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Maintenance Schedule for ACI Pneumatic Operated Unloaders

⚠ WARNING! NEVER LOOSEN BOLTS OR NUTS, OR REMOVE PLUGS WHILE THE COMPRESSOR IS RUNNING OR CONTAINS PRESSURE. ANY COMPARTMENT IN THE UNLOADER CAN POTENTIALLY CONTAIN PRESSURE EVEN IF THE COMPRESSOR IS NOT RUNNING. (Certain vent connections or plugs may be loosened temporarily only as described under the detailed maintenance schedule 3 month interval.)

⚠ WARNING! IF THE UNLOADER HAS BROKEN OR MISSING PARTS, IS LEAKING GAS, AIR, OR OIL, OR IS MAKING NOTICABLY UNUSUAL SOUNDS IT MUST BE SERVICED IMMEDIATELY REGARDLESS OF THE NORMAL MAINTENANCE SCHEDULE. ANY OF THESE CONDITIONS MAY RESULT IN EXTENSIVE DAMAGE TO THE UNLOADER OR COMPRESSOR, A DISCHARGE OF GAS, PERSONAL INJURY OR LOSS OF LIFE.

⚠ IMPORTANT! THE RECOMMENDATIONS AND MAINTENANCE INTERVALS IN THIS DOCUMENT ARE GUIDELINES BASED ON TYPICAL SERVICE CONDITIONS WITH CLEAN, DRY PROCESS GAS; CLEAN, DRY ACTUATOR CONTROL AIR OR GAS; GOOD GENERAL MAINTENACE PRACTICES. ACTUAL CONDITIONS MAY REQUIRE MORE FREQUENT INSPECTIONS AND MAINTENANCE.

MAINTENANCE SCHEDULE SUMMARY

(See page 2 for detailed descriptions.)

	Daily	Every 3 Months	Every 6 Months	Annually	Every 4 Years	Every 6 Years
Observe exterior condition of unloader	●					
Check for breather filter leaks (if applicable)	●					
Verify that position indicator is correct	●					
Listen for unusual sounds	●					
Check condition of transparent cover		●				
Inspect all unloader vents for leaks		●				
Examine unloader for oil contamination			●			
Clean breather filter (if installed)			●			
Check actuator piston retainer nut				●		
Inspect plug seating surface				●		
Disassemble and inspect					●[1]	●[2]
Install seal replacement kit					●[1]	●[2]

[1] Standard duty – unloaders cycle a few times per hour, unit vibration is moderate and speed is high (over 800 rpm), and actuating pressure is 25-50% over recommended. [2] Light duty – unloaders cycle only a few times per day, unit vibration and speed are low (under 800 rpm), and actuating pressure is less than 25% over recommended.

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DETAILED MAINTENANCE SCHEDULE

Daily

1. **Observe exterior condition of unloader.** Watch for any parts that may be missing, loose bolts or nuts.
2. **Check for breather filter leaks.** This is applicable only if the air vent (AV1)[3] uses a breather filter rather than being tubed to an outside vent.
3. **Verify that position indicator is correct;** i.e. indicator moves during load step changes, and shows closed (in) and open (out) when it should.
4. **Listen for unusual sounds**, especially when the unloader closes or is operating unloaded.

Every 3 Months or 2,000 Hours

1. **Check the condition of the transparent cover** over the position indicator for any cracks or chips.
2. **Inspect all unloader vents (GV1, GV2, AV1)[3] for leaks** with a soap and water solution. NEVER loosen a vent or drain ***plug*** while the unit is running or pressurized. (a) For any vent connection that is connected to a ***tubing*** run, the unit should be running during the inspection. Very slowly loosen (DO NOT REMOVE) the compression fittings and check for leaks. Re-tighten fittings. (b) For any vent connection that uses a breather filter (typical for AV1), simply check the breather for leaks with the unit running (keep in mind that a single puff of air is normal when the unloader activates). (c) It is never recommended that GV1 or AV1 be plugged (also GV2 if the control medium is flammable gas), but if they are for some reason, the unit must be shut down and the plugs removed. The unit must then be re-started and those connections checked for leaks. (A pressure guage or leakage monitor may also be used for continuous monitoring.) (d) For actuators where air is used as the control medium, GV2 is typically plugged and may be checked using method (a) above.

Every 6 Months or 4,000 Hours

1. **Examine unloader for oil contamination.** Disconnect tube or plug fittings, or breather filter at the unloader. These include control medium (CM), air vent (AV1), and gas vents (GV1 and GV2). DO NOT remove the primary drain plug (GVD) unless the cylinder head is going to be removed during a shutdown. Allow any built up oil to drain. NOTE: Any significant oil build up typically indicates a back-flow from a vent/drain system and requires servicing the check-valve between the unloader connection and the vent/drain header.
2. **Clean breather filter** if so equipped (the air vent AV1 should have this if it is not tubed to the vent system).

[3] GV1, GV2, and AV1 are stamped on the unloader to identify connections. They are also identified on the unloader assembly illustrations. GV1 is the primary gas seal between the volume pocket and actuating piston chamber. GV2 is the secondary "gas" seal in the actuator cover, but is only a gas seal if gas is being used as the actuator control medium, otherwise it is sealing air pressure. AV1 is simply a vent on the underside of the actuating piston to permit displacement of the atmospheric air under the piston. The only time it will have a constant flow is if there is a leak either from GV1 or around the actuator piston seal ring.

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DETAILED MAINTENANCE SCHEDULE *(continued)*

Annually or 8,000 Hours

1. **Inspect actuator piston retainer nut** and set screws to insure they are tight (piston is secure). This requires removal of the actuator cover. Observe caution tag for actuators that are spring loaded.
2. **Inspect plug seating surface** for nicks, defects, or excessive wear (requires removal of head assembly but no further disassembly). Width of seating surface should not be more than 0.060 inch wide. Visually inspect seating surface inside head if possible – otherwise it may be necessary to feel this surface for any nicks, defects, or excessive wear.

Every 4 Years (Standard Duty) or 6 Years (Light Duty)

Refer to footnote on page 1 for definitions of standard and light duty.

1. **Disassemble unloader and inspect parts for wear and damage**. Replace as required.
2. **Install seal replacement kit.**