



Preserving Ariel Reciprocating Compressors for Storage

ER-25 applies to Ariel reciprocating compressors stored for 12 months since last preservation. These procedures should prevent corrosion inside an Ariel reciprocating compressor for 12 months if the protection is not compromised. If any deterioration occurs, or if the crankshaft is turned, re-preserve per ER-25.

NOTE: ER-25 does not apply to non-lube compressor cylinders and distance pieces. Use ER-34 to inspect and preserve non-lube cylinders and distance pieces.

For new compressors to be stored longer than 12 months from the Ariel shipment date, see ER-10.5.1 "Warranty Administration Procedure", and apply for Deferred Start-up Status to defer the Standard Warranty.

Preservation Materials and Equipment

Use the following or their equivalents:

1. A contact rust preventative: Mobil Oil Mobilarma 247 or Cortec VpCI 322.
2. A liquid vapor phase corrosion inhibitor (VpCI): Cortec VpCI 329 or VpCI 322. These products are incompatible with polyglycol (PAG) synthetic oils. For PAG applications, consult Ariel. VpCI 329 and VpCI 322 are equivalent in strength and compatible with each other.
3. Cortec VpCI 369 corrosion inhibitor.
4. Waterproof back, UV resistant tape: Shurtape PC667.
5. Shipping covers and gaskets to seal cylinder suction and discharge openings.
6. Wax impregnated cloth: MARVELPAK #12 JAN-B-121F, Type I Grade C, Class II. Available from EDCO Supply (Brooklyn, New York).
7. Priming pump if compressor does not have one.
8. Tarps and tie down materials if storing compressor outdoors.

Preservation Procedure

1. Inspect and preserve the compressor in a clean, dry environment. Remove the following:
 - Top cover.
 - Crosshead guide covers.
 - Tape and wax impregnated cloth from drive stub.
 - Suction and discharge cylinder nozzle shipping covers.
 - One crank end suction valve from each cylinder.
 - One head end suction valve from each cylinder.
 - For packaged compressors, remove one discharge valve cap from each cylinder.

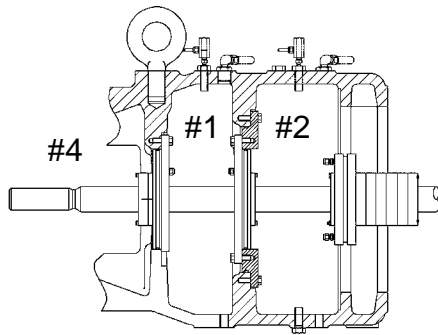
REV	DESCRIPTION	REV	EC	DATE	REV	EC	DATE
	Completely re-written. Primary changes: Removed paragraph numbering. Changed to new ER format. Removed contact information.	4	010756	12-18-02	9	015759	9-9-11
		3	ECN8001	---	8	016770	6-9-10
		2	ECN7829	---	7	014719	11-3-08
		1	ECN6452	---	6	013545	9-21-06
		0	---	4-8-93	5	011418	1-22-04



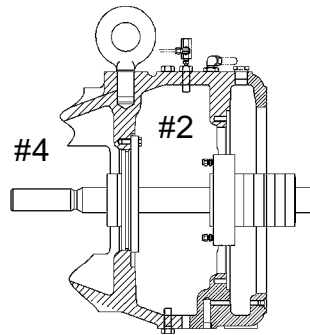
2. Inspect all compressor internal surfaces and cavities.
 - a. Inspect for corrosion or standing water. If found, photograph affected areas and contact Ariel.
 - b. Remove water contamination and corrosion prior to coating parts with rust preventative.
 - c. Inspect for potential leak paths for water and air and seal them.
 - d. Verify metal and plastic plugs are tight and replace damaged plugs.
 - e. Inspect exposed stainless steel tubing and verify metal tubing caps are tight.
 - f. Inspect suction and discharge nozzle shipping covers and gaskets for damage.
3. Prime lube oil system with a fresh 50/50 mixture of compressor frame oil and rust preventative such as Mobilarma 247 or Cortec VpCI 322, if compatible with frame oil.
 - a. Pump rust preventative/oil mixture through the lube oil system. Introduce mixture upstream of the oil filter. Verify oil visibly flows from all bearing positions and crossheads.
 - b. Drain excess rust preventative/oil mixture from frame and guides. Lube oil piping should remain filled with the rust preventative/oil mixture during the storage period.
4. **To prevent damage, perform Step 4 within 8 hours of Step 3.** Thoroughly mix rust preventative and VpCI before dispensing it. Use VpCI within 24 months of manufacture date. Spray all internal compressor surfaces with a rust preventative such as Mobilarma 247 or Cortec VpCI 322, if compatible with frame oil. Consult Ariel if rust preventative is incompatible with frame oil.
 - a. Spray rust preventative inside frame, guide, and each compressor cylinder. Cover all internal surfaces including: unloaders, piston rod, valve pocket surfaces, retainers, valve caps, suction and discharge gas passages, valves, crosshead guides, and distance pieces.
 - b. Rotate crankshaft 180° and repeat Step a. Allow no noticeable accumulation of rust preventative in the bottom of treated cavities.
 - c. For KBB:V:Z:U models with o-ring seal top covers, lightly coat the top rail of the frame with Cortec VpCI 369 or equivalent before installing top cover.
5. Add VpCI corrosion inhibitor to the frame per Table 1. Pour, spray, or fog the VpCI into the frame. If pouring, distribute evenly throughout the cavity. Do not pour VpCI directly on any bearing surfaces.
6. Add VpCI corrosion inhibitor to guide and distance piece cavities per Table 2. Pour, spray, or fog the VpCI into the cavity. If pouring, distribute evenly throughout the cavity. Do not pour VpCI directly on any bearing surfaces.

TABLE 1 Minimum Quantity of Cortec VpCI 329 or 322 Corrosion Inhibitor for Frames - Fluid Oz. (ml)

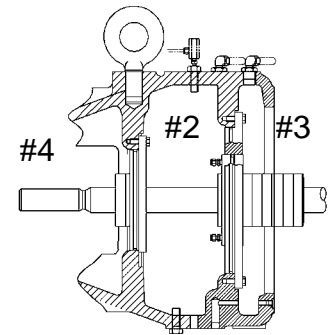
Frame	Min. Quantity	Frame	Min. Quantity
JG:JGA/2	3 (89)	JGE:K:T/6	22 (651)
JG:JGA/4	6 (177)	JGC:D/2	10 (296)
JGA/6	10 (296)	JGC:D/4	16 (473)
JGM:N:P:Q/1&2	3 (89)	JGC:D/6	22 (651)
JGI/1	3 (89)	KBZ:U/2	16 (473)
JGR:J/2	3 (89)	KBZ:U/4	22 (651)
JGR:J/4	10 (296)	KBZ:U/6	36 (1065)
JGJ/6	16 (473)	KBB:V/4	36 (1065)
JGH:E:K:T/2	6 (177)	KBB:V/6	50 (1479)
JGH:E:K:T/4	16 (473)		



Long Two Compartment Guide



Standard Guide



Short Two Compartment Guide

TABLE 2 Minimum Quantity of Cortec VpCI 329 or 322 Corrosion Inhibitor for Compressor Guide Compartments - Fluid Oz. (ml)

Compressor Frame	L2 Guide Compartment #1	L2, STD, and S2 Guide Compartment #2	S2 Guide Compartment #3	Crosshead Cavity #4 ^a
JG:A:R:J	1/2 (15)	1/2 (15)	1/2 (15)	N/A
JGH:E:K:T	1/2 (15)	1 (30)	1/2 (15)	2 (59)
JGC:D	1 (30)	2 (59)	1/2 (15)	4 (118)
JGZ:U, KBZ:U	2 (59)	2 (59)	1 (30)	4 (118)
KBB:V	3 (89)	3 (89)	1-1/2 (44)	6 (177)

a. Compartment #4 is used when guides ship unmounted with a shipping cover.

7. Add VpCI corrosion inhibitor to the cylinder per Table 3. Pour, spray, or fog the VpCI into the cylinder. If pouring, distribute evenly throughout the cavity. Distribute 75% of the VpCI evenly between the cylinder suction and discharge gas passages, and 25% evenly between the crank end and head end of the cylinder bore.

TABLE 3 Minimum Quantity of Cortec VpCI 329 or 322 Corrosion Inhibitor for Cylinders

Cylinder Class	Cylinder Bore Diameter - inches (cm)						
	< 10 (25)	10 to 15 (25 to 38)	> 15 (38)	-	-	-	-
JG:A:M:N:P:Q:R:J	< 10 (25)	10 to 15 (25 to 38)	> 15 (38)	-	-	-	-
JGH:E:K:T	< 5 (13)	-	-	5 to 15 (13 to 38)	> 15 (38)	-	-
JGC:D:Z:U, KBZ:U	< 5 (13)	-	5 to 10 (13 to 25)	-	-	> 10 (25)	-
KBB:V	-	-	-	5 to 10 (13 to 25)	-	10 to 15 (25 to 38)	> 15 (38)
Quantity oz. (ml)	1 (30)	2 (59)	3 (89)	4 (118)	6 (177)	7 (207)	9 (266)

8. If your compressor is not shown in the tables above, contact Ariel for correct VpCI quantities.
9. Add quantity of Cortec VpCI 329 or 322 to the following cavities:
 - 1/2 ounce to the cylinder lube box sump via the fill plug.
 - 1 ounce to lube oil filter housings drained prior to shipment (not applicable to spin-on filters).



- 1/2 ounce to lube oil pump discharge port.
10. VpCI corrosion inhibitors require protected cavities to remain sealed during storage. Open cavities deplete VpCI concentration, rendering it ineffective. To prevent VpCI depletion, seal the compressor as follows:
 - Plug all openings including vents and breather connections. Verify plugs are tight.
 - Reassemble all covers and the valve assemblies and re-connect the pre-lube pump.
 - Seal cylinder suction and discharge nozzles with shipping covers and gaskets.
 - Verify proper installation of cylinder shipping covers and gaskets.
 - Replace damaged shipping flange covers or gaskets.
 - Hand-wrench tighten the shipping flange cover bolts in a criss-cross pattern.
 11. Coat drive stub with rust preventative, wrap with wax impregnated cloth such as MARVELPAK #12, followed by waterproof backed tape such as Shurtape PC667.
 12. Tape the clearance opening between the drive end dust seal cover and crankshaft to prevent any exchange of air to the frame.
 13. Ensure force feed pump stroke adjustment lock nuts are wrench tight and the priming stem is covered with wax impregnated cloth.
 14. Ensure all vents, drains, and process piping are capped, plugged, or sealed to prevent air from entering compressor.
 15. Tag the compressor and guide/cylinder assemblies with a tag stating that the crankshaft should not be turned and the date of the last compressor inspection and preservation. If the crankshaft is turned for any reason, re-preserve per ER-25.

Storage

Prior to packaging, store the compressor in a clean, dry environment. If stored outdoors, protect it from direct contact with the elements. Never store a compressor with the mounting feet in direct contact with the ground; protect them from corrosion.

If the compressor is stored after packaging, protect all piping and bottles in the package in addition to the compressor. Verify all openings in the package are sealed.

Commissioning Compressor to Service

At commissioning:

1. Inspect all compressor internal surfaces and cavities. Inspect for corrosion or standing water. If found, photograph affected areas and contact Ariel.
2. **Change the oil filter.** There is no need to change oil, or if drained, to flush the frame prior to filling with oil; the rust preventative will mix with the lube oil. For PAG synthetic oil applications, consult Ariel.
3. Remove temporary covers, gaskets, plugs, tape, tags etc. that seal the compressor. Replace all connections including vents and drains.
4. Complete the Start-Up Check list in the Ariel Maintenance and Repair Manual (ER-10.4.01 or ER-10.4.02).