

Read through the entire manual before proceeding with installation.

Any procedures presented in this guide are suggestions only, and it is the responsibility of the owner/operator to ensure that the installation is done only by trained, qualified individuals, and performed according to all applicable codes including, but not limited to, local codes for your municipality, city, county and state; this includes all electrical and mechanical work. All workers must be trained in the proper safety procedures and appropriate PPE and attire must be worn at all times.

Note: Bellow connectors are not designed to compensate for misalignment or vibration isolation. Proper spring and dampers should be used as engine/genset and silencer mounts.

PRE-INSTALLATION

- Prior to unpacking, check all components for shipping damage.
- Keep shipping materials intact to protect the unit until installation is complete.
- Verify the correct parts are received by comparing the nameplate with the packing list.
- Locate nameplate and note direction (if applicable). Bellows with liners have a flow direction that will be noted.
- Verify that the bellows connector and recommended gaskets are of proper size for the mating surface openings and ensure that all mating surfaces are clean and free of foreign material before installation.
- When cleaning the surfaces, do not use abrasive materials such as steel wool or wire brushes. Use only isopropyl alcohol and clean with soft rags. (Do not use chloride or halide-based cleaners.)
- Exhaust system components inside the enclosure may need to be covered with suitable insulation to protect personnel and reduce room temperature. Use only chloride and halide free insulation. (Removable Thermal Insulation Covers, aka Thermal Wrap, available from inExhaust™)
- Observe all OSHA mandated regulations for the safe rigging of exhaust equipment.
- Do not use any lifting device directly on the bellows capsule or bellows capsule cover.
- Prior to welding or other potentially damaging work, protect the bellows capsule element.
- If flange connections are used, flanged faces must be parallel with each other and mating surfaces must also be parallel.
- Don't pre-stretch or compress bellows at time of installation. The bellows connector must be relaxed at time of install.

INSTALLATION

Flanged Connections:

1. Place the flange of the connector (floating flange, if applicable) over the exhaust outlet of the engine, with the gasket between the two facing surfaces and bolt holes properly aligned, so that the axial lines of the connector and mating orifice are concentrically aligned.
2. Secure the flange over the mating face of the outlet using appropriate Nut-Bolt-Gasket (NBG) kit, to aid in maintaining joint tightness over time. Higher grade fasteners will loosen as the system settles, causing failure. Do not use spring lock washers, as operating temperatures and pressures will cause them to degrade or disintegrate. Apply high temperature anti-seize to bolts – Loctite® 34517 or equivalent is suggested (not included or supplied by inExhaust).
3. Secure the opposite flange of the connector to the mating face of the receiving system, with the gasket between the two facing surfaces and bolt holes properly mated. Use the same grade of fasteners as previously described, ensuring that the axial lines of the engine outlet, connector, and mating orifice remain concentrically aligned.

Caution:

- a) To avoid potential failure, do not handle or install this product in a manner or position such that torqueing, or twisting can occur along it's axial line. The installation must be pre-aligned so that bolts for all mating surfaces can drop into place with no force, offsetting, bending, twisting or other form of distortion. Bellows are not designed to absorb any torque or misalignment. Do not force-rotate one end of the expansion joint for alignment of the bolt holes.



CONTINUED

- b) Pre-loading of flange connections due to misalignment will result in premature failure and will void the warranty.
- c) The installation must produce no downward force or loads exerted on the engine exhaust outlet.
4. To ensure uniform flange pressure for flanged connections, tighten bolts in a star shaped pattern until all are snug.
5. Following the same star-shaped pattern, torque the bolts to the specified torque. Never torque bolts directly to the left or right of the previously torqued bolt.
 - a) Torque only after all nuts and bolts are hand tight.

Cuffed Connections:

1. Ensure the clamp is loosely attached to either the cuff or the exhaust piping prior to fitting the exhaust piping to the cuff.
 2. Insert the exhaust piping securely into the cuffed portion of the connection, ensuring that the exhaust piping is uniformly bottomed out.
 3. Position the clamp towards the edge of the cuff, allowing a min. of 0.5" from the edge of the clamp to the edge of the pipe.
 4. Torque the clamp bolts until tight. Re-check tightness prior to and after initial engine start and system commissioning.
- This product is rated at 5 PSIG (0.34bar). Hydrostatic test pressure shall not exceed 1.5 times the rated pressure.
 - For maximum durability, allow the Bellows to operate as closely as possible to a free state.

POST-INSTALLATION

- Review that all components of your exhaust system are properly installed and ready for operation.
- If there is any indication of leaks or damage, cease operation immediately and conduct a broader inspection to determine the cause and resolve.
- After the initial engine run and cool down, re-check all bolts for tightness and torque as required.
- Exhaust back-pressure must not exceed the allowable back-pressure specified by the engine manufacturer. Excessive exhaust back-pressure reduces engine power and engine life and may lead to high exhaust temperatures and smoke. Engine exhaust back-pressure should be estimated before the layout of the exhaust system is finalized and is recommended to be measured at the exhaust outlet under full-load operation, as needed.
- Verify that the type and amount of movement generated by the system are identical with movements the expansion joint is designed for.

MAINTENANCE

It is recommended that maintenance is performed monthly, or every 10 hours of operation, (whichever comes first).

Maintenance for a typical exhaust system installation will consist of physical and visual examination of the exhaust system for any sign of gas leakage, cracks, significant areas of damage or corrosion. Re-tighten any loose bolts if necessary.

Note: If there is any indication of leaks or damage, cease operation immediately and conduct a broader inspection to determine the cause and resolve.

Thank you for choosing inExhaust as your exhaust system components solution!

For any questions, please contact us at sales@inExhaust.com.

This guide is also available on our website: www.inExhaust.com

