



# Quadra-Side Compensators Installation Instructions

## ANCHORING & GUIDING KEFLEX™ QUADRA-SIDE EXPANSION COMPENSATORS (7Q SERIES)

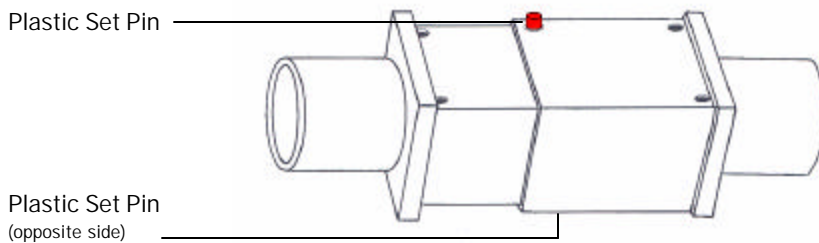
Expansion compensators used in risers and radiation lines require adequate anchoring and guiding. Main anchors are necessary at the end of each straight pipe run containing a compensator, with guides installed to prevent the line from bowing, buckling or becoming misaligned because of thermal expansion or internal pressures. **Pipe hangers and rollers are not considered to be adequate as guides. Anchors should be located per the Expansion Joint Manufacturers Association (EJMA) standards, as noted on the reverse side of this sheet.** The main anchors must restrain the ends of the pipe so that all expansion is directed into the compensator. The main anchors must also withstand the end thrust force of the internal pressure, plus all other piping system loads.

Expansion compensators should not be subjected to hydrostatic pressure tests beyond their rated working pressures. If a higher pressure test is required, the factory should be advised. The inside of all piping must be clean before installing and testing expansion compensators. **Before the pipe lines are hydrostatically tested, all anchors and pipe guides must be secured, and the plastic set pins must be removed.**

**THE CONTRACTOR INSTALLING SWEAT END TYPE EXPANSION COMPENSATORS IS ADVISED TO USE A SOFT (TIN-LEAD) SOLDER. EXCESSIVE HEAT USED TO MAKE THE SOLDER JOINT MAY HAVE A DETRIMENTAL EFFECT ON THE COMPENSATOR. THE MANUFACTURERS WARRANTY IS NULL AND VOID IF THE INSTALLING TEMPERATURE EXCEEDS 950° ON THE END FITTINGS.**

The single type expansion compensator is fitted with two (2) plastic set pins that holds the bellows at an optimum installation length during shipment. The dual type expansion compensator has four fasteners—two for each bellows. **After the unit has been attached to the pipes and the system properly anchored and guided, the plastic set pins must be removed,** allowing the bellows to automatically make proper allowance for expansion of the line during service (see diagram). Compensators must be leak checked subsequent to installation.

Expansion compensators are not designed to absorb torsional movement or stress. Subjecting a compensator to torsion of any amount may drastically affect operating life and will void the warranty.



1. Leave plastic pins in place during installation to provide proper compression and extension movements in response to pipe thermal expansion and contraction, respectively.
2. Remove plastic pins AFTER installation is complete, but PRIOR to hydrotesting.

## COPPER TUBE GUIDE SPACING

Data per Heating and Air Conditioning magazine, Sept. 1961

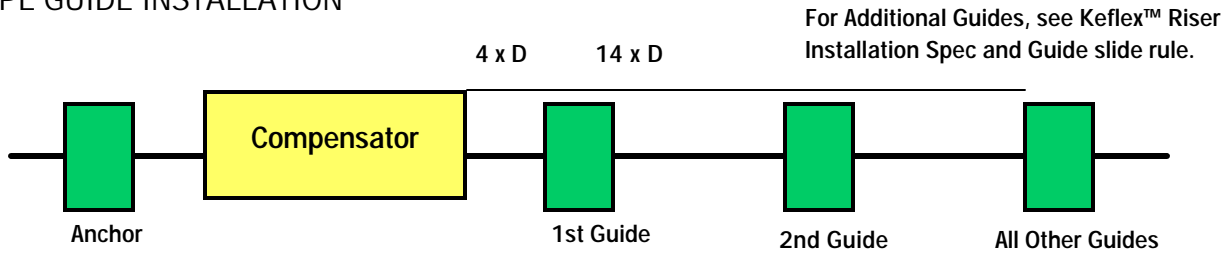
Tube Size+	4 X D	14 X D	Maximum Spacing for Intermediate Guides For Copper Type "M" Water Tube (feet)*		
			25 PSI	50 PSI	70 PSI
3/4"	3"	10-1/2"	7	6	5
1"	4"	1'2"	9	8	6
1-1/4"	5"	1'5-1/2"	14	11	9
1-1/2"	6"	1'9"	14	11	9
2"	8"	2'4"	19	14	12
2-1/2"	10"	2'11"	23	17	15
3"	1'	3'6"	27	20	18
4"	1'4"	4'8"	31	23	21

\*For Copper type "L" tubing, spacing may be increased by 10%. For Copper type "K" tubing, spacing may be increased by 20%



# Copper Tube Guides & Anchors Installation Instructions

## TYPICAL PIPE GUIDE INSTALLATION



D = Nominal Pipe I.D.

## COPPER TUBE NYLON GUIDE & BRACKET (CTG)

1. Guides should be positioned at recommended spacing as noted on the reverse side.
2. The guide bracket must be mounted and secured to a solid and non-moving surface.
3. Maximum service temperature should not exceed 270 degrees Fahrenheit.

## COPPER TUBE ANCHOR & BRACKET (CTA)

1. Anchors should be located per the Expansion Joint Manufacturers Association (EJMA) standards:
  - A. At a change in direction of flow.
  - B. Between two expansion joints of different sizes.
  - C. At the entrance of a side branch into a main line.
  - D. Where a valve is installed in a pipe run between two expansion joints.
  - E. At the blind end of a pipe.
2. The anchor bracket must be mounted and secured to a solid and non-moving surface.
3. The copper anchor should be soldered to the copper tube for best results.

## RECOMMENDED POSITIONING OF ANCHORS, GUIDES, & COMPENSATORS

