

Separation expertise
for your success in iron ore



How can we make your iron ore production more profitable?

How will your business continue to grow despite changing iron ore prices? What equipment will give you reliable performance with minimal residual moisture? What will it take to boost capacity at the lowest possible cost?

A solution to improve every process

Having served large producers like Jindal along with smaller operators such as CML Metals and Stoilensky GOK, we know the complex challenges you face. From difficult ore bodies to boosting availability, each solution demands a unique level of expertise.

The solid/liquid separation experts

For all customers, it's just a matter of reducing investment and operating costs for high-throughput applications. Other times, the aim is to reduce wastewater from tailings treatment in remote deserts. Whatever the situation, the core challenge is to find the most efficient, reliable solution for your solid/liquid separation needs.

Your partner in innovation

To many customers, we're known as the partner of choice for high-capacity concentrate dewatering with the lowest operating

costs. In one case, this meant increasing throughput to more than 500t/h per machine, with half the total footprint of traditional solutions. In a different brownfield project, the result was the world's largest hyperbaric filter in iron ore production, with a guaranteed residual moisture content of 7% requested at high throughput and clear filtrate.

Resources you can count on

Whether it's thickening or filtration, concentrate or tailings, the list of success stories goes on and on. With thousands of professionals and more than one hundred iron ore solutions in operation, every new challenge is a welcome opportunity. A chance to put our experience, financial strength, and technical resources to work for you.

BIG IDEAS



YOUR BUSINESS

YOUR NEEDS



Meeting your needs with leading iron ore separation technologies

Changing ore grades. Unpredictable prices. Higher throughputs. In many ways, the need to improve efficiency in iron ore dewatering has never been more intense. Our approach? To surround you with the industry's most innovative solid/liquid separation technologies.

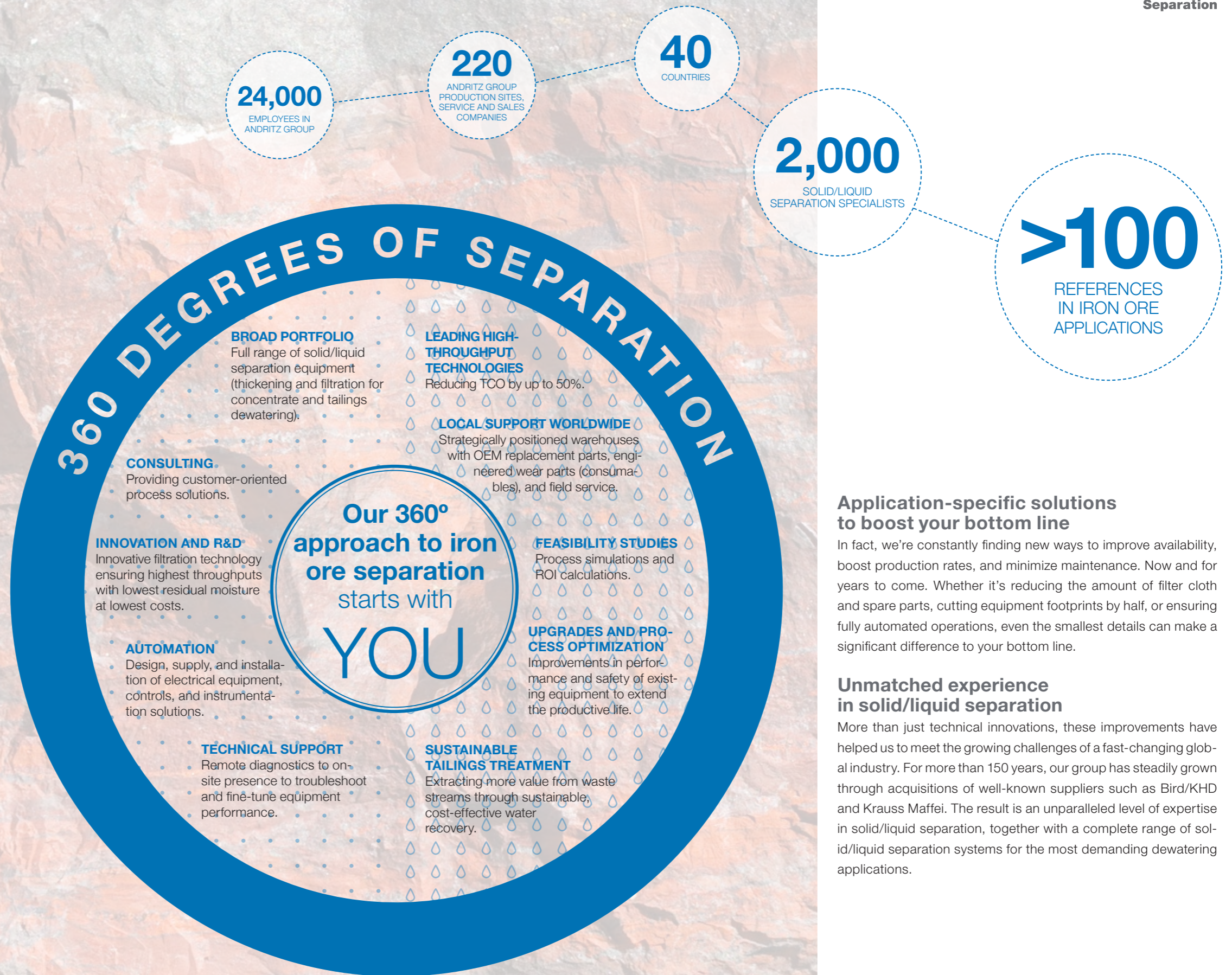
When working to meet your demands, our focus is clear: Give us your biggest challenges in concentrate and tailings treatment, and we'll commit our full range of services and solutions to solving them.

It all starts with your needs

Our aim is to provide you with a comprehensive range of equipment and services. And it all starts by addressing your process requirements, including consulting, material tests, and feasibility studies. Once you've chosen the right solution, we work closely together to design, service, and optimize its performance and availability.

Leader in high-throughput technologies

Over the years we've earned a growing reputation for developing innovative new ways to boost operating margins for an array of high-throughput applications. Our lowest operating costs have provided payback periods in the order of a couple of months.



Application-specific solutions to boost your bottom line

In fact, we're constantly finding new ways to improve availability, boost production rates, and minimize maintenance. Now and for years to come. Whether it's reducing the amount of filter cloth and spare parts, cutting equipment footprints by half, or ensuring fully automated operations, even the smallest details can make a significant difference to your bottom line.

Unmatched experience in solid/liquid separation

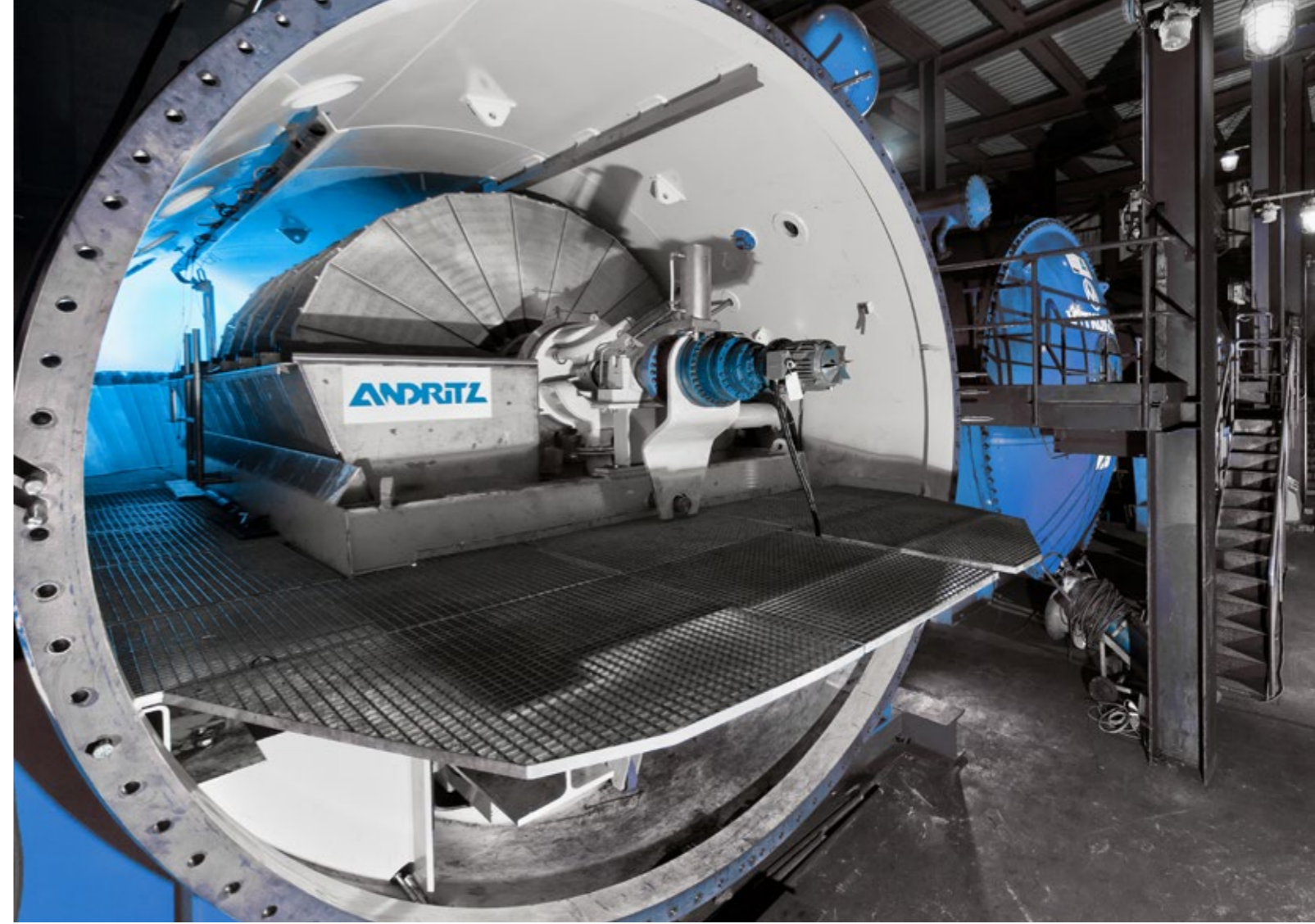
More than just technical innovations, these improvements have helped us to meet the growing challenges of a fast-changing global industry. For more than 150 years, our group has steadily grown through acquisitions of well-known suppliers such as Bird/KHD and Krauss Maffei. The result is an unparalleled level of expertise in solid/liquid separation, together with a complete range of solid/liquid separation systems for the most demanding dewatering applications.

Where we fit into your production line

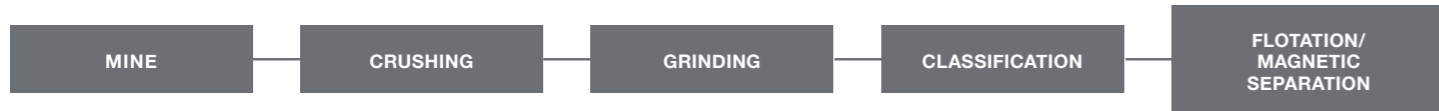
When it comes to thickening and filtration in the iron ore industry, getting the right end product at the right cost is no simple task. Whether it's magnetite or hematite, goethite, limonite, or siderite, all types of rock demand their own approach. Thanks to our comprehensive range of separation solutions, we're able to supply complete dewatering plants.

In designing a new beneficiation plant or extension and modernization, our engineers draw on decades of experience from all types of mechanical and thermal systems. They can also provide and optimize multiple technologies for specific applications – from belt and filter presses to vacuum belt, drum, and disc filters, and even thickeners and plants for water recovery.

When the highest volumes are critical, our innovative hyperbaric disc filter generates extremely high throughputs at the low specific residual moisture content and clear filtrate needed for further processing – all at substantially lower operating costs. Just one example of how we help you streamline your production, even in the most demanding applications.



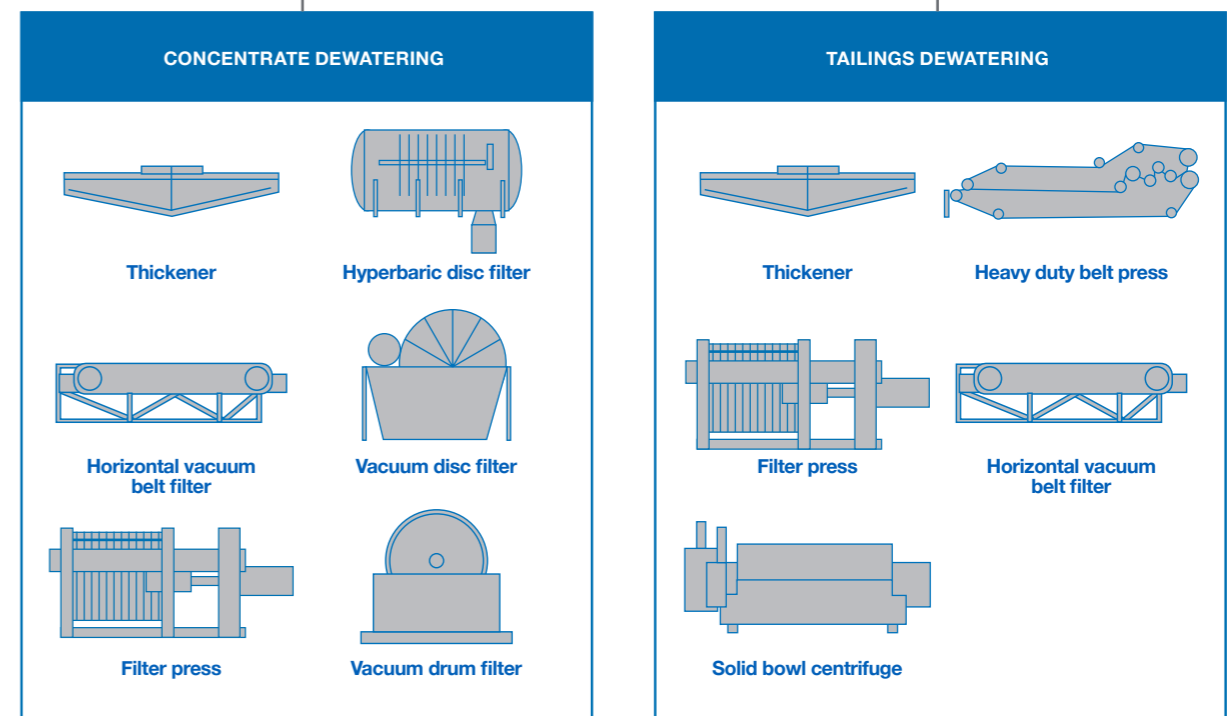
▲ ANDRITZ hyperbaric disc filter



How can we boost your capacity?

As the demand for iron ore rises, so does the need for higher capacities. Maybe it's processing huge volumes of low-grade ore with minimal residual moisture. Or doubling your throughput with a high-capacity filter press. In either case, we have an innovative solution to make it both possible and profitable.

◀ ANDRITZ filter press



>500 t/h
THROUGHPUT
PER UNIT

UP TO
50%
REDUCED TOTAL
COST OF
OPERATION

30%
INCREASED FILTER
CLOTH LIFETIME

Concentrate dewatering

Higher throughput, lower cost

Whether you're producing iron ore pellets, filter cakes, or feed for other processes, reliability is everything. In addition to consistently high throughputs with specific lowest moisture content, you need continuous operation around the clock, with no downtime.

Since nearly all of our customers are in remote locations where personnel and resources are scarce, there's no room for chance. Without exception, they need a solution that's innovative enough to increase margins from the start, and robust enough to keep them that way for years to come.

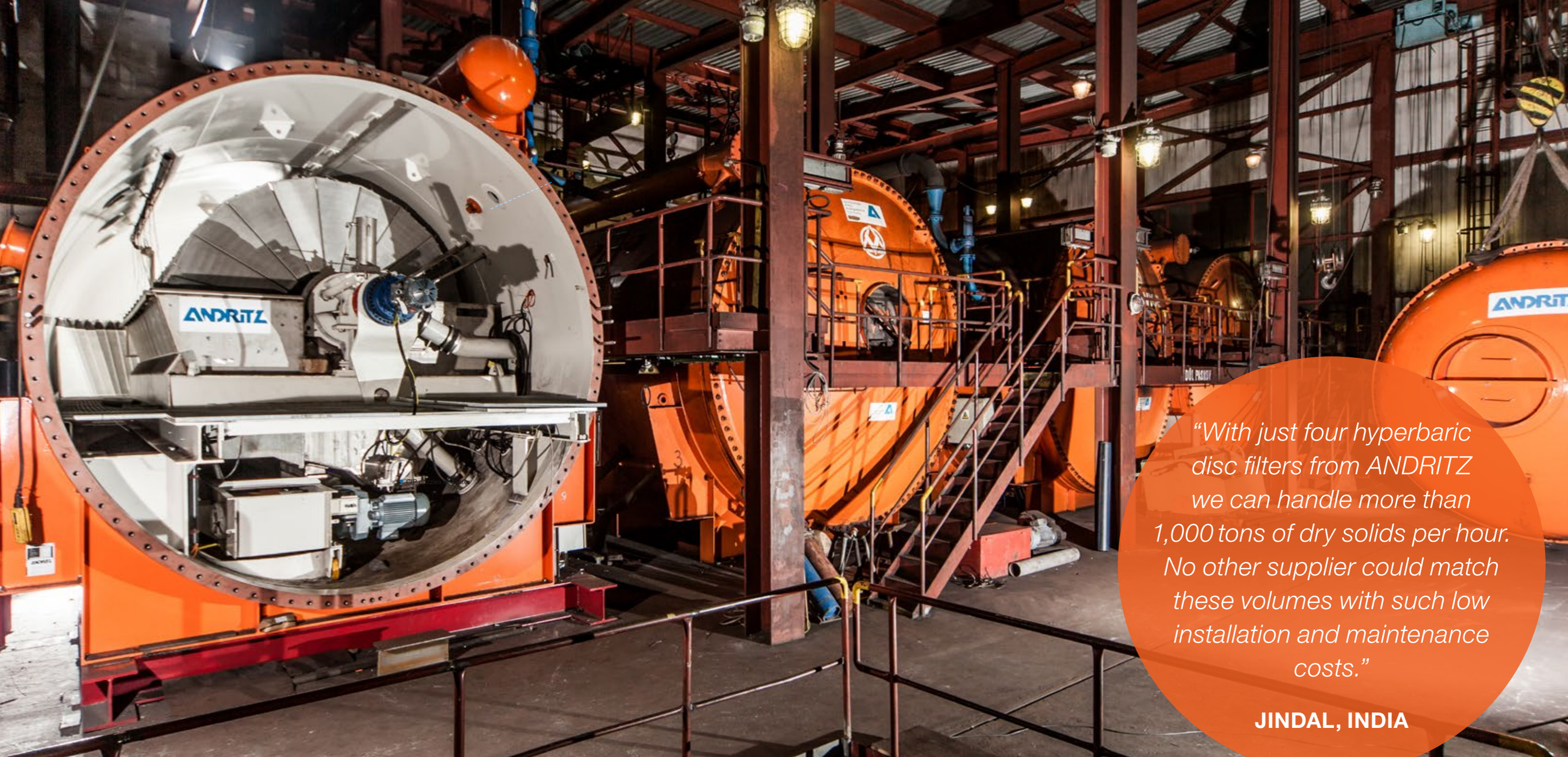
Profitable high-capacity filtration

Thanks to the reliable performance of our filtration solutions, we can help to reduce everything from energy consumption and filter cloth to spares and personnel costs, day in and day out. Our hyperbaric filter, for example, is capable of capacities of 500 t/h with filtration of very fine material – all in one dependable, fully automated machine. The end result? A clear filtrate, residual moisture of as little as 6%, and up to 50% in reduced total cost of ownership.

Reducing your footprint in thickening

For many applications, both water and space are also in short supply. This is why we've constantly reduced the radius of our thickeners while increasing their throughput by up to 18 times. Their size, design and ancillaries are optimized for your specific application, either to maximize throughput or minimize flocculant consumption and clear underflow.





“With just four hyperbaric disc filters from ANDRITZ we can handle more than 1,000 tons of dry solids per hour. No other supplier could match these volumes with such low installation and maintenance costs.”

JINDAL, INDIA

▲ Hyperbaric disc filter installation

Twice the capacity, half the footprint

Why it pays to think big

Over 1,000 tons per hour. 8-9% residual moisture. At the lowest possible cost. In 2011, a large Indian iron ore producer named Jindal had reached a turning point. To meet these demands, a more innovative approach was necessary. One that would enable continuous operation, reduced operating costs, and more than twice the throughput per unit compared with conventional solutions.

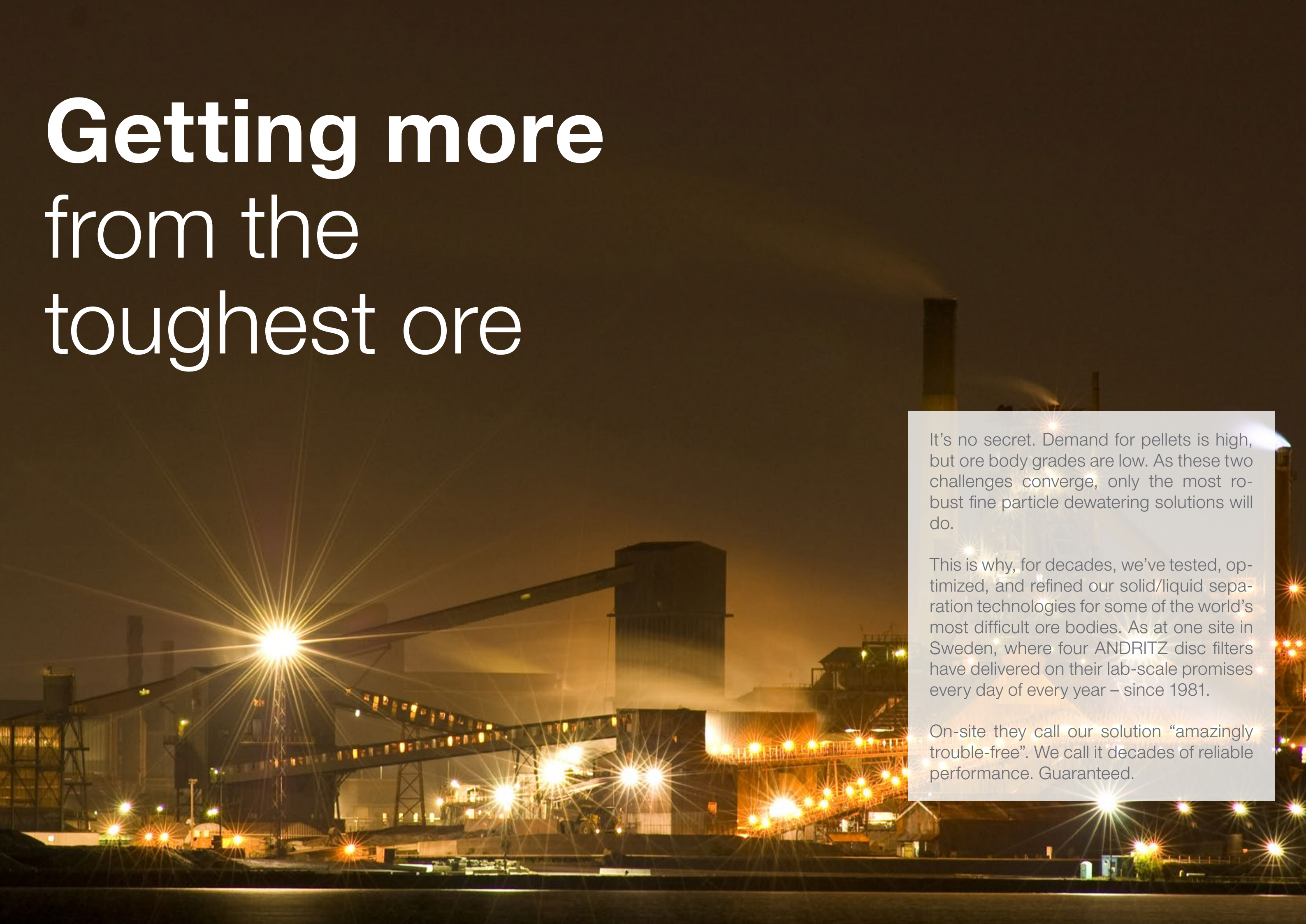
Doing more with fewer units

For Jindal, it was not just the limitations of conventional technologies that posed a challenge. With difficult hematite iron ore, it was also the very fine particle size distribution and high Blaine number that made vacuum filtration economically unsustainable. A throughput requirement as ambitious as theirs, it was calculated, would demand as many as 8-10 filter presses – along with the added buffer capacity, energy costs, and machine footprint this would entail.

A boost in capacity and efficiency

Instead, the customer chose to install four continuously operating hyperbaric disc filters (HBFs) from ANDRITZ, thereby dramatically reducing energy costs and excess buffer capacity of pumps and conveying systems. Other expenses, such as for up- and downstream interfaces, were also reduced – in this case by up to 30%. In total, it all amounted to a solution so compact, efficient, and reliable that two additional HBFs have since been commissioned to make the production site more profitable than ever before.

Getting more from the toughest ore



It's no secret. Demand for pellets is high, but ore body grades are low. As these two challenges converge, only the most robust fine particle dewatering solutions will do.

This is why, for decades, we've tested, optimized, and refined our solid/liquid separation technologies for some of the world's most difficult ore bodies. As at one site in Sweden, where four ANDRITZ disc filters have delivered on their lab-scale promises every day of every year – since 1981.

On-site they call our solution “amazingly trouble-free”. We call it decades of reliable performance. Guaranteed.

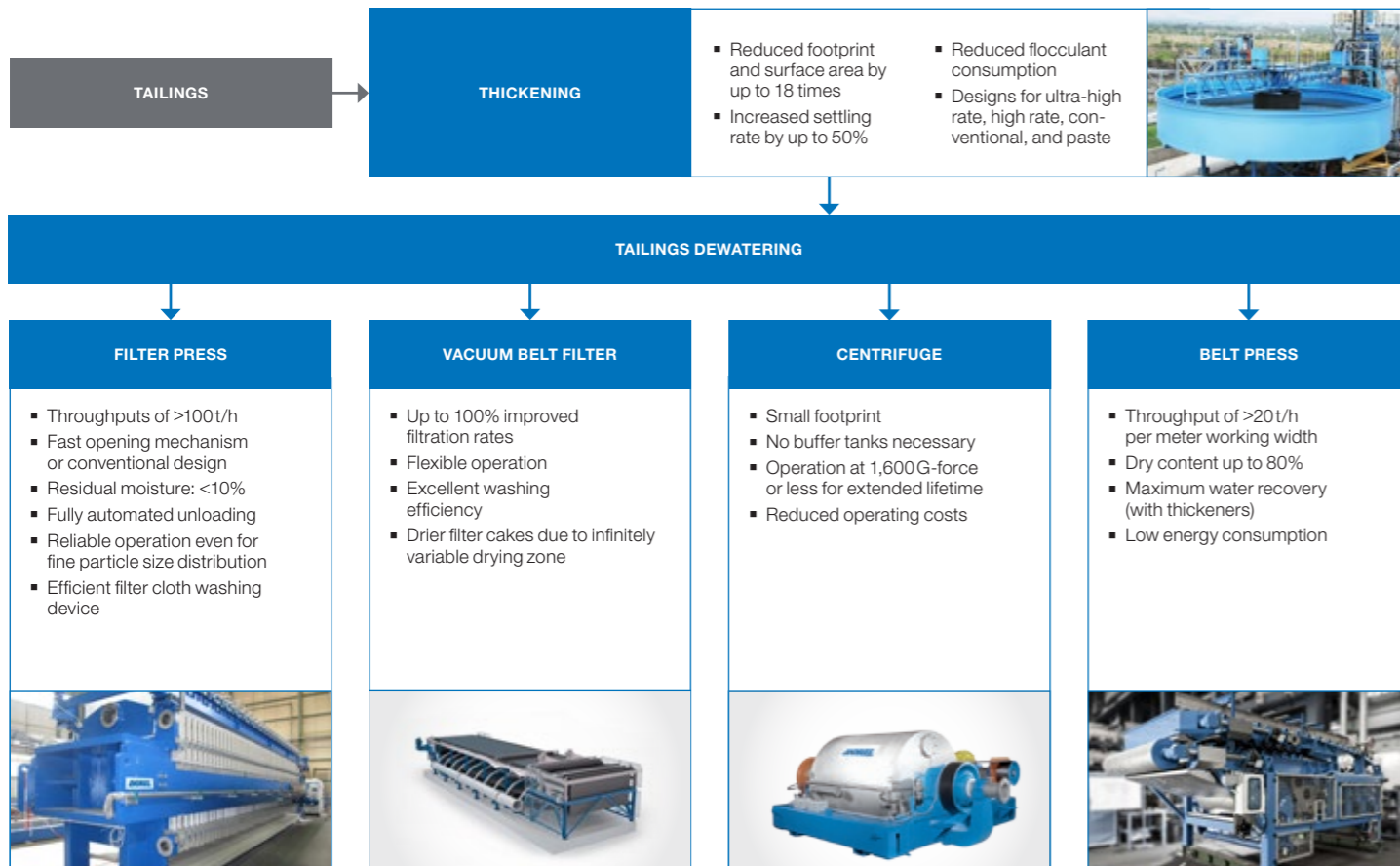
Tailings dewatering

Creating more value from waste

Wherever water or tailing ponds are scarce, it's crucial to recover as much water as possible before recirculation. It all comes down to making the most of your waste streams with the most efficient solutions for thickening, dewatering, and disposal.

Thanks in part to our many years of experience in municipal and industrial waste treatment, we're no strangers to extracting value from waste water. In iron ore production, we've refined our solutions to produce drier tailings reliably and efficiently and allow you to conserve both water and transportation costs.

For example, we can supply an optimized horizontal vacuum belt filter for coarse materials. Or a fully automated centrifuge where space is limited. Depending on your requirements for volume, cake dryness, regulatory standards and more, our tailings dewatering solutions make it possible to cut operating costs by reducing volume by more than 80%.



100,000 h
OPERATING TIME PER THICKENER

>80%
VOLUME REDUCTION

>20t/h
THROUGHPUT PER METER WORKING WIDTH PER UNIT

“A customer in South Africa needed to dewater 840 t/h of magnetite with 7% cake moisture content. We were the only supplier who could achieve this, and with an impressive 98% availability.”

ANDRITZ SEPARATION MANAGEMENT

Put 150 years of OEM experience to work

Need to optimize your process? Boost availability? Ensure non-stop productivity? When you work with ANDRITZ SEPARATION, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation. Put our in-depth knowledge of separation equipment and processing to work for you.

Vast experience through large installed base

With an installed global base of more than 55,000 solid/liquid separation solutions and systems, you can imagine that we take service seriously. Wherever these customers are located, we work very closely with them to maximize uptime and boost efficiency.

Well-known OEM brands

Some customers know us as the people with ANDRITZ SEPARATION on our overalls. Others have come to understand that we are the OEM behind former brand names like Netzsch Filtration, 3Sys Technologies, Bird, KHD Humboldt Wedag, Rittershaus & Blecher, Guinard, Lenser, KMPT, Escher Wyss, Royal GMF Gouda, Frautech, and Sprout Bauer, companies who all have been acquired by ANDRITZ. But frankly, we are capable of servicing and supplying spare parts for nearly all brands of solid/liquid separation equipment on the market.

Local support backed by global expertise

Our service philosophy is simple: One phone call, one contact person, one dedicated team that speaks your language and knows your equipment and process. This is not an empty promise. It is backed by a network of 550 service specialists for solid/liquid separation equipment and systems as well as service centers all around the world.

A true full-service provider

Whether you need spare parts, rentals, local service, repairs, upgrades, or modernization of your equipment, ANDRITZ SEPARATION is a 360-degree service partner. From initial consulting through to service agreements, plant optimization, automation, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. In short, we've got you covered.



Local support
Responsive local service centers and field service technicians

OEM spare parts
Wear and spare parts from OEMs or in OEM quality in local inventories

Repairs & upgrades
Optimization of machine and process performance, repair work, retrofitting, and modernization

Service agreements
Preventive maintenance, from contracts for spare parts, maintenance, inspections, and repairs to upgrades and operation

Second-hand and rentals
Certified second-hand and rental machines

Automation
Automation tools to improve processes and plants, both technically and economically

Training
Operator training and tailored seminars for operating and maintenance personnel



Where do you
want to go

TOMORROW?

Now you've seen how ANDRITZ SEPARATION can improve your filtration process: More than 2,000 solid/liquid separation experts and a range of reliable, innovative systems, all backed by a 150-year track record.

Let's sit down and see how we can take your operations to the next level. Contact us today.

www.andritz.com/separation



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MINERALS

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