1.1 ROUTERS

There is no absolute recommendation as to which brand of router you should use to work with Corian®.

However, in day-to-day fabrication, you would be well-equipped to have the following power hand tools:

- 1 1/2-hp router
- 2-hp router
- 3-hp router
- 3-hp plunge base router

Some companies seeking higher productivity have made further investments:

- C.N.C. router
- shaper
- panel saw
- V-groover
- water-cooled diamond-tipped saw

Refer to Table 1.1.A below for a guideline of approximate router power recommendations for common tasks:

Table 1.1.A

TASK	MINIMUM POWER
General-Purpose Work: e.g., edge and seam trimming, cutouts	2+ hp
Heavy-Duty Work: e.g., bulk cutouts, banjo cuts, coving	3+ hp
Detail Work: e.g., edge treatment	1 1/2 hp

Note:
Router power output will vary depending on the brand of machinery.

Helpful Hints:

The key element in choosing which router is most suitable for varying tasks is the quality of cut and the overall wear and tear on valuable machinery.

Corian® is made of natural minerals and acrylic resin and is, therefore, very tough on blades and motors. The listed recommendations above are based on maximizing maintenance on routers in day-to-day operations.

1.2 ROUTER BITS

Router bits should, at a minumum, be tipped with tungsten carbide. Polycrystalline diamond bits may be suitable in certain applications utilizing CNC machinery.

For day-to-day fabrication, you should have the following:

- 3/8" (10 mm) carbide-tipped single flute with 1/2" (13 mm) shank
- 3/8"–1/2" (10–13 mm) carbide-tipped double flute with 1/2" (13 mm) shank
- carbide-tipped decorative bits
- 1/2" (13 mm) shank with roller bearing (profile bit)

Table 1.2.A

TASK:	TOOL/BIT
General-Purpose Work e.g., edge and seam trimming, cutouts	3/8" (10 mm) carbide-tipped single flute with 1/2" (13 mm) shank 1/2" (13 mm) carbide-tipped double flute, etc.
Heavy-Duty Work e.g., bulk cutouts, banjo cuts	1/2" (13 mm) carbide-tipped single flute with 1/2" (13 mm) shank polycrystalline diamond bit
Detail Work e.g., coving, edge treatment	carbide-tipped decorative bit with 1/2" (13 mm) shank

Helpful Hints:

Only use quality tungsten carbide-tipped bits. Make sure they are kept sharp, clean and stored in a way that protects them from damage. Regularly check bit bearings for any slackness or play. Lubricate bearings regularly.

1.3 SAWS AND BLADES

Any type of circular saw may be used for ripping and sizing Corian®. Most acceptable common varieties include:

- stationary saw bed with sliding tray
- vertical panel saw
- drop-cut saw with 45-degree angle option
- heavy-duty portable circular saw
- radial arm saw
- beam saw

Regardless of the type of circular saw, all saws must:

1. be heavy-duty.

2. have triple-chip blades of tungsten carbide which should be used only for cutting Corian®.

3. have blades with hook angle of –5 degrees to +10 degrees and be described as "for cutting hard plastics."

4. have a quiet blade; small gullets, brass plugs and heavier blade stock.

5. also, all safety guides must comply with the local safety standards.

Blades should be sharpened regularly with a 400- to 600-grit grinding wheel.

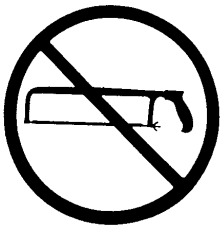
Blades should have 6 teeth per 1" (25 mm) diameter. Refer to Table 1.3.A for the most successful dry blades for cutting Corian®.

Table 1.3.A

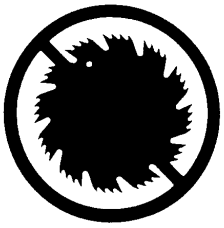
BLADE SIZE inches (mm)	NUMBER OF TEETH
7 1/2" (190 mm)	40
10" (254 mm)	60
12" (300 mm)	72
16" (406 mm)	100

The following tools must not be used, in any circumstances to cut Corian®:

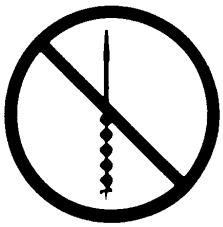
Saber Saws



Hacksaws



Ripping or Combination Blades



Auger Bits

Helpful Hints:

For large-volume work, a water-cooled diamond saw is recommended as the most economical saw.

Heavy-duty, handheld circular saws may be used to "bring the tool to the material." Use tungsten carbide blade with correct blade configuration, referring to Table 1.3.A.

The correct tools are essential for cutting Corian® to ensure that no chipping occurs and that all cuts are neat and clean.

Any small cuts or fractures in a Corian® cut may lead to cracking when the sheet is subject to stresses. **As with glass, any nicks or fractures create potential weaknesses in the sheet.**

The best way to eliminate stress from saw cuts is to trim all sawn edges with a shaper or router with a sharp straight cutting tool.

1.4 SANDING AND FINISHING

In day-to-day fabrication, you need to be well equipped and have the following:

- orbital sander
- palm sander
- random orbital sander or varying sizes
- stationary belt sander
- portable belt sander

Microfinishing film abrasives are used for day to day finishing.

Open-coat silicone carbide sandpaper is recommended for quick sizing.

Other abrasive systems are available that will work well on Corian® surfaces.

Using sanding systems with vacuum dust extraction will speed up work, lessen clean up and save wear and tear on the sander.

Helpful Hints:

Many high volumn shops use air sanders as they provide greater tool longevity.

Use machines for which spare parts and service are readily available, as sanders are subject to extreme wear and tear while working Corian®. Also "blow out" tools on a regular basis to clean out the fine dust.

1.5 TEMPLATES

Templates are made from:

1. Compressed materials.
2. Corian®. (To avoid the Corian® Joint Adhesive sticking to the Corian® template, apply several coats of furniture polish to the template. The fine wax buildup will help to eliminate sticking from Joint Adhesive.)

Store all templates in a way that keeps them in good condition and the leading edge true (such as in a vertical rack).

Templates are essential in ensuring that cutouts are clean and smooth, which means perfect seams for shape installation.

1.6 STRAIGHTEDGES

Straightedges are critical for truing edges prior to finishing and for preparing edges to be seamed. There are a number of commercially available straightedges, or you can make them yourself.

1.7 CLAMPING SYSTEMS

Several types of clamps are suitable for use with Corian®. Among these are:

- spring clamps
- C-clamps
- small bar clamps
- vacuum-clamping systems
- PVC ring clamps
- wood bar clamps

Table 1.7.A shows which clamping systems are recommended for different applications.

Table 1.7.A

TASK:	TYPE OF CLAMP
Attach buildup strips	PVC ring clamps, spring clamps, C-clamps, small bar clamps or wood bar clamps
Hold templates or straightedges in place	C-clamps or bar clamps, vacuum clamping systems
Hold bowls during seaming	Bowl clampoing jigs, vacuum systems, locking pliers with long jaws

Helpful Hints:

Keep clamps clean and in a readily accessible position in the work area.

1.8 DUST EXTRACTION

Although Corian® dust is nontoxic, all dust should be removed at the point of generation wherever possible.

Ducted extraction should be provided over all cutting and sanding areas of the workshop.

Hand sanders should be fitted with portable dust extractors and, if possible, to vacuum extractors.

Helpful Hints:

Keep filters regularly maintained to ensure effective operation. Several tool manufacturers make sanding systems with vacuum dust extractors which switch on when the sander is activated.