TS NEXGEN

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TS NEXGEN

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2021 2019

Awarded the 2nd Korea Strong Small Business Association (Innovative product ship equipment sector)

HLB Power Co., Ltd. merged with TS Group our firm concluded lately to have a new company name, TS NEXGEN Co., Ltd.

Location & Affiliated Companies



Incheon

TS NEXGEN Co., Ltd.

The Incheon north port is located 500m away from the office & factory.

By Air

The Incheon International Airport is located 30km away from the office & factory, which takes around 30mins by car

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TS NEXGEN

Introduction

We, TS NEXGEN, ever since the modest beginning in 1993, have been a pioneer and leader in recognizing the needs for air and gas management products and air and gas control devices for energy processing plants and power stations.

TS NEXGEN have engaged in the various kinds of construction projects such as a Gas Turbine Plant, Thermal Power Plant, Flue Gas Denitrification(DeNox) Plant, Flue Gas Desulphurization(FGD) Plant, Cement Plant, Steel Smelting Plant, Chemical Process Plant, Waste Heat Recovery Plant, Garbage Incinerating Plant and other industrial plant with right machinery & equipment capabilities, superior manpower, and remarkable technical capability to design, manufacture and erect of the wide ranges of air/flue gas control or isolation dampers.

The modern plants require high quality dampers with various application and the clients' demands are varying faster than ever, so the wider variety of comprehensive manufacturing & servicing are required. In order to successfully meet those requirements, in everything we do, our management focus is on providing clients with the very best quality products.

Surely we have fabricated those best complete lines of dampers such as Single Louver Damper, Tandem Louver Damper, Guillotine Damper, Diverter Damper, Flap Damper and other special dampers resulting from the workmanship of skilled people woven into the modern equipment & machinery.

Now thanks to our best quality products, we have enjoyed a high reputation from the clients. Furthermore, we are very eager to expand our activity & participation to abroad as offering our advanced technology, and to diversify our products to sell in different markets.

Parallel to our positive contribution, rooted in "The Sincerity Spirit and The Creativity of Workmanship" as the motto, we shall surely continue to dedicate ourselves to building excellence of entire Dampers to meet the variety of requirements and needs from our customers.

Products for Gas Turbine Power Plant



- 1. Exhaust Gas Bypass System (EGBS)
- 2. Diverter Damper
- 3. Silencer
- 4. Steel Structure



Exhaust Gas Bypass System

EGBS

TS NEXGEN has developed a complete exhaust gas bypass system(EGBS) for gas turbine plants. The total height and diameter of EGBS measures as per customer's requirements. The dimensions of all system components can be adapted to suit different gas turbine frame sizes. All parts are provided with internal insulation.

TS NEXGEN's proven diverter damper with special lattice structure is one of the main components of combined cycle power plant. While turbine starts up, the diverter is utilized for volume control operations toward boiler.

TS NEXGEN's bypass silencers are custom designed to keep sound level within required levels. In order to provide the most effective solution, sound power level output of gas turbine, requirements of noise(near field and far field), require pressure drop and duct/stack dimensions are considered for silencer design.

TS NEXGEN's steel structure is engineered and manufactured based on structural analysis after thorough examination and analysis of wind speed and seismic data by our qualified engineering team.

As TS NEXGEN's workshop is located very close to Incheon North Port, products can be delivered in big-sized packages as long as local transportation situation allows. Customers can benefit from this kind of available big-sized packing with minimum time and cost for the concerned site installation.





Diverter Damper

In combined cycle gas turbine power plants, the turbine exhaust gas is directed either to a heat recovery steam generator or to the bypass stack by means of single blade diverter damper.

TS NEXGEN's specially designed diverter is capable of performing well especially under high temperature and velocity. The diverter with special sealing design and blade structure can be heated up evenly to prevent malfunction caused by any thermal expansion or deformation when the plant is running, which leads high performance and stability to suit every plant layout or new construction. 100% gas tight shut off is achieved in both positions with seal air system.

As TS NEXGEN's workshop is close to Incheon North Port, a diverter can be delivered in a single package. This available service can provide customers with substantial benefit with minimum time and cost for site installation.



Silencer for Bypass Stack

TS NEXGEN's bypass silencer is custom designed to keep sound level within required levels. In order to provide the most effective solution, sound power level output of gas turbine, requirements of noise(near field and far field), required pressure drop and duct/stack dimensions are considered for silencer design.





Bypass Stack

TS NEXGEN's bypass stack design maximizes gas turbine efficiency by minimizing pressure drop. The insulation design is applied to withstand high-temperature gas emissions and for safety of personnel.

TS NEXGEN can supply with complete scope of bypass stack such as stack shell, silencer, steel ladder & platform, FAA lights, lightning protection and other related auxiliaries.



Stack Damper

The stack damper with either two or four blades is available from TS NEXGEN. It is used for weatherproof or rainproof purpose for efficient operation of HRSG. Our stack damper has a self-opening function to relieve overpressure with mechanical device. Electric type actuator is normally used.





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Products for Thermal Power Plant

1. Louver Damper

- Single Louver Damper
- Tandem Louver Damper
- Double Louver Damper
- 2. Guillotine Damper
- 3. Slide Gate

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- 4. Flap Damper
- 5. Ventilation Door



Single Louver Damper

Single louver damper isolates or controls air/gas. It can be operated with manual handle, pneumatic actuator, electric actuator or electro-hydraulic actuator as per customer's requirements. TS NEXGEN has delivered our single louver dampers for a lot of thermal power plant projects and especially our bias dampers, large-sized special dampers, have been favorably accepted by our customers.





Tandem Louver Damper

Tandem louver dampers are used for Boiler, FGD, SCR or ESP system that require zero gas leakage. TS NEXGEN is capable of engineering seal air system and heating system using from heat-resistant materials to corrosion-resistant materials and our qualified design in the field has been recognized on FGD, SCR and boiler projects. Especially, TS NEXGEN's special lattice structure reduces pressure drop and weight, thereby improving effciency at construction site.

TS NEXGEN's tandem dampers have been supplied to a lot of power projects over the world and proven its quality to the customers.





Double Louver Damper

TS NEXGEN's double louver damper which looks a combination of two single louver dampers can individually operate by two actuators and it can reach 100% gas tight with seal air system.

Double louver dampers are mainly used for FGD or SCR system that require zero gas leakage for safety of personnel and have enough room to be installed.





Guillotine Damper

TS NEXGEN's guillotine damper is used for shut-off of dust laden flue gas volumes and for lower pressure drop. It is designed for electric driven actuator and its blade operates very smoothly and confidently with rack and pinion. Guillotine damper of leak zero type especially is used for isolation purpose as well as for man safety during maintenance period. TS NEXGEN supplies various size of guillotine dampers by our competent engineering team.



Slide Gate

TS NEXGEN's slide gate is used for isolation purpose in ducts that require low/zero leakage and lower perssure drop with fast close/open operating time. Compared to guillotine damper with electric drive, slide gate with pneumatic cylinder has shorter operating time and could respond quickly to any emergency situation. Installation of pneumatic cylinder on both sides shall be backed up by qualified engineering and manufacturing capabilities and TS NEXGEN's extensive experience and knowledge from a lot of worldwide projects enables us to supply customer with quality slide gates.





Flap Damper

TS NEXGEN's flap damper is installed in the duct where is the gas-blocking area due to its excellent sealing ability.

Pressure drop can be minimized and quick operation and fail mode can be formed by using the pneumatic cylinder.

The flap damper shown in Fig. 3 has a pressure relief function and the pressure can be adjusted with a balance weight.



Ventilation Door

This damper can be applied to a high temperature environment of 616 degrees. It is a door type damper designed to ventilate (relieve) the pressure in the duct when a value greater than the required hot air & pressure in the duct is applied during operation. When an Emergency (Air & Signal Fail) occurs during operation and the cylinder (actuator) cannot be operated, a balance weight is installed on the door so that the pressure applied in the duct can be normally ventilated (relieved) the pressure.







Products for Nuclear Power Plant (SR&NSR Equipment.)

Using for Safety Related Zone/Non-Safety Related Zone in Nuclear Power Plants or Other Industrial Plants.

Safety Related Equipment is capable of operation during and after accident due to Seismic Forces and ohter loadings.

Basically the design fabrication and performance for Safety Related Equipment are based on the Seismic & Environmental Requirements of IEEE 323, 344 and 382.

The other requirements, which are not mentioned in IEEE or other criteria, can be fulfilled.



Manual Damper

This damper is usually operated by hand or pressure.

Modulation Type

This type is used for air volume(air flow) controlling function. To reach the required air volume, the handle(quadrant) should be positioned a desired point and hold by self-lock device.

OB(Opposed Blade Damper), **BY**(Butterfly Damper)/**RBY**(Round Butterfly Damper)

Generally leakage class III or IV is required for this damper in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard.





Isolation Type

This type is used for two position such as full open and full close function.(On-Off function) When air leakage class should be required based on ASME AG-1, depending on job-site or customer requirements.

BY(Butterfly Damper)/**RBY**(Round Butterfly Damper)

Generally leakage class III or IV is required for this damper in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard.

CK(Check Damper)/RCK(Round Check Damper)

This damper is used for preventing a back air flow in duct-line.

The blade connected to hinge post is closed by back pressure or back air flow and opened under normal static pressure. This damper can be installed vertically or horizontally in duct-line. Generally leakage class II is required in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard. This damper is rectangular or round.

BDD(Back Draft Damper)

This damper is normally installed in wall or in the terminal parts of duct-line. The fuction is almost same as check damper(CK). Generally leakage class II or III is required for this damper in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard. Counter balance applied. This damper is rectangular.











Control Damper

This damper is usually operated by actuator. This damper can be equipped with other device such as solenoid valve, limit switch, positioner, etc. to control a damper blade precisely.

Modulation Type

This type is used for air volume(air flow) controlling function. To reach the required air volume, 75~105psig of inlet pressure should be adjusted to 3~15psig of operating pressure by 4~20mA of electric signal.(PSR actuator type) Electric hydraulic force causes to modulate balance beam with 4~20mA signal, and this induces to adjust the angle of the blades.(ESR actuator type) This operating pressure can control the angle of each blade.

OB(Opposed Blade Damper), **BY**(Butterfly Damper)/**RBY**(Round Butterfly Damper)

Generally leakage class III or IV is required for this damper in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard.







Isolation Type

This type is used for two position such as full open and full close fuction.(On-Off function) When damper being closed, normally a certain air leakage class should be required based on ASME AG-1, depending on job-site or customer request.

BY(Butterfly Damper)/**RBY**(Round Butterfly Damper)

Generally leakage class II, III or IV is required for this damper in accordance with ASME AG-1. Designed to meet construction criteria, IEEE standard. This damper is rectangular or round.

CK(Check Damper)/RCK(Round Check Damper)

This damper is used for preventing a back air flow in duct-line. The blade connected to hinge post is closed by back pressure or back air flow and opened under normal static pressure. This damper can be installed vertically or horizontally in duct-line. Generally leakage class II is required in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard. This damper is rectangular or round.

DD(Dual Disk Damper)

Generally leakage class 0 or I as air tight damper is required in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard. This damper is rectangular or round. Operating as full open and full close.



PB(Parallel Blade Damper)

Generally leakage class II is required for this damper in accordance with ASME AG-1. Designed to meet construction criteria of IEEE standard. The blade is operated in parallel as two position; full open and full close.

Smoke Damper

Smoke Damper is usually operated by smoke detector as well as heat when fire breaking. When fire breaking, the fusible link is utilized automatically by signal from ionization detector. Leakage class I should meet in accordance with UL555S. Smoke damper is constructed by UL555s as determined ANSI/NEPA 90A and ANSI/NEPA 803. This damper has a handle for reset.



Fire Damper (FL/ETL Type)

Fire Damper is operated by heat when fire breaking. The fusible link should be melt down by heat, and then the blade is shut down as a curtain due to the force of stainless steel closure flat spring as well as self-weight. So it is called as curtain type fire damper. Normally class A 3-hour rated(UL listed) is widely adopted. Fire damper is constructed by UL555 as determined ANSI/NEPA 90A and ANSI/NEPA 803. This damper has a handle for reset.



Louver

Louver designed to meet construction & test criteria of AMCA standards. Water penetration requirement for fixed/operating blade type and leakage class for operating blade type can be fulfilled according to customer's request. Louver is classified by blade function as fixed blade or adjustable blade follows; 1)Fixed Louver(A Type) 2)Operating Dual Combination Louver(C Type), 3)Back Draft Dual Combination Louver(Intake - D Type / Exhaust - E Type), 4) Backdraft(Exhaust) And Operating Dual Combination Louver(F Type) 5) Sand Trap Louver(G Type)



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G.R.D (Grill, Register, Diffuser)

G.R.D designed to meet construction criteria of IEEE, ADC1062 GRD-84 and ISO-5219, air distribution and air diffusion criteria. Grille, Register and Diffuser(GRD) are for air distributing and diffusion devices. Usually Grille and Register are installed in the wall. Single deflection, double deflection or Fixed Louver blade for Grille/Register are available.

Grille with deflection blades can control air flow vertically and/or horizontal.

Register is equipped with volume control damper(VCD) to control air volume.

Diffuser is installed on ceiling. Diffuser is round or square shape. Volume control damper to control air volume is available. Square Diffuser is 1~4way.



Silencer designed to meet construction criteria of IEEE & ASTM standards. Normally rectangular type is widely used for duct installation. Mainly installed in the front of Air Handling Units(AHU) or fan as well as where sound attenuation is required.

Silencer

Humidifier

Humidifier designed to meet construction criteria of IEEE, UL998 & 1013, and ASTM standards, humidifier consists of evaporating chamber, dispersion tube set, electric immersion heater, make-up water valve, control box and humidity controllers & sensors. The installation methods are;

- 1) Floor mounting
- 2) Trapeze hanger mounting
- 3) Bracketed to wall mounting

Dispersion tube is emitting dry steam which can be absorbed into running air flow easily.



Analysis

Our Qualified Engineers are doing their best to improve product reliability and quality through various analysis using 2D design as well as 3D modeling. The experience and ability gained through various challenges and executions are definitely enough to win the trust of our customers.

Diverter Dampeı













Diverter Dampe





G: Site Is





Flap Damper



Nuclear Damper













Major Deliveries

Zwitina Gas Turbine Project in Libya

Client : Daewoo Engineering & Construction Co.,Ltd. GT Model : Siemens SGT5-PAC-4000F Item : Diverter Damper & Blanking Plate (6,500 x 6,500) Q'ty : 2 Sets Delivery Date : Mar 2014



Biskra CCPP Project in Algeria

Client : Posco Daewoo GT Model : GE 9FA Item : Exhaust Gas Bypass System (6,500 x 6,500) Q'ty : 4 Sets Delivery Date : Oct 2015

Mostaghanem CCPP Project in Algeria

Client : Samsung C&T GT Model : GE 9FA Item : Exhaust Gas Bypass System (6,500 x 6,500) Q'ty : 4 Sets Delivery Date : July 2016

Colon Power Project in Panama

Client : Posco E&C GT Model : GE Frame 6FA.03 Item : Exhaust Gas Bypass System (4,370 x 4,370) Q'ty : 2 Sets Delivery Date : Feb 2017







Quality Certification

We are making all kinds of efforts to maintain, improve and develop the highest quality continuously for customer satisfaction.







