

**TECHNICAL PARAMETERS
EVOGRES**



EMILGROUP

EVOGRES
SERIE

EVOGRES+
SERIE

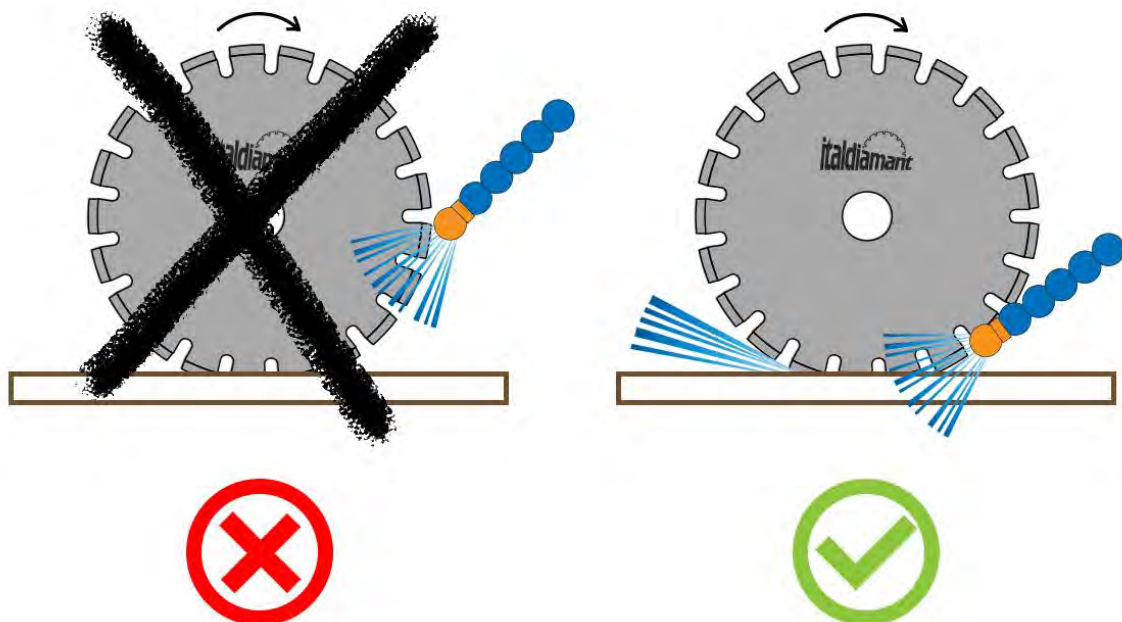
EVOGRES
SERIE
DKT3

WATER SUPPLY FOR DIAMOND CUTTING BLADES

Conditions for optimum performance:

- **ORIENTATION OF THE WATER FLOW**

Regulate the water flow precisely at the point of contact between the diamond abrasive part of the blade and the material, as shown in the image below. With proper regulation, you should notice a jet of water from behind the blade during the cut. This flow allows discharging the waste of the material.



- **WATER**

The water must be clean, without mud and without particles of material inside.

- **PRESSURE**

The pressure shall be sufficient to clean the diamond abrasive part of the blade from the cutting waste.

Ensure that the water pressure is constant and does not drop, so that the flow is directed to the recommended contact area to cool the blade properly, as shown in the image above.

A working blade can reach high temperatures, so the correct orientation of the water flow on the diamond abrasive part is essential for its cooling, durability and good cut quality of the material.

Remember that small water flow but adequately oriented is more effective than a large amount of water poorly oriented.

BASICS FOR THE CORRECT USE OF DIAMOND BLADES

● WORKTOP

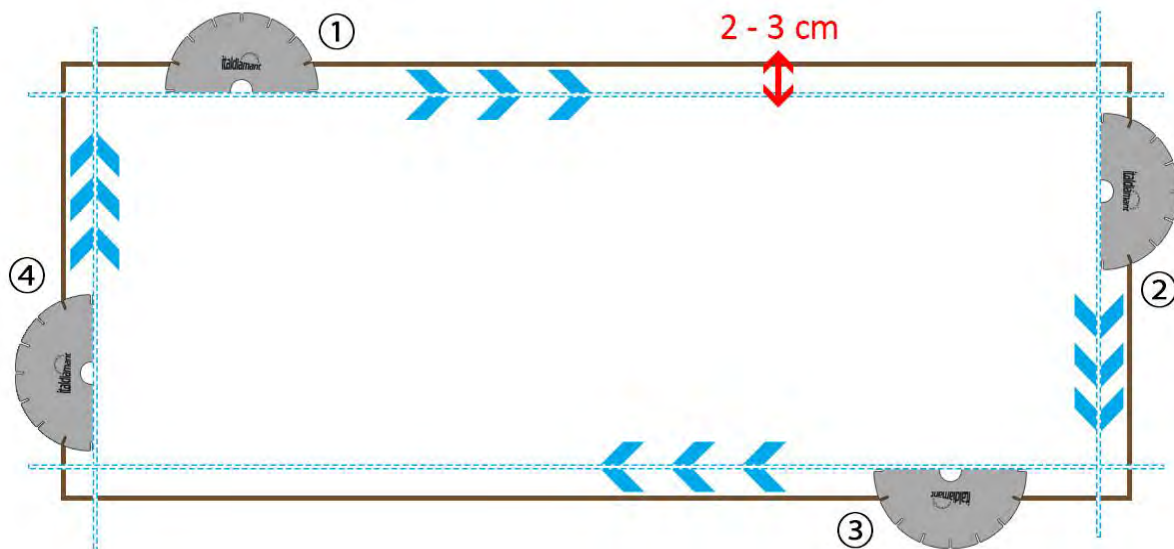
The worktop must be in good condition and flat. If the saw worktop is made of wood or concrete, we recommend flattening it, or we suggest placing a quartz slab or a high-intensity rubber mat between the material and the worktop. This operation highly improves the finish of the cut.

● HANDLING SLABS

Be very careful when handling slabs and avoid any kind of bending. Bending can cause material breakage during the cut.

● REMOVING THE TENSION FROM THE SLABS

Before starting, we recommend removing the tension from all the slabs by cutting the edge with the saw blade for 2-3 cm. Remember to do this operation on all four sides.



● CUTTING SLABS

Perform single-pass cutting until the end. Once finished, avoid moving backward with the blade still inside the material. We advise exiting from the material. This trick avoids possible chipping of the slab and closing of the abrasive part of the blade itself.

● SPEED

Respect all the correct advancement and engine speed parameters.

● SHARPENING

To sharpen or clean the blade, make some cuts on the quartz/engineering stone (about 15 linear meters) or use our sharpening block. Working with the correct parameters and measures allows the blade to keep its sharpen.

WORKING PARAMETERS



The tests we have run gave good cutting results even at 45 degrees, as well as for direct cutting from top to bottom, standard working conditions on CNC machines (on slab thickness 4-12 mm: speed 0,6 m/min; with 20 mm: speed 0,4 m/min).

The following parameters are subject to variations according to the material, machines and working conditions. Register on the website service.italdiamant.com for updated parameters.

N.B.: it is fundamental that the blade receive the right quantity of water on the cutting point in order to refresh and clean the the diamond abrasive part of the blade (see “Water Supply for Diamond Cutting Blades”). Insufficient water flow can reduce both performance and lifetime of the blade.



TRAVEL SPEED AND ROTATION (RPM) BY TYPE AND MATERIAL

Diameter (mm)	Slab Thickness (mm)	RPM [optimal]	Speed on Dark or Colourful (m/min)		Speed on White or Light Colours (m/min)	
			EVOGRES SERIE	EVOGRES SERIE+	EVOGRES SERIE	EVOGRES SERIE+
300	6,5 - 12	2.100 - 2.800 [2.600]	1,2	1,5	0,9	1,1
300	20	2.100 - 2.800 [2.600]	1	1,3	0,8	1
350	6,5 - 12	1.900 - 2.500 [2.300]	1,2	1,5	0,9	1,1
350	20	1.900 - 2.500 [2.500]	1	1,3	0,8	1
400	6,5 - 12	1.500 - 2.300 [2.100]	1,2	1,5	0,9	1,1
400	20	1.800 - 2.300 [2.100]	1	1,3	0,8	1
450	6,5 - 12	1.200 - 2.000 [1.900]	1,2	1,5	0,9	1,1
450	20	1.200 - 2.000 [1.500]	1	1,3	0,8	1
500	6,5 - 12	1.000 - 1.600 [1.500]	1,2	1,5	0,9	1,1
500	20	1.000 - 1.600 [1.500]	1	1,3	0,8	1

BASIC FOR CORRECT USE OF DIAMOND DRILL AND FINGER BITS

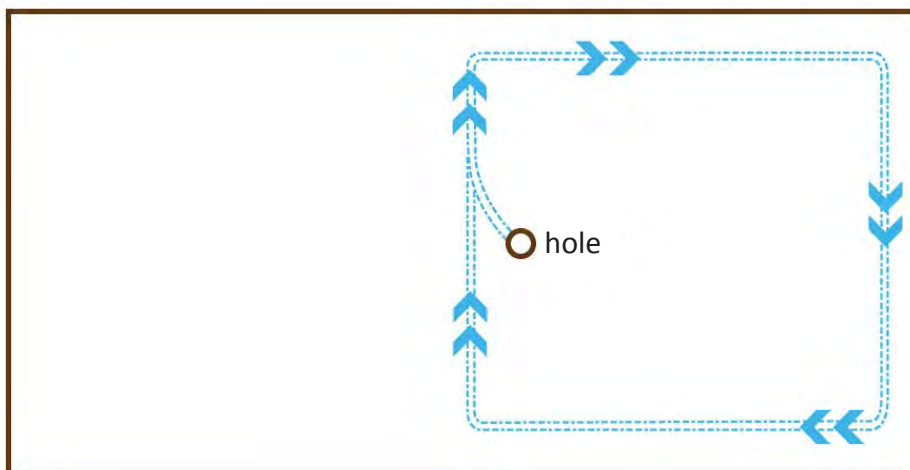
Usage on CNC Machines

- **TO CUT WITH DRILL BIT**

To drill the internal holes, the slab must be well secured by the suction cups (at least two near the part to be drilled).

- **TO CUT WITH FINGER BIT**

Before using the router, it is necessary to create a hole with the core drill (normally \varnothing 35 mm), situated in the central area of the slab short side. Later, enter inside the cave with the finger bit and proceed following the arrows as shown in the image below.



Usage on 5-axis Bridge Saw Machine with Swivel Head

For this application, it is important to use our reinforced finger bit with the diamond segment on the top of the tool. Using the top part of the instrument, drill the material with a down feed of 15 mm/min. After the drilling, enter inside the cut with the tool's lateral diamond and proceed with the correct feed rate as shown in the reference table "EvoGres Finger Bits" on page 30.

IMPORTANT: on this type of machine, a more generous water supply is essential during the use of the tools.

EVOGRES DRILL BITS



For a better finish, we recommend to set the machine with incremental infeed followed by pauses: for example, cut 8 mm deep, then stop and turn the drill bit 0,5 mm back. Then cut 8 mm deep again. Repeat the sequence until the drilling is complete.

Working Parameters

Diameter (mm)	RPM	Drilling Feed (mm/min)	Average Life
from 8 until 25	3.500 - 4.000	30	80 - 100 holes
30 - 35	2.000 - 3.000	20	80 - 100 holes
from 50 until 125	1.000 - 2.000	20	80 - 100 holes

EVOGRES FINGER BITS



- single step -

Working Parameters

Diameter (mm)	RPM	Cutting Speed on Dark or Colourful (mm/min)	Cutting Speed on White or Light Colours (mm/min)	REINFORCED Finger Bit Drilling Down Feed	Average Life
20 - 23	3.500 - 4.500	200	160	15 mm/min	75 - 90 linear metres

EVOGRES DRILL BITS FOR REBATING AND FOR INCREMENTAL CUTTING



Working Parameters

Diameter (mm)	Removal	RPM	Cutting Speed (mm/min)
from 8 until 15	until 2 mm each step	5.000 - 7.000	200 - 300
20	until 2 mm each step	5.000 - 7.000	200

EVOGRES ROUTER BITS FOR DRAIN BOARD



Working Parameters

Diameter (mm)	Removal	RPM	Cutting Feed Rate (mm/min)
12 - 15	until 3 mm each step	5.000 - 7.000	200 - 300

EVOGRES DRUM WHEELS



Working Parameters

Diameter (mm)	Removal	RPM	Cutting Feed Rate (mm/min)
from 60 until 90	until 3 mm each step	4.500 - 6.500	400 - 600

EVOGRES PROFILE WHEELS FOR 45 DEGREES



Working Parameters

Diameter (mm)	RPM	Cutting Feed Rate (mm/min)
80	3.000 - 4.000	200

EVOGRES BLADES FOR CNC MACHINES AND FOR GROOVING ON EDGE POLISHING MACHINES



Working Parameters

Diameter (mm)	RPM
210	2.800 - 3.000
260	2.500 - 3.000

EVOGRES GRINDING WHEELS

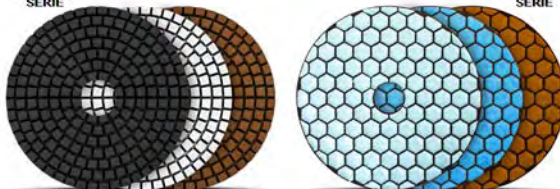


A. GRINDING WHEEL B. TEFLON GRINDING WHEEL

Working Parameters

Diameter (mm)	Removal	RPM	Speed (mt/min)
A. 300	until 4 mm max each step	2.000 - 2.500	0,5
A. 350	until 4 mm max each step	1.900 - 2.100	0,5
B. 300	until 4 mm max each step	2.100 - 2.600	0,5
B. 350	until 4 mm max each step	1.900 - 2.200	0,5
B. 400	until 4 mm max each step	1.600 - 1.900	0,5

EVOGRES DIACER FOR WET AND DRY POLISHING



Working Parameters

Diameter (mm)	RPM
100	4.000

EVOGRES WDD WET DRILLING BITS



Working Parameters

Diameter (mm)	RPM	Notes
for every diameter	2.000 - 2.400	suggested a plenty water flow

EVOGRES BLADES FOR DRY USE



Working Parameters

Diameter (mm)	RPM
115 - 125	10.000 - 11.000
230	5.000 - 6.000

EVOGRES GRINDING CUPS



Working Parameters

Diameter (mm)	RPM
100	4.000

EVOGRES ROUTER BITS FOR SINK



Working Parameters

Diameter (mm)	RPM
10	5.000 - 6.000

EVOGRES G35 DRY DRILLING BITS



Working Parameters

Diameter (mm)	RPM
for every diameter	10.000 - 11.000

QUALITY ALWAYS ON THE CUTTING-EDGE



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