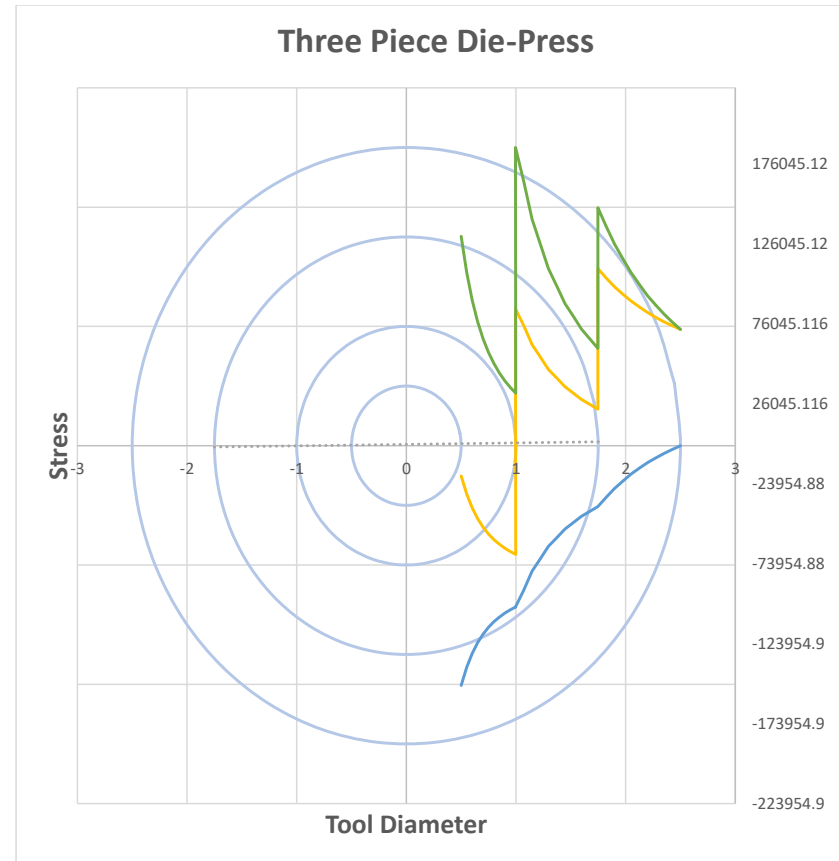


| Input                     |          |               |
|---------------------------|----------|---------------|
| Insert                    | Material | Carbide(ND20) |
|                           | ID       | 1             |
|                           | OD       | 2             |
| Middle Insert             | Material | M2(RC59-61)   |
|                           | ID*      | 1.99          |
|                           | OD       | 3.5           |
| Casing                    | Material | H13(RC46-49)  |
|                           | ID       | 3.49          |
|                           | OD       | 5             |
| Internal forming Pressure |          | 150000        |

\* 3 Ring Press Fit: Casing and Middle Insert are assembled first. Then the insert is press-fitted into the Middle Insert + Casing Assembly. Middle Insert ID is measured after assembly with Casing.

| Results   |  |             |
|---|--|-------------|
| Interference Pressure: Middle - Casing          |  | 18062.48976 |
| Interference Pressure: Insert - (Middle+Casing) |  | 67922.70162 |
| Insert  | Disp Outer Surface (Radius) Interference 2 | 0.001336    |
|   | Tangential Stress - Inside Surface         | -18930.727  |
|   | Tangential Stress - Outside Surface        | -67999.478  |
|   | Radial Stress - Inside Surface             | -150000     |
|   | Radial Stress - Outside Surface            | -100931.249 |
| Due to Interference 2, new ID                   |  | 0.997487    |
| Middle Insi                                     | Disp Inner Surface (Radius) Interference 1 | 0.003664    |
|   | Tangential Stress - Inside Surface         | 85697.821   |
|   | Tangential Stress - Outside Surface        | 22839.644   |
|   | Radial Stress - Inside Surface             | -100931.249 |
|   | Radial Stress - Outside Surface            | -38073.072  |
| Casing  | Tangential Stress - Inside Surface         | 110809.245  |
|   | Tangential Stress - Outside Surface        | 72736.174   |
|   | Radial Stress - Inside Surface             | -38073.072  |
|   | Radial Stress - Outside Surface            | 0           |

| Study Information (Change as needed) |  |
|--------------------------------------|--|
| Part #                               |  |
| Study Date                           |  |
| Project                              |  |
| Name                                 |  |



**English Unit System**

Dia inches

Stress lbs

Pressure lbs/in<sup>2</sup>