



BY JOHNSON CONTROLS

Service Information

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SI0267

Supersedes SI0267 (415)

REV

515

Equipment Affected: YIA Absorption Chiller

SPECIAL START-UP INSTRUCTIONS
FOR MIX-MATCH UNITS.

GENERAL

Mix-Match units are units with non-standard top shells or condenser/generator shells on standard lower shells. These shells are often chosen for increased tube surface for low temperature hot water applications.

You can recognize a Mix-Match unit by the difference in the Model #. The unit size will be repeated twice Example: (ie. YIA-HW-3B24/C1-46-C-S-C) or ("3B2/4C1").

START-UP INSTRUCTIONS

A Mix-Match unit will require a different amount of solution and refrigerant charge from the standard unit. The correct amounts are indicated in the Solution and Refrigerant Charge Table on *Page 3*.

When commissioning a Mix-Match unit, you will notice one or two additional valves located on the liquid line between the condenser and evaporator. These valves serve as the expansion device and thus will need to be properly throttled for optimum unit performance. They ship fully open from the factory.

Adjust the valves one at a time as follows:

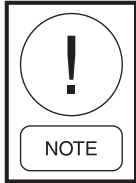
1. Verify that the unit is completely shutdown (NO pumps running).
2. Turn valve CW to the fully closed position.
3. Turn valve CCW, 4 full turns open.
4. Run unit 80 – 100% load.
5. Measure and record the Delta T of each valve at points A and B on *Figure 1*.
6. Delta T should be between 18 – 22 °F (10 – 12 °C)
7. If Delta T is above the recommended temperature in step 5; turn the valve CW ½ turn to decrease the temperature 3 – 5 °F (2 – 3 °C).

If Delta T is below the recommended temperature in step 5; turn the valve CCW ½ turn to increase the temperature 3 – 5 °F (2 – 3 °C).

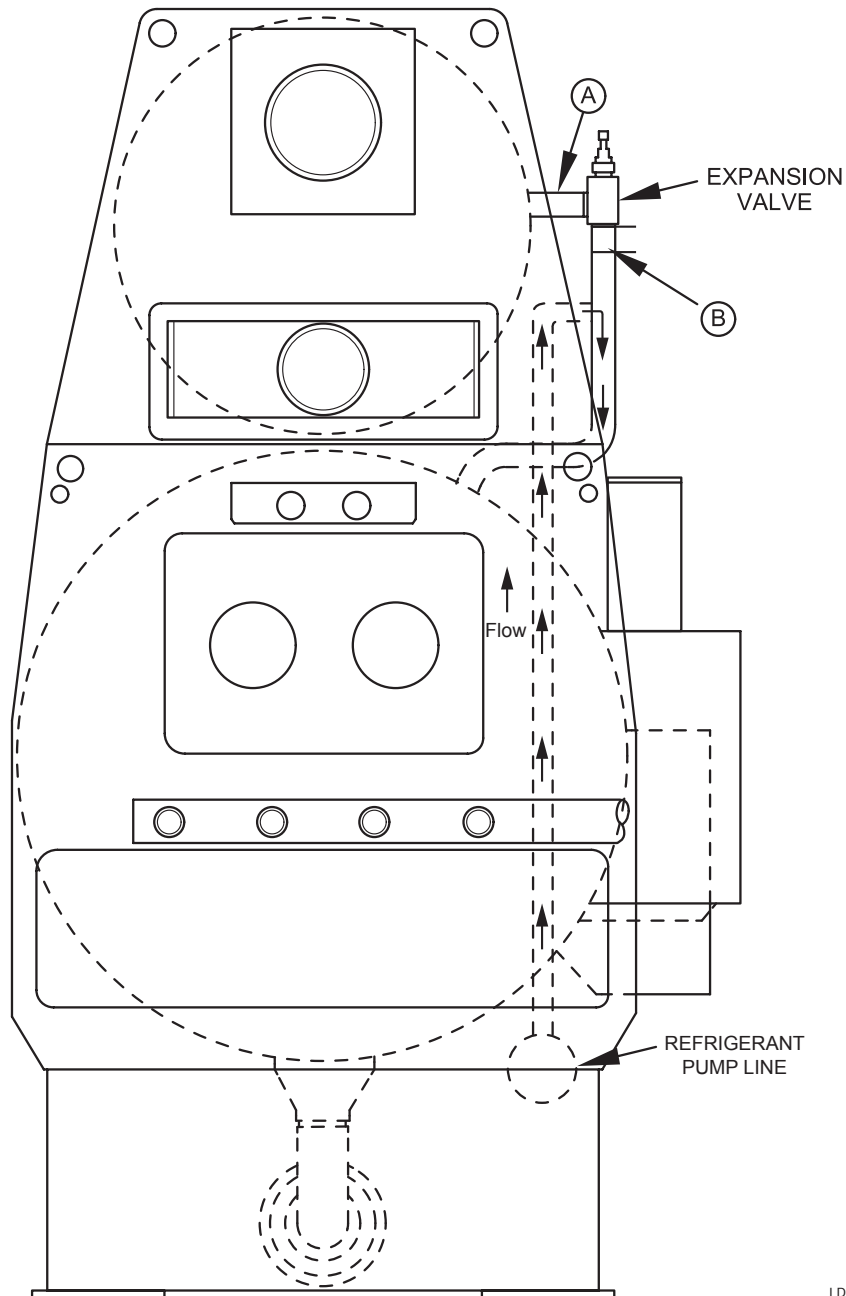
Work on this equipment should only be done by properly trained personnel who are qualified to work on this type of equipment. Failure to comply with this requirement could expose the worker, the equipment and the building and its inhabitants to the risk of injury or property damage.

The instructions on this service bulletin are written assuming the individual who will perform this work is a fully trained HVAC & R journeyman or equivalent, certified in refrigerant handling and recovery techniques, and knowledgeable with regard to electrical lock out/tag out procedures. The individual performing this work should be aware of and comply with all Johnson Controls, national, state and local safety and environmental regulations while carrying out this work. Before attempting to work on any equipment, the individual should be thoroughly familiar with the equipment by reading and understanding the associated service literature applicable to the equipment. If you do not have this literature, you may obtain it by contacting a Johnson Controls Service Office.

Should there be any question concerning any aspect of the tasks outlined in this bulletin, please consult a Johnson Controls Service Office prior to attempting the work. Please be aware that this information may be time sensitive and that Johnson Controls reserves the right to revise this information at any time. Be certain you are working with the latest information.



The valves used for the expansion device are the "new style" globe valves found on the YPC products. All information for these valves including repair and spare parts can be found in Service Information letter SI0010.



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FIGURE 1 - WHERE TO MEASURE REFRIGERANT DELTA T

TABLE 1 - SOLUTION & REFRIGERANT CHARGE FOR MIX-MATCH UNIT

MIX-MATCH UNIT	REFRIGERANT CHARGE LBS (KG)					SOLUTION CHARGE LBS (KG)					ALCOHOL	
	CHARGE SHIPPED		UNIT CHARGE			CHARGE SHIPPED		UNIT CHARGE				
	DRUMS	LBS	GALS	LITERS	LBS	DRUMS	LBS	GALS	LITERS	LBS	QTS	LITERS
ONE LARGER SHELL												
2A3-2B1	1	458 (207)	51	193	425 (192)	5	1,988 (901)	131	496	1,755 (796)	1.5	1.4
2A4-3B2	2	917 (415)	61	230	508 (230)	6	2,385 (1081)	156	590	2,090 (948)	1.5	1.4
3B2-4C1	2	917 (415)	86	327	717 (325)	8	3,180 (1442)	222	839	2,975 (1349)	2	1.9
3B3-5C2	2	917 (415)	95	359	792 (359)	9	3,578 (1622)	243	921	3,256 (1476)	2	1.9
4B4-5C3	2	917 (415)	106	402	883 (400)	10	3,975 (1803)	273	1033	3,658 (1659)	2	1.9
5C2-7D1	3	1,375 (623)	113	428	942 (427)	10	3,975 (1803)	290	1099	3,886 (1762)	3	2.8
5C3-7D2	3	1,375 (623)	124	471	1,033 (468)	11	4,373 (1983)	319	1209	4,275 (1939)	3	2.8
6C4-8D3	3	1,375 (623)	142	539	1,183 (536)	13	5,168 (2344)	366	1384	4,904 (2224)	3	2.8
7D2-8E1	4	1,833 (831)	177	670	1,475 (669)	16	6,360 (2884)	454	1720	6,084 (2759)	4	3.7
8D3-9E2	4	1,833 (831)	197	745	1,642 (744)	17	6,758 (3065)	505	1913	6,767 (3069)	4	3.7
9E2-12F1	6	2,750 (1247)	283	1070	2,359 (1070)	25	9,938 (4507)	726	2748	9,728 (4412)	5	4.7
10E3-13F2	6	2,750 (1247)	300	1136	2,500 (1133)	26	10,336 (4688)	770	2916	10,318 (4680)	5	4.7
TWO LARGER SHELLS												
2A4-4C1	2	917 (415)	70	264	583 (264)	6	4,422 (2005)	179	678	2,399 (1088)	1.5	1.4
3B3-7D1	2	917 (415)	98	370	817 (370)	9	6,633 (3008)	251	951	3,363 (1525)	2	1.9
4B4-7D2	2	1,375 (623)	110	415	917 (415)	10	7,370 (3342)	282	1066	3,779 (1714)	2	1.9
5C3-8E1	3	1,375 (623)	142	539	1,183 (536)	13	9,581 (4345)	365	1383	4,891 (2218)	3	2.8
6C4-9E2	3	1,375 (623)	163	616	1,358 (615)	14	10,318 (4680)	418	1580	5,601 (2540)	3	2.8
8D3-12F1	5	2,292 (1039)	224	849	1,867 (846)	20	14,740 (6685)	576	2179	7,718 (3500)	4	3.7

Notes:

1. Solution drums are 30 gallon (114 liter) capacity.
2. Refrigerant drums are 55 gallon (208 liter) capacity.
3. The unit charge given in the table is typical only at unit start-up. Final trimming of solution and refrigerant may require more or less from the start-up amount.
4. Solution quantities are based on ADVAGuard750 @ 53% base concentration weight.
5. 1 gallon of water = 8.334 lbs. (3 kg.)
6. 1 gallon of solution = 13.40 lbs. (6 kg.)

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