

Multi-Wing Z Series Fans Blade Pitch Angle Setting Instructions

Before You Begin:

To maintain balance of fan:

- Mark the hub castings across a joint.
- Mark the location of any balancing weight.
- Number the blades and blade sockets.

Step 1 – Determine Blade Type: 1Z, 2Z, 4Z, 5Z, 6Z, 7Z, TR7Z or TR8Z

Look for markings on blade which are in one of two places:

Look on cone section at base of blade, or

Look inside the bottom of the socket (blade must be removed from hub).

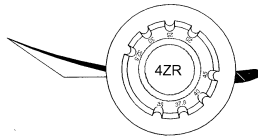
Finally, if not sure, visit Multi-Wing Parts at www.multi-wing.net, or contact us.

Step 2 – Determine Rotation Code: L or R

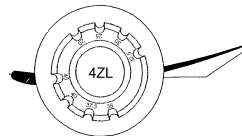
R rotation rotates clockwise facing air discharge; L rotation is counterclockwise facing air discharge.

Examples of rotation for 4Z blades as viewed from end of socket are below, and 5Z is similar.

R, or clockwise



L, or counterclockwise



Step 3 – Find Blade Pitch Angle: 20, 25, 27.5, 30, 32.5, 35, 37.5, 40, 45, or 50

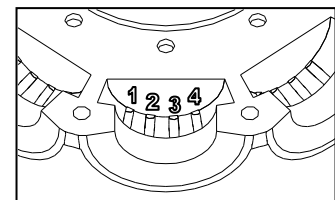
The blade pitch angle can be found several ways:

First, by knowledge of the Multi-Wing fan part number.

The pitch angle precedes the blade material code in the part number. For example, the pitch angle is 30 degrees in this part number: 36/9-9/30/PPG/5ZR/ SH 1-3/8 /AS

Second, by careful disassembly:

- Disassemble fan on flat surface, and note in which groove the pin is located. See number code in picture to the right.
- Using table in step 5 below, find the possible blade pitch.



Third, by calling a sales engineer at Multi-Wing for assistance.

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Step 4 – Determine Groove Number: 1, 2, 3 or 4

Find the groove number in chart below:

ROUND PIN PITCHES											
Type	Rotation	Blade Pitch Angle									
		20°	25°	27.5°	30°	32.5°	35°	37.5°	40°	45°	50°
1Z,2Z,4Z,7Z, TR7Z,TR8Z	R	4	3	-	2	1	4	3	2	1	-
1Z,2Z,4Z,7Z	L	1	2	-	3	4	1	2	3	4	-
5Z	R	-	4	-	3	2	1	4	3	2	1
5Z	L	-	1	-	2	3	4	1	2	3	4
6Z	R	1	2	1	3	2	4	-	-	-	-
6Z	L	1	2	4	3	3	4	-	-	-	-

3.5 DEGREE OFFSET PITCHES (SHALLOW SIDE)											
Type	Rotation	Blade Pitch Angle									
		16.5°	21.5°	24°	26.5°	29°	31.5°	34°	36.5°	41.5°	46.5°
1Z,2Z,4Z,7Z, TR7Z,TR8Z	R	4R	3R	-	2R	1R	4L	3L	2L	1L	-
1Z,2Z,4Z,7Z	L	1R	2R	-	3R	4R	1L	2L	3L	4L	-
5Z	R	-	4R	-	3R	2R	1R	4L	3L	2L	1L
5Z	L	-	1L	-	2L	3L	4L	1R	2R	3R	4R
6Z	R	1L	2L	1L	3L	2L	4L	-	-	-	-
6Z	L	1R	2R	4R	3R	3R	4R	-	-	-	-

3.5 DEGREE OFFSET PITCHES (STEEP SIDE)											
Type	Rotation	Blade Pitch Angle									
		23.5°	28.5°	31°	33.5°	36°	38.5°	41°	43.5°	48.5°	53.5°
1Z,2Z,4Z,7Z, TR7Z,TR8Z	R	4L	3L	-	2L	1L	4R	3R	2R	1R	-
1Z,2Z,4Z,7Z	L	1L	2L	-	3L	4L	1R	2R	3R	4R	-
5Z	R	-	4L	-	3L	2L	1L	4R	3R	2R	1R
5Z	L	-	1R	-	2R	3R	4R	1L	2L	3L	4L
6Z	R	1R	2R	1R	3R	2R	4R	-	-	-	-
6Z	L	1L	2L	4L	3L	3L	4L	-	-	-	-

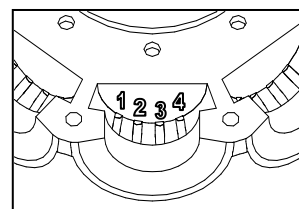
Step 5 – Final Assembly

Place one hub retainer piece down. A weighted coffee can could be used to elevate the fan from the work surface.

ROUND PIN

Using the Groove Number found in Step 4:

Using picture to right, place the locking pin in the groove number that you found in Step 4 above.



3.5 DEGREE OFFSET PIN

Using the Groove Number found in Step 4:

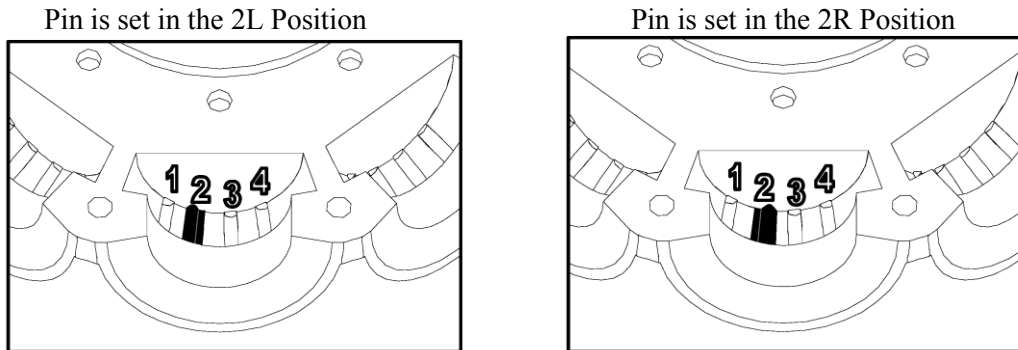
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Place the locking pin in the groove number that you found in Step 4 above.

If there is an R after the Groove number, align the pin so the elevated offset is to the right of the groove.

If there is an L after the Groove number, align the pin so the elevated offset is to the left of the groove.

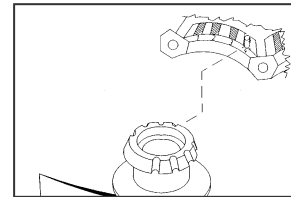
Example:



To change the offset to the left or right of the groove, the offset pin will need flipped lengthwise.

Finally, Insert Blades:

- Place the blade over the pin in the hub/retainer blade socket, so that the pin also fits into the appropriate pitch angle groove in the blade. See example picture to the right.



For 6Z fans, use the pitch angle groove in the blade marked with your rotation (R or L) and pitch angle. Example: L35 is “L” rotation and 35-degree pitch angle.

- Repeat for all blades.
- Assemble hubset together, aligning the match marks you made. Replace any balancing weight to its original position.
- To finish, tighten the bolts in a cross pattern to 5 to 6 foot-pounds of torque for the outer bolt circle.
- If shaft mounted fan: Mount center hub-boss to retainer plates. Use 5-6 ft lbs of torque for M6 bolts (qty 5), use 13-15 ft lbs for 5/16-18 bolts (qty 9).