Ohio | Public Utilities Commission

Application to Commit Energy Efficiency/Peak Demand Reduction Programs (Mercantile Customers Only)

Case No.: 13-1323-EL-EEC

Mercantile Customer: **Procter and Gamble (3 Locations)**

Electric Utility: **Duke Energy**

Program Title or Description: **Chiller Tune Ups**

Rule 4901:1-39-05(F), Ohio Administrative Code (O.A.C.), permits a mercantile customer to file, either individually or jointly with an electric utility, an application to commit the customer's existing demand reduction, demand response, and energy efficiency programs for integration with the electric utility's programs. The following application form is to be used by mercantile customers, either individually or jointly with their electric utility, to apply for commitment of such programs in accordance with the Commission's pilot program established in Case No. 10-834-EL-POR

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the electric utility's energy efficiency and demand reduction (EEDR) rider will be automatically approved on the sixty-first calendar day after filing, unless the Commission, or an attorney examiner, suspends or denies the application prior to that time. Completed applications requesting the exemption from the EEDR rider (Option 2) will also qualify for the 60-day automatic approval so long as the exemption period does not exceed 24 months. Rider exemptions for periods of more than 24 months will be reviewed by the Commission Staff and are only approved up the issuance of a Commission order.

Complete a separate application for each customer program. Projects undertaken by a customer as a single program at a single location or at various locations within the same service territory should be submitted together as a single program filing, when possible. Check all boxes that are applicable to your program. For each box checked, be sure to complete all subparts of the question, and provide all requested additional information. Submittal of incomplete applications may result in a suspension of the automatic approval process or denial of the application.

Any confidential or trade secret information may be submitted to Staff on disc or via email at ee-pdr@puc.state.oh.us.

Section 1: Mercantile Customer Information

Name: **The Procter and Gamble Company**

Principal address: **1 Procter and Gamble Plaza Cincinnati Ohio 45201-5572**

Address of facility for which this energy efficiency program applies:

6083 Center Hill Avenue Cincinnati Ohio 45241
11473 Grooms Road Cincinnati, Ohio 45241
8340 Mason Montgomery Road Cincinnati, Ohio 45040

Name and telephone number for responses to questions:

Megan Fox, 513-287-3367

Electricity use by the customer (check the box(es) that apply):

✓ The customer uses more than seven hundred thousand kilowatt hours per year at the above facility. (**See Attachment 1 - Appendix 1)**

□ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.)

Section 2: Application Information

A) The customer is filing this application (choose which applies):

□ Individually, without electric utility participation.

✓ **Jointly with the electric utility.**

B) The electric utility is: **Duke Energy**

C) The customer is offering to commit (check any that apply):

□ Energy savings from the customer's energy efficiency program. (Complete Sections 3, 5, 6, and 7.)

□ Capacity savings from the customer's demand response/demand reduction program. (Complete Sections 4, 5, 6, and 7.)

✓ **Both the energy savings and the capacity savings from the customer's energy efficiency program. (Complete all sections of the Application.)**

Section 3: Energy Efficiency Programs

A) The customer's energy efficiency program involves (check those that apply):

- ☐ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, and the date on which the customer would have replaced such equipment if it had not been replaced early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).

- ☐ Installation of new equipment to replace equipment that needed to be replaced The customer installed new equipment on the following date(s):

- ☐ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s): _____.

- ✓ **Behavioral or operational improvement.**

B) Energy savings achieved/to be achieved by the energy efficiency program:

1) If you checked the box indicating that the project involves the early replacement of fully functioning equipment replaced with new equipment, then calculate the annual savings [(kWh used by the original equipment) – (kWh used by new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

   Annual savings: _____kWh

2) If you checked the box indicating that the customer installed new equipment to replace equipment that needed to be replaced, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by the higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

   Annual savings: _____kWh

   Please describe any less efficient new equipment that was rejected in favor of the more efficient new equipment.

3) If you checked the box indicating that the project involves equipment for new construction or facility expansion, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: _____ kWh

Please describe the less efficient new equipment that was rejected in favor of the more efficient new equipment.

4) If you checked the box indicating that the project involves behavioral or operational improvements, provide a description of how the annual savings were determined. **Chiller tune-ups - preventative maintenance performed resulting in energy savings.**

_____

Section 4: Demand Reduction/Demand Response Programs

A) The customer's program involves (check the one that applies):

✓ **Coincident peak-demand savings from the customer's energy efficiency program.**

□ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)

□ Potential peak-demand reduction (check the one that applies):

□ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.

□ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.

B) On what date did the customer initiate its demand reduction program?

February and April 2012

C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

417.7 KW (See Attachment 1 - Appendix 2)

Section 5: Request for Cash Rebate Reasonable Arrangement (Option 1) or Exemption from Rider (Option 2)

Under this section, check the box that applies and fill in all blanks relating to that choice.

Note: If Option 2 is selected, the application will not qualify for the 60-day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) The customer is applying for:

✓ **Option 1: A cash rebate reasonable arrangement.**

OR

□ Option 2: An exemption from the energy efficiency cost recovery mechanism implemented by the electric utility.

OR

□ Commitment payment

B) The value of the option that the customer is seeking is:

Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):

✓ A cash rebate of **$10,383.50 (See Attachment 1 - Appendix 3).**

Option 2: An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider.

□ An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for ____ months (not to exceed 24 months). (Attach calculations showing how this time period was determined.)

OR

□ A commitment payment valued at no more than $_____. (Attach documentation and calculations showing how this payment amount was determined.)

OR

□ Ongoing exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for an initial period of 24 months because this program is part of the customer's ongoing efficiency program. (Attach documentation that establishes the ongoing nature of the program.) In order to continue the exemption beyond the initial 24 month period, the customer will need to provide a future application establishing additional energy savings and the continuance of the organization's energy efficiency program.)

Section 6: Cost Effectiveness

The program is cost effective because it has a benefit/cost ratio greater than 1 using the (choose which applies):

□ Total Resource Cost (TRC) Test. The calculated TRC value is: _____ (Continue to Subsection 1, then skip Subsection 2)

✓ Utility Cost Test (UCT). The calculated **UCT value is 2.21(See Attachment 1 - Appendix 4)**

Subsection 1: TRC Test Used (please fill in all blanks).

The TRC value of the program is calculated by dividing the value of our avoided supply costs (generation capacity, energy, and any transmission or distribution) by the sum of our program overhead and installation costs and any incremental measure costs paid by either the customer or the electric utility.

The electric utility's avoided supply costs were _____.

Our program costs were _____.

The incremental measure costs were _____.

Subsection 2: UCT Used (please fill in all blanks).

We calculated the UCT value of our program by dividing the value of our avoided supply costs (capacity and energy) by the costs to our electric utility (including administrative costs and incentives paid or rider exemption costs) to obtain our commitment.

Our avoided supply costs were **$146,184 (See Attachment 1 - Appendix 5).**

The utility's program costs were **$25,453 (See Attachment 1 - Appendix 6).**

The utility's incentive costs/rebate costs were **$10,383.50 (See Attachment 1 - Appendix 3)**.

Section 7: Additional Information

Please attach the following supporting documentation to this application:

Narrative description of the program including, but not limited to, make, model, and year of any installed and replaced equipment.

A copy of the formal declaration or agreement that commits the program or measure to the electric utility, including:

1) any confidentiality requirements associated with the agreement;
2) a description of any consequences of noncompliance with the terms of the commitment;
3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;
4) permission by the customer to the electric utility and Commission staff and consultants to measure and verify energy savings and/or peak-demand reductions resulting from your program; and,
5) a commitment by the customer to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.

Refer to Offer Letter following this application

A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.

DUKE ENERGY
Mercantile Self Direct Program
139 East Fourth Street
Cincinnati, OH 45202

513 629 5572 fax

May 24, 2013

Mr. Quentin Groves
Procter and Gamble Company
11510 Reed Hartman Highway
Cincinnati, Ohio 45241

Subject: Your **Three Prescriptive** Applications for a Duke Energy Mercantile Self-Direct Rebate

Dear Mr. Groves:

Thank you for your Duke Energy Mercantile Self Direct rebate application. As noted in the Energy Conservation Measure (ECM) chart on page two, a total rebate of $10,383.50 has been proposed for your chiller tune up projects completed in the 2012 calendar years. **All Self Direct Rebates are contingent upon approval by the Public Utilities Commission of Ohio (PUCO).**

At your earliest convenience, please indicate if you accept this rebate by

- providing your signature on page two
- completing the PUCO-required affidavit on page three.

Please return the documents to my attention via fax at 513-629-5572 or e-mail to SelfDirect@Duke-Energy.com. Upon receipt, Duke Energy will submit the necessary documentation to PUCO. Following PUCO's approval, Duke Energy will remit payment.

At Duke Energy, we value your business and look forward to working with you on this and future energy efficiency projects. We hope you will consider our Smart $aver® incentives, when applicable. Please contact me if you have any questions.

Sincerely,

Grady Reid, Jr
Product Manager
Mercantile Self Direct Rebates

cc: Mike Harp, Duke Energy
Rob Jung, Ecova

Please indicate your response to this rebate offer within 30 days of receipt.

☒ Rebate is accepted. ☐ Rebate is declined.

By accepting this rebate, Procter and Gamble affirms its intention to commit and integrate the energy efficiency projects listed on the following pages into Duke Energy's peak demand reduction, demand response and/or energy efficiency programs.

Additionally, Procter and Gamble also agrees to serve as joint applicant in any future filings necessary to secure approval of this arrangement as required by PUCO and to comply with any information and reporting requirements imposed by rule or as part of that approval.

Finally, Procter and Gamble affirms that all application information submitted to Duke Energy pursuant to this rebate offer is true and accurate. Information in question would include, but not be limited to, project scope, equipment specifications, equipment operational details, project costs, project completion dates, and the quantity of energy conservation measures installed.

If rebate is accepted, will you use the monies to fund future energy efficiency and/or demand reduction projects?

☒ YES ☐ NO

If rebate is declined, please indicate reason (optional):

Customer Signature	Printed Name	Date
[illegible]	Quentin Graves	5/28/13

Proposed Rebate Amounts

Measure ID	Energy Conservation Measure (ECM)	Proposed Rebate Amount
ECM-1	Water Cooled Chiller Tune Up – Year 2012 - Center Hill - (Qty – 6)	$3402.00
ECM-2	Water Cooled Chiller Tune Up – Year 2012 - Grooms Rd - Qty – 5)	$3624.00
ECM-3	Water Cooled Chiller Tune Up – Year 2012- Mason Montgomery Rd - (Qty – 5)	$3357.50
Total		$10,383.50

Ohio | Public Utilities Commission

Application to Commit Energy Efficiency/Peak Demand Reduction Programs (Mercantile Customers Only)

Case No.: ____-____-EL-EEC

State of Ohio :

Quentin Groves, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

   Jones Lang LaSalle

   [insert customer or EDU company name and any applicable name(s) doing business as]

2. I have personally examined all the information contained in the foregoing application, including any exhibits and attachments. Based upon my examination and inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete.

3. I am aware of fines and penalties which may be imposed under Ohio Revised Code Sections 2921.11, 2921.31, 4903.02, 4903.03, and 4903.99 for submitting false information.

Quentin Groves Facility Manager

Signature of Affiant & Title

Sworn and subscribed before me this 29 day of May, 2013 Month/Year

April Schnelle

Signature of official administering oath

April L. Schnelle

Print Name and Title

My commission expires on APRIL L. SCHNELLE Notary Public, State of Ohio My Commission Expires 09-24-2017

Attachment 1 – Procter and Gamble (3 Locations)

Appendix 1 – Electric History

27400759 01		
PROCTER & GAMBLE		
6083 CENTER HILL RD		
CINCINNATI, OH 45224		
Date	Days	Actual KWH
4/1/2013	32	2,443,415
2/28/2013	29	2,280,527
1/30/2013	30	2,272,871
12/31/2012	33	2,427,533
11/28/2012	33	2,469,435
10/26/2012	29	2,413,435
9/27/2012	30	2,915,817
8/28/2012	29	3,101,609
7/30/2012	32	3,767,998
6/28/2012	29	2,902,786
5/30/2012	30	2,822,445
4/30/2012	32	2,464,609
Total		**32,282,480**

Appendix 2 – Annual kWh and kW savings

Measure	**Measure Amount**	**Unit of Measure**	**Annual kWh Gross with losses (per unit)**	**TOTAL Annual kWh Gross with losses**	**Saved Summer coincident kW with losses Per Unit**	**Total KW Gross with losses**
Water Cooled Chiller Tune Up - Center Hill	5603.4	Tons	64.46	361,195	0.02	112.1
Water Cooled Chiller Tune Up - Grooms Rd	5280	Tons	64.46	340,349	0.02	105.6
Water Cooled Chiller Tune Up - Mason Montgomery Rd	10000	Tons	64.46	644,600	0.02	200.0
Totals	**20,883.40**			**1,346,144**		**417.7**

Existing Energy kWh (Per Unit)	New Energy kWh (Per Unit)	kWh Savings (Per Unit)	Total kWh Savings	Existing Demand-kW (Per Unit)	New Demand (Per Unit)	kW Savings (Per Unit)	Total kW Savings
600	540	60	336204	0.6	0.552	0.048	268.9632
600	540	60	316800	0.6	0.552	0.048	253.44
600	540	60	600000	0.6	0.552	0.048	480
			1,253,004				**1,002**

Note: After consideration of line losses, total energy savings are **1,346,144 kWh and 418 summer coincident kW.** These values may also reflect minor DSMore software rounding error

Appendix 3 – Cash Rebate

Measure	Amount
Water Cooled Chiller Tune Up - Center Hill	$3,402.00
Water Cooled Chiller Tune Up - Grooms Rd	$3,624.00
Water Cooled Chiller Tune Up - Mason Montgomery Rd	$3,357.50
Totals	**$10,383.50**

Appendix 4 – Utility Cost Test

Measure	UCT
Water Cooled Chiller Tune Up (ALL)	2.21

Appendix 5 – Avoided Supply Costs

Measure	T&D	Production	Capacity	Quantity	Total Avoided Costs
Water Cooled Chiller Tune Up - Center Hill	$1.00	$4.00	$2.00	5603.4	$39,224
Water Cooled Chiller Tune Up - Grooms Rd	$1.00	$4.00	$2.00	5280	$36,960
Water Cooled Chiller Tune Up - Mason Montgomery Rd	$1.00	$4.00	$2.00	10000	$70,000
Totals				**20883.4**	**$146,184**

Appendix 6 – Utility Program Costs

Measure	Qty	Admin Costs	Total Costs
Water Cooled Chiller Tune Up - Center Hill	5603.4	$1.22	$6,829
Water Cooled Chiller Tune Up - Grooms Rd	5280	$1.22	$6,435
Water Cooled Chiller Tune Up - Mason Montgomery Rd	10000	$1.22	$12,188
Totals	**20883.4**		**$25,453**

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-629-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☒ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

Please list Duke Energy account numbers below (attach listing of multiple accounts and/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
2740-0759-01-0	36,000,000		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct rebates are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

Please check each box to indicate completion of the following program requirements:

☒ All sections of appropriate application(s) are completed	☒ Proof of payment.*	☒ Manufacturer's Spec sheets	☐ Energy model/calculations and detailed inputs for Custom applications

* If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet	☐ MSD Prescriptive Lighting ☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet	☐ MSD Prescriptive Lighting ☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet
Heating & Cooling	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Heating & Cooling ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	☐ MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s)	☐ MSD Prescriptive Heating & Cooling	☐ MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s)
Chillers & Thermal Storage	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Chillers & Thermal Storage ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Chiller Tune-ups	☐ MSD Prescriptive Chiller Tune-ups	☒ MSD Prescriptive Chiller Tune-ups	☐ MSD Prescriptive Chiller Tune-ups
Motors & Pumps	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Motors, Pumps & Drives ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
VFDs	Not Applicable	☐ MSD Prescriptive Motors, Pumps & Drives ☐ MSD Custom Part 1 ☐ MSD Custom VFD Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom VFD Worksheet
Food Service	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Food Service ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Air Compressors	☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet	☐ MSD Prescriptive Process ☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet
Process	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Process ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Energy Management Systems	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet
Behavioral* & No/Low Cost**		☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**
*** Please ensure that you include the age of the replaced equipment for measures classified as "Early Replacement" in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.
**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

Duke Energy

MERCANTILE SELF DIRECT Ohio Chiller Tune-up Service Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-629-5572.

Is this application: ☒ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Required (check one)		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☐ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☒ Duke Energy Representative	☐ Web Site	☐ Radio
☐ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	Procter & Gamble	Contact		Quentin Graves (JLL)	
Phone	513-698-4540	**Account Number**		2740-0759-01-0	
Street Address (Where rebate should be mailed)		11510 Reed Hartman Hwy			
City	Blue Ash	State	Ohio	Zip Code	45241
Installation Street Address	6083 Center Hill Avenue				
City	Cincinnati	State	Ohio	Zip Code	45224
E-mail Address	Graves.q@pg.com				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor		Contact			
Phone		Fax			
Street Address					
City		State		Zip Code	
E-mail Address					

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☐ **Vendor**

Payment Information		
Who should receive rebate payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of rebate directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	31-0411980
	Vendor Tax ID #	

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature	Quentin Graves (JLL)	Vendor Signature	
Date	4/26/13	Date	
Title	JLL Facility Manager	Title	

Rebates are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for rebates. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

Duke Energy

Air Cooled and Water Cooled Chiller Tune-ups						
Manufacturer and Model #	# of Units	Tons Per unit*	Total Project Cost	Current Service Date	Previous Service Date	Total Rebate
YKHHHDJ2-DAFS	2	1250	$2,640	2/17/12	3/4/11	$1,320
YKS5R4J1-DDCS	2	1500	$2,744	2/21/12	3/14/11	$1,372
YCWZ77CCO-46PA	2	51.7	$1,420	2/29/12	3/17/11	$710

*Provide manufacturer's spec sheet documenting the size of the unit

To Calculate your tune-up rebate*:	
A. Add up equipment capacity of all units serviced (in tons) and multiply by $2/ton =	$11,207
B. Cost of service = 6804 x 50% of total service cost =	$3,402
Total Rebate (lesser amount of row A or row B)=	$3,402

*Rebates cannot exceed 50% of total service invoice (**external** labor and equipment).

Service Requirements:

1. **This rebate is available only once per unit in a 12 month period.**
2. An individual chiller is considered one unit.
3. Copy of paid invoice must be included with this application
4. Self serviced (internal) labor should not be included as part of the total service cost. Only external labor will be considered as part of the total service invoice.
5. Cooling service must include the following normal maintenance items **(please check if completed):**

☒ Air cooled condenser coil cleaning	☒ Compressor amp draw	☒ Low Pressure controls
☒ System Pressure check and adjust	☒ Supply motor amp draw	☒ High Pressure controls
☒ Filter inspect or replace	☒ Condenser fan(s) amp draw	☒ Crankcase heater operation
☒ Belt inspect or replace	☒ Liquid line temperature	☒ Water cooled chiller condenser tube cleaning
☒ Contactors condition	☒ Suction pressure & temperature	☒ Water cooled chiller evaporator tube cleaning
☒ Evaporator condition	☒ Oil level & pressure	

Rebate Eligibility

- Rebates are only available to customers on Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Rebate will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise rebate levels and/or qualifying efficiency levels at anytime.
- Customer may assign the rebate to the vendor who installed/supplied the equipment. The customer's signature is required in the appropriate places on this form to assign the rebate to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the rebate. This assigned rebate must reduce the purchase price paid for the equipment by an equivalent amount.
- Any equipment which, either separately or as part of a project, has or will receive a rebate from any other Duke Energy program
- In no case will Duke Energy pay a rebate above the actual cost of the service.
- Rebate recipient assumes all responsibilities for any tax consequences resulting from Duke Energy rebate payment.
- To qualify for Duke Energy rebates, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Rebate applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the rebate program.

WHBC - 91 PAGES - 10/2/12

DeBra-Kuempel
MECHANICAL - ELECTRICAL
An EMCOR Company

521300

Remit to: P.O. Box 701620
Cincinnati, OH 45270-1620

BILLED BY:JULIE B. #513-527-8137

INVOICE	DATE
00699156	9/30/12

CUSTOMER:
21962
PAM
JONES LANG LASALLE AMERICAS-P&G
ACCOUNTING
PO BOX 5126
CINCINNATI, OH 45201-5126
698-6547

JOB ADDRESS:
JLL/P&G / WHBC / CHILLERS-12/12
6083 CENTER HILL AVENUE
CINCINNATI, OH 45224

Customer PO No.:

Job Number...: 244452
Bill Contract: 244452

REFERENCE DESCRIPTION	AMOUNT
JLL P&G @ WHBC / CHILLERS MAINTENANCE 1/1/2012 THRU 12/31/2012	
PREVENTIVE MAINTENANCE	7,304.00

12/13 PO# 799318

RECEIVED
SEP 27 2012
JLL ACCOUNTING

New PO requested 10/5/12

OK TO PAY

Now Accepting Visa/MC/AMX for
Payment of Invoices.
A Service Charge of 1.5% per Month
will be charged on All Past Due Accts.

SUB-TOTAL	7,304.00
TAX	474.76
AMOUNT PAID	.00
AMOUNT DUE	7,778.76

ORIGINAL DUE ON RECEIPT

DeBra-Kuempel 3976 Southern Avenue Cincinnati, Ohio 45227 Phone 513-271-6500 Fax 513-271-4676

SHIPPED OCT 02 2012

KY MASTER # M04348
OH CONTRACTOR # 25061

WHBC - 91 PAGES - 10/2/12

Page ____ of ____

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244452 Date: 02/17/12 Tech: 149 Unit:

Equip/Mfg: YORK Model: YK

Serial #:

Status: ☐ Complete ☑ Incomplete ☐ Follow-up

Customer Name: PG Winton Hills Acct Mgr: TV

Site Address:

City: Cin State: OH Zip:

Bill To: Jones Lang LaSalle

Equipment Location: Chiller Plant

Purpose of Call: Annual Maintenance

Description of Work:
Reviewed Fault History log & recorded
Logged machines that are running.
Reviewed operation of chillers with
Dave Buchert

Recommendations:

- ☑ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqp/Manpower
- ☑ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☑ Proper GFCI Usage
- ☐ Hot Work
  - ☐ Fire Alarm Syst Disabled
  - ☐ Hot Work Permit
  - ☐ Fire Watch
  - ☐ Explosion
- ☐ Chemical Hazard
- ☑ Customer Site Specific
- ☐ Confined Space Entry
  - ☐ CSE Permit
- ☐ 70E Elect PPE
- ☑ Air Quality Monitor
- ☐ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Ed Martinez	2-17	6	X1

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244452 Date: 02/17/12 Tech: 0576 Unit:

Equip/Mfg: YORK Model: YKHHHDJ2-AAFS

Serial #: SBRM081630

Status: ☐ Complete ☐ Incomplete ☐ Follow-up

Customer Name: P&G WHBC Jones Lang LaSalle Acct Mgr: Tom K

Site Address: 6083 Center Hill Ave

City: Cincinnati State: Ohio Zip: 45224

Bill To: Jones Lang LaSalle

Equipment Location: Mechanical Room

Purpose of Call: Annual Chiller PM

Description of Work: Worked at P&G to perform annual PM on chillers. Checked and tightened electrical connections. Leak checked machines, checked contactors, checked temperatures and pressures, Ran units and checked operation. Filled out log sheet

Recommendations:

- ☐ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☐ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☒ Proper GFCI Usage
- ☐ Hot Work
- ☐ Fire Alarm Syst Disabled
- ☐ Hot Work Permit
- ☐ Fire Watch
- ☐ Explosion
- ☐ Chemical Hazard
- ☒ Customer Site Specific
- ☐ Confined Space Entry
- ☐ CSE Permit
- ☒ 70E Elect PPE
- ☐ Air Quality Monitor
- ☒ Appropriate PPE
- ☐ Other

Quantities						
Cash	Truck	Shop	Pur. Order	Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Danny Knight	Feb 15	6.0	Reg
" "	Feb 16	2.0	Reg
" "	Feb 17	8.0	Reg

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: [signature] 2-17-12 Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page ____ of ____

WHBC - 91 PAGES - 10/2/12

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244452 Date: 02/21/12 Tech: 149 Unit: 4+5

Equip/Mfg: YORK 05315 Model: YKS5R40T1

Serial #: GKEM053153

Status: ☐ Complete ☑ Incomplete ☐ Follow-up

Customer Name: PG Winton Hills Acct Mgr: N

Site Address: Center Hill

City: Cin State: Oh Zip:

Bill To: Jones Lang LaSalle

Equipment Location: CUP

Purpose of Call: Chiller Annual maintenance

Description of Work: shut down machine
Changed drives + oil filters
Checked motor couplings. Checked flow switches
Checked oil heaters + oil pump
Began leak checking machine

Recommendations:

- ☑ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☑ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☑ Proper GFCI Usage
- ☐ Hot Work
  - ☐ Fire Alarm Syst Disabled
  - ☐ Hot Work Permit
  - ☐ Fire Watch
  - ☐ Explosion
- ☐ Chemical Hazard
- ☑ Customer Site Specific
- ☐ Confined Space Entry
  - ☐ CSE Permit
- ☑ 70E Elect PPE
- ☐ Air Quality Monitor
- ☑ Appropriate PPE
- ☐ Other

Quantities: Cost	Truck	Shop	Pur Order	Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt ☐ Comp. Failure

Tech	Date	Hours	Rate
Ed Mathews	2-21	4	x1
Ed Mathews	2-22	5	x1
Ed Mathews	2-23	3	x1
Ed Mathews	2-24	8	x1

Tool Usage:

☑ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☑ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244452 Date: 02/22/12 Tech: 0576 Unit:

Equip/Mfg: York Model: YKHHDJ2-DAFS

Serial #: SNLM852100

Status: ☐ Complete ☐ Incomplete ☐ Follow-up

Customer Name: Pr & G WHBC (Jones Lang Lasalle) Acct Mgr: Tom V

Site Address: 6883 Center Hill

City: Cincinnati State: Ohio Zip:

Bill To: Jones Lang Lasalle

Equipment Location: Utility Plant

Purpose of Call: Annual Chiller PM and Inspection

Description of Work: Worked at WHBC to perform annual PM on Chillers. Checked and tightened electrical connections, lubed motors and heaters. Changed oil filters and all other clean-up filter driers. Greased motors, checked motor coupling, checked flow switches and safeties, leak checked machines. Filled

Recommendations: and log sheets. Downloaded all fault histories to give copies

- ☒ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☒ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☒ PPE Hard Hat, Glasses
- ☒ Fall Protection
- ☒ Proper GFCI Usage
- ☐ Hot Work
- ☐ Fire Alarm Syst Disabled
- ☐ Hot Work Permit
- ☐ Fire Watch
- ☐ Explosion
- ☐ Chemical Hazard
- ☒ Customer Site Specific
- ☐ Confined Space Entry
- ☐ CSE Permit
- ☒ 70E Elect PPE
- ☐ Air Quality Monitor
- ☒ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			
					692507	Filter driers and oil filters
					692313	Filters and driers

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Danny K	2-21	8.0	Reg
	2-22	8.0	
	2-23	8.0	
	2-24	8.0	

Tool Usage:

☒ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☒ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244452 Date: 02/29/12 Tech: 0576 Unit: ALL

Equip/Mfg: York Model: ON-File

Serial #: ON-File

Status: [X] Complete [ ] Incomplete [ ] Follow-up

Customer Name: P&G WHBC Jones Lang LaSalle Acct Mgr: Tom V

Site Address: 6083 Center Hill

City: Cincinnati State: Ohio Zip: 45224

Bill To:

Equipment Location: Chiller Plant

Purpose of Call: Contract Annual PM and Inspection

Description of Work: Worked at WHBC for Dave Buckert to perform annual PM and inspection. Worked on Chillers to change all oil filters and refrigerant filter driers. Checked oil pump amps after swapping motor. Checked oil heaters 480volt and 120volt took amp draws. Checked flow

Recommendations: switches and high pressure switch. Leak checked all machines, Inspected for oil leaks, took oil samples for analysis. Filled out log sheets for machines that were operational. Filled out annual sheets and refrigerant forms.

- [X] Lock Out/Tag Out
- [ ] LO/TO Permit
- [ ] Ladder (Tie Off)
- [ ] Lifting Eqpt/Manpower
- [ ] PPE Hard Hat, Glasses
- [X] Fall Protection
- [X] Proper GFCI Usage
- [ ] Hot Work
- [ ] Fire Alarm Syst Disabled
- [ ] Hot Work Permit
- [ ] Fire Watch
- [ ] Explosion
- [ ] Chemical Hazard
- [X] Customer Site Specific
- [ ] Confined Space Entry
- [ ] CSE Permit
- [X] 70E Elect PPE
- [ ] Air Quality Monitor
- [X] Appropriate PPE
- [ ] Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

- [ ] AC Check Out
- [ ] Refrig. Check Out
- [X] Refrig. Job Site Rpt.
- [ ] Heating Check Out
- [ ] Add. Material Rpt.
- [ ] Start Up Rpt.
- [ ] Comp. Failure

Tech	Date	Hours	Rate
Denny K	2-27	5.0	Reg
" "	2-29	7.0	Reg

Tool Usage:

- [X] Vac. Pump
- [ ] Comb. Analyzer
- [ ] Torch
- [X] Rec. Unit
- [ ] Crane
- [ ] Lift
- [ ] Auger
- [ ] Sewer Camera
- [X] Other HIO Leak detector

# of Deliveries to Job:

Authorized Signature: Dave Buckert 2/29/12 Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Chiller Maintenance Program - Procter & Gamble Cincinnati Sites

Site	Building	Floor	Room	Designation	Mfg.	Model #	Serial #	Capacity	Annual PM w/out oil change	Comments
GO	Central Building	Basement	C-LL	Chiller #1	Carrier	19RV65654R6DFS64S	72024	650	$2,800.00	
GO	Central Building	Basement	C-LL	Chiller #2	Carrier	19RV65654R6DFS64S	72026	650	$2,800.00	
GO	Central Building	Basement	C-LL	Chiller #3	Carrier	19RV65654R6DFS64S	72023	650	$2,800.00	
GO	Central Building	Basement	C-LL	Chiller #4	Carrier	19RV65654R6DFS64S	72025	650	$2,800.00	
GO	Sycamore Bld.	Penthouse		Chiller #5	Carrier	19XRV4547353CL5645	71501	400	$2,400.00	
MBC	Utility Bldg CUP	1st	Chiller	#1 Chiller	York	YK S2 S2 J2 DH AS	1093-115021	2000	$1,343.00	
MBC	Utility Bldg CUP	1st	Chiller	#2 Chiller	York	YK S2 S2 J2 DH AS	1093-114815	2000	$1,343.00	
MBC	Utility Bldg CUP	1st	Chiller	#3 Chiller	York	YK S2 S2 J2 DH AS	1193-115022	2000	$1,343.00	
MBC	Utility Bldg CUP	1st	Chiller	#4 Chiller	York	YK S2 S2 J2 DH AS	1193-114816	2000	$1,343.00	
MBC	Utility Bldg CUP	1st	Chiller	#5 Chiller	York	YK S2 S2 J2 DH AS	1193-115023	2000	$1,343.00	
MBC	CUP	Roof	Outside	#7 Chiller	Trane	RTAA3004XGO1A1DOBK	U94D21837	300	$1,429.00	
SWIC	HB	1st	PRL Mechanical Room	Carrier Chiller #2. Serves CTCH Boxes	Carrier	30HK-040-D-611	2508Q16090	40	$1,620.00	
SWIC	C	1st	C1 Mechanical Room	#3 Vilter Chiller. Services CTCH boxes	Vilter	D-17612261	2261R22D	60	$1,350.00	
SWIC	C	1st	C1 Mechanical Room	CTCH Chiller A for 20deg box C1B06	Copeland	6RA4-1000-TSK	01H67438K	20	$1,130.00	
SWIC	HB	1st	PRL Mechanical Room	Carrier Chiller #1. Serves CTCH Boxes	Carrier	30HK-040-D-611	2608Q16108	40	$1,620.00	
SWIC	Utility Building	1st	Boiler Room	#1 Chiller (15682-000022)	York	YKSDRCJ4-DHCS	GNFM 135563	2000	$1,333.00	
SWIC	Utility Building	1st	Boiler Room	#2 Chiller (15682-000023)	York	YKSDRCJ4-DHCS	GLFM 195253	2000	$1,333.00	
SWIC	Utility Building	1st	U Bldg. Annex	#4 Chiller (15682-000025)	York	YK P1 Q2 H2-DB AS	YDAM 882221	1200	$1,342.00	
WHBC	6083	CUP		Chiller #1	York	YKHHHDJ2-DAFS	SNLM52100	1250	$1,320.00	
WHBC	6083	CUP		Chiller #3	York	YKHHHDJ2-DAFS	SBRM081630	1250	$1,320.00	
WHBC	6083	CUP		Chiller #4	York	YKS5R4J1-DDCS	GFHM07925	1500	$1,372.00	
WHBC	6083	CUP		Chiller #5	York	YKS5R4J1-DDCS	GKEM053153	1500	$1,372.00	
WHBC	6083	CUP		Glycol Chiller #1	York	YCWZ77CCO-46PA	UBKMQ00971	51.7	$710.00	
WHBC	6083	CUP		Glycol Chiller #2	York	YCWZ77CCO-46PA	UBKMQ00970	51.7	$710.00	
								24,263	$38,276.00	

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244441 Date: 10/25/12 Tech: 1505 Unit:

Equip/Mfg: Model:

Serial #:

Status: [X] Complete [ ] Incomplete [ ] Follow-up

Customer Name: P+G Winton Hill Acct Mgr: DI

Site Address:

City: State: Zip:

Bill To:

Equipment Location:

Purpose of Call:

Description of Work: Gathered vibration DATA Per Agreement

Recommendations:

- [ ] Lock Out/Tag Out
- [ ] LO/TO Permit
- [X] Ladder (Tie Off)
- [ ] Lifting Eqpt/Manpower
- [X] PPE Hard Hat, Glasses
- [X] Fall Protection
- [ ] Proper GFCI Usage
- [ ] Hot Work
- [ ] Fire Alarm Syst Disabled
- [ ] Hot Work Permit
- [ ] Fire Watch
- [ ] Explosion
- [ ] Chemical Hazard
- [ ] Customer Site Specific
- [ ] Confined Space Entry
- [ ] CSE Permit
- [ ] 70E Elect PPE
- [ ] Air Quality Monitor
- [X] Appropriate PPE
- [ ] Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

- [ ] AC Check Out
- [ ] Refrig. Check Out
- [ ] Refrig. Job Site Rpt.
- [ ] Heating Check Out
- [ ] Add. Material Rpt.
- [ ] Start Up Rpt.
- [ ] Comp. Failure

Tech	Date	Hours	Rate
L Wisnosack	10-25	6	Reg

Tool Usage:

- [ ] Vac. Pump
- [ ] Comb. Analyzer
- [ ] Torch
- [ ] Rec. Unit
- [ ] Crane
- [ ] Lift
- [ ] Auger
- [ ] Sewer Camera
- [X] Other Vib2130-D

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3976 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937 531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.536.8505

Louisville
3600 Chamberlain Drive, Suite 358 • Louisville, KY 40241
502.368.0454

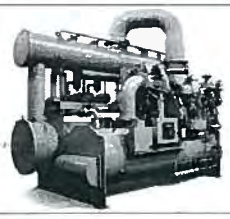
24 Hour Service 513.271.6500

FILE

YORK®
Water-Cooled Chillers

YORK
BY JOHNSON CONTROLS

(All chillers are electric-drive and use refrigerant HFC-134a unless otherwise noted *)

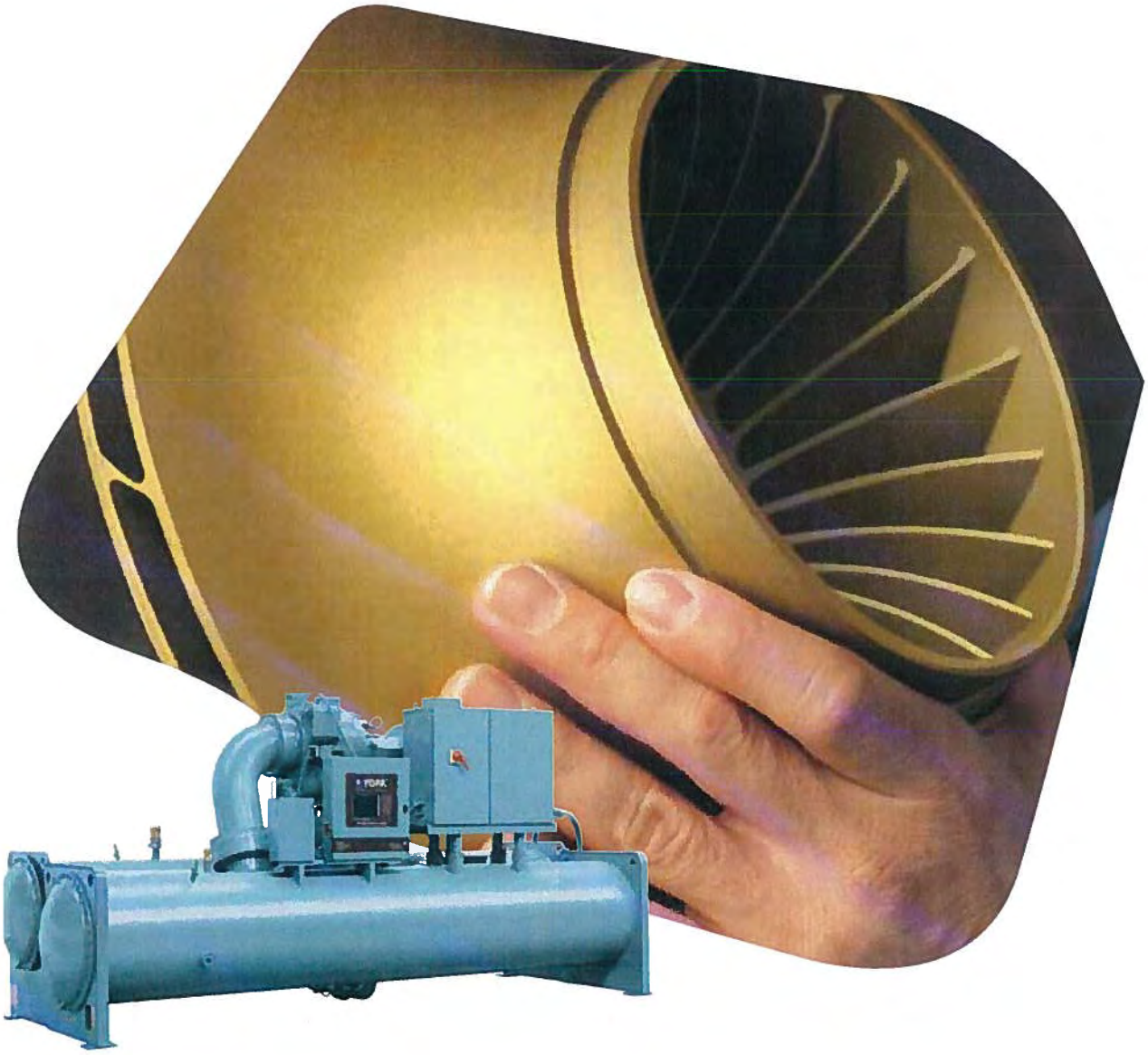
CAPACITY	MODEL and DESCRIPTION	
215 - 380 TR 755 - 1340 kW	**Model YMC² – magnetic centrifugal compressor** **Unique Features:** 30% less refrigerant, 73 dBA, OptiView™ control panel, OptiSound™ control, OptiSpeed™ variable-speed drive **Ideal Applications:** comfort cooling, facilities requiring low sound levels, green / LEED® buildings	
250 - 3000 TR 880 - 10,550 kW	**Model YK – centrifugal compressor** **Unique Features:** OptiSpeed™ variable-speed drive, heat-recovery capability, quick start feature, OptiSound™ control, OptiView™ control panel **Ideal Applications:** comfort cooling, heat-recovery sites, data centers	
2500 - 3500 TR 8800 - 12,000 kW	**Model YK-EP – centrifugal compressors with economizer** **Unique Features:** higher efficiency at design and off-design conditions, OptiSpeed™ variable-speed drive, single control panel **Ideal Applications:** district cooling, process / industrial cooling, data centers, turbine inlet-air cooling	
1500 - 6000 TR 5300 - 21,100 kW	**Model YD – dual centrifugal compressors** **Unique Features:** smallest footprint per cooling ton in the industry, single OptiView™ control panel **Ideal Applications:** district cooling, retrofits, building additions	
300 - 2500 TR 1050 - 8800 kW	**Model CYK – compound centrifugal compressors** **Unique Features:** high-head and heat-pump capability **Ideal Applications:** air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	
700 - 2800 TR 2460 - 9850 kW	**Model YST – steam-turbine-drive centrifugal compressor *** **Unique Features:** packaged steam condenser, automatic start-up, OptiView™ control panel **Ideal Applications:** co-generation, hybrid plants	
3000 - 5500 TR 10,550 - 19,350 kW	**Titan Model OM – centrifugal compressor with electric-motor, steam-turbine, or gas-engine drive *** **Unique Features:** flexibility, longest life expectancy, easily retrofitted **Ideal Applications:** district cooling, air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	

PUBL-6374 (512) Supersedes: PUBL-6374 (212)
© 2012 Johnson Controls, Inc. P.O. Box 423, Milwaukee, WI 53201 Printed in USA
www.johnsoncontrols.com

Johnson Controls

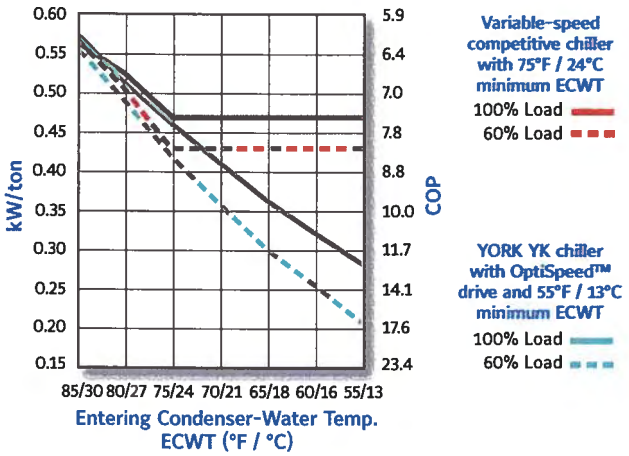
YORK® MODEL YK
CENTRIFUGAL CHILLERS

Best route to real-world energy performance

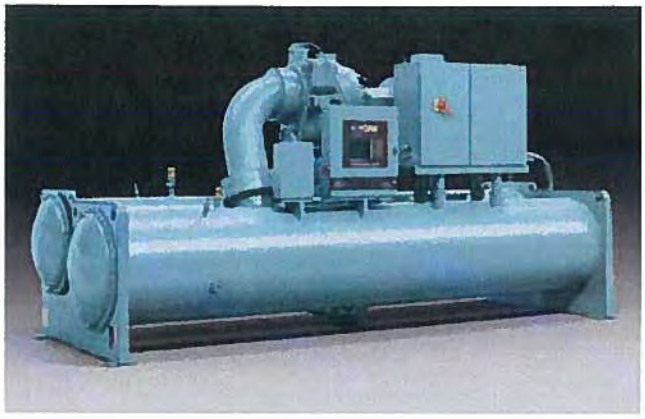


YORK®
BY JOHNSON CONTROLS

YORK® YK chillers deliver maximum efficiency



YORK YK chillers can utilize ECWTs as low as 55°F (13°C) to reach 0.20 kW/ton (18 COP) at off-design conditions, reducing instantaneous energy consumption by as much as 50%.



The capacity range of the YORK model YK chiller is 250 to 3,000 TR (880 to 10,540 kW). Both low-voltage (250 to 575 V) and medium-voltage (2,300 to 13.800 V) designs are available.

Real-world energy performance is essential

YORK® model YK centrifugal chillers, manufactured by Johnson Controls, provide the best route to real-world energy performance – the combined performance at all operating conditions, not just design. Because chillers in the real world operate nearly 99% of the time at off-design conditions, off-design performance is the major factor in energy consumption. That's why YK centrifugal chillers are engineered for maximum efficiency at both design and off-design conditions.

Unsurpassed Integrated Part Load Value

The Air-conditioning, Heating, and Refrigeration Institute (AHRI) Chiller Certification Program endorses the validity of off-design analysis to compare chiller energy consumption. Measured with AHRI's Integrated Part Load Value (IPLV), YK centrifugal chillers are unsurpassed in energy efficiency. Equipped with an OptiSpeed™ variable-speed drive, they can reduce energy usage as low as 0.20 kW/TR at off-design conditions.

Adaptive capacity control optimizes performance

When a YORK YK chiller is equipped with an OptiSpeed drive, it incorporates advanced Adaptive Capacity Control logic, which continually optimizes chiller operation. It closely examines critical operating parameters, and then determines the most efficient way to operate. In addition, it lets you optimize your savings when using intelligent control strategies, such as chilled-water reset. Adaptive Capacity Control logic also accommodates the characteristics of the refrigerant used in the chiller – today and tomorrow.

Take advantage of colder entering-condenser water

Unlike competitive chillers which require entering condenser-water temperature (ECWT) from the cooling tower to be held artificially high, YORK YK centrifugal chillers can utilize ECWT as low as 55°F (13°C). The lower ECWT reduces the compressor workload, and that can reduce instantaneous energy consumption as much as 50%.

Powerful control center saves energy

YK chillers feature the OptiView™ Control Center, which uses microprocessor capabilities to save you energy. Operation at just 1° below the designed chilled-water-temperature setpoint can increase chiller energy consumption by as much as 3%, wasting thousands of kilowatt-hours and dollars each year. The digital precision of the OptiView Control Center lets you set chilled-water temperature to a resolution of ± 0.1°. As a result, you eliminate the energy wasted by drifting a degree or more from the setpoint. The OptiView Control Center can also be used to schedule daily operating hours and holidays. No longer is energy accidentally wasted cooling the facility when it's not needed.

The OptiView Control Center helps you operate your YORK YK chiller more efficiently by allowing for the precise setting of chilled-water temperature and operating schedule.

Maximum control with OptiView™ Control Center

Easy to operate

The intuitive, full-color OptiView Control Center offers you a higher level of monitoring and control. Data input is foolproof, and data outputs are shown in association with illustrations of the appropriate chiller components. For convenience, all data can be displayed in eleven different languages, in addition to Imperial or SI units.

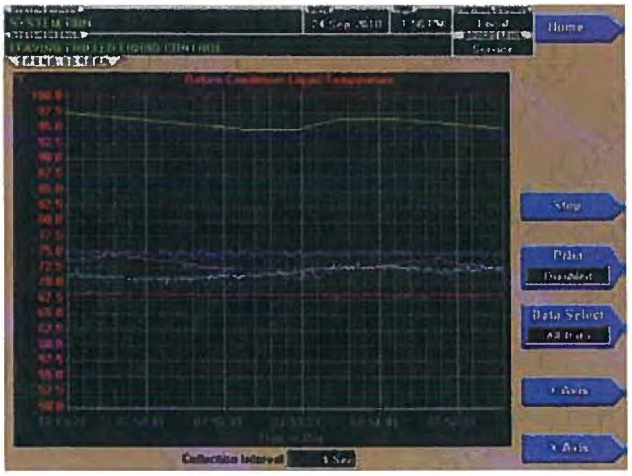
Easy to monitor

The OptiView Control Center allows on-board trending of up to six different values, selected from over 100 variables. The values and sampling interval are all user-selectable. This flexibility allows you to select parameters that are critical for your operation and to perform trending without a BAS interface and separate monitor.

Easy to integrate

Energy savings and ease-of-use can be fully realized when the HVAC system is an integrated part of the building-automation system. The OptiView Control Center is designed to communicate with the Johnson Controls Metasys® system. It can also communicate with most control systems on the market today using its optional ELink communication card.

Data outputs on the OptiView Control Center are accompanied with an illustration of the appropriate chiller component, making chiller operation more intuitive.



The trending screen provided performance insights not possible with snap shot observations.

Versatile design provides superior sustainability and flexibility

Environmental responsibility

The environmental impact of your chiller can be significant. You can reduce your impact by specifying YORK YK chillers. You'll get the benefit of refrigerant HFC-134a, which has zero ozone depletion potential (ODP). Plus, the high efficiency of the chillers reduces the indirect global warming potential (GWP), which is 98% of the total impact, caused by greenhouse-gas emissions produced by your utility to power the chiller. In addition, because of the chillers' high efficiency, your building could earn points for the Optimize Energy Performance (EAc1) credit in the Leadership in Energy and Environmental Design® (LEED) program.

Falling-film technology, utilized in the evaporator of YK chillers, reduces the refrigerant charge by up to 40%. It is available in YK chillers up to about 1,000 TR (based on conditions), and will help your building to qualify for maximum LEED points for Enhanced Refrigerant Management (EAc4).

Reduced noise levels

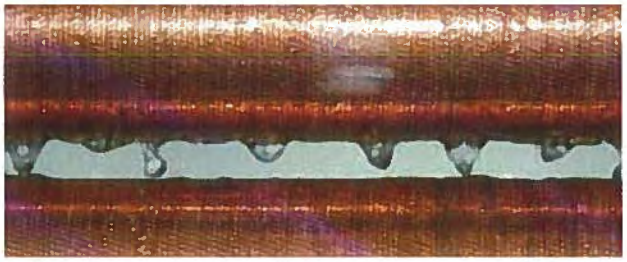
Traditional centrifugal chillers can generate a substantial amount of objectionable noise, but the YORK YK chiller is equipped with the innovative OptiSound™ Control, which reduces noise at off-design conditions. The control continuously monitors the characteristics of the compressor-discharge gas and optimizes the diffuser spacing of the compressor to minimize noisy gas-flow disruptions from the impeller. Chiller operation is also stabilized.

Flexible heating option

The YORK YK chiller can also be configured as a heat-recovery chiller, for use in facilities with simultaneous heating and cooling requirements. The heat-recovery unit takes advantage of the free heat that is typically rejected by the cooling towers. The heat can be used to control humidity, reheat the air, and preheat domestic hot water. Heat-recovery units have outstanding heating coefficients of performance that can reach up to 11.4.

Quick restart and return to setpoint

The Quick Start feature available on the YORK YK chiller reduces the risks that temperature-sensitive facilities experience after a power interruption. YK chillers equipped with this feature restart and return to the specified chilled-water temperature faster, reducing the risks of expensive downtime.



(Photo courtesy of the LTCM lab of the Ecole Polytechnique Fédérale de Lausanne, Switzerland)

A falling-film evaporator is more efficient because refrigerant is sprayed over the tubes, reducing refrigerant charge up to 40%.

The YK chiller is available in a heat-recovery configuration. Recovered heat can be used in the HVAC or domestic hot-water systems.

Maximum reliability with minimum maintenance

OptiView Control Center keeps you well-informed

The OptiView Control Center provides complete information on your chiller's operating condition. Safety-shutdown information includes day, time, cause of shutdown and type of restart required. Color-coding of fault messages allows easy determination of chiller status. Yellow messages signify shutdowns with automatic restart, requiring no operator intervention. Red messages are displayed for shutdowns requiring manual restart, alerting the operator that a system check may be required.

The Trending Screen can show changes in motor current, oil temperature and pressure, refrigerant pressures, or water temperatures, all of which can be valuable indicators of developing problems. This capability gives you ample time to take corrective measures before any expensive downtime is incurred. With the OptiView Control Center, you can see when to schedule routine maintenance in advance of actual need.

Open drive is easy to maintain

The YORK YK centrifugal chiller uses an open-motor driveline, which means less downtime. If a motor failure occurs, the chiller can be brought back online much faster and at a reduced cost. The motor is easy to remove, and can be repaired at a local motor shop. As a result, downtime due to motor failure is dramatically reduced.

Electrical protection extends motor life

Equipped with an OptiSpeed drive, the YK chiller starts "softly," never letting the inrush current exceed 100% of the full-load amps. By limiting the inrush, the motor windings do not rub together with expansion, which results in longer motor life and less chiller downtime. Lower inrush also reduces torque stresses on the motor and compressor driveline.

Start maximizing today

For more information on how YORK YK chillers can deliver real-world energy performance, visit johnsoncontrols.com or contact your Johnson Controls representative.

Color-coded fault messages allow early determination of chiller status and required operator action.

Printed on recycled paper.

PUBL-5187 (1010) Supercedes PUBL-5187 (908)
© 2010 Johnson Controls, Inc. P.O. Box 423, Milwaukee, WI 53201 Printed in USA
www.johnsoncontrols.com

Johnson Controls

YORK®

PACKAGED LIQUID CHILLERS
WATER COOLED & REMOTE-RECIPROCATING HERMETIC

RENEWAL PARTS	Supersedes: Nothing	795	FORM 150.55-RP3

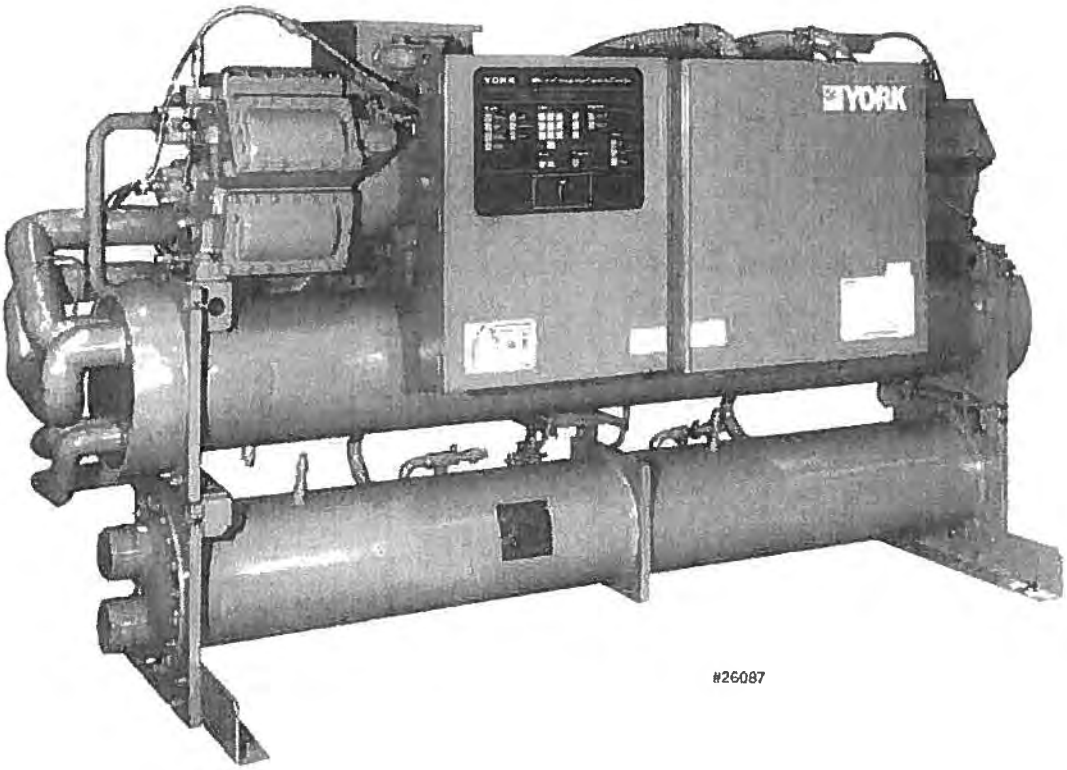
WATER COOLED MODELS

YCWZ33AB, YCWZ44AB, YCWZ47CC, YCWZ77CC,
YCWZ88CC, YCWZ88HD, YCWZ89HD, YCWZ99HD

REMOTE CONDENSER MODELS

YCRZ33AO, YCRZ44AO, YCRZ47CO, YCRZ77CO,
YCRZ88CO, YCRZ88HO, YCRZ89HO, YCRZ99HO

STYLE A
50 & 60 HZ



#26087

WARNING

HIGH VOLTAGE
is used in the operation of this equipment
DEATH OR SERIOUS INJURY
may result if personnel fail to observe precautions.

Work on electronic equipment should not be undertaken unless the individual(s) has (have) been trained
in the proper maintenance of the equipment and is (are) familiar with its potential hazards.

Shut off power supply to equipment before beginning work and follow lockout procedures. When working inside equipment with power off, take special care to discharge every capacitor likely to hold dangerous potential.

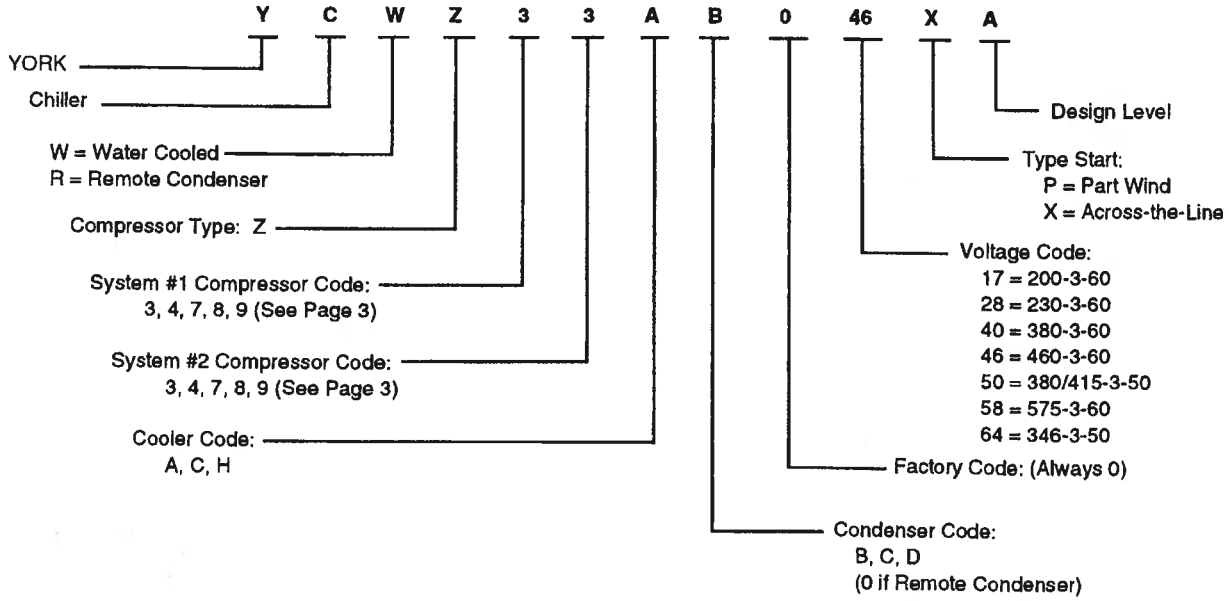
Be careful not to contact high voltage connections when installing or operating this equipment.

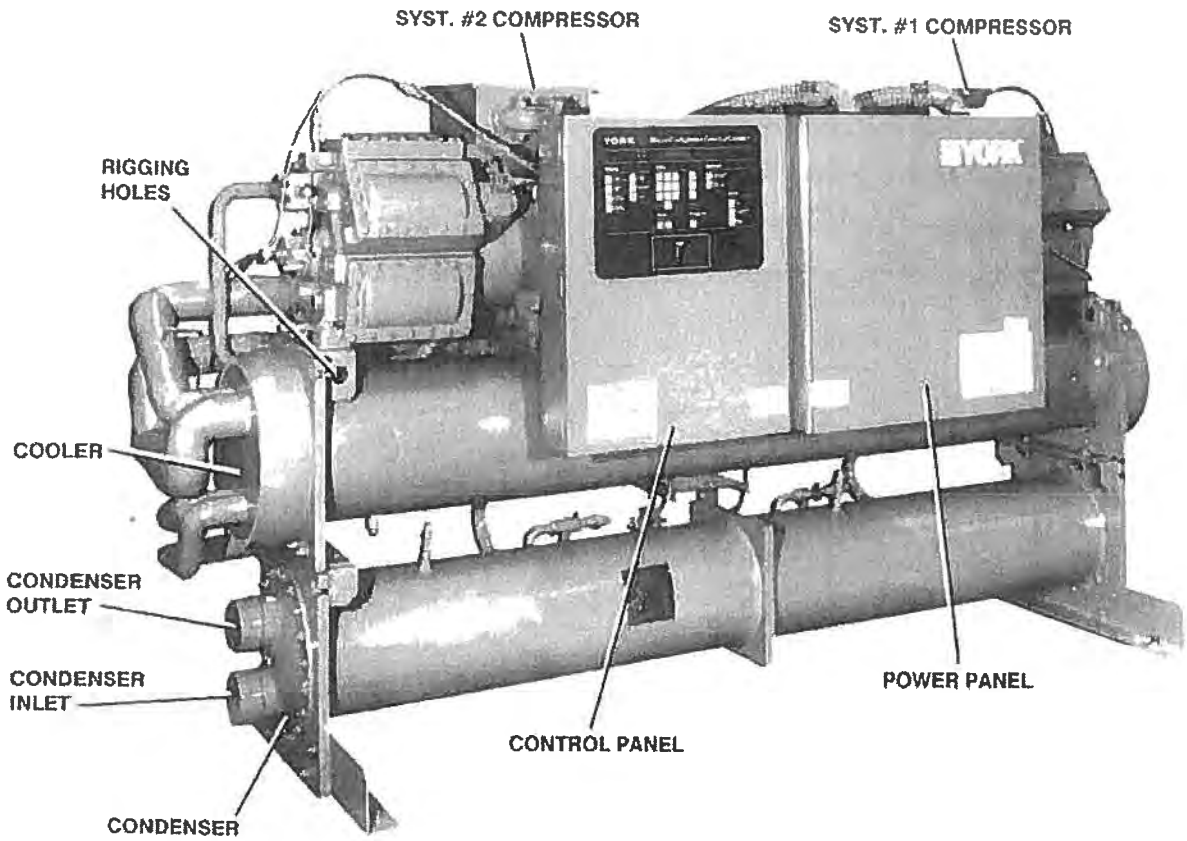
LOW VOLTAGE

DO NOT be misled by the term "low voltage".
Voltages as low as 50 volts may cause death.

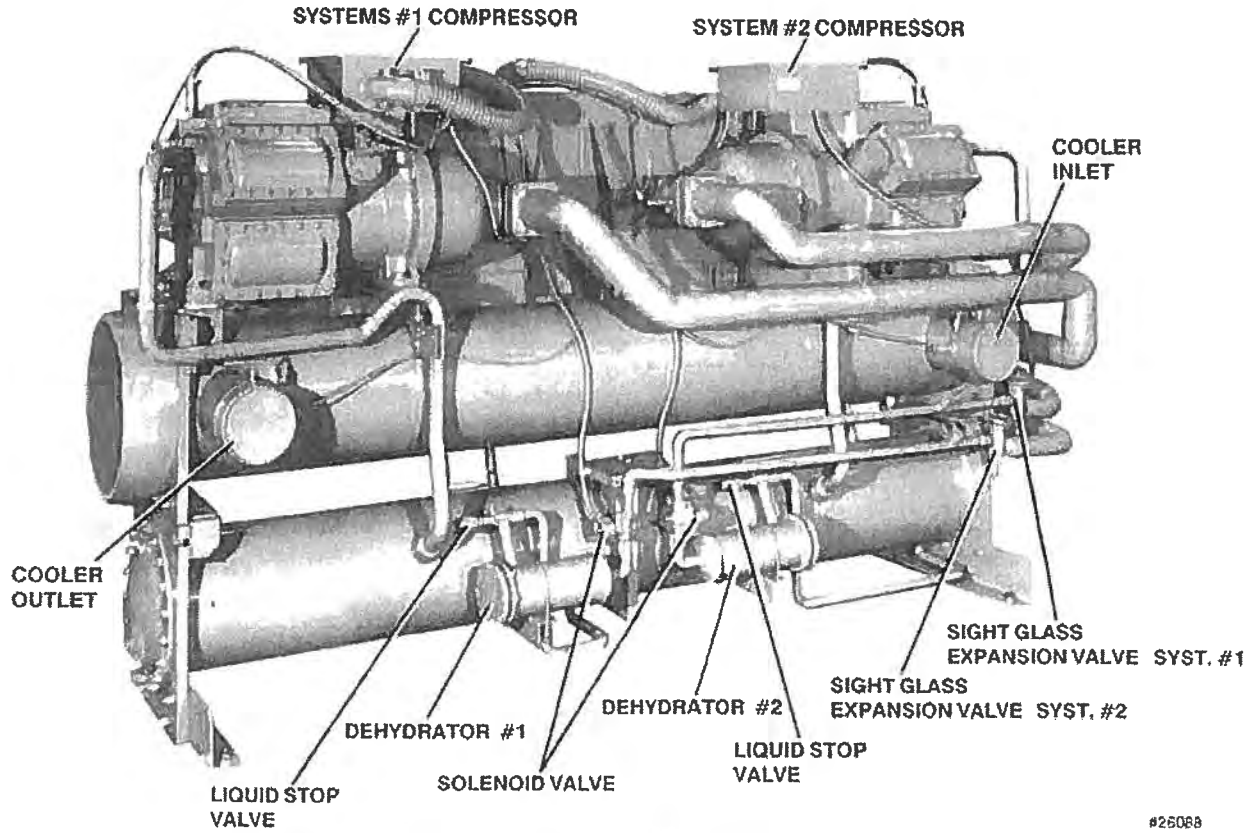
NOMENCLATURE

The model number denotes the following characteristics of the unit:





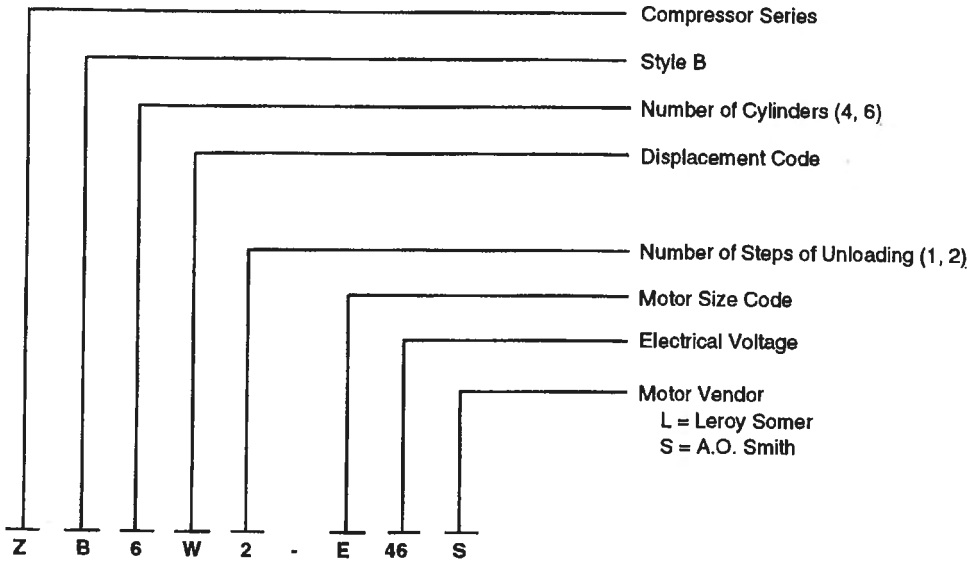
#26087



#26088

MAJOR UNIT COMPONENTS

COMPRESSOR NOMENCLATURE



COMPRESSOR MODEL NUMBERS

(WATER COOLED AND REMOTE CONDENSER UNIT MODELS)

UNIT MODEL		YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO
COMPRESSOR MODEL	SYSTEM NO. 1	ZB4K1-B	ZB4M1-C	ZB4M1-C	ZB6S2-D
	SYSTEM NO. 2	ZB4K1-B	ZB4M1-C	ZB6S2-D	ZB6S2-D

UNIT MODEL		YCWZ88CC YCRZ88CO	YCWZ88HD YCRZ88HO	YCWZ89HD YCRZ89HO	YCWZ99HD YCRZ99HO
COMPRESSOR MODEL	SYSTEM NO. 1	ZB6W2-E	ZB6W2-E	ZB6W2-E	ZB6AE2-E
	SYSTEM NO. 2	ZB6W2-E	ZB6W2-E	ZB6AE2-E	ZB6AE2-E

For replacement compressors and/ or parts, refer to Form 180.45-RP2.
Remanufactured compressors are available from the Wheeling, Illinois manufacturing facility.
Contact the local YORK Applied Systems Office.

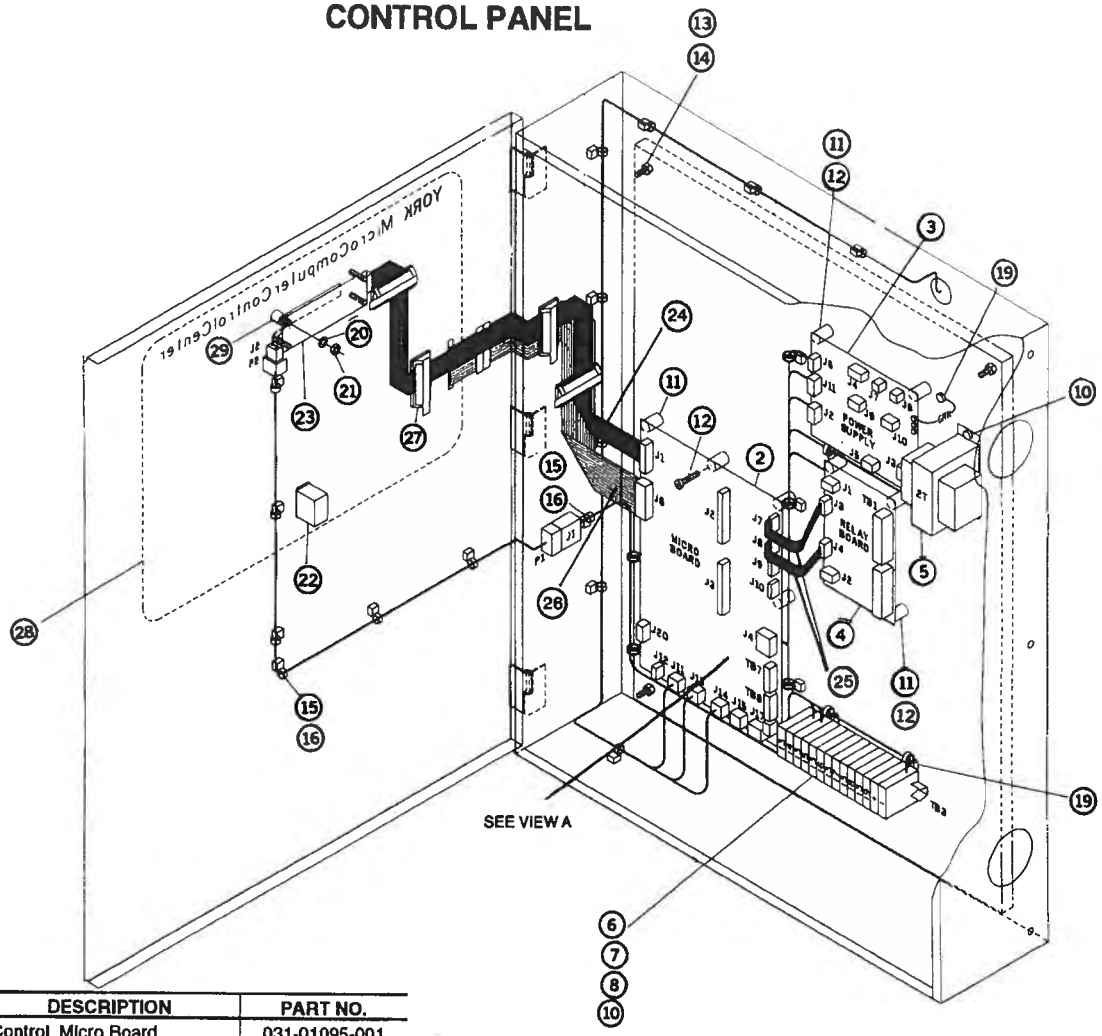
[S]COMPRESSOR MOTOR CONTACTORS

VOLTAGE CODE	TYPE START	SYSTEM	UNIT MODEL			
			YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO
-17	A	1, 2	-	-	-	-
	P	1, 2	024-25551	024-25551	024-25550	024-25550
-28	A	1, 2	-	-	-	-
	P	1, 2	024-25551	024-25551	024-25550	024-25550
-40	A	1, 2	024-25551	024-25551	024-25549	024-25549
	P	1, 2	024-25551	024-25551	024-25549	024-25549
-46	A	1, 2	024-25551	024-25551	024-25551	024-25551
	P	1, 2	024-25551	024-25551	024-25551	024-25551
-50	A	1, 2	024-25551	024-25551	024-25551	024-25551
	P	1, 2	024-25551	024-25551	024-25551	024-25551
-58	A	1, 2	024-25551	024-25551	024-25551	024-25551
	P	1, 2	024-25551	024-25551	024-25551	024-25551
-64	A	1, 2	024-25551	024-25551	024-25550	024-25550
	P	1, 2	024-25551	024-25551	024-25550	024-25550

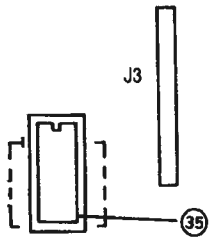
VOLTAGE CODE	TYPE START	SYSTEM	UNIT MODEL			
			YCWZ88CC YCRZ88CO	YCWZ88HD YCRZ88HO	YCWZ89HD YCRZ89HO	YCWZ99HD YCRZ99HO
-17	A	1, 2	-	-	-	-
	P	1, 2	024-25549	024-25549	024-25549	024-25549
-28	A	1, 2	-	-	-	-
	P	1, 2	024-25549	024-25549	024-25549	024-25549
-40	A	1, 2	024-25549	024-25549	024-25549	024-25549
	P	1, 2	024-25549	024-25549	024-25549	024-25549
-46	A	1, 2	024-25550	024-25550	024-25549	024-25549
	P	1, 2	024-25550	024-25550	024-25549	024-25549
-50	A	1, 2	024-25550	024-25550	024-25549	024-25549
	P	1, 2	024-25550	024-25550	024-25549	024-25549
-58	A	1, 2	024-25550	024-25550	024-25550	024-25550
	P	1, 2	024-25550	024-25550	024-25550	024-25550
-64	A	1, 2	024-25549	024-25549	024-25549	024-25549
	P	1, 2	024-25549	024-25549	024-25549	024-25549

NOTES:
[S] = Recommended Stock Spare Parts
P = Part Winding
Part Winding (Start) compressors require two (2) contactors per compressor (system).
A = Across-the-Line
Across-the-Line (Start) compressors require one (1) contactor per compressor (system).
Contactors include suppressors.

CONTROL PANEL



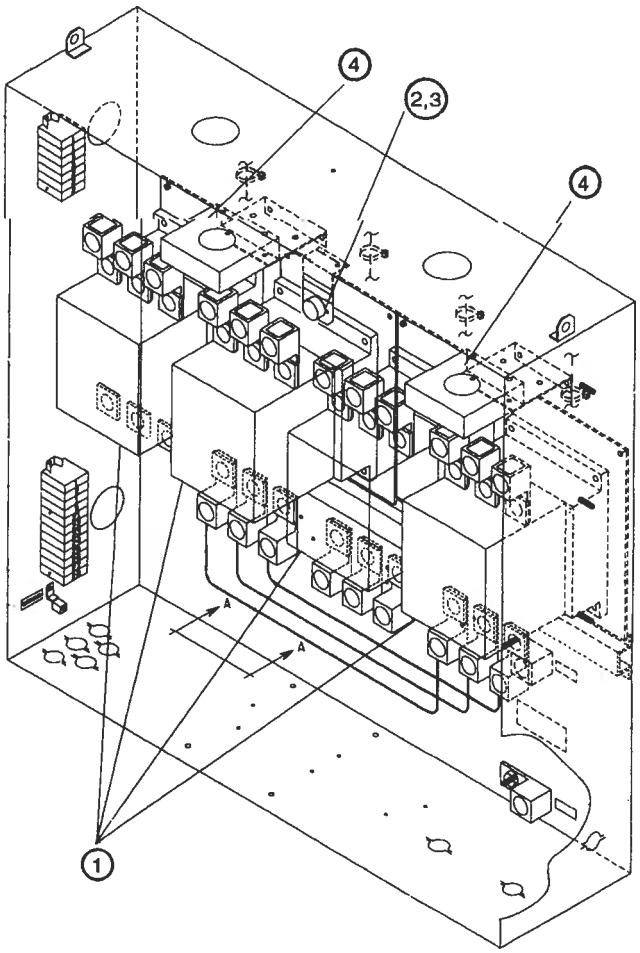
ITEM	QTY/UNIT	DESCRIPTION	PART NO.
$2	1	Control, Micro Board	031-01095-001
$3	1	Control, Power Supply	031-01094-000
$4	1	Control, Relay Board	031-01093-000
5	1	Transformer, Control	025-27911-000
6	14	Block, Terminal	025-20945-000
7	1	End, Terminal Block	025-20946-000
8	1	Strip, Marker (14 Pole)	025-29159-000
10	5	Scr., Tap TH. #8 x 3/8 Lg	021-13783-000
11	16	Nut, Expansion	021-14661-000
12	16	Scr., Tap Pan Hd. #8 x 1-1/4	021-14667-000
13	4	Lock Washer, TH. Int. 3/8	021-01155-000
14	4	Nut, Hex 3/8 UNC-2B	021-00467-000
15	15	Lock Washer, TH. Int. #10	021-01137-000
16	15	Nut, Hex #10-24	021-08282-000
17	3	Hsg., Connr. Plug, Mini-Univ. [1]	025-28383-000
18	1	Harness, Hinged Panel [1]	571-01226-212
19	12	Scr., Tap, Pan Hd. #10 x 1/2	021-13789-000
20	4	Lock Washer, Hel. Spg. #4	021-17576-000
21	4	Nut, Hex #4-40	021-10056-000
22	1	Switch, Unit ON/OFF	024-25517-000
23	1	Display, LCD	031-01110-000
24	1	Ribbon Cable	031-01109-211
25	2	Ribbon Cable	031-01109-212
26	4	Ribbon Cable	031-01109-213
27	3	Clamp, Ribbon Wire	025-25156-000
28	1	Switch, Keypad	024-25504-000
29	4	Spacer, Nylon 7/16 Lg.	021-17575-000
32-1	1	Harness, Sensor - Suct. #1 [2]	371-01263-231
32-2	1	Harness, Sensor - Oil #1 [2]	371-01263-233
32-3	1	Harness, Sensor - Suct. #2 [2]	371-01263-232
32-4	1	Harness, Sensor - Oil #2 [2]	371-01263-234
32-5	1	Harness, Sensor - LWT [2]	371-01263-241
32-6	1	Harness, Sensor - EWT [2]	371-01263-242
33	1	Lable, Caution [1]	035-03908-000
34	1	Strap, Cable [1]	025-18167-000
$35	1	EPROM	031-01096-001
36	3	Suppressor for Options [3]	031-00808-000



NOTES:

$ = Recommended Stock Spare Parts

1. Not Shown
2. Not Showm. Sensor Harness without Sensor.
3. Not shown, shipped loose for field use to place across the coil of any relay or contactor connected to the Control Panel or its 115VAC Power Supply including the application of:
   - Alarm Circuit Relays
   - Pump Starter (Contactor)
   - Flow Switch Inputs
   - BAS Inputs

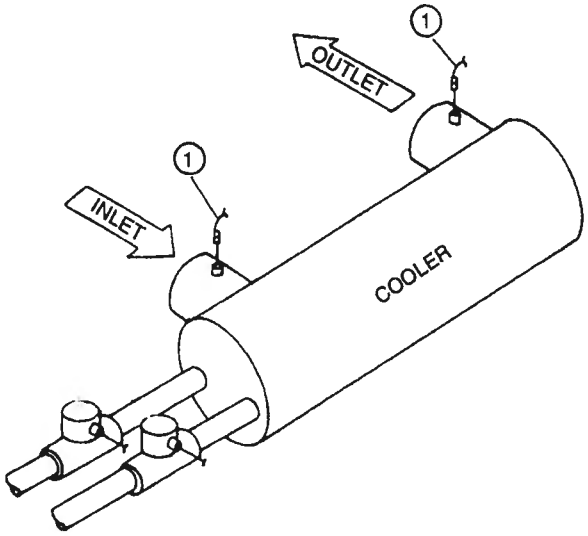


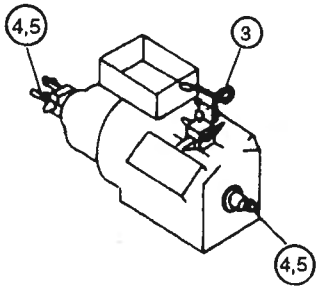
POWER PANEL
(SHOWN IS FOR PART-WINDING STARTING)

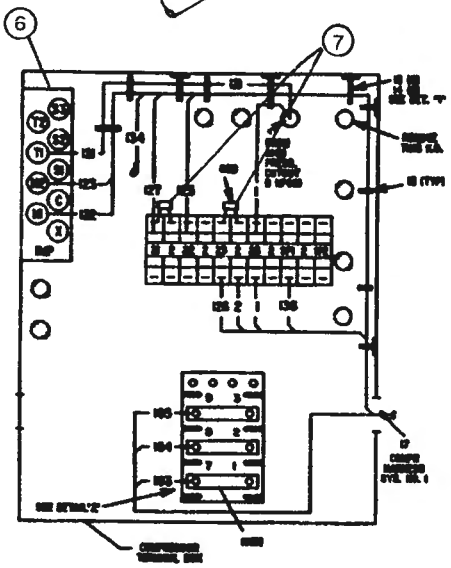
POWER PANEL
CONTROL COMPONENTS

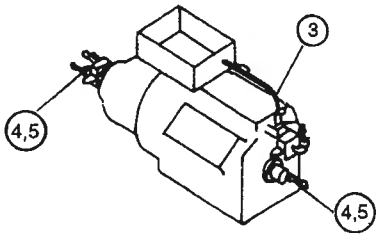
ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	PART NO. ALL MODELS
$ 1	See p. 5	Contractor (w/Suppressor), Compressor	ALL	SEE PAGE 5
$ 2	1	FUSE Control (7 amp), 1FU	ALL	025-25515-000
3	1	Fuseholder (Use with Item 2)	ALL	025-17407-000
4	2	Transformer, Current	ALL	025-27408-000

$ Recommended Stock Spare Part









"Z" COMPRESSOR SYSTEM
TYPICAL COMPRESSOR MOTOR TERMINAL BOX

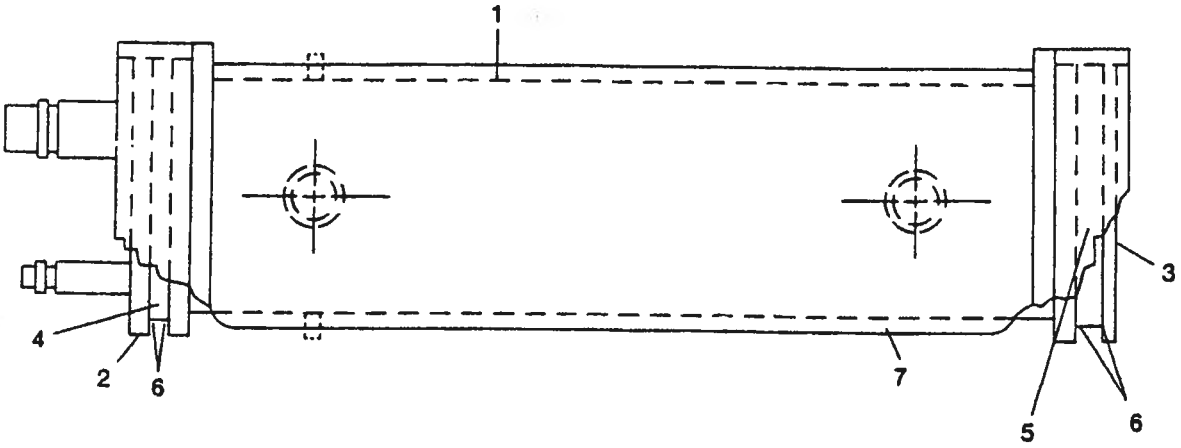
CONTROL COMPONENTS

ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	PART NO. ALL MODELS
		SENSORS		
[s]1	2	Water Temperature (LWT,RWT)	ALL	025-29964-000
2	1	Heat Conductive Compound (Use with Item 1)	ALL	013-00898-000
[s]3	2	High Pressure Cutout	ALL	025-28399-000
[s]4	4	Transducer (Oil & Suction Pressure)	ALL	025-29139-002
5	4	Brass Adaptor (Use with Item 4)	ALL	023-16272-000
6	2	Module, Motor Protector	ALL	025-07522-000
[s]7	See Table Below	Suppressor, Compressor Unloading Solenoids and Liquid Line Solenoids	ALL	031-01117-000

UNIT MODEL	YCWZ33AB, YCRZ33AO	YCWZ44AB, YCRZ44AO	YCWZ47CC, YCRZ47CO	YCWZ77CC, YCRZ77CO
QUANTITY	4	4	5	6

UNIT MODEL	YCWZ88CC, YCRZ88CO	YCWZ88HD, YCRZ88HO	YCWZ89HD,YCRZ89HO	YCWZ99HD, YCRZ99HO
QUANTITY	6	6	4	4

[s] Recommended Stock Spare Part

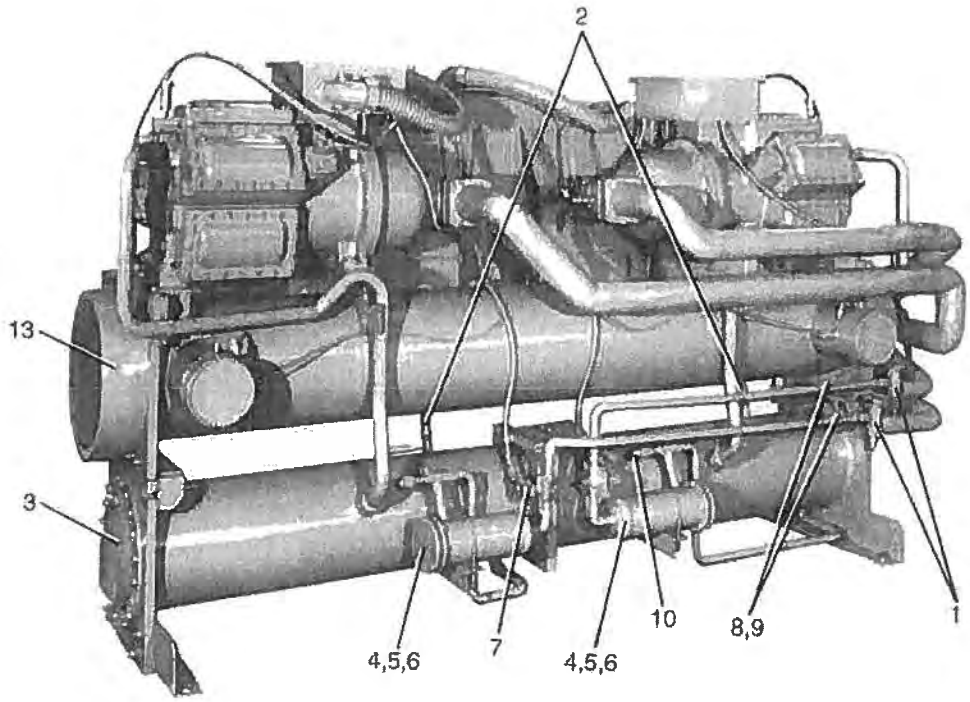


COOLER COMPONENTS

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO
1	1	Cooler, Less Insulation (Includes Items 2 thru 6)	375-17501	375-17501	375-17505	375-17505
2	1	Head, Connection End	375-17525	375-17525	375-17553	375-17553
3	1	Head, Back End	375-17523	375-17523	375-17554	375-17554
4	1	Pass Baffle, Connection End	075-17031	075-17031	075-17544	075-17544
5	1	Pass Baffle, Back End	375-18173	375-18173	375-18174	375-18174
[s] 6 [1]	4	Gasket, Pass Baffle & Head	075-17033	075-17033	075-17546	075-17546
7	3	Insulation, 3/4" x 49" x 65"	010-04198	010-04198	010-04198	010-04198

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCWZ88CC YCRZ88CO	YCWZ88HD YCRZ88HO	YCWZ89HD YCRZ89HO	YCWZ99HD YCRZ99HO
1	1	Cooler, Less Insulation (Includes Items 2 thru 6)	375-17505	375-17511	375-17511	375-17511
2	1	Head, Connection End	375-17553	375-18009	375-18009	375-18009
3	1	Head, Back End	375-17554	375-18008	375-18008	375-18008
4	1	Pass Baffle, Connection End	075-17544	375-17085	375-17085	375-17085
5	1	Pass Baffle, Back End	375-18174	075-17084	075-17084	075-17084
[s] 6 [1]	4	Gasket, Pass Baffle & Head	075-17546	075-17082	075-17082	075-17082
7	3	Insulation, 3/4" x 49" x 65"	010-04198	010-04198	010-04198	010-04198

NOTES:
[s] Recommended Stock Spare Part
1. When replacing gasket, Item 6, use:
   [s] Sealer, Gasket, 013-02827
   [s] Primer, 013-01753



#26088
FIG. 1 – UNIT REFRIGERANT COMPONENTS (WATER COOLED MODEL SHOWN)

UNIT COMPONENTS

WATER COOLED MODELS

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCWZ33AB	YCWZ44AB	YCWZ47CC	YCWZ77CC
[5] 1	2	Valve, Thermal Expansion	025-23211	025-23211	025-21955	025-21955
[5] 2	2	Valve, Relief	022-08870	022-08870	022-08870	022-08870
3	1	Condenser	SEE PAGE 14			
			UNIT MODEL			
			YCWZ88CC	YCWZ88HD	YCWZ89HD	YCWZ99HD
[5] 1	2	Valve, Thermal Expansion	025-21955	025-21955	025-21955	025-21955
[5] 2	2	Valve, Relief	022-08870	022-08870	022-08870	022-08870
3	1	Condenser	SEE PAGE 14			

REMOTE CONDENSER MODELS

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCRZ33AO	YCRZ44AO	YCRZ47CO	YCRZ77CO
[5] 1	2	Valve, Thermal Expansion	025-21954	025-21954	025-23211	025-23211
			UNIT MODEL			
			YCRZ88CO	YCRZ88HO	YCRZ89HO	YCRZ99HO
[5] 1	2	Valve, Thermal Expansion	025-23211	025-23211	025-23211	025-23211

[5] Recommended Stock Spare Part

UNIT COMPONENTS (Continued)
(See Fig. 1)

WATER COOLED AND REMOTE CONDENSERMODELS

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ46CO	YCWZ77CC YCRZ77CO
$4	2	Dehydrator, Body (Permanent Core)	026-20145	026-20145	-	-
5	2	Dehydrator, Body (Replaceable Core)	-	-	026-30598	026-30598
$6	4	Dehydrator, Core (Use with Item 5)	-	-	026-18328	026-18328
7	2	Valve, Liquid Solenoid	025-17513	025-17513	025-17513	025-17513
8	2	Moisture Indicator, Body	026-32397	026-32397	026-32397	026-32397
9	2	Moisture Indicator, Cap Assembly	026-32800	026-32800	026-32800	026-32800
10	2	Valve, Liquid Stop	025-10510	025-10510	025-10510	025-10510
11	2	Compressor	SEE PAGE 4			
12	16	Pad Isolator	075-00820	075-00820	075-00820	075-00820
13	1	Cooler	SEE PAGE 9			

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCWZ88HD YCRZ88CO	YCWZ88HD YCRZ88HD	YCWZ89HD YCRZ88HO	YCWZ99HD YCRZ99HO
5	2	Dehydrator, Body (Replaceable Core)	026-30598	026-30598	026-30598	026-30598
$6	4	Dehydrator, Core (Use with Item 5)	026-18328	026-18328	026-18328	026-18328
7	2	Valve, Liquid Solenoid	025-17513	025-17513	025-17513	025-17513
8	2	Moisture Indicator, Body	026-32397	026-32397	026-32397	026-32397
9	2	Moisture Indicator, Cap Assembly	026-32800	026-32800	026-32800	026-32800
10	2	Valve, Liquid Stop	025-10510	025-10510	025-10510	025-10510
11	2	Compressor	SEE PAGE 4			
12	16	Pad Isolator	075-00820	075-00820	075-00820	075-00820
13	1	Cooler	SEE PAGE 9			

$ Recommended Stock Spare Part

COMPONENTS FOR UNIT OPTIONS [1]

ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	ALL MODELS
POWER DISCONNECT SWITCH (PDS)				
A	1	Switch, Disconnect (Across-the-Line Start)	-17 -28 -40 -46 -50 -58 -64	SEE PAGE 13 FOR MODELS
		Switch, Disconnect (Part-Winding Start)	-17 -28 -40 -46 -50 -58 -64	

ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	ALL MODELS
CHICAGO CODE				
B	2	Valve Relief (YCW Units Only)	ALL	022-08894-000
CONTROL TRANSFORMER (1T)				
C	1	Transformer	-17 -28 -40 -46 -50 -58 -64	025-28664-001 025-28664-002 025-28664-003 025-28664-002 025-28664-003 025-28664-004 N.A.
D	2	Fuse, Transformer	-17 -28 -40 -46 -50 -58 -64	025-27972-000 025-27971-000 025-27970-000 025-27922-000 025-27970-000 025-17360-000 N.A.
PUMP CONTROL KIT/RELAY BOARD KIT				
E	1	Relay Control Board	ALL	031-01093-000
DISCHARGE PRESSURE READOUT				
F	2*	Transducer, Discharge Pressure	ALL	025-29139-001
G	2*	Adaptor, Transducer (Use with Item F)	ALL	023-16272-000
LOADMINDER (HOT GAS BYPASS) [4]				
		MODEL YCWZ		
H	2	Valve, Regulator, Hot Gas	ALL	025-27647-000
I	2	Suppressor	ALL	031-01117-000
		MODEL YCRZ		
J	2	Valve, Regulator, Hot Gas	ALL	025-27647-000
K	2	Suppressor	ALL	031-01117-000

NOTES (For Pages 12 - 13):

* One required per compressor

\- Not Applicable

N.A. Not Available

1. Parts listed on pages 12 and 13 are for single replacement parts contained in the Option Kits. Part Numbers provided **DO NOT** reflect part numbers for complete Option Kits. See the Installation Operation Manual, Form 150.55-NM3 for complete Option Kit Part Numbers.
2. All other parts for this option are the same as standard, including cooler, controls, and unit components.
3. This option also requires Relay Board Kit, Item I, and Discharge Pressure Readout Kit, Items J and K.
4. Loadminder Option also requires Relay Board Kit, Item E.
5. Used with Remote Control Center (If Specified).

COMPONENTS FOR UNIT OPTIONS [1]

ITEM NO.	UNIT MODEL								
	YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO	YCWZ88CC YCRZ88CO	YCWZ88HD YCRZ88HO	YCWZ89HD YCRZ89HO	YCWZ99HD	YCRZ99HO
POWER DISCONNECT SWITCH (PDS)									
A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25564
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25564	024-25564	024-25564	024-25564	024-25563	024-25563	024-25563	024-25563	024-25563
	024-25565	024-25565	024-25564	024-25564	024-25564	024-25564	024-25564	024-25564	024-25563
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25564
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565

ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	ALL MODELS
FLOW CONTROL SWITCH				
L	1	Switch, Flow	ALL	024-26116-000
REMOTE CONTROL CENTER				
M	1	Control, Micro Board	ALL	031-01196-000
WALL-MOUNTED TRANSFORMER [5]				
N	1	Primary Voltage 115/1/60	-	025-29917-001
		Primary Voltage 230/1/50	-	025-29917-002
MULTIPLE UNIT SEQUENCING KIT				
O	1	Sensor, Temperature	ALL	025-28935-000
P	1	Resistor, 180 Ohm Fixed	ALL	025-29900-000
BAS INTERFACE				
Q	1	Control, Remote Reset	ALL	031-00814-000
MUFFLER, DISCHARGE				
R	2	Muffler, Discharge (YCR Units Only)	ALL	029-20225-000
CONDENSER WATER TEMPERATURE READOUT				
S	2	Sensor, Temperature (YCW Units Only)	ALL	025-29964-000

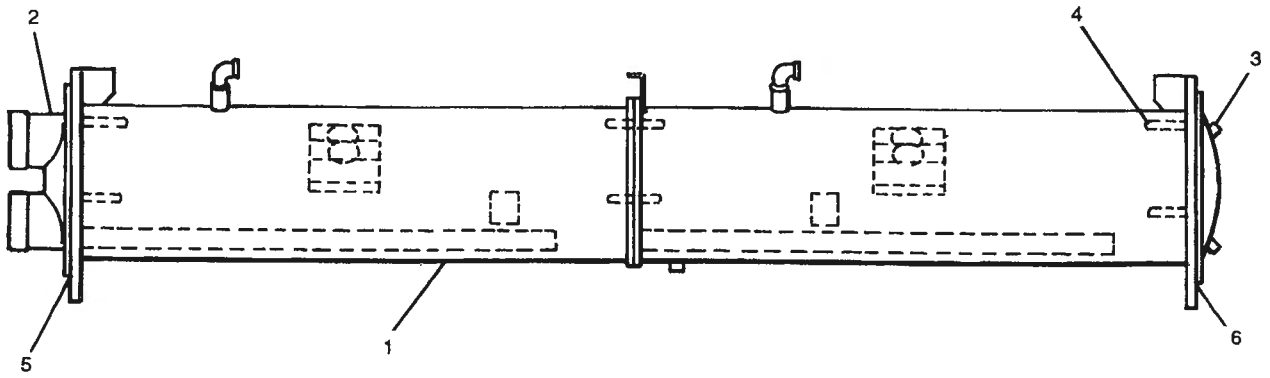
NOTES (For Pages 12 - 13):

* One required per compressor

\- Not Applicable

N.A. Not Available

1. Parts listed on pages 12 and 13 are for single replacement parts contained in the Option Kits. Part Numbers provided **DO NOT** reflect part numbers for complete Option Kits. See the Installation Operation Manual, Form 150.55-NM3 for complete Option Kit Part Numbers.
2. All other parts for this option are the same as standard, including cooler, controls, and unit components.
3. This option also requires Relay Board Kit, Item I, and Discharge Pressure Readout Kit, Items J and K.
4. Loadminder Option also requires Relay Board Kit, Item E.
5. Used with Remote Control Center (If Specified).



CONDENSER COMPONENTS

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCWZ33AB	YCWZ44AB	YCWZ47CC	YCWZ77CC
1	1	Condenser (Includes Items 2 thru 7)	375-01016-000	375-01016-000	375-01017-000	375-01017-000
2	1	Head, Front End	375-00390-001	375-00390-001	375-00390-001	375-00390-001
3	1	Head, Back End	375-00391-001	375-00391-001	375-00391-001	375-00391-001
4	-	Tube Condenser No. Tubes per Condenser	007-07864-000 73	007-07864-000 73	007-07864-000 95	007-07864-000 95
[s] 5 [1]	1	Gasket, Head, Front	075-00394-001	075-00394-001	075-00394-001	075-00394-001
[s] 6 [1]	1	Gasket, Head, Back	075-00394-001	075-00394-001	075-00394-001	075-00394-001

ITEM NO.	QTY PER UNIT	DESCRIPTION	UNIT MODEL			
			YCWZ88CC	YCWZ88HD	YCWZ89HD	YCWZ99HD
1	1	Condenser (Includes Items 2 thru 7)	375-01017-000	375-01018-000	375-01018-000	375-01018-000
2	1	Head, Front End	375-00390-001	366-90688-000	366-90688-000	366-90688-000
3	1	Head, Back End	375-00391-001	366-92136-000	366-92136-000	366-92136-000
4	-	Tube Condenser End No. Tubes per Condenser	007-07864-000 95	007-07864-000 134	007-07864-000 134	007-07864-000 134
[s] 5 [1]	1	Gasket, Head, Front	075-00394-001	067-77469-000	067-77469-000	067-77469-000
[s] 6 [1]	1	Gasket, Head, Back	075-00394-001	067-77469-000	067-77469-000	067-77469-000

NOTES:
[s] Recommended Stock Spare Part
1. When replacing gaskets, Items 5 & 6, use:
   [s] Sealer, Gasket, 013-02827
   [s] Primer, 013-01753

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-629-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☒ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

Please list Duke Energy account numbers below (attach listing of multiple accounts and/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
0040-2121-01-7	24,000,000		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct rebates are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

Please check each box to indicate completion of the following program requirements:

☒ All sections of appropriate application(s) are completed	☒ Proof of payment.*	☒ Manufacturer's Spec sheets	☐ Energy model/calculations and detailed inputs for Custom applications

* If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet	☐ MSD Prescriptive Lighting ☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet	☐ MSD Prescriptive Lighting ☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet
Heating & Cooling	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Heating & Cooling ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	☐ MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s)	☐ MSD Prescriptive Heating & Cooling	☐ MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s)
Chillers & Thermal Storage	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Chillers & Thermal Storage ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Chiller Tune-ups	☐ MSD Prescriptive Chiller Tune-ups	☒ MSD Prescriptive Chiller Tune-ups	☐ MSD Prescriptive Chiller Tune-ups
Motors & Pumps	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Motors, Pumps & Drives ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
VFDs	Not Applicable	☐ MSD Prescriptive Motors, Pumps & Drives ☐ MSD Custom Part 1 ☐ MSD Custom VFD Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom VFD Worksheet
Food Service	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Food Service ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Air Compressors	☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet	☐ MSD Prescriptive Process ☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet
Process	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Process ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Energy Management Systems	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet
Behavioral* & No/Low Cost**	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet		

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**
*** Please ensure that you include the age of the replaced equipment for measures classified as "Early Replacement" in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.
**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

Duke Energy

MERCANTILE SELF DIRECT Ohio Chiller Tune-up Service Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-629-5572.

Is this application: ☒ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Required (check one)		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☐ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☒ Duke Energy Representative	☐ Web Site	☐ Radio
☐ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	Procter & Gamble	Contact		Quentin Groves (JLL)	
Phone	513-698-4540	**Account Number**		0040-2121-01-7	
Street Address (Where rebate should be mailed)		11510 Reed Hartman Hwy			
City	Blue Ash	State	Ohio	Zip Code	45241
Installation Street Address	11473 Grooms Rd				
City	Blue Ash	State	OH	Zip Code	45241
E-mail Address	Groves.q@pg.com				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor		Contact			
Phone		Fax			
Street Address					
City		State		Zip Code	
E-mail Address					

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☐ **Vendor**

Payment Information		
Who should receive rebate payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of rebate directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	31-0411980
	Vendor Tax ID #	

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature	Quentin Groves (JLL)	Vendor Signature	
Date	4/8/2013	Date	
Title	JLL Facility Manager	Title	

Rebates are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for rebates. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

Duke Energy

Air Cooled and Water Cooled Chiller Tune-ups						
Manufacturer and Model #	# of Units	Tons Per unit*	Total Project Cost	Current Service Date	Previous Service Date	Total Rebate
YKSDRCJ4-DHCS	2	2000	$2,666	04/16/12		$1,333
YK P1 Q2 H2-DB AS	1	1200	$1,342	02/29/12		$671
Carrier 30HK-040-D-611	2	40	$3,240	4/27/12		$1620

*Provide manufacturer's spec sheet documenting the size of the unit

To Calculate your tune-up rebate*:	
A. Add up equipment capacity of all units serviced (in tons) and multiply by $2/ton =	$21,120
B. Cost of service = x 50% of total service cost =	$3,624
Total Rebate (lesser amount of row A or row B)=	$3,624

*Rebates cannot exceed 50% of total service invoice (**external** labor and equipment).

Service Requirements:

1. **This rebate is available only once per unit in a 12 month period.**
2. An individual chiller is considered one unit.
3. Copy of paid invoice must be included with this application
4. Self serviced (internal) labor should not be included as part of the total service cost. Only external labor will be considered as part of the total service invoice.
5. Cooling service must include the following normal maintenance items **(please check if completed):**

☒ Air cooled condenser coil cleaning	☒ Compressor amp draw	☒ Low Pressure controls
☒ System Pressure check and adjust	☒ Supply motor amp draw	☒ High Pressure controls
☒ Filter inspect or replace	☒ Condenser fan(s) amp draw	☒ Crankcase heater operation
☒ Belt inspect or replace	☒ Liquid line temperature	☒ Water cooled chiller condenser tube cleaning
☒ Contactors condition	☒ Suction pressure & temperature	☒ Water cooled chiller evaporator tube cleaning
☒ Evaporator condition	☒ Oil level & pressure	

Rebate Eligibility

- Rebates are only available to customers on Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Rebate will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise rebate levels and/or qualifying efficiency levels at anytime.
- Customer may assign the rebate to the vendor who installed/supplied the equipment. The customer's signature is required in the appropriate places on this form to assign the rebate to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the rebate. This assigned rebate must reduce the purchase price paid for the equipment by an equivalent amount.
- Any equipment which, either separately or as part of a project, has or will receive a rebate from any other Duke Energy program
- In no case will Duke Energy pay a rebate above the actual cost of the service.
- Rebate recipient assumes all responsibilities for any tax consequences resulting from Duke Energy rebate payment.
- To qualify for Duke Energy rebates, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Rebate applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the rebate program.

DeBra-Kuempel
MECHANICAL - ELECTRICAL
An EMCOR Company

Remit to: P.O. Box 701620
Cincinnati, OH 45270-1620

AUG 03 2012

BILLED BY: JULIE B. #513-527-8137

12001249

INVOICE	DATE
00693620	7/31/12

CUSTOMER:
21962
PAM
JONES LANG LASALLE AMERICAS-P&G
ACCOUNTING
PO BOX 5126
CINCINNATI, OH 45201-5126
698-6547

JOB ADDRESS:
JLL/P&G / SWIC / CHILLERS-12/12
11510 REED HARTMAN HWY
CINCINNATI, OH 45241

Customer PO No.: 755472-OP-4014409100

Job Number...: 244442
Bill Contract: 244442

REFERENCE DESCRIPTION	AMOUNT
JLL /P&G @ SWTC/ CHILLER MAINTENANCE 1/1/2012 THRU 12/31/2012	
PREVENTIVE MAINTENANCE	7,248.00

OK TO PAY
8-8-12

RECEIVED
AUG 3 2012
JLL ACCOUNTING

GR'D PT
AUG 03 2012

Now Accepting Visa/MC/AMX for
Payment of Invoices.
A Service Charge of 1.5% per Month
will be charged on All Past Due Accts.

SUB-TOTAL	7,248.00
TAX	471.12
AMOUNT PAID	.00
AMOUNT DUE	7,719.12

ORIGINAL DUE ON RECEIPT

PPED AUG 06 2012

8

DeBra-Kuempel
MECHANICAL - ELECTRICAL
An EMCOR Company

Remit to: P.O. Box 701620
Cincinnati, OH 45270-1620

BILLED BY:JULIE B. #513-527-8137

INVOICE	DATE
00693620	7/31/12

CUSTOMER:
21962
PAM
JONES LANG LASALLE AMERICAS-P&G
ACCOUNTING
PO BOX 5126
CINCINNATI, OH 45201-5126
698-6547

JOB ADDRESS:
JLL/P&G / SWIC / CHILLERS-12/12
11510 REED HARTMAN HWY
CINCINNATI, OH 45241

Customer PO No.: 755472-OP-4014409100

Job Number...: 244442
Bill Contract: 244442

REFERENCE DESCRIPTION	AMOUNT
JLL /P&G @ SWTC/ CHILLER MAINTENANCE 1/1/2012 THRU 12/31/2012	
PREVENTIVE MAINTENANCE	7,248.00

Now Accepting Visa/MC/AMX for
Payment of Invoices.
A Service Charge of 1.5% per Month
will be charged on All Past Due Accts.

SUB-TOTAL	7,248.00
TAX	471.12
AMOUNT PAID	.00
AMOUNT DUE	7,719.12

FILE **DUE ON RECEIPT**

KY MASTER # M04348
OH CONTRACTOR # 25061

Page ____ of ____

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 02/29/12 Tech: 149 Unit:

Equip/Mfg: YORK Model: YK

Serial #:

Status: ☐ Complete ☑ Incomplete ☐ Follow-up

Customer Name: PG SUPPLY Acct Mgr: N

Site Address: Reed Hartman Hwy

City: Cin State: Oh Zip:

Bill To: Jones Lang LaSalle

Equipment Location: Same

Purpose of Call: Annual maintenance

Description of Work:
Took oil samples from 3 chillers, and filled out paperwork
Began maintenance on 1200 Ton chiller

Recommendations:

- ☑ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☑ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☑ Proper GFCI Usage
- ☐ Hot Work
- ☐ Fire Alarm Syst Disabled
- ☐ Hot Work Permit
- ☐ Fire Watch
- ☐ Explosion
- ☐ Chemical Hazard
- ☑ Customer Site Specific
- ☐ Confined Space Entry
- ☐ CSE Permit
- ☑ 70E Elect PPE
- ☐ Air Quality Monitor
- ☑ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Ed Maddux	2-29	2½	X1
Ed Maddux	3-1	4	X1

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: _____ Customer P.O.#: _____ Total: _____

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Remit to: DeBra-Kuempel • 3976 Southern Avenue • Cincinnati, Ohio 45227
24 Hour Service 513.271.6500 FAX 513.271.4676 TOLL FREE 1.800.395.5741

OFFICE

KY MASTER # M04348
OH CONTRACTOR # 25061

Page ____ of ____

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 03/ /12 Tech: 149 Unit:

Equip/Mfg: YORK Model: YK

Serial #: 2000 Ton chiller

Status: ☐ Complete ☑ Incomplete ☐ Follow-up

Customer Name: P&G SWTC Acct Mgr: TV

Site Address: Reed Hartman Hwy

City: Cin State: OH Zip:

Bill To: Jones Lang LaSalle

Equipment Location: 2 Building

Purpose of Call: Annual Maintenance

Description of Work: Completed annual maintenance on 1200 Ton chiller #4.
3-16. Began annual maintenance on chiller #1 2000 Ton

Recommendations:

- ☐ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☑ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☑ Proper GFCI Usage
- ☐ Hot Work
- ☐ Fire Alarm Syst Disabled
- ☐ Hot Work Permit
- ☐ Fire Watch
- ☐ Explosion
- ☐ Chemical Hazard
- ☑ Customer Site Specific
- ☐ Confined Space Entry
- ☐ CSE Permit
- ☑ 70E Elect PPE
- ☐ Air Quality Monitor
- ☑ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Ed Mallux	3-12	8	x1
Ed Mallux	3-16	5	x1

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: _____ Customer P.O.#: _____ Total: _____

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3976 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937.531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.536 8505

Louisville
3600 Chamberlain Drive, Suite 358 • Louisville, KY 40241
502.368.0454

24 Hour Service 513.271.6500

OFFICE

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 03/14/12 Tech: 0576 Unit: #2B

Equip/Mfg: York Model: ON-File

Serial #: ON-File

Status: ☐ Complete ☒ Incomplete ☐ Follow-up

Customer Name: P&G SWIC (Jones Lang LaSalle) Acct Mgr: TV

Site Address: Reed Hartman Hwy

City: Cincinnati State: Ohio Zip:

Bill To:

Equipment Location: Utilities Bldg

Purpose of Call: Annual Chiller PM and Inspection

Description of Work: Worked at Sharon Woods to perform annual PM and Inspection. Started by locking out disconnect for oil pump and 480 volt heater. Changed oil filter and all refrigerant clean up driers. evacuated and opened valves checked the electrical connections. Turned on disconnect and amped motors and heaters. Filled out annual log sheet and left copy on chiller.

Recommendations:

- ☒ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☒ PPE Hard Hat, Glasses
- ☒ Fall Protection
- ☒ Proper GFCI Usage
- ☐ Hot Work
- ☐ Fire Alarm Syst Disabled
- ☐ Hot Work Permit
- ☐ Fire Watch
- ☐ Explosion
- ☐ Chemical Hazard
- ☒ Customer Site Specific
- ☐ Confined Space Entry
- ☐ CSE Permit
- ☒ 70E Elect PPE
- ☐ Air Quality Monitor
- ☒ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Donny Knight	3-14	2.0	Reg
	3-13	2.0	Reg

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page ____ of ____

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 04/12/12 Tech: 4954 Unit:

Equip/Mfg: York Model: YKSDRCJ4-DHCS

Serial #: GNFM/135563

Status: ☑ Complete ☐ Incomplete ☐ Follow-up

Customer Name: P&G Sharon Woods Acct Mgr:

Site Address: Reed Hartman Hwy

City: Cincinnati State: Ohio Zip:

Bill To:

Equipment Location:

Purpose of Call:

Description of Work: Tech checked chiller #1. Logged condenser and water flow switch operation, inspected and tightened contacts on oil heater and oil pump on chiller as well and opened to compressor motor bearings. Performed a log on chiller #2.

Recommendations:

- ☐ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☐ PPE Hard Hat, Glasses
- ☑ Fall Protection
- ☐ Proper GFCI Usage
- ☐ Hot Work
- ☐ Fire Alarm Syst Disabled
- ☐ Hot Work Permit
- ☐ Fire Watch
- ☐ Explosion
- ☐ Chemical Hazard
- ☐ Customer Site Specific
- ☐ Confined Space Entry
- ☐ CSE Permit
- ☐ 70E Elect PPE
- ☐ Air Quality Monitor
- ☑ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Eric Folzenlogen	4/12/12	8	RT

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: James Dooley Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3976 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937.531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.536.8505

Louisville
3600 Chamberlain Drive, Suite 358 • Louisville, KY 40241
502.368.0454

24 Hour Service 513.271.6500

OFFICE

KY MASTER # M04348
OH CONTRACTOR # 25061

Page ____ of ____

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 04/16/12 Tech: 149 Unit: 142

Equip/Mfg: YORK Model: YKSDRCU4

Serial #: 195253

Status: ☑ Complete ☐ Incomplete ☐ Follow-up

Customer Name: PPG SWIC Acct Mgr: TV

Site Address: Reed Hartman Hwy

City: Cin State: Oh Zip:

Bill To: Jones Lang LaSalle

Equipment Location: C Building

Purpose of Call: Annual P.M on chillers

Description of Work: Performed annual maintenance Task Topped off Freon Level in chiller #2 Cleaned out clogged lines to flow switches

Recommendations: Chiller #2 may need to have more Freon added when machine can be logged of more Freon provided by OLL

- ☑ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☑ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☑ Proper GFCI Usage
- ☐ Hot Work
  - ☐ Fire Alarm Syst Disabled
  - ☐ Hot Work Permit
  - ☐ Fire Watch
  - ☐ Explosion
- ☐ Chemical Hazard
- ☑ Customer Site Specific
- ☐ Confined Space Entry
  - ☐ CSE Permit
- ☑ 70E Elect PPE
- ☐ Air Quality Monitor
- ☑ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Ed Maddox	4-16	7½	x1
Ed Maddox	4-17	2	x1

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: James Donley Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3976 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937.531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.536.8505

Louisville
3600 Chamberlain Drive, Suite 358 • Louisville, KY 40241
502.368.0454

24 Hour Service 513.271.6500

OFFICE

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 04/27/12 Tech: 0576 Unit: 1 + 2

Equip/Mfg: Carrier Model: 30HK-040-

Serial #:

Status: ☐ Complete ☐ Incomplete ☐ Follow-up

Customer Name: P+G SWIC Jones Lang LaSalle Acct Mgr: Tom V

Site Address: 11511 Reed Hartman Hwy

City: Cincinnati State: Ohio Zip:

Bill To:

Equipment Location: HB Building Mechanical Room

Purpose of Call: Annual PM and Inspection

Description of Work: Came to P+G to perform Annual PM and Inspection on HB chillers. Checked electrical connections and contactors, Megged motors, took oil samples for analysis. Leak checked units, Ran units and took temps and checked pressures. Wiped down units and cleaned up work area.

Recommendations:

* Will send Quote for leak repairs.

- ☒ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☐ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☒ Proper GFCI Usage
- ☐ Hot Work
  - ☐ Fire Alarm Syst Disabled
  - ☐ Hot Work Permit
  - ☐ Fire Watch
  - ☐ Explosion
- ☐ Chemical Hazard
- ☒ Customer Site Specific
- ☐ Confined Space Entry
  - ☐ CSE Permit
- ☒ 70E Elect PPE
- ☐ Air Quality Monitor
- ☒ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			
			4	Thompson		oil sample analysis

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure ☒ Chiller Log Sheet

Tech	Date	Hours	Rate
Danny Knight	4-24	8.0	Reg
↓	4-25	8.0	Reg
	4-27	8.0	Reg

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☒ Other H10 leak detector

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244441 Date: 02/10/12 Tech: 0533 Unit:

Equip/Mfg: CARRIER Model: 30HK040

Serial #:

Status: ☐ Complete ☐ Incomplete ☒ Follow-up

Customer Name: P&G SWTC Acct Mgr: N

Site Address: REED HARTMANN HWY

City: CINTI, OH State: Zip:

Bill To: JLL

Equipment Location: HB MECH ROOM

Purpose of Call: CHILLER PM

Description of Work: PERFORMED REGULAR CHILLER PM INSPECTIONS CHECKED ALL ELECTRICAL, CONTROLS, REFRIG/WATER/OIL PRESS & TEMPS, ETC. LOGGED ALL READINGS. CLEANED UP MACHINES & WORK AREA

* Recommendations: WILL QUOTE REFRIG. LEAK REPAIRS ON CH-2 CIRCUIT B WHICH IS LOW ON GAS (SEE TICKET NO. 55125 FOR DETAILS)

- ☐ Lock Out/Tag Out
  - ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☒ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☐ Proper GFCI Usage
- ☐ Hot Work
  - ☐ Fire Alarm Syst Disabled
  - ☐ Hot Work Permit
  - ☐ Fire Watch
  - ☐ Explosion
- ☐ Chemical Hazard
- ☐ Customer Site Specific
- ☐ Confined Space Entry
  - ☐ CSE Permit
- ☒ 70E Elect PPE
- ☐ Air Quality Monitor
- ☒ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
VINNIE B	2/9	3.0	
"	2/10	3.0	

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 08/14/12 Tech: 0576 Unit: #12

Equip/Mfg: Carrier Model: 30HK040D611

Serial #: 2608Q16108

Status: [X] Complete [ ] Incomplete [ ] Follow-up

Customer Name: P&G SWIC (Jones Lang Lasalle) Acct Mgr: Ron V

Site Address: Reed Hartman Hwy

City: Cincinnati State: Ohio Zip:

Bill To: Jones Lang Lasalle

Equipment Location: HB building

Purpose of Call: Chiller PM

Description of Work: Came to P&G Sharon woods to perform chiller PM and Inspection. Inspected electrical control and starter cabinet Inspected electrical connections and contactors checked operation of unit. Filled out chiller log sheet and left in cabinet. Checked pressures and temperatures of chiller. Ran both machines and checked circuits A & B operation and everything is okay. Wiped down unit cabinet with cleaner and cleaned up work area around chiller.

Recommendations:

- [X] Lock Out/Tag Out
- [ ] LO/TO Permit
- [ ] Ladder (Tie Off)
- [ ] Lifting Eqpt/Manpower
- [X] PPE Hard Hat, Glasses
- [ ] Fall Protection
- [ ] Proper GFCI Usage
- [ ] Hot Work
- [ ] Fire Alarm Syst Disabled
- [ ] Hot Work Permit
- [ ] Fire Watch
- [ ] Explosion
- [ ] Chemical Hazard
- [X] Customer Site Specific
- [ ] Confined Space Entry
- [ ] CSE Permit
- [X] 70E Elect PPE
- [ ] Air Quality Monitor
- [X] Appropriate PPE
- [ ] Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

- [ ] AC Check Out
- [ ] Refrig. Check Out
- [ ] Refrig. Job Site Rpt.
- [ ] Heating Check Out
- [ ] Add. Material Rpt.
- [ ] Start Up Rpt.
- [ ] Comp. Failure

Tech	Date	Hours	Rate
Danny Knight	8-14	6.0	Reg

Tool Usage:

- [ ] Vac. Pump
- [ ] Comb. Analyzer
- [ ] Torch
- [ ] Rec. Unit
- [ ] Crane
- [ ] Lift
- [ ] Auger
- [ ] Sewer Camera
- [ ] Other

# of Deliveries to Job:

Authorized Signature: Chris Riley Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3976 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937.531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.536.8505

Louisville
3600 Chamberlain Drive, Suite 358 • Louisville, KY 40241
502.368.0454

24 Hour Service 513.271.6500

OFFICE

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 10/30/12 Tech: 0576 Unit: 1 + 2

Equip/Mfg: Carrier Model: 30HK-040-A-611

Serial #: 2608Q16108

Status: [X] Complete [ ] Incomplete [ ] Follow-up

Customer Name: P&G SWIC (Jones Lang LaSalle) Acct Mgr: Tom V

Site Address: Reed Hartman Hwy

City: Cincinnati State: Ohio Zip:

Bill To: Jones Lang LaSalle

Equipment Location: HB building

Purpose of Call: Chiller Maintenance and Inspection

Description of Work: Came to P&G Sharon woods to HB building to perform maintenance and Inspection of Chiller #1 and #2 Ran one machine at a time and switched to the other. Ran both circuits of machine and checked pressures and temps recorded voltage and amps. Filled out log sheet. Wiped down equipment and cleaned up work area. Everything OKAY.

Recommendations:

- [X] Lock Out/Tag Out
- [ ] LO/TO Permit
- [ ] Ladder (Tie Off)
- [ ] Lifting Eqpt/Manpower
- [X] PPE Hard Hat, Glasses
- [ ] Fall Protection
- [X] Proper GFCI Usage
- [ ] Hot Work
  - [ ] Fire Alarm Syst Disabled
  - [ ] Hot Work Permit
  - [ ] Fire Watch
  - [ ] Explosion
- [ ] Chemical Hazard
- [X] Customer Site Specific
- [ ] Confined Space Entry
  - [ ] CSE Permit
- [X] 70E Elect PPE
- [ ] Air Quality Monitor
- [X] Appropriate PPE
- [ ] Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

- [ ] AC Check Out
- [ ] Refrig. Check Out
- [ ] Refrig. Job Site Rpt.
- [ ] Heating Check Out
- [ ] Add. Material Rpt.
- [ ] Start Up Rpt.
- [ ] Comp. Failure

Tech	Date	Hours	Rate
Donny Knight	10-30	6.0	Reg

Tool Usage:

- [ ] Vac. Pump
- [ ] Comb. Analyzer
- [ ] Torch
- [ ] Rec. Unit
- [ ] Crane
- [ ] Lift
- [ ] Auger
- [ ] Sewer Camera
- [ ] Other

# of Deliveries to Job:

Authorized Signature: Mark N Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244442 Date: 10/23/13 Tech: 1505 Unit:

Equip/Mfg: Model:

Serial #:

Status: [X] Complete [ ] Incomplete [ ] Follow-up

Customer Name: PGSWTC \ SLL Acct Mgr: N/A

Site Address:

City: State: Zip:

Bill To:

Equipment Location:

Purpose of Call:

Description of Work: Did vibration Data Collection on Chillers per Contract

Recommendations: See Report

- [ ] Lock Out/Tag Out
  - [ ] LO/TO Permit
- [ ] Ladder (Tie Off)
- [ ] Lifting Eqpt/Manpower
- [X] PPE Hard Hat, Glasses
- [ ] Fall Protection
- [ ] Proper GFCI Usage
- [ ] Hot Work
  - [ ] Fire Alarm Syst Disabled
  - [ ] Hot Work Permit
  - [ ] Fire Watch
  - [ ] Explosion
- [ ] Chemical Hazard
- [ ] Customer Site Specific
- [ ] Confined Space Entry
  - [ ] CSE Permit
- [ ] 70E Elect PPE
- [ ] Air Quality Monitor
- [X] Appropriate PPE
- [ ] Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

- [ ] AC Check Out
- [ ] Refrig. Check Out
- [ ] Refrig. Job Site Rpt.
- [ ] Heating Check Out
- [ ] Add. Material Rpt.
- [ ] Start Up Rpt.
- [ ] Comp. Failure

Tech	Date	Hours	Rate
L Wommack	10-23	5	Reg

Tool Usage:

- [ ] Vac. Pump
- [ ] Comb. Analyzer
- [ ] Torch
- [ ] Rec. Unit
- [ ] Crane
- [ ] Lift
- [ ] Auger
- [ ] Sewer Camera
- [X] Other Vib 2130-D

# of Deliveries to Job:

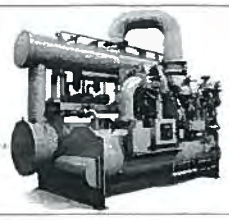
Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

YORK®
Water-Cooled Chillers

YORK BY JOHNSON CONTROLS

(All chillers are electric-drive and use refrigerant HFC-134a unless otherwise noted *)

CAPACITY	MODEL and DESCRIPTION	
215 - 380 TR 755 - 1340 kW	**Model YMC² – magnetic centrifugal compressor** **Unique Features:** 30% less refrigerant, 73 dBA, OptiView™ control panel, OptiSound™ control, OptiSpeed™ variable-speed drive **Ideal Applications:** comfort cooling, facilities requiring low sound levels, green / LEED® buildings	
250 - 3000 TR 880 - 10,550 kW	**Model YK – centrifugal compressor** **Unique Features:** OptiSpeed™ variable-speed drive, heat-recovery capability, quick start feature, OptiSound™ control, OptiView™ control panel **Ideal Applications:** comfort cooling, heat-recovery sites, data centers	
2500 - 3500 TR 8800 - 12,000 kW	**Model YK-EP – centrifugal compressors with economizer** **Unique Features:** higher efficiency at design and off-design conditions, OptiSpeed™ variable-speed drive, single control panel **Ideal Applications:** district cooling, process / industrial cooling, data centers, turbine inlet-air cooling	
1500 - 6000 TR 5300 – 21,100 kW	**Model YD – dual centrifugal compressors** **Unique Features:** smallest footprint per cooling ton in the industry, single OptiView™ control panel **Ideal Applications:** district cooling, retrofits, building additions	
300 - 2500 TR 1050 - 8800 kW	**Model CYK – compound centrifugal compressors** **Unique Features:** high-head and heat-pump capability **Ideal Applications:** air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	
700 - 2800 TR 2460 - 9850 kW	**Model YST – steam-turbine-drive centrifugal compressor *** **Unique Features:** packaged steam condenser, automatic start-up, OptiView™ control panel **Ideal Applications:** co-generation, hybrid plants	
3000 - 5500 TR 10,550 - 19,350 kW	**Titan Model OM – centrifugal compressor with electric-motor, steam-turbine, or gas-engine drive *** **Unique Features:** flexibility, longest life expectancy, easily retrofitted **Ideal Applications:** district cooling, air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	

PUBL-6374 (512) Supersedes: PUBL-6374 (212)
© 2012 Johnson Controls, Inc. P.O. Box 423, Milwaukee, WI 53201 Printed in USA
www.johnsoncontrols.com

Johnson Controls

HVAC Guide Specifications
Water-Cooled and Condenserless
Reciprocating Chillers

Size Range:
15 to 60 Tons (53 to 210 kW)

Carrier Model Number:
30HW018-040
30HK040-060
30HL050,060

Part 1 — General

1.01 SYSTEM DESCRIPTION

Microprocessor controlled water-cooled (HWB,HWC, HWS,HK) or condenserless (HWA,HL) liquid chiller utilizing serviceable, semi-hermetic type compressor.

1.02 QUALITY ASSURANCE

A. The 30HWB,HWC,HK 60-Hz unit performance shall be rated per ARI (U.S.A.) Standard 550/590-98 at standard rating conditions. All other unit performance shall be based on ARI Standard 550/590-98.
B. Unit construction shall comply with ANSI/ASHRAE 15, latest revision Safety Standard, NEC, and applicable ASME codes (U.S.A. codes).
C. Unit shall be certified in accordance with ISO 9002 manufacturing quality standard.
D. Unit shall be UL listed and UL, Canada certified (30HWA,HWB,HWC,HK 60-Hz units only) (U.S.A. standards).

1.03 DELIVERY, STORAGE AND HANDLING

Unit shall be shipped factory-assembled with all piping and wiring, precharged with a complete operating charge (30HWB,HWC,HWS,HK) or a holding charge (30HWA,HL) of R-22 and shall be stored and handled according to manufacturer's recommendations.

Part 2 — Products

2.01 EQUIPMENT

A. General:
Single-piece liquid chiller consisting of compressor(s), direct expansion cooler, condenser(s) (30HWB,HWC,HWS,HK), controls, safeties, and any hardware required before start-up.
B. Unit Cabinet:
1. Frame shall be of heavy-gage galvanized steel with an electrostatically applied baked enamel finish.
2. The 30HW units shall pass through a standard 30-in. (762 mm) door and shall not exceed 36 in. (914 mm) in length (30HWA,B). The 30HK,HL units shall not exceed 36 in. (762 mm) in width.
C. Compressor:
1. Reciprocating, serviceable, semi-hermetic type only.
2. Equipped with an automatically reversible oil pump, operating oil charge, suction and discharge shutoff valves, oil sight glass, and a refrigerant suction gas-cooled motor.
3. Each shall be mounted on spring vibration isolators with an isolation efficiency of no less than 95%.
4. Each compressor shall have a crankcase heater, muffler, and suction cutoff unloaders.
5. Speed not to exceed 1750 rpm (29.2 r/s) for 60 Hz units, and 1450 rpm (24.2 r/s) for 50 Hz units.
6. Shall be same manufacturer as chiller.
D. Cooler:
1. 30HW: Single-pass ANSI type 316, stainless-steel, brazed-plate construction.
30HK,HL: Single-pass, shell-and-tube type with removeable heads and multiple internal polypropylene baffles. Seamless copper tubes shall be rolled into tube sheets.
2. Direct expansion refrigerant circuit.
3. Equipped with grooved-end-type fluid connections at least 8 in. (203 mm) above floor level.
4. Insulated with 3/4-in. (19 mm) closed cell foam or equivalent.

a. Unit shall be equipped with sensors and all necessary components in conjunction with the control system to provide the unit with the following protections:
   1) Loss of refrigerant charge protection.
   2) Low fluid flow detection.
   3) Low chilled fluid temperature protection.
   4) Low control voltage (to unit) protection.
   5) High-pressure switch.
b. Compressors shall be equipped with the following manual-reset type protections:
   1) Pressure overload.
   2) Electrical overload through the use of definite-purpose contactors and calibrated, ambient compensated, magnetic trip circuit breakers. Circuit breakers shall open all 3 phases in the event of an overload in any one phase (single-phasing condition).

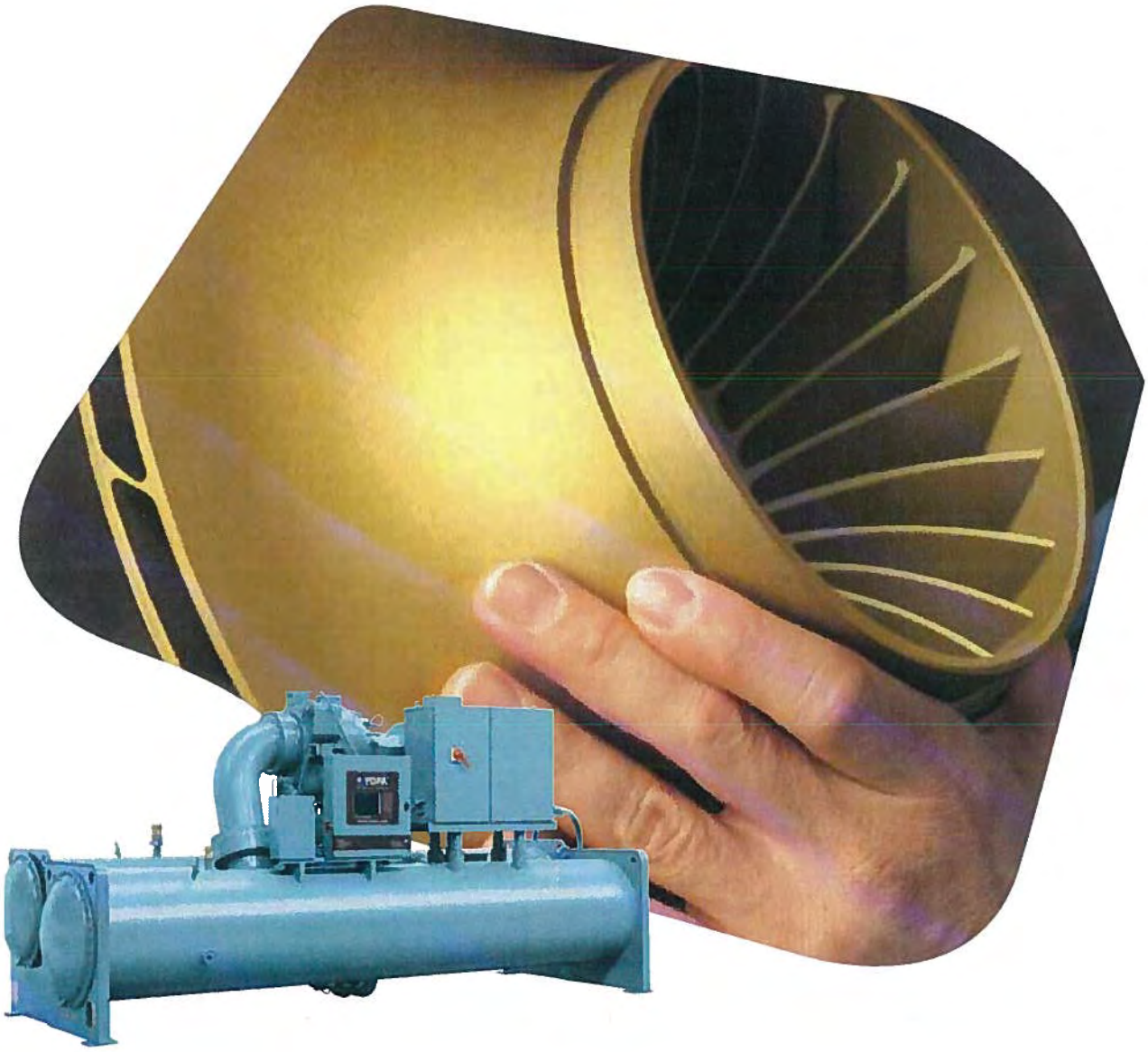
J. Operating Characteristics:
   1. Unit shall be capable of starting with up to 95 F (35 C) fluid temperature entering the cooler.
   2. Unit shall be capable of operating with variable cooler fluid flow.

K. Electrical Requirements:
   1. Single-point electrical power connection with terminal block. Shall include power for control circuit.
   2. Control points shall be accessed through terminal block.

L. Special Features:
   1. Oil Safety Switch (standard on HWA,HL, and brine units, field-installed accessory on HWB,HWC,HWS,HK standard units):
      This switch senses differential oil pressure and prevents unit operation at low oil pressures.
   2. Hot Gas Bypass:
      This factory-installed option (30HW) or field-installed accessory (30HK,HL) shall permit chiller unloading capacity down to 10% of maximum loaded capacity.
   3. Pressure Gage Panel:
      This field-installed accessory shall include both suction and discharge pressure gages with shutoff valves.
   4. Sound Enclosure Panels:
      This acoustic package shall be either factory (30HW units only) or field installed and shall entirely enclose the compressor section to reduce radiated sound by approximately 5 dBA.
   5. Mobility Package (30HW units only):
      This package shall be either factory (30HWA,B only) or field installed and shall include 4 swivel wheels for easy unit mobility.
      NOTE: The 30HWC,S units require 2 packages.
   6. Vibration Isolators (30HW units only):
      Vibration isolators shall be field installed before the unit is set into its final location and shall reduce vibration transmission through the mounting area of the chiller.
   7. Multi-Chiller Control:
      The multi-chiller control shall be field installed, and shall sequence up to 8 chillers in parallel.
   8. Proof-of-Flow Switch:
      This field-installed accessory shall sense fluid pressure differential across the chiller, and shall be compatible with the multi-chiller control accessory.
   9. Compressor Ground Fault Sensor:
      Ground-current sensing shall deenergize the compressor on sensing of a 2.5 ± 2 amps current imbalance from primary to ground to prevent formation of acids from motor burnout. It shall be a field-installed accessory.
   10. Part-Wind Start (option on 30HW025-040; special order on HK040-060 and HL050,060):
      Part-wind start shall be factory installed to reduce compressor inrush current.
   11. Non-Fused Disconnect (30HW units only):
      The non-fused disconnect shall be factory installed and shall disconnect all power to the unit (including control circuit power).
   12. Medium Temperature Brine (30HW units only):
      Special modifications shall be made at the factory to permit operation with leaving chilled fluid temperatures between 15 to 39 F (–9.4 to 3.9 C).
      NOTE: This is a special order for 30HK,HL units.
   13. Condenser Manifold Package (HK only):

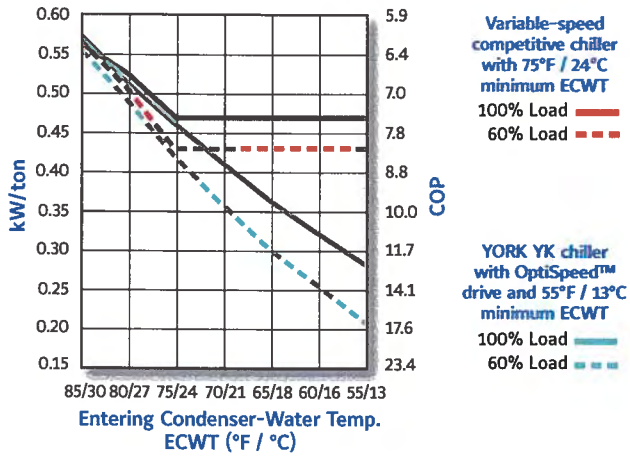
YORK® MODEL YK
CENTRIFUGAL CHILLERS

Best route to real-world energy performance

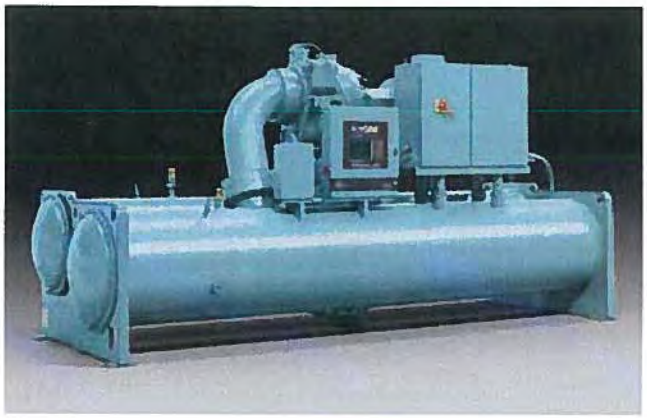


YORK®
BY JOHNSON CONTROLS

YORK® YK chillers deliver maximum efficiency



YORK YK chillers can utilize ECWTs as low as 55°F (13°C) to reach 0.20 kW/ton (18 COP) at off-design conditions, reducing instantaneous energy consumption by as much as 50%.



The capacity range of the YORK model YK chiller is 250 to 3,000 TR (880 to 10,540 kW). Both low-voltage (250 to 575 V) and medium-voltage (2,300 to 13.800 V) designs are available.

Real-world energy performance is essential

YORK® model YK centrifugal chillers, manufactured by Johnson Controls, provide the best route to real-world energy performance – the combined performance at all operating conditions, not just design. Because chillers in the real world operate nearly 99% of the time at off-design conditions, off-design performance is the major factor in energy consumption. That's why YK centrifugal chillers are engineered for maximum efficiency at both design and off-design conditions.

Unsurpassed Integrated Part Load Value

The Air-conditioning, Heating, and Refrigeration Institute (AHRI) Chiller Certification Program endorses the validity of off-design analysis to compare chiller energy consumption. Measured with AHRI's Integrated Part Load Value (IPLV), YK centrifugal chillers are unsurpassed in energy efficiency. Equipped with an OptiSpeed™ variable-speed drive, they can reduce energy usage as low as 0.20 kW/TR at off-design conditions.

Adaptive capacity control optimizes performance

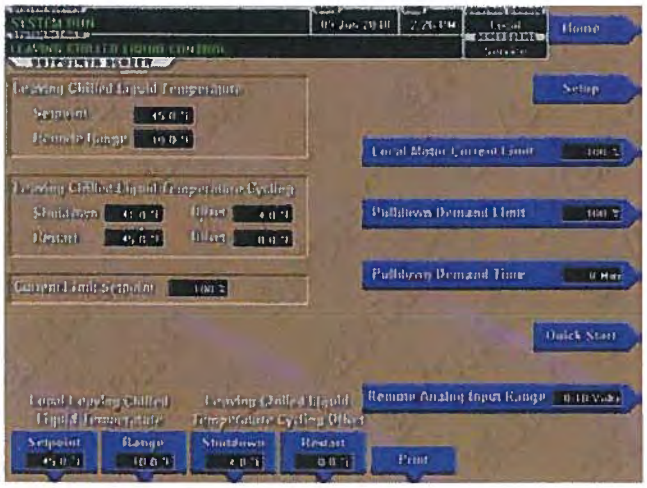
When a YORK YK chiller is equipped with an OptiSpeed drive, it incorporates advanced Adaptive Capacity Control logic, which continually optimizes chiller operation. It closely examines critical operating parameters, and then determines the most efficient way to operate. In addition, it lets you optimize your savings when using intelligent control strategies, such as chilled-water reset. Adaptive Capacity Control logic also accommodates the characteristics of the refrigerant used in the chiller – today and tomorrow.

Take advantage of colder entering-condenser water

Unlike competitive chillers which require entering condenser-water temperature (ECWT) from the cooling tower to be held artificially high, YORK YK centrifugal chillers can utilize ECWT as low as 55°F (13°C). The lower ECWT reduces the compressor workload, and that can reduce instantaneous energy consumption as much as 50%.

Powerful control center saves energy

YK chillers feature the OptiView™ Control Center, which uses microprocessor capabilities to save you energy. Operation at just 1° below the designed chilled-water-temperature setpoint can increase chiller energy consumption by as much as 3%, wasting thousands of kilowatt-hours and dollars each year. The digital precision of the OptiView Control Center lets you set chilled-water temperature to a resolution of ± 0.1°. As a result, you eliminate the energy wasted by drifting a degree or more from the setpoint. The OptiView Control Center can also be used to schedule daily operating hours and holidays. No longer is energy accidentally wasted cooling the facility when it's not needed.



The OptiView Control Center helps you operate your YORK YK chiller more efficiently by allowing for the precise setting of chilled-water temperature and operating schedule.

Maximum control with OptiView™ Control Center

Easy to operate

The intuitive, full-color OptiView Control Center offers you a higher level of monitoring and control. Data input is foolproof, and data outputs are shown in association with illustrations of the appropriate chiller components. For convenience, all data can be displayed in eleven different languages, in addition to Imperial or SI units.

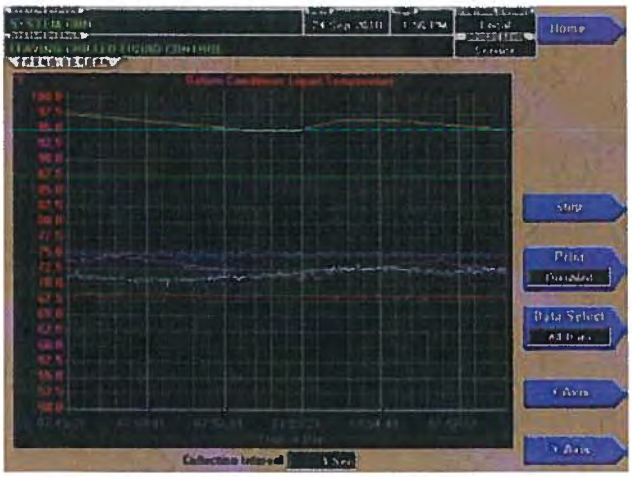
Easy to monitor

The OptiView Control Center allows on-board trending of up to six different values, selected from over 100 variables. The values and sampling interval are all user-selectable. This flexibility allows you to select parameters that are critical for your operation and to perform trending without a BAS interface and separate monitor.

Easy to integrate

Energy savings and ease-of-use can be fully realized when the HVAC system is an integrated part of the building-automation system. The OptiView Control Center is designed to communicate with the Johnson Controls Metasys® system. It can also communicate with most control systems on the market today using its optional ELink communication card.

Data outputs on the OptiView Control Center are accompanied with an illustration of the appropriate chiller component, making chiller operation more intuitive.



The trending screen provided performance insights not possible with snap shot observations.

Versatile design provides superior sustainability and flexibility

Environmental responsibility

The environmental impact of your chiller can be significant. You can reduce your impact by specifying YORK YK chillers. You'll get the benefit of refrigerant HFC-134a, which has zero ozone depletion potential (ODP). Plus, the high efficiency of the chillers reduces the indirect global warming potential (GWP), which is 98% of the total impact, caused by greenhouse-gas emissions produced by your utility to power the chiller. In addition, because of the chillers' high efficiency, your building could earn points for the Optimize Energy Performance (EAc1) credit in the Leadership in Energy and Environmental Design® (LEED) program.

Falling-film technology, utilized in the evaporator of YK chillers, reduces the refrigerant charge by up to 40%. It is available in YK chillers up to about 1,000 TR (based on conditions), and will help your building to qualify for maximum LEED points for Enhanced Refrigerant Management (EAc4).

Reduced noise levels

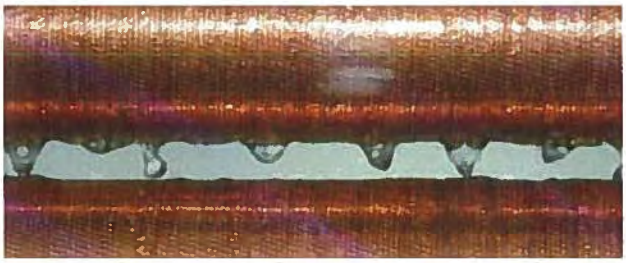
Traditional centrifugal chillers can generate a substantial amount of objectionable noise, but the YORK YK chiller is equipped with the innovative OptiSound™ Control, which reduces noise at off-design conditions. The control continuously monitors the characteristics of the compressor-discharge gas and optimizes the diffuser spacing of the compressor to minimize noisy gas-flow disruptions from the impeller. Chiller operation is also stabilized.

Flexible heating option

The YORK YK chiller can also be configured as a heat-recovery chiller, for use in facilities with simultaneous heating and cooling requirements. The heat-recovery unit takes advantage of the free heat that is typically rejected by the cooling towers. The heat can be used to control humidity, reheat the air, and preheat domestic hot water. Heat-recovery units have outstanding heating coefficients of performance that can reach up to 11.4.

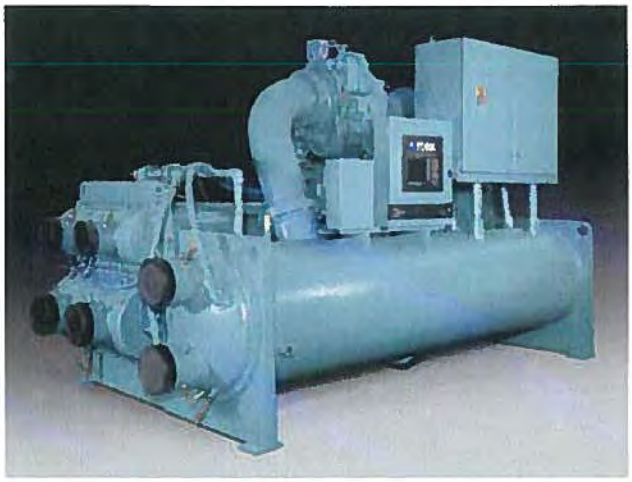
Quick restart and return to setpoint

The Quick Start feature available on the YORK YK chiller reduces the risks that temperature-sensitive facilities experience after a power interruption. YK chillers equipped with this feature restart and return to the specified chilled-water temperature faster, reducing the risks of expensive downtime.



(Photo courtesy of the LTCM lab of the Ecole Polytechnique Fédérale de Lausanne, Switzerland)

A falling-film evaporator is more efficient because refrigerant is sprayed over the tubes, reducing refrigerant charge up to 40%.



The YK chiller is available in a heat-recovery configuration. Recovered heat can be used in the HVAC or domestic hot-water systems.

Maximum reliability with minimum maintenance

OptiView Control Center keeps you well-informed

The OptiView Control Center provides complete information on your chiller's operating condition. Safety-shutdown information includes day, time, cause of shutdown and type of restart required. Color-coding of fault messages allows easy determination of chiller status. Yellow messages signify shutdowns with automatic restart, requiring no operator intervention. Red messages are displayed for shutdowns requiring manual restart, alerting the operator that a system check may be required.

The Trending Screen can show changes in motor current, oil temperature and pressure, refrigerant pressures, or water temperatures, all of which can be valuable indicators of developing problems. This capability gives you ample time to take corrective measures before any expensive downtime is incurred. With the OptiView Control Center, you can see when to schedule routine maintenance in advance of actual need.

Open drive is easy to maintain

The YORK YK centrifugal chiller uses an open-motor driveline, which means less downtime. If a motor failure occurs, the chiller can be brought back online much faster and at a reduced cost. The motor is easy to remove, and can be repaired at a local motor shop. As a result, downtime due to motor failure is dramatically reduced.

Electrical protection extends motor life

Equipped with an OptiSpeed drive, the YK chiller starts "softly," never letting the inrush current exceed 100% of the full-load amps. By limiting the inrush, the motor windings do not rub together with expansion, which results in longer motor life and less chiller downtime. Lower inrush also reduces torque stresses on the motor and compressor driveline.

Start maximizing today

For more information on how YORK YK chillers can deliver real-world energy performance, visit johnsoncontrols.com or contact your Johnson Controls representative.

Color-coded fault messages allow early determination of chiller status and required operator action.

Printed on recycled paper.

PUBL-5187 (1010) Supercedes PUBL-5187 (908)
© 2010 Johnson Controls, Inc. P.O. Box 423, Milwaukee, WI 53201 Printed in USA
www.johnsoncontrols.com

Johnson Controls

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-629-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☒ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

Please list Duke Energy account numbers below (attach listing of multiple accounts and/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
6930-2121-01-0	38,000,000		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct rebates are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

Please check each box to indicate completion of the following program requirements:

☒ All sections of appropriate application(s) are completed	☒ Proof of payment.*	☒ Manufacturer's Spec sheets	☐ Energy model/calculations and detailed inputs for Custom applications

* If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet	☐ MSD Prescriptive Lighting ☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet	☐ MSD Prescriptive Lighting ☐ MSD Custom Part 1 ☐ Custom Lighting Worksheet
Heating & Cooling	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Heating & Cooling ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	☐ MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s)	☐ MSD Prescriptive Heating & Cooling	☐ MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s)
Chillers & Thermal Storage	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Chillers & Thermal Storage ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Chiller Tune-ups	☐ MSD Prescriptive Chiller Tune-ups	☒ MSD Prescriptive Chiller Tune-ups	☐ MSD Prescriptive Chiller Tune-ups
Motors & Pumps	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Motors, Pumps & Drives ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
VFDs	Not Applicable	☐ MSD Prescriptive Motors, Pumps & Drives ☐ MSD Custom Part 1 ☐ MSD Custom VFD Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom VFD Worksheet
Food Service	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Food Service ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Air Compressors	☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet	☐ MSD Prescriptive Process ☐ MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet
Process	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Prescriptive Process ☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet
Energy Management Systems	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet	☐ MSD Custom Part 1 ☐ MSD Custom EMS Worksheet
Behavioral* & No/Low Cost**		☐ MSD Custom Part 1 ☐ MSD Custom General Worksheet	

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**
*** Please ensure that you include the age of the replaced equipment for measures classified as "Early Replacement" in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.
**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

Duke Energy

MERCANTILE SELF DIRECT Ohio Chiller Tune-up Service Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-629-5572.

Is this application: ☒ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Required (check one)		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☐ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☒ Duke Energy Representative	☐ Web Site	☐ Radio
☐ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	Procter & Gamble	Contact		Quentin Graves (JLL)	
Phone	513-698-4540	**Account Number**		6930-2121-01-0	
Street Address (Where rebate should be mailed)		11510 Reed Hartman Hwy			
City	Blue Ash	State	Ohio	Zip Code	45241
Installation Street Address	8340 Mason Montgomery Road				
City	Mason	State	Ohio	Zip Code	45040
E-mail Address	Graves.q@pg.com				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor		Contact			
Phone		Fax			
Street Address					
City		State		Zip Code	
E-mail Address					

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☐ **Vendor**

Payment Information		
Who should receive rebate payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of rebate directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	31-0411980
	Vendor Tax ID #	

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature	Peter Graves (JLL)	Vendor Signature	
Date	4/26/13	Date	
Title	JLL Facility Manager	Title	

Rebates are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for rebates. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

Duke Energy

Air Cooled and Water Cooled Chiller Tune-ups						
Manufacturer and Model #	# of Units	Tons Per unit*	Total Project Cost	Current Service Date	Previous Service Date	Total Rebate
YORK YK S2 S2J2DHAS	5	2000	$6,804	2/10/12	2/02/11	$3,402
*Provide manufacturer's spec sheet documenting the size of the unit						

To Calculate your tune-up rebate*:	
A. Add up equipment capacity of all units serviced (in tons) and multiply by $2/ton =	$20,000
B. Cost of service = 6804 x 50% of total service cost =	$3,402
Total Rebate (lesser amount of row A or row B)=	$3,402
*Rebates cannot exceed 50% of total service invoice (**external** labor and equipment).	

Service Requirements:

1. **This rebate is available only once per unit in a 12 month period.**
2. An individual chiller is considered one unit.
3. Copy of paid invoice must be included with this application
4. Self serviced (internal) labor should not be included as part of the total service cost. Only external labor will be considered as part of the total service invoice.
5. Cooling service must include the following normal maintenance items **(please check if completed):**

☒ Air cooled condenser coil cleaning	☒ Compressor amp draw	☒ Low Pressure controls
☒ System Pressure check and adjust	☒ Supply motor amp draw	☒ High Pressure controls
☒ Filter inspect or replace	☒ Condenser fan(s) amp draw	☒ Crankcase heater operation
☒ Belt inspect or replace	☒ Liquid line temperature	☒ Water cooled chiller condenser tube cleaning
☒ Contactors condition	☒ Suction pressure & temperature	☒ Water cooled chiller evaporator tube cleaning
☒ Evaporator condition	☒ Oil level & pressure	

Rebate Eligibility

- Rebates are only available to customers on Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Rebate will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise rebate levels and/or qualifying efficiency levels at anytime.
- Customer may assign the rebate to the vendor who installed/supplied the equipment. The customer's signature is required in the appropriate places on this form to assign the rebate to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the rebate. This assigned rebate must reduce the purchase price paid for the equipment by an equivalent amount.
- Any equipment which, either separately or as part of a project, has or will receive a rebate from any other Duke Energy program
- In no case will Duke Energy pay a rebate above the actual cost of the service.
- Rebate recipient assumes all responsibilities for any tax consequences resulting from Duke Energy rebate payment.
- To qualify for Duke Energy rebates, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Rebate applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the rebate program.

Terms and Conditions

I certify that this premise is served by Duke Energy (or an affiliate of Duke Energy), that the information provided herein is accurate and complete, and that I have purchased and installed the high efficiency equipment (indicated herein) for the business facility listed herein and not for resale. Attached is an itemized invoice for the indicated installed equipment. In understand that the proposed rebate payment from Duke Energy is subject to change based on verification and Duke Energy approval. I agree to Duke Energy verification of both the sales transaction and equipment installation which may include a site inspection from a Duke Energy representative or Duke Energy agent. I understand that I am not allowed to receive more than one rebate from Duke Energy on any piece of equipment. I also understand that my participation in the program may be taxable and that my company is solely responsible for paying all such taxes. I hereby agree to indemnify, hold harmless and release Duke Energy and it's affiliates from any actions or claims in regards to the installation, operation and disposal of equipment (and related materials) covered herein including liability from an incidental or consequential damages. Duke Energy does not endorse any particular manufacturer, product or system design within these programs; does not expressly or implicitly warrant the performance of installed equipment (Contact your contractor for details regarding equipment warranties), and is not liable for any damage caused by the installation of the equipment or for any damage cause by the malfunction of the installed equipment.

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

DeBra-Kuempel
3976 Southern Avenue
Cincinnati, OH 45227
Phone: 513.271.6500
Fax: 513.271.4676

www.debra-kuempel.com

January 30, 2012

Mr. Jim Kuehn
Jones Lang LaSalle
6083 Center Hill Road
Cincinnati, OH 45224

RE: MBC - Chiller PM Contract

Dear Jim:

Per the chiller service agreement with JLL, DeBra-Kuempel is pleased to provide the contracted chiller maintenance pricing for January 1, 2012 through December 31, 2012, for your review.

Scope of Work:

- Perform annual PM on (6) chillers.
- Provide vibration analysis on the above equipment.
- Follow all tasks and pricing as indicated in the city wide chiller contract agreement.

Quotation:

DeBra-Kuempel will perform the above scope of work for the sum of ***Eight Thousand Two Hundred Thirty Three Dollars ($8,233.00)***, plus applicable sales tax.

Conditions:

- This proposal is based upon all work being performed during the normal working hours of 7:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays.
- Invoices will be rendered as work progresses and all invoices are payable upon receipt.
- Service charges at the rate of 1½% per month (as stated on our invoices) will be charged on all past due accounts.
- This quotation is subject to revision if not accepted within thirty (30) days.
- To signify your acceptance, please sign below and return a copy of this proposal with your purchase order.

Thank you for this opportunity to be of service. If you have any questions or if I can be of further assistance, please feel free to contact me directly at (513) 527-8152.

Respectfully,

DEBRA-KUEMPEL

Tom Viox
Account Manager

Dayton
1948 West Dorothy Lane • Dayton, OH 45439
P: 937.531.5455 • F: 937.531.5456

An Equal Opportunity Employer

Maysville
702 Parker Drive• Maysville, KY 41056
P: 606.563.8505 • F: 606.563.8750

DeBra-Kuempel
MECHANICAL - ELECTRICAL
An EMCOR Company

Remit to: P.O. Box 701620
Cincinnati, OH 45270-1620

AUG 03 2012

BILLED BY:JULIE B. #513-527-8137 12001248

INVOICE	DATE
00693612	7/31/12

CUSTOMER:
21962
PAM
JONES LANG LASALLE AMERICAS-P&G
ACCOUNTING
PO BOX 5126
CINCINNATI, OH 45201-5126
698-6547

JOB ADDRESS:
JLL/P&G / MBC / CHILLERS-12/12
8700 MASON MONTGOMERY ROAD
MASON, OH 45040

Customer PO No.: 754814-OP-4014407000
Job Number...: 244422
Bill Contract: 244422

REFERENCE DESCRIPTION	AMOUNT
JLL/P&G @ MBC/ CHILLER MAINTENANCE 1/1/2012 THRU 12/31/2012	
PREVENTIVE MAINTENANCE	8,233.00

GR'D DD
AUG 04 2012

OK TO PAY
8-8-12

RECEIVED
AUG 3 2012
JLL ACCOUNTING

Now Accepting Visa/MC/AMX for
Payment of Invoices.
A Service Charge of 1.5% per Month
will be charged on All Past Due Accts.

SUB-TOTAL	8,233.00
TAX	535.15
AMOUNT PAID	.00
AMOUNT DUE	8,768.15

ORIGINAL **DUE ON RECEIPT**

14

AUG 07 2012

KY MASTER # M04348
OH CONTRACTOR # 25061

Page 1 of 1

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244422 Date: 02/08/12 Tech: 0576 Unit:

Equip/Mfg: York Model: YKS252J2D2

Serial #: GNBm-114614

Status: ☐ Complete ☒ Incomplete ☐ Follow-up

Customer Name: P&G MBC (Jones Lang LaSalle) Acct Mgr: Tom V

Site Address: 8700 Mason-Montgomery Rd

City: Mason State: Ohio Zip:

Bill To: Jones Lang LaSalle

Equipment Location: Chiller Room

Purpose of Call: Annual Chiller PM and Inspection

Description of Work: Worked at Mason P&G to perform the Annual Chiller PM and Inspection. Took oil samples and checked electrical connections. Checked motor coupling. Changed all drives, Check flow switch operation, Inspected oil pump contacts, and heater operation. Topped off oil cups for motor bearings.

Recommendations:

- ☒ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☐ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☒ Proper GFCI Usage
- ☐ Hot Work
- ☐ Fire Alarm Syst Disabled
- ☐ Hot Work Permit
- ☐ Fire Watch
- ☐ Explosion
- ☐ Chemical Hazard
- ☒ Customer Site Specific
- ☐ Confined Space Entry
- ☐ CSE Permit
- ☒ 70E Elect PPE
- ☐ Air Quality Monitor
- ☒ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Danny Knight	2-8	8.0	Reg
	2-9	8.0	Reg
↓	2-10	8.0	Reg

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other

# of Deliveries to Job:

Authorized Signature: Customer P.O.#: Total:

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3575 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937.531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.536.8505

Louisville
3600 Chamberlain Drive, Suite 358 • Louisville, KY 40241
502.368.0454

24 Hour Service 513.271.6500

OFFICE

KY MASTER # M04348
OH CONTRACTOR # 25061

Page ____ of ____

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244422 Date: 02/10/12 Tech: 149 Unit: 1-5

Equip/Mfg: YORK Model: YKS2S2J2

Serial #: GNBM114614

Status: ☐ Complete ☑ Incomplete ☐ Follow-up

Customer Name: P&G MBC Acct Mgr: N

Site Address: 8700 Mason Montgomery Rd

City: Mason State: OH Zip:

Bill To: Same

Equipment Location: C.U.P.

Purpose of Call: Annual P.M. on York chillers

Description of Work: Changed filters and o.l. filters
Checked motor couplings. Checked safety
controls. Leak checked machines
Filled out general reports.
Downloaded faults from processor.

Recommendations:

- ☑ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☑ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☑ Proper GFCI Usage
- ☐ Hot Work
  - ☐ Fire Alarm Syst Disabled
  - ☐ Hot Work Permit
  - ☐ Fire Watch
  - ☐ Explosion
- ☐ Chemical Hazard
- ☑ Customer Site Specific
- ☐ Confined Space Entry
  - ☐ CSE Permit
- ☑ 70E Elect PPE
- ☐ Air Quality Monitor
- ☑ Appropriate PPE
- ☐ Other

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			
			✓		691267	Driers
			✓		691308	O.L. Filters & Driers.

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Ed Maddox	2-6	6½	X1
Ed Maddox	2-8	8	X1
Ed Maddox	2-9	8	X1
Ed Maddox	2-10	8	X1

Tool Usage:

☑ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☑ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other Lap Top Computer

# of Deliveries to Job:

Authorized Signature: _____ Customer P.O.#: _____ Total: _____

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3076 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937.531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.436.8505

Louisville
3600 Chamberlain Drive, Suite 159 • Louisville, KY 402
502.368.0454

24 Hour Service 513.271.6500

OFFICE

KY MASTER # M04348
OH CONTRACTOR # 25061

Page ____ of ____

SERVICE REPORT

DeBra-Kuempel
Mechanical-Electrical
An EMCOR Company

Job #: 244422 Date: 02/16/12 Tech: 149 Unit:

Equip/Mfg: YORK Model: YKS252J2

Serial #:

Status: ☐ Complete ☐ Incomplete ☑ Follow-up

Customer Name: P&G MBC Acct Mgr: N

Site Address: Mason Montgomery Rd.

City: Cin State: OH Zip:

Bill To: Jones Lang LaSalle

Equipment Location: C.U.P.

Purpose of Call: Annual P.M on chillers

Description of Work:
Filled out annual report loss on chillers
Recorded refrig loss from chillers.
Completed P.M on chiller #2

Recommendations: chiller #2 needs 480 volt oil heater thermostat replaced.

- ☑ Lock Out/Tag Out
- ☐ LO/TO Permit
- ☐ Ladder (Tie Off)
- ☐ Lifting Eqpt/Manpower
- ☑ PPE Hard Hat, Glasses
- ☐ Fall Protection
- ☑ Proper GFCI Usage
- ☐ Hot Work
  - ☐ Fire Alarm Syst Disabled
  - ☐ Hot Work Permit
  - ☐ Fire Watch
  - ☐ Explosion
- ☐ Chemical Hazard
- ☑ Customer Site Specific
- ☐ Confined Space Entry
  - ☐ CSE Permit
- ☑ 70E Elect PPE
- ☐ Air Quality Monitor
- ☑ Appropriate PPE
- ☐ Other ____

Quantities				Part Number	DeBra-Kuempel P.O. #	Material / Rental / Tool Description
Cash	Truck	Shop	Pur. Order			

Technical Reports Completed:

☐ AC Check Out ☐ Refrig. Check Out ☐ Refrig. Job Site Rpt. ☐ Heating Check Out
☐ Add. Material Rpt. ☐ Start Up Rpt. ☐ Comp. Failure

Tech	Date	Hours	Rate
Ed Madden	2-16	8	X1
Ed Madden	2-17	2	X1

Tool Usage:

☐ Vac. Pump ☐ Comb. Analyzer ☐ Torch
☐ Rec. Unit ☐ Crane ☐ Lift
☐ Auger ☐ Sewer Camera
☐ Other ____

# of Deliveries to Job:

Authorized Signature: Bridi Pierson Customer P.O.#: ____ Total: ____

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

Cincinnati
3976 Southern Ave. • Cincinnati, OH 45227
513.271.6500

Dayton
1948 W. Dorothy Ln. • Dayton, OH 45439
937.531.5455

Maysville
702 Parker Dr. • Maysville, KY 41056
606.536.8505

Louisville
3600 Chamberlain Drive, Suite 358 • Louisville, KY 40241
502.368.0454

24 Hour Service 513.271.6500

OFFICE

YORK®
Water-Cooled Chillers

YORK BY JOHNSON CONTROLS

(All chillers are electric-drive and use refrigerant HFC-134a unless otherwise noted *)

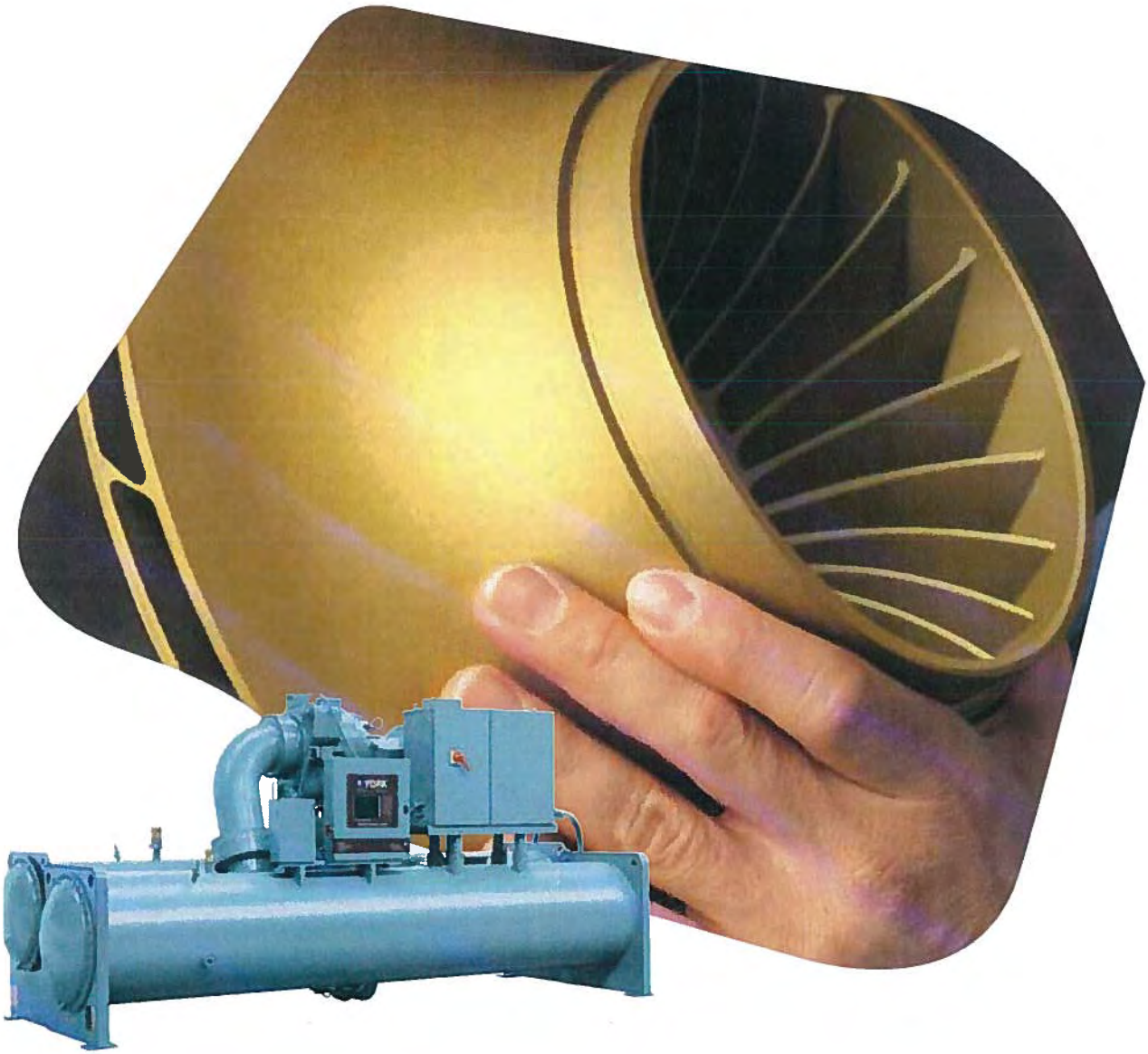
CAPACITY	MODEL and DESCRIPTION	
215 - 380 TR 755 - 1340 kW	**Model YMC² – magnetic centrifugal compressor** **Unique Features:** 30% less refrigerant, 73 dBA, OptiView™ control panel, OptiSound™ control, OptiSpeed™ variable-speed drive **Ideal Applications:** comfort cooling, facilities requiring low sound levels, green / LEED® buildings	
250 - 3000 TR 880 - 10,550 kW	**Model YK – centrifugal compressor** **Unique Features:** OptiSpeed™ variable-speed drive, heat-recovery capability, quick start feature, OptiSound™ control, OptiView™ control panel **Ideal Applications:** comfort cooling, heat-recovery sites, data centers	
2500 - 3500 TR 8800 - 12,000 kW	**Model YK-EP – centrifugal compressors with economizer** **Unique Features:** higher efficiency at design and off-design conditions, OptiSpeed™ variable-speed drive, single control panel **Ideal Applications:** district cooling, process / industrial cooling, data centers, turbine inlet-air cooling	
1500 - 6000 TR 5300 - 21,100 kW	**Model YD – dual centrifugal compressors** **Unique Features:** smallest footprint per cooling ton in the industry, single OptiView™ control panel **Ideal Applications:** district cooling, retrofits, building additions	
300 - 2500 TR 1050 - 8800 kW	**Model CYK – compound centrifugal compressors** **Unique Features:** high-head and heat-pump capability **Ideal Applications:** air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	
700 - 2800 TR 2460 - 9850 kW	**Model YST – steam-turbine-drive centrifugal compressor *** **Unique Features:** packaged steam condenser, automatic start-up, OptiView™ control panel **Ideal Applications:** co-generation, hybrid plants	
3000 - 5500 TR 10,550 - 19,350 kW	**Titan Model OM – centrifugal compressor with electric-motor, steam-turbine, or gas-engine drive *** **Unique Features:** flexibility, longest life expectancy, easily retrofitted **Ideal Applications:** district cooling, air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	

PUBL-6374 (512) Supersedes: PUBL-6374 (212)
© 2012 Johnson Controls, Inc. P.O. Box 423, Milwaukee, WI 53201 Printed in USA
www.johnsoncontrols.com

Johnson Controls

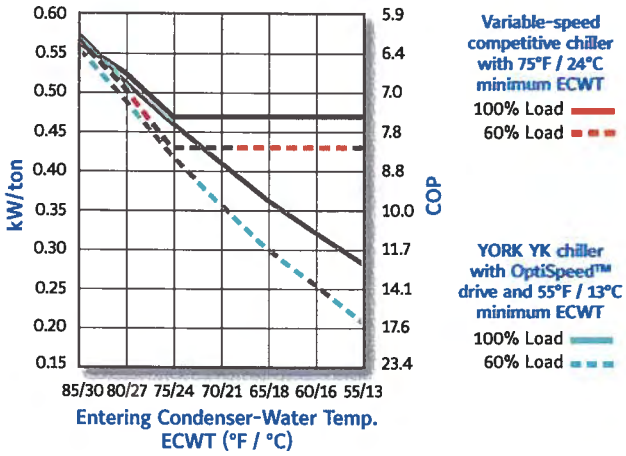
YORK® MODEL YK
CENTRIFUGAL CHILLERS

Best route to real-world energy performance



YORK®
BY JOHNSON CONTROLS

YORK® YK chillers deliver maximum efficiency



YORK YK chillers can utilize ECWTs as low as 55°F (13°C) to reach 0.20 kW/ton (18 COP) at off-design conditions, reducing instantaneous energy consumption by as much as 50%.

The capacity range of the YORK model YK chiller is 250 to 3,000 TR (880 to 10,540 kW). Both low-voltage (250 to 575 V) and medium-voltage (2,300 to 13.800 V) designs are available.

Real-world energy performance is essential

YORK® model YK centrifugal chillers, manufactured by Johnson Controls, provide the best route to real-world energy performance – the combined performance at all operating conditions, not just design. Because chillers in the real world operate nearly 99% of the time at off-design conditions, off-design performance is the major factor in energy consumption. That's why YK centrifugal chillers are engineered for maximum efficiency at both design and off-design conditions.

Unsurpassed Integrated Part Load Value

The Air-conditioning, Heating, and Refrigeration Institute (AHRI) Chiller Certification Program endorses the validity of off-design analysis to compare chiller energy consumption. Measured with AHRI's Integrated Part Load Value (IPLV), YK centrifugal chillers are unsurpassed in energy efficiency. Equipped with an OptiSpeed™ variable-speed drive, they can reduce energy usage as low as 0.20 kW/TR at off-design conditions.

Adaptive capacity control optimizes performance

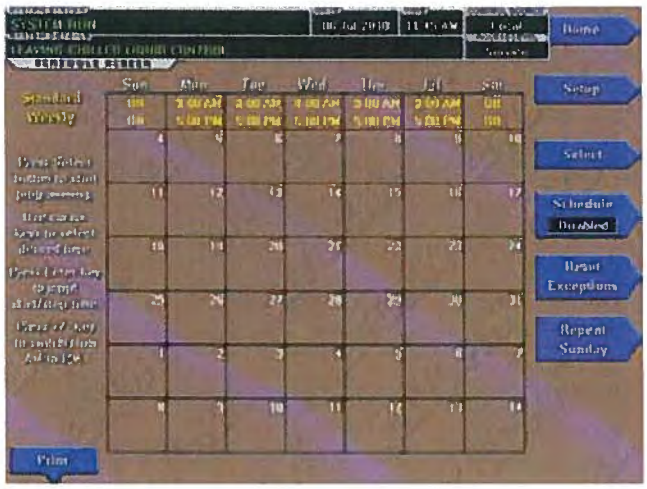
When a YORK YK chiller is equipped with an OptiSpeed drive, it incorporates advanced Adaptive Capacity Control logic, which continually optimizes chiller operation. It closely examines critical operating parameters, and then determines the most efficient way to operate. In addition, it lets you optimize your savings when using intelligent control strategies, such as chilled-water reset. Adaptive Capacity Control logic also accommodates the characteristics of the refrigerant used in the chiller – today and tomorrow.

Take advantage of colder entering-condenser water

Unlike competitive chillers which require entering condenser-water temperature (ECWT) from the cooling tower to be held artificially high, YORK YK centrifugal chillers can utilize ECWT as low as 55°F (13°C). The lower ECWT reduces the compressor workload, and that can reduce instantaneous energy consumption as much as 50%.

Powerful control center saves energy

YK chillers feature the OptiView™ Control Center, which uses microprocessor capabilities to save you energy. Operation at just 1° below the designed chilled-water-temperature setpoint can increase chiller energy consumption by as much as 3%, wasting thousands of kilowatt-hours and dollars each year. The digital precision of the OptiView Control Center lets you set chilled-water temperature to a resolution of ± 0.1°. As a result, you eliminate the energy wasted by drifting a degree or more from the setpoint. The OptiView Control Center can also be used to schedule daily operating hours and holidays. No longer is energy accidentally wasted cooling the facility when it's not needed.



The OptiView Control Center helps you operate your YORK YK chiller more efficiently by allowing for the precise setting of chilled-water temperature and operating schedule.

Maximum control with OptiView™ Control Center

Easy to operate

The intuitive, full-color OptiView Control Center offers you a higher level of monitoring and control. Data input is foolproof, and data outputs are shown in association with illustrations of the appropriate chiller components. For convenience, all data can be displayed in eleven different languages, in addition to Imperial or SI units.

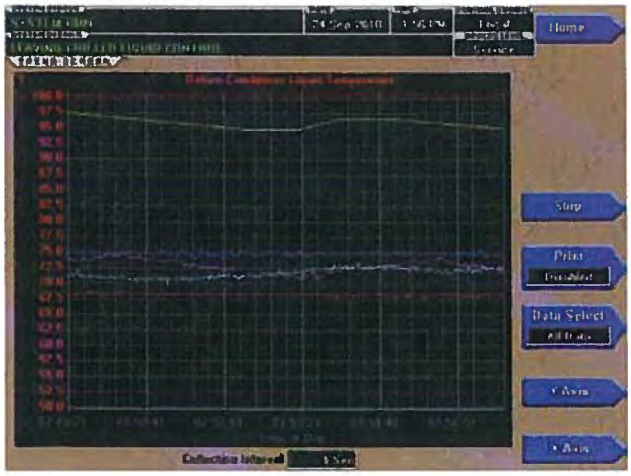
Easy to monitor

The OptiView Control Center allows on-board trending of up to six different values, selected from over 100 variables. The values and sampling interval are all user-selectable. This flexibility allows you to select parameters that are critical for your operation and to perform trending without a BAS interface and separate monitor.

Easy to integrate

Energy savings and ease-of-use can be fully realized when the HVAC system is an integrated part of the building-automation system. The OptiView Control Center is designed to communicate with the Johnson Controls Metasys® system. It can also communicate with most control systems on the market today using its optional ELink communication card.

Data outputs on the OptiView Control Center are accompanied with an illustration of the appropriate chiller component, making chiller operation more intuitive.



The trending screen provided performance insights not possible with snap shot observations.

Versatile design provides superior sustainability and flexibility

Environmental responsibility

The environmental impact of your chiller can be significant. You can reduce your impact by specifying YORK YK chillers. You'll get the benefit of refrigerant HFC-134a, which has zero ozone depletion potential (ODP). Plus, the high efficiency of the chillers reduces the indirect global warming potential (GWP), which is 98% of the total impact, caused by greenhouse-gas emissions produced by your utility to power the chiller. In addition, because of the chillers' high efficiency, your building could earn points for the Optimize Energy Performance (EAc1) credit in the Leadership in Energy and Environmental Design® (LEED) program.

Falling-film technology, utilized in the evaporator of YK chillers, reduces the refrigerant charge by up to 40%. It is available in YK chillers up to about 1,000 TR (based on conditions), and will help your building to qualify for maximum LEED points for Enhanced Refrigerant Management (EAc4).

Reduced noise levels

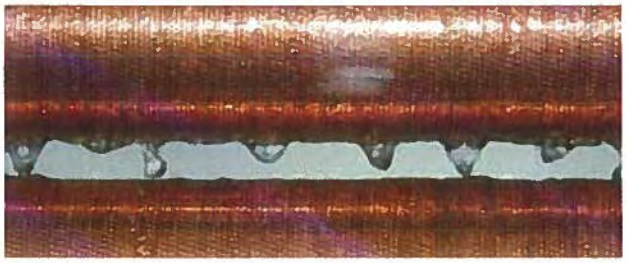
Traditional centrifugal chillers can generate a substantial amount of objectionable noise, but the YORK YK chiller is equipped with the innovative OptiSound™ Control, which reduces noise at off-design conditions. The control continuously monitors the characteristics of the compressor-discharge gas and optimizes the diffuser spacing of the compressor to minimize noisy gas-flow disruptions from the impeller. Chiller operation is also stabilized.

Flexible heating option

The YORK YK chiller can also be configured as a heat-recovery chiller, for use in facilities with simultaneous heating and cooling requirements. The heat-recovery unit takes advantage of the free heat that is typically rejected by the cooling towers. The heat can be used to control humidity, reheat the air, and preheat domestic hot water. Heat-recovery units have outstanding heating coefficients of performance that can reach up to 11.4.

Quick restart and return to setpoint

The Quick Start feature available on the YORK YK chiller reduces the risks that temperature-sensitive facilities experience after a power interruption. YK chillers equipped with this feature restart and return to the specified chilled-water temperature faster, reducing the risks of expensive downtime.



(Photo courtesy of the LTCM lab of the Ecole Polytechnique Fédérale de Lausanne, Switzerland)

A falling-film evaporator is more efficient because refrigerant is sprayed over the tubes, reducing refrigerant charge up to 40%.

The YK chiller is available in a heat-recovery configuration. Recovered heat can be used in the HVAC or domestic hot-water systems.

Maximum reliability with minimum maintenance

OptiView Control Center keeps you well-informed

The OptiView Control Center provides complete information on your chiller's operating condition. Safety-shutdown information includes day, time, cause of shutdown and type of restart required. Color-coding of fault messages allows easy determination of chiller status. Yellow messages signify shutdowns with automatic restart, requiring no operator intervention. Red messages are displayed for shutdowns requiring manual restart, alerting the operator that a system check may be required.

The Trending Screen can show changes in motor current, oil temperature and pressure, refrigerant pressures, or water temperatures, all of which can be valuable indicators of developing problems. This capability gives you ample time to take corrective measures before any expensive downtime is incurred. With the OptiView Control Center, you can see when to schedule routine maintenance in advance of actual need.

Open drive is easy to maintain

The YORK YK centrifugal chiller uses an open-motor driveline, which means less downtime. If a motor failure occurs, the chiller can be brought back online much faster and at a reduced cost. The motor is easy to remove, and can be repaired at a local motor shop. As a result, downtime due to motor failure is dramatically reduced.

Electrical protection extends motor life

Equipped with an OptiSpeed drive, the YK chiller starts "softly," never letting the inrush current exceed 100% of the full-load amps. By limiting the inrush, the motor windings do not rub together with expansion, which results in longer motor life and less chiller downtime. Lower inrush also reduces torque stresses on the motor and compressor driveline.

Start maximizing today

For more information on how YORK YK chillers can deliver real-world energy performance, visit johnsoncontrols.com or contact your Johnson Controls representative.

Color-coded fault messages allow early determination of chiller status and required operator action.

Printed on recycled paper.

PUBL-5187 (1010) Supercedes PUBL-5187 (908)
© 2010 Johnson Controls, Inc. P.O. Box 423, Milwaukee, WI 53201 Printed in USA
www.johnsoncontrols.com

Johnson Controls

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

6/4/2013 4:43:47 PM

in

Case No(s). 13-1323-EL-EEC

Summary: Application Application to Commit Energy
Efficiency/Peak Demand Reduction
Programs
(Mercantile Customers Only)- Procter and Gamble Chiller Tune Up electronically filed by
Carys Cochern on behalf of Duke Energy