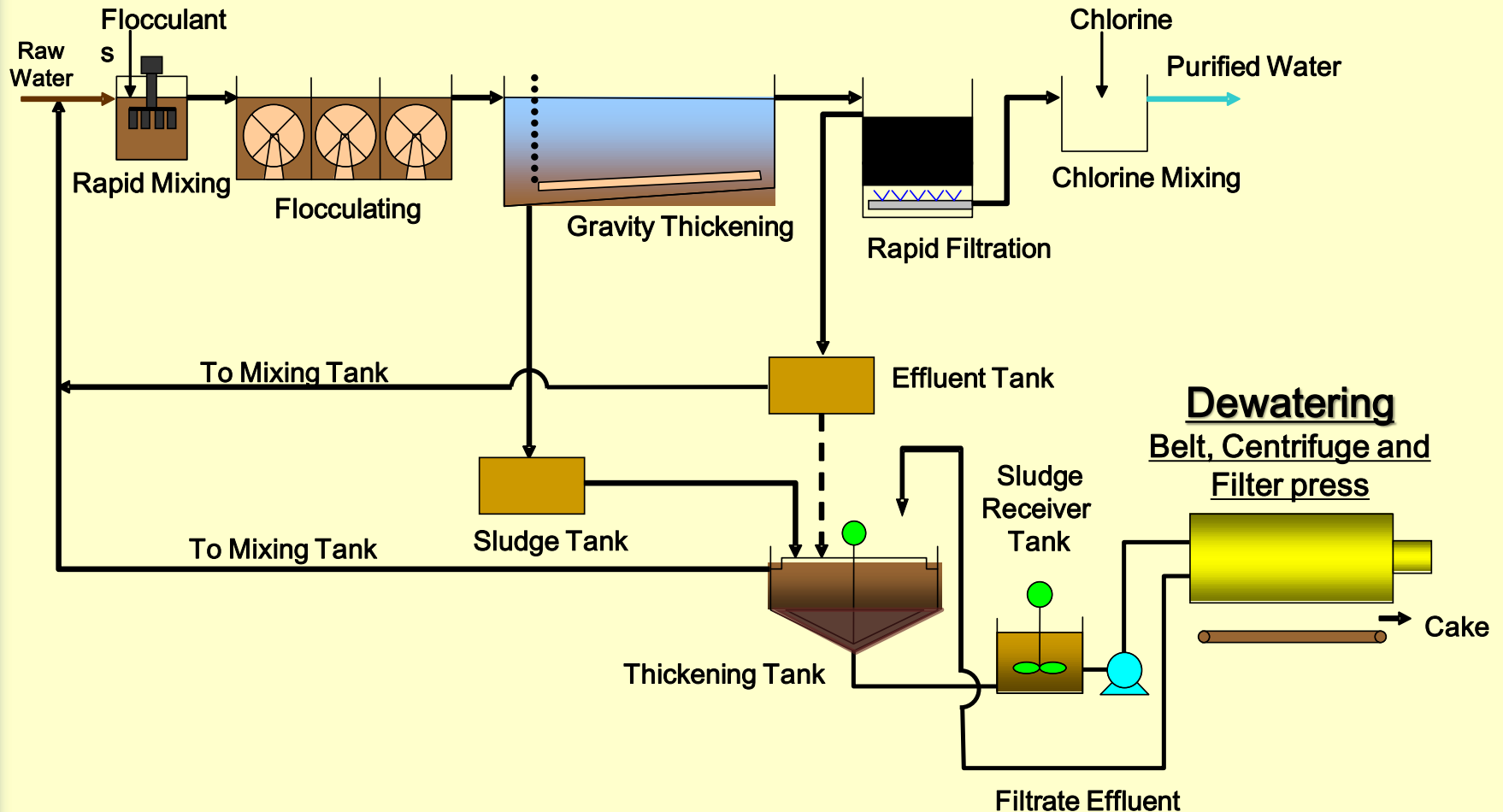


Updated Sludge Dewatering Processes in Water and Sewage Works in Japan

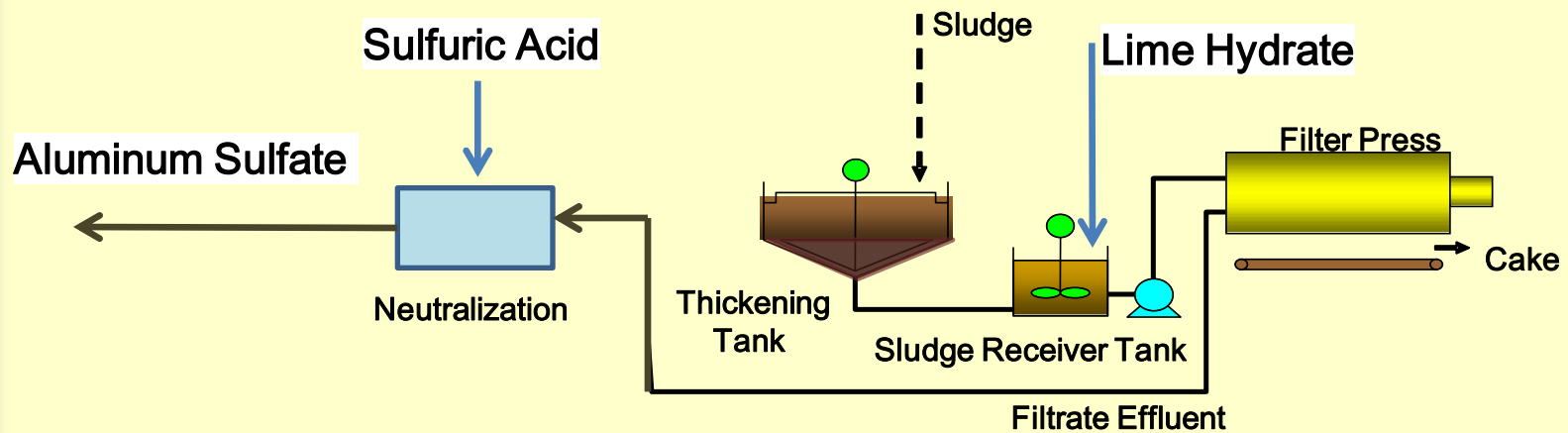


Sludge Dewatering Process in Waterworks

RAPID FILTRATION PROCESS (Non-Dosing Dewatering Process)



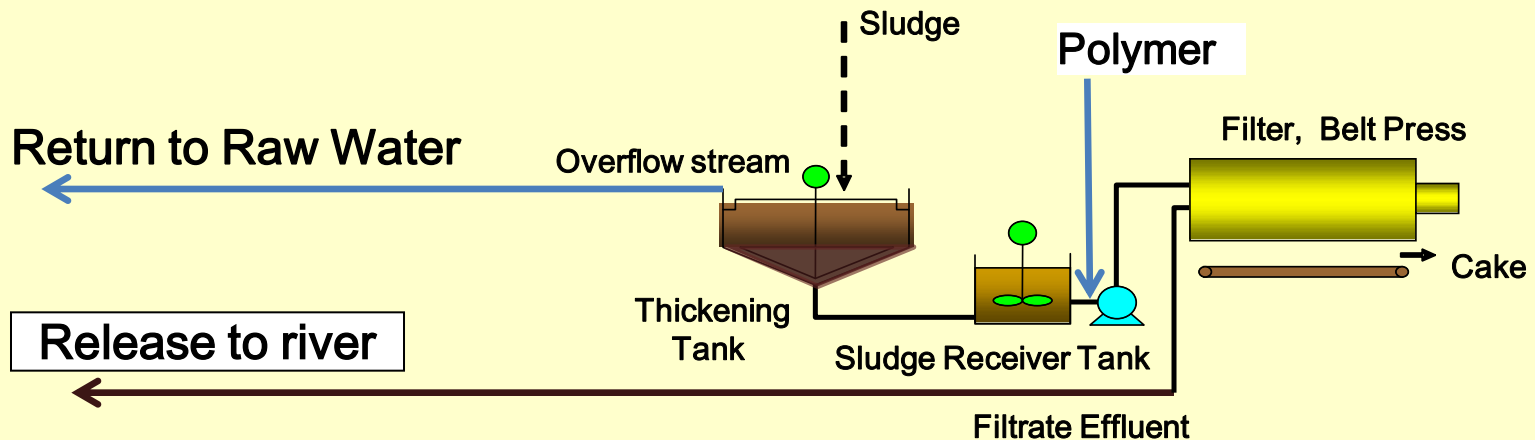
Lime Hydrate Dewatering Process



Features:-

1. Filtration rate is increased
2. Cake volume increases by dosing Lime- Hydrate
3. Neutralization is required for filtrate by adding acid
4. Hazardous working condition for handling Lime-Hydrate
5. Filter cloth life is reduced and acid washing is required for filter cloth due to clogging by lime hydrate

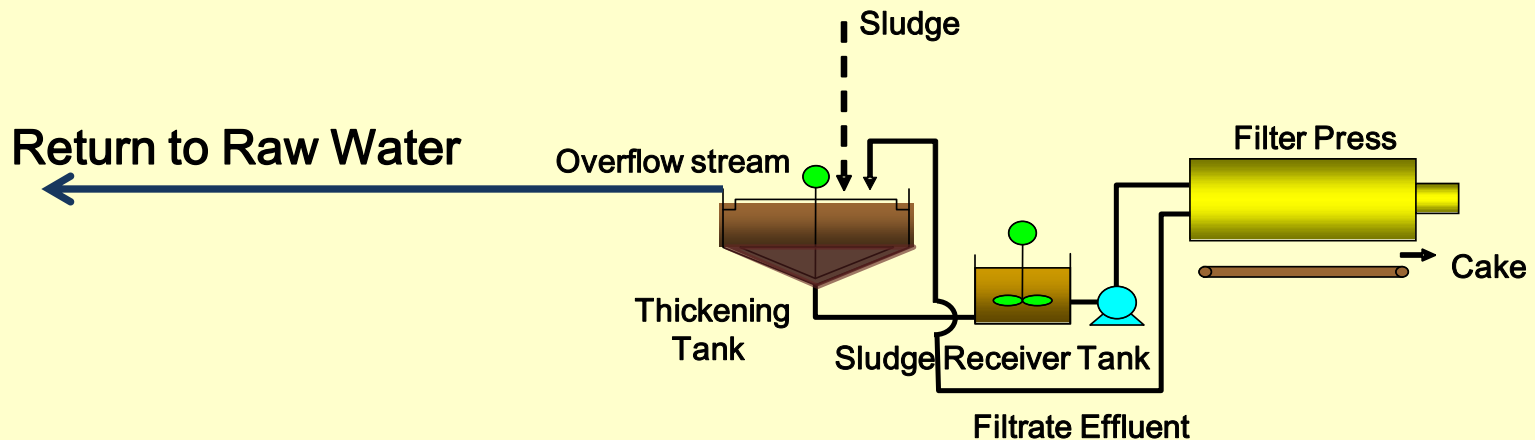
Polymer Dosing Dewatering Process



Features:-

1. Filtration rate is increased
2. Acrylamide monomer remained in filtrate must be controlled less than 0.00005mg/L to return to raw water in Japan
3. It is difficult to get low moisture in filter cake
4. Filter cloth life is reduced and hot water washing is required for filter cloth due to clogging by polymer

Non-Dosing Dewatering Process



Features:-

1. Filtrate can be returned to raw water
2. No need to handle acid or Lime-Hydrate
3. Dewatered cake is reused efficiently like gardening and agriculture soil
4. Low Filtration rate

Classifications of Non-Dosing Dewatering Process

1. Long-time Dewatering Process
2. Intermediate-time Dewatering Process
3. Short-time Dewatering Process

Dewatering process	Long	Intermediate	Short
Cycle Time	24 hours /cycle	3 – 24 hours/cycle	30-60 min/cycle
Feed (MPa)	0.2 - 1.5	0.2 - 1.0	0.3 - 0.5
Comp. (MPa)	N/A	1.2 - 1.5	1.2 - 1.5
Filtration Rate (kgDSm ² /hr)	Lower	Low	<u>High</u>
Cake Moisture	55 – 70%	50 – 65%	<u>45 – 60%</u>
Footprint	Large	Large	<u>Small</u>



Short-time Non-Dosing Dewatering Process is the Market leader in Japan

LASTA Filter Press (Non-Dosing Required Filter Press)

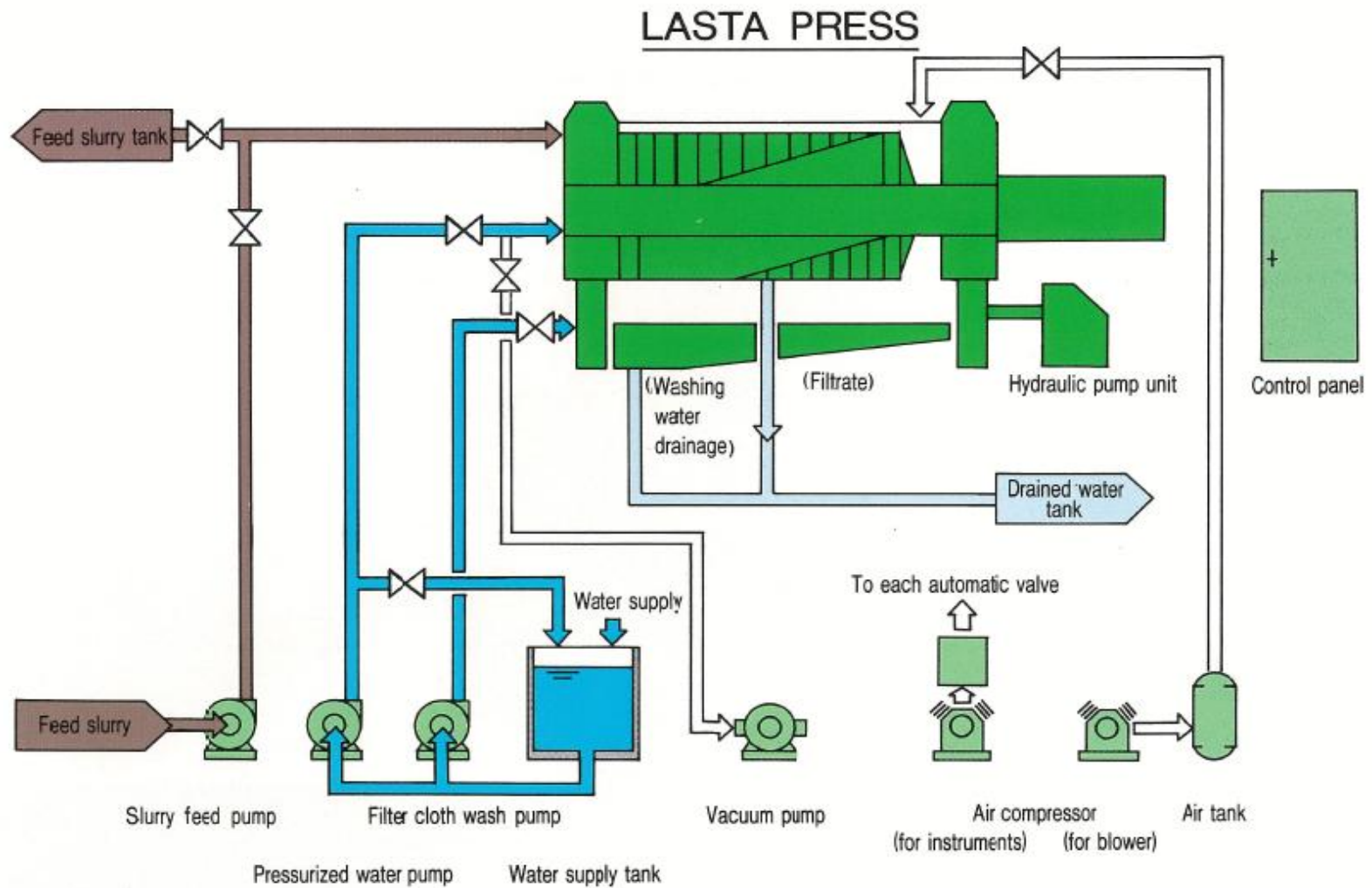


Max. Filter Plate size 2100 x 2100 mm

Max. 100 Chambers

Max. Filter area 800 m²

LASTA Filter Press – Flow Sheet



Feature of LASTA Filter Press

Non-Dosing Dewatering System



Thin filter cake

**Variable sludge
condition**

Complete Cake discharge with Automatic Cloth Traveling System

All Filter Cloths Washed Simultaneously

Fully Automatic Operation 24-hours

All Plates Open Simultaneously

Short Mechanical Time (5 - 8min)

Responds to various concentrations by adjustable feeding and compression time

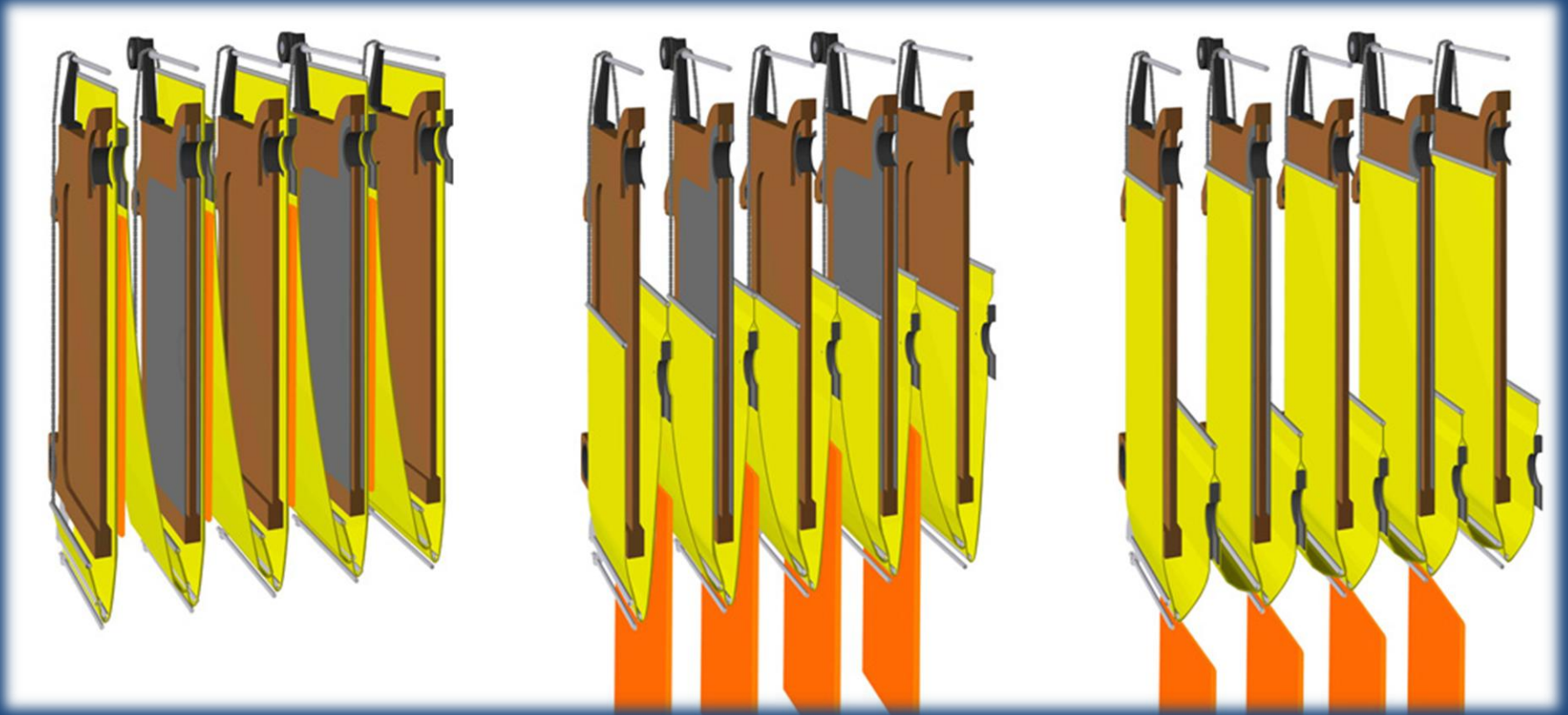
LASTA Filter Dewatering System

Filtration & Compressing Process



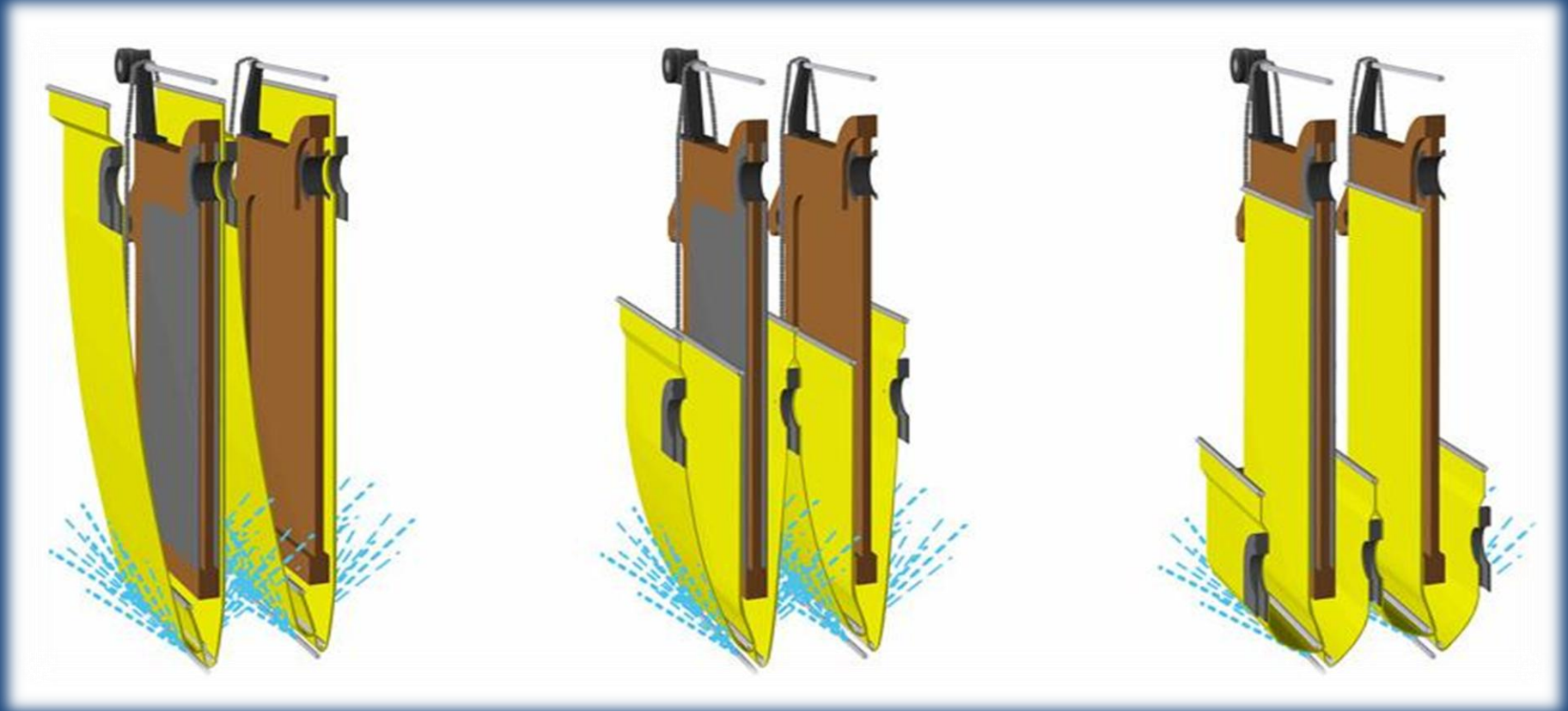
LASTA Filter Dewatering System

Cake Discharge Process with Cloth Travelling



LASTA Filter Dewatering System

Cloth Washing Process with Cloth Travelling



Advantages of LASTA Filter Press (Non-Dosing Required Filter Press)

Initial cost

- Chemicals dosing system is not required.

Maintenance cost

- Complete cake discharge (no labour required)
- Chemicals dosing is not required
- Lower cost of cake disposal

Recycle

- Return filtrate and wash water to raw water (Closed system)

Electric Motor Clamping Cylinder Filter Press



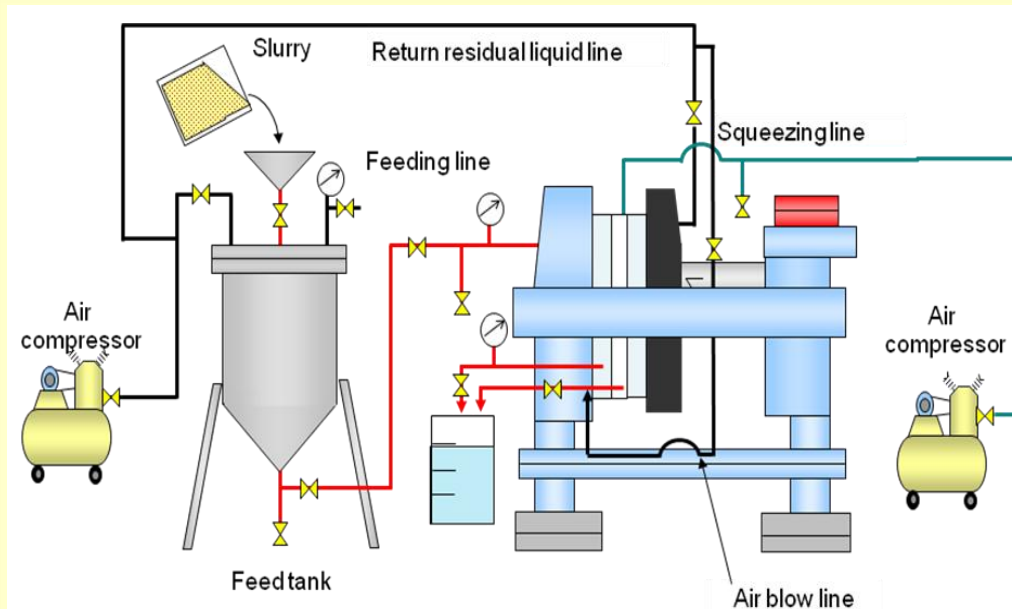
OIL FREE operation is available

Risk Free from oil leakage

No Hydraulic Pump Unit and Hydraulic Piping

Opportunity For Testing

To demonstrate and confirmation of the performance of LASTA press, we could provide the opportunity for testing in our R & D and also in site according to clients request.



LASTA TEST UNIT #360

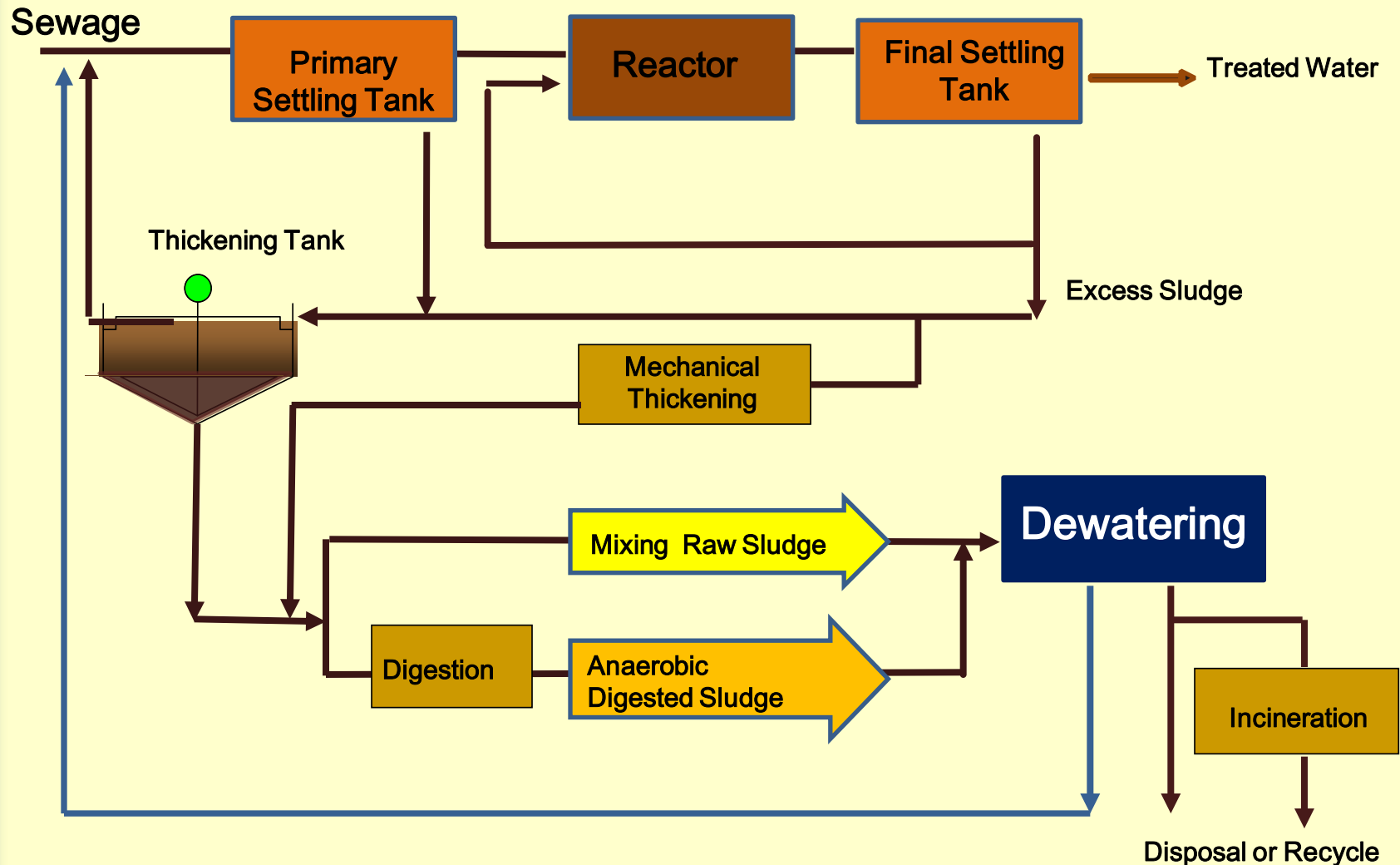


LASTA SINGLE LEAF TEST ER

Sludge Dewatering Process in Sewage Works

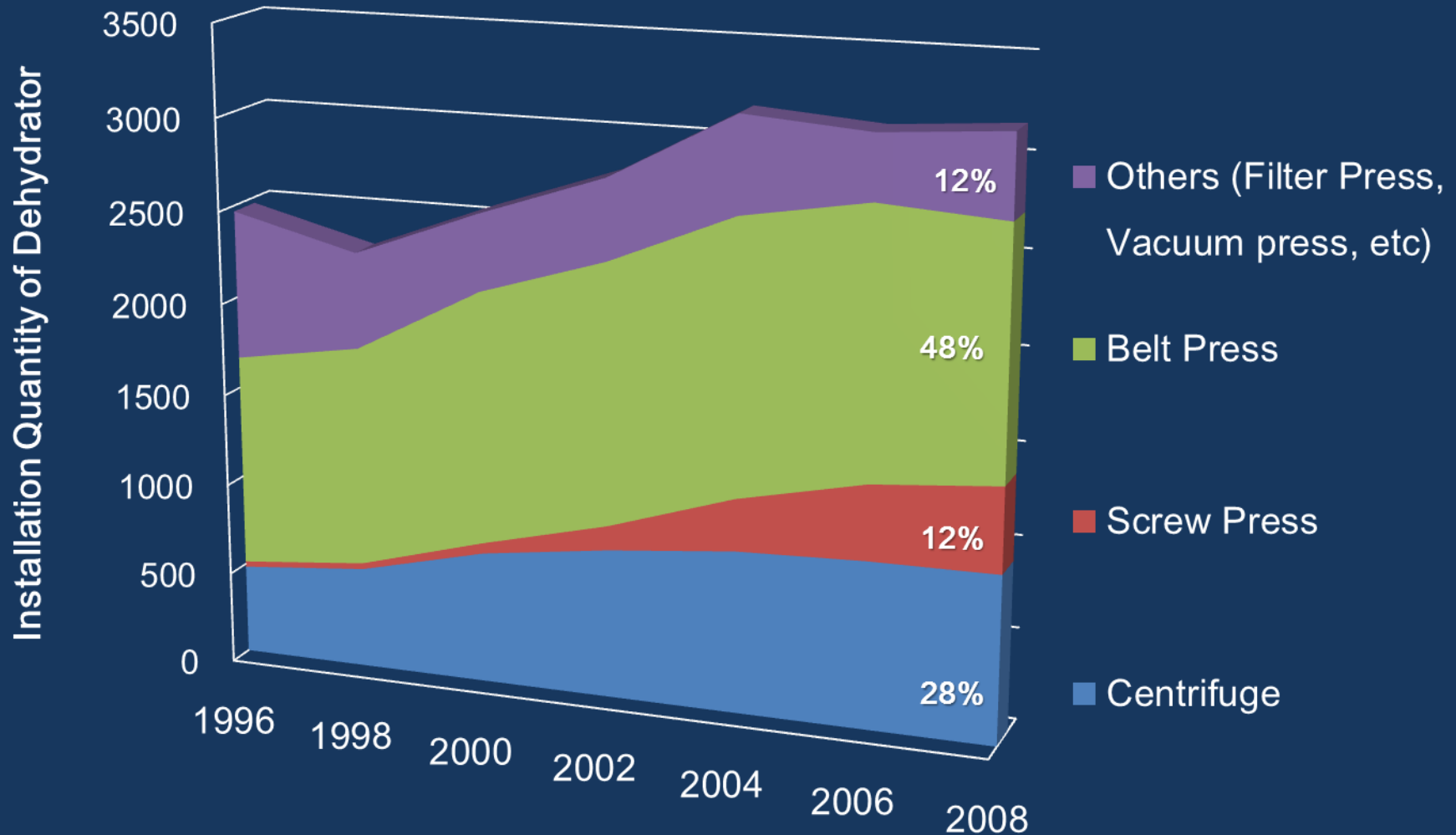


Sludge Dewatering Process in Sewage treatment

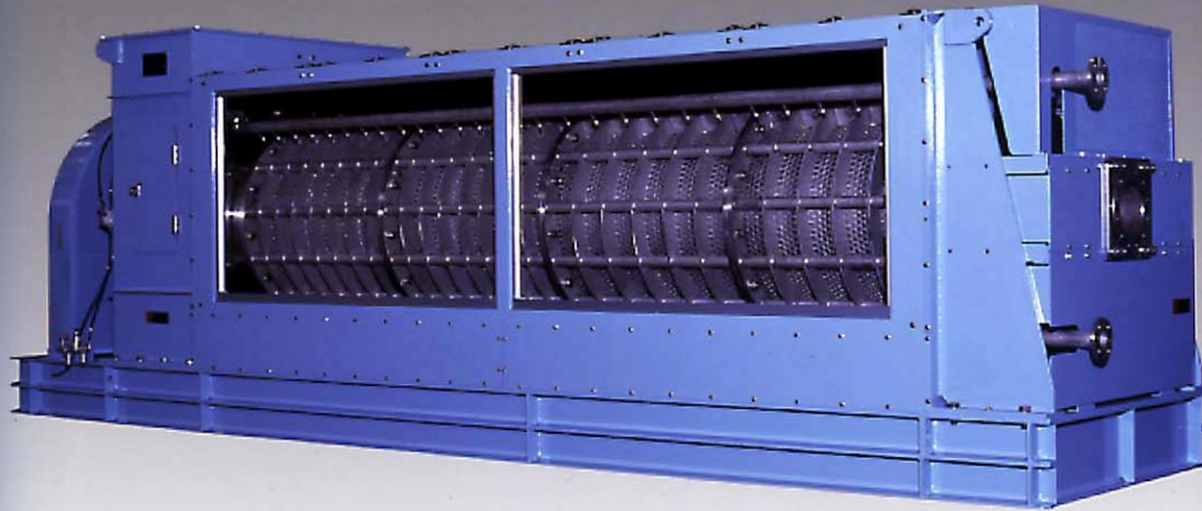


Comparison of Dehydrators - 1

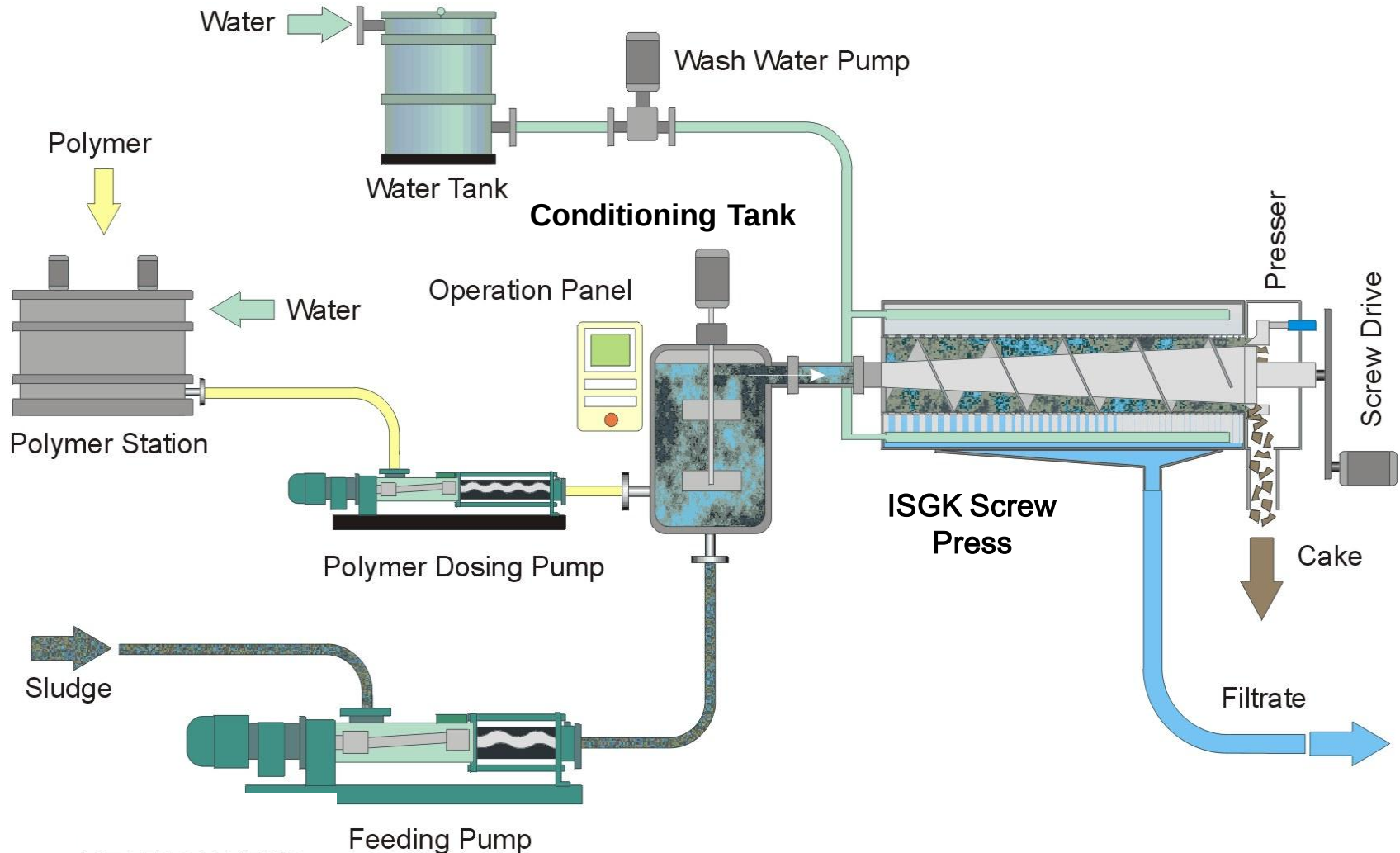
Development of Installed Dehydrators in Sewage Works



Standard type Screw Press - ISGK – III

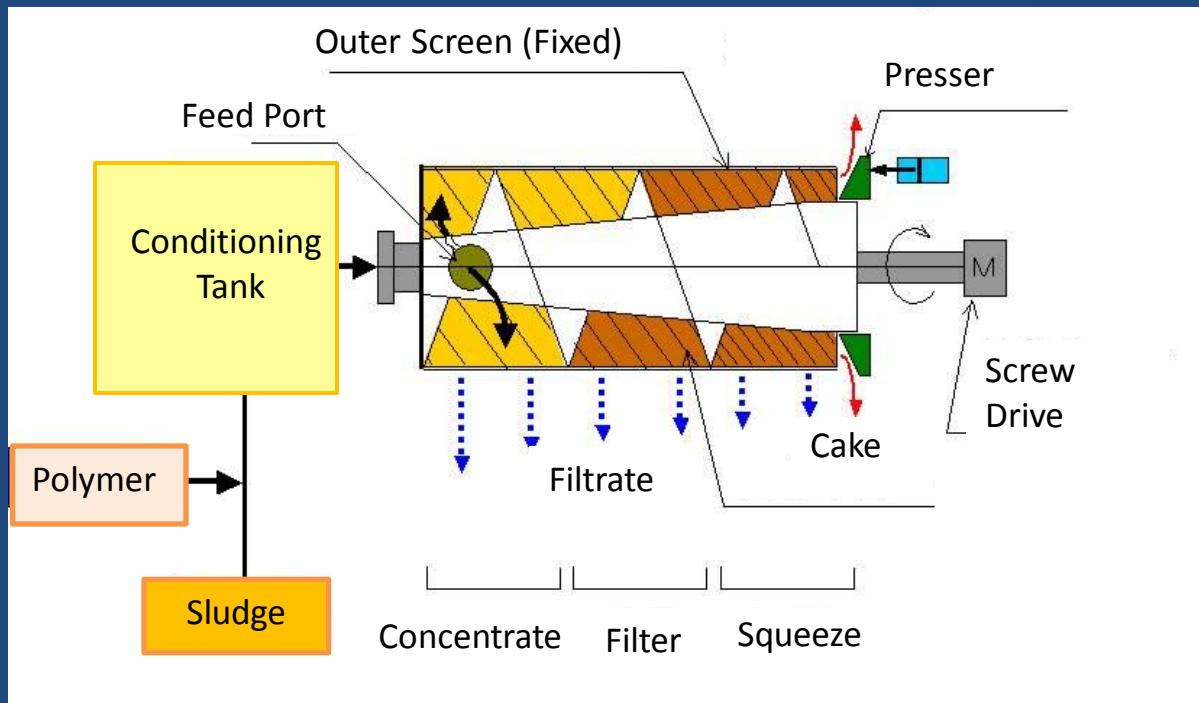


Flow Sheet - Screw Press - ISGK – III



Technical Originality

- Structural Concept of Standard type ISGK -Ⅲ



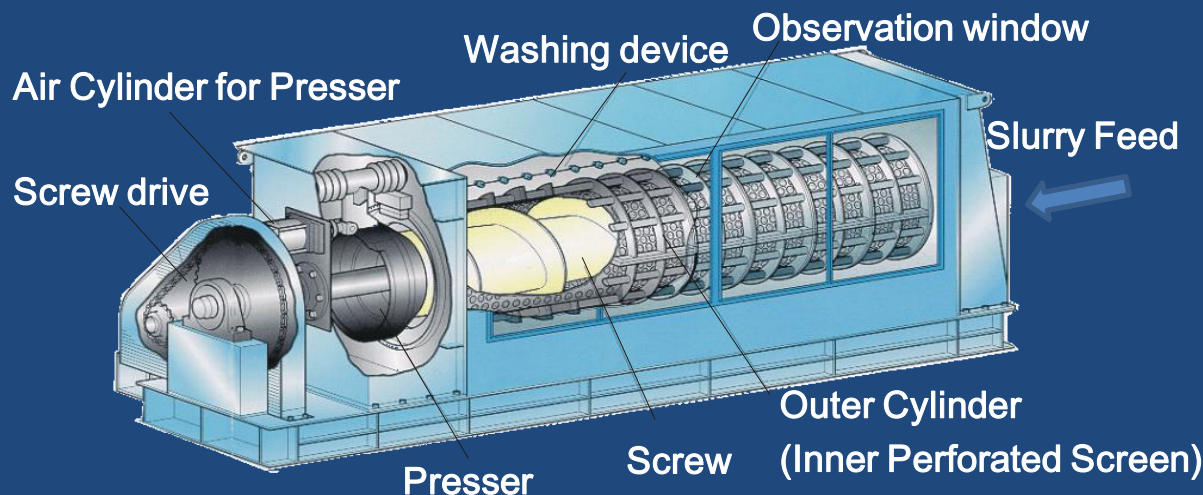
Initially the sludge is concentrated through the metal filter screen by gravity



With the reduction of dewatering space, sludge is filtered in a second stage

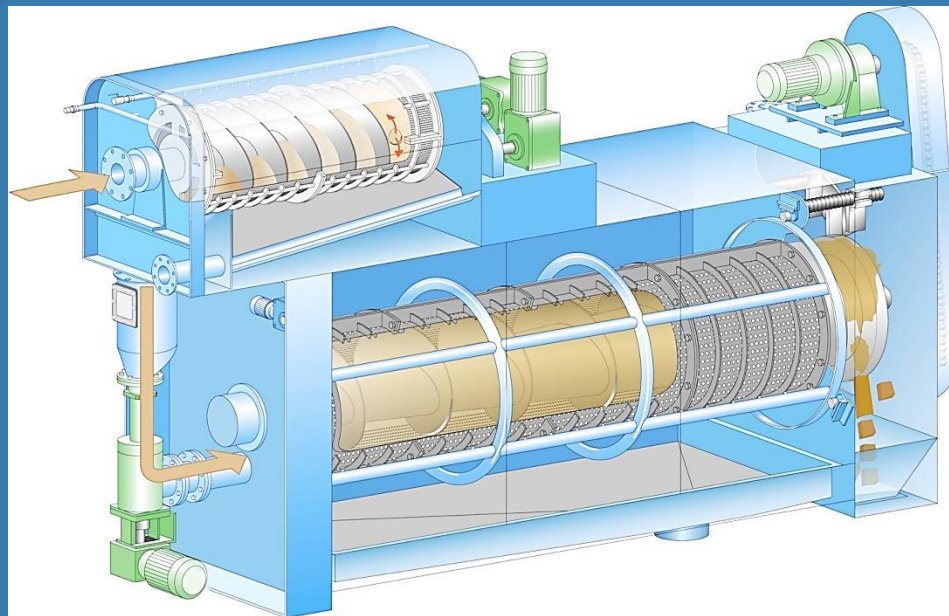


At the final stage, the sludge is compressed and dewatered by back pressure due to presser and screw rotating pressure



Requirement of much
Lower Cake Moisture for
Sludge Recycling

Requirement of Stable
Treatment for difficult
filterability sludge due to
the variation of treatment



Hybrid Type Screw Press ISGK-V

Hybrid Type Screw Press – ISGK - V



Features of The Screw Press

- Energy Saving

- Low electric power consumption

- ⇒ Apply low electric power motor

- Simple and Low Cost Maintenance

- ⇒ Save labor cost due to no requirement of filter cloth replacement

- ⇒ Less consumable parts and easy maintenance locally

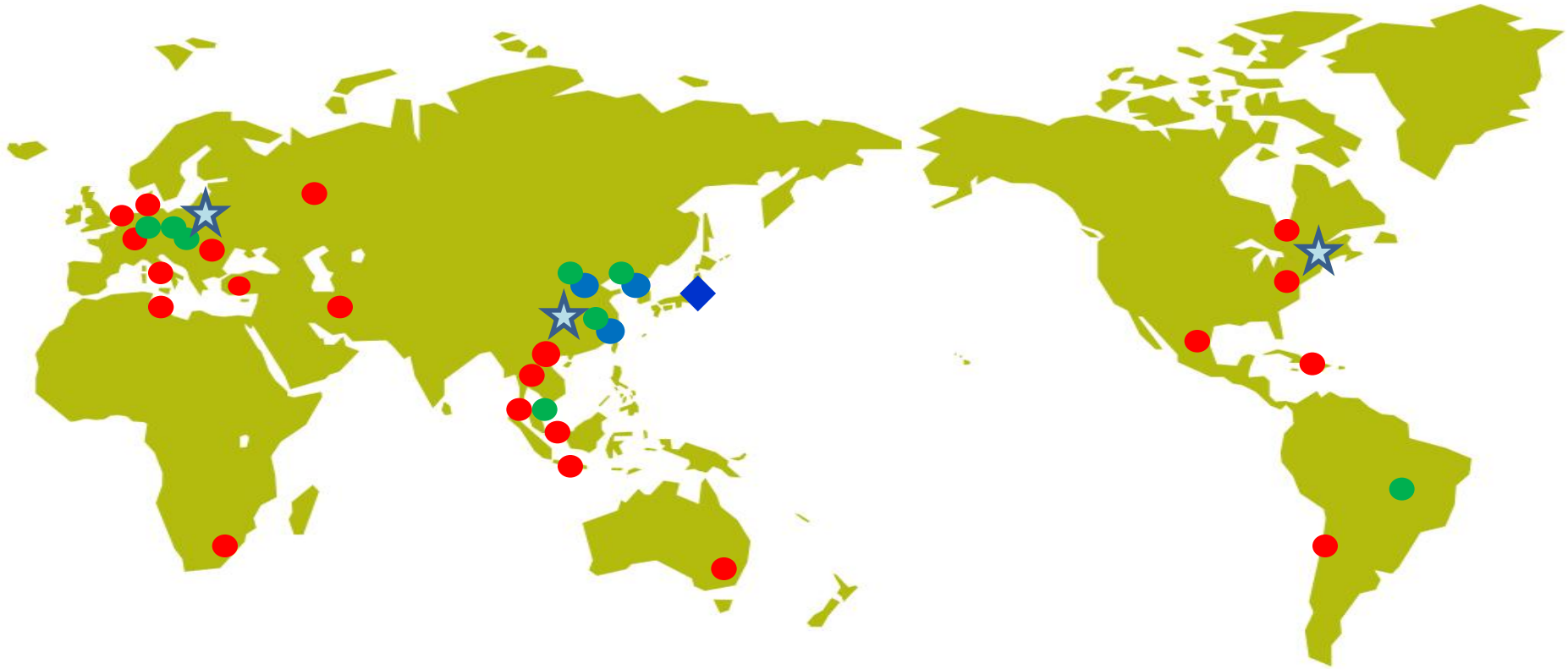
- Environmental Preservation

- ⇒ Less noise and vibration due to low rate rotation

- ⇒ Easy odor control due to enclosed structure

- ⇒ Less returned water due to low washing water volume

Installation record of LASTA Filter Press & Screw Press ISGK



Total installation quantity of LASTA Filter Press is 613 units

395 units for International (24 countries)

● 70 units for WTP ● 325 units for Private company ● 218 units for Japanese WTP

● Total installation quantity of ISGK is 455 units

86 units for International (8 countries) 369 units for Japanese

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Thank you...