

Now In Production

APRIL 2010



Spirit, Kinston, NC

A custom pad mounted 550 Tons of DX cooling with twin air cooled condensing sections.

R-134A Refrigerant

Representative : H C Sharp Company. 8301D Crest Industrial Drive St. Louis, MO 63123

Mike Haas, P 314-351-6900; F 314-351-6901



The base is constructed with 8 inch welded structural steel and it is sprayed with 4 inches of polyurethane foam insulation.



The unit consists of two air cooled condensing sections with eight (8) eighty ton screw compressors.



4500 Industrial Access Road Douglasville, GA 770-489-0716 P ; 770-489-2938 F ; www.seasons4.net

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80,000 cfm of fresh air is conditioned down to 54.8/54.3 deg F.

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**Hot gas reheat coil, sub-cool reheat coil,
126 KW electric heat ,
COLD FOG atomizing humidifier and stainless
steel liners downstream of coiling coil section
are some of the special features of the unit.**



**Four (4) direct drive airfoil plenum blowers with VFDs and four (4) Power Burners
with drum and tube heat exchangers are additional features of the unit.**



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10,000 mbh indirect natural gas heat section.

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The unit is built in 6 sections for shipping, but it is designed so that all circuits are intact when the unit is shipped.



Aluminum exterior panels are insulated with 2" polyurethane foam insulation. The unit is completely tested and shipped to the jobsite.



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ENGINEERING SPECIFICATIONS

JOB NAME SPIRIT
LOCATION KINSTON, NC
DATE PREPARED Revised: 12/07/09
SEASONS-4 REFERENCE # A513-DX
UNIT MODEL # 3SZT49-5518-MN100-80HU
UNIT DESIGNATION RTU-1
SYSTEM VOLTAGE 460/3/60

DESIGN DATA

TOTAL COOLING CAPACITY (BTUH)	6,619,164
SENSIBLE CAPACITY (BTUH)	3,564,834
TOTAL AIRFLOW (CFM)	80,000
OUTDOOR AIR (CFM)	24,000
RETURN AIR (CFM)	56,000
NET TOTAL COOLING CAPACITY (BTUH)	5,971,484*
NET SENSIBLE CAPACITY (BTUH)	2,917,154*

* DESIGN DATA CAPACITIES INCLUDE EFFECTS OF SUBCOOL COIL REHEAT

COMPRESSOR SECTION

COMPRESSOR:

TYPE	COPELAND SCREW
NUMBER	8
STAGES OF CAPACITY	8

AIR COOLED CONDENSER SECTION

CONDENSER COIL:

COIL FACE AREA/ROWS/FPI	709.6/6/10
DESIGN AMBIENT TEMPERATURE (FDB):	95.0

CONDENSER FANS:

TYPE	PROPELLER
DIA/RPM	30/1,140
QTY/HP	36/1.5

PRECOOLING COIL SECTION

FACE AREA (SQ-FT)	165.0
ROWS/FPI	3/10
COIL CIRCUITS (NUMBER)	4
TOTAL CAPACITY (BTUH)	3,223,692
SENSIBLE CAPACITY (BTUH)	1,967,430
ENTERING AIR TEMP (FDB/FWB)	95.0/78.0
COIL LEAVING AIR TEMP (FDB/FWB)	72.9/67.9
CONDITIONED AIR (CFM)	80,000

ENGINEERING SPECIFICATIONS

DEHUMIDIFICATION COIL SECTION

FACE AREA (SQ-FT)	165.0
ROWS/FPI	6/10
COIL CIRCUITS (NUMBER)	4
TOTAL CAPACITY (BTUH)	3,395,472
SENSIBLE CAPACITY (BTUH)	1,597,405
ENTERING AIR TEMP (FDB/FWB)	72.9/67.9
COIL LEAVING AIR TEMP (FDB/FWB)	54.8/54.3
CONDITIONED AIR (CFM)	80,000

SUBCOOLING COIL SECTION

FACE AREA (SQ-FT)	165.0
ROWS/FPI	2/10
REHEAT CAPACITY (BTUH)	571,671
ENTERING AIR TEMP (FDB/FWB)	54.8/54.3
LEAVING AIR TEMP (FDB/FWB)	61.3/57.0
CONDITIONED AIR (CFM)	80,000

HOT GAS REHEAT COIL SECTION

FACE AREA (SQ-FT)	165.0
ROWS/FPI	2/10
COIL CIRCUITS (NUMBER)	2
REHEAT CAPACITY (BTUH)	1,198,447
ENTERING AIR TEMP (FDB/FWB)	61.3/57.0
LEAVING AIR TEMP (FDB/FWB)	75.0/62.1
CONDITIONED AIR (CFM)	80,000
AIR PRESSURE DROP	0.16

SUPPLY AIR BLOWER SECTION

TYPE	AF SWSI PLENUM
NUMBER/SIZE	4/PLCD300
AIRFLOW (CFM)	80,000
TOTAL STATIC PRESSURE (TSP) IN WC	6.55
EXTERNAL STATIC (ESP) IN WC	2.00
DESIGN FAN SPEED (RPM)	1,770
FAN BHP (INCLUDING DRIVE LOSSES)	4 @ 28.1
MOTOR HP	4 @ 30
MOTOR DRIVE	DIRECT DRIVE

PRE-FILTER SECTION

TYPE	2" PLEATED
NUMBER/SIZE	40/24x24
TOTAL FACE AREA (SQ-FT)	160.0
FACE VELOCITY (FPM)	500

PRE-FILTER SECTION 2

TYPE	19" D70 PUROLATOR, 8 POCKET BAG FILTERS
NUMBER/SIZE	40/24x24
TOTAL FACE AREA (SQ-FT)	160.0
FACE VELOCITY (FPM)	500

ENGINEERING SPECIFICATIONS

FINAL FILTER SECTION

TYPE	DROPLET FILTER; PROVIDED BY HUMIDIFIER MANUFACTURER
NUMBER/SIZE	40/24x24
TOTAL FACE AREA (SQ-FT)	160.0
FACE VELOCITY (FPM)	500

GAS HEAT SECTION

TYPE	NATURAL GAS; POWER BURNER
INPUT CAPACITY (BTUH)	10,000,000
OUTPUT CAPACITY (BTUH)	8,000,000
CONDITIONED AIR (CFM)	80,000
CONDITIONED AIR TR (F)	93
STAGING	MODULATING
GAS CONNECTION SIZE (MPT)	2 @ 2-1/2"
MIN GAS PRESSURE (IN-WC)	7"
MAX GAS PRESSURE (IN-WC)	14"

ELECTRIC HEAT SECTION

TYPE	OPEN WIRE
INPUT CAPACITY (KW)	126
CONDITIONED AIR (CFM)	80,000
CONDITIONED AIR TR (F)	5.0
STAGING	SCR

HUMIDIFIER

TYPE	FOG HUMIDIFIER
CAPACITY (LB/HR)	2250.0
CONDITIONED AIR (SCFM)	80,000
STAGING CONTROLS	3(30%-70%-100%)
SUPPLY CONNECTION SIZE	3/4"
DRAIN CONNECTION SIZE	1"
PUMP (QTY/HP)	1/5.0

UNIT SECTION WEIGHTS

SECTION A WEIGHT (LBS)	10200
SECTION B WEIGHT (LBS)	11500
SECTION C WEIGHT (LBS)	32600
SECTION D WEIGHT (LBS)	32600
SECTION E WEIGHT (LBS)	11800
SECTION F WEIGHT (LBS)	9000

UNIT WEIGHT (LBS)	107,700
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ENGINEERING SPECIFICATIONS

ELECTRICAL DATA

JOB NAME SPIRIT

LOCATION KINSTON, NC

DATE PREPARED Revised: 12/07/09

SEASONS-4 REF NUMBER A513-DX_PWR1 UNIT MODEL 3SZT49-5518-MN100-80HU

UNIT DESIGNATION RTU-1

SYSTEM VOLTAGE 460 CONTROL VOLTAGE 120 EXT. VOLTAGE 24

<u>ITEM</u>	<u>QTY</u>	<u>HP</u>	<u>FLA</u>	<u>LRA</u>	<u>KW</u>	<u>TYPE</u>
SA FAN	4	30.0	35.0	223.6	21.6	Bald
EXH FAN	2	30.0	35.0	223.6		Bald
HUMIDIFIER PUMP MOTOR	1	5	6.6	51		Bald
ELECT HEAT	1		158.3		126.0	Open
CONTROL CIRCUIT			6.5			
CONVENIENCE OUTLET			6.5			20 Amps
VEST. HEAT F/HUMDIFIER	1		6.3		5.0	
DRAFT EXHAUSTER	4	1.5	3.0			
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TOTALS (COOL)	7	***	229.6		86.3	
TOTALS (HEAT)	13	186.5	406.3		217.3	

M.C.A. (MINIMUM CIRCUIT AMPACITY)

M.O.P. (MAXIMUM OVERLOAD PROTECTION)

S.C.C.R. (SHORT CIRCUIT CURRENT RATING)

ENGINEERING SPECIFICATIONS**ELECTRICAL DATA****JOB NAME** SPIRIT**LOCATION** KINSTON, NC**DATE PREPARED** Revised: 12/07/09**SEASONS-4 REF NUMBER** A513-DX_PWR2 **UNIT MODEL** 3SZT49-5518-MN100-80HU**UNIT DESIGNATION** RTU-1**SYSTEM VOLTAGE** 460 **CONTROL VOLTAGE** 120 **EXT. VOLTAGE** 24

<u>ITEM</u>	<u>QTY</u>	<u>HP</u>	<u>FLA</u>	<u>LRA</u>	<u>KW</u>	<u>TYPE</u>
COMP 5,6 PRECOOL	2	***	120.0	485.0	53.0	SCA2-700E
COMP 1 DEHUMID	1	***	120.0	485.0	50.8	SCA2-700E
COMP 3 DEHUMID	1	***	120.0	485.0	50.8	SCA2-700E
COND FAN	18	1.5	2.7	16.2	1.4	
CONTROL CIRCUIT			6.5			
CONVENIENCE OUTLET			6.5			20 Amps
TOTALS (COOL)	22	***	541.6		233.0	
TOTALS (HEAT)			13.0			

M.C.A. 572 (MINIMUM CIRCUIT AMPACITY)M.O.P. 600 (MAXIMUM OVERLOAD PROTECTION)S.C.C.R. 65,000 (SHORT CIRCUIT CURRENT RATING)

ENGINEERING SPECIFICATIONS**ELECTRICAL DATA****JOB NAME** SPIRIT**LOCATION** KINSTON, NC**DATE PREPARED** Revised: 12/07/09**SEASONS-4 REF NUMBER** A513-DX_PWR3 **UNIT MODEL** 3SZT49-5518-MN100-80HU**UNIT DESIGNATION** RTU-1**SYSTEM VOLTAGE** 460 **CONTROL VOLTAGE** 120 **EXT. VOLTAGE** 24

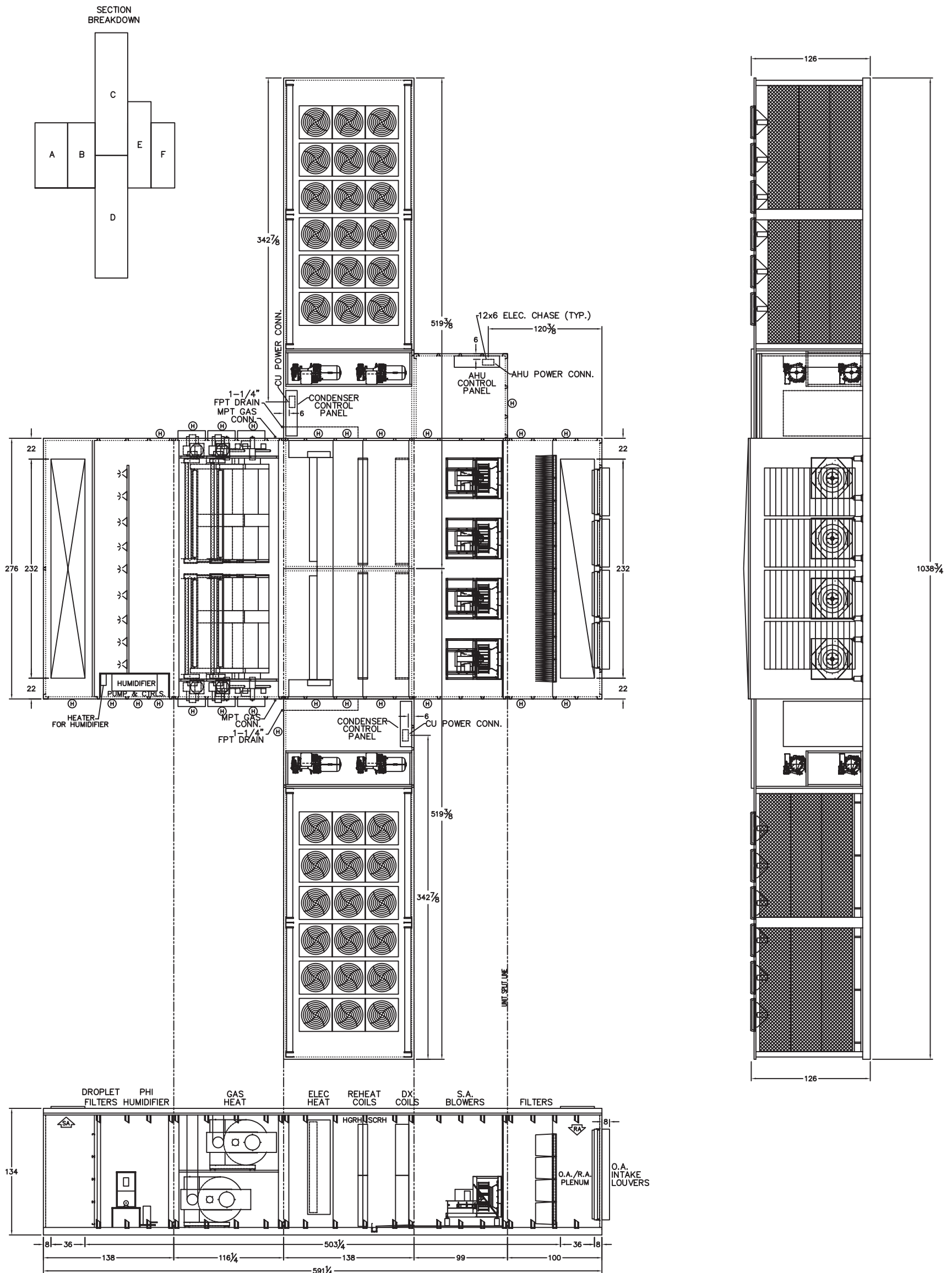
<u>ITEM</u>	<u>QTY</u>	<u>HP</u>	<u>FLA</u>	<u>LRA</u>	<u>KW</u>	<u>TYPE</u>
COMP 7,8 PRECOOL	2	***	120.0	485.0	53.0	SCA2-700E
COMP 2 DEHUMID	1	***	120.0	485.0	50.8	SCA2-700E
COMP 4 DEHUMID	1	***	120.0	485.0	50.8	SCA2-700E
COND FAN	18	1.5	2.7	16.2	1.4	
CONTROL CIRCUIT			6.5			
CONVENIENCE OUTLET			6.5			20 Amps
TOTALS (COOL)	22	***	541.6		233.0	
TOTALS (HEAT)			13.0			

M.C.A. 572 (MINIMUM CIRCUIT AMPACITY)M.O.P. 600 (MAXIMUM OVERLOAD PROTECTION)S.C.C.R. 65,000 (SHORT CIRCUIT CURRENT RATING)



DIMENSIONAL DATA

SPIRIT
KINSTON, NC
RTU-1



(H) HINGED ACCESS DOOR

REV. 3: 12/07/2009 JDP
REV. 2: 11/20/2009 JDP
REV. 1: 09/16/2009 JDP
08/18/2009 JDP A513D00JP

NOTE: O.A./E.A. LOUVERS, FURNACE VENT CAPS, ETC. MAY REQUIRE FIELD INSTALLATION