

MANUFACTURING RECOMMENDATIONS

DEFINITIVE 65

DIAMOND TOOLING

Rough Tool Radius 0.30 - 0.50 mm

Fine Tool Radius 0.20 - 0.50 mm

MACHINING RECOMMENDATIONS

Back rough cut amount 0.3 - 0.5 mm

Back rough feed rate 3 - 4 in per min

Back rough spindle speed 7000 - 9000 rpm

Back rough cut amount (last pass) 0.05 - 0.15 mm

Back rough feed rate (last pass) 1.5 - 2.5 in per min

Back rough spindle speed (last pass) 7000 - 9000 rpm

Back final feed rate 1.5 - 2.5 in per min

Back final spindle speed 6500 - 8000 rpm

Back final cut amount 0.02 - 0.06 mm

Front rough cut amount 0.2 - 0.4 mm

Front rough feed rate 2 - 4 in per min

Front rough spindle speed 7000 - 9000 rpm

Front rough cut amount (clean up pass) 0.05 - 0.15 mm

Front rough feed rate (clean up pass) 1.5 - 2.5 in per min

Front rough spindle speed (clean up pass) 7000 - 9000 rpm

Front final feed rate 1.5 - 2.5 in per min

Front final spindle speed 7000 - 9000 rpm

Front final cut amount 0.02 - 0.10 mm

Please note: These are typical values. Always check the certificate of compliance supplied with the goods for the actual values of the batch.

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Environment Control

For best manufacturing conditions Contamac recommends 21°C (± 2) with a relative humidity of 45% - 60%.

Polishing

If polishing is required the recommended polish compound is Contapol 2 with a spindle speed of 500 – 2000rpm and using minimal weight. The duration of the polishing cycle should be kept to a minimum (10 – 30 seconds).

Blocking

Use low temperature blocking wax with an operational temperature of 60°C such as Contamac Low Melt Wax.

De-Blocking

We recommend the use of Isopar E, Petroleum Ether or equivalent in an ultrasonic bath for dissolving blocking wax and cleaning the lens. The solvent in the ultrasonic bath must not be allowed to become overheated and should be changed frequently. The solvent should be dried off the lens using a medical grade tissue.

Hydratation, Sterilisation and Storage

Hydration of the DEF65 material should be performed in sterile buffered saline with a pH of 7.40 (7.20 - 7.60). Failure to accurately control within the pH limits derived for this material could result in incomplete hydration.

To ensure complete hydration of the lenses manufactured from our DEF65 material, a four-step hydration process is required.

STEP 1: For initial hydration place the dry finished lenses into sterile buffered saline and allow the lenses to hydrate at room temperature 20°C (± 2) for one to two hours.

STEP 2: Change saline and place the glass vial containing the lenses into an incubator overnight (>16 hours) at 60°C (± 5), alternatively place the lenses into baskets and place into a heated water bath at 60°C (± 5).

STEP 3: Take the lenses out of the incubator and allow them to thermally equilibrate to room temperature 20°C (± 2) before measuring the hydrated lens parameters. Please note that at this stage full hydration of the lenses has typically not been achieved.

STEP 4: As observed with many Silicone Hydrogel materials, maximum hydration is only achieved after performing a single full autoclave cycle. An allowance of expansion of approximately 0.1 mm in lens diameter should be taken into account for the final step of the hydration process. The margin of expansion is predictable within a batch but will exhibit limited inter-batch variability. We would recommend sterilising at a temperature of 121°C for a duration of 30 minutes.

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The swell factor information provided by Contamac with each batch of material is intended as general guidance and the precise swell factors should be investigated by each individual laboratory as it pertains to their specific manufacturing processes and lens designs.

Reference

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