



## QUOTED SERVICE REPORT

\*Scan the QR Code to see new offerings

**Service Request Number:** 1-58589405354

**Status:** Completed

**Requestor:** Raul Cozza

JOHNSON CONTROLS SALISBURY WILMINGTON CB - 0N28

812 First State Blvd  
Wilmington, DE 19804-3573  
(866) 589-9275

**Service Site:**

DUPONT EXPERIMENTAL STATION  
DUPONT EXPERIMENTAL  
Rt 141 Lancaster Pike  
Wilmington, DE 19880-0000

**Bill To:**

E I DUPONT DENEMOURS CO  
1325779  
Attn Accounts Payable Department  
Po Box 80040  
Wilmington, DE 19880-0040

**Purchase Order:** 6501823103

**Blanket Purchase Order:**

**Customer Authorization:**

**Customer Work Order:**

**Quoted Amount:** \$8,030.75

**Service Requested:**

CHILLER #8 REFRIGERANT LEAK REPAIRS (DEC. 2017)

TRANSFER R-134A CHARGE TO YORK CENTRAL RECOVERY TANK  
DOCUMENT WEIGHT OF CHARGE & CALCULATED PERCENTAGE LOSS BASED ON DESIGN

REPAIR OF THE FOLLOWING REFRIGERANT LEAK FOUND ON 11/27/17:

COMPRESSOR PRE-ROTATION VANE SHAFT SEAL  
DISSMANTLE & REMOVE OLD SEAL ASSEMBLY  
FURNISH & INSTALL NEW SEAL ASSEMBLY WITH NEW ORINGS, GASKET, & FASTENERS  
PROPERLY SET & TORQUE SEAL

12" FREE-COOLING BUTTERFLY O-RING FLANGE SEALS  
RIG, DISSMANTLE, & REMOVE VALVE  
CLEAN VALVE & FLANGE SURFACES  
INSTALL NEW O-RING SEALS IN VALVE FLANGE FACES  
RE-INSTALL VALVE & PROPERLY TORQUE FLANGES  
\*(Does not include any additional repairs to valve if discovered & necessary upon removal)

COMPRESSOR OIL RESERVOIR ACCESS COVER GASKET  
REMOVE ACCESS COVER & OLD GASKET  
CLEAN COMPRESSOR & COVER SURFACES  
INSPECT RESERVOIR  
INSTALL NEW GASKET

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Lynn Dolphin

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### Service Requested:

RE-INSTALL ACCESS COVER & PROPERLY TORQUE

VERIFY TIGHTNESS OF ALL REPAIRS WITH NITROGEN PRESSURE TEST  
PERFORM EVACUATION/DEHYDRATION, & VACUUM HOLD TEST  
TRANSFER RECOVERED CHARGE BACK INTO CHILLER  
PROVIDE DUPONT WITH EPA LEAK REPAIR DOCUMENTATION

### Service Provided:

Date	Activity Number	Activity Status	Work Performed	By
12/04/2017	1-QWYMAR9	Completed		Kevin Frazee
12/06/2017	1-QWYMB2J	Completed		Kevin Frazee

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Service Provided:				
Date	Activity Number	Activity Status	Work Performed	By
12/15/2017	1-QZB3OK0	Completed	<p>12/08/17:</p> <ul style="list-style-type: none"> <li>Removed Oil Reservoir Access Cover &amp; Old Gasket</li> <li>Cleaned Compressor &amp; Cover Surfaces</li> <li>Inspected Reservoir (Clean/Clear)</li> <li>Installed New Gasket</li> <li>Re-Installed Cover &amp; Properly Torqued (14 Ft/Lbs)</li> </ul> <p>12/11/17:</p> <ul style="list-style-type: none"> <li>Dismantled &amp; Removed Old Compressor Pre-Rotation Vane Shaft Seal Assembly</li> <li>Installed New Control Shaft Seal w/ New Orings, Gasket, &amp; Fasteners</li> <li>Properly Set Full Open/Closed Positions &amp; Torqued Seal (</li> <li>Installed New Seal Assembly with New Gasket, O-Rings, Control Shaft, and Bolts</li> <li>Set to Appropriate Positioning and Torqued to Spec (Shaft=75 Ft/Lbs / Cover=35 Ft/Lbs)</li> <li>Reconnected PRV Actuator, Checked, &amp; Adjusted to Proper Travel</li> </ul> <p><b>**MONITORING RECOMMENDED**:</b></p> <ul style="list-style-type: none"> <li>- There is a noticeable binding of the Internal PRV components at a certain position in the rotation, when stroked from OPEN to CLOSED manually by HAND (This was evident w/ both the Old &amp; New Seal Assemblies). However, there seems to be no hesitation in the stroke when the Actuator Motor is in control.</li> <li>- Actuator Motor has Leaked a Sufficient amount of Hydraulic Fluid &amp; should be "Topped Off"</li> </ul> <p>12/12/17:</p> <ul style="list-style-type: none"> <li>Dismantled &amp; Removed 12" Free-Cooling Butterfly</li> <li>Removed Old Flange O-Rings</li> <li>Cleaned Flanges, O-Ring Grooves, &amp; Valve Internals</li> <li>Installed New Flange O-Ring Seals &amp; Greased Internal Seat Components</li> </ul>	Kevin Frazee

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Date	Activity Number	Activity Status	Work Performed	By
			<ul style="list-style-type: none"><li>• Re-Installed Valve &amp; Torqued Bolts to 180 Ft/Lbs</li><li>• Pressurized with Nitrogen to 100psig &amp; Verified All Replaced Components were LEAK-FREE</li></ul>	

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Service Provided:				
Date	Activity Number	Activity Status	Work Performed	By
12/20/2017	1-QZB8I7L	Completed	<p>12/1/17 - 12/4/17:</p> <ul style="list-style-type: none"> <li>• Performed Recovery of CHILLER #8's R-134A Charge to the YORK Central Recovery Tank to EPA Specification, Weighed, &amp; Documented.</li> </ul> <ul style="list-style-type: none"> <li>◇ TOTAL R-134A RECOVERED: 2,540 LBS (12/04/2017)</li> <li>◇ TOTAL DESIGN CHARGE: 3,250 LBS</li> <li>◇ DEFICIT = 710 LBS (21.8% LOW)</li> <li>◇ LAST DATE OF RECORDED CHARGE: 02/08/2017 (315 Days)</li> <li>◇ CHARGE at that TIME: 3,070 LBS</li> <li>◇ LEAK RATE (Based on EPA Formula)= 20%</li> </ul> <p>12/13/2017:</p> <ul style="list-style-type: none"> <li>• Started Chiller Evacuation / Dehydration Process</li> <li>• Performed a Double Evac., then allowed Vacuum Pump to run Overnight</li> </ul> <p>12/14/2017:</p> <ul style="list-style-type: none"> <li>• CHILLER VACUUM LEVEL was @ 425 microns</li> <li>• Performed a VACUUM HOLD TEST for 5 Hrs</li> <li>• VACUUM RISE = 76.7microns/Hr (GOOD)</li> <li>• Brought Chiller out of Vacuum, up to 5psig, with the Recovered R-134A in the Storage Tank</li> </ul> <p>12/19/2017:</p> <ul style="list-style-type: none"> <li>◇ ALL RECOVERED CHARGE WAS RE-INSTALLED: 2,540 LBS</li> </ul> <p><b>**CURRENTLY CHILLER IS STILL 710 LBS (21.8%) LOW on CHARGE**</b></p> <p><b>***RECOMMEND REFRIGERANT PURCHASE &amp; INSTALLATION TO ACHIEVE FULL TONNAGE***</b></p>	Kevin Frazee

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Service Provided:				
Date	Activity Number	Activity Status	Work Performed	By
12/01/2017	1-QWYMAMX	Completed	CHILLER #8 REFRIGERANT LEAK REPAIRS (2017 YEAR-END) DUPONT PO#: 6501823103 JCI QUOTE#: 1-QSIZO7X SR: 1-58589405354  • Material order for the Repair of the Following Refrigerant Leaks Discover on 11/27/17 during Routine Annual Maintenance:  <input type="checkbox"/> COMPRESSOR OIL RESERVOIR ACCESS COVER PLATE (SMALL) <input type="checkbox"/> COMPRESSOR PRE-ROTATION VANE SHAFT SEAL (MEDIUM) <input type="checkbox"/> 12" FREE-COOLING BUTTERFLY O-RING FLANGE SEALS (LARGE)	Kevin Frazee

Materials Used:
Description
O-RING LUBE
Spray Paint,Dark Machine Gray,15 oz.
Spray Paint,Light Machine Gray,15 oz.
Eyebolt,3/8-16,1In,With Shoulder
OIL FILTER
GASKET1/32 X 8 X 8 / 064 43793 000
SEAL O-RING NEOPRENE / 028 16523 455
005 SCREW CAP 12PT HD 3/8 / 221 11175 800
SCREW, CAP / 021 11998 000
SEAL O RING 1 IDX1/8 S / 028 04522 000
SEAL O RING 1-1/8 IDX1/8 / 028 04353 000
GASKET / 028 00781 000
SHAFT CONTL PREROT DEVICE / 364 29573 000

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Refrigerant Tracking:											
Activity #	Action Taken	Type	Amount	Asset ID	Customer Tag	Serial Number	Model Number	Circuit ID	Circuit Tag	Leak Location	Leak Rate
1-QZB8I7L	Recovery Reclaim	R-134a	2540	1-FY0MJZY	CHILLER #8	GACM117864	OTT4G2-ZBES			O-RING	

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### Service Order Warranty Terms and Conditions

#### **PARTS WARRANTY:**

Johnson Controls, Inc. (JCI) warrants that original equipment, parts or components manufactured or labeled by JCI shall be free from defects in material and workmanship under normal usage and proper installation and maintenance for a period of one (1) year from the date of shipment. Equipment, parts or components not manufactured or labeled by JCI shall carry a warranty from defects in material and workmanship under normal usage and proper installation and maintenance for a period of ninety (90) days from the date of shipment. Notwithstanding the foregoing, in the event JCI is reasonably able to identify a warranty for a period longer than the ninety (90) days applicable to equipment, parts or components not manufactured or labeled by JCI, it will assign all assignable rights under such warranty to Customer and reasonably cooperate in the enforcement of any warranty claim. Recertified or replacement parts installed on equipment and still under the original equipment manufacturer's warranty are covered for ninety (90) days or the remainder of the original equipment manufacturer warranty period, whichever is longer. For large tonnage chillers, JCI will warrant under normal usage and proper installation and maintenance for a period of one (1) year from the date of shipment: screw compressors, motors, control panels and components, VFD's and components and Liquid Cooled Solid State Starters and components. For small tonnage chillers, JCI will warrant under normal usage and proper installation and maintenance for a period of one (1) year from the date of shipment: scroll compressors, condenser coils, control panels and components, screw compressors (DXS and Mustang), and fan motors. In the event of a valid warranty claim, the Customer's remedy shall, at JCI's sole discretion and subject to the exclusions herein, be limited to repair or replacement of the subject equipment, part or component conditioned upon the return to JCI of any defective equipment, part or component. This Parts Warranty does not cover any shipping, handling or transportation charges or any associated labor costs.

#### **LABOR WARRANTY:**

Johnson Controls, Inc. (JCI) warrants its workmanship or that of its agents in relation to installation of materials for a period of ninety (90) days from date of installation or with respect to service work for a period of ninety (90) days from the date of service. Customer acknowledges that re-performance shall be its exclusive and only remedy with regards to any services provided by JCI. Customer shall bear all labor costs associated with the repair or replacement of failed material that is outside the scope of this express labor warranty. All warranty labor shall be executed during JCI normal business hours.

These warranties do not extend to any equipment which has been repaired by others, abused, altered, or misused in any way, or which has not been properly and reasonably maintained.

THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE OF MERCHANTABILITY AND FITNESS FOR A SPECIFIC PURPOSE. UNDER NO CIRCUMSTANCES SHALL JCI BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING FROM OR RELATING TO ANY DEFECT IN MATERIAL OR WORKMANSHIP OF EQUIPMENT OR THE PERFORMANCE OF SERVICES.

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