

METROPOLITAN NY CHAPTER Refrigeration Service Engineers Society

Continuing Education for the HVAC/R Industry

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May 2017

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Charging Non-TXV Split System Air Conditioning Systems

There are several methods which can be used to properly charge a residential split system air conditioner with a fixed-orifice metering device. One method suggested by some manufacturers is to measure the amount of superheat at the inlet of the condensing unit. This method is commonly referred to as the "superheat method." The correct system superheat value for this type of system is not constant and changes based on two factors. The manufacturer will typically supply a chart such as the one shown below for a technician to determine the proper amount of superheat for the system.

The two factors that will influence this superheat value are the wet-bulb temperature entering the evaporator and the dry-bulb temperature entering the outdoor condenser. Once these two values are known, using a chart like the one below, the correct superheat value can be determined.

To properly charge a system, add or remove refrigerant until the actual superheat value is within $\pm 5^{\circ}\text{F}$ of the value obtained from the chart below. If the actual superheat value is higher than what is stated by the chart, add refrigerant to the system. If the actual superheat value is lower than what is stated on the chart, remove refrigerant.



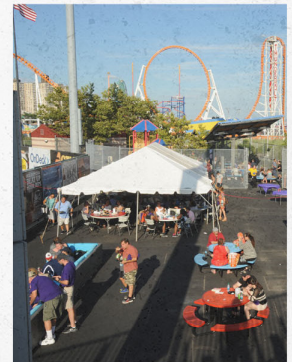
Required Superheat Values for Non-TXV Split System Air Conditioning System

		Condenser Entering Air DB												
Indoor Entering Air WB		55	60	65	70	75	80	85	90	95	100	105	110	115
	50	9	7	---	---	---	---	---	---	---	---	---	---	---
	52	12	10	6	---	---	---	---	---	---	---	---	---	---
	54	14	12	10	7	---	---	---	---	---	---	---	---	---
	56	17	15	13	10	6	---	---	---	---	---	---	---	---
	58	20	18	16	13	9	5	---	---	---	---	---	---	---
	60	23	21	19	16	12	8	---	---	---	---	---	---	---
	62	26	24	21	19	15	12	8	5	---	---	---	---	---
	64	29	27	24	21	18	15	11	9	6	---	---	---	---
	66	32	30	27	24	21	18	15	13	10	8	5	---	---
	68	35	33	30	27	24	21	19	16	14	12	9	6	---
	70	37	35	33	30	28	25	22	20	18	15	13	11	8
	72	40	38	36	33	31	28	26	24	22	20	17	15	14
	74	42	40	38	36	34	31	30	27	25	23	22	20	17
	76	45	43	41	39	37	35	33	31	29	27	26	25	23

Superheat value should be with $\pm 5^{\circ}\text{F}$ for a properly charged system.

If the actual superheat value is higher, add refrigerant; If the actual superheat value is lower, remove refrigerant

To prevent slugging do not attempt to adjust charge at conditions in the table that are indicated with a dash (---).



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Congratulations to Lester Sinnette for getting the correct answer to the Troubleshooting Challenge in the February issue of RSES Journal

The Metro NY RSES Chapter Officers and Board members wish you all a Successful and Safe Spring & Summer Season.

We look forward to seeing you in September **SAFE & HEALTHY** for another informative series of Educational Programs.

In the unlikely event of scheduled meeting cancellations, announcement will be posted on our web site

Wednesday May 10th, 2017 at 7:30 pm

at

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21-01 24th Avenue, Astoria NY 11102

TroubleShooting Tips & Tricks

Bring your Troubleshooting Problems

By

Rich Bruno

PRESIDENT'S MESSAGE

You will be receiving your RSES dues renewal notice shortly. In order to insure your uninterrupted membership please pay it as soon as possible. The chapter portion of the dues has not increased in several years, and this is partly due to revenues from the seminars we present. Your support of these seminars enables us to keep the chapter dues from increasing.

This month's meeting notice contains a section on the benefits you enjoy as a member of RSES (next page). Read them over. Perhaps there are some you never realized you had. In addition to these there is the benefit of our monthly Chapter meetings. Our chapter meetings are devoted to educating you the technician. You also have the opportunity to attend seminars at a reduced rate. Our May meeting is the last before breaking for the summer. I, along with the Board of Directors, wish you a Safe and Prosperous Summer.

RSES MEMBERSHIP BENEFITS

RSES member benefits go beyond training and education, however. Members qualify for special discounts on all of RSES training and educational materials, International Seminars and the RSES Annual Conference. They also receive:

A subscription to the **RSES Journal** the premiere industry monthly magazine.

Access to the entire contents of the **Service Application Manual** online.

Networking Opportunities Chapter meetings, State and Regional conferences provide members the opportunity to network with peers and build valuable personal and professional relationships within the HVACR industry.

NATE - North American Technician Excellence has recognized many RSES training courses and events. Technicians who successfully complete one or more of these instructor-led courses, or approved events, will receive credit toward renewing their NATE certification.

RSES Technical Institute is a comprehensive course of study designed to help members who desire to attain the highest levels of technical competency within the HVACR industry. Upon joining RSES, student members are inducted as Student (Student Technician) and individual members are inducted as a Level 1 (Technician). Individual members have the opportunity to advance levels through course participation or by passing required exams. On-line study courses are also available.

Certificate Member, Certificate Member Specialist and Specialized Member are classifications of RSES membership exclusive to RSES members (with the exception of student members). This status signifies to customers, employers and the entire HVACR industry your knowledge and commitment to excellence and improvement.

RSES OnLine Career Center – <http://jobs.rses.org> – A resume and job posting hub where employers with job openings can connect with technicians seeking new employment.

RSES Partners in Education - Entry into this members-only section of the RSES website features exclusive access to the section highlighting technical data from a number of original equipment manufacturers.

RSES Journal Archives: This members-only section of the RSES website features exclusive access to the highlighting features and technical articles since December 1995. **Topics include tips on servicing, maintaining and troubleshooting commercial and residential HVACR equipment.**

The MSAC Hotline, Manufacturers Service Advisory Council, is an exclusive feature of RSES Journal. MSAC is comprised of longtime industry experts who answer technical questions submitted by readers. Members enjoy free access to this benefit in the magazine and online.

Group Insurance Programs: Various insurance programs are available to RSES members, including group term life, long-term care, hospital income insurance, cancer protection – and others.

Advertising Solutions - A Jobsite Radius **Direct Mail Program** from Radius Connection will help micro-target specific geographic areas. Keep your name and consistent marketing message in front of customers and prospects with this direct mail program.

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Discounts on car rentals and hotel/motel rooms.

Participating Jiffy Lube Inc. locations extend a 10% discount to RSES members.

and.....WELCOME ABOARD.