

high-speed machining systems



FSP 300X 5 Axis



Case Study: Aluminum Lid-Mold for Food Packaging

| Program ID | Extension | Tool Ball | Taper | Spindle Speed | Cutting Feed |
|---------------|-----------|-----------|-------|---------------|--------------|
| Mold_Roughing | 1.75 | 0.5 | 0 | 32,000 | 330 |
| Semi_Fin_Mid | 1.0 | 0.25 | 0 | 35,000 | 275 |
| Finish | 1.0 | 0.125 | 0 | 38,000 | 275 |
| Moore Logo | 1.0 | 0.125 | 0 | 38,000 | 60 |

- Material: 6061 Aluminum Block
- Size: 50 mm x 185 mm x 240 mm

Total cutting time for complete mold:
1 Hours 20 Minutes

specifications

FSP 300X

Capacity

| | |
|--|-------------------------------------|
| Travel X axis | 420 mm (16.54 inches) |
| Travel Y axis | 320 mm (12.60 inches) |
| Travel Z axis | 310 mm (12.20 inches) |
| Travel B axis | 230 degrees (25+180+25) |
| Travel C axis | Infinite |
| B axis centerline to spindle nose (Z axis) | 100 mm to 400 mm (3.94 - 15.75 in.) |
| Table Load | 27 kg (60 lbs.) |
| Maximum Swing (C axis rotary) | 300 mm (11.81 inches) |

Speeds and feeds

| | |
|---|---------------------------------|
| Speed range | 200 to 30,000 rpm |
| Spindle speed | 10KW 13.4 HP |
| Maximum speed (B axis swivel) | 140 rpm |
| Maximum speed (C axis rotary) | 210 rpm |
| Rapid feedrate (X, Y, & Z axes) | 30,000 mm/min. (1181 IPM) |
| Contouring feedrate (X, Y, & Z axes) | 20,000 mm/min. (787 IPM) |
| Maximum axis acceleration (X, Y, & Z axes) | 16.6 m/sec ² (1.7 G) |
| Maximum axis acceleration (B axis swivel) | 130 rad/sec ² |
| Maximum axis acceleration (C axis workhead) | 300 rad/sec ² |

Accuracy

Positioning: DIN/ISO 230-2

| | |
|---|---------------------------|
| Positional uncertainty P: X, Y, & Z axes | 0.004 mm (0.00016 inches) |
| Positional uncertainty P: B & C axes | 10 arc seconds |
| Positional uncertainty PA: X, Y, & Z axes | 0.003 mm (0.00012 inches) |
| Positional uncertainty PA: B & C axes | 5 arc seconds |

Geometric: Straightness

| | |
|---------------|--------------------------|
| X, Y & Z axes | 0.005 mm (0.0002 inches) |
|---------------|--------------------------|

Geometric: Squareness

| | |
|------------------|---------------------------|
| XY, XZ & YZ axes | 0.0076 mm (0.0003 inches) |
|------------------|---------------------------|

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