Manitowoc®

REFRIGERANT FIELD CONVERSION PROCEDURE

R-502 to R402B (HP81)

Field Kit 76-2559-3

For Models

GR-0150A	GR-0400A	GR-0600A	GR-0800A	GR-1200A	GR-1701W
GD-0152A	GD-0402A	GD-0602A	GD-0802A	GD-1202A	GD-1703W
GR-0151W	GY-0404A	GY-0604A	GY-0804A	GY-1204A	GY-1705W
GD-0153W	GR-0401W	GR-0601W	GR-0801W	GR-1201W	GR-1790N
GR-0200A	GD-0403W	GD-0603W	GD-0803W	GD-1203W	GD-1792N
GD-0202A	GY-0405W	GY-0605W	GY-0805W	GY-1205W	GY-1794N
GY-0204A	GR-0490N	GR-0690N	GR-0890N	GR-1290N	
GR-0201W	GD-0492N	GD-0692N	GD-0892N	GD-1292N	
GD-0203W	GY-0494N	GY-0694N	GY-0894N	GY-1294N	
GY-0205W					

WARNING!

Use only Du Pont SUVA® HP81 as retrofit refrigerant. Other replacement refrigerants may cause poor performance and/or component failure.

EQUIPMENT MODIFICATION REQUIREMENTS	
Component	**Change Required**
Compressor	**None** (No oil change required)
Expansion Valve (TXV)	**None** — see G600 special instructions
High pressure cut-out	**None**
Low pressure cut-out (remotes)	**None**
Fan cycling control (air-cooled)	**None**
All solenoid valves	**None**
Water regulating valve (water-cooled)	**None**
Heat exchanger	**None** — see G1700 special instructions
Electrical wiring	**None**
Branch circuit fuse size	**None**
Air-cooled condenser	**None**
Water-cooled condenser	**None**
Evaporator	**None**

SYSTEM PERFORMANCE AFTER CONVERSION		
	Daily Ice Production	**Energy Efficiency**
G150	Same	Same
G200	5% increase	5% increase
G400	8% increase	5% increase
G600	5% increase	5% increase
G800	10% increase	5% increase
G1200	10% increase	5% increase
G1700	Same	3% increase

- **Operating discharge (high) pressure —** Air-cooled models will run 20-30 psig (138-207 kPa gauge) higher than R-502 pressures published in service manuals. Set water-cooled head pressure same as R-502 settings.
- **Operating suction (low) pressure —** Will run 1-3 psig (7-21 kPa gauge) higher than R-502 pressures published in service manuals.

CONVERSION INSTRUCTIONS

1. Recover R-502 refrigerant from the ice machine in accordance with international, national, state, or local governing laws.
2. Refer to "equipment modificaton requirements" checklist on previous page.
3. Remove and replace liquid line filter drier. Use only Manitowoc approved O.E.M. filter drier. See chart.

   NOTE: *Compressor oil does not require changing.*
4. Evacuate the ice machine.
   IMPORTANT: *Remote models require a 4-point hose hook-up to evacuate properly. Refer to Service Manual or Service Bulletin SB-18-84 for proper evacuation procedure.*
5. Charge ice machine with Du Pont SUVA® HP81 refrigerant. System charge is identical to R-502 charge listed on model/serial number tag.

   NOTE: *Charge with **liquid** only into the high side of the ice machine using weigh-in method or "Dial-A-Charge". Refer to Service Manual or Service Bulletin SB-18-84 for proper charging procedure.*
6. Remove purple R-502 labels from compressor and near service valves. Do not remove model and serial number tags!
7. Attach a SUVA® HP81 conversion label (p/n 81-3442-3) to each of three locations (find labels attached to page 4):

   A. Next to both serial number plates.

   B. Next to the service valves.

   IMPORTANT: *Write service company name and conversion date on each label.*
8. Restart ice machine and verify it operates properly. (Refer to service manual if necessary.) Water-cooled models maintain head pressure at the same R-502 setting — see chart below.

Ice Machine	Filter Drier		Water-Cooled Head Pressure Settings	
	Self-Contained Air & Water Models	Remote Air-Cooled Models	PSIGauge	kPaGauge
G150	89-3022-9	—	225	(1,551)
G200	89-3022-9	—	225	(1,551)
G400	89-3022-9	89-3026-3	240	(1,655)
G600	89-3022-9	89-3026-3	220	(1,517)
G800	89-3026-3	89-3026-3	230	(1,586)
G1200	89-3026-3	89-3026-3	230	(1,586)
G1700	89-3026-3	89-3027-3	220	(1,517)

SPECIAL INSTRUCTIONS

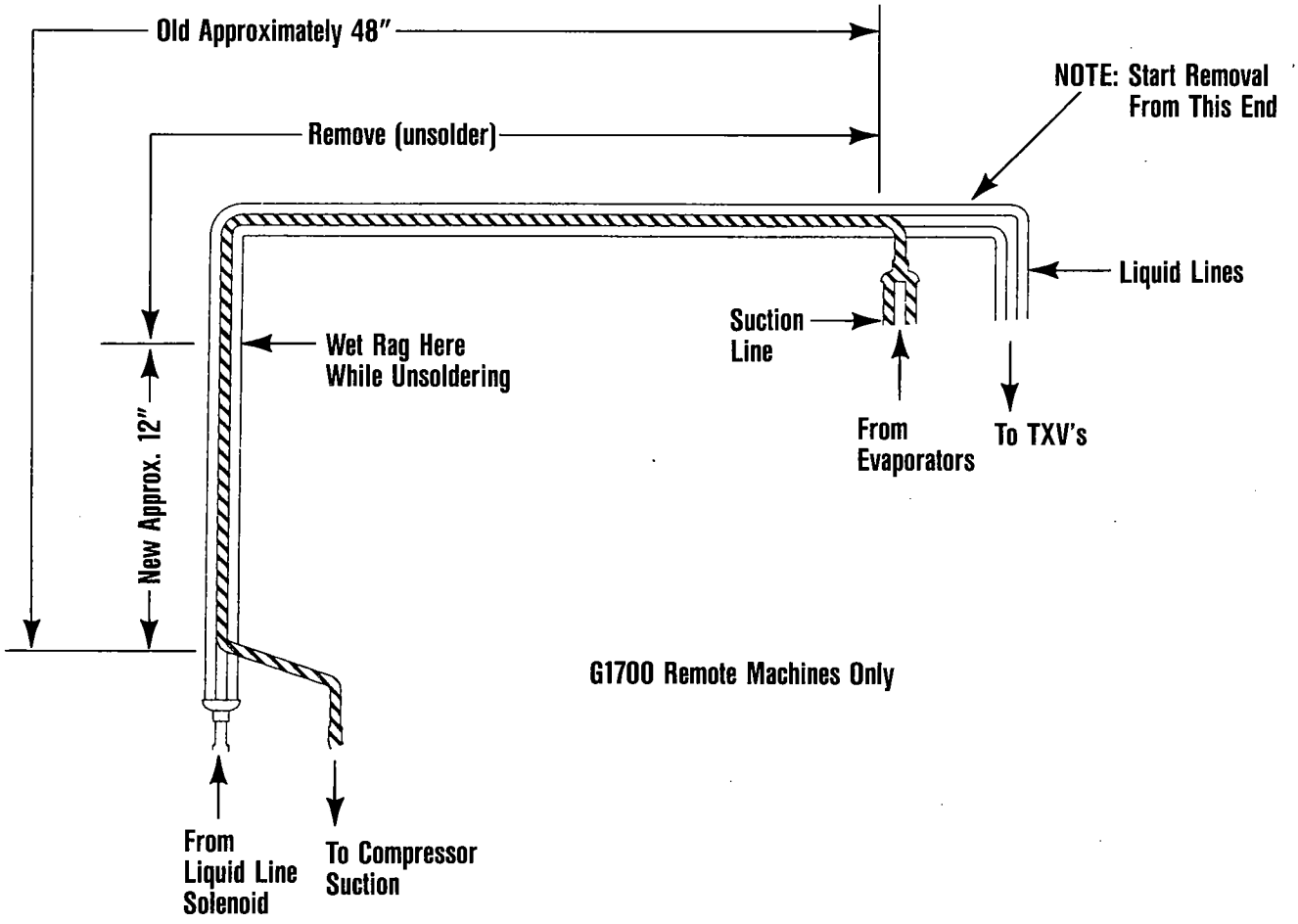
G600 EXPANSION VALVE (TXV) ADJUSTMENT

1. **If valve has a painted head,** remove tubing from TXV outlet (large line).
2. Insert a ¼" Allen wrench into the TXV outlet deep enough to engage adjustment nut.
3. As you look at the valve from the outlet end, rotate the Allen wrench one (1) turn clockwise.
   NOTE: The nut will turn hard.
4. **If valve has a stainless steel head,** it comes from the factory preset and requires **No** adjustment.

G1700 REMOTE MODELS ONLY
HEAT EXCHANGER SHORTENING

The G1700 remote requires shortening of the heat exchanger when converting to SUVA® HP81. The procedure is as follows:

1. Remove the insulation from the suction line liquid heat exchanger assembly. You will see two ¼" O.D. liquid lines soldered to the suction line for approximately 48". You must reduce this soldered length to approximately 12".
2. Reduce solder to 12".
   A. At compressor end, measure from where heat exchanger starts, to approximately 12" and place a wet rag in this location.
   B. Starting at evaporator end, use a pliers and a low flame torch to **carefully** separate the liquid lines from the suction line. Be sure when reaching the 12" point not to go too far.
3. Reinsulate the suction line. Run the removed liquid lines outside of the suction line.



G1700 Remote Machines Only

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Web Site - www.manitowocice.com
P/N 80-0946-3
Issued April, 1993

IMPORTANT

This ice machine is converted to

DuPont Suva® HP81 Refrigerant

in accordance with Manitowoc guidelines.

REFRIGERANT CHARGE

The SUVA®HP81 charge remains the same as R-502 charge specified on the serial plate.

ELECTRICAL/PRESSURE RATINGS

All electrical and pressure ratings listed on serial plate remain the same.

Service Co._____

Month_____ Year_____

Manitowoc Ice Inc. 81-3442-3

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