

Installation Instructions

B-Series VT40, VT60, VT100

Important Safety Notice. This information is intended for use by individuals possessing adequate backgrounds of electrical, refrigeration and mechanical experience. Any attempt to repair major equipment may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

Special Precautions To Be Observed When Charging Refrigeration Systems.

Only technically-qualified persons, experienced and knowledgeable in the handling of refrigerant and operation of refrigeration systems, should perform the operations described in this manual. All local, federal, and EPA regulations must be strictly adhered to when handling refrigerants.

If a refrigeration system is being charged from refrigerant cylinders, disconnect each cylinder when empty or when the system is fully charged. A gage should be installed in the charging line to indicate refrigerant cylinder pressure. The cylinder may be considered empty of liquid R404A refrigerant when the gauge pressure is 25 pounds or less, and there is no frost on the cylinder. Close the refrigerant charging valve and cylinder valve before disconnecting the cylinder. Loosen the union in the refrigerant charging line--carefully to avoid unnecessary and illegal release of refrigerant into the atmosphere.

! CAUTION !

Immediately close system charging valve at commencement of defrost or thawing cycle if refrigerant cylinder is connected. Never leave a refrigerant cylinder connected to system except during charging operation. Failure to observe either of these precautions can result in transferring refrigerant from the system to the refrigerant cylinder, over-filling it, and possibly causing the cylinder to rupture because of pressure from expansion of the liquid refrigerant brought on by an increase in temperature.

! CAUTION !

Always store cylinders containing refrigerant in a cool place. They should never be exposed to temperatures higher than 125°F and should be stored in a manner to prevent abnormal mechanical shocks.

Also, transferring refrigerant from a refrigeration system into a cylinder can be very dangerous and is not recommended.

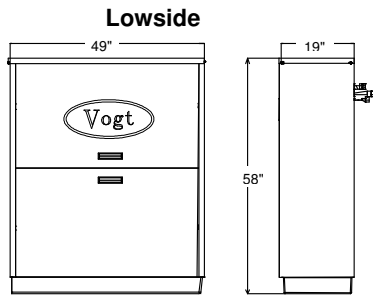
! CAUTION !

It is not recommended that refrigerant be transferred from a refrigeration system directly into a cylinder. If such a transfer is made, the refrigerant cylinder must be an approved, CLEAN cylinder--free of any contaminants or foreign materials--and must be connected to an approved recovery mechanism with a safety shutoff sensor to assure contents do not exceed net weight specified by cylinder manufacturer or any applicable code requirements.

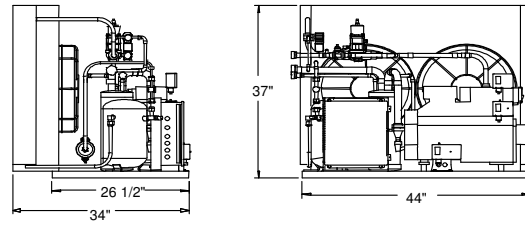
! CAUTION !

Machine Footprint

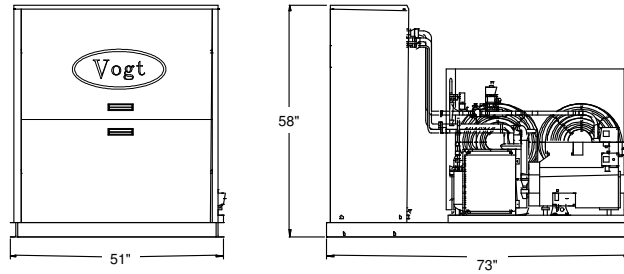
VT40 - Split System



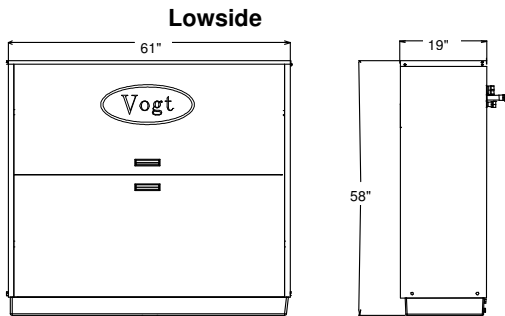
Highside (Condensing Unit)



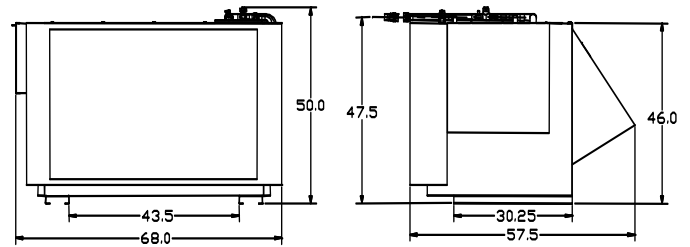
VT40 - Skid Mounted (Packaged)



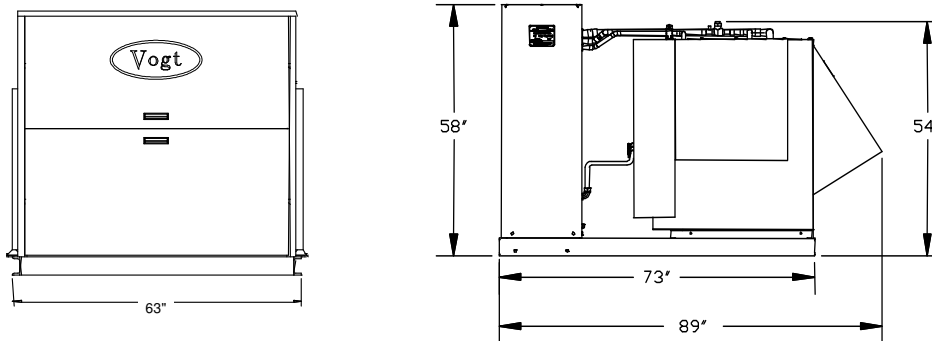
VT60 - Split System



Highside (Condensing Unit)

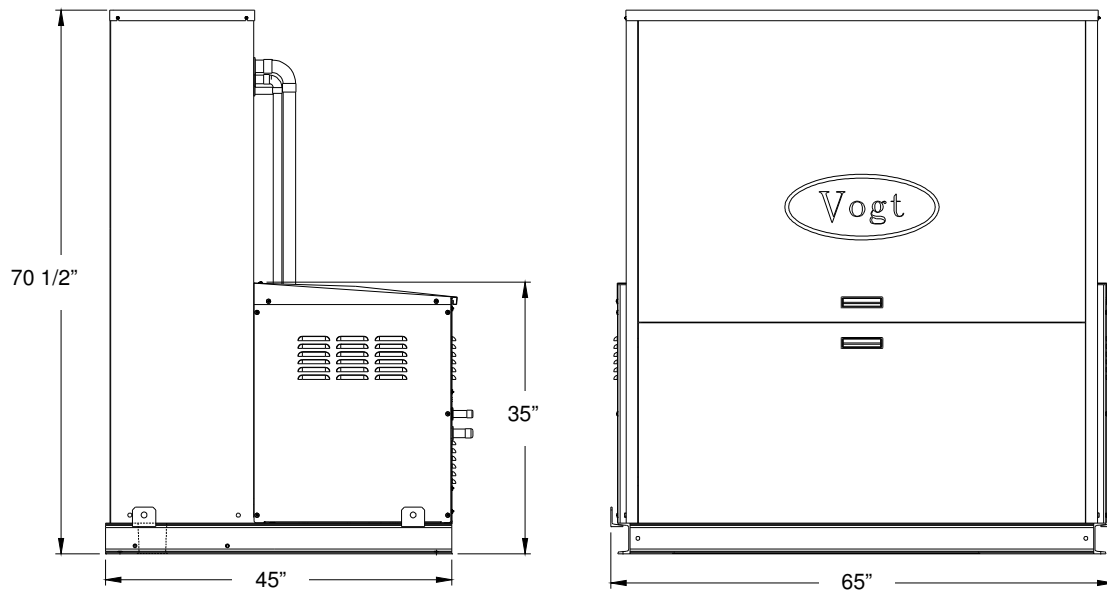


VT60 - Skid Mounted (Packaged)



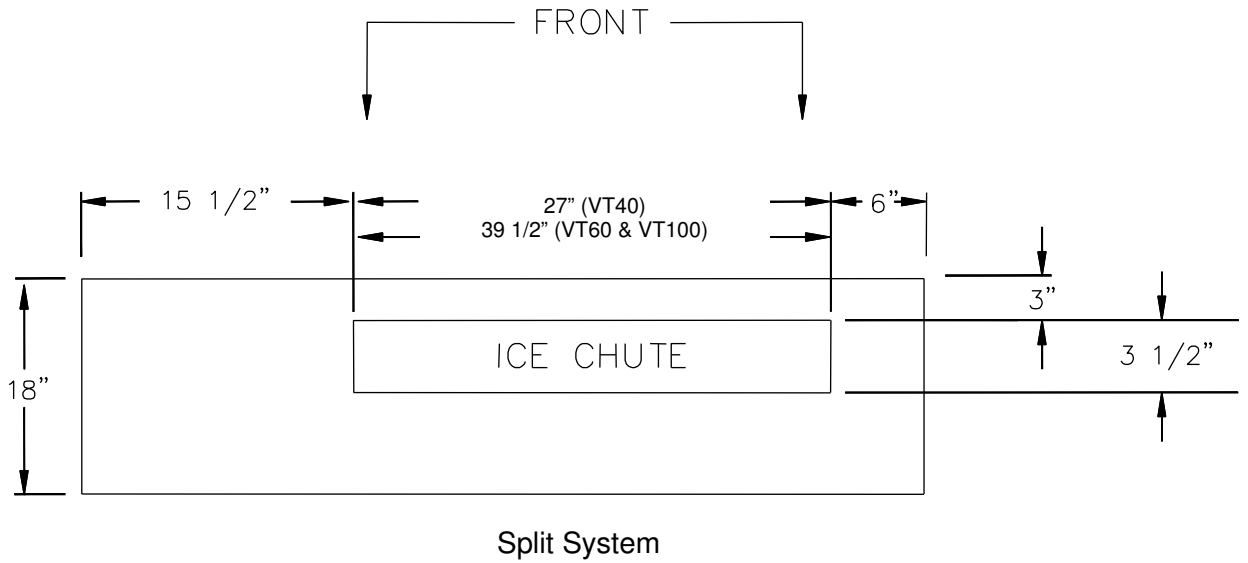
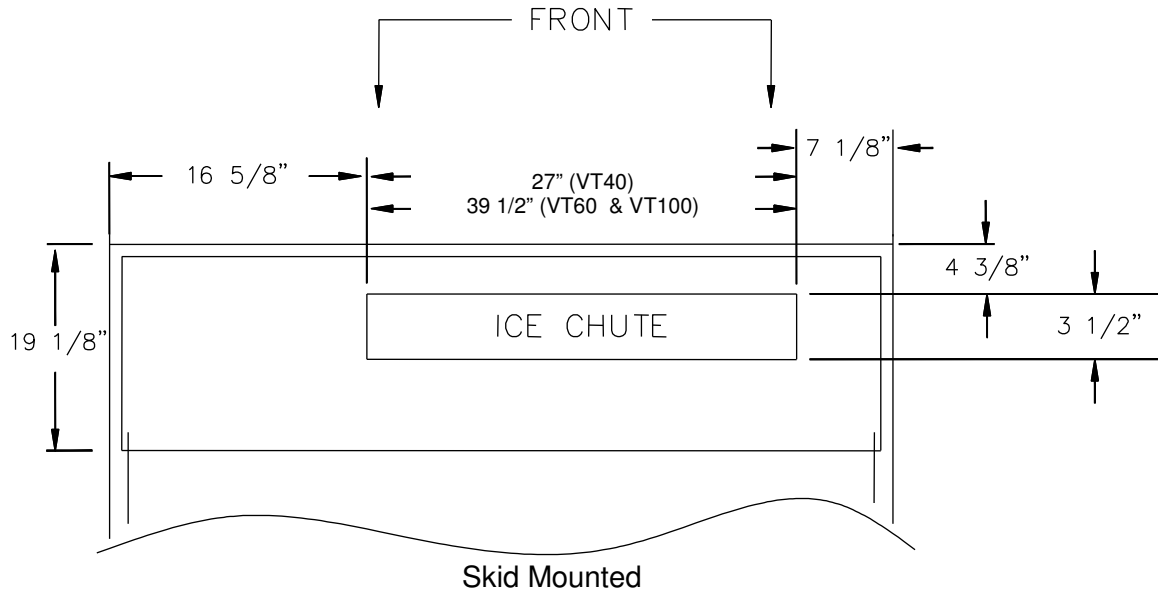
UNIT	Skid Mounted			Split System					
	Height	Width	Depth	Lowside			Highside		
VT40	58"	51"	73"	58"	49"	19"	37"	44"	34"
VT60		63"	89"		61"		50"	68"	57.5"

VT100 – Skid Mounted

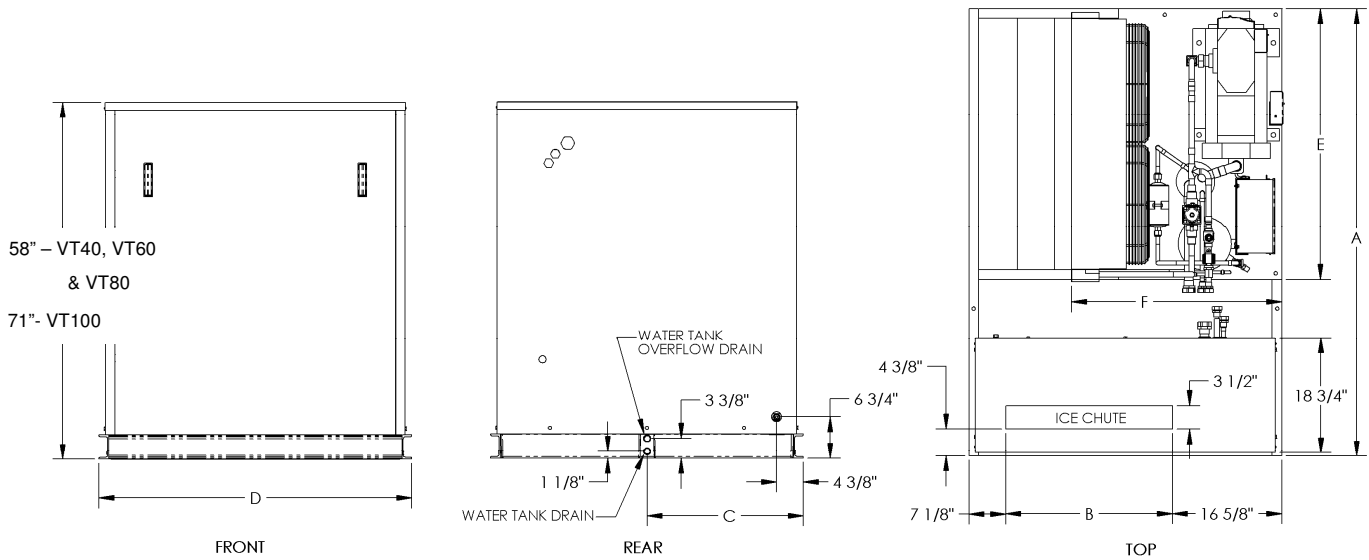


UNIT	Skid Mounted			Air Cooled Condenser		
	Height	Width	Depth	Height	Width	Depth
VT100	70 1/2	65	45	42	46	75

Chute Location: Using drawing, determine ice machine location so that it is centered on bin. Place ice machine on storage unit and bolt in place. **Machine must be level front to back and side to side for proper operation.**



Ice Chute Cutout Location



Unit	"A"	"B"	"C"	"D"	"E"	"F"
VT40	72 5/8"	27"	24 3/8"	50 3/4"	44"	34"
VT60	89"	39 1/2"	30 1/2"	65"	57.5"	68"
VT100	44 7/8"				N/A	N/A

Ice Machine Dimensions

Remote Weights			Skid Mounted Weights	
Model	Evaporator	Condensing Unit	Model	Skid Mounted
VT40	520 lbs.	975 lbs.	VT-40	1525 lbs.
VT60	650 lbs.	1330 lbs.	VT-60	2290 lbs.
VT100	1,850 lbs.	400 lbs. (condenser)	VT100	-----

Weight Of Machines

Model	Suction Line	Hot Gas Line	Liquid Line	Remote Condenser	
				Discharge	Liquid Return
VT40	1 3/8 OD	7/8 OD	5/8 OD	N/A	N/A
VT60		1 1/8 OD	7/8 OD	N/A	N/A
VT100	1 5/8 OD			1 3/8 OD	7/8 OD

Note: Split systems will be supplied with Rota-lock adapters to connect the highside to the lowside

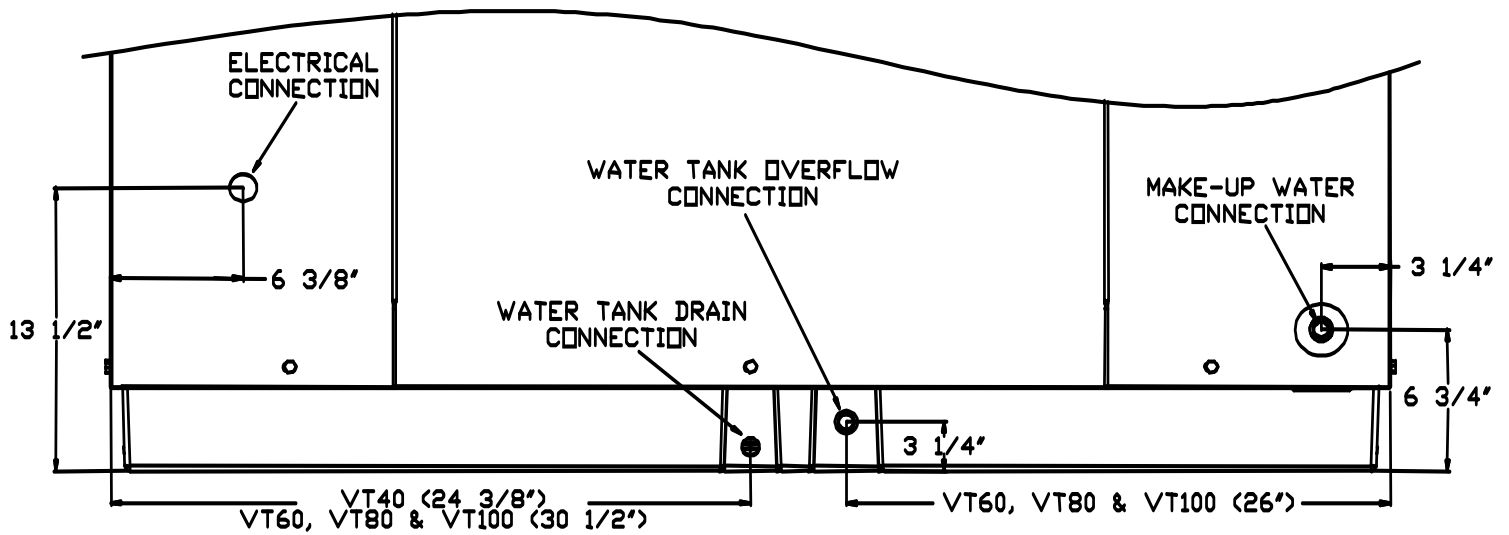
Refrigerant Line Sizes

Machine Clearances: A minimum three (3) feet of clearance is recommended around entire ice machine. This will provide sufficient area for service and air flow.

Evaporator Installation: Mount evaporator section (lowside) on storage area capable of sustaining its weight and secure by thru bolting.

Note: Ambient at the lowside should remain between 50 °F – 105 °F. Makeup water temperature should not drop below 40 °F. Machine may experience problems if operated outside of these ranges.

Piping Installation: Use ACR refrigeration tubing and nitrogen purge during brazing to prevent formation of copper oxide. For piping runs exceeding 25', consult a reliable piping manual (Copeland, Heatcraft, or Vilter) for proper pipe sizing. Heat sink all ball valves and remove Schrader valve core prior to brazing. Pressure test piping for leaks. Evacuate lines to 500 microns prior to starting machine.



NOTE: VT40 OVERFLOW CONNECTION DIRECTLY ABOVE TANK DRAIN CONNECTION

Makeup, water tank drain and water tank overflow are 1/2" FPT connections

VT Lowside Water and Electrical Connections – Rear View

Makeup Water Flow	VT40	VT60	VT100
Usage - Gallons /100 lbs of Ice	12	12	12
Flow rate – Gallons / minute	0.38	0.54	0.80
Flow rate – Gallons / hour	22.5	32.5	48.0
Water Tank Capacity - Gallons	6	7	

Note: Water usage and flow rates base on 70°F water with no blowdown

Wiring And Electrical Connection.

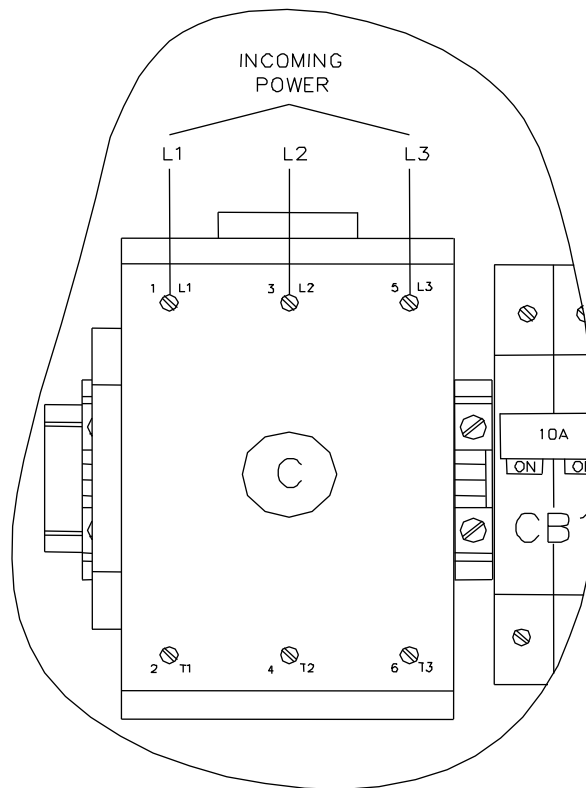
Electrical Data	VT40	VT60	VT100			
			Kramer	KeepRite	Kramer	KeepRite
Volts/ Phase/ Hertz	208/230-3-60	208/230-3-60	208/230-3-60		460-3-60	
Total F.L.A. Rating	46.1	56.4	80.6	79.9	38.7	40.0
Minimum Circuit Ampacity	54.0	66.9	97.1	95.9	47	48
Maximum Fuse	90	110	165		80	

! WARNING !
Only service personnel experienced in refrigeration and qualified to work with high voltage electrical equipment should be allowed to install or work on the Vogt® VT Series Ice machine.
! WARNING !

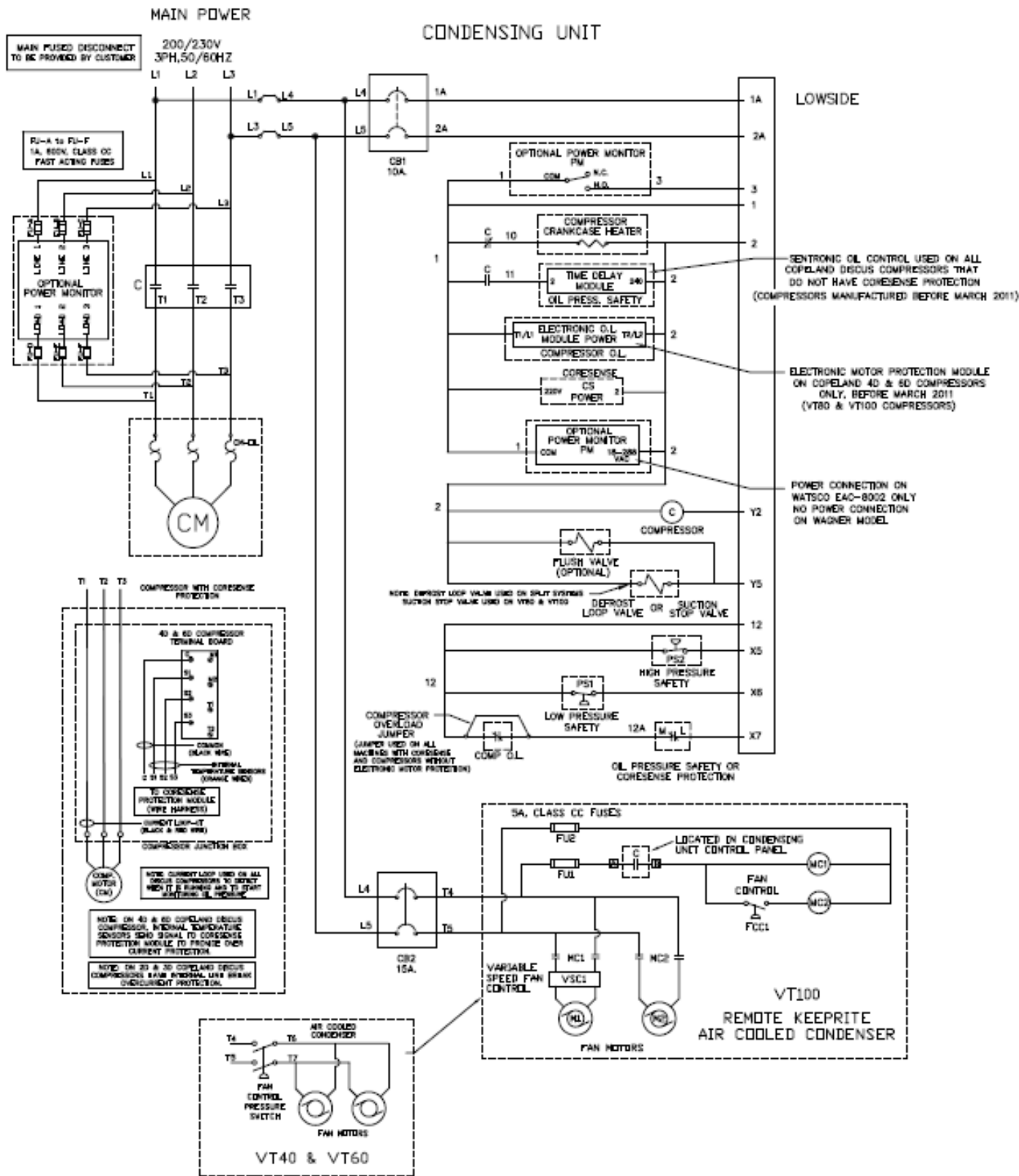
Main Power: Power for the entire ice machine will be supplied at the condensing unit.

Refer to the table below to properly size wiring connections. **A fused disconnect must be provided** near the condensing unit of the ice machine. Connect 3 phase power to compressor contractor L1, L2, L3 for operation of the VT ice machine and its controls. If one leg of the 3 phase power is higher or lower (“Wild”), it should be connected to terminal #L2. Connect the “Ground” wire to the “Ground” terminal provided.

Note: Total FLA is for entire machine, including compressor



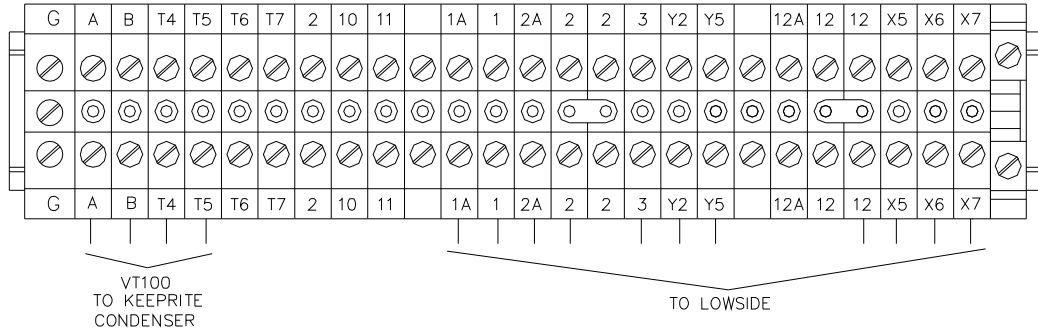
Main Power Connection



Condensing Unit Electrical Schematic – 208/230V (PLC)

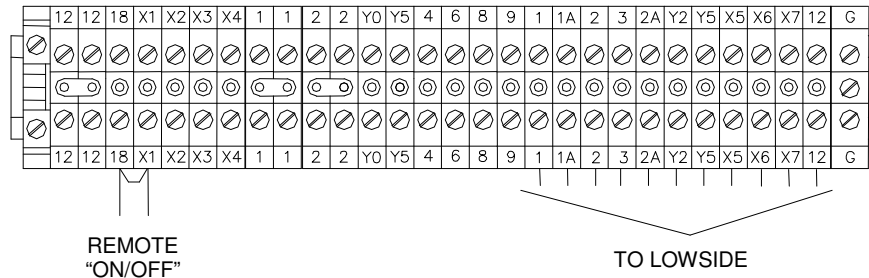
Air Cooled Condenser Wiring (VT100 with KeepRite Condenser): Run four #14 AWG wires from the terminals A, B, T4 and T5 on the condensing unit control panel terminal block to the air cooled condenser control panel.

Standard Voltage Machine
200/230V,3PH, 50/60HZ



Condensing Unit Terminal Blocks

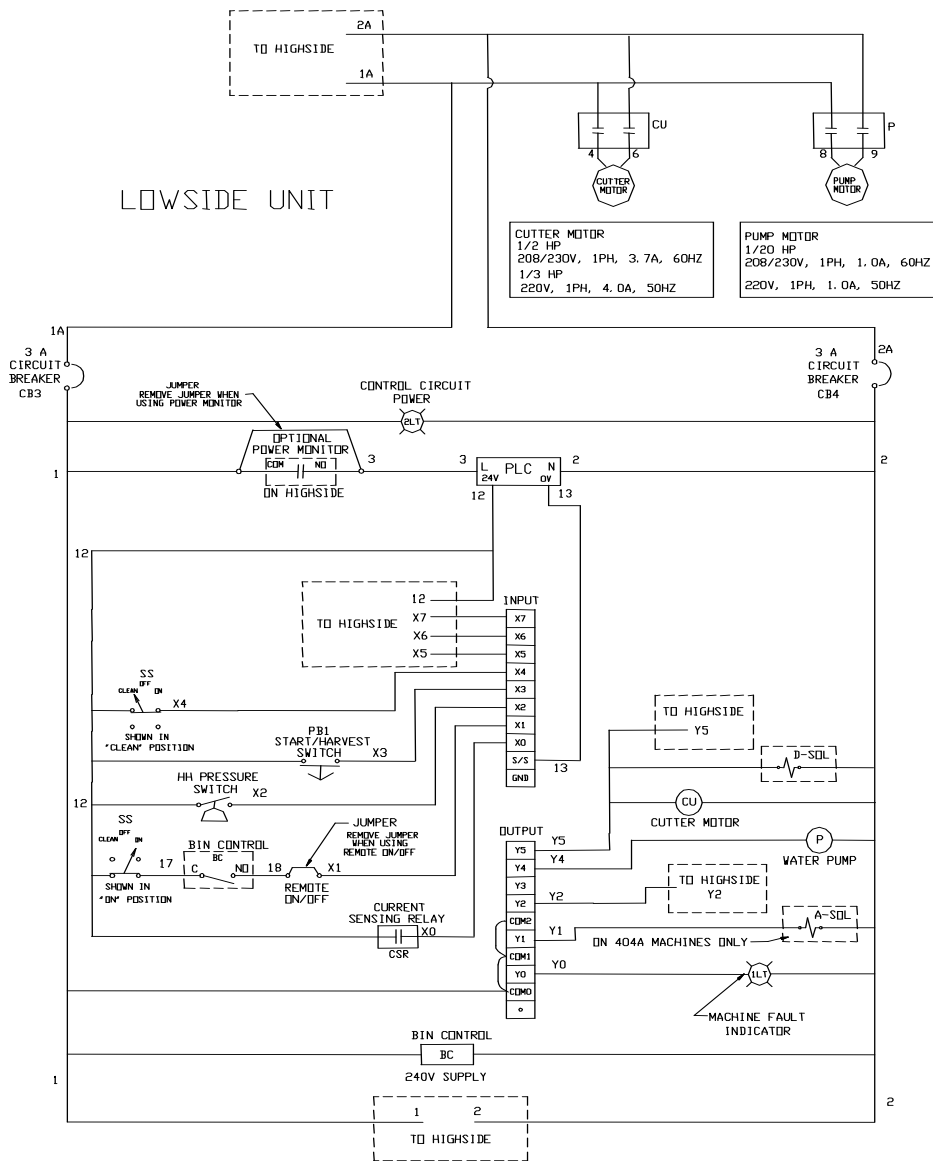
Lowside Electrical Connections: Run 11 #14 AWG or larger wires run from the Lowside control panel terminal block to the condensing unit (highside) control panel terminal block.



Number of wires	Wire Size (AWG)	Wire #
5	16 (Red)	1, 2, 3, Y2, Y5
4	16 (Blue)	X5, X6, X7, 12
2	14 (Black)	1A, 2A
1	14 (Green)	Gnd

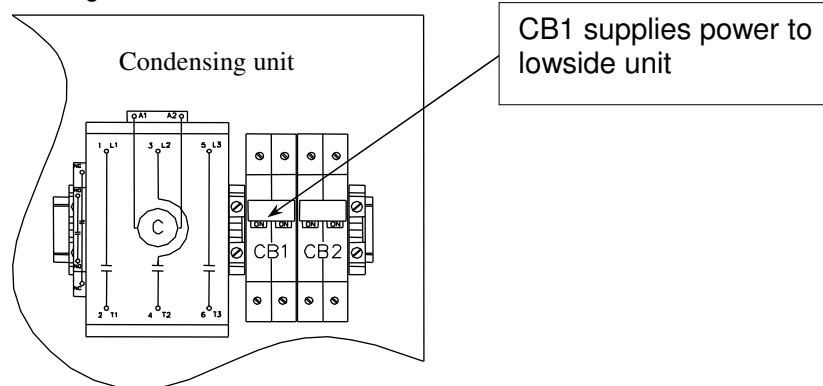
Lowside Terminal Block

Note: Machine is supplied with a remote “on/off” connection on the lowside terminal block. If a remote on/off switch is required, remove jumper between #18 and #X1 and connect switch to these terminals.



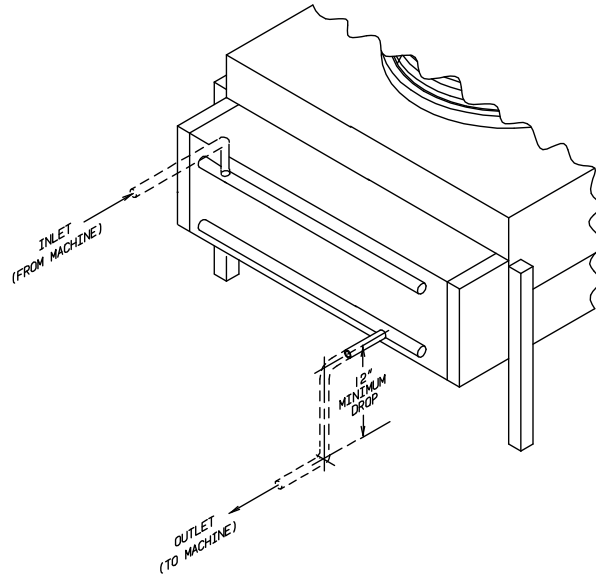
Lowside Unit (200/230V)

Power is supplied to the lowside through circuit breaker (CB1) located in the condensing unit control panel. See diagram below.



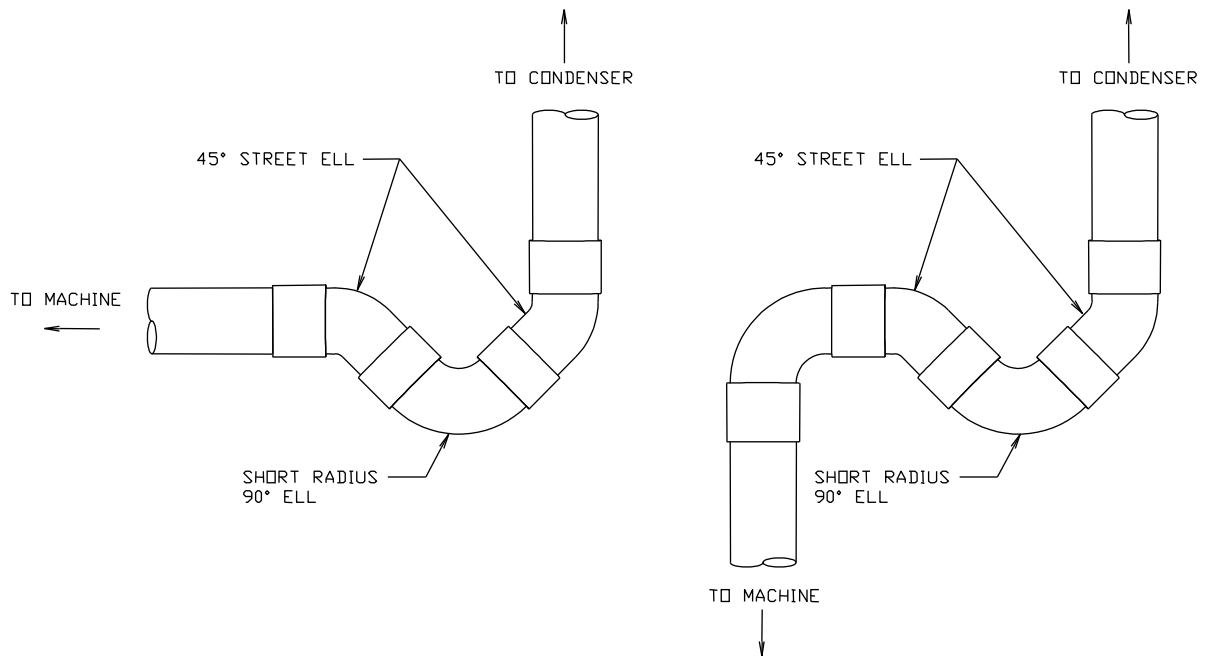
Condensing Unit Circuit Breakers (200/230V)

Air Cooled Condenser Installation (VT100): Ice making systems with remote condensers are trapped internally. A trap leaving the compressor is not necessary. On vertical runs a short radius "P" trap should be installed every 15' to 20' of vertical rise to facilitate oil flow. Horizontal runs should be sloped in direction of refrigerant flow 1" for every 20' of run. The condenser should be securely mounted in a place capable of sustaining its weight.



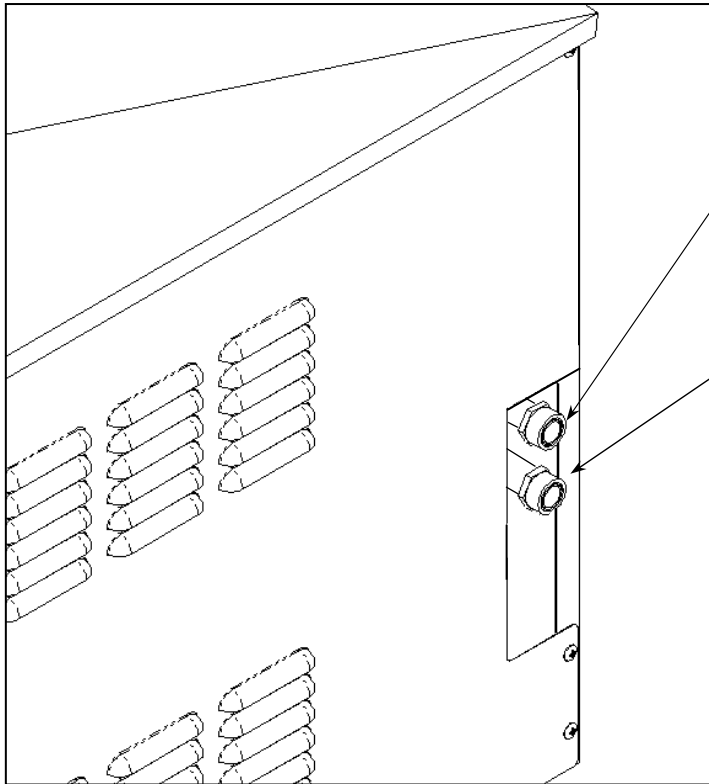
Condenser Piping

Note: Dash lines indicate customer supplied piping.



Recommended Traps

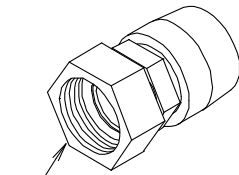
Must solder with 45% silver solder



Liquid return from
Air Cooled Condenser
(7/8" line)

Discharge gas to
Air Cooled Condenser
VT80 - 1 1/8"
VT100 - 1 3/8"

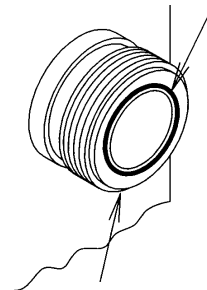
Female Rota-lock Adapters:
12A2396A0701 – for 1 1/4"-12 F x 7/8" Sweat
(Return Line from condenser)
12A2396A0601 – for 1 3/4"-12 F x 1 3/8" Sweat
(Discharge to condenser)



Rota-lock Adapter

Note: Rota-lock adapters
supplied with machine

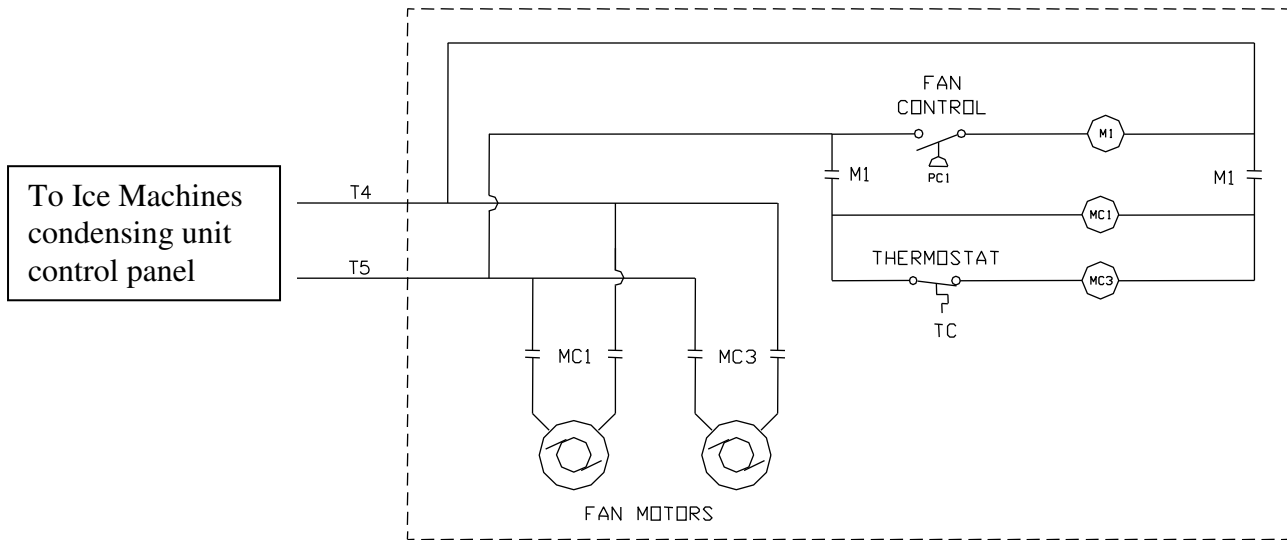
Teflon Seals:
12A2600T01 – for 1 1/4"-12 adapter
12A2600T03 – for 1 3/4"-12 adapter



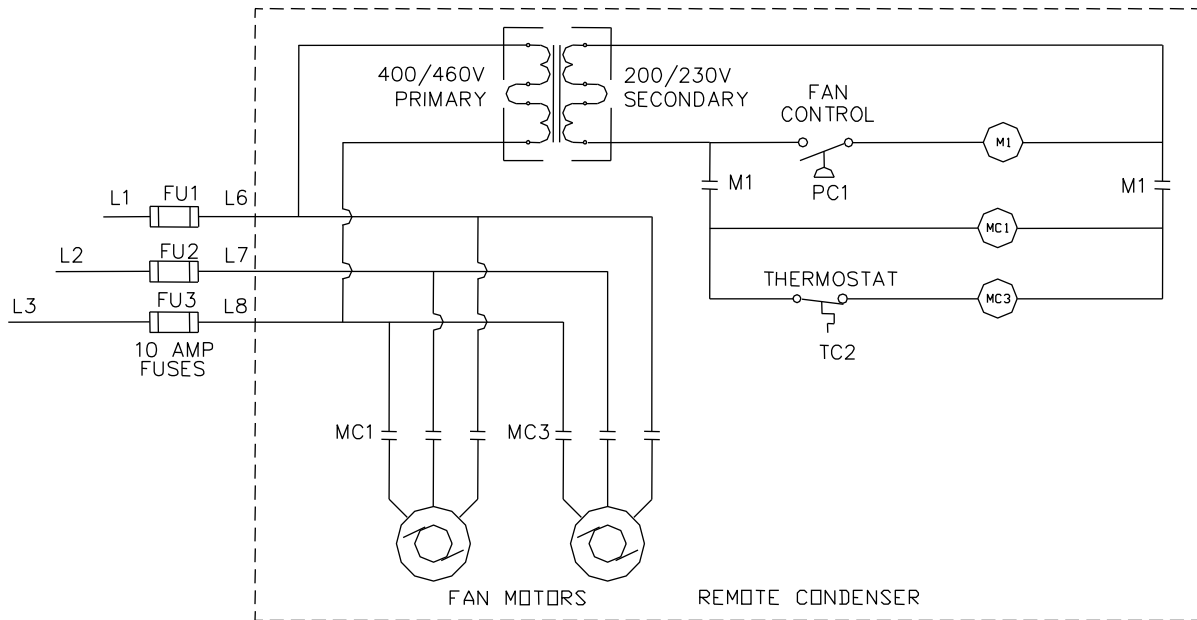
Note: Rota-lock male
adapter on ice machine

VT80 & VT100 Condenser Refrigerant Line Connections

Air Cooled Condenser Wiring: The air cooled condenser will be wired to the condensing unit control panel. Run two #14 AWG wires and a ground wire from the condensing unit control panel to the Air Cooled condenser control panel.



208/230V

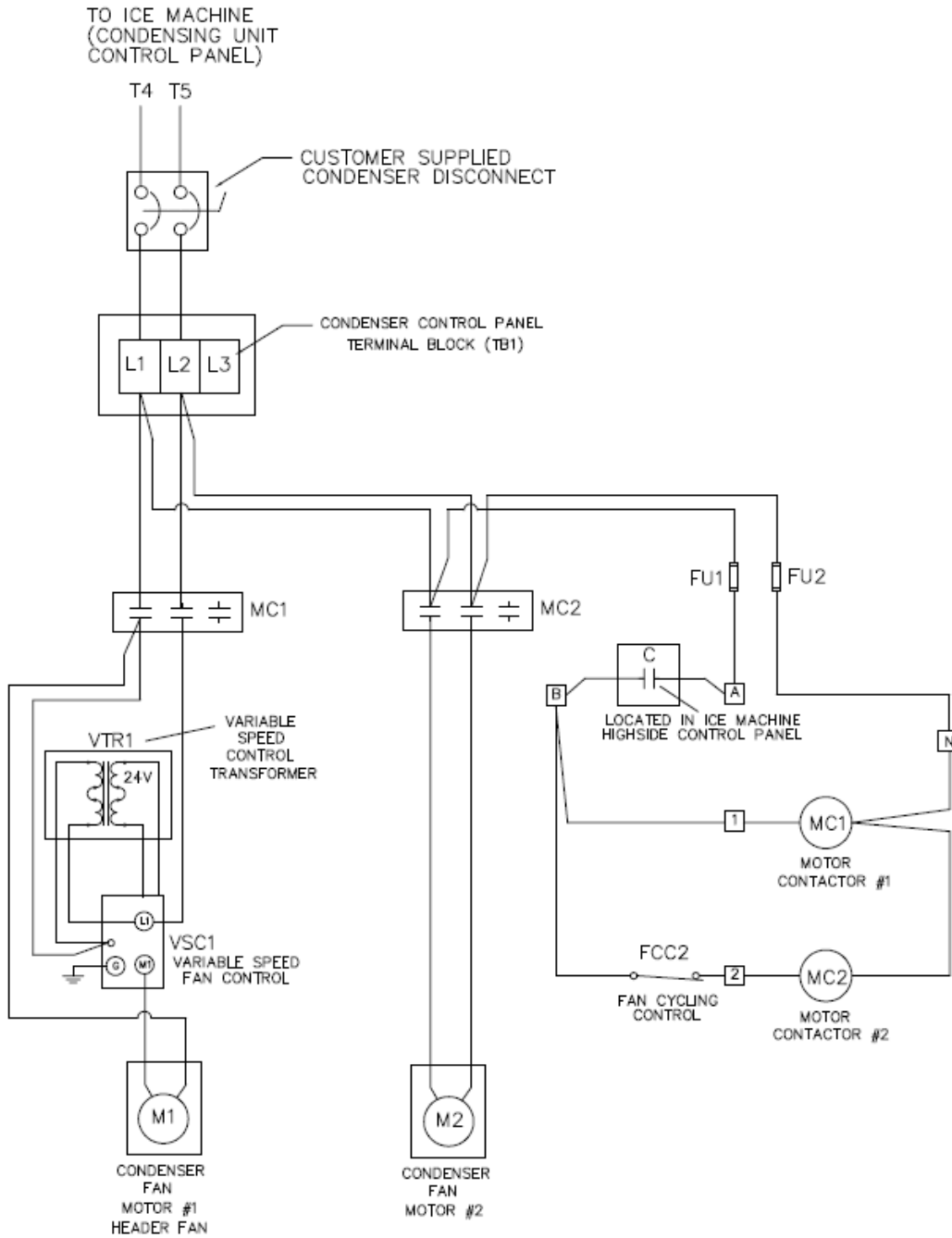


460V

Kramer VT100 Remote Air Cooled Condenser Wiring

Note: Fan control pressure switch is located in air cooled condenser control panel on VT100's with remote condensers. On VT40's and VT60's, fan control pressure switch is location on condensing unit (highside).

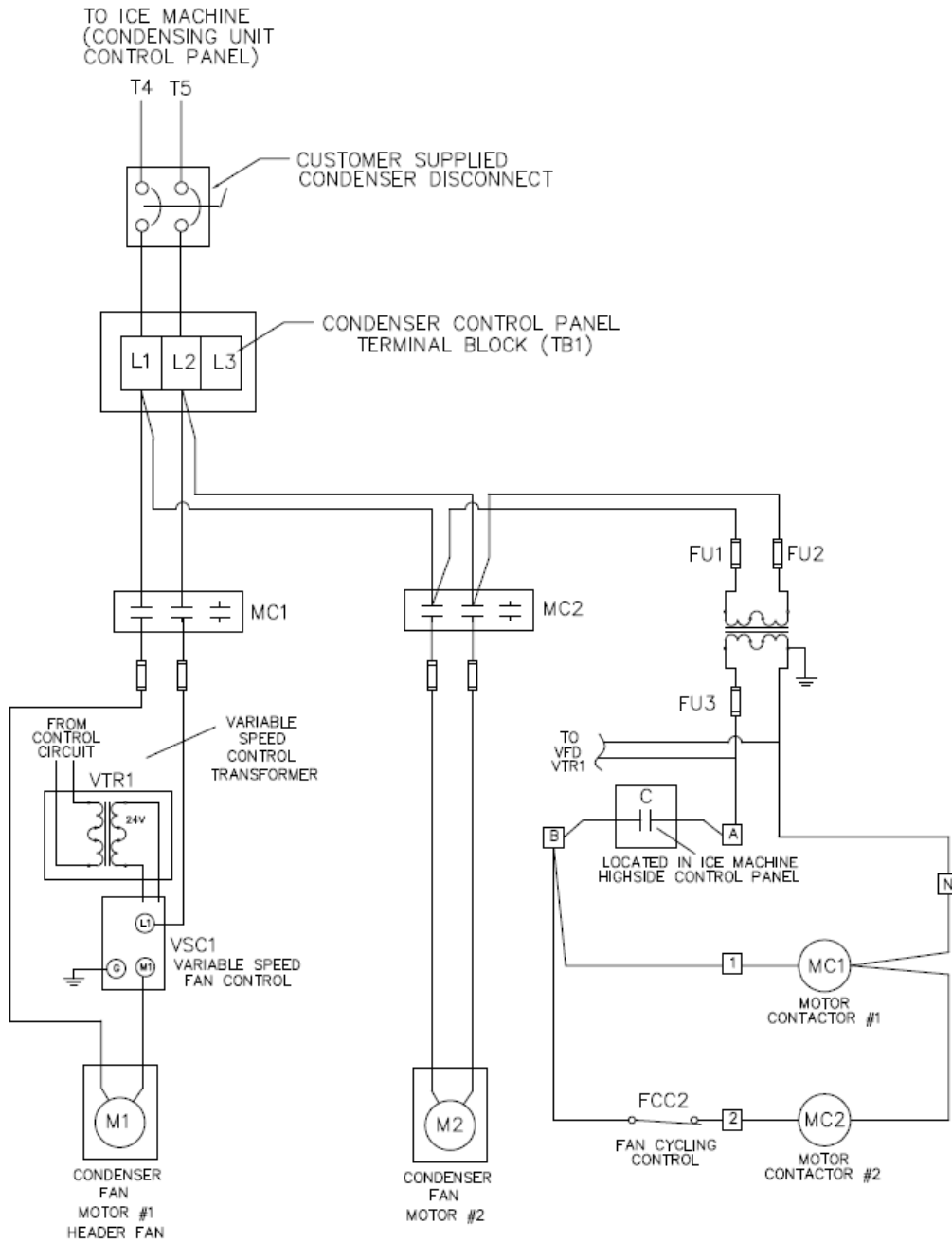
208/230V Condenser



KeepRite VT100, 200/230V Remote Air Cooled Condenser Wiring

Note: Fan cycling switch, FCC2 (Danfoss) for fan motor #2, is not factory set. Switch must be set in the field before startup. Cut Out = 210 psi, Diff = 25 psi. Use an accurate gauge to set, not the scale on the pressure switch.

400/460V Condenser



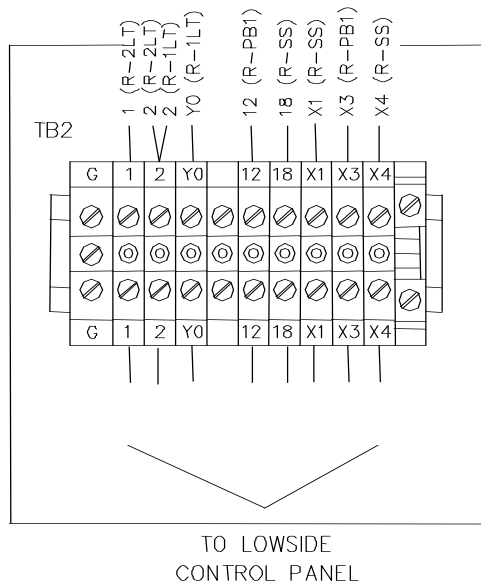
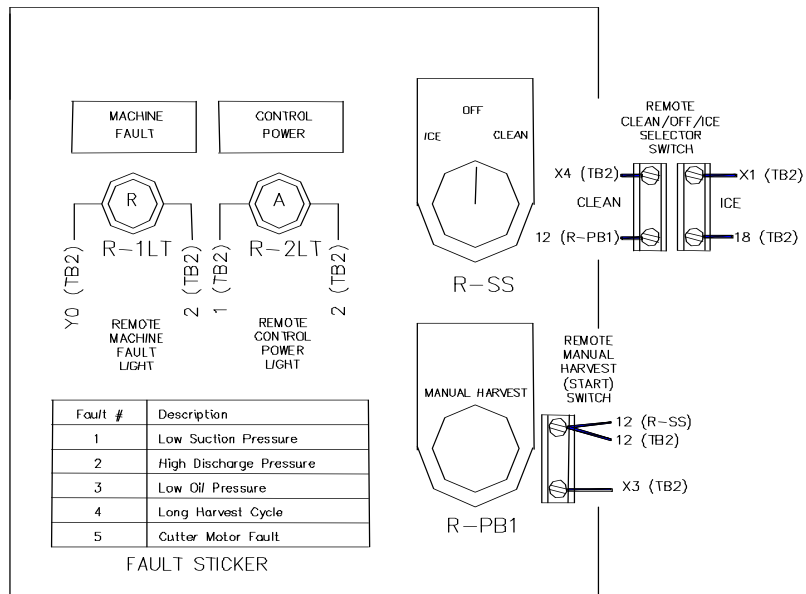
KeepRite VT100, 400/460V Remote Air Cooled Condenser Wiring

Note: Fan cycling switch, FCC2 (Danfoss) for fan motor #2, is not factory set. Switch must be set in the field before startup. Cut Out = 210 psi, Diff = 25 psi

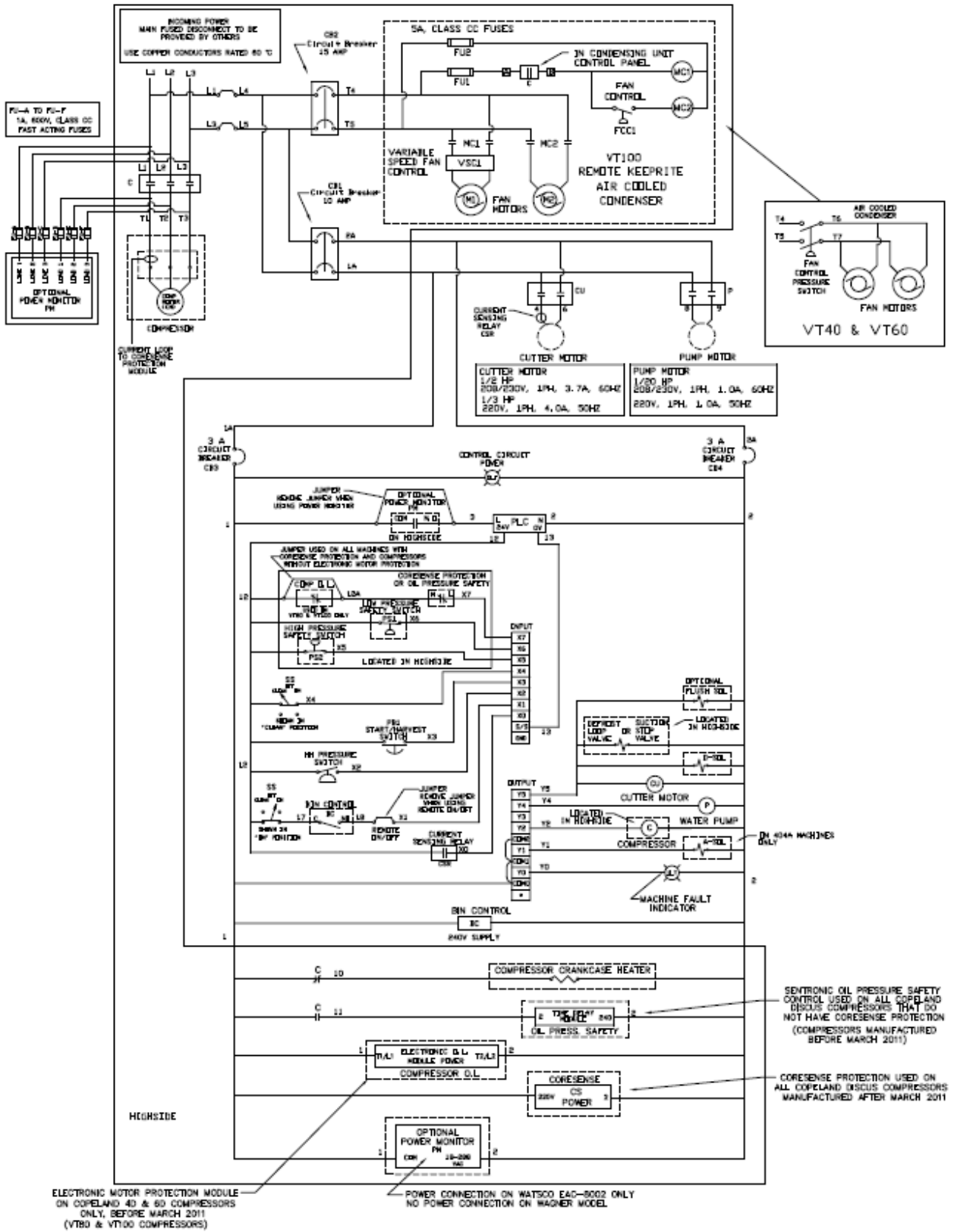
Remote Control Panel (Optional): A remote panel can be added to control the ice machine. When installed, the jumper between 18 & X1 on the lowside control panel must be removed and the “Selector Switch” in the “Ice” position.

See table below for number, color, and size of wire to be run from the remote panel to the lowside control panel:

Number of wires	Wire Size (AWG)	Wire #
3	14 (Red)	1, 2, Y0
5	14 (Blue)	12, 18, X1, X3, X4
1	14 (Green)	Ground wire



Remote Panel Layout



Complete Electrical Diagram with Remote Panel