



# METAL EXPANSION JOINTS STORAGE, TRANSPORT & INSTALLATION

do's, don'ts and useful tips



# METAL EXPANSION JOINTS

To ensure a long-term service life, pressure resistance and reliability of your Expansion Joints, take precautions and handle them with care during handling, storage, and installation.

Follow these simple Do's and Don'ts to protect your Expansion Joints, and make sure they are installed correctly, function properly and yield the optimal result.



# STORAGE AND TRANSPORT

Even the best product will become more prone to failure if it is not handled properly.

## Do's

- ✓ Perform a visual inspection to check for any damages from shipping as soon as they are received.
- ✓ Place them on an even, solid surface.
- ✓ Store them in a clean and dry environment, sheltered from rain, sand, soil, building materials and chemicals.
- ✓ Use wooden support if the weight of the end fittings causes the bellows to bend.
- ✓ Avoid mechanical damage.

## Don'ts

- ✗ Do not lift Expansion Joints in any way that causes the bellows to be subjected to mechanical loads.
- ✗ Do not subject them to torsion.
- ✗ Do not stack them on top of each other or knock them against each other.



**TIP: DO NOT** remove transportation and pre-tensioning fittings until the Expansion Joint is installed. Expansion Joints not properly fixed can potentially cause injury, and premature removal of secure fitting can impact their integrity and ability to function, reduce their service life in the long run or cause them to break down.

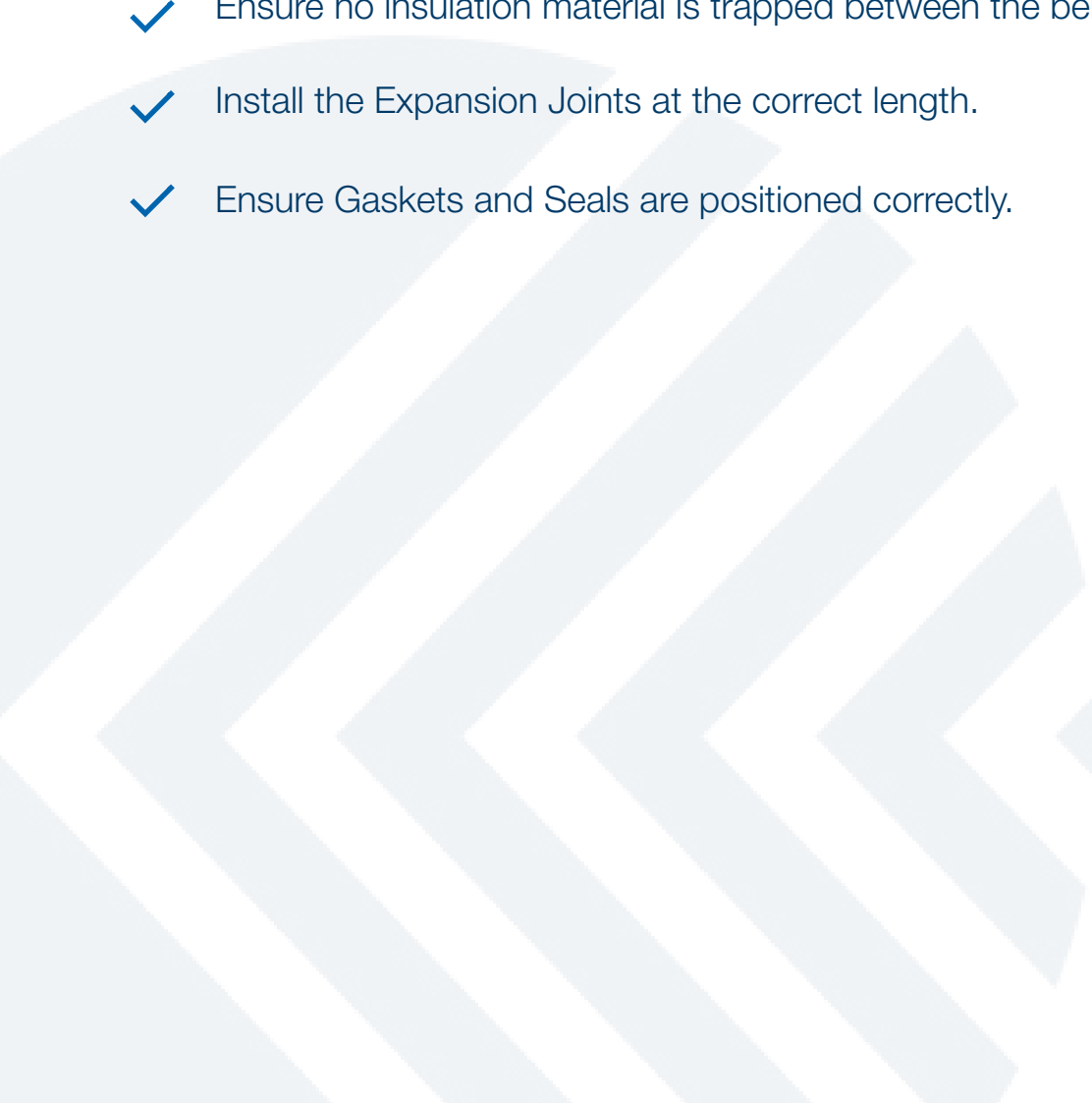
# INSTALLATION

Correct installation of the Expansion Joint not only extends its life span but also enhances the total lifespan of the whole piping system.

## Before Installation Do's

- ✓ Check for damages, including damaged parts or watermarks.
- ✓ Keep the Expansion Joint clean, free of debris and insulation materials.
- ✓ Ensure the sealing surfaces on flanges are even and clean.
- ✓ Check if the gap in the pipeline where the Expansion Joint will be installed follows the specified installation length, with design tolerances considered.
- ✓ The connecting ends of the pipeline should be clean and properly prepared for welding.
- ✓ Ensure that the Expansion Joint is installed at the correct location.
- ✓ Expansion joints must be installed according to the design data.
- ✓ Ensure that anchors can handle all pipework loads and reaction forces from the Expansion Joint.
- ✓ Add lagging covers when Expansion Joints are supplied without external covers.
- ✓ Confirm system requirements and review anchors, supports, and alignment guides.

## During installation Do's

- ✓ Ensure the adjacent pipework has the right anchors, guides, and supports in place.
  - ✓ Ensure only one Expansion Joint is fitted between two main anchors.
  - ✓ Ensure tie rods on lateral Expansion Joints are correctly fitted and secured.
  - ✓ Protect the Expansion Joint against weld spatter and debris, welding or grinding work.
  - ✓ Ensure the Expansion Joint is installed in the right way round, indicated by the flow direction arrow.
  - ✓ Ensure that the hinge pins are in the correct orientation.
  - ✓ Remove all shipping and pre-tensioning devices before testing.
  - ✓ Ensure no insulation material is trapped between the bellows' convolutions.
  - ✓ Install the Expansion Joints at the correct length.
  - ✓ Ensure Gaskets and Seals are positioned correctly.
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# Don'ts

- ✗ Do not use Expansion Joints to compensate for piping installation inaccuracies unless explicitly stated in the design data.
- ✗ Avoid using drop rods or hanger rods.
- ✗ Do not remove tie rods, hinge links and gimbals.
- ✗ Avoid arcing on the bellows.
- ✗ Be careful not to damage the bellows on flanged units with over-long studs or bolts.
- ✗ Never lift the Expansion Joint using shipping bars, hinges, gimbals, tie rods or any other operative device.
- ✗ Be careful not to attach chains or ropes to the bellows section, as this part of the Expansion Joint can be easily damaged.
- ✗ Bellows should not be cleaned with steel wool or wire brushes. Any cleaning should be done with care.
- ✗ Do not rotate Expansion Joints in order to align bolt holes.
- ✗ When testing before installation, do not use shipping bars to retain thrust.



**Our KLINGER Expansion Joints are built to the highest quality standards in the industry. Once they are correctly installed, they should not require maintenance other than routine inspections.**

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