REFRIGERANT FIELD CONVERSION
PROCEDURE R-12 TO MP39 (R-401A)
FIELD KIT 7626223

FOR MODELS

AR-0100A	A/C/E/HR-0200A	A/C/ER-0400A	
AD-0102A	A/C/E/HD-0202A	A/C/ED-0402A	
AY-0104A	A/C/E/HY-0204A	A/C/EY-0404A	
AR-0101W	A/C/E/HR-0201W	A/C/ER-0401W	ER-0490N
AD-0103W	A/C/E/HD-0203W	A/C/ED-0403W	ED-0492N
AY-0105W	A/C/E/HY-0205W	A/C/EY-0405W	EY-0494N

WARNING!

Use only MP39 as retrofit refrigerant. Other replacement refrigerants may cause poor performance and/or component failure.

EQUIPMENT MODIFICATION REQUIREMENTS

Component	Change Required
Compressor	Change oil in compressor to alkylbenzene
Expansion Valve	A-0100 none; other models change to 8367553
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)	Reset discharge pressure to 135 psig (931 kPa gauge)
Heat Exchanger	None
Electrical Wiring	None
Branch Circuit Fuse Size	None
Air-cooled Condenser	None
Water-cooled Condenser	None
Evaporator	None
Refrigerant Charge	Change to R-401A (amount changes - see chart)

SYSTEM PERFORMANCE AFTER CONVERSION

- **Operating discharge (high) pressure:** air-cooled models will run 5-35 psig (34-241 kPa gauge) higher than R-12 pressures published in service manuals.
- **Operating suction (low) pressure:** will run 1-3 psig (7-21 kPa gauge) higher than R-12 pressure published in service manuals.
- **Daily ice production:** the daily ice production will remain the same as published in service manuals.

CONVERSION INSTRUCTIONS

IMPORTANT: E-0400 remote ice machines require the use of the three-point hookup for recovery and evacuation. Refer to service manual or technician's manual for service procedure.

1. Recover R-12 refrigerant from the ice machine in accordance with local and national governing laws.
2. Replace compressor oil:

   NOTE: If changing compressor and new compressor has alkylbenzene lubricant in it, proceed to step 3.

   A. Remove compressor from ice machine.

   B. Invert compressor so that the oil drains out through large suction port into a measuring bowl.

   C. Record amount of oil removed: _____

   You must remove and replace at least 75% of the original oil charge with new alkylbenzene lubricant.

Compressor Model	Factory Oil Charge Fluid Ounces (Liter)
"J" Series Copeland	18 (.532)
"AE" Series Tecumseh	10 (.296)
"AK" Series Tecumseh	15 (.444)
"R" Series Copeland	20 (.591)

   D. Replace a volume of alkylbenzene lubricant equal to the volume of the oil removed in step 2, "C", above. Pour alkylbenzene oil into the suction port. Use the following viscosity:

Manufacturer	Viscosity Recommended
Tecumseh	150 or 150TD
Copeland	200 TD

WARNING!
Do not add more alkylbenzene lubricant than removed.
An excessive lubricant charge will result in a compressor failure.

E. Reinstall the compressor.

3. Install new expansion valve, 8367553. Failure to install new TXV will result in compressor failure.

   NOTE: A-0100 does not require TXV change.

4. Install new liquid line filter drier. Use only Manitowoc-approved filter drier.
5. Evacuate and then recharge the ice machine with R-401A (MP39) refrigerant. **NOTE:** Weigh-in liquid charge into the high side of the ice machine.

   IMPORTANT: The MP39 charge is less than the R-12 nameplate charge (see table below for MP39 charge):

Nameplate R-12 Charge	**New R-401A Charge**	**Kilograms**
8 oz.	6 oz.	.1688
9 oz.	7 oz.	.1969
10 oz.	7 oz.	.1969
15 oz.	12 oz.	.3375
21 oz.	15 oz.	.4219
22 oz.	15 oz.	.4219
28 oz.	20 oz.	.5625
256 oz. (16 lb.)	192 oz. (12 lb.)	5.4430

6. Remove white R-12 labels from compressor and near service valves. *Do not remove model and serial number tags!*
7. Attach an R-401A (MP39) conversion label, 8134843, attached to back page of this procedure, at each of the following three locations:

   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. Water-cooled models: Reset discharge pressure to 135 psig.

Restart ice machine and verify that it operates properly (refer to service manual, if necessary).

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