

DEALER SERVICE BULLETIN

Number: DSB11-0043

Date: 12/12/11 **Supersedes:** New

Title: 30RB/XA Microchannel Heat Exchanger (MCHX) Refrigerant Charge Changes

MODEL CATEGORY: Chillers (30 Series)

MODELS AFFECTED:

Carrier: 30RB, 30XA

Serial Number(s): 3407Qnnnnn through 4210Qnnnnn (30RB)
2406Qnnnnn through 4210Qnnnnn (30XA)

SITUATION:

Several improvements have been made to the MCHX coils. As a result of these changes, the coil part numbers and circuit refrigerant charge amounts also changed.

Style	Old		New	
	Part Number	RCD Replacement Kit	Part Number	RCD Replacement Kit
Standard	00PPG000450800A	30RB660013	00PPN000473501A	30RB660054
E-Coat	00PPG000450800AC	30RB660013E	00PPN000473501AC	30RB660055

The tables below indicate the correct factory charge amounts for all MCHX units produced prior to 4310Q. The nameplate charge may differ from the values listed below.

Table 1 - 30RB Refrigerant Charge

Unit	Prior S/N 4310Qnnnnn			Starting S/N 4310Qnnnnn			Charge Delta per MCHX Coil
	Circuit			Circuit			
	A	B	C	A	B	C	
30RB_060	43	21	-	40	20	-	1.0
30RB_070	43	21	-	40	20	-	1.0
30RB_080	34	36	-	33	33	-	1.0
30RB_090	42	43	-	40	40	-	1.0
30RB_100	42	43	-	40	42	-	1.0
30RB_110	42	56	-	40	53	-	1.0
30RB_120	42	61	-	43	57	-	1.0
30RB_130	58	47	-	54	43	-	1.0
30RB_150	60	66	-	56	62	-	1.0
30RB_160	86	59	-	83	55	-	1.0
30RB_170	86	68	-	83	64	-	1.0
30RB_190	93	93	-	83	87	-	1.0
30RB_210	63	57	68	59	53	64	1.0
30RB_225	63	63	68	59	59	64	1.0
30RB_250	63	63	95	59	59	89	1.0
30RB_275	86	93	72	83	87	68	1.0
30RB_300	86	93	100	83	87	94	1.0
30RB_31A	86	59	-	83	55	-	1.0

Unit	Prior S/N 4310Qnnnnn			Starting S/N 4310Qnnnnn			Charge Delta per MCHX Coil
	Circuit			Circuit			
	A	B	C	A	B	C	
30RB_31B	86	59	-	83	55	-	1.0
30RB_33A	86	68	-	83	64	-	1.0
30RB_33B	86	59	-	83	55	-	1.0
30RB_34A	86	68	-	83	64	-	1.0
30RB_34B	86	68	-	83	64	-	1.0
30RB_36A	93	93	-	83	87	-	1.0
30RB_36B	86	68	-	83	64	-	1.0
30RB_39A	93	93	-	83	87	-	1.0
30RB_39B	93	93	-	83	87	-	1.0

Table 2 - 30XA Refrigerant Charge

Unit	Prior S/N 4310Qnnnnn			Starting S/N 4310Qnnnnn			Charge Delta per MCHX Coil
	Circuit			Circuit			
	A	B	C	A	B	C	
30XA_080	98	98	-	93	93	-	1.5
30XA_090	94	94	-	88	88	-	1.5
30XA_100	96	96	-	90	90	-	1.5
30XA_110	100	96	-	94	90	-	1.5
30XA_120	100	100	-	94	94	-	1.5
30XA_140	137	86	-	128	90	-	1.5
30XA_160	135	100	-	126	94	-	1.5
30XA_180	141	141	-	132	132	-	1.5
30XA_200	161	161	-	152	152	-	1.5
30XA_220	170	161	-	160	152	-	1.5
30XA_240	170	168	-	160	159	-	1.5
30XA_260	247	165	-	234	156	-	1.5
30XA_280	240	170	-	227	160	-	1.5
30XA_300	245	170	-	230	161	-	1.5
30XA_325	240	240	-	226	226	-	1.5
30XA_350	245	240	-	232	226	-	1.5
30XA_400	170	170	215	161	161	203	1.5
30XA_450	236	170	227	224	161	215	1.5
30XA_500	243	177	227	231	168	215	1.5

SOLUTION:

If a coil is replaced on a unit with MCHX coils and a serial number prior to 4310Q, a refrigerant charge adjustment is required. The nameplate charge will be too much and may result in high head trips.

In each of the tables listed above, there is a charge amount listed for the charge difference per coil. This number and the number of coils to be replaced are required to determine the new charge amount with the following formula:

$$\text{New Charge Amount} = \text{Old Charge Amount} - (\text{Charge Delta per MCHX Coil} \times \text{Number of MCHX Coils Changed})$$

In the following example, a 30RBA100 unit (S/N: 4209Q) one circuit A coil is being changed. The original charge for circuit A is 42 lbs. According to the chart, the Charge Delta per MCHX Coil is 1.0 lbs. To determine the new circuit charge amount, use the formula above.

New Charge Amount = Old Charge Amount – (Charge Delta per MCHX Coil x Number of MCHX Coils Changed)

New Charge Amount = 42 lbs – [(1.0 lb/MCHX Coil) x (1 MCHX Coil Changed)]

New Charge Amount = 42 lbs – 1.0 lb

New Charge Amount = 41 lbs

Note: Units that operate with brine conditions, Leaving Water Temperature less than 40 °F, may not be operating with the nameplate charge. All refrigerant charge amounts shown are for standard duty only. The same principle applies for a brine machine, but the starting charge amount may be different. Follow the charging guidelines in the Controls & Troubleshooting book for additional information.

Factory Action:

New coils with lower charge requirements began production 4310Qnnnnn.

Field Action:

If a coil is replaced, the charge must be adjusted. Use the information listed above for charge amounts.

Parts/Kits:

RCD is currently shipping the new style coil for all replacements.

Warning: Do not perform any of the servicing instructions provided in this Service Bulletin unless you are a trained and qualified technician. Observe all precautions in the instructions, equipment tags, labels and observe all other safety precautions that may apply. Failure to follow this warning could result in property damage, personal injury or death.