



Industry Guide
to Products for



POWER GENERATION





Your Single Source for **Reliability** in Level Indication & Control, Sightflow Indication, Filtration and Separation

The power generation industry has looked to Clark-Reliance for decades for the most extensive product line in level measurement and control. Currently, the company has emerged as a leader in separation and filtration for the industry as well.

Our history of innovation goes all the way back to 1884, when the Reliance Gage Column Company introduced the company's first breakthrough product: a low water alarm for boilers. Using floats attached to a steam whistle, this revolutionary device sounded an alarm when water conditions became unsafe.

Today, after acquiring a number of distinguished product lines, we offer an integrated, unified, service-driven approach to instrumentation, control and filtration. Our broad product offering can provide the convenience and responsibility of a single source for many products for your plant.

Despite their far-ranging variety, all Clark-Reliance products share a common attribute: they provide the reliability essential to critical applications throughout your operation.



How To Use This Brochure

Clark-Reliance product information is presented three ways in this brochure:

Pages 4–7 Schematic illustrations indicate Clark-Reliance products relating to typical processes in the power generation industry. There are two schematics: one for coal or oil-fired boilers, and one for gas turbines.

Pages 8–18 Overview of products with cross reference to plant applications

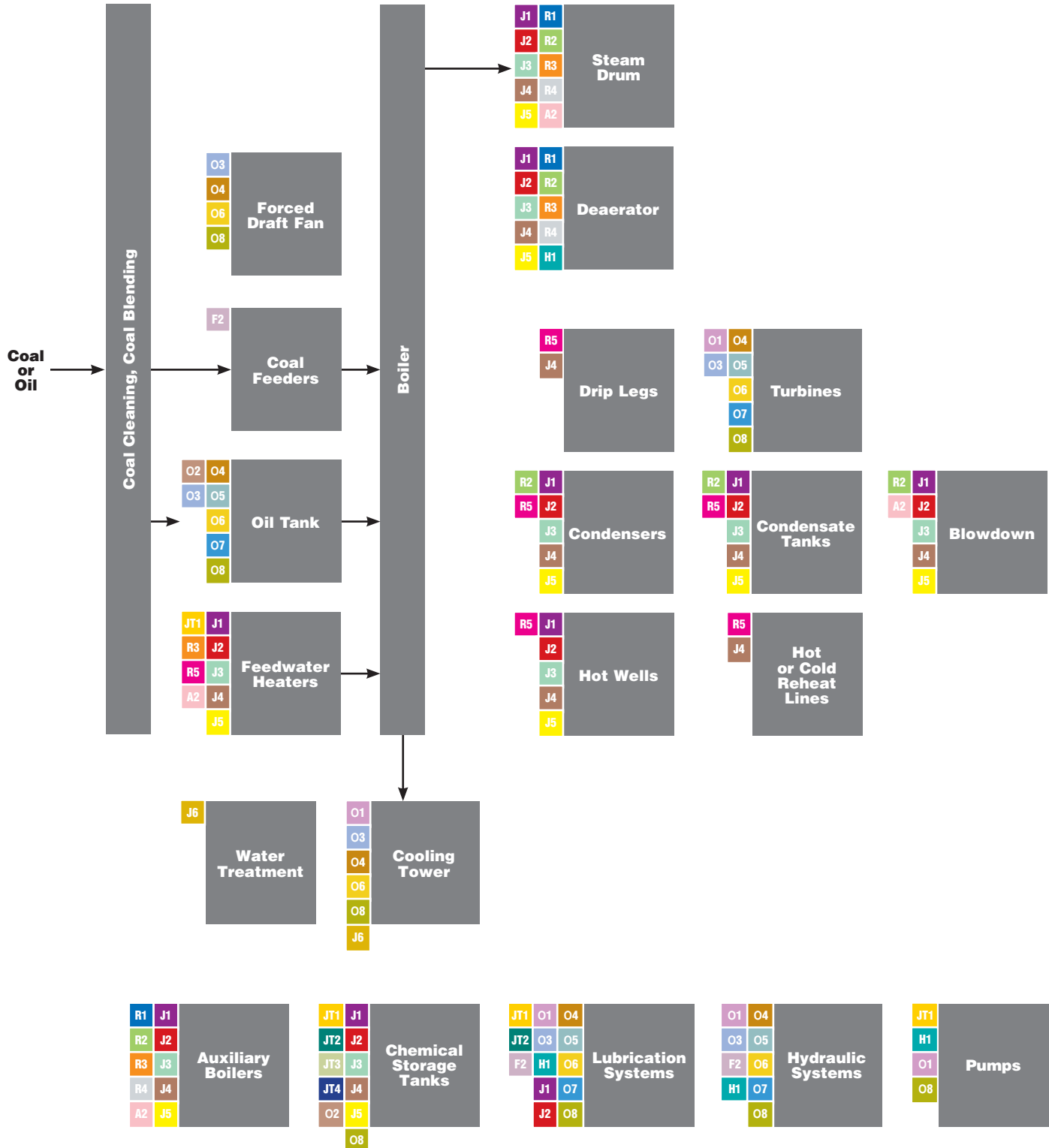
Pages 19–23 Process overview with cross reference to products employed





POWER GENERATION

Coal or Oil-Fired Boiler



PRODUCTS OFFERED



Jerguson® Glass Level Gages

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Jerguson Magnetic Level Gages

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Jerguson MGWR Gages

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Jerguson External Cage Level Switches

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Anderson® AVB Steam Drum Vane Separators

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FILCOA® Liquid Filtration Elements

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Reliance® Electro Eye-Hye® Remote Drum Level Indication

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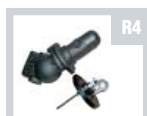
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OFS Oil & Fuel Purification and Flushing Services

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OFS Rental Equipment for Industrial Fluid Purification

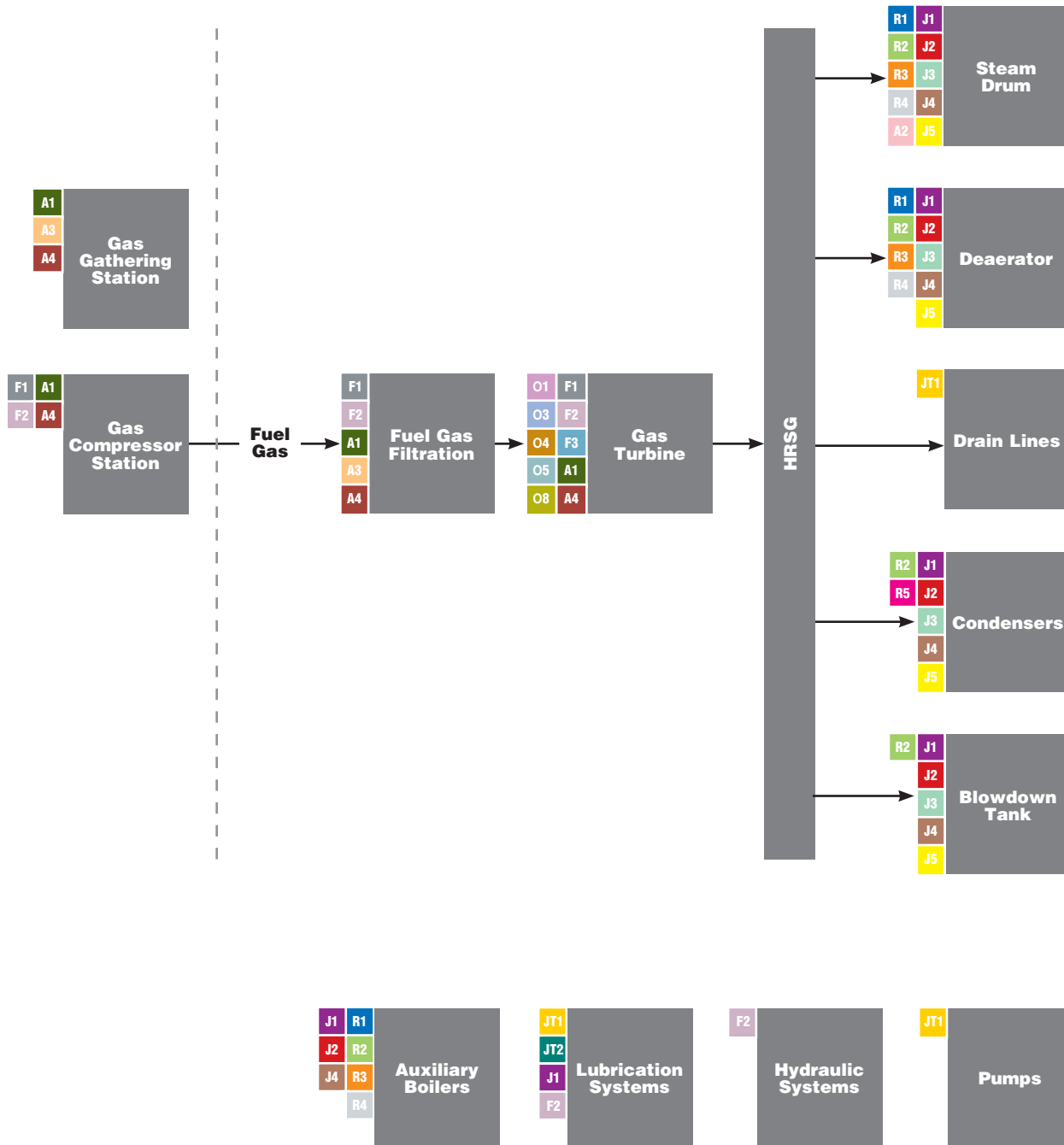
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POWER GENERATION

Gas Turbine





J1 Jerguson® Glass Level Gages

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J2 Jerguson Magnetic Level Gages

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J3 Jerguson MGWR Gages

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J4 Jerguson External Cage Level Switches

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JT1 Jacoby-Tarbox® Sight Flow Indicators

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JT2 Jacoby-Tarbox Sight Windows

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R1 Reliance® Electro Eye-Hye® Remote Drum Level Indication

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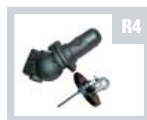
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F1 FILCOA® Gas Coalescer Elements

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O8 OFS Rental Equipment for Industrial Fluid Purification

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J1



Jerguson® Glass Level Gages

Direct reading reflex and transparent Flat Glass Gages for liquid level management feature a recessed gasket surface for improved reliability and ease of maintenance. Improve visibility of transparent gages, especially when mica shields are required, with an intense white LED illuminator, model EPL-100. A variety of gage valves are available with safety ballchecks along with a broad range of accessories as required per application.

PLANT APPLICATIONS:

Feedwater Heaters	Condensate Tanks
Steam Drums	Blowdown
Deaerators	Auxilliary Boilers
Condensers	Chemical Storage Tanks
Hot Wells	Lubrication Systems

J2



Jerguson Magnetic Level Gages



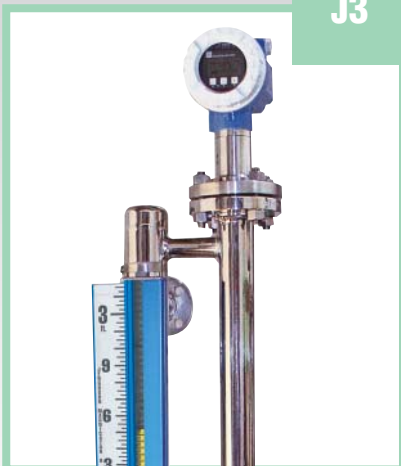
Watch the video!

Jerguson Magnicator® Magnetic Level Gages feature the most reliable magnetic circuit available through the use of a patented float magnet arrangement and a highly vibration-resistant indicator flag assembly. Magnetic gages offer improved visibility and reduced maintenance compared to glass level gages. Integrate the Magnetic Level Gage to your control system using a variety of point level switches or externally mounted continuous output transmitters. All gage designs meet the requirements of ASME B31.1 & B31.3 as a standard. Specify FlashProof chambers for cryogenic or light end applications to eliminate false level indications.

PLANT APPLICATIONS:

Feedwater Heaters	Hot Wells	Chemical Storage Tanks
Steam Drums	Condensate Tanks	Lubrication Systems
Deaerators	Blowdown	
Condensers	Auxilliary Boilers	

J3



Jerguson Model MGWR Gages

Redundant level measurement package featuring indirect reading Magnetic Level Gage and independent Guided Wave Radar transmitter. Guided Wave Radar transmitters provide highly accurate and reliable level measurement in light hydrocarbon applications and are not dependent upon the Magnetic Gage Float for deriving a level signal. Custom bridles available to create double or triple redundant GWR transmitters with a direct reading glass or magnetic gage in a single package.

PLANT APPLICATIONS:

Feedwater Heaters	Condensers	Blowdown
Steam Drums	Hot Wells	Auxilliary Boilers
Deaerators	Condensate Tanks	Chemical Storage Tanks

Jerguson®

External Cage Level Switches

Jerguson External Cage Level Switches feature a unique, tri-magnet switch mechanism that provides a snap-action switch strictly through the use of repelling magnetic fields. Float operated models are available up to 1000°F (537°C) providing a reliable switch in high temperature applications without the use of springs (as with displacer switches). All designs comply with ASME B31.1 & B31.3 as standard.



Watch the video!

J4



PLANT APPLICATIONS:

Feedwater Heaters	Drip Legs	Auxilliary Boilers
Steam Drums	Hot Wells	Chemical Storage Tanks
Deaerators	Condensate Tanks	Hot or Cold Reheat Lines
Condensers	Blowdown	

Jerguson

Displacer Level Transmitters

Jerguson Displacer Level Transmitters feature LVDT (Linear Variable Differential Transformer) technology to provide reliable level indication and avoid issues with wear points and drift that occur with other technologies. All pressure chambers are designed in accordance with ASME B31.1 & B31.3 as a standard.

PLANT APPLICATIONS:

Feedwater Heaters	Condensers	Blowdown
Steam Drums	Hot Wells	Auxilliary Boilers
Deaerators	Condensate Tanks	Chemical Storage Tanks

J5



Jerguson

UltraSonic Transmitters

Jerguson UltraSonic Transmitters offer a low cost level measurement solution for low pressure applications such as water treatment or inlet water level monitoring. Products are available from compact 4-20mA output only through a complete system with control module that accepts multiple transmitter inputs and cycles through (5) programmable relays. Units are available for level or open channel flow and contain pre-programmed tables for indication in non-linear vessels.

PLANT APPLICATIONS:

Water Treatment
Cooling Towers

J6



JT1



Jacoby-Tarbox® Sight Flow Indicators

Jacoby-Tarbox Sight Flow Indicators are designed in accordance with ASME B31.1 and B31.3 using only listed metals within their construction to ensure full specification compliance and meet more specifications “out of the box” than any manufacturer. This includes NACE compliance, standard for wetted materials. Jacoby-Tarbox units offer unique features that allow them to have the longest duty cycles in the industry. Jacoby-Tarbox also offers a variety of API 614 compliant solutions for lubricating systems on rotating equipment.

PLANT APPLICATIONS:

Lubricating Systems	Pumps
Feedwater Heaters	Drain Lines
Chemical Storage Tanks	

JT2



Jacoby-Tarbox Sight Windows

Jacoby-Tarbox Sight Windows are used for process observation on various treaters and with processes that involve mixed, blended, distilled, or potentially stratified material. Sight windows are an optional solution for API 614 compliance in lubricating systems on rotating equipment.

PLANT APPLICATIONS:

Chemical Storage Tanks
Lubricating Systems

JT3



Jacoby-Tarbox Phaeton® XTL Lighting

Jacoby-Tarbox Phaeton XTL LED Tank Lighting offers a long-lasting, low operating cost solution to tank and sight flow indicator lighting needs. Vibration resistant, long-life LED's virtually eliminate maintenance.



Watch the video!

PLANT APPLICATIONS:

Chemical Storage Tanks

Jacoby-Tarbox®

Eductors

Jacoby-Tarbox in-tank Eductors are used in process tanks requiring mixing, blending, or to prevent material stratification. In-tank eductors work independently, or in concert with other mixing technologies. In-line eductors are used in various applications, the most common being an alternative means to transport media to and from processes, or to combine liquids or gases while in-line instead of in-tank.

PLANT APPLICATIONS:

Chemical Storage Tanks

JT4



FILCOA®

NFS Gas Coalescer Elements

Gasses used in the power generation industry can contain natural gas liquids, water, hydrocarbons, and particulate. These contaminants can foul critical equipment such as compressors, furnaces, boilers, and turbines. National Filtration Systems (NFS) / FILCOA coalescer elements include a comprehensive range of absolute-rated micro-glass filters with broad chemical compatibility. These elements are designed and supplied with OEM systems. FILCOA / NFS elements meet the requirements of the major turbine suppliers for the most critical services.

PLANT APPLICATIONS:

Gas Compression
Fuel Gas Filtration
Gas Turbines

F1



FILCOA

NFS Liquid Lube Oil Filters

Liquid fuels and lubrication liquids require absolute particle removal to ensure the protection of equipment. The installation of absolute-rated Clark-Reliance FILCOA / NFS filters makes it possible to ensure efficiency and provides equipment protection. The graded-density structure of FILCOA / NFS filter products for liquids remove solids and deformable contaminants that would quickly plug competitive filter elements. These elements are designed and supplied with OEM systems. FILCOA / NFS elements meet the requirements of the major turbine suppliers for the most critical services.

PLANT APPLICATIONS:

Gas Compression Gas Turbines Hydraulic Systems
Fuel Gas Filtration Lubrication Systems for Rotary Equipment Feeders

F2



F3



FILCOA®

NFS Water Filters

Clark-Reliance filter product offerings include a comprehensive range of absolute-rated water filters for the Power Generation industry. FILCOA elements are constricted with graded-density structures to remove solids and deformable contaminants. These elements are designed and supplied with OEM systems. FILCOA / NFS elements meet the requirements of the major turbine suppliers for the most critical services.

PLANT APPLICATIONS:

Gas Turbines

R1



Reliance®

Electro Eye-Hye® Remote Drum Level Indication System

The Electro Eye-Hye Drum Level Indication System provides remote indication of the drum level for steam and water applications up to 3000 PSI (207 Bar) and 695 degrees F (368 degrees C). This system consists of three components: 1) An Electroleve Column with 10, 12 or 20 conductivity probes located at specified levels, with 1" male pipe size (standard) vessel connections (flanged or female socket weld connections are also available); 2) a Control Unit that provides a switch contact for each probe level for High or Low Alarm and High or Low trip functions; 3) a Panel Indicator with Miniature Bi-Color (Red/Green) LED type or Tri-Color LED Indicator. Either type is designed for panel mounting in a control room or may be specified in a weatherproof enclosure for installation near the boiler.

PLANT APPLICATIONS:

Steam Drums on Power Boilers

Deaerators

Auxiliary Boilers

R2



Reliance

Water Columns and Standpipes

Water Columns and Standpipes are primarily used to support Water Gage Glasses. Water Columns are available in cast iron models for applications to 250 PSI (17 Bar) and steel models for applications up to 3000 PSI (207 Bar). Water Columns generally include conductivity probes for High & Low Alarms and Low Water Cutout functions. Standpipes support Water Gage Glasses, the same function as a Water Column, without probes. A Water Column or Standpipe provides the proper support for mounting a Water Gage Glass and assures stable observation of the drum level. An Electroleve Column may also serve as a Water Column to support a Water Gage Glass. This combination forms a "LevelMax" System for remote and local level indication in one assembly.

PLANT APPLICATIONS:

Steam Drums on Power Boilers
Condensate Tanks

Deaerators
Auxiliary Boilers

Blowdown Tanks and Condensers

Reliance®

Water Gage Glasses

Prismatic (Reflex), Flat Glass, and Simpliport® Bi-Color



Watch the video!

Prismatic Water Gage Glasses for applications up to 350 PSI (24 Bar) present the water as black up to the meniscus line. Flat Glass (Transparent) Water Gage Glasses with DuraStar LED Illumination for applications up to 2000 PSI (138 Bar) provide a bright “star-like” image at the water level, and Simpliport Bi-Color Ported Type Water Gage Glasses for applications up to 3000 PSI (207 Bar) with “Simpliport 180” Wide Angle LED Viewing System provide a bright green image up to the water line and red image for the steam indication above the water level.

PLANT APPLICATIONS:

Steam Drums on Power Boilers
Feedwater Heaters

Deaerators
Auxiliary Boilers

R3



Reliance

Levalarms

Float or Conductivity Probe Type Level Switch used for primary or auxiliary low water cutouts. This device can also be used as a level alarm switch. Float actuated models are available for applications up to 800 PSI (55 Bar). Conductivity Probe type models are available for applications up to 1800 PSI (124 Bar).

PLANT APPLICATIONS:

Steam Drums on Power Boilers
Auxiliary Boilers

Deaerators

R4



Reliance

TWIP Level Switches

Conductivity Probe type level switches used for alarms or limit control functions on applications up to 3000 PSI (207 Bar) and application design temperatures up to 1100°F (593°C). Chamber materials include carbon steel and chrome-moly (P22 or P91 grades)

PLANT APPLICATIONS:

Drip Legs
Condensate Tanks
Hotwells

Hot or Cold Reheat Lines
Feedwater Heaters
Condensers

R5



H1



HYCOA Liquid Filters

Liquid fuels and lubrication liquids require absolute particle removal to ensure the protection of equipment. The installation of absolute-rated Clark-Reliance HYCOA filters make it possible to ensure efficiency and provide equipment protection. The graded-density structure of HYCOA filter products for liquids remove solids and deformable contaminants that would quickly plug competitive filter elements. These elements are designed and supplied with OEM systems. HYCOA elements meet the requirements of the major turbine suppliers for the most critical services.

PLANT APPLICATIONS:

Compressor Lubricating Oil	Power Plant Deaerator Inlet
Power Plant Compressor Lubricating Oil	Power Plant Hydraulic Systems
Power Plant Turbine/Generator Lubricating Oil	Power Plant Pumps
Power Plant Steam Turbine Lubricating Oil	

A1



Anderson® AVS and AVGS Vane Separators

Anderson Vane Separators are used in applications where efficient liquid-gas separation is required. Anderson AVS and AVGS Vane Separators utilize the pocket type vane element to efficiently remove liquid contaminant from air and gas streams as well as steam flows. Pocket type vanes provide higher capacity with minimum pressure drop.

PLANT APPLICATIONS:

Compressor Station Inlet
Compressor Station Discharge
Combined Cycle Power Plant Steam Injection Inlet
Power Plant Fuel Gas Inlet
Gas Gathering Station

A2



Anderson AVB Steam Drum Vane Separator

Anderson AVB Steam Drum Vane Separators are designed specifically to provide clean, dry steam. The Anderson AVB Steam Drum Vane Separator utilizes the pocket type vane element to efficiently remove liquid particles from steam flows. This type of separator provides maximum protection for downstream equipment.

PLANT APPLICATIONS:

Power Plant Steam Drums
Auxiliary Boilers
Blowdown Tanks
Feedwater Heaters

A3



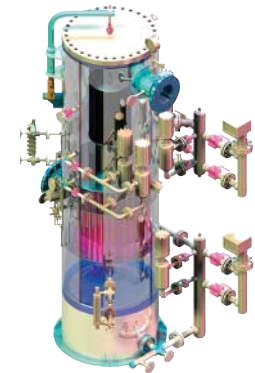
Anderson® AFS Filter Separator

The Anderson AFS Filter Separator is a two stage device utilizing high efficiency filter elements in conjunction with a second stage mechanical separator to achieve high efficiency removal of both liquids and solids from natural gas streams. These separators can be oriented in either vertical or horizontal configurations. They are designed to handle high contaminant loading and potential slugs of liquids.

PLANT APPLICATIONS:

Natural Gas Gathering Station Inlet
Natural Gas Transmission Station Inlet
Power Plant Fuel Gas Inlet

A4



Anderson ACF Coalescing Filter

The Anderson ACF Coalescing Filter is a two stage device that provides the optimum level of protection for fuel gas equipment by utilizing a first stage mechanical style separator followed by a second stage consisting of the highest efficiency coalescing filter elements available to provide virtually contaminant-free gas to downstream equipment.

PLANT APPLICATIONS:

Compressor Station Discharge
Natural Gas Gathering Station Discharge
Natural Gas Transmission Station Discharge
Power Plant Fuel Gas Inlet
Natural Gas Turbine Inlet



01



OFS Vacuum Dehydration Oil Purification System (VDOPS)

A Vacuum Dehydration Oil Purification System (VDOPS) is designed to remove dissolved, emulsified, and free water from a variety of oils ranging from Lube, Hydraulic, and High Viscosity Gear Oils. A VDOPS will also remove particulate by use of its high efficiency particulate removal filter, typically rated 5 micron Beta(c) > 1000 per ISO 16889. A VDOPS uses vacuum, heat, and mass transfer to remove water from oil by changing it to a gas. Most water is put back in the atmosphere as water vapor and some is condensed into a holding chamber. A VDOPS is designed to recirculate or kidney loop reservoirs and maintain oil as low as 20 PPM on a continual basis. Particulate can be maintained as low as ISO 15/14/11.

PLANT APPLICATIONS:

Main Turbine Lube Oil Reservoirs
Boiler Feed Pump Lube Oil

Speed Control Hydraulic Systems
Force Draft Fan Bearing Lube Systems

Cooling Tower Gear Boxes

02



OFS Fuel Coalescers (FC)

Fuel Coalescers (FC) are designed to remove free and emulsified water from Fuel Systems. Water is removed by coalescing water droplets and gravity-separating them. Water is collected at the bottom of a coalescing vessel and drained by manual or automatic means. A FC will also remove particulate by use of its high efficiency particulate removal filter, typically rated 5 micron Beta(c) > 1000 per ISO 16889. Water in fuel can be maintained as low as 30 PPM and particulate as low as ISO 15/14/11.

PLANT APPLICATIONS:

Main Fuel Tanks
Outside Storage Tanks

Generator Belly Tanks
Main Fuel Supply to Turbine Generators

03



OFS Filter Carts & Low Flow Filtration

Filter Carts and Low Flow Filtration Systems are typically used to recirculate and kidney loop smaller lube, hydraulic, gear box reservoirs and fuel tanks. They can also be used to transfer new or make-up oil into reservoirs. Filter Carts are primarily designed to remove particulate by use of their high efficiency particulate removal filters, typically rated 5 micron Beta(c) > 1000 per ISO 16889. Particulate levels can be maintained as low as ISO 15/14/11.

PLANT APPLICATIONS:

Main Turbine Lube Oil Reservoirs
Boiler Feed Pump Lube Oil
Speed Control Hydraulic Systems

Force Draft Fan Bearing Lube Systems
Cooling Tower Gear Boxes and Fuel Tanks
Lubrication Systems

OFS

High Flow Filtration Systems (HFFS)

High Flow Filtration Systems (HFFS) are typically used to recirculate and kidney loop larger lube, hydraulic, gear box reservoirs and fuel tanks. They can also be used to transfer new or make-up oil into reservoirs. High Flow Filtration Systems are primarily designed to remove particulate by use of their high efficiency particulate removal filter, typically rated 5 micron Beta(c) > 1000 per ISO 16889. Particulate levels can be maintained as low as ISO 15/14/11.

PLANT APPLICATIONS:

Main Turbine Lube Oil Reservoirs	Force Draft Fan Bearing Lube Systems
Boiler Feed Pump Lube Oil	Cooling Tower Gear Boxes and Fuel Tanks
Speed Control Hydraulic Systems	Lubrication Systems

O4



OFS

Varnish Removal Systems (VRS)

Varnish Removal Systems (VRS) were developed to address the need to properly remove varnish (also known as lacquer, sludge, or tar) commonly found in various lubrication and hydraulic systems. The process utilizes a technology by Fluitec® called Electrophysical Separation Process™ (ESP), which is a patent-pending technology that absorbs dissolved and suspended oil degradation products – the cause of varnish. Varnish removal is accomplished with an oxidatively-stable filter media, engineered to selectively remove only the varnish-causing contaminants without disturbing the fluid's additives.

PLANT APPLICATIONS:

Main Turbine Lube	EHC Speed Control Systems using Fire Retardant Fluids
Boiler Feed Pump Lube	

O5



OFS

Filter Vessels - Simplex & Duplex

The harmful effect of particulate contamination in oils, fuels, and other hydrocarbons have been well documented. By maintaining absolute fluid cleanliness, the life of critical wear components can be dramatically increased, minimizing downtime and maximizing profitability. Simplex and duplex single and multi-element filter housing assemblies are available. Simple and reliable, these filter housing assemblies provide the needed framework for an outstanding filter system. Housings can be equipped with a multitude of filters from pleated micro-glass, resin impregnated cellulose, string wound, nylon mesh bag to stainless steel strainers.

PLANT APPLICATIONS:

Main Turbine Lube Oil Reservoirs	Speed Control Hydraulic Systems	Cooling Tower Gear Boxes
Boiler Feed Pump Lube Oil	Force Draft Fan Bearing Lube Systems	

O6



07



OFS

Oil & Fuel Purification and Flushing Services

OFS has the manpower and equipment to perform turnkey oil flushing and filtration services anywhere in the world. We have the equipment and the know-how to perform on-site oil flushing and oil reclamation services, as well as on-site fluid analyses. Compressor systems are common applications and OFS crews can complete systems within hours.

PLANT APPLICATIONS:

Main Turbine Lube Oil Reservoirs
Boiler Feed Pump Lube Oil
Speed Control Hydraulic Systems

Force Draft Fan Bearing Lube Systems
Cooling Tower Gear Boxes and Fuel Tanks

08



OFS

Rental Equipment and Services for Industrial Fluid Purification

OFS maintains a large fleet of rental equipment, ready for deployment anywhere. Additionally, we can provide factory-trained crews to perform oil flushing and filtration services at your plant.

PLANT APPLICATIONS:

Boiler Feed Pump Lube Oil
Chemical Storage Tanks
Cooling Tower Gear Boxes and Fuel Tanks
EHC Speed Control Systems using
Fire Retardant Fluids
Force Draft Fan Bearing Lube Systems
Gas Turbines
Generator Belly Tanks
Lubrication Systems

Main Fuel Supply to Turbine Generators
Main Fuel Tanks
Main Turbine Lube Oil Reservoirs
Oil Tanks
Outside Storage Tanks
Pumps
Speed Control Hydraulic Systems
Turbines

Auxiliary Boilers

These Low Pressure Boilers are used for base load steam or emergency power. Also, they are used for steam heat tracing. These boilers are generally manufactured to comply with the requirements of the ASME Boiler Code or applicable Codes for the country of installation.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Reliance Water Columns and Standpipes	Jerguson Magnetic Level Gages
Reliance Levalarms	Jerguson Glass Level Gages
Reliance Water Gage Glasses	Jerguson Model MGWR Gages
Reliance Electro Eye-Hye Remote Drum Level Indication Systems	Jerguson External Cage Level Switches
	Anderson AVB Steam Drum Vane Separators

Blowdown Tanks

Tanks are used for the safe discharge of steam and condensate routed from the boiler drums and instrument drain lines, during the blowdown processes conducted by plant operators.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson Magnetic Level Gages	Jerguson External Cage Level Switches
Jerguson Glass Level Gages	Anderson AVB Steam Drum Vane Separators
Jerguson Model MGWR Gages	Reliance Water Columns and Standpipes
Jerguson Displacer Level Transmitters	

Chemical Storage Tanks

The chemicals in these tanks are used for treatment and injection at various stages of the steam generation cycle to maintain safe operation of the plant.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson Magnetic Level Gages	Jacoby-Tarbox Sight Windows
Jerguson External Cage Level Switches	Jacoby-Tarbox Eductors
Jerguson Glass Level Gages	Jacoby-Tarbox Sight Flow Indicators
Jerguson Model MGWR Gages	Jacoby-Tarbox Phaeton XTL Lighting
Jerguson Displacer Level Transmitters	OFS Rental Equipment
	OFS Fuel Coalescers

Coal Feeders

A Coal Feeder regulates the amount of coal that is fed into the coal mill based on the demand for the furnace. The feeder generally receives coal from a silo or a conveyor system.

CLARK-RELIANCE PRODUCTS EMPLOYED:

FILCOA Liquid Filtration Elements

Condensate Tanks

Condensate Tanks are used for the collection of condensate from plant steam processes. The condensate collected in these tanks is generally circulated back into the plant to conserve energy.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson Magnetic Level Gages	Jerguson External Cage Level Switches
Jerguson Glass Level Gages	Reliance Water Gage Glasses
Jerguson Model MGWR Gages	Reliance TWIP Level Switches
Jerguson Displacer Level Transmitters	





Condensers

The Condenser receives water from steam turbine lines, which initiates the feedwater cycle. The rate of condensate formation can be up to 6,000 gallons per minute.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson Magnetic Level Gages	Jerguson External Cage Level Switches
Jerguson Glass Level Gages	Reliance TWIP Level Switches
Jerguson Model MGWR Gages	Reliance Water Gage Glasses
Jerguson Displacer Level Transmitters	

Deaerators

Deaerators are used for the make-up water and eliminate dissolved air from the water, purifying the water & reducing its corrosiveness. Chemicals such as hydrazine and ammonia are also added at this stage to further control oxygen pH and acidity.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson Glass Level Gages	Reliance Water Gage Glasses
Jerguson Model MGWR Gages	Reliance TWIP Level Switches
Jerguson Displacer Level Transmitters	Reliance Water Columns and Standpipes
Jerguson Magnetic Level Gages	Reliance Levalarms
Jerguson External Cage Level Switches	Reliance Electro Eye-Hye Remote Drum Level Indication Systems

Drain Lines

Steam condensate drain lines in power applications are often routed to condensate pots with level switch controls to actuate drain valves, in an effort to control energy losses.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jacoby-Tarbox Sight Flow Indicators

Drip Legs

Drip Legs provide a safe discharge path for condensate that forms in steam pipelines. Drip Legs are critical, as a flooded drip leg could send condensate to the turbine, causing extreme damage.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Reliance TWIP Level Switches	Jerguson External Cage Level Switches
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Feedwater Heaters

Feedwater Heaters are activated with steam that is extracted from various stages of the turbine, so the water will gain temperature with contribution from each stage.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson Glass Level Gages	Jerguson Magnetic Level Gages
Jerguson Model MGWR Gages	Jerguson External Cage Level Switches
Jerguson Displacer Level Transmitters	Anderson AVB Steam Drum Vane Separators

Forced Draft Fans

These fans are used to supply the air required for the combustion of fuel, as well as to control the flue gas. In the event these fans trip (shut down), the boiler will trip, as well.

CLARK-RELIANCE PRODUCTS EMPLOYED:

OFS Handheld Filtration Systems
OFS High Flow Filtration Systems
OFS Bearing Lube Systems

OFS Filter Carts and Low Flow Filtration Systems
OFS Filter Vessels
OFS Rental Equipment

Fuel Gas Filtration

Natural gas is processed through several stages of filtration to remove solid and liquid contaminants to the proper levels to protect the downstream gas turbine generator.

CLARK-RELIANCE PRODUCTS EMPLOYED:

FILCOA Gas Filters and Coalescing Elements
FILCOA Liquid Filters

Anderson AVS and AVGS Vane Separators
Anderson ACF Coalescing Filters

Gas Compressor Stations

Gas compressors are installed in the fuel gas lines to the turbine to boost the pressure when necessary to ensure that the gas is at the proper pressure to enable the gas turbine to function properly.

CLARK-RELIANCE PRODUCTS EMPLOYED:

FILCOA Gas Filters & Coalescing Elements
FILCOA Liquid Filters

Anderson AVS and AVGS Vane Separators
Anderson ACF Coalescing Filters

Gas Gathering Stations

Gas from numerous production wells is collected together at a common site where it may be treated or filtered before putting the gas into a common pipeline for transport to a processing facility.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Anderson AFS Filter Separators
Anderson ACF Coalescing Filters

Anderson AVS and AVGS Vane Separators

Gas Turbines

The gas turbine burns natural gas as fuel to spin the turbine and generate electricity. The turbine also generates heat that may be used to generate steam which will be fed to the steam turbine to generate additional power.

CLARK-RELIANCE PRODUCTS EMPLOYED:

FILCOA Gas Filters and Coalescing Elements
FILCOA Water Filters
FILCOA Liquid Filters
Anderson AVS and AVGS Vane Separators
Anderson ACF Coalescing Filters

OFS Vacuum Dehydration Oil Purification Systems
OFS Rental Equipment
OFS Filter Carts and Low Flow Filtration Systems
OFS High Flow Filtration Systems
OFS Varnish Removal Systems





Hot or Cold Reheat Lines

These pipe lines are found on steam extraction and waste heat recovery applications on power boilers.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Reliance TWIP Level Switches

Jerguson External Cage Level Switches

Hot Wells

Hot Wells are associated with each condenser and are operated with a maintained level for recirculating pumps to operate properly.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Reliance TWIP Level Switches

Jerguson Glass Level Gages

Jerguson Magnetic Level Gages

Jerguson Model MGWR Gages

Jerguson External Cage Level Switches

Jerguson Displacer Level Transmitters

Hydraulic Systems

Hydraulic Systems are used to provide power to valves and other critical equipment.

CLARK-RELIANCE PRODUCTS EMPLOYED:

FILCOA Liquid Lube Oil Filters

OFS Rental Equipment

HYCOA Liquid Filters

OFS Vacuum Dehydration Oil Purification Systems

OFS High Flow Filtration Systems

OFS Filter Carts and Low Flow Filtration Systems

OFS Varnish Removal Systems

OFS Oil and Fuel Purification and Flushing Services

OFS Filter Vessels

Lubrication Systems

Lubrication Systems provide lube oil to critical rotating equipment, such as bearings, gears, etc.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jacoby-Tarbox Sight Flow Indicators

OFS Varnish Removal Systems

Jacoby-Tarbox Sight Windows

OFS Filter Vessels

FILCOA Liquid Lube Oil Filters

OFS High Flow Filtration Systems

HYCOA Liquid Filters

OFS Vacuum Dehydration Oil Purification Systems

Jerguson Glass Level Gages

OFS Oil and Fuel Purification Flushing Services

Jerguson Magnetic Level Gages

OFS Filter Carts and Low Flow Filtration Systems

OFS Rental Equipment

Oil Tanks

Oil Tanks are used for storage of new and used lube oil.

CLARK-RELIANCE PRODUCTS EMPLOYED:

OFS Fuel Coalescers

OFS Handheld Filtration Systems

OFS High Flow Filtration Systems

OFS Filter Carts and Low Flow Filtration Systems

OFS Varnish Removal Systems

OFS Filter Vessels

OFS Bearing Lube Systems

OFS Oil and Fuel Purification and Flushing Services

OFS Coalescer Oil Purification Systems

OFS Rental Equipment

Pumps

Pumps are part of Hydraulic and Lubrication Systems, delivering oil to critical components through piping, tubing, or hoses.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jacoby-Tarbox Sight Flow Indicators	OFS Vacuum Dehydration Oil Purification Systems
HYCOA Liquid Filters	OFS Rental Equipment

Steam Drums

The Steam Drum is where steam is extracted for plant use. The water level is observed and maintained by plant operators for safe operation by preventing water carry over or events due to low water conditions. Steam Drums vary in capacity and pressure up to 3000 PSI.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson Magnetic Level Gages	Reliance Electro Eye-Hye Remote Drum Level Indication Systems
Jerguson External Cage Level Switches	Reliance Levalarms
Jerguson Glass Level Gages	Reliance Water Columns and Standpipes
Jerguson Model MGWR Gages	Reliance Water Gage Glasses
Jerguson Displacer Level Transmitters	Anderson AVB Steam Drum Vane Separators

Transformers

Transformers change electricity from one voltage to another.

CLARK-RELIANCE PRODUCTS EMPLOYED:

OFS High Vacuum Transformer Oil Purification Systems

Turbines

Turbines generate the electricity that is sent to the nation's power grid. Steam flow from the Steam Drum is used to drive, or turn, the Turbine.

CLARK-RELIANCE PRODUCTS EMPLOYED:

OFS Handheld Filtration Systems	OFS Vacuum Dehydration Oil Purification Systems
OFS High Flow Filtration Systems	OFS Filter Carts and Low Flow Filtration Systems
OFS Varnish Removal Systems	OFS Filter Vessels
OFS Bearing Lube Systems	OFS Oil and Fuel Purification and Flushing Services
OFS Coalescer Oil Purification Systems	Anderson AVB Steam Drum Vane Separators
OFS Rental Equipment	

Water Treatment

The water in power boiler applications is typically chemically treated in an effort to reduce its corrosive properties to extend the life of the piping and all related equipment.

CLARK-RELIANCE PRODUCTS EMPLOYED:

Jerguson UltraSonic Transmitters



Industry Guide to Products for

POWER GENERATION



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