

Washing Machine Instruction Manual

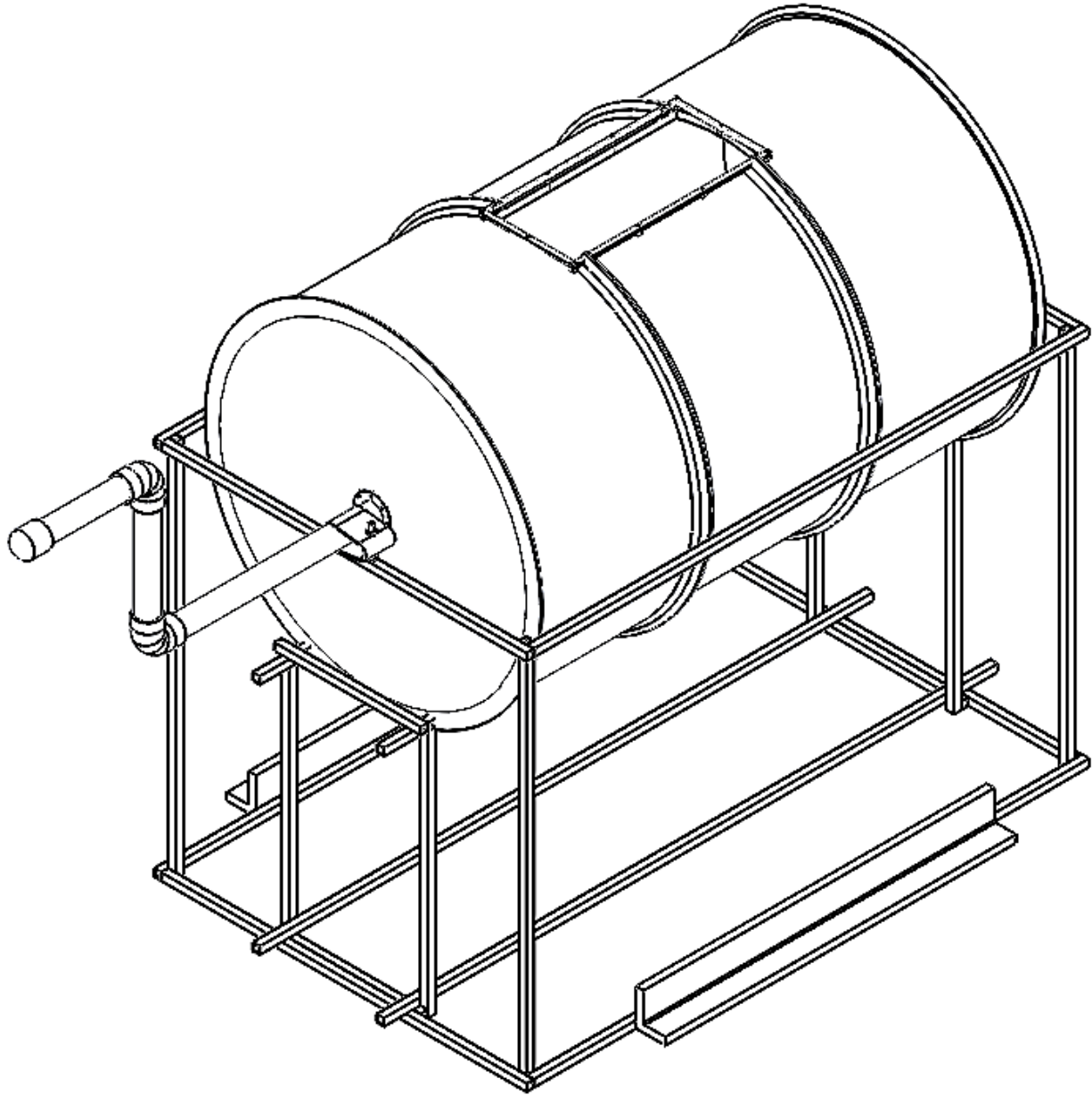


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Total Bill of Materials

<u>Item</u>	<u>Quantity</u>
13 mm Steel Tubing	17 m
Rubber Inner Tube	2 m
55 Gallon Drum	1
6.35 mm Bolts 7.75 cm	2
6.35 mm Bolts 5 cm	10
6.35 mm Hex Nuts	24
55 mm PVC Pipe	0.5 m
25 mm PVC Pipe	5 m
25 mm PVC 90° Elbows	10
25 mm PVC T-Joint	8
25 mm PVC Cap	2
2.5 mm Bolts or Screws	36
2.5 mm Hex Nuts	36
Angle Iron	120 cm

Supplemental Instructions:

General:



The brush-and-tub symbol used throughout the instructions represents the use of PVC glue. A combination of primer and glue is recommended for most effectively attaching PVC components.



The welding symbol is used wherever metal tubing needs attaching.



The boiling symbol is used to indicate that a piece of PVC needs to soak in boiling water. This allows the pipe to be easily deformed.



The pinching symbol indicates that a piece of PVC needs re-formed via squeezing. An effective way to do this is by sliding a smaller diameter PVC tube through the bearing and pinching until snug.



The cutting symbol indicates that a piece requires incision. This is used for instances of cutting and hole puncturing in the barrel or in a piece of PVC. Any appropriate tool can be used. Holes for bolts are recommended to be 0.375" (10 mm) for the 0.5" (6.35 mm), but any size hole can work as long as it provides a snug fit for the bolt.

Agitator:

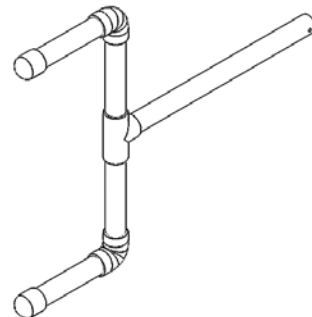
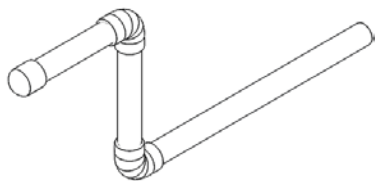
All PVC pieces used in the construction of the agitator are 1" (25 mm) diameter. The elbows and T-corner pieces should all be flush when assembled. The fins should ideally be offset 90 degrees from each other, one in each cardinal direction. The holes in either end of the shaft are for bolts that increase replaceability of each of the PVC components.

Bearings:

The bearings are created by boiling short segments of 2" (55 mm) diameter PVC. After a few minutes, they should be pliable enough to reform by hand. Care should be taken when dealing with hot water and PVC.

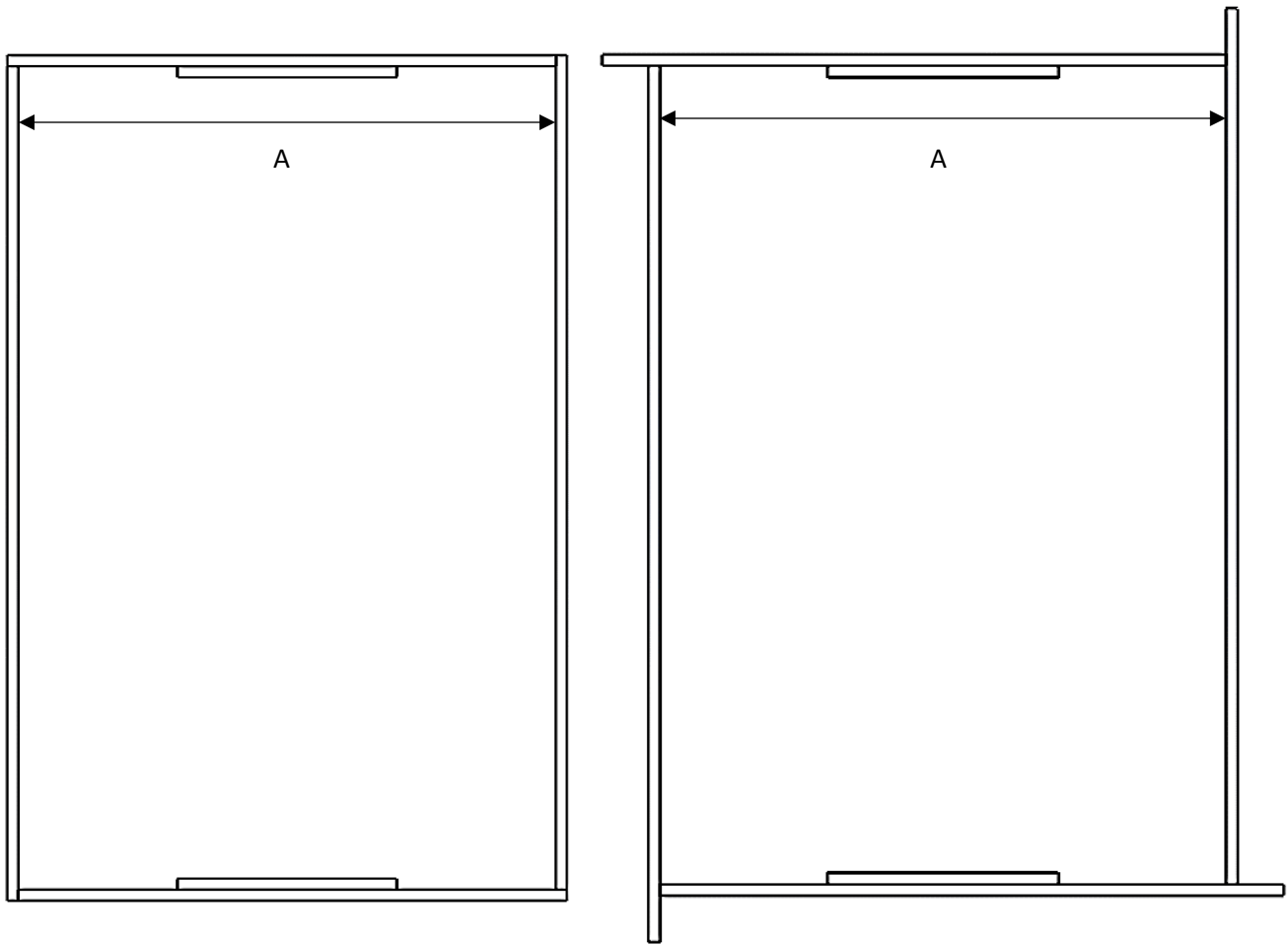
Hand Crank:

The handle used to rotate the agitator can be made in any shape that the user feels will be easiest to operate. The only restriction is that the hand crank be able to attach to the agitator through the axial hole in the barrel. Some potential handles are shown below.



Frame:

All metal tube pieces can be several centimeters longer than indicated. The length values listed in the instructions are minimum values. The exceptions to this are the vertical, 17" (43.2 cm) pieces, labelled "B" in the manual. These should be as close to the indicated value as reasonably possible. The critical dimensions for the construction of the frame are the inside dimensions when attaching tubes together, which should be measured as closely as possible. All metal pieces attach at 90-degree angles. The images below show how the frame can be constructed using pieces longer than shown. The distance "A" is the same in both images.



Drum:

The sharp edges created from cutting in steps 1 and 2 need to be covered with rubber. They are covered by single or multiple pieces of rubber. In all steps where rubber is applied, the bolt heads are to be on the inside of the barrel. This means that the threads of the bolts and the corresponding nuts will be on the outside of the barrel.

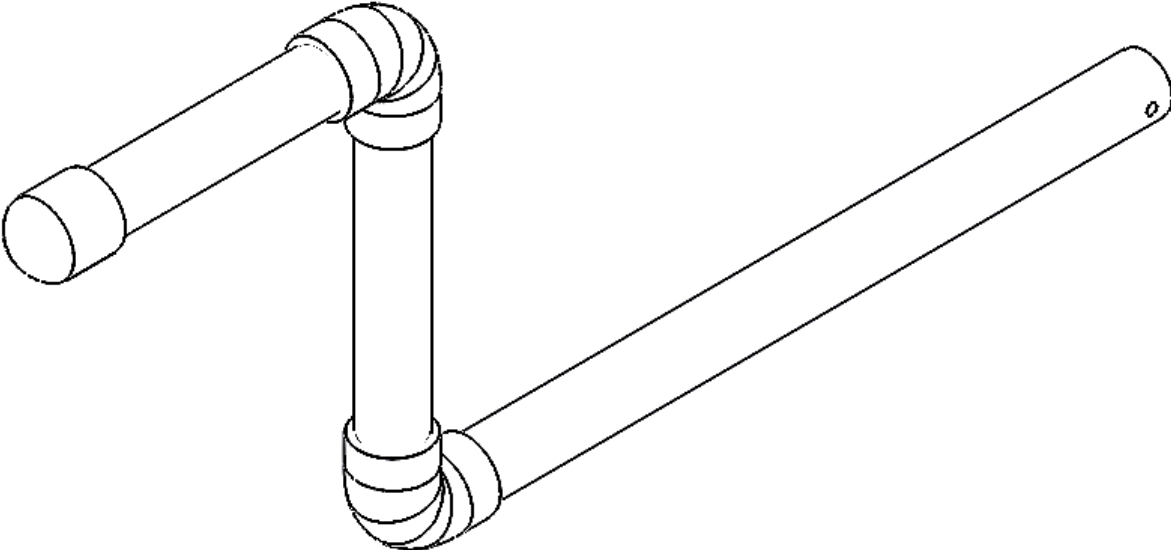
Assembly:

The bolts welded to the frame should be oriented so that the threads are facing up and the head is touching the frame. There are two nuts on this bolt, one on either side of the PVC bearing to hold the bearing in place without slipping. To insert the agitator, it must be rotated as it is lowered into the barrel. Once the agitator is inside the barrel, bolts and nuts can be inserted to connect it to the tail and the hand crank.

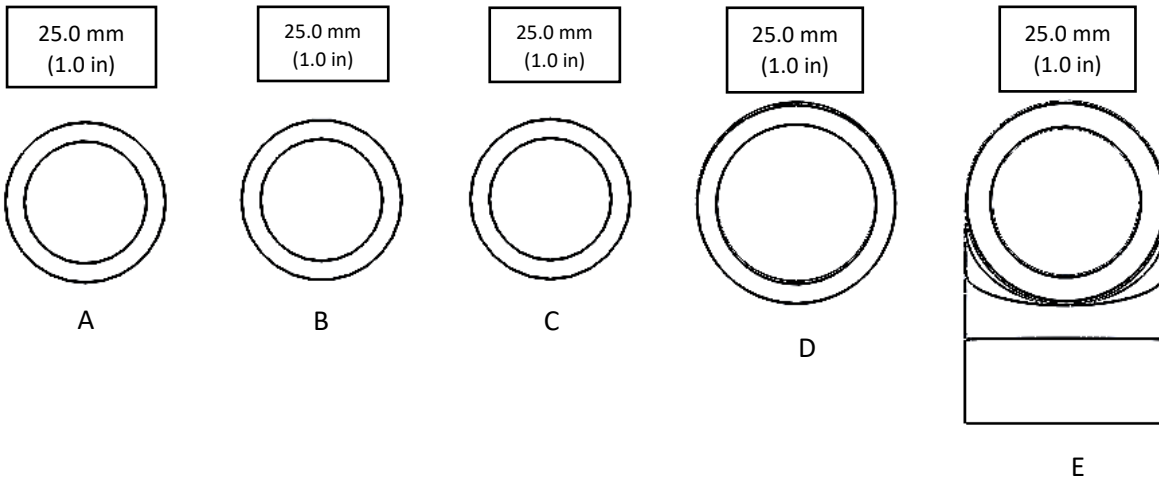
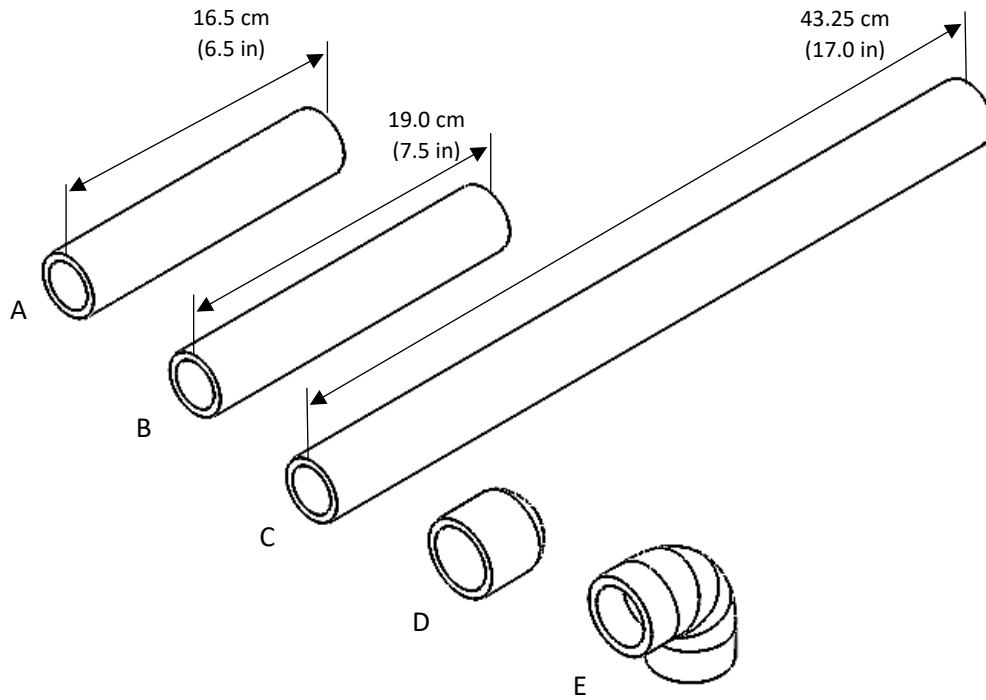
Plug:

To attach the plug to the barrel, washers and bolts connect as shown in the manual. A piece of rubber is inserted between the barrel and the first washer to create a waterproof seal.

Hand Crank:

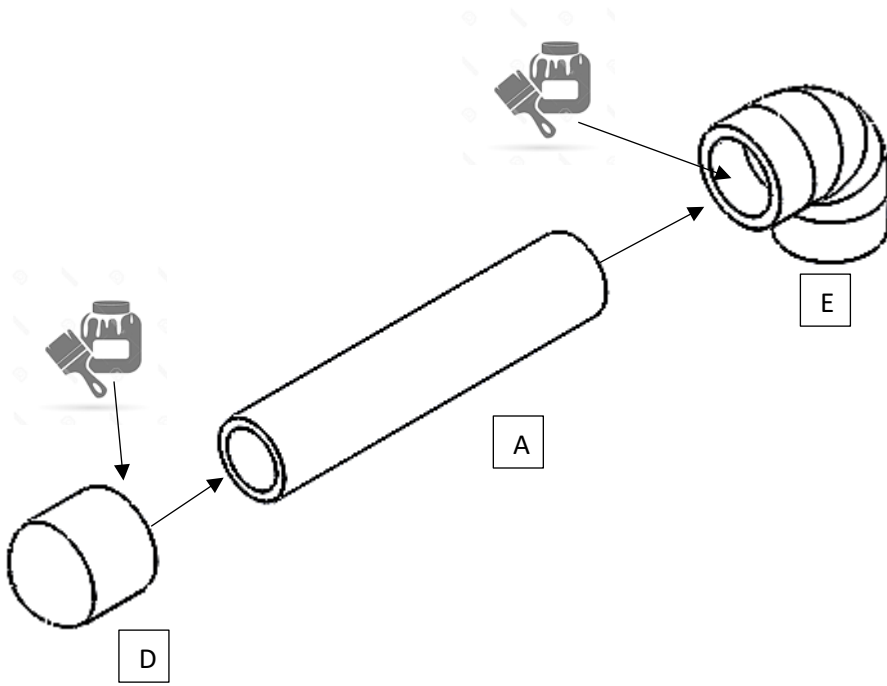
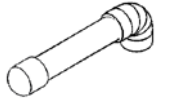
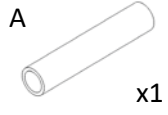


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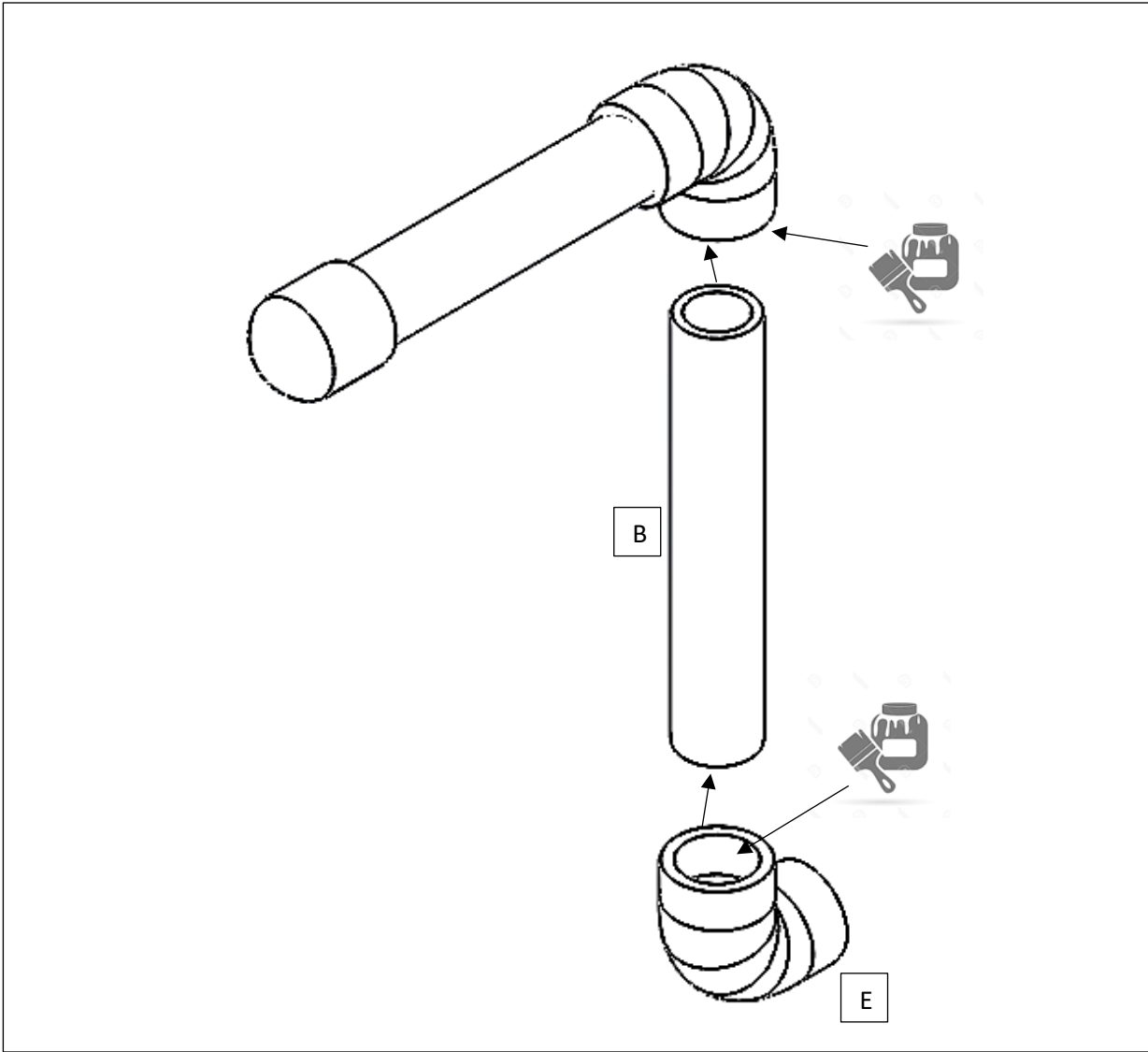
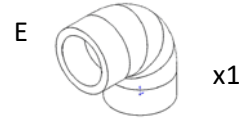
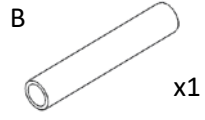


A	x1
B	x1
C	x1
D	x1
E	x2

1)



2)

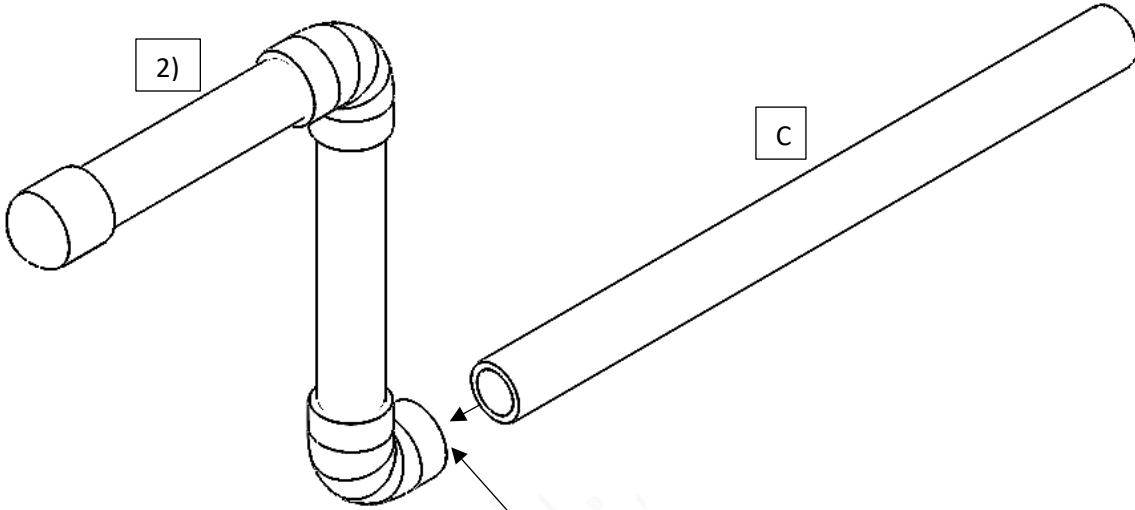


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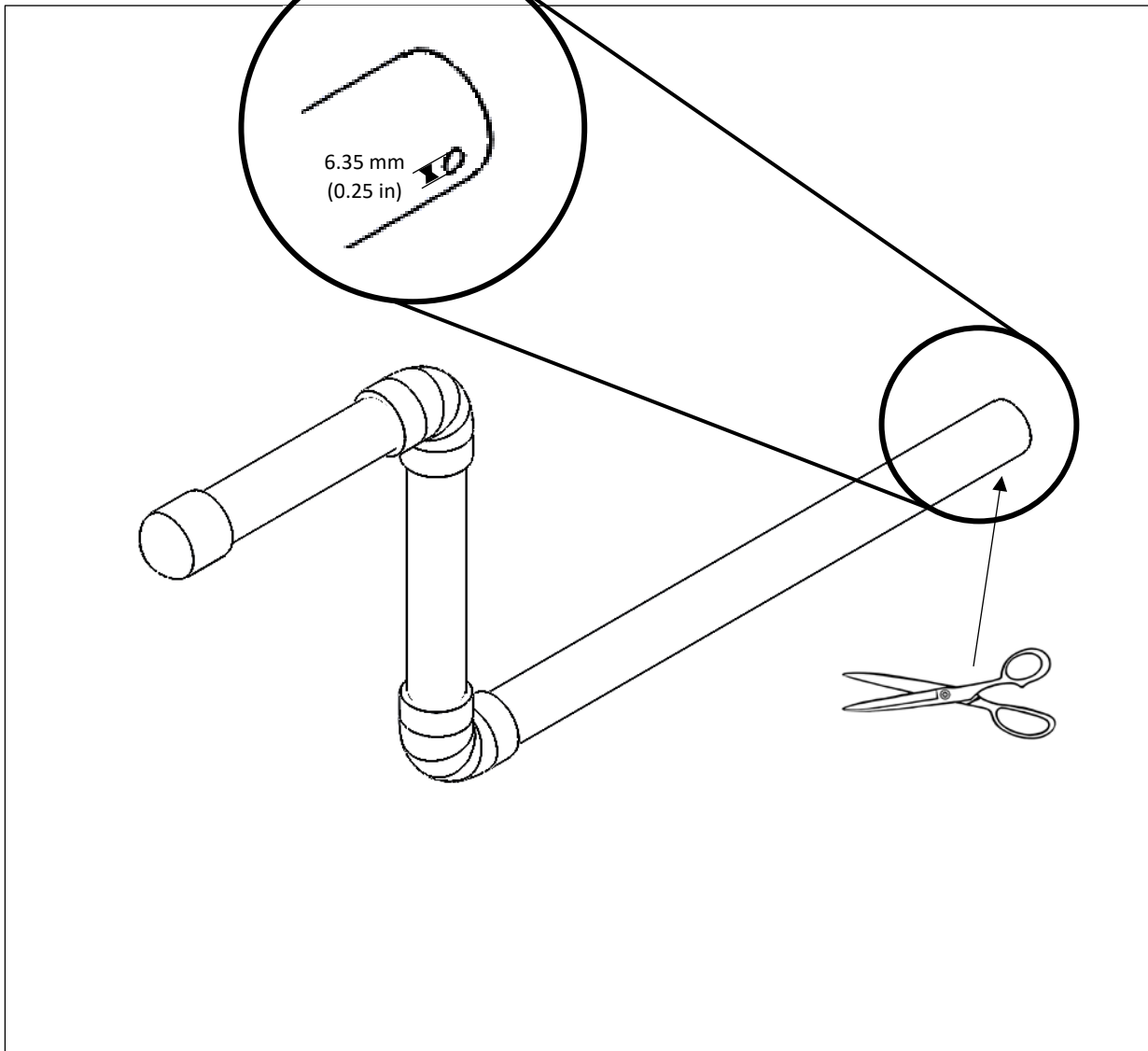
c



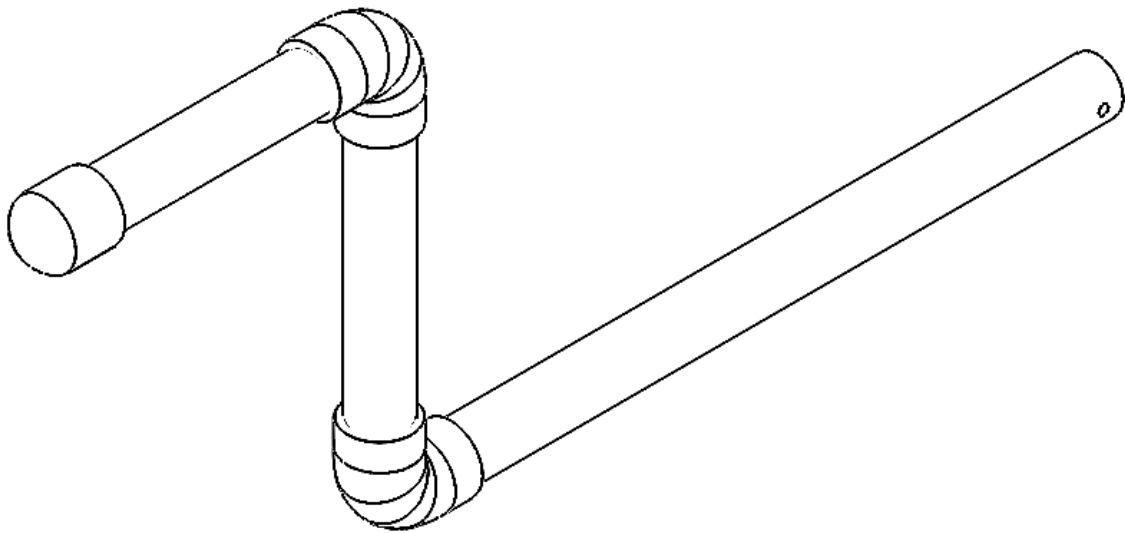
x1



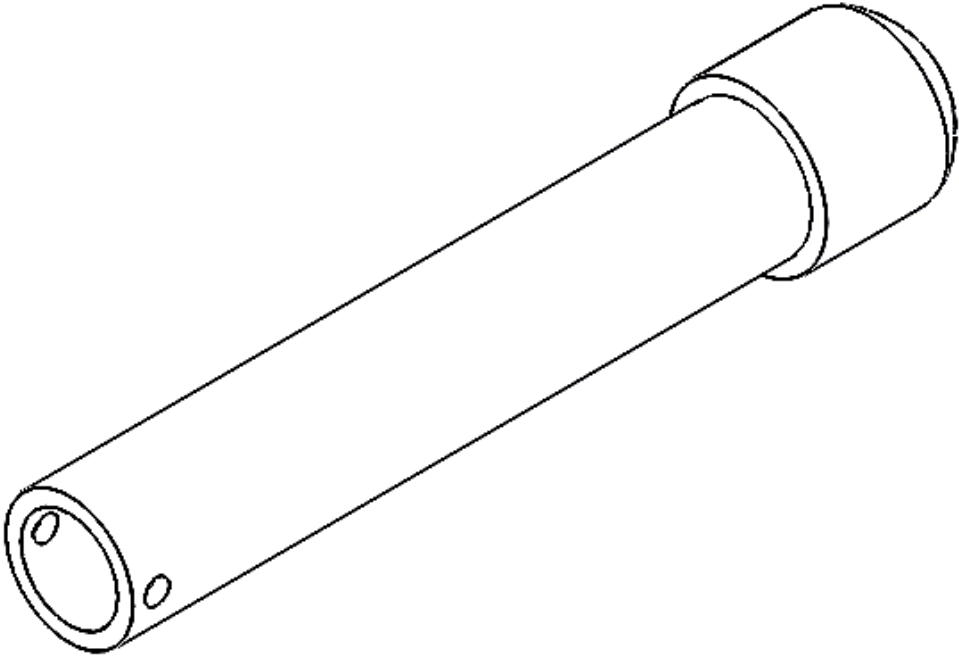
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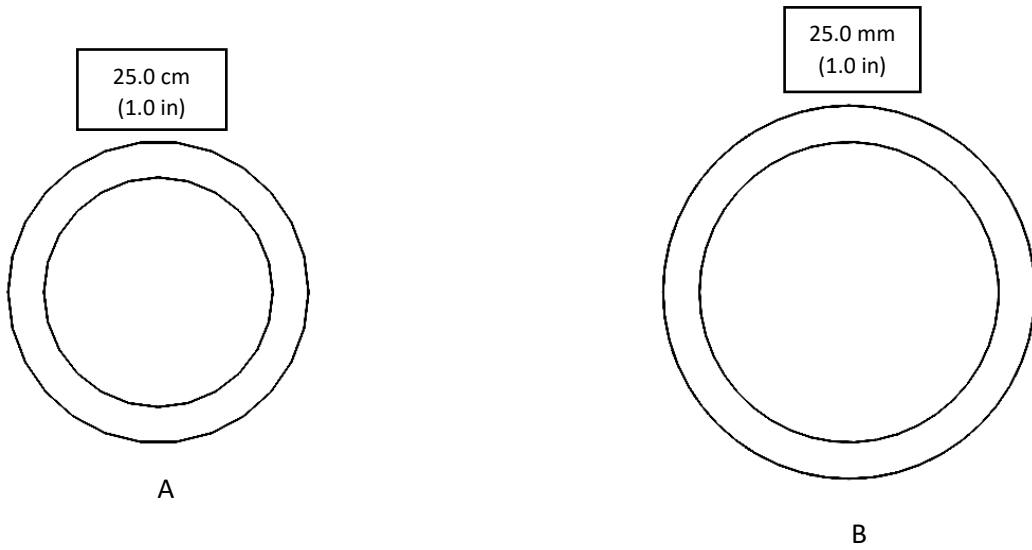
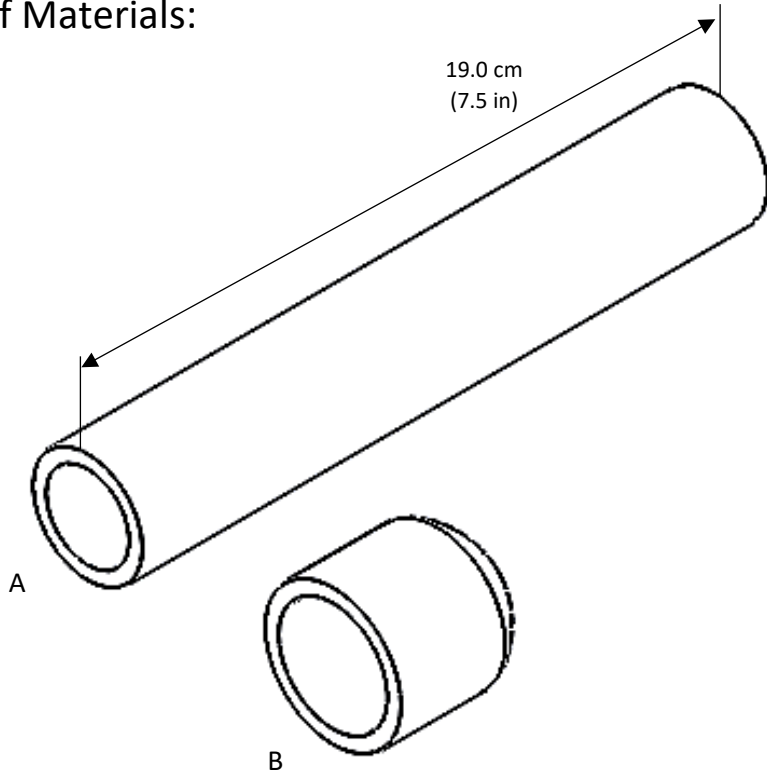
5)



Support Tail:

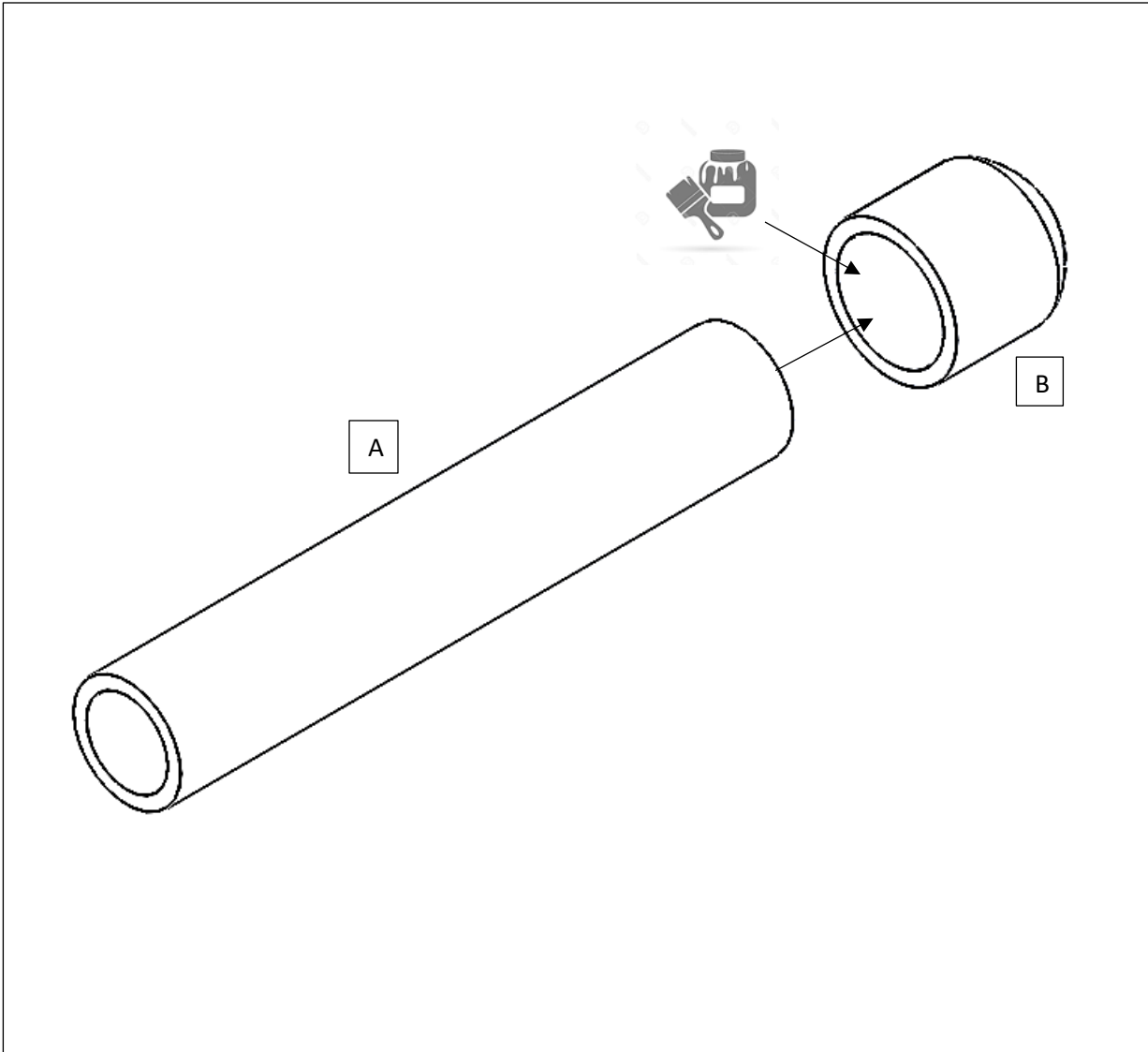
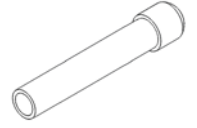
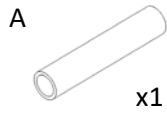


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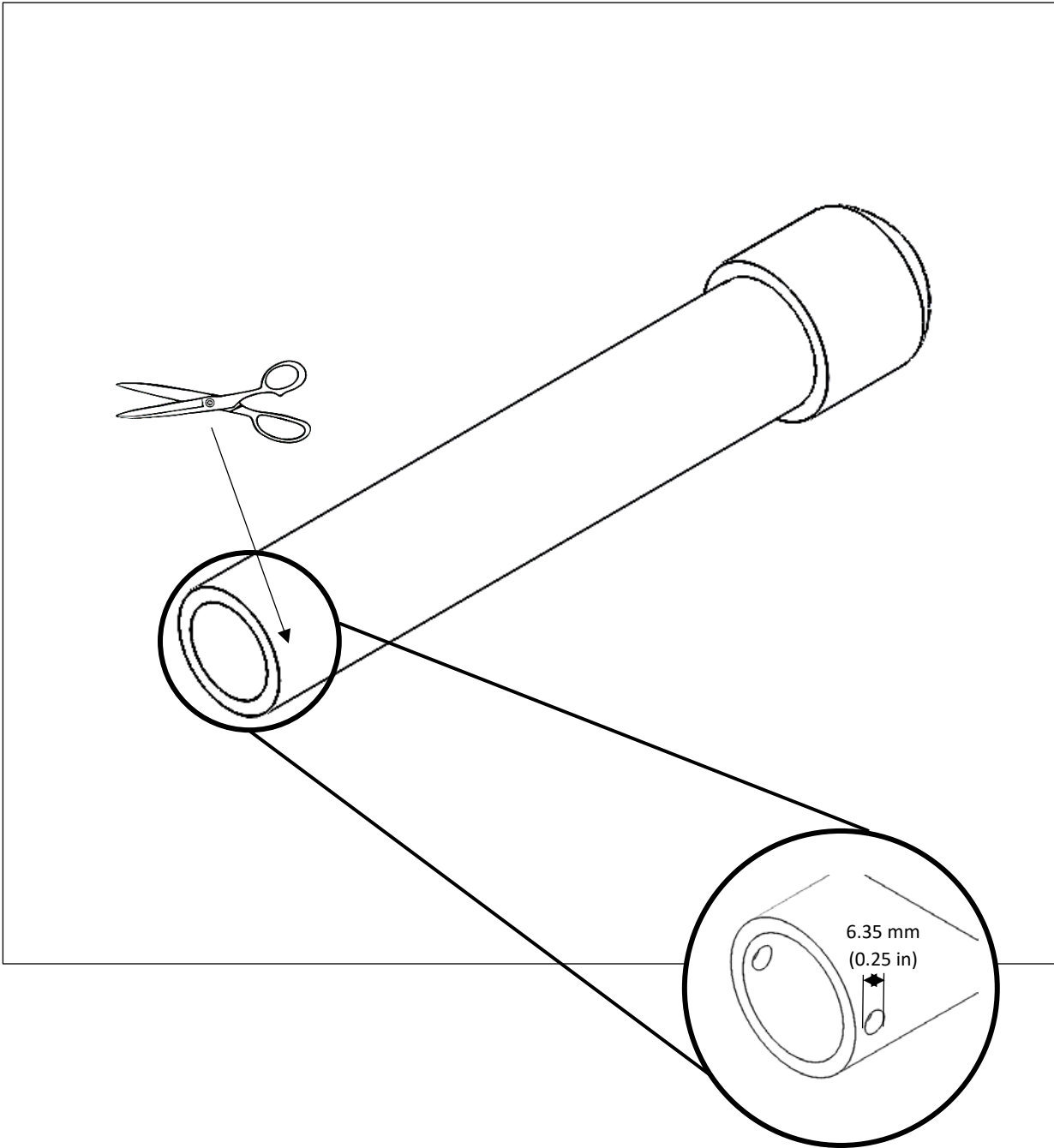
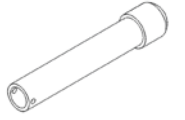


<u>A</u>	<u>x1</u>
<u>B</u>	<u>x1</u>

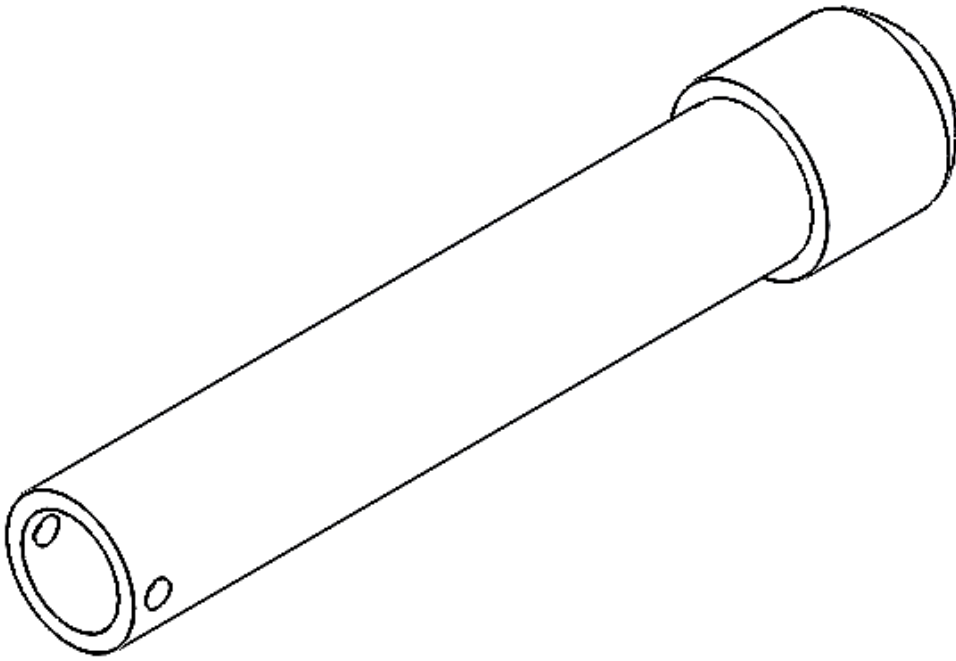
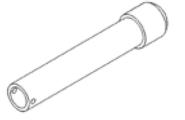
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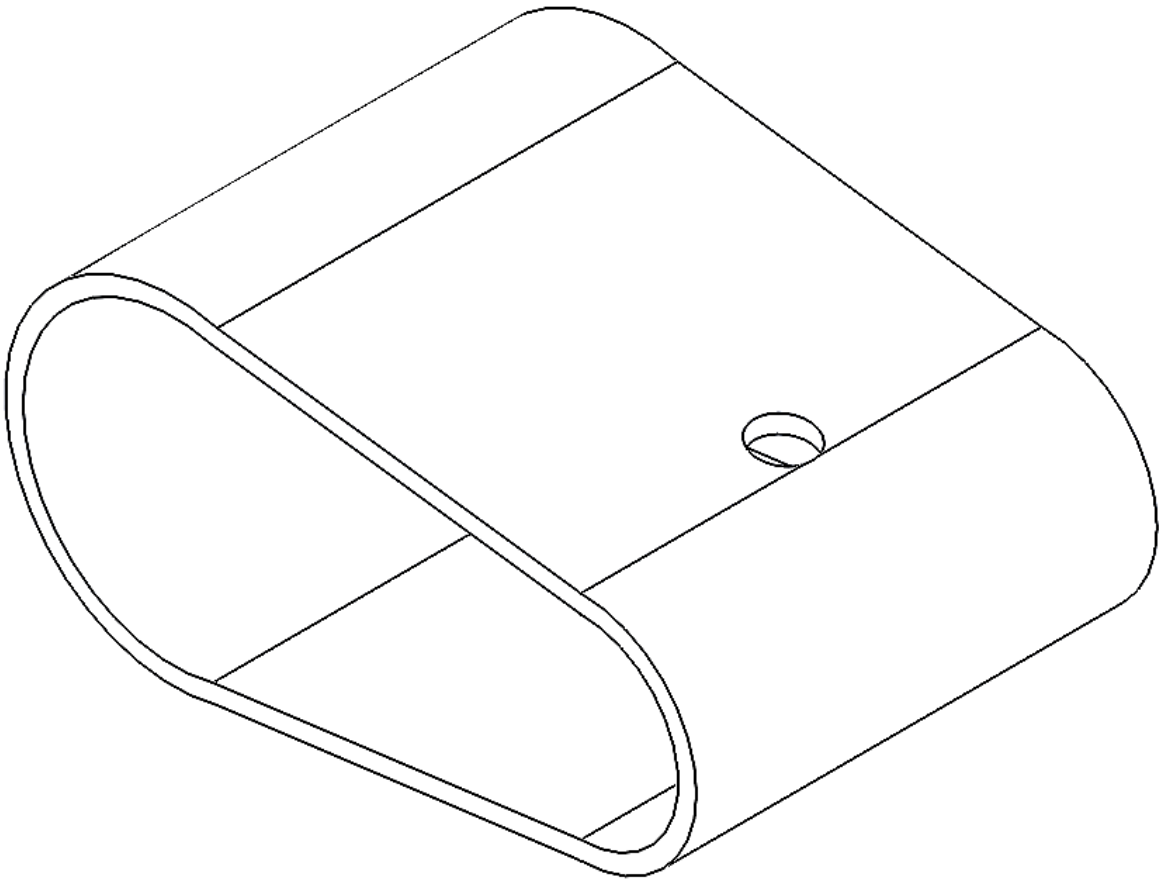
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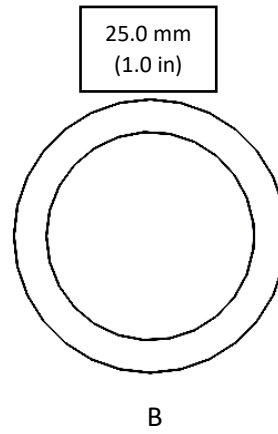
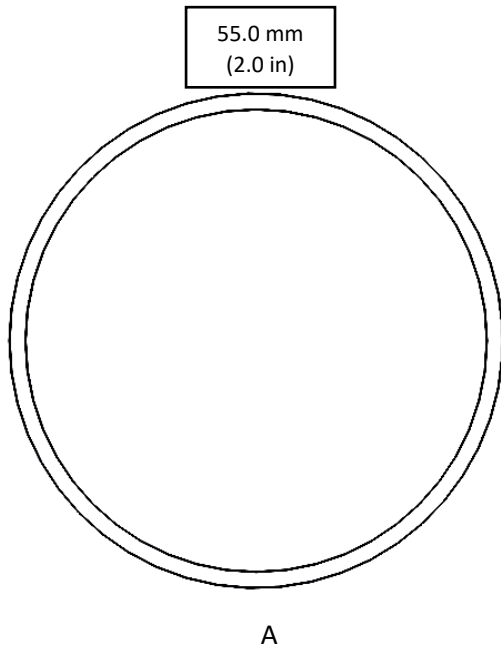
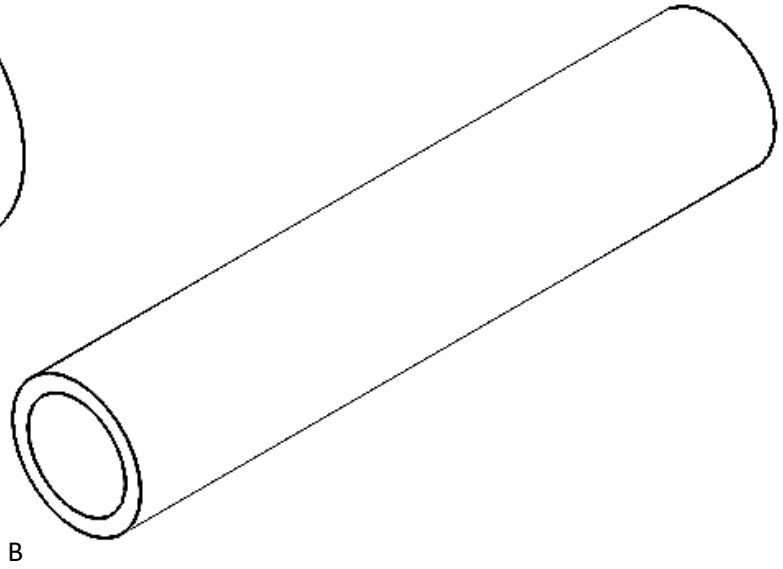
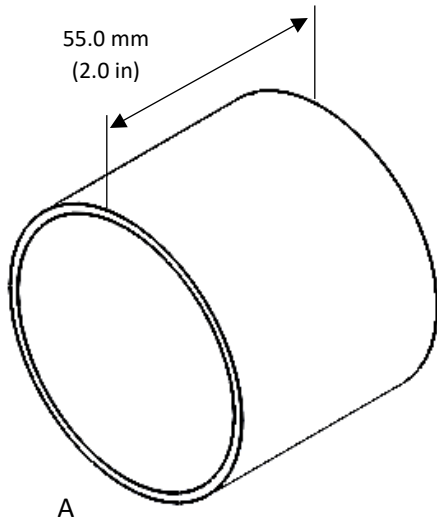
3)



Bearing:



Bill of Materials:



A	x2
B	x1

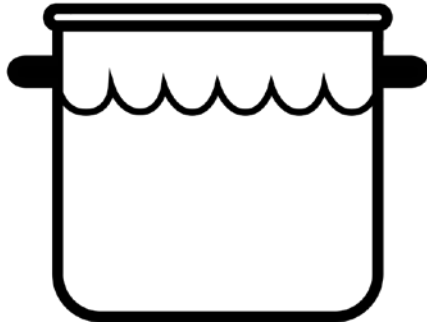
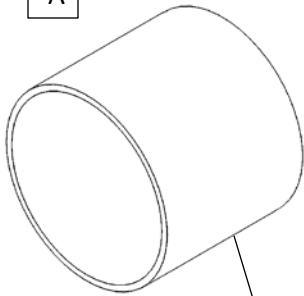
1)

A



x1

A



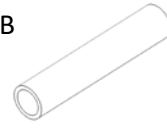
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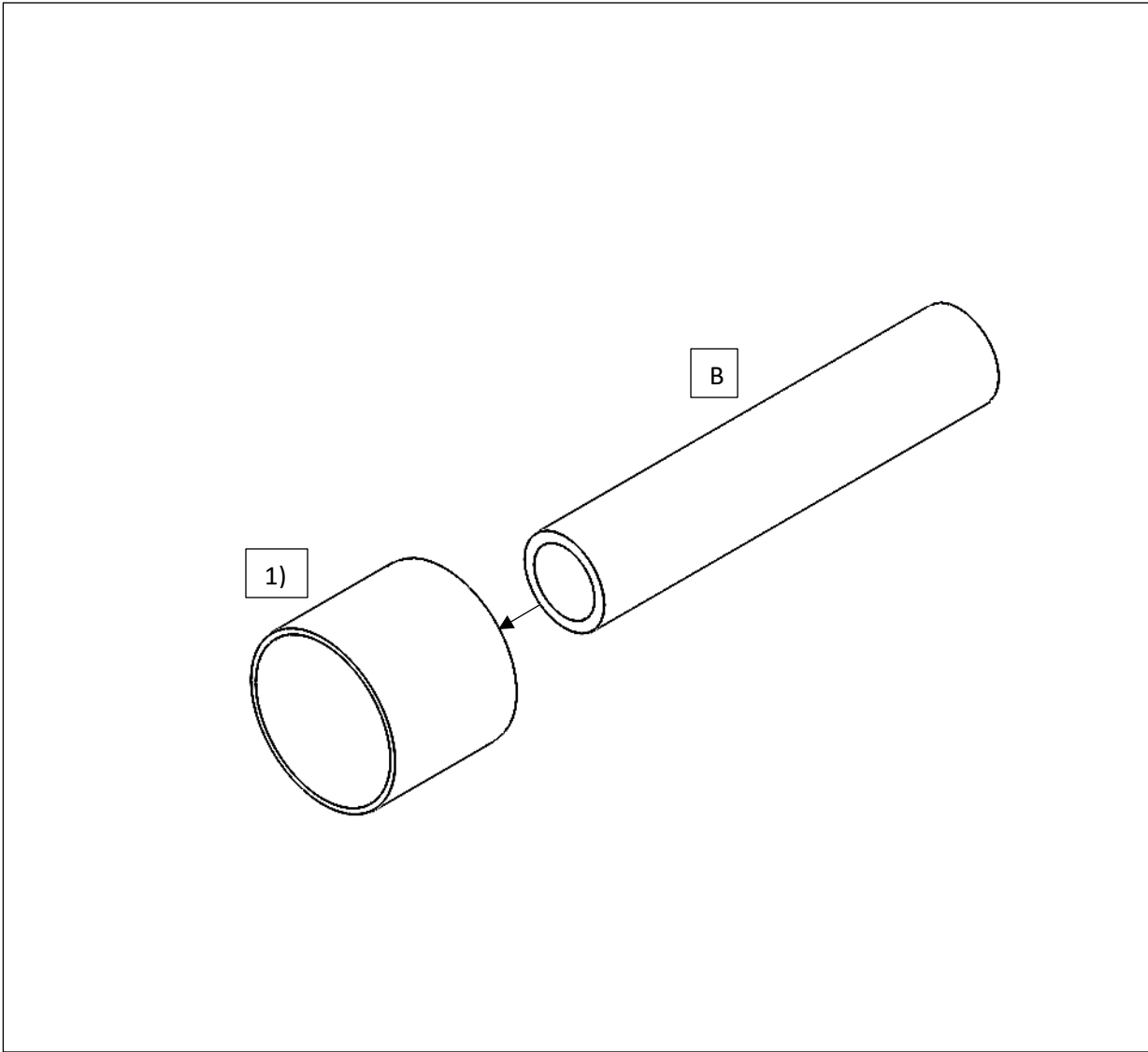
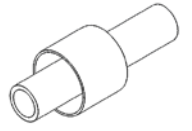


x1

B

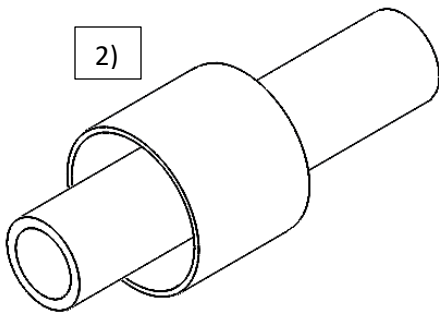
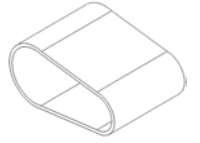
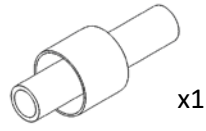


x1



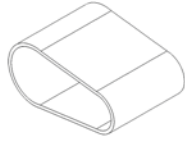
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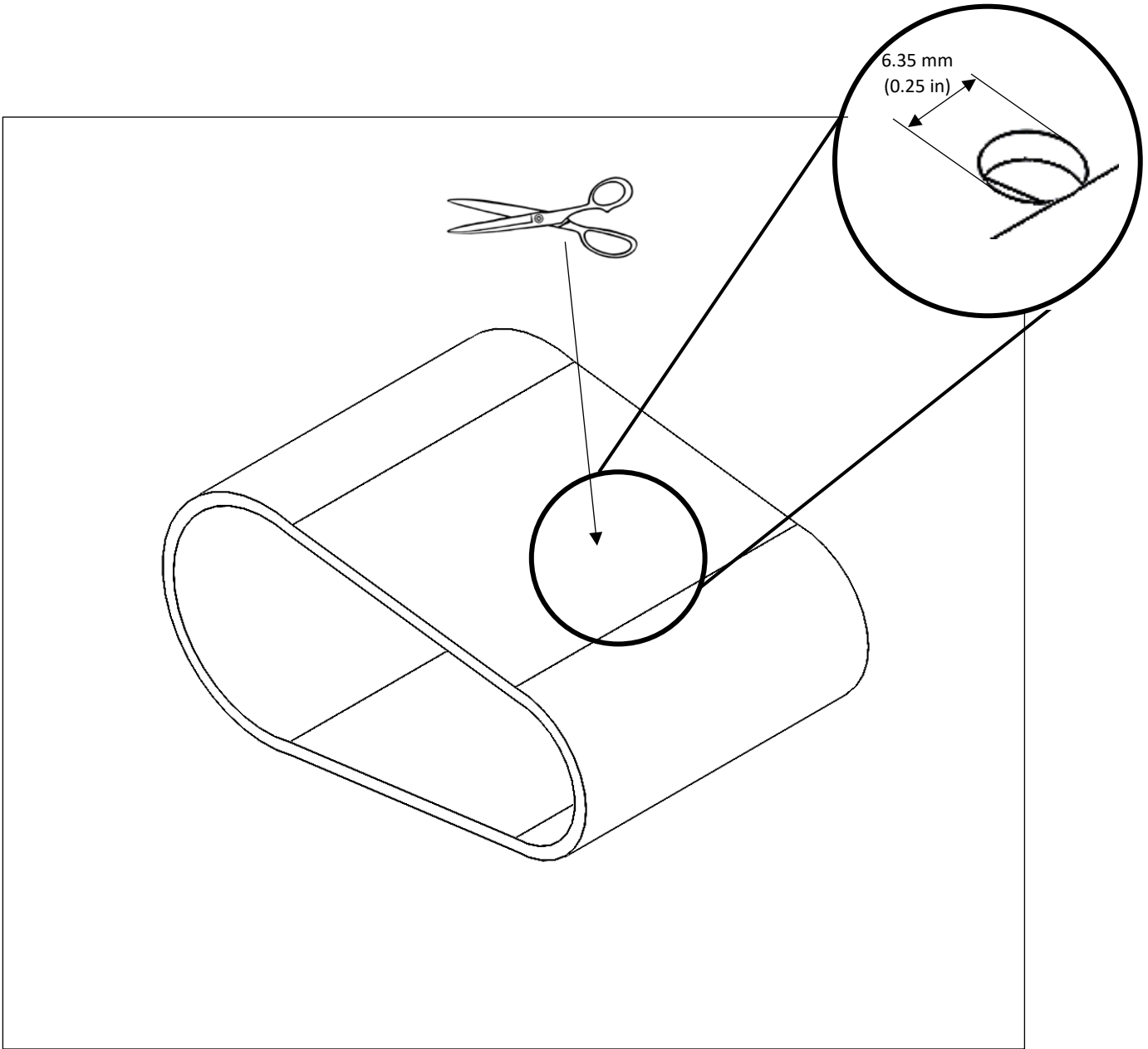


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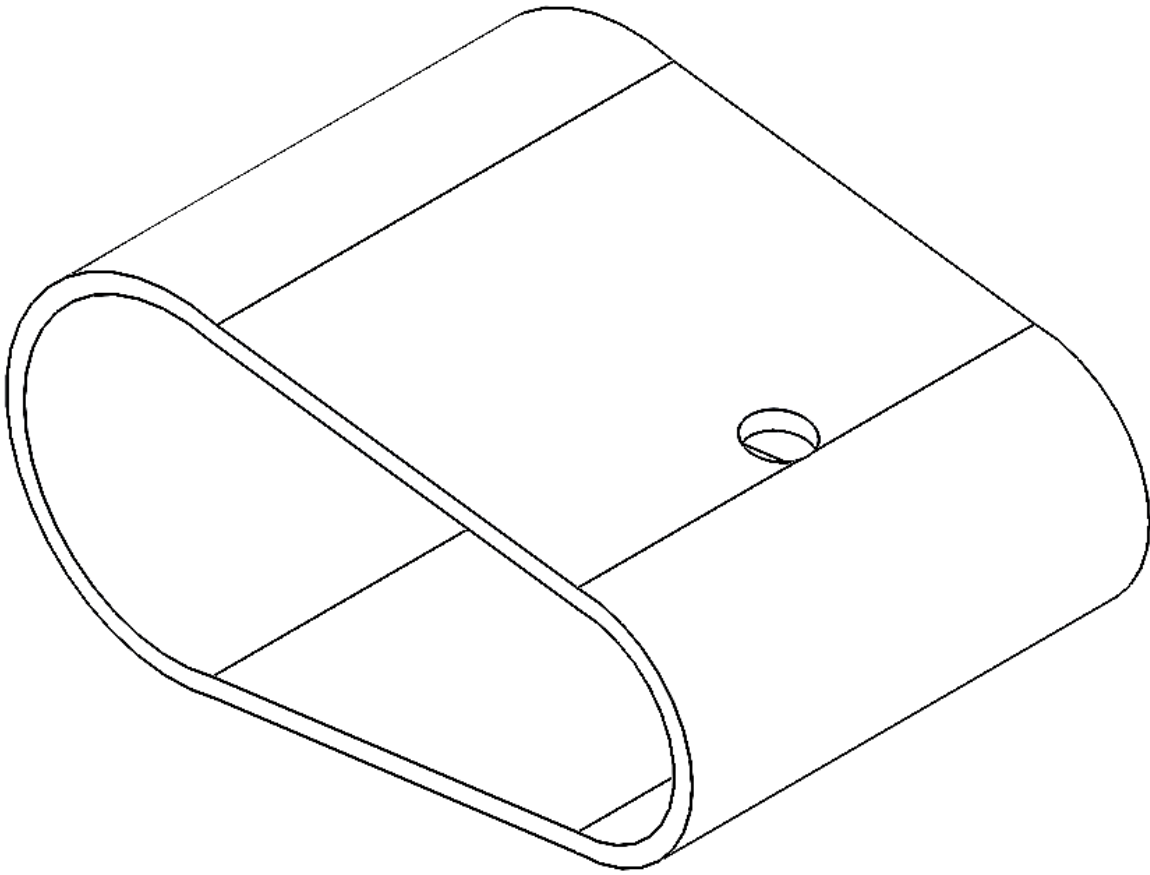
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x1

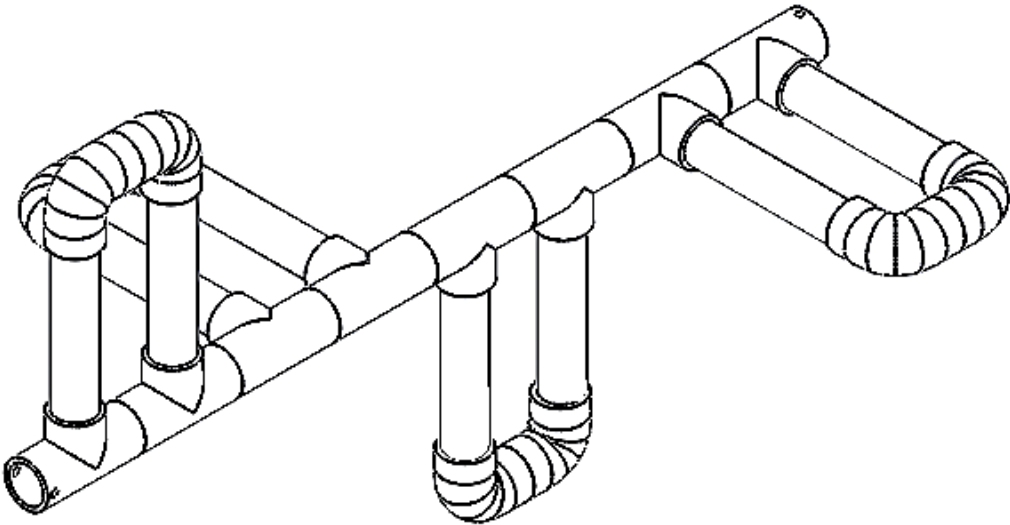


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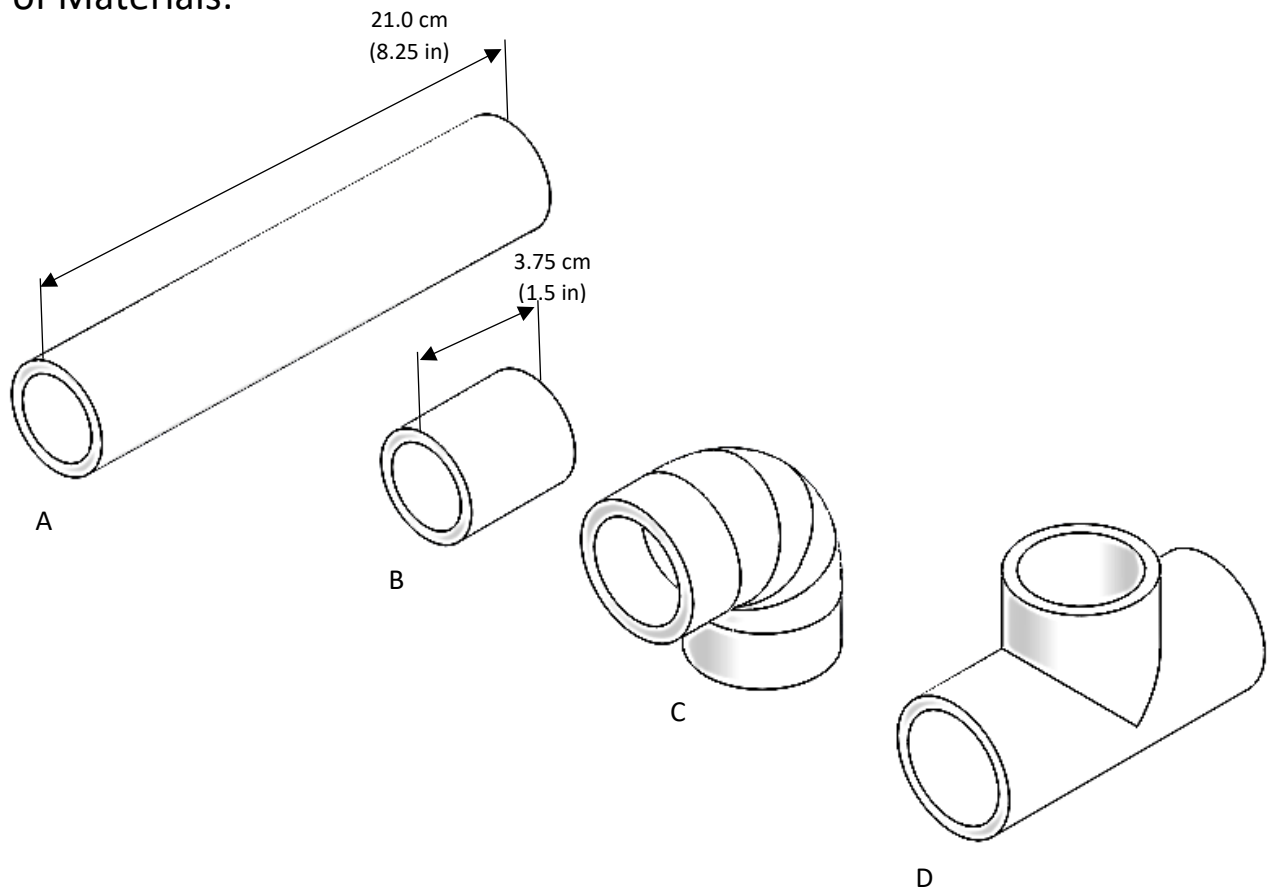


x2

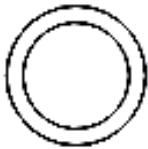
Agitator:



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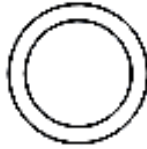


25.0 mm
(1.0 in)



A

25.0 mm
(1.0 in)



B

25.0 mm
(1.0 in)



C

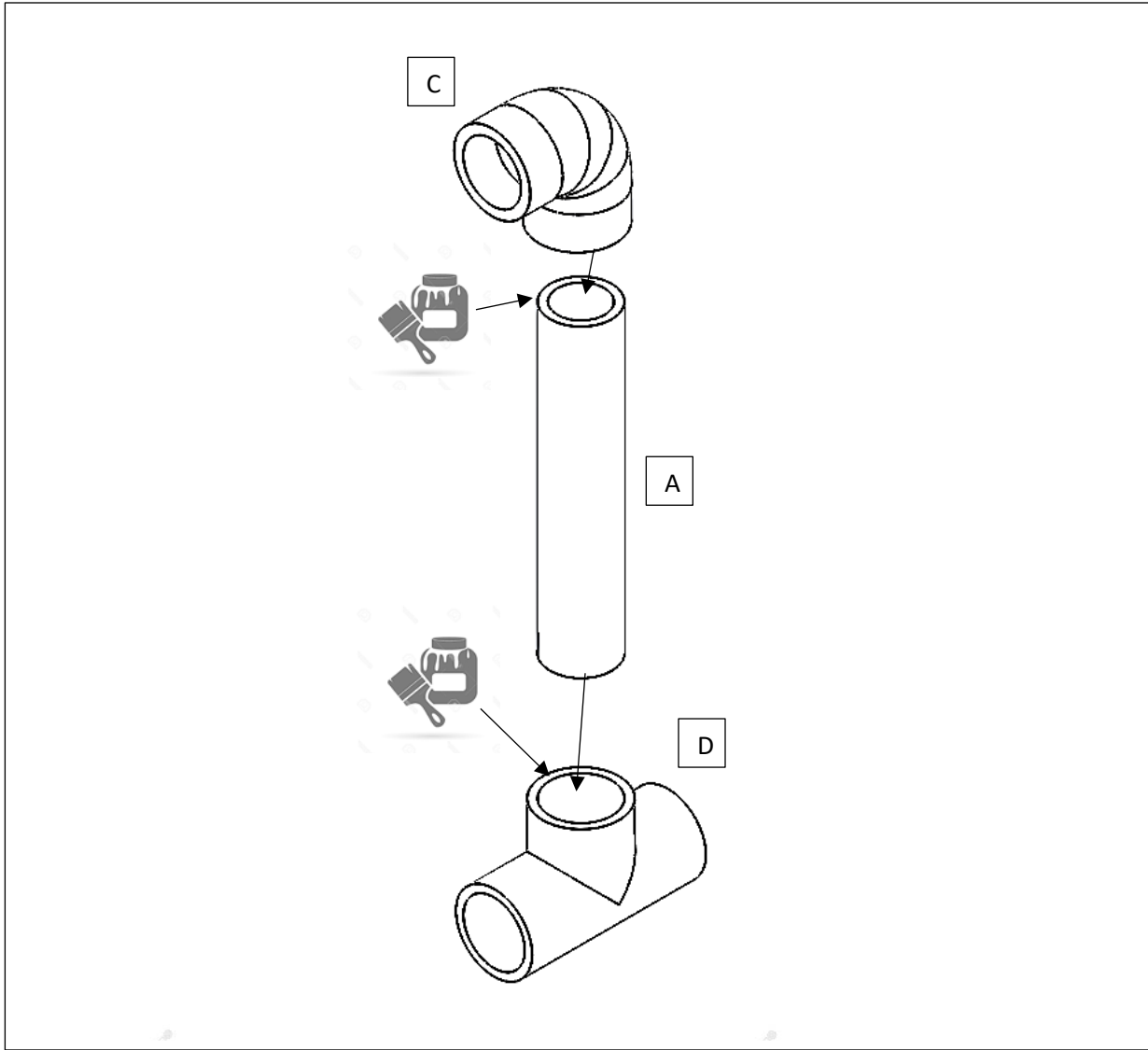
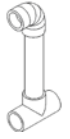
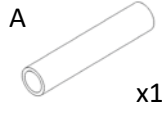
25.0 mm
(1.0 in)



D

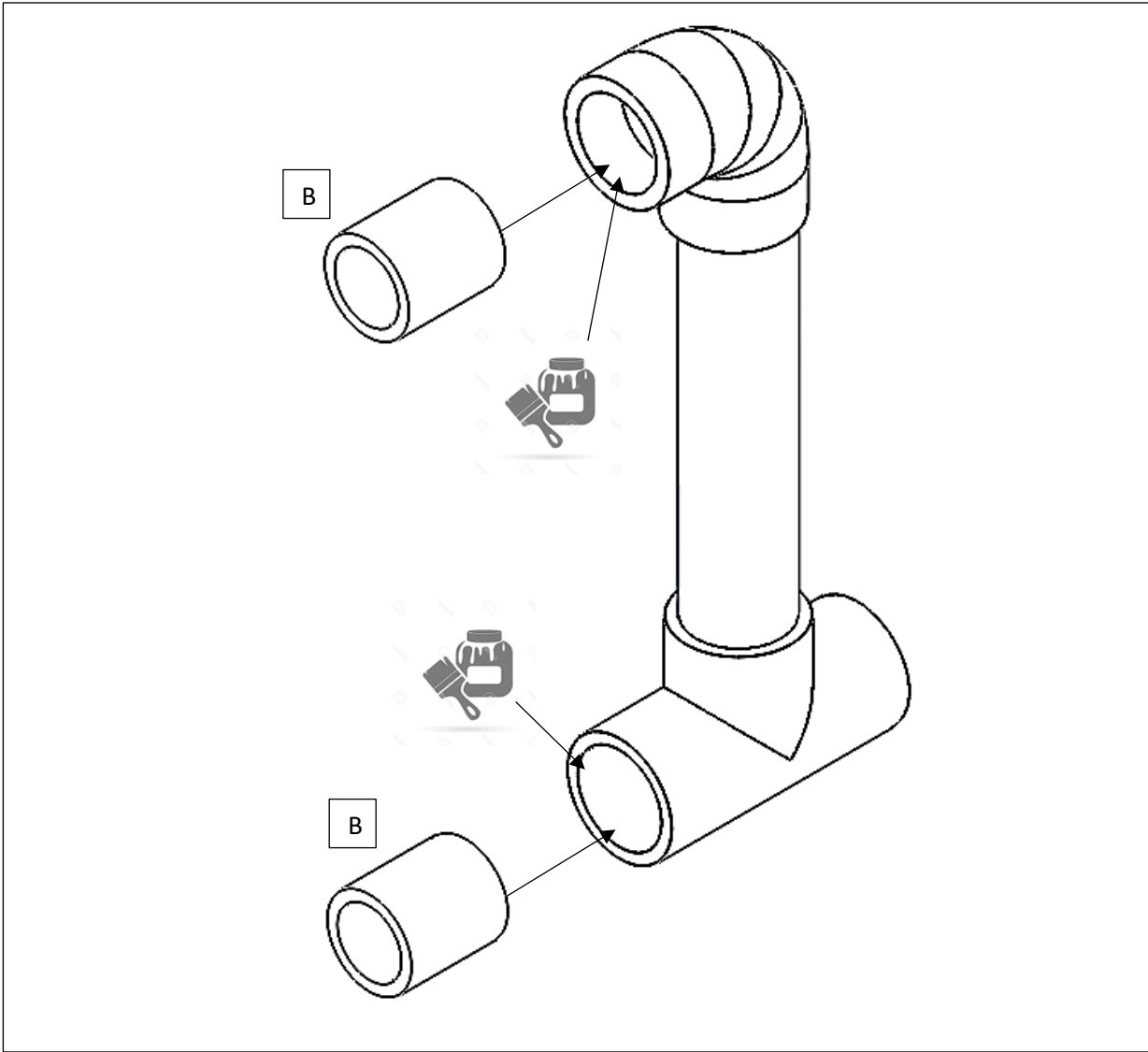
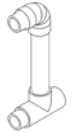
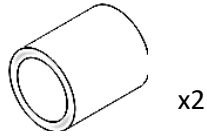
A	x8
B	x11
C	x8
D	x8

1)

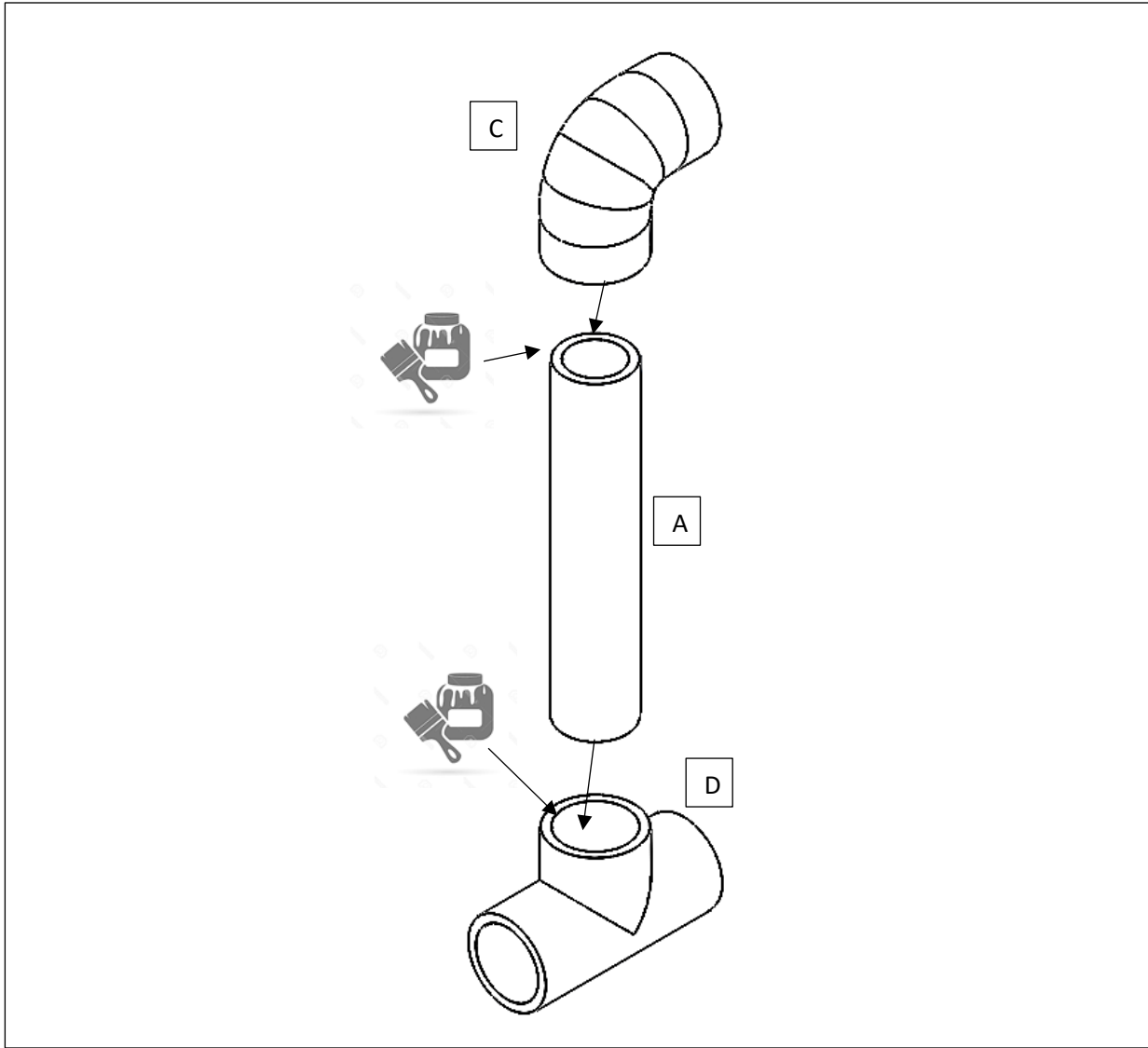
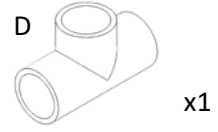
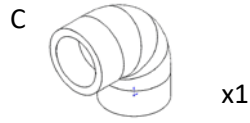
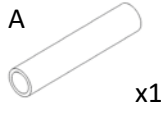


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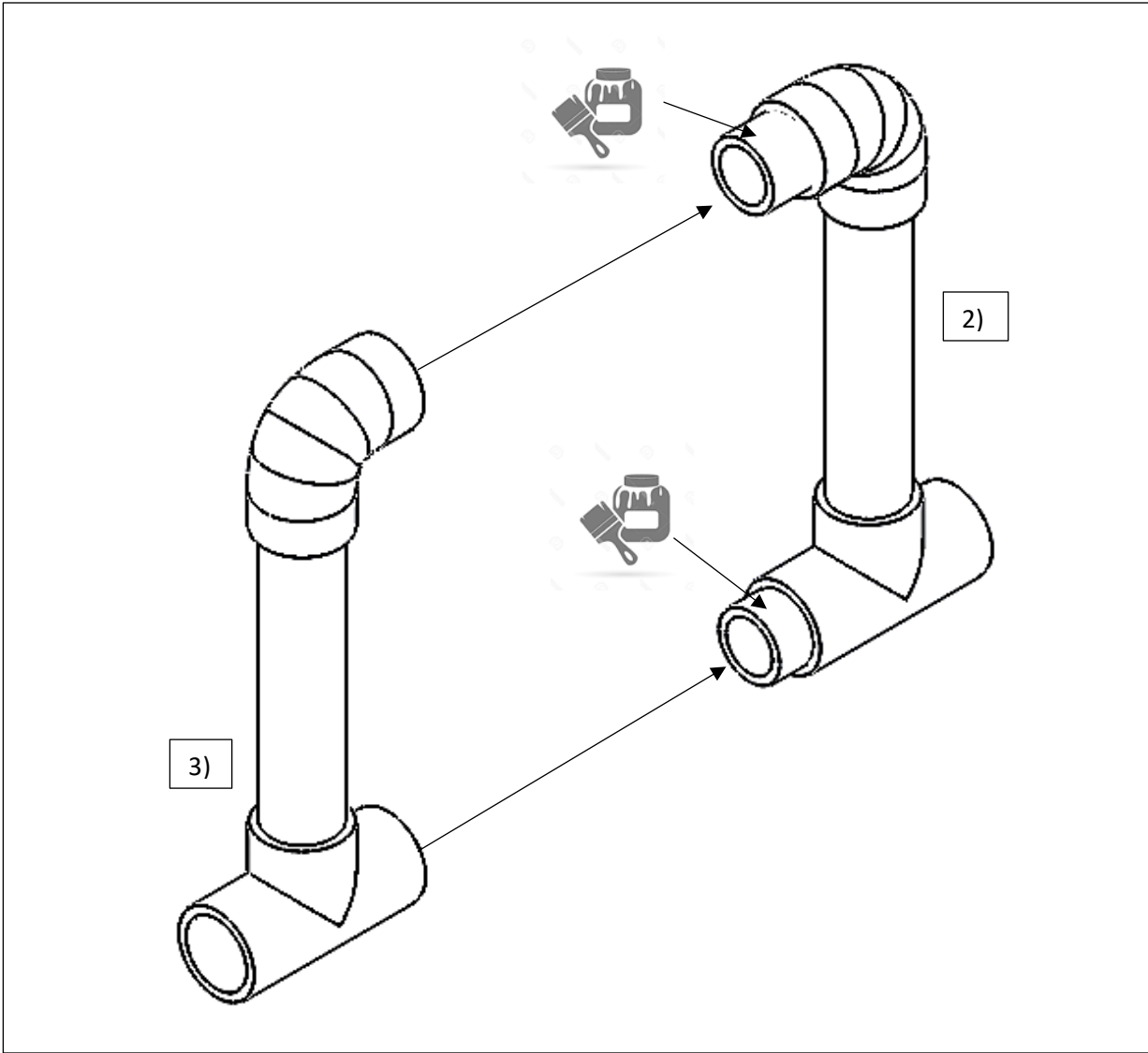
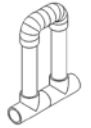
B



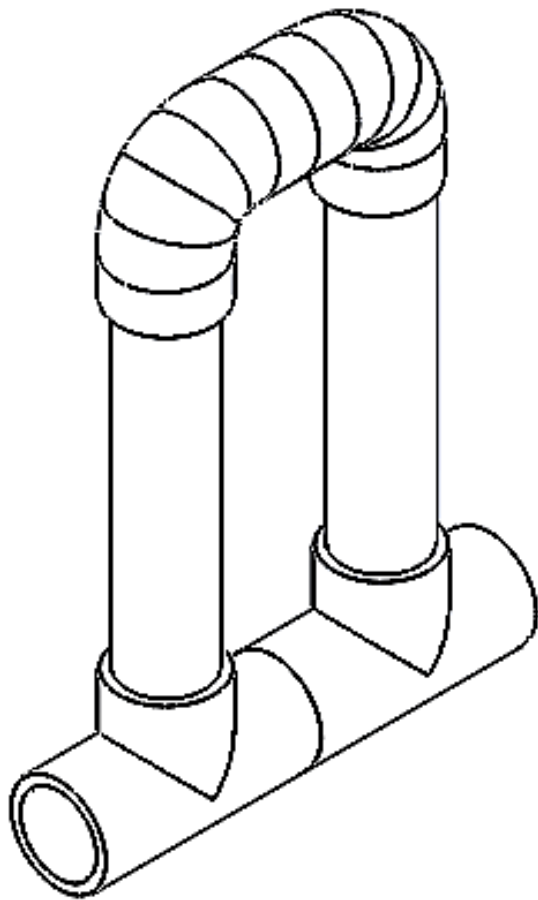
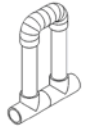
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4)



5)



4x

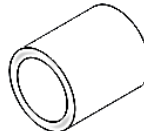
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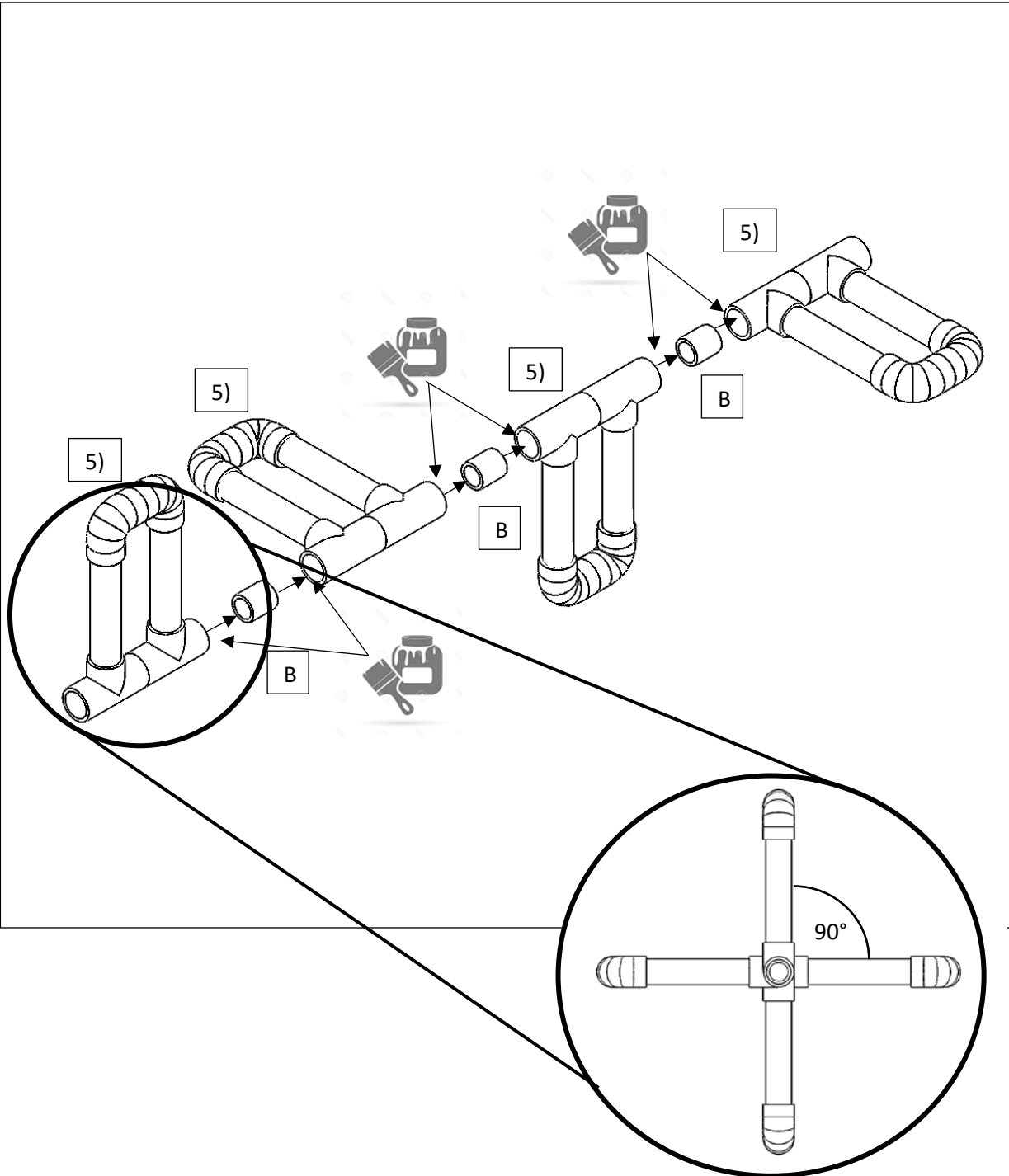
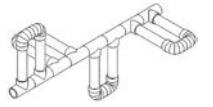


x4

B

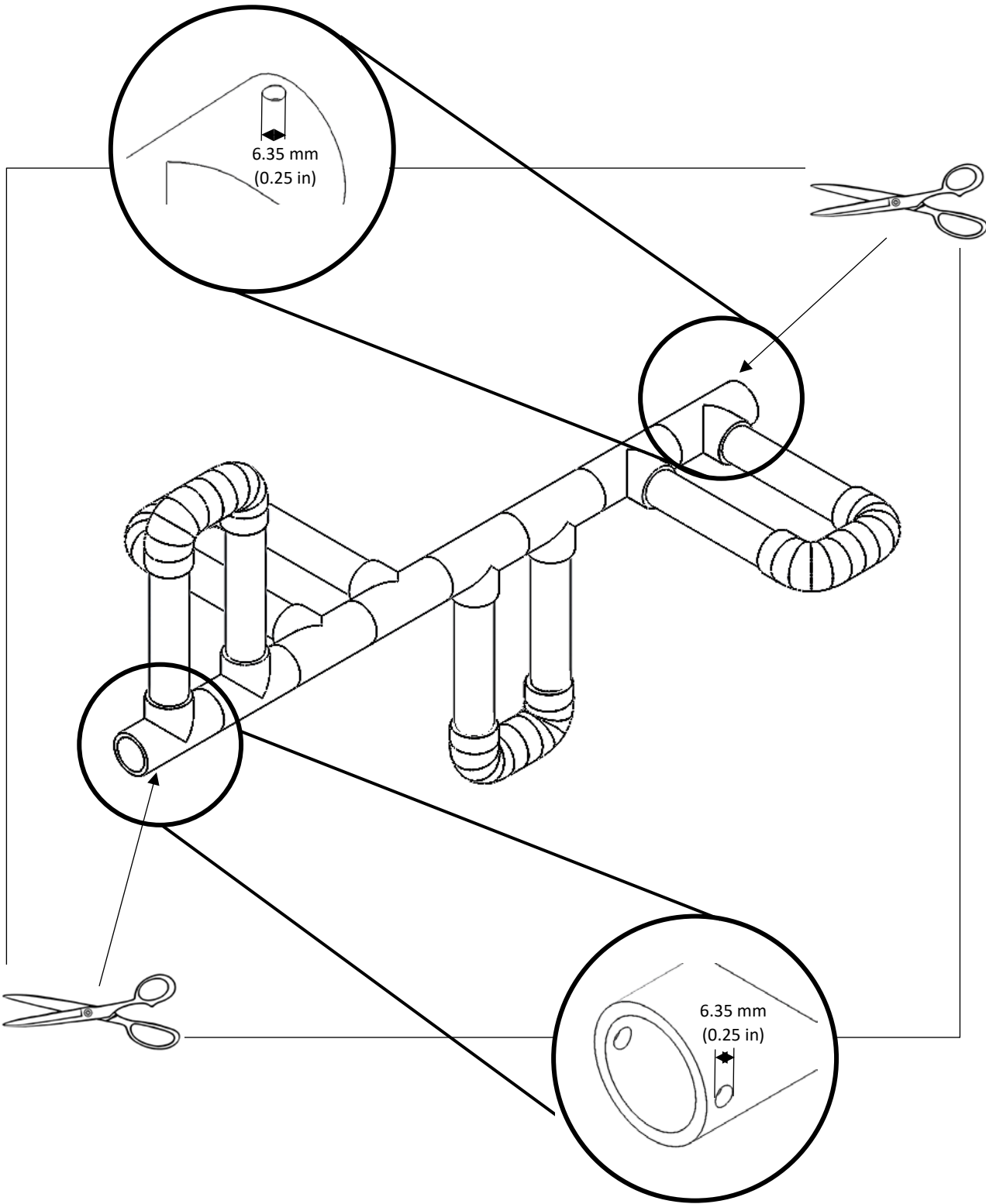
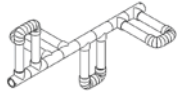


x3

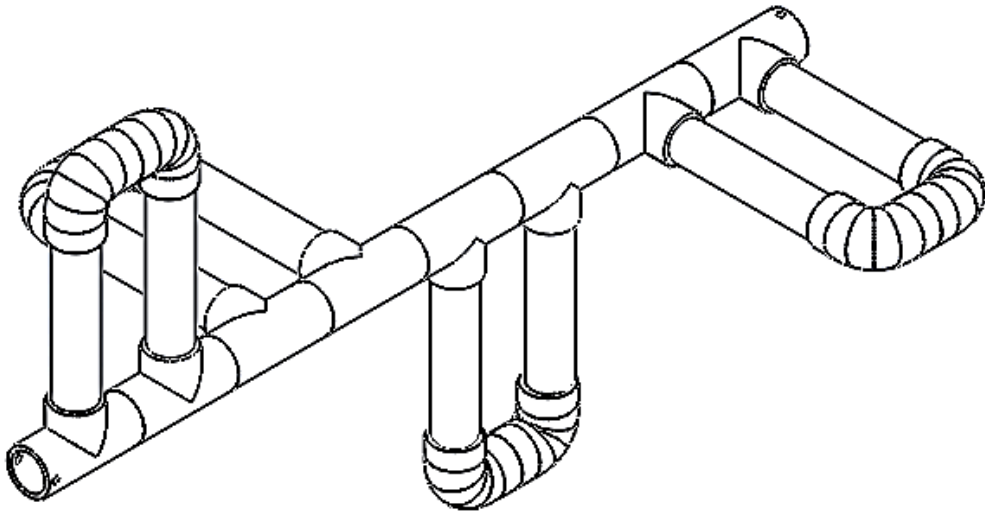


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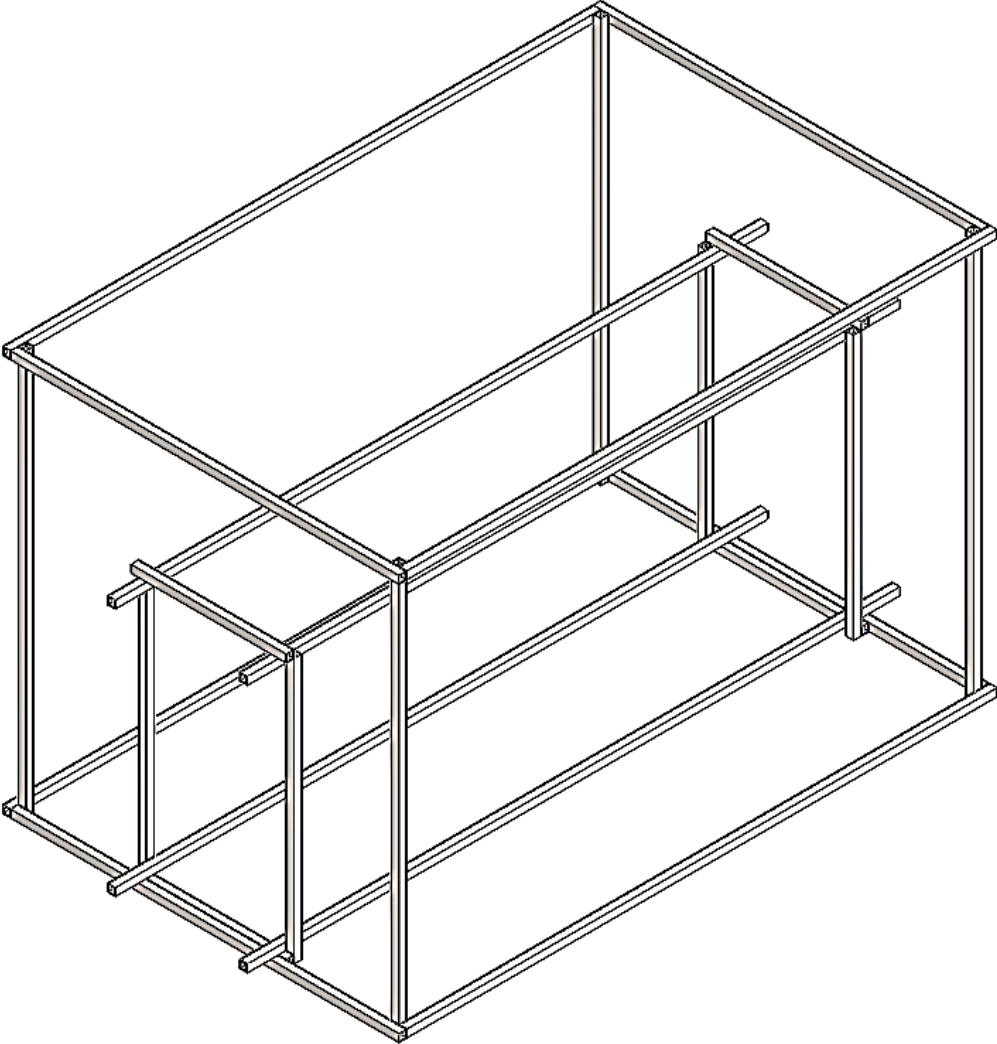
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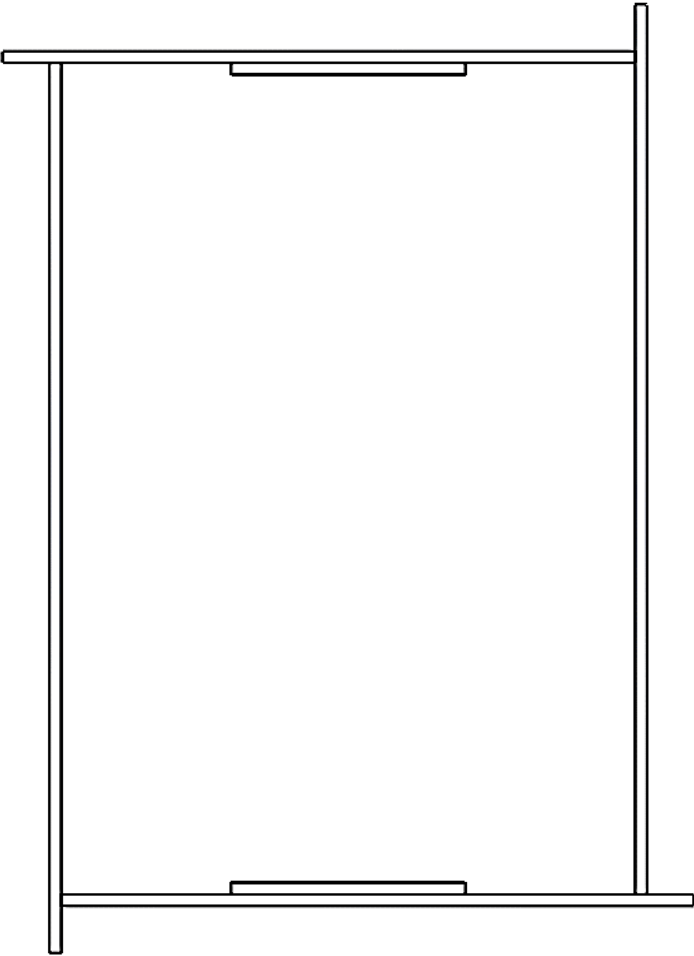
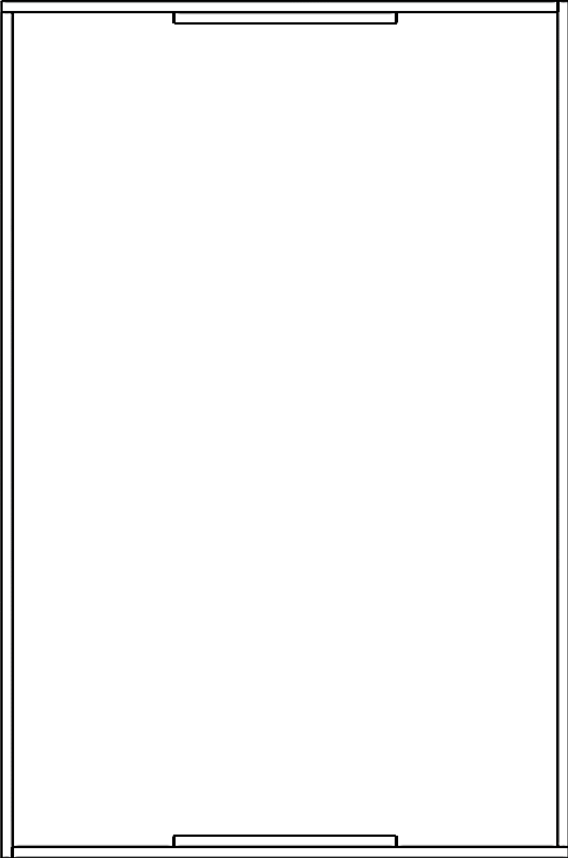
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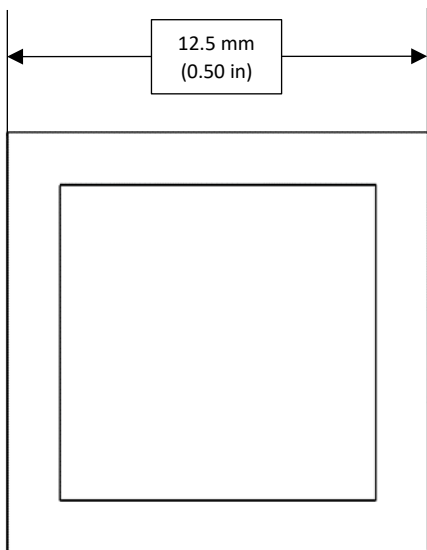
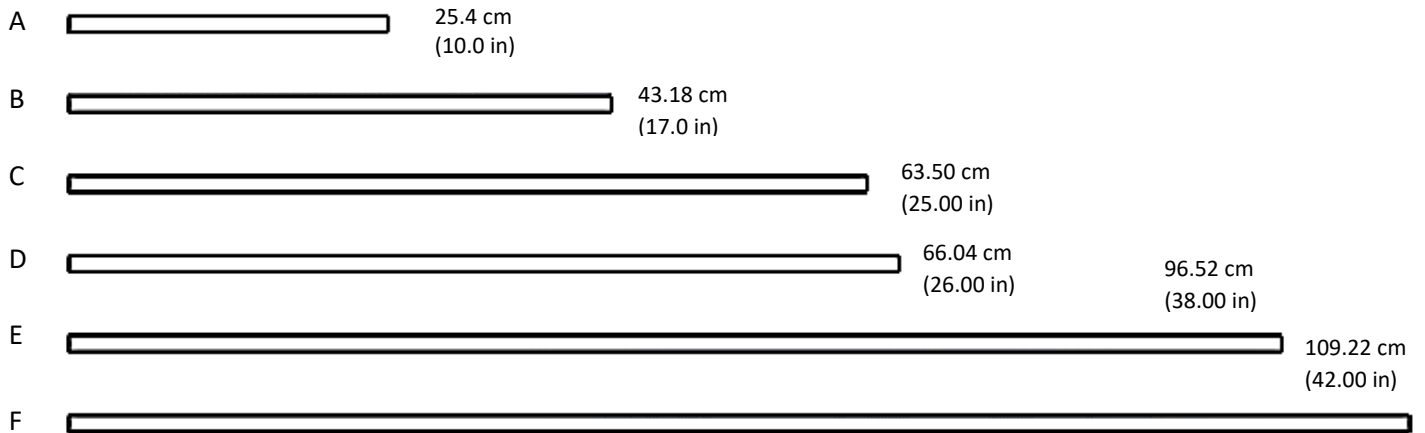
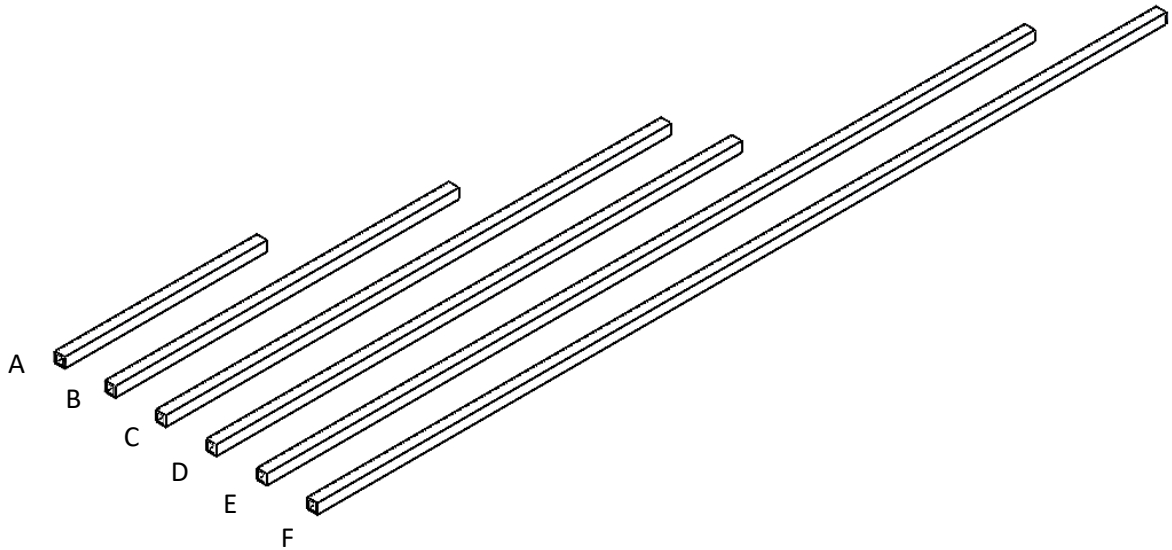
Frame:



Instructions:



Bill of Materials:




A, B, C,
D, E, F

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B	x4
C	x4
D	x4
E	x4
F	x4

35

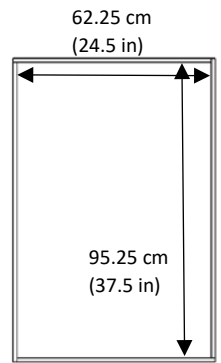
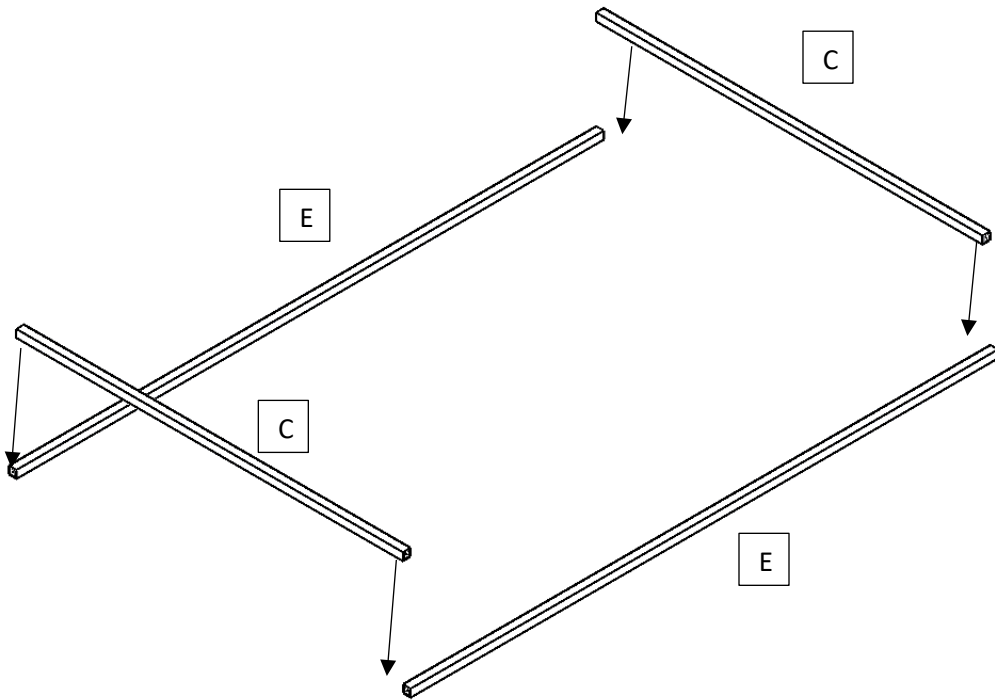
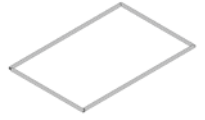
1)

C 

x2

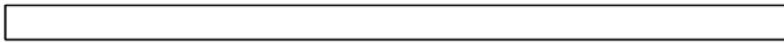
E 

x2

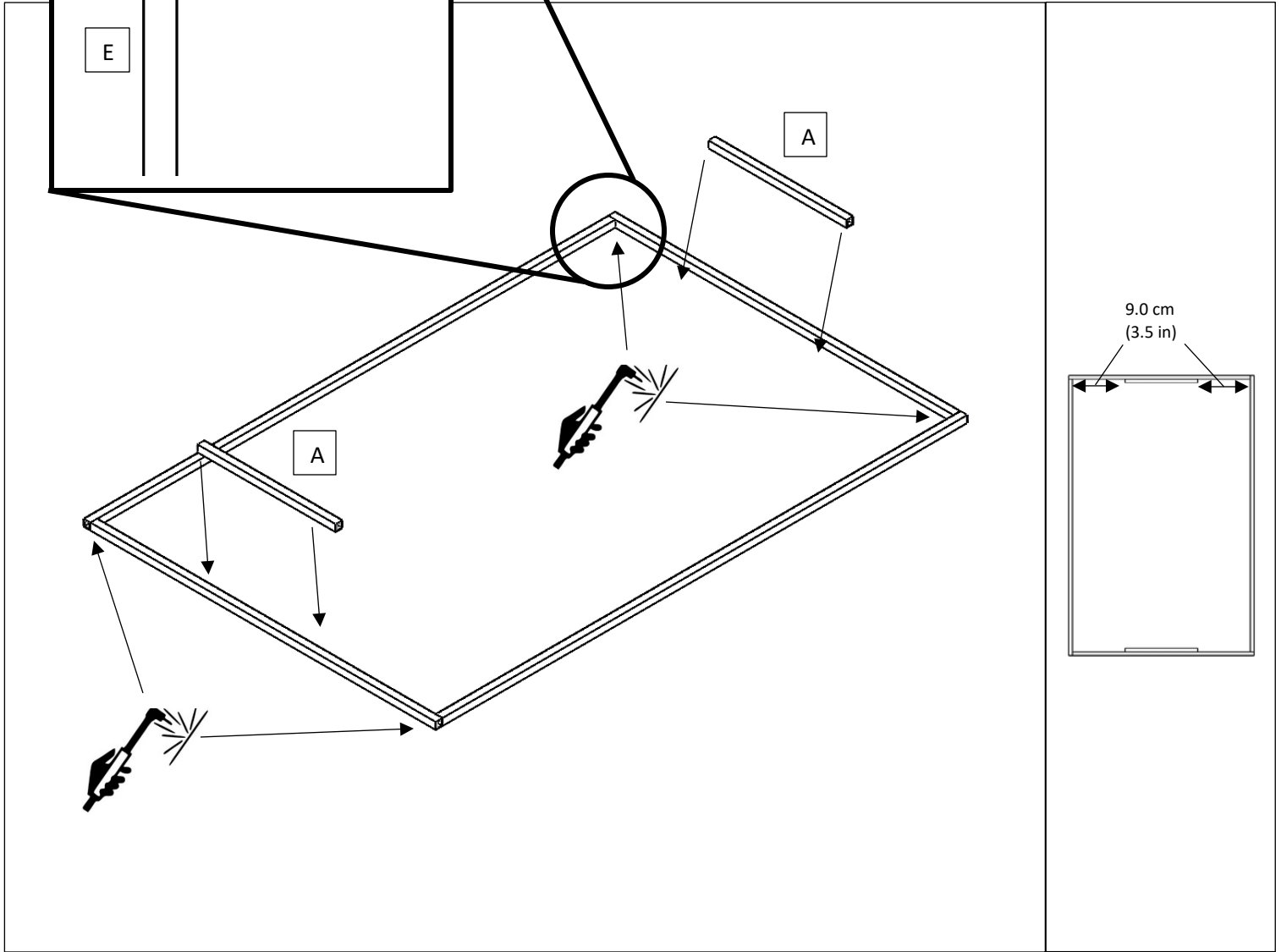
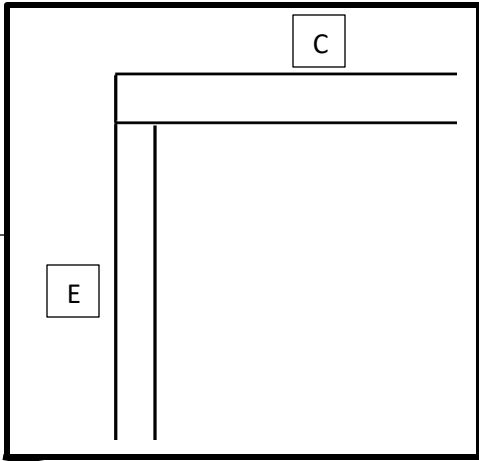


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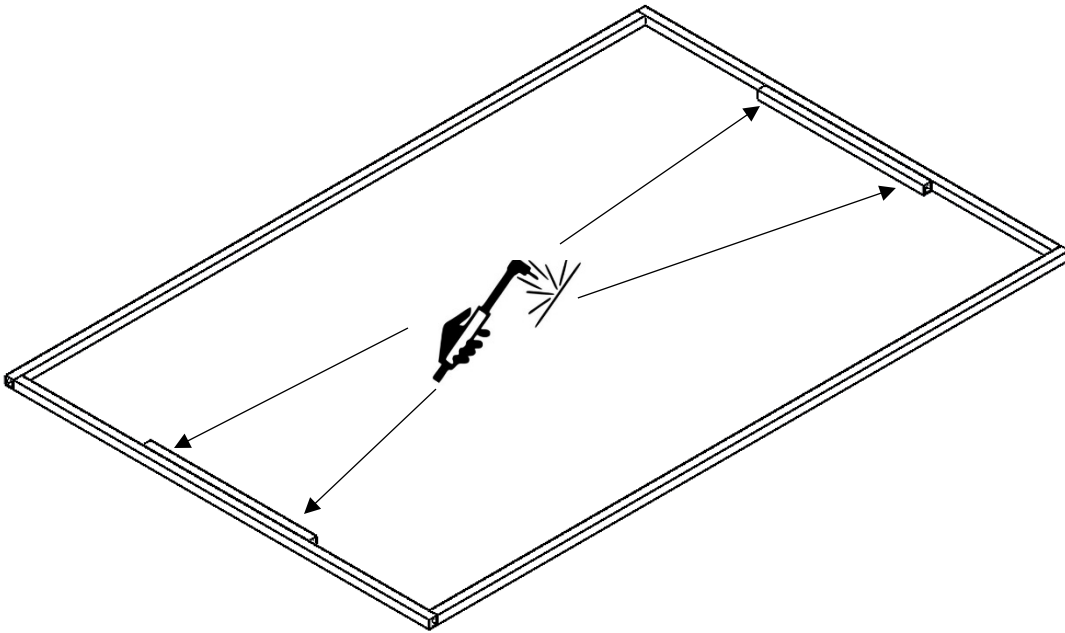
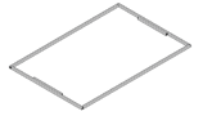
A



x2

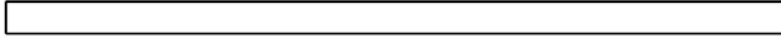


3)

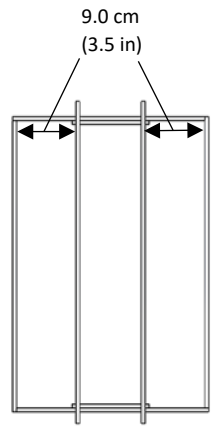
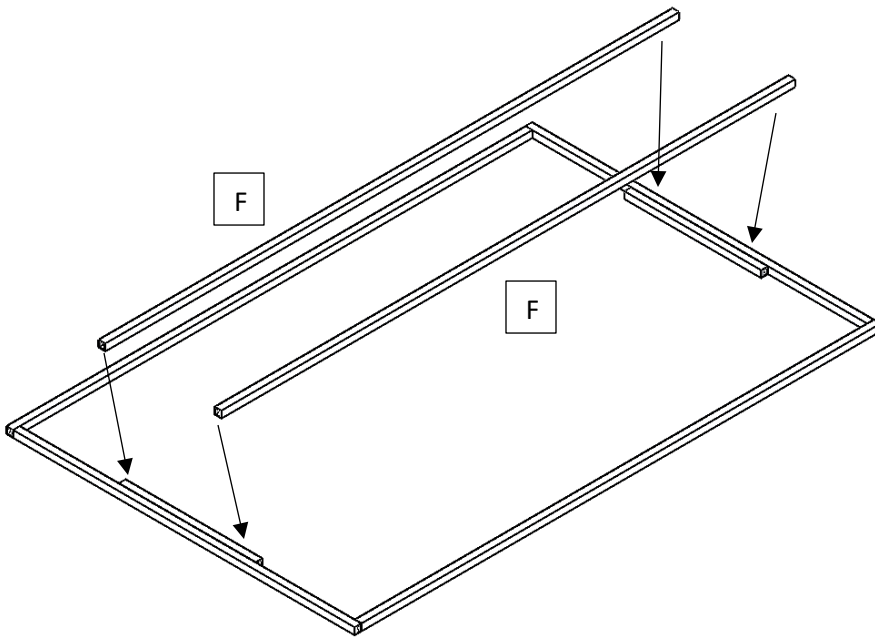


4)

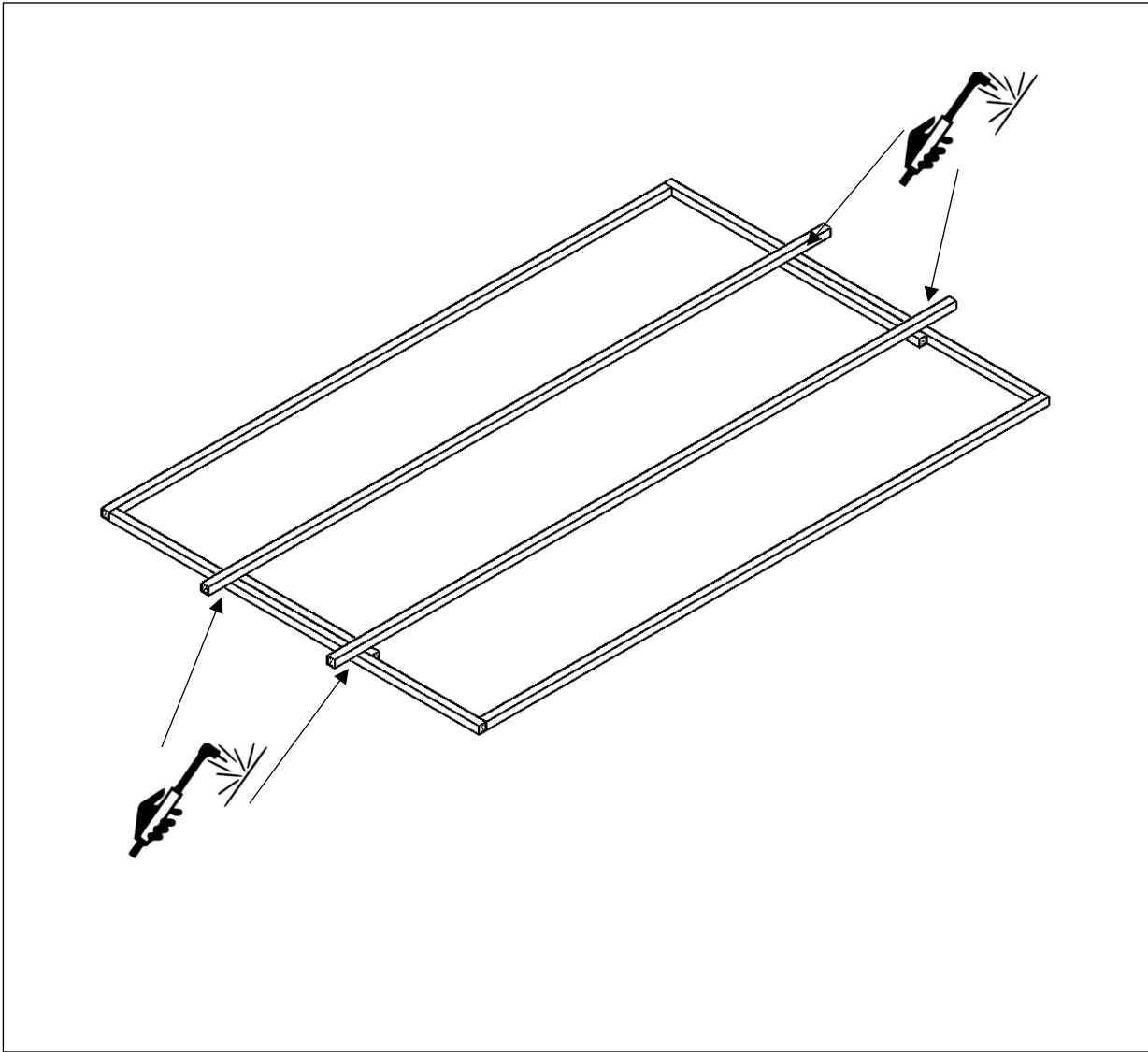
F



x2



5)

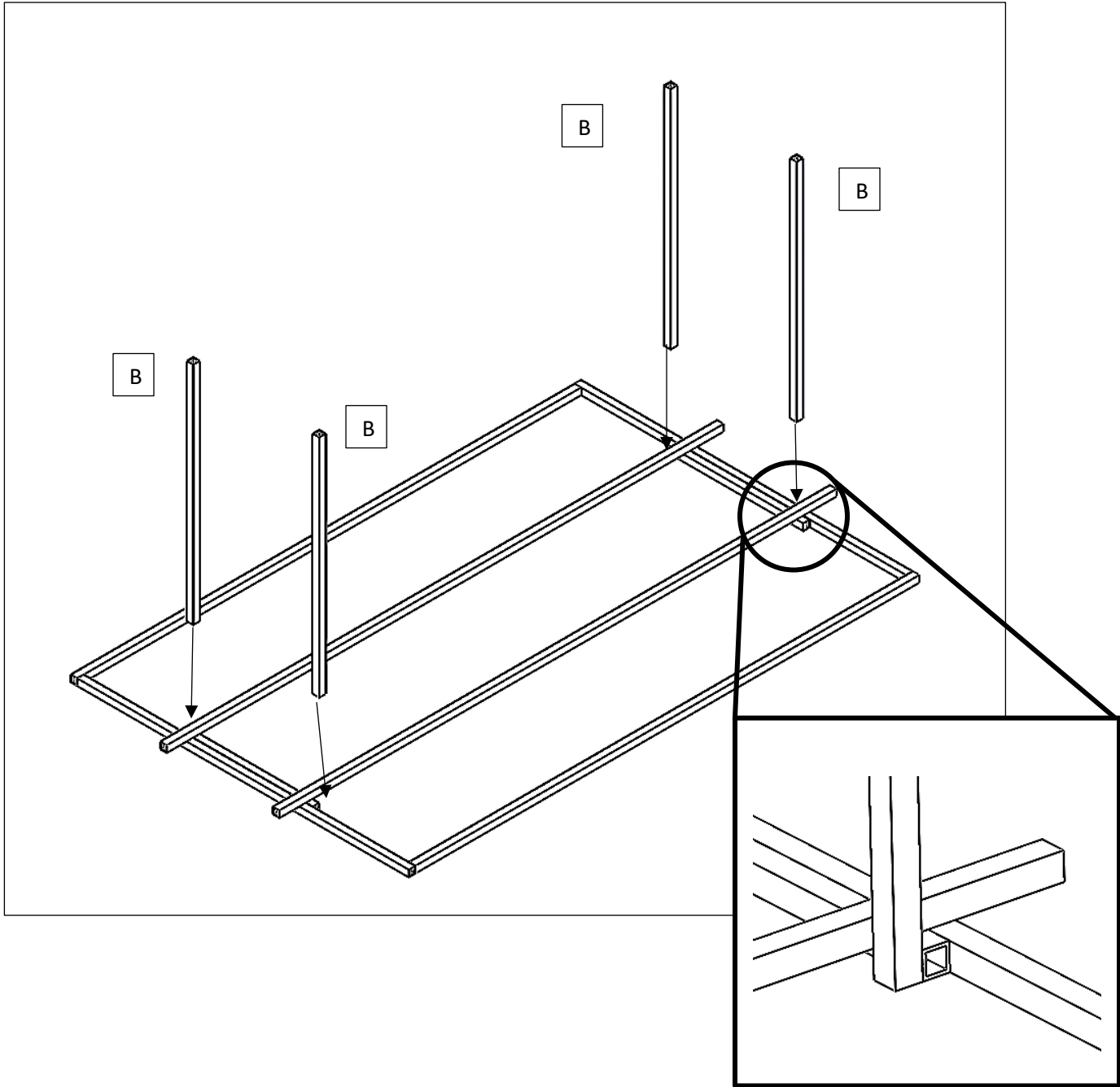


6)

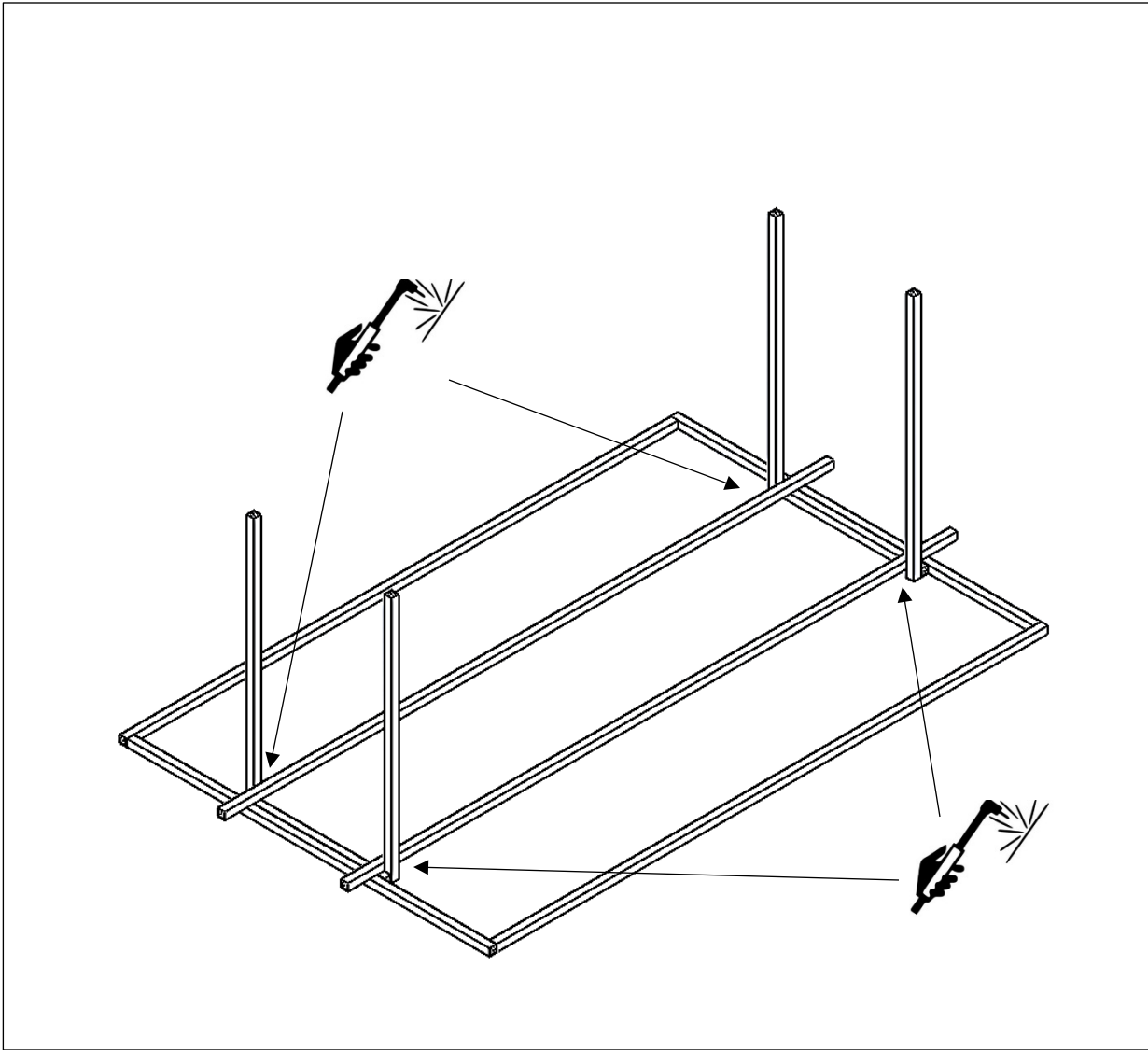
B



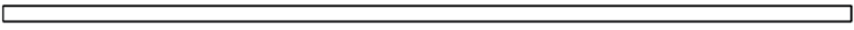
x4

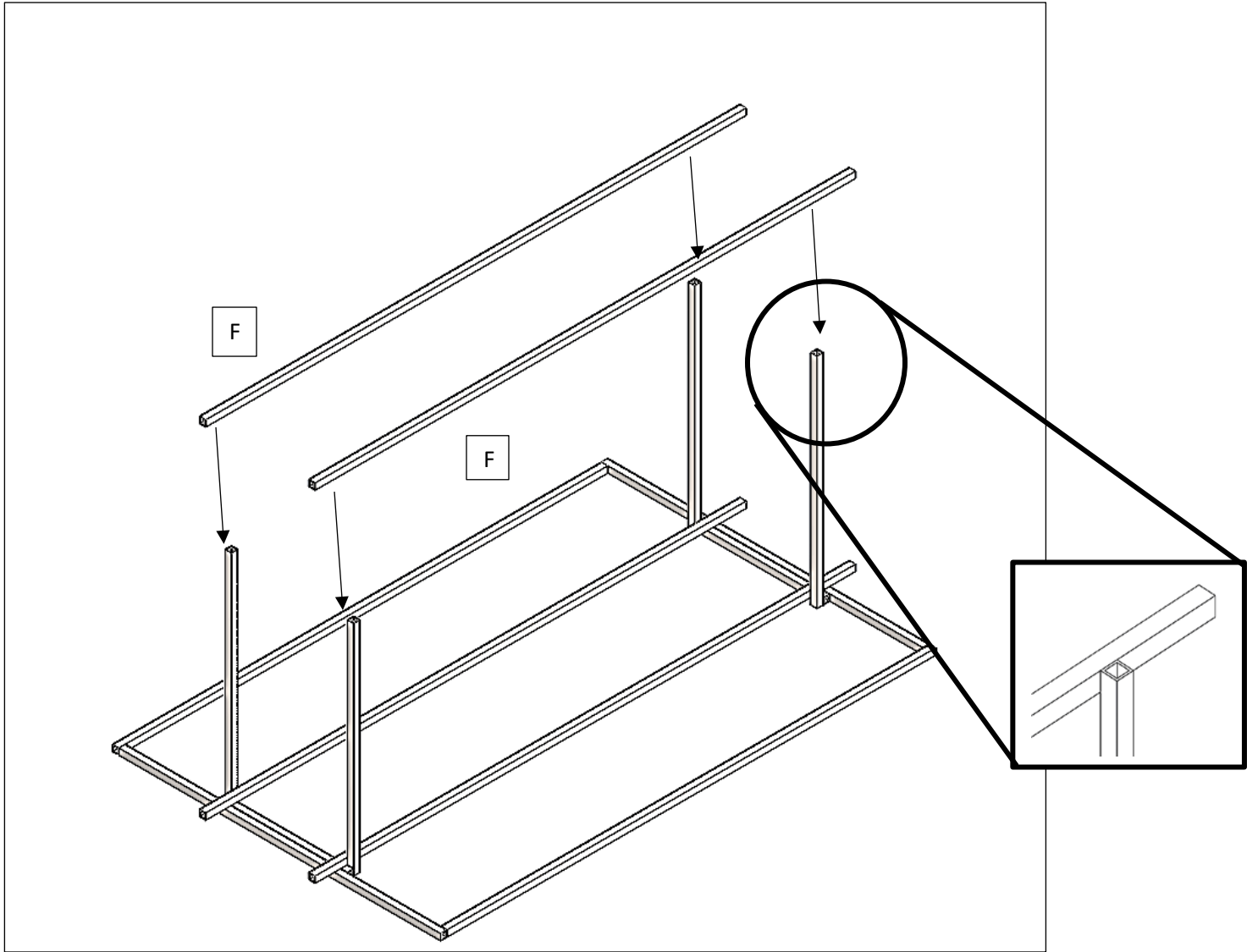


7)

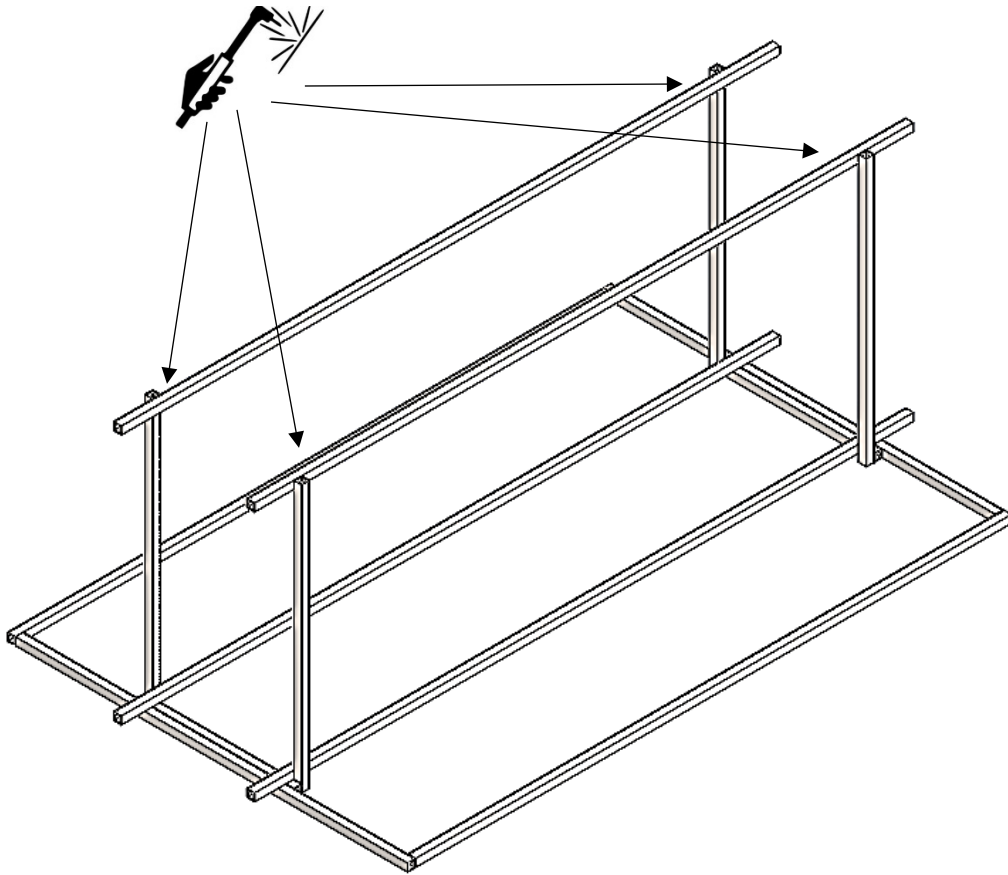


8)

F  x2

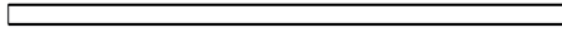


9)

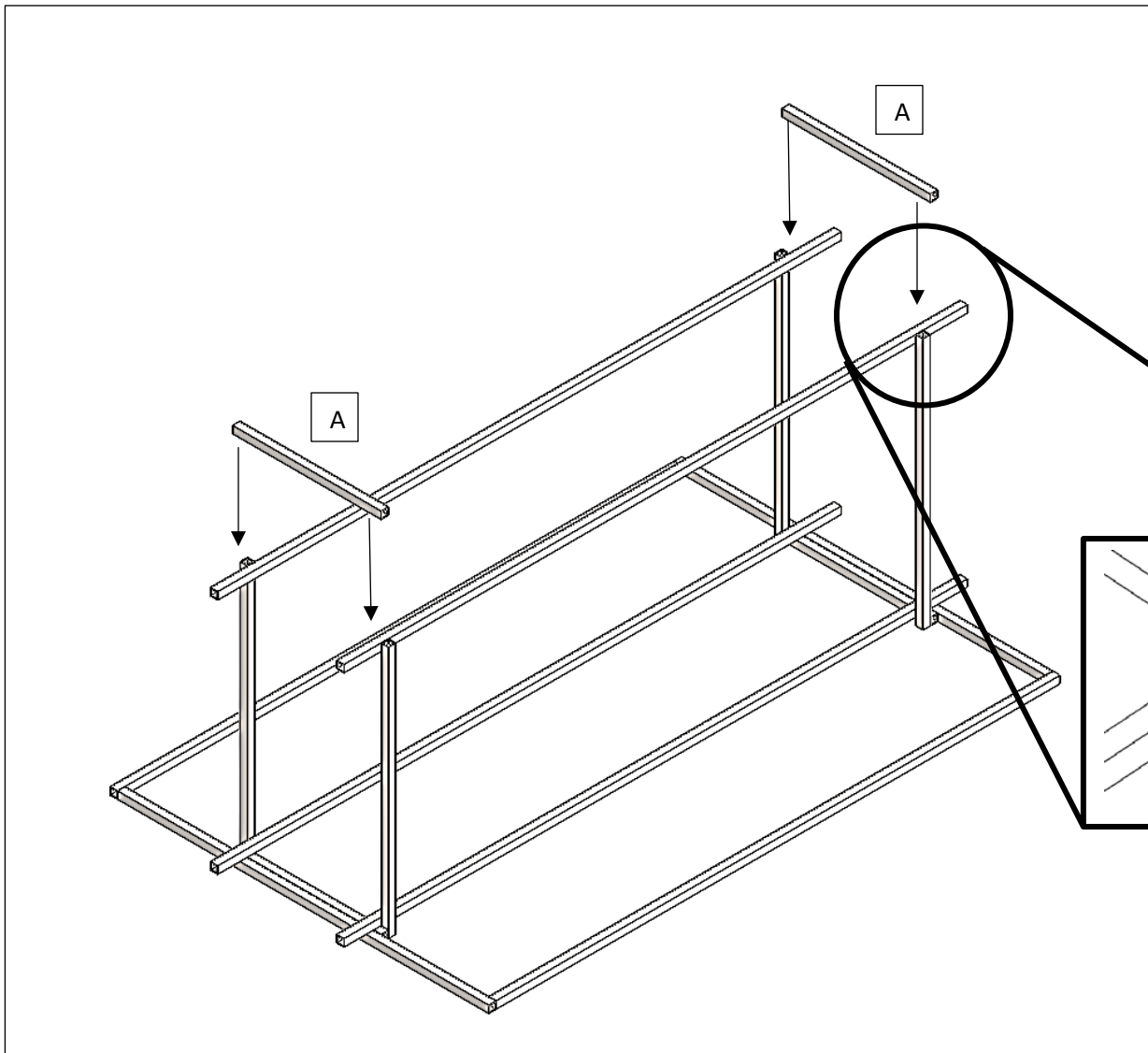


10)

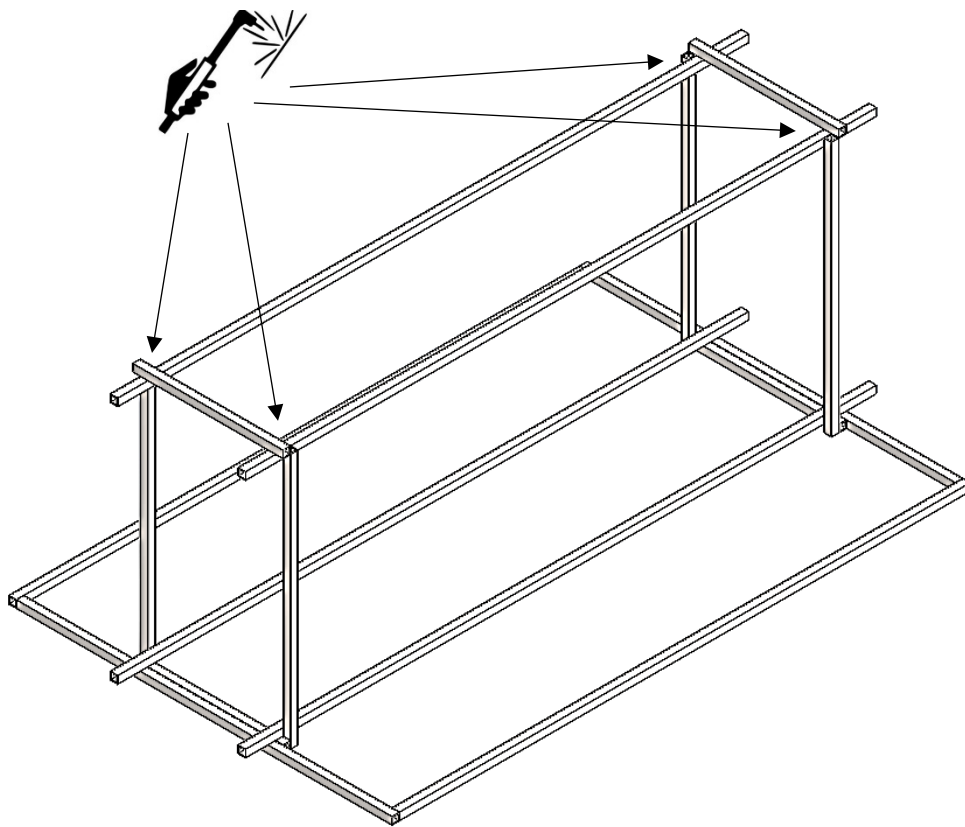
A



x2



11)

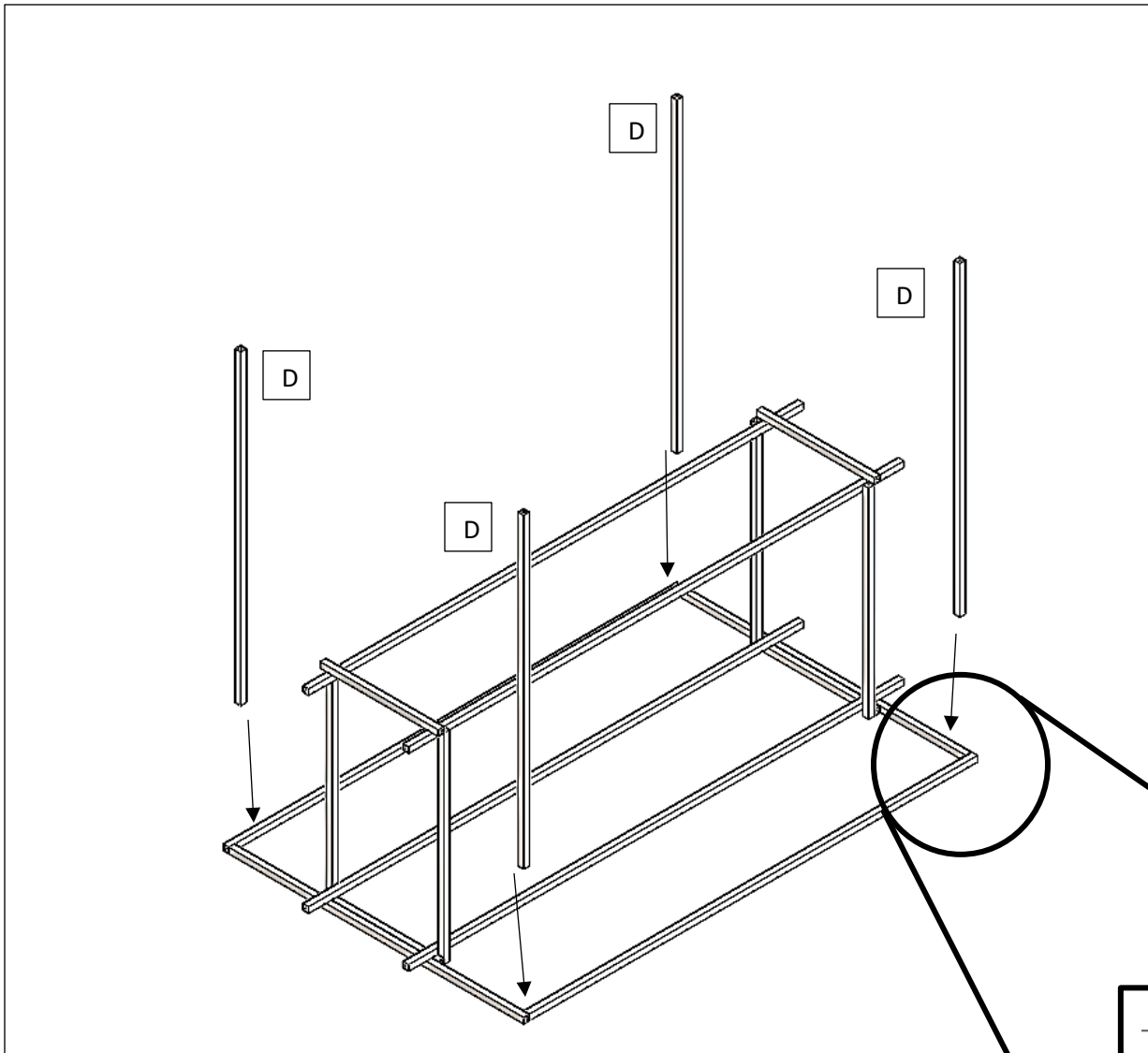


12)

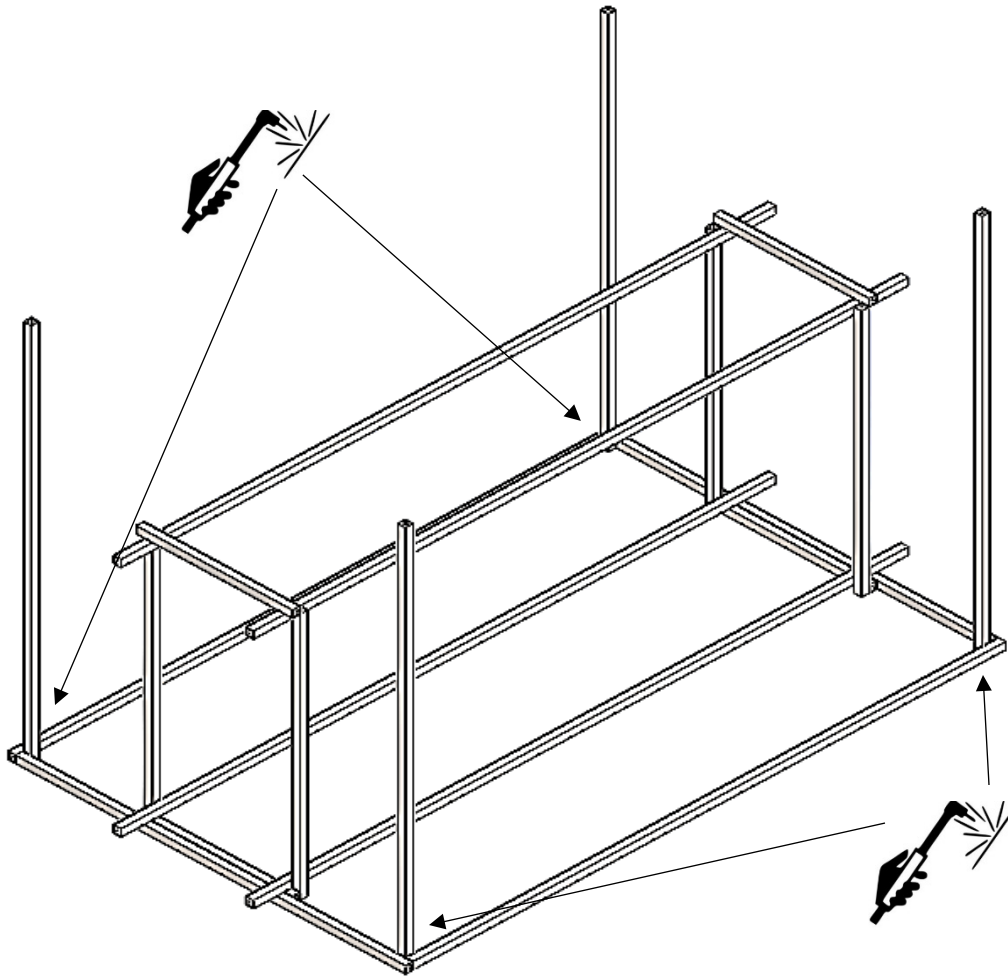
D



x4

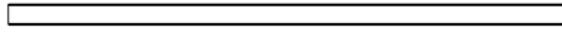


13)

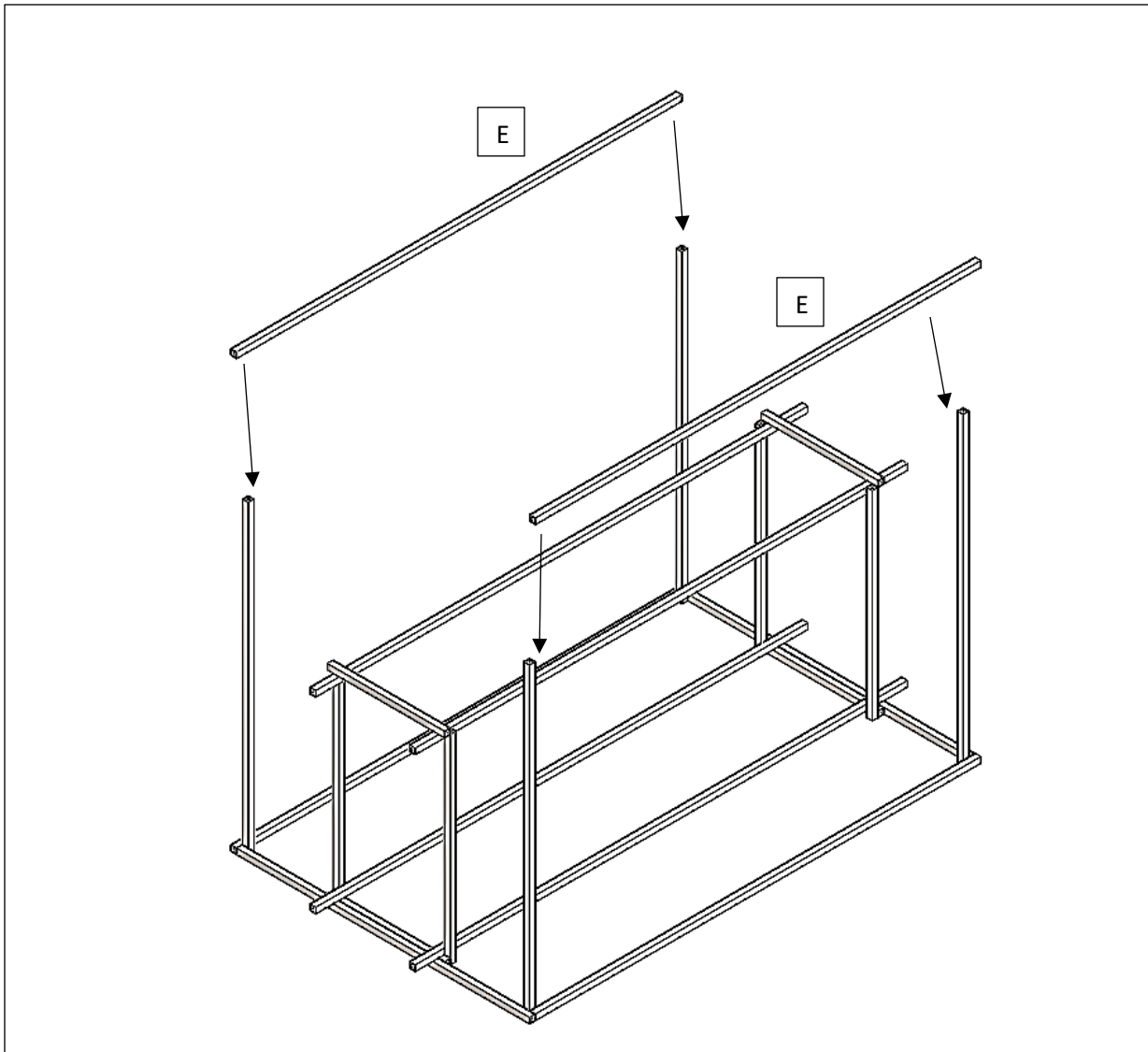


14)

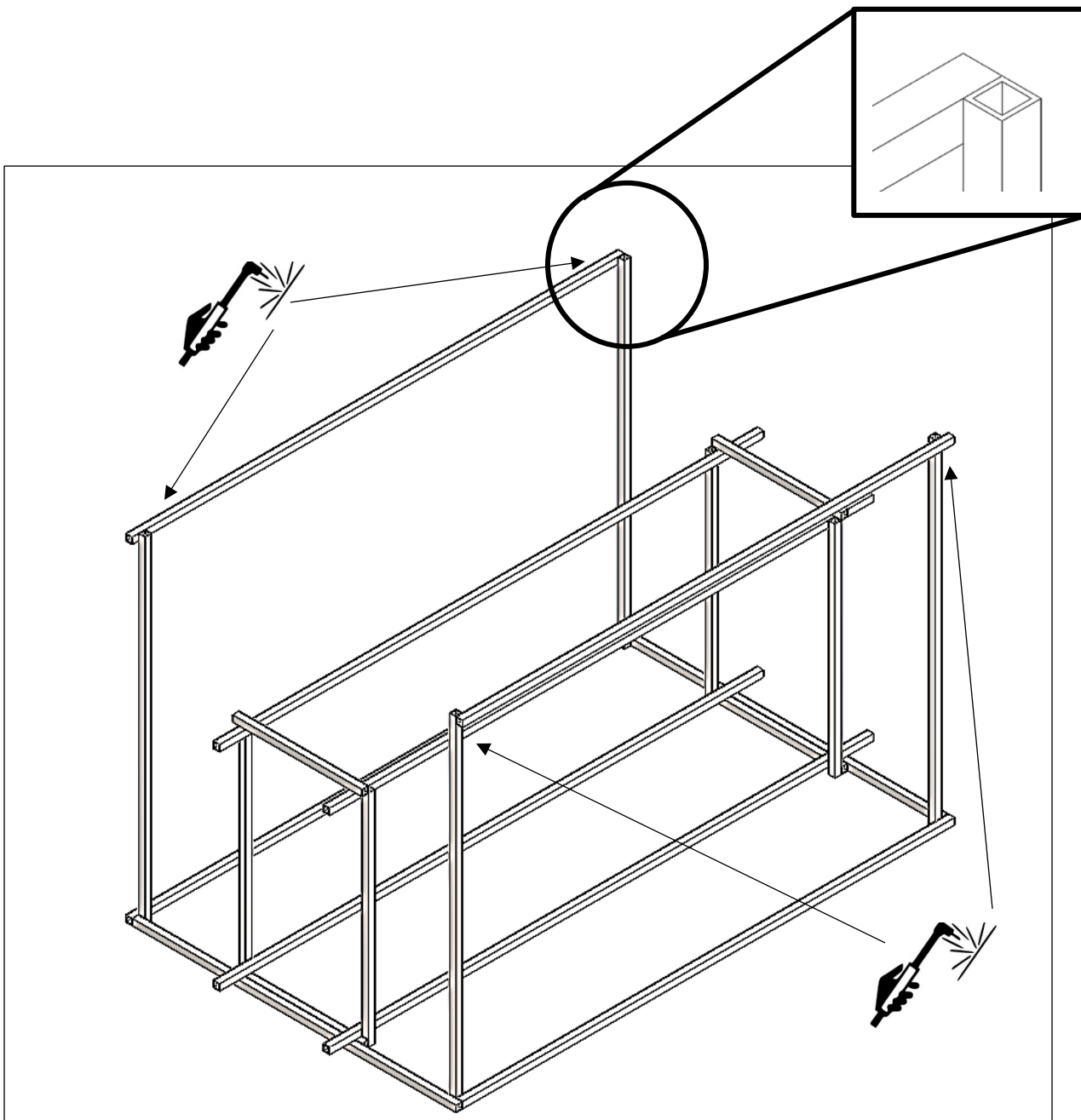
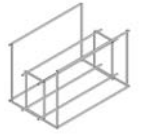
E



x2

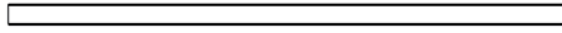


15)

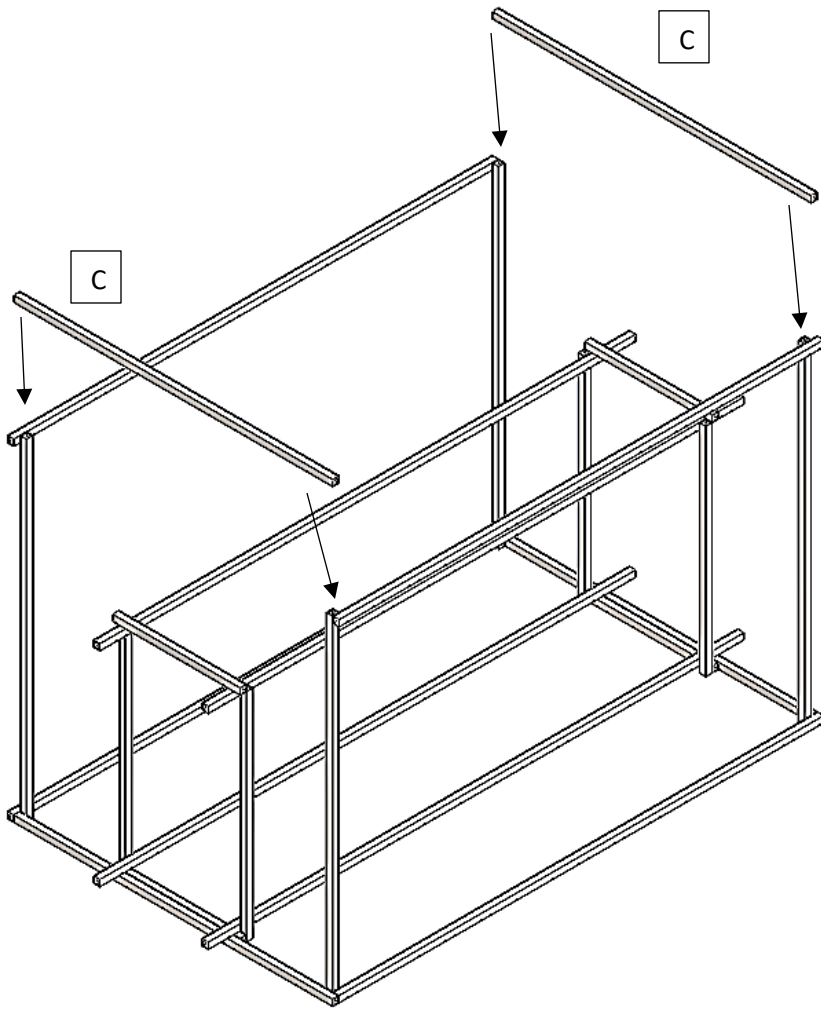


16)

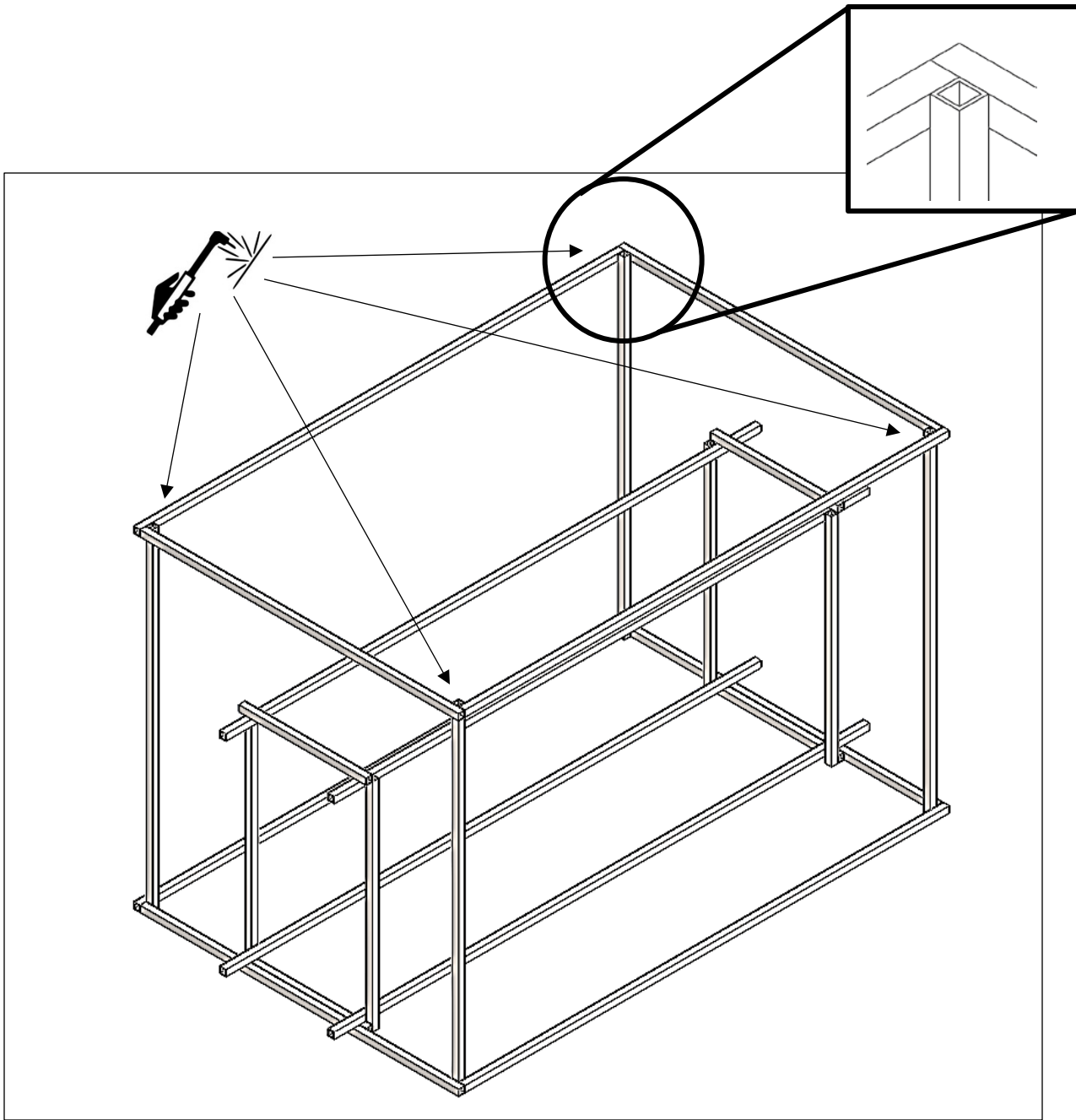
c



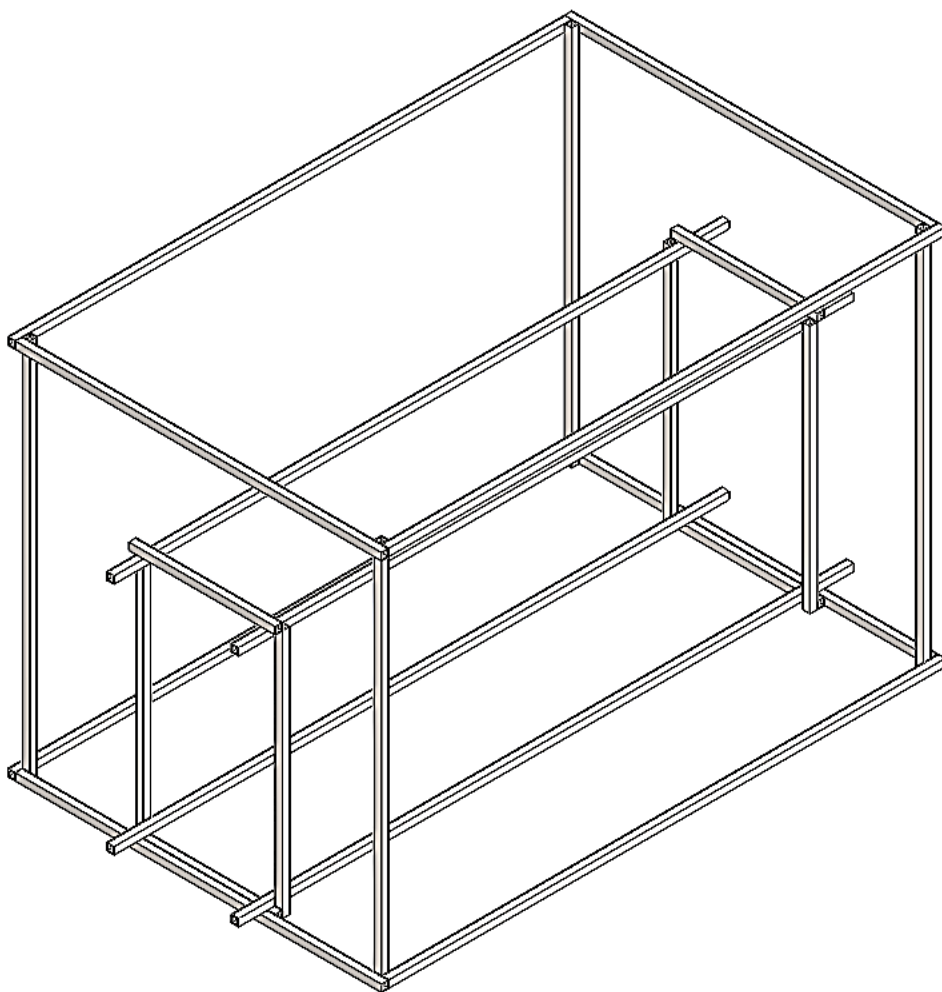
x2



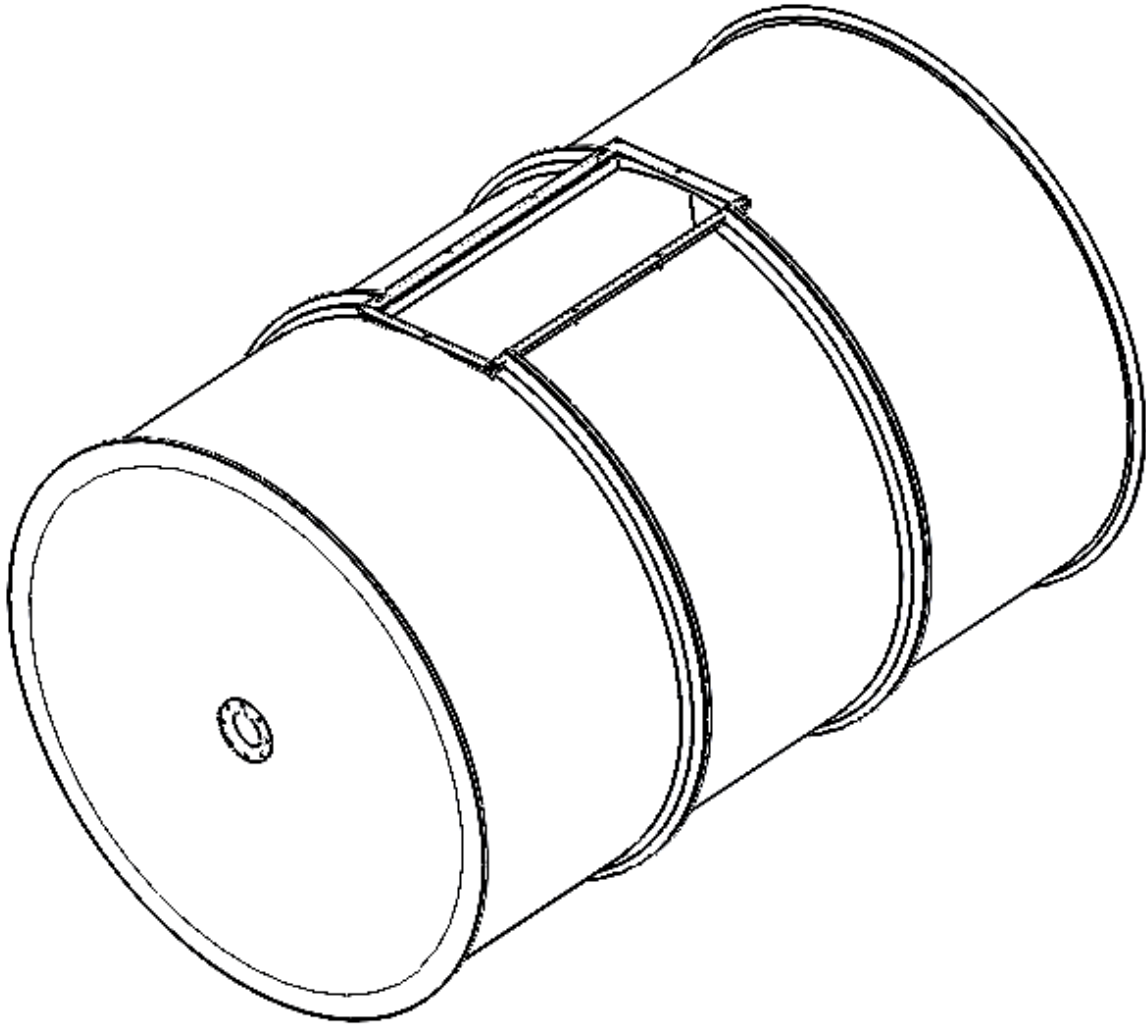
17)



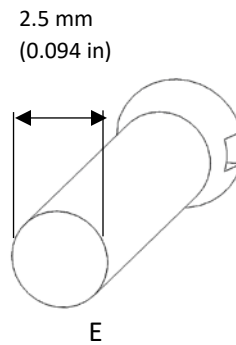
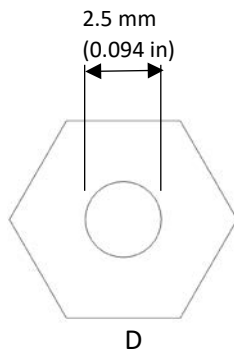
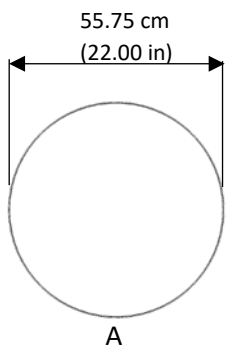
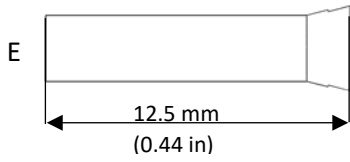
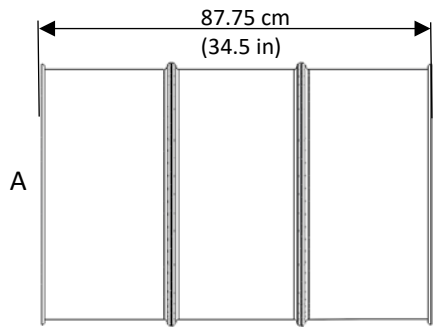
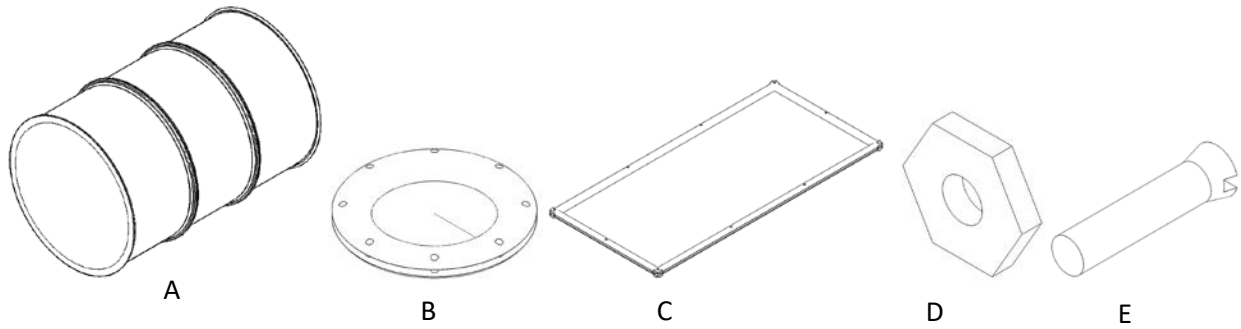
18)



Drum:



Bill of Materials:



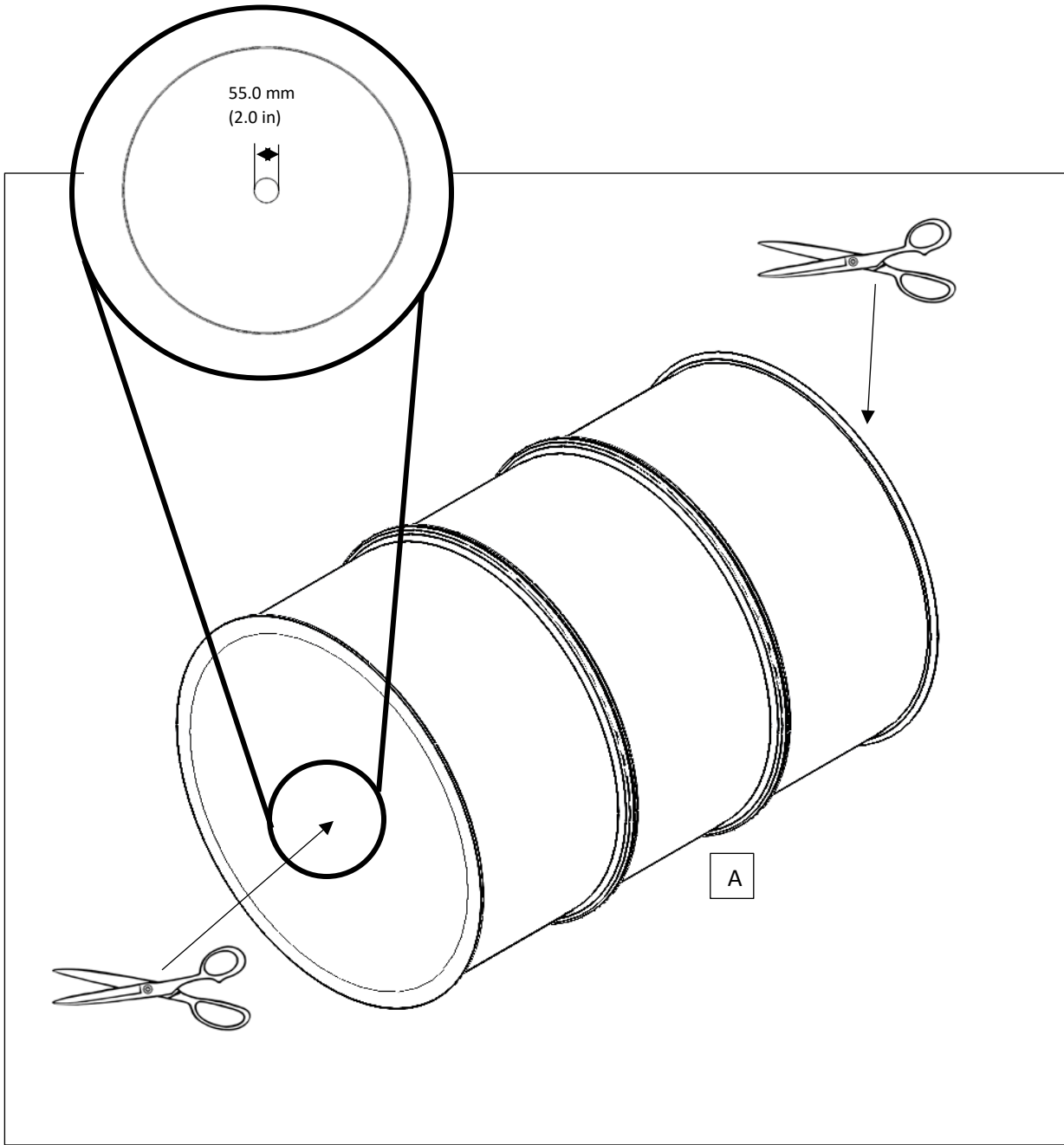
<u>A</u>	x1
<u>B</u>	x2
<u>C</u>	x1
<u>D</u>	x26
<u>E</u>	x26

1)

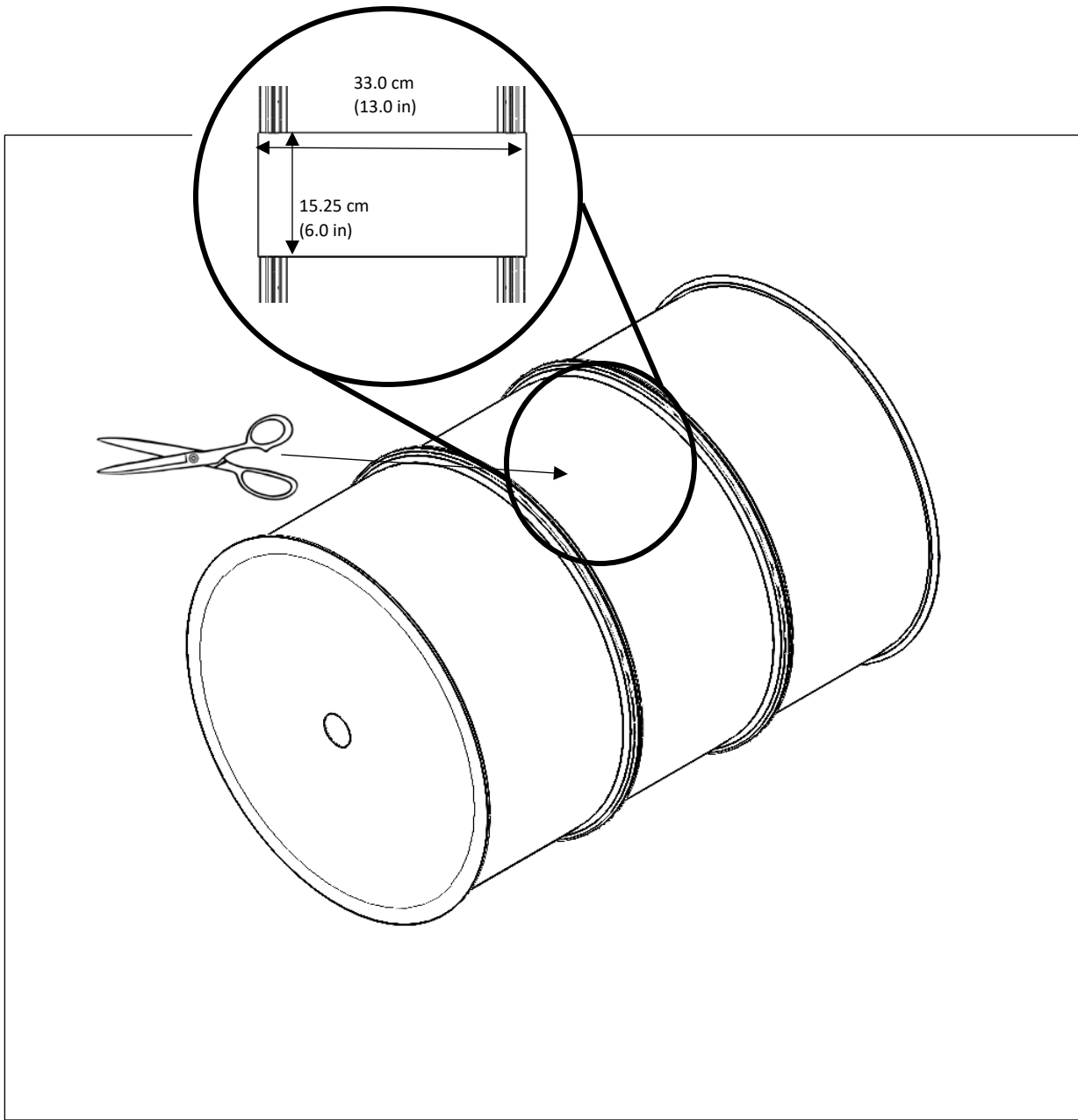
A



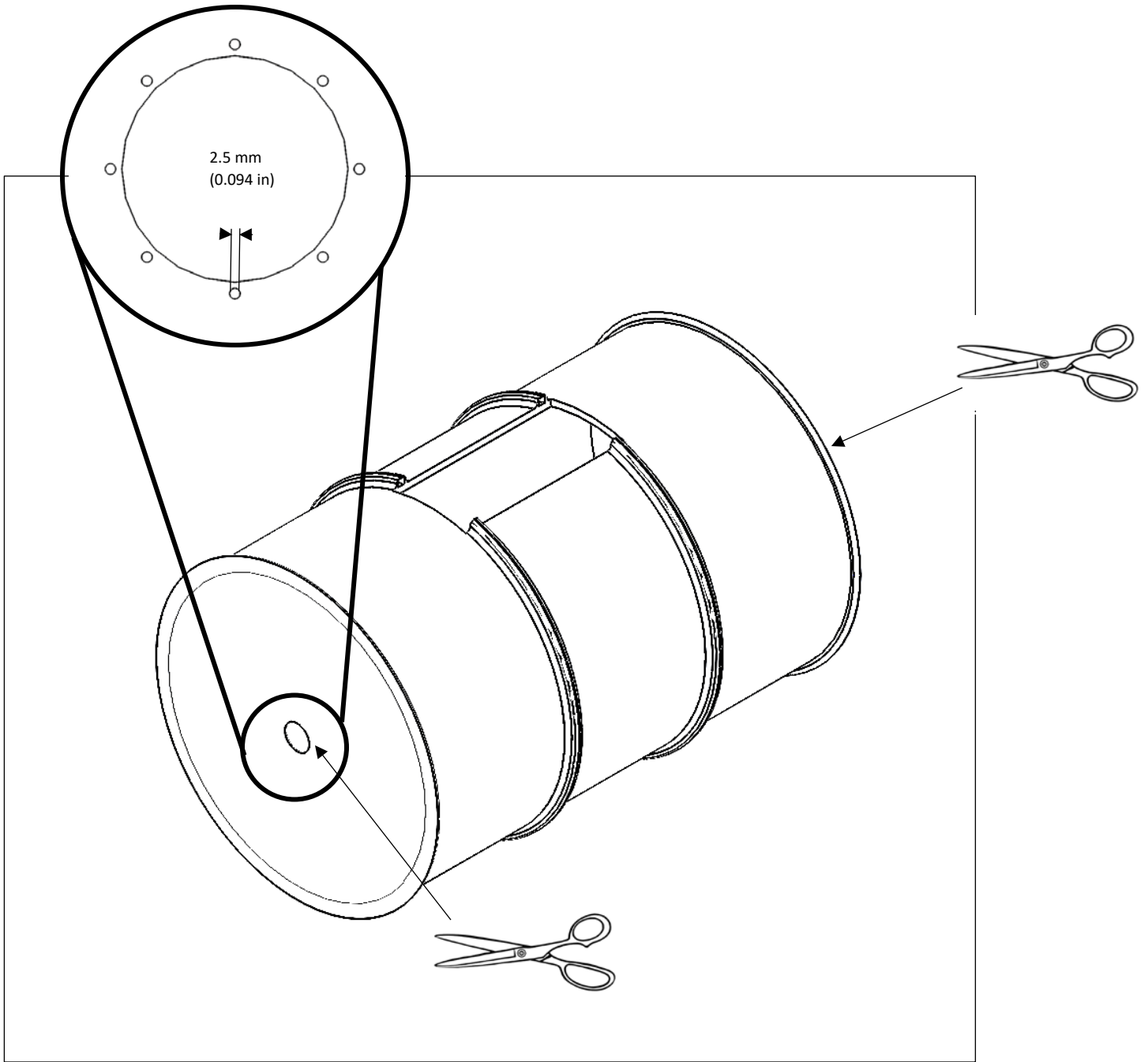
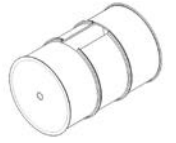
x1



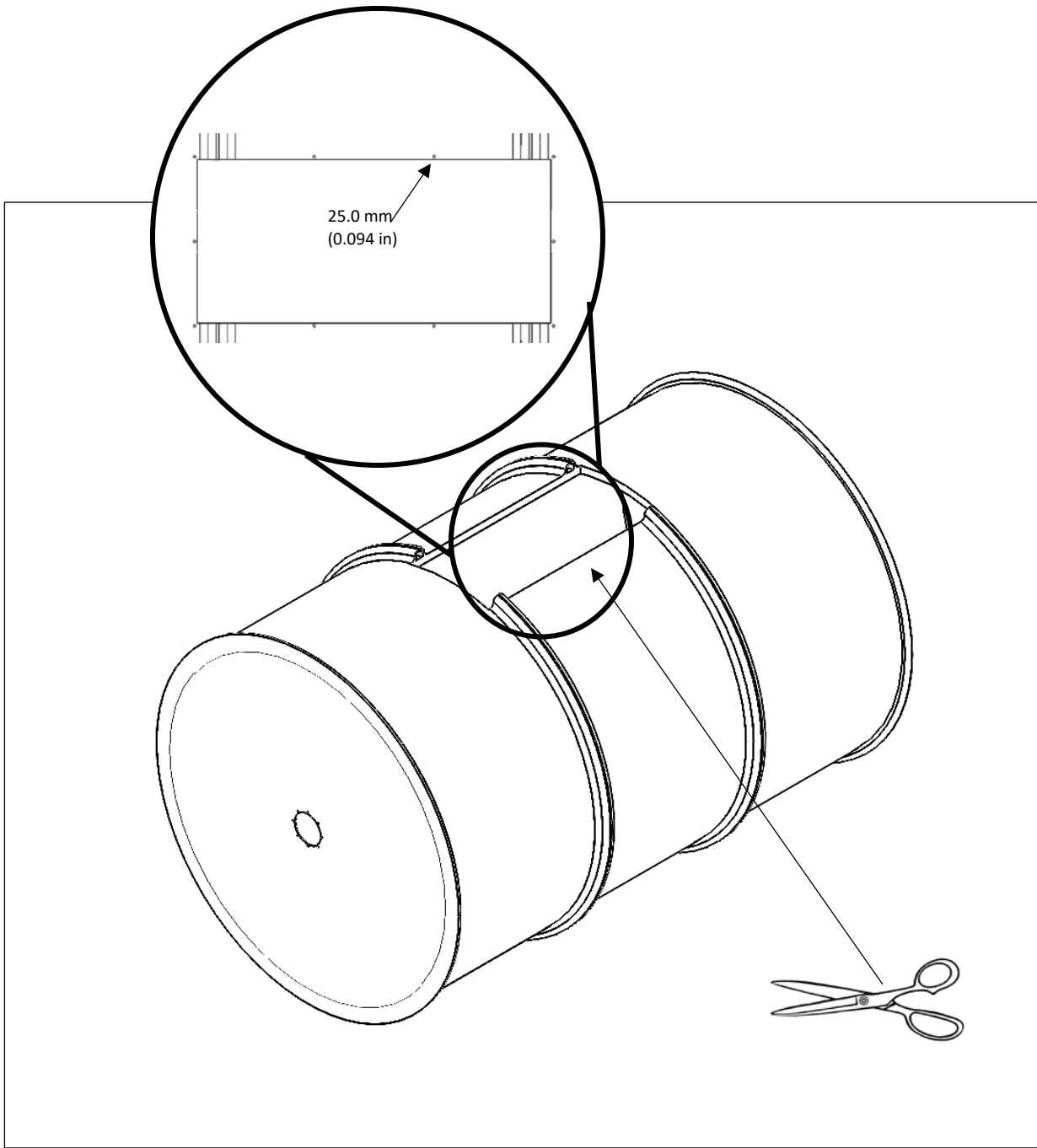
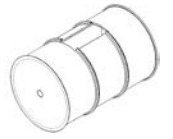
2)



3)

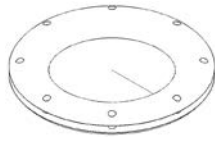


4)

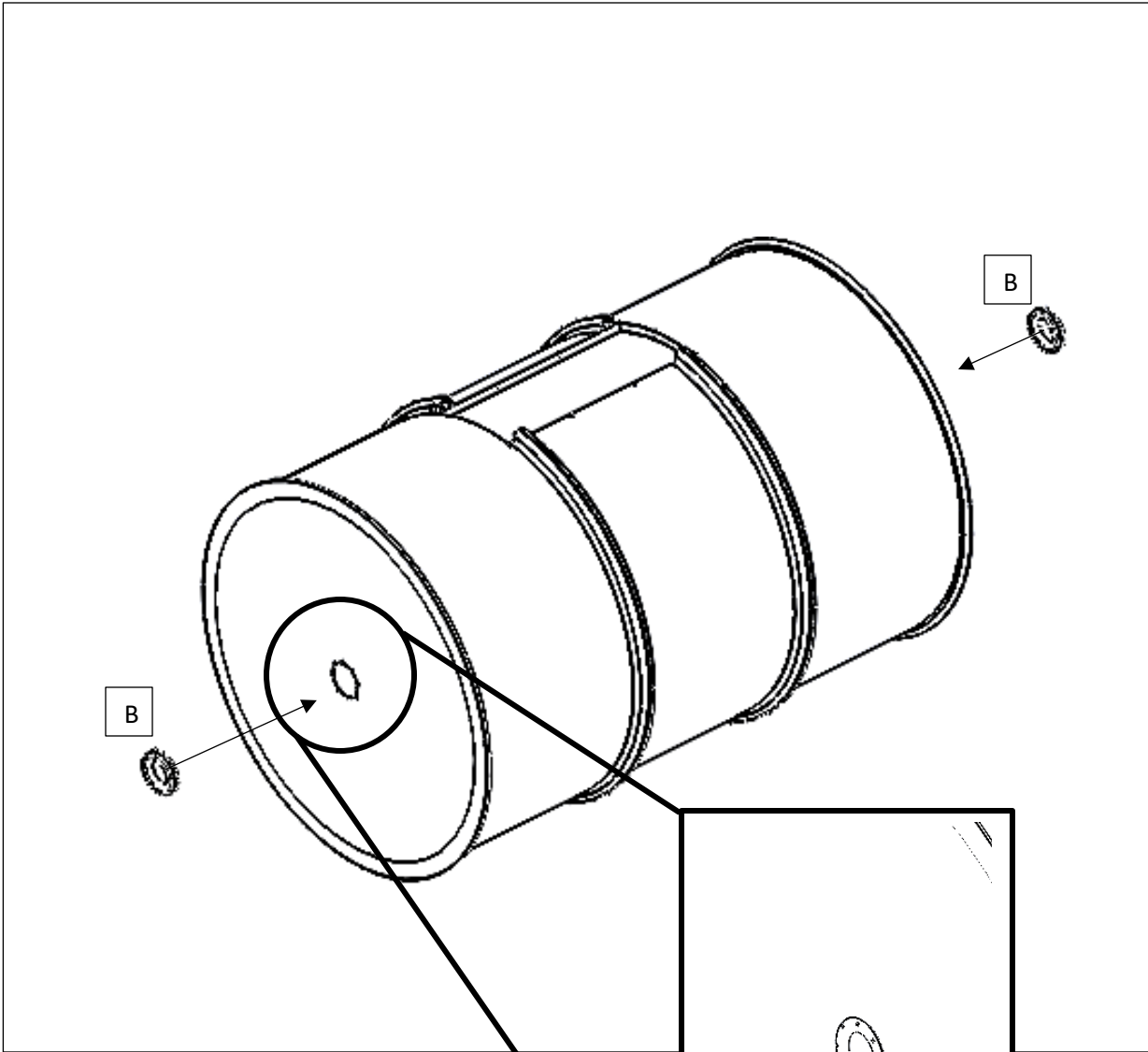
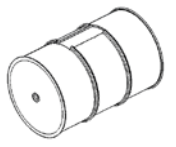


5)

B



x2



B

B

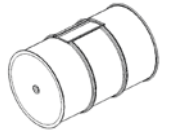
60

6)

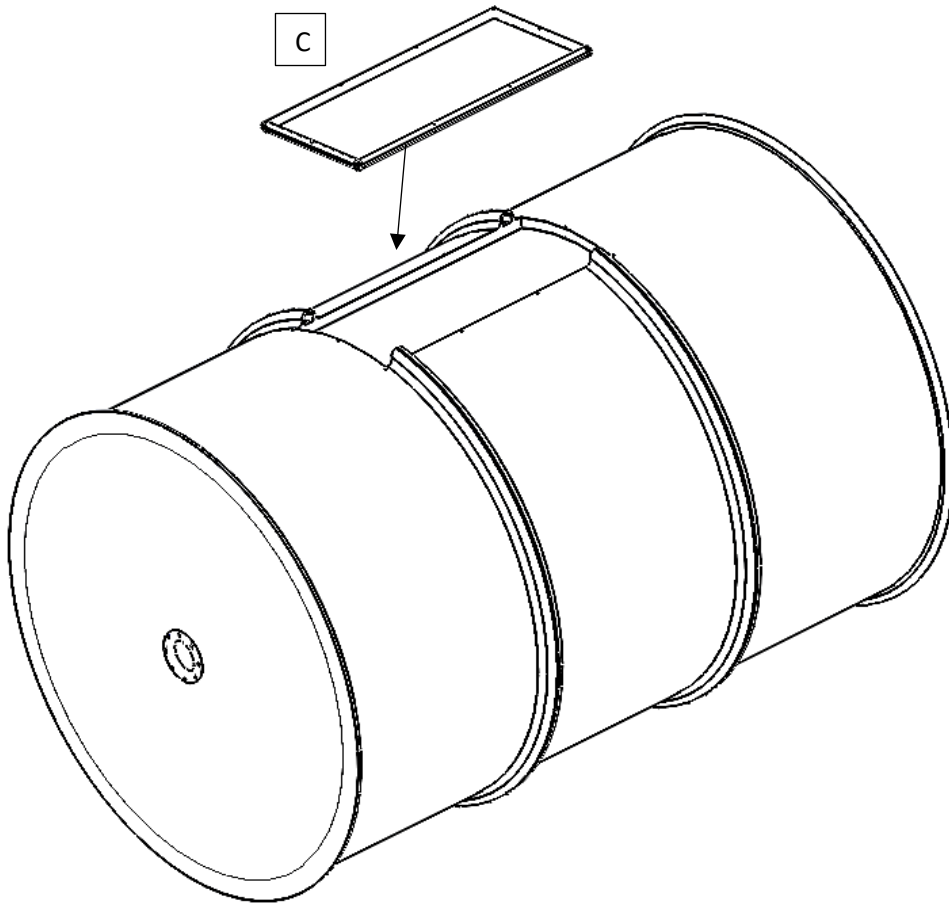
c



x1



c



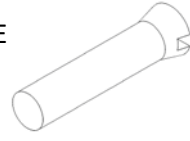
7)

D

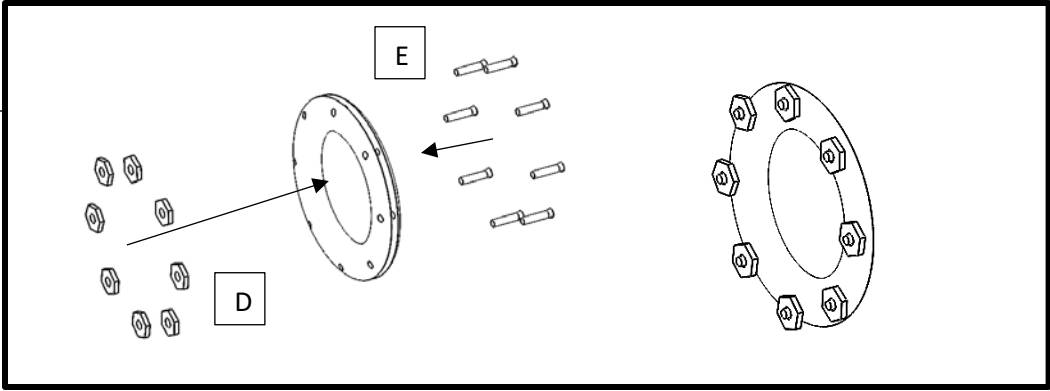
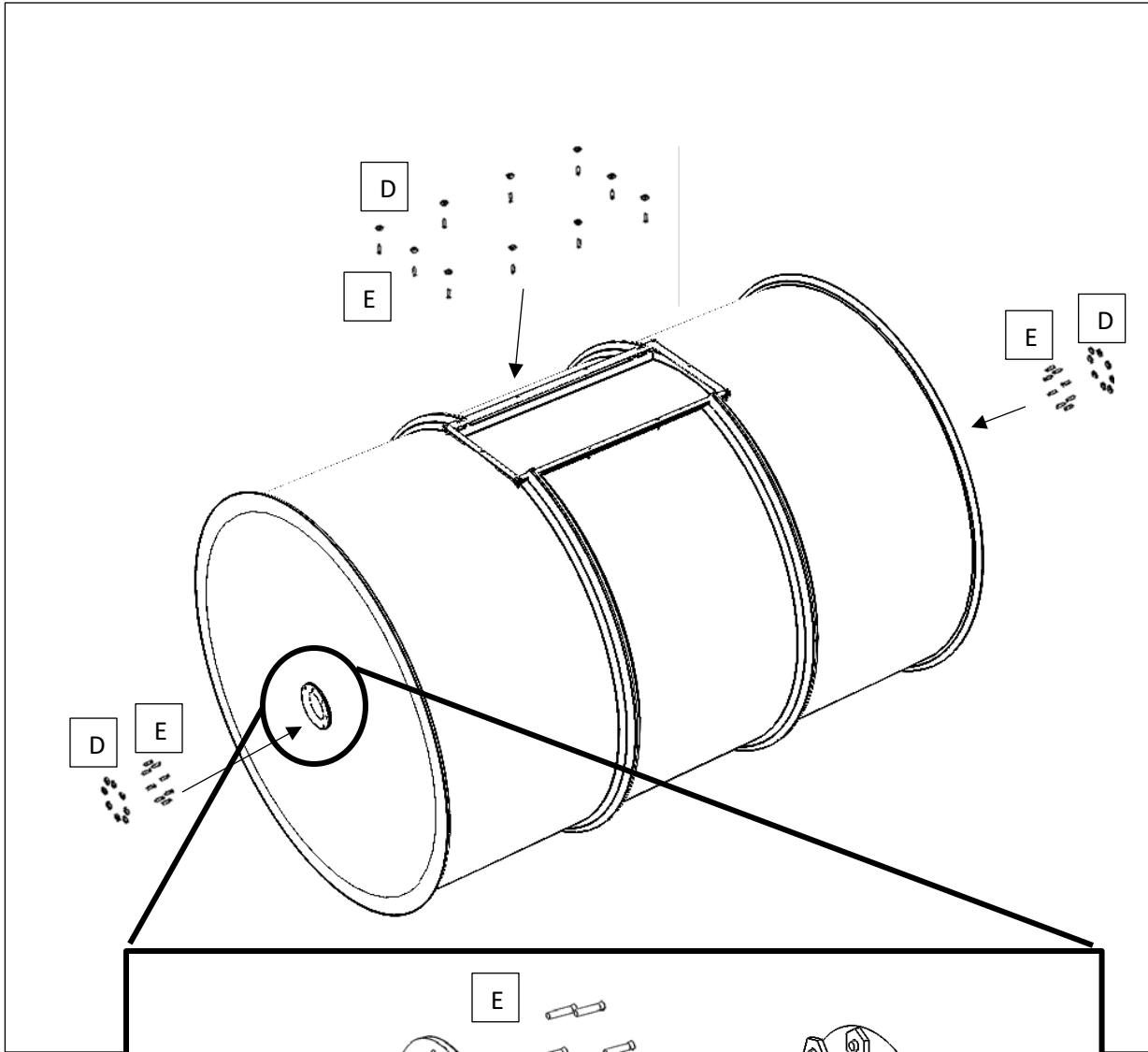
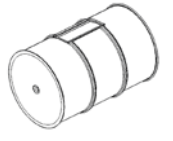


x26

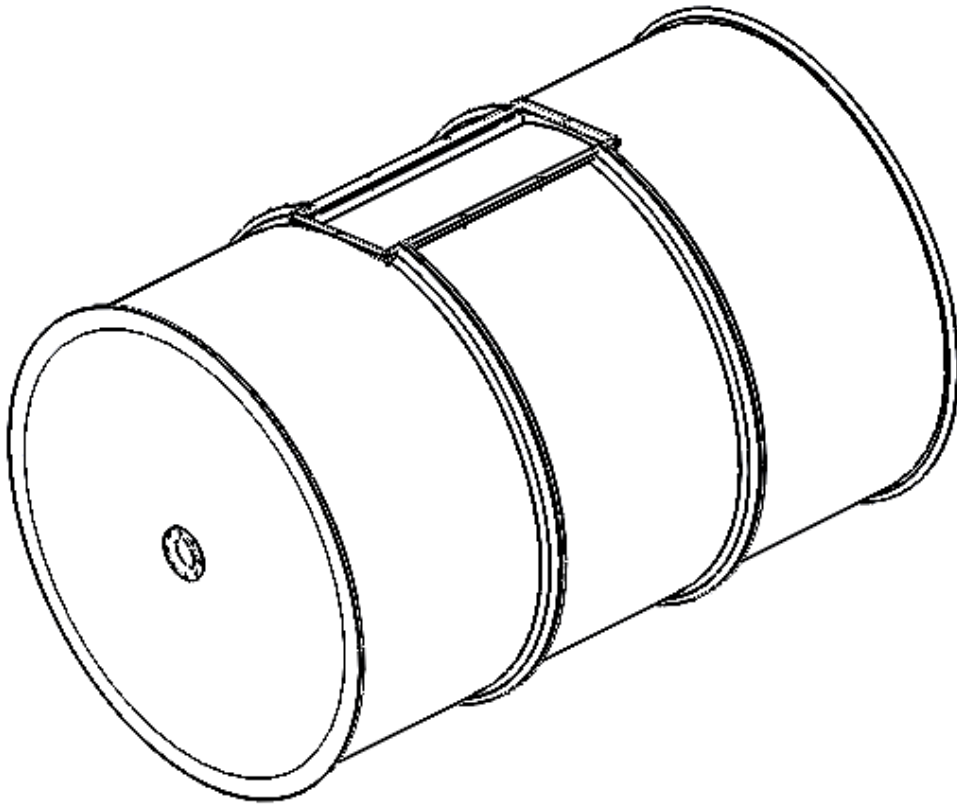
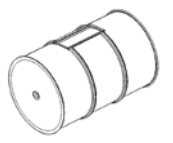
E



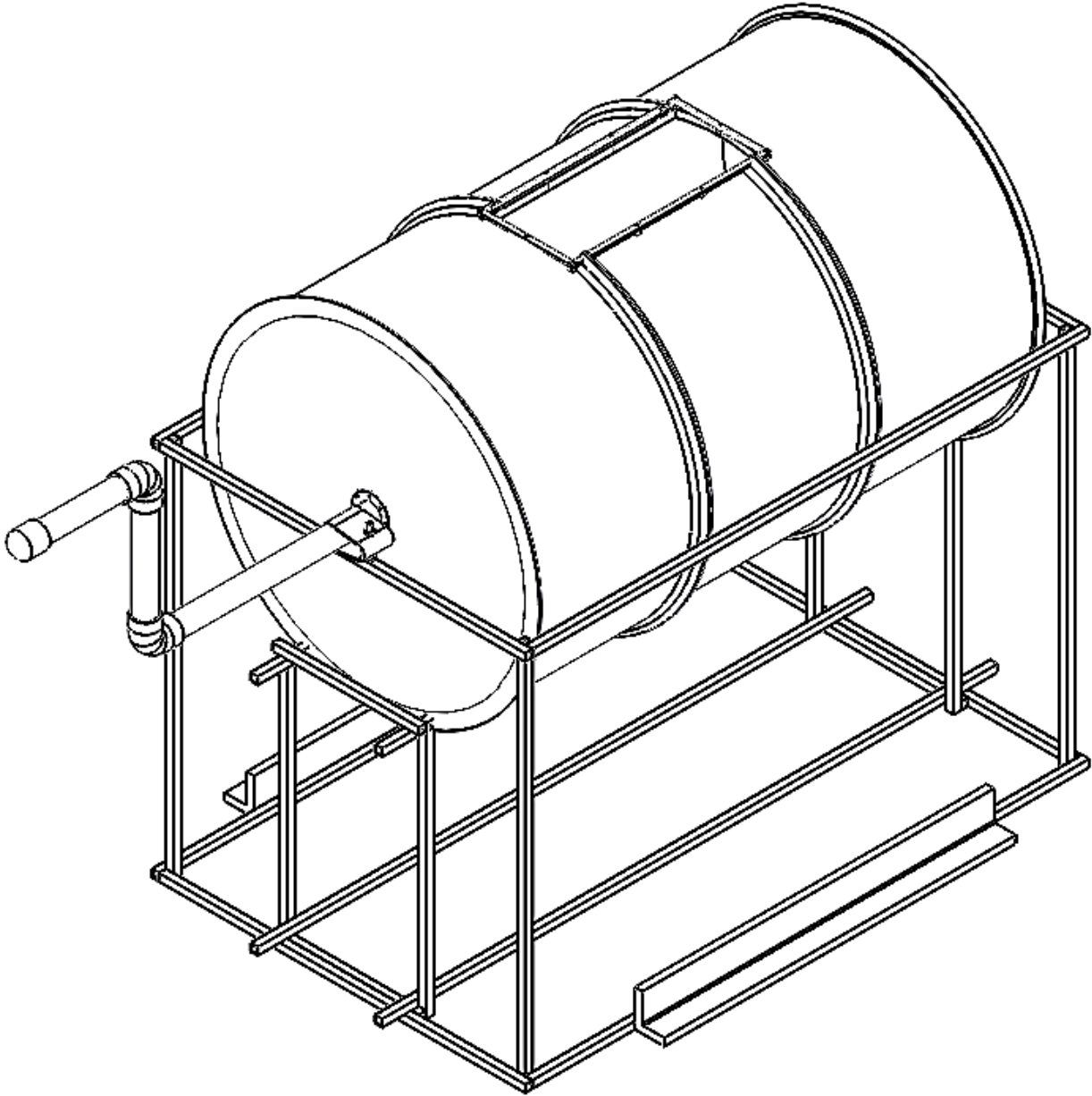
x26



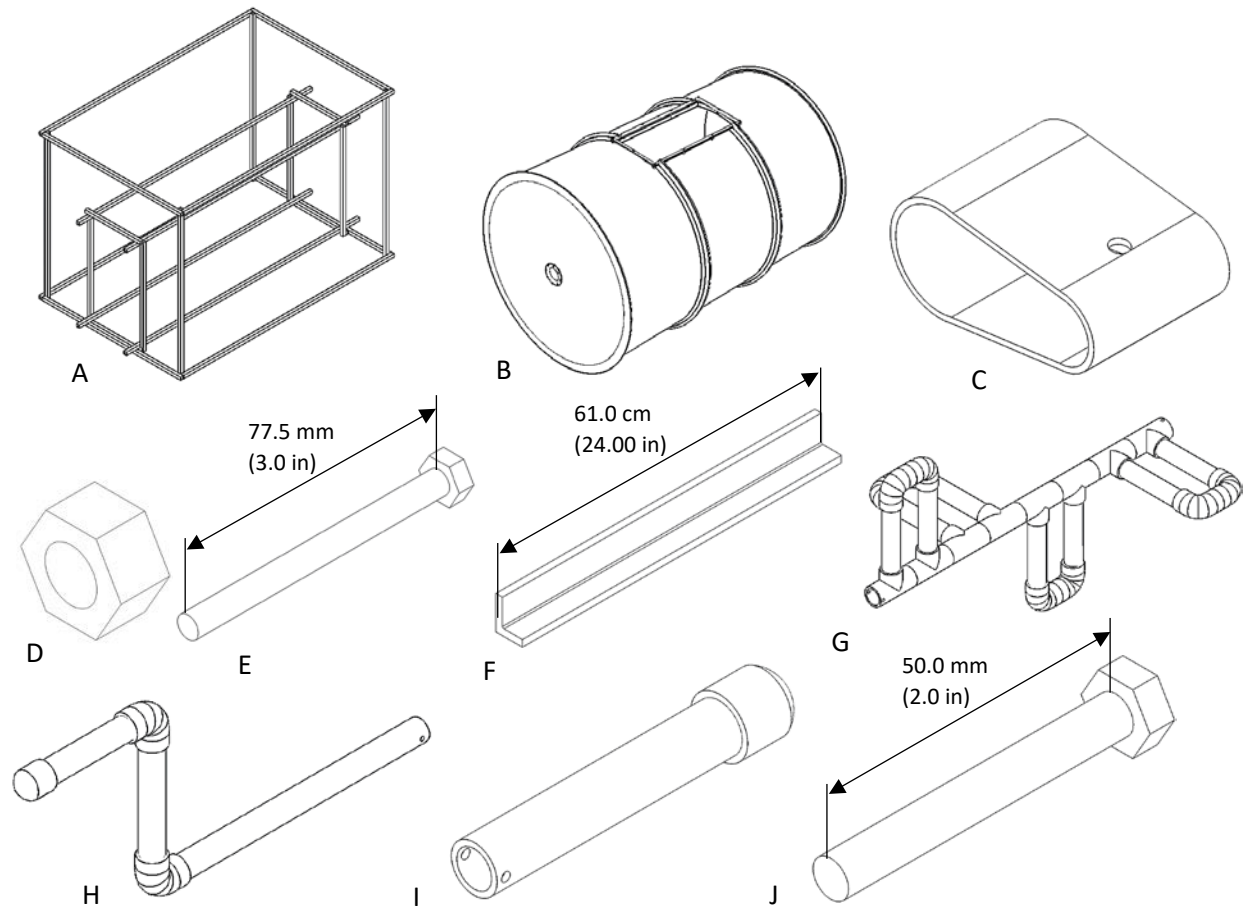
8)

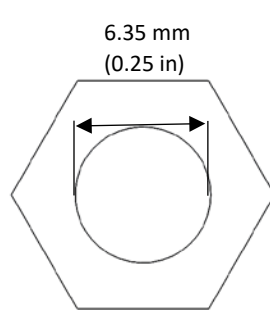
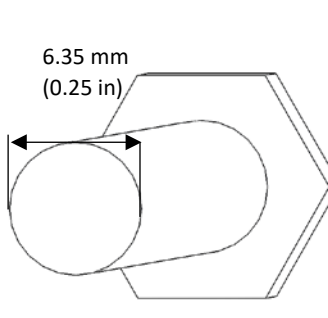
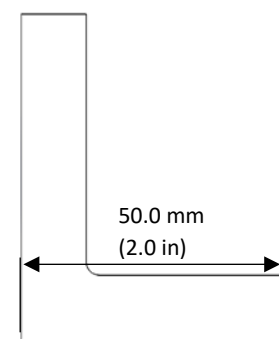


Assembly:

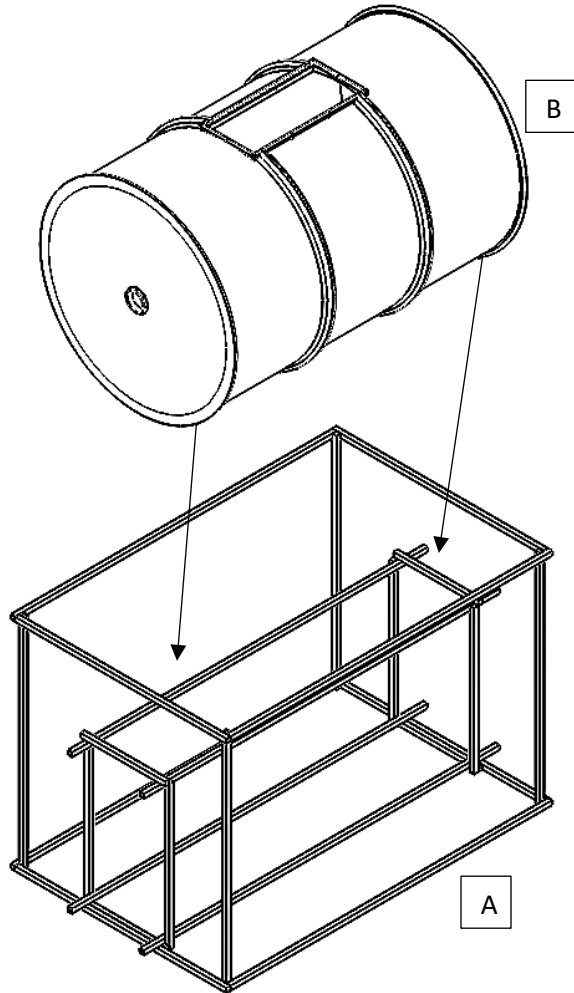
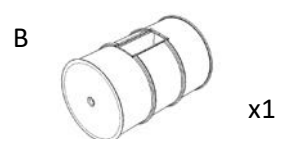


Bill of Materials:



	<u>A</u>	x1
	<u>B</u>	x1
	<u>C</u>	x2
	<u>D</u>	x8
	<u>E</u>	x2
	<u>F</u>	x2
	<u>G</u>	x1
	<u>H</u>	x1
	<u>I</u>	x1
	<u>J</u>	x2

1)



2)

C



x2

D

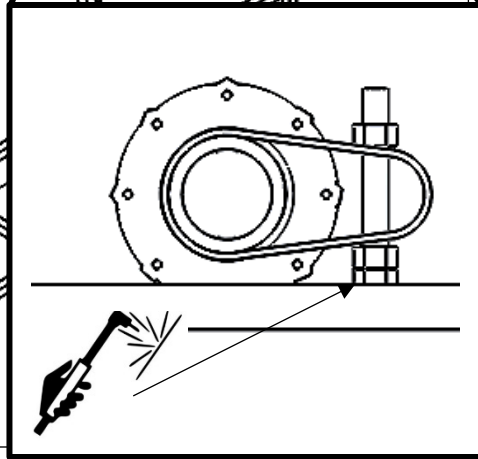
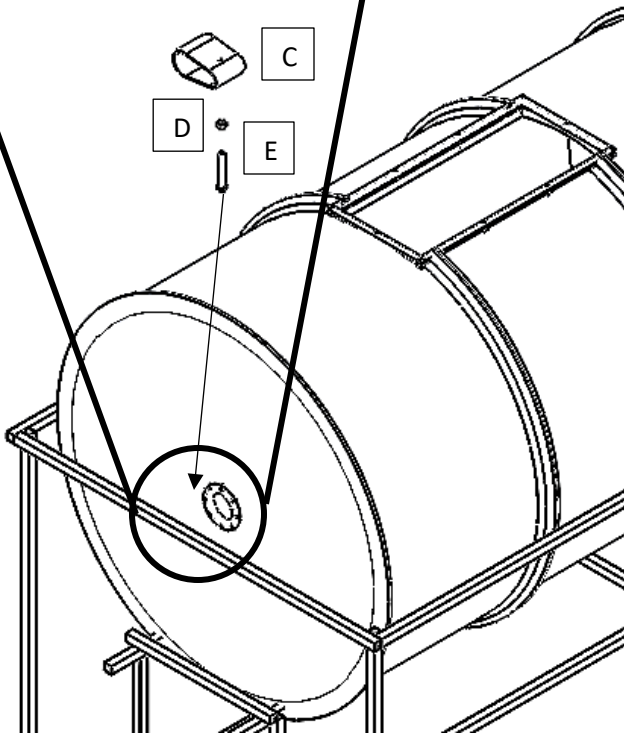
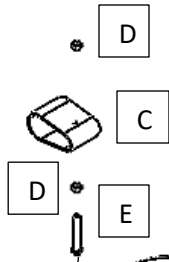
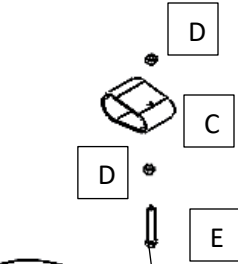
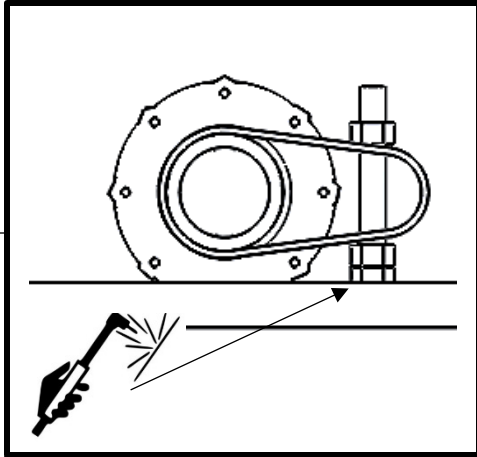


x4

E



x2

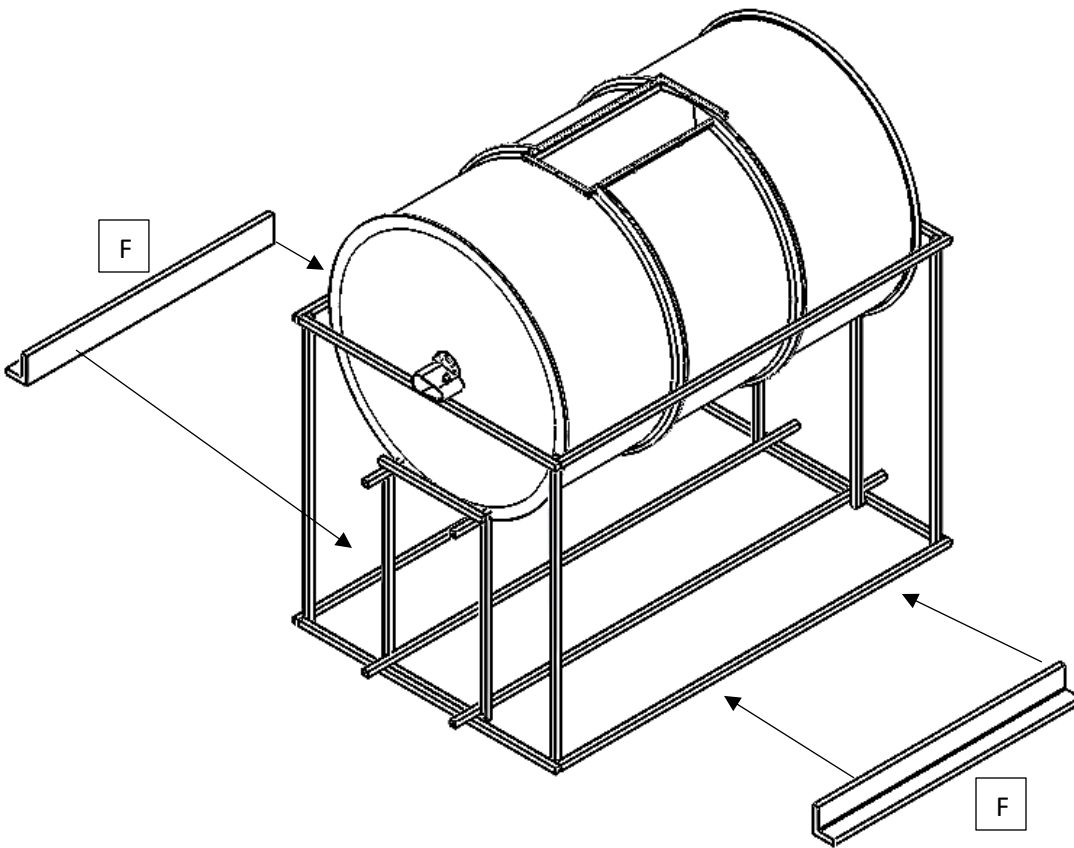


3)

F

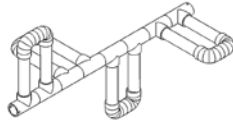


x2

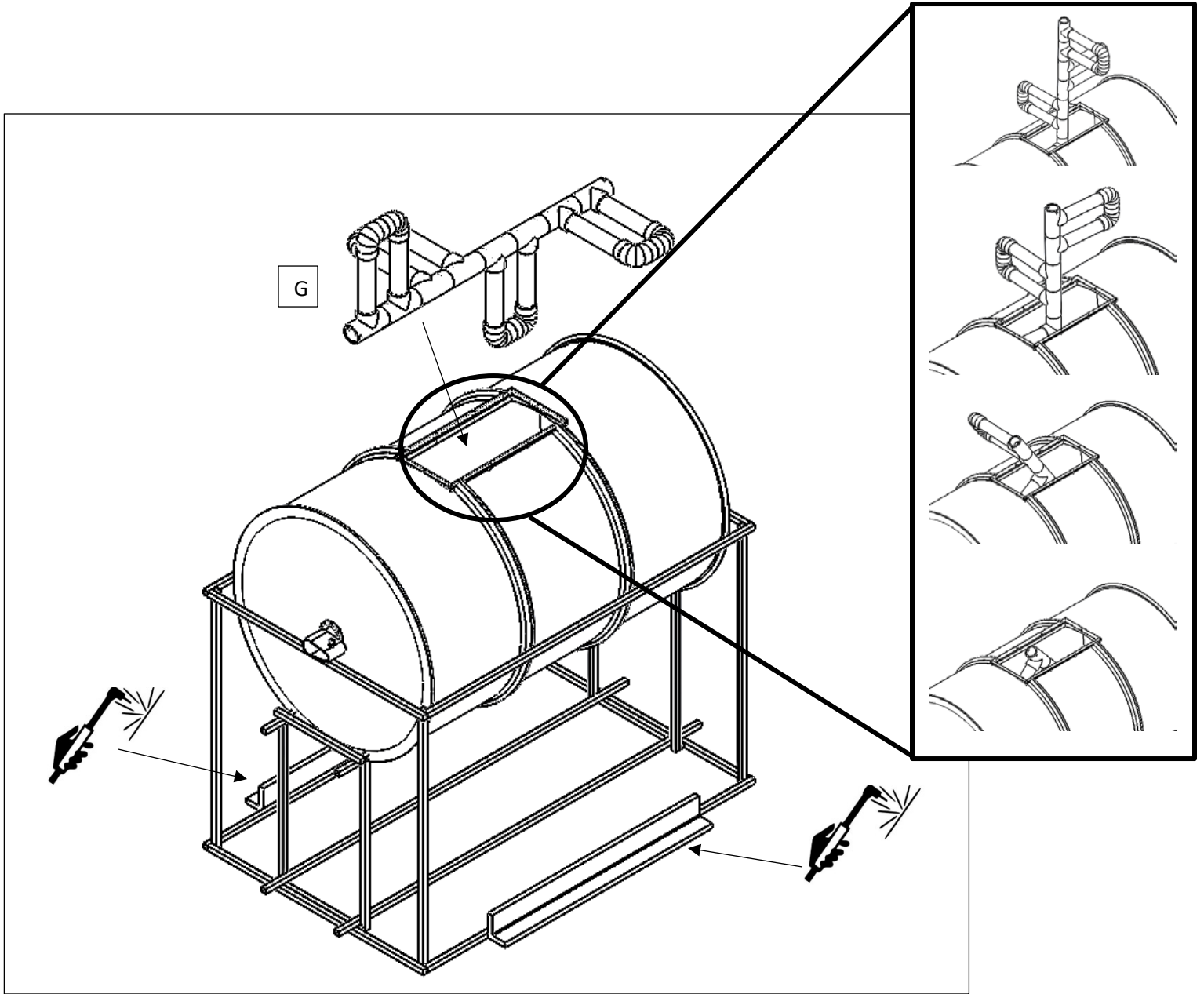
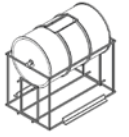


4)

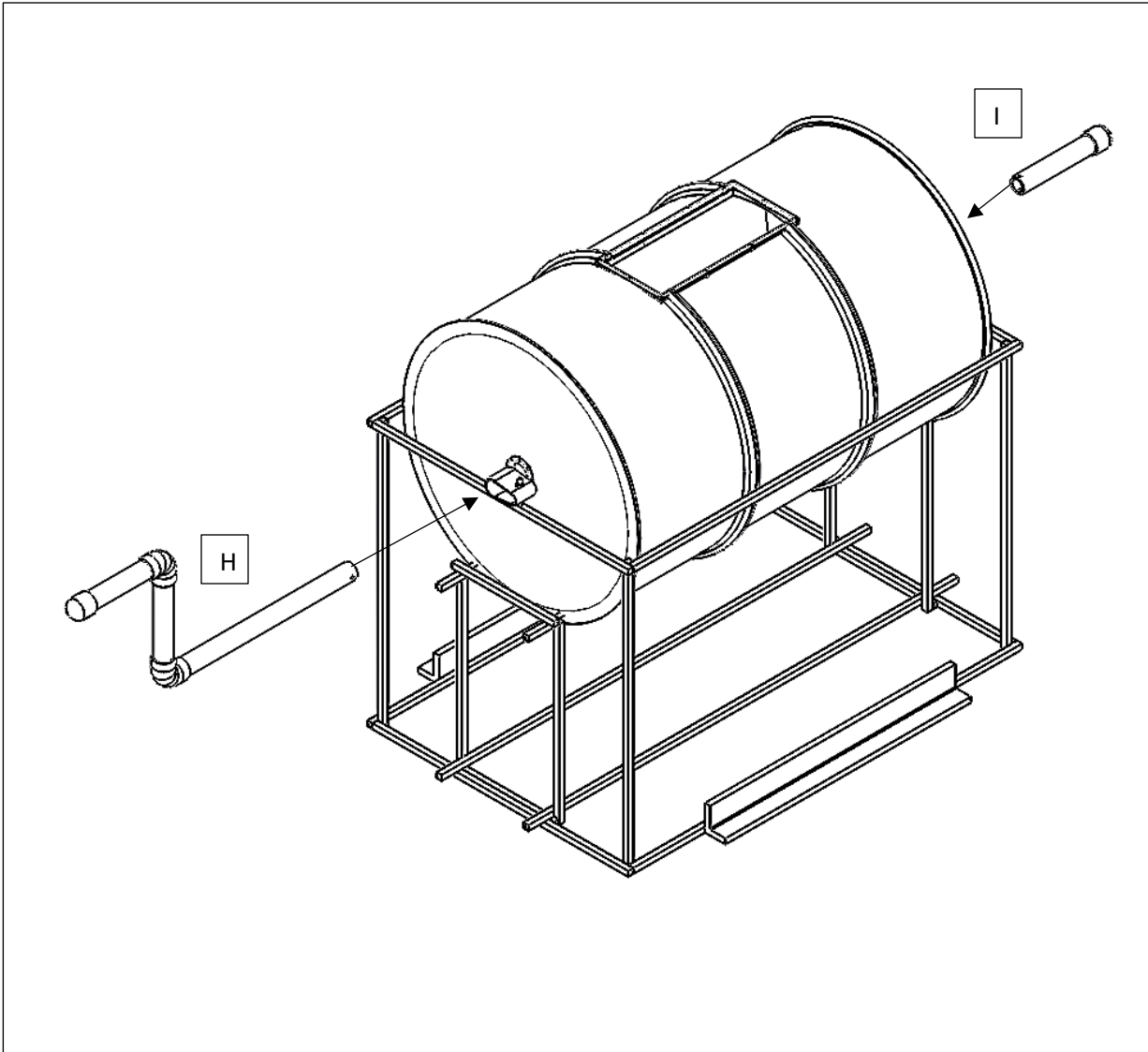
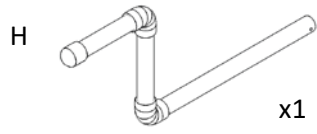
G



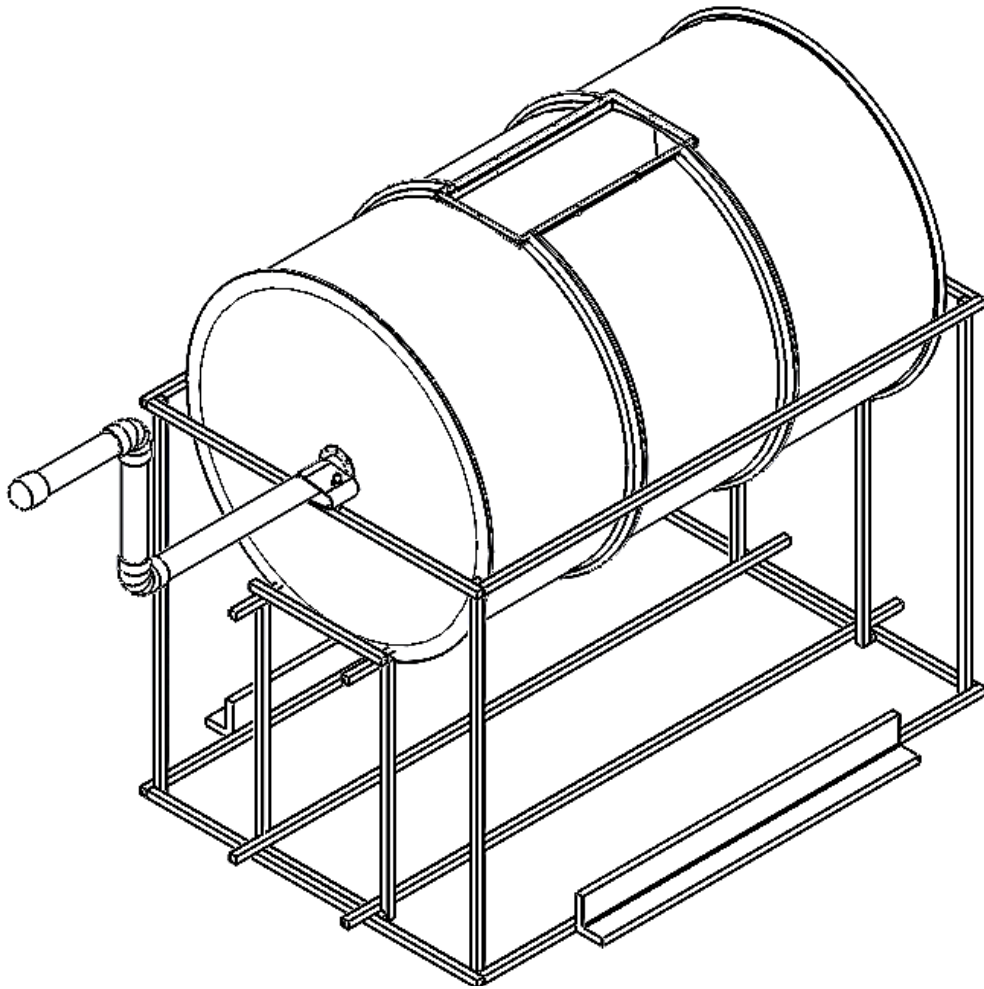
x1



5)



6)



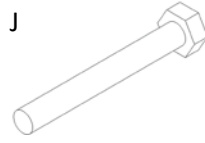
7)

D

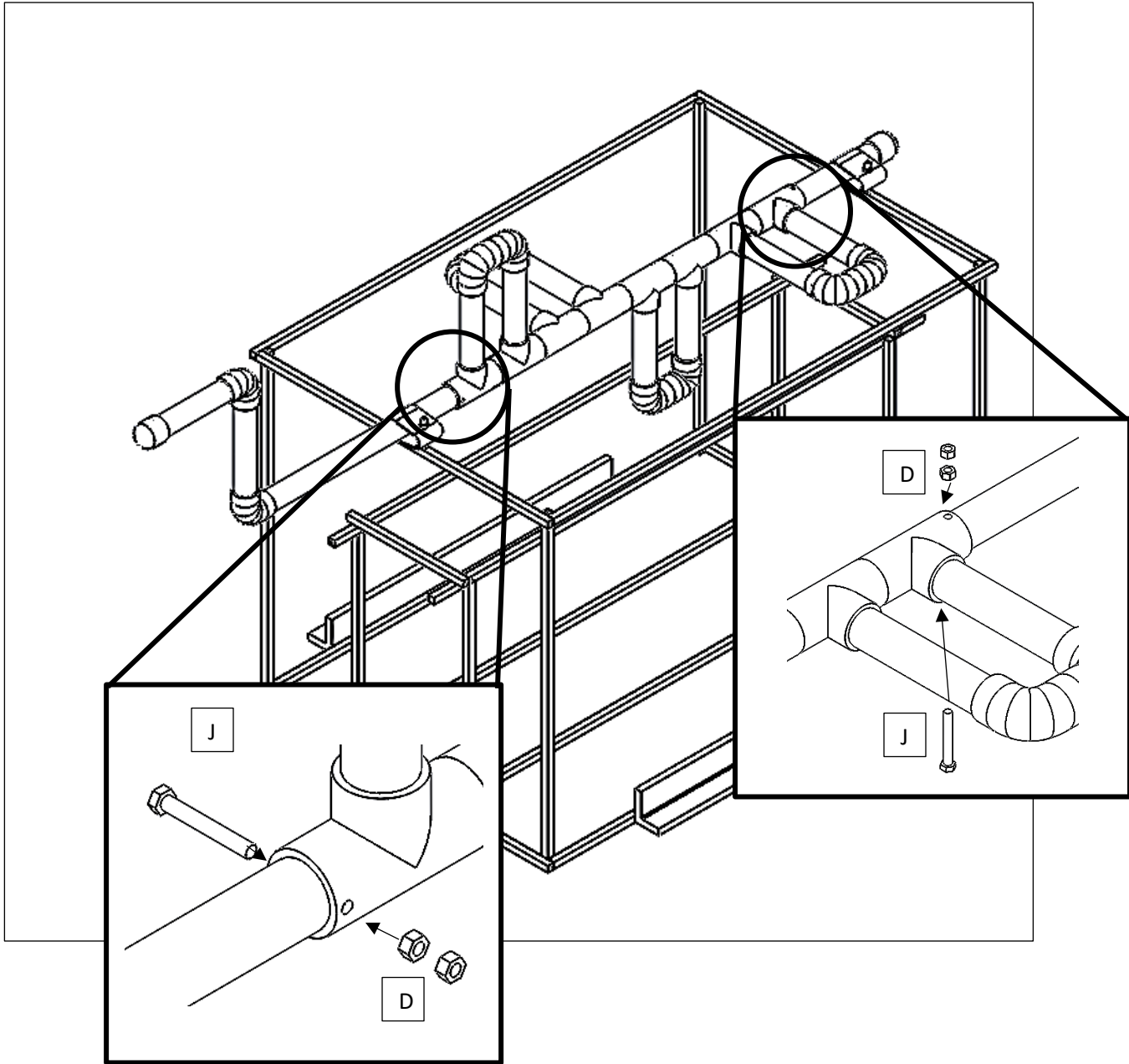
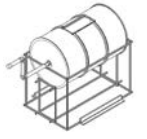


x4

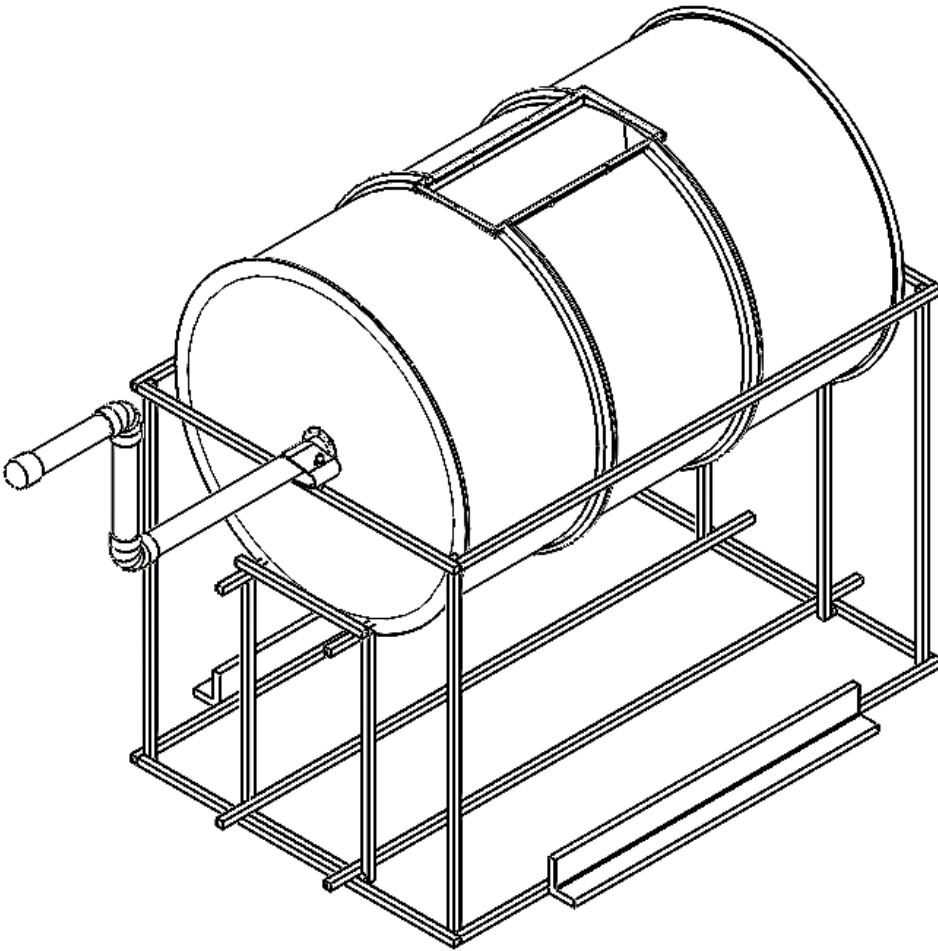
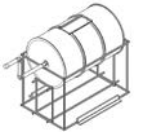
J



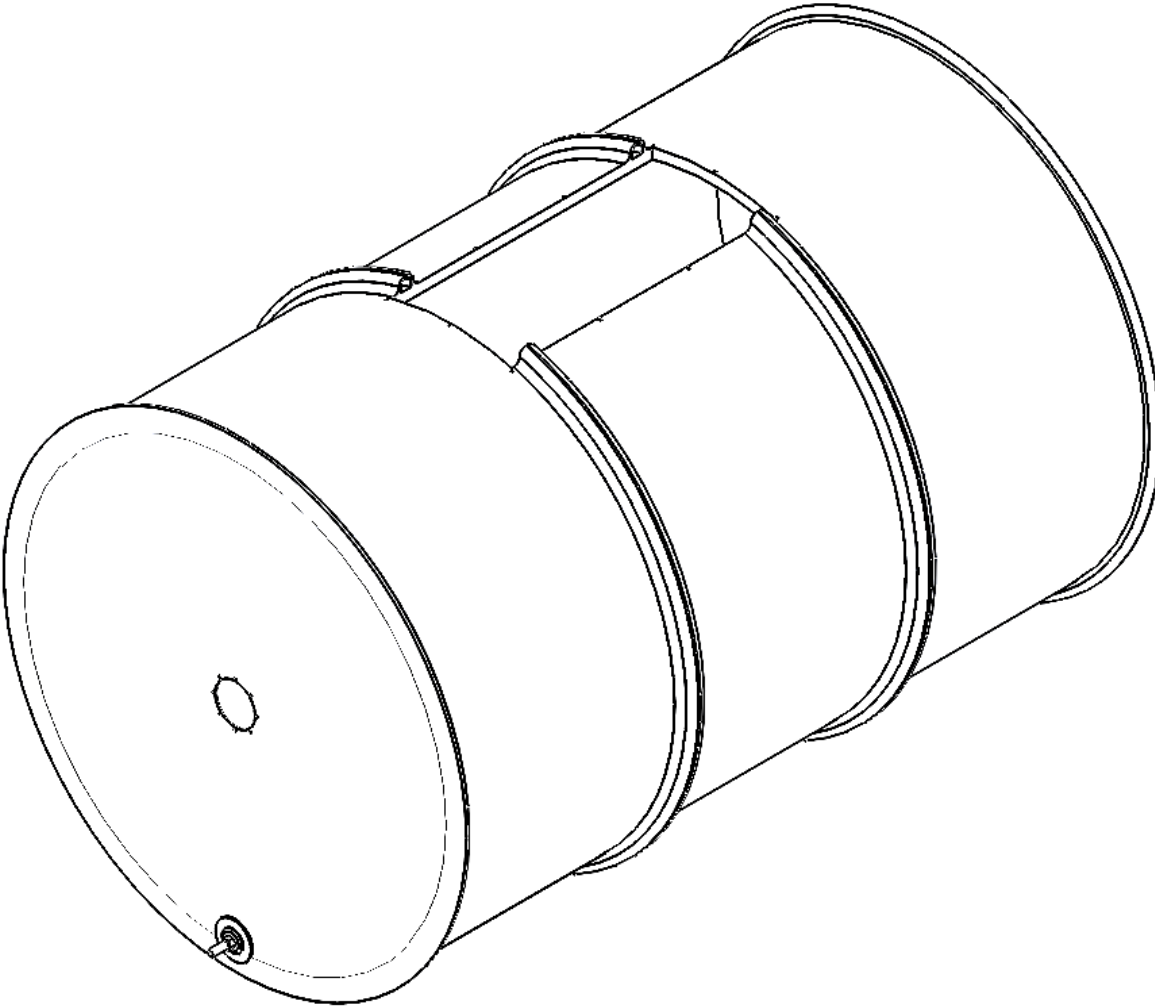
x2



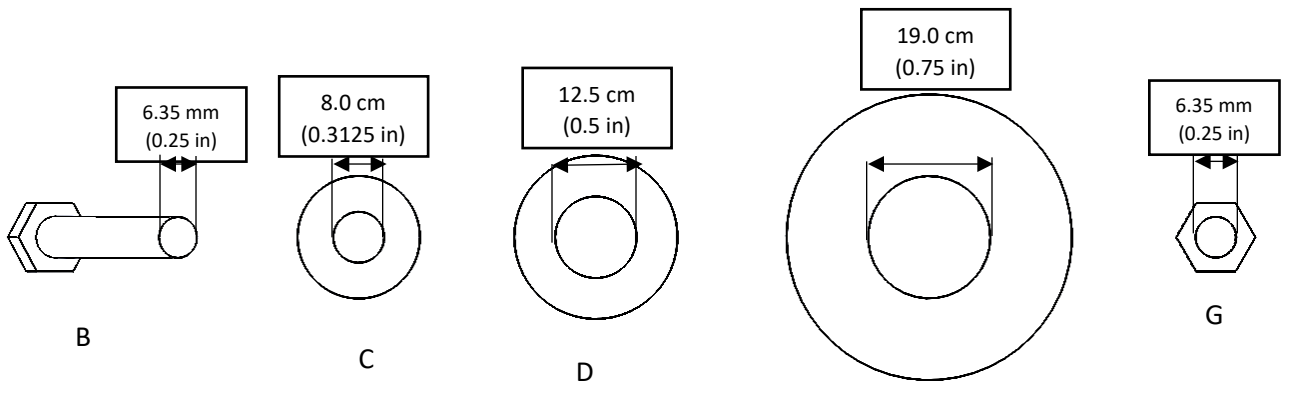
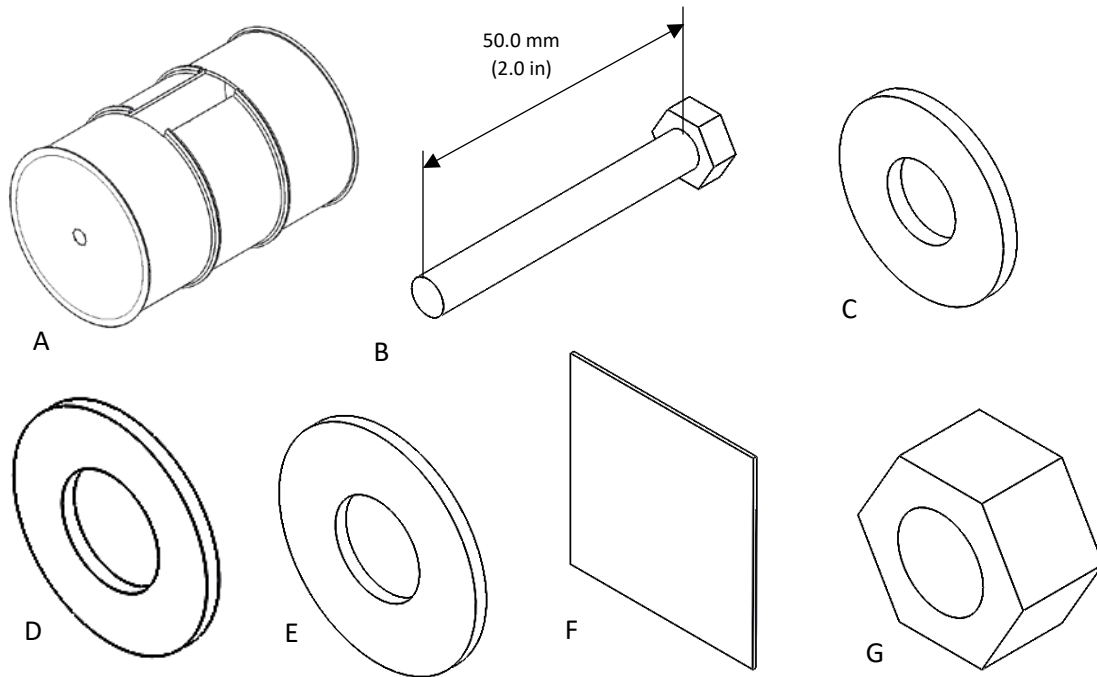
8)



Plug (Optional):



Bill of Materials:



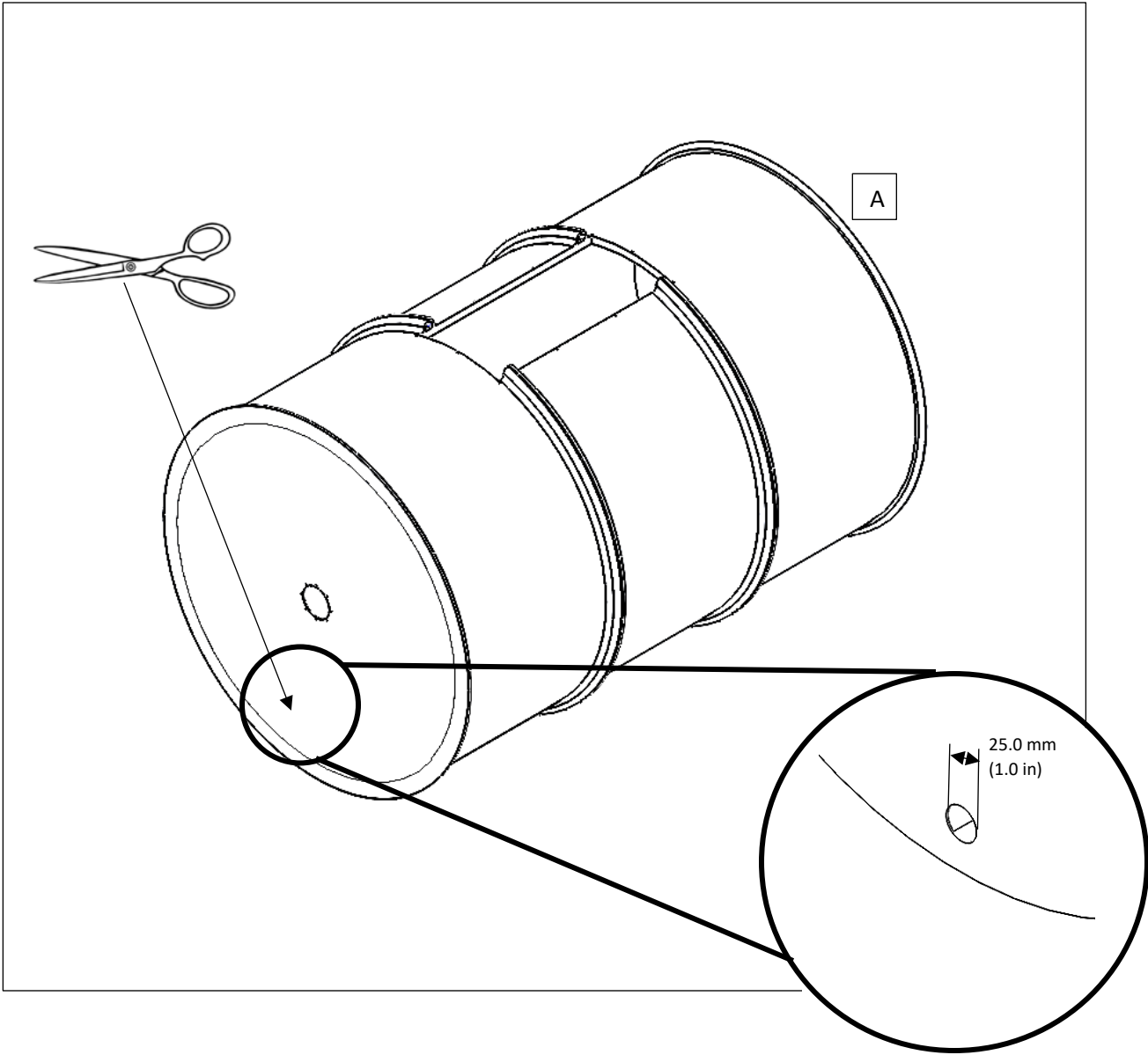
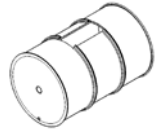
A	x1
B	x1
C	x2
D	x2
E	x2
F	x1
G	x1

1)

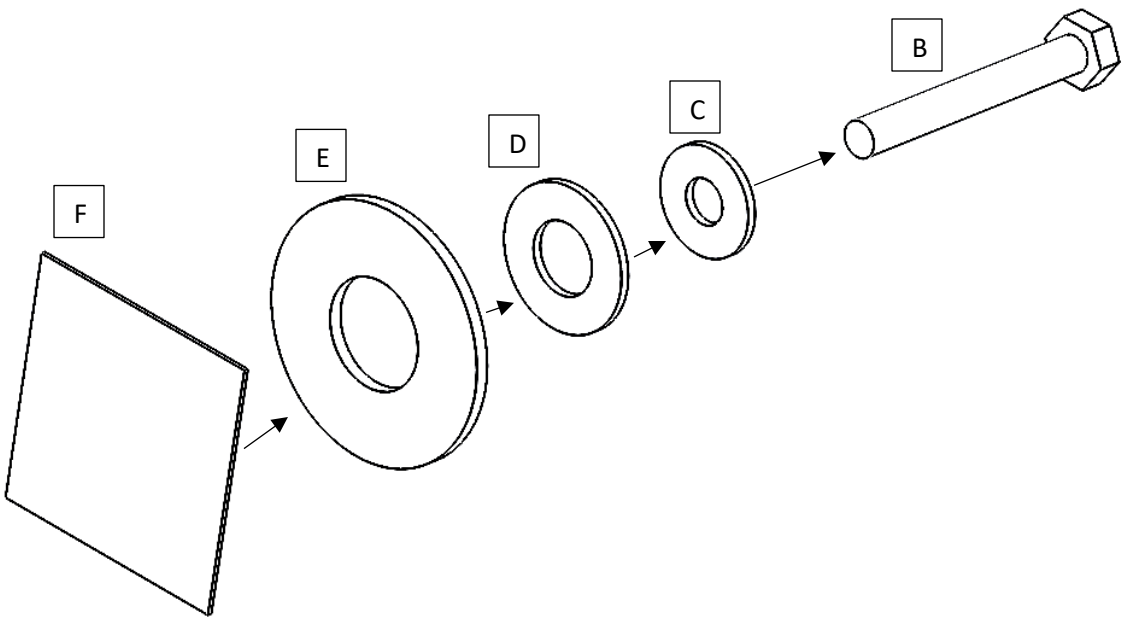
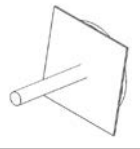
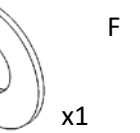
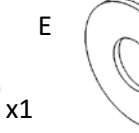
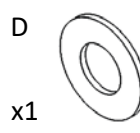
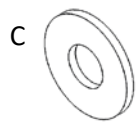
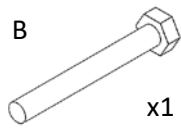
A



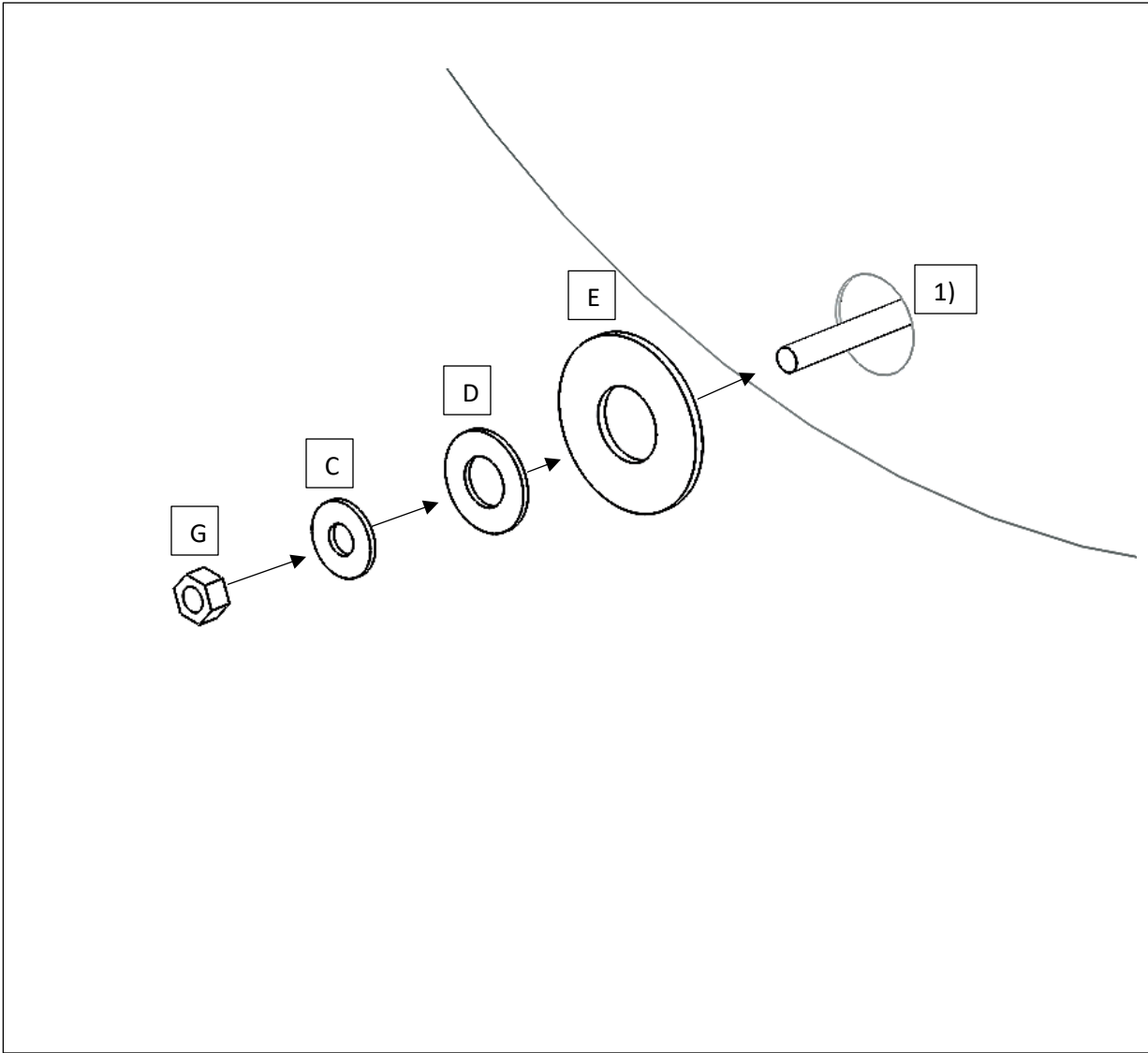
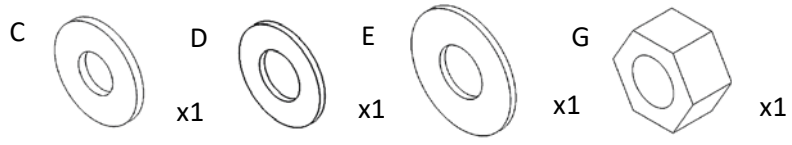
x1



2)



3)



4)

