TECHNOLOGY CHARACTERISTICS

CNC Press **Technology**

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SSI Sintered Specialties is an industry leader in metal parts manufacturing through press and sinter, with a fleet of 39 conventional and CNC presses ranging from 20-880 tons, including 32 high temperature furnaces. The below characteristics describe what parts are fit for this process.

MATERIAL AVAILABILITY

There is a wide range of options available for materials in conventional powder metallurgy. This includes - but is not limited to - stainless steels and chromium steels for high temperature sintering and dual materials like soft magnetic and non-magnetic layered materials, which can be applied radially. Engineered custom grades are also available.

CNC TECHNOLOGY IS BEST FIT FOR:

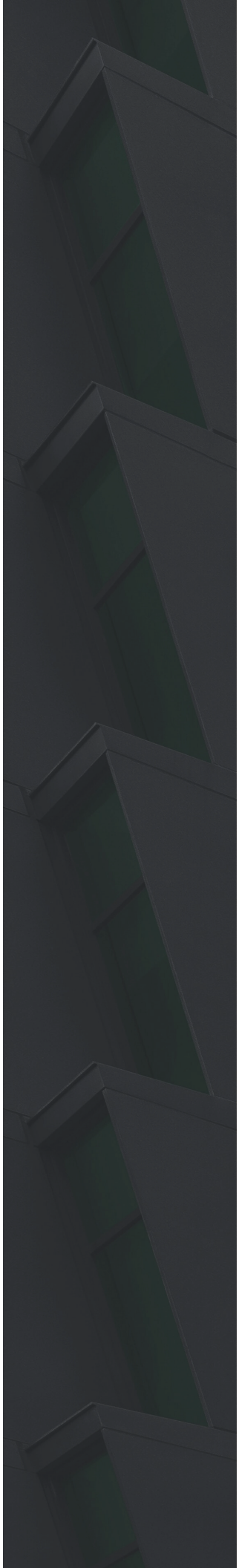
- Four to six level components, where every level can be precisely controlled and managed
- Components with undercut features
- Applications requiring high temperature sintering

DESIGN GUIDELINES:

- Projected area: 25 - 510 square mm
- Part length: 3 - 100 mm
- Minimum wall thickness: 2 mm
- OD: 25 - 250 mm
- Aspect ratio: 10:1

DESIGN FEATURES:

- **Moderately complex 3D parts with these features:**
  - Combining multiple parts into one
  - Undercuts, grooves, slots & depressions
  - Net shape capabilities
  - Knurled surfaces on punch faces
  - External and internal threads as secondary operations
  - Light weighting: only putting material where needed
  - Protrusions: bosses



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DIMENSIONAL PRECISION

- High temperature sintering: +/- 0.25 mm
- Conventional sintering: +/- 0.1%
- +/- 100 microns in direction of pressing

MINIMUM RADIUS

- 250 - 500 microns, depending on locations

SUFACE FINISH

- 1.6 um punch surfaces, in line with MPIF standard 58
- 0.8 um die wall surfaces, in line with MPIF standard 58

DRAFT

Draft is typically not required, with some exceptions for shelf dies and step core rods.

TOOLING

Tooling is required, with cost dependent on application complexity and number of levels.