

Leak Diagnosis & Detection System

■ Leak Diagnosis System

Leak detection sensors, we said "Flow-LOOK", are installed for a specific period or regularly for piping or affiliated facility (water valve or hydrant), analyzing the continuity, the communication reports of sonic wave to deliver diagnosis results to the smart pad; leak is detected on exclusive management software.



Specifications of the daily leak diagnosis

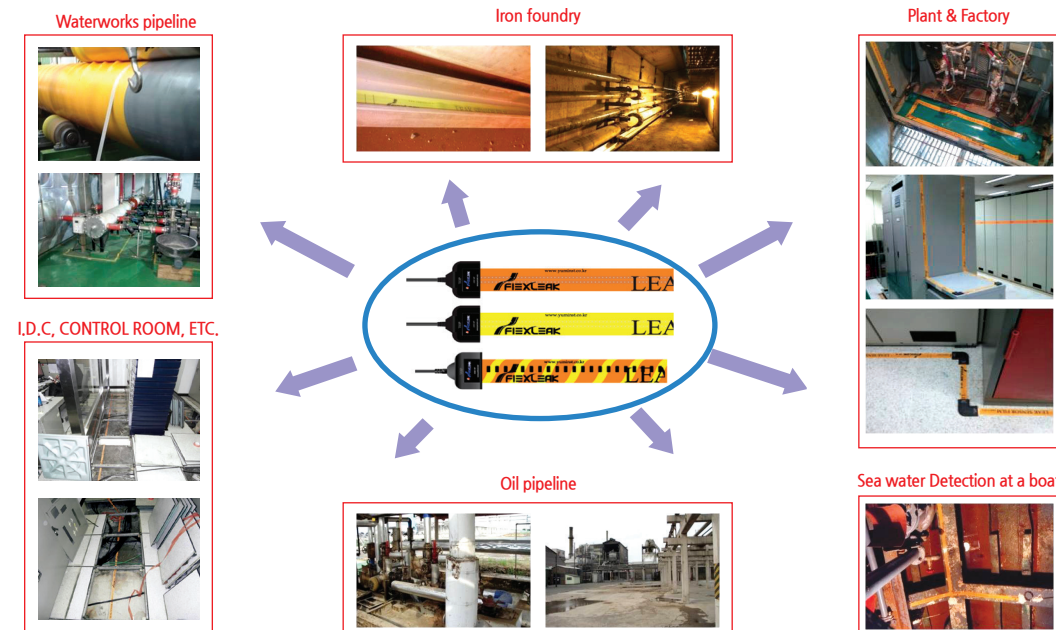
Detection sensor	Basic idea	The sonic wave (level, spread, color and continuity of sound) are analyzed to diagnose leak.
	Structure of the detection sensor	One case: 10 diagnosis sensors (basic) embedded the terminal converter
	Weight	Less than 800g/unit
	Operation frequency	173.70MHz(424MHz, 2.4GHz(Optional))
	Frequency of sound collection	More than 10 times per 5 minutes
	Waterproof	Complete waterproofing that conforms to international specifications
	Physical specification	Smaller than 10mm
	Power source	Rechargeable battery
Operation terminal	Diagnosis	173.70MHz(424MHz, 2.4GHz(Optional)) + Bluetooth (Certified for communication and broadcasting)
		Connection via Bluetooth or USB
Operation terminal		Smart devices (support for Android OS), GPS functionality
		English support (smartphone / server software for PC)

Advantage of the product

- Save time and man power
- Concentrative and motivational detector
- Save the money, no need to check on the sound detector
- One person can control the large area
- Easy and fast leakage check
- All line on the data system



■ Leak Detection System



We are opening a new chapter of history with pioneering and challenging spirit.

Flowtech
FLOWTECH CO., LTD.



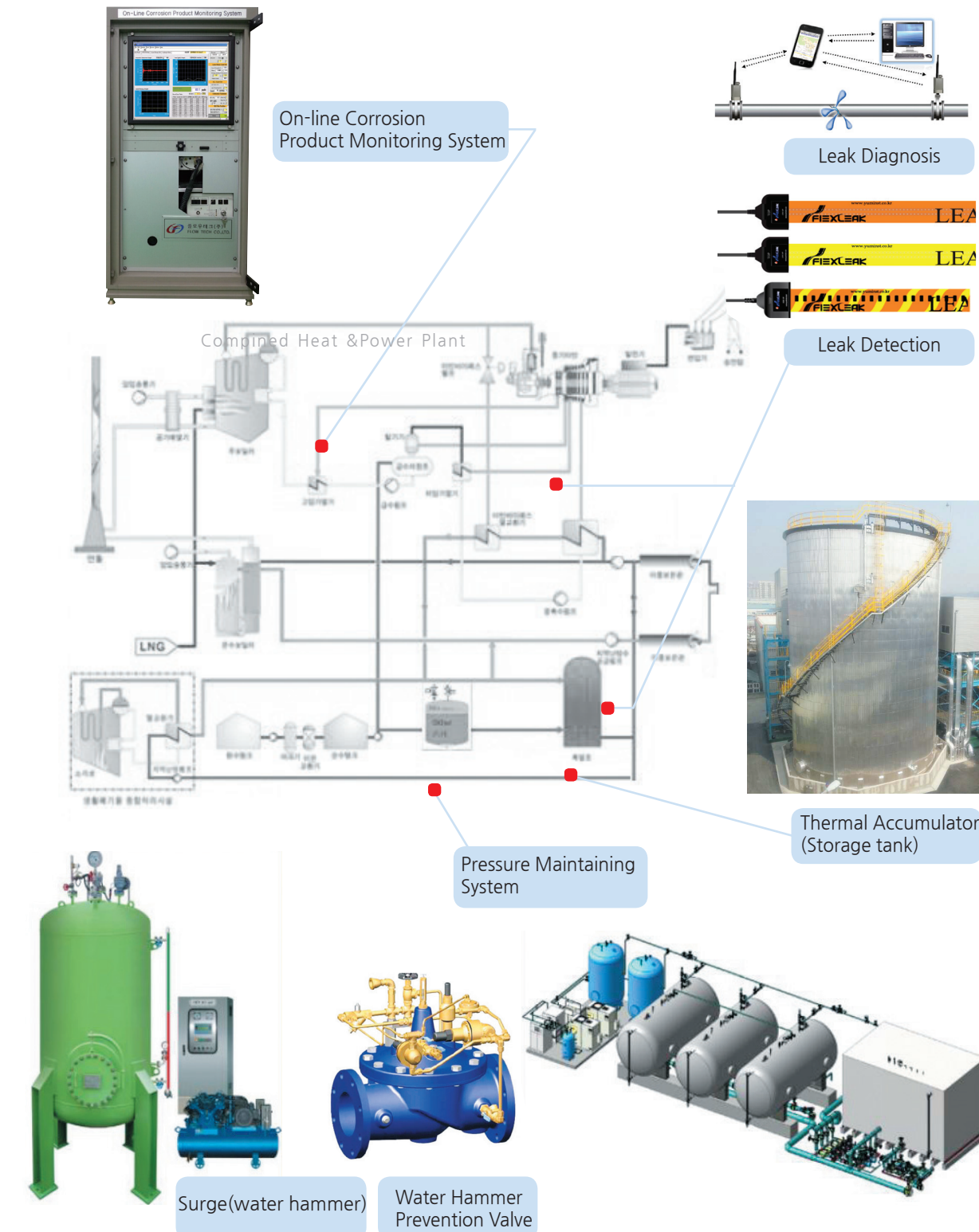
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NO.201604

Surge(water hammer)Protection System
Pressure Maintaining System
Thermal Accumulator(Storage tank)
On-line Corrosion Product Monitoring System
Leak Diagnosis & Detection System

Flowtech's Item in Power Plant



About FLOWTECH

FLOWTECH provides hydraulic machinery products and services based on eco-friendliness of water-energy-environment. We have made continued effort for R&D and value creation for our customers, with the ultimate goal of making all the projects of our customers eco-friendly, more efficient, and highly stable. Water Hammer prevention equipment, Pressure Maintaining System, and water supply line pressure pump system we supply have been recognized as by far the best in the world in various aspects, and as we are ranked as No. 1 in supply performance in Korea, we are preparing the application for global patents and entering into overseas markets to compete with global players. To this end, we have increased our R & D investments (8.5% of the revenue of 2010) every year as a small but robust eco-friendly hydraulic machinery and engineering company with a sound management structure and sustainable human resources development.

History

2005

Established FLOWTECH CO., LTD.- Surge Protection System equipment, integrated pump system and automatic fluid filtering system
Developed Water Hammer Protection controller (HAMMER-trol) and testing analysis equipment.

2006

Supplied integrated pump system (I&I WMS) to Hyundai Seongwoo Resort for the first time in Korea
Obtained ISO 9001 & ISO 14001 (CRK-Q0-420, CRK-E0-066)

2007

Registered a patent(1) - CES & local cooling and heating N2 pressure expansion water controlling system (No.10-0702469)
Obtained a venture certificate (No.20070200808)
Registered a patent(2) - Expansion water and feed water control system for parallel circulation system (No.10-0760985)
Registered a patent(3) - Water Hammer Prevention System for cooling & heating circulation piping system (No.10-0760984)

2008

Registered a patent(4) - I&I WMS integrated pump system(No.10-0795592)
Registered six trademarks including Eco-trol, HAMMER-trol
Registered a patent(5) - Pressure Maintaining System auto control(No.10-0842818)
Registered a patent(6) - Combined Heat & Power Plant N2 gas filling expansion pressure equipment (No.10-0845472)
Gained an INNO-BIZ Certificate (No.8071-2171)
Registered a patent(7) - Water Hammer Prevention System (No.10-0868908)

2009

Registered a patent(8) - Cold Accumulator (No.10-0879629)
Gained a venture ethical management certificate (No.08-05), Registered the company R&D center (No.2009110132)
Selected as Promising SME by Incheon City (No. 250)

2010

Registered a utility model(1)- Energy saving Water supply line pressure pump system (No.20-0446721)
Registered a patent(9) - Energy saving and highly reliable Water Hammer Prevention System and operating method (No.10-0933656)
Registered a patent(10) - Water level control method for pressure tank with multiple sensors (No.10-0982683)

2011

Registered a patent(11) - Water level control method for pressure tank using level transmitter and level switch (No.10-1069126)
Registered a utility model(2) - Energy saving Water Hammer Prevention System (No.20-0456211)
Registered a patent(12) - Damage sensor of bladder-type expansion tank(No.10-1077059)
Selected as a Quality Product Maker by Incheon City (Water Hammer Prevention System, Pressure Maintaining System / Nov. 2011-Jan. 2014)
Selected a VISION 2011 Company by Incheon City
Registered a patent(13) - Controlling method of cooling/heating system pressure maintaining facilities with multiple sensors(No. 10-109882)

2012

Registered a patent(14) - Partial pressuring device for community energy supply systems(No. 10-1142098)
Performance certified by Small Business Administration(No. 21-233)
Green Technology certified by the Ministry of Land and Maritime Affairs(No. GT-12-00090)
Registered a patent(15)(patent in China) - Nitrogen gas filling expansion & pressurization device(ZL 2009 8 0104325.1)
Designated as a supplier of excellent Water Hammer Prevention Controllers(No. 2012097)

2013

Export-promising small & medium business(13 Incheon-68)
Engineering business reported
Construction business(Machinery facility construction) reported

2014

Certified as a clean business: Certified as a clean business: Completed Risk assessment & field test
Submitted to the Korean Intellectual Property Office (KIPO) three patent applications for valve control technologies related to water hammer reduction
Established a branch in Dubai
CE Certification (Pressure Vessel, Air Chamber)
Moved to a new building in Incheon Nam-dong Industrial Park

2015

KC-Certificate(KCW-2015-0027)
Acquire confirmation order of the surge vessel (100mx 18units, 60mx1unit) from Eagle Electromechanical(Contractor)for DEWA project & Award Al Riyadh Authority Project, Execute SurgeAnalysis project in AKOYA

2016

ASME U Certificate of Authorization
ASME S Certificate of Authorization

Surge(water hammer)Protection System



■Hydraulic Transient Analysis · Safety Diagnosis

In an effort to inspect a fluid distribution system to Protect possible massive damages by Water Hammer caused by sudden stop of pumps or sudden closure and opening of valves in the piping system, it is possible to select a Water Hammer Prevention System and examine its suitability, when necessary.

Supply Performance Water distribution network for USFK Peongtaek Base, Goheong-Gwangyang Metropolitan Network Safety Analysis and 50 more piping system



■Water Hammer Prevention Valve

When the pump stops abruptly in the event of power outage, water in piping system continues to flow with the inertia force, lowering pump outlet pressure (negative pressure) and then causing up surge if blocked by Check Valve, flowing backwards. In this case, the system opens the valve in advance to control Up Surge.

Supply Performance Incheon Int'l Airport and USFK Kimhae Air Base and more.



■Surge Protection System with Bladder BAL-trol®

Saving pressurized air almost permanently with a built-in bladder in Pressure Tank, the system does not require a separate compressor and effectively controls not only up and down surge but also surge in combination with UD-con that supplies interactive differential friction factor.

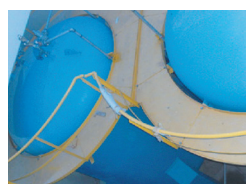
Supply Performance 16 units of Qatar Q-chem II, Olefins series (C4~30) production line to Middle East Supplied petro-chemical plant NBR-based equipment for the first time in Korea and more



Project Name : Taebaek Seohak Leisure Complex Snow Making Water
570kw x 630mAq x 6pumps



Project Name : Gangwon Goseong Water Purification Facility
3 water distribution system



Project Name : Multifunctional Administrative City Water Distribution System



Project Name : Yongin Guseong Pressure Facility Guseong District Water Distribution System



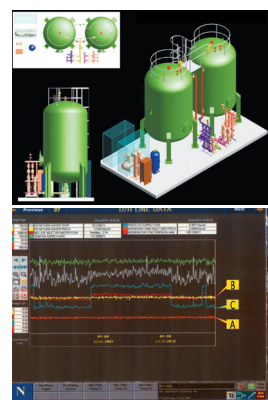
World Best Technology and Patents



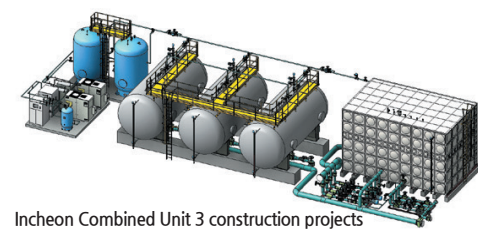
Power Plant · District Heating Power Plant

■Pressure Maintaining System

This expansion control and Pressure Maintaining System to prevent flushing & Water Hammer of water in the 1st thermal piping system of combine heat and power generation or community cooling and heating (CES integrated energy) prevents corrosion of pipes by feeding 99.9% N2 gas emitted from the N2 generator in a system in the tank contacting expansion water. The system protects pipes by lowering high pressure and preventing evaporation at lower pressures in the event of sharp changes in flow of circulation piping system, sudden stop of pumps, trip caused by power failure and sudden valve closure and opening, and optimizes the system by securing reference pressure of piping system even for variable flow operation to save energy.



Supply Performance



Incheon Combined Unit 3 construction projects
Project Owner : Korea Midland Power Co.,Ltd.
Heating Corporation : Kumho E&C
Pressure Maintaining System : 100mL x 3 units



Southeast District Distribution Complex CES Construction Project
Project Owner : SH Corporation
Contractor : Lotte E&C
Pressure Maintaining System: 20mL x 2 units



Osan Combined Heat & Power Plant Expansion Project
Project Owner : Daesung E&C Cogen Business Unit
Contractor : Daesung E&C
Pressure Maintaining System: 65mLx2units(2nd)



Seongnam Resource Recovery Facility Reconstruction Project
Project Owner : Korea District Heating Corporation
Contractor : Kenertec
Pressure Maintaining System: 1.5mL x 2 units



Goyang Samsung Combined Heat & Power Plant Construction Project
Project Owner : Korea District Heating Corporation
Contractor : Hyundai Engineering & Construction



Pressure Maintaining System: Paju Combined Heat & Power Plant Construction Project
Project Owner : Korea District Heating Corporation
Contractor : Daewoo Engineering & Construction
Pressure Maintaining System: 90mL x 2 units



Incheon Hyangchon Heat Exchange Facility
Project Owner : Korea Land & Housing Corporation
Contractor : KEANGNAM ENETPRISES LTD
Pressure Maintaining System: 12mL x 2 units

■Thermal Accumulator(Storing tank)

In a cogeneration plant, a Thermal Accumulator stores excessive heat during low heat load time and supplies the stored heat during high heat load time for flexible and efficient operation of heat production facilities. Also, the storage tank features quick initial stratification, minimized zone for minimized heat loss and extension of heat storage tank capacity. Besides, it has surge prevention function, reducing pipe destruction and extending the life and N2 Gas Sealing in the upper space prevents corrosion.



■On-line Corrosion Product Monitoring

If the power Plant using a "On-line Corrosion Product Monitoring System", the infinitesimal(ppb) concentration of iron oxide that occurs from the corrosion of power station water plumbing can be measured in real time, optimizing the water quality program for the prevention of power station steam generator container corrosion with reliability, carrying out the work with high efficiency, and there is no need for pre-treatment process of sample and injecting color developing reagent as in the previous method.

* Registered for domestic and international patent, first commercialized new technology, possess power station delivery record

