



# CP432 Tube and Pipe Bender Kit

Bulletin 4391-CP432



ENGINEERING YOUR SUCCESS.

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### Tooling Selection – Inch Tube and Pipe Sizes

The tooling for all sizes ranging from 1/4" through 2" tube and 1/2" through 2" pipe is included with the bender. Listed below are the components required for bending each size.

Tube O.D.	Bend Radius	Radius Block Part #	Slide Block Part # (2 req'd.)	Drive Pin
1/4"	9/16	975179	975185	975221
3/8"	1-1/4	975179		
1/2"	1-1/2	975179		
5/8"	1-7/8	975180	975186	
3/4"	2-1/4	975180		
1"	3	975181	975187	A-12
1-1/4"	3-3/4	975182		
1-1/2"	4-1/2	975183		
2"	8	975184	975188	

Pipe Size	Bend Radius	Radius Block Part #	Slide Block Part # (2 req'd.)	Drive Pin
1/2	3-3/16	BZ-12011	BZ-12071	A-12
3/4	5	BZ-12021		
1	5-7/8	BZ-12031		
1-1/4	7-1/4	BZ-12041		
1-1/2	8	BZ-12051		
2	9-1/2	BZ-12061		

### Capacity Guide

Tube O.D.	Minimum Wall Thickness without Wrinkling	Maximum Wall Thickness	
		Steel	SS
1/4	.028	*	*
3/8	.035	*	*
1/2	.035	*	*
5/8	.049	0.188	0.188
3/4	.065	0.188	0.188
1	.065	0.188	0.134
1-1/4	.083	0.188	0.134
1-1/2	.095	0.188	0.134
2	.120	0.188	0.134

\*For sizes 1/2" OD and below, fully annealed steel and stainless steel tube can be bent with no limit on wall thickness.

Pipe Size	Maximum Schedule
1/2	80
3/4	80
1	80
1-1/4	80
1-1/2	80
2	80

### Radius Blocks for CP432 – Metric Tube Sizes

Tube O.D. (mm)	Bend Radius (mm)	Part #
10	34	976503-Block
12	34	976503-Block
14	38	976503-Block
15	38	976505
16	38	976505
18	42	976508
20	42	976508
22	89	976510
25	100	976510
30	100	976512
32	100	976515
35	105	976516
38	114	976517
42	128	976518
50	200	976519

### Slide Blocks for CP432 – Metric Tube Sizes

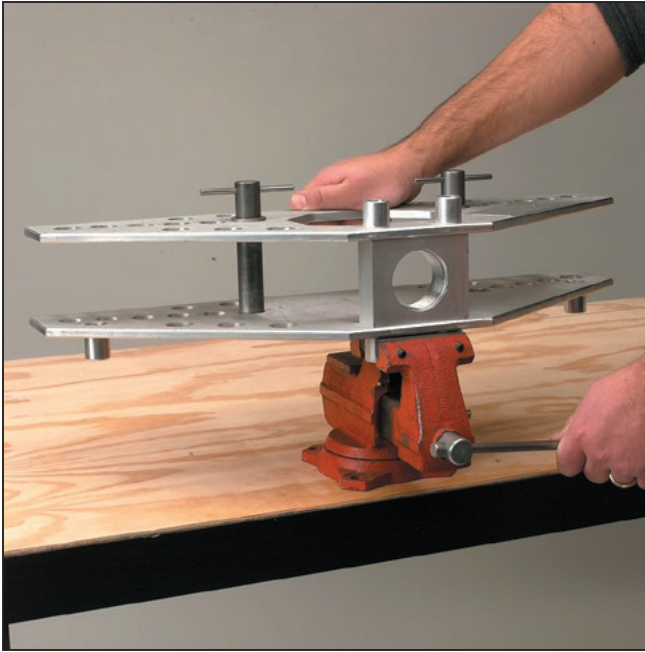
Tube O.D. (mm)	Part #
10	976504
12	976504
14	976504
15	976506
16	976506
18	976509
20	976509
22	976511
25	976511
30	976513
32	976513
35	976520
38	976520
42	976521
50	976521



### Accessories

Tube O.D. (mm)	Part #
Metric Tooling Kit (10-50mm)	CP432-MM TOOL KIT

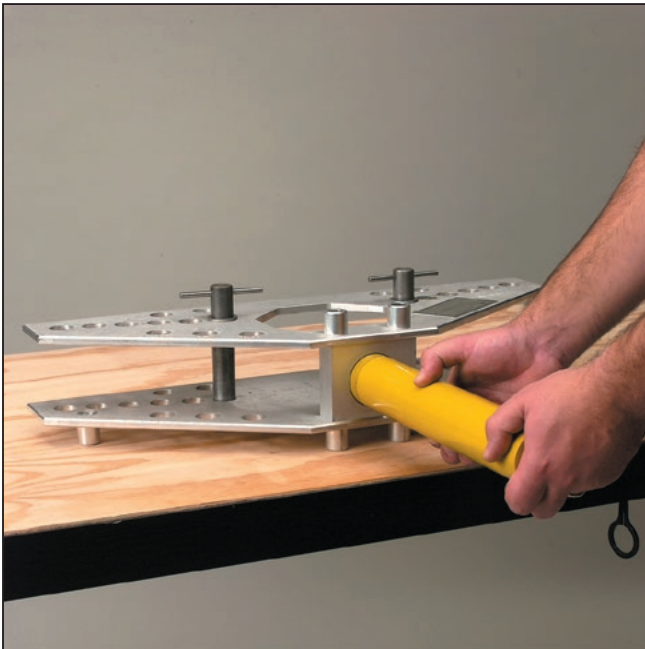
## Set-Up



**Step 1** Clamp the Base Assembly in a Vise or place the Base Assembly on a table/flat surface.



**Step 2** Install the quick coupling, part number 3050-3, into the Cylinder Assembly. Use pipe thread sealant to assure a leak free connection.



**Step 3** Thread the Cylinder Assembly into the open end of the Base Assembly.



**Step 4** Install the 6' Hose Assembly into the port of the air/hydraulic pump. Use pipe thread sealant to assure a leak free connection.

## Set-Up (Continued)



**Step 5** Install the quick coupling, part number 3010-3, onto the hose assembly. Use pipe thread sealant to assure a leak-free connection.

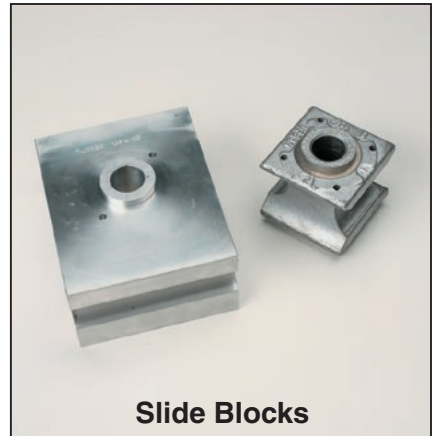
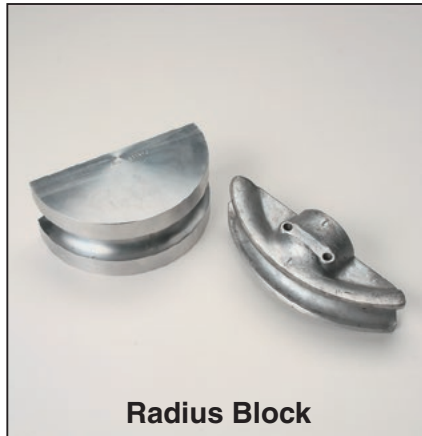


**Step 6** Connect the quick couplings on the hose and cylinder.

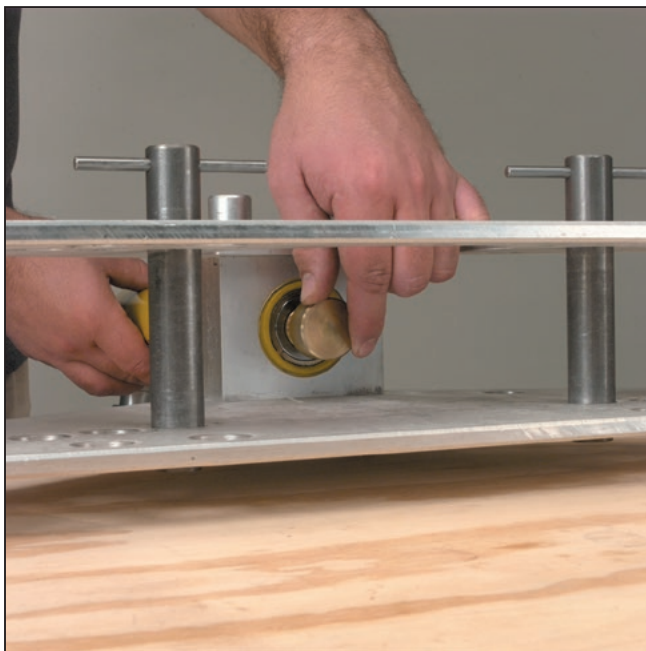


**Step 7** Connect a 90 psi air supply to the corresponding port on the air/hydraulic pump.

## Tooling Selection & Installation



**Step 1** Select the Drive Pin, Radius Block and Slide Blocks based on the Tube O.D. or inch pipe size (IPS) to be bent. See chart on page 2.



**Step 2** Thread the Drive Pin into the cylinder assembly.

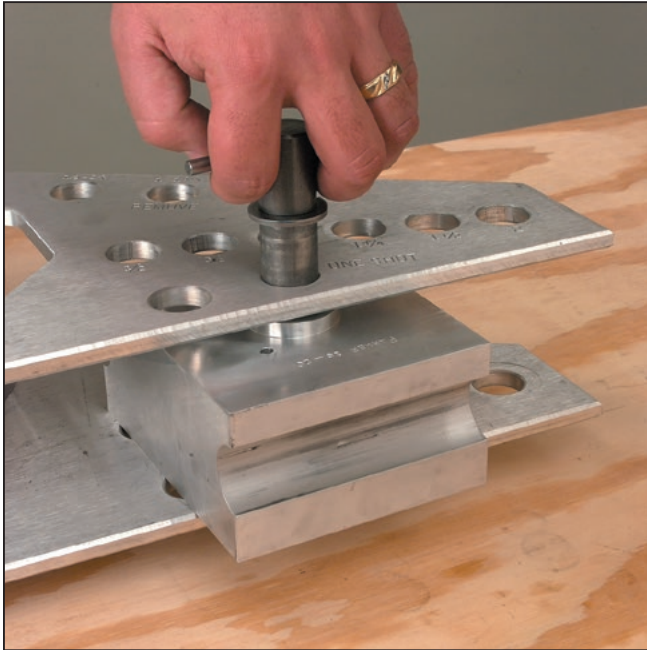


**Step 3** Place the Radius Block into position over the drive pin. When using a radius block with multiple sizes, be sure to install it with the largest size at the bottom.

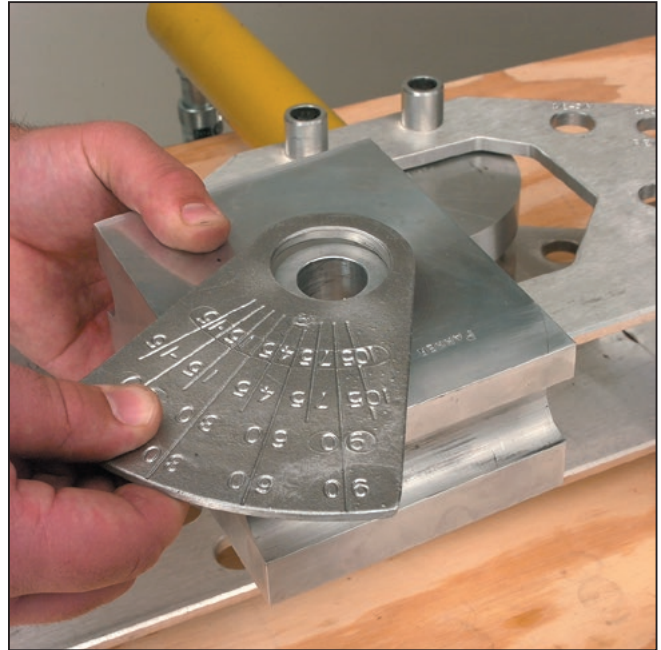
\*For IPS and 1"-2" tube — Insert the locking pin into the corresponding holes in the radius block.

## Tooling Selection & Installation

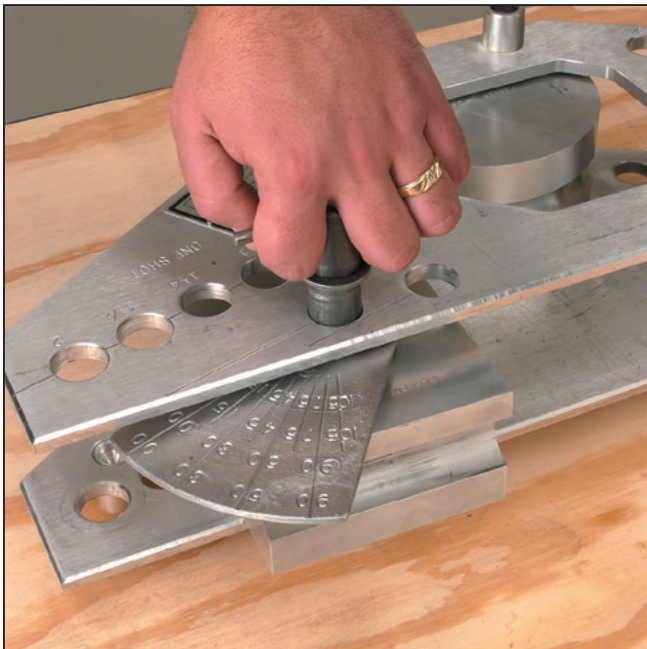
For the following three steps, please refer to cover photo for bender orientation if needed.



**Step 4** Install the slide block for the left side in the hole location corresponding to its size, using the pivot pin as shown. For slide blocks with multiple sizes, be sure to install with the largest size at the bottom.



**Step 5** Orient the right slide block's groove that is equal to the size tube or pipe to be bent, facing the radius block. Then, install the angle indicator on the slide block as shown.



**Step 6** Install the slide block/angle indicator assembly in the hole corresponding to its size using the drive pin to hold it in place.

## Duplicating Tube Assemblies



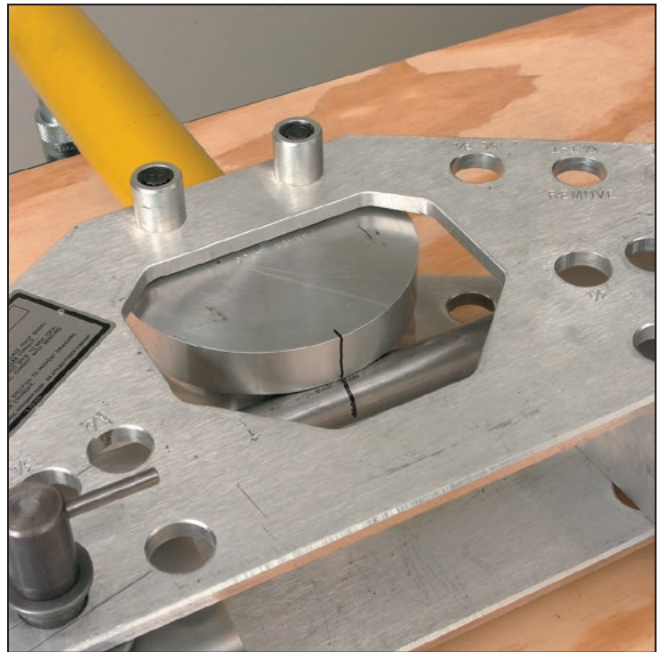
**Step 1** Mark the center of all bends on the tube assembly to be duplicated.



**Step 2** Measure from one end of the tube to the center of the first bend. It is necessary to measure along the centerline of the tube as close as possible to achieve the correct distance.



**Step 3** Mark the tube to be bent with the measured distance.



**Step 4** Place the tube in the bender, orienting the mark on the tube with the center of the radius block.



### Duplicating Tube Assemblies (Continued)



**Step 5** Prior to bending, assure that there is adequate tube length to contact the slide blocks on either side.



**Step 6** Keeping all hands free from the moving parts of the bender, depress the foot pedal on the air/hydraulic pump to begin bending.



**Step 7** Continue operation, when the angle indicator reaches the desired bend angle, release the foot pedal on the pump.



**Step 8** Depress the upper portion of the foot pedal to retract the radius block.

### Duplicating Tube Assemblies (Continued)



**Step 9** Remove the tube. Re-orienting the slide blocks may be necessary for tube removal.



**Step 10** Check the bend angle. In some cases it is necessary to overbend a few degrees to compensate for springback in the tube. If necessary, place the tube in the bender and repeat steps 4 through 9.



**Step 11** Measure the distance from the center mark on the first bend to the center of the second bend on the original tube.

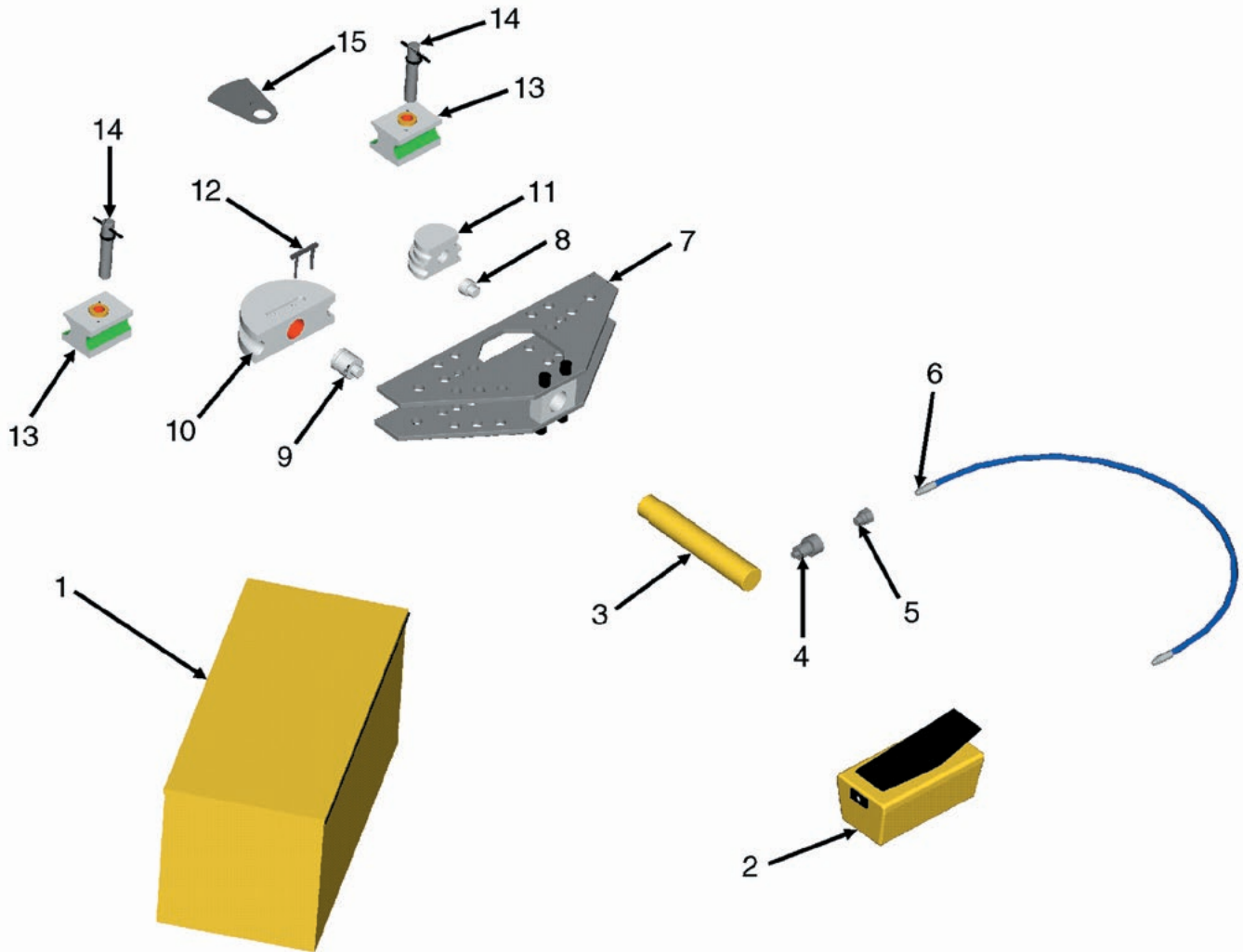


**Step 12** Measure the tube to be bent from the center mark on the first bend to the distance measured on the original tube. Mark the tube.

**Step 13** Repeat steps 4 through 10.

**Step 14** For additional bends, repeat steps 11

**Parts Breakdown**



Item #	Part #	Description
1	CM-4	Steel Carry Case
2	PAT-1102N	Air/Hydraulic Pump, 10,000psi
3	RC-1010	Hydraulic Cylinder, 10,000psi
4	3050-3	Quick Coupler, 10,000psi
5	3010-3	Quick Coupler, 10,000psi
6	975222	10,000psi Hose Assembly, 6'
7	BZ-12371	Frame Assembly
8	975221	Drive Pin for 1/4" through 3/4" tube
9	A-12	Drive Pin for 1" -2" tube, 1/2" - 2" IPS
10	See Pg. 3	Single Size Radius Block
11	See Pg. 3	Multiple Size Radius Block
12	BZ-12377	Locking Pin for Single Size Radius Blocks
13	See Pg. 3	Slide Blocks (2 required)
14	BZ-12375	Pivot Pin for Slide Blocks
15	BZ-12091	Angle Indicator







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