# JOHNSON SCREENS® HIGH CAPACITY INTAKE SCREENS



# **Johnson** screens<sup>®</sup>

## JOHNSON SCREENS® HIGH CAPACITY INTAKE SCREENS

### THE WORLD'S MOST EFFICIENT INTAKE SYSTEM



#### Conventional Intake

The conventional passive intake design allows variation in entrance velocity across the screen face.



#### High Capacity

Intake Johnson Screens high capacity intake screens have uniform flow rates at 90 percent of the maximum allowable velocity. Johnson Screens<sup>®</sup> intake systems provide uninterrupted water withdrawal from lakes, rivers and oceans. They operate continuously and can be cleaned and maintained with no downtime.

To provide maximum efficiency, Johnson Screens features custom designed and engineered systems tailored to each unique environment, meeting stringent regulations protecting fish and aquatic life.

The result is a system which costs less to install and operate, and requires less maintenance.

#### MAXIMUM EFFICIENCY

The combination of non-plugging Vee-Wire<sup>®</sup> design and patented internal flow modifiers provide the highest open area, while maintaining low slot velocity and the lowest pressure drop in the industry.

This delivers maximum water capacity with minimal entrainment and impingement.

### COMPUTATIONAL FLUID DYNAMIC (CFD) ANALYSIS

This CFD image depicts the uniformity of the flow velocity across the entire intake screen surface area when using a dual pipe low modifier.



# CUSTOM DESIGNED AND ENGINEERED

With over 40 years of intake screen experience and hundreds of installations world wide, *Johnson Screens* engineers can provide design and application assistance for any environment.



These intake screens can be constructed from various stainless steel alloys and Z-Alloy for both fresh and seawater applications. Different materials can be selected for corrosion issues, to repel mollusks and to resist biofouling.

#### LESS MAINTENANCE

Johnson Screens passive intake screen systems have no moving parts that could break down or wear out, unlike travelling screens. This eliminates the need for replacements parts and costly repairs.

The controlled slot velocity of the screen, coupled with the specially matched Hydroburst<sup>™</sup> air backwash, keep the system clean and operating.

#### LOWER COST

Johnson Screens intake screen systems provide a unique, flexible design. This design results in lower initial costs, no moving parts, less maintenance needs and simplified installation. All of this combined leads to a reliable, inexpensive water supply.



### HYDROBURST™ BACKWASH SYSTEM: MAXIMIZING INTAKE SYSTEM EFFICIENCY

Johnson Screens developed the *Hydroburst* backwash system for conditions where the intake screens may need regular cleaning due to areas with high concentrations of debris or areas that are difficult to access.

The process flushes the debris away from the screen surface by releasing a large volume of compressed air inside the screen in a quick burst.

The typical backwash procedure cleans each water intake sequentially or at regular intervals. The *Hydroburst* system can be manually or automatically operated. Initiation of the system can be time-based, based on delta p or on reduction in flow. It consists of four major components:

- 1. A compressor, which supplies compressed air, needed to recharge the receiver tank.
- 2. A receiver tank that stores the compressed air.
- 3. A distributor system, required for multi-screen applications.
- 4. A control panel, for manual or automatic operation.



### JOHNSON SCREENS® PATENTED INTERNAL FLOW MODIFIER: HIGH EFFICIENCY AND LOW COSTS

Johnson Screens has a long history of leading the surface water industry in developing new technologies. The many patents and design innovations attributed to the Johnson Screens' staff are indicators of the commitment to our customers and the future.

This same commitment to innovation brought the Vee-Wire® design and dual pipe flow modifier to the surface water industry. They are key to the superior performance of the passive intake screens.

The key component of an intake screen system is the internal flow modifier. Johnson Screens developed the open pipe flow modifier concept over 30 years ago, and recently upgraded that design with the patented dual pipe flow modifier. The even flow raises the overall efficiency of the screen to over 90 percent, which means smaller screen cylinders and *Hydroburst* components can be used. The low pressure drop across the screen surface reduces the amount of energy required to pull water through the screen, creating significant savings on operating costs.



# Providing over 100 years of experience, innovation and customer satisfaction. Contact us today.



### OUR WIDE RANGE OF PRECISION ENGINEERED EQUIPMENT IS SUITABLE FOR MORE APPLICATIONS THAN EVER.

Turn to Johnson Screens® to help maximize your operational efficiency and find long-term, trouble-free solutions. Discover our ever-expanding range of products, designed with your needs in mind:

#### ARCHITECTURE AND

CONSTRUCTION Column covers Urban furniture Frontages Floor grating Furniture Ventilation grids Sun-control screens Custom lighting Wall partitions

#### **GENERAL INDUSTRIAL**

Flat panels Sieve bends Cylindrical screens Centrifugal baskets 120° pressure fed screens Trommels Vibrator screens Diffuser screens Pressure screens

# **Johnson**screens<sup>®</sup>

#### AUSTRALIA - ASIA PACIFIC

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#### MINERAL AND AGGREGATE PROCESSING

Centrifuge baskets Pipo® modular screening systems Koko® screening systems Specialty wire & polyurethane combination screens Woven wire Sieve bends Trommel mats Frames Spray Nozzles HDPE Pipes Ceramics Rubber screening systems Mill liners & Rubber ceramic wear liners Urethane lined pipe

#### FIELD SERVICES

Installation Inspection Repair Assistance Supervisor

#### PETROCHEMICAL AND REFINING

Centerpipes Outer baskets Scallops Support grids and beams Outlet collectors Laterals Distributor trays Nozzle systems Scale traps

#### WATER PROCESS

CoMag® & BioMag® Passive Intake screens In-line self-cleaning filters Nozzles Triton® underdrain systems Fish diversion screens Collectors/distributors Resin traps Precoat filters Milliscreen® Suboscreen® Stepscreen Centre-Flo Screen

#### WATER WELL

Well screens (stainless steel and PVC) Riser pipes Sand spears Environmental monitoring screens Drilling fluid Nu-Well® rehabilitation chemicals

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