

TECHNOLOGY CHARACTERISTICS

# CNC Press Technology



# Technology Characteristics

DSB Technologies 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:  $\pm 0.25$  mm
- Conventional sintering:  $\pm 0.1\%$
- $\pm 100$  microns in direction of pressing

## **MINIMUM RADIUS**

- 250 - 500 microns, depending on locations

## **SURFACE FINISH**

- 1.6  $\mu$ m punch surfaces, in line with MPIF standard 58
- 0.8  $\mu$ m 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.