## Accepted Manuscript

Title: Generalized effects of refrigerant charge on normalized performance variables of air conditioners and heat pumps

Author: Mehdi Mehrabi, David Yuill

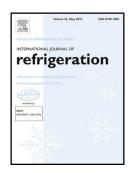
PII: S0140-7007(17)30066-X

DOI: http://dx.doi.org/doi: 10.1016/j.ijrefrig.2017.02.014

Reference: JIJR 3558

To appear in: International Journal of Refrigeration

Received date: 22-11-2016 Revised date: 23-1-2017 Accepted date: 13-2-2017



Please cite this article as: Mehdi Mehrabi, David Yuill, Generalized effects of refrigerant charge on normalized performance variables of air conditioners and heat pumps, *International Journal of Refrigeration* (2017), http://dx.doi.org/doi: 10.1016/j.ijrefrig.2017.02.014.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Generalized effects of refrigerant charge on normalized performance variables of air conditioners and heat pumps

Mehdi Mehrabi\*, David Yuill

University Of Nebraska-Lincoln, Architectural Engineering, Omaha, NE 68182, US mmehrabi@unomaha.edu

\* Corresponding Author

**HIGHLIGHTS** 

Detailed response to reviewers is provided

The manuscript is modified addressing the reviewers' comments. The details of

modification are described in the detailed response to reviewers.

Some other minor editorial issues are also modified in the current revision of the paper,

which is described in the detailed response to reviewers.

**ABSTRACT:** 

Several laboratory experiments have studied the effect of faults on vapor compression cycle air-

conditioning systems. There has been a particular focus on refrigerant charge variation, which is believed

to be quite common in air conditioners. The current paper summarizes the effects on several normalized

performance variables for all of the results available in the literature for refrigerant charge variation, and

provides generalized relationships. The generalizations were developed for operation at ANSI/AHRI

210/240 standard test conditions and are provided separately for fixed orifice and thermostatic expansion

valve equipped systems in both cooling and heating mode. The level of variation found in the summary

shows that for many applications, it is reasonable to the use generalized relationships to estimate the

effect of faults on systems that have not been tested in a laboratory.

Keywords: Air conditioner; Heat pump; Refrigerant charge; Fault; Generalized effect

1

## Download English Version:

## https://daneshyari.com/en/article/5017136

Download Persian Version:

https://daneshyari.com/article/5017136

<u>Daneshyari.com</u>