deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

AUTOMOTIVE TEST STAND

316 SS Adjustable Flow Rate Controller

INDUSTRY: Automotive Testing

SIC CODE: 3700-2

APPLICATION: Emissions test stands are used to check the efficiencies of engines run at different temperatures with controlled gasoline temperatures to get optimum combustion.

WHERE IN PROCESS?: The flow of gasoline is held at a constant rate by Kates Controllers as it is warmed by passing over heating coils to get desired temperature. The tests are run in 3º F increments.

WHY IS FLOW RATE CRITICAL?: Accurate flow control is required to obtain uniform heating of the gasoline, and to improve the validity of the test.

WHAT ALTERNATIVES WERE CONSIDERED?: Pressure regulators, needle valves, rotameters and control valve loops.

MAIN REASON FOR CHOOSING KATES: Accuracy of 1-1/2% of set point regardless of pressure fluctuations. Simplicity is also a major consideration.

Did You Know

In 1948 Willard A. Kates invented the Kates Flow Rate Controller to control the rate of flow to pump seal flushes. Basically any end user that has pumps has a need for Kates. Especially in high pressure drop situations, Kates is ideal.

PARAMETERS

SERVICE MEDIA:
Unleaded Gasoline

CONNECTIONS:
3/4" FNPT

VISCOSITY:
0.563 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
0.73

OPTIONS:
Teflon® O-rings, Metal Knob, SS Tags

TEMPERATURE:
Varies

SOURCE OF FLOW:
Pump

INLET PRESSURE:
50 PSIG

OUTLET PRESSURE:
0-1 PSIG

FLOW RANGE:
9.8, 4.2 gpm

MODEL:
FB11T-BEF

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

AIR OPERATED DIAPHRAM PUMP SUPPLY

316 SS Adjustable Flow Rate Controller

INDUSTRY: Metal Coating

SIC CODE: 3470-1

APPLICATION: Control of plant air to air operated diaphragm pump (Warren Rupp Flap-Valve SA1-A Sandpiper) to control discharge of pump in coiled steel coating process.

WHERE IN PROCESS?: Plant compressed air line to sludge press feed pump after pressure regulator.

WHY IS FLOW RATE CRITICAL?: Plant compressed air line to sludge press feed pump after pressure regulator.

WHAT ALTERNATIVES WERE CONSIDERED?: Pressure regulator and control valve.

MAIN REASON FOR CHOOSING KATES: Kates is required to control air flow for a constant discharge rate regardless of the back pressure fluctuations of the pump. Variability of air flow is needed to determine different pumping rates.

Did You Know

If you have an idea for a new product or there is something "missing" from Kates product line, contact the factory. W.A. Kates Company is always looking for ways to expand our product line to meet customers changing needs.

PARAMETERS

SERVICE MEDIA:
Air

CONNECTIONS:
1/2" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings, Gas Service

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Air compressor

INLET PRESSURE:
40 PSIG

OUTLET PRESSURE:
Varying

FLOW RANGE:
0.8-20 SCFM

MODEL:
CB11T-BJ

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

ATTEMPERATOR/DESUPERHEATER STEAM SYSTEM

316 SS Adjustable Flow Rate Controller

INDUSTRY: Electric Power Production

SIC CODE: 4900-1

APPLICATION: Attemperator/Desuperheater system supplying steam to high pressure and low pressure turbines

WHERE IN PROCESS?: The Kates is used to control the flow of condensate water to spray nozzles which cool steam in the attemperator from 1000° F down to 625° F, which is used to lubricate low pressure turbine seals. The system uses timed solenoids activated by a temperature switch together with a constant flow from the Kates Controller to ensure the proper volume of condensate.

WHY IS FLOW RATE CRITICAL?: To control temperature drop accurately. Excessive flow will drop the temperature below 625° degrees, requiring additional energy to reheat the steam. Inadequate flow will leave the steam too hot, causing seal damage on the low pressure.

WHAT ALTERNATIVES WERE CONSIDERED?: Back pressure regulator with an orifice plate downstream.

MAIN REASON FOR CHOOSING KATES: Supply pressure can vary from 250 to 375 PSIG to the spray nozzles. Kates compensates for varying pressures to accurately control flow.

Did You Know

The new rounded impeller design eliminates some sticking between the impeller and orifice sleeve.

PARAMETERS

SERVICE MEDIA:
Condensate Water

CONNECTIONS:
1/2" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings, Metal Knob

TEMPERATURE:
125-130° F

SOURCE OF FLOW:
Condensate Pump

INLET PRESSURE:
250-375 PSIG

OUTLET PRESSURE:
5 PSIG

FLOW RANGE:
0.05- 1.0 gpm, 1-25 gpm

MODEL:
BB11T-BE GB11T-BE

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

BOILER FEED PUMP

316 SS Adjustable Flow Rate Controller

INDUSTRY: Generic

SIC CODE: N/A

APPLICATION: Maintaining the minimum critical flow to a boiler feed pump in order to maintain proper heating in the pump during cold conditions.

WHERE IN PROCESS?: Recirculation line off the pump discharge back to the pump.

WHY IS FLOW RATE CRITICAL?: Loss of flow or too little flow creates pump instability and poor working capability. Too much recalculated flow is simple wasted energy.

WHAT ALTERNATIVES WERE CONSIDERED?: Multiple component flow control loop.

MAIN REASON FOR CHOOSING KATES: Simple operation, ease of installation, no interaction of various components.

Did You Know

Kates has built units for 5500 psi service for Chemical Injection in Norway. The units were "specials" build to 2200 ANSI standards.

PARAMETERS

SERVICE MEDIA:
Boiled FeedWater

CONNECTIONS:
1-1/2" RF Flanges

VISCOSITY:
1.0 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings, Metal Knob

TEMPERATURE:
270° F

SOURCE OF FLOW:
Boiler Feed Water Recirc.

INLET PRESSURE:
1100 PSIG

OUTLET PRESSURE:
Varying

FLOW RANGE:
30-40 gpm

MODEL:
JB65B-BE

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

COGENERATION PLANTS: NOX WATER INJECTION

316 SS Adjustable Flow Rate Controller

INDUSTRY: Turbine Generators

SIC CODE: 3511

APPLICATION: Injection of demineralized water into turbine exhaust ("NOX WATER") to maintain critical NOX levels.

WHERE IN PROCESS?: Kates Automatic Flow Rate Controller is the final control element in the demineralized water or condense system being fed by a centrifugal pump. The Kates controller is physically located in the water skid.

WHY IS FLOW RATE CRITICAL?: When the turbine exceeds a certain rpm the noxious fumes generated exceed the E.P.A guidelines. The injection of water reduces the noxious oxides released. The co-gen units use the low noxious oxide levels generated as a selling feature, making flow control a critical component..

WHAT ALTERNATIVES WERE CONSIDERED?: Kates replace several different control valves. None of them could offer the rangeability of the Kates.

MAIN REASON FOR CHOOSING KATES: Precise flow control under varying pressure and flow range ability. The turbine specification for contaminant size in the demineralized water or condensate is more stringent that the Kates recommended filtration providing water with particles well within the range of the Kates controller to handle.

Did You Know

Kates has 1000 psi @ 30 gpm test bench for testing and calibration. Each flow rate controllers is checked at 33 different calibration set points to ensure they meet quality specifications.

PARAMETERS

SERVICE MEDIA:
Demineralized Water or Condensate

CONNECTIONS:
Flanged

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS: Teflon® O-rings, S.S. tag, remote positioning 4-20 madc electric actuator

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Centrifugal Pump

INLET PRESSURE:
1100 PSIG

OUTLET PRESSURE:
550 psi

FLOW RANGE:
8-80, 8-166, 15-350 GPM

MODEL: JB65B-BFH, KB65B-BFH, MB65B-BFH

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

ENGLISH MUFFINS

316 SS Adjustable Flow Rate Controller

INDUSTRY: Bakery

SIC CODE: 2050-1

APPLICATION: Sponge Making: Mixing flour, water, nutrient and yeast slurry to produce dough used for English Muffins

WHERE IN PROCESS?: Kates units control the addition of water into the process.

WHY IS FLOW RATE CRITICAL?: Viscosity of the mix is determined by the percent water added.

WHAT ALTERNATIVES WERE CONSIDERED?: Kates replaces metering pumps of old systems.

MAIN REASON FOR CHOOSING KATES: Kates replaces metering pumps of old systems.

Did You Know

Kates has a 2000 psi @ 80 gpm test bench for testing and calibration. This was originally bought specifically for one customer to test under actual field conditions.

PARAMETERS

SERVICE MEDIA:
Water

CONNECTIONS:
3/4" FNPT

VISCOSITY:
1.0 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
110° F

SOURCE OF FLOW:
Centrifugal Pump

INLET PRESSURE:
30 psi

OUTLET PRESSURE:
Atmospheric

FLOW RANGE:
4-20 GPM

MODEL:
GB11T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

HEAT EXCHANGE SYSTEM FOR COMPUTER

316 SS Adjustable Flow Rate Controller

INDUSTRY: Heat Exchanges

SIC CODE: 0000-1

APPLICATION: Heat exchanges on lBM Series 400 Computers in county government offices.

WHERE IN PROCESS?: Control the flow rate of chilled water to the heat exchange from a centrifugal pump in a closed system

WHY IS FLOW RATE CRITICAL?: Date processing time on computers is significantly affected by fluctuations in operating temperature. Accurate flow control is required to maintain a stable temperature.

WHAT ALTERNATIVES WERE CONSIDERED?: Pressure regulators.

MAIN REASON FOR CHOOSING KATES: Accurate flow control regardless of varying pressure is required to maximize computer operating efficiency.

Did You Know

The only two factors that will ever make a Kates fail are (1) particulate contamination and (2) not having a 10 psi differential pressure across the valve. If those two conditions are met, a Kates will work indefinitely.

PARAMETERS

SERVICE MEDIA:
Chilled Water

CONNECTIONS:
1-1/2" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
32-70° F

SOURCE OF FLOW:
Centrifugal Pump

INLET PRESSURE:
75-110 PSIG

OUTLET PRESSURE:
65-85 PSIG

FLOW RANGE:
3-80 gpm

MODEL:
JB11T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

MINING - ORE RECOVERY

316 SS Adjustable Flow Rate Controller

INDUSTRY: Mining

SIC CODE: 1000

APPLICATION: Cleaning and separation of phosphate from raw ore in recovery plant for end use in fertilizers.

WHERE IN PROCESS?: Kates controls the addition of cleaning agents (fatty acids, ammonia, etc.) into troughs containing a slurry mixture of phosphate ore.

WHY IS FLOW RATE CRITICAL?: A proper blend of the cleaning agents is critical to achieve a good mix for the proper separation of the phosphate from dirt and other minerals.

WHAT ALTERNATIVES WERE CONSIDERED?: Kates replaces control valves in a conventional electronic loop.

MAIN REASON FOR CHOOSING KATES: Kates' ability to maintain constant flow regardless of pressure changes eliminates the searching and fighting of controls valves caused by different loads on the distribution system.

Did You Know

The Stainless Steel Mini-Flo has been used on steam tracing.

PARAMETERS

SERVICE MEDIA:
Fatty/Acid FA/Fo

CONNECTIONS:
3/4" FNPT

VISCOSITY:
100 SSU

MATERIAL:
316 SS

SPECIFIC GRAVITY:
0.9

OPTIONS:
Teflon® O-rings, Worcester Electric Actuator for 4-20mA Control

TEMPERATURE:
140° F

SOURCE OF FLOW:
Multiple Distribution Line

INLET PRESSURE:
10-80 psi

OUTLET PRESSURE:
Varying

FLOW RANGE:
1-5 gpm

MODEL:
FB11T-BHW01

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

REMOTE POSITIONING AUTOMOTIVE TESTING

316 SS Adjustable Flow Rate Controller/Remote Positioning

INDUSTRY: Automotive Parts Testing
CUSTOMER: Eaton - Lectron Products Division
Rochester Hills, MI
SIC CODE: 3700-2

APPLICATION: Lectron Products manufactures a variety of products for the automotive industry, one of which is a electromatically variable orifice (EVO) which is part of a power steering pump. The parts are tested at various flow rates. The Kates is remotely positioned by a PC and test data is logged.

WHERE IN PROCESS?: The flow of the power steering fluid must be regulated. The stand utilizes four Kates with Jordan actuators.

WHY IS FLOW RATE CRITICAL?: In testing these parts, it is critical that flow is regulated at three different setpoints for various parts and must reach each setpoint in under 1 second.

WHAT ALTERNATIVES WERE CONSIDERED?: Manual Kates were used on the same setup in the past. The stands were updated with actuators to modernize the process.

MAIN REASON FOR CHOOSING KATES: Accuracy of 1-1/2% of set point regardless of pressure fluctuations. Remote positioning allows for greater speed in testing. Tie in with PC is also a key.

Did You Know

All 316 SS Kates flow rate controllers have incorporated (2) Teflon® bands around the orifice cylinder. Since this standardization, galling between the orifcice cylinder and the orifice sleeve has been eliminated.

Note: All units no matter what orings are used (i.e. - Viton, Buna) will have these & other Teflon® seals.

PARAMETERS

SERVICE MEDIA:
Power Steering Fluid

CONNECTIONS:
3/4" FNPT

VISCOSITY:
9 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
0.839

OPTIONS:
Teflon® O-ring, Jordan Actuator

TEMPERATURE:
Varies

SOURCE OF FLOW:
Pump

INLET PRESSURE:
200 - 250 PSIG

OUTLET PRESSURE:
Varies

FLOW RANGE:
Low, medium & high setpoint for various parts.
0.5 -5.0 GPM.

MODEL:
EB11T-BHJ01

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

FUEL LIMITING

Fix-A-Flo

INDUSTRY: Professional Sports
CUSTOMER: Unlimited Hydroplane Racing Assoc. Seattle , WA
SIC CODE: 7941

APPLICATION: The Unlimited Hydroplanes are the biggest and fastest of the hydroplane racing boats. Fuel must be restricted or governed to prolong the life of the engines.

WHERE IN PROCESS?: The Kates is set up to limit the fuel flow to the engine.

WHY IS FLOW RATE CRITICAL?: If flow is too high, the drivers will "red-line" the engines and "blow up" the engines.

WHAT ALTERNATIVES WERE CONSIDERED?: None, this is a new design implemented in 1994.

MAIN REASON FOR CHOOSING KATES: Unlimited Hydroplanes are powered by helicopter engines which are put on sale once or twice a year by the government. The engines are sold in lots of 10 or 12. before the fuel was limited, flow was coming to the engines at up to 5.4 gpm. The Kates limits the flow and increase the life of these expensive engines. It also levels the playing field providing a standard all racers must comply with. Kates are not only exceptional controllers but also are very precise limiters.

Did You Know

The top speed achieved in the UHRA is 172.358 m.p.h.. Miss Budweiser, with Chip Hanauer, set the record in Honolulu in 1995. The Kates Fix-A-Flo fuel restrictor, was in use at the time. The previous UHRA record on a 2-1/2 mile qualifying lap was 170.087 m.p.h. in the pre-fuel restrictor era.

PARAMETERS

SERVICE MEDIA:
Jet A Fuel

CONNECTIONS:
1/2" FNPT

VISCOSITY:
Varies

MATERIAL:
Brass

SPECIFIC GRAVITY:
.88

OPTIONS:
Viton O-rings (standard)

TEMPERATURE:
50 - 85° F

SOURCE OF FLOW:
Fuel Pump

INLET PRESSURE:
600 PSIG

OUTLET PRESSURE:
Varies

FLOW RANGE:
1994: 4.7 gpm
1996: 4.3 gpm

MODEL:
50FB: Fix-A-Flo

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

POLYMER INJECTION SYSTEM

316 SS Adjustable Flow Rate Controller

INDUSTRY: Sanitary Services

SIC CODE: 4900

APPLICATION: Distribution of diluted water into polymer injection system.

WHERE IN PROCESS?: Primary and secondary dilution of polymer.

WHY IS FLOW RATE CRITICAL?: Need the ability to manually set the flow rate at the operator's discretion. Flow must be constant for proper dilution of polymer.

WHAT ALTERNATIVES WERE CONSIDERED?: Closed electronic flow control loop.

MAIN REASON FOR CHOOSING KATES: Kates Controllers automatically provide accurate control with low maintenance and without sophisticated electronics.

Did You Know

The Kates Mini-Flo is used on soda dispensing machines for Coca-Cola. There were two Zytel Mini-Flos, one to control the syrup, the other to control carbonates water.

PARAMETERS

SERVICE MEDIA:
Water: Grade B or C filtered effluent

CONNECTIONS:
1-1/2" RF Flanges

VISCOSITY:
1.0 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
95° C

SOURCE OF FLOW:
Pump Effluent from filtration stream

INLET PRESSURE:
50 PSIG

OUTLET PRESSURE:
30 PSIG

FLOW RANGE:
3-30 GPM

MODEL:
JB11B-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

REVERSE OSMOSIS

316 SS Adjustable Flow Rate Controller

INDUSTRY: N/A

SIC CODE: 3500-3

APPLICATION: Brine solution rejection in Reverse Osmosis system.

WHERE IN PROCESS?: Discharge/Reject side of membrane to drain (atmosphere).

WHY IS FLOW RATE CRITICAL?: Water feed and brine reject must be equal to balance system and achieve chemical equilibrium.

WHAT ALTERNATIVES WERE CONSIDERED?: Flow control valve.

MAIN REASON FOR CHOOSING KATES: Accuracy, cost, simplicity. Kates will maintain a constant flow rate regardless of pressure changes and large pressure drop on the reject side of the membrane.

Did You Know

The Kates Mini-Flo was also used on coffee pots on airliners when the coffee maker would brew continuously. Due to changes in altitude from 0-35,000 ft. the pressure would change but Kates would keep the flow constant.

PARAMETERS

SERVICE MEDIA:
Brine Solution (Brackish Water)

CONNECTIONS:
3/4" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
25-40° C

SOURCE OF FLOW:
High Pressure pump through membrane modules

INLET PRESSURE:
400-500 PSIG

OUTLET PRESSURE:
Atmospheric

FLOW RANGE:
1-20 gpm

MODEL:
GB33T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

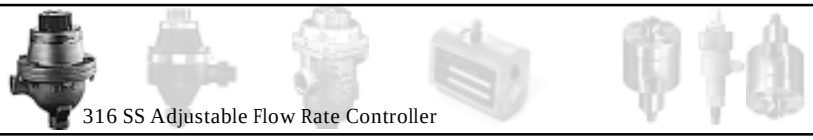
W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

AIR FLOW LIMITER



316 SS Adjustable Flow Rate Controller

INDUSTRY: Chemical

SIC CODE: 2824

APPLICATION: Limiting air loss in an air line off a central compressor if any line is ruptured.

WHERE IN PROCESS?: Near air compressors.

WHY IS FLOW LIMITING CRITICAL?: If the line ruptures, other plants or sections in the plant are not shut down due to lack of air.

WHAT ALTERNATIVES WERE CONSIDERED?: None, new application.

MAIN REASON FOR CHOOSING KATES: Low pressure drop until rupture occurs. The Kates also acts as a perfect limiter.

Did You Know

Kates is being used more and more for the purge of nitrogen in nitrogen blanketing applications. This application is getting bigger all the time.

PARAMETERS

SERVICE MEDIA:
Air

CONNECTIONS:
3" RF Flanges

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings, Gas Service

TEMPERATURE:
Varies

SOURCE OF FLOW:
Compressor

INLET PRESSURE:
150 PSIG Max

OUTLET PRESSURE:
Full line pressure

FLOW RANGE:
N/A

MODEL:
MB11B-BJ

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

WATER FEED TO ROLLERS

316 SS Mini-Flo Flow Rate Controller

INDUSTRY: Chemical

SIC CODE: 2824

APPLICATION: Controlling water flow to troughs in which bar rollers are riding.

WHERE IN PROCESS?: The Kates is mounted on the machine that is making the filter material.

WHY IS FLOW RATE CRITICAL?: The rollers must be kept cool and clean. If too much water is allowed to flow the filter material becomes wet and clogs the machine.

WHAT ALTERNATIVES WERE CONSIDERED?: Needle valves and orifices. These alternatives are unsatisfactory due to line pressure fluctuations.

MAIN REASON FOR CHOOSING KATES: The Kates have to be mounted to the machine. Size and repeatability are also important.

Did You Know

Kates Flow Rate Controllers have been used on every medium from hydrogen to honey! If it flows without being acted upon by an outside source ("non-Newtonian" fluids) Kates can control it.

PARAMETERS

SERVICE MEDIA:
Water

CONNECTIONS:
1/4" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
EPDM O-Rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Plant Water Supply

INLET PRESSURE:
Varies

OUTLET PRESSURE:
Atmosphere

FLOW RANGE:
FIxed at .6 GPM

MODEL:
25FS11-L
Stainless Steel Mini-Flo

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

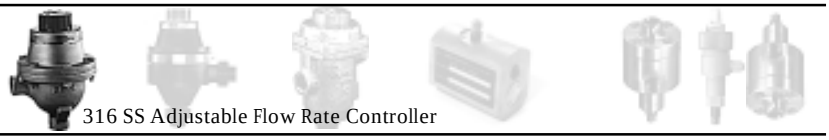
W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

SHAMPOO/HAIR COLORING



316 SS Adjustable Flow Rate Controller

INDUSTRY: Cosmetic

SIC CODE: 2840-4

APPLICATION: Cold deionized water from scale-operated batching tanks is blended with hot deionized water and hot oils in the manufacture of hair cosmetics.

WHERE IN PROCESS?: The flow of hot deionized water is maintained at a constant rate until emulsification of the product is complete.

WHY IS FLOW RATE CRITICAL?: The controlled addition of hot deionized water is necessary to establish emulsification of the product without excess air, which would cause foaming and in some cases a slight exothermic reaction.

WHAT ALTERNATIVES WERE CONSIDERED?: Air loaded diaphragm control valves or ball valves.

MAIN REASON FOR CHOOSING KATES: Convenience is being able to set the needed flow rate and get good repeatability without adjustment or supervision.

Did You Know

Kates Flow Rate Controllers will control the rate of flow of any "thixotropic" fluid. That is any fluid that will seek its own level without being acted upon by an outside source.

PARAMETERS

SERVICE MEDIA:
Hot Deionized Water

CONNECTIONS:
2" RF Flanges

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
15-20° C

SOURCE OF FLOW:
Centrifugal Pump

INLET PRESSURE:
60 PSIG

OUTLET PRESSURE:
Atmospheric

FLOW RANGE:
25-50 gpm

MODEL:
KB11B-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

DYNAMOMETER LAB/ ENGINE TEST FACILITY

316 SS Adjustable Flow Rate Controller

INDUSTRY: Automotive Testing

SIC CODE: 3700-1

APPLICATION: New dynamometer test lab facility to prove newly developed electronic fuel injection engines for automobile.

WHERE IN PROCESS?: Controlling the flow of gasoline to simulate the automotive fuel pump on different size engines. Kates flow rate controller is used in over 100 test cells throughout the automotive industry.

WHY IS FLOW RATE CRITICAL?: A constant flow rate is needed to monitor a constant engine speed for accurate testing. Varying the flow of gasoline to the engine under controlled conditions over varying time frames simulates real life conditions at different idling or running speeds.

WHAT ALTERNATIVES WERE CONSIDERED?: Pressure regulator and mulitcomponent flow loops.

MAIN REASON FOR CHOOSING KATES: Accuracy, rangeability, low cost and minimal upkeep.

Did You Know

A typical turndown ratio for a Kates Flow Rate Controller is 25:1. Compared to the average control valve which is about 15:1, Kates offers a much higher ratio as well as providing a linear flow curve. Control valves only work effectively at approximately the 25-75% range.

PARAMETERS

SERVICE MEDIA:
Unleaded Gasoline

CONNECTIONS:
3/4" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
.75

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Bosch Pump

INLET PRESSURE:
100 PSIG

OUTLET PRESSURE:
40-50 PSIG

FLOW RANGE:
120 liters per hour

MODEL:
BB11T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

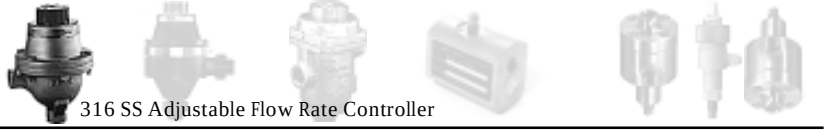
W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

TURBINE PUMP BEARING FLUSH



316 SS Adjustable Flow Rate Controller

INDUSTRY: Sanitary

SIC CODE: 4900

APPLICATION: Maintaining the minimum critical flow to a boiler feed pump in order to maintain proper heating in the pump during cold conditions.

WHERE IN PROCESS?: Flushing water to bearings on pumps. Six bearing locations per pump.

WHY IS FLOW RATE CRITICAL?: The flushing water cools, lubricates and cleans debris from the bearing. Improper flow can cause shutdown on low flows causing possible expensive overhauls.

WHAT ALTERNATIVES WERE CONSIDERED?: None.

MAIN REASON FOR CHOOSING KATES: Kates insures adequate and uniform flow of water at various bearing levels, although pressure conditions vary at each level. Supply pressure can vary due to power loss at Finished Water Pumping Station, and changes in production rate.

Did You Know

Kates Flow Rate Controllers experience linear flow curves, higher turndown ratios and longer life due to the "Arcurate Orifice" perfected by Willard A. Kates. A typical orifice has a "knife edge" where the Kates is rounded or arced for superior performance.

PARAMETERS

SERVICE MEDIA:
Water

CONNECTIONS:
3/4" FNPT

VISCOSITY:
1.0 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Pump City Water

INLET PRESSURE:
120-140 PSIG

OUTLET PRESSURE:
20-40 PSIG

FLOW RANGE:
1-20 gpm, 4-10 gpm average requirement

MODEL:
GB11T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

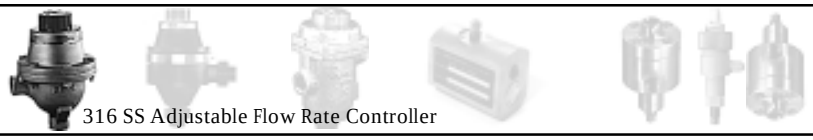
W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

WIRE MANUFACTURING



316 SS Adjustable Flow Rate Controller

INDUSTRY: Metal Coating

SIC CODE: 3470-1

APPLICATION: Wire drawing of 1038 carbon and other materials.

WHERE IN PROCESS?: Kates controllers maintain a constant 30 gpm of cooling water through the wire drawing machine. Blocks stretch or "draw" the wire up to 2000 feet per minute.

WHY IS FLOW RATE CRITICAL?: The machine and water must be temperature controlled to keep the wire from breaking.

WHAT ALTERNATIVES WERE CONSIDERED?: None-original equipment from specification several years ago.

MAIN REASON FOR CHOOSING KATES: Easy to install and maintain.

Did You Know

The valve tube, which contains the exit orifices in a Kates, is designed to eliminate cavitation. The (3) exit ports are spaced equidistantly apart. The force of the flow entering the valve tube is cancelled out due to this design. Therefore cavitation has never been a concern with Kates.

PARAMETERS

SERVICE MEDIA:
Water

CONNECTIONS:
2" RF Flanges

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
88° F

SOURCE OF FLOW:
Centrifugal Pump

INLET PRESSURE:
11 PSIG

OUTLET PRESSURE:
Atmospheric

FLOW RANGE:
30 GPM

MODEL:
KB11B-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

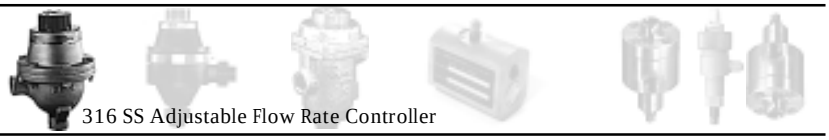
W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

SOFT DRINK BOTTLING



316 SS Adjustable Flow Rate Controller

INDUSTRY: Beverage

SIC CODE: 2080-1

APPLICATION: Treating water from a filtration system is injected with CO2 to provide carbonation. It is then fed to a proportioner where syrup is added to produce the soft drink.

WHERE IN PROCESS?: The flow of carbonated water is maintained at a constant rate as it passes over the cooling coils to ensure uniform cooling before it is blended with the syrup in the proportioner.

WHY IS FLOW RATE CRITICAL?: The treated water must be cooled from approximately 85 degrees to a constant 45 degrees to get proper mixing and processing.

WHAT ALTERNATIVES WERE CONSIDERED?: Flow control valve.

MAIN REASON FOR CHOOSING KATES: Past experience - Maintaining a constant flow regardless of pressure fluctuations is critical to achieve uniform cooling.

Did You Know

Each Kates Flow Rate Controller is checked at (33) calibration setpoints to insure it meets quality specifications.

PARAMETERS

SERVICE MEDIA:
Treated Carbonated Water

CONNECTIONS:
2" RF Flanges

VISCOSITY:
1.0 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
85° F

SOURCE OF FLOW:
Centrifugal Pump

INLET PRESSURE:
35-40 PSIG

OUTLET PRESSURE:
2-5 psi

FLOW RANGE:
85-110 gpm

MODEL:
KB11B-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

STAIN BLOCKER COATINGS

316 SS Adjustable Flow Rate Controller

INDUSTRY: Carpet/ Fabric/ Textile Manufacturing

SIC CODE: 2270

APPLICATION: Controlling the flow of stain blocker being applied to carpet.

WHERE IN PROCESS?: Blending water and stain blocker at controlled rates.

WHY IS FLOW RATE CRITICAL?: Over-application of stain blocker increases production costs. Under-application reduces the effectiveness of the stain blocker.

WHAT ALTERNATIVES WERE CONSIDERED?: Flow control loop, control valve remotely operated.

MAIN REASON FOR CHOOSING KATES: "Fiddle Free" flow control, cost, and simplicity of operation.

Did You Know

E-mail Kates today with your technical questions, expediting inquiries, requests for quotes and other items at:

info@wakates.com

PARAMETERS

SERVICE MEDIA:
Stain Blocker

CONNECTIONS:
2" RF Flanges

VISCOSITY:
300 SSU

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
140° F

SOURCE OF FLOW:
Mixing Tank

INLET PRESSURE:
60 PSIG

OUTLET PRESSURE:
30 psi

FLOW RANGE:
15-125 gpm

MODEL:
KB11B-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

HIGH PURITY PARTICLE COUNTING

316 SS Adjustable Flow Rate Controller

INDUSTRY: Electronic Circuit Manufacturers

SIC CODE: 3679

APPLICATION: Sample streams at several points in deionized water systems for integrated circuit manufacturing to analyze particulate content.

WHERE IN PROCESS?: Pressurized sample stream off main line flow through particle counter and then through Kates Controllers before it is discharged as waste.

WHY IS FLOW RATE CRITICAL?: The flow of the deionized water must be held at a constant through the analyzer to allow it to give reliable light pulses to be scattered off the particles. A varying flow rate changes the scattering amplitude, resulting in an inaccurate size determination.

WHAT ALTERNATIVES WERE CONSIDERED?: Monitoring flow with a meter or electronic mass flow sensor to generate an analog signal used to compensate for the variable light pulses with a computer.

MAIN REASON FOR CHOOSING KATES: Cost, accuracy and simplicity. Met-One, Inc. will begin recommending Kates to their customers as an enhancement to their product.

Did You Know

Check out the W.A. Kates Company Web site today at:

http://www.wakates.com

Find out everything about Kates Flow Rate Controllers.

PARAMETERS

SERVICE MEDIA:
Deionized Water

CONNECTIONS:
1/2" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Main process stream

INLET PRESSURE:
Less than 50 PSIG

OUTLET PRESSURE:
Atmospheric

FLOW RANGE:
75-200 ml/minute

MODEL:
AB11T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

CHEMICAL BATCHING AND DILUTION

316 SS & PVC Adjustable Flow Rate Controller

INDUSTRY: Chemical Production

SIC CODE: 2800-1

APPLICATION: Dilution of concentrated sulfuric acid in the production of Erythromycin and its by-products.

WHERE IN PROCESS?: A PVC Kates Controller is used to meter the concentrated acid from an outdoor storage tank to the primary dilution tank. Two stainless steel Kates units control the flow of water used in the second dilution step as the solution is fed to two separate processes.

WHY IS FLOW RATE CRITICAL?: The diluted concentrations of the sulfuric acid must be maintained within 3% to be used in the production process.

WHAT ALTERNATIVES WERE CONSIDERED?: Control valve and rotameter.

MAIN REASON FOR CHOOSING KATES: The three Kates Controllers will alleviate the need for a full time operator who previously monitored the dilution process.

Did You Know

W.A. Kates Company now has a customized software package for Windows 3.1+ and Windows 95+ that contains the following:

The complete guide to W.A. Kates Company, real working demos, the entire Kates catalog, and more.

Request it today from you local representative!

PARAMETERS

SERVICE MEDIA:
Water & 98% Sulfuric Acid

CONNECTIONS:
FNPT

VISCOSITY:
1.0 & 2.5 cps

MATERIAL:
316 SS & PVC

SPECIFIC GRAVITY:
1.0 & 1.82

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Centrifugal Pump

INLET PRESSURE:
20-60 PSIG

OUTLET PRESSURE:
Varying

FLOW RANGE:
0.8 gpm

MODEL:
CB11T-B, &
EC11U-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

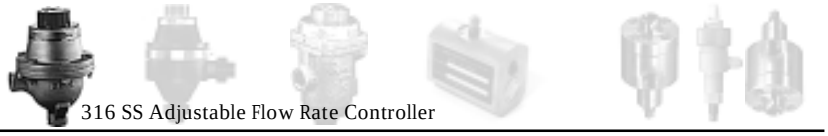
W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

ROTATING SEALS ON TURBINES & COMPRESSORS



316 SS Adjustable Flow Rate Controller

INDUSTRY: Turbines & Compressors
Generators

SIC CODE: 3511

APPLICATION: Industrial filter systems to filter recirculating light turbine oil fed to rotating seals on compressors and turbines.

WHERE IN PROCESS?: In line to rotating seals downstream of secondary filter.

WHY IS FLOW RATE CRITICAL?: Flow rate dictates efficiency and life of seals, saving wear or shaft.

WHAT ALTERNATIVES WERE CONSIDERED?: Conventional multicomponent flow loop.

MAIN REASON FOR CHOOSING KATES: Low cost, automatic adjustment to varying differential pressure due to build up of effluent on filters.

Did You Know

W.A. Kates Company recently received an 1-1/2" flow rate controller originally purchased in 1965 back from a customer . They had shut down their compressor and no longer had a need for the Kates. It was used to control the flow of oil through a labyrinth seal.

The Kates was cleaned and put on our test bench. It duplicated the original calibration data sheet exactly, point for point, after 30 years.

This is not the exception but the expected typical life of a Kates under "clean" fluid conditions.

PARAMETERS

SERVICE MEDIA:
Turbine oil

CONNECTIONS:
3/4" RF Flanges

VISCOSITY:
100 SSU

MATERIAL:
316 SS

SPECIFIC GRAVITY:
0.8

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Centrifugal pump, filter line effluent

INLET PRESSURE:
345 PSIG

OUTLET PRESSURE:
Varying

FLOW RANGE:
1-25 gpm

MODEL:
GB33B-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

BLEACHING RAW FABRIC

316 SS Adjustable Flow Rate Controller

INDUSTRY: Fabric Manufacturing

SIC CODE: 2253

APPLICATION: Mixing bleach for raw fabric processing.

WHERE IN PROCESS?: To control water flow to the washing machines.

WHY IS FLOW RATE CRITICAL?: If the bleach mix is too strong, it will deteriorate the fabric material and impair the dyeing process.

WHAT ALTERNATIVES WERE CONSIDERED?: Ball valves/ Globe valves.

MAIN REASON FOR CHOOSING KATES: Accuracy and ease of use.

Did You Know

Kates have also been implemented to control stain blocker and permanent press fluids in many mills.

PARAMETERS

SERVICE MEDIA:
Water

CONNECTIONS:
3/4" RF Flanges

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings, Metal Knob

TEMPERATURE:
Ambient

SOURCE OF FLOW:
City Water

INLET PRESSURE:
40 -80 PSIG

OUTLET PRESSURE:
0-20 PSIG

FLOW RANGE:
1-20 gpm

MODEL:
GB11B-BE

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

HYDRAULICALLY DRIVEN TOOLING SYSTEM

316 SS Adjustable Flow Rate Controller

INDUSTRY: Hydraulic Machinery

SIC CODE: 3569-1

APPLICATION: Maintains a constant flow of sea water to hydraulically driven tools (bansaws, impact wrenches, etc.). This equipment is used onboard U.S. Navy ships for maintenance, repair under water search and excavation.

WHERE IN PROCESS?: While at sea, salt water is pumped aboard ship, filtered, and then pumped at 3000 PSIG by a Diesel Harmon 8 cylinder diaphragm pump through the Kates Flow Rate Controllers to the various tooling lines.

WHY IS FLOW RATE CRITICAL?: A constant flow of high pressure water is required to operate the tooling at a designated speed. Compensation for surges, caused by the diaphragm pump and from varying usage loads on the system, is needed to prevent damage to the tooling.

WHAT ALTERNATIVES WERE CONSIDERED?: None..

MAIN REASON FOR CHOOSING KATES: Ability to maintain a constant flow, regardless of large pressure fluctuations.

Did You Know

Kates Flow Rate Controllers have been used on atomic submarines to control flow of water through pump seals used with nuclear reactors.

PARAMETERS

SERVICE MEDIA:
Salt Water

CONNECTIONS:
3/4" FNPT

VISCOSITY:
1.0

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Diesel Harmon 8-cylinder

INLET PRESSURE:
3000 PSIG

OUTLET PRESSURE:
Varies

FLOW RANGE:
1.5-20 gpm

MODEL:
GB06T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

PASTA MACHINE

316 SS Adjustable Flow Rate Controller

INDUSTRY: Food Manufacturing

SIC CODE: 2040-1

APPLICATION: Control of low concentration salt water to flour in pasta machine.

WHERE IN PROCESS?: Water feed into mixer.

WHY IS FLOW RATE CRITICAL?: An accurate water feed is required to mix with the flour which is weighed and fed at 1500 pounds per hour. The water composition ensures a uniform pasta in the process.

WHAT ALTERNATIVES WERE CONSIDERED?: None - original design.

MAIN REASON FOR CHOOSING KATES: Kates controllers maintain the required flow with high accuracy at low cost.

Did You Know

Kates Flow Rate Controllers can be cleaned by backflushing or using steam without damage.

PARAMETERS

SERVICE MEDIA:
Low concentration salt water

CONNECTIONS:
1/2" FNPT

VISCOSITY:
1 cps

MATERIAL:
316 SS

SPECIFIC GRAVITY:
1.0

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Ambient

SOURCE OF FLOW:
Centifugal Pump/ City Water

INLET PRESSURE:
40-70 PSIG

OUTLET PRESSURE:
Atmospheric

FLOW RANGE:
0.1 - 3.0 GPM

MODEL:
CB11T-B

the genius of simplicity

deionized water • rotating seals • additives/blending • nitrogen blanketing • natural gas • reverse osmosis • dynamometers • ratio blending •

W.A. Kates company

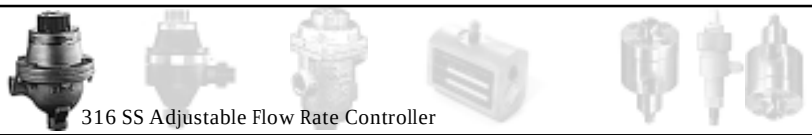
Application News

humidity control • heat exchangers • cooling water • vacuum pumps • instrument purges • analytical fast-loops • ...and hundreds more!

1363 Anderson • Clawson, MI 48017 • Phone 248-435-8225 • Fax 248-435-8255
NEW! E-mail: info@wakates.com NEW! Internet: http://www.wakates.com

PUMP SEALS

API PLAN 11, 21, 32 • ANSI 7311, 7321 and 7332



316 SS Adjustable Flow Rate Controller

INDUSTRY: Pumping Equipment

SIC CODE: 3053 and 3561

APPLICATION: All pumps have one similar problem, controlling the rate of flow of the sealant fluid. If the flow is too low, the pump may overheat or the seals may wear. If the flow is too high, sealant is wasted.

WHERE IN PROCESS?: The Kates is inserted in the specified API and ANSI pump seal.

WHY IS FLOW RATE CRITICAL?: If the pump seal fails, the pump will incur severe damage. By controlling the rate of the flush to the seal, the life of the pump is extended.

WHAT ALTERNATIVES WERE CONSIDERED?: Multiple orifices that need to be replaced often. Conventional multi-component flow control loop.

MAIN REASONS FOR CHOOSING KATES: No worry about orifice sizing. Precise flow insured. Ability to take large pressure drops.

Did You Know

At a company in California, a 1/2" 1500# Kates is used to seal and flush a hydrocracker charge pump. The Kates is set at 3 gpm and is rarely touched. The flow rate controller is taking a 2200 psi pressure drop across it without cavitation.

PARAMETERS

SERVICE MEDIA:
Pump Seal Flushing Fluid

CONNECTIONS:
1/2" or 3/4" FNPT or Flanged

VISCOSITY:
Varies

MATERIAL:
316 SS

SPECIFIC GRAVITY:
Varies

OPTIONS:
Teflon® O-rings

TEMPERATURE:
Varies

SOURCE OF FLOW:
Pump

INLET PRESSURE:
Up to 3600 PSIG

OUTLET PRESSURE:
Varies

FLOW RANGE:
Varies

MODEL:
A, B, C, F, or GB11T-B

the genius of simplicity