

4_6 Panelized Folding



Step1 : Paneling Base Circles (Outside and Inside)

1. **Curve** (Control Crv)-> *Base Rhino curve on front or side view*

- Right click and 'Set one curve'

- Curve should be located around the origin

2. **Slider** -> *N-Vertical : number of vertical division*

- integer, lower limit = 1, upper limit = 20, value = 20 (varies)

3. **Slider** -> *N-Horizontal : number of horizontal division*

- integer, lower limit = 1, upper limit = 40, value = 30 (varies)

4. **PFrames**

- C : Crv (Control Crv)

- N : Slider from 2.

5. **pComp**

- P : PFrame(F)

6. **Pt**

- Z : pComp(Z)

7. **Cir** -> *outside circles which produce set of 'Front' points*

- P : Pt(Pt)

- R : pComp(X)

8. **pComp**

- P : Cir(C)

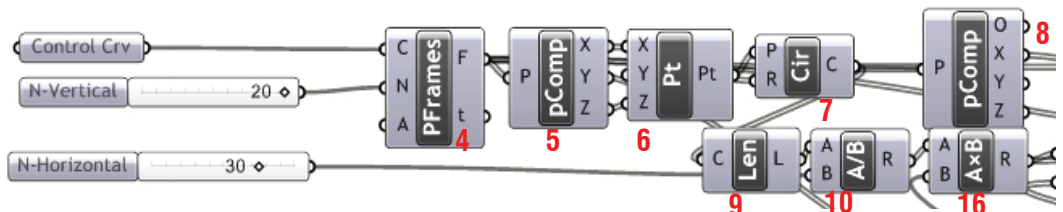
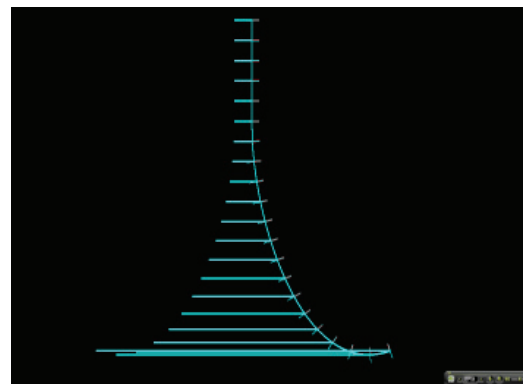
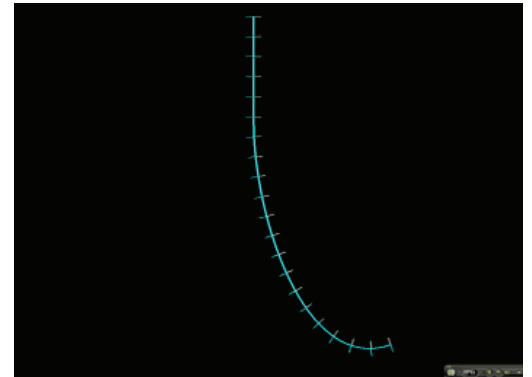
9. **Len** -> *this is to calculate the depth related to width*

- C : Cir(C)

10. **A/B**

- A : Len(L)

- B : Slider(N-Horizontal) from 2.



11. **Slider** -> *Folding Angle : horizontal angle between panel units*
 - Floating point, lower limit =90, upper limit = 210, value = 100

12. **A-B**
 - A : 180 (integer)
 - B : Slider(Folding Angle)

* this process is to refine and manipulate the folding depth (set back)

13. **A/B**
 - A : A-B(R)
 - B : 2 (integer)

14. **AxB**
 - A : A/B(R)
 - B : Pi(y)

15. **Tan** -> *set back proportion*

- x : AxB(R)

16. **AxB** -> *set back (depth) values*

- A : A/B(R)

- B : Tan(y)

17. **Lug**
 - L : PFrame(F)

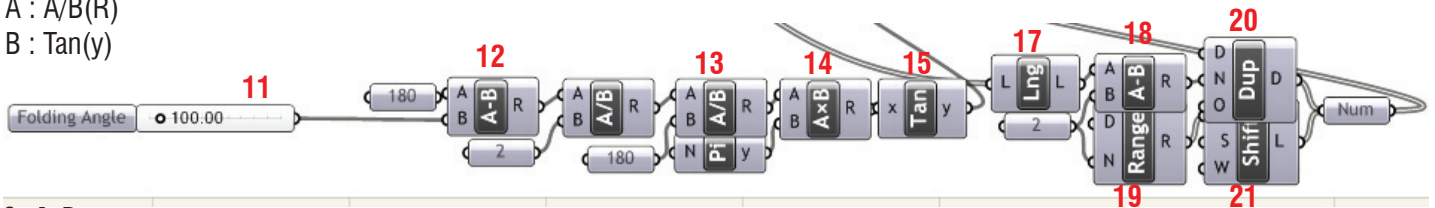
18. **A-B**
 - A : Lug(L)
 - B : 2 (integer)

19. **Range**
 - D : default (0-1.0)
 - N : 2 (integer)

20. **Dup**
 - D : 0 (integer)
 - N : A-B(R)

21. **Shift**
 - L : Range(R)
 - S : 1

22. **Num**
 - Connect First Dup(D), and then Shift(L)



23. **AxB**
 - A : AxB(R) from 16.
 - B : Num

24. **A-B**
 - A : AxB(R) from 16.
 - B : AxB(R) from 23.

25. **Amp**
 - V : pComp(X)
 - A : A-B(R)

26. **Rev**
 - V : Amp(V)

27. **Move** -> *move back plane points*
 - G : PFrame(F)
 - T : Rev(V)

28. **pComp**
 - P : Move(G)

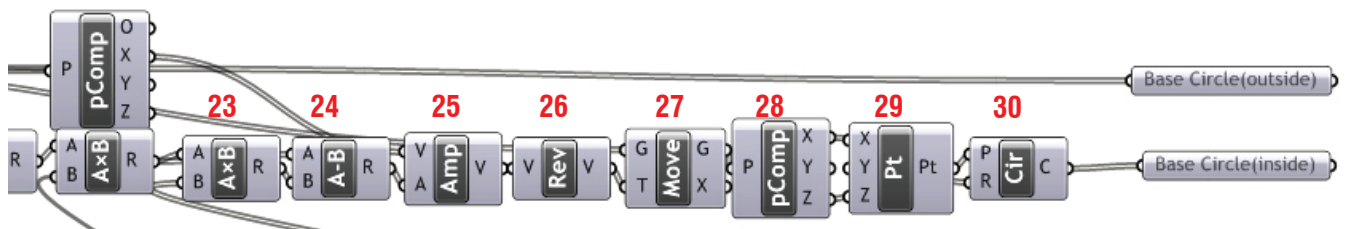
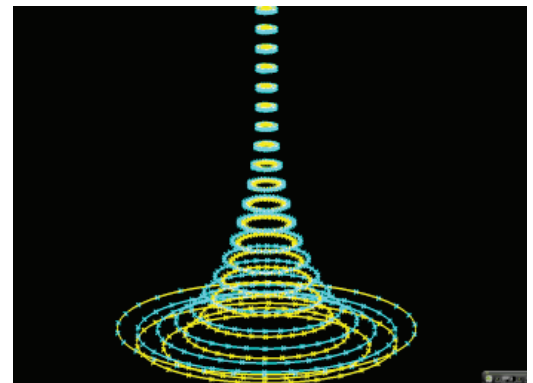
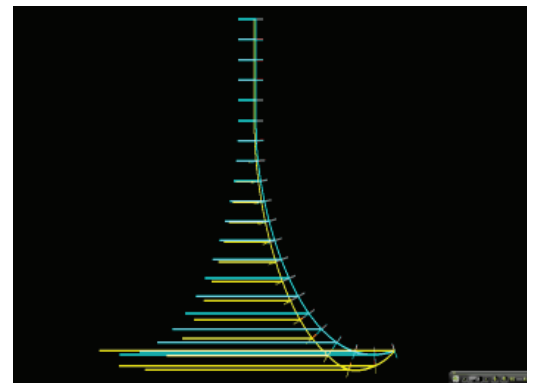
29. **Pt**
 - Z : pComp(Z)

30. **Cir** -> *inside circles which produce set of 'Back' points*
 - P : Pt(pt)
 - R : pComp(X)

31. **Curve** (Base Circle(outside))
 - Cir(C) from 7.

32. **Curve** (Base Circle(inside))
 - Cir(C) from 30.

* final folding depth will be defined by the distance between two sectional curves



Step2 : Points Organization

33. Divide

- C : Curve (Base Circle-outside)
- N : Slider(N-Horizontal) from 2.

34. Flip

- D : Divide(P)

35. Shift -> outside lower set of points

- L : Flip(D) / - S : 1

36. Shift -> outside upper set of points

- L : Flip(D) / - S : -1

37. Divide

- C : Curve (Base Circle-inside)
- N : Slider(N-Horizontal) from 2.

38. Flip

- D : Divide(P)

39. Shift -> inside lower set of points

- L : Flip(D) / - S : 1

40. Shift -> inside upper set of points

- L : Flip(D) / - S : -1

* final surfaces are divided into two group by type

< points for group A >

41. Cull (Cull Pattern) -> top points/front

- L : Shift(L) from 35.
- P : manage Boolean collection : true /false

42. Cull (Cull Pattern) -> bottom points/front

- L : Shift(L) from 35.
- P : manage Boolean collection : false /true

43. Cull (Cull Pattern) -> top points/back

- L : Shift(L) from 39.
- P : manage Boolean collection : true /false

44. Cull (Cull Pattern) -> bottom points/back

- L : Shift(L) from 39.
- P : manage Boolean collection : false /true

< points for group B >

49. Cull (Cull Pattern) -> top points/front

- L : Shift(L) from 36.
- P : manage Boolean collection : true /false

50. Cull (Cull Pattern) -> bottom points/front

- L : Shift(L) from 36.
- P : manage Boolean collection : false /true

51. Cull (Cull Pattern) -> top points/back

- L : Shift(L) from 40.
- P : manage Boolean collection : true /false

52. Cull (Cull Pattern) -> bottom points/back

- L : Shift(L) from 40.
- P : manage Boolean collection : false /true

45. Flip

- D : Cull(L) from 41

46. Flip

- D : Cull(L) from 42

47. Flip

- D : Cull(L) from 43

48. Flip

- D : Cull(L) from 44

53. Flip

- D : Cull(L) from 49

54. Flip

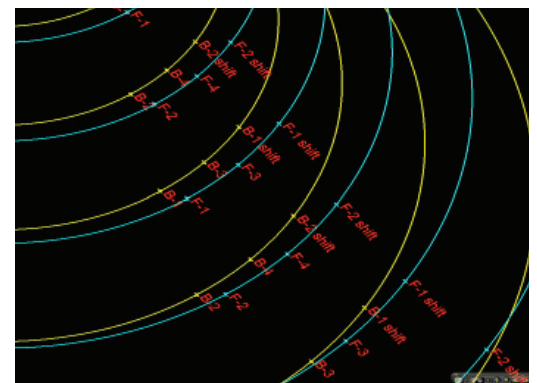
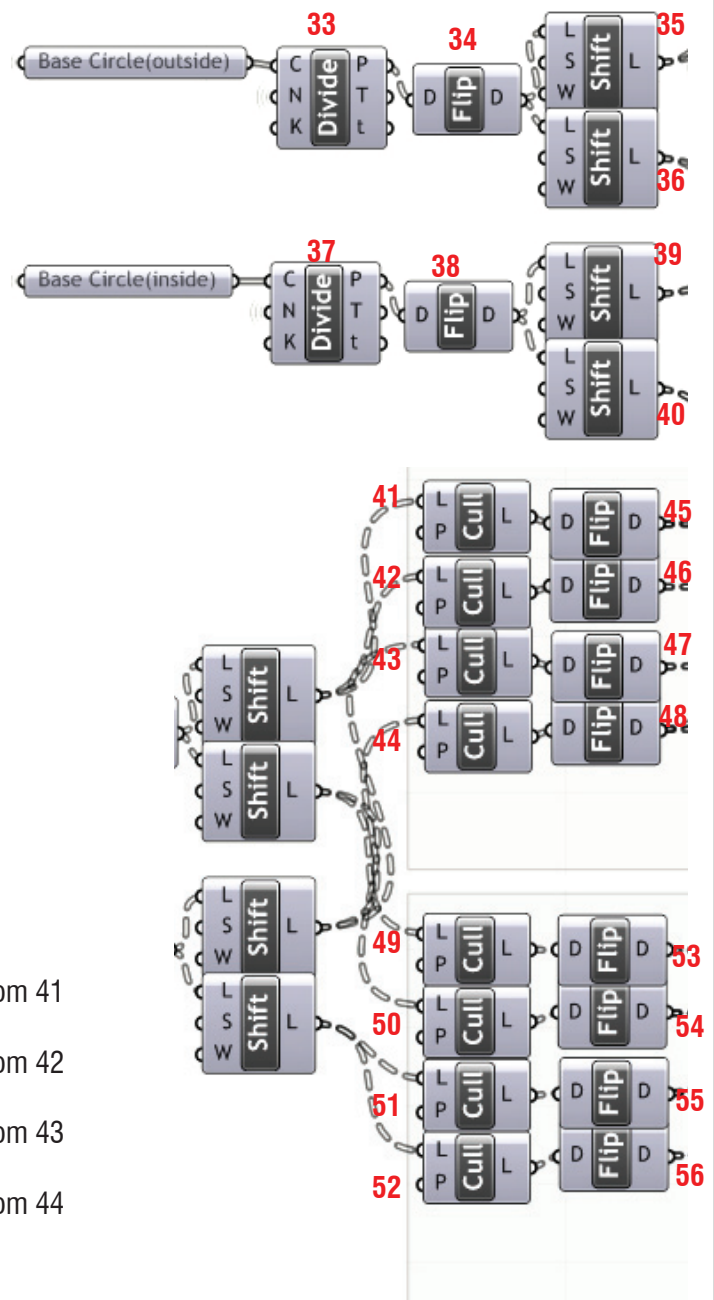
- D : Cull(L) from 50

55. Flip

- D : Cull(L) from 51

56. Flip

- D : Cull(L) from 52



Step3 : Surface from Points

<Surface in group A>

57. **Cull (Cull Pattern)** -> *F(front)-1*

- L : Flip(D) from 45.
- P : manage Boolean collection : true /false

58. **Cull (Cull Pattern)** -> *B(back)-2*

- L : Flip(D) from 48.
- P : manage Boolean collection : true /false

59. **Ln (Edge1)** -> *between F-1 and B-2*

- A : Cull(L) from 49.
- B : Cull(L) from 50.

60. **Cull (Cull Pattern)** -> *F(front)-1*

- L : Flip(D) from 45.
- P : manage Boolean collection : true /false

61. **Cull (Cull Pattern)** -> *F(Front)-4*

- L : Flip(D) from 46.
- P : manage Boolean collection : false/true

62. **Ln (Edge2)** -> *between F-1 and F-4*

- A : Cull(L) from 52.
- B : Cull(L) from 53.

63. **Cull (Cull Pattern)** -> *B(back)-3*

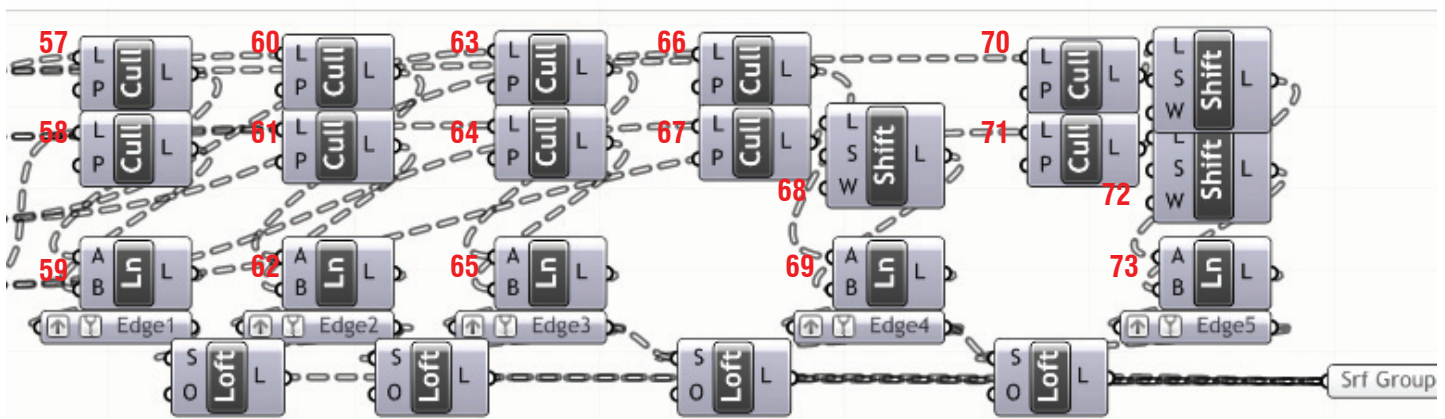
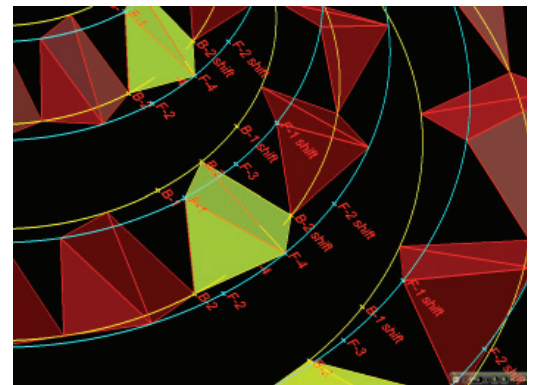
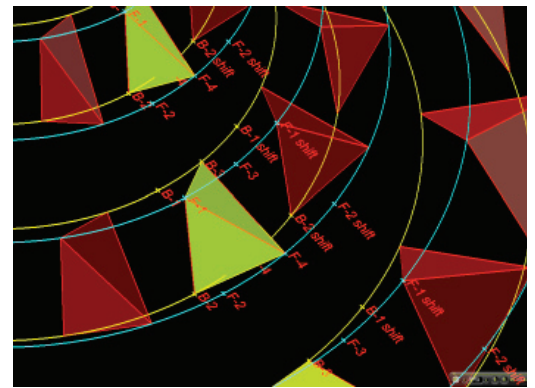
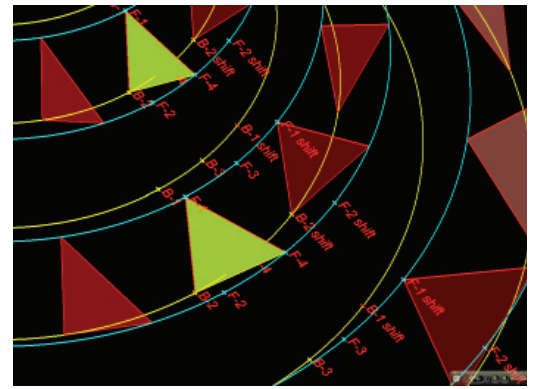
- L : Flip(D) from 47.
- P : manage Boolean collection : false/true

64. **Cull (Cull Pattern)** -> *F(front)-4*

- L : Flip(D) from 46.
- P : manage Boolean collection : false/true

65. **Ln (Edge3)** -> *between B-3 and F-4*

- A : Cull(L) from 55.
- B : Cull(L) from 56.



66. **Cull (Cull Pattern)** -> *B(back)-3*

- L : Flip(D) from 47.
- P : manage Boolean collection : false/true

67. **Cull (Cull Pattern)** -> *B(back)-2*

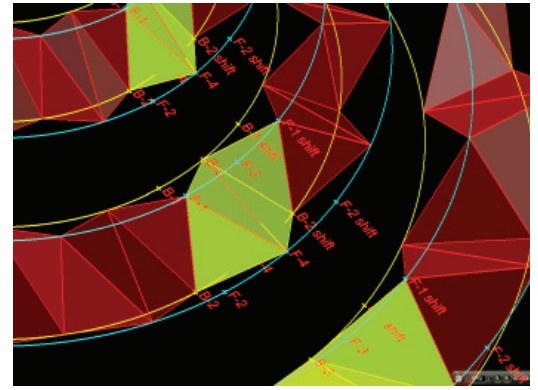
- L : Flip(D) from 48.
- P : manage Boolean collection : true /false

68. **Shift** --> shift of *B(back)-2*

- L : Cull(L) / - S : 1

69. **Ln (Edge4)** -> *between B-3 and shift of B-2*

- A : Cull(L) from 66.
- B : Shift(L) from 68.



70. **Cull (Cull Pattern)** -> *F(front)-1*

- L : Flip(D) from 45.
- P : manage Boolean collection : true /false

71. **Shift** --> shift of *F(front)-1*

- L : Cull(L) / - S : 1

72. **Cull (Cull Pattern)** -> *B(back)-2*

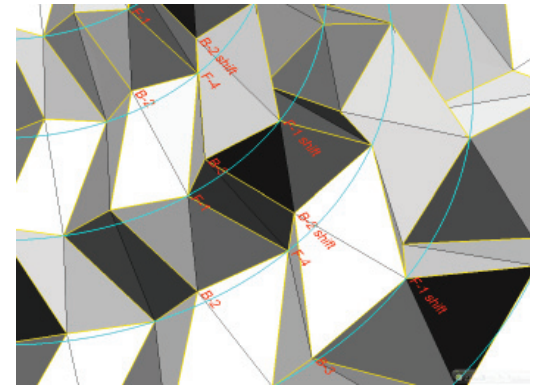
- L : Flip(D) from 48.
- P : manage Boolean collection : true /false

73. **Shift** --> shift of *B(back)-2*

- L : Cull(L) / - S : 1

74. **Ln (Edge5)** -> *between F-1 and shift of B-2*

- A : Shift(L) from 71.
- B : Shift(L) from 73.



75. **Loft** -> *between Edge1 and Edge2*

76. **Loft** -> *between Edge2 and Edge3*

77. **Loft** -> *between Edge3 and Edge4*

78. **Loft** -> *between Edge1 and Edge2*

< Surface in group B >

* all the similar process with group B (57.~78.)

