



PENFLEX

FLEXIBLE PIPING SOLUTIONS FOR POWER GENERATION

The trends surrounding renewable energies and efficient energy consumption are placing new demands on power generation facilities. Constant cycling to balance the grid puts equipment under additional thermal stress while more efficient boilers or heat exchange systems may be needed for a retrofit.

To better manage operations and maintenance costs, there can be no weak links in the system. Piping that can efficiently and effectively operate under given temperature, pressure and vibration requirements is critical to a successful operation.

With decades of engineering and manufacturing expertise in power generation applications, Penflex continues to innovate and improve its processes to keep pace with the speed of change in the industry.

TURBINE HOSE AND TUBE ASSEMBLIES

Penflex manufactures a range of assemblies to support steam and gas turbine systems. Corrugated hoses are used to deliver fuel to the system, syphon away hot air, and connect components on the outside of the combustion area to ensure instantaneous and even ignition. Where axial extension and compression occur, as in the case with some cross flame tubes and sleeves, balance access tubes and rotor cooling lines, interlocked hoses or tubes may be required.

Key features of Penflex's Power Generation Assemblies include:

- Precision machine parts
- Heavy wall thicknesses for higher pressure applications
- Options for thermal barrier and ceramic coatings

At a glance

Penflex offers the widest range of metal hose and braid products in the industry, with compressed pitch options for increased flexibility.

Alloy selection includes 321, 316, Hastelloy C276, Monel 400, Inconel 625, and Bronze.

ASME B31.1 compliant and ASME IX certified welders as well as on-site CWE, CWI, and NDE ensure highest quality fabrication. Additional certifications available.

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For more information, please contact sales@penflex.com

- Various NDE leak detection methods, including hydrostatic and helium mass spectrometer testing
- Custom identification tags based on requirements

METAL EXPANSION JOINTS

Hot exhaust gases moving at high velocities and at varying pressures exposes a gas turbine system to thermal stresses and considerable vibration. To accommodate the thermal expansion and irregular, consistent movement, expansion joints need to be designed for extreme operating conditions.

Penflex designs and manufactures metal expansion joints in accordance with EJMA and ASME B31.1 specifications. These are used at various turbine intersections, including at the air inlet and exhaust outlet, just beyond the diffuser, on the outlet ducting itself and in connection with the bypass stack. Boiler penetration seals and safety relief valves are just a few of the many names given to power generation expansion joints Penflex makes.

Key features of Penflex's Power Generation Expansion Joints include:

- Multi-ply bellows for maximum cycle life under stringent conditions
- Pipe sizes of 2.5" and up
- Various attachments are available, including Fixed Flanges, Floating Flanges (Vanstone), RF Flanges, Weld Nipples
- Options for Universal Joints
- Non-Destructive Examination—Pressure Testing, Liquid Penetrant Testing, Fluorescent Penetrant Testing and Radiography—is available

With a focus on safety and durability, Penflex offers a complete range of metal hoses and expansion joints with options for wall thickness, flexibility, temperature and pressure ratings to provide the ideal solution for any power generation application.