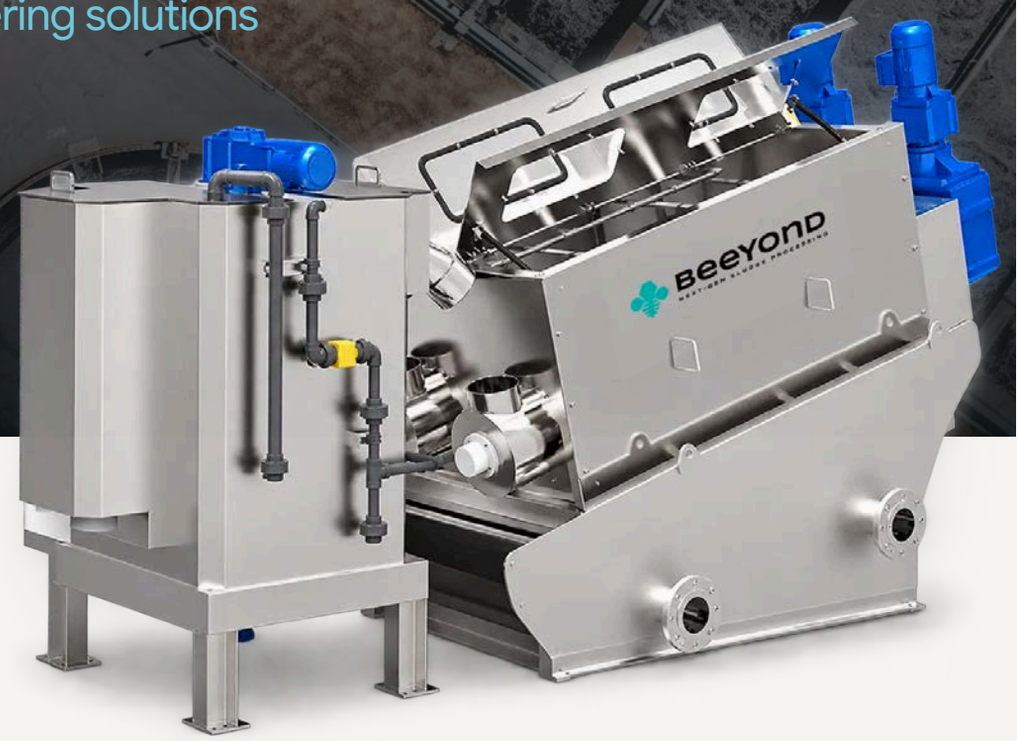
BEEYOND
NEXT-GEN SLUDGE PROCESSING

MULTI-PLATE SCREW PRESS
SLUDGE DEWATERING & THICKENING

BTECH®

Series® Multi-Plate Screw Press
Advanced sludge dewatering solutions



Sludge in.
Cake out.

One low-speed screw, a fixed and free ring system, and a cake you can shovel. Clog-free, self-cleaning, fully automatic.

POWERED BY

ECOIMPIANTISUD
water treatment solutions

BEEYOND.IT

[01 — INTRODUCTION]

Where experience becomes technology.

Beeyond was born from nearly four decades spent designing, building and operating municipal and industrial wastewater treatment plants.

Working in this sector every day, Ecoimpianti Sud identified sludge management as one of the biggest drivers of a plant's efficiency and running costs. BTECH was selected by people who run treatment plants for a living — and who wanted a dewatering machine that simply keeps working.

The **BTECH Series® Multi-Plate Screw Press** is a high-performance, cost-effective alternative to conventional mechanical dewatering — belt presses, decanter centrifuges and filter presses — in both efficiency and effectiveness.

It runs continuously, 24 hours a day, without supervision and with minimal maintenance. Its modular design and adjustable screw speed make it flexible and economical, while its compact footprint and quiet operation allow installation in tight spaces, even close to offices or occupied areas.

12
Models in the range, single- and multi-screw

9–600 kg-DS/h
Dewatering capacity

≥20% DS
Minimum cake dry solids

2,000–50,000 mg/L
Inlet sludge concentration

0.74–5.15 kW
Total installed power

32–320 L/h
Rinse water — litres per hour, not m^3

Engineered for continuous operation.

Clog-free filtration
Free rings clean the filtering gaps on every turn. No clogging, no capacity fade between cleanings.

Self-cleaning
Rinse water measured in litres per hour — 32 L/h on a BTECH-201. No backwash pump.

Low-speed operation
From 0.74 kW. Low vibration and noise, reduced dynamic loads.

Fully automatic
Start-up, operation and wash-down run unattended, around the clock.


BTECH-302


BTECH-403

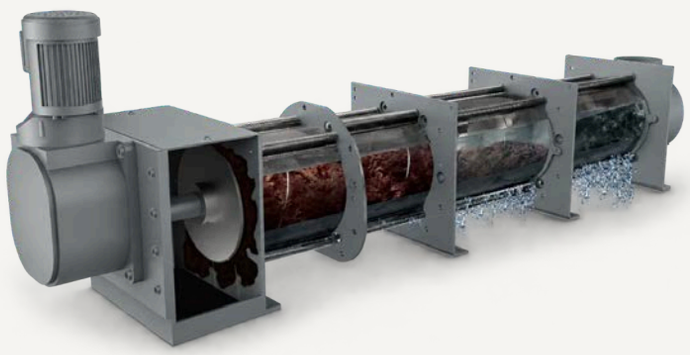

CONTROL CABINET

[02 — OPERATING PRINCIPLE]

Progressive dewatering inside one drum.

The dewatering drum is built from interlaminated **fixed rings** and **free rings**, held by tie rods with spacers in between. A screw turns slowly through the stack.

Sludge is thickened and then dewatered progressively along the screw axis. Screw pitch narrows towards the discharge outlet: pressure builds where the sludge is already thick, and the cake is discharged.



A

Fixed rings

Form the filtration slot and carry the load.

B

Free rings

Ride with the screw and keep the slot open, so the press cleans itself.

C

Screw

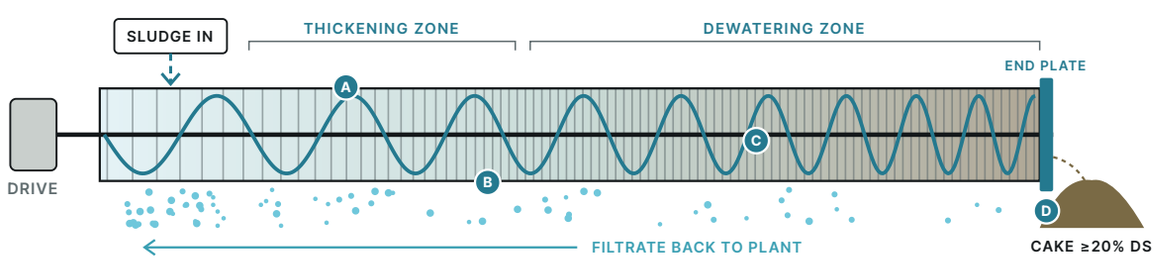
Low speed, narrowing pitch: transport plus compression.

D

End plate

Back-pressure point. Sets the cake dryness.

[HOW IT WORKS]



01

Sludge in

Flocculated feed enters at the inlet end, from 2,000 to 50,000 mg/L.

02

Thickening

Free rings move with the screw. Free water drains through the ring gaps.

03

Dewatering

Screw pitch narrows. Pressure on the sludge increases.

04

Filtrate out + cake

Filtrate returns to the plant headworks. Cake is discharged at ≥20% DS.

[PROCESS LINE]

Feed & flow control	Flocculation tank	Dewatering drum	Cake & filtrate
Sludge from thickener	Polymer conditioning & mixing	Inverter-controlled screw	To skip / conveyor · back to plant

[03 — WHY BTECH®]

Six reasons it stays running.

01
Wide concentration range
From 2,000 to 50,000 mg/L — mixed liquor to primary sludges — through a single inlet, on the same machine.

02
Clog-free, no thickener
Moving rings wipe the gaps of the fixed rings on every revolution, so nothing blinds. Thickening happens in the first section: no upstream thickener needed.

03
Low speed, low power
Screw pitch and ring gaps narrow towards the outlet, building pressure gradually at 2–4 rpm. Minimal vibration, low noise.

04
Self-cleaning
The ring stack cleans itself while running. Rinse water is measured in litres per hour (32 L/h on a BTECH-201). Less washing, fewer odours, less secondary pollution.

05
Replaces existing systems
Cake at 20% dry solids or better. Retrofits belt presses, decanter centrifuges and filter presses — and handles oily sludge with ease.

06
Fully automatic control
Pressure builds against the end plate and the cake discharges by itself. Start-up, operation and wash-down run unattended, 24/7.

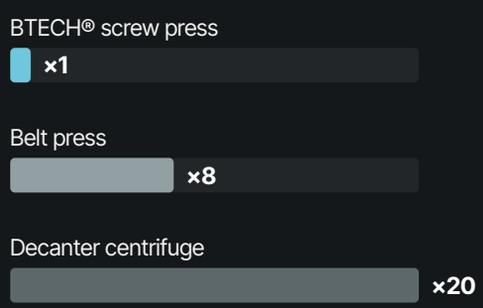
[ENERGY]

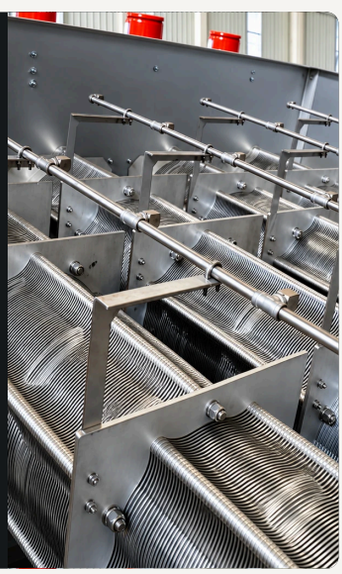
A fraction of the power of conventional dewatering.

0.01–0.1 kWh/kg-DS

Specific energy consumption of the BTECH® screw press: approximately **1/8 of a belt press** and **1/20 of a decanter centrifuge**, with extremely low noise levels.

Relative specific energy consumption
(BTECH® = 1)





[FOUR CORE CONCEPTS BEHIND THE TECHNOLOGY]

01
No filter mesh
The gap between moving parts does the filtering. No cloth or mesh prone to clogging.

02
Self-cleaning geometry
Neighbouring parts move against each other every revolution and wipe the slot open.

03
Low-speed mechanics
Slow rotation: wear-free structure, no vibration, no noise, no foundation.

04
Energy and water
Small motors, rinse water in litres per hour, and a dry cake at ≥20% DS.

[04 — APPLICATIONS & CASE HISTORIES]

Where the press is working.

Municipal wastewater · Food processing · Beverages & wineries · Dairy · Biogas digestate · Composting · Petrochemical & oily sludge · Chemical · Pharmaceutical · Slaughtering & breeding · Printing & dyeing · Paper & pulp · Leather · Metal working

−90%
Energy use
Urban WWTP, replacing a centrifuge

−55%
Polymer consumption
Urban WWTP, replacing a belt press

+500%
Dewatering capacity
Industrial WWTP, replacing a centrifuge

−90%
Sludge disposal cost
Two winery WWTPs

[REFERENCES · MUNICIPAL WASTEWATER]



MUNICIPAL · BTECH-352

Acquedotto Pugliese

Serracapriola (FG)

SLUDGE	Biological
BRIEF	Centrifuge replacement

- Energy use −90%
- Polymer use −50%
- Simpler daily operation



MUNICIPAL · BTECH-301 SKID

Gestore Servizio Idrico

Sangineto Lido (CS)

SLUDGE	Biological
BRIEF	Belt press replacement

- Energy use −85%
- Polymer use −55%
- Simpler daily operation



MUNICIPAL · BTECH THICKENER

Acquedotto Pugliese

Bisceglie (BT)

SLUDGE	Biological surplus
BRIEF	Dynamic thickening

- Surplus sludge volume to anaerobic digestion cut to one-fifth
- Longer digester retention: more biogas and better stabilisation

[04 — REFERENCES]

Results measured on site.

[INDUSTRY, FOOD & BEVERAGE AND ENERGY]



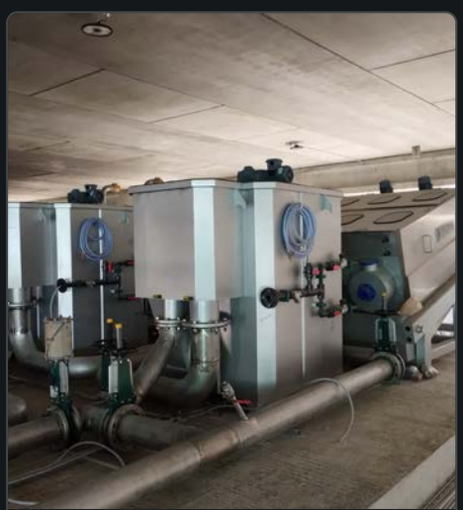
COMPOSTING · BTECH-351

Progeva

Laterza (TA)

SLUDGE	Chemical-physical and biological
BRIEF	Centrifuge replacement

- Dewatering capacity +500%
- Energy −70% · polymer −30%
- Simpler daily operation



BIOMETHANE · 2 × BTECH-403

Sebigas Renewable Energy

Corigliano Calabro (CS)

SLUDGE	Digestate
BRIEF	New solid-liquid separation

- Suspended solids in filtrate −70%
- Less maintenance on the separation stage



WINERY · BTECH-301 SKID

Cantine 2 Palme

Cellino San Marco (BR)

SLUDGE	Biological
BRIEF	New sludge dewatering line

- Disposal cost −90%
- Simpler daily operation



WINERY · BTECH-301

Cantine Paololeo

San Donaci (BR)

SLUDGE	Chemical-physical
BRIEF	New sludge dewatering line

- Disposal cost −90%
- Simpler daily operation



INDUSTRIAL · BTECH-201

Ondapack Sud

Acquaviva delle Fonti (BA)

SLUDGE	Chemical-physical
BRIEF	Centrifuge replacement

- Energy use −80%
- Polymer use −50%
- Simpler daily operation



INDUSTRIAL · BTECH-201 SKID

Kikau

Massafra (TA)

SLUDGE	Chemical-physical
BRIEF	Replacing drainage bags

- Fully automatic dewatering
- Simpler daily operation

[05 — TABLE OF SELECTION]

Twelve models.
One principle.

Model	Capacity range* kg-DS/h	Discharge height mm	Dimensions mm			Net weight kg	Operating weight kg	Power kW	Water consumption L/h
			L	W	H				
BTECH-201	9–15	350	2555	920	1465	320	470	0.74	32
BTECH-202	18–30	350	2615	960	1465	470	730	1.11	64
BTECH-301	30–50	495	3325	870	1760	910	1320	1.50	40
BTECH-302	60–100	495	3455	1135	1760	1350	2130	2.25	80
BTECH-303	90–150	495	3670	1560	1760	1820	2880	3.00	120
BTECH-351	60–100	585	3475	905	1820	1610	2210	1.10	72
BTECH-352	120–200	585	3570	1285	1820	2300	3400	2.75	144
BTECH-353	180–300	585	3645	1725	1820	3350	4850	3.85	216
BTECH-401	90–150	759	3905	1070	2210	2500	3400	1.85	80
BTECH-402	180–300	759	4240	1570	2210	3480	5200	2.95	160
BTECH-403	270–450	759	4465	2060	2210	4550	7050	4.05	240
BTECH-404	360–600	759	4670	2630	2210	6550	9660	5.15	320

(*) Capacity data for reference only. Contact our Technical Department for further information on model selection and configuration.

BEEYOND
NEXT-GEN SLUDGE PROCESSING

Your sludge processing partner.

CONTACT

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POWERED BY

ECOIMPIANTISUD
water treatment solutions

Nearly forty years of engineering, construction, revamping, operation and maintenance of water treatment plants.

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