



**DATE:**

**5/17/2024**

**AGENDA ITEM (ACTION ITEM):**

**Consider/Approve Change Order No. 5 with Morel Construction for the Support Operations Center Project – BG 23-173.**

**APPLICABLE BOARD POLICY:**

**01.1 Legal Status of the Board; 04.31 Authority to Encumber and Expend Funds; Capital Construction Process – 702 KAR 4:160**

**HISTORY/BACKGROUND:**

**This is the fifth (5<sup>th</sup>) change order for the Support Operations Center Project associated with Morel Construction. The original contract was \$20,518,787.00. This change order for a deduction of \$51,189.00 with previous change orders of \$447,081.00 making the new contract sum \$20,914,679.00.**

**The Point of Lubrication (POL) System detailed in the original bid has been modified to more efficiently serve the Transportation Garage. This modification has resulted in a reduction of cost of \$1,320.00 as the original cost of the unit was \$49,339.00 and the revised unit (which shall be purchased with a KCS D Purchase Order) is \$48,019.00.**

**The Transportation Garage had initially intended to utilize its existing Air Compressor in the new garage. The bid included an Air Compressor Dryer to remove moisture from inside the tank of the air compressor to mitigate the moisture levels in the compressed air. It has since been determined that the Air Compressor is failing and will need to be replaced. As a result, a credit is being issued for the Air Compressor Dryer in the amount of \$1,850.00 and a new Air Compressor and Dryer will be purchased with a KCS D Purchase Order in the amount of \$14,364.00.**

**Item No 1: Provide a credit for the original Point of Lubrication System.**  
**DEDUCT: \$ 49,339.00**

**Item No 2: Provide a credit for the Air Compressor Dryer from EC Schmidt Plumbing Contractor.**  
**DEDUCT: \$ 1,850.00**

**TOTAL DEDUCT: \$ 51,189.00**

**SUMMARY OF CHANGE ORDER FOR SCOTT PHASE V, TAYLOR MILL SITE  
CIRCULATION, AND WOODLAND MIDDLE ADDITION AND RENOVATION  
BG 21-083**

The original contingency for this project	\$1,485,150.00
Total for prior approved change orders	(\$ 447,081.00)
Total for prior Material/Equipment purchase order changes	\$ 0.00
Total for current change orders	<u>\$ 51,189.00</u>
Contingency Balance	\$ 1,089,258.00

**FISCAL/BUDGETARY IMPACT:**

Deduction of \$51,189.00 to the existing contract for Morel Construction.

Addition of \$62,383.00 in Direct Purchase Order from the Support Operations Center Project with a total net increase of \$11,194.00.

**RECOMMENDATION:**

Approve Change Order No. 5 with Morel Construction for the Support Operations Center Project – BG 23-173.

**CONTACT PERSON:**

Matt Rigg, Chief Operations Officer

\_\_\_\_\_  
*Principal/Administrator*

  
\_\_\_\_\_  
*District Administrator*

  
\_\_\_\_\_  
*Superintendent*

# **AIA® Document G701® – 2017**

## Change Order

<b>PROJECT: (Name and address)</b> KCSD Support Operations Center 11800 Taylor Mill Road. Independence, Kentucky 41051	<b>CONTRACT INFORMATION:</b> Contract For: General Construction Date: 6/6/2023	<b>CHANGE ORDER INFORMATION:</b> Change Order Number: 005 Date: 5/9/2024
<b>OWNER: (Name and address)</b> Kenton County School District 1055 Eaton Drive Ft. Wright, Kentucky 41017	<b>ARCHITECT: (Name and address)</b> GRW 801 Corporate Drive Lexington, Kentucky 40503	<b>CONTRACTOR: (Name and address)</b> Morel Construction Co., LLC 2801 Alexandria Way Highland Heights, Kentucky 41076

**THE CONTRACT IS CHANGED AS FOLLOWS:**

*(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)*

Furnish and install revised Point of Lubrication (POL) system in accordance with attached quotes and as discussed at the POL system meeting on March 13, 2024.

Provide a credit for the original POL system per the attached quote from RJA Environmental LLC dated May 23, 2023 in the amount of (\$49,339.00)

Provide a credit for the Air Compressor Dryer from E.C. Schmidt Plumbing Contractor dated April 15, 2024 in the amount of (\$1,850.00)

Provide revised POL system per the attached quote from RJA Environmental LLC dated March 15, 2024 including additional Washer Fluid POL system in the amount of \$48,019.00 Owner P.O. Item.

Provide new Air Compressor and Air Compressor Dryer per the attached quote from RJA Environmental LLC dated March 15, 2024 in the amount of \$14,364.00 Owner P.O. Item

The original Contract Sum was	\$ 20,518,787.00
The net change by previously authorized Change Orders	\$ 447,081.00
The Contract Sum prior to this Change Order was	\$ 20,965,868.00
The Contract Sum will be decreased by this Change Order in the amount of	\$ 51,189.00
The new Contract Sum including this Change Order will be	\$ 20,914,679.00

The Contract Time will be unchanged by zero (0) days.  
 The new date of Substantial Completion will be February 25, 2025.

**NOTE:** This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

**NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.**

GRW _____ <b>ARCHITECT (Firm name)</b>  _____ <b>SIGNATURE</b> David Vaught, Project Manager _____ <b>PRINTED NAME AND TITLE</b> 5/9/24 _____ <b>DATE</b>	Morel Construction Co., LLC _____ <b>CONTRACTOR (Firm name)</b>  <div style="font-size: 8px; border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;">                     Digitally signed by Adolph F. Zell IV                      DN: cn=Sells, email=adzell@morelconstruction.net, o=Morel Construction Co., LLC, ou=Vice President, cn=Adolph F. Zell IV                      Date: 2024.05.10 11:19:58-0700                 </div> _____ <b>SIGNATURE</b> Adolph F. Zell, Vice President _____ <b>PRINTED NAME AND TITLE</b> 5/10/24 _____ <b>DATE</b>	Kenton County School District _____ <b>OWNER (Firm name)</b> _____ <b>SIGNATURE</b> Matthew Rigg, C.O.O. _____ <b>PRINTED NAME AND TITLE</b> _____ <b>DATE</b>
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2801 ALEXANDRIA Way  
 HIGHLAND HEIGHTS, KY 41076  
 858-442-7100 FAX: 859-442-8175

## REQUEST FOR CHANGE ORDER

### MOREL CONSTRUCTION Co., LLC

GRW Engineering Architecture Geospatial Inc.  
 801 Corporate Drive  
 Lexington, KY 40503

Attn: Mr. David Vaught

Request No. 14  
 X-No. 22  
 Project **Kenton County School District  
 Support Operations Center**  
 Project No. 23-02

We hereby request your formal Change Order to our contract for the following changes in the Scope of Work.

Furnish and install revised POL Lubrication system in accordance with attached quotes and as discussed at the POL Lubrication meeting on 03/13/2024.

Base Bid (Credit for original bid see attached RJA Environmental LLC Quote, dated 05/23/2023.)	(\$49,339.00)
Plumbing (See attached credit for dryer from E.C. Schmidt Plumbing Contractor, Inc., dated 04/15/2024.)	(\$1,850.00)
<b>Total Deduct to Morel Construction Co., LLC Contract.</b>	<b>(\$51,189.00)</b>

Updated Bid (See attached RJA Environmental Quote, dated 03/15/2024.)	\$48,019.00
New Air compressor and dryer (See attached RJA Environmental LLCI Quote, dated 03/15/2024.)	\$14,364.00
<b>Total Add to New RJA Environmental Owner P.O.</b>	<b>\$62,383.00</b>

This Request is Valid for 5 Days  
 A Time Extension of 0 Days is Included in this Request

- A. We are proceeding with this work as per verbal authorization of \_\_\_\_\_
- B. We have completed this work as per verbal authorization of \_\_\_\_\_
- C. We will proceed with this work only upon receipt of this signed authorization, or formal Change Order.**

SIGNED: \_\_\_\_\_

DATE: \_\_\_\_\_

1. EMAILED - Architect
2. ORIGINAL - Owner/Arch. File
3. COPY - X File

MOREL CONSTRUCTION Co., LLC

By:   
 Adolph F. Zell, Vice President

April 16, 2024  
 Date



# RJA Environmental LLC

10600 Millington Ct  
Cincinnati, OH 45242

## ESTIMATE

Date
5/23/2023

Quote #
3041

*Due to fluctuating prices from our suppliers, RJA quotes can only be held for 30 days from date of quote.*

Customer
MOREL CONSTRUCTION CO LLC 2801 ALEXANDRIA PIKE HIGHLAND HEIGHTS, KY 41076 CAMPBELL COUNTY

Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KENTUCKY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
		PROVIDE AND INSTALL EQUIPMENT LISTED ONLY PLUS RUN LUBE PIPING TO EQUIPMENT ONLY (NO AIR) AT KENTON COUNTY KY GARAGE		
		7 TANKS - AF, OIL, ATF, USED AF, USED OIL (Grease & DEF per plans)		
7.00	RTH-DWT1500L	ROTH 400 GALLON DOUBLE WALL TANK - With STD Fittings, Leak Detector, & Tank Base, Metal, UL Listed	2,331.00	16,317.00
7.00	RTH-GAUGE-400	ROTH 2" SEALED FUEL OIL GAUGE - For 400 gal (1500 liter) Tanks, NPT(m), Red	41.00	287.00
7.00	RTH-PUMP BRKT 3 (THRD)	ROTH THREADED PUMP BRACKET - For 400 gal Tanks, Includes Bracket, 4 Mounting Clips, 4 Fasteners, and 4 Stop Nuts	119.00	833.00
7.00	RTH-FREIGHT	ROTH (1 EACH) SHIPS ANYWHERE IN THE CONTINENTAL USA FOR \$175	175.00	1,225.00
		PLEASE NOTE: All tanks must be inspected upon delivery. If damage is evident or suspected, note specifics on bill of lading before the driver leaves. Take photos of tanks as well showing damage. Notify us immediately. ROTH will make every effort to file a claim with the freight company, however if damage is found at a later date and BOL is not noted, your claim / reimbursement may be denied.		

TERMS:NET 20 from date of invoice	<b>Total</b>
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Phone #
513-891-8558

Sales@rodjohnsonassociates.com
www.rjasales.com

*Thank you for the opportunity!*



# RJA Environmental LLC

10600 Millington Ct  
Cincinnati, OH 45242

## ESTIMATE

Date
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Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KENTUCKY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
		7 PUMPS - NEW AF, OIL, ATF, (GREASE & DEF), USED AF & OIL		
1.00	SAM-551010	SAMSON 1" DF100 AF DIAPHRAGM PUMP - 28 gpm, Aluminum	581.00	581.00
2.00	SAM-347120	SAMSON PM4 - 5:1 STUB PUMP WITH BUNG	501.00	1,002.00
1.00	SAM-304	SAMSON PM3 - 55:1 GREASE PUMP	499.00	499.00
1.00	SAM-551164	SAMSON POLY DF DEF PUMP, 28 GPM,	623.00	623.00
		PUMPS FOR USED AF, OIL		
2.00	SAM-2835	SAMSON 1" CLASSICFLO AODD DIAPHRAGM PUMP 46 gpm, 100 Max psi, NPTF Inlet & Outlet, Aluminum / Buna	785.00	1,570.00
		24 REELS - FOUR BANKS OF SIX REELS EACH AF, OIL, ATF, GREASE, DEF?, ELEC		
4.00	SAM-506122	SAMSON 1/2" x 50' LP REEL FOR COOLANT AND AIR-Single Arm in Overhead Mount Position, Includes Hose, Inlet Hose and Ball Stop, Aluminum Base and Composite Spool, 300 psi, White	419.00	1,676.00

TERMS:NET 20 from date of invoice	<b>Total</b>
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Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KENTUCKY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
8.00	SAM-506222	SAMSON 1/2" x 50' MP REEL FOR OIL AND ATF - Single Arm in Overhead Mount Position, Includes Hose, Inlet Hose and Ball Stop, Aluminum Base and Composite Spool, 2,000 psi, White	437.00	3,496.00
4.00	SAM-506321	SAMSON 3/8" x 50' GREASE REEL - Single Arm in Overhead Mount Position, Includes Hose, Inlet Hose and Ball Stop, Aluminum Base and Composite Spool, 4,000 psi, White	516.00	2,064.00
4.00	SAM-506722	SAMSON 1/2" x 50' DEF REEL - Single Arm in Overhead Mount Position, Includes Hose, Inlet Hose and Ball Stop, Aluminum Base and Composite Spool, 300 psi, White	790.00	3,160.00
4.00	SAM-3175	SAMSON 50' ENCLOSED ELECTRIC LIGHT REEL	240.00	960.00
4.00	SAM-360163	SAMSON 5 HOSE REEL STAND	1,750.00	7,000.00
		20 DISPENSE FOR OIL, ATF & AF, GREASE, DEF		
4.00	SAM-365537	SAMSON EC8 ELECTRONIC METERED OIL HANDLE - Flex Extension, 1/4 Turn Tip, 8 gpm, 1450 psi, 1/2" NPT	263.00	1,052.00
8.00	SAM-363117	SAMSON NON-METERED HANDLE FOR ATF AND AF Flex Extension, 1/4 Turn, 1/2" NPTF 1450 psi	139.00	1,112.00

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Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KENTUCKY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
4.00	SAM-413082	SAMSON HP GREASE HANDLE - Flex Outlet, Includes Z-Swivel	165.00	660.00
4.00	SAM-688303	SAMSON AUTOMATIC DISPENSE NOZZLE DEF	228.00	912.00
20.00	SAM-360127	SAMSON WALL VERTICAL MOUNT GUN HOLDER WITH DRIP COLLECTION TRAY	123.00	2,460.00
	FREIGHT	INCOMING TBD - Estimate only	1,850.00	1,850.00

TERMS:NET 20 from date of invoice

**Total \$49,339.00**

Phone #
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*Thank you for the opportunity!*





# E. C. Schmidt Plumbing Contractor, Inc.

1599 Grandview Road Alexandria, Kentucky 41001

Phone: 859-635-4308 Fax: 859-635-1450

Email: [eschmidt@fuse.net](mailto:eschmidt@fuse.net)

## Change Order

**To:**

Morel Construction

Attn: Adolph Zell

**Date:**

April 15, 2024

**C.O.**

#1

**Job Name/Location:**

Kenton Co. Operation Building  
(Airline Credit)

**Phone/Fax:**

We hereby agree to the change (s) additional work specified below:

Per our conversation, there will be a credit back for the air dryer which will be furnished and installed by others.

- 1) Air Dryer -\$1,850.00

*Please do not pay from this change order. Please deduct from contract and pay from payment application.*

Date of Agreement: 4/15/2024

Authorized Signature: *Earl C. Schmidt, President*

Payment will be made as follows:

**PER CONTRACT**

**Accepted** – The above prices and specifications of this Change Order are satisfactory and are hereby accepted. All work to be performed under same terms and conditions as specified in original contract unless otherwise stipulated.

Authorized

Signature: \_\_\_\_\_

(owner)

Date of Acceptance: \_\_\_\_\_



# RJA Environmental LLC

10600 Millington Ct  
Cincinnati, OH 45242

## ESTIMATE

Date
3/15/2024

Quote #
3041.2

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Customer
MOREL CONSTRUCTION CO LLC 2801 ALEXANDRIA PIKE HIGHLAND HEIGHTS, KY 41076 CAMPBELL COUNTY

Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
		PROVIDE AND INSTALL EQUIPMENT LISTED BELOW ONLY PLUS RUN LUBE PIPING TO EQUIPMENT (NO AIR PIPING ) AT KENTON COUNTY KY GARAGE		
		6 TANKS - USED OIL, New Oil, ATF, Coolant, Coolant Waste, Washer Fluid (Grease & DEF delivered by owner and owner supplied)		
1.00	RTH-DWT1500L	ROTH 400 GALLON DOUBLE WALL TANK - With STD Fittings, Leak Detector, & Tank Base, Metal, UL Listed	2,428.00	2,428.00
2.00	RTH-DWT1000L	ROTH 275 GALLON DOUBLE WALL TANK with std fittings plus Leak Detector and Tank Base - UL Listed	1,210.00	2,420.00
3.00	RTH-DWT400L	ROTH 110 GALLON DOUBLE WALL TANK with std fittings plus Leak Detector and Tank Base - UL Listed	958.00	2,874.00
5.00	RTH-PUMP BRKT 1 (THRD)	ROTH THREADED PUMP BRACKET - For 110, 165, & 275 gal Tanks, Includes Bracket, 4 Mounting Clips, 4 Fasteners, and 4 Stop Nuts	124.00	620.00
1.00	RTH-PUMP BRKT 3 (THRD)	ROTH THREADED PUMP BRACKET - For 400 gal Tanks, Includes Bracket, 4 Mounting Clips, 4 Fasteners, and 4 Stop Nuts	124.00	124.00
5.00	RTH-GAUGE-275	ROTH 2" SEALED FUEL OIL GAUGE - For 275 gal (1000 liter) Tanks, NPT(m), Red	41.00	205.00

TERMS:NET 20 from date of invoice	<b>Total</b>
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Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
1.00	RTH-GAUGE-400	ROTH 2" SEALED FUEL OIL GAUGE - For 400 gal (1500 liter) Tanks. NPT(m), Red	43.00	43.00
7.00	RTH-FREIGHT	ROTH (1 EACH) SHIPS ANYWHERE IN THE CONTINENTAL USA FOR \$175  PLEASE NOTE: All tanks must be inspected upon delivery. If damage is evident or suspected, note specifics on bill of lading before the driver leaves. Take photos of tanks as well showing damage. Notify us immediately. ROTH will make every effort to file a claim with the freight company, however if damage is found at a later date and BOL is not noted, your claim / reimbursement may be denied.	175.00	1,225.00
		8 PUMPS - 6 TANKS - USED OIL, New Oil, ATF, Coolant, Coolant Waste, Washer Fluid, Grease, Def		
2.00	BAL-1130-021	BALCRANK PANTHER 5:1 BARE OIL PUMP - Includes Bung Adapter and Pressure Relief Valve Kit, Steel, 10-150 psi	671.00	1,342.00
4.00	BAL-1120-015S	BALCRANK 1" UL ALUMINUM DIAPHRAGM PUMP for Diesel Fuel, Used Oil, and light viscosity fluids.	1,177.00	4,708.00

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QTY	Item	Description	Cost EA	Sell Total
1.00	BAL-1151-006	BALCRANK GREASE PUMP STATIONARY 400 lb DRUM ASSEMBLY - Includes PANTHER 50:1 Pump. (1150-011) Drum Cover. (4420-004) Follower Plate. (4440-009)	1,353.00	1,353.00
8.00	RJA-3260-033	1/4" FILTER REGULATOR - Mini, Auto Drain, NPT(f), Includes Nipple	60.00	480.00
1.00	SAM-551164	SAMSON POLY DEF PUMP, 28 GPM	623.00	623.00
1.00	SAM-688303	SAMSON AUTOMATIC DISPENSE NOZZLE DEF	240.00	240.00
		24 REELS - FOUR BANKS OF SIX REELS EACH New Oil, ATF, Coolant, Grease, Washer Fluid, Air		
8.00	BAL-2120-013	BALCRANK 1/2" x 50' CLASSIC OIL REEL - Includes Hose, Hose Stop, & 2.5' Connecting Hose, Single Arm, Steel, 2,750 psi	592.00	4,736.00
12.00	BAL-2120-020	BALCRANK 1/2" x 50' CLASSIC AW REEL - Includes Hose, Hose Stop, & 2.5' Connecting Hose, Single Arm, Steel, 300 psi	509.00	6,108.00
4.00	BAL-2120-007	BALCRANK 3/8" x 50' CLASSIC GREASE REEL - Includes Hose, Hose Stop, & 2.5' Connecting Hose, Single Arm, Steel, 5,000 psi	684.00	2,736.00

TERMS:NET 20 from date of invoice	<b>Total</b>
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# RJA Environmental LLC

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Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
		20 HANDLE DISPENSE - New Oil, ATF, Coolant, Grease, Washer Fluid, Air, and four air couplers		
8.00	BAL-3330-177	BALCRANK MECH METERED OIL HANDLE, LITERS, RIGID EXT, 1/4 MANUAL	293.00	2,344.00
8.00	BAL-3320-055	BALCRANK NON METERED CONTROL HANDLE FLEX 90 - WATER BASED PRODUCTS	174.00	1,392.00
4.00	BAL-3310-025	BALCRANK PRO SERIES GREASE HANDLE WITH Z-SWIVEL & 18" WHIP HOSE	400.00	1,600.00
4.00	BAL-3270-136	BALCRANK COUPLER, AIR 1/2" BODY, 1/2" FPT - INDUSTRIAL SERIES	36.00	144.00
2.00	BAL-3120-211	BALCRANK Y-STRAINER, 1/2"	33.00	66.00
4.00	BAL-3230-001	BALCRANK SHUT-OFF VALVE, NEEDLE 1/2" NPT, HP	87.00	348.00
6.00	RJA-3260-033	1/4" FILTER REGULATOR - Mini, Auto Drain, NPT(f), Includes Nipple	60.00	360.00
4.00	HAN-1" BRASS NPT	HANNAY 1" BRASS FOG NOZZLE - NPT	200.00	800.00
4.00	HAN-3520-25-26	HANNAY REEL 1" x 100' coupled 1" MNPT each end	1,600.00	6,400.00
1.00	CHP-VRV7F-8	CHAMPION 7.5HP AIR COMPRESSOR, 80 Gallon Vertical, RV-Series, Fully Packaged Air Compressor complete with Magnetic Starter, Air Cooled Aftercooler, Pneumatic Auto Tank Drain, Low Oil Stop Control, and Vibration Isolator Pads.	8,316.00	8,316.00

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QTY	Item	Description	Cost EA	Sell Total
1.00	CHP-CL30-06-G00	CHAMPION LUBRICATOR, 3/4", 196 CFM	398.00	398.00
1.00	CHP-CGD75A1	CHAMPION 75 CFM Non-Cycling Refrig DRYER, 115 Volt / 1 PH.	5,100.00	5,100.00
	FREIGHT	TBD - Estimate only	2,850.00	2,850.00
	RJA-	All owner supplied equipment must be on site, communicated by the CG, prior to RJA mobilization.  Once on site, if RJA's ability to work is delayed due to GC scheduling errors (cement work, painting, equipment not moved - area not prepared, in the same area of our scope) and/or if the owner supplied equipment is not available, an ADD-ON request will be required for additional time and expenses needed to complete the work and/or make a return trip.		
	RJA-...	Any electrical wiring that needs to be moved must be done by the electrician (not RJA).		
	RJA-....	A signed CHANGE ORDER must be given for any additional work requests made to RJA while on site by either contractor or Ryder employees outside scope of work quoted above.		
		TAX NOT APPLIED - GOVERNMENT PROJECT - Tax exemption certificate must be provided at time of order.		

2,300 FOR EQUIP  
2,850.00  
550 FOR COMPRESSOR

TERMS:NET 20 from date of invoice	<b>Total</b>
-----------------------------------	--------------

Phone #
513-891-8558

Sales@rodjohnsonassociates.com
www.rjasales.com

*Thank you for the opportunity!*



# RJA Environmental LLC

10600 Millington Ct  
Cincinnati, OH 45242

## ESTIMATE

Date
3/15/2024

Quote #
3041.2

*Due to fluctuating prices from our suppliers, RJA quotes can only be held for 30 days from date of quote.*

Customer
MOREL CONSTRUCTION CO LLC 2801 ALEXANDRIA PIKE HIGHLAND HEIGHTS, KY 41076 CAMPBELL COUNTY

Ship To
KENTON COUNTY BUS GARAGE 11800 TAYLOR MILL RD INDEPENDENCE, KY 41051 KENTON COUNTY

QTY	Item	Description	Cost EA	Sell Total
	RJA-TERMS (20) billed 2	TERMS: NET 20 days from date of invoice - TWO INVOICES  RJA will invoice for materials up to 2 weeks prior to mobilization and remaining balance will billed upon completion		
		PAST DUE INVOICES ARE SUBJECT TO ADDITIONAL 1.5% FEE MONTHLY		
		ACCEPTANCE OF RJA BID PER ABOVE		
		Signature- Morel Construction/ Kenton County Bus Garage Job		

TERMS:NET 20 from date of invoice	<b>Total</b> \$62,383.00
-----------------------------------	--------------------------

Phone #
---------

Sales@rodjohnsonassociates.com
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513-891-8558
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www.rjasales.com
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*Thank you for the opportunity!*

**CHAMPION**

5-25 HP | RECIPROCATING AIR COMPRESSORS

**Advantage**







**CHAMPION**



**QUICK SHIP\***  
COMPRESSORS

AVAILABLE FOR

*Immediate  
Shipment*

**Downtime is NOT an option**

Champion has the solution

# Fully-Equipped Packages Available Immediately

## A Winning Combination

Champion compressors are proven units, known for their reliability over decades of use. We know our products and understand how they operate in many different operating environments. No matter the application, Champion gets the job done.

The Advantage Program features fully-equipped compressor packages that are available for immediate shipment.

## We Provide the Total Package

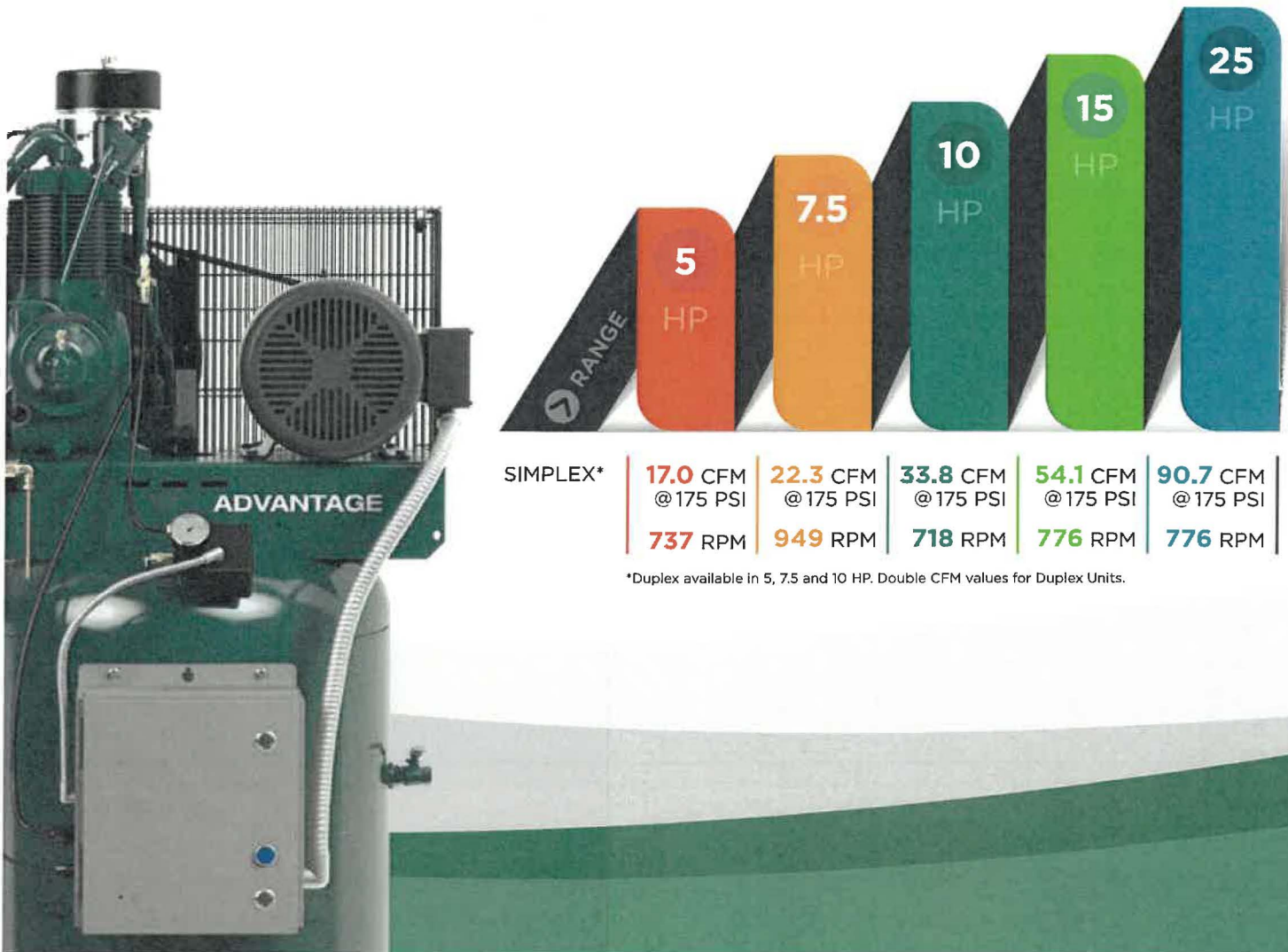
Premium accessories on a superior performing compressor—saves you time and protects your investment.



\*Immediate shipment subject to unit availability.

# Advantage Standard Features

- Heavy Duty Two-Stage, Splash-Lubricated Air Compressor Pump(s)
- Multi-Finned Cylinders and Head
- Integral Cylinder Head
- Intercoolers for Cooling Between Stages
- Reliable High Flow Disc Valves
- Tapered Roller Main Bearings
- Balanced Crankshaft
- Oil-Level Site Glass
- Centrifugal Unloader for Loadless Starting
- 0-300 PSIG Air Pressure Gauge
- Factory Fill with ChampLub Lubricants
- Vertical or Horizontal Configurations
- ASME Code Air Receiver
  - Pressure Relief Valve
  - Service Valve
  - Drain Valve
  - Pressure Gauge
- Oversized Inlet Filter
- Mounted Control Panel
- Electric Timed Drain
- Air-Cooled Aftercooler (select models)
- Vibration Isolators
- Low-Oil Stop Control





### Vibration Isolator Pads

Isolates the compressor unit from the foundation or floor. Reduces noise and protects the unit from out-of-level floor situation that could cause vibration and damage.



### Air-Cooled Aftercooler

The factory mounted, heavy duty, air-cooled aftercooler effectively removes up to 65% of the moisture from discharged compressed air.



### Control Panel

Provides thermal overload protection, and transformer provides reliable low voltage output to the auxiliary components. May be mounted or unmounted.



### Automatic Tank Drain

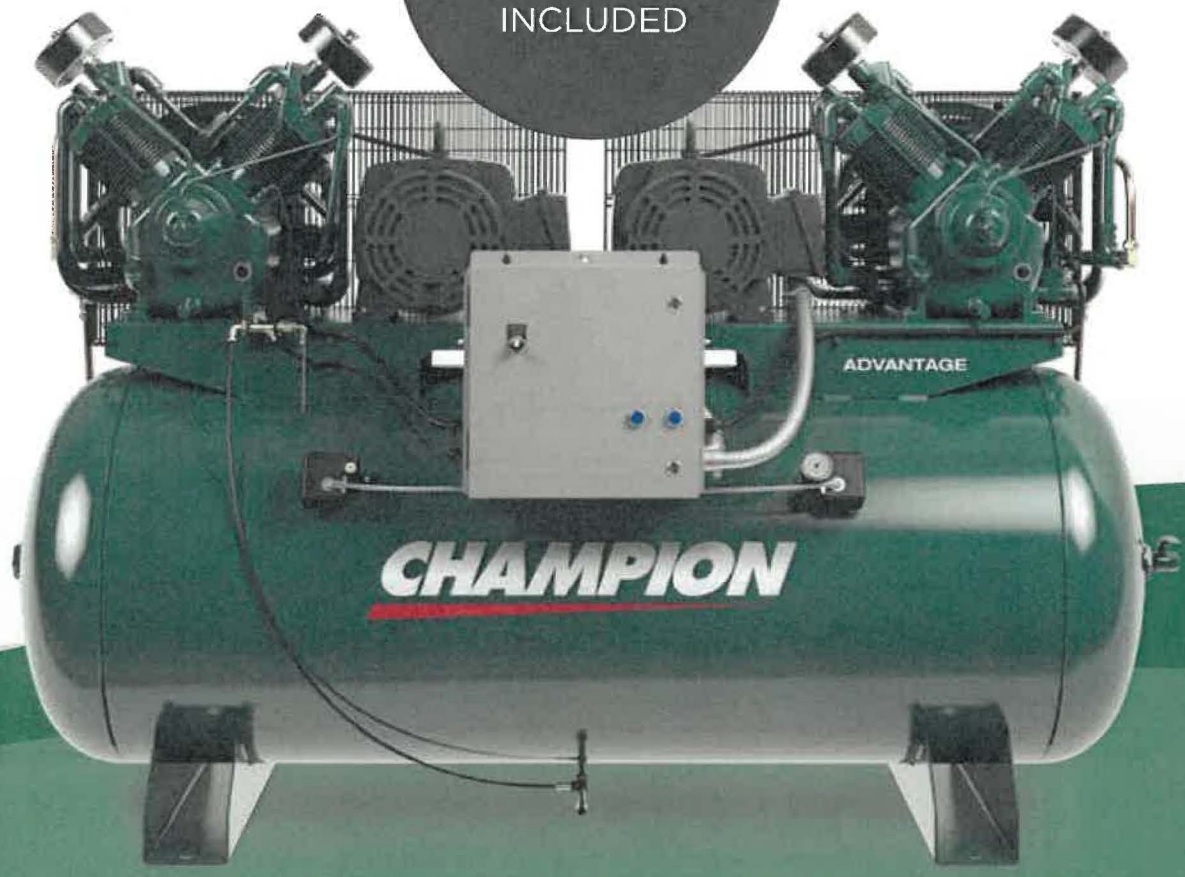
Ant adjustable electric timed drain automatically discharges moisture from the receiver.



### Low-Oil Stop Control

Low-oil stop control shuts down the unit when oil levels are below an adequate level. Prevents the unit from restarting until oil level has been restored.

CHAMPION  
**PREMIUM**  
**ACCESSORIES**  
INCLUDED



# Convenience & Peace of Mind



## Standard Warranty

The standard warranty covers parts and labor on the package components for one year and three years on the compressor pump.



The Champion philosophy ensures long-lasting, reliable equipment. Our warranty program demonstrates our confidence in our products. Each new Champion assembled unit has a 3 year warranty on the compressor pump against defects in materials of workmanship under normal use and service.

\*See standard warranty form BU-32 for complete standard warranty details.

## Premium Extended Warranty

Purchase a Premium Warranty Kit at the same time as your new Champion compressor package to receive extended warranty protection. This offer will double the coverage with an additional 3 years of warranty on the compressor pump (parts & labor) providing 6 YEARS of worry free coverage. The Premium Extended Warranty also provides an extra 12 months coverage on the package for a total of 24 months. See Premium Warranty form BU-28 for complete extended warranty details.

- Premium Warranty kit has all necessary service items (oil & filters) for 6 years of annual maintenance.
- Duplex machines require two kits, one for each pump.
- The use of approved Champion lubricants are required to maintain the extended warranty period.



# Advantage

## 5-25 HP RECIPROCATING COMPRESSORS

MOTOR HP	TANK CAPACITY GAL.	ADVANTAGE MODEL	DIMENSIONS L x W x H INCHES	APPROX. SHIP WEIGHT LBS.	175 PSI RATING	
					RPM	CFM DEL'Y
5	80	VR5-8	35 x 27 x 75	590	737	17.0
5 (x2)	120	HR5D-12	75 x 33 x 54	980	737	34.0
7.5	80	VR7F-8	31 x 24 x 75	630	949	22.3
7.5 (x2)	120	HR7D-12	83 x 34 x 54	1305	570	51.2
10	120	HR10-12	71 x 32 x 55	895	718	33.8
10	120	VR10-12	43 x 30 x 81	895	718	33.8
10 (x2)	240	HR10D-24	88 x 38 x 61	2325	718	67.6
15	120	HR15-12	73 x 36 x 62	1210	776	54.1
25	120	HR25-12	74 x 36 x 65	1597	776	90.7

## Sales & Service Distributors Across America

### An Extensive Network

Your sales, service and technical support needs will be handled quickly and easily by our extensive network of Champion factory-trained, authorized local distributors. Maintaining and adequately servicing your compressor has never been easier.

Over **1,100** Champion distributors ready to provide solutions to all your compressed air needs

To find a distributor visit:  
[www.championpneumatic.com](http://www.championpneumatic.com)



Champion is committed to  
delivering **superior products** built with  
the **exceptional standards** you expect.

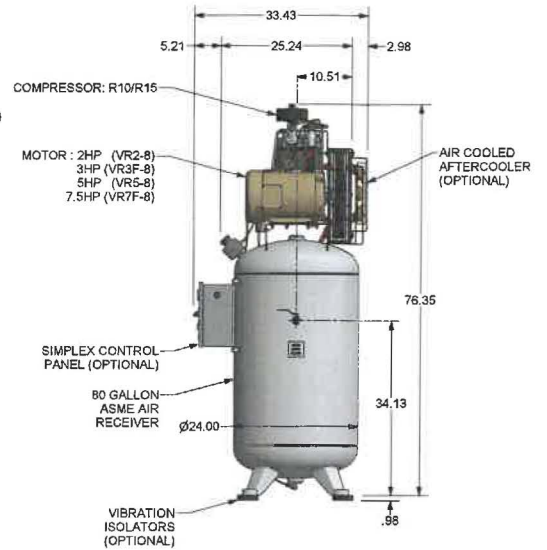
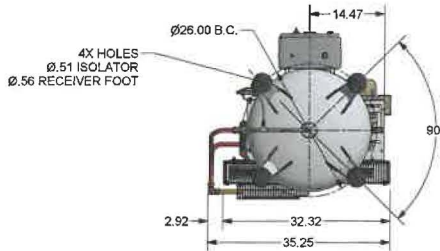
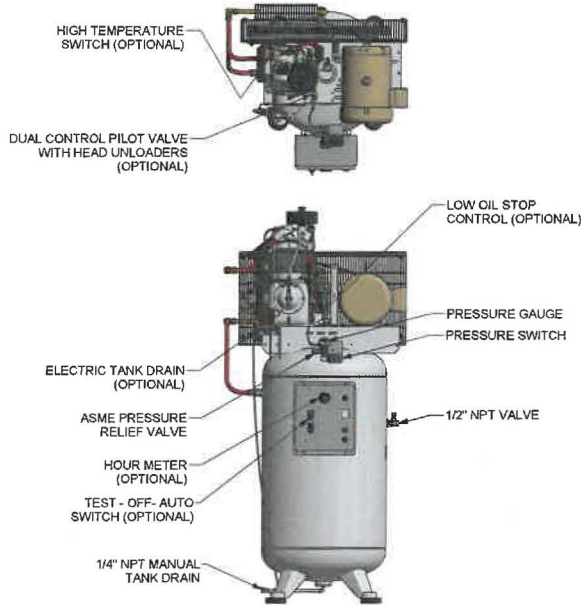
**CHAMPION**<sup>®</sup>

1301 North Euclid Avenue  
Princeton, Illinois 61356 USA  
866-276-4330  
[www.ChampionPneumatic.com](http://www.ChampionPneumatic.com)



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CR-ADV-PROG 4th Ed. 8/19

REVISION HISTORY						
ZONE	REV	DESCRIPTION	ECN #	DATE	DWN	CHK
	02	REVISED AS PER ECN	1129957	1/11/2020	jb3513.ext	



- NOTES:
- DO NOT SCALE DRAWING.
  - SPECIFICATIONS AND DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.
  - ALL DIMENSIONS ARE IN INCHES.

FINISH OF CHAMFERS AND FLEETS TO CONFORM TO ROUGHEST ADJACENT AREA.  
SURFACE ROUGHNESS MAXIMUM PER ASME B46.1 PLUS, THREADS PER THE ASME STANDARD.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.  
TOL. ON DECIMALS .X = ± .05  
TOL. ON DECIMALS .XX = ± .02  
TOL. ON DECIMALS .XXX = ± AS SPECIFIED  
TOL. ON ANGLES = ± 0.3°

THIRD ANGLE PROJECTION

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DIMENSIONING AND TOLERANCING PER ASME Y14.5-2009  
THREADS PER ASME B1.1 GAGING SYSTEM 210/0.2, ASME B1.26.1 & B1.26.2

**Gardner Denver**  
Gardner Denver Inc.  
Quincy, IL

313CAS800  
313CAS800  
OUTLINE-UNIT, 80GL ELECTRIC  
VR2-8, VR3F-8, VRS-8, VR7F-8  
412CAS800 | 02  
1 OF 1



<b>CHAMPION</b>		<b>R Series 7.5HP</b>		<b>Eng. Data Sheet: CP-R4-V4</b>															
		<b>Engineering Data Sheet</b>		<b>Date: 9/13/2022</b>															
		<b>Air Cooled, 60Hz</b>		<b>Supersedes: CP-R4-V3</b>															
<b>Model Number</b>		VR7F-6	VR7F-8	VR7F-12	HR7F-6	HR7F-8	HR7F-12	HR7DF-12	HR7DF-24	BR7F	BR7	VR7-8	VR7-12	HR7-8	HR7-12	HR7-24	HR7D-12	HR7D-24	
<b>Configurator Number</b>		<b>R2-30A</b>																	
<b>Description</b>		<b>Units</b>		<b>Product Data</b>															
<b>Compressor Pump</b>																			
Pump Model	n/a	R15B								R30D									
Number of Cylinders	n/a	2								4									
Bore & Stroke	in.	4-5/8 & 2-1/2 x 3								4-5/8 (2) & 2-1/2 (2) x 3									
Flywheel	OD in.	16.5								18.9									
Pulley 80 / 125 PSIG	OD in.	9.35								7									
Pulley 175 PSIG	OD in.	9.35								6.2									
Number of Stages	n/a	2																	
Lubrication	n/a	Splash Lubricated																	
Oil Capacity	qt.	2								4									
Oil Type	n/a	CHAMPLUB, ISO 100 Non-Detergent Industrial Lubricant																	
Number of Belt Grooves	n/a	2																	
Belt Section	n/a	B																	
Crankcase	n/a	Cast Iron																	
Bearings	n/a	Tapered Roller																	
Cylinder	n/a	Aluminum with Cast Iron Liner																	
Piston 1st Stage	n/a	Aluminum Alloy																	
Piston 2nd Stage	n/a	Cast Iron																	
Valves	n/a	Disc Valves																	
Intake Filter	n/a	5 Micron																	
<b>Main Drive Motor (1)</b>																			
Drive Motor Nominal Power	hp(kW)	7.5 (5.59)																	
Voltage (2)	n/a	208/230/460/575																	
Phase	n/a	1 or 3																	
Drive Motor Speed	rpm	1800																	
Service Factor	n/a	1.15																	
Motor Insulation Class	n/a	F																	
Drive Motor Full Load Current - 208/1/60 (3)	amps	44.0																	
Drive Motor Full Load Current - 230/1/60 (3)	amps	40.0																	
Drive Motor Full Load Current - 208/3/60 (3)	amps	24.2																	
Drive Motor Full Load Current - 230/3/60 (3)	amps	22.0																	
Drive Motor Full Load Current - 460/3/60 (3)	amps	11.0																	
Drive Motor Full Load Current - 575/3/60 (3)	amps	9.0																	
Wire Size - 208/1/60 (3,4,5)	awg	6 (2)								6 (2)									
Wire Size - 230/1/60 (3,4,5)	awg	6 (2)								6 (2)									
Wire Size - 208/3/60 (3,4,5)	awg	8 (6)								8 (6)									
Wire Size - 230/3/60 (3,4,5)	awg	10 (6)								10 (6)									
Wire Size - 460/3/60 (3,4,5)	awg	14 (10)								14 (10)									
Wire Size - 575/3/60 (3,4,5)	awg	14 (10)								14 (10)									

1) Main Drive Motor performance is based off the standard ODP motor.  
2) Compressors are voltage specific and must be specified at time of order.  
3) The amp draws and wire size provided are off general NEC guidelines. For proper breaker and fuses please consult a licensed electrician or electrical contractor.  
4) Copper wire, 75°C (167°F) maximum temperature rating, 30°C (86°F) ambient temperature  
5) Values in ( ) is for incoming power line on duplex units.

<b>CHAMPION</b>		<b>R Series 7.5HP</b>										<b>Eng. Data Sheet: CP-R4-V4</b>									
		<b>Engineering Data Sheet</b>										<b>Date: 9/13/2022</b>									
		<b>Air Cooled, 60Hz</b>										<b>Supersedes: CP-R4-V3</b>									
Model Number		VR7F-6	VR7F-8	VR7F-12	HR7F-6	HR7F-8	HR7F-12	HR7DF-12	HR7DF-24	BR7F	BR7	VR7-8S	VR7-12	HR7-8	HR7-12	HR7-24	HR7D-12	HR7D-24			
Configurator Number		R2-30A																			
Description	Units	Product Data																			
<b>Performance Data (6)</b>																					
CFM Delivery @ 80 PSIG (7)	acfm		23.7			47.4	23.7					31.9					63.8				
CFM Delivery @ 125 PSIG (7)	acfm		23.0			46.0	23.0					28.7					57.4				
CFM Delivery @ 175 PSIG (7)	acfm		22.3			44.6	22.3					25.6					51.2				
Displacement @ 80 / 125 PSIG	cfm		28.7			57.4	28.7					39.6					79.2				
Displacement @ 175 PSIG	cfm		28.7			57.4	28.7					33.5					67				
Maximum Pressure	psig	175																			
Working Pressure Differential	psig	35																			
Pump Operating Speed @ 80 / 125 PSIG	rpm		949									649									
Pump Operating Speed @ 175 PSIG	rpm		949									570									
Minimum Speed	rpm	400																			
Maximum Speed	rpm		1000									1050									
Cooling Air Flow @ 80 / 125 PSIG	cfm		1195									975									
Cooling Air Flow @ 175 PSIG	cfm		1195									835									
Dryer Flow	cfm	32																			
Heat Rejection	btu/hr		16800			33600						16800					33600				
Noise Level (8)	dB(A)		77			80						77					78				
Aftercooler Approach Temp (9)	°F	45																			
Min/Max Operating Temp	°F	32 / 104																			
<b>Dimensions and Weight</b>																					
Tank Size	gal	60	80	120	60	80	120	240				80	120	80	120	240	120	240			
Tank Configuration	n/a	Vertical						Horizontal						Vertical		Horizontal					
Tank Capacity @ 80 PSIG	ft³	51.7	68.9	103.3	51.7	68.9	103.3	206.7				68.9	103.3	68.9	103.3	206.7	103.3	103.3			
Tank Capacity @ 125 PSIG	ft³	76.2	101.6	152.4	76.2	101.6	152.4	304.9				101.6	152.4	101.6	152.4	304.9	152.4	304.9			
Tank Capacity @ 175 PSIG	ft³	103.5	138.0	207.0	103.5	138.0	207.0	414.0				138.0	207.0	138.0	207.0	414.0	207.0	414.0			
Tank Pumping Time @ 125 PSIG (10)	min	2.9	3.8	5.7	2.9	3.8	2.9	2.9	5.9			3.0	4.6	3.0	4.6	9.5	2.3	4.7			
Tank Pumping Time @ 175 PSIG (10)	min	4.1	5.5	8.3	4.1	5.5	4.1	4.1	8.6			4.9	7.4	4.9	7.5	15.4	3.7	7.7			
Package Length	in.	35.3	35.0	35.3	51.8	66.8	71.5	74.9	88.3	38.0	42.7	42.8	42.7	67.3	71.8	88.2	83.0	88.3			
Package Length w/ dryer	in.	n/a						74.6	76.8			n/a						82.5	91.9	n/a	
Package Width	in.	32.5	34.5	37.4	31.6	31.6	32.8	32.7	37.9	24.7	25.3	37.9	37.4	31.6	32.8	33.3	33.7	37.9			
Package Width w/ dryer	in.	n/a						34.5	35.7			n/a						35.8	35.8	n/a	
Package Height	in.	77.0	76.4	75.8	49.3	49.0	54.8	54.0	60.5	29.5	28.2	63.7	75.7	48.8	54.7	60.6	54.0	60.6			
Package Height w/ dryer	in.	n/a						49.8	54.0			n/a						54.8	61.4	n/a	
Approx. Ship Weight	lbs.	565	630	802	565	630	802	1150	1485	310	430	753	882	763	882	1236	1305	1675			
Approx. Ship Weight w/ dryer	lbs.	n/a						855	964			n/a						1080	1230	n/a	
Pump Length	in.							20										21.13			
Pump Width	in.							16.875										25.42			
Pump Height	in.							23.25										23.563			
Pump Weight	lbs.							109										220			
Discharge Connection (11)	npt "	1/2 F	3/4 F	1/2 F	3/4 F						3/4 F										
Parts Manual ID	n/a	CQF3454						CQF3455			CQF3454						CQF3455				
Service Manual ID	n/a	CQF3473																			
Controller Manual ID	n/a	CQF3475						CQF3538			CQF3475						CQF3538				

- 6) All units tested in accordance with CAGI/PNEUROP Acceptance Test Code PN2CPTC2.
- 7) acfm is actual cubic feet per minute at inlet conditions.
- 8) Sound levels are based off estimated dB(A).
- 9) Approach temperature is the temperature above the discharge air and above the ambient air of the aftercooler.
- 10) Tank pumping time is based off 0 PSIG to fully pressurized.
- 11) M = Male connection, F=Female connection

**NOTE: Duplex models take quantities of 2 on applicable items such as motors, pump, oil quantity, etc.**

***CHAMPION***

10-1200 SCFM | NON-CYCLING DRYER

# CGD Series



# Refrigerated Global Design

CGD series refrigerated air dryers offer the perfect balance between technology and simplicity to dry compressed air systems to a stable ISO 8573-1 Air Quality, Class 4 to 5 pressure dew point.



## Design Features

### CGD 10-50 SCFM

- Smooth bore, copper tube-on-tube heat exchangers
- Centrifugal separator efficiently captures condensate
- Static condenser design provides trouble free, quiet operation
- Electronic drain valve

### CGD 75-1200 SCFM

- Stainless steel, cross flow heat exchangers optimize heat transfer and service life
- Compact design saves floor space
- Stainless steel inlet/outlet connections to prevent corrosion
- Timed electric condensate drain
- Integral demister/separator



Copper  
"Tube-on-Tube"  
Heat Exchanger



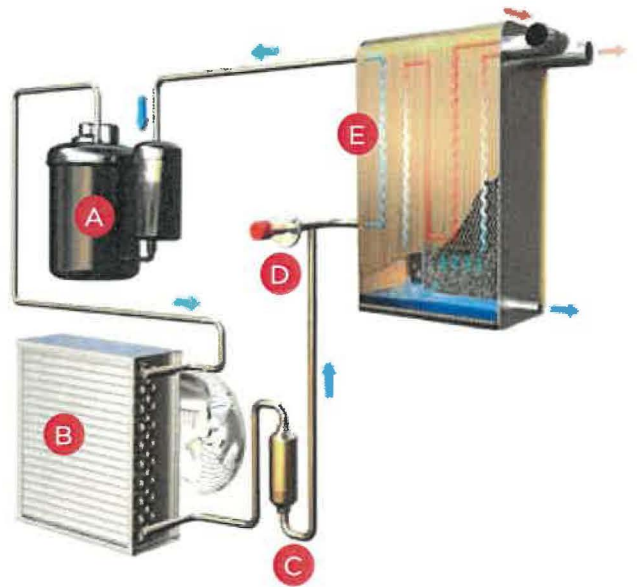
Stainless Steel  
Demister/Separator

# How it Works

## Refrigeration Circuit

A hermetically sealed refrigerant compressor (A) takes in evaporated refrigerant and compresses it to a higher pressure. The air cooled condenser (B) turns the high pressure gas into a high pressure refrigerant. An in-line filter dryer (C) removes contaminants from the high pressure refrigerant gas. A constant pressure valve (D) reduces the pressure and regulates the flow of refrigerant into the heat exchanger (E).

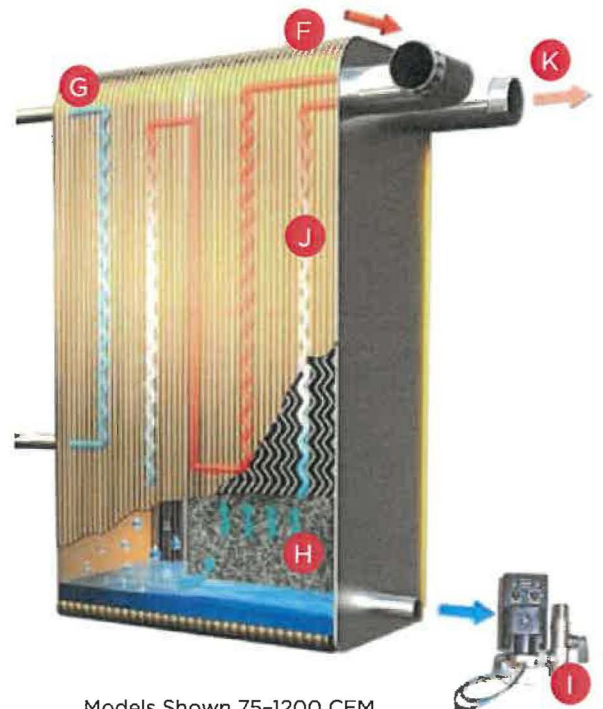
Refrigerant is continuously circulated through the system



Models Shown 75-1200 CFM

## Air Circuit

Warm, saturated compressed air enters the air to air heat exchanger (F) and is cooled by the exiting air. The precooled air (G) then enters the air to refrigerant heat exchangers and is further chilled causing water vapor to condense. Condensed moisture is collected from the air stream by an integral separator (H) with stainless steel demister. Liquid condensate is removed from the separator by a (I) high performance drain. Cold air is then reheated in the air-to-air heat exchanger (J) to eliminate pipe line sweat. Clean dry air exits (K) the dryer and is now conditioned for use.



Models Shown 75-1200 CFM

# Value at its Best

## Efficient Condensate Management

- Increased calming zone and integral demister/separator captures liquid condensate and solid particles
  - Effectively removes condensate from 0-100% flow conditions without moisture carry-over
- Furnished with condensate drain
  - Electronic or timed electric (dependent on scfm range)

## Safety First - Environmentally Friendly

- Models 10-125 scfm CFC free R134A refrigerant
- Models 150-1200 scfm R407C refrigerant
- CSA approved

## Warranty Protection

- 2-Year Standard Warranty
- 3-Year Extended Warranty

- 1 Fan motor and blade assembly
- 2 Rugged, epoxy coated cabinet
- 3 Timed electric drain
- 4 Controls—models shown are 200-500 scfm
- 5 Stainless steel heat exchanger with integral demister separator
- 6 Refrigerant compressor
- 7 Constant expansion valve
- 8 Air-cooled condenser core



# Take Control

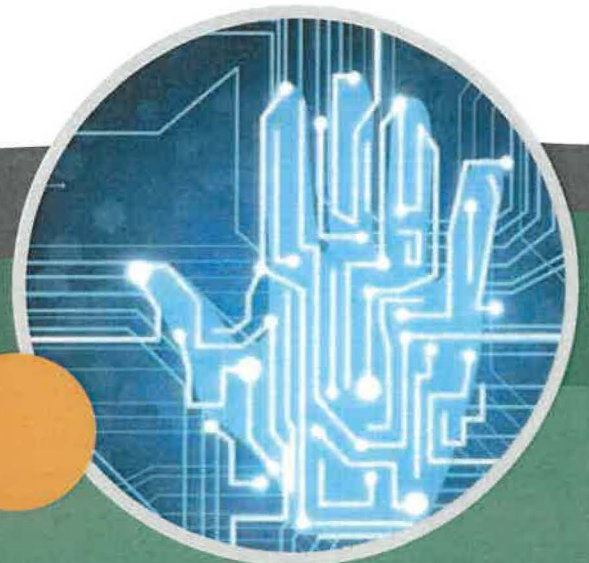
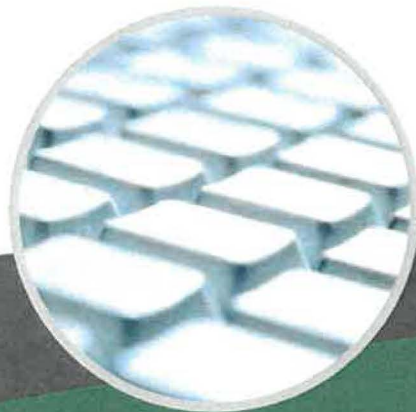
## Models 10-150 SCFM

- Illuminated on/off switch
- Dew point temperature display to monitor inlet load conditions



## Models 200-1200 SCFM

- Illuminated on/off switch
- LED dew point temperature display
- EDV control
- Dry alarm contact
- Equipped with panel mounted drain timer control



# International Air Quality Class Standards

ISO 8573-1, the international standard for compressed air quality, defines the amount of contamination permissible in compressed air. The ISO standard identifies three primary forms of contamination: solid particles, water and oil contaminants. These forms are classified and assigned to a quality class, ranging from Class 0 being the highest purity level to a Class 6, which is the most relaxed level.

Gardner Denver's CGD series refrigerated air dryers provide dry compressed air at a stable ISO 8573-1 Air Quality Class 4 to 5 pressure dew point.



## Pre-Filtration Option

FIL Series—Grade C Filtration removes solids and oil contaminants from the air stream before entering the dryer.

### ISO Air Quality Class

- Solids - Class 2
- Remaining Oil - Class 4
- Removes solids 1.0 micron & larger
- Remaining oil content 2.0 mg/m<sup>3</sup>

## After-Filtration Option

FIL Series—Grade E Filtration provides high efficiency oil removal protecting downstream equipment.

### ISO Air Quality Class

- Solids - Class 1
- Remaining Oil - Class 1
- Removes 99.999+% of solids  $\geq$  0.01 micron
- Remaining oil content  $<$  0.01 mg/m<sup>3</sup>





# CGD SPECIFICATIONS

MODEL	INLET FLOW		PRESSURE DROP	VOLTAGE	DIMENSIONS						REFRIGERANT	IN/OUT CONNECTIONS		POWER CONSUMPTION	WEIGHT
	SCFM	NM <sup>3</sup> /H			HEIGHT		WIDTH		DEPTH			NPT	KW		
			IN	MM	IN	MM	IN	MM							
CGD10A1	10	16	2.3		15	381	13	330	13	330		¾" OD	0.21	64	
CGD15A1	15	25	2.5		15	381	13	330	13	330		¾" OD	0.24	69	
CGD25A1	25	42	2.7		22	558	16	406	15	381		¾"	0.47	88	
CGD35A1	35	59	2.9		22	558	16	406	15	381		¾"	0.47	92	
CGD50A1	50	84	2.9	115/1/60	22	558	20	508	20	508	R 134a	¾"	0.63	101	
<b>CGD75A1</b>	<b>75</b>	<b>127</b>	<b>2.5</b>		<b>24</b>	<b>609</b>	<b>15</b>	<b>381</b>	<b>33</b>	<b>838</b>		<b>1"</b>	<b>0.52</b>	<b>123</b>	
CGD100A1	100	170	3.3		24	609	15	381	33	838		1"	0.65	129	
CGD125A1	125	212	3.7		24	609	15	381	33	838		1"	0.68	135	
CGD150A1			3.0		21	533	13	330	30	762		1"	1.11	161	
CGD150A2	150	255	3.7	230/1/60	24	609	15	381	35	889	R 407c	1"	0.91	152	
CGD200A2			2.4	230/1/60	30	762	18	457	37	940		2"	1.53	196	
CGD200A4	200	340	2.6	460/3/60	30	762	17	432	36	914	R 134a	1 ½"	1.42	183	
CGD250A2			2.2	230/1/60	30	762	18	457	37	940	R 407c	2"	1.87	181	
CGD250A4	250	424	2.8	460/3/60	30	762	17	432	36	914	R 134a	1 ½"	1.98	211	
CGD300A2			1.7	230/1/60	32	812	20	508	44	1118	R 407c	2"	2.09	252	
CGD300A4	300	509	3.1	460/3/60	30	762	20	508	38	965	R 134a	1 ½"	2.05	219	
CGD400A2			2.6	230/1/60	32	812	20	508	44	1118	R 407c	2"	2.83	270	
CGD400A4	400	680	2.5		30	762	21	787	38	965	R 134a	2"	2.5	232	
CGD500A4	500	849	3.0		32	812	22	558	48	1218		2"	3.18	328	
CGD600A4	600	1019	3.7		32	812	22	558	50	1270		2"	3.8	353	
CGD600W4	600	1019	3.7		32	812	22	558	50	1270		2"	3.8	353	
CGD800A4	800	1359	2.8		59	1450	30	762	42	1067		3" FLG	5.4	687	
CGD800W4	800	1359	2.8	460/3/60	59	1450	30	762	42	1067	R 407c	3" FLG	5.4	687	
CGD1000A4	1000	1699	2.9		64	1626	29	737	45	1143		4" FLG	6.6	786	
CGD1000W4	1000	1699	2.9		64	1626	29	737	45	1143		4" FLG	6.6	786	
CGD1200A4	1200	2038	3.9		64	1626	29	737	45	1143		4" FLG	8.66	810	
CGD1200W4	1200	2038	3.9		64	1626	29	737	45	1143		4" FLG	8.66	810	

Maximum Inlet Air Temperature: 120°F (49°C) Maximum Operating Pressure: 250 psig (Models CGD25-50), 232 psig (Models CGD75-500). Above conditions tested at 100°F inlet air temperature, 100% saturated inlet air, 100 psig operating pressure and 100°F ambient air temperature.

## OPERATING CONDITIONS

MODEL	MAX INLET AIR PRESSURE		MIN INLET AIR PRESSURE		MAX INLET AIR TEMPERATURE		MIN INLET AIR TEMPERATURE		MAX AMBIENT AIR TEMPERATURE		MIN AMBIENT AIR TEMPERATURE		
	SCFM	PSIG	BARG	PSIG	BARG	°F	°C	°F	°C	°F	°C	°F	°C
5-10 to 50		250	17	30	2	120	49	40	4	110	43	45	7
75-500		232	16	10	1	120	49	40	4	110	43	45	7
600-1200		232	16	43	3	120	49	45	7	110	43	34	1

## CAPACITY CORRECTION FACTORS

To adjust the dryer capacity for non-standard conditions, use the Capacity Correction Factors (multipliers) from the tables below. **Sizing Example:** What is the capacity of an CGD100 at 100°F inlet air temperature, 150 psig working pressure and 110°F ambient air temperature? **Answer:** 100 scfm (rated flow from CGD specifications table) × 1.08 (correction factor for inlet air temperature, table 1) × 0.94 (correction factor for ambient air temperature, table 2) = 102 scfm

INLET AIR PRESSURE		INLET AIR TEMPERATURE			
PSIG	BARG	90°F/32°C	100°F/38°C	110°F/43°C	120°F/49°C
80	5.6	1.19	0.95	0.77	0.63
100	6.9	1.25	1	0.82	0.68
125	8.6	1.3	1.05	0.86	0.72
150	10.3	1.34	1.08	0.9	0.75
175	12.1	1.37	1.11	0.92	0.78
200	13.8	1.39	1.14	0.95	0.8
250	17.2	1.43	1.17	0.98	0.83

AMBIENT AIR TEMPERATURE	80°F/27°C	90°F/32°C	100°F/38°C	110°F/43°C
Multiplier	1.12	1.06	1	0.94

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