



## **Diamond & tungsten-carbide tipped rocksaws**



**Saws for construction, stone cutting, demolition and forestry.**

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**ECHIDNA**



# Applications - Construction

In the construction industry, Echidna diamond rocksaws are suited to a wide range of applications. For example:

- excavations for footings, basements, lift shafts
- tunneling
- construction and maintenance of roads
- use in hard to reach places and populated areas
- trenches for underground piping and cables



🕒 Echidna D4HS high speed rock saw with multiaxial cutting head. (Prague, Czech Republic)

🕒 Echidna D1 diamond rocksaw cutting expansion slot in reinforced concrete water channel. (Stachy, Czech Republic)



🕒 Echidna D6 diamond rocksaw with 2500mm blade cutting hard sandstone for a shopping centre carpark. (Wollongong, Australia)



🕒 Cutting sandstone horizontally with Echidna D3 diamond rocksaw. (Sydney, Australia)

# Applications - Quarrying

Cutting with diamond rocksaws produces a good surface finish, wastes very little material and can be done with high precision. This makes excavator diamond saws highly suitable for mining and quarrying stone, including stone of high hardness (eg. basalt, granite). With dual blade saws, or single blade saws with adjustable offset extension, parallel cuts of high precision can be achieved.

Where there is no cooling water available and/or the material is not too hard, carbide tipped saws can be used. For compressive strength below 40 MPa these are just as fast as diamond and require much less operator skill than diamond.

- ① *Echidna HS family of saws can achieve unprecedented precision, the slices here are down to 2mm thin.*



- ① *Echidna C5 tungsten carbide with 2600 mm diameter blade in a hard sandstone quarry. (Queensland, Australia)*

- ① *In places with high quality stone, each construction site can be turned into a small production quarry. (Sydney, Australia)*

# Applications - Demolition

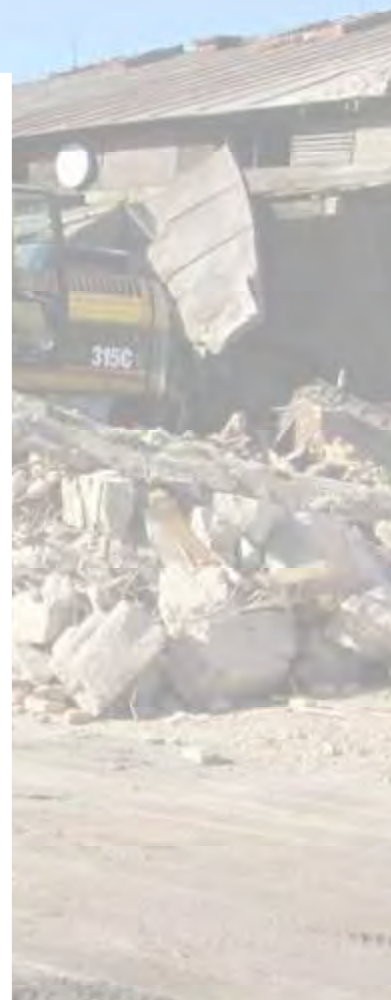
Echidna diamond rocksaws can be used in demolition as an alternative or addition to hammers and shears.

Both our standard (large blade) and high-speed (small blade) models will cut through a range of materials including steel reinforced concrete.

Materials can be cut into manageable sized pieces to be taken away for processing and recycling.



📍 Echidna D3 diamond rocksaw.  
(Newcastle, Australia)



📍 High speed D4HS diamond rocksaw used for demolition of hard, reinforced concrete.  
(Czech Republic)

# Applications - Forestry

Echidna excavator stump grinders are a powerful alternative to stand-alone units. They use the power and reach of an excavator to remove stumps quickly and efficiently even in difficult to access locations.

The organic material from the stump is left in place to decompose and enrich the soil, as compared with the alternative of ripping the stumps out of the ground with the excavator, and then burning or otherwise disposing of the stump.



☛ Echidna Sg4 stump grinder demonstration. (Beluno, Italy)

# Applications - Other

The applications of the technology developed by Echidna is not limited to the construction, demolition and forestry industries.

With our knowledge of materials and machinery, Echidna machinery can be adapted to a wide range of applications with standard and custom designed accessories and systems.

☛ Echidna rocksaw used for cutting paper rolls at a paper mill. (Visy, Australia)



**Specially designated gantry system for cutting iron slab. (Wollongong, Australia)**

# Diamond Rocksaws

## Standard Rockcutting Models

Echidna has developed 2 distinct kinds of diamond blade rocksaws. For general excavation works such as bulk excavations and trenching, we recommend the standard range of Echidna diamond rocksaws.

These rocksaws can also be used for cutting other materials such as bitumen, concrete or wood.



## Rock, Bitumen and Concrete Cutting

Echidna developed its range of high-speed diamond rocksaws for demolitions, road cutting and other applications that do not require great depth of cut and where economical small blades are the best option.

The blades of the high-speed machines spin faster than the standard rocksaws making them a powerful and economical choice for cutting concrete, rock, bitumen and asphalt.

With their high rotation speed, these rocksaws use much smaller blades than the standard diamond blade rocksaws. This makes them less cumbersome to handle, less likely to be damaged and more economical, as the cost of the diamond blades decreases rapidly with decreasing diameter.

# Tungsten - carbide Rocksaws

Tungsten-carbide rocksaws are suitable for earthmoving, excavation, quarrying and mining. They can cut medium-hard, soft and clay rich materials.

Although slower and less efficient than diamond tipped saws for hard materials, the tungsten-carbide tipped rocksaws have some advantages:

- Damaged or worn picks can be easily replaced.
- No need for cooling water during cutting.
- Better suited for soft materials than diamond saws.
- Lower requirement on operator's skill.



Echidna has tungsten-carbide rocksaw models available for excavators from 8 - 80 tonnes. They are designed to minimise weight and be compact in size, while having a robust construction.

We have many options available to tailor them to your application such as extensions for cutting outside of tracks and the cutting optimiser.

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# Features

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## Fast acting automatic brake

Echidna rocksaws have an inbuilt hydraulic braking system. It engages automatically when hydraulic pressure drops below a certain pre-set level. This means it operates even in emergency situations such as loss of oil from a broken hose.

The brake system has no mechanical parts. This means no wear, no abrasive dust and no maintenance.

It also locks the blade during transport.



## Double Swiveling Shield

The protective shield on Echidna Diamond Saws is made up of two independent assemblies.

The inner shield rotates by 360 ° (full circle) around the blade. It is constructed so that its outer rim sits flush with the outer face of the cutting blade. The outer guard swivels around the inner shield independently by approx. +/- 45 °.

With this arrangement it is possible to open the shield angle to cover most of the blade in situations where surrounding property must be well guarded from the cut debris.

The outer guard provides full protection from both sides of the cutting blade. The outer guard can be removed when cutting along a boundary wall is required.



## Reversible blade rotation

All Echidna diamond saws except of D1J come with reversible blade rotation. When connected to an auger another two directional circuit, the direction of blade rotation can be changed at any time.

This allows control of the direction in which cut debris is thrown.

The choice of rotation direction is absolutely essential for horizontal cutting, as one must cut against the direction of blade spin.



## Bearing Hub Construction

The construction of the front bearing hub and the sealing arrangement of all Echidna diamond saws provides protection against any dirt entering the bearing space, and even allows the saw to be used fully submerged in water.

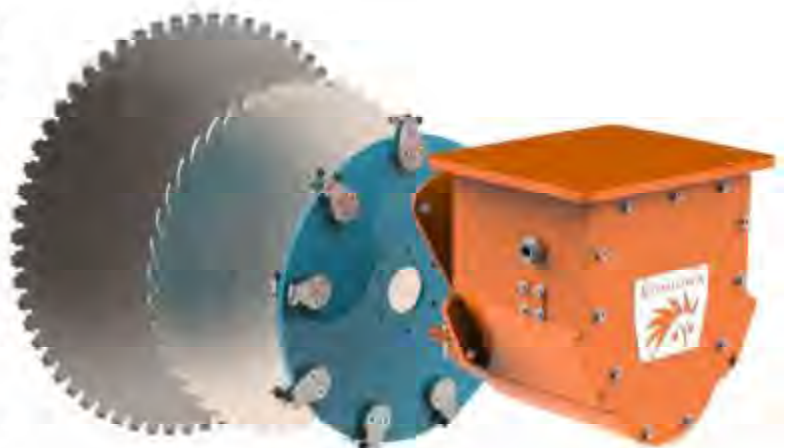
The bearing hub is robust enough to support multiple blades, with spacers, for slab and trench cutting.



## Wood Cutting & Stump Grinding Attachment

The high speed and the robust bearing assemblies of all Echidna saws from sizes D1 to D6 are constructed to withstand large axial and radial loads which are needed for stump grinding and wood cutting.

Echidna offers stump grinding attachments that can be mounted on a saw instead of the diamond blade. The diamond saw can thus be converted in minutes to an efficient stump grinder with all the advantages of an excavator mounted tool, ie reach, flexibility, power etc.



## Rotating Head Bracket

A swiveling head bracket that allows the saw to be repositioned from left to right cut and vice versa, without the need to disconnect it from the excavator.

A manual version is an optional extra for Echidna Diamond Rocksaws in the D1, D2 and D3 series that is particularly useful in excavations where access is tight. For machine sizes D4 and higher this function is motorised for safety reasons.



## High Speed Cutting

The high-speed (HS) series diamond saws are capable of spinning the blade at up to an incredible 4800 rpm.

This allows them to drive very small diameter blades for powerful and economical cutting of steel reinforced concrete and asphalt, which often do not require great cutting depth, but where tip speed is of paramount importance. The high-speed Echidna rocksaws will easily outperform a diamond road saw.

Blades as small as 400mm diameter can be used and yet the high pressure capability of these saws gives them enough torque to drive a 1200mm cutting blade.



## Cooling System for High Speed Cutting

High speed cutting, such as is required for cutting of steel-reinforced concrete or asphalt, generates heat. This substantially shortens the life of the blade.

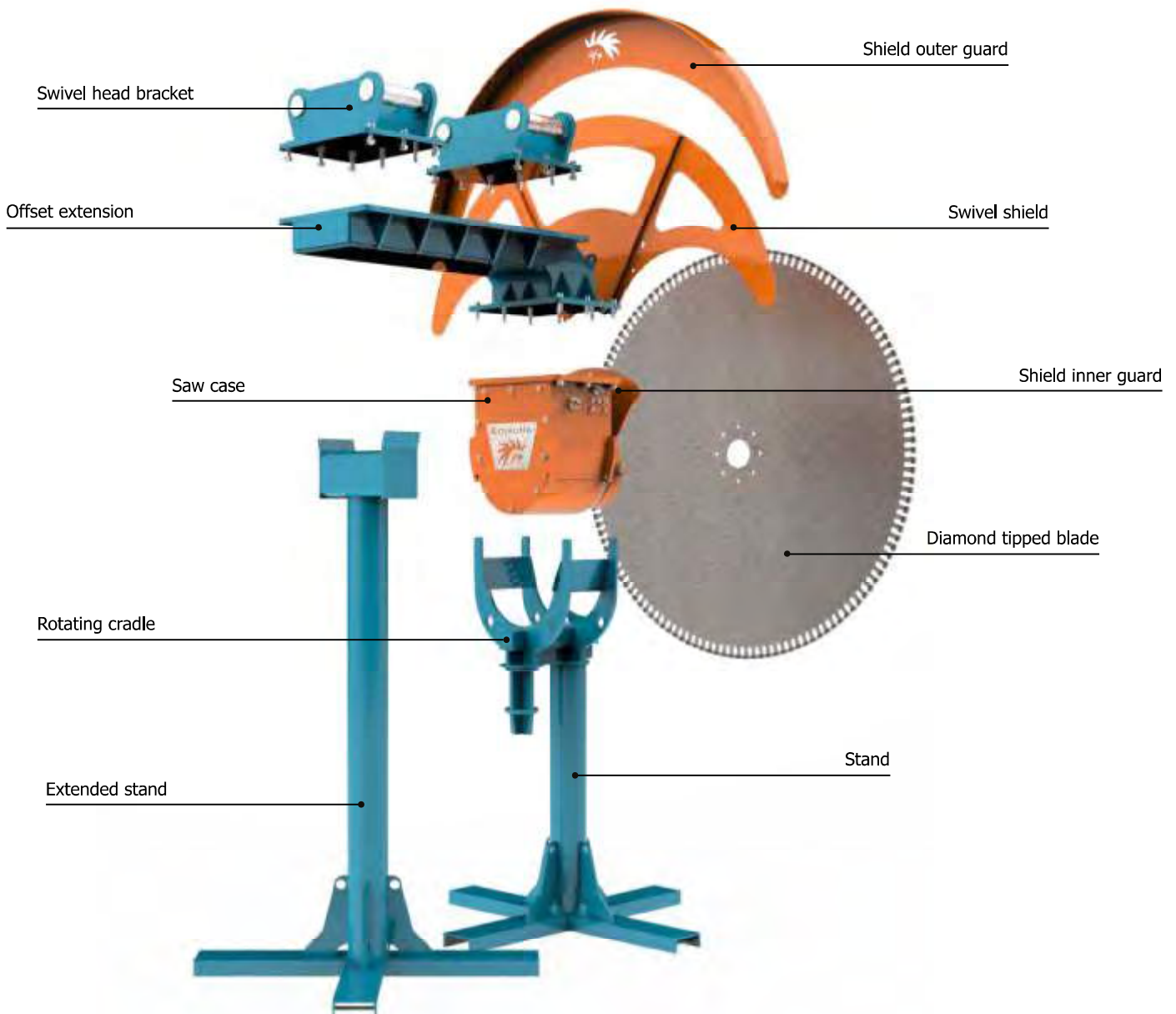
Echidna has developed a water jet system incorporated into the safety shield, that allows for large flows of water when needed and provides or adjustment of the water jet direction to send the water to exactly where it is needed.



# Other Features

- rotating stand
- compact size
- fast blade rotation
- short body length for cutting deep trenches
- no need for case drain for some models
- strong and light construction
- single- and multi-blade configurations
- high quality blades and cutting stones
- built-in water nozzle
- optional motor speed sensor
- hydraulic test points

## The make up of an Echidna diamond cutting system



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# Accessories

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## Multidirectional Cutting Heads

The Echidna multidirectional cutting heads are for situations when cutting is needed at an angle other than vertical, i.e. perpendicular to the excavator linkage pins. Echidna has developed a range of cutting heads that rotate and slide about and along one or more axes.

This is particularly needed in tunnelling, demolition and quarrying works.



## Automatic Cutting Optimiser

Echidna has released one of the most significant developments in the field of mobile rock cutting, concrete cutting and demolition works: a Cutting Optimiser for rock saws such as those used with excavator. It offers these advantages:

- reduces operator fatigue
- improves the daily productivity easily by a factor of 3 compared to even the best of human operators.
- increases rocksaw blade life by applying optimum pressure for cutting

This hydraulic servo control system takes over from the operator in controlling the feed rate of the rocksaw, be it a diamond or carbide saw. The device automatically detects the presence of

an active tool (eg a rock saw) on the excavator. When there is no rocksaw present, the excavator functions like without the rocksaw.

When a rocksaw is activated, i.e. cutting blade is made to spin, the operator brings the blade slowly into contact with the rock, concrete or other material to be cut and the servo unit automatically detects the rock and takes over the control of the rocksaw movement.

No more exhausting operator hours concentrating on fine control of the joy stick. The operator simply engages the appropriate joy stick into "full throttle" position and the Optimiser does his work. When the joy stick is released the Optimiser automatically and instantly disengages.

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## Adjustable offset extension

Twin blade saws are often used a solution when two parallel cuts are needed. The disadvantage of a twin blade saw is in the impossibility to easily adjust the width between the two blades.

Echidna has developed an adjustable offset extension whereby only single blade is used and the saw is hydraulically offset to any position to make the second cut.



## Other Accessories

- Fixed and adjustable head brackets to suit all excavator sizes.
- Extension for offset cutting.
- Diamond blades to suit material to be cut.
- Single or reversible rotation valve block with dynamic brake and anti-cavitation circuit.
- Integral motor and valve block cooling system for extreme work duty and/or work in hot climatic conditions.
- Motor speed/pressure sensor for manual cut-speed optimisation.
- Automatic host machine leveler for speedy machine positioning.

# Selection guide

## Do you need a Diamond or Tungsten-Carbide Rocksaw?

Use this chart to choose the type of rocksaw that you need. The chart is intended as a guide only.

