

TECHNICAL INSTRUCTIONS

REPLACEMENT SCROLL COMPRESSOR KIT (CTD P/N 18-10151-20)

KIT CONTENTS

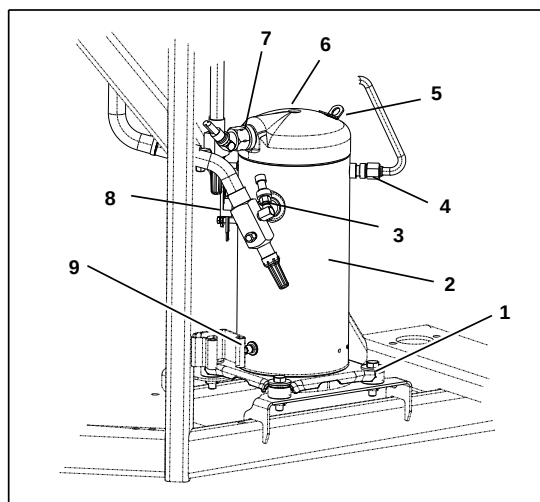
Item	Component	Part Number	Quantity
5	Compressor	18-10151-21	1
10	D-Ring (Power cable)	22-04193-11	1
15	O-Ring (economizer connection)	42-00243-04	1
20	Service valves connection Teflon seal	42-00384-02	2
25	Power cable lubricant – Krytox GPL205	22-04128-12	1
30	Ground connection screw	34-06343-00	1
35	Installation instructions	98-02587-00	1

WARNING

Be aware of HIGH VOLTAGE power supplied by the generator as the unit may start automatically when the START/RUN-OFF switch is in the ON position. Before servicing the unit, ensure the START/RUN-OFF switch is in the OFF position. Also disconnect the power plug and negative battery cable. **Proper Lock Out / Tag Out procedures MUST be applied.**

CAUTION

The scroll compressor achieves low suction pressure very quickly. Do not use the compressor to evacuate the system below 0 psig. Never operate the compressor with the suction or discharge service valves closed (front-seated). Internal damage will result from operating the compressor in a deep vacuum.



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|-----------------------|---------------------------------|
| 1. Mounting Hardware | 6. Discharge Temperature Sensor |
| 2. Compressor | 7. Discharge Connection |
| 3. Suction Connection | 8. Power Plug |
| 4. Economizer | 9. Oil Adjustment Port |
| 5. Lifting Lug | |

INSTRUCTIONS

1. Install manifold gauges, turn the unit ON and run it in full cool mode for 20 min. Full cool can be achieved by setting the unit setpoint as low as possible. Operating the unit for 20 minutes helps to ensure that the compressor oil is fully returned to the compressor sump after startup.
2. After 20 minutes of runtime or if the compressor is non-operational, place the unit control in Service Mode. This forces all stepper valves to 100% open and the compressor will shut down.
3. When the message center reads "RECOVER/LEAKCHK/EVAC MODE" attach a refrigerant recovery device, midseat the suction, discharge and liquid lines valves and reclaim the refrigerant charge.
4. Front-seat the discharge and suction service valves to help protect the remainder of the system.
5. If necessary, remove all remaining refrigerant from compressor using refrigerant recovery system. Refrigerant out gassing from compressor oil can build pressure when the service valves are closed. Additional reclamation may be needed to insure no refrigerant exists in the compressor.
6. Ensure the unit is disconnected from the power source, disconnect the battery and verify the SROS is in OFF position. **Apply lock out tag out device.**
7. Remove the Rotalock fittings from the suction and discharge service connections, and uncouple the economizer line from the compressor.
8. Disconnect the compressor discharge temperature sensor (CDT) connector. The replacement compressor comes with the compressor discharge temperature sensor already installed.
9. Remove and save the compressor base-mounting bolts and washers.
10. Rotate the compressor to gain access to the power plug. Remove the power plug retaining clip, by pulling out gently on the left side (to clear the shorter left locking tab and rotate the right locking tab) and then slide up and off the plug. Pull the plug out and away from the compressor to remove. Disconnect the ground lead / terminal from the compressor circle fence. See Figure 1 below.

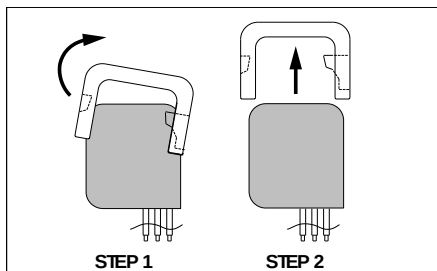


Figure 1

Note: Inspect the power plug terminals to ensure they are not deformed or have any signs of heat or arcing. If any damage is noted, replace the power cable.

11. Remove (slide out) the old compressor from the unit and slide the new compressor into the unit. Refer to compressor view above.

Note: DO NOT add any oil to the replacement compressor. Replacement compressors are shipped with full oil charge of 64 oz

12. Install the replacement "D" ring into the square groove of the power plug.
13. For ease of installation and to prevent the "D" ring from rolling, use a small amount of the supplied "Krytox GPL205" lubricant to lubricate the outside radius of the "D" ring. Also apply lubricant to the compressor terminals.
14. Align the power plug with the cutout in the terminal fence. Insert the power plug at a slight angle allowing the "D" ring to start at the lower portion of the terminal fence. Apply even pressure on the back of the power plug until the flat surface of the plug seats against the outer face of the terminal fence. Insertion force of the power plug to the compressor socket may be difficult, use of a blunt hard object to pound compressor plug into the compressor socket is not recommended. Compressor pin damage may occur if plugs are hammered into place. Use light tapping from the palm of hand to aid in seating the plug. If the plug is tight fitting, remove plug and inspect the D-ring for proper seating in groove, add more oil and retry.
15. Reinstall the molded plug retainer. Ensure that molded plug retainer is fully engaged in the circle fence, if not engaged correctly, insert the compressor plug deeper into socket and verify the compressor plug is inserted squarely to the socket.
16. Attach the compressor grounding terminal to the compressor circle fence using new ground screw provided. Grounding screw is a thread cutting type screw. Tighten the grounding screw to a final torque of 40 in/lbs.

Note: Due to thread cutting nature of the ground screw, higher initial torque is required to "cut" threads into the base metal. This high initial torque can mislead one to believe the screw is tight. Visually verify that screw is actually providing a clamping pressure to the grounding terminal and ring terminal is tight.

17. Install the four base-mounting bolts loosely.

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18. Place new Teflon seals at the compressor suction and discharge ports. Apply a slight amount of residual POE compressor oil to the economizer port O-ring, back side of sleeves and coupling nut and put in place at the economizer line connection port. Hand-tighten all three connections.
19. Torque the four base-mounting screws to 89 Nm (66 ft-lbs).
20. Torque the compressor connections as follows:

Service Valve Connection	Torque Value
Suction / Discharge Rotalocks	(80 to 100 ft.-lbs.) 109 to 136 Nm
Economizer	(37 to 43 ft.-lbs.) 50 to 58 Nm

21. Back-seat the suction and discharge service valves.
22. Reconnect the battery. With starter wire disconnected, place the unit into "Service Mode". Leak check and evacuate the unit and charge in accordance with the Operation and Service manual procedures.



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23. Following installation of a replacement compressor, the oil level in the unit may be above the required level. The replacement compressor is fitted with an oil level adjustment port (see compressor view above). Re-attach starter wire and start the unit and run a full cool mode for a minimum of 20 minutes to return oil to the compressor. Full cool mode can be obtained by changing the temperature set point of the unit to a frozen setpoint -22F and running for 20 minutes in a pull down condition. Front-seat the liquid line service valves and allow the suction pressure to pull down to 0 bar/psig.

Note: The ideal compressor suction pressure at shutdown should be in the 1-20 psig range. If the suction pressure is too high the oil coming out of the oil level adjustment port will be mixed with the refrigerant vapor in a foamy spray. If the suction pressure is too low, air can be pulled into the system.

24. After successful pump down, shut the system off and front seat the discharge service valve.
25. Remove the cap from the oil level adjustment port. Assemble the supplied elbow fitting to a short refrigerant hose with the Schrader de-pressing device of the elbow acting on the Schrader device on the compressor. Attach a hand valve on the other end of the refrigeration hose. Ensure the outlet of the valve is pointed into a container to catch the oil and vapor from the end of the hose fitting.
26. Make sure the hand valve is closed. Attach the hand valve, elbow fitting, and hose assembly to the compressor oil level adjustment port. It may be necessary to loosen the battery and move it slightly out of the way to make room for the elbow fitting.
27. As the hand valve is slowly opened, there will be a release of vapor from the hose initially (the amount will depend on the length of the hose) followed by:
 - a) A stream of oil if the oil level is above the oil level adjustment port.
 - b) A mixture of refrigerant and oil if the level is at or near the oil level adjustment port. (No additional action required) -Close the hand valve.
 - c) A steady purge of vapor if the oil level is below the oil level adjustment port. (No additional action required)-Close the hand valve.
28. If the oil level is high as in option "a"; slowly bleed the oil out until a vapor and oil mixture starts to flow out of the valve then close the hand valve. Adding oil should never be required with a new compressor, they are shipped with 64oz of oil. If they are getting pure vapor then the oil is elsewhere in the system which is okay.
29. Open service valves by back-seating the liquid, suction and discharge service valves and install service valve caps.
30. The refrigeration system and compressor are ready for normal use.