DAWSON CO.
YOUR FLUID TECHNOLOGY RESOURCE

Hydronic News

OF SOUTHERN CALIFORNIA, CLARK COUNTY NEVADA, AND HAWAII

Bell & Gossett Representatives Since 1952

Laars Representatives Since 1999

Cemline Representatives Since 1989

Volume 1, Issue 1 August 2004

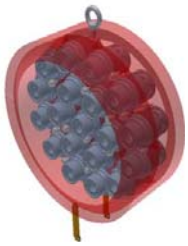
Product Highlights

B&G CIRCUIT SENTRY

Automatic Flow Control Valve

Bell & Gossett is pleased to announce the new Circuit Sentry line of automatic flow limiting valves! The Circuit Sentry offers unique and important operating features, which provide important benefits to some of the challenging hydronic system applications.

The valve is available in two styles – brass with integral ball valve and wafer style. The brass valve is currently available from ½" to 1-1/2" in female NPT or sweat fixed end connections. Larger brass sizes will be available by year end.



The union tailpiece is available in female or male NPT connections and female sweat connections. Tailpiece sizes may be used interchangeably in the body size to reduce the need for a piping adapter. For larger flanged pipe sizes, wafer valves are available up to 20" in diameter, with larger sizes available as special order. This allows the **Circuit Sentry** line to control flows from 1/3 GPM to 7200 GPM and beyond.

Each body is built around a unique flow control cartridge. Traditional automatic flow limiting valves have relied on small cut slots to control flow. These slots often lead to improper operation. The **Circuit Sentry** cartridge utilizes a simple orifice plate for flow control leaving a clear hole for water to flow through. In the **Circuit Sentry,** a unique rolling diaphragm connects the static and dynamic portions of the cartridge. This creates a zone of controlled differential pressure and allows the control spring to maintain the constant differential pressure required across the orifice for precise flow control.

The diaphragm also prevents flow between the static and dynamic barrels of the cartridge. This feature, aside from allowing precise fluid flow control, also greatly reduces the possibility for hydronic-system-borne dirt from lodging between

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Project Highlights

ANAHEIM MEMORIAL HOSPITAL

Project Location: *Anaheim, California*
By David Hernandez, P.E.

Last summer Dawson Company was given the opportunity to show why "Your Fluid Technology Resource" is not only our company slogan, but our commitment to the HVAC industry for the last 56 years. Working closely with **Scot Wrotenbery** of **Trane Global Controls & Contracting** (the general contractor) and **Tony Grano** and **Jim McReynolds** of **Retrofit Technology** (the mechanical contractor), Dawson Company provided both technical support and a myriad of equipment for the central plant upgrade at Anaheim Memorial Center.

This project was designed by **Mike Gilmore** of **Donn C. Gilmore & Associates** in Anaheim, CA and consisted of a 418 HP steam plant, to provide both comfort heating and domestic hot water, and a 1,150 ton chilled water plant to provide comfort cooling chilled water. Dawson Company provided just about all of the ancillary equipment to support the prime movers including:

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Inside This Issue

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the two components causing operational sticking and clogging. Moreover, it allows one pressure cartridge to control flows across a rated differential pressure from 2 PSID to more than 60 PSID.

While the valve itself is an important addition to Bell & Gossett's line of balancing products, it is not the only device being announced at this time. Bell & Gossett will also be offering these products in assembled valve kits. There are sixteen standard kit offerings, eight utilizing the **Circuit Sentry** and eight incorporating the Circuit Setter Plus® manual balancing valve. Kits are available to 2" in size, with and without flexible hoses, allowing for hundreds of kit configurations.

B&G CHECK TROL

Isolation Control Flange

Three features in one valve!

Installing a Check-Trol on the discharge of the circulator gives you the features of a Flow Control Valve, Isolation Valve and Companion flange. Another advantage of the Check-Trol is the minimal pressure drop, especially when compared to the losses that can be experienced when a check valve is installed internal to the circulator. The Check-Trol flanges are packaged with an isolation flange of the same size to create a pair. Capscrews and nuts are included.

DAVEY PUMP

HS Multistage Booster System

The ultimate in strong, even water pressure!

Davey's HS multistage booster system with Hydrascan® control gives you the ultimate in strong, even water pressure. The Hydrascan® control starts the pump as soon as you switch on the tap and continues running until water is not required. Hydrascan® continuously monitors the flow of water and will switch it off to avoid damage if the supply becomes inadequate. HS systems are compact, quiet and easy to install. A 2-gallon pressure tank is included.

LAARS PENNANT

The industry's most versatile and environmentally friendly commercial systems!

The new Pennant line of fan-assisted, modular boilers and water heaters from LAARS ranks among the industry's most versatile and environmentally friendly commercial systems for hydronic and hot water applications. Available in 500, 750, 1000, 1250, 1500, 1750, and 2000 MBTU, Pennant systems run reliably on natural or LP gas and deliver efficiency levels up to 85%. Pennant systems are also among the "greenest" in the industry with NOx emissions below 10ppm.

Pennant boilers and water heaters feature convenient modular construction that separates the burner trays, gas train, and blower assembly.

All Pennant models use lightweight insulation, glass-lined cast iron or bronze headers, and non-ferrous waterways. The 10-tube heat exchanger design uses finned tubing for the quickest and most efficient heat transfer and the water heater meets the ASHRAE 90.1 standard for efficiency for use with storage tanks.

Pennant is also available with copper or cupronickel heat exchanger tube options for use in various water and flow rate conditions, and an optional factory-mounted pump sized for the heat exchanger and 30 feet of piping.

LAARS RHEOS

Modulating Boiler or Hot Water Heater!

Smart boiler/water heater technology combines the precise control of state-of-the-art modulation electronics that sense the existing conditions and automatically adjusts the boiler performance to meet the required heating loads. Available in 1.2, 1.6, 2.0, and 2.4 million BTU's at 87% combustion efficiency. Rheos sets a new standard in boiler design with its high-density heat exchanger that uses a unique double row finned tube design to maximize the heating surface area.

This design yields the highest density of heat transfer per square foot of floor space. In addition, the low emissions burner enables Rheos to deliver the highest environmental performance and meet building codes and environmental regulations in all 50 states and Canada, including NOx emission standards.

LAARS RHEOS+

Condensing Boiler/Water Heater for commercial systems!

The LAARS Rheos+ 2400 smart condensing boiler heater is a breakthrough in commercial heating system design. Now, for the first time, engineers and heating contractors can choose a single high-efficiency (up to 90%), low-cost system for commercial installations. Available in 1.2 and 2.4 million BTU's.

The Rheos+ 2400 saves fuel by automatically adjusting its firing rate in response to the demand for heat. This can save owners up to 30% over conventional, non-modulating systems. The Rheos+ 2400 also features the highest density and smallest footprint available, so it takes up far less floor space. In fact, its so compact it can fit through a standard doorway.

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MITSUBISHI VFD

A500: The A500 Series delivers outstanding performance for a wide range of applications, including machinery that requires high motor torque production without encoder feedback, even at low RPM. A broad selection of standard settings, plus 3 plug-in option ports, enable the user to tailor the product to suit the application requirements.

E500: The cost-cost effective variable speed control solution for general purpose applications.

F500: The F500 Series delivers outstanding performance for a wide range of commercial applications. A broad selection of standard settings, plus 3 plug-in option ports, enables the user to tailor the product to suit the application requirements.

S500: Low cost Sub-Micro VFD with Mitsubishi Quality.

A201E: Advanced technologies have been incorporated into a single unit to produce performance that is perfect for applications such as elevators and line controls.

V500: This series achieves high precision and fast response that exceeds the performance of conventional general-purpose inverters. This series can be used in specialized applications such as line control and elevators.

PACKAGED DRIVES: Now you can get a complete "Package" from Mitsubishi. We develop, engineer, manufacture and service AC variable frequency drive packages. Our packaged drives come to your facility with "As Built" documentation, pre-tested, and ready for installation and wiring.

INSIDE DAWSON

By Ric Serafin, President and C.E.O.

It's been three years since we published the Dawson Company Hydronic Newsletter. It's back for good and will be published quarterly.

Let me share with you some of the changes at Dawson Company. Five months ago Michael D. Taylor stepped down as President and Chairman of the Board. Together, we continued to move on and carried the drive and passion Michael D. Taylor handed to us. He has definitely done a lot of good things for the company. His biggest accomplishment is the people he mentored and developed throughout his 19 years with the company.

The new management team at Dawson Company is as follows:

1) Ric C. Serafin – President, CEO, Treasurer
2) Frank E. Dunn – Executive Vice President, Chairman of the Board
3) David W. Dawson – Vice President, Secretary
4) Nicholas C. Ekdahl – Operations Manager
5) Peggy J. Ogata – Controller
6) Michael J. Caffrey – Branch Manager, San Diego
7) Jim Cavaness – Branch Manager, Las Vegas

Our Mission is To Deliver Superior Solutions, Performance and Value. Always.

Our Vision is Limitless Possibilities through Growth, Leadership and Innovation.

We have just added quality products to our long list of top brand manufacturers such as Mitsubishi Electric variable frequency drives, Davey Pumps residential booster systems, Hydromatic sewage pumps, and Highland Tanks oil and water separators.

Our focus is in our core business of commercial HVAC and plumbing. Our primary vendors are Bell & Gossett, ITT Heat Transfer, McDonnell & Miller, Hoffman Specialties, Laars Heating Systems, and Cemline.

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Technical Matters

By Jack Dawson, P.E., M.S.

INSTANTANEOUS GAS FIRED WATER HEATERS

Trade shows, written advertisements, and even Paul Harvey are touting these European type heaters.

These heaters are designed to hang on the wall of a kitchen – thus their fancy finished look.

They have severe capacity limitations that most Americans will not tolerate. For instance, an input of 200,000 BTU/hr will deliver about 4GPM. This might handle a shower and a basin, but it can't keep up with anything needing more flow. Additionally, they have a pressure drop in the range of 15psi.

These units fire with any detected flow – which means that you can NOT use a re-circulating system. Perhaps worse, these things will lime up quickly with ordinary California water. A water softener may help. I have talked with plumbers who put these in at owners' insistence, only to be pulled out within a year.

Storage type water heaters are one of the real bargains in the plumbing industry. A 50 gallon unit with about 40,000 input sells for less than $400.

CLOSED VERSUS OPEN HYDRONIC SYSTEMS

We at Dawson Company are often asked about closed versus open systems.

Open Systems have continual addition of fresh water and sometimes added air. Some examples of open systems are:

- Residential and commercial plumbing where the water is never reused and there is continual make up.
- Steam systems where the hot condensate is in vented receivers and there is continual make up.
- Commercial and industrial systems where the water is used to cool some process and is either wasted or is cooled through evaporating some of the water.

Corrosion and electrolysis are a problem in any open system and is intensified if the water is heated. Precipitation of solids (most often calcium carbonate) is also a problem. The problem is minimized by avoiding the use of metals that are very active in the electromotive series such as black steel, aluminum, magnesium, with the less active metals such as copper, brass, bronze, galvanized and stainless steel. Where a lot of these problems are anticipated, we recommend the services of a water chemist.

Closed systems may appear similar to open systems but there is a big difference in lack of corrosion, electrolysis, and precipitation. Examples of closed systems are:

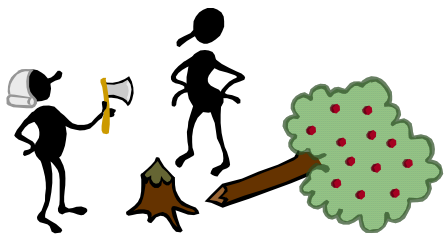
- A modern automobile cooling system where aluminum, brass, cast iron, and steel are used.
- Millions of hydronic residential heating systems that use cast iron boilers, cast iron pumps, brass impellers, brass and cast iron valves, and steel compression tanks.

A closed system is usually filled with city water that has dissolved solids, dissolved oxygen, and some small solids and suspended solids. If the system is operated as a closed system, the solids soon precipitate and are hardly noticed. The dissolved oxygen attacks some metals and forms a black oxide that again is hardly noticed. In the process, the water has become chemically neutral and corrosion does not occur. Dissimilar metals are not a problem and electrolysis does not occur.

For over half a century, the standard construction for closed systems consisted of black iron pipe, brass and iron valves, pumps with cast iron bodies with brass impellers. However, the standard materials of open systems include copper, brass, plastic, and stainless steel pipe. Iron bodied pumps should not be used on open systems; the preferred materials are all bronze or stainless steel. Steel and iron valves are not to be used in open systems.

This Quarter's Core Value: **HONESTY**

Fairness and straightforwardness of conduct, adherence to the facts, acting without deception.



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- ITT Bell & Gossett chilled, condenser, hot and domestic hot water pumps
- ITT Bell & Gossett steam to water heat exchangers (singlewall for comfort heating and doublewall for domestic hot water)
- ITT Bell & Gossett air control components including air separators, expansion tanks and air vents
- ITT Bell & Gossett pump accessories, including suction diffusers and triple-duty valves
- ITT Hoffman steam control valves, steam traps and vacuum breakers
- ITT Hoffman condensate return unit
- Cemline Corporation condensate blowdown tank
- J.L. Wingert pot feeders

The list above is just a small portion of the products Dawson Company has to offer. We are committed to being the first choice for "fluid technology" products and technical expertise in our territory and would like to thank the project team for choosing Dawson Company:

Owner's Representative – Bradley Daniels, Anaheim Memorial Medical Center
Design Engineer – Mike Gilmore, Donn C. Gilmore & Associates
General Contractor – Trane Global Controls & Contracting, Scot Wrotenbery
Mechanical Contractor – Retrofit Technology, Tony Grano & Jim McReynolds

HOFFMAN Self-contained pilot operated steam control valves and steam traps.

BELL & GOSSETT Hot water pumps, shell and tube heat exchangers, air separator

Yes, we truly are "Your Fluid Technology Resource"!

CHILDREN'S HOSPITAL & HEALTH CENTER
Central Plant Expansion

Project Location: *San Diego, CA*
By Mike Caffrey

This project is a modernization and expansion of the central plant in the prestigious Children's Hospital of San Diego. Dawson Company sales engineer, John Sieger, invested many hours working with the engineer of record, the **Syska Hennessy Group**. This project was initially designed on the East Coast, which presented a number of challenges for both John and Syska's West Coast office. Substantial specification revision was required to permit commercial HVAC products to be utilized, and sizes and capacities for the scheduled equipment were changing on a weekly basis.

Ultimately, **A.O. Reed & Co**. put forward the winning proposal and was awarded the job. At this point, negotiations began between **Roy Hobbs**, Vice President of Business Development for **A.O. Reed**, and Mike Caffrey of Dawson Company. An agreement was reached and the project review began again. Ongoing changes continued to present challenges, but were ultimately resolved through the willingness of **Mr. Hobbs** and **Syska Hennesy Group** to respond quickly to design issues. John Sieger continued to assist the **Syska Hennessy Group** and the project design issues were resolved.

Dawson Company provided all of the pumps for the plant – a total of nine split cases in horsepower from 40 to 300. A.O. Smith Century E+3 motors were featured on all pumps. A custom package from Cemline was also ordered, which will feature two generators and a custom stainless steel boiler feed unit, all mounted on one skid. Total capacity of the Cemline unit will be 4,800 pounds per hour of 75 psig steam. Hansen Tank provided some custom tanks, one of which was 25 feet long and 2 ½ feet in

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diameter. Flex-Hose provided a custom air separator designed for high temperature hot water, and hydronic accessories were supplied by both Bell & Gosset and Flow Conditioning.

While challenging to complete, this project increases the reliability and safety of a vital institution for residents of San Diego County. Additionally, the new plant promises to deliver substantial energy savings to the hospital. The new plant is expected to be operational by the end of the year.

CAESAR'S SOUTH TOWER

Project Location: *Las Vegas, Nevada*

By David Dawson

In the summer of 2003, **Brad Geinzer** of **JBA Consulting Engineers** was given the task of orchestrating and designing both the domestic and the heating hot water system for the new Caesars South Tower. Cemline's SEH Stainless Steel Double Wall units were the preferred equipment to provide the domestic hot water. In October of 2003, David Dawson and Dustin McNeely of Dawson Company were called upon to size the units for the conditions provided by **Mr. Geinzer**.

After a few condition changes and some redesigning, eleven V12SEH1242 and fourteen V14SEH1442 Cemline units were selected. **Mr. Geinzer** kept the conditions relatively identical so there would not be an array of different sized units. The purpose for this was to keep Caesars inventory to a minimum and to make ordering replacement parts less difficult.

The job went to bid in November of 2003. Due to budgeting issues, the job was re-bid in January of 2004 and again in March. Following the March bid, **Hansen Mechanical** was awarded the job and **Ken Strickler** was put in charge of collecting submittals, issuing purchase orders, and scheduling shipments. Dawson Company was awarded the job and the Cemline units were put on order in early June with an expected delivery date of early September.

We wish to thank **Brad Geinzer** of **JBA** for the opportunity to work closely with him on this project. We look forward to working with him on more projects in the future!

MAMMOTH MOUNTAIN SKI RESORT
Canyon Station/Village Gondola Station

Project Location: *Mammoth Lakes, California*

By Deborah Thomas

with acknowledgement to Steve Berry and Manny Masso for their assistance

When Mike Taylor, President of Dawson Co (retired Feb. 2004), got the call from **Xcel**, Dawson Company was ready, willing, and more than able to meet their needs! Mike, along with sales engineers Steve Berry and Manny Masso, worked closely with engineers and salesmen from **Laars** and **Watts Radiant** to design many of the snowmelt systems.

The Canyon Station is the upper portion of the ski resort and houses the mountain's main gondola/lift center. It also provides storage for all 37 gondola cars when they are not in operation. The Village Gondola station is situated in the heart of the Village at Mammoth – a pedestrian-oriented "town" where tourists are provided with lodging, dining, shopping and other resort amenities.

This challenging snowmelt project, including a 10,000 sq. ft. radiant heated deck (among other extensive snowmelt surfaces), required a strong team effort, many hours of hard work, and creative designing. The team ultimately settled on a primary-secondary-tertiary system, modified to meet their unique needs. Some of those modifications included elevating the temperatures and delta-Ts to minimize pump sizing. In addition, due to the possibility of cold starts in extreme cold weather, the team worked diligently to minimize the risks of cracking concrete gondola bays.

Keith Whitworth, design engineer for **Watts Radiant**, assisted with designing several of the snowmelt systems and the CAD layout of the tubing. He also worked hard to design each of the HydroControl panels that **Xcel** used to minimize the amount of wall space required for piping and controls in tight mechanical room layouts. His designs were also aimed at reducing field installation time.

This project saw a lot of firsts – not just in matters of design, but also in equipment. **Bill Root**, VP Sales & Marketing and **John Warner**, Director of Sales at **Laars** pushed hard to get LP certification for their Laars Rheos modulating boiler. Once the first commercial prototype passed high altitude testing in Denver, it was shipped to the site to become the first LP approved and commercially installed Rheos unit.

Another first was the wall-hung HydroControl panel. It was the largest ever fabricated by Watts Radiant. Even with changes to the

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Calendar of Events

This Year

LRSH – 50th Anniversary!

Also This Year:

Waterpik-Laars 2004 New Product Training
- Pennant & Rheos + Classes -

Place: Moorpark, CA
Date: Sept. 13-14, 2004
Website: www.laars.com

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Queen Mary Trade Show (Apartment Association of California Southern Cities, Inc.)

Place: Long Beach, CA
Date: September 23, 2004
Website: www.apt-assoc.com

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AAGLA (Apartment Association of Greater Los Angeles) Expo

Place: 621 S. Westmoreland Ave.
Los Angeles, CA 90005
Date: October 7, 2004
Website: www.aagla.org

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ASPE 2004 Convention & Engineered Plumbing Exposition

Place: Cleveland, OH
Date: October 23-27, 2004
Website: www.aspe.org

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Coming Up Next Year:

AHR (Air Conditioning, HVAC, and Refrigeration) Expo

Place: Orlando, FL
Date: February 7-9, 2005
Website: www.ahrexpo.com

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AAGLA PHCC Trade Show

Place: Pomona, CA
Date: February 26, 2005
Website: www.phccweb.org

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"Life ought to be a struggle of desire toward adventures whose nobility will fertilize the soul."

Rebecca West: (1892-1983) Irish Author, Journalist.

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panel's function coming in mid-stream due to new demands by Mammoth Mountain management, the panel was completed in just three weeks.

HydroControl Panel

All the coordinated team efforts, hard work and creative innovation of the team members, and the state of the art equipment used proved it's worth when the station was hit with it's first snow storm less than 24-hours after system start-up. Everything worked exactly as it was designed to.

Many new changes have occurred since the initial design of the facilities: Snowmelt was added to two external sidewalk/bus-loading zones at the Village. This system was powered by the Rheos boilers in the Village Gondola Station, changing the design from a single injection mix, low-temp zone to a dedicated three-zone, low temperature HydroControl.

Further changes added a fourth zone to this HydroControl panel to provide snowmelt for three stairways. The flexibility of Onix tubing by Watts Radiant permits it to be contoured easily to the stair surface. Radiate tubing was also placed under much of the Village sidewalks and will ultimately be heated via a central heating district with piped-in waste heat from a geothermal generation station located four miles away.

In the final analysis, the truly significant factor in this project was teamwork. The collaboration between **Xcel**, Dawson Company, **Laars**, and **Watts Radiant** were, according to Mike Taylor, "quite a different story than the typical adversarial plan and spec cycle." The result was a quality project delivered to the owner – and that's what it's all about!

Continued from page 3 – **Inside Dawson**

We were incorporated in 1948, but I consider Dawson Company as an old-young company. Old because we have 56 years of tradition and strong good will. Young because we are change agents, adaptable to new ways of doing business as dictated by the global economy.

Our Core Values are dictated by our strong corporate beliefs. They are: Honesty, Integrity, Teamwork, Courage, Quality, and Creativity. Each of these values are well defined in our corporate culture and are practiced daily. We can assure you that every business decision made at Dawson Company is consistent with our Core Values.

Thank you very much for your continued support of Dawson Company and I encourage you to visit our newly developed website at www.dawsonco.com.

The Value of Teamwork

Along the Western Coast of the United States there are huge groves of red cedars. They grow tall and lovely and appear to be very strong. But their roots are shallow. When one falls, others often follow. Do you know what holds up these beautiful trees? They lean on each other. Their branches touch and support one another. Not one of them can stand alone.

Sunday Sermons

CHECK YOUR KNOWLEDGE

1. Who was the General Contractor for the Anaheim Memorial Hospital project?
2. How many standard assembled valve kit offerings utilizing Circuit Sentry and Circuit Setter Plus will B&G be offering?
3. Which Laars product features the highest density and smallest footprint available?
4. What is the Dawson Company "Mission"?
5. What should not be used on open hydronic systems?
6. What is the definition for this quarter's Core Value?
7. Who put forward the winning proposal for the Children's Hospital & Health Center project in San Diego?
8. Which two products were first commercially installed at the Mammoth Mountain Ski Resort project?
9. What's happening on October 23-27, 2004?
10. What is the address for the Dawson Company website?

ANSWERS ARE ON THE RIGHT

*"The time is always **right** to do what is **right**."*

Dr. Martin Luther King, Jr.: (1829-1968) Civil Rights Leader.

1. Scot Wrotenbery of Trane Global Controls & Contracting; 2. sixteen; 3. Rheos+ 2400; 4. To Deliver Superior Solutions, Performance and Value. Always; 5. Iron bodied pumps; 6. Fairness and straightforwardness of conduct, adherence to the facts, acting without deception.; 7. A.O. Reed & Co.; 8. Laars Rheos Modulating Boiler & the Hydro Control panel assembled by Watts Radiant; 9. ASPE 2004 Convention & Engineered Plumbing Exposition in Cleveland, OH; 10. www.dawsonco.com

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