

LUBE

TECHNI-GRAM



FROM:

LEWIS FOX
DIRECTOR OF TECHNOLOGY

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Troubleshooting Compressors

Most compressors fail due to system malfunctions. The proper field examination of the failed compressor often will reveal symptoms of system problems. Proper corrections will help eliminate future failures.

Unfortunately, people tend to accept reoccurring problems as “normal.” They tend to work around them instead of solving them, probably because reoccurring problems seem hard to solve. The truth is, reoccurring problems can be as easy to solve as any other type of problem. That’s because whenever a reoccurring problem starts, there has to be a “change in operation” and whenever the problem stops, there also has to be a “change in operation.”

The following troubleshooting list can be of assistance to customers in determining compressor problems:

Symptom: Frequent air/oil separator plug-up/collapse

Cause	Correction
<ul style="list-style-type: none">• Wrong type of lubricant in compressor.• Ingestion of chemically active gases.• Ruptured intake air path/filter.	<ul style="list-style-type: none">• Review and analyze lubricant. Replace with correct lubricant.• Inspect and replace separator. Review oil analysis. Review/correct inlet air source.• Inspect inlet filter, inspect air path, check for voids. Replace/repair as needed.

Symptom: Failure to start

Cause	Correction
<ul style="list-style-type: none">• Safety shut-down tripped.• Main switch disconnected.• Power failure.	<ul style="list-style-type: none">• Re-set compressor safety.• Check switch, verify power is ON.• Check power supply.

Symptom: High air temp switch auto shutdown (water cooled unit)

Cause	Correction
<ul style="list-style-type: none">• Sump lubricant level low.• Clogged or varnished heat exchanger/lubricant cooler.• Plugged oil filter element.• Faulty thermal by-pass valve.	<ul style="list-style-type: none">• Fill lubricant to recommended level.• Inspect lubricant lines for blockage. Analyze lubricant. If varnish present, flush.• Replace oil filter element(s).• Rebuild or replace by-pass valve.



... to keep it running

Symptom: High air temp switch auto shutdown (air cooled unit)**Cause**

- Sump oil level low.
- Faulty thermal by-pass valve.
- Restriction of heat exchanger airflow.
- Clogged or varnished heat exchanger/air cooler.
- Plugged oil filter element.
- Insufficient air circulation at oil cooler.

Correction

- Fill to recommended lubricant level.
 - Rebuild or replace by-pass valve.
 - Remove restrictions.
 - Power wash cooler tubes & fins. Pre-soak if needed. Analyze lubricant. If varnish present, flush.
 - Replace oil filter element(s).
 - Check location – make sure there is no restriction of cool fresh air.
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Symptom: Improper discharge pressure**Cause**

- Excessive air demand.
- Service valve open.
- Leaky service line.
- Plugged inlet air filter.
- Inlet valve stuck partially closed.

Correction

- Evaluate plant air demand. Inspect plant for air leaks.
 - Close valve.
 - Correct leaks.
 - Clean or replace air filter.
 - Check inlet valve assembly. Rebuild as needed.
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Symptom: Excessive lubricant consumption**Cause**

- Overfilled lubricant sump.
- Broken lubricant line.
- Lubricant return scavenge line not positioned properly in separator. Plugged scavenge line.
- High compressor discharge temperature.

Correction

- Drain receiver to proper level.
 - Replace lubricant line.
 - Check scavenge line connections. Insure scavenge line cut at 45 degree angle, reaches bottom of separator and is free of blockage.
 - Inspect and clean coolers. Inspect temperature control valve.
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Symptom: High power consumption**Cause**

- Plugged air/oil separator.
- Obstructed after cooler.
- Improper air pressure setting.
- Obstructed inlet air filter.
- Lubricant viscosity problems.

Correction

- Change separator element.
 - Clean after cooler.
 - Adjust setting to specified level.
 - Inspect and replace as needed.
 - Test and replace oil as needed.
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Symptom: Premature lubricant breakdown**Cause**

- Compressor operating too hot.
- Ingestion of chemically active gases.
- Negligence in draining condensate from receiver.
- Mixing different types of lubricant.

Correction

- See HIGH AIR TEMPERATURE SWITCH AUTO SHUTDOWN.
 - Review plant/operations/make-up air. Analyze lubricant. Correct inlet air source, as needed.
 - Drain condensate from receiver periodically. Inspect auto-drains, drain lines and valves.
 - Drain old lubricant and replace with new lubricant. Analyze old lubricant. Flush compressor.
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