



A Honeywell Company

UOP RUSSELL LLC

<p>Vendor: 105653 CHROMALOX INC 103 GAMMA DRE EXT PITTSBURGH Pennsylvania 15238 USA Phone: 412-967-5195 Fax: 4129675144 Kind Attn : Christopher Molnar / Femida At</p>	<p>Delivery terms: FCA - Free Carrier FREE CARRIER</p>	<p>Purchase Order 4500813738</p> <p>Date : NOV/14/2017</p> <p>Page : 1 of 2</p>
<p>Deliver To: RUSSELL WAREHOUSE 760 WEST MAIN PARKWAY CATOOSA Oklahoma 74015 USA</p>	<p>Bill To: UOP RUSSELL LLC c/o Honeywell International PO Box 981762 El Paso, Texas 79998 - 1762</p> <p>Or Email Invoice To: PMTUSInvoice981762@Honeywell.com</p>	<p>Plant: 1401 RUSSELL WAREHOUSE</p> <p>Currency : USD</p> <p>Proj Network# : J488XX</p>

All Invoices, Correspondence & Shipping-Papers must reference PO Number & PO Line Item and Proj. Network# where applicable.

We are a responsible care company and are committed to achieving health, safety and environmental excellence with your help.

See our Commitment Statement at <http://www.honeywell.com/sites/sm>.

"UOP Russell Project: J488

Unless a previously signed MASTER EQUIPMENT PURCHASE AGREEMENT or a special HONEYWELL/UOP/UOP Russell/Supplier TERMS & CONDITIONS are in place, then this PURCHASE ORDER and any product/service associated with this PURCHASE ORDER will be governed by the following documents:

- 1) The representations made on the face of this Purchase Order.
- 2) Honeywell International Inc. Purchase Order Terms and Conditions.
- 4) Other documents referenced in Honeywell's request for proposal.
- 3) Technical specifications from Honeywell referenced in the items.

The attached proposal is included only to clarify technical requirements and Scope of Work/Equipment/Services to be purchased. Supplier's ""boilerplate"" preprinted terms and conditions, whether attached, affixed, or otherwise submitted are expressly denied. Any additional or different terms proposed by SELLER are hereby rejected unless expressly consented to by Honeywell in writing. The Product/Service prices stated herein are firm and can only be changed with the prior written consent of BUYER.

Our Contact Persons

Purchasing: Daniel Ramirez, daniel.ramirez@honeywell.com

If there are any issues regarding invoices, please e-mail Accounts Payable at the following address: accountspayable@uop.com

Agreed & Accepted By:

Authorized Signature of Seller

Authorized and Approved By OPEN

Tax ID 3101720754

Buyer Phone

Purchasing Return Fax

Email Id

PO Created for Reference - This is not an official PO



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If required, please submit approval drawings and certified drawings to

UOPDOCUMENTCONTROL@HONEYWELL.COM

Drawing/text documents will be assembled in one PDF file per tag number in the following sequence:

1. Transmittal
2. Drawings
3. Specs
4. Calcs (if applicable)
5. Misc (if applicable)

Provide final documentation electronically to REBEKAH.GONZALEZ@HONEYWELL.COM

Large files will require Sharepoint access.

=PLEASE REFERENCE OUR UOP RUSSELL JOB NUMBER & PO NUMBER ON ALL

DRAWINGS/DOCUMENTS THAT ARE SUBMITTED. UOP RUSSELL WILL RETURN ANY ITEMS THAT DO NOT HAVE THIS INFORMATION CLEARLY STATED="

Item	Quantity	Unit	Material	Description	Delivery Date
Unloading Point		Goods Recipient			
10	6,140.00	Serv Value		H-101	
H-101		WAREHOUSE			
			500288147 GCHI-03-010P-E2XX,480V,1-3PH		
20	250.00	Serv Value		DOCUMENTS	
H-101		WAREHOUSE			
			444444002UT CUSTOMER REQUIRED DOCUMENTS		
30	175.00	Serv Value		MATERIAL TEST REPORTS	
H-101		WAREHOUSE			
			444444012UT MATERIAL TEST REPORT		

GENERAL CONDITIONS OF PURCHASE

In addition to the terms and conditions noted on the face of this document, this purchase order is subject to the Honeywell International and its subsidiaries GENERAL TERMS AND CONDITIONS OF PURCHASE, attached hereto and incorporated herein (if not attached, will be provided upon request). If this purchase order references a statement of work or any other document required in the performance of this purchase order that document is deemed incorporated herein and shall become a binding part of the Purchase Order.

Send acknowledgement and all correspondence to Buyer.

In addition, Seller shall promptly notify Buyer if any chemical substance constituting or contained in the products sold to Buyer hereunder is not on the Toxic Substance Control Act(TSCA) Chemical Substance Inventory, or is covered by a significant new use or control regulation under TSCA and shall properly label the substance and provide to the Buyer proper information about the substance, including a current Material Safety Data Sheet.

CERTIFICATE OF COMPLIANCE

Customer Name UOP RUSSELL LLC	Customer Purchase Order Number 4500813738
Chromalox Sales Order Number 2347823-01	Chromalox Location OGDEN, UTAH
ASME Serial Number A3826	

Customer Part Number	Chromalox Part Number	Description	Quantity	Work Order
N/A	053-500288-147	GCHI-03-010P-E2XX 480V 1-3PH 10KW	1	2609674

This certifies that the products, as detailed above, have been supplied, manufactured, tested, and/or inspected using procedures that are in compliance with an established Quality Management System that meets the requirements of ISO 9001:2008 and have been found to be in compliance with applicable specifications, and/or applicable drawings unless otherwise stated.

Additional Notes:



Quality Assurance Manager

01/13/2018

Date



DOCUMENT NAME
CIRCULATION HEATER
FINAL INSPECTION

DOCUMENT IDENTIFICATION
OG-QAD-40-0179

Rev. 6

Page 1 of 1

Final Acceptance Test (FAT) Record

DATE: 1/13/18 Retention Times:
 CHROMALOX SO #: 2347823-01 CHROMALOX WO #: 2609674 COMM (1 yr)
 CHROMALOX PART #: 053-500288-147 DESCRIPTION: GCH-03-010P-E2 XX ASME (5 yrs)
 CUSTOMER NAME: UOP Russell CUSTOMER PART #: NA GOV'T (7 yrs)
 CUSTOMER PO #: 4500813738 UNIT SERIAL#: A3826 N/A

DESCRIPTION		INITIALS OR N/A
1.	Verify the unit is clean, free from scratches, and threads are not damaged.	
2.	Verify the correct thermostat and thermocouples have been installed. <u>RTD</u>	
3.	Verify all dimensions and the correct bolts have been used to assemble the flange to the chamber per the drawing and any special instructions.	
4.	Verify alignment of all nozzles and branches to the chamber. Check position and angle using levels, squares and other measuring tools as needed.	
5.	Verify the correct instruction plate has been installed on the jacket per the drawing.	
6.	Verify the correct ASME nameplate is attached.	
7.	Verify the correct catalog number, part number, volts, watts, phase, customer part number are stamped on the nameplate.	
8.	Verify nozzles are covered or capped off.	
9.	Document transmitter serial number _____ Document junction box serial number _____	<u>NA</u>
10.	Verify all Quality checks have been performed and documented prior to being moved to shipping.	

I certify that all the above requirements have been met, and that this sheet has been filled out in its entirety. Each line is stamped and dated; or filled in with N/A when not applicable to the current order.

Quality Representative Micki Varney

Date 1/13/18

REVISION DATE: 3/22/2016	REVISED BY: SUSAN ALVARI
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DOCUMENT NAME
**LARGE FLANGE FINAL
 INSPECTION CHECKLIST**

DOCUMENT IDENTIFICATION
OG-QAD-40-0077

Rev. 21

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Final Acceptance Test (FAT) Record

DATE: 12-18-17 QUANTITY: 1 Retention Times:
 CHROMALOX SO #: 2347823-01 CHROMALOX WO #: 2611808 COMM (1 yr)
~~2347278-01~~
 CHROMALOX PART #: 155-500290-155 DESCRIPTION: TM1-03-010P-E2XX ASME (5 yrs)
 CUSTOMER NAME: UOP UNIT SERIAL#: A3826 N/A GOV'T (7 yrs)
 CUSTOMER PO #: _____ CUSTOMER TAG/PART #: _____ N/A ATEX (10 yrs)

ITEM	INSPECTION CHARACTERISTIC	Assembly verified by a CO or above
1	VERIFY: That the Large Flange Production Check Sheet OG-LGF-40-0000 is complete.	TUR
2	RESISTANCE TEST OG-QAD-10-0030 (UNLESS OTHERWISE SPECIFIED BY CUSTOMER REQUIREMENTS) RECORD MULTIPLE CIRCUITS FOR ACTUAL VALUES ON REVERSE SIDE - USE OG-QAD-40-0206 FOR HEATERS WITH MORE THAN 12 CIRCUITS. <input type="checkbox"/> Passed within an acceptable range (COMM only) Calc. Nominal: <u>44.69</u> Ohms <input checked="" type="checkbox"/> Actual: <u>45.41, 44.77, 44.86</u> Ohms Lower Limit: <u>42.46</u> Ohms Upper Limit: <u>47.82</u> Ohms Equipment: <u>ECB 098</u> Cal. Date: <u>04-30-18</u> <input checked="" type="checkbox"/> VERIFY NO CONTINUITY BETWEEN ALL CIRCUITS (NO RESISTANCE READING ACROSS CIRCUITS) VERIFY/INCLUDE RECORD OF SPARE ELEMENT INSULATION RESISTANCE FORM OG-QAD-40-0189 N/A <input checked="" type="checkbox"/>	TT
3	INSULATION RESISTANCE (MEG) TEST OG-QAD-10-0004 - RECORD COLD READINGS CHECK ONE - RECORD ACTUAL VALUES ON REVERSE SIDE FOR MULTIPLE CIRCUITS <input type="checkbox"/> UNSEALED ASSEMBLIES 5 MOhm <input type="checkbox"/> AIR SET SEALED/SILICONE 20 MOhm <input checked="" type="checkbox"/> RTV 200 MOhm <input type="checkbox"/> HERMETIC SEAL/EPOXY/RUBBER MOLD 2000 MOhm Actual: <u>2329 mhm</u> <input type="checkbox"/> range (COMM only) Equipment: <u>Emg-155</u> Cal. Date <u>04-30-18</u>	TT
4	DIELECTRIC (HIPOT) TESTING OG-QAD-10-0016 <input checked="" type="checkbox"/> VAC, 1 sec, 5mA <u>2352</u> <input type="checkbox"/> *VAC, 60 sec, 5mA <u>N/A</u> *Government heaters tested for 60 seconds at 2E + 1000 unless specified on the drawing Equipment: <u>EHP-109</u> Cal. Date <u>04-30-18</u>	TT
5	VERIFY DIMENSIONS PER DRAWING: <u>500290-155</u> ACTUAL DIMENSIONS: "A" <u>76 1/2</u> "B" <u>63</u> BUNDLE DIAMETER <u>2 3/5 2 3/4</u> <input checked="" type="checkbox"/> CHECK IF HEATERS ARE WITHIN A TOLERANCE RANGE VERIFY AND RECORD FLANGE/SCREWPLUG SIZE, RATING, and MATERIAL: <u>Flange 3"-600LBS SA-A350 LF2CL1 Steel</u>	TUR
6	INSPECT BRAZE ON TERMINATION <input type="checkbox"/> 223-304407-002 (SEALED) <input type="checkbox"/> 223-304407-003 (UNSEALED) N/A <input checked="" type="checkbox"/>	TUR
7	FLANGE HT # <u>77AV5</u> N/A <input type="checkbox"/>	TUR



DOCUMENT NAME
LARGE FLANGE FINAL INSPECTION CHECKLIST

DOCUMENT IDENTIFICATION
OG-QAD-40-0077
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8	<input checked="" type="checkbox"/> N/A IF ADH or TDH: <ul style="list-style-type: none"> For heaters without fittings: Assemble speed nut to element down against flange. For heaters with fittings: Torque nut to 20-30 ft-lbs. For heaters with compression fittings-Threaded Flange no nut or gasket: Use S/S pipe sealant, 1st nut torque 85 ft-lbs. Torque ferrule nut 40 ft-lbs. Assemble Insulation if required. Perform visual inspection to ensure unit sits square and even.	TUR
9	VERIFY BUSSING / WIRING <input checked="" type="checkbox"/> ELECTRICAL CLEARANCE: .250" Min. between circuits/.500" Min. between live parts & Enclosure <input checked="" type="checkbox"/> VERIFY FISH PAPER HAS BEEN INSTALLED WHERE NEEDED <input checked="" type="checkbox"/> BUSS BARS ARE EVEN, AND FLAT, NUTS FULLY SEATED <input checked="" type="checkbox"/> ALL NUTS TORQUED PER: OG-QAD-10-0029	TUR
10	VERIFY INSTALLATION OF SENSOR PER DRAWING <u>500290-155</u> N/A <input type="checkbox"/> SENSOR TYPE: <u>RTD</u> SENSOR READING: <u>110.26, 110.26, 1.76</u> <input type="checkbox"/> °F <input checked="" type="checkbox"/> Ohms VERIFY TC TEMPERATURE INCREASES OR DECREASES WITH HEATING OR COOLING (RESPECTIVELY) AT SENSOR TIP. FOR HEATERS WITH MORE THAN THREE T/C OR RTD, USE OG-QAD-40-0207 N/A <input checked="" type="checkbox"/>	TUR
11	TRANSMITTER SERIAL NUMBER _____ N/A <input type="checkbox"/> JUNCTION BOX SERIAL NUMBER <u>1700028984</u> N/A <input type="checkbox"/>	TUP
12	VERIFY STAMPING/ID OF NAMEPLATE AND LABELS PER DRAWING <u>500290-155</u> PRIOR TO ATTACHING TO HEATER	TUR
13	PROTECT ALL OPEN CONDUIT OPENINGS WITH PLASTIC PLUGS	TUP
14	OIL ELEMENTS (CARBON STEEL ONLY) N/A <input checked="" type="checkbox"/>	TUP
15	PAINT/COATING/CLEANING AS REQUIRED PER WORK ORDER/ITP	TUP
16	DOCUMENTATION COMPLETE AS REQUIRED BY WO, DRAWING, BOM, ITP and PICK SLIP	
17	VERIFY PROPER INSTRUCTION SHEETS AND GASKET (check): SPIRAL WOUND <input checked="" type="checkbox"/> COMP. <input type="checkbox"/> RING <input type="checkbox"/> GASKET <input type="checkbox"/> INSTRUCTION SHEET <input checked="" type="checkbox"/> NONE <input type="checkbox"/>	TUR

RECORD THE ACTUAL CIRCUIT RESISTANCE AND INSULATION RESISTANCE (MEGOHM)

CIRCUIT	GigΩ/MΩ	Ω	CIRCUIT	GigΩ/MΩ	Ω	CIRCUIT	GigΩ/MΩ	Ω
	1	_____		_____	2		_____	_____
4	_____	_____	5	_____	_____	6	_____	_____
7	_____	_____	8	_____	_____	9	_____	_____
10	_____	_____	11	_____	_____	12	_____	_____

I certify that all the above requirements have been met, and that this sheet has been filled out in its entirety. Each line is stamped and dated; or filled in with N/A when not applicable to the current order.

(107)

Quality Representative

12-19-2017
 Date



DOCUMENT NAME

HYDROSTATIC/
PNEUMATIC
TEST RECORD

DOCUMENT IDENTIFICATION

OG-QAD-40-0002

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GENERAL INFORMATION					
1. SALES ORDER # 2347823-01		2. SERIAL # A3826		3. NATIONAL BOARD # 24009	4. CUSTOMER UOP RUSSELL
5. PART / DRAWING NUMBER					
SUB-ASSEMBLY PART #			TOP LEVEL PART # 500288-147		
6. CLASSIFICATION					
ASME SECTION: <input type="checkbox"/> I <input type="checkbox"/> IV <input checked="" type="checkbox"/> VIII <input type="checkbox"/> NBIC "R"			<input type="checkbox"/> COMMERCIAL <input checked="" type="checkbox"/> ASME <input type="checkbox"/> GOVERNMENT <input type="checkbox"/> ATEX		
7. COMPONENT					
<input checked="" type="checkbox"/> PRESSURE VESSEL		<input type="checkbox"/> FLANGED HEATER		<input type="checkbox"/> BOILER	<input type="checkbox"/> SCREW PLUG
<input type="checkbox"/> OTHER					
8. TESTING					
TEST	REQUIRED PSIG	REQUIRED TIME (MIN)	ACTUAL PSIG	ACTUAL TIME (MIN)	TEMP (120deg.F MAX)
<input type="checkbox"/> PRE HYDRO					
<input checked="" type="checkbox"/> FINAL HYDRO	1560	10	1590	10	70
<input type="checkbox"/> STEELGARD TEST (%)					
<input type="checkbox"/> PNEUMATIC AIR TEST					
<input type="checkbox"/> HERMETIC SEAL					
<input type="checkbox"/> HELIUM BUBBLE					
<input type="checkbox"/> HELIUM SNIFF					
<input type="checkbox"/> ASSEMBLED BOILER					
<input type="checkbox"/> SUBMERGENCE TEST					
TESTING OPERATOR		SIGN / DATE <i>Jarvis Tenn</i> 1/5/2018			
9. GAUGE INFORMATION					
SERIAL NUMBER MAG 817		CALIBRATION DUE DATE 4/30/2018		<input type="checkbox"/> CHART	
10. UNIT ORIENTATION					
<input type="checkbox"/> VERTICAL			<input checked="" type="checkbox"/> HORIZONTAL		
11. NAMEPLATE DATA / REMARKS					
12. TEST RESULTS					
<input checked="" type="checkbox"/> ACCEPT			<input type="checkbox"/> REJECT		
13. CERTIFICATION					
INSPECTED / VERIFIED BY DATE <i>[Signature]</i> 1-5-18		ASME AUTHORIZED INSPECTOR DATE <i>[Signature]</i> 1/5/17		CUSTOMER / SOURCE INSPECTOR DATE	

REVISION DATE: 02/02/2017

PREPARED BY: SUSAN ALVARI

Retention Time – 1yr Commercial / 5 yr ASME / 7yr Government / 10 ATEX



DOCUMENT NAME
HYDROSTATIC/
PNEUMATIC
TEST RECORD

DOCUMENT IDENTIFICATION

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GENERAL INFORMATION

1. SALES ORDER # 2347823-01 2. SERIAL # A3826 3. NATIONAL BOARD # N/A 4. CUSTOMER UOP RUSSELL

5. PART / DRAWING NUMBER

SUB-ASSEMBLY PART # 500290-155 TOP LEVEL PART # 500288-147

6. CLASSIFICATION

ASME SECTION: I IV VIII NBIC "R" COMMERCIAL ASME GOVERNMENT ATEX

7. COMPONENT

PRESSURE VESSEL FLANGED HEATER BOILER SCREW PLUG OTHER

8. TESTING

TEST	REQUIRED PSIG	REQUIRED TIME (MIN)	ACTUAL PSIG	ACTUAL TIME (MIN)	TEMP (120deg.F MAX)
<input checked="" type="checkbox"/> PRE HYDRO	1560	10	1577	10	68 F
<input type="checkbox"/> FINAL HYDRO					
<input type="checkbox"/> STEELGARD TEST (%)					
<input type="checkbox"/> PNEUMATIC AIR TEST					
<input type="checkbox"/> HERMETIC SEAL					
<input type="checkbox"/> HELIUM BUBBLE					
<input type="checkbox"/> HELIUM SNIFF					
<input type="checkbox"/> ASSEMBLED BOILER					
<input type="checkbox"/> SUBMERGENCE TEST					

TESTING OPERATOR SIGN / DATE J. G. 12-14-17

9. GAUGE INFORMATION

SERIAL NUMBER 609 CALIBRATION 6-30-18 CHART
MAG DUE DATE

10. UNIT ORIENTATION

VERTICAL HORIZONTAL

11. NAMEPLATE DATA / REMARKS

12. TEST RESULTS

ACCEPT REJECT

13. CERTIFICATION

INSPECTED / VERIFIED BY DATE 12-14-17 ASME AUTHORIZED INSPECTOR DATE 12/14/17 CUSTOMER / SOURCE INSPECTOR DATE

REVISION DATE: 02/02/2017

PREPARED BY: SUSAN ALVARI

Retention Time - 1yr Commercial / 5 yr ASME / 7yr Government / 10 ATEX