KEFLEX
HVAC Products

# 7Q Series Expansion Compensators

Meets Low Lead Requirements!

## THE QUADRA-SIDE™

*The Industry Standard in Expansion Compensators For the Control of Pipe Expansion & Contraction in Water/Steam Systems.*

*Keflex is the only manufacturer utilizing this superior square design that eliminates issues that can occur with round compensators*

## Key Specifications:

- Sizes—3/4" to 4"
- Single Bellows—316L SS
  - 2" Total Movement
    - 1 1/2" Compression
    - 1/2" Extension
- Dual Bellows—316L SS
  - 4" Total Movement
    - 3" Compression
    - 1" Extension
- Pressure—200 or 300 psig
- Temperature—600°F

| MODELS & END FITTINGS | | |
|---|---|---|
| Single | Dual | End Fitting |
| 7Q | 7QD | Female Pipe Threads |
| 7QT | 7QTD | Copper Sweat Ends |
| 7QFL | 7QFLD | 150# Drilling Flanges |
| 7QMPT | 7QMPTD | Male Pipe Threads |
| 7QVG | 7QVGD | Victaulic Grooved Ends |
| 7QWT | 7QWTD | Carbon Steel Weld Ends |

## Features:

- Square Telescoping Shroud
- Removable Set Pin
- Multi-ply 316L Stainless Steel Bellows
- Variety of Standard End Fittings
- Internal Guide
- Small Size

## Benefits:

- Prevents torsion, squirm, misalignment, & external damage
- Provides optimum positioning for installation
- Provides Lower Actuation Force & Longer Cycle Life
- Meets Most Installation Requirements
- Prevents offset and assures pipe movement is directed axially
- Easy installation in walls, under floors, or behind radiator covers

KEFLEX
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Woodstock, IL 60098

MADE IN THE USA

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## 7Q & 7QD

- Brass Case
- Female Brass Thread Ends

Max. Working Pressure 300 PSIG @ 70°F  Max. Temperature 600°F

| Nominal I.D. | Max. O.D. | OAL | Wt. (Lbs) | OAL (Dual) | Wt. (lbs) (Dual) |
|---|---|---|---|---|---|
| 3/4" | 2" | 6 1/2" | 2.25 | 11 1/2" | 3.75 |
| 1" | 2" | 6 1/2" | 2.25 | 11 1/2" | 3.75 |
| 1 1/4" | 2" | 6 1/2" | 2.50 | 11 1/2" | 3.75 |
| 1 1/2" | 2 1/2" | 6 1/2" | 4.00 | 11 1/2" | 6.25 |
| 2" | 3" | 6 1/2" | 5.75 | 11 1/2" | 8.75 |
| 2 1/2" | 3 1/2" | 7" | 7.75 | 12" | 11.75 |
| 3" | 4 1/2" | 7 3/4" | 11.00 | 12 3/4" | 15.50 |
| 4" | 5 1/2" | 8" | 12.00 | 13" | 16.00 |

## 7QT & 7QTD

- Brass Case
- Female Copper Tube Ends

Max. Working Pressure 200 PSIG @ 70°F  Max. Temperature 600°F

| Nominal I.D. | Fit Tube O.D. | Max. O.D. | OAL | Wt. (Lbs) | OAL (Dual) | Wt. (lbs) (Dual) |
|---|---|---|---|---|---|---|
| 3/4" | 7/8" | 2" | 6 1/2" | 1.50 | 11 1/2" | 2.50 |
| 1" | 1 1/8" | 2" | 6 1/2" | 1.50 | 11 1/2" | 2.50 |
| 1 1/4" | 1 3/8" | 2" | 6 1/2" | 1.75 | 11 1/2" | 3.00 |
| 1 1/2" | 1 5/8" | 2 1/2" | 6 1/2" | 2.75 | 11 1/2" | 4.50 |
| 2" | 2 1/8" | 3" | 10" | 3.50 | 15" | 6.00 |
| 2 1/2" | 2 5/8" | 3 1/2" | 10 3/4" | 5.00 | 15 3/4" | 10.00 |
| 3" | 3 1/8" | 4 1/2" | 11 1/2" | 6.25 | 16 1/2" | 12.00 |
| 4" | 4 1/8" | 5 1/2" | 13 1/2" | 7.00 | 18 1/2" | 13.00 |

## 7QFL & 7QFLD

- Brass Case
- Steel 150# Drilling Plate Flanges

Max. Working Pressure 300 PSIG @ 70°F  Max. Temperature 600°F

| Nominal I.D. | Max. O.D. | OAL | Wt. (Lbs) | OAL (Dual) | Wt. (lbs) (Dual) |
|---|---|---|---|---|---|
| 3/4" | 3 7/8" | 11" | 5.75 | 16" | 8.00 |
| 1" | 4 1/4" | 11" | 5.75 | 16" | 8.25 |
| 1 1/4" | 4 5/8" | 11" | 8.25 | 16" | 10.50 |
| 1 1/2" | 5" | 11" | 8.75 | 16" | 12.00 |
| 2" | 6" | 11" | 10.75 | 16" | 16.25 |
| 2 1/2" | 7" | 11" | 16.00 | 16" | 21.00 |
| 3" | 7 1/2" | 11" | 19.00 | 16" | 26.25 |
| 4" | 9" | 11" | 20.00 | 16" | 27.00 |

## 7QMPT & 7QMPTD

- Brass Case
- Male Carbon Steel Pipe Thread Ends

Max. Working Pressure 300 PSIG @ 70°F  Max. Temperature 600°F

| Nominal I.D. | Max. O.D. | OAL | Wt. (Lbs) | OAL (Dual) | Wt. (lbs) (Dual) |
|---|---|---|---|---|---|
| 3/4" | 2" | 9 1/2" | 2.25 | 14 1/2" | 4.00 |
| 1" | 2" | 9 1/2" | 2.25 | 14 1/2" | 4.25 |
| 1 1/4" | 2" | 9 1/2" | 2.50 | 14 1/2" | 4.50 |
| 1 1/2" | 2 1/2" | 9 1/2" | 4.00 | 14 1/2" | 6.00 |
| 2" | 3" | 9 1/2" | 5.75 | 14 1/2" | 8.25 |
| 2 1/2" | 3 1/2" | 9 1/2" | 7.75 | 14 1/2" | 11.75 |
| 3" | 4 1/2" | 9 1/2" | 11.00 | 14 1/2" | 15.50 |
| 4" | 5 1/2" | 9 1/2" | 12.00 | 14 1/2" | 16.00 |

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## 7QVG & 7QVGD

- Brass Case
- Sch 40 Carbon Steel Victaulic Groove Ends

Max. Working Pressure 300 PSIG @ 70°F  Max. Temperature 600°F

| Nominal I.D. | Max. O.D. | OAL | Wt. (Lbs) | OAL (Dual) | Wt. (lbs) (Dual) |
|---|---|---|---|---|---|
| 3/4" | 2" | 10 1/2" | 2.50 | 15 1/2" | 4.00 |
| 1" | 2" | 10 1/2" | 2.75 | 15 1/2" | 4.25 |
| 1 1/4" | 2" | 10 1/2" | 3.25 | 15 1/2" | 4.50 |
| 1 1/2" | 2 1/2" | 10 1/2" | 4.00 | 15 1/2" | 6.00 |
| 2" | 3" | 10 1/2" | 5.25 | 15 1/2" | 8.25 |
| 2 1/2" | 3 1/2" | 10 1/2" | 7.50 | 15 1/2" | 11.75 |
| 3" | 4 1/2" | 10 1/2" | 9.50 | 15 1/2" | 15.25 |
| 4" | 5 1/2" | 10 1/2" | 10.50 | 15 1/2" | 16.00 |

## 7QWT & 7QWTD

- Brass Case
- Sch 40 Carbon Steel Weld Ends

Max. Working Pressure 300 PSIG @ 70°F  Max. Temperature 600°F

| Nominal I.D. | Max. O.D. | OAL | Wt. (Lbs) | OAL (Dual) | Wt. (lbs) (Dual) |
|---|---|---|---|---|---|
| 3/4" | 2" | 10 1/2" | 2.50 | 15 1/2" | 4.00 |
| 1" | 2" | 10 1/2" | 2.75 | 15 1/2" | 4.25 |
| 1 1/4" | 2" | 10 1/2" | 3.25 | 15 1/2" | 4.50 |
| 1 1/2" | 2 1/2" | 10 1/2" | 4.00 | 15 1/2" | 6.00 |
| 2" | 3" | 10 1/2" | 5.25 | 15 1/2" | 8.25 |
| 2 1/2" | 3 1/2" | 10 1/2" | 7.50 | 15 1/2" | 11.75 |
| 3" | 4 1/2" | 10 1/2" | 9.50 | 15 1/2" | 15.25 |
| 4" | 5 1/2" | 10 1/2" | 10.50 | 15 1/2" | 16.00 |

## CTA ANCHORS

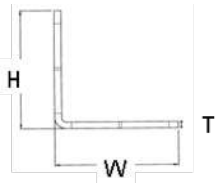
- Copper Tube Anchor& Bracket

| Pipe Size | Part Number | Bracket Diameter |
|---|---|---|
| 3/4" | F006CTA33<br>F006CTA45 | 7/8" |
| 1" | F010CTA33<br>F010CTA45 | 1 1/8" |
| 1 1/4" | F012CTA33<br>F012CTA45 | 1 3/8" |

## CTG GUIDES & BRACKETS

- Nylon Guide with Steel Bracket

| Pipe Size | Part Number | Leg Length | Nylon Hole Diameter |
|---|---|---|---|
| 3/4" | F006CTG33<br>F006CTG45 | 2"<br>2" | 15/16"<br>15/16" |
| 1" | F010CTG33<br>F010CTG45 | 2 1/4"<br>2 1/4" | 1 3/16"<br>1 3/16" |
| 1 1/4" | F012CTG33<br>F012CTG45 | 2 1/2"<br>2 1/2" | 1 7/16"<br>1 7/16" |




| Bracket Part Number | W | H | T |
|---|---|---|---|
| 33 | 3 1/4" | 3 3/8" | 3/16" |
| 45 | 4 1/4" | 5 1/8" | 3/16" |

Bracket Notes:
Use CTA Brackets with CTG Guides & Anchors. Guide or Anchor can be mounted to either leg to meet field installation needs.

Keflex Dual Compensator

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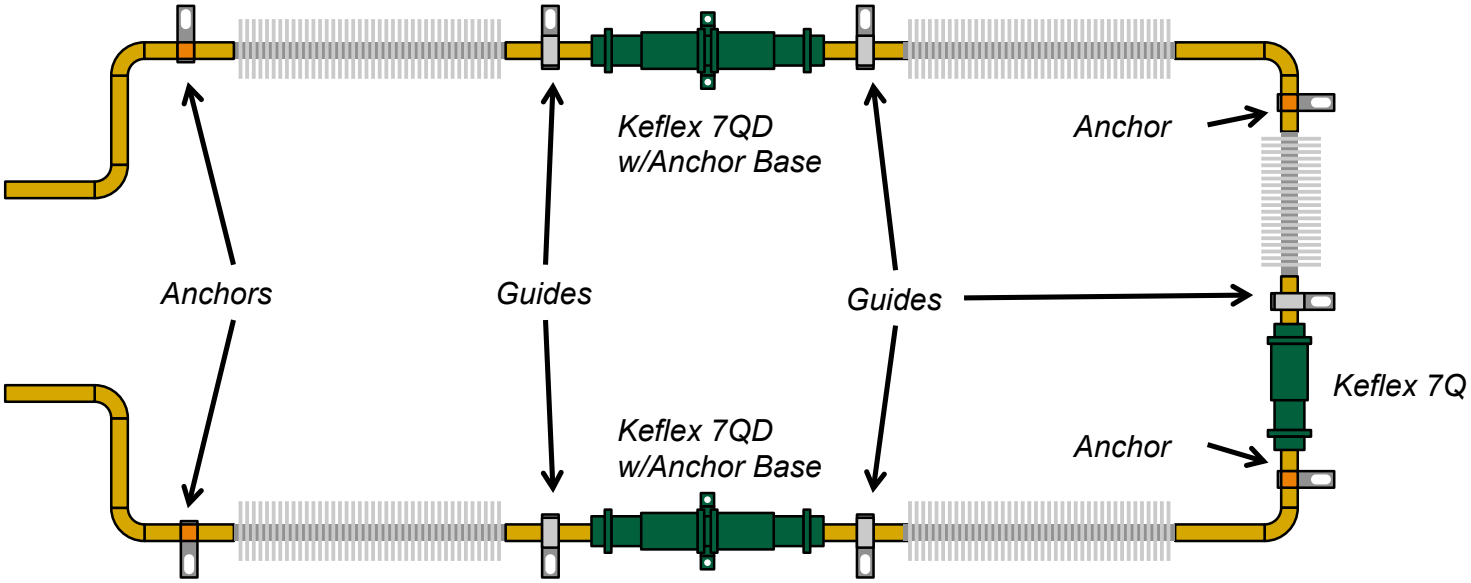
## Anchoring and Guiding KEFLEX™ Compensators

Compensators used in risers and radiation lines require adequate anchoring and guiding. Main anchors are necessary at the end of each pipe run, 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. 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. This force is shown in the Thrust Force Data Table.

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 compensators. Before the pipe lines are hydrostatically tested, all anchors and pipe guides must be secured.

The contractor installing sweat end type compensators is advised to use a soft solder. Excessive heat used to make the solder joint may have a detrimental effect on the compensator. Soldered joints should be washed thoroughly so as to neutralize or remove acids used in solder fluxes

## Recommended Positioning of Guides, Anchors, & Compensators

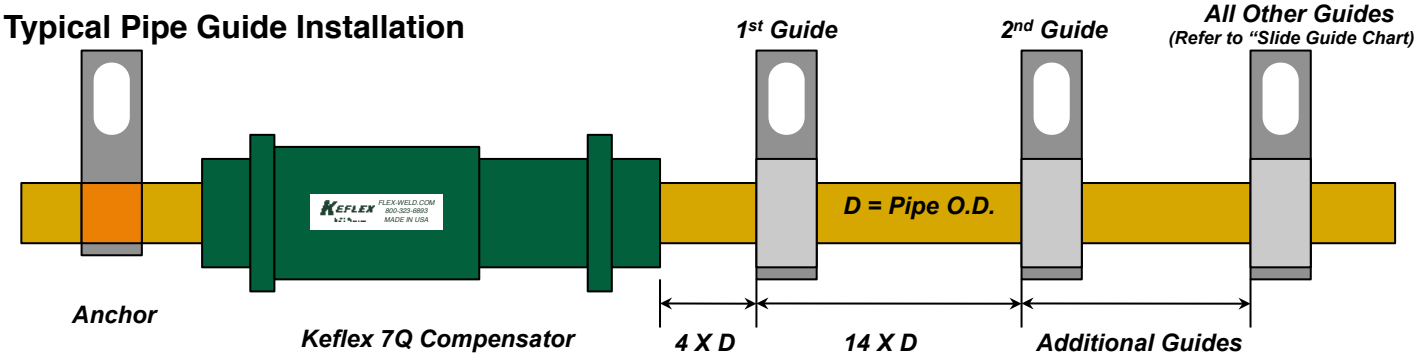



Expansion compensators must be both correctly selected and properly installed for effective performance in service. The reactions created by pressure and movement within the piping system should be carefully considered and the following precautions taken at installation:

- System design must not create torque on expansion compensators. See diagram below for typical installation practices.
- Piping centerlines should be precisely aligned.
- All set pins must be removed after installation.

Anchors must be of sufficient strength to withstand the thrust pressure of the pipe section.

## Typical Pipe Guide Installation

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