

# UNDERWATER EXCAVATION SOLUTION USING EXCAVATOR SUSPENDED ROTARY DRUM CUTTER

**erkat**<sup>®</sup>



## TECHNICAL PROPOSAL & INTRODUCTION

EXCLUSIVELY REPRESENTED IN PAKISTAN BY;



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# OUR ASSOCIATION WITH "ERKAT" GERMANY



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## AUTHORIZATION

We, Erkat Spezialmaschinen & Service GmbH,  
with our headquarters at

Jeremiasstrasse 4, 36433, Leimbach, Germany,

as producer and manufacturer of Rotary Drum Cutters and other excavator  
attachments under the trade name "Erkat", authorize "SECURA-GROUP OF CO."  
located at Suite No. 101, First Floor, Arab Business Centre, Plot No. 5, Bahadurabad  
Chowrangi, KARACHI-PAKISTAN  
represented by its CEO, Mr. Ali TIRMIZI to be the Exclusive AGENT of our entire  
products range throughout the entire Country of Pakistan.

We guarantee the quality and performance of our products and we authorize  
"SECURA-GROUP OF CO." to ensure, for these products, the fulfilment of the  
obligations concluded from the delivery contract, regarding the installation,  
commissioning, starting to work and technical assistance to the potential Clients.

Should you have any questions, please do not hesitate to contact to our  
above-named agent and/or, to us directly.

Kind regards,

Klaus Ertmer

Managing Director,

Erkat Spezialmaschinen & Service GmbH,



Dated: 13.08.2014

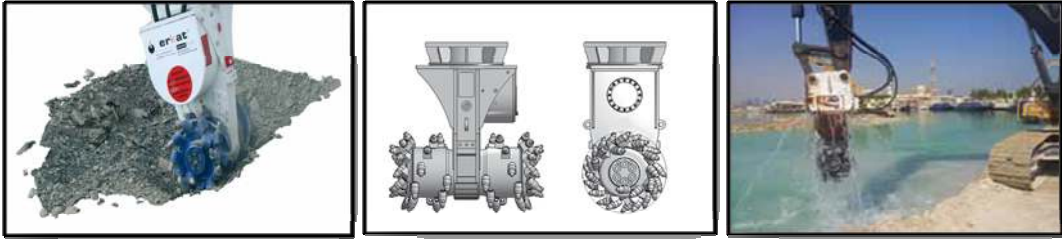
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geschäftsführer  
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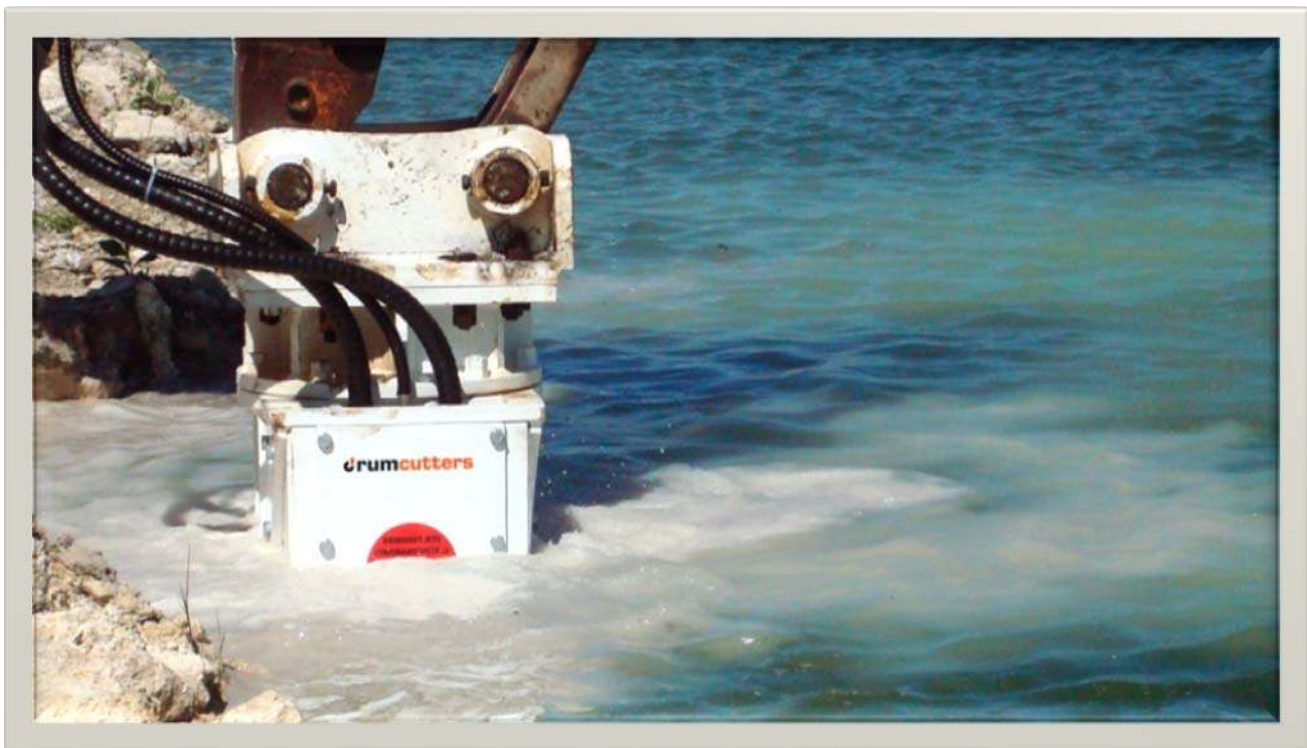
## **WHAT IS ROTARY DRUM CUTTER?**

Unlike hydraulic breakers, drum cutters can be used to depths of 100 ft (30 m) under water with little or no modifications. They are ideally suited for removing rock from harbours and river beds, repair work in canals and underwater demolition projects.

*Underwater applications often involve deepening of rivers and harbours as well as digging of foundation.*

Provided the drum cutter is well maintained with no leakages from hydraulic connections and case drain pressure being correct there is no risk of polluting water with oil. ***There are no components on a drum cutter that can be damaged while the machine is submerged in water. This makes the drum cutter an ideal tool for underwater excavating.***

In shallow water, or in applications where canals, rivers or harbours are being deepened, the operator can normally work “blind” and achieve a good result. Where accuracy is required, as in the excavation of underwater foundations, lack of visibility can be a serious problem. Excavator mounted GPS systems provide the operator with accurate information regarding location of the drum cutter and are often used when accuracy is important. With such equipment, foundations can be excavated accurately, even at depth.



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Drum cutters use a low energy method of impact resulting in low noise and vibration. Production rates are relatively high compared to hydraulic breakers, particularly in softer materials.

## **FEATURES & BENEFITS USING HYDRAULIC ROTARY DRUM CUTTER:**

Drum cutters use a low energy method of impact resulting in low noise and vibration.

Benefits of using a drum cutter!!

- ❖ **Low vibration** - no danger of damaging sensitive structures that may be found in close proximity, can be used in built up areas without inconvenience to others
- ❖ **Low noise** - allows excavation or demolition to be carried out without inconvenience or bother to people located close by.
- ❖ **High production rates** - as materials become harder, the productivity advantages of drum cutters compared to hydraulic breakers becomes less
- ❖ **Small grain size** - cut material has a grain size small enough to be used for back fill
- ❖ **High return on investment** - the cost benefits associated with accurate removal of material, no transportation and crushing of broken material, high productivity etc. allows contractors to make a high return on their investment

## **"ERKAT" DRUM CUTTERS FOR HARBOUR DEEPENING**

Regardless of whether you are working in construction, steel, mining, tunneling, forestry, road building or the natural stone industries you can discover new ways with:

**erkat|special|drum cutters** can broaden your horizons. These adaptable, reliable, quiet and low vibration machines offer a great alternative for those applications where more traditional methods are either inadequate or too expensive.

New applications will be revealed – discover new horizons!

# **Technical Proposal & Introduction**

Following considerations will be required for underwater applications of rotary drum cutter:

a. **TYPE OF UNDERWATER APPLICATION**

If underwater excavation, following is needed;

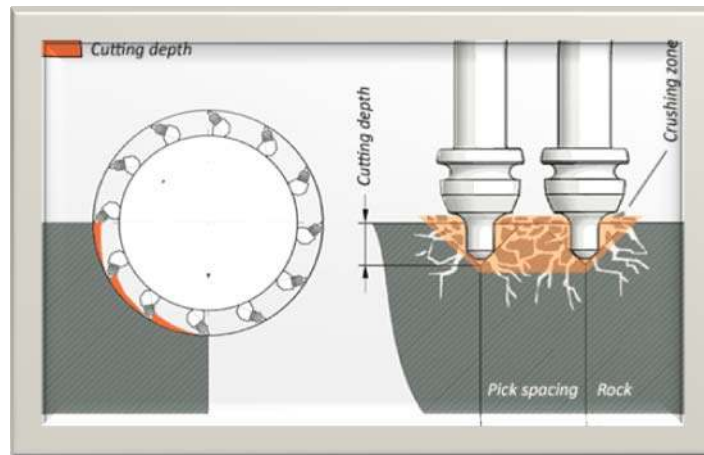
- **TYPE/MODEL OF ROTARY DRUM CUTTER (ER 2000, ER3000 OR ER5500 RECOMMENDED FOR THIS APPLICATION)**
- **MOUNTING BRACKETS**
- **SELECTION OF PROPER HYDRAULIC EXCAVATOR HAVING HYDRAULIC PIPING ARRANGEMENTS (50-70 TONS)**
- **HYDRAULIC PIPES/FITTINGS ACCORDING TO THE DEPTH OF WORKS**
- **POINT ATTACK TOOLS/CUTTING PICKS IN SUFFICIENT QUANTITY**
- **PANTOON/BARGE TO PLACE EXCAVATOR AND MANPOWER ON BOARD**
- **HEALTH & SAFETY ARRANGEMENTS ON BOARD**
- **TEAM OF DIVERS TO NAVIGATE WITH THE DRUM CUTTER/EXCAVATOR OPERATOR**





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**The productivity of a drum cutter depends to a large extent on the uni-axial compressive strength of the material to be cut.**



*The oil flow and pressure that the excavator is able to provide to the drum cutter combined with excavator weight and stability are also critical factors influencing productivity.*

## **HOW DOES HYDRAULIC DRUM CUTTER WORK?**

The Rotary Drum Cutters can cut downwards and sideways. They are designed to be used in applications where the size and shape of the standard double head drum cutter makes it unsuitable or difficult to use.

Drum cutters (single drum cutters) are driven by a powerful radial piston motor creating extremely high cutting forces. The robust cutter drums together with their secure fixing method enable them to operate in the most demanding conditions.

Drum cutters are excavator suspended according to their hydraulic power requirements. Special mounting brackets are supplied according to the make/size and capacity of the excavators.

Our “Made in Germany” drum cutters are based around a common, well proven cutting technology using carbide tipped teeth to crush, grind or cut hard materials.

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## ***They are; Robust***

Drum cutters attachments are reliable and long lasting because the drive train is over-engineered and the attachment of the cutter drums is very secure. They are designed to be low maintenance.

## ***They are; Strong***

Cutter heads from Drum cutters are designed to provide the optimum cutting power at the recommended cutting speeds. They guarantee a smooth cutting action while providing each pick with the maximum cutting power to penetrate the rock.

## ***They are; Flexible***

A range of cutter drum designs and widths combined with a choice of motors with different displacement and torque provides several options to adapt the drum cutter to the excavator and to the ground conditions at the job site.

## ***They are; Reliable***

High torque hydraulic motors drive extremely large spur gears to turn the cutter drums. The gear wheels are so robust the drum cutters can be used in the most difficult conditions without risk of failure.

## ***They are; Quiet and Low Vibration***

With low vibration and quiet operation, rotary drum cutters can work in environmentally sensitive areas.

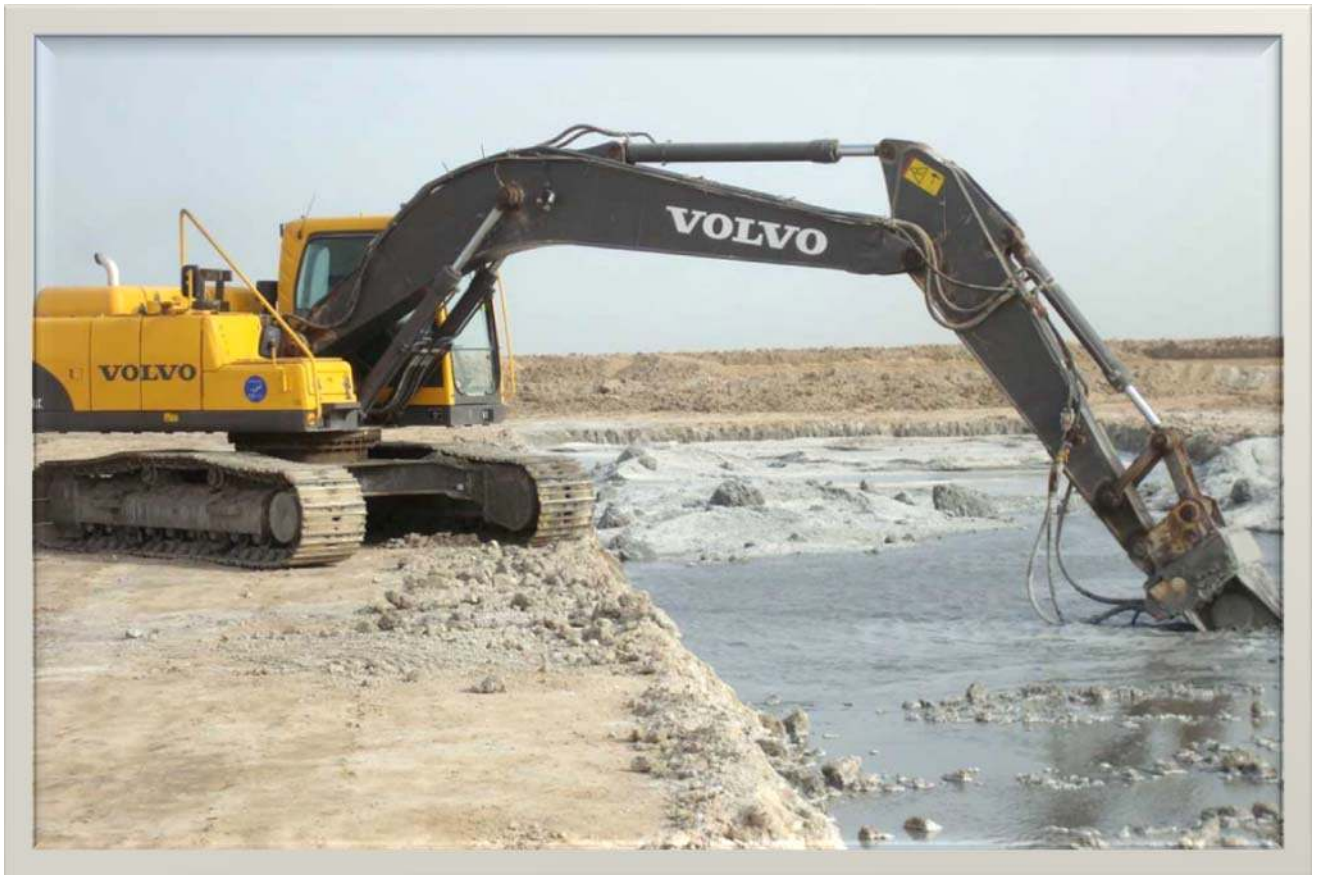
## ***They are; Adjustable***

A central fixing system allows rotary drum cutters to rotate through 360° without having to be disconnected from the excavator. (ER RANGE)

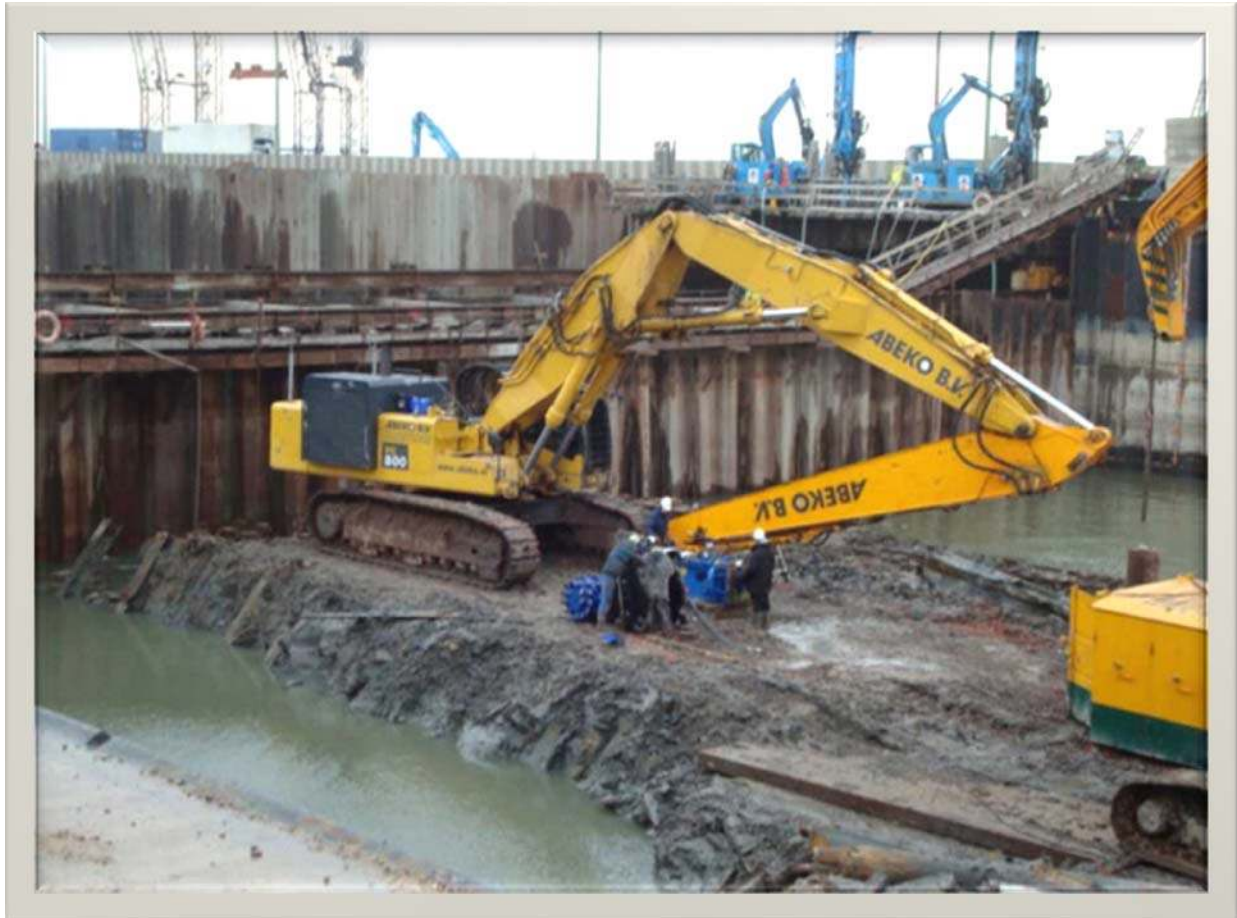


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## **ROTARY DRUM CUTTERS IN ACTION UNDERWATER ...**



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