

TECHNICAL BULLETIN – DDR20

SUBJECT: HOW TO INSTALL A DRUM SYPHON ELBOW

A. Determine the length of the vertical syphon pipe using a 60° elbow

1. Calculate dimension “A” by dividing the inside diameter of your drum by 2.
2. Subtract the desired syphon clearance (dimension “B”) from “A”. Multiply this result by 1.155 in order to find dimension “C”.
3. Consult the following chart. Select “D” based on the elbow size you are using. Subtract “D” from “C” in order to find the length of the angle pipe over the thread.

Elbow Size	“D”
¼”	1
3/8”	1
½”	7/8
¾”	1-9/16
1”	1-11/16

Example:

Let’s assume we have a 42” diameter drum that has an internal diameter of 40”.

Step 1. Divide internal diameter by 2. $A = 40/2 = 20$ ”.

Step 2. Subtract desired syphon clearance “B”, in this case .250”, from internal diameter A, or $20 = 19.750$ ”. Multiply this quantity by 1.155 to obtain dimension “C”. $19.750 \times 1.155 = 22.81125$ ”

Step 3. Assuming we are using a ½” elbow, if we check the chart in step 3 we find that “D” is 7/8” or 0.875”. We subtract “D” from “C” or $22.81125 - 0.875 = 21.936$. The closest fraction for 0.936 would be 15/16 or 0.9375, so your pipe length would be 21-15/16”.

B. Installation Instructions

1. After cutting the vertical syphon pipe to the appropriate length, thread both, the horizontal and the vertical pipe into the elbow.
2. Attach the horizontal pipe to the head of the rotary joint.
3. Open the syphon elbow so that the horizontal and vertical pipes are in-line (straight). Slide the assembly into the roll journal and then slowly turn the pipe assembly until the

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vertical pipe is pointing downward (you will turn the pipes 180°).

4. Attach the head of the rotary joint to the body of the rotary joint and tighten, following the recommendations of the rotary joint supplier.
5. In order to enhance condensate removal and improve the operation of the syphon, it is recommended that you cut the end of the vertical syphon leg at a 30° angle (parallel to the surface of the drum) rather than leaving it square. This permits blow-through steam and condensate to exit the vertical syphon pipe in the unlikely event that the leg contacts the roll.