FORM

Distributor: _____ Job Site Reference: _____

Dealer: _____ Date: _____

Technician's Name: _____ Installation date: _____

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MODEL INFO	Model #	Serial #
Furnace or Fan coil:		
Outdoor Unit:		
Air Cleaner:		
UV Lights:		
Thermostat:		
Electronic Air Cleaner:		
Furnace:		
Humidifier:		

ELECTRICAL INFO

Control Voltage:_____Vac

Supply Voltage:_____Vac Φ_____

3 Phase (Φ) Voltages: T1→T2_____Vac

T1→T3_____Vac T2→T3_____Vac

OUTDOOR

Air Temp Entering Outdoor Coil:_____°F

Air Temp Leaving Outdoor Coil:_____°F

Outdoor Fan Amps:_____amps

Htg.Metering Device:____txv____piston #____

Line Set Length:____ft

Line Set Size: Suc____in, Liq____in

COMPRESSOR DATA

Comfort Alert Code:_____

Comp. Start Voltage:_____Vac

Comp. Run Amps: Com_____Run_____Start_____

Locked Rotor Amps:_____amps R→C=_____Ω

Refrigerant Pressures

Equal?_____yes ____no S→C=_____Ω Run

Cap:_____μF(1Φ only) R→S ≈ R→C+C→S

Hard Start Kit Used?_____yes ____no

AIRFLOW

Electric Heat Temp Rise CFM Method

Volts =_____ Amps = _____

Ret. Air Temp.____°F Sup. Air Temp.†_____°F

cfm = _____

Electric Heat Temp Rise Method

$$cfm = \frac{(Volts)(Amps)(3.413)}{1.08(\Delta T)}$$

Total External Static Method *

Ret. Static + Sup. Static = Total External Static

Use the Total External Static in conjunction with the Blower Performance data in the Product Specification Sheets

NOTE: 350-400 CFM PER TON

REFRIGERANT PROPERTIES

A. Vapor Line Temp.

at Service Valve:_____°F SuperHeat_____°F

B. Vapor Pressure (A - B)

at Service Valve:_____psig_____°F

C. Liquid Line Temp.

at Service Valve:_____°F Sub-Cooling_____°F

D. Liquid Pressure (C - D)

at Service Valve:_____psig_____°F

INDOOR PROPERTIES

Air Temp Entering Indoor Coil:_____°FDB _____°FWB

Air Temp Leaving Indoor Coil:_____°FDB _____°FWB

Airflow:_____cfm

Return Static *:_____w.c. (Used with Total External Static Method)

Supply Static *:_____w.c. (Used with Total External Static Method)

Clg. Metering Device: txv piston #_____

Htg.Blower Speed Tap:_____ Clg. Blower Speed Tap: Blower

Amps: Hi Cool_____amps Lo Cool_____amps

Heat_____amps

Filter Type: _____

Dip Switch Settings: ON or OFF (FAN COIL DIP SWITCHES)

1._ON 2._ON 3._ON 4._ON 5._ON 6._ON 7._ON 8._ON

Defrost Time Interval:_____min

SYSTEM CAPACITY (Cal. On page 2)

Htg. Capacity (HP):_____btuh

Clg. Capacity (AC/HP):_____btuh

Htg. System Capacity Method

btu's = (cfm)(1.08)(ΔT)

btu's = _____

ADDTL. COMMENTS:

AC/HP TECHNICAL EVALUATION FORM

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REFERENCE CHARTS

PRESSURE -TEMPERATURE CHART

Temp °F	R-22 Pressure	R-410A Pressure
-50	6.2	3.5
-45	2.7	8.5
-40	0.5	11.6
-35	2.6	14.9
-30	4.9	18.5
-25	7.4	22.5
-20	10.1	26.9
-15	13.2	31.7
-10	16.5	36.8
-5	20	42.5
0	23.9	48.6
5	28.2	55.2
10	32.8	62.3
15	37.7	70
20	43	78.3
25	48.7	87.3
30	54.9	96.8
35	61.5	107
40	68.5	118
45	76	129.7
50	84	142.2
55	92.5	155.5
60	101.6	169.6
65	111.2	184.6
70	121.4	200.6
75	132.2	217.4
80	143.6	235.3
85	155.7	254.1
90	168.4	274.1
95	181.8	295.1
100	195.9	317.2
105	210.7	340.5
110	226.3	365
115	242.7	390.7
120	259.9	417.7
125	277.9	445.9
130	296.8	475.6
135	316.5	506.5
140	337.2	539
145	358.8	572.8
150	381.5	608.1

QUICK SYSTEM ANALYSIS (√)

SYSTEM PROBLEM	OPERATING TRENDS (LOW-NORMAL-HIGH)														
	SUCTION PRESSURE			DISCHARGE PRESSURE			SUPERHEAT			SUBCOOLING			AMPERES		
	L	N	H	L	N	H	L	N	H	L	N	H	L	N	H
Overcharge															
Condenser (Air) Restricted															
Non-Condensibles in System															
High Evaporator Load															
Loose TXV Feeder Bulb															
- Oversized TXV															
- Leaking TXV Seat															
- Wrong Equalizer Connection															
- Uninsulated Feeder Bulb															
Undercharge															
Liquid Line Restriction															
Low Outdoor Ambient															
Suction Line Restriction															
Evaporator Air (Cooler Liquid) Restricted															
Undersized TXV															
- Leaking Feeder Bulb															
- No External Equalizer															
Inefficient Compressor															
ACTUAL SYSTEM OPERATION ( )															

INDOOR DRY BULB ADJUSTMENT

Use equations below in conjunction with unit's "Tech Label" information for total and sensible capacities @ indoor dry bulbs other than 80°F entering coil.

Sensible Capacity at Indoor db LOWER than 80°F

$$= (\text{MBh} \times \text{S/T}) - \left(\frac{(80 - \text{Indoor db}) \times 835 \times \text{Indoor cfm}}{1000}\right)$$

Sensible Capacity at Indoor db HIGHER than 80°F

$$= (\text{MBh} \times \text{S/T}) + \left(\frac{(\text{Indoor db} - 80) \times 835 \times \text{Indoor cfm}}{1000}\right)$$

SYSTEM CAPACITY CALCULATOR

Temperature Wet-Bulb(F)	Enthalpy Btu/LB	Temperature Wet-Bulb(F)	Enthalpy Btu/LB	Temperature Wet-Bulb(F)	Enthalpy Btu/LB	Temperature Wet-Bulb (F)	Enthalpy Btu/LB	Temperature Wet-Bulb(F)	Enthalpy Btu/LB	Temperature Wet-Bulb(F)	Enthalpy Btu/LB
40	15.23	48	19.21	56	23.84	64	29.31	72	35.83	80	43.69
41	15.7	49	19.75	57	24.48	65	30.06	73	36.74	81	44.78
42	16.17	50	20.3	58	25.12	66	30.83	74	37.66	82	45.9
43	16.66	51	20.86	59	25.78	67	31.62	75	38.61	83	47.04
44	17.15	52	21.44	60	26.46	68	32.42	76	39.57	84	48.22
45	17.65	53	22.02	61	27.15	69	33.25	77	40.57	85	49.43
46	18.16	54	22.62	62	27.85	70	34.09	78	41.58		
47	18.68	55	23.22	63	28.57	71	34.95	79	42.62		

INDOOR COIL (EVAPORATOR)

	ENTERING	LEAVING	DIFFERENCE
W.B.			
Enthalpy			Δh = Btu/LB

EVAPORATOR CAPACITY
BTUH = 4.5 x cfm x Δh

OUTDOOR COIL (CONDENSOR)

	ENTERING	LEAVING	DIFFERENCE
(Air) D.B.			ΔT = °F

CONDENSOR CAPACITY
BTUH = 1.10 x COND. Cfm x ΔT

Due to varying field condidtions, a tolerance of 10% must be expected when comparing test data to actual performance.

* Used in the "Total External Static" method in conjunction with the "Blower Performance Data" in Product Specification sheets or the unit's "Tech Label" to calculate airflow.
† Temperature rise is equal to the supply air temp. minus the return air temp. at steady state operation. The supply air temp. should be measured away form the line of sight of the heat exchanger.