
Short General Information Chart

Part name: 2X-435611-AB
Points: 5
Units: Inches
Report Time: 5:46:36 PM
Report Date: 4/8/2003
Print Reference: Sample layout with auxiliary views
Part Number: 2X-435611-AB
Customer: General Motors Corporation

Long General Information Chart

Part name: 2X-435611-AB
Points: 5
Units: Inches
Report Time: 5:46:36 PM
Report Date: 4/8/2003
Print Reference: Sample layout with auxiliary views
Part Number: 2X-435611-AB
Customer: General Motors Corporation
Offset End A: +0.000
Offset End B: +0.000
X Datum: +1.000
Y Datum: +1.000
Z Datum: +1.000
Total Length: +9.692
Total Length Adjusted: +9.570
Outer Diameter: +0.625

Customer note

Customer: General Motors Corporation

Original date note

Part Date: 2/15/96

Part number note

Part Number: 2X-435611-AB

Blueprint reference note

Part Reference: Sample layout with auxiliary views

Sequence notes

Sequence 1:
Sequence 2:
Sequence 3:
Sequence 4:

Fittings notes

Fitting 1:
Fitting 2:
Fitting 3:
Fitting 4:

Cannot find document file
Enter a filename for the document in the General Point Data Menu.

file: layout.tcd

geometric projection: these views were projected in a just a few minutes using the auxview command.

tubecad is an excellent teacher for beginners in projection because it calculates the shape of the projection view for you.

you will find that auxview is useful in reproducing -and even verifying- the projections on a customer print. if a view's shape was projected improperly on a print, then a quick comparison with the same projection in tubecad will show you were the print is wrong.

tip - create auxviews last: only after the primary view orientations are in their final position. auxviews are usually projected at a specific angle relative to a parent view. changing the parent view's angle with will cause the dependant auxviews to shift so the true views are no longer true.

 Tube material note

Tube Material: Low carbon steel

 Outer Diameter Information

OD: +0.625

 Total Length Chart

Total Length: +9.692
 Total Length Adjusted: +9.570

 Coordinate Synchronization Chart

Synchronization: ENABLED
 DBB Tolerance: +0.001
 Rotation Angle Tolerance: +0.001
 Bend Angle Tolerance: +0.000
 Sync Check Result: WARNING - ***NOT SYNCHRONIZED***

[D]CSYNC ERROR] Straight 3 Difference: -0.01640809 exceeds tolerace of 0.00100000
 Design Length: 0.35858589
 Layout Length: 0.37499398

[D]CSYNC ERROR] Rotation 2 Difference: 1.67710876 exceeds tolerace of 0.00100000
 Design Rotation: 35.81629944
 Layout Rotation: 34.13919067

[D]CSYNC ERROR] Bend 3 Difference: 0.81764221 exceeds tolerace of 0.00000000
 Design Angle: 91.89257813
 Layout Angle: 91.07493591

[D]CSYNC ERROR] Straight 4 Difference: 0.30111015 exceeds tolerace of 0.00100000
 Design Length: 0.70760620
 Layout Length: 0.40649605

 Layout Coordinates & Radii

Point	Label	X	Y	Z	Radius
1	1	+0.000	+0.000	-0.580	-----
2	2	+5.100	+0.000	-0.580	+1.120
3	3	+6.226	+0.000	-1.621	+1.120
4	4	+7.430	+1.811	-1.842	+1.120
5	5	+7.280	+2.062	-0.322	-----

 Design Coordinates & Radii

Point	Label	X	Y	Z	Radius
1	1	+0.000	+0.000	-0.580	-----
2	2	+5.100	+0.000	-0.580	+1.120
3	3	+6.226	+0.000	-1.621	+1.120
4	4	+7.430	+1.811	-1.842	+1.120

5 5 +7.280 +2.062 +0.000 -----

Coordinates & Radii - Alternate Units

Point	Label	X	Xa	Y	Ya	Z	Za
1	1	+0.000 in (	+0.000 mm)	+0.000 in (	+0.000 mm)	-0.580 in (	-14.732 mm)
2	2	+5.100 in (	+129.540 mm)	+0.000 in (	+0.000 mm)	-0.580 in (	-14.732 mm)
3	3	+6.226 in (	+158.135 mm)	+0.000 in (	+0.000 mm)	-1.621 in (	-41.184 mm)
4	4	+7.430 in (	+188.714 mm)	+1.811 in (	+46.012 mm)	-1.842 in (	-46.794 mm)
5	5	+7.280 in (	+184.904 mm)	+2.062 in (	+52.362 mm)	-0.322 in (	-8.186 mm)

Layout Coordinates - Origin Set to Zero

Point	Label	X	Y	Z	Radius
1	1	+0.000	+0.000	+0.000	-----
2	2	+5.100	+0.000	+0.000	+1.120
3	3	+6.226	+0.000	-1.041	+1.120
4	4	+7.430	+1.811	-1.262	+1.120
5	5	+7.280	+2.062	+0.258	-----

Layout Coordinates & Radii - Fractional

Point	Label	X	Y	Z	Radius
1	1	0	0	-0 37/64	-----
2	2	+5 3/32	0	-0 37/64	+1 1/8
3	3	+6 7/32	0	-1 5/8	+1 1/8
4	4	+7 7/16	+1 13/16	-1 27/32	+1 1/8
5	5	+7 9/32	+2 1/16	-0 21/64	-----

Layout Coordinates & Radii - Fractional Zeroed

Point	Label	X	Y	Z	Radius
1	1	0	0	0	-----
2	2	+5 3/32	0	0	+1 1/8
3	3	+6 7/32	0	-1 3/64	+1 1/8
4	4	+7 7/16	+1 13/16	-1 17/64	+1 1/8
5	5	+7 9/32	+2 1/16	+0 1/4	-----

Design Coordinates & Radii - Zeroed

Point	Label	X	Y	Z	Radius
1	1	+0.000	+0.000	+0.000	-----
2	2	+5.100	+0.000	+0.000	+1.120
3	3	+6.226	+0.000	-1.041	+1.120
4	4	+7.430	+1.811	-1.262	+1.120
5	5	+7.280	+2.062	+0.580	-----

Design Coordinates & Radii - Fractional

Point	Label	X	Y	Z	Radius
1	1	0	0	-0 37/64	-----
2	2	+5 3/32	0	-0 37/64	+1 1/8
3	3	+6 7/32	0	-1 5/8	+1 1/8
4	4	+7 7/16	+1 13/16	-1 27/32	+1 1/8
5	5	+7 9/32	+2 1/16	0	-----

Design Coordinates & Radii - Fractional Zeroed

Point	Label	X	Y	Z	Radius
1	1	0	0	0	-----
2	2	+5 3/32	0	0	+1 1/8
3	3	+6 7/32	0	-1 3/64	+1 1/8
4	4	+7 7/16	+1 13/16	-1 17/64	+1 1/8
5	5	+7 9/32	+2 1/16	+0 37/64	-----

Tangent Coordinates

Point	X	Y	Z
-------	---	---	---

2A	+4.661 in	+0.000 in	-0.580 in
2B	+5.422 in	+0.000 in	-0.878 in
3A	+5.734 in	+0.000 in	-1.166 in
3B	+6.595 in	+0.555 in	-1.689 in
4A	+6.801 in	+0.866 in	-1.727 in
4B	+7.319 in	+1.996 in	-0.722 in

Tangent Coordinates - Fractional

Point	X	Y	Z
2A	+4 21/32 in	0 in	-0 37/64 in
2B	+5 27/64 in	0 in	-0 7/8 in
3A	+5 47/64 in	0 in	-1 11/64 in
3B	+6 19/32 in	+0 9/16 in	-1 11/16 in
4A	+6 51/64 in	+0 55/64 in	-1 47/64 in
4B	+7 5/16 in	+ in	-0 23/32 in

Tangent Coordinates - Datum Zeroed

Point	X	Y	Z
2A	+4.661 in	+0.000 in	+0.000 in
2B	+5.422 in	+0.000 in	-0.298 in
3A	+5.734 in	+0.000 in	-0.586 in
3B	+6.595 in	+0.555 in	-1.109 in
4A	+6.801 in	+0.866 in	-1.147 in
4B	+7.319 in	+1.996 in	-0.142 in

Tangent Coordinates - Datum Zeroed and Fractional

Point	X	Y	Z
2A	+4 21/32 in	0 in	0 in
2B	+5 27/64 in	0 in	-0 19/64 in
3A	+5 47/64 in	0 in	-0 19/32 in
3B	+6 19/32 in	+0 9/16 in	-1 7/64 in
4A	+6 51/64 in	+0 55/64 in	-1 9/64 in
4B	+7 5/16 in	+ in	-0 9/64 in

Automatic CNC - L-R-A-Radius

Bend	L	R	A	Radius
1	+4.661 in	+0.000 deg	+42.770 deg	+1.120 in
2	+0.425 in	+109.889 deg	+61.780 deg	+1.120 in
3	+0.375 in	+34.139 deg	+91.075 deg	+1.120 in
4	+0.406 in	-----	-----	-----

Automatic CNC - L-R-A-Radius

Bend	L	R	A	Radius
1	+4.661 in	+0.000 deg	+42.770 deg	+1.120 in
2	+0.425 in	+109.889 deg	+61.780 deg	+1.120 in
3	+0.375 in	+34.139 deg	+91.075 deg	+1.120 in
4	+0.406 in	-----	-----	-----

Pines style Bender Chart

Bend	Angle	Stop	180RotL	Radius	
1	+42.770 deg	+5.030 in	+0.000 deg	+1.120 in	(+5 1/32)
2	+61.780 deg	+3.769 in	+109.889 deg	+1.120 in	(+3 49/64)
3	+91.075 deg	+2.187 in	+34.139 deg	+1.120 in	(+2 3/16)

Pines Bender Chart with Elongation Compensation

Bend	Angle	Stop	180RotL	Radius	
1	+42.770 deg	+4.908 in	+0.000 deg	+1.120 in	(+4 29/32)
2	+61.780 deg	+3.674 in	+109.889 deg	+1.120 in	(+3 43/64)
3	+91.075 deg	+2.130 in	+34.139 deg	+1.120 in	(+2 1/8)

Bend	Angle	Stop	360Rot	Radius		
1	+42.770 deg	+5.030 in	+0.000 deg	+1.120 in	(	+5 1/32)
2	+61.780 deg	+3.769 in	+109.889 deg	+1.120 in	(	+3 49/64)
3	+91.075 deg	+2.187 in	+144.028 deg	+1.120 in	(	+2 3/16)

 Conrac 1 with Elongation

Bend	Angle	Stop	360Rot	Radius		
1	+42.770 deg	+4.908 in	+0.000 deg	+1.120 in	(	+4 29/32)
2	+61.780 deg	+3.674 in	+109.889 deg	+1.120 in	(	+3 43/64)
3	+91.075 deg	+2.130 in	+144.028 deg	+1.120 in	(	+2 1/8)

 Conrac 2

Bend	Stop	360Rot	Angle	Radius		
1	+5.030 in	+0.000 deg	+42.770 deg	+1.120 in	(	+5 1/32)
2	+3.769 in	+109.889 deg	+61.780 deg	+1.120 in	(	+3 49/64)
3	+2.187 in	+144.028 deg	+91.075 deg	+1.120 in	(	+2 3/16)

 Conrac 2 with Elongation Compensation

Bend	Stop	360Rot	Angle	Radius		
1	+4.908 in	+0.000 deg	+42.770 deg	+1.120 in	(	+4 29/32)
2	+3.674 in	+109.889 deg	+61.780 deg	+1.120 in	(	+3 43/64)
3	+2.130 in	+144.028 deg	+91.075 deg	+1.120 in	(	+2 1/8)

 Compact

--- Length Section ---

Bend	DBP	DBB	STPdraw	STPcomp	ARClen
1	+5.100 in	+4.661 in	+5.030 in	+4.194 in	+0.836 in
2	+1.534 in	+0.425 in	+3.769 in	+2.562 in	+1.208 in
3	+2.186 in	+0.375 in	+2.187 in	+0.406 in	+1.780 in
4	+1.548 in	+0.406 in	-----	-----	-----

--- Angle Section ---

Bend	Bend	180Rot	360Rot	360RotRel
1	+42.770 deg	+0.000 deg	+0.000 deg	+0.000 deg
2	+61.780 deg	+109.889 deg	+109.889 deg	+109.889 deg
3	+91.075 deg	+34.139 deg	+34.139 deg	+144.028 deg

 Compact with Elongation Compensation

--- Length Section ---

Bend	DBP	DBB	STPdraw	STPcomp	ARClen
1	+5.100 in	+4.661 in	+4.908 in	+4.099 in	+0.809 in
2	+1.534 in	+0.425 in	+3.674 in	+2.505 in	+1.169 in
3	+2.186 in	+0.375 in	+2.130 in	+0.406 in	+1.723 in
4	+1.548 in	+0.406 in	-----	-----	-----

--- Angle Section ---

Bend	Bend	180Rot	360Rot	360RotRel
1	+42.770 deg	+0.000 deg	+0.000 deg	+0.000 deg
2	+61.780 deg	+109.889 deg	+109.889 deg	+109.889 deg
3	+91.075 deg	+34.139 deg	+34.139 deg	+144.028 deg

 Compact with Fractions

--- Length Section ---

Bend	DBP	DBB	STPdraw	STPcomp	ARClen
1	+5 3/32 in	+4 21/32 in	+5 1/32 in	+4 3/16 in	+0 27/32 in
2	+1 17/32 in	+0 27/64 in	+3 49/64 in	+2 9/16 in	+1 13/64 in
3	+2 3/16 in	+0 3/8 in	+2 3/16 in	+0 13/32 in	+1 25/32 in
4	+1 35/64 in	+0 13/32 in	-----	-----	-----

--- Angle Section ---

Bend	Bend	180Rot	360Rot	360RotRel
1	+42.770 deg	+0.000 deg	+0.000 deg	+0.000 deg
2	+61.780 deg	+109.889 deg	+109.889 deg	+109.889 deg
3	+91.075 deg	+34.139 deg	+34.139 deg	+144.028 deg

Compact with Elongation Comp and Fractions

```

--- Length Section ---
Bend      DBP          DBB          STPdraw      STPcomp      ARClen
  1      +5 3/32 in    +4 21/32 in   +4 29/32 in   +4 3/32 in    +0 13/16 in
  2      +1 17/32 in    +0 27/64 in   +3 43/64 in   +2 1/2 in     +1 11/64 in
  3      +2 3/16 in     +0 3/8 in     +2 1/8 in     +0 13/32 in   +1 23/32 in
  4      +1 35/64 in    +0 13/32 in
    
```

```

--- Angle Section ---
Bend      Bend          180Rot      360Rot      360RotRel
  1      +42.770 deg    +0.000 deg   +0.000 deg   +0.000 deg
  2      +61.780 deg    +109.889 deg +109.889 deg +109.889 deg
  3      +91.075 deg    +34.139 deg  +34.139 deg  +144.028 deg
    
```

Compact 2

```

--- Length Section ---
Bend      DBP          DBB          STPdraw      STPcomp      ARClen
  1      +5.100 in     +4.661 in    +5.030 in    +4.194 in     +0.836 in
  2      +1.534 in     +0.425 in    +3.769 in    +2.562 in     +1.208 in
  3      +2.186 in     +0.375 in    +2.187 in    +0.406 in     +1.780 in
  4      +1.548 in     +0.406 in
    
```

```

--- Angle Section ---
Bend      180Rot      360Rot      360RotRel      Bend
  1      +0.000 deg   +0.000 deg   +0.000 deg     +42.770 deg
  2      +109.889 deg +109.889 deg +109.889 deg   +61.780 deg
  3      +34.139 deg  +34.139 deg  +144.028 deg   +91.075 deg
    
```

Compact 2 with Elongation Compensation

```

--- Length Section ---
Bend      DBP          DBB          STPdraw      STPcomp      ARClen
  1      +5.100 in     +4.661 in    +4.908 in    +4.099 in     +0.809 in
  2      +1.534 in     +0.425 in    +3.674 in    +2.505 in     +1.169 in
  3      +2.186 in     +0.375 in    +2.130 in    +0.406 in     +1.723 in
  4      +1.548 in     +0.406 in
    
```

```

--- Angle Section ---
Bend      180Rot      360Rot      360RotRel      Bend
  1      +0.000 deg   +0.000 deg   +0.000 deg     +42.770 deg
  2      +109.889 deg +109.889 deg +109.889 deg   +61.780 deg
  3      +34.139 deg  +34.139 deg  +144.028 deg   +91.075 deg
    
```

Compact 2 with Fractions

```

--- Length Section ---
Bend      DBP          DBB          STPdraw      STPcomp      ARClen
  1      +5 3/32 in    +4 21/32 in   +5 1/32 in    +4 3/16 in    +0 27/32 in
  2      +1 17/32 in    +0 27/64 in   +3 49/64 in   +2 9/16 in    +1 13/64 in
  3      +2 3/16 in     +0 3/8 in     +2 3/16 in    +0 13/32 in   +1 25/32 in
  4      +1 35/64 in    +0 13/32 in
    
```

```

--- Angle Section ---
Bend      180Rot      360Rot      360RotRel      Bend
  1      +0.000 deg   +0.000 deg   +0.000 deg     +42.770 deg
  2      +109.889 deg +109.889 deg +109.889 deg   +61.780 deg
  3      +34.139 deg  +34.139 deg  +144.028 deg   +91.075 deg
    
```

Compact 2 with Elongation Compensation and Fractions

```

--- Length Section ---
Bend      DBP          DBB          STPdraw      STPcomp      ARClen
  1      +5 3/32 in    +4 21/32 in   +4 29/32 in   +4 3/32 in    +0 13/16 in
  2      +1 17/32 in    +0 27/64 in   +3 43/64 in   +2 1/2 in     +1 11/64 in
  3      +2 3/16 in     +0 3/8 in     +2 1/8 in     +0 13/32 in   +1 23/32 in
  4      +1 35/64 in    +0 13/32 in
    
```

```

--- Angle Section ---
Bend      180Rot      360Rot      360RotRel      Bend
  1      +0.000 deg   +0.000 deg   +0.000 deg     +42.770 deg
  2      +109.889 deg +109.889 deg +109.889 deg   +61.780 deg
  3      +34.139 deg  +34.139 deg  +144.028 deg   +91.075 deg
    
```

Dakota Tube Chart

Customer: General Motors Corporation
 Date: 2/15/96
 Part Number: 2X-435611-AB
 Print Reference: Sample layout with auxiliary views
 Tubing: Low carbon steel
 Cut Length: +9.692
 Point to Point: +7.570

TUBE COORDINATES

```

=====
Point      Label      X          Y          Z          Radius
-----
1          1          +0.000    +0.000    -0.580    -----
2          2          +5.100    +0.000    -0.580    +1.120
3          3          +6.226    +0.000    -1.621    +1.120
4          4          +7.430    +1.811    -1.842    +1.120
5          5          +7.280    +2.062    +0.000    -----
=====
    
```

```

=====
BEND      LENGTH      COLLET      CLAMP      C-LINE      ROTATION
ANGLES    SETTINGS    SETTINGS    AREA       LENGTH      INSTRUCTION
-----
1          +42.770     +5.030     -----    +4.661     +5.100     -----
2          +61.780     +3.769     +109.889   +0.425     +1.534     +109.889 CCW
3          +91.075     +2.187     +144.028   +0.375     +2.186     +34.139 CCW
4          -----    -----    -----    +0.406     +1.548     -----
=====
    
```

Dakota Tube Chart with Elongation Compensation

Customer: General Motors Corporation
 Date: 2/15/96
 Part Number: 2X-435611-AB
 Print Reference: Sample layout with auxiliary views
 Tubing: Low carbon steel
 Cut Length: +9.692
 Point to Point: +7.570

TUBE COORDINATES

```

=====
Point      Label      X          Y          Z          Radius
-----
1          1          +0.000    +0.000    -0.580    -----
2          2          +5.100    +0.000    -0.580    +1.120
3          3          +6.226    +0.000    -1.621    +1.120
4          4          +7.430    +1.811    -1.842    +1.120
5          5          +7.280    +2.062    +0.000    -----
=====
    
```

```

=====
BEND      LENGTH      COLLET      CLAMP      C-LINE      ROTATION
ANGLES    SETTINGS    SETTINGS    AREA       LENGTH      INSTRUCTION
-----
1          +42.770     +4.908     -----    +4.661     +5.100     -----
2          +61.780     +3.674     +109.889   +0.425     +1.534     +109.889 CCW
3          +91.075     +2.130     +144.028   +0.375     +2.186     +34.139 CCW
4          -----    -----    -----    +0.406     +1.548     -----
=====
    
```

Dakota Tube Chart, Fractional

Customer: General Motors Corporation
 Date: 2/15/96
 Part Number: 2X-435611-AB
 Print Reference: Sample layout with auxiliary views
 Tubing: Low carbon steel
 Cut Length: +9.692
 Point to Point: +7.570

TUBE COORDINATES

```

=====
Point      Label      X      Y      Z      Radius
  1         1         0      0     -0 37/64 -----
  2         2      +5 3/32      0     -0 37/64    +1 1/8
  3         3      +6 7/32      0      -1 5/8    +1 1/8
  4         4      +7 7/16     +1 13/16    -1 27/32    +1 1/8
  5         5      +7 9/32     +2 1/16      0 -----
=====
    
```

```

=====
BEND      LENGTH      COLLET      CLAMP      C-LINE      ROTATION
ANGLES    SETTINGS    SETTINGS    AREA       LENGTH      INSTRUCTION
-----
1      +42.770    +5.030    -----    +4.661     +5.100    -----
2      +61.780    +3.679    +109.889   +0.425     +1.534    +109.889 CCW
3      +91.075    +2.187    +144.028   +0.375     +2.186    +34.139 CCW
4      -----    -----    -----    +0.406     +1.548    -----
=====
    
```

Dakota Tube Chart with Elongation Compensation, Fractional

Customer: General Motors Corporation
 Date: 2/15/96
 Part Number: 2X-435611-AB
 Print Reference: Sample layout with auxiliary views
 Tubing: Low carbon steel
 Cut Length: +9.692
 Point to Point: +7.570

TUBE COORDINATES

```

=====
Point      Label      X      Y      Z      Radius
  1         1         0      0     -0 37/64 -----
  2         2      +5 3/32      0     -0 37/64    +1 1/8
  3         3      +6 7/32      0      -1 5/8    +1 1/8
  4         4      +7 7/16     +1 13/16    -1 27/32    +1 1/8
  5         5      +7 9/32     +2 1/16      0 -----
=====
    
```

```

=====
BEND      LENGTH      COLLET      CLAMP      C-LINE      ROTATION
ANGLES    SETTINGS    SETTINGS    AREA       LENGTH      INSTRUCTION
-----
1      +42.770    +4.908    -----    +4.661     +5.100    -----
2      +61.780    +3.674    +109.889   +0.425     +1.534    +109.889 CCW
3      +91.075    +2.130    +144.028   +0.375     +2.186    +34.139 CCW
4      -----    -----    -----    +0.406     +1.548    -----
=====
    
```

Jack Heckman with Elongation Compensation

Bend	Angle	Stop	Rotation	DBP	DBB	Radius
1	+42.770	0' 4-15/16"	+109.889 (CCW)	+5.100	+4.661	+1.120
2	+61.780	0' 3-11/16"	+34.139 (CCW)	+1.534	+0.425	+1.120
3	+91.075	0' 2-1/8"		+2.186	+0.375	+1.120
				+1.548	+0.406	

Total Length = 0' 9-11/16"
 Total Length Adjusted = 0' 9-9/16"
 Cross Check = 0' 7-9/16"

Eaton Leonard Laservision

Part Number: 2X-435611-AB
 Outer Diameter: +0.625 in

1	X =	+0.000 in	Y =	+0.000 in	Z =	-0.580 in	Radius =	+1.120 in
2	X =	+5.100 in	Y =	+0.000 in	Z =	-0.580 in	Radius =	+1.120 in
3	X =	+6.226 in	Y =	+0.000 in	Z =	-1.621 in	Radius =	+1.120 in
4	X =	+7.430 in	Y =	+1.811 in	Z =	-1.842 in	Radius =	+1.120 in
5	X =	+7.280 in	Y =	+2.062 in	Z =	-0.322 in		

1	DBB =	+4.661 in	POB =	+0.000 deg	DOB =	+42.770 deg	Radius =	+1.120 in
2	DBB =	+0.425 in	POB =	+109.889 deg	DOB =	+61.780 deg	Radius =	+1.120 in
3	DBB =	+0.375 in	POB =	+34.139 deg	DOB =	+91.075 deg	Radius =	+1.120 in
4	DBB =	+0.406 in						

 TubeCAD Long

	Part Number	2X-435611-AB		
	Outer Diameter	+0.625 in	(	+0 5/8 in)
	Offset End One	+0.000 in	(	0 in)
	End to Tangent	+4.661 in	(	+4 21/32 in)
Bend 1	Point 1 to Point 2	+5.100 in	(	+5 3/32 in)
	Angle of Bend	+42.770 deg	(
	Radius	+1.120 in	(	+1 1/8 in)
	Tangent Distance	+0.439 in	(	+0 7/16 in)
	Arc Length	+0.836 in	(	+0 27/32 in)
	Arc Length Adjusted	+0.809 in	(	+0 13/16 in)
	Point 2 to Point 3	+1.534 in	(	+1 17/32 in)
	Length Between Bends	+0.425 in	(	+0 27/64 in)
	Rotation (+/- 180 Degrees)	+0.000 deg	(	SP)
	Length Between Bends	+0.425 in	(	+0 27/64 in)
	Rotation (+/- 180 Degrees)	+0.000 deg	(	SP)
Bend 2	Point 2 to Point 3	+1.534 in	(	+1 17/32 in)
	Angle of Bend	+61.780 deg	(
	Radius	+1.120 in	(	+1 1/8 in)
	Tangent Distance	+0.670 in	(	+0 43/64 in)
	Arc Length	+1.208 in	(	+1 13/64 in)
	Arc Length Adjusted	+1.169 in	(	+1 11/64 in)
	Point 3 to Point 4	+2.186 in	(	+2 3/16 in)
	Length Between Bends	+0.375 in	(	+0 3/8 in)
	Rotation (+/- 180 Degrees)	+109.889 deg	(	CCW)
	Length Between Bends	+0.375 in	(	+0 3/8 in)
	Rotation (+/- 180 Degrees)	+109.889 deg	(	CCW)
Bend 3	Point 3 to Point 4	+2.186 in	(	+2 3/16 in)
	Angle of Bend	+91.075 deg	(
	Radius	+0.000 in	(	0 in)
	Tangent Distance	+1.141 in	(	+1 9/64 in)
	Arc Length	+1.780 in	(	+1 25/32 in)
	Arc Length Adjusted	+1.723 in	(	+1 23/32 in)
	Point 4 to Point 5	+1.548 in	(	+1 35/64 in)
	Length Between Bends	+0.406 in	(	+0 13/32 in)
	Rotation (+/- 180 Degrees)	+34.139 deg	(	CCW)
	Tangent to End	+0.375 in	(	+0 3/8 in)
	Offset End Two	+0.000 in	(	0 in)
	Total Length	+9.692 in	(	+9 11/16 in)
	Total Length Adjusted	+9.570 in	(	+9 9/16 in)
	Cross Check	+7.570 in	(	+7 37/64 in)

 TubeCAD Short

Point	Label	X	Y	Z	L	R	A	Radius
1	1	+0.000	+0.000	-0.580	+4.661	+0.000	+42.770	+1.120
2	2	+5.100	+0.000	-0.580	+0.425	+109.889	+61.780	+1.120
3	3	+6.226	+0.000	-1.621	+0.375	+34.139	+91.075	+1.120
4	4	+7.430	+1.811	-1.842	+0.406	-----	-----	-----
5	5	+7.280	+2.062	-0.322	-----	-----	-----	-----

 TubeCAD Short

Point	Label	X	Y	Z	L	R	A	Radius
1	1	+0.000	+0.000	-0.580	+4.661	+0.000	+42.770	+1.120
2	2	+5.100	+0.000	-0.580	+0.425	+109.889	+61.780	+1.120
3	3	+6.226	+0.000	-1.621	+0.375	+34.139	+91.075	+1.120
4	4	+7.430	+1.811	-1.842	+0.406	-----	-----	-----
5	5	+7.280	+2.062	-0.322	-----	-----	-----	-----

TubeCAD Short - Origin Set To Zero

Point	Label	X	Y	Z	L	R	A	Radius
1	1	+0.000	+0.000	+0.000	+4.661	+0.000	+42.770	+1.120
2	2	+5.100	+0.000	+0.000	+0.425	+109.889	+61.780	+1.120
3	3	+6.226	+0.000	-1.041	+0.375	+34.139	+91.075	+1.120
4	4	+7.430	+1.811	-1.262	+0.406			
5	5	+7.280	+2.062	+0.258				

TubeCAD Short - Origin Set To Zero

Point	Label	X	Y	Z	L	R	A	Radius
1	1	+0.000	+0.000	+0.000	+4.661	+0.000	+42.770	+1.120
2	2	+5.100	+0.000	+0.000	+0.425	+109.889	+61.780	+1.120
3	3	+6.226	+0.000	-1.041	+0.375	+34.139	+91.075	+1.120
4	4	+7.430	+1.811	-1.262	+0.406			
5	5	+7.280	+2.062	+0.258				