

METROPOLITAN NY CHAPTER Refrigeration Service Engineers Society

Continued Education for the HVAC/R Industry

“Better Service Through Knowledge”

May 2012

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The Importance of Continued Education

The heating, air conditioning and refrigeration industry has a multitude of technologies working together to make each system function. A technician newly graduated from a voc-tech school, or a technician with a few years of experience, could not be expected to know all the different technologies he/she will encounter.

Even a service tech with many years of experience needs to refine his/her skills and continue to master these technologies. The importance of continued education cannot be over emphasized. A good service technician knows this and strives to keep learning. Any service technician who is serious about this field will always look for ways to learn more and refine his/her skills.

Knowledge is the best tool any service technician can carry with him/her. And, like any tool, it needs to be worked on to keep it sharp and useful. A dull or poorly maintained tool is of no use to a service technician when he/she needs it most.

The same is true of knowledge. A technician cannot efficiently troubleshoot a system if he/she does not understand all the technologies working within a system. A technician should never become complacent and believe he/she has learned all that can be learned.

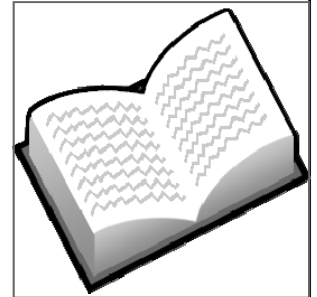
With all the various and rapidly changing technologies in our field, it is truly an enormous task to master them all.

There are numerous ways for a technician to continue his/her education:

- 1) *Join a trade organization.* Many organizations offer educational material for the technician to study and review. Others offer evening classes, and many even offer seminars on a variety of topics pertinent to the trade.
- 2) *Contact equipment manufacturers.* Many manufacturers offer in-depth training seminars on the equipment they manufacture. These seminars, which usually are offered through local wholesalers or distributors, are an excellent source of information for the technician. Many have mailing lists which a technician or service company can join to be notified of new information or any upcoming seminars.
- 3) *Read technical articles published in trade magazines.*

These magazines contain an abundance of technical information, and it is wise for a technician to subscribe to as many magazines and publications as possible. Many publications highlight a specific topic in each issue and fill the magazine with excellent technical information on that topic.

- 4) *Attend a local college that offers evening courses on heating, air conditioning, refrigeration and related technologies.* These courses tend to contain basic information, but a technician just starting out in the field may find it a useful way to strengthen his/her knowledge base.



Given all the opportunities available for a service technician to refine his or her skills, there should be no excuse not to take advantage of them. Knowledge is truly powerful and a good technician should strive to continue to learn.

Refrigeration Cylinders

Technicians regularly handle various types of refrigerant cylinders. These cylinders can cause injury to a technician if mishandled, so keep these safety guidelines in mind:

- Use only DOT approved cylinders for the recovery or storage of refrigerants from a system.
- Do not overfill refillable refrigerant cylinders to more than 80% of their internal volume.
- Disposable cylinders are not reusable. They should not be refilled or used for any other purpose
- Disposable cylinders must be transported in their original cartons.
- Always transport refrigerant cylinders in an upright and secured position to prevent movement during transportation.
- If the cylinder looks damaged, do not use it. Any dents, signs of rusting or gouges may indicate an unsafe condition.
- Do not warm refrigerant cylinders above a temperature of 130°F.

SIZING GUIDE FOR WALK-IN COOLERS AND FREEZERS

*Heavy usage is defined as two times the average air change. Average air changes determined by ASHRAE based on box size for 24 hour period.

Box Dimensions (Ft.)	Floor Sq. Ft.	BtuH Load*									
		+35 Room Usage Average Heavy	+30 Room Usage Average Heavy	0 Room Usage Average Heavy	-10 Room Usage Average Heavy	-20 Room Usage Average Heavy					
6 x 6 x 8		4750	6389	4488	6037	4583	6505	4929	7041	5274	7577
6 x 8 x 8		5417	7274	5119	6974	5225	7407	5630	8028	6034	8648
6 x 10 x 8	60	6055	8100	5722	7655	5806	8213	6265	8911	6725	9609
8 x 8 x 8	64	6188	8291	5848	7835	5934	8410	6405	9127	6876	9844
8 x 10 x 8	80	6954	9269	6572	8759	6631	9363	7165	10169	7699	10974
8 x 12 x 8	96	7669	10174	7247	9614	7273	10234	7867	11123	8461	12011
8 x 14 x 8	112	8366	11045	7905	10437	7922	11092	8575	12059	9227	13026
8 x 16 x 8	128	9051	11888	8553	11234	8528	11890	9237	12933	9946	13976
8 x 18 x 8	144	9748	12732	9212	12032	9169	12732	9936	13852	10702	14972
8 x 20 x 8	160	10419	13548	9846	12803	9755	13490	10576	14682	11397	15874
8 x 22 x 8	176	11540	14807	10905	13992	10817	14715	11692	15977	12567	17239
8 x 24 x 8	192	12224	15622	11552	14763	11386	15439	12314	16769	13242	18099
8 x 26 x 8	208	12874	16398	12166	15496	11976	16176	12955	17573	13935	18970
8 x 28 x 8	224	13519	17163	12775	16219	12530	16873	13562	18336	14594	19799
8 x 30 x 8	240	14187	17947	13407	16960	13108	17587	14191	19115	15274	20642
8 x 32 x 8	256	14824	18694	14009	17666	13653	18264	14786	19855	15920	21446
10 x 10 x 8	100	7789	10339	7361	9770	7386	10401	7990	11304	8594	12208
10 x 12 x 8	120	8626	11385	8152	10759	8138	11405	8809	12401	9481	13397
10 x 14 x 8	140	9439	12384	8920	11703	8887	12405	9626	13493	10365	14581
10 x 16 x 8	160	10250	13379	9686	12643	9577	13311	10379	14484	11182	15658
10 x 18 x 8	180	11049	14349	10441	13560	10279	14216	11144	15472	12009	16728
10 x 20 x 8	200	11838	15299	11187	14458	10942	15070	11868	16405	12794	17741
10 x 24 x 8	240	13391	17180	12654	16207	12751	17231	13796	18721	14842	20211
10 x 28 x 8	280	14891	18922	14072	17881	14043	18844	15205	20482	16367	22120
12 x 12 x 8	144	10038	13021	9486	12305	8991	12553	9739	13655	10486	14756
12 x 14 x 8	168	10956	14155	10353	13376	10235	14052	11055	15251	11875	16450
12 x 16 x 8	192	11886	15284	11232	14443	11029	15082	11919	16375	12810	17667
12 x 18 x 8	216	12775	16359	12072	15459	11807	16080	12767	17464	13726	18847
12 x 20 x 8	240	13681	17440	12928	16481	12573	17052	13599	18524	14626	19995
12 x 22 x 8	264	14549	18474	13749	17458	13299	17974	14392	19541	15485	21088
14 x 14 x 8	196	11993	15423	11333	14575	11126	15216	12024	16521	12923	17826
14 x 16 x 8	224	13013	16656	12297	15740	11995	16338	12971	17745	13946	19152
14 x 20 x 8	280	15011	19042	14185	17795	13687	18487	14811	20088	15935	21688
14 x 24 x 8	336	16969	21347	16036	21073	15330	20539	16598	22324	17866	24110
16 x 16 x 8	256	14148	18019	13370	17028	12939	17550	13998	19067	15056	20583
16 x 20 x 8	320	16349	20631	15450	19496	14777	19873	15996	21598	17215	23323
16 x 24 x 8	374	18506	23157	17488	21883	16563	22093	17938	24017	19313	25941
18 x 18 x 8	324	16476	20782	15570	19639	14864	19989	16090	21724	17317	23460
18 x 20 x 8	360	18128	22644	17131	21398	16305	21678	17617	23523	18930	25369
18 x 24 x 8	432	20484	25389	19357	23993	18260	24090	19739	26149	21219	28208
20 x 20 x 8	400	19470	24145	18340	22817	17386	23019	18790	24982	20194	26945
20 x 24 x 8	480	21988	27132	20779	25640	19453	25566	21036	27755	22619	29945
20 x 28 x 8	560	24963	30480	23590	28804	21963	28514	23721	30922	25479	33330
20 x 32 x 8	640	27480	33340	25969	31506	23954	30909	25884	33529	27813	36149
20 x 36 x 8	720	29946	36127	28299	34140	25919	32251	28017	36077	30115	38903
20 x 40 x 8	800	32420	38904	30637	36764	27888	35575	30153	38603	32518	41631
24 x 40 x 8	960	38694	45735	36565	43878	34681	43023	37368	46538	39939	49937
28 x 40 x 8	1120	43183	50733	40808	48970	38123	47062	41095	50921	43950	54664
32 x 40 x 8	1280	48550	56318	45880	55056	42894	51900	46146	56580	49282	60656
36 x 40 x 8	1440	54344	62804	51355	61626	46254	56259	49872	60781	53194	65186
40 x 40 x 8	1600	58738	67611	55507	66608	49583	60073	53385	64916	57070	69642

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*Your Chapter Officers and Board members wish you all a
successful and safe summer season.*

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

Wednesday May 9th, 2012 at 7:30pm

at

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*What HVAC Technicians Can do to Recognize Issues and Avoid Problems with
Indoor Air Quality.*

We Will Also Touch on the Proliferation of Plate Frame Heat Exchangers.

by

Tony DeVito - CSI (Chemical Specifics, Inc.)

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