

AERATION CONTROL FOR WASTEWATER TREATMENT PLANT:

Aeration is a Crucial Process in any Wastewater, be it Municipal Sewage or Industrial Effluent Treatment. In Aerobic Conditions, like in a Municipal Sewage Treatment Plant, the incoming Sewage includes Nitrogen, and in Anaerobic Conditions Effluent includes Dissolved Metals like in form of Ferrous Compounds, Chemicals like Hydrogen Sulphide and other Volatile Organic Compounds, in such Effluent, Oxidation helps to convert these chemicals to insoluble precipitates which can be removed or filtered out.

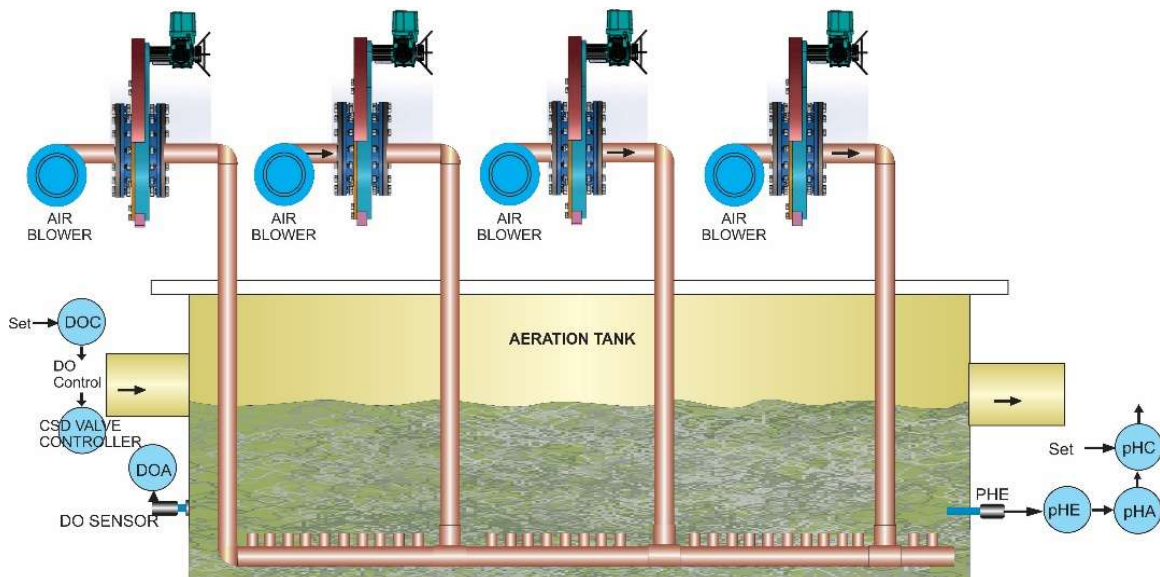
This Nitrogen is in the form of Ammonia, and it is usually present in the water in the form of ammonium ions. This ammonia is converted into its Nitrite by certain Bacteria, which are the Ammonia-Oxidizing Bacteria. Furthermore, the Nitrite is converted into Nitrate by another set of Bacteria, which are the Nitrite-Oxidizing Bacteria. This process, which converts Ammonia to Nitrite and further converts Nitrite to Nitrate, is called Nitrification and requires Oxygen.

The Oxygen in the Effluent is in the form of Dissolved Oxygen (DO). And as the Concentration of DO affects the Nitrification Rate, DO needs to be controlled. Similarly, in Anaerobic Conditions also the Oxygen needs to be controlled. Various Aeration Control Methods are employed where the Iris Valve is Constant so that the Air Pressure isn't compromised while the Air Flow is regulated. Please go through the CSD or Iris Valve Brochure or scroll down to see the advantages and Flow Profile of CSD or Iris Valve.

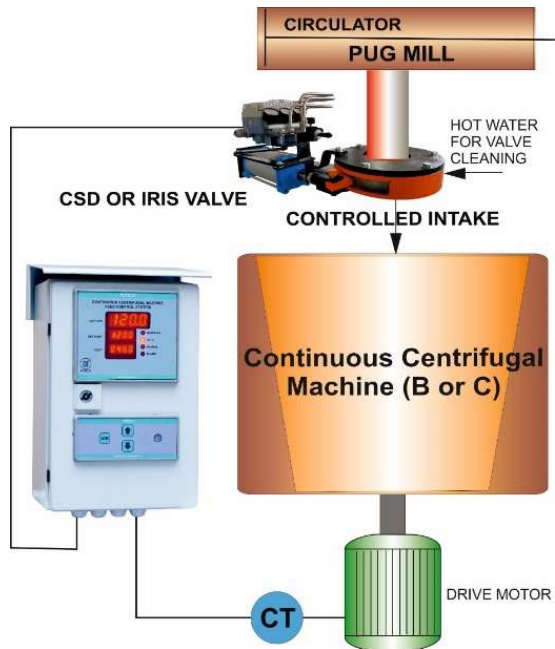
Methods to Control DO in Sewage or Effluent Water:

1. Monitoring the Dissolved Oxygen using DO Sensors, Ammonia Content using Ion Selective Electrodes, Turbidity Sensors, and Controlling Air Intake.
2. CSD or Iris Valve is regulated as per the requirement from the Central or Local Controllers.

Aeration Control in Aeration Tank:



CSD OR IRIS VALVE BASED CONTINUOUS CENTRIFUGAL MACHINE FEED AUTOMATION SYSTEM:



CONTINUOUS CENTRIFUGAL MACHINE
AUTOMATIC FEED CONTROL SYSTEM
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- CONTINUOUS CENTRIFUGAL MACHINE BASKET DRIVE LOAD CURRENT SENSING
- FEED CONTROL USING IRIS VALVE WITH RESPECT TO DRIVE LOAD CURRENT

CSD OR IRIS VALVE BASED CONTINUOUS CENTRIFUGAL MACHINE AUTOMATION ADVANTAGES:

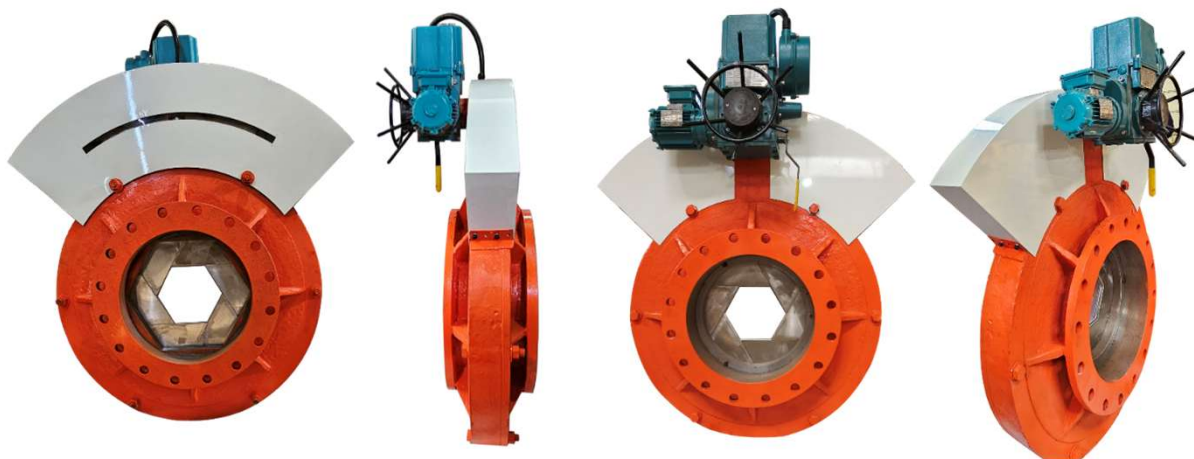
- Constant Load on the Machine Basket Drive results in Constant Machine Operation and Optimum Current Consumption of the Drive Motor thus Saving Power and Maximizing Capacity Utilization at the Same Time.
- Constant Load on the Machine Basket results in Improved Molasses Purity as well as Increased Throughput at the same time.
- Concentric and Uniform Material Intake Ensures uniform layer of Masecuite over the surface of the Basket thus it results in Excellent Purging, leading to higher efficiency and increased throughput
- A Uniform layer of Masecuite over the surface of the Basket also results in Power, Water, and Steam Saving. Power Saving of up to 20% for total Masecuite Curing. Thus, it ensures a Very Attractive payback. INFACNT CONTINUOUS CENTRIFUGAL MACHINE AUTOMATION WORKS LIKE A "MULTIBAGGER".
- Concentric and Uniform Material Intake also ensures Proper Basket Balance, reducing Wear and Tear.
- Higher Capacity Utilization of Continuous Centrifugal Machines and Operational life improvement and Reduced Cost of Ownership.
- Eliminates Human Errors, Overflows, and Stoppages. THUS, WORKS AS A "STOP LOSS AUTOMATION"!

POWER SAVING OF UP TO 20% FOR TOTAL MASSECUITE CURING.
CONTINUOUS CENTRIFUGAL MACHINE ATOMATION WORKS LIKE A "MULTIBAGGER".
STOP LOSSES, REDUCE COST OF OWNERSHIP
INCREASE RETURN ON INVESTMENT, INCREASE PROFITABILITY

**IRIS VALVE OR CONCENTRIC SPLIT DIAPHRAGM (CSD) VALVE
ELECTRIC, OR PNEUMATIC ACTUATION WITH POSITIONER**



CONCENTRIC SPLIT DIAPHRAGM VALVE OPENS THROUGH THE CENTRE



CSD CONTROL VALVE (450mm / 18"), WITH MOTORIZED 3-PHASE ELECTRIC ACTUATOR



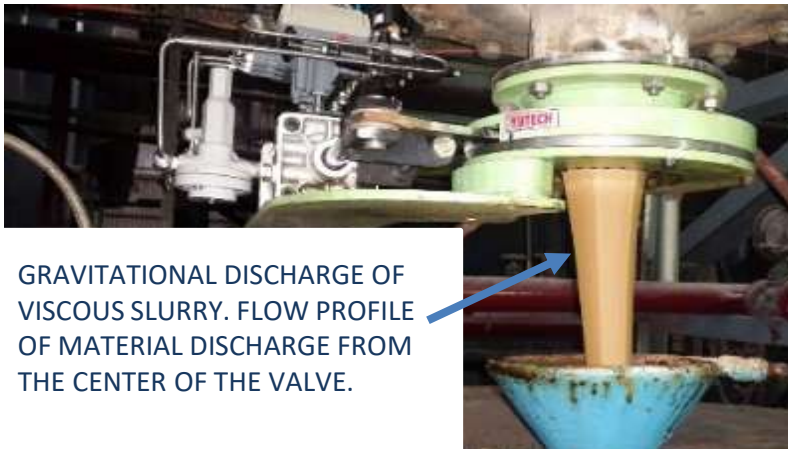
PNEUMATICALLY ACTUATED IRIS VALVE WITH ELECTRO-PNEUMATIC POSITIONER

IRIS VALVE OR CONCENTRIC SPLIT DIAPHRAGM VALVE



FLOW PROFILE OF CONCENTRIC SPLIT DIAPHRAGM VALVE:

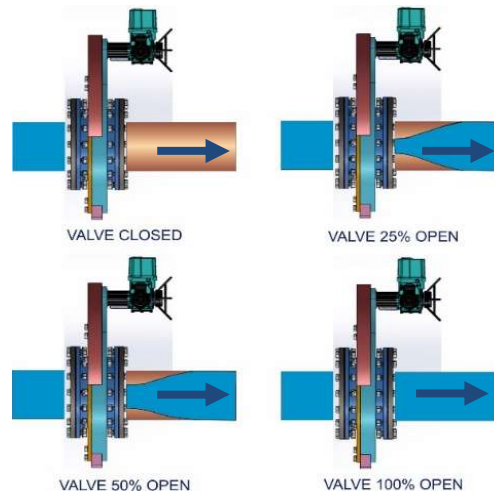
GRAVITY DISCHARGE INSTALLATION:



GRAVITATIONAL DISCHARGE OF VISCOUS SLURRY. FLOW PROFILE OF MATERIAL DISCHARGE FROM THE CENTER OF THE VALVE.

GRAVITY DISCHARGE INSTALLATION IS USED FOR SUGAR MASSECUITE FLOW CONTROL FOR LOW GRADE SUGAR BASKET FEED CONTROL USING CSD OR IRIS VALVE. THIS ELIMINATES BASKET UNBALANCE, IMPROVES PURGING, STABILIZES DRIVE LOADS, ELIMINATES OVERFLOWS AND GENERATES IMMENSE PROFITS.

INLINE INSTALLATION: THE FLOW PROFILE THROUGH THE SPLIT DIAPHRAGM'S CENTER, MINIMIZES PRESSURE DROP, NOISE, AND FLOW TURBULENCE THROUGHOUT THE ENTIRE FLOW REGULATION RANGE



IRIS VALVE INLINE FLOW PROFILE

OTHER APPLICATIONS:

- CONTROLLED GRAVITY FLOW OF GRAINS OR PELLETS OR POWDERS WITH A PARTICLE SIZE BETWEEN 0.5 MM AND 10 MM
- IDEAL FOR CONTROLLING GRAVITY FLOW CONTROL OF FLOW OF SLURRIES / SEMI-SOLIDS / CONCRETE AND OTHER FLUIDS
- IDEAL FOR RATIO CONTROL OF TWO OR MORE INGREDIENTS FALLING IN A VESSEL
- HOT AND COLD AIRFLOW CONTROL

PLEASE DOWNLOAD CSD OR IRIS VALVE BROCHURE CUM DATASHEET: CSD-IRIS-VALVE-24-B FROM OUR WEBSITE www.yutechautomation.com.

PLEASE VISIT OUR WEBSITE www.yutechautomation.com.

YU Technologies Pvt. Ltd.

HO & Works: B 8/5, MIDC, Miraj, 416 410, Distt: Sangli, Maharashtra, India.

T: +91 916 832 4851, +91 911 224 9727 / 8 / 9.

E: info@yutech.in; sale@yutech.in

W: www.yutech.in; www.yutechautomation.com

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