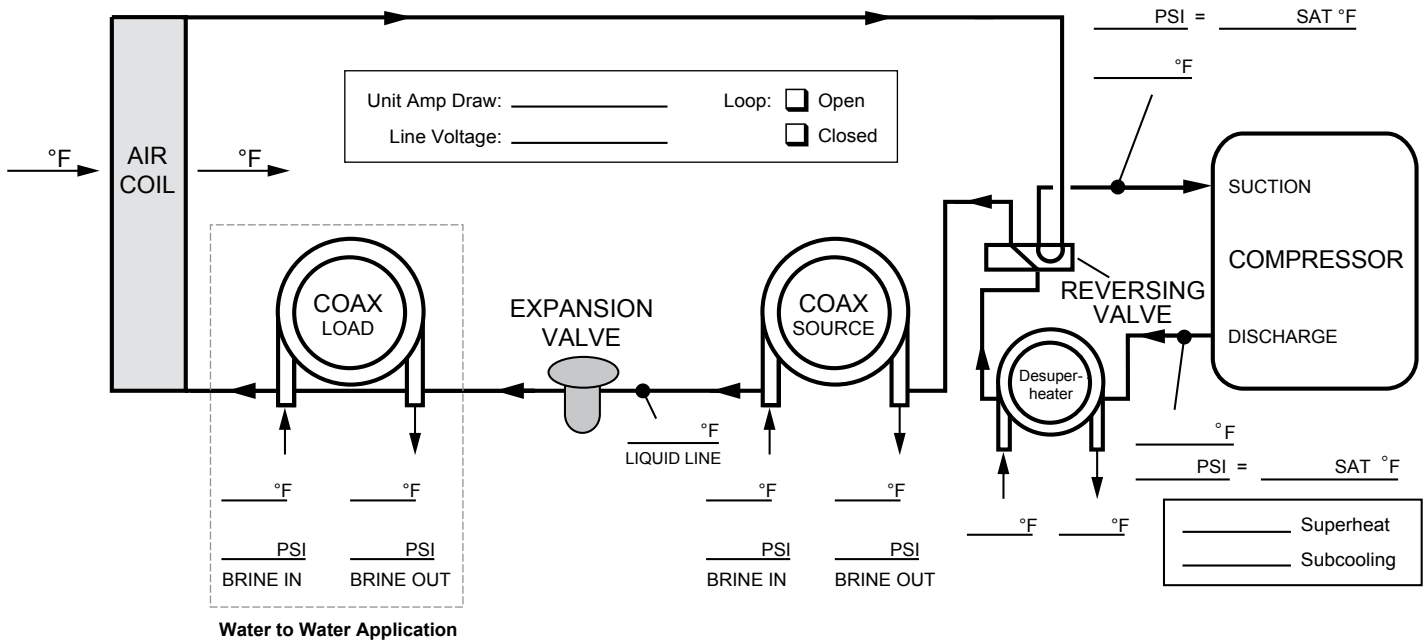


DEALER: _____
 PHONE #: _____ DATE: _____
 PROBLEM: _____
 MODEL #: _____
 SERIAL #: _____



Startup/Troubleshooting Form

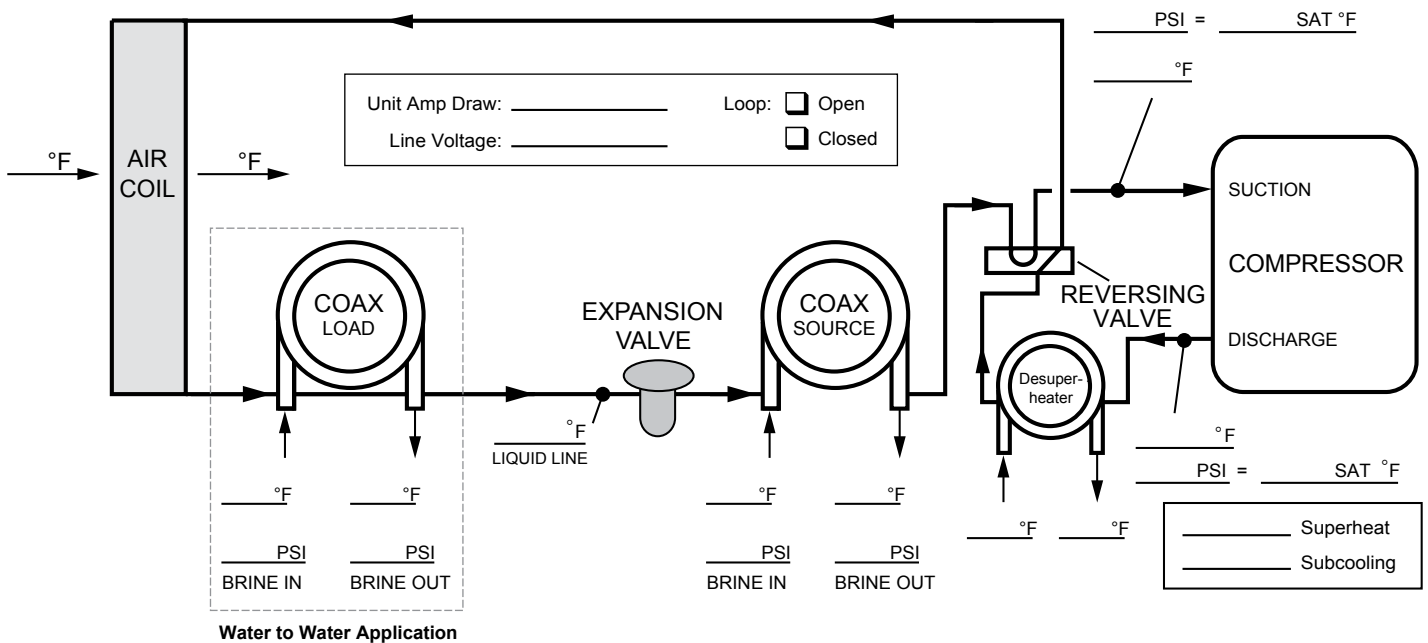
COOLING CYCLE ANALYSIS



$$\text{Heat of Extraction/Rejection} = \text{GPM} \times 500 \text{ (485 for water/antifreeze)} \times \Delta T$$

Note: DO NOT hook up pressure gauges unless there appears to be a performance problem.

HEATING CYCLE ANALYSIS



1. JOB INFORMATION

WFI Model #: _____ Job Name: _____ Loop: Open / Closed
 WFI Serial #: _____ Install. Date: _____ Desuperheater: Y / N

2. FLOW RATE IN GPM

	SOURCE COAX		LOAD COAX (WATER TO WATER)	
	COOLING	HEATING	COOLING	HEATING
WATER IN Pressure:	a. _____ PSI	a. _____ PSI	a. _____ PSI	a. _____ PSI
WATER OUT Pressure:	b. _____ PSI	b. _____ PSI	b. _____ PSI	b. _____ PSI
Pressure Drop = a - b	c. _____ PSI	c. _____ PSI	c. _____ PSI	c. _____ PSI
Look up flow rate in table:	d. _____ GPM	d. _____ GPM	d. _____ GPM	d. _____ GPM

3. TEMPERATURE RISE / DROP ACROSS COAXIAL HEAT EXCHANGER*

	COOLING	HEATING
WATER IN Temperature:	e. _____ °F	e. _____ °F
WATER OUT Temperature:	f. _____ °F	f. _____ °F
Temperature Difference:	g. _____ °F	g. _____ °F

* Steps 3 - 9 should be conducted with the desuperheater disconnected.

4. TEMPERATURE RISE / DROP ACROSS AIR COIL

	COIL		LOAD COAX (WATER TO WATER)	
	COOLING	HEATING	COOLING	HEATING
SUPPLY AIR Temperature:	h. _____ °F	h. _____ °F	LWT: h. _____ °F	h. _____ °F
RETURN AIR Temperature:	i. _____ °F	i. _____ °F	EWT: i. _____ °F	i. _____ °F
Temperature Difference:	j. _____ °F	j. _____ °F	j. _____ °F	j. _____ °F

5. HEAT OF REJECTION (HR) / HEAT OF EXTRACTION (HE)

Brine Factor*: k. _____

* Use 500 for pure water, 485 for methanol or Environol™. (This constant is derived by multiplying the weight of one gallon of water (8.34) times the minutes in one hour (60) times the specific heat of the fluid.
 Water has a specific heat of 1.0

	COOLING (HR)	HEATING (HE)
HR / HE = d x g x k	l. _____ BTU / HR	l. _____ BTU / HR

STEPS 6 - 9 NEED ONLY BE COMPLETED IF A PROBLEM IS SUSPECTED

6. WATTS

	COOLING	HEATING
Volts:	m. _____ VOLTS	m. _____ VOLTS
Total Amps (Comp. + Fan)*:	n. _____ AMPS	n. _____ AMPS
Watts = m x n x 0.85	o. _____ WATTS	o. _____ WATTS

* If there is only one source of power for the compressor and fan, Amp draw can be measured at the source wiring connections.

7. CAPACITY

	COOLING	HEATING
Cooling Capacity = l - (o x 3.413)	p. _____ BTU / HR	p. _____ BTU / HR
Heating Capacity = l + (o x 3.413)		

8. EFFICIENCY

	COOLING	HEATING
Cooling EER = p / o	q. _____ BTU / W	q. _____ BTU / BTU
Heating COP = p / (o x 3.413)		

9. SUPERHEAT (S.H.) / SUBCOOLING (S.C.)

	COOLING	HEATING
Suction Pressure:	r. _____ PSI	r. _____ PSI
Suction Saturation Temperature:	s. _____ DEG. F	s. _____ DEG. F
Suction Line Temperature:	t. _____ DEG. F	t. _____ DEG. F
S.H. = t - s	u. _____ DEG. F	u. _____ DEG. F
Head Pressure:	v. _____ PSI	v. _____ PSI
High Pressure Saturation Temperature:	w. _____ DEG. F	w. _____ DEG. F
Liquid Line Temperature*:	x. _____ DEG. F	x. _____ DEG. F
S.C. = w - x	y. _____ DEG. F	y. _____ DEG. F

* Liquid line is between the coax and the expansion device in the cooling mode; between the air coil and the expansion device in the heating mode.