SEMICONDUCTOR BACK END TESTING

LIQUID NITROGEN PIPING

CHALLENGE

- Efficient supply of LN_2 from bulk tank
- Readily available supply of LN_2 at use point
- Clean & frost free operation in all conditions

SOLUTION

Part of the back-end semiconductor manufacturing process involves putting individual chips through environmental testing. Often, liquid nitrogen is required to perform cold-shock and cold cycle tests at dozens of use points. Vacuum jacketed piping and the use of vapor vents ensure a constant supply of LN_2 is maintained at multiple use points, with minimal losses. Due to the extreme cleanliness requirements in the semiconductor industry, liquid nitrogen piping must operate completely frost & moisture free under all conditions. Bayonet joints are designed to limit heat loss, and end traps allow frost free operation at use points, even while LN_2 is readily available.

HOW IT WORKS

- Modular piping and connections allow distribution to multiple use points, and possibility of re-configuration
- Vapor vents help maintain liquid availability at use points
- Vacuum jacketing across bayonet connections and components increase efficiency and clean operation
- End traps provide frost-free connection points even when liquid is present

ADVANTAGES

- Clean, frost free cooling to extremely low temperatures
- Variety of internal diameter piping to accommodate a range of flow rates
- Modular and re-configurable
- Years of experience as cryogenic experts

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