HANSEN TECHNOLOGIES CORPORATION

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TECHNI-BRIEFS

Selecting Ammonia Refrigeration Shut-Off Valves

Selecting shut-off valves involves evaluating a number of valve characteristics. Features commonly looked for include tight seating, leak-proof stem packing, easy operation, low pressure drop, moderate weight, and rugged construction. However, ease of installation and insulation are sometimes overlooked. Hansen offers all of these features with 100% factory testing. Quality, reliability, and providing customers with the features they want allow Hansen to maintain the number one position in North America for shut-off valves.
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GS200H Socket Weld Shut-Off Valve

Purger Preventative Maintenance

As summer approaches and the temperature rises, condensing pressures also rise. Noncondensible gas purgers reduce energy costs by removing air and other gases from a refrigeration system. It is essential to the optimal function of a refrigeration system that every system purger is working properly. In many cases an old purger must be replaced by an efficient purger, or repaired.

Hansen's AUTO-PURGER® AP noncondensible refrigerant gas purger.

Hansen AUTO-PURGER®s are built to last, but parts can get worn. For example, the electrical components of the purger should be replaced after 5 to 7 years of use. Solenoid coils, float switches, strainers, and
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Field Report: HA4AM Electric Motor Compensated Regulator

A California-based citrus company has found tremendous success with four Hansen HA4AM Electric Motor Compensated Regulators in a recent refrigeration system addition. James Bartell of James Bartell and Associates, Inc., engineered the recirculated liquid ammonia refrigeration system using these HA4AM regulators for two degreening rooms, or "sweat rooms," where citrus is ripened.
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Pressure Relief Valve Maintenance

Vital to any industrial or large commercial refrigeration system are pressure (safety) relief valves. These valves provide emergency relief from over-pressure in refrigeration systems. The ANSI/ASHRAE 15-1994 Safety Code for Mechanical Refrigeration requires pressure vessels of all refrigeration systems to be protected by a pressure relief device. For most pressure vessels, dual relief valves connected via a 3-way shut-off valve are required. It is essential that routine inspection and maintenance occurs on these important valves. In time of emergency, can you be sure your pressure relief valve will operate properly?
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Two pressure-relief valves connected via a three-way dual shut-off valve.

Inside...

Selecting Ammonia Refrigeration Shut-Off Valves

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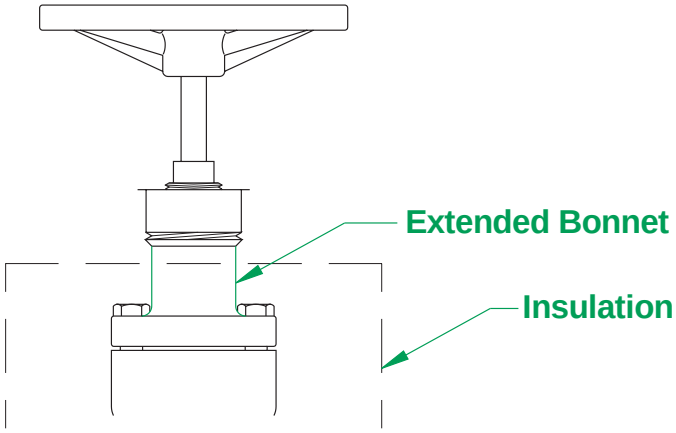
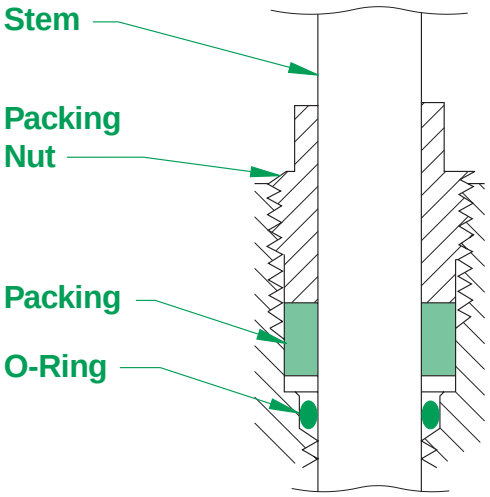
Important features to look for include strong, yet light weight, bodies made from low-temperature-tolerant materials, such as cast steel or ductile iron. Valves with extended bonnets that rise above traditional insulation thicknesses make valve insulation easier. Hansen's stainless steel rising stem design is beneficial for visual verification of shut-off valve seat position. To ensure sound welding and convenient installation, weld ends are cleanly machined to proper wall thickness and fit. On same size valves, interchangeable seal caps and handwheels provide greater flexibility.

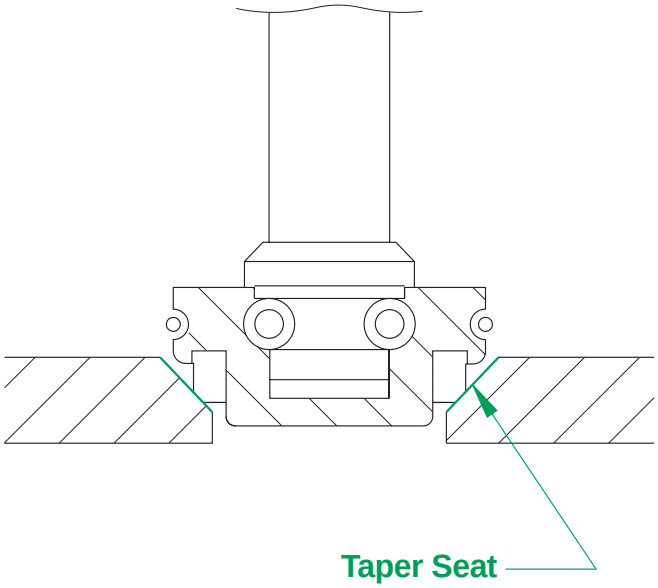




One of the most vital characteristics of reliable shut-off valves is leak-free stem sealing. Close examination of Hansen's valves reveals their leak-free, dual stem sealing. Hansen's O-ring-plus-packing design maintains tightness better than the conventional packing design, especially in conjunction with the standard stainless steel stems. The patented O-ring-stem-seal design permits low torque operation to open and close the valve because the packing nut does not normally require retightening. Packing nuts feature highly-effective, corrosion-resistant, dual plating. Stems have a back-seating design for easy stem seal replacement.

Effective shut-off valves have tight seating. A number of materials and designs exist for shut-off valve seats. Hansen's shut-off valves have conical (tapered) seats, not bead seats, to prevent dirt particle accumulation and to increase flow. Hansen uses Teflon seats which have proven excellent in providing bubble-tight sealing and long seat life without resorting to lead-containing (Pb) materials. In addition, every Hansen valve is individually factory tested on a sensitive leak-detection system for both external leaks and seat leaks.

Hansen's low-pressure-drop shut-off valves are available in threaded, socket weld, or butt weld connection styles. Hand expansion (regulating) valves and gauge, purge, and needle valves also have dual packing and stainless steel stems. With plenty of valves in stock and a highly-organized packing procedure, Hansen shut-off valves are shipped promptly for arrival in proper condition.



Note: All diagrams, schematics, and installation drawings in this newsletter are representations for illustration purposes only and should not be used for actual engineering or installation.

HA4AM Electric Motor Compensated Regulator

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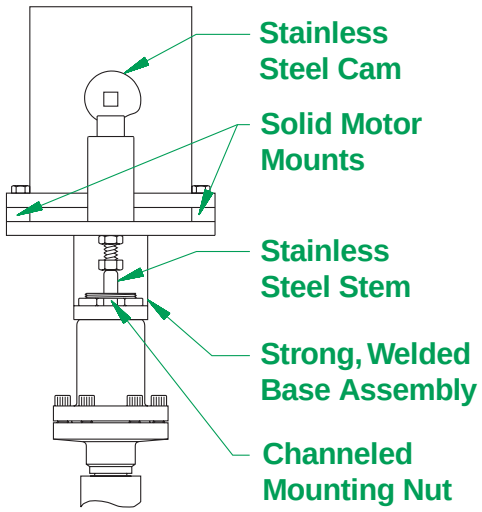
Each HA4AM controls a coil, (two coils per room). In order to keep humidity high in these fruit-ripening rooms, cooled air is discharged through the side walls of each room by using a centrifugal blower to pull air over the 30-ton (95 kW) coils. The de-greening rooms are kept at approximately 56°F (13°C) and 85% relative humidity. The company is pleased to see the rooms are holding temperature at ±1°F (0.5°C) despite variations in quantity and fluctuations in temperature of the incoming product.

In operation, an HA4AM motor receives a signal from a temperature controller based on a temperature sensor inside the room. The motor rotates to increase or decrease the refrigerant pressure setting of the pilot accordingly.

The Hansen HA4AM is commonly used for liquid chiller control and precise room temperature control (within 1°F or 0.5°C). It is capable of quick response to temperature change. The strong welded base eliminates the problem of motor-binding, while the quad ring stem seal and channeled mounting nut prevent moisture leakage past the stem area into the pilot area. Durable, stainless steel stem, cam, and follower are long-lasting and corrosion resistant.



Year 2000 Compliance

As January 1, 2000 approaches, so does the deadline for all businesses to make sure that their computer systems are compatible with the new millennium. Hansen Technologies Corporation is ready.

Year 2000 compliance refers to the situation facing businesses everywhere that have computer systems and products that use only the last two digits to represent the year. Date-oriented programs, such as inventory, billing, and payroll will be particularly affected as January 2000 will be recorded and processed by many computers as January 1900.

Hansen offers several products that integrate electronic circuitry and/or controllers. These include our popular line of AUTO-PURGER®s, the Frost Master®, and the *Pump Guardian.* Also, our line of level probes, including the Vari-Level® and Techni-Level®, use electronic circuitry and/or controllers. After an extensive review of all our electronic products, it has been determined that Hansen is millennium-ready. No Hansen product, including products already in the field, will be affected by the year 2000 dilemma.

In addition to the product lines, our new internal business computer system, integrated in 1998, is year 2000 compliant. This means that customer orders, customer accounts, and inventory monitoring will continue to function normally from this millennium to the next. Ensuring year 2000 compliance for our product line and internal resources reaffirms Hansen's commitment to customer service and product reliability.

Purger Preventative Maintenance

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other parts should all be inspected periodically to ensure proper functioning. If an AUTO-PURGER has gone more than eight years without maintenance, now is a good time to consider replacing key parts or even the entire AUTO-PURGER, if appropriate. Remember, preventative maintenance will benefit your purger and help keep your refrigeration system working at an optimal level during the hot summer season and beyond.

For replacement part numbers for AP or APM models, review the current AUTO-PURGER operation and instruction manual.

New Literature Now Available From Hansen

Over the past few months, Hansen Technologies has published some new technical bulletins. For a copy of any of these bulletins or information on any Hansen product, contact us at 1-800-426-7368 or Fax (630) 325-1572.

Bulletin P479: Level Pulse Control System
Bulletin R429c: Modular Pressure Regulators
Bulletin G109i: Threaded Shut-Off Valves
Bulletin HB21a: Sales Staff and Regional Sales Territories
Bulletin HB32: Shut-Off Valves Brochure
Bulletin X419: Thermostatic Expansion Valves
Bulletin C403: Gravity Drain Check Valves

Pressure Relief Valve Maintenance

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A number of guidelines for pressure relief valve service and maintenance exist to ensure that pressure relief valves work correctly. Some tips in brief include the following.

Industry-Accepted Tips

- ✔ Atmospheric discharge lines should have adequate rain and moisture protection, and be capable of draining condensate and rainwater.
- ✔ Check to make sure the relief valve exit stays unobstructed.
- ✔ Routine maintenance of pressure relief valves should include visual inspection of the relief valve and discharge piping every six months.
- ✔ Relief valves should be replaced at intervals of no longer than five years of service.
- ✔ Maintain pressure relief valve data in an inventory record, including location, size, set pressure, manufacturer, capacity, date installed, dates of inspections, and latest date for replacement.
- ✔ Pressure relief valves should not be discharged during installation or start-up.
- ✔ Replace pressure relief valves once they have discharged.

Hansen valves come with highly-durable, plastic date tags to help quickly and easily identify when a pressure relief valve was installed. In addition, Hansen recommends the following.

Hansen's Additional Tips

- ✔ Never expose your face or body to a connected relief valve exit.
- ✔ Avoid trapped ice build up between valves and other equipment.
- ✔ Reduce inlet pressure to zero before attempting to install or replace any pressure relief valve. Preferably, and as required by most codes, use a three-way dual shut-off valve to isolate relief valves for individual inspection or replacement.
- ✔ Check the nameplate or installation date tag to be sure the time-in-service does not exceed five years.
- ✔ Look for corrosion and leaks. If there is any doubt about the internal condition of a relief valve, remove and inspect it internally. If there is any question about a valve's condition, replace it.

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