38AH,AK,AKS,AQS,ARD,ARQ,ARS,ARZ Gage Panel Accessory 50/60 Hz

Installation Instructions

Part No. 30GA900111

CONTENTS

SAFETY CONSIDERATIONS

Installation, start-up, and servicing of this equipment can be hazardous due to system pressures, electrical components, and equipment location (roofs, elevated structures, etc.).

Only trained, qualified installers and service technicians should install, start up, and service this equipment.

When working on this equipment, observe precautions in the literature and on tags, stickers, and labels attached to the equipment. Obey any other safety precautions that may apply.

⚠ WARNING

Open all remote disconnects before servicing this equipment. Electrical shock could result in personal injury.

GENERAL

This manual provides instruction for field installation of the gage panel accessory package. Read these instructions carefully before proceeding with installation. The gage panel accessory package consists of one suction pressure gage and one discharge gage mounted on a common panel, with a shutoff valve on each gage. Fastener hardware is supplied with the package (see Table 1).

Table 1 — Fastener Hardware

ITEM	QUANTITY	DESCRIPTION
1	2	Screw, 10-24 x 1/2-in. (12.7 mm)
2	4	Washer, Plain No. 10
3	2	Lockwasher, No. 10
4	2	Nut
5	2	Quick Flare Coupling, 1/4 in.
6	2	Coupling Valve Core Depressor Copper Seal*

*Label and store for future use. After installing gage panel, tie seal package around gage panel tubing to save for future use.

See Table 2 for quantity of gage panels required on each unit and mounting and connection locations. Note in Table 2 that certain models also require field-supplied half unions (1/4 in. flare x 1/4 in. MPT).

INSTALLATION

⚠ WARNING

To avoid the possibility of electrical shock, be sure to open and tag all electrical disconnects before installing this accessory.

Step 1 — Examine Package Contents —

Check each item for shipping damage. If damage is found, file claim with shipping agency immediately. Notify your Carrier representative if any item is missing.

Step 2 — Mount Gage Panel in Unit

38AH044-084 STANDARD DUAL-CIRCUIT UNITS (see Fig. 1)

1. If unit is equipped with accessory condenser security grilles, remove the grilles to obtain unobstructed access to the compressors for each circuit.
2. Position the gage panels on the sides of the 2 upright posts (located behind corner posts), adjacent to compressors A1 and B1 with gages facing out. Use the gage panels as templates to mark locations of the screw holes on the upright posts.

NOTE: Be sure to check that the mounted gage panels do not interfere with security grilles accessory (if installed).

3. Drill 2 holes, each 1/4 in. (6.4 mm) in diameter, in each upright post.
4. Using the mounting hardware provided, mount the gage panels. Place one plain washer under the head of each screw and another plain washer under each lockwasher. Secure screws.
5. Use touch-up paint to protect scratched areas and new hardware against rust.

38AH044-084 OPTIONAL SINGLE-CIRCUIT UNITS, 38AH124,134 MODULES (see Fig. 2)

1. If unit is equipped with security grilles accessory, remove the grilles to obtain unobstructed access to compressor A1.
2. Position the gage panel on the side of the left upright post (located behind corner post), adjacent to compressor A1, with gages facing out. Use the gage panel as a template to mark locations of the screw holes on the upright.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

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Table 2 — Gage Panel Mounting Locations

SIZES	ACCESSORY PACKAGE QTY NECESSARY	GAGE PANEL LOCATION	GAGE LINE CONNECTION POINT	FIG. REF
Unit 38AH				
024-034	2	Gage panel no. 1: Inside right-hand corner post with gages facing access panel. Gage Panel no. 2: Against upper condenser section partition, above condenser coil	LO: Suction service valve* HI: Discharge service valve*	3
044-084	2†	Sides of 2 upright posts (located behind corner posts) adjacent to compressors A1 and B1 (A1 for single-circuit)	LO: Suction-side Schrader tee HI: Discharge service valve*	1, 2
094,104	2	Posts closest to each circuit's lead compressor	LO: Suction-side connection tee HI: Discharge service valve*	4
124,134	2 (one per module)	Upright post near lead compressor A1	LO: Suction-side Schrader tee on lead compressor A1 HI: Discharge service valve*	2
Unit 38AK				
007-012	1	Basepan, inside access panel	LO: Service port, suction line above compressor HI: Service port, liquid line inside cabinet	5
Unit 38AKS				
008-012	1	Basepan, inside access panel	LO: Service port, suction line near compressor HI: Discharge service valve*	5
013-024	1	Basepan, inside access panel	LO: Compressor service valve* HI: Compressor service valve*	6
028-044	1	Inside unit corner post section	LO: Compressor service valve* HI: Compressor service valve*	3
Unit 38AQS				
008	1	Basepan, inside access panel	LO: Service port, suction line HI: Discharge service valve*	5
012,016	1	Basepan, inside access panel	LO: Compressor service valve* HI: Compressor service valve*	6
Unit 38ARD				
012	2	Basepan, inside access panel	LO: Service port, suction line inside cabinet HI: Service port, liquid line inside cabinet	7
014-024	2	Basepan, inside access panel	LO: Service port, suction line inside cabinet HI: Service port, liquid line inside cabinet	6
Unit 38ARQ				
008-012	1	Basepan, inside access panel	LO: Service port, suction line inside cabinet HI: Service port, liquid line inside cabinet	7
Unit 38ARS				
012	1	Basepan, inside access panel	LO: Service port, suction line inside cabinet HI: Service port, liquid line inside cabinet	7
Unit 38ARZ				
007-012	1	Basepan, inside access panel	LO: Service port, suction line inside cabinet HI: Service port, liquid line inside cabinet	7

LEGEND

HI — High
LO — Low

*Requires field-supplied half-union couplings (1/4-in. flare x 1/4-in. MPT) (see Step 5 — Make Tubing Connections on page 5).

†For optional single-circuit units, one gage panel is installed on the upright post near lead compressor A1. The gage line connection for LO is suction-side Schrader tee on lead compressor A1.

NOTE: Be sure to check that the mounted gage panel does not interfere with security grilles accessory (if installed).

3. Drill 2 holes, each 1/4 in. (6.4 mm) in diameter, in the upright post.
4. Using the mounting hardware provided, mount the gage panel. Place one plain washer under the head of each screw and another plain washer under each lockwasher. Secure screws.
5. Use touch-up paint to protect scratched areas and new hardware against rust.

38AH024-034 and 38AKS028-044 (see Fig. 3)

1. Mount gage panel on inside of corner post section, with gages facing forward toward access panel. For 38AH024-034 units, mount second gage panel directly opposite as shown in Fig. 3.

   NOTE: Before drilling any mounting holes, first mark location of holes in corner post section. Be sure gage shutoff valves will not interfere with access door closing.
2. Hold gage panel against inside of corner post section as shown. Use panel as a template to locate mounting holes in corner post. Drill 2 holes, each 1/4 in. (6.4 mm) in diameter, in corner post.
3. Mount gage panel using hardware supplied. Place one plain washer under the head of each screw and another plain washer under each lockwasher. Secure screws.
4. Protect against rusting by spraying unit touch-up paint over new hardware and scratched areas.

38AH094,104 (see Fig. 4)

1. If unit is equipped with security grilles, remove the grilles to obtain unobstructed access to the compressors on each circuit.
2. Position the gage panels on the posts closest to the lead compressor of each circuit, with gages facing out. Use the gage panels as templates to mark location of the screw holes on the posts.

   NOTE: Be sure that the mounted gage panels do not interfere with security grilles (if installed).

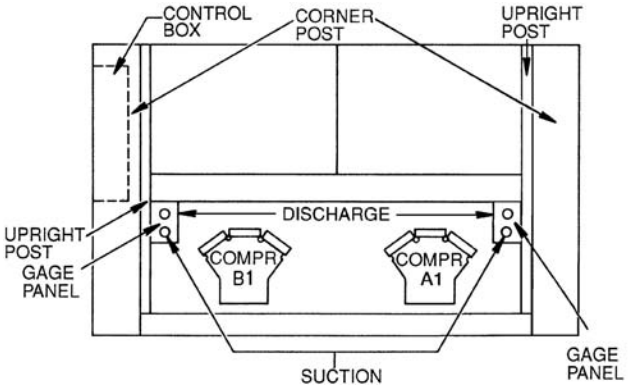

Fig. 1 — Gage Panels in 38AH044-084 (Standard Dual-Circuit Units)

3. Drill 2 holes, each 1/4 in. (6.4 mm) in diameter, in each post.
4. Using the mounting hardware provided, mount the gage panels. Place one plain washer under the head of each screw and another plain washer under each lockwasher. Secure screws.
5. Use touch-up paint to protect scratched areas and new hardware against rust.

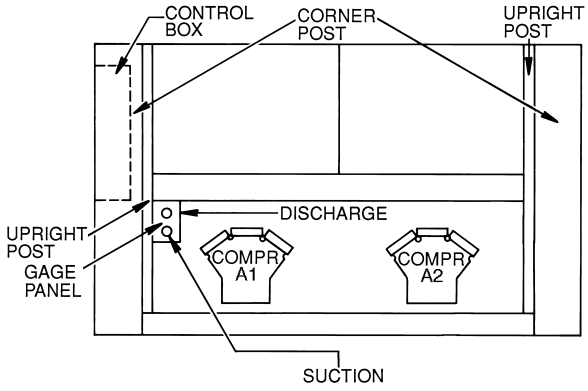

Fig. 2 — Gage Panel in 38AH044-084 Optional Single-Circuit Units and 38AH124,134 Units (Each Module)

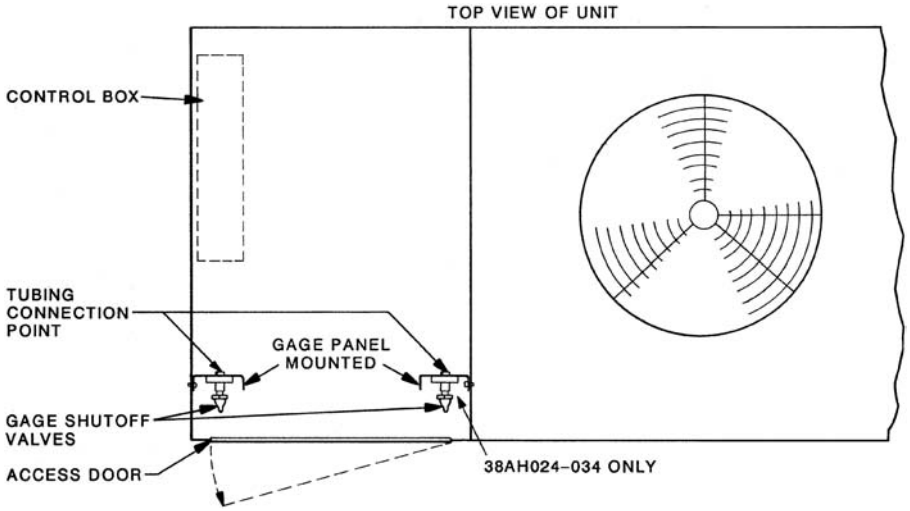

Fig. 3 — Gage Panel on 38AH024-034 and 38AKS028-044

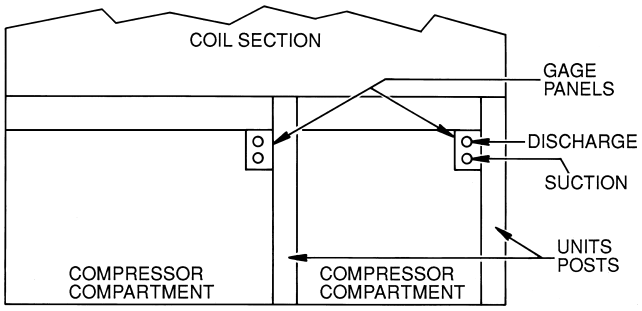

Fig. 4 — Gage Panels in 38AH094,104

38AK007-012, 38AKS008-012, 38AQS008 (see Fig. 5)

1. Mount gage panel on the basepan of the unit, just inside the compressor access panel with the gages facing toward the control box and compressor access panel.
2. Hold gage panel against basepan as shown. Use panel as template to locate mounting holes in basepan.
3. Drill 2 holes, each 1/4 in. (6.4 mm) in diameter, in basepan.
4. Mount gage panel using hardware supplied. Place one plain washer under the head of each screw and another plain washer under each lockwasher. Secure screws.
5. Protect against rusting by spraying unit touch-up paint over hardware and scratched areas.

38AKS013-024, 38AQS012,016, 38ARD014-024 (see Fig. 6)

1. Locate gage panel(s) (two panels are required for 38ARD) on the basepan of the unit, slightly inside the control box and compressor access panel. Gages should be facing the access panel.
2. Hold gage panel(s) against basepan as shown in Fig. 8. Mark screw hole positions.
3. Drill 2 holes, each 1/4 in. (6.4 mm) in diameter, in the basepan for each gage panel.
4. Mount gage panel using hardware provided. Place one plain washer under the head of each screw. Place another plain washer under each lockwasher. Secure screws.
5. Use touch-up paint to protect scratched areas and new hardware against rust.

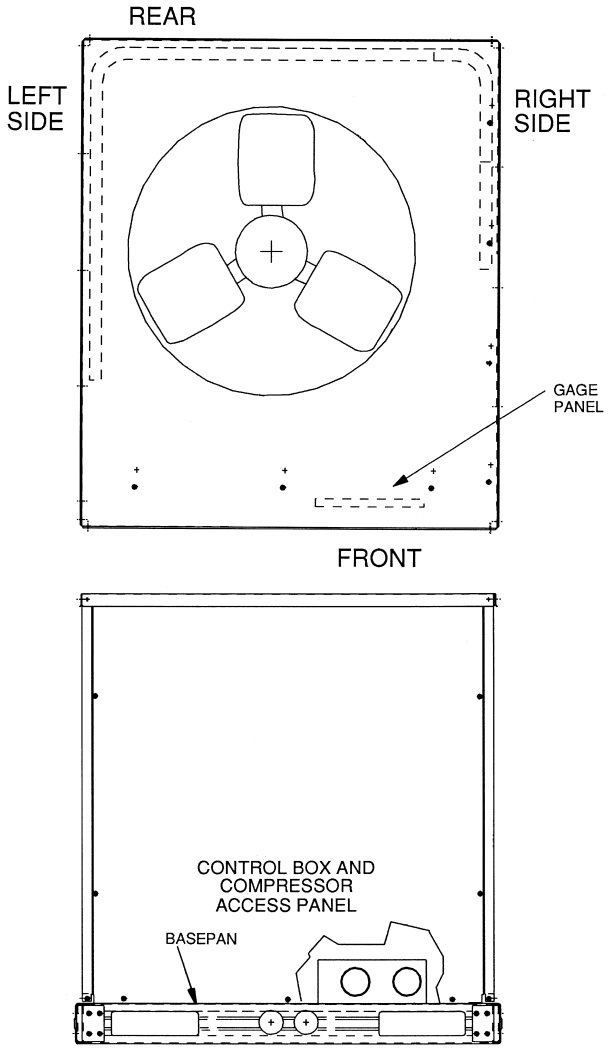

Fig. 5 — Gage Panel in 38AK007-012, 38AKS008-012, and 38AQS008

38ARD012, 38ARQ008-012, 38ARS012, 38ARZ007-012 (see Fig. 7)

1. Locate gage panel(s) (two panels are required for 38ARD) on the basepan of the unit, slightly inside the control box access panel. Gages should be facing the access panel.
2. Hold the gage panel(s) against the basepan as shown in Fig. 7. Mark screw hole locations.
3. Drill two holes, each 1/2 in. (6.4 mm) in diameter, in the basepan.
4. Mount gage panel(s) using hardware provided. Place one plain washer under the head of each screw. Place another plain washer under each lockwasher. Secure screws.
5. Use touch-up paint to protect scratched areas and new hardware from rust.

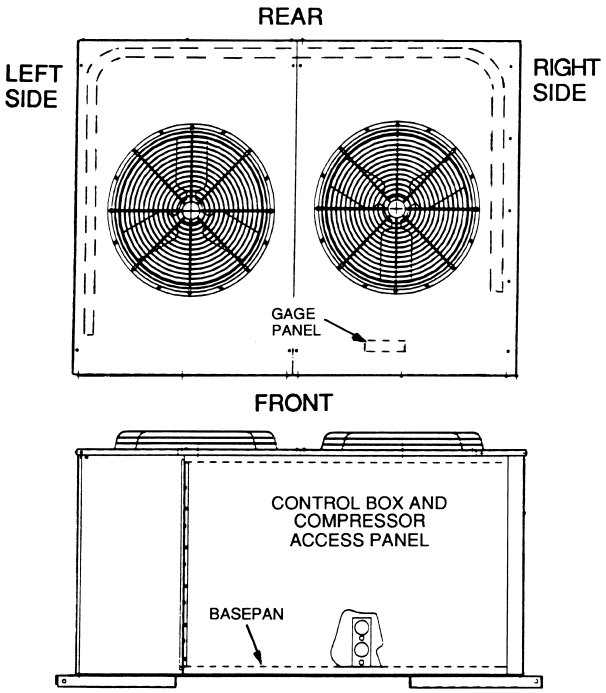

Fig. 6 — Gage Panels in 38AKS013-024, 38AQS012,016 and 38ARD014-024

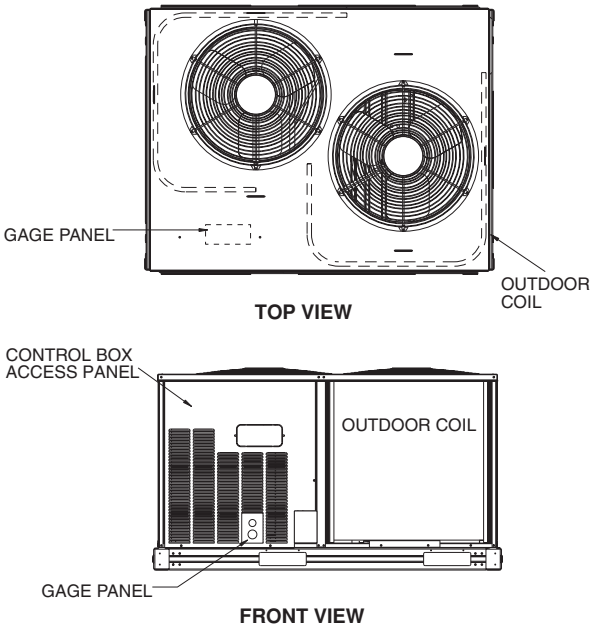

Fig. 7 — Gage Panels in 38ARD012, 38ARQ008-012, 38ARS012, and 38ARZ007-012

Step 3 — Tighten Gage Shutoff Valves

⚠ CAUTION

Tighten shutoff valve on each gage carefully. Maximum allowable torque is 7 ft-lb (1.0 kg-m) for these units.

Step 4 — Prepare Copper Tubing — Measure the run distance between each gage and its corresponding connection point (see Table 2). Cut the field-supplied 1/4 in. (6.4 mm) copper tubing to the required length. Add flare nuts and flare each tube end.

NOTE: 38AH044-134 units come with a lead compressor suction-side connection port that has a check valve. See Fig. 8.

Step 5 — Make Tubing Connections — Before making connections, check the compressor service valves to be sure they are fully backseated (compressor service valve open, but service port closed) before proceeding with next step.

Refer to Table 2 for location of gage line connection points.

WHEN CONNECTING TO GAGES — Connect each tube section, prepared in Step 4, to its corresponding gage.

WHEN CONNECTING TO SERVICE VALVES (Table 2)

1. Refer to Table 3 for field-supplied coupling requirements.
2. For units requiring the field-supplied half-union coupling(s), remove 1/4 in. pipe plug from the gage ports on the service valve(s) and install the half-union(s).
3. Connect the tubing with flare nut to the half-union.
4. Turn each service valve stem approximately one full turn away from fully backseated position (to open gage port). After all tubing connections are fitted, open the shutoff valve at the gage, if required for gage reading.

WHEN CONNECTING TO SUCTION-SIDE TEE (OR SCHRADER) FITTINGS (Table 2)

1. Remove the protective cap from the refrigerant tee on the suction side (or Schrader fitting) above the compressor sight glass on each lead compressor.
2. Attach the 1/4 in. quick flare coupling provided to one end of the tubing and then to the suction gage tee.

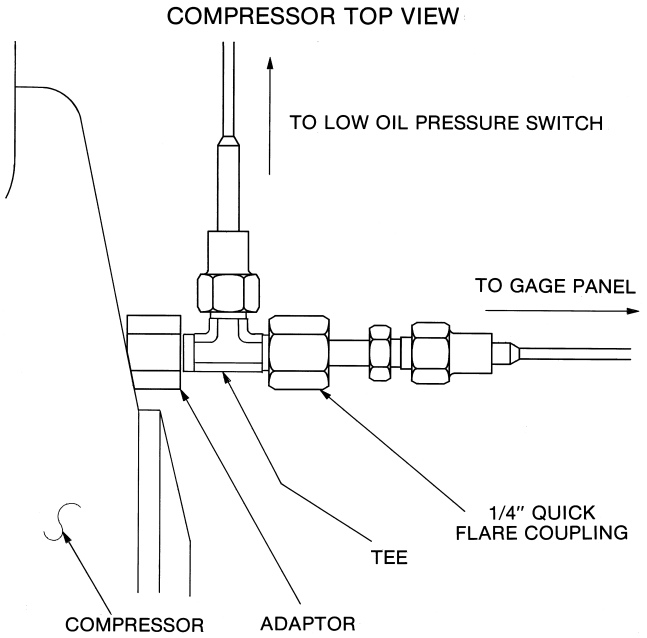

Fig. 8 — Typical Lead Circuit Suction-Side Connections on 38AH044-084 Single-Circuit Units and 38AH024-134 Dual-Circuit Units (Each Compressor)

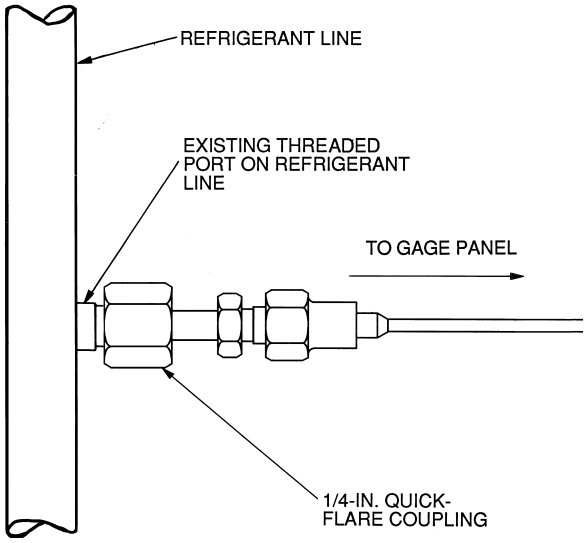

Fig. 9 — Refrigerant Gage Connections (Service Port Connection)

3. Tighten the coupling to 7 to 8 ft-lb (5 to 5.9 n-m) of torque (8 ft-lb [5.9 n-m] maximum). See Fig. 8. The flare couplings depress the check valves within the tees (or Schrader fitting) to allow refrigerant flow.
4. Be sure all refrigerant connections are tight.
5. Open the shutoff valve at the gage, if required, for gage reading.

WHEN CONNECTING TO SERVICE PORTS (Table 2)

1. Attach the 1/4 in. quick flare coupling provided to one end of the tubing and then to the service port. See Fig. 9.
2. Tighten the coupling to 7 to 8 ft-lb (5 to 5.9 n-m) of torque (8 ft-lb [5.9 n-m] maximum). The flare couplings depress the check valves within the tees to allow refrigerant flow.
3. Be sure all refrigerant connections are tight.
4. Open the shutoff valve at the gage, if required, for gage reading.

GENERAL CHECK

1. Check all refrigerant connections and joints for leakage. Tie seal package around gage panel tubing for future use.
2. Replace security grilles (if unit is equipped with them).

Table 3 — Service Valve Coupling Data

UNIT	SIZE	CONNECTION LOCATION	
		Discharge Valve	Suction Valve
38AH	024-034	X	X
	044-134	X	—
38AK	007-012	—	—
38AKS	008-012	X	—
	013-044	X	X
38AQS	008	X	—
	012,016	X	X
38ARD	012 014-024	—	—
38ARQ	008-012	—	—
38ARS	012	—	—
38ARZ	007-012	—	—

LEGEND

— — Not Applicable
X — Requires field-supplied half-union couplings (1/4-in. flare x 1/4-in. MPT)

Replacing Copper Valve Core Depressor Seals in Couplings — Spare seals are included (see Table 1) for future use. Use them to repair possible refrigerant leaks due to a damaged seal at the coupling. These seals may never have to be used. Once a coupling is connected and tightened to proper torque (7 to 8 ft-lb [5 to 5.9 n-m]), a permanent seal is made. However, repeated removal and installation of $^1/_4$ in. coupling may damage seal and cause leaks. To ensure a proper seal, replacement of the copper seal may be necessary. To remove old seal, use needle-nose pliers to bend back lip of copper seal and pull out. Replace seal by handpressing new seal into the coupling. Seal sets into place when turning down the coupling to required torque.

OPERATION

To protect the gages from any undue vibration and to maintain gage accuracy, *open the gages to system pressure only when readings are required.* Crack open the gage valves just enough to reach pressure without fluctuation of the gage needles.

NOTE: If gage panel is located behind an access panel, note gage reading as quickly as possible after removing panel. Once the panel is removed, airflow over the coil will change and alter system pressures.

After readings are taken, close the gage valves to isolate the gages from system pressure.

When doing routine maintenance, make sure the gage valves are open and the gages are reading the existing system pressures, not the residual pressure of the connecting tubes.