150 Britannia Road East, Unit #1
Mississauga, Ontario
Canada L4Z 2A4

Submittal

Project number: 10290
Project name: Kingsbury County Courthouse
Representative:
Location:

Note: This submittal is based on equipment and options listed on the attachment(s) and represents our interpretation of your requirements. It is the representative's responsibility to review this submittal and verify that it meets the job specifications.

Project Information

Project name: Kingsbury County Courthouse
Location:
Owner:
Architect:
MEP firm:
Mechanical contractor:
Date: 1/23/2026

Sales Representative

Submitted by:
Email:
Phone number:

Project Summary

Qty	Description	Model Number
1	SKC - SpaceKeeper Console	SKC018B4-0H5X 21C 22 27 54D
	Tag(s): HP-E	
1	SKC - SpaceKeeper Console	SKC010B4-0H5X 21C 22 27 54D
	Tag(s): HP-B	

Product Data: SpaceKeeper Console

Qty	Description	Model Number
1	SpaceKeeper Console	SKC018B4-0H5X 21C 22 27 54D

Tag(s): HP-E

Selected Options

015	Unit Capacity : 018 - Nominal 1.5 Ton Unit - Cooling
B	Voltage : 208-230/60/1
0H	Arrangement : Standard Unit
5	Base Height : 5" Base Height
X	Unit Type : Nominal Airflow and ESP
54D	Configuration : Dehumidification - Demand Flow
	Fan Motor Type : Constant Volume EC Motor
	Filter Type : Standard Filter
21C	Control Accessories : Condensate Overflow Protection
27	Control Accessories : Remote Alarm
22	Miscellaneous Options : Set Unit for 230 Volt Power
	Demand Flow with Autoflow Balancing Valve : None
	Demand Flow with Hays Autoflow Balancing Valve : None
	Autoflow Balancing Valve : None
	Hays Autoflow Balancing Valve : None

Product Data: SpaceKeeper Console

Qty	Description	Model Number
1	SpaceKeeper Console	SKC010B4-0H5X 21C 22 27 54D

Tag(s): HP-B

Selected Options

010	Unit Capacity : 010 - Nominal 0.8 Ton Unit - Cooling
B	Voltage : 208-230/60/1
0H	Arrangement : Standard Unit
5	Base Height : 5" Base Height
X	Unit Type : Nominal Airflow and ESP
54D	Configuration : Dehumidification - Demand Flow
	Fan Motor Type : Constant Volume EC Motor
	Filter Type : Standard Filter
21C	Control Accessories : Condensate Overflow Protection
27	Control Accessories : Remote Alarm
22	Miscellaneous Options : Set Unit for 230 Volt Power
	Demand Flow with Autoflow Balancing Valve : None
	Demand Flow with Hays Autoflow Balancing Valve : None
	Autoflow Balancing Valve : None
	Hays Autoflow Balancing Valve : None

Mechanical Specification - SKC

PART 1: GENERAL

1.1 The HVAC system is based on Bulldog Heat Pump System

1.2 The system will automatically provide the availability of heating or cooling functions 24 hours a day, 365 days a year without need for a changeover

1.3 Model selection and performance shall be in accordance with the schedule on the drawings

1.4 Mechanical cooling shall be enabled with Entering Condenser Water below 125ºF and 2 GPM/ton

1.5 Each unit/chassis shall be pressure tested with Nitrogen on both the refrigerant and fluid (water) circuits followed by a helium leak detection program for both circuits. Units are then attached to the vacuum system for at least 2 hours and monitored

1.6 Each unit shall be run tested for a minimum of 15 minutes with a water/ glycol solution to ensure 100% functionality in all modes of operation Individual units/chassis shall be self-contained and complete when shipped from the factory

1.7 Units shall be safety certified and bear a seal of approval from one of UL/ULC/ETL or ESA. All units must be AHRI certified and meet ASHRAE 90.1 minimum standard

1.8 Manufacturer shall warrant the parts only of each unit for a period of 12 months from the start-up date or 18 months from the unit shipment date whichever occurs first

1.9 Commissioning of the Bulldog unit(s) shall be performed by a CGC trained technician. A commissioning report shall be provided by the commissioning technician for review and approval by the owner's representative

1.10 It is the contractor's responsibility to have the system properly flushed and cleaned prior to commissioning

1.11 Alternate proposals shall include consideration for equipment space requirements, pipe and equipment sizing, electrical installation impact, operation costs, sound implications and redesign fees

PART 2: MECHANICAL PARTS

The SpaceKeeper console heat pump (SKC) is a ductless unit that consists of an external painted cabinet and a non-replaceable chassis

2.1 CABINET

2.1.1 The cabinet shall be constructed based on a frame and panel principle with lift off front access panel for maximum service access. The air is directly delivered through the punched grille at the top panel

2.1.2 The external metal shall be heavy gauge lined with 1/2" acoustic insulation and painted with an epoxy powder and shall be finished with a light grey colour.

2.1.3 The unit comes with a standard 5" base

2.2 CHASSIS

2.2.1 The chassis must be a complete self-contained unit

2.2.2 The chassis shall be complete with refrigeration circuit, hydronic circuit, blower assembly, controls and an internal corrosion resistant Stainless Steel insulated condensate drain pan

2.2.3 The panels shall be insulated with 1/2" acoustic insulation and shall be easily removable and sufficiently large to allow access to all refrigeration components

2.2.4 The chassis shall be complete with stainless steel braided flexible 24" hoses rated at 400psi. A clear reinforced condensate hose shall be provided with the chassis

2.2.5 The plug connection shall provide positive disconnect of main power to the unit

2.3 BLOWER & MOTOR

2.3.1 The complete blower section including motor shall be easily accessible and removable for service.

2.3.2 The blower shall be forward curved, DWDI centrifugal blower statically and dynamically balanced. Sizes 018 & 024 are equipped with 2 fan motor assemblies

2.3.3 The blower is directly driven by a an Electronically Commutated (EC) motor that has integral thermal overload protection

2.3.4 The motor is Totally Enclosed Air Over (TEAO) type

2.4 FILTER

2.4.1 The filter chamber shall be an integral part of the system located on return air path and should be serviceable from the front of the unit

2.4.2 The filter shall be standard capacity, 1 inch thick "Disposable" type shipped with the unit

2.5 HYDRONIC HEATING LOOP

2.5.1 The refrigerant circuit shall not operate in the heating mode

2.5.2 Heating coil shall be aluminum fin and copper tube construction rated to withstand 300 PSI working pressure

PART 3: REFRIGERATION PARTS

3.1 REFRIGERATION SYSTEM

3.1.1 The refrigeration circuit shall be available for operation on non-ozone depleting R410a refrigerant. Refrigeration circuit does not operate in heating mode. Reversing type Heat Pumps must supply a life time Parts & Labour Warranty on the Reversing Valve

3.1.2 The refrigeration circuit shall have the following components:

- Thermal Expansion Valve with external equalizer
- Filter dryer
- High pressure cut-out
- High pressure service port
- Low pressure cut-out
- Low pressure service port

3.1.3 The service ports shall be located to facilitate field service with unit in place

3.1.4 All refrigerant piping shall be of type ACR copper pipe

3.1.5 The refrigerant circuit and components shall be factory assembled in a sealed, leak and performance tested, properly charged system

3.1.6 The sealed refrigerant circuit shall be certified for 600 PSIG working pressure

3.2 COMPRESSOR

3.2.1 The compressor shall be high efficiency sealed hermetic rotary type

3.2.2 The compressor shall be externally isolated on rubber mounts and connected to refrigerant circuit with floating piping to minimize sound transmission

3.2.3 The compressor motor shall have integral thermal overload protection

3.2.4 The compressor shall not operate in the heating mode

3.2.5 The compressor shall be provided with a 5 minute restart delay to avoid compressor short cycling and low pressure lockout

3.3 DIRECT EXPANSION EVAPORATOR COIL

3.3.1 The refrigerant to air heat exchanger shall be aluminum fin and copper tube construction rated to withstand 300 PSI refrigerant working pressure

3.3.2 The coil shall have a maximum face velocity of 500 FPM

3.3.3 A Stainless Steel condensate drain pan shall be provided under the coil

3.3.4 The unit shall be supplied with a ¾" ID condensate hose

3.4 WATER COOLED CONDENSER MODULE

The condenser shall be high efficiency refrigerant-to-water heat exchanger of copper inner water tube, minimum ½ " diameter and steel refrigerant outer shell design rated to withstand 600 PSI refrigerant working pressure and 300 PSI water pressure

3.5 VALVE CONFIGURATION - FACTORY INSTALLED

All Units shall be supplied with a 3 way Valve for continuous flow

PART 4: CONTROL SYSTEMS

4.1 SYSTEM

4.1.1 The unit shall be complete with a standard microprocessor controlled electronic circuit board

4.1.2 The Control panel shall be supplied with individual 24 VAC control transformer

4.1.3 The control board shall have LED indicators displaying thermostat call, unit operation and Alarms

4.1.4 The control board shall operate with:

- A 24 volt thermostat
- Onboard fuse protection

4.2 ALARMS

The standard Control Panel shall have the following standard alarms:

- Low Coil Temperature
- High Leaving Water Temperature
- Low Discharge Air Temperature
- Low Refrigerant Pressure
- High Refrigerant Pressure
- High Condensate Level

PART 5: OPTIONS SELECTED

Information regarding some of the options selected for SKC family can be seen below.

Option 54D - Dehumidification control with demand flow: The heating coil is mounted in the reheat position. Auto flow valve not included. Thermostat/ Humidistat is required.

Standard - The fan motor shall be constant volume EC (Electronically Commutated).

Option 21 - High condensate level sensor

Option 27 - Remote alarm connector provided, wired and monitored by others.

Option 22 - Set unit for 240V power

BULLDOG HEAT PUMP

SKC-

Tag: **HP-E**

Project: **Kingsbury County Courthouse**

Model #: **SKC018B4-0H5X 21C 22 27 54D**

Unit Information

Model Series:	**SKC**	
Capacity:		
Quantity:	**1**	
Altitude:	**0**	ft.
Airflow:	**520**	(CFM)
ESP:	**0**	in. H2O
Motor Type:	**ECM**	

Cooling Performance

Air Side

Entering Air Temperature (DB/WB):	**80.6/66.2**	F
Total Capacity:	**13.292**	MBH
Sensible Capacity:	**12.014**	MBH
Leaving Air Temperature (DB/WB):	**58.5/57.6**	F
EER @ Operating Conditions:	**11.3**	

Fluid Side

Entering Fluid Temperature:	**100**	F
Fluid Flow:	**3**	gpm
Leaving Fluid Temperature:	**112.1**	F
Fluid Type:	**Propylene Glycol**	
Percent Glycol:	**30**	%
Fluid Pressure Drop:	**15**	ft. H2O

Heating Performance

Air Side

Entering Air Temperature:	**68.0**	F
Total Capacity:	**19.145**	MBH
Leaving Air Temperature:	**103.3**	F

Fluid Side

Entering Fluid Temperature:	**125**	F
Fluid Flow:	**3**	gpm
Leaving Fluid Temperature:	**111.6**	F
Fluid Type:	**Propylene Glycol**	
Percent Glycol:	**30**	%
Fluid Pressure Drop:	**15**	ft. H2O

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SpaceKeeper Console

Electrical Data - 208-230/60/1

Unit Amp Draw:	**6.1**		
Minimum Amps (MCA):	**10**	Maximum Amps (MOP):	**15**
Cooling Watts:	**1177**	Heating Watts:	**67**

General Unit Data

Operating Weight:	**150**	lbs.
Shipping Weight:	**150**	lbs.
Unit Length:	**13**	in
Unit Width:	**49**	in
Unit Height:	**25**	in
Refrigerant Charge:	**35**	oz

BULLDOG HEAT PUMP

SKC-

Tag: **HP-B**

Project: **Kingsbury County Courthouse**

Model #: **SKC010B4-0H5X 21C 22 27 54D**

Unit Information

Model Series:	**SKC**	
Capacity:		
Quantity:	**1**	
Altitude:	**0**	ft.
Airflow:	**320**	(CFM)
ESP:	**0**	in. H2O
Motor Type:	**ECM**	

Cooling Performance

Air Side

Entering Air Temperature (DB/WB):	**80.6/66.2**	F
Total Capacity:	**9.403**	MBH
Sensible Capacity:	**8.029**	MBH
Leaving Air Temperature (DB/WB):	**57.5/56.7**	F
EER @ Operating Conditions:	**12.0**	

Fluid Side

Entering Fluid Temperature:	**100**	F
Fluid Flow:	**1.7**	gpm
Leaving Fluid Temperature:	**114.9**	F
Fluid Type:	**Propylene Glycol**	
Percent Glycol:	**30**	%
Fluid Pressure Drop:	**15**	ft. H2O

Heating Performance

Air Side

Entering Air Temperature:	**68.0**	F
Total Capacity:	**13.632**	MBH
Leaving Air Temperature:	**107.3**	F

Fluid Side

Entering Fluid Temperature:	**125**	F
Fluid Flow:	**1.7**	gpm
Leaving Fluid Temperature:	**108.1**	F
Fluid Type:	**Propylene Glycol**	
Percent Glycol:	**30**	%
Fluid Pressure Drop:	**15**	ft. H2O

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SpaceKeeper Console

Electrical Data - 208-230/60/1

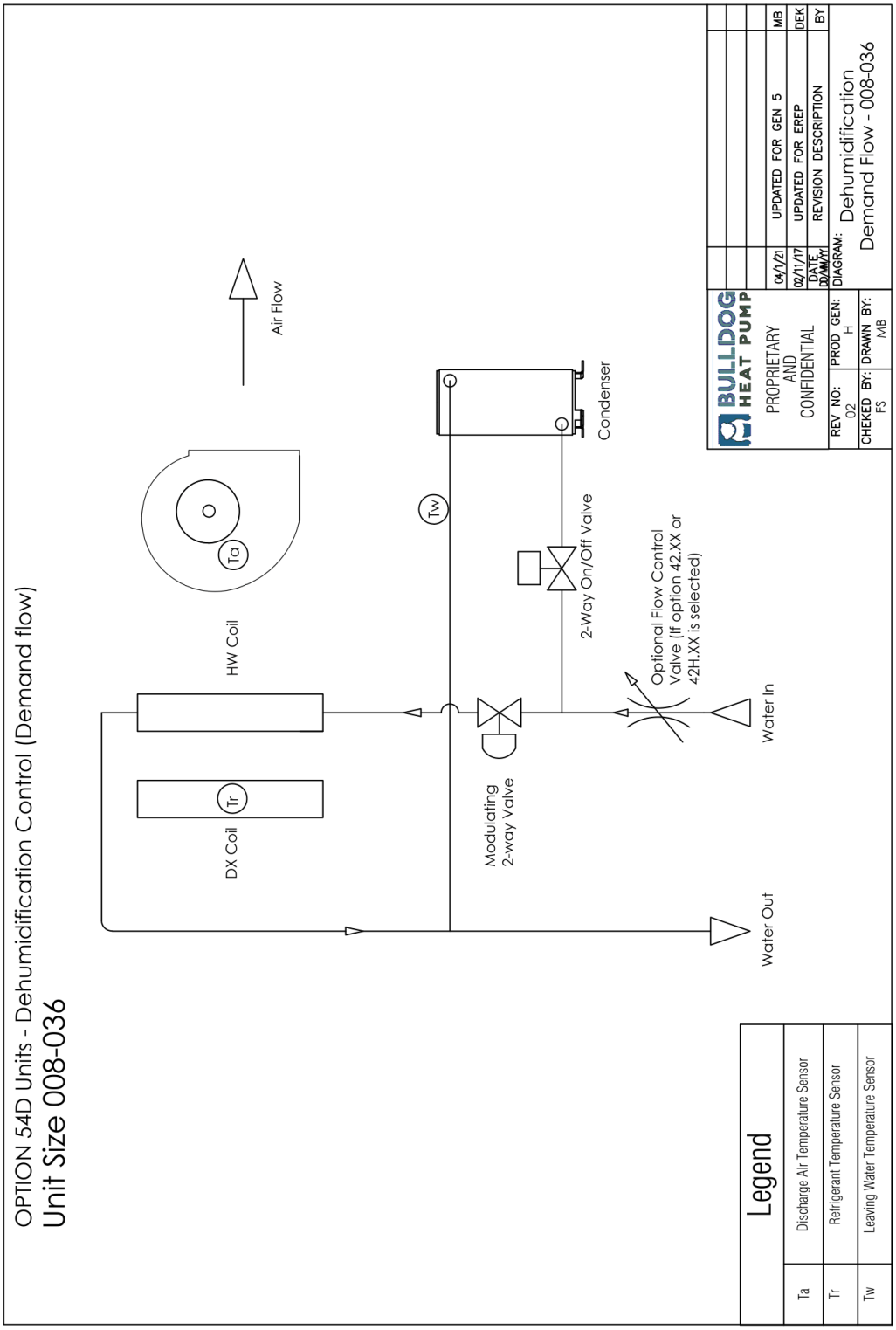
Unit Amp Draw:	**4.1**		
Minimum Amps (MCA):	**6**	Maximum Amps (MOP):	**15**
Cooling Watts:	**781**	Heating Watts:	**38**

General Unit Data

Operating Weight:	**135**	lbs.
Shipping Weight:	**135**	lbs.
Unit Length:	**13**	in
Unit Width:	**49**	in
Unit Height:	**25**	in
Refrigerant Charge:	**27**	oz

Option 54D Piping Diagram for 008-036

Qty: 2 Tag(s): HP-B, HP-E



SKC008-015 Dimensional Diagram

Qty: 2 Tag(s): HP-B, HP-E

Supply and Return Hose Kit

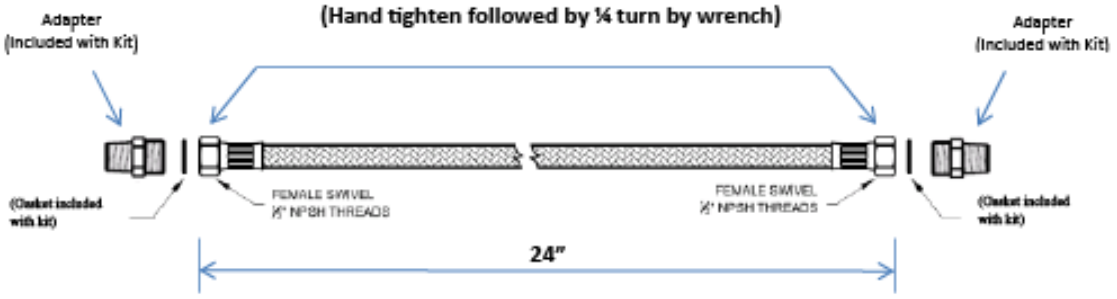
Qty: 2 Tag(s): HP-B, HP-E

Hydronic Hose Kit- Submittal Data

Hose supplied for SpaceKeeper Console Units (SKC)

Swivel Ends

(Hand tighten followed by ¼ turn by wrench)



DIMENSIONS AND SPECIFICATIONS OF HOSE							
Size	Connections	Seals	Wt (lbs)	Working Pressure (PSI)	Temp Range (°F)	Thread (Pitch/IN)	Cv (GPM)
½" X 24"	F ←→ F	Gasket	0.64	400	5°-265°	14	3.5

MATERIALS	
SIZE (NOM. ID)	UFHF (½" thru 1")
CORE	KEVLAR® Reinforced EPDM
BRAID	Stainless Steel
FITTING	Brass OT58
FERRULE	Stainless Steel
SEALS	EPDM
ADAPTER	Brass

Design Data:

1. These connectors are fire rated.
   Application Standard: ASTM E 84-00
   (NFPA 255, ANSI/UL 723 & UBC 8-1)
2. Fittings: Brass, NPSH Swivel w Seal
3. These connectors are designed for water only; not intended for natural gas or gasoline applications

BULLDOG HEAT PUMP

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No other heat pump does more, with less.

Specifications are Subject to Change without Notice- Last Modified February 26, 2016