
NAGFORM

PROGRESSION DESIGN SOFTWARE

MES_i

Metal Forming Systems, Inc.

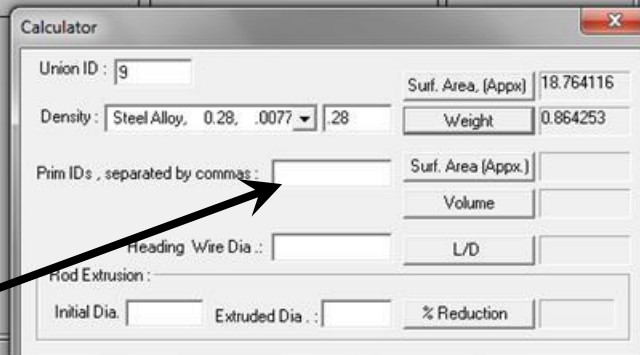
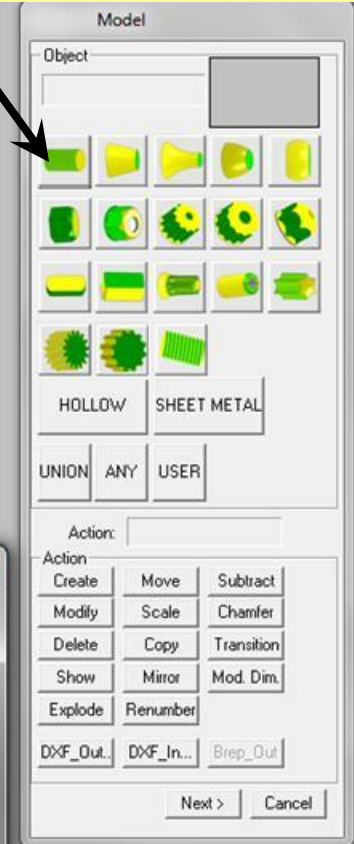
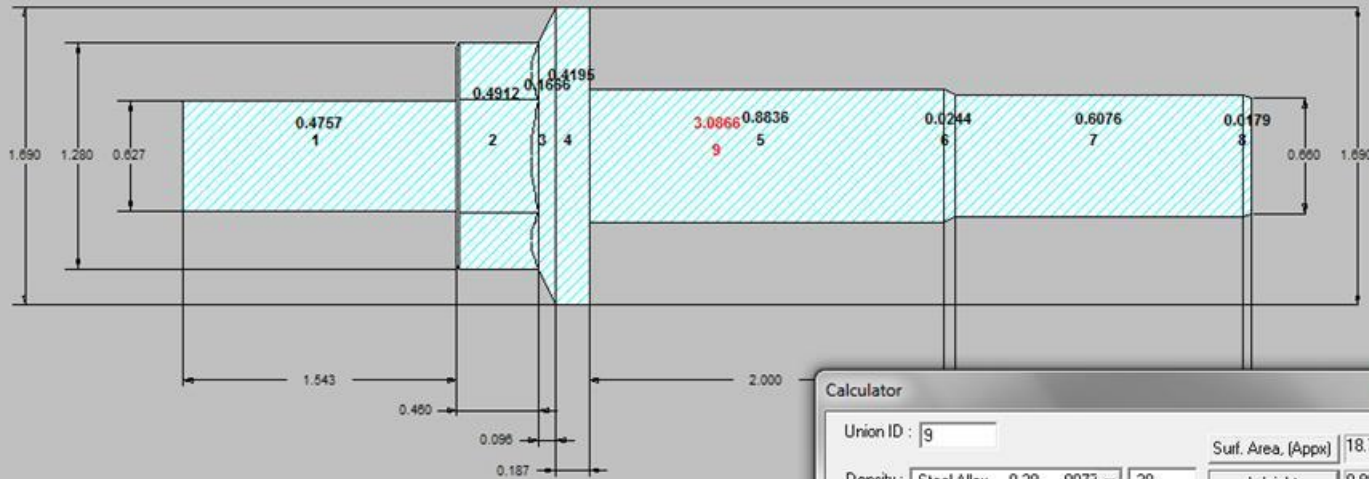
7974 N. Lilley Road

Canton MI -48187

www.nagform.com

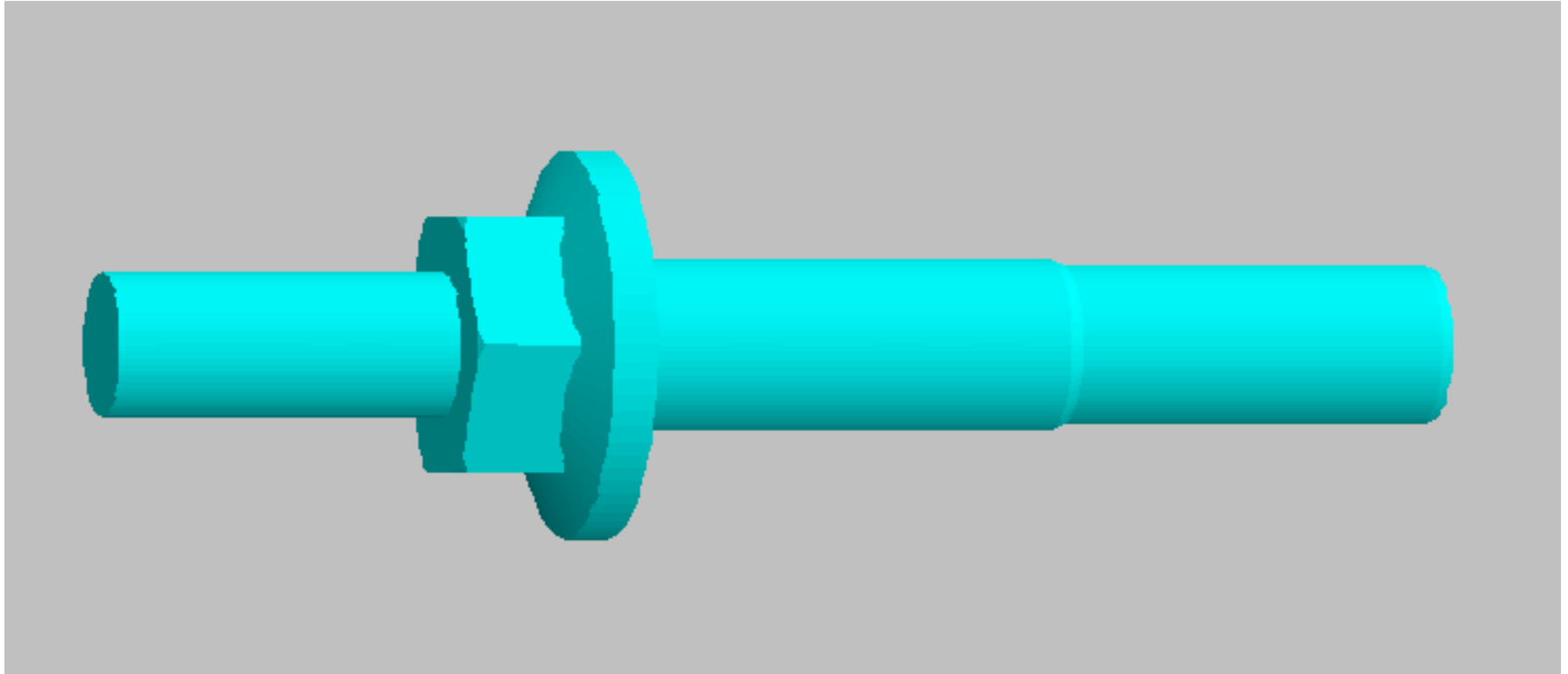
NAGFORM DESKTOP (MODEL SECTION)

The User creates the part by adding the primitives and specifying the dimensions

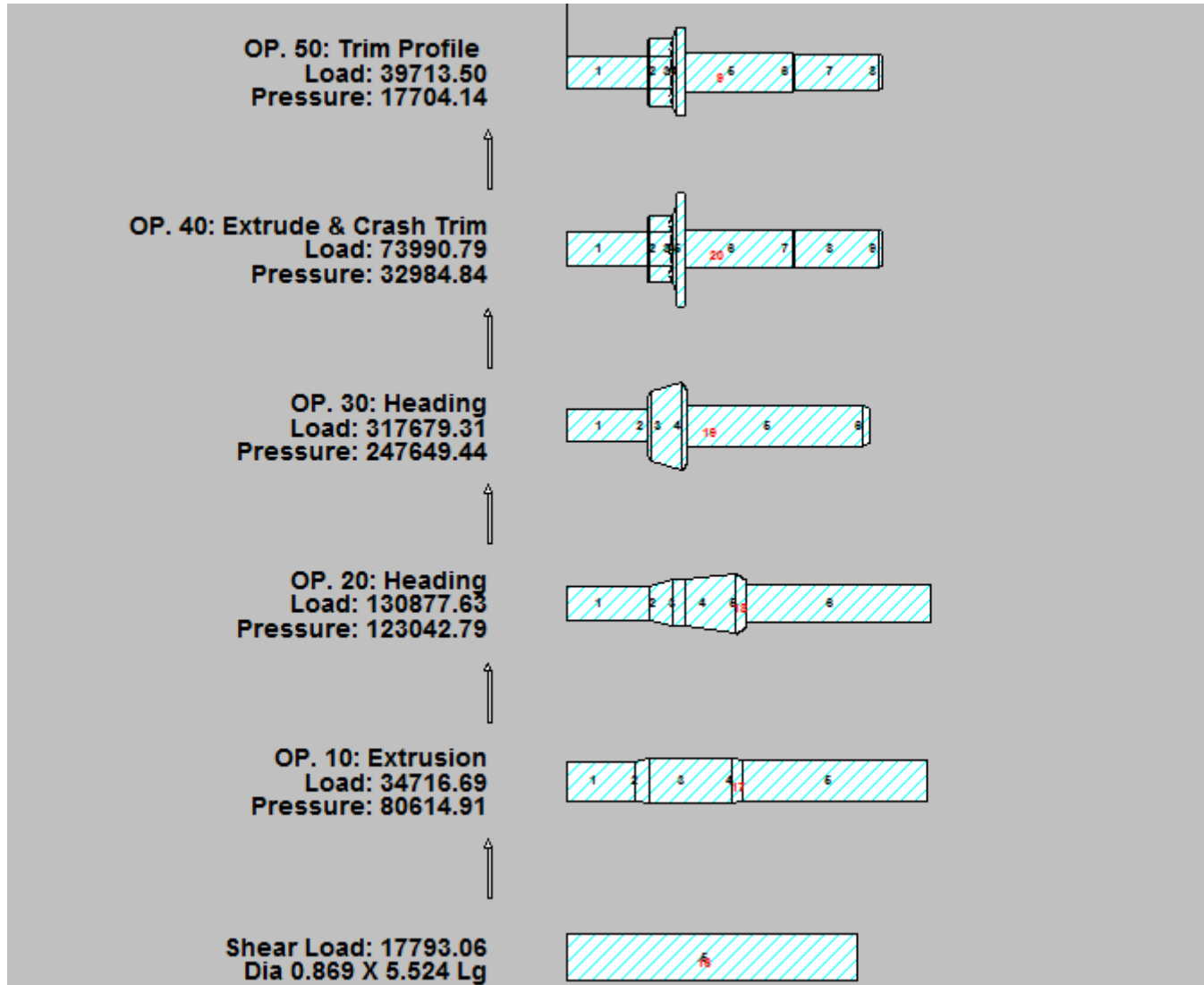


PART VOLUMES, SURFACE AREA AND WEIGHT

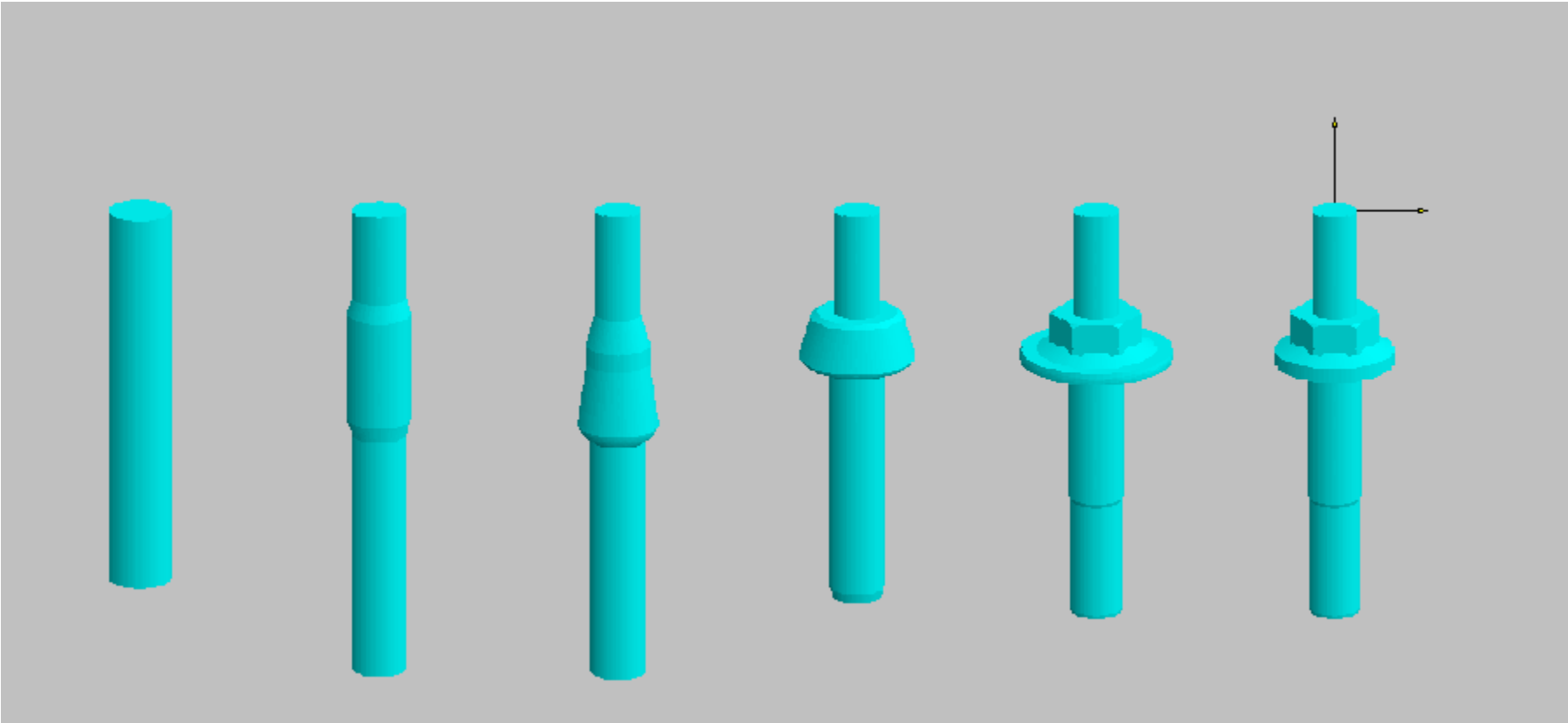
PART 3D RENDERED VIEW



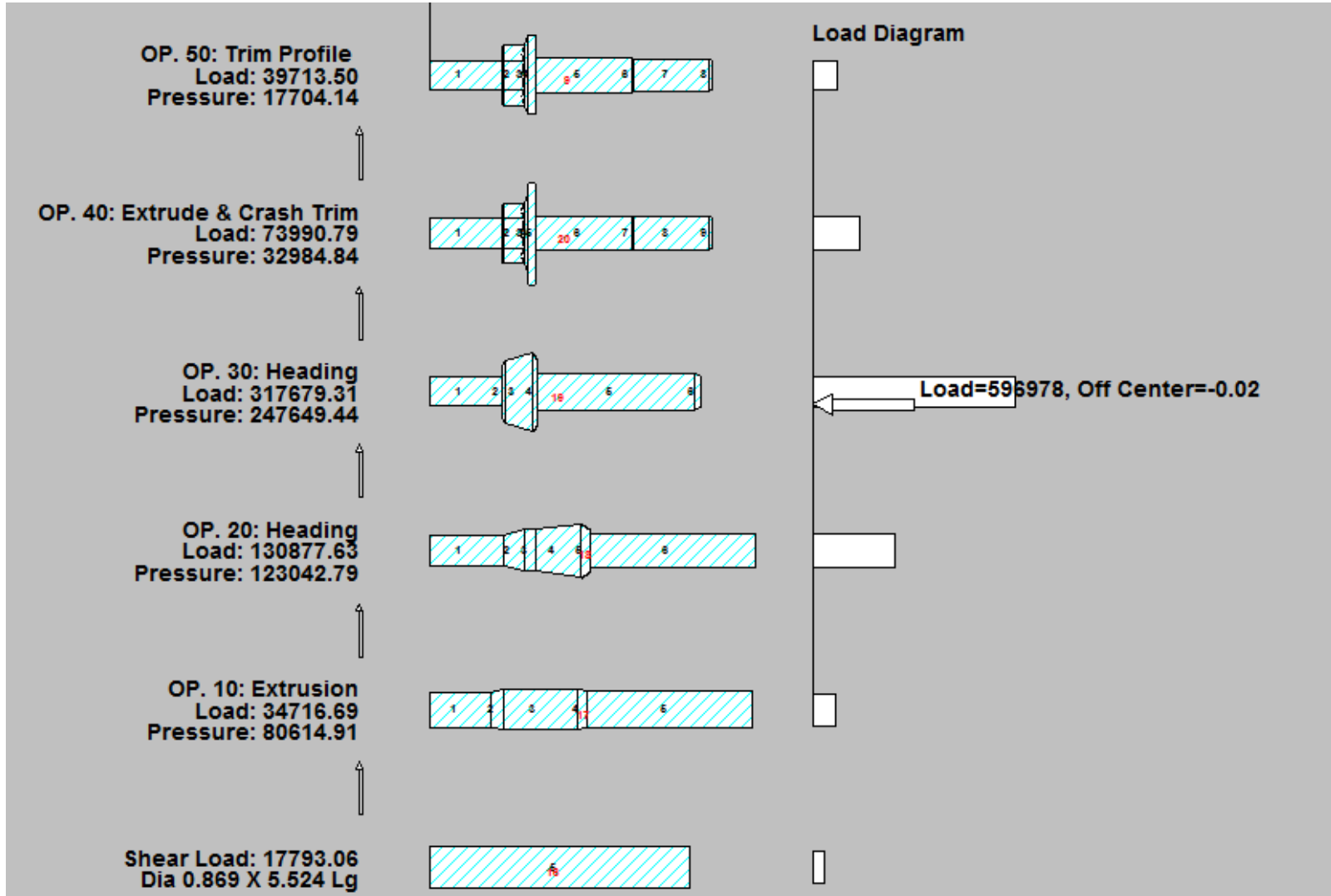
PROGRESSION DESIGN



PROGRESSION DESIGN – 3D RENDERED VIEW



ESTIMATED TOOL LOADS



MACHINE SUMMARY

TELLS THE USER WHICH OF THEIR MACHINES WILL BE ABLE TO MAKE THE DESIGN

OP. 50: Trim Profile
Load: 39713.50
Pressure: 17704.14

OP. 40: Extrude & Crash Trim
Load: 73990.79
Pressure: 32984.84

OP. 30: Heading
Load: 317679.31
Pressure: 247649.44

OP. 20: Heading
Load: 130877.63
Pressure: 123042.79

OP. 10: Extrusion
Load: 34716.69
Pressure: 80614.91

Shear Load: 17793.06
Dia 0.869 X 5.524 Lg

Load Diagram

Machine Selection

File: c:\programs\mfsi2\nagform\projects\display.mac

MACHINE SELECTION SUMMARY
Number of designs = 1

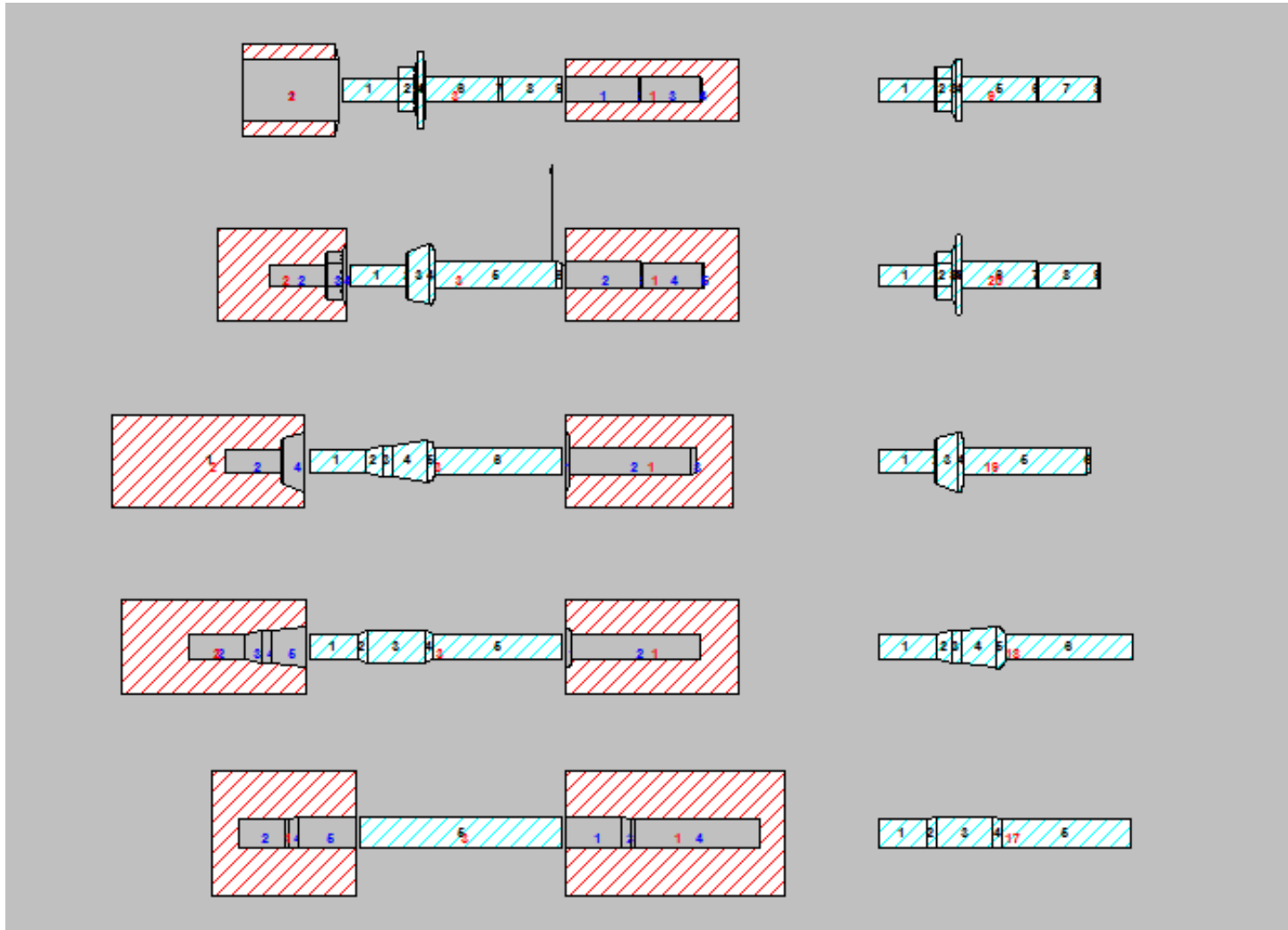
**** Design #1 ****

Blank dia = 0.869000, Blank length = 5.523700
Number of operations = 5
Form process Case=2070 - from preform #16 to preform #17
Estimated forming load = 34716.691406
Estimated forming pressure = 80614.906250

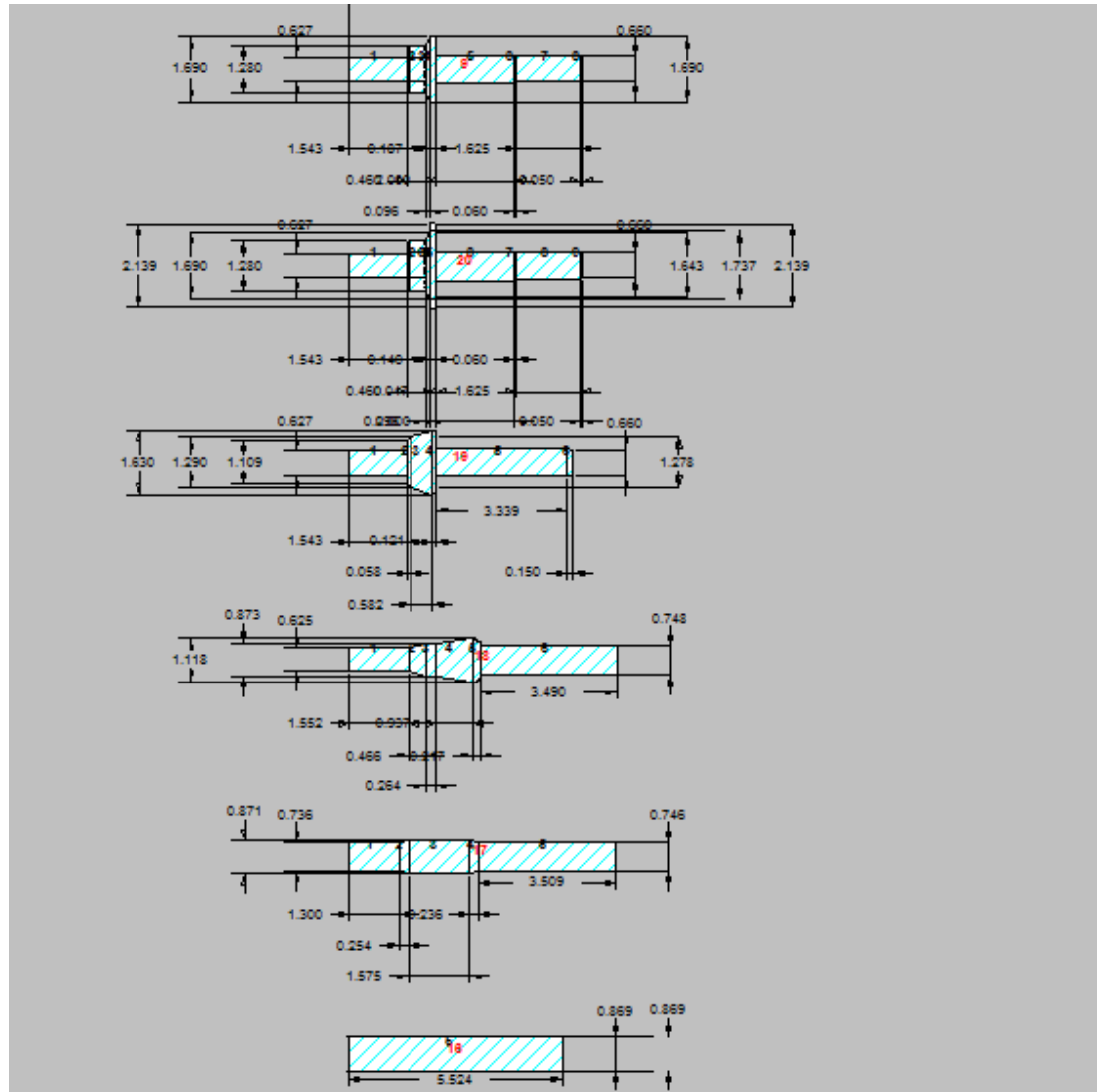
Estimated Part Space Required = 6.198683
Estimated Punch Stroke Required = 4.437522
Estimated Punch KO Required = 1.767522
Estimated Die KO Required = 2.670000
Estimated Die Sleeve Length Required = 2.860000

SP250: Blank Length of 5.523700 exceeds Machine's Max. Cut-Off Length spec. of 3.350000
SP360: Blank Length of 5.523700 exceeds Machine's Max. Cut-Off Length spec. of 5.000000
SP460: Blank Diameter of 0.869000 exceeds Machine's Max. Wire Diameter spec. of 0.748000
SP150: Load of 65.438816 tons exceeds Machine's capacity of 54.000000 tons

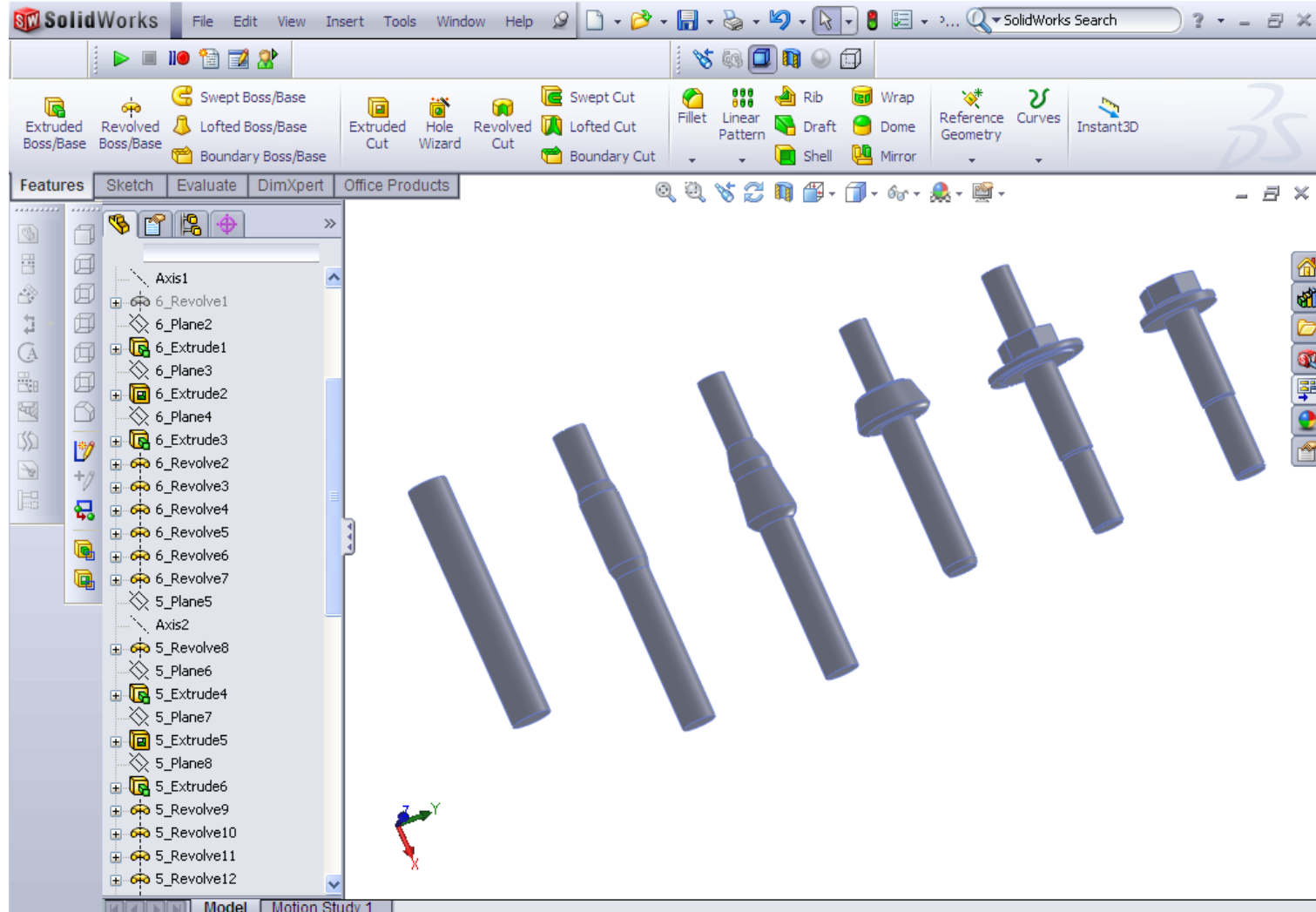
DEFAULT TOOLING



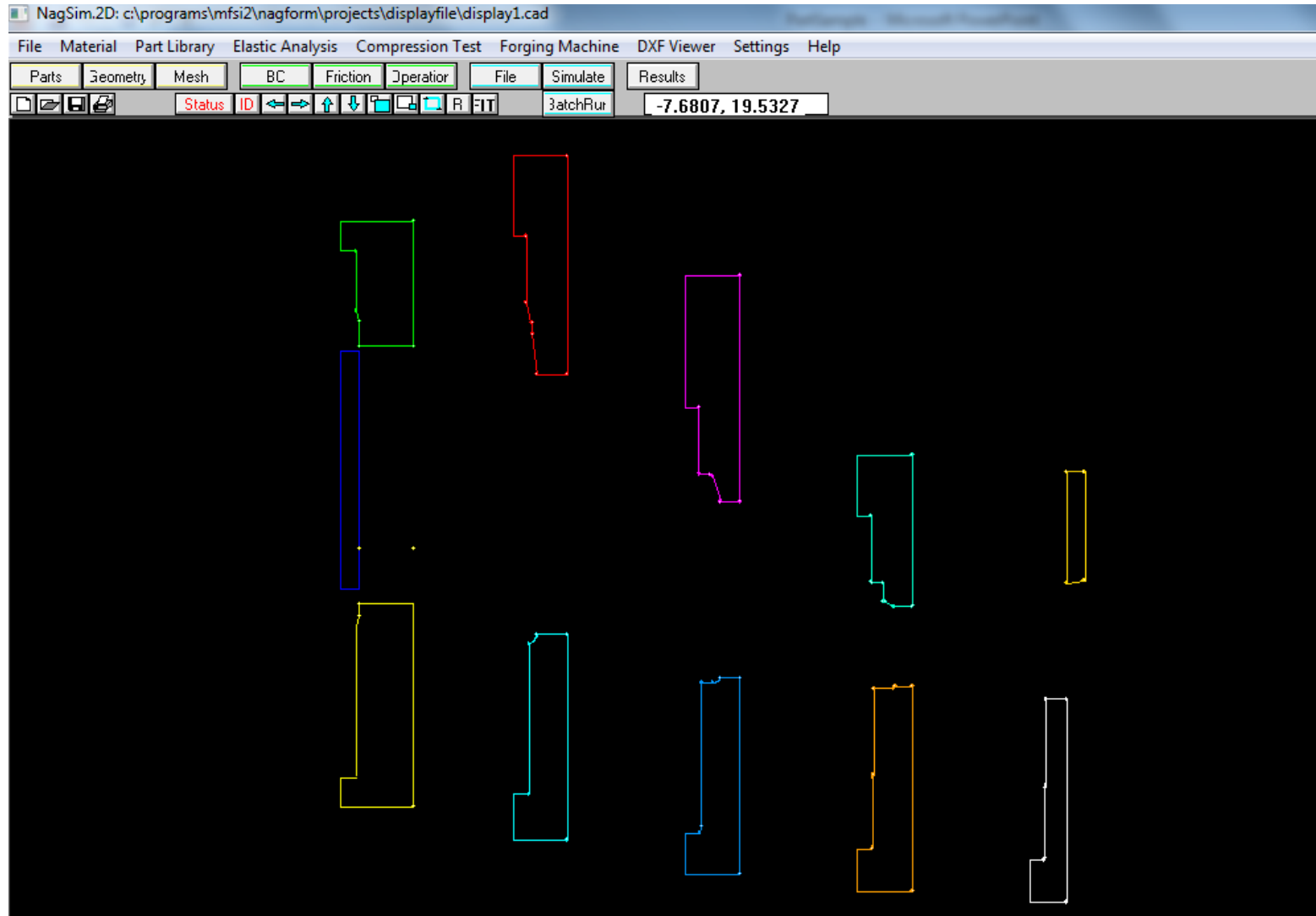
PROGRESSION DIMENSIONS



ALL PART, PROGRESSION & DEFAULT TOOLING CAN BE EXPORTED INTO ANY 2-D OR 3-D SOFTWARE



AUTOMATIC CREATION OF NAGSIM SIMULATION FILES (2D & 3D)



ADVANCE PROCESS CALCULATOR

Select Process ->

- Heading - Open
- Heading - Enclosed no Flash
- Heading - Enclosed w Flash
- Open Extrusion
- Trap Extrusion
- Back Extrusion
- Trimming / Shearing

Process Calculator

Part Material -> [] Assign 1010Amm

Basic Info:

Union ID : 11 Total Surface Area -Appx 5467.9449

Density : Steel Alloy, 0.28, .00 0.00770 Weight 78.265968

Prim IDs, separated by commas: [] Prim Surface Area -Appx []

Prim(s) Volume []

Select Process -> Back Extrusion

Back Extrusion

Starting Wire Dia: 22

Outside Dia, D: 16

Inside Dia Extruded, d: 10.7

Length Extruded, L: 7

Punch Land, l: 1

Calculate

Load, N: 201853.172

Pressure, N/mm2: 2244.803

Energy, N-mm: 781053.502

% Reduction: 44.72

Add To History

BACK EXTRUSION

NAGFORM contains an advanced process calculator to help calculate the approximate loads pressure etc. for various processes