

Course in ANSYS

Boolean's + meshing issues

Course Outline

Introduction

Lesson 1. Modeling reviewed – Boolean's

Lesson 2. Boolean's + meshing issues

Lesson 3. Operate + meshing issues

Lesson 4. Import + meshing issues

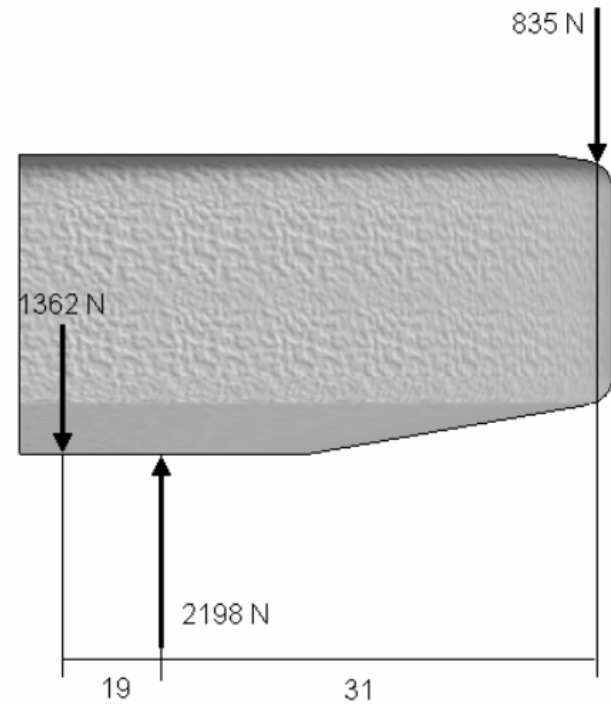
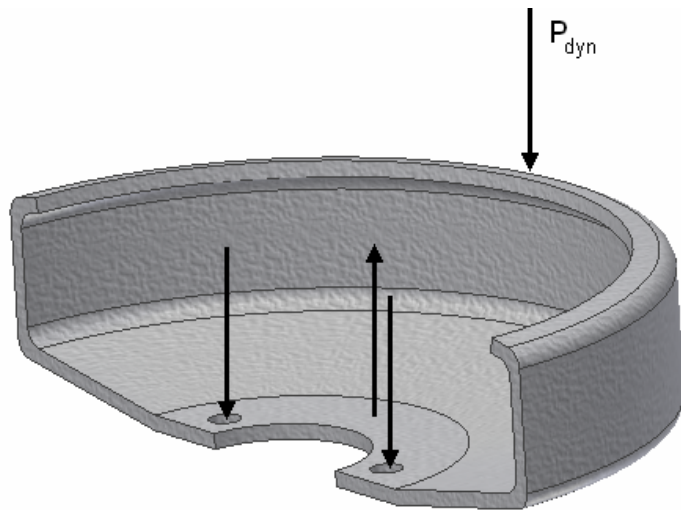
Lesson 5. Meshing – advanced topics

Modeling considerations

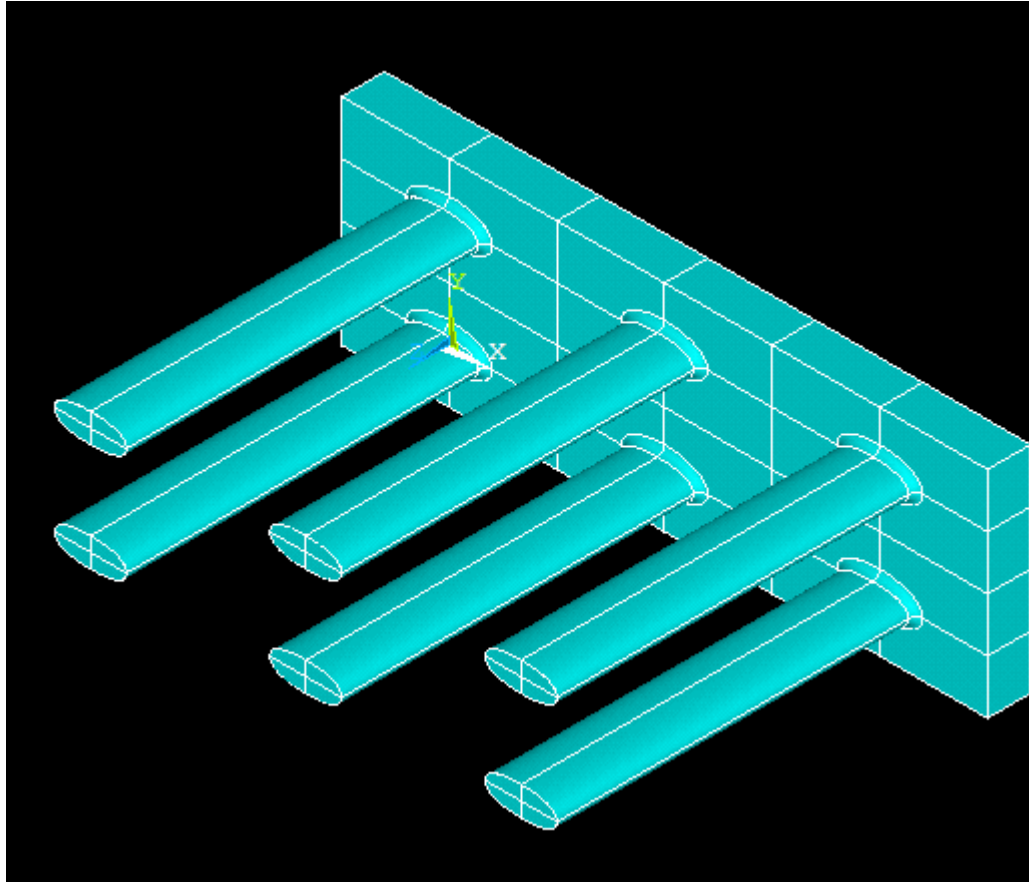
- Run through example240 and example241
- What element type should be selected for the grinding shield example?
- Mesh method?
 - Model storage *.lgw or *.db?
 - **Element type?**
 - Level of detail?
 - **Mesh method?**
 - Allow model modifications?
 - **Type of analysis to perform?**
 - **Material models?**
 - **Boundary conditions and loads?**

Modeling considerations

- Apply the boundary conditions and the loads indicated
- Solve
- Plot the deformed shape



Example - Fins



Example - Fins

```
/PREP7
ET,1,SOLID90
K, ,,,
K, ,15,,
K, ,15,7.5,,
K, ,,7.5,,
!Round bottom surface
K, ,6,,
K, ,6,-1,,
K, ,,3,,
K, ,-1,3,,
! Round top surface
K, ,,,1,
K, ,5,,1,
K, ,5,-1,1,
K, ,,2,1,
K, ,-1,2,1,
! Extra points
K, ,5,,2,
K, ,,2,2,
```

Example - Fins

```
LSTR, 1, 5
LSTR, 5, 2
LSTR, 2, 3
LSTR, 3, 4
LSTR, 4, 7
LSTR, 7, 1
LSTR, 5, 6
LSTR, 10, 11
LSTR, 12, 13
LSTR, 7, 8
LSTR, 10, 14
LSTR, 12, 15
LSTR, 10, 9
LSTR, 9, 12
LSTR, 9, 1
!*
L2TAN,-10,7
!*
L2TAN,-9,8
!*
L2TAN,-11,2
!*
L2TAN,5,12
```

Example - Fins

```
lesize,3,,,1,,,,,  
lesize,4,,,1,,,,,
```

```
lesize,16,,,2,,,,,  
lesize,17,,,2,,,,,
```

```
lesize,1,,,2,,,,,  
lesize,6,,,2,,,,,
```

```
lesize,13,,,2,,,,,  
lesize,14,,,2,,,,,
```

!

```
lesize,18,,,1,,,,,  
lesize,19,,,1,,,,,  
lesize,15,,,1,,,,,
```

! Areas

```
AL,2,3,4,5,16  
AL,16,6,1  
AL,17,14,13  
AL,15,13,1,18  
AL,16,17,18,19  
AL,6,19,14,15
```


Example - Fins

```
VEXT,1,2,,0,0,-6,,,,  
VEXT,3,, ,0,0,49,,,,  
VA,2,3,4,5,6
```

```
ACCAT,9,10
```

```
MSHAPE,0,3d  
MSHKEY,1  
VMESH,1,4,
```

```
VSYMM,X,ALL,, ,0,0  
VSYMM,Y,ALL,, ,0,0
```

```
VGEN,3,ALL,, ,30,, ,0  
VGEN,2,ALL,, ,15,, ,0
```