SOP Reference #: LF0003_Cutting

Operation/Task:	**LF Cutting/Routing**			Equipment:	**Large Format Kongsberg Cutter**
Owner:	Digital Manager	Date Created: Revision History:	3/11/26 See last page	Department:	Digital Studio

ALERTS (see below): Critical Step ◆ Quality Check ☑ Tip ☺ Team Safety ✚

Purpose: This SOP/work instruction describes the process of Table cutting, routing

Step #	Alerts	Step Description - "What to Do"	"How to Do it"	"Why to Do it"
1	✚	Safety	• Keep hands clear of moving gantry and tools. • Ensure vacuum system is active before cutting. • Never bypass safety interlocks or emergency stops. • Verify blades and bits are properly secured before operation.	Safety First

2	◆	Machine Startup / Calibration	6.1 Startup 1. Turn on main power to the Kongsberg XP. 2. Start the vacuum system. 3. Power up the operator console. 4. Launch i-cut Production Console. 5. Verify connection between software and table. 6. Press Servo Button to Activate Servos (lightning bolt). 7. Press Red Engagement Button to engage tool. 8. Press Green Initialization Button to Calibrate tools attached to carriage	Must initialize & calibrate tools to continue to production

3	◆	Software Prep (i-Cut)	1. Import cutting file (PDF, SVG, DXF, etc.).
			2. Confirm:
			  ○ Correct dimensions
			  ○ Tool assignments (knife, crease, route)
			  ○ Layer mapping
			3. Apply cut/crease/routing styles as needed.
			4. Set material type and thickness.
			5. Configure registration marks if printed job:
			  ○ Select correct camera/registration method
			6. Nest or position job layout if required.
			7. Open file in “Cut Files” folder on Desktop to send job to the Kongsberg queue.
				Opens cut file needed to cut prints / tool specs + material profiles must be correct to proceed

4	◆	Material Prep	1. Place material squarely on the table. 2. Align with table origin or registration marks. 3. Activate vacuum zones for material hold-down. 4. Ensure material is flat and secure.	Material must be aligned to appropriate activated vacuum zones to proceed

5	◆	Tool Setup	1. Install required tools:
			  ○ Knife tool (drag or oscillating)
			  ○ Creasing tool
			  ○ Router/spindle (if applicable) Requires routing Mat
			2. Verify tool depth and pressure settings:
			  ○ Adjust knife depth to just cut through material
			  ○ Set crease pressure appropriate to substrate
			3. Perform tool calibration if required.
				Proper tool must be utilized for each specific material to cut correctly

6	◆	Run Job	1. Load job from queue on the console.
			2. Set table top reference
			3. Perform a test cut (recommended for new materials).
			4. Press green START to begin operation.
			5. Monitor machine during operation:
			  ○ Watch for material shifting
			  ○ Listen for abnormal sounds
			6. Pause or stop immediately if issues occur.
				This is the actual cut production process

7	☑	Quality Check and Competion	1. Inspect finished pieces for:
			  ○ Clean cuts
			  ○ Proper creasing
			  ○ Accurate dimensions
			2. Adjust settings if needed and rerun test.
			3. Remove finished material from table.
			4. Clear debris and scrap material.
			5. Prepare table for next job.
				Quality Control / Cleanup

Notes: ☺

Maintenance (Basic Operator Level)

- Clean table surface daily.
- Check tools for wear and replace as needed.
- Empty dust extraction system (if routing).
- Inspect belts and moving parts visually.
- Report any issues immediately.

Troubleshooting

Issue	Possible Cause	Solution
Misaligned cuts	Incorrect registration	Re-run camera alignment
Incomplete cuts	Blade depth too shallow	Adjust depth/pressure
Material shifting	Insufficient vacuum	Activate more zones

Rough edges (routing)	Dull bit or wrong speed	Replace bit / adjust RPM

Notes / Best Practices

- Always run a test cut on new materials.
- Use correct tool for each substrate type.
- Keep tools sharp for best quality.
- Maintain clean vacuum zones for consistent hold-down.

Definitions:

Revision History	Description of Changes	Requested by	Date
Rev 1	First posting to intranet	Digital Manager	3/2026

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