

Untitled

Fabrication packet - 1 tube (1 bent, 0 straight) - 0 coped or mitered ends - every station is inches from the sawn END A unless a template says END B

TUBES 1 1 bent - 0 straight	CUT ENDS 0 templates in the 1:1 PDF	TUBE LENGTH 26" 1 blank, saw lengths	BENDS 1 on 1 tube
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CUT LIST

#	TUBE	BLANK (SA..	OD X WALL	END A	END B	BEND	WEIGHT	SHEETS
1	Tube-01	26	1.5 x 0.12	square	square	B1 90 deg @ 7.198	3.84 lb	-

Blank = saw length, long point to long point, the blank the flat pattern and the machine are built on. Material: -. Weights are for steel.

STOCK

SIZE	MATERIAL	PCS	TOTAL LENGTH	TUBES (#)
1.5 OD x 0.12 wall	-	1	26"	1

HOW TO READ THIS PACKET

- END A / END B

the two ends of every blank, named on every drawing and template. Bend start, clamp reference and landing stations are inches from the sawn END A.
- BEND START

where the arc begins (the die's tangent point). SET BENDER TO already includes the die's measured springback.
- 1:1 TEMPLATES

every wrap template is in the separate Wrap Templates PDF. Print it at 100%% (actual size) and check the bar before cutting.
- THETA

position around the tube. Theta 0 is the outside of the bend and the seam of every wrap template: scribe one line along the outside of the bend and use it for every template on that tube.
- RED / BLUE

red = the cut line, shaded red = waste; blue = a layout or reference mark. * = a plane reference, not a clamp-block face: the die has no clamp geometry, or the block face would fall off a leg shorter than its clamp window.

TUBE 1 OF 1

Tube-01

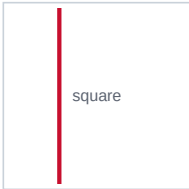
BLANK (SAW) 26 in	TUBE 1.5 x 0.12 OD x wall	WEIGHT 3.84 lb
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END A

SQUARE CUT

Do saw square, deburr the ID

Template none needed

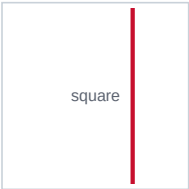


END B

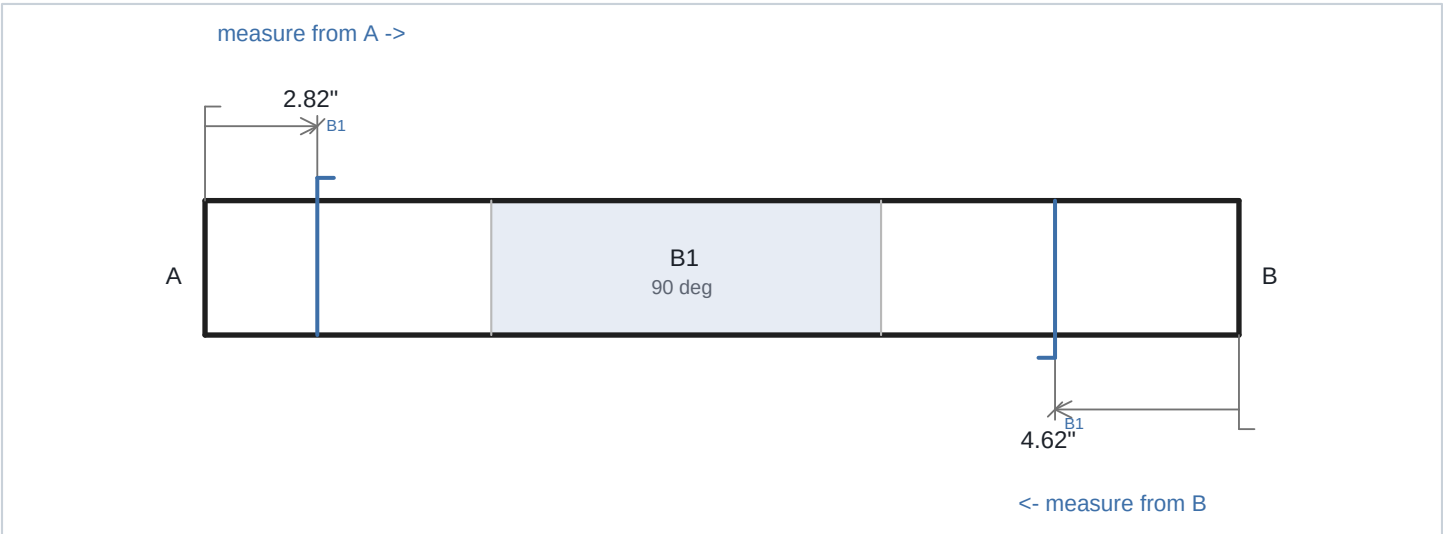
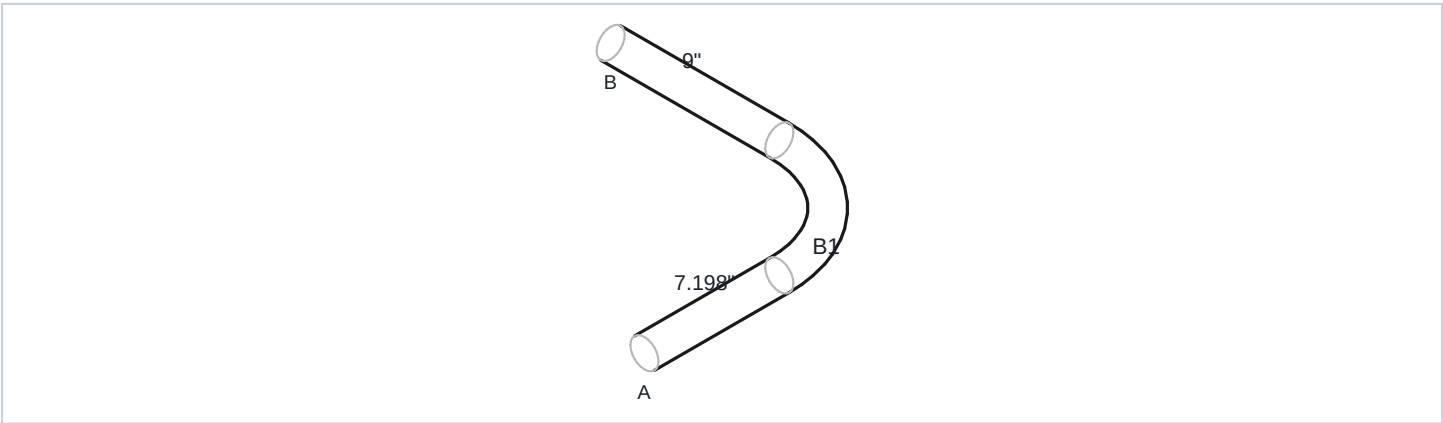
SQUARE CUT

Do saw square, deburr the ID

Template none needed



BEND	1 bend - die 1.5" x 6.24" CLR (4x) - dom-tubing					model drawn at 3 CLR, bent on the 6.24 die		
BEND	START FROM END A	ANGLE	SET BENDER TO (+SPRING)	ROTATION	CLR	ARC	STRAIGHT AFTER	
B1	7.198	90	92 (+2)	0	6.24	9.802	9	
Clamp block face - B1 feeding A>B: 2.823" from END A B1 feeding B>A: 4.625" from END B								



Unrolled blank, proportional along its length - not to scale. Stations are inches from the sawn end each chain hooks on. Seam = theta 0 = outside of bend. Red = end cut.

- 1 SAW

Blank 26", long point to long point. Deburr.
- 2 MARK

Bend start 7.198" from END A. Scribe the theta 0 line along what will be the outside of the bend.
- 3 BEND

B1 to 90 deg in the 6.24 CLR die: set 92 deg (2 deg springback). Rotation 0.

Bender tables

The classic LRA schedule and the centerline apex points, in the blank frame (sawn END A = 0): the same numbers as the tube cards.

BEND SCHEDULE (LRA)

TUBE	BEND	FEED L	ROT R	ANGLE A	SET TO	CLR	ARC	TAIL TO B	DIE
Tube-01	B1	7.198	0	90	92.05	6.24	9.802	9	1.5" x 6.24" CLR (4x) - d..

Feed = straight from END A (or from the previous bend's end tangent) to the bend start. Rotation is dialled between bends; bend 1 is the datum and reads 0. Set to = angle plus the die's measured springback. A bend-first blank's grip stock is not in the feed: measure from the finished END A.

CENTERLINE APEX POINTS (XYZ)

TUBE	POINT	X	Y	Z
Tube-01	start	0	0	0
Tube-01	apex1	13.438	0	0
Tube-01	end	13.438	15.24	0

START at the END A centerline, X along the first leg, the first bend in the XY plane.