

**DELKOR** 



# **DELKOR THICKENERS | CLARIFIERS**

*Innovation out of tradition – It pays to talk to a specialist!*

**TAKRAF Group**, through its established and well-known brands, TAKRAF and DELKOR, provides innovative technological solutions to the mining and associated industries. We leverage our experience, acquired over more than a century, to provide equipment, systems and services that best satisfy our clients' mining, comminution, material handling, liquid/solid separation and beneficiation requirements. Owners and operators around the world trust our engineered solutions to lower the total cost of ownership and reduce environmental impact by improving efficiency with safe and reliable equipment. For sustainable solutions backed by expert service you can rely on TAKRAF Group. Visit us at [www.takraf.com](http://www.takraf.com).

**We at TAKRAF Group are committed to environmental and social sustainability in all our business interactions and have adopted a Zero Harm approach under our global safety promise.**

Owners and operators around the world are confident that TAKRAF Group provides the most suitable solution to their unique project requirements. We assist our clients in overcoming the most complicated challenges in transforming the resource industry towards a sustainable future. We focus on specific areas that are critical for reliable and sustainable operations, as it is here where we best support our clients with innovative solutions that save energy, lower environmental impact and meet or exceed operational requirements.

One focus area is liquid/solid separation, where we capitalize on our global DELKOR brand and its track record of thousands of successful installations. In line with our commitment to environmental sustainability, DELKOR dewatering and process equipment are specifically designed for the needs of the mining industry.

We leverage our global organization and aggregate our extensive expertise by offering a unique combination of both application experience and product based knowledge. Clients therefore benefit from direct technical discussions with our local specialists, who are able to draw upon this expertise and provide the most suitable local solution and service that enhances safety, improves sustainability, decreases costs and increases efficiency.

Our commitment is summarized by:

Safety | Reliability | Innovation | Sustainability

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## **DELKOR - YOUR SEDIMENTATION & DE-WATERING SPECIALIST**

**DELKOR's** track record in solid/ liquid separation and mineral processing applications stretches back several decades with more than 3,000 successful installations worldwide. Specialists from DELKOR offer an unmatched combination of experience and product-based knowledge. Clients benefit from face-to-face technical discussions with DELKOR local process experts who are able to draw upon global experiences so as to offer every client the best solution for the specific local conditions of the application. DELKOR aims to be your local but global specialist.



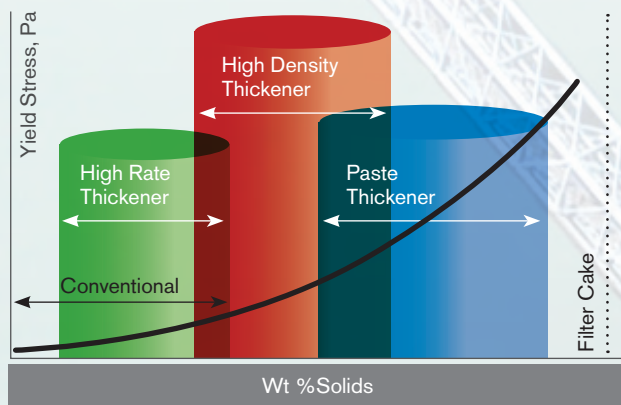
**DELKOR** can offer everything from an upgrade on an existing thickener with its high performance feedwells through to a full turnkey supply of the design, fabrication and supervision of installation. Our specialists will assist not only at the conceptual stage with testwork, equipment selection and sizing, but right through the planning, engineering, commissioning and operational phases of a project.



# WHAT IS YOUR PROCESS REQUIREMENT?

We leverage our knowledge and experience from over 35 years of providing thickening and clarifying solutions to the mining and minerals processing industries and apply it to each and every project ensuring that you receive the most effective and efficient processing solution.

PASTE	We have provided paste thickeners up to 40 m in diameter with drives in excess of 10 mNm of torque.
HIGH DENSITY	For applications where high water recovery is required but without the process and pumping issues associated with paste. DELKOR have operational units from 1 m to 99 m in diameter.
HIGH THROUGHPUT	As one of the pioneers of high rate thickening we can count on hundreds of units operating successfully around the world.
CLARITY	Where water quality and clarity is the deciding factor – we have our range of clarifiers and Pinned Bed Clarifiers (PBCs). They can achieve low Total Suspended Solid (TSS) or clarities down to 20 ppm.



## DELKOR's range of thickeners and clarifiers covering all of your process requirements include:

- Conventional thickeners
- High rate thickeners
- High density thickeners
- Paste thickeners
- Shear thinning systems
- Conventional clarifiers
- Pinned bed clarifiers

## STANDOUT FEATURES YOU CAN RELY ON

### SHEAR THINNING

An important option for the operation of a paste thickener. The DELKOR shear thinning system can be easily retrofitted onto existing thickeners as well as new applications. Our newly developed shear thinning system imparts energy efficiently in a well controlled environment into highly viscous and high yield stress slurries to improve their pumpability.

### DESIGN CAPABILITY

By centralizing our design and drafting, we are able to offer improved delivery times whilst also improving our overall quality. However, our in-depth technical expertise within our local teams ensures that we comply with each country's specific design standards.

### INSTRUMENTATION and CONTROL

Our specialists are available throughout the implementation and operational periods of a project in order to ensure that all specific technical requirements are met. These specialists also boast significant experience in the application, calibration and operation of a wide array of instruments and control options that will assist any thickener to operate more effectively and efficiently.

# CONTINUOUS IMPROVEMENT

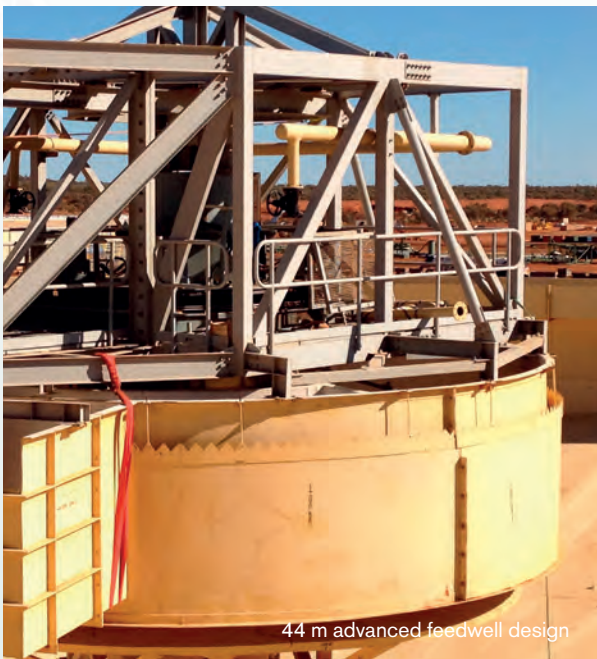
We have a mandate to continue to improve our equipment range and supply the most technically competent and highest quality thickener and clarifier packages in the market.

## FEEDWELL DESIGN

By employing Computational Fluid Dynamics (CFD) modelling, test work and leveraging hundreds of thickener installations in 46 countries over 35 years, we boast a range of feedwell designs to suit any feed conditions.

### Standout features include:

- Latest generation design released in 2017
- Improved flocculent/ slurry kinetics
- Lower operational costs
- Forced dilution capability



44 m advanced feedwell design



60 m bolted thickener in Vietnam



DELKOR standard drive



Thickener mechanism with round profile structure

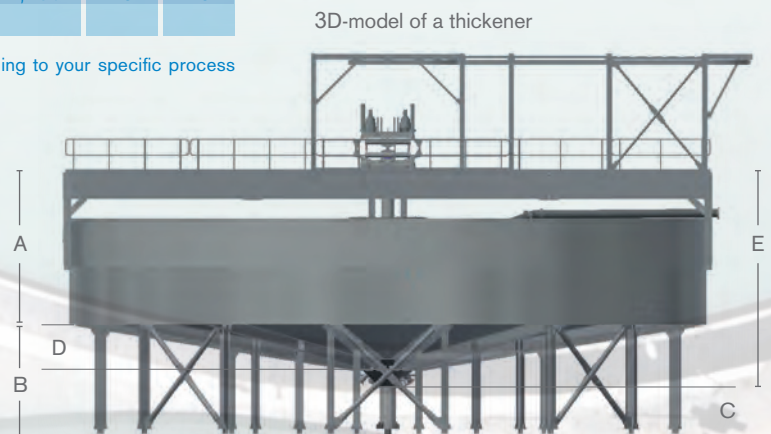
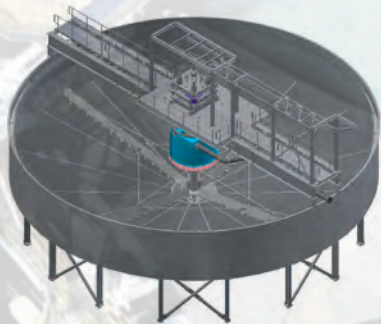
## HEAVY DUTY DRIVE TECHNOLOGY

Our high quality and heavy duty drive designs have set the industry standard for effective and reliable operation. The high torque and stresses associated with paste have only made drive design and selection even more important. Our drive range technology includes single planetary units delivering 230,000 Nm of torque as well as multi-pinion center drive systems capable of 14 MNm of torque and can be operated hydraulically or electrically.



Dimensions						Steel Tank	
Dia-meter	A mm	B mm	C mm	D degrees	E mm	Avai-lable	Bolted Option
1	2,400	2,500	1,800	15	2,650	✓	✓
5	2,400	2,350	1,800	12	2,950	✓	✓
8	2,400	2,750	1,800	12	3,350	✓	✓
10	2,400	3,050	1,800	9	3,650	✓	✓
12	2,400	3,250	1,800	9	3,850	✓	✓
15	2,400	3,600	1,800	9	4,200	✓	✓
18	2,400	3,900	1,800	9	4,500	✓	✓
20	2,400	4,150	1,800	9	4,750	✓	✓
22	3,000	4,350	1,800	9	5,550	✓	✓
25	3,000	4,700	1,800	9	5,900	✓	✓
30	3,000	5,250	1,800	9	6,450	✓	✓
35	3,000	5,700	1,800	9	6,900	✓	✓
40	3,200	5,250	1,800	9	6,650	✓	✓
45	3,200	5,500	1,800	9	6,900	✓	✓
50	3,200	6,000	1,800	9	7,400	✓	✓
55	3,200	6,400	1,800	9	7,800	✓	✓
60	3,500	6,800	1,800	9	8,500	✓	no
65	3,500	7,400	1,800	9	9,100	✓	no
70	3,500	7,800	1,800	9	9,500	✓	no
80	3,500	8,850	1,800	9	10,550	✓	no
90	3,500	-	-	9	11,450	no	no
100	3,500	-	-	9	12,250	no	no

Further to the above table we are able to provide any size according to your specific process requirements.



3D-model of a thickener

## SELECTING THE BEST THICKENER FOR YOUR SPECIFIC APPLICATION

Leveraging years of bench scale, pilot testing on site and full scale thickener experience, we are able to accurately and quickly ascertain the type, geometry and number of thickeners for a particular application.

Design can vary from typical high rate thickeners with shallow sloping floors and standard side walls to paste units with steep floor angles and extended side wall heights.

## OUR GLOBAL DELKOR PRESENCE

DELKOR is able to provide comprehensive client support services around the world. We can also propose customized maintenance solutions, such as spare parts supply, stock management and/or maintenance contracts.



## **TAKRAF GmbH**

Torgauer Strasse 336  
04347 Leipzig – Germany  
T +49 341 2423 500  
info@takraf.com

## **Americas**

Canada  
T +1 403 252 8003  
(Calgary)  
T +1 604 451 7767  
(Vancouver)

USA  
T +1 303 714 8050

Mexico  
T +52 55 8525 7363

Brazil  
T +55 31 3298 3000

Chile  
T +56 223 983 000

Peru  
T +51 1 264 2224

## **Asia**

India  
T +91 80 4262 1000  
(Bengaluru)  
T +91 44 2499 5514  
(Chennai)  
T +91 33 6645 5800  
(Kolkata)

China  
T +86 10 8447 5656

## **Sub-Saharan Africa**

South Africa  
T +27 11 201 2300

## **Europe, Central Asia, North Africa, Middle East**

Germany  
T +49 341 2423 500  
(Leipzig)  
T +49 3574 854 0  
(Lauchhammer)

Russia  
T +7 495 787 4336

Uzbekistan  
T +998 71 202 4639

Kazakhstan  
T +7 717 227 3097

## **Asia Pacific**

Australia  
T +61 7 3015 3200  
(Brisbane)  
T +61 2 8335 0400  
(Sydney)  
T +61 8 6146 1200  
(Perth)

