1. Step 1
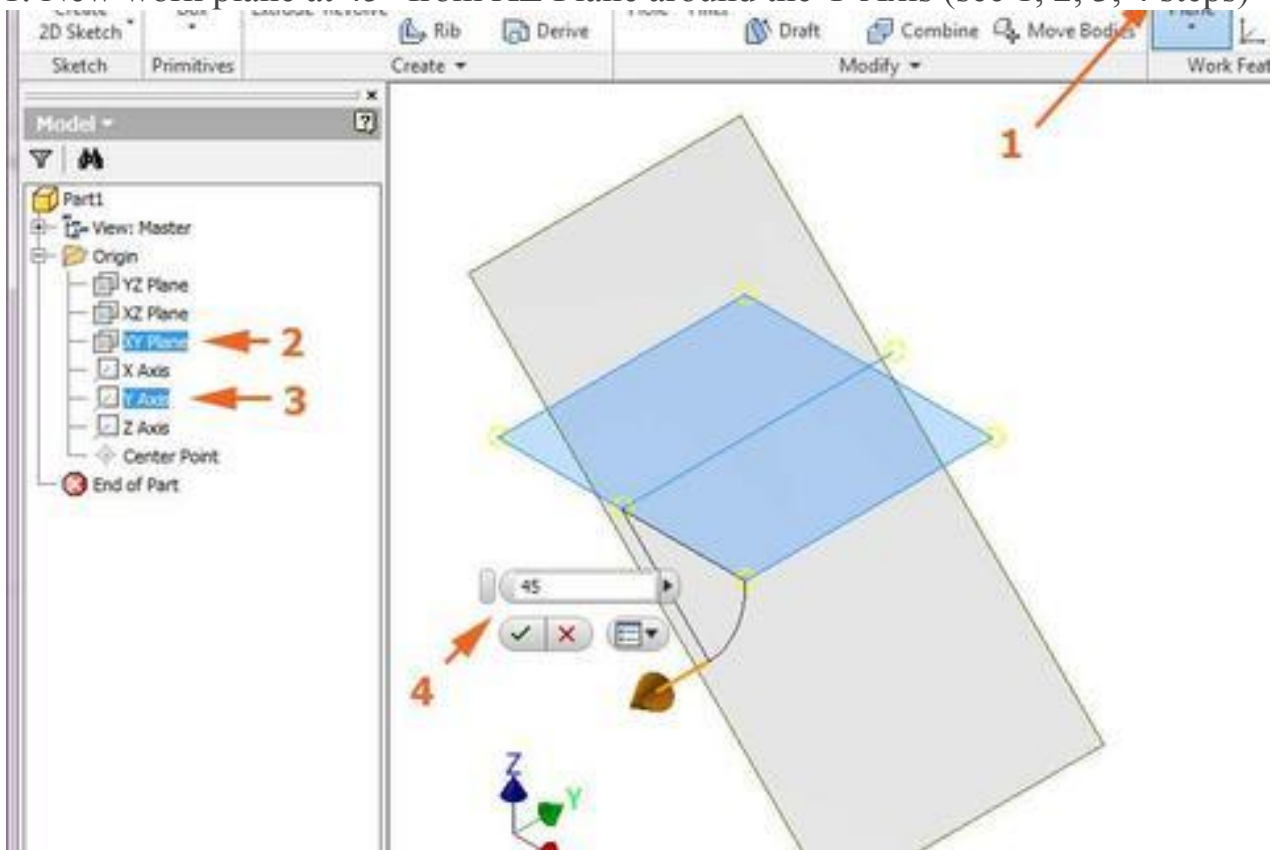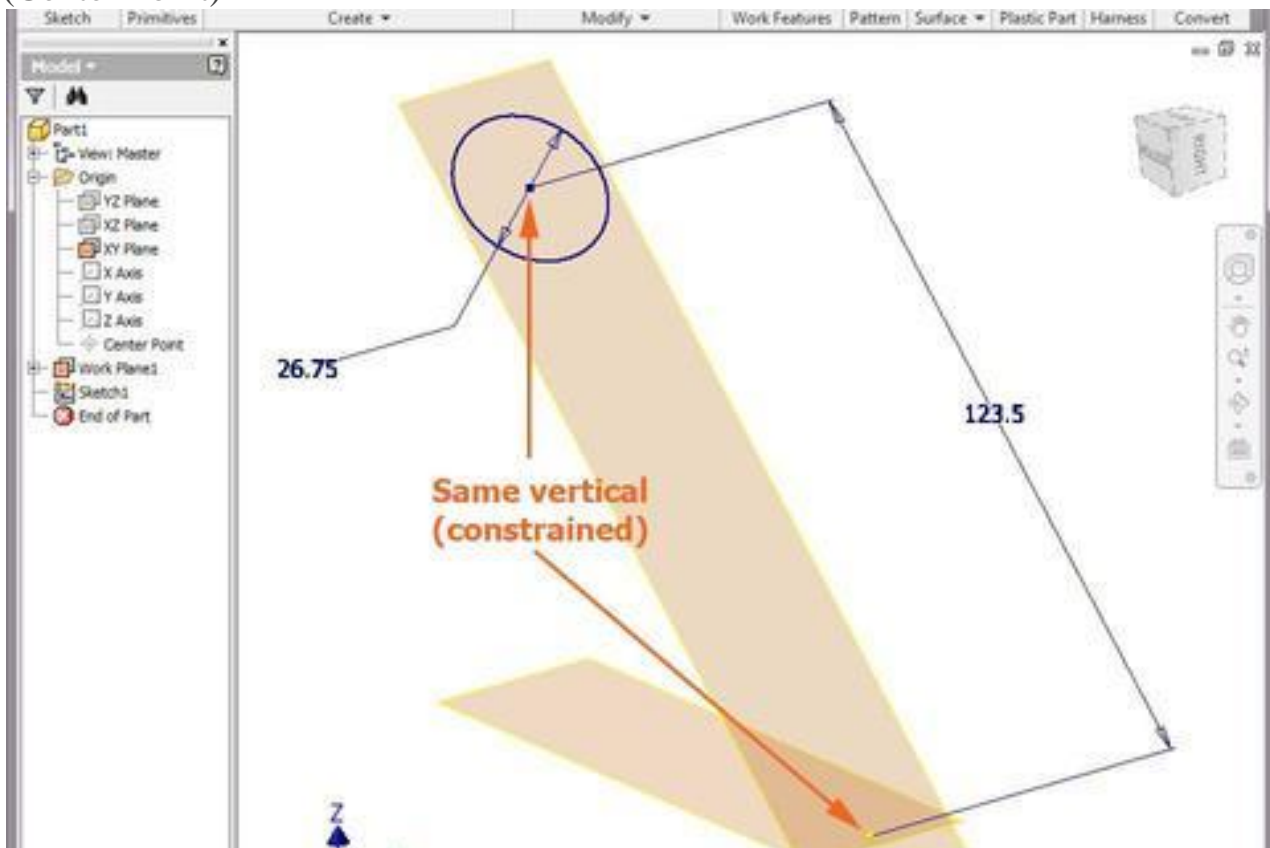
1. New work plane at 45° from XZ Plane around the Y Axis (see 1, 2, 3, 4 steps)
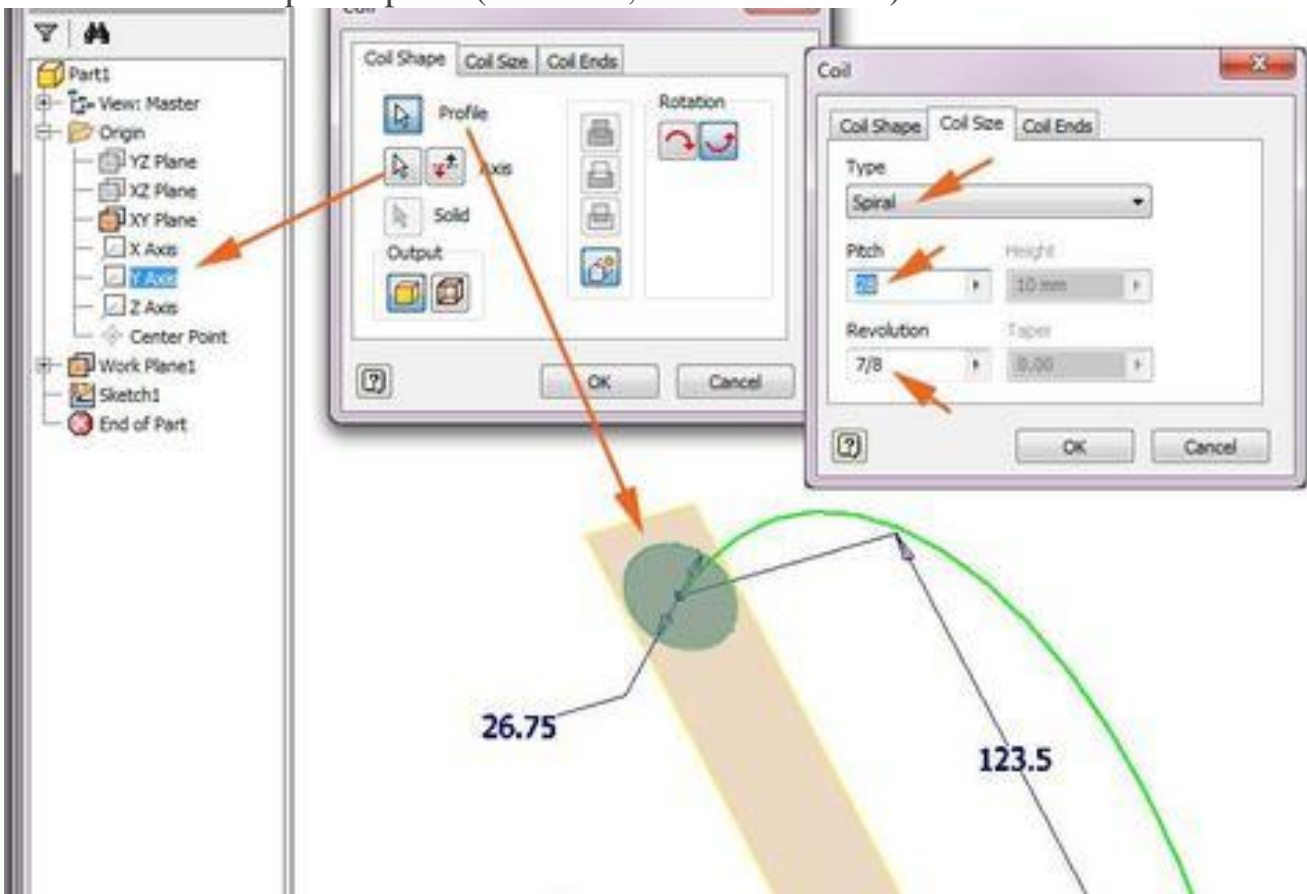

2. Step 2

2. New sketch: Circle Ø26.75 with center at 123.5 on the same vertical with the origin (Center Point)
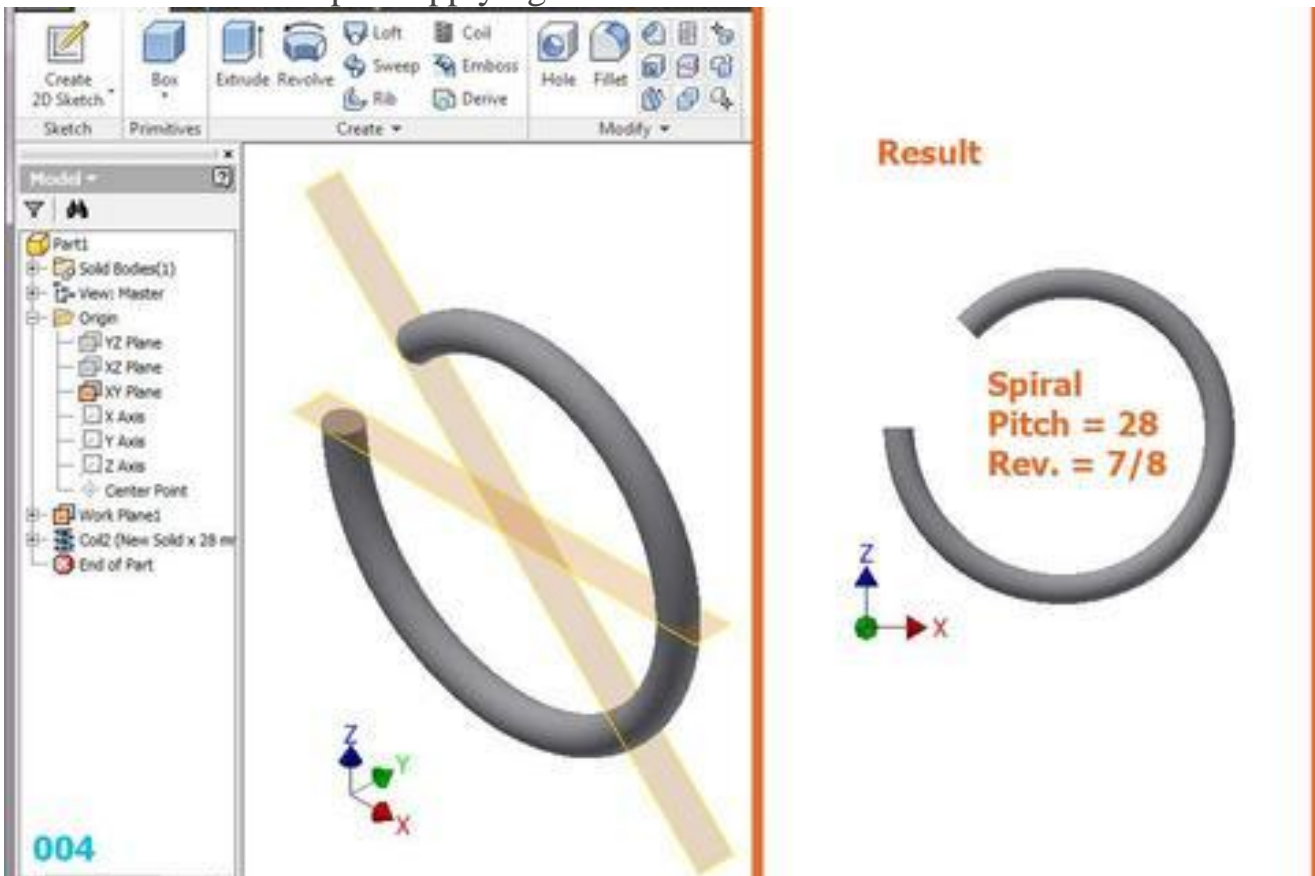
3. Step 3

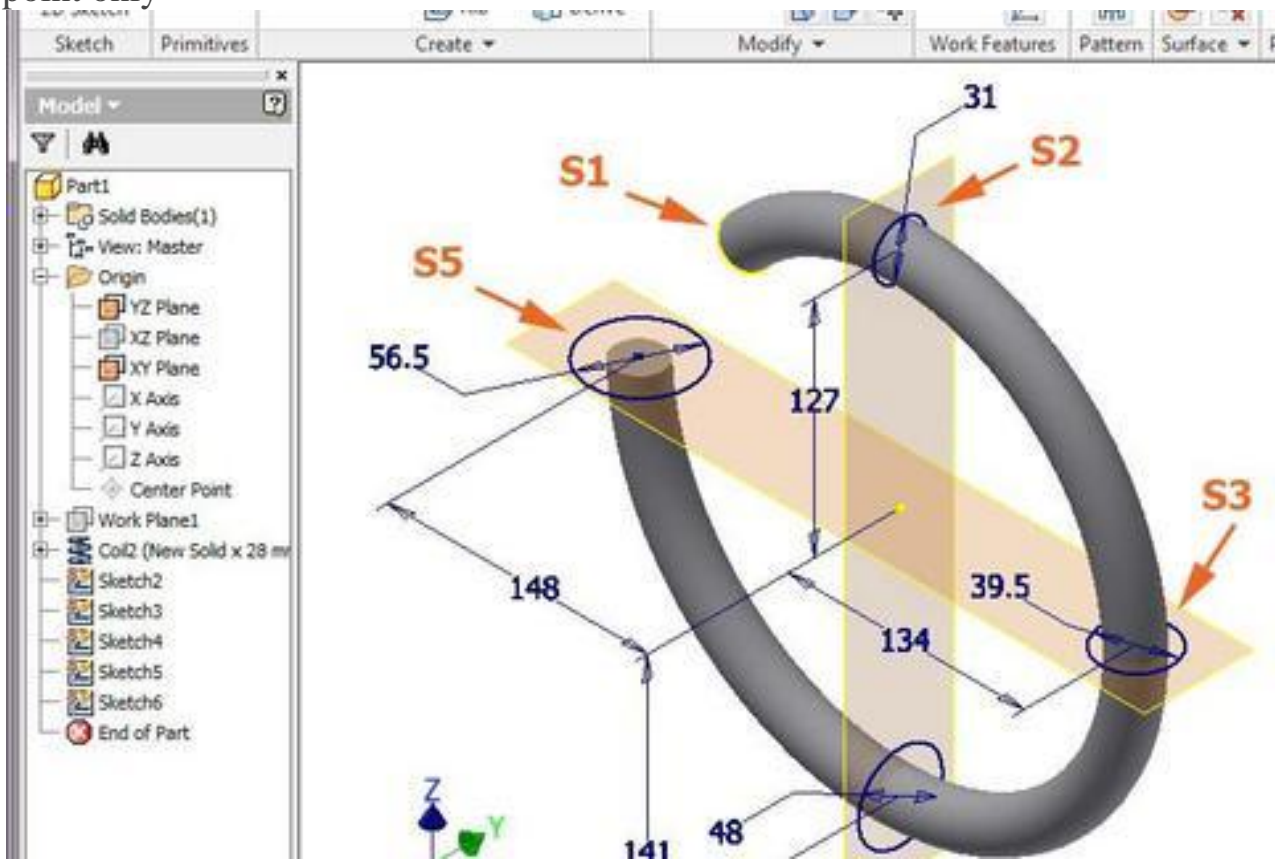3. Coil tool with Spiral option (Pitch=28, Revolution=7/8)

4. Step 4

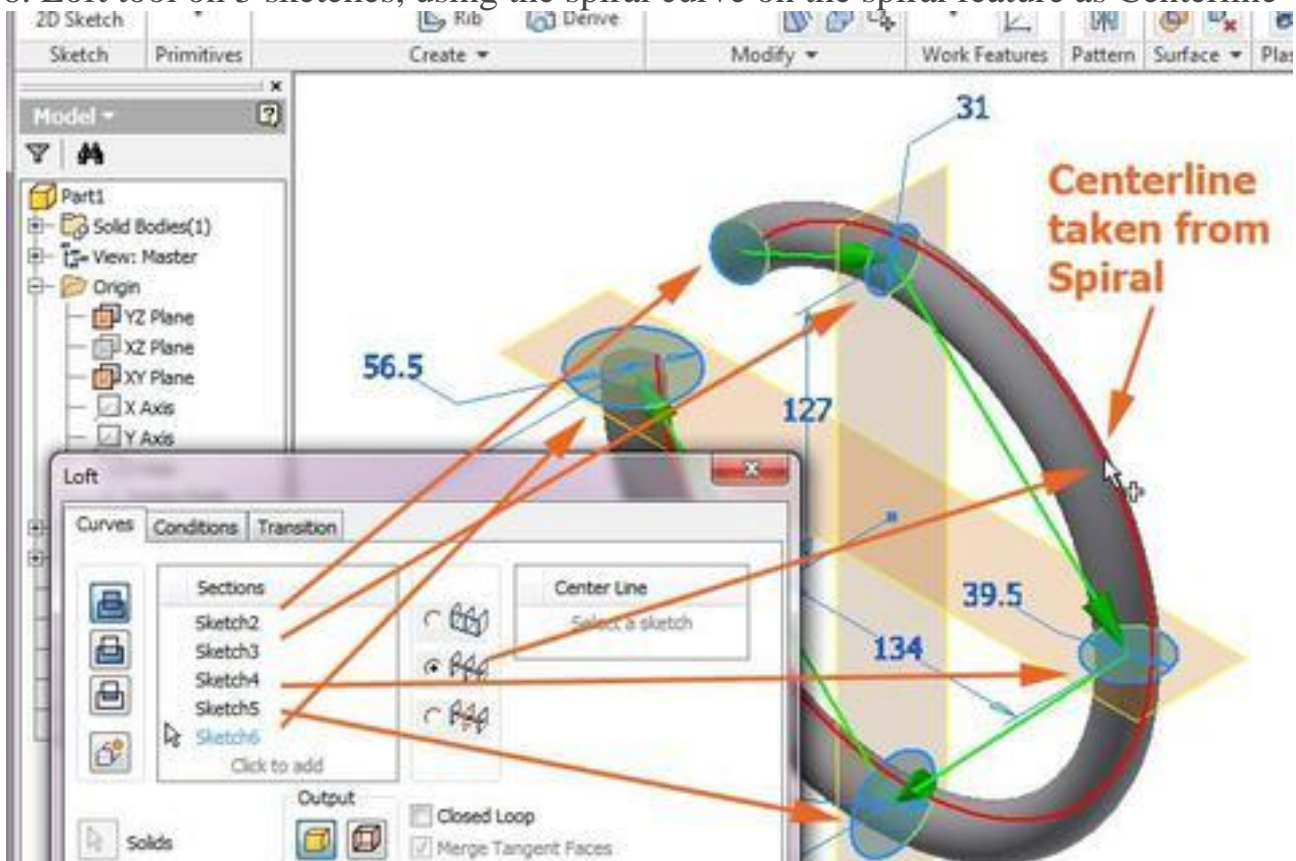4. Result from Coil/Spiral applying

5. Step 5

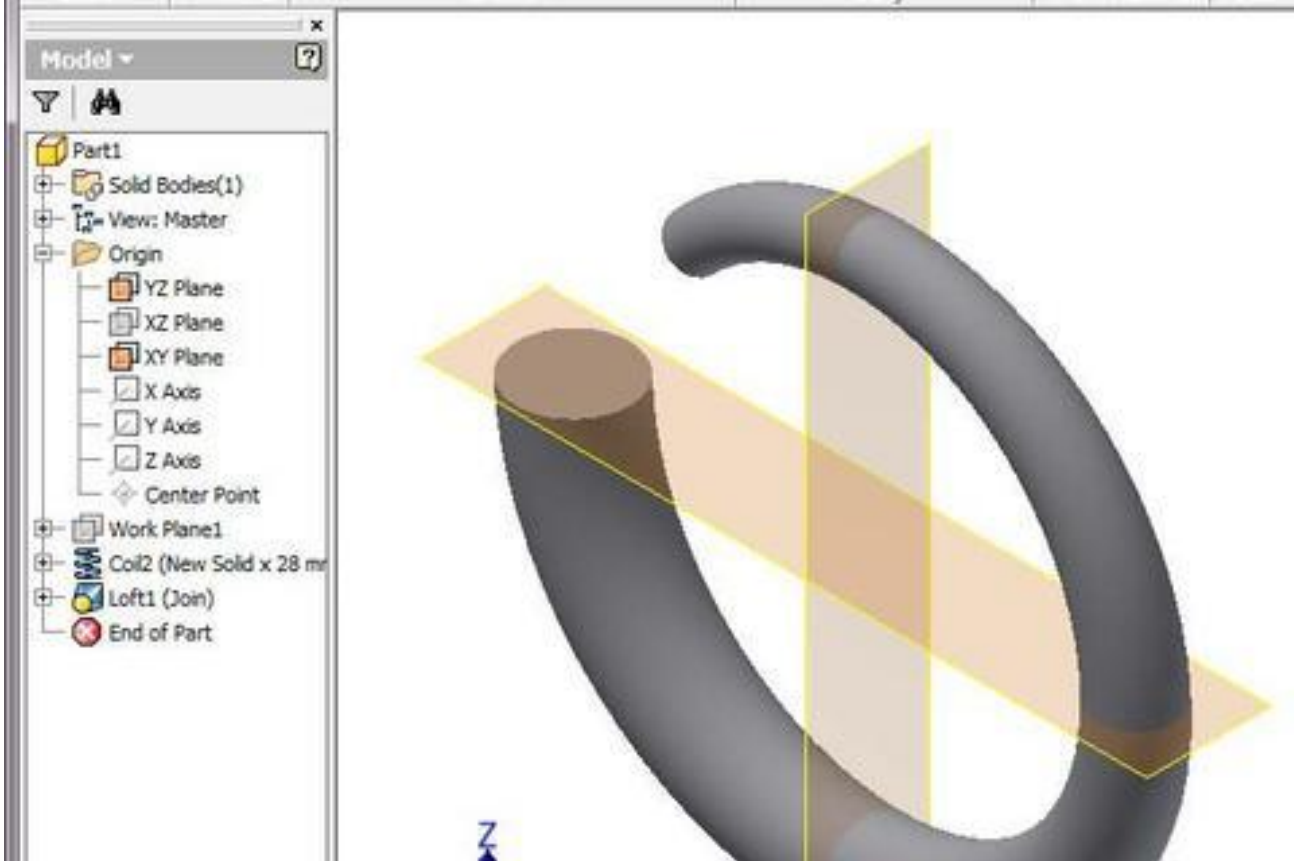5. Creating of 5 sketches (5 circles), where the last 4 of them are related to the Center point only

6. Step 6

6. Loft tool on 5 sketches, using the spiral curve on the spiral feature as Centerline
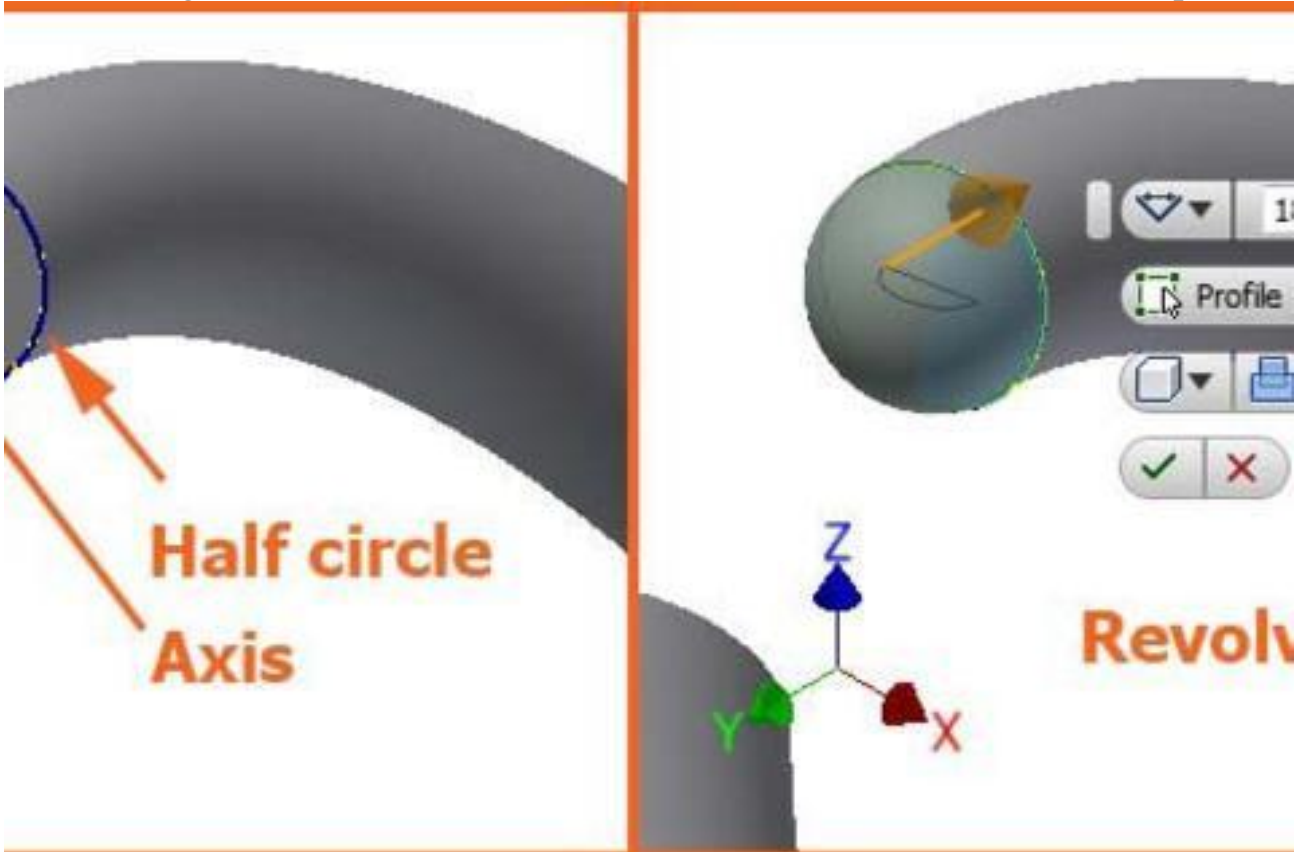
7. Step 7

7. Result from Loft tool applying

Model ▾

Part1
  Solid Bodies(1)
  View: Master
  Origin
    YZ Plane
    XZ Plane
    XY Plane
    X Axis
    Y Axis
    Z Axis
    Center Point
  Work Plane1
  Coil2 (New Solid x 28 m
  Loft1 (Join)
  End of Part

8. Step 8

8. Revolving half circle on S1 around its diameter on 180° to create a hemisphere
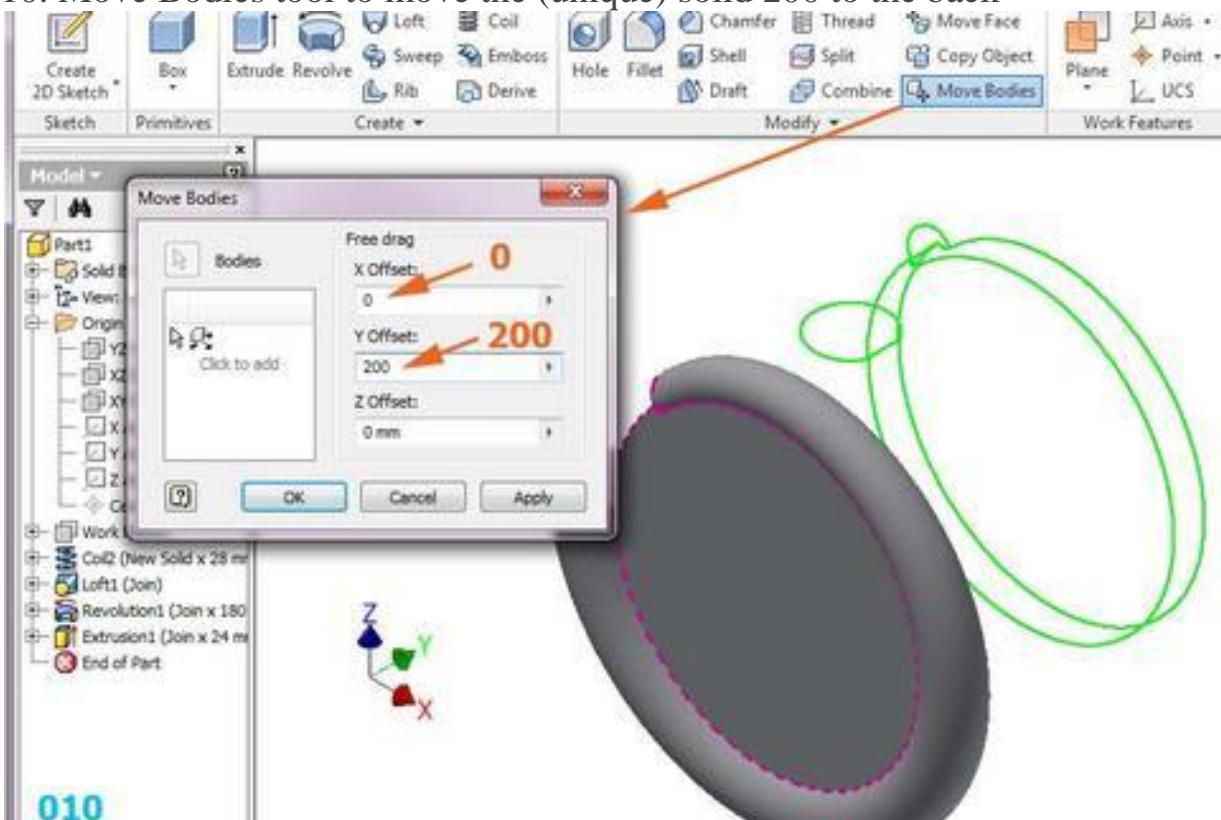

Half circle
Axis

Profile

Revolv

9. Step 9

9. Extrude tool on a circle (radius=123.5) in the Center point using a 24 simmetrical distance
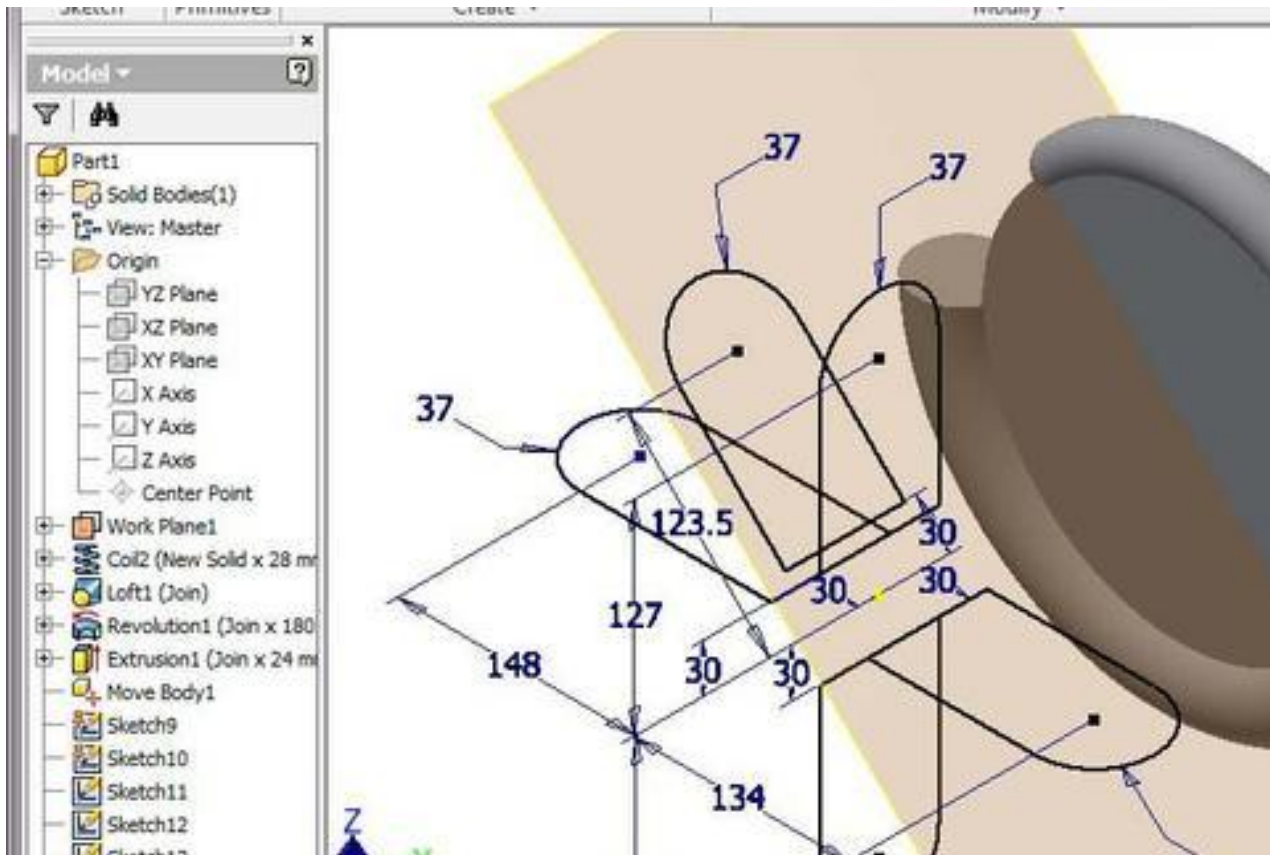

10.   Step 10

10. Move Bodies tool to move the (unique) solid 200 to the back
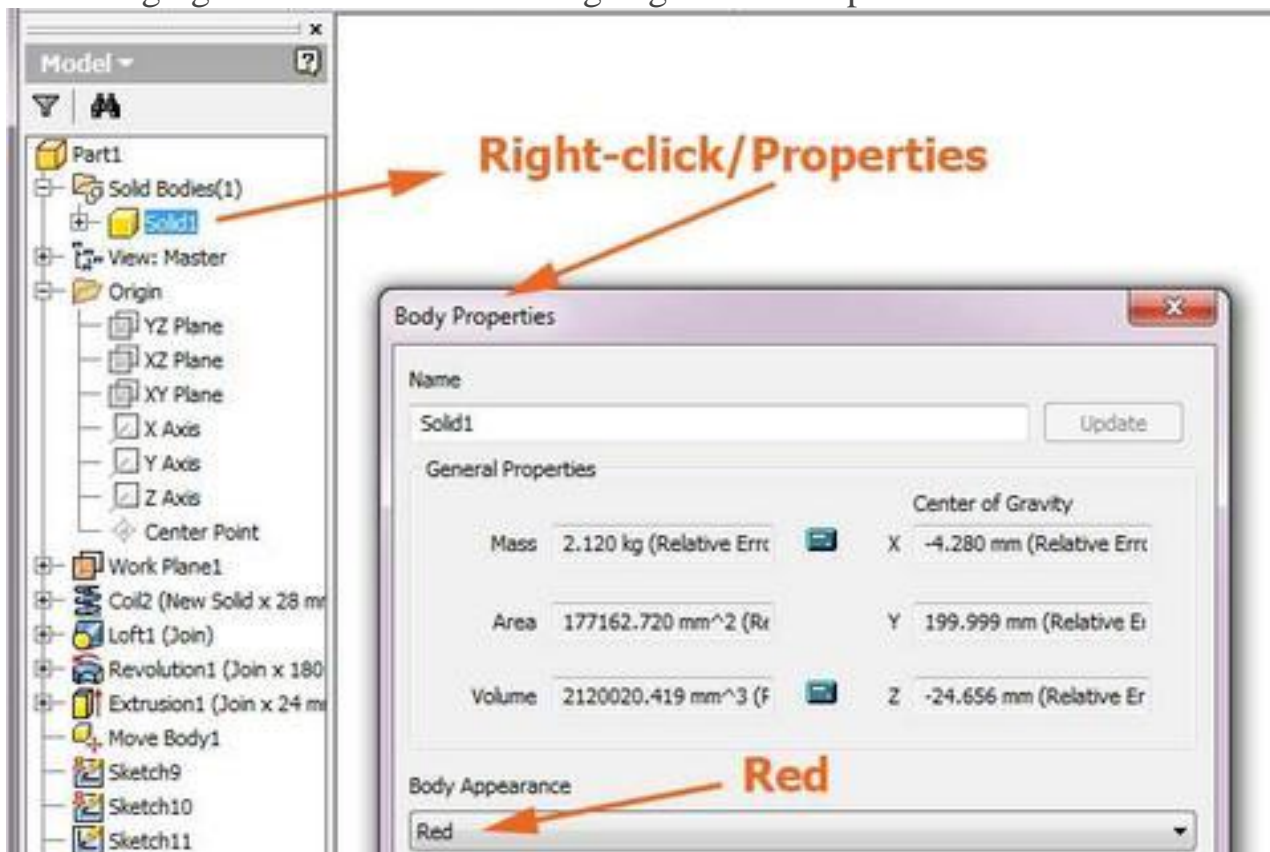
11.   Step 11

11. New 5 similar sketches (only one dimension differs), related to the same Center point as above
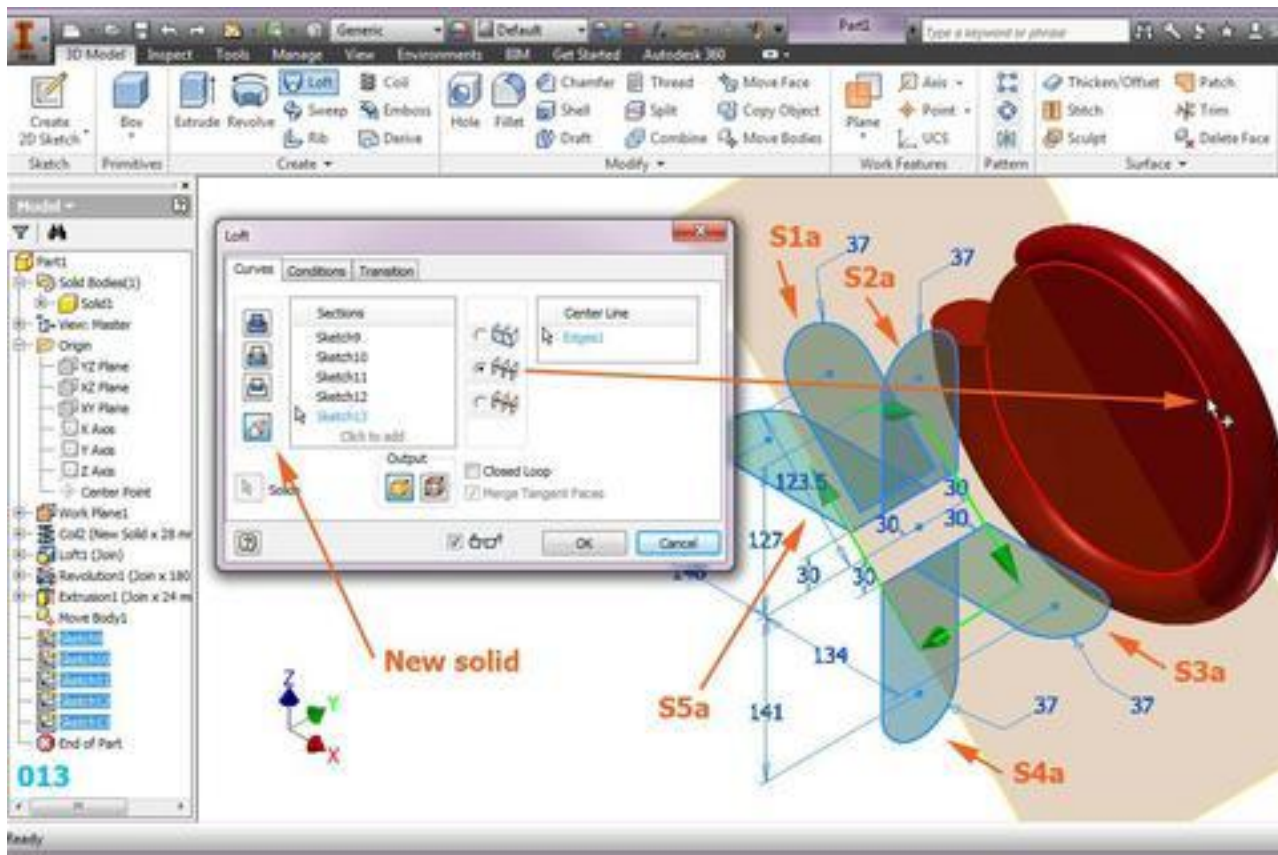

12.   Step 12

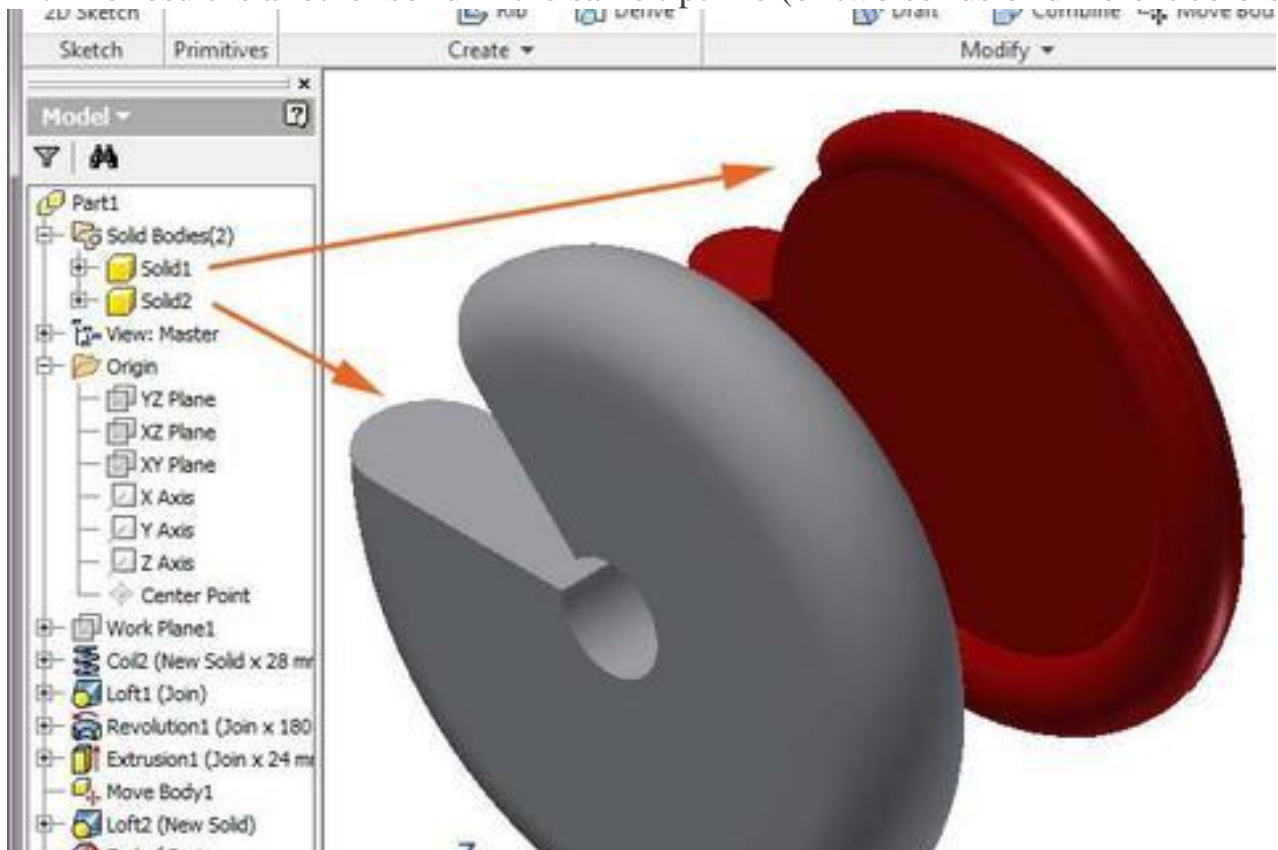12. Changing color of the Solid1 using Right click/Properties

13. Step 13

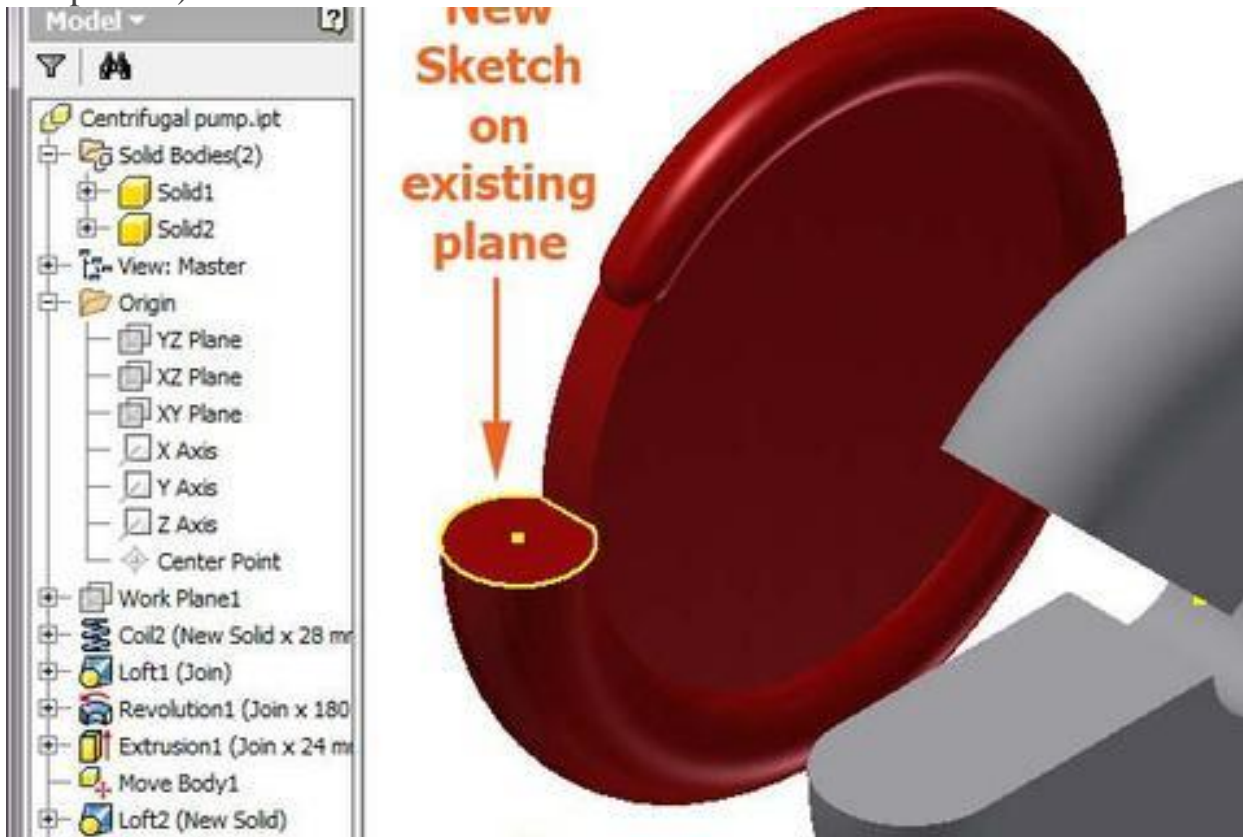13. Loft tool with New solid option, on the 5 sketches with Centerline from the spiral curve

14. Step 14

14. The result is another solid in the same .ipt file (or two solids of different colors)
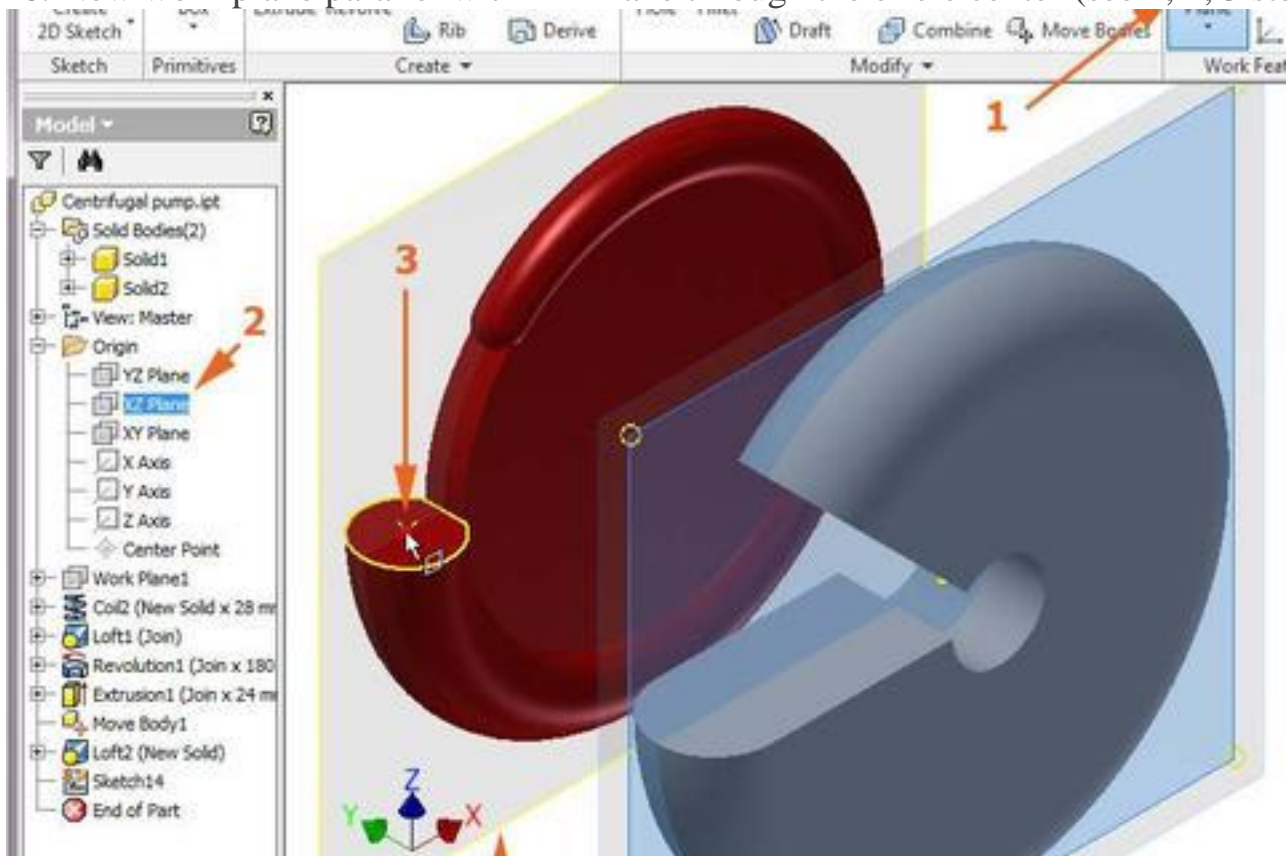
15. Step 15

15. New sketch on an existing plane - a circle is automatically projected (like in 005 or 008 picture)
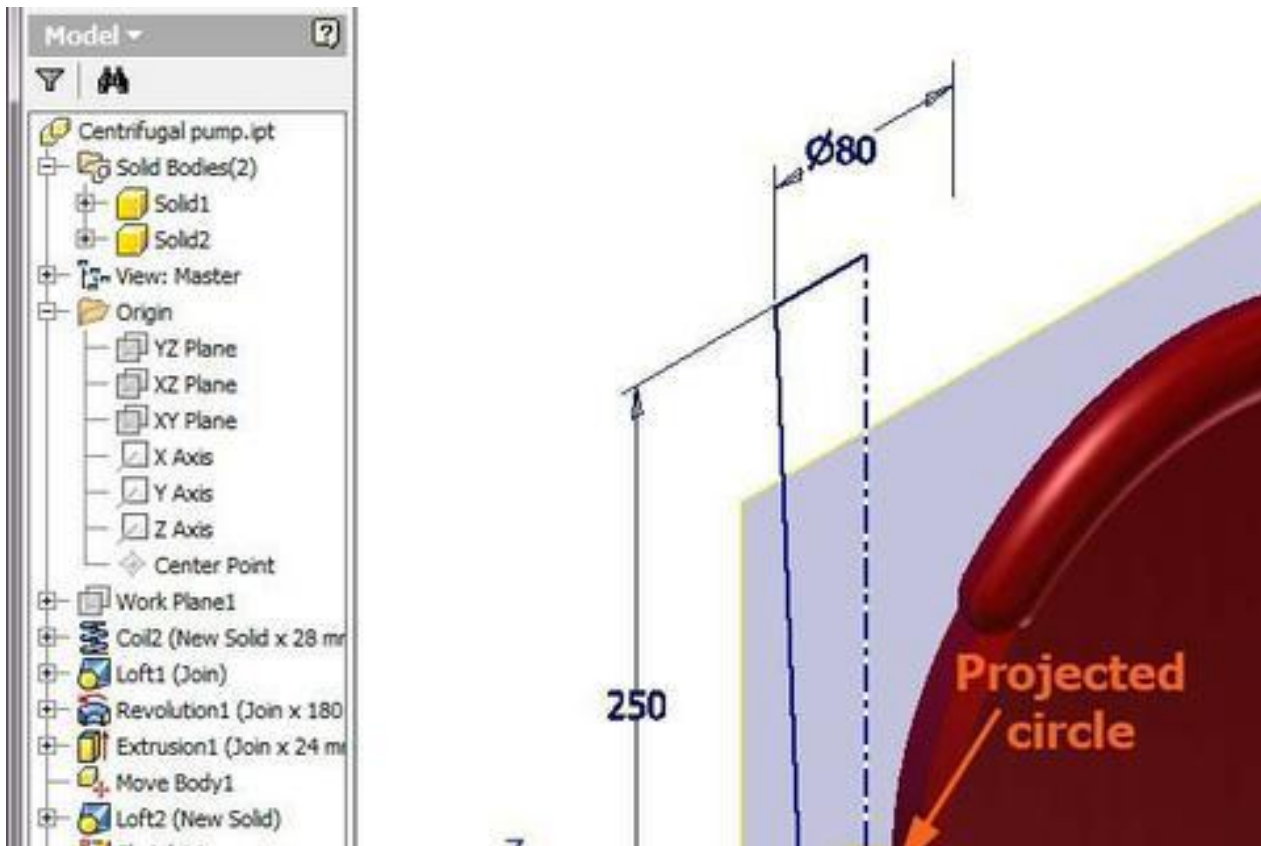

16. Step 16

16. New work plane parallel with XZ Plane through the circle center (see 1, 2, 3 steps)
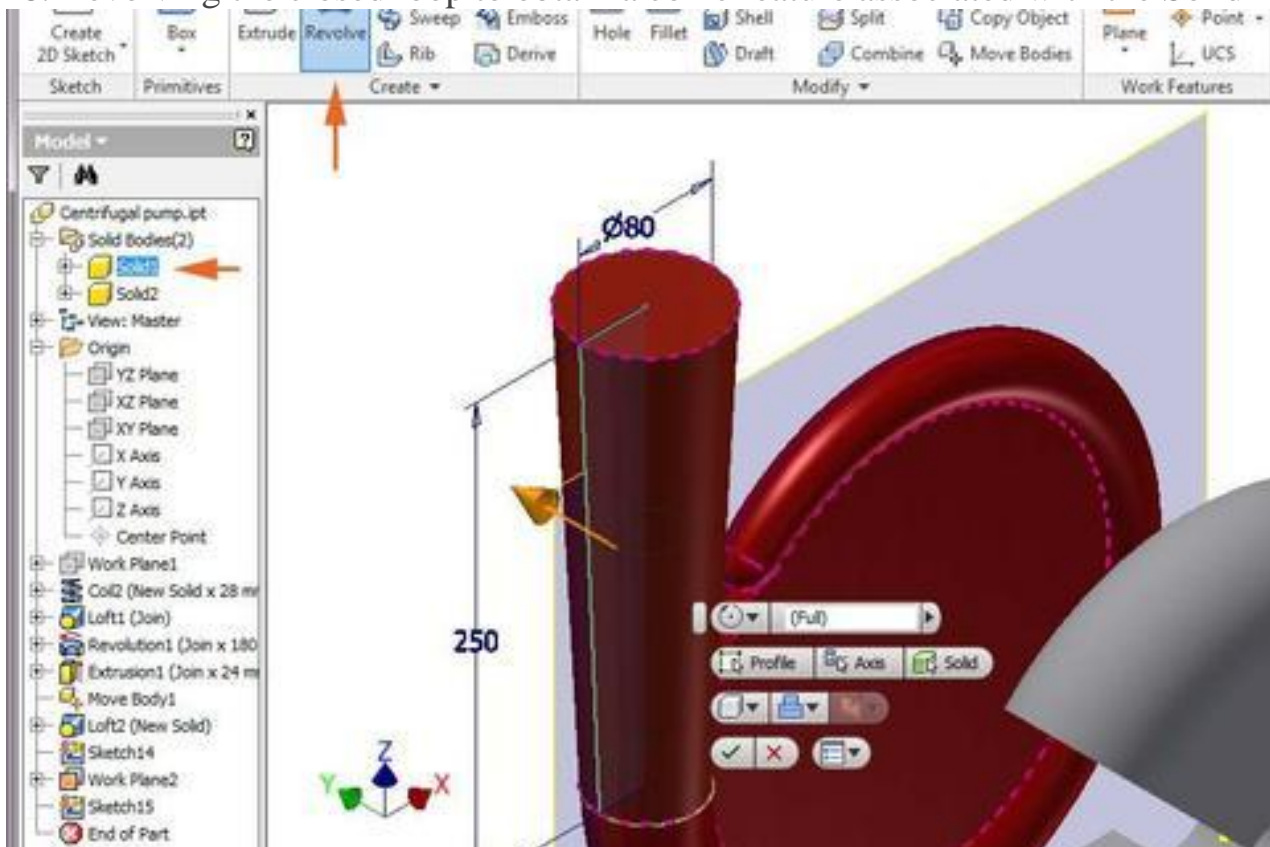
17. Step 17

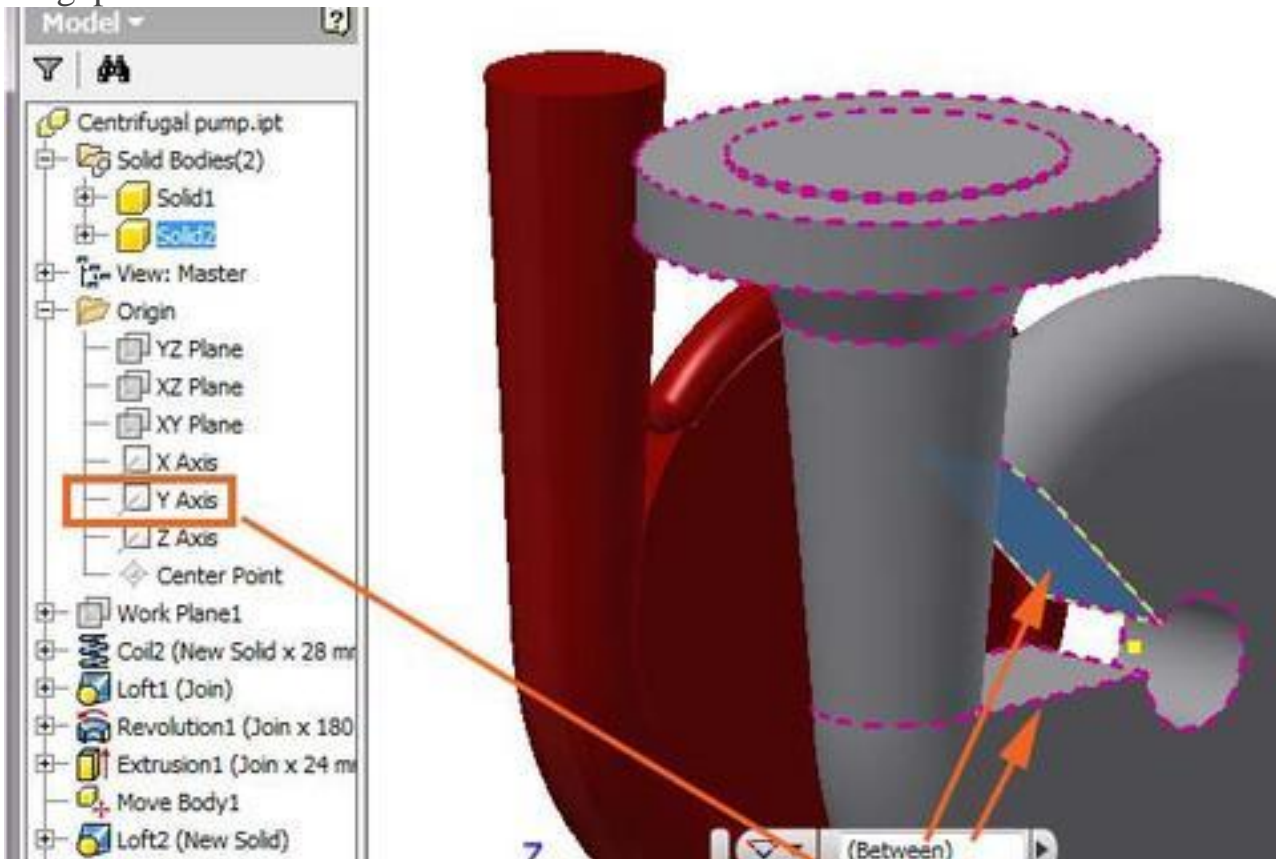17. New sketch on XZ Plane - a centerline from the projected circle center, and other 3 lines

18. Step 18

18. Revolving the closed loop to obtain a conic feature associated with the Solid1

19. Step 19

19. New sketch for the Solid2 with a line projected from the circle of the Solid1

Projected circle

20. Step 20

20. The sketch also related to the Center point will be revolved - attached to the Solid2

Solid1 = Invisible

Ø230
Ø150
Midpoint of projected circle
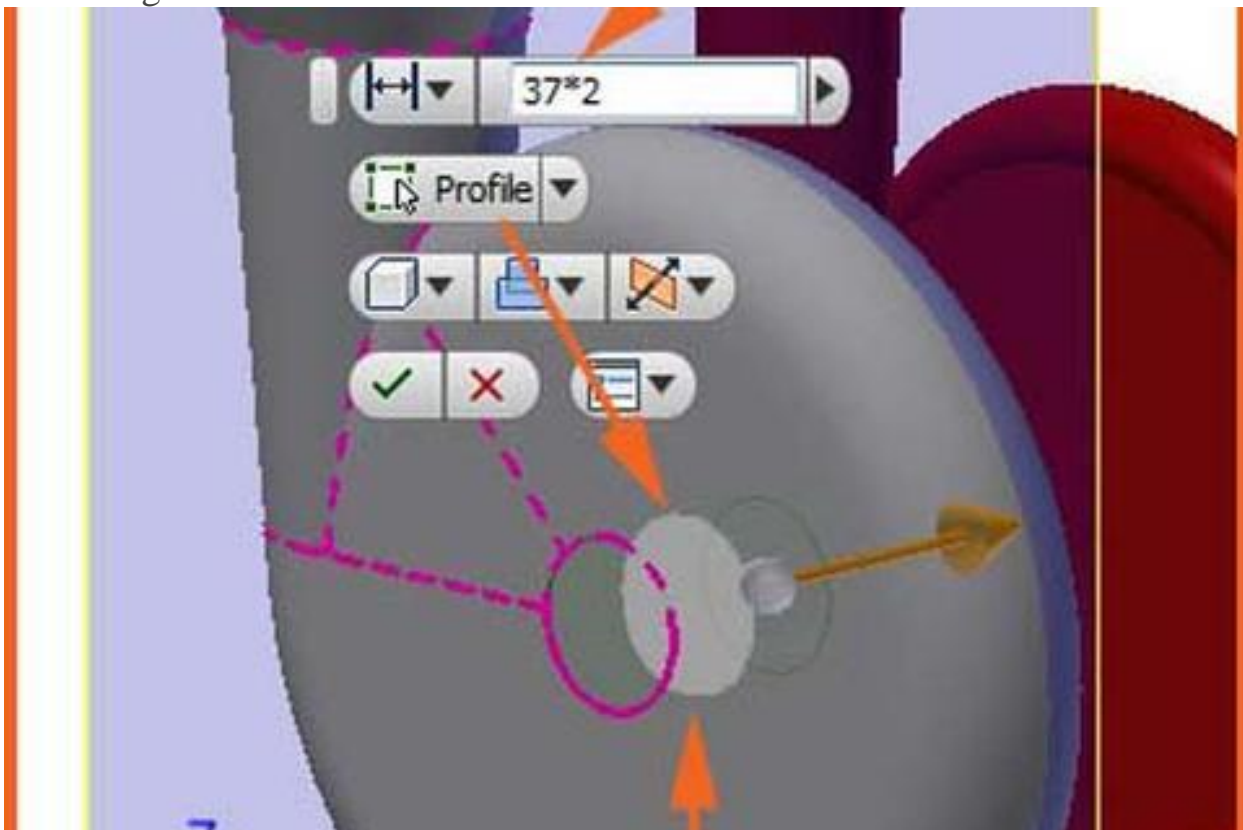Ø138
3
35
38
Ø103
Ø74
Solid2

21. Step 21

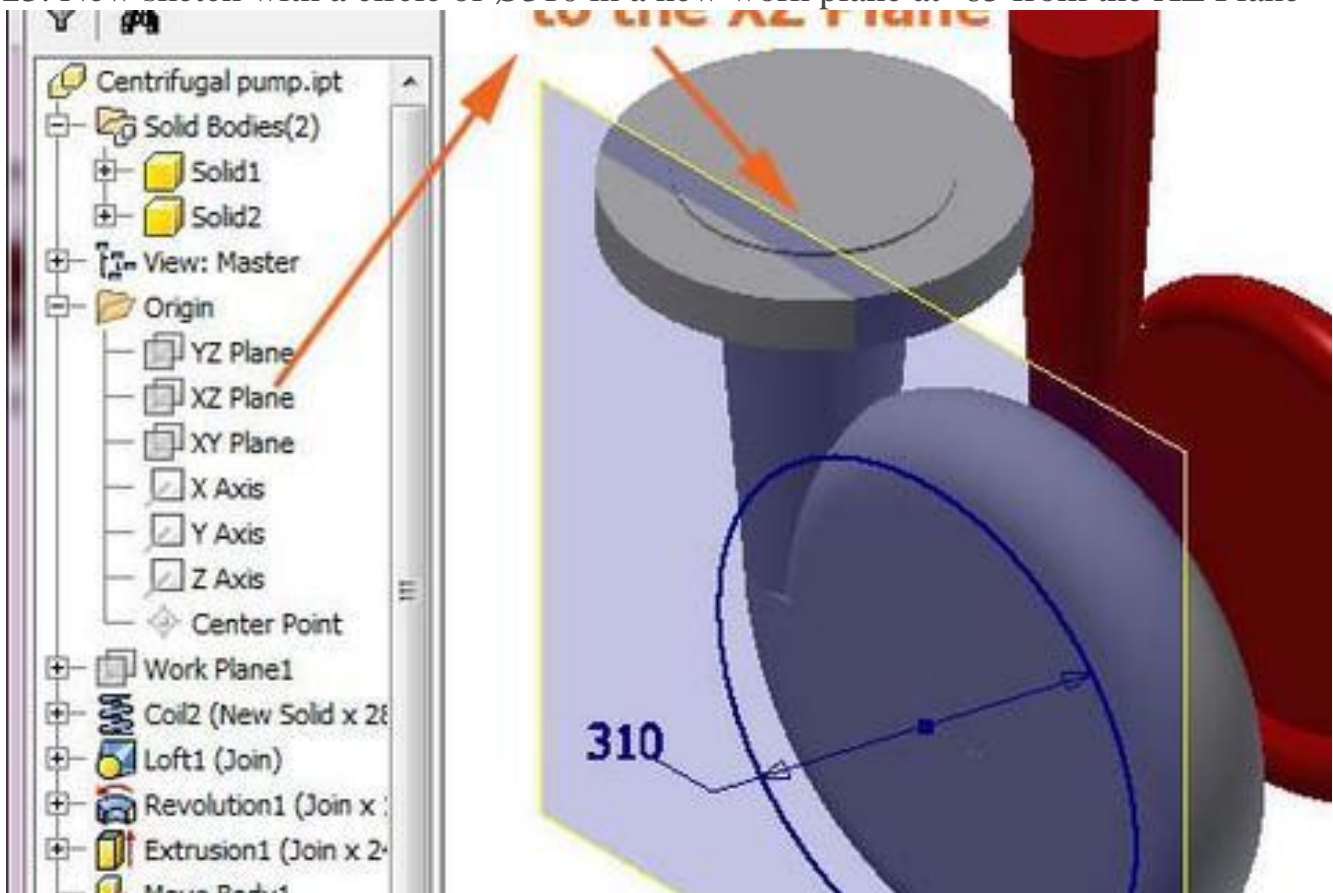21. A sketch created on the sloped plane is revolved between it and the next one, to fill the gap

22. Step 22

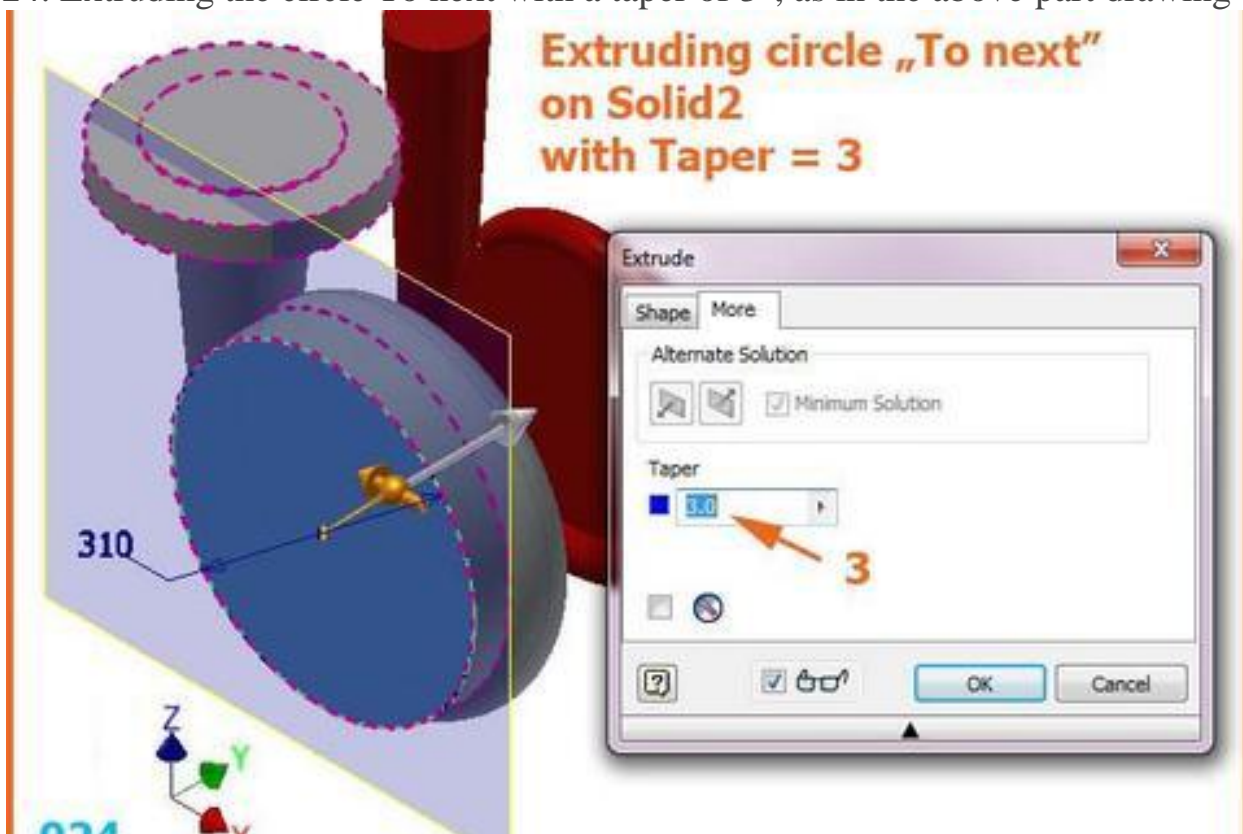22. Filling the central hole of the Solid2

23. Step 23

23. New sketch with a circle of Ø310 in a new work plane at -65 from the XZ Plane
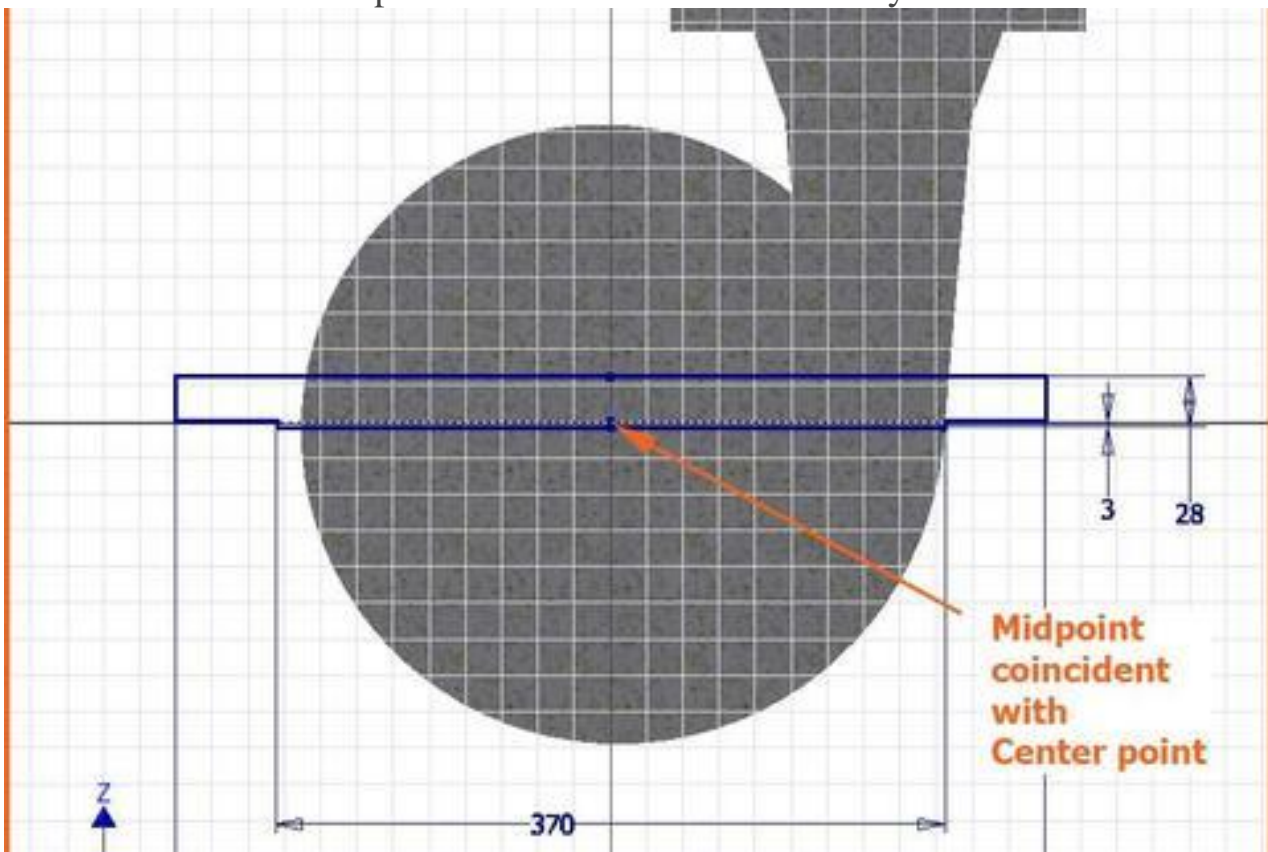

24. Step 24

24. Extruding the circle To next with a taper of 3°, as in the above part drawing
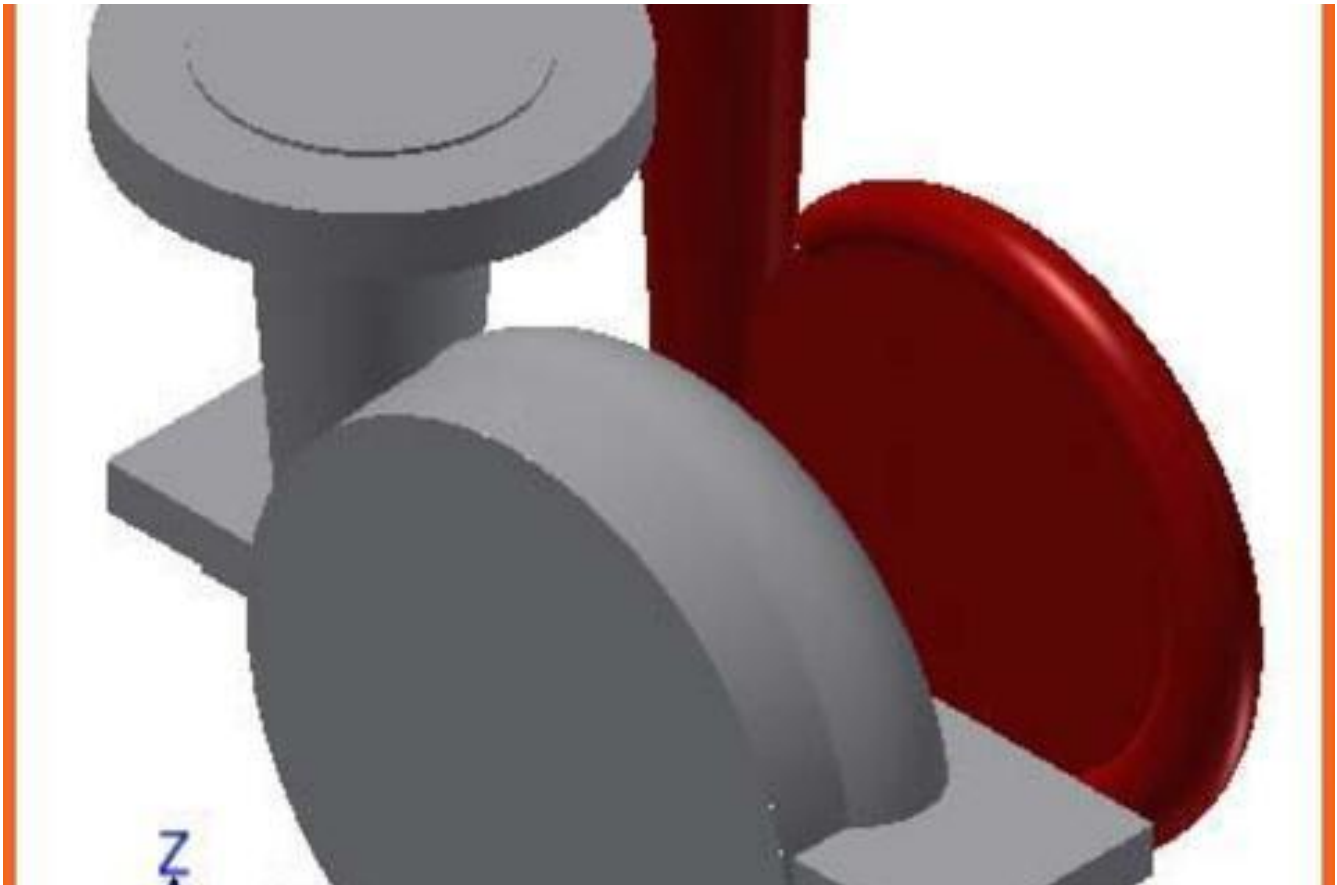
25. Step 25

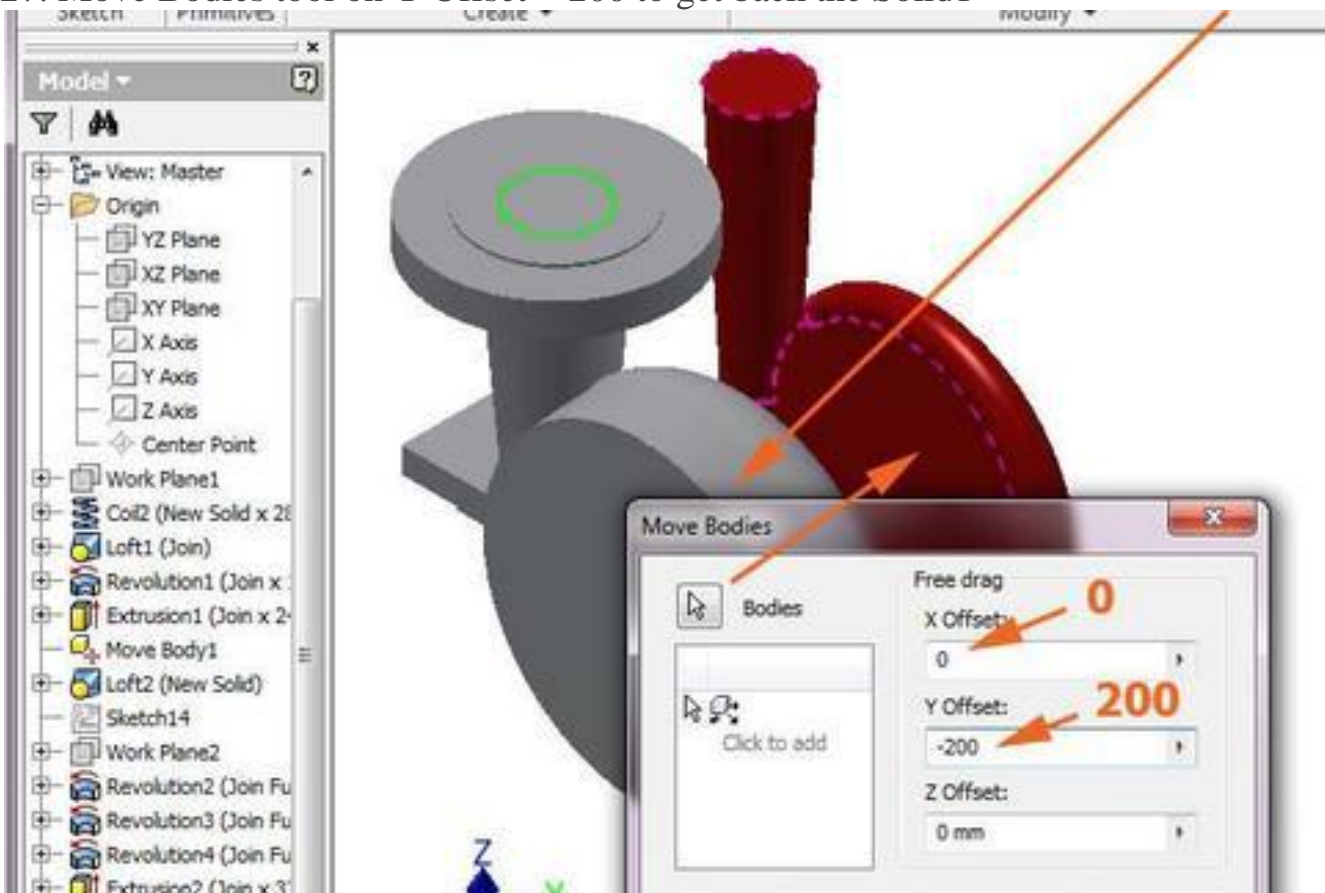25. A new sketch in the plane XZ to extrude simmetrically on 120

26. Step 26

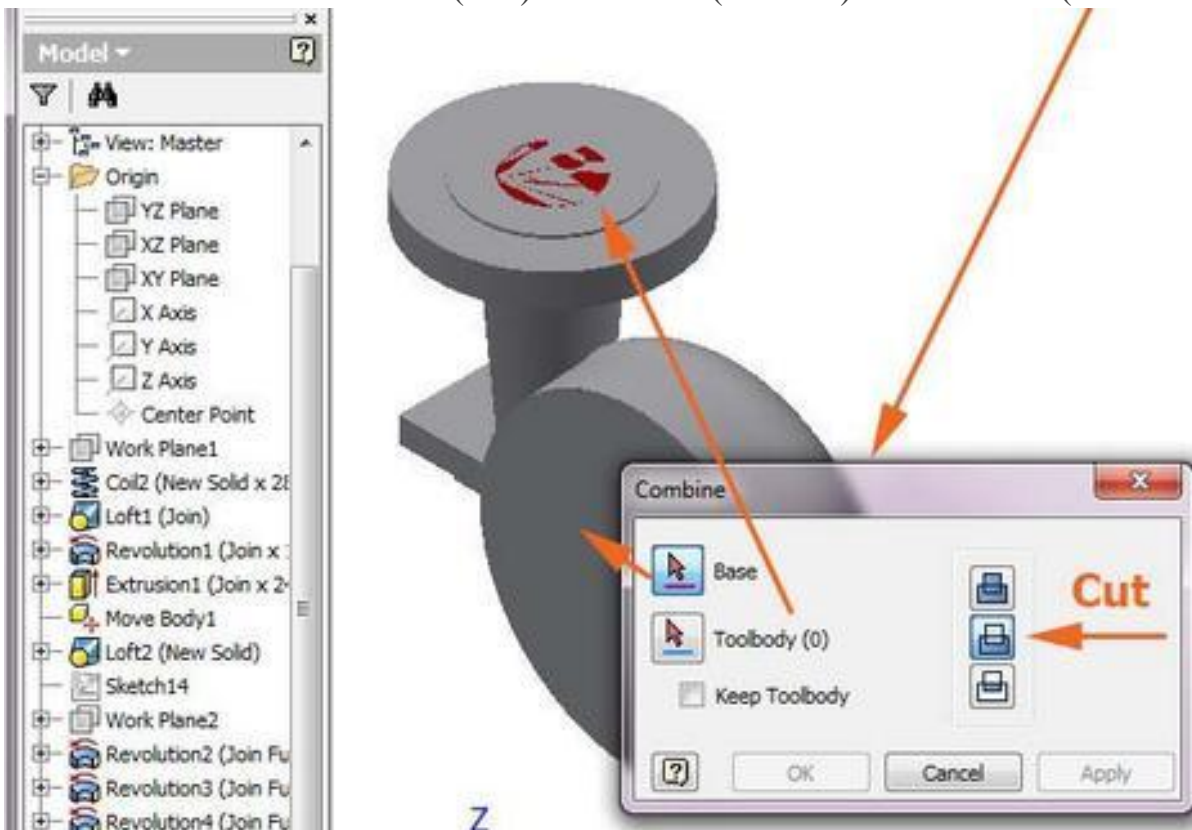26. The result of the last two extrudes

27. Step 27

27. Move Bodies tool on Y Offset = 200 to get back the Solid1

28. Step 28

28. Combine tool to subtract (Cut) the Solid1 (as Base) from Solid2 (as Toolbody)
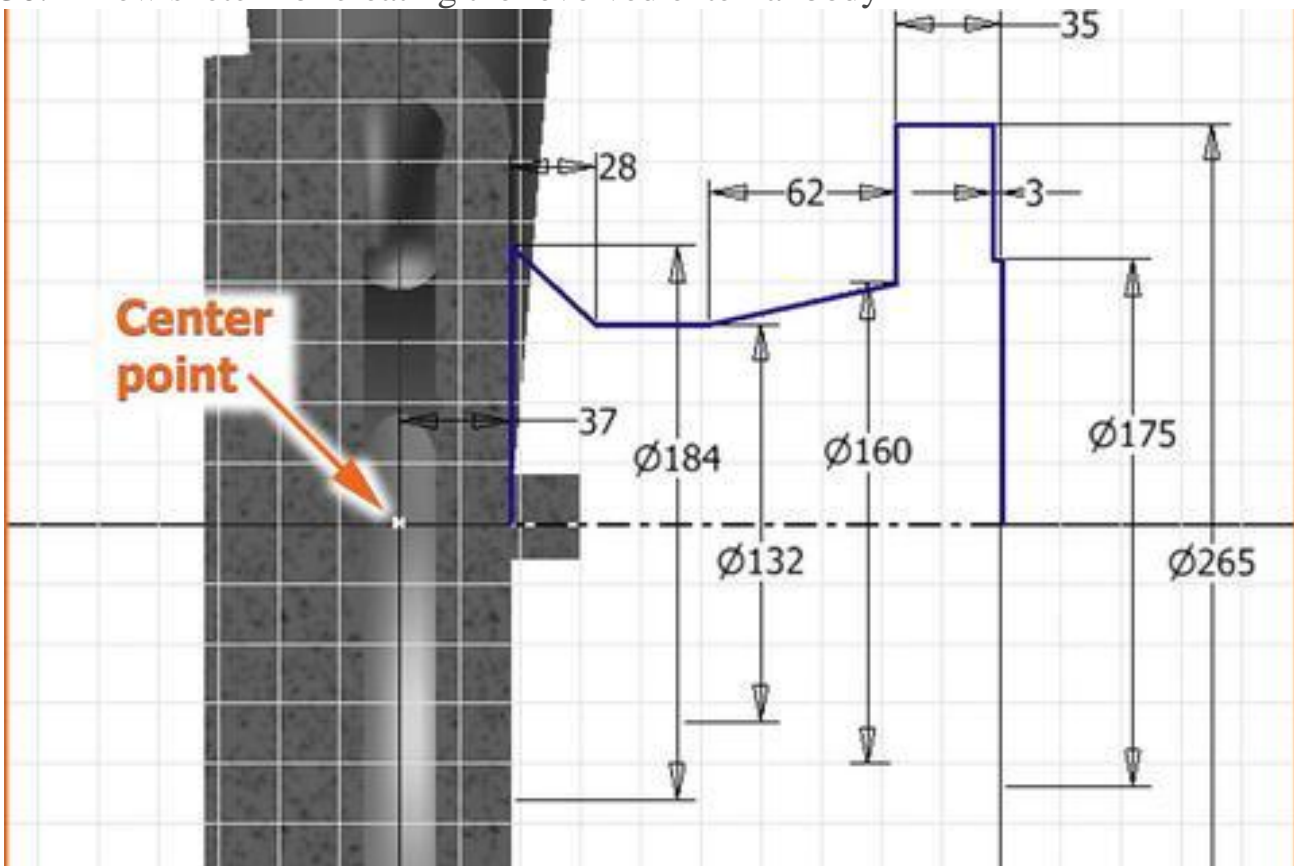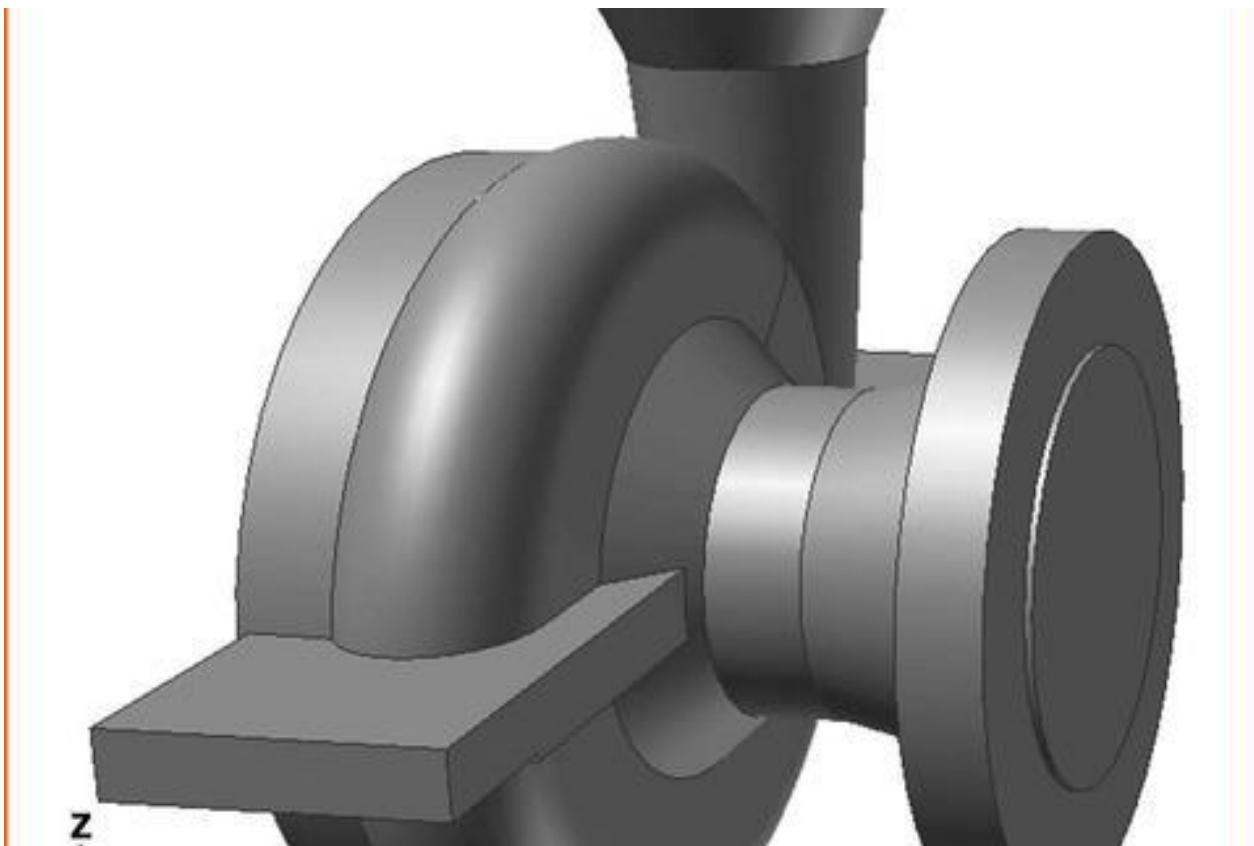
29. Step 29

29. The result (intentionally sectioned)

Intentionally
sectioned

30. Step 30

30. A new sketch for creating the revolved external body

Center
point

35

28

62

3

37

Ø184

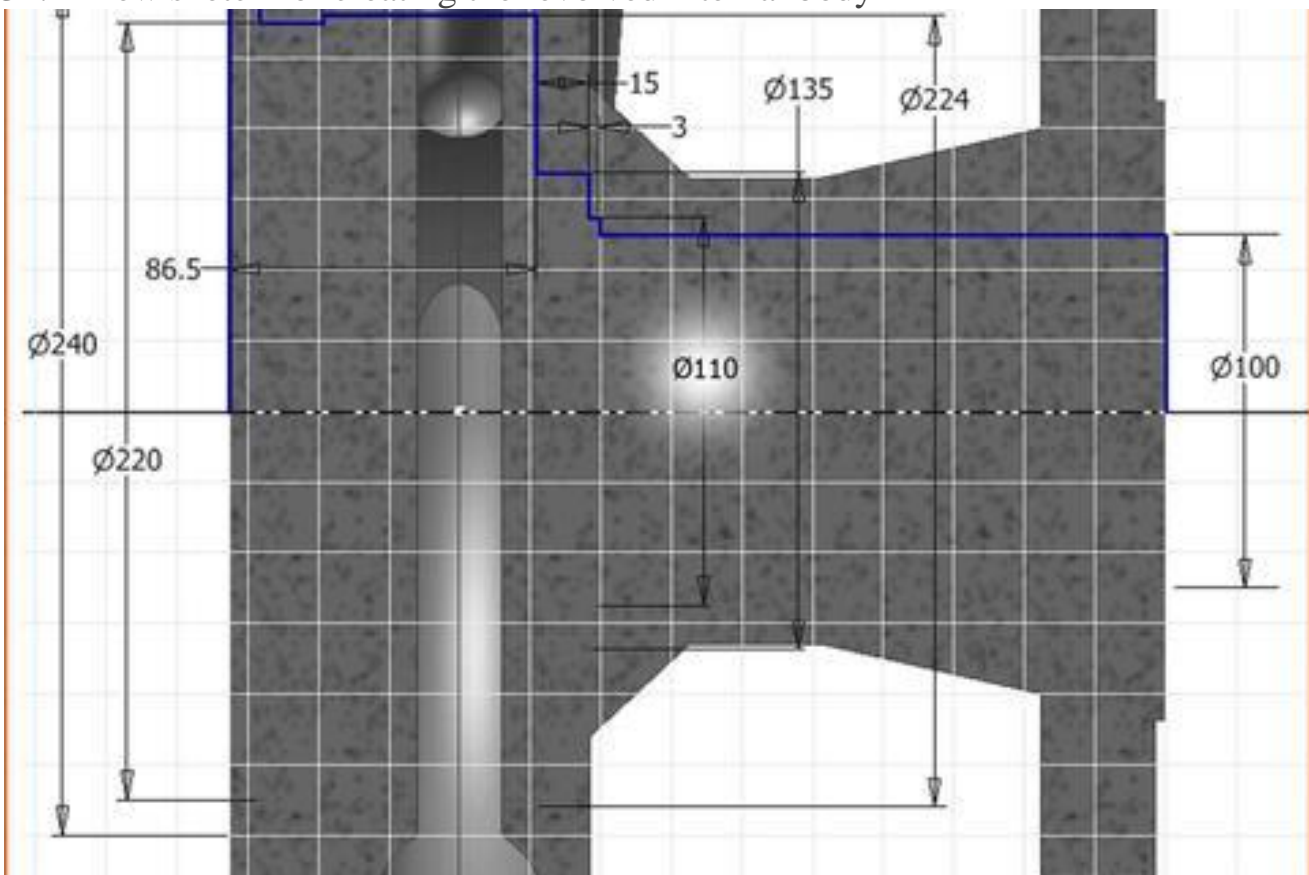Ø160

Ø175

Ø132

Ø265

31. Step 31
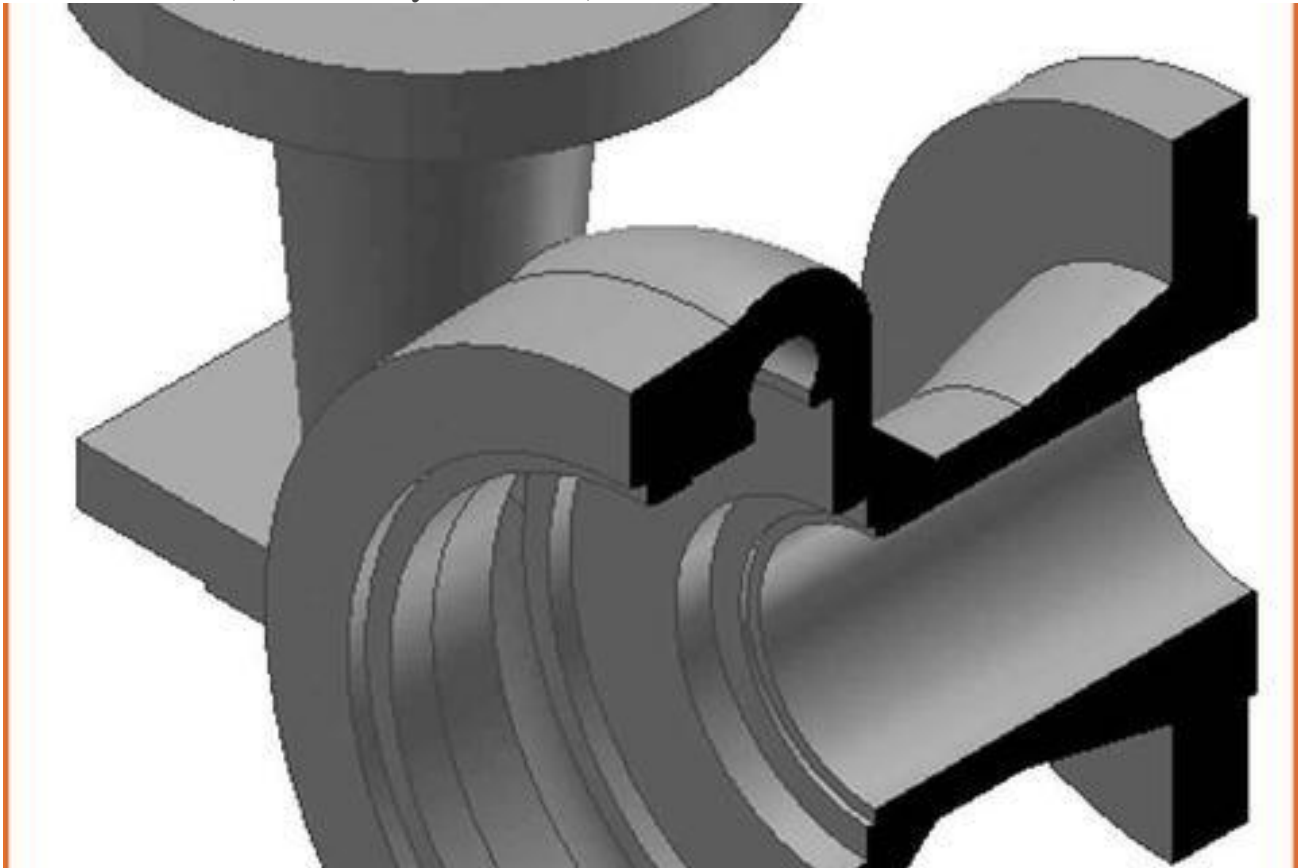
31. Result of Revolution

32. Step 32

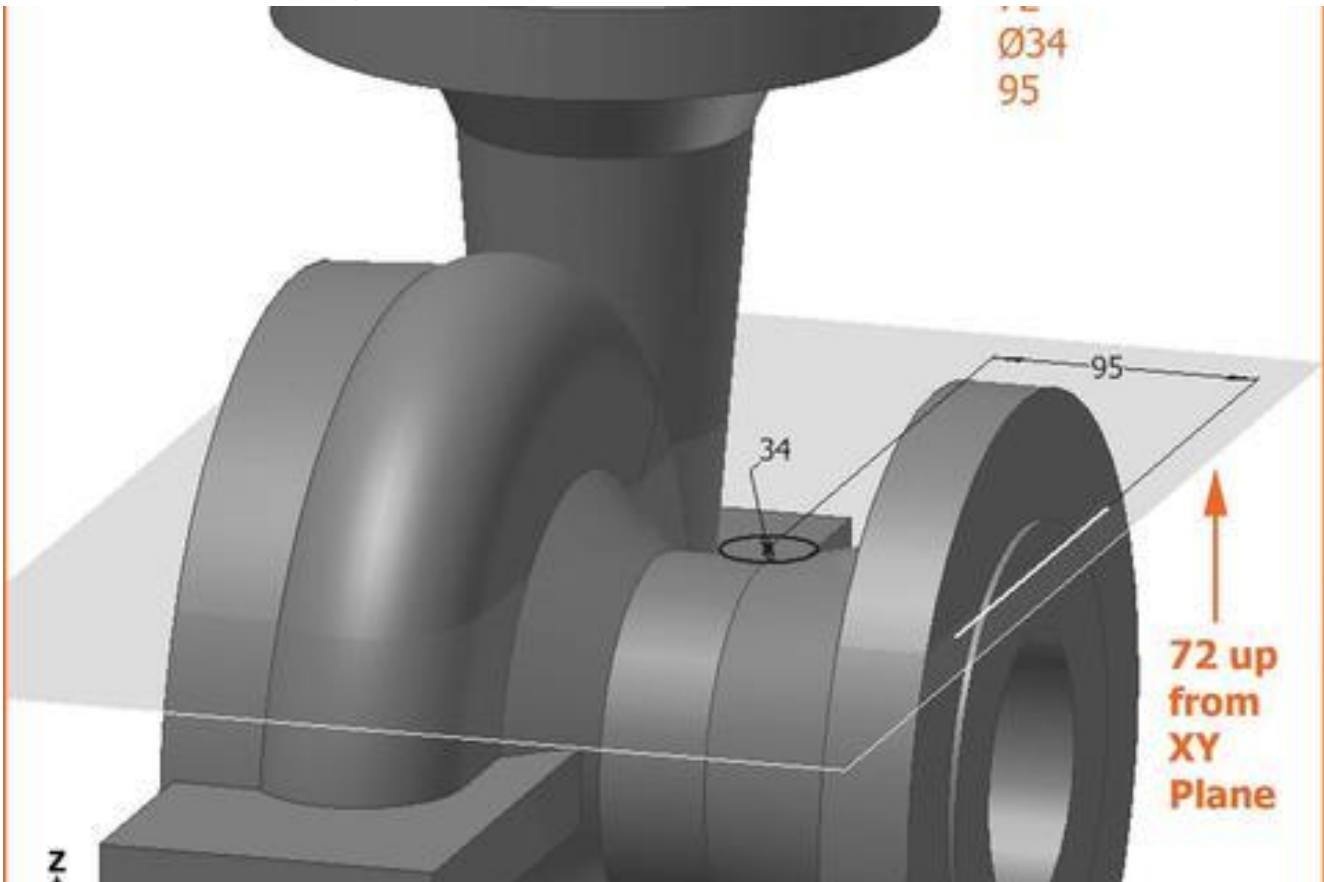32. A new sketch for creating the revolved internal body

33. Step 33

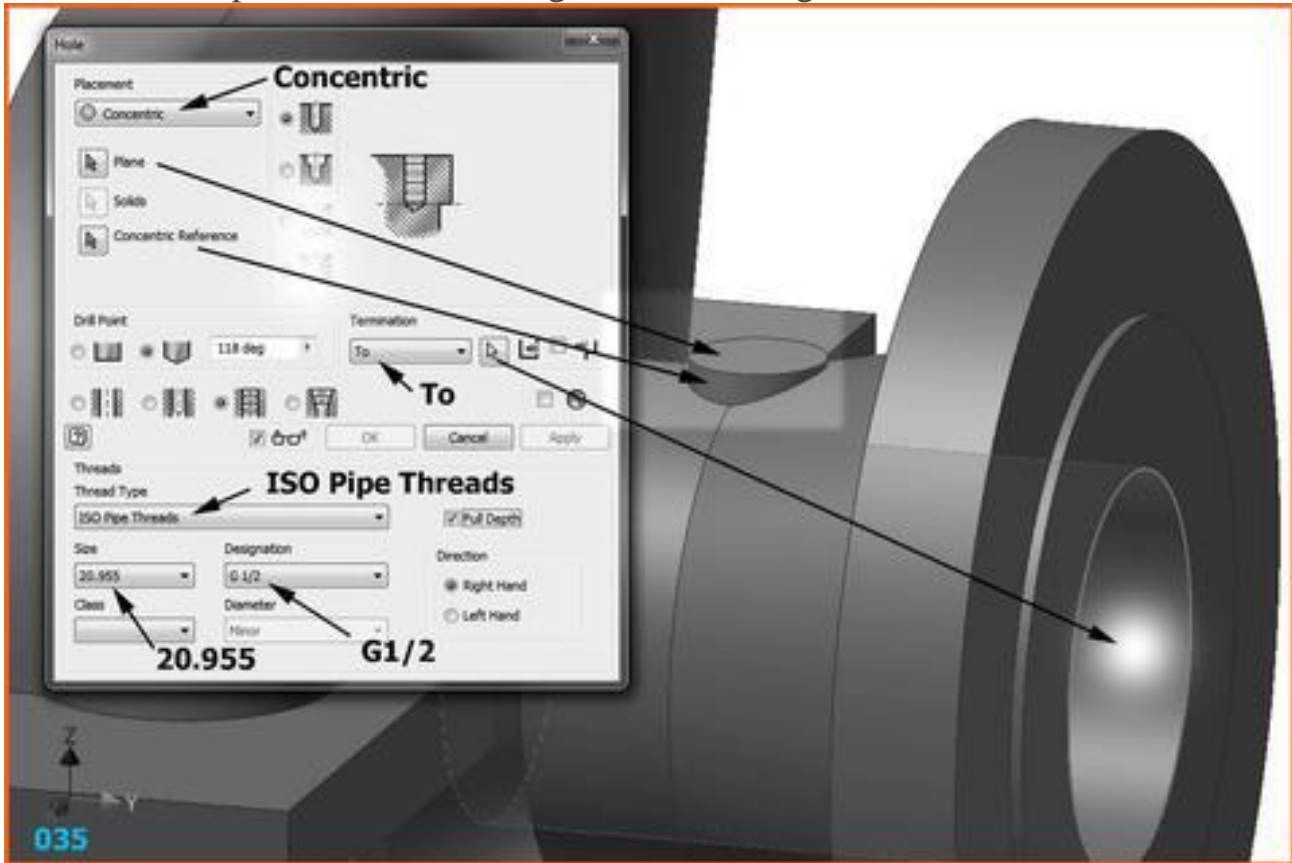33. The result (intentionally sectioned)

34. Step 34

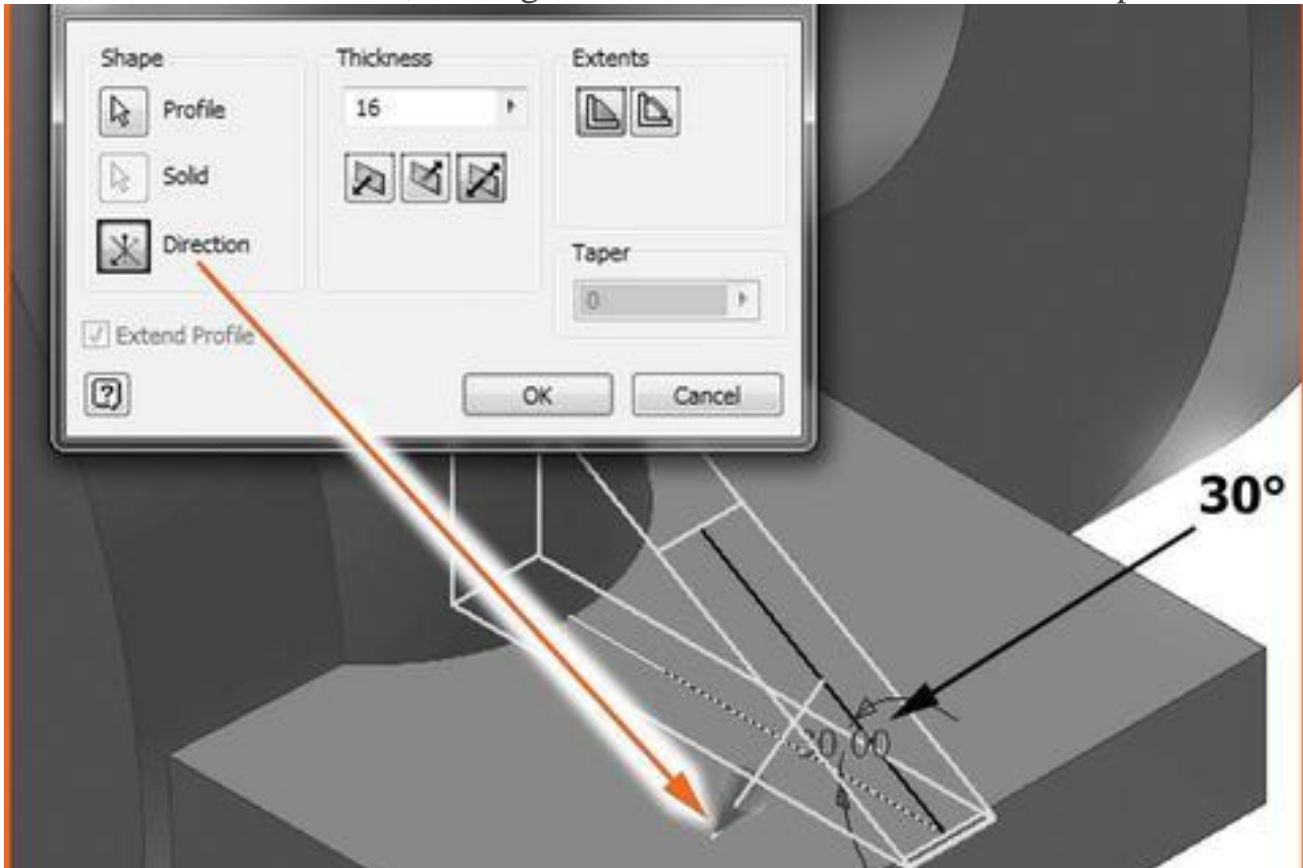34. New sketch with a Ø34 circle to create a boss for a G1/2" hole

35. Step 35

35. The ISO Pipe G1/2" hole, through but not through all

36. Step 36

36. Rib tool to create a rib, starting from a sketch in XZ Plane with a sloped line at 30°

37. Step 37

37. Final part