

TECHNICAL NOTE 03-01A
WATER RESTRAINT SYSTEM (WRS)
Water Pump and Compressor Settings and Connections

Dated April 27, 2001 Revised October 17, 2001

Compressor Rotation

According to Atlas-Copco the compressor manufacturer, the compressor rotation can be either Clockwise (CW) or Counterclockwise (CCW). Our compressors should have the same rotation, so our electrical phasing connections should be made so that the compressor rotation is always Counterclockwise (CCW) when viewed while looking at the compressor fan shroud. In other words, the compressor fan will be turning in the CCW rotation when viewed through the shroud. If the rotation is not correct please reconnect the motor to reverse the rotation. Record each phase wire colors for future maintenance reasons.

Diesel and Electric Pump Water Pressure Setting

The pump pressure for diesel and electric systems should be 9 bar (or 130.5 psi). The electric systems have no setting so the pressure should be 9 bar or there is a system problem. The diesel pumps can be adjusted for pressure by adjusting the pump motor RPM. Install the pressure gauge and adjust the diesel engine throttle stop to get a pressure reading of 9 bar at top speed.

Compressor Wiring Connections

The compressor wiring connections, shorting bar locations and wiring connections are shown in the attached figure. There are two possible compressor voltage settings. Use the correct one for your system. Be sure to set the correct ampere current setting using the yellow rotary control at the top of the compressor pressure switch contact block.

Compressor Primary Air Pressure Setting

The compressor air pressure must be between a low of 14 bar (203 psi) and a high of 16 Bar (232 psi) are all times. These two settings are located on the top of the spring assembly inside the compressor pressure regulator plastic enclosure and on top of the pressure regulator assembly. The high-pressure limit is adjusted by turning the metal screw located in the center of the metal assembly as shown in the attached illustration. After the high pressure limit is set, then the low pressure limit is set by turning the metal screw located to the side of the metal assembly as shown in the attached illustration. You will have to cycle the compressor several times and monitor the pressure gauge to accomplish both settings

Compressor Low Air Pressure Setting

The end of the reserve air tank contains an air pressure regulator with gauge, a moisture trap and an oiler. After the primary pressure has been adjusted, the low-pressure air should be adjusted to 6 bar (87 psi) in normal conditions. If this line length from the compressor to the nozzle location is extra long, the pressure can be increased to 7 bar (101 psi). Adjustment is made by turning the plastic pressure regulator knob.

Compressor Low Air Pressure moisture trap and oiler

There is a moisture trap and oiler located after the low-pressure regulator, all located on the end of the reserve air tank. Immediately after the regulator is the moisture trap. The trap needs no adjustment but should be visually checked periodically for water buildup. The trap should be emptied after more than $\frac{1}{2}$ full. Immediately after the moisture trap is the oiler. The oiler bowl should be removed and filled about $\frac{3}{4}$ full with compressor oil. Reinstall the filled bowl and adjust the oiler adjustment, located on top of the oiler) so that the small dip of oil (very small drip) occurs about every 10 seconds.

Attachments to this technical note:

1. Photograph of top of pressure switch showing adjustments
2. Drawing (WRS wiring connections 4) showing compressor wiring locations

db12601