



Alex:

You requested a layout for your room where you make all of the turns in the **plane of the ceiling**. Your crown spring angle = 38 deg (measure as shown on page 34). All corners are either 90 deg or 270 deg. Unfortunately the room has 10 inside corner and 6 outside corners. That means there needs to be at least 4 H/V (horizontal/vertical, page 42) corner turns. (**Note:** If you do not want to make the H/V turns then you can cope the H/V turns instead, see Chapter 11, p 80 & 81).

**Note:** Crown 1-2 means crown molding piece going from corner 1 to corner 2.

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**Remember** from chapter 5.....see page 46 and 47.

1. That 90° or 270° deg turns in the plane of the ceiling will change the crown spring angle by the amount the ceiling slopes..... therefore when making turns in the ceiling plane:

**Horizontal to Upward Sloped inside corner - spring angle increases**

**Horizontal to Upward Sloped outside corners – spring angle decreases**

**Horizontal to Downward Sloped outside corners – spring angle increases**

**Horizontal to Downward Sloped inside corners – spring angle decreases**

**Upward Sloped to Horizontal outside corners - spring angle decreases**

**Upward Sloped to Horizontal inside corners – spring angle increases**

**Downward Sloped to Horizontal inside corner – spring angle decreases**

**Downward Sloped to Horizontal Outside corner – Spring angle increases**

2. All outside wall corners in a room with a sloped ceiling must be turned in the plane of the ceiling.

Therefore you should turn an inside corner that will change the crown spring angle in the opposite direction.

For all outside corners you must have an inside corner turned in the plane of the ceiling so the spring angle will correct itself.

**3. Crown molding looks better when it leans outward than when it leans inward.**

**4. Ceiling turn crown slope angle =  $90^\circ$  - crown spring angle – ceiling slope (see page 38)**

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**Lets install crown 1-2 with the correct spring angle of 38 deg..... You will need to use the extra table download on page 50 in the book or the miter excel program to get your saw settings. I have also attached the extra tables to this email reply.**

**Corner 1** –  $90^\circ$  inside corner H/V with 10 deg slope, Horizontal crown slope =  $90 - \text{crown spring angle} = 90 - 38 = 52$  deg, M=31.6, B=33.9. Vertical turn  $180+10= 190$  deg outside corner with vertical crown slope = crown spring angle = 38 deg crown slope angle, crown 1-2 spring angle =  $38^\circ$ , M=3.9, B=3.1

**Corner 2** –  $270^\circ$  outside corner, ceiling turn crown slope angle =  $90 - 38 - 10 = 42$ ,  
**Horizontal to Downward Sloped outside corners – spring angle increases (see above)**  
crown 2-3 spring angle =  $38 + 10 = 48$ ; M=36.6, B=28.2

**Corner 3** –  $90$  deg inside corner, ceiling turn crown slope angle = 42, crown 3-4 spring angle =  $48 - 10 = 38$   
M=36.6, B=28.2

**Corner 4** –  $90$  deg inside corner, ceiling turn crown slope angle = 42, crown 4-5 spring angle =  $38 + 10 = 48$  deg.  
M=36.6, B=28.2

**Corner 5** -  $90$  deg inside corner, ceiling turn crown slope angle = 42, crown 5-6 spring angle =  $48 + 10 = 58$  deg.  
M=36.6, B=28.2

**Corner 6** -  $270$  deg outside corner, ceiling turn crown slope angle = 42, crown 6-7 spring angle =  $58^\circ - 10^\circ = 48^\circ$   
deg. M=36.6°, B=28.2°

**Corner 7** - 90 deg inside corner, ceiling turn crown slope angle = 42, crown 7-8 spring angle =  $48 + 10 = 58$  deg.  $M=36.6$ ,  $B=28.2$

**Corner 8** - 270 deg outside corner, ceiling turn crown slope angle = 42, crown 8-9 spring angle =  $58^\circ - 10^\circ = 48^\circ$  deg.  $M=36.6^\circ$ ,  $B=28.2^\circ$

**Corner 9** - 270 deg outside corner, ceiling turn crown slope angle = 42, crown 9-10 spring angle =  $48^\circ - 10^\circ = 38^\circ$  deg.  $M=36.6^\circ$ ,  $B=28.2^\circ$

**Corner 10** – 90° inside corner H/V with 10 deg slope, Horizontal crown slope =  $90 - \text{crown spring angle} = 90 - 38 = 52$  deg,  $M=31.6$ ,  $B=33.9$ . Vertical turn  $180+10= 190$  deg outside corner with vertical crown slope = crown spring angle = 38 deg crown slope angle, crown 10-11 spring angle =  $38^\circ$ ,  $M=3.9$ ,  $B=3.1$

**Note:** There is no change in the crown spring angle when making a H/V turn

**Corner 11** is a vertical inside 160° corner, crown slope angle = crown spring angle = 38 deg.... (see page 38), crown 11-12 spring angle = 38 (spring angle does not change for a horizontal or vertical turn).  $M=7.9$ ,  $B=6.1$

**Corner 12** - 270 deg outside corner, ceiling turn crown slope angle =  $90 - 38 = 52$ , crown 12-13 spring angle =  $38^\circ + 10^\circ = 48^\circ$  deg.  $M=31.6^\circ$ ,  $B=33.9^\circ$

**Corner 13** - 90 deg inside corner, ceiling turn crown slope angle = 52, crown 13-14 spring angle =  $48 - 10 = 38$  deg.  $M=31.6^\circ$ ,  $B=33.9^\circ$

**Corner 14** – 90° inside corner H/V with 10 deg slope, Horizontal crown slope =  $90 - \text{crown spring angle} = 90 - 38 = 52$  deg,  $M=31.6$ ,  $B=33.9$ . Vertical turn  $180+10= 190$  deg outside corner with vertical crown slope = crown spring angle = 38 deg crown slope angle, crown 14-15 spring angle =  $38^\circ$ ,  $M=3.9$ ,  $B=3.1$

**Note:** There is no change in the crown spring angle when making a H/V turn

**Corner 15** – 90° inside corner H/V with 10 deg slope, Horizontal crown slope = 90 – crown spring angle = 90 – 38 = 52 deg, M=31.6, B=33.9. Vertical turn 180+10= 190 deg outside corner with vertical crown slope = crown spring angle = 38 deg crown slope angle, crown 15-16 spring angle = 38°, M=3.9, B=3.1

**Note: There is no change in the crown spring angle when making a H/V turn**

**Corner 16** is a vertical inside 160° corner, crown slope angle = crown spring angle = 38 deg.... (see page 38), crown 16-17 spring angle = 38 (spring angle does not change for a horizontal or vertical turn). M=7.9, B=6.1

**Corner 17** - 270 deg outside corner, ceiling turn crown slope angle = 90 – 38 = 52, crown 17-18 spring angle = 38° + 10° = 48° deg. M=31.6°, B=33.9°

**Corner 18**- 90 deg inside corner, ceiling turn crown slope angle = 52, crown 18-1 spring angle = 48 - 10 = 38 deg. M=31.6°, B=33.9°

As I mentioned before, if you do not want to make the H/V turns (corners 1, 10, 14 & 15) then you can cope these joint as I show in Chapter 11. The crown spring angle will be the same as shown in the floor plan above....i.e. the crown on both sides of the coped joint will have a spring angle of 38 degrees. When coping, it will be best to cope the sloped crown into the horizontal crown. Cut the sloped crown to be coped at least 6” longer than the wall length measurement and make the coped joint first and when you get the coped joint it to fit then miter the other end of the crown piece for the ceiling plane turn.

Please let me know if this answers your question and if I can be of any further assistance.

Sincerely yours  
Wayne Drake, President  
CompoundMiter, Inc.