



Quotation no. R-0278

FROM: RBS REFRIGERATION, INC
Roberto Guzman
10371 SW 212 ST
Miami, FL 33189

Date: 09/14/2012

QUOTE SUBMITTED TO:

Name: Tampa Cargo
Attention: Miguel Davila
Address: 1650 NW 66 AVE Bldg 708 Suite 206
City: Miami
State: Florida Zip: 33122

RE: Bitzer Parallel Rack System & Glycol equipment

Dear Miguel:

In response to your inquiry, RBS REFRIGERATION, INC is pleased to provide the following quotation in regards to job no. [TC-5032](#)

The installation of five (5) Bitzer Compressors Glycol Rack System and related components that includes the items shown below;

(A) SCOPE OF WORK:

A.1 Work will consist of removing existing Belt Driven reciprocating Grasso compressors, **Evaporative Condenser** and all (42) direct expansion evaporators in the plant in which will be replaced by, (5) six Bitzer compressors, (42) Glycol fan coil Units, (3) three plate to plate Heat Exchangers that will maintain 17.3 F (supply) 27.3 F (return), (1) one Expansion Tank and (1) one Air Separator and (3) three Pump system will be arranged at equipment proximity. Existing Refrigeration lines at the plant will be completely removed as well as evaporators, and existing components. Existing EMS systems (Opto 22) will be removed along with all I/O board and related components and is to be replaced for an Emerson Controller RX-400 as well as sensors, transmitters, sensors and I/O boards.

A1.1 PVC Glycol Piping:

- 1- All existing refrigeration piping are to be removed from cooler boxes and mechanical equipment. New PVC piping is to be installed, and shall be schedule 80.



A1.2 EMS and control circuit

- 1- Remove existing transducers and install new 5VDC Eclipse Emerson transducers on discharge and suction side.
- 2- Provide by-pass contactors for single and variable speed combined arrangement (SS/VFD) on evaporative condenser motors. Existing VFD enclosure to be used for this type of arrangement
- 3- Install AWG 16 wire for 0-10Vdc 0-40mA from 4AO to inverter signal
- 4- Existing pump contactor to be fed from new 8RO I/O boards
- 5- Existing accumulators level switches to be wire to provided 16AI input boards using 16 AWG wiring

A1.3 EMS and Electrical / Contractor Installation

Electrical contractor shall furnish and install electrical main and control wiring and water proof EMT piping from main and sub-main and EMS control panel providing circuit control to compressors. Compressor part winding starting arrangement shall be provided for each compressor that includes;

- 1- **To Install Siemens panels at main and sub-main for new compressors installations**
- 2- To remove existing Saftronics from compressors
- 3- To Install panels and sub-panels to all mechanical equipment
- 4- To install (2) two **Variable Frequency Drives** on Evaporative Condenser
- 5- EMT water proof pipe to existing panels
- 6- Furnish and install junction sub-panel enclosure
- 7- To route wiring to compressor terminal box
- 8- To install control wiring EMT water proof piping
- 9- To install control wiring to each existing electrical device.

Note: FPL fees/permits are not included under this provision

NOTE: Power from main source and/or panels are included under this provision.

A1.4 Hangers, Glycol PVC Lines Support and Insulation

- 1) New PVC main piping and branches are to be supported using Clevis and regular carbon steel channels type hangers.
- 2) Pipe branches hangers shall be constructed using 1 5/8 x 1 5/8 strut channel
- 3) Insulation shall be Trymer 2000xp closed cell specified on current plans



(B) RACK, HYDRONIC AND SYSTEM COMPONENTS BREAKDOWN

(Table B.1)

Qty	Equipment Part/ Model	Equipment Description	Unit Price \$	Extended Price \$
5	HSK8571-140-4PU.	Bitzer Screw Compressors	32,202.00	\$161,010.00
1	ATC1364E-1G	Evaporative Condenser	230,190.00	\$230,190.00
1	Rack System Frame	Steel Frame and Piping	23,900.00	\$23,900.00
2	AW540X-IS1	Frame to plate HX	98,275.00	\$196,550.00
3	Bell & Gossett	3) Parallel Pump Station	22,500.00	\$67,500.00
1	GBM757-190-SC	Economizer- Subcooler	8,800.00	\$8,800.00
2	ICM-40	Danfoss expansion valve	4,506.00	\$9,012.00
12	V5013C1027	4" Honeywell valves	3,280.00	\$39,360.00
1	RX 400 and Boards	E2 Controller Ast boards	39,890.00	\$39,890.00
4	V5013C1001	2 1/2" Honeywell valve	2,900.00	\$11,600.00
5	STW500	Hansen Strainers	1,950.00	\$9,750.00
6	GS200H	Socket Welded Valve	996.00	\$5,976.00
6	EW500H	Butt Welded Globe valve	2,625.00	\$15,750.00
1	NEMA 1-2 Doors Encl	72"x74"x12"Galv, Encl	14,490.00	\$14,490.00
1	Miscellanies Electrical on Equipment	Relays Contactors, Transformers, Starters	36,354.00	\$36,354.00
16	ML7421B1023	Honeywell valve actuator	2,300.00	\$36,800.00
18	B150S	Bitzer Oil Change After Start-Up	409.00	\$7,362.00
2	HEAD 80"OD X 1/2" NOM.THK, 2:1 ELLIP, SA516-70 NORMALIZED, BEVELED	Suction Accumulator	8,673.00	\$8,673.00
1	CA-700	Taco Expansion Tank	22,970.00	\$22,970.00
1	AC14F	Taco Air Separator	21,120.00	\$21,120.00
2	SIEMENS 2000 AMPS	Siemens main panels	30,345.00	\$60,690.00

Note:

All materials/components highlighted gray, are considered the equipment Rack system as a whole.



(B) RACK, HYDRONIC AND SYSTEM COMPONENTS BREAKDOWN

(Table B.1) CONT;

Qty	Equipment Part/ Model	Equipment Description	Unit Price \$	Extended Price \$
1	ALFALAVAL HX	Warm fluid heat exchanger	12,320.00	\$12,320.00
16	KRACK	Old Cooler evap+ taxes	8,449.00	\$135,184.00
8	KRACK	New Cooler evap+ taxes	8,449.00	\$67,592.00
4	KRACK	Pre-cooler evap+ taxes	8,449.00	\$33,796.00
14	KRACK	Loading evap + taxes	2,832.00	\$39,648.00
21	ACUF-() AF	Balancing valves	1,278.00	\$26,838.00
1	PVC PIPE MATERIAL AND FITTINGS	PVC material 2" to 14"	198,700.00	\$198,700.00
1	DOWFROST GLYCOL 35% CONC	5,000 gallons ethylene glycol	55,200.00	\$55,200.00
23	EV220B	Solenoid Valves	2,660.00	\$61,180.00
1	TRYMER 2000XP	Piping insulation material	128,415.00	\$128,415.00
1	BELL/GOSSETT 5500	Pumps controller	6,244.00	\$6,244.00
2	Emerson Control Techniques	Pumps variable frequency drives	8,345.00	\$16,690.00
2	Emerson Control Techniques	Evaporative condenser variable frequency drives	9,687.00	\$19,374.00
1	Shipping Direct Equipment/Components	Overall direct from manufacturers where applied	18,945.00	\$18,945.00

Notes:

- 1) All materials and components except for Equipment and Controller devices are based on local supplier prices with a price Mark-up of 13% included.
- 2) Equipment/Components are direct price from Manufacturers including local taxes.
- 3) Current Shipping and handling of Equipment and Components are FOB, direct quote from manufacturer including fees/insurances.
- 4) Equipment and components are sold and with the latest revised manufacturer prices, and are subject to new revisions within the specified validation dates of this quote.
- 5) Local taxes are included on all Equipment, Materials and Components.



(C) RBS REFRIGERATION TERMS AND CONDITIONS:

Shop Drawings will be provided upon acceptance. *Job will require 50% upfront of total bid price. Permits/Fees are not included in this proposal. This proposal is valid 30 days from this date.*

(D) EQUIPMENT WARRANTY:

Compressors are guaranteed for (1) one year labor/replacement unless additional warranties are requested by owner.

Equipment/Labor and parts described in table B.1 have (1) one year warranty labor/replacement

(E) WORK TIME FRAME

Existing Unit Cooler Evaporators are estimated to be removed in 3 1/2 months. New Glycol fan coil units shall be installed within 3 1/2 months along with Hydronic System and related components. Rack fabrication will be executed in approximately 2 1/2 months in conjunction with fan coil installation, and prior to installing hydraulic piping in the plant.

Contractor shall keep all refrigeration equipment at the plant 100% operative, until the evaporative condenser and compressor change out, that will take approximately 4 days to provide start-up, balancing of new hydronic system, and compressors set points and safety parameters.

Note: Parts/Components and equipment delivery are to be received from manufacturer within the conditions not specified by RBS Refrigeration, Inc.



Rack System Parts/Components (equipment/materials)-----\$1,887,183.00
Mechanical/Electrical Engineering Services Design-----\$18,110.00
 Electrical contractor total labor and materials less equipment-----
 -----340,450.00

Overall Installation will consist on the complete removal of the existing entire system and installation of a 35% Ethylene Glycol System in which **covers labor** specifically for installation, balance, and equipment start-up. Duration of project might take a period of (5) five to (7) months to be completed, -----\$630,000.00

All refrigerant shall be recovered from the entire system. (Refrigerant Recovery Company) will be sub-contracted by RBS Refrigeration Inc). Refrigerant recovery company-----\$28,869.00

Crane services will be provided the day of system change-out for 14 hrs of operation by a local hoisting company-----\$12,800.00
Dade County permits/fees-----\$16,340.00

Total Bid-----\$2,933,752.00

Acceptance Signature_____

Authorized Signature_____