### Coolant Temperature Above Normal - Gradual Overheat (Continued)



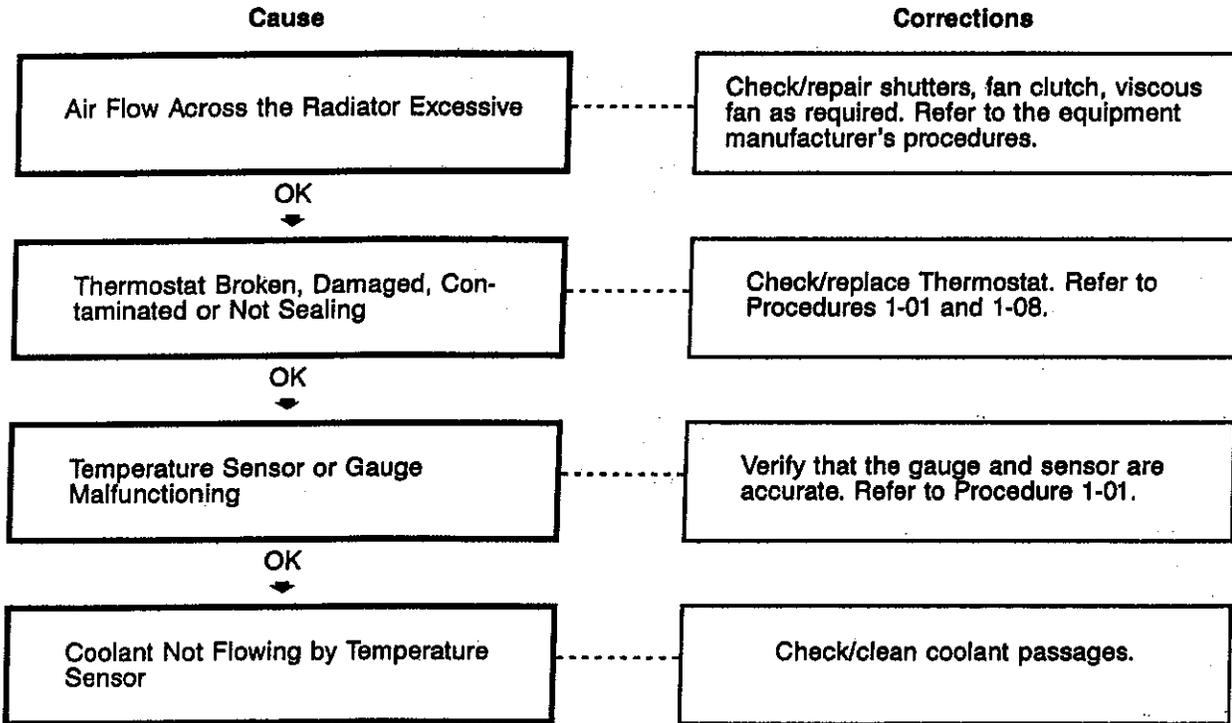
### Coolant Temperature Above Normal - Sudden Overheat



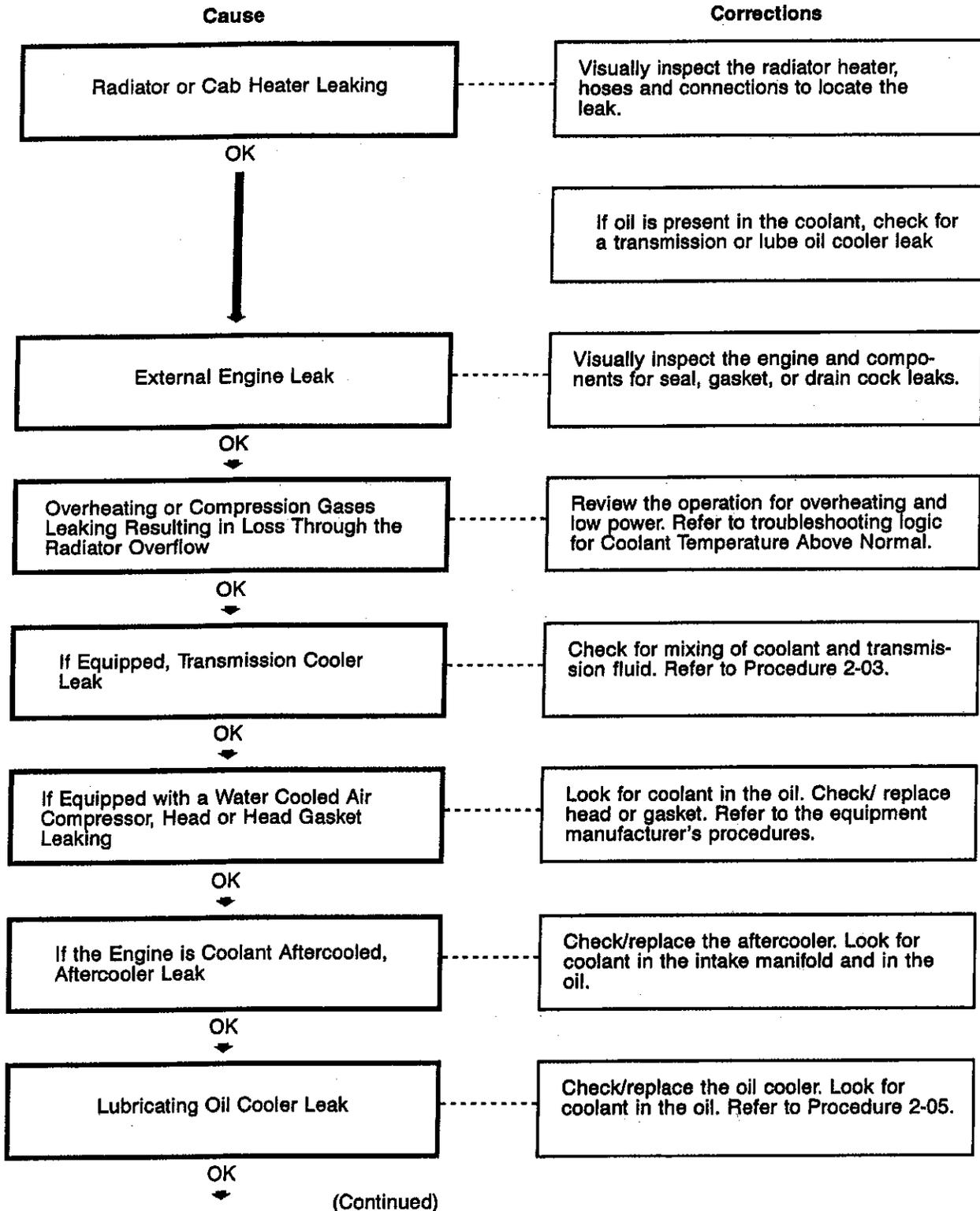
### Coolant Temperature Above Normal - Sudden Overheat (Continued)



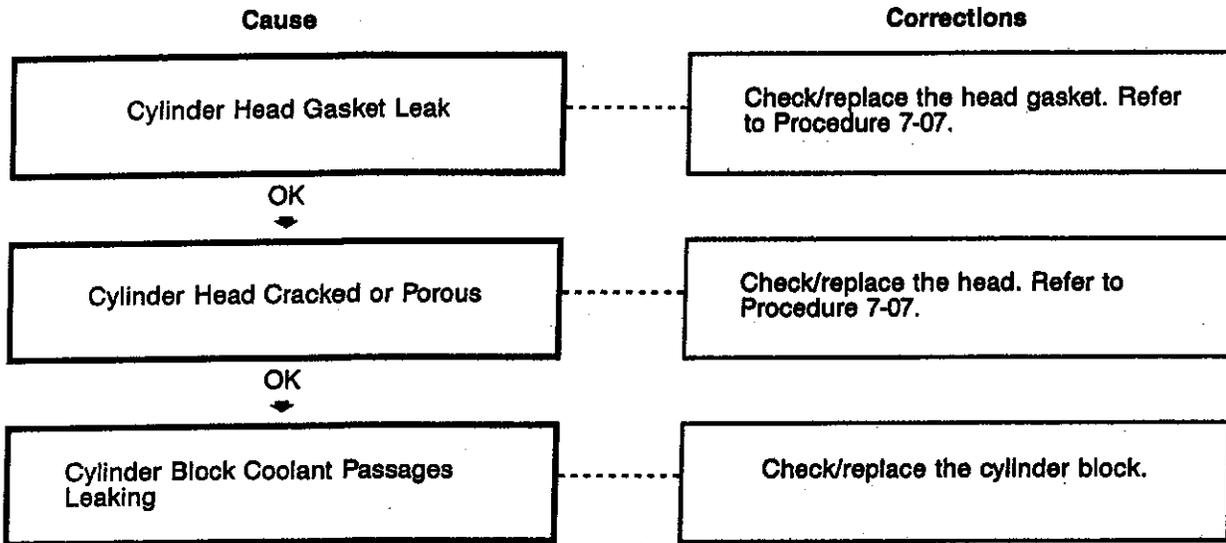
### Coolant Temperature Below Normal



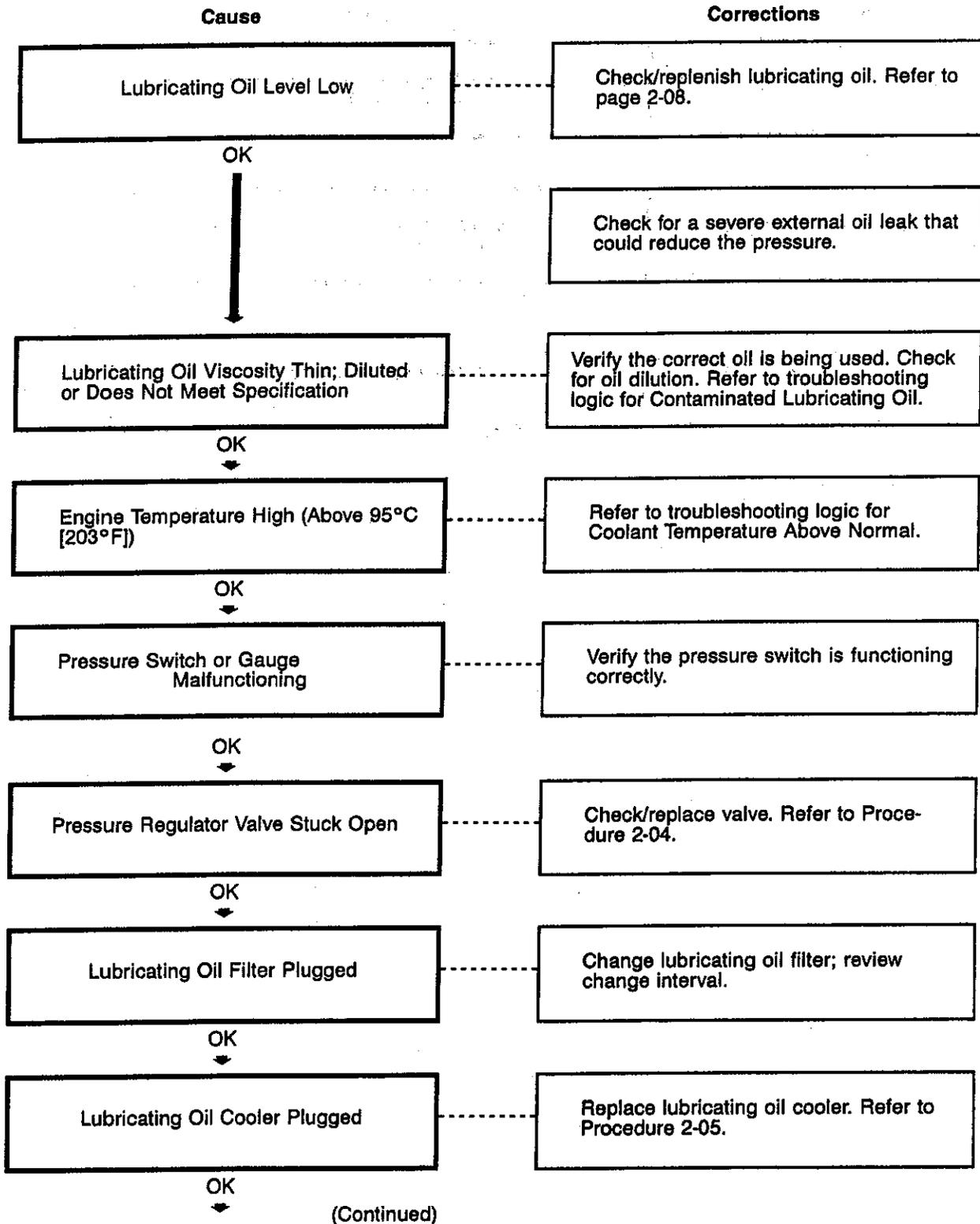
### Coolant Loss



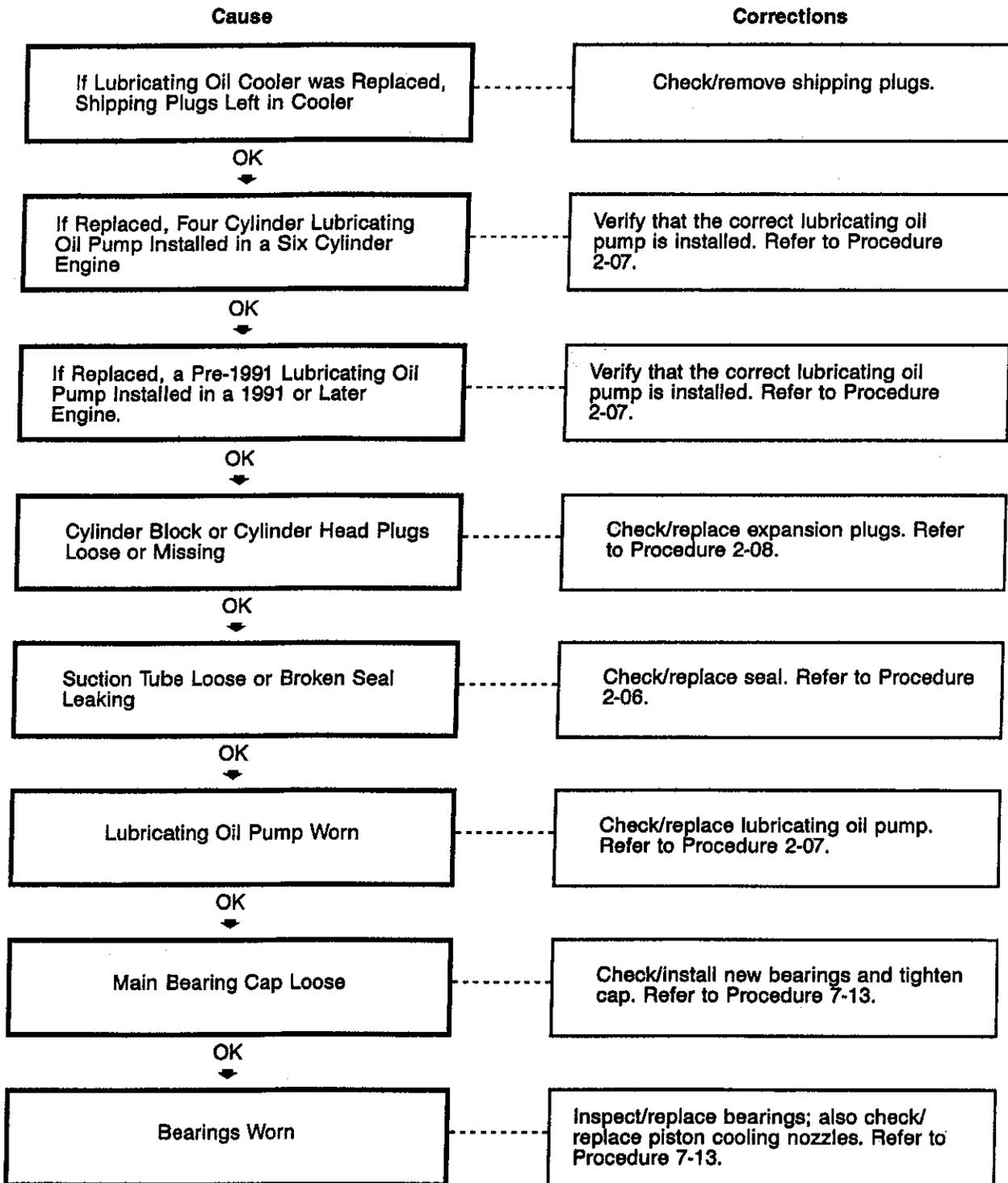
### Coolant Loss (Continued)



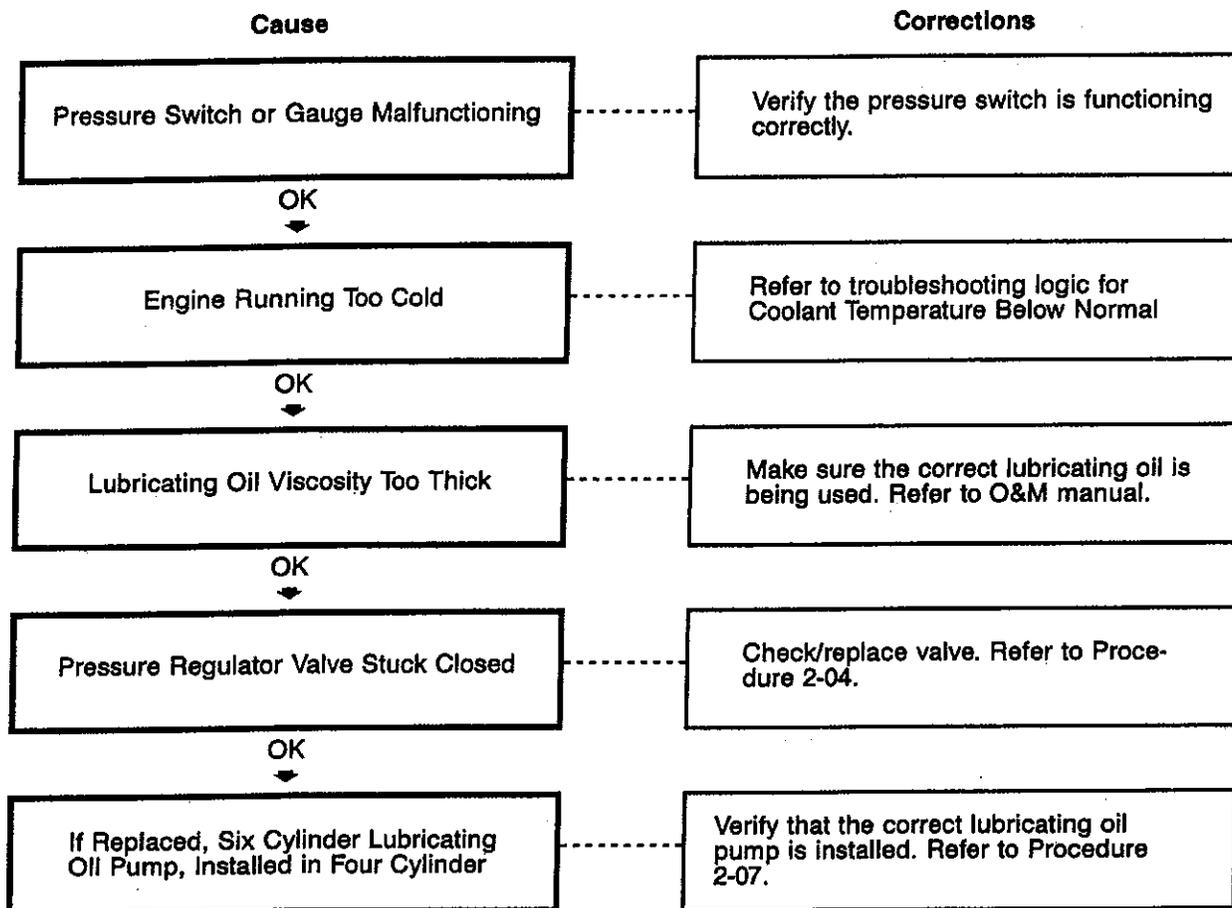
### Lubricating Oil Pressure Low



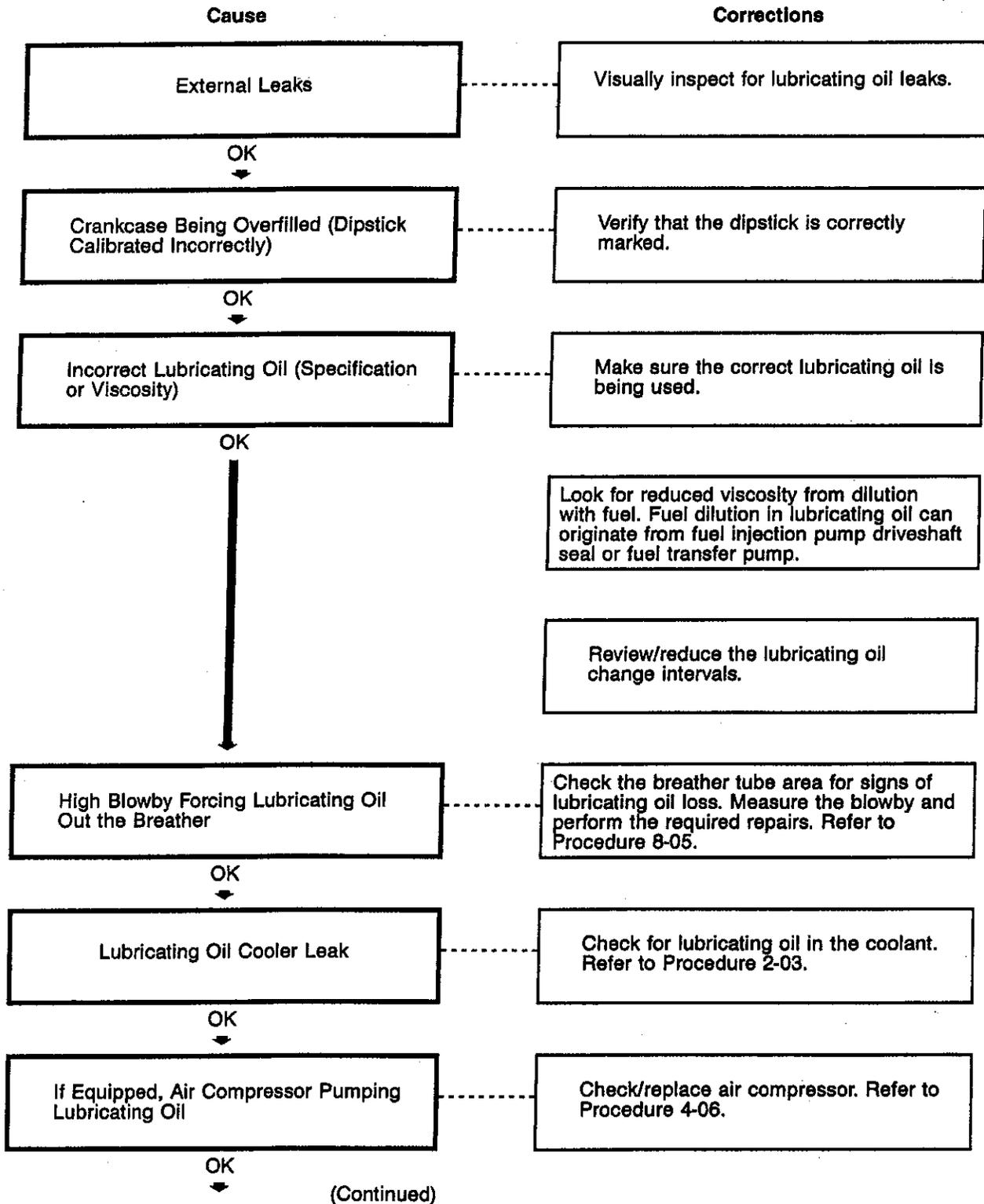
### Lubricating Oil Pressure Low (Continued)



### Lubricating Oil Pressure High

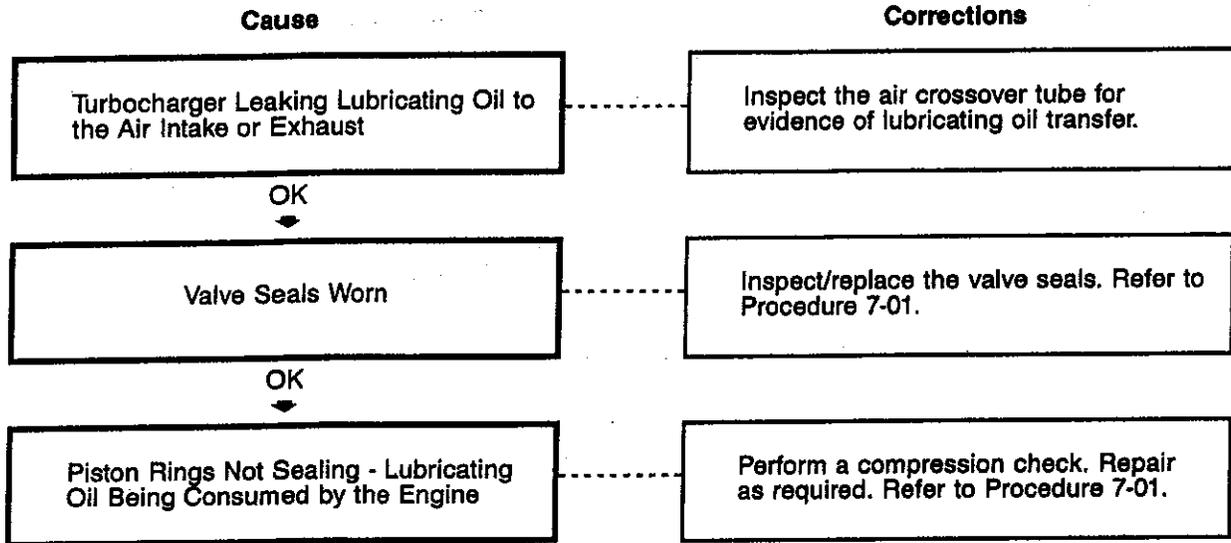


### Lubricating Oil Consumption Excessive

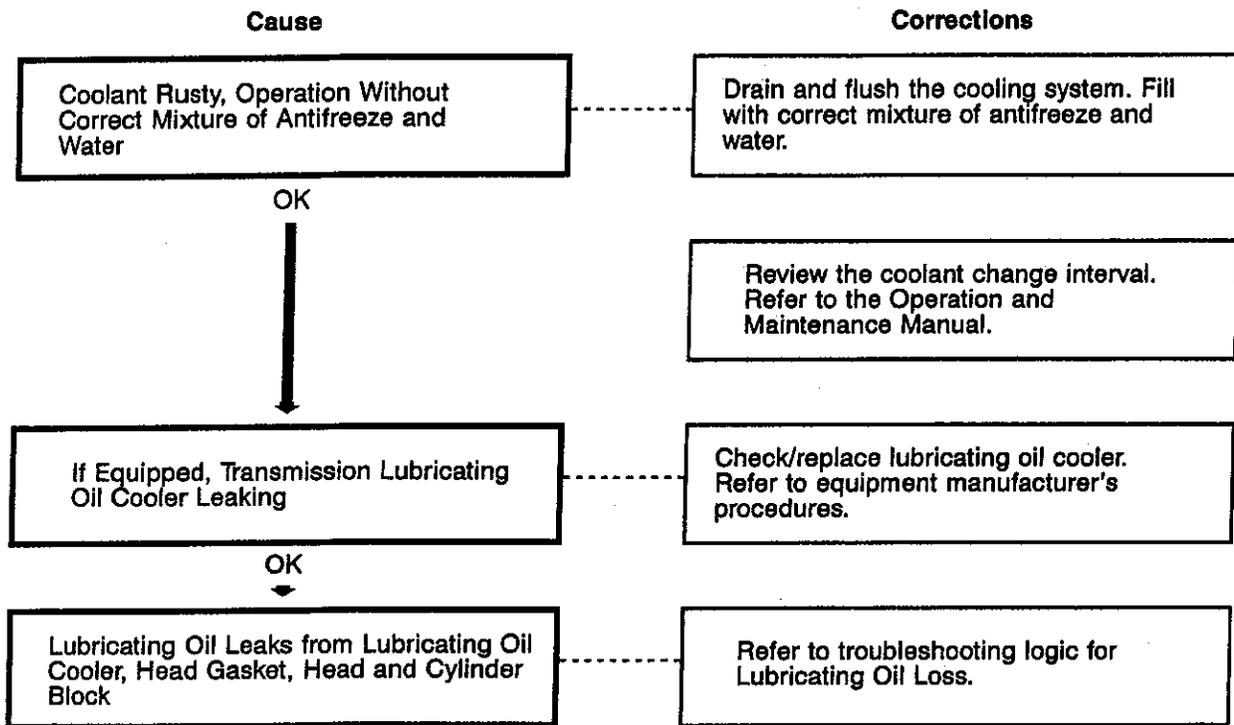


(Continued)

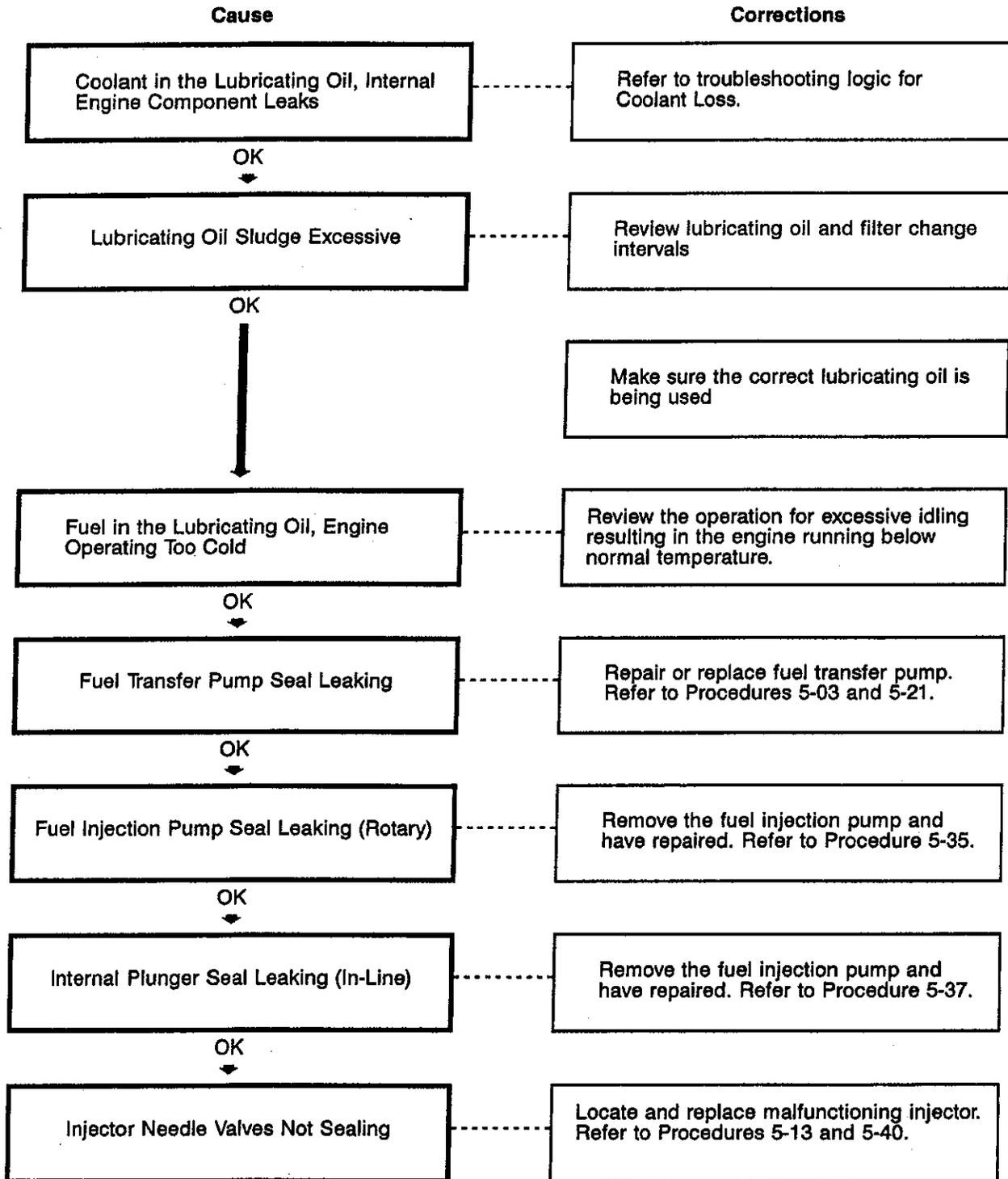
### Lubricating Oil Consumption Excessive (Continued)



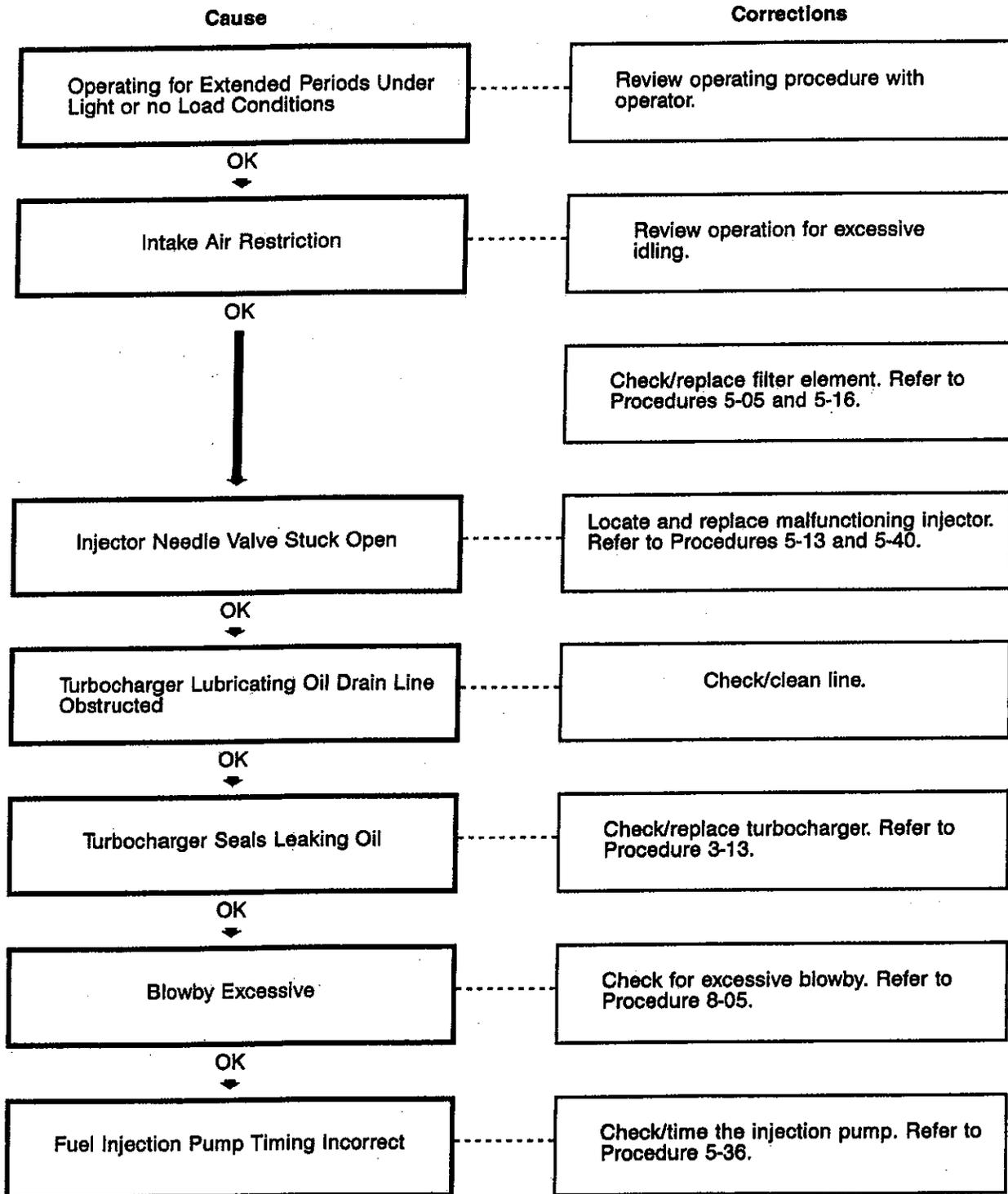
### Coolant Contaminated



### Lubricating Oil Contaminated



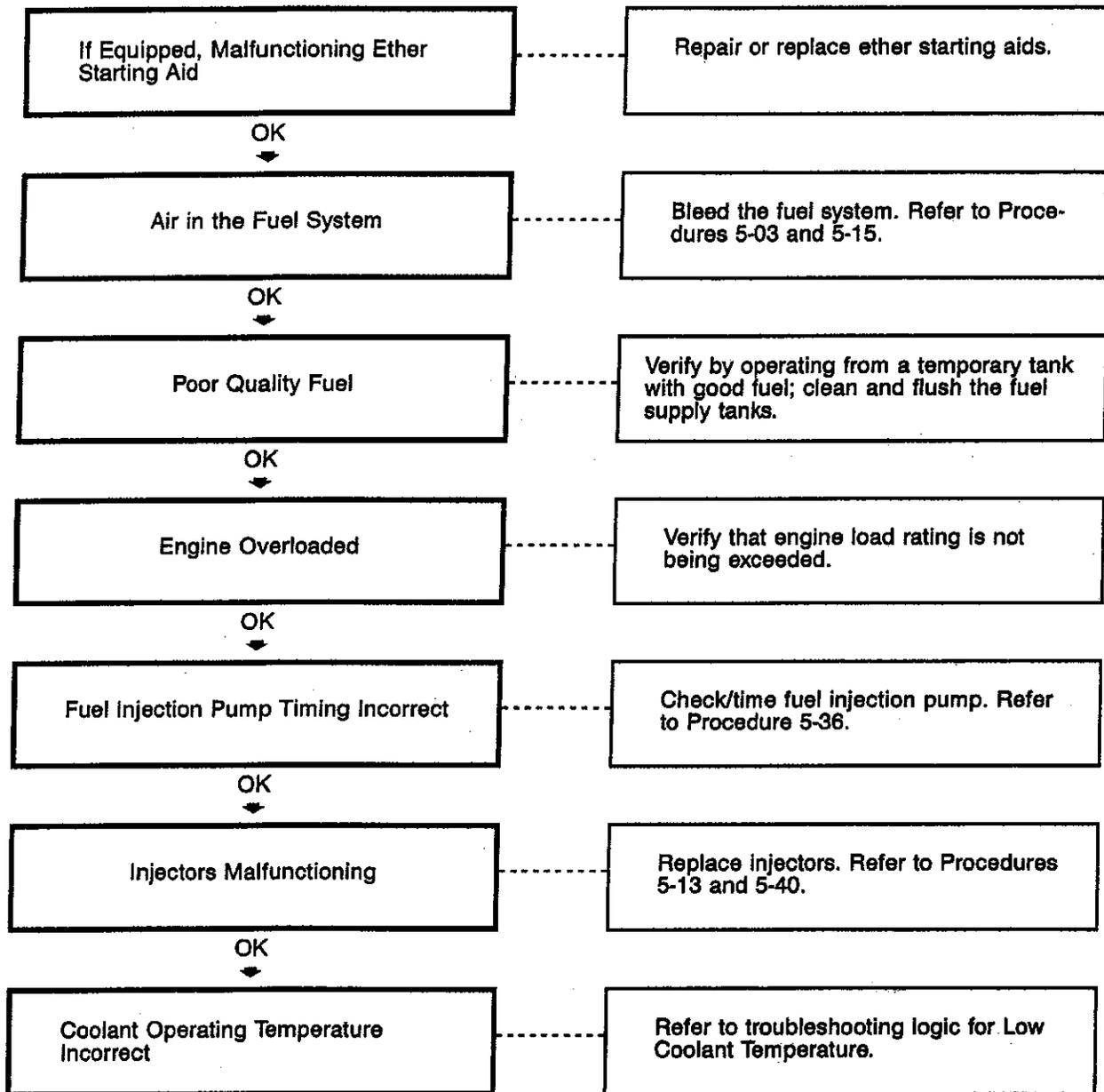
### Fuel Or Oil Leaking From Exhaust Manifold



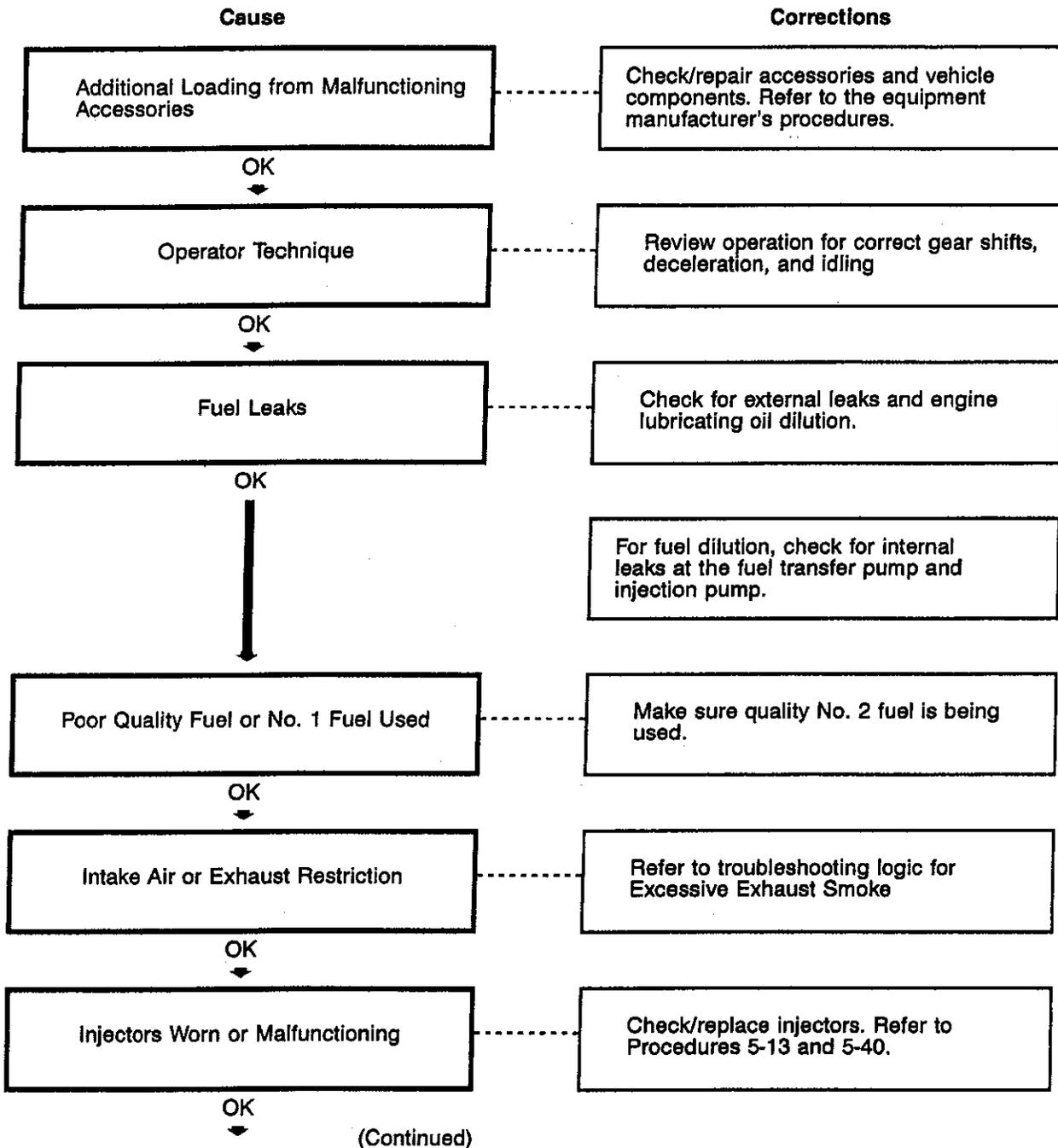
### Compression Knocks

Cause

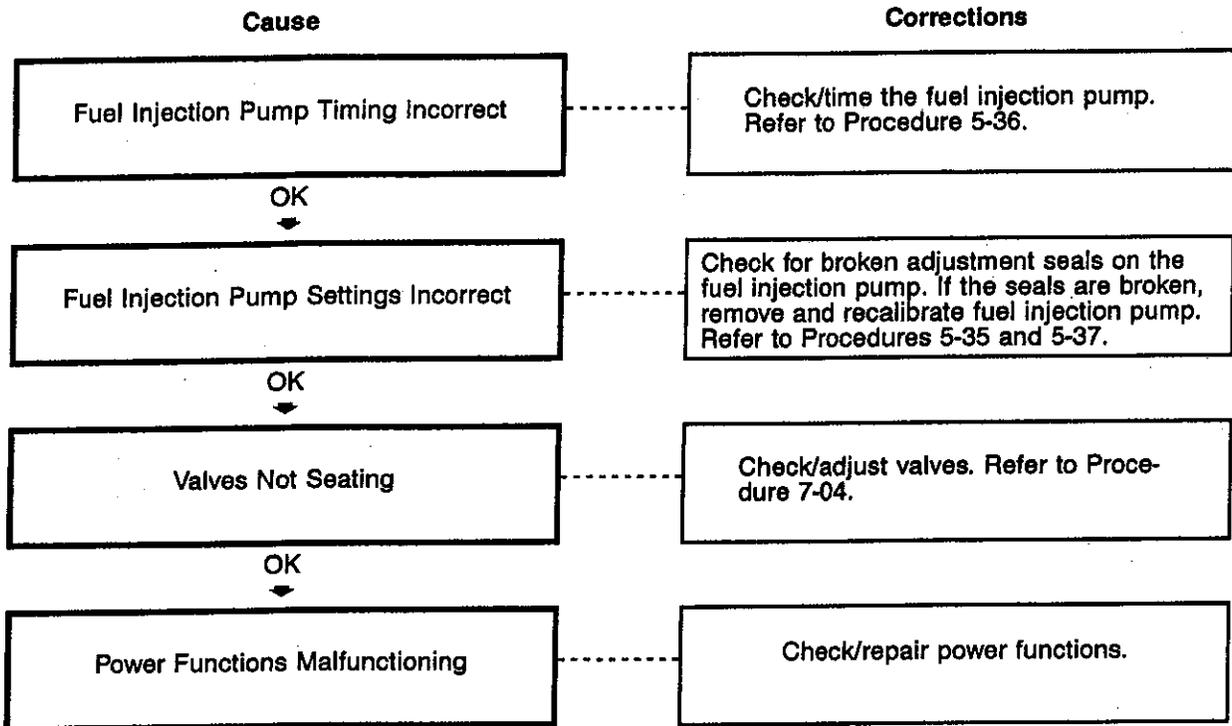
Corrections



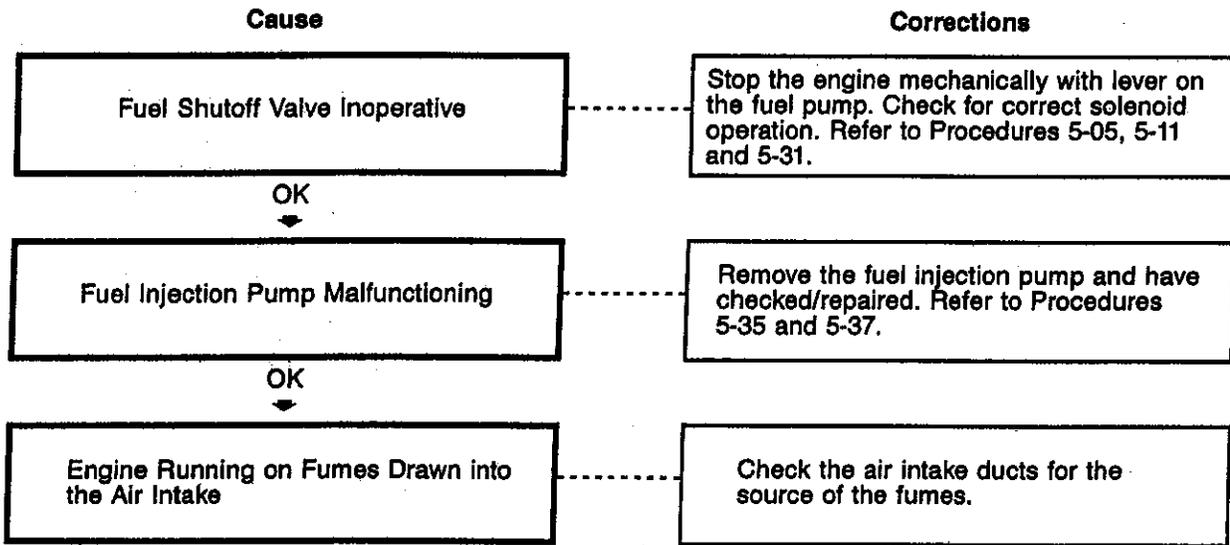
### Fuel Consumption Excessive



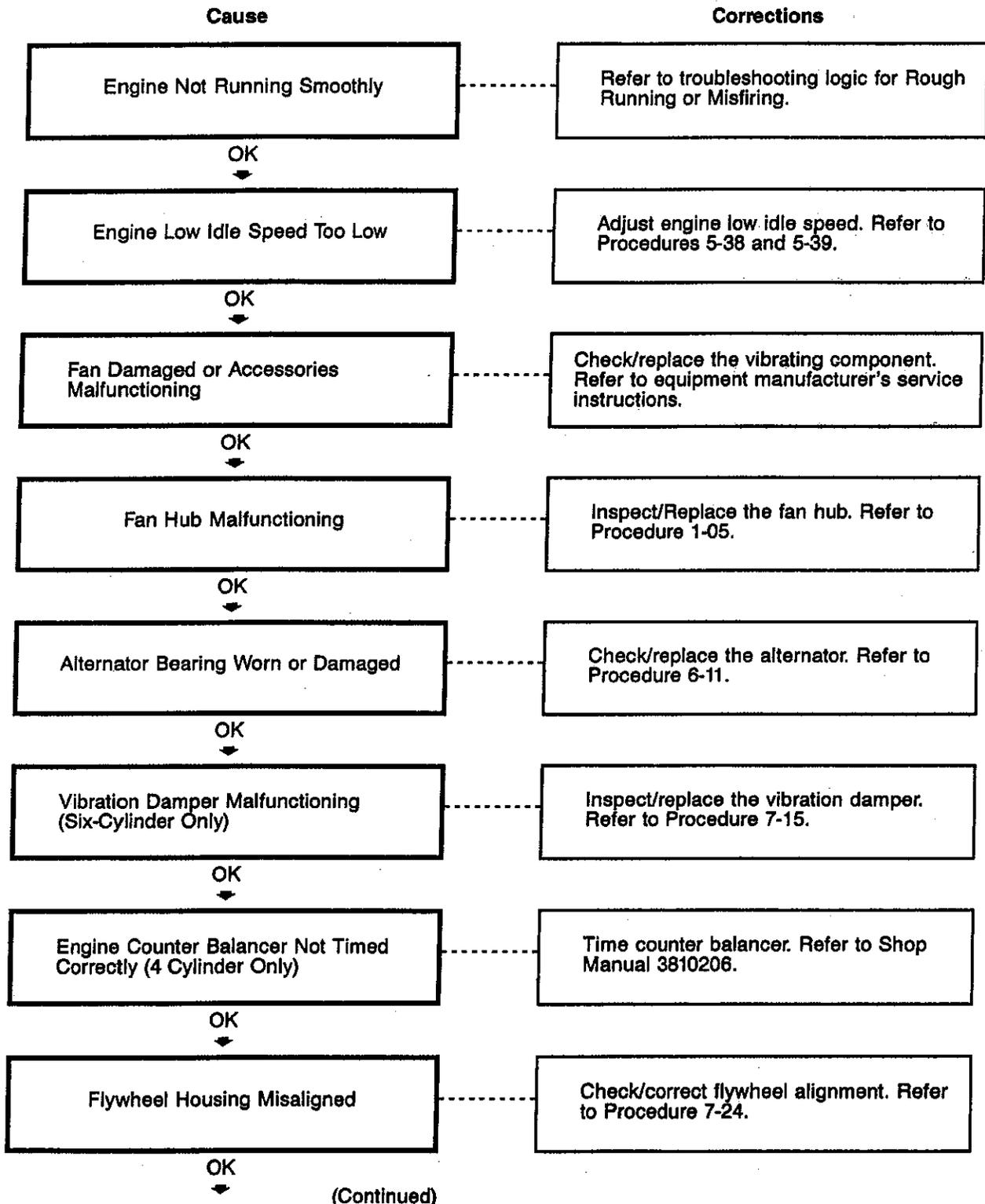
### Fuel Consumption Excessive (Continued)



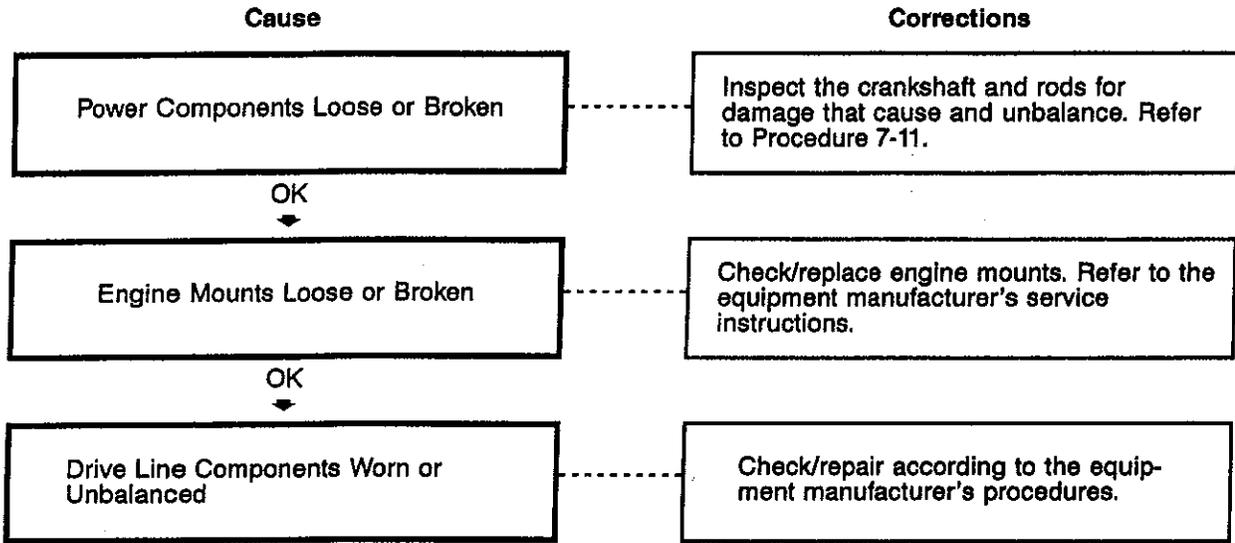
### Engine Will Not Shut Off



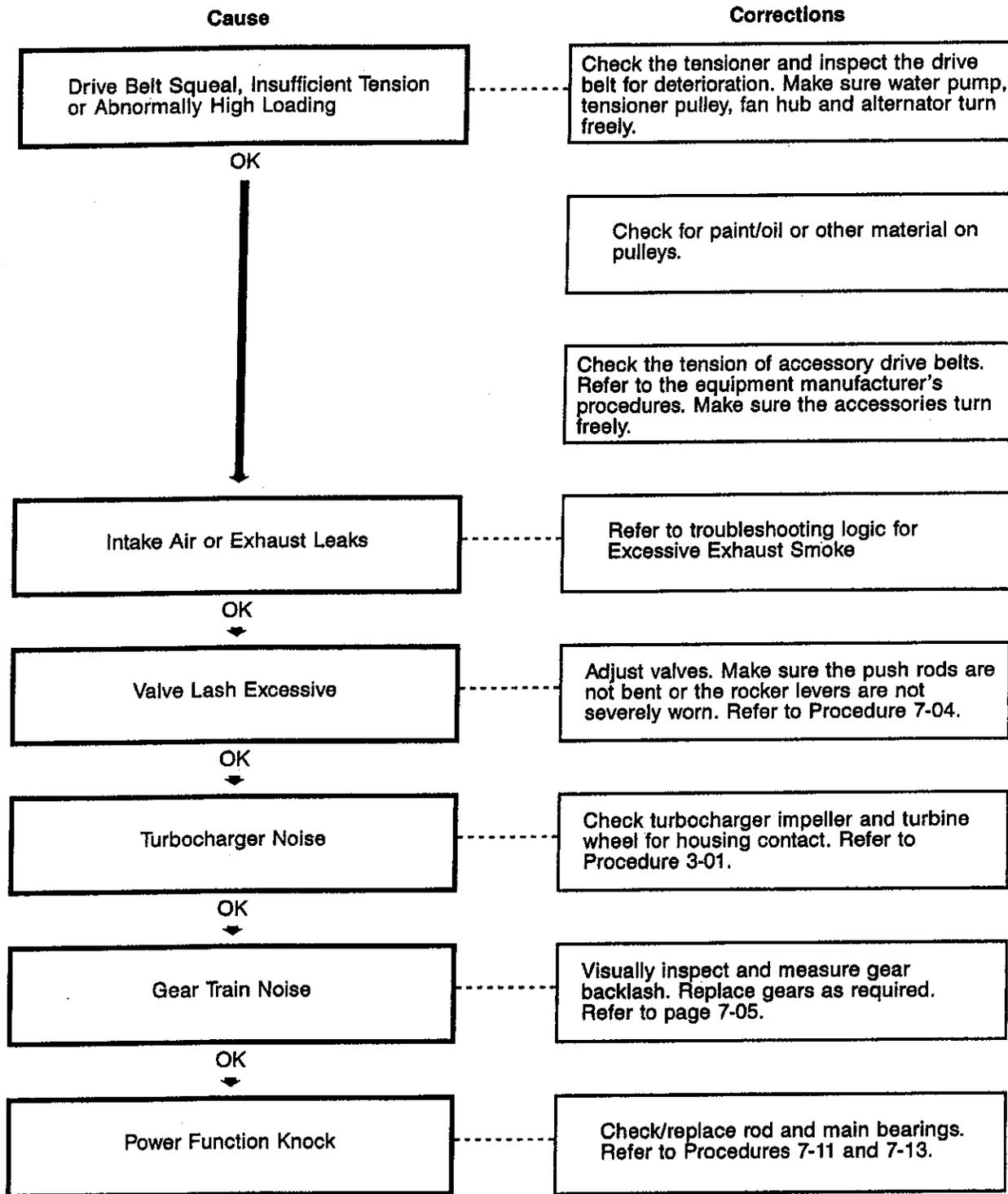
### Engine Vibration Excessive



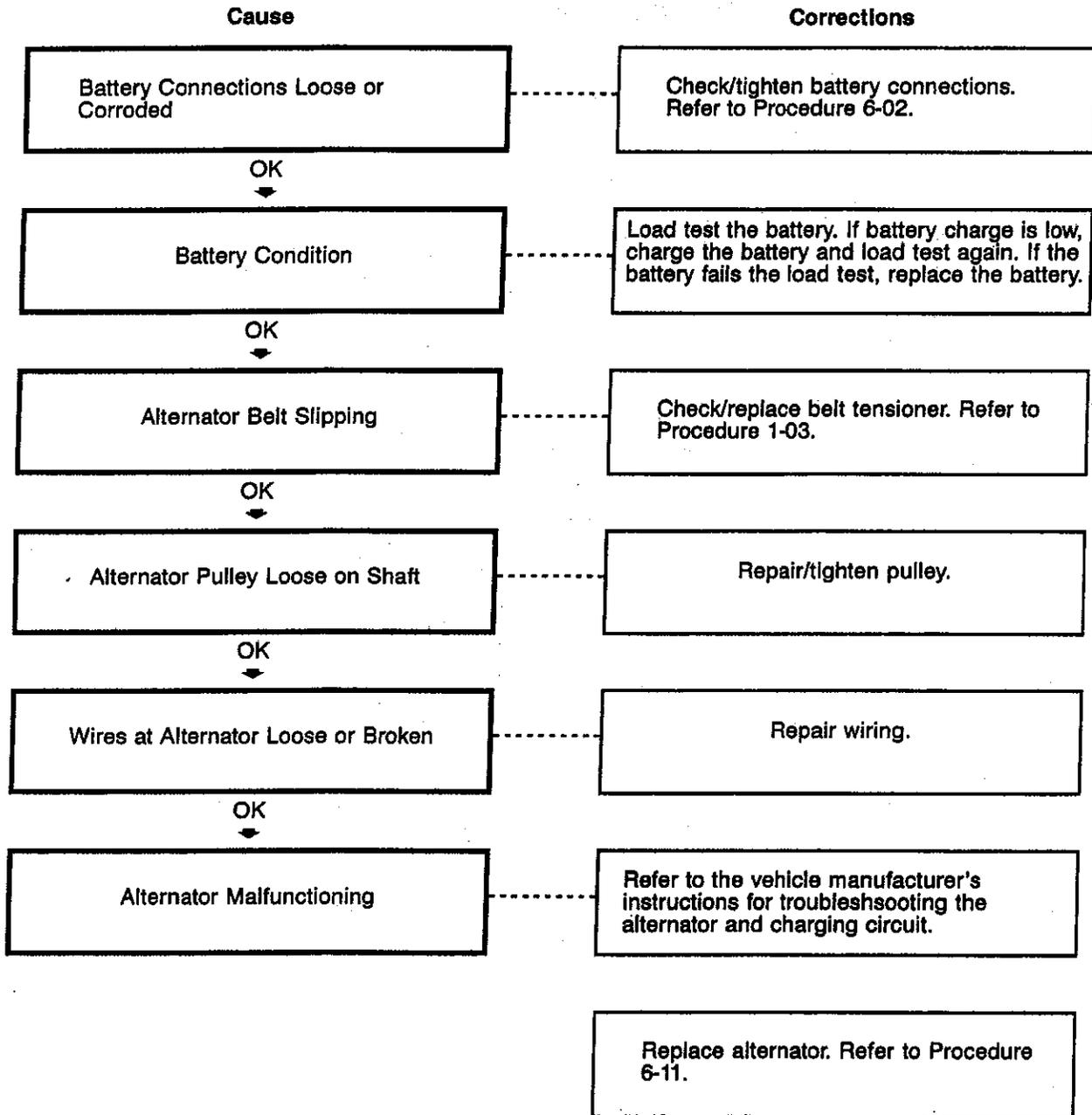
### Engine Vibration Excessive (Continued)



### Engine Noises Excessive

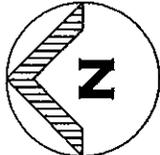
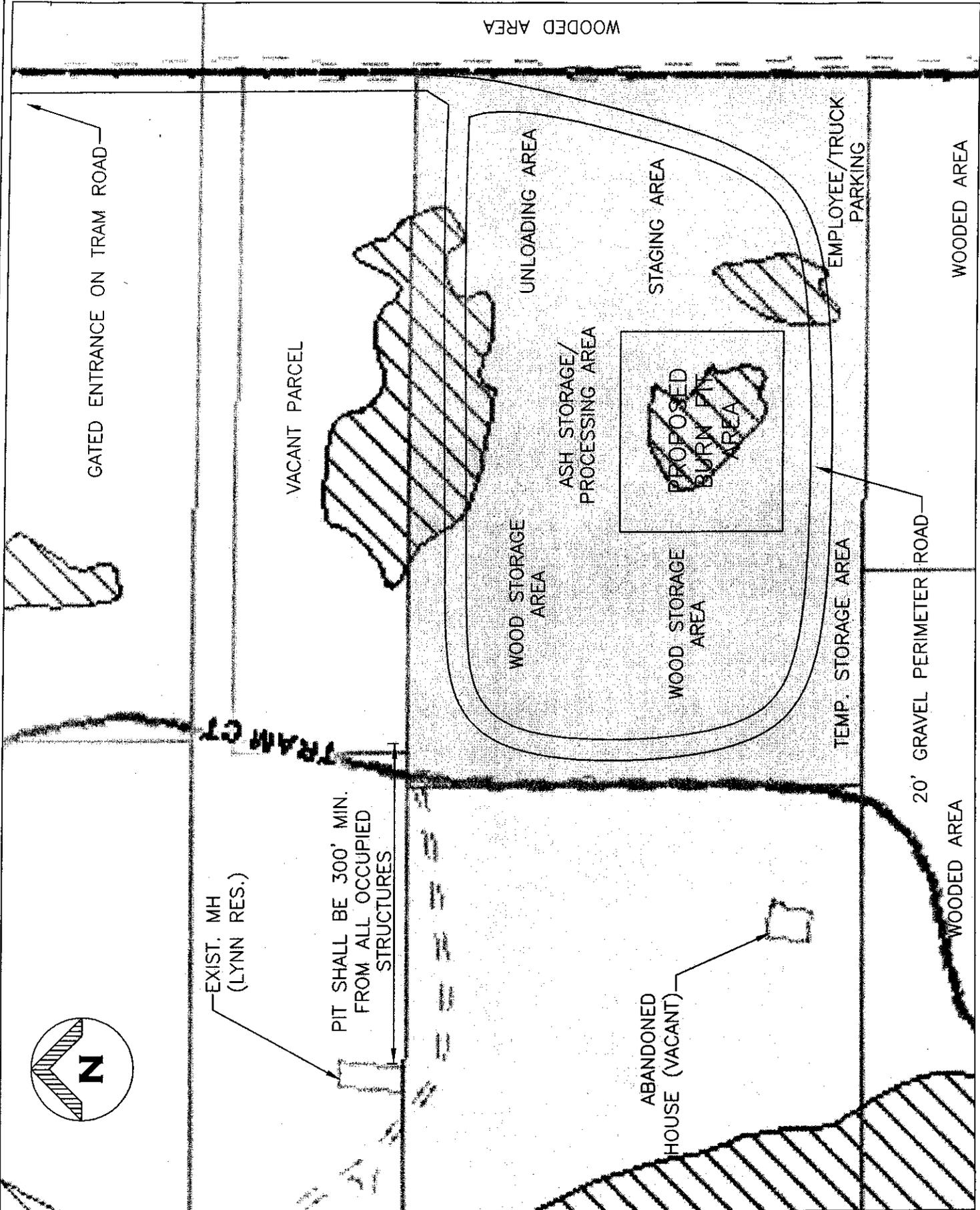


### Alternator Not Charging Or Insufficient Charging



**APPENDIX D**

**FACILITY SITE PLAN**



TRAM CT

EXIST. MH (LYNN RES.)

PIT SHALL BE 300' MIN. FROM ALL OCCUPIED STRUCTURES

ABANDONED HOUSE (VACANT)

FIGURE NO. 1.0  
 CARMEN BOURGEOIS GREEN, P.E.  
 FLA LICENSE #40890  
 BLACKHAWK ENGINEERING, INC.  
 STATE CERTIFICATE # 26881  
 CARMEN@BLACKHAWKENGINEERS.COM

**BARBER YARD TRASH FACILITY**

SITE PLAN SCALE: 1" = 120'

DESIGNED BY:	C.B.G.	REVISED BY:	DATE:	DESCRIPTION:
DRAWN BY:	C.B.G.			
CHECKED BY:	C.B.G.			
DATE:	3/3/09			



**BLACKHAWK ENGINEERING INC.**  
 9013 MAHAN DRIVE, SUITE 101, TALLAHASSEE FLORIDA 32309  
 PHONE (850) 224-4295 + (850) 222-7645 + FAX (850) 386-4295  
 EMAIL: SUPPORT@BLACKHAWKENGINEERS.COM + STATE CERTIFICATE # 26881

## **APPENDIX E**

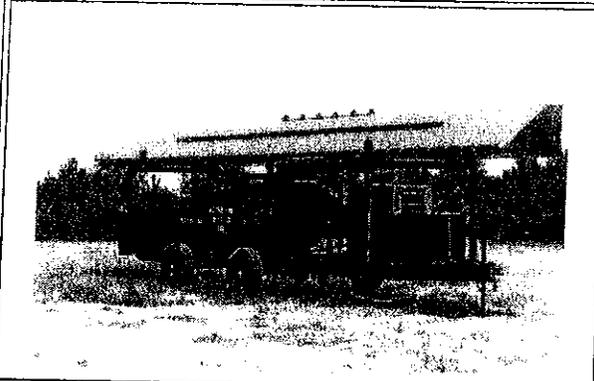
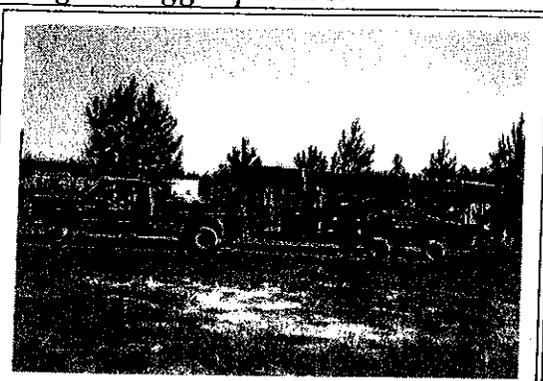
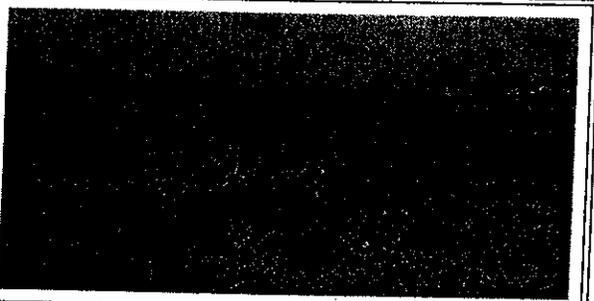
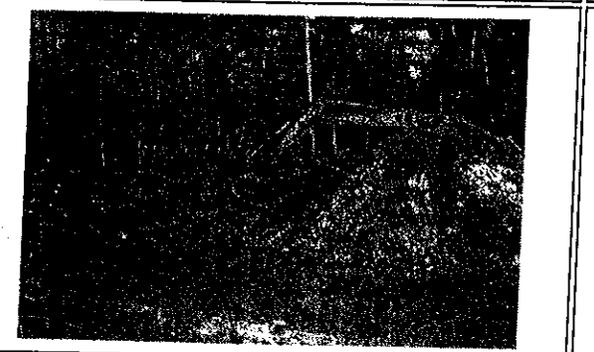
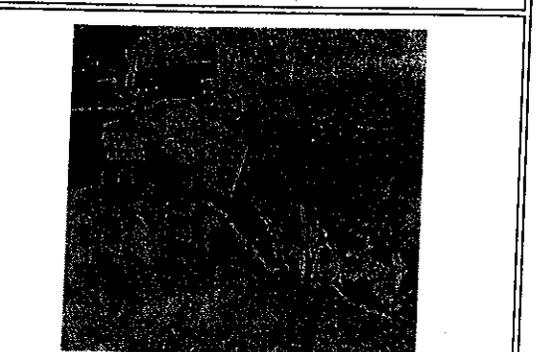
### **MANUFACTURER'S OPERATION INSTRUCTIONS**

# McPherson Systems, Inc

M30F and M40F Trench Burners

Contact us for availability of rental trench burners!

*Please Click the Thumbnail to get a bigger picture.*

	
	
	
<a href="#">M30F Specifications</a>	<a href="#">M40F Specifications.</a>
<a href="#">M30F Setup Diagram</a>	<a href="#">M30F Transport Diagram</a>

[previous page](#)

## ***McPherson Systems Inc.***

100 Springhill Church Road

Tifton, Georgia 31794

(229) 386-2367

### **Specifications for M40F Air Curtain Destructor**

#### **A. Blower Unit**

Diesel power, 152 H.P. Cummins 6BT 5.9L with 1 1/2" PTO clutch.

Vane Axial Fan - 37 inch, 8 blade steel, computer balanced

Volume - 40,000 cubic ft. per minute at atmospheric pressure

Fan Housing - 11 gage double steel for noise suppression and safety

Air volume minimum of 36,000 ft.<sup>3</sup>/min. at nozzle.

Plenum section - 12 gage steel construction with self sealing fireproof connection to the nozzle

#### **B. Nozzle**

Nozzle section - 11 gage steel with no bolt together sections with reinforcement at air outlets. Nozzle attaches to plenum using a patented quick hitch system.

Nozzle velocity - 8,000 ft./min. - minimum

#### **C. Setup and Transport**

Air curtain is completely portable and can be set up for transport or use in 15 minutes.

#### **D. Warranty**

Warranty - The machine in total is warranted for a period of one year for defects in parts or workmanship. Non warranty items are belts, tires, or damage from misuse or abuse of the machine.

The engine is warranted by the supplier for two year or 2000 hours.

Cummins engines are offered with an optional warranty of up to sixty months. Prices available upon request.

# Air Curtain Destructor Operating Instructions

## Step 1 – Ignition Process

Load the pit 1/3 full with a homogeneous mixture of trees, logs, and large brush. Douse the wood with **1 PINT** of fuel oil, putting the majority of the oil on the wood at the front center side of the pit. Ignite the wood at the same point. Allow sufficient time for the fire to take hold before introducing any air from the Air Curtain Destructor Turn on Air Curtain Destructor fan using following instructions after fire has ignited across pit.

**Caution: DO NOT** use highly volatile solvents such as mineral spirits, gasoline, etc. for ignition.

**NOTE:** Only wood waste consisting of trees, logs, large brush, stumps relatively free of soil, and lumber may be burned.

**CAUTION: AN OPERATOR MUST REMAIN WITH THE MACHINE AT ALL TIMES!**

## **Engine Start-Up Procedure**

1. Disengage the clutch lever as shown in FIGURE 1.
2. Push in murphy switch and hold.
3. Using the ignition switch, start the engine.
4. Release murphy switch after the oil pressure level has risen to proper operating level.
5. Engage clutch as shown in FIGURE 1.
6. Using the throttle adjustment knob increase engine speed to 2000 RPM.

## **Engine Shut-Down Procedure**

1. Disengage Clutch lever.
2. Reduce engine speed to 800 RPM.
3. Maintain 800 RPM for several minutes to allow engine to cool.
4. Switch ignition key to **OFF** position.

## **Operating Instructions (cont.)**

### **STEP 2 – Loading Procedures**

Once the fire reaches full intensity intermittent loading may begin. The intervals between loading may be determined by observing the burning rate. The charges should be alternated between light and heavy material. Also, the material should be loaded toward the rear of the pit under the ACD manifold.

The pit should not be overloaded, that is, the material should not be piled up so high that it will protrude above the air curtain. Loading several smaller loads instead of one large load when charging will enhance burner performance. Burning times shall be regulated by state air quality rules as explained in the permit requirements.

When starting up the fire in the morning, you need only to turn on the blower at low speed and begin lightly loading dry wood. Enough hot coals will remain to start the fire each morning if the pit was not covered the day before.

### **STEP 3 – Shut Down Procedures**

Stop loading material into the pit approximately 2 hours before you turn the blower off using the Engine Shut Down Procedure described above.

## Operating Instructions (cont.)

### **STEP 4 – Maintenance & Safety Requirements (See also Service instructions on previous page)**

Ash removal is required in order to maintain efficient and proper combustion. Ashes should not be allowed to build up in the pit to higher than 1/3 the pit depth or to the point where they begin to impede combustion and are blown out of the pit, whichever occurs first. Before ashes are removed they should be saturated with water for cooling and dust control.

For reasons of public Safety, it is recommended that a fence or barrier surround the combustion pit.

The machine should be serviced daily at fan bearings.

To quit burning at the end of the day, loading should be discontinued one to one and half-hours before the blower is shut off.

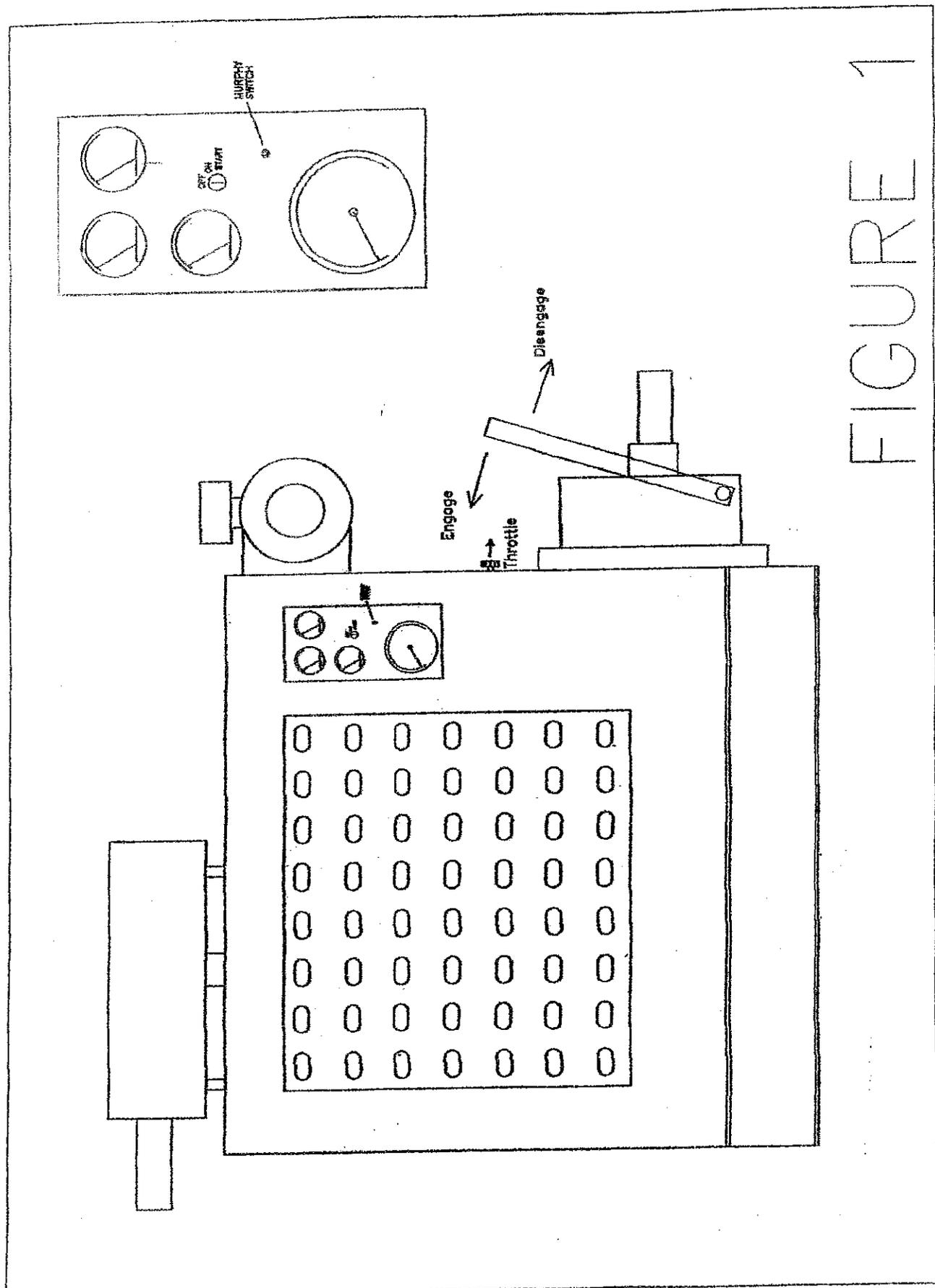
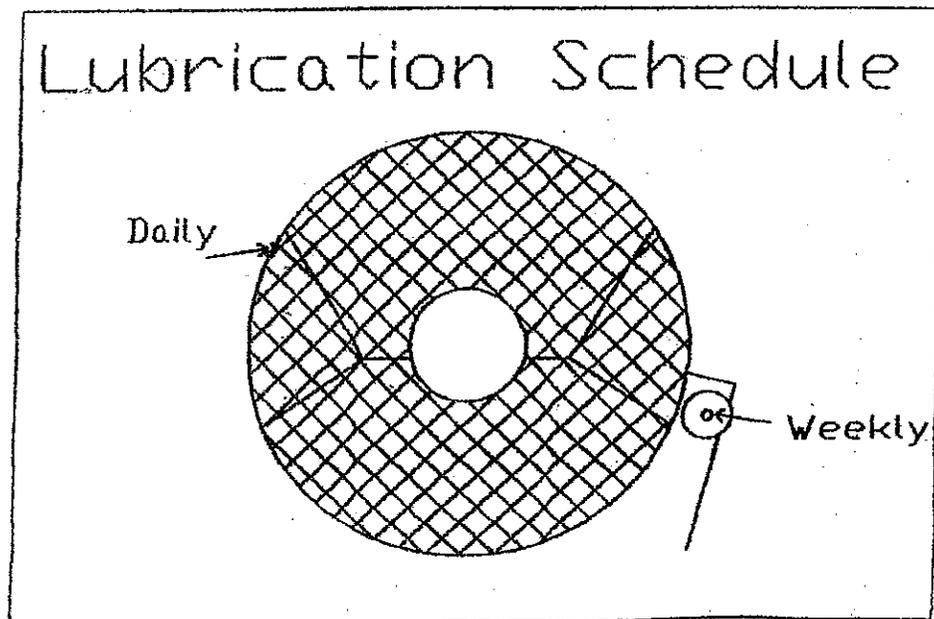


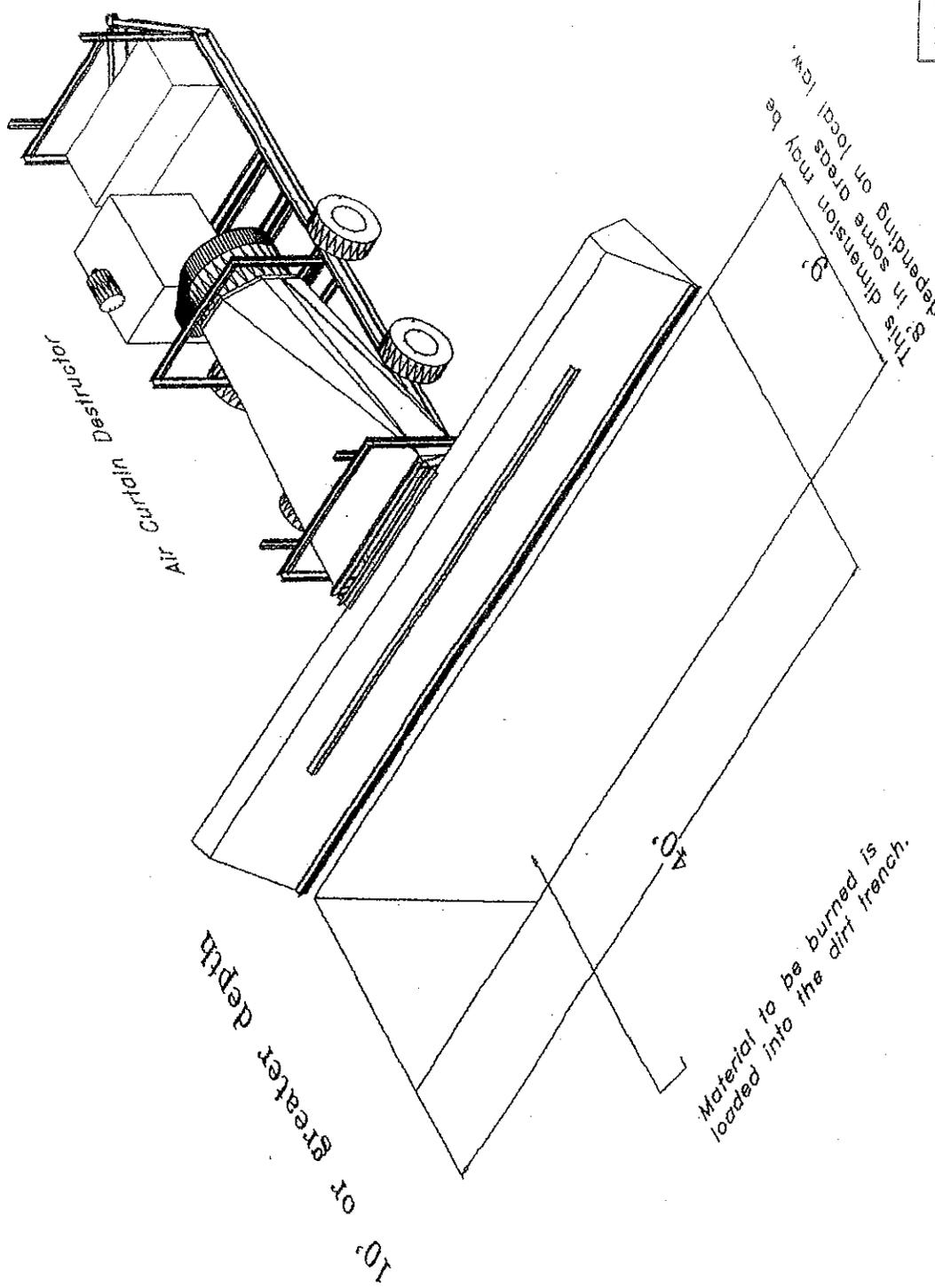
FIGURE 1

## Air Curtain Service Instructions

Note: Always allow engine to cool before performing any service operations

1. Check engine motor oil level.
2. Check radiator water level. **WARNING: NEVER CHECK HOT!**
3. Examine all belts for wear and tension.
4. Inspect fan for cracks or abnormal wear. This can be carried out with a flashlight.
5. Grease engine clutch, belt tensioner, and fan as shown in the following drawings.





McPherson Systems Inc.  
 Tifton, GA  
 (229) 386-2367  
 M40F Set-up diagram