



# HOSHIZAKI AMERICA, INC.

## SERVICE BULLETIN

**SB09-0008**

July 20, 2009

Page 1 of 3

### **Subject: Standard R-404A Remote Systems, Lines & Refrigerant Charge.**

(Note: Serenity KMS and FS Models will be covered under a separate bulletin)

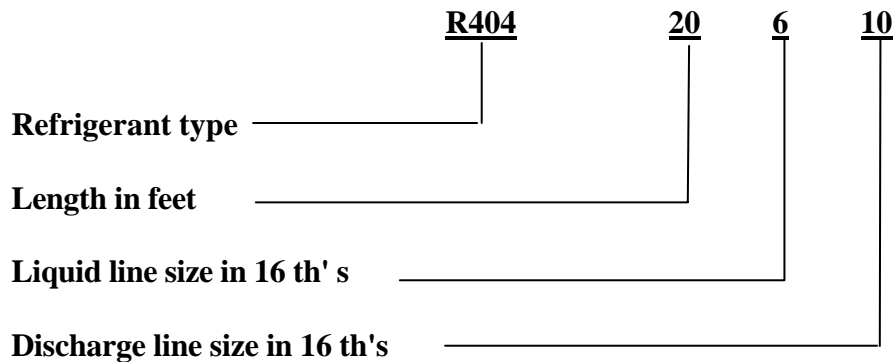
This bulletin is an update to service bulletin SB09-0018. This bulletin includes line set and condenser applications for newer Hoshizaki units.

**\*\*All new remote installations should include a new condenser and line set. The use of existing condensers is not recommended/allowed as they may not provide for optimum performance and could affect the refrigeration system warranty coverage.**

Listed below are the current pre-charged line-sets available for R-404A refrigerant applications.

R404-2046-2	R404-2068-2	R404-20610
R404-3546-2	R404-3568-2	R404-35610
R404-5568-2	R404-55610	

To identify the line-sets, use this code.



## Line set application chart:

Model number	Pre Charged Line Sets	Condenser Model	Liquid line size "OD ~ 16 th's	Discharge line size "OD ~ 16 th's
<b>KM-461MRH</b> <b>KM-515MRH</b> <b>KM-650MRH</b>	R404-2046-2 R404-3546-2	URC-5F	1/4" ~ <u>4</u> /16"	3/8" ~ <u>6</u> /16"
<b>KM-500MRH</b> <b>KM-501MRH</b> <b>F-1001MRH/ (-C)</b>	R404-2046-2 R404-3546-2	URC-6F	1/4" ~ <u>4</u> /16"	3/8" ~ <u>6</u> /16"
<b>KML-600MRH</b>	R404-2046-2 R404-3546-2	URC-7F	1/4" ~ <u>4</u> /16"	3/8" ~ <u>6</u> /16"
<b>KM-901MRH</b> <b>KML-631MRH</b> <b>KMD-901MRH</b>	R404-2068-2 R404-3568-2 R404-5568-2	URC-9F	3/8" ~ <u>6</u> /16"	1/2" ~ <u>8</u> /16"
<b>KM-900MRH/(3)</b> <b>KM-1300MRH/(3)</b> <b>KM-1300SRH/(3)</b> <b>KMD-900MRH</b> <b>KMD-700MRH</b> <b>F-1500MRH/ (-C)</b>	R404-2068-2 R404-3568-2 R404-5568-2	URC-12F	3/8" ~ <u>6</u> /16"	1/2" ~ <u>8</u> /16"
<b>KM-1340MRH</b> <b>KM-1301SRH/(3)</b>	R404-2068-2 R404-3568-2 R404-5568-2	URC-14F	3/8" ~ <u>6</u> /16"	1/2" ~ <u>8</u> /16"
<b>KM-1600MRH/(3)</b> <b>KM-1600SRH/(3)</b> <b>KM-2000SRH/(3)</b> <b>KM-1800SRH/(3)</b> <b>F-2000MRH/(3)/(-C)</b>	R404-20610 R404-35610 R404-55610	URC-20F	3/8" ~ <u>6</u> /16"	5/8" ~ <u>10</u> /16"
<b>KM-1601MRH/(3)</b> <b>KM-1601SRH/(3)</b> <b>KM-1900SRH/(3)</b>	R404-20610 R404-35610 R404-55610	URC-21F	3/8" ~ <u>6</u> /16"	5/8" ~ <u>10</u> /16"
<b>KM-2500SRH/(3)</b>	R404-20610 R404-35610 R404-55610	URC-23F	3/8" ~ <u>6</u> /16"	5/8" ~ <u>10</u> /16"
<b>KM-2400SRH/(3)</b>	R404-20610 R404-35610 R404-55610	URC-24F	3/8" ~ <u>6</u> /16"	5/8" ~ <u>10</u> /16"

Hoshizaki recommends that excess line length or extra loops should be removed prior to making connections to the unit and condenser. Follow normal refrigeration practices to evacuate the line-set holding charge, cut out the excess loops, re-solder the tubing, leak check, and charge with R-404A refrigerant gas pressure of 15-30 psig. Once completed, make your connections to the condenser and unit. This will eliminate the possibility of oil traps and line kinks in the line-set and make for a more professional looking installation. Note: Always follow the instructions for tightening the connectors that are provided with the line set. (See SB-0004R)

A universal line-set adapter kit, part number OS-QUICK is available if you need to field-fabricate a line-set. Both lines should be insulated separately for the entire length of the run. Follow the instructions provided in the technician's pocket guide to field-fabricate or shorten/lengthen a line set. As always, the installer should use good refrigerant piping practices to assure proper operation. A single small service half loop is recommended for the line-set at the rear of the ice machine head to allow for the unit to be pulled away from the wall if necessary.

All R-404A remote systems have maximum limitations on line-set length. These limitations are highlighted in the technician's pocket guide and in the installation instructions provided with the unit. The maximum line-set length from connector to connector is 100 ft. The maximum lift from the unit up to the condenser is 33 ft. The maximum drop from the unit down to the condenser is 10 ft. The maximum length with the existing refrigerant charge is 66 ft. It should be noted that exceeding these recommended maximum limitations may affect the operation and warranty coverage.

In case of a line set length that exceeds 66 ft.; additional refrigerant must be added to the system. To calculate the amount to be added, multiply the length of additional liquid line over 66 ft. to the 100 ft. maximum by **0.4 oz.** per foot. As an example, a 76-ft. line-set application will require an additional (10 ft. x 0.4 oz.) 4 fl. oz. of R-404A refrigerant. It is recommended to mark the additional refrigerant amount on the unit nameplate with a black marker so that the next technician will know the exact refrigerant charge amount. Note: Units using 1/4" liquid lines and 3/8" discharge the line size should be increased to 3/8" liquid and 1/2" discharge for the entire length of the run. This will also require an additional 16.5 oz of refrigerant plus 0.4 oz per foot over 66 feet.

Following these recommendations will allow you to provide a proper installation of a Hoshizaki remote condenser application using R-404A refrigerant.