

**Knowledge Domain: Plumbing**  
**Unit: Connections**  
**Skill: Fitting Adapters**

**Tools and Parts Required:**

- 1) different sized pipes
  - a. ex.  $\frac{1}{2}$ " (12.7mm) and  $\frac{1}{4}$ " (6.35mm) diameter
- 2) different sized adapters
- 3) different sized flush bushing connectors
- 4) pipe joint glue
- 5) Teflon tape
- 6) plumbing putty, or general putty (optional)
- 7) Spanner, adjustable (optional)

**Introduction**

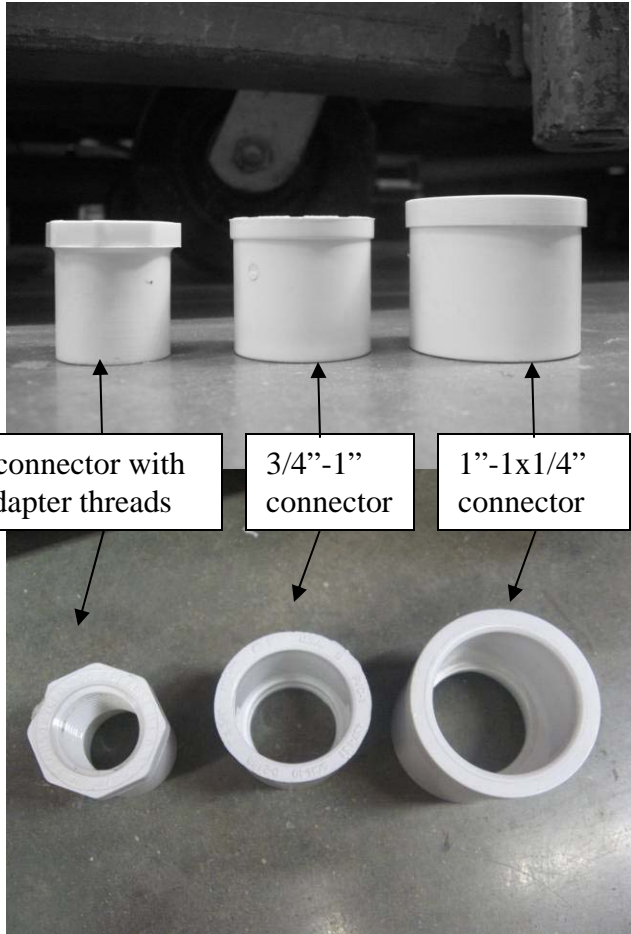
Pipes are attached to each other by using adapters and flush bushing connectors. Insert flush bushing connectors into each other so that pipes can be connected with other pipes of smaller or larger diameters.

**Example**

Below is a picture of a typical pipe adapter. The pipe end is generally smooth while the connector end has threads.



Below are connectors that can be used with adapters, and examples of material used to fit adapters together.



1/2"-3/4" connector with female adapter threads

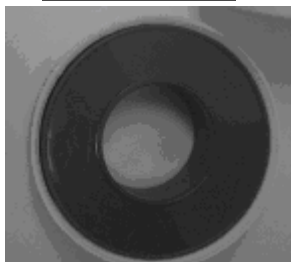
3/4"-1" connector

1"-1x1/4" connector

Pipe joint glue



Teflon tape



## Identification and Diagnosis

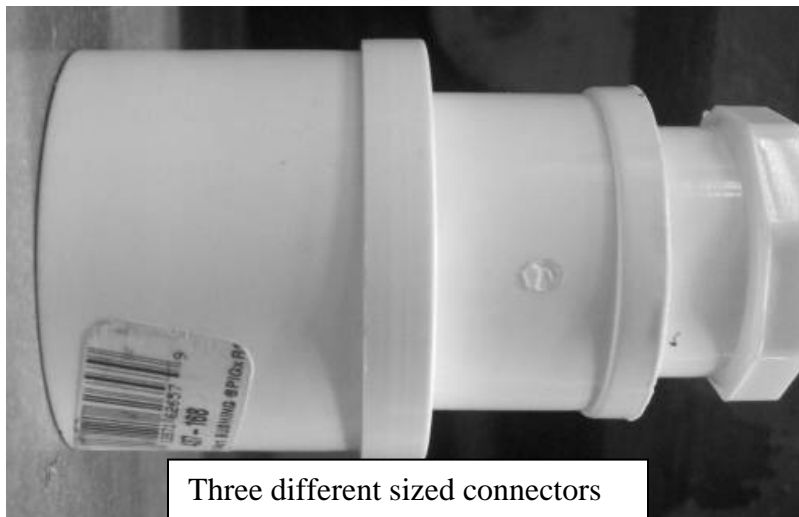
When new medical equipment donations arrive, pipes may need to be adapted for installation. If you notice a leak at the point where two pipes of different sizes meet, this leak may be caused by a faulty adapter. These pipe adapters are the wrong size. For example, the adapter does not fit into the pipe, or the connector needs to accommodate another pipe with a different diameter. This lesson addresses these problems.

## Procedure

### *If the adapter does not fit on the pipe end:*

1. Choose a flush bushing connector that will slide snugly into the pipe end.
2. Choose another connector that will fit into the other side of the first connector.

Pipe end



Three different sized connectors

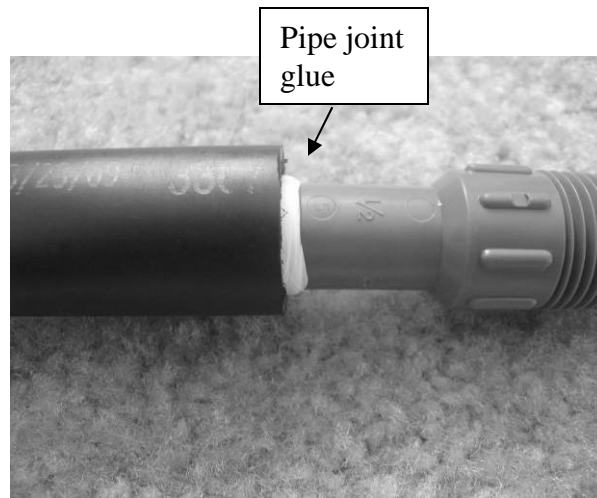
3. Continue to add smaller or larger diameter flush bushing connectors until you can fit the adapter into place.



4a. If the connector is too small and is threaded, wrap Teflon tape around the connector until the connector fits tightly into the adapter.



4b. If the connector is not threaded, add enough pipe joint glue onto the connector around the circumference. Insert into the adapter. Add pipe joint glue around the adapter. Insert into the pipe.

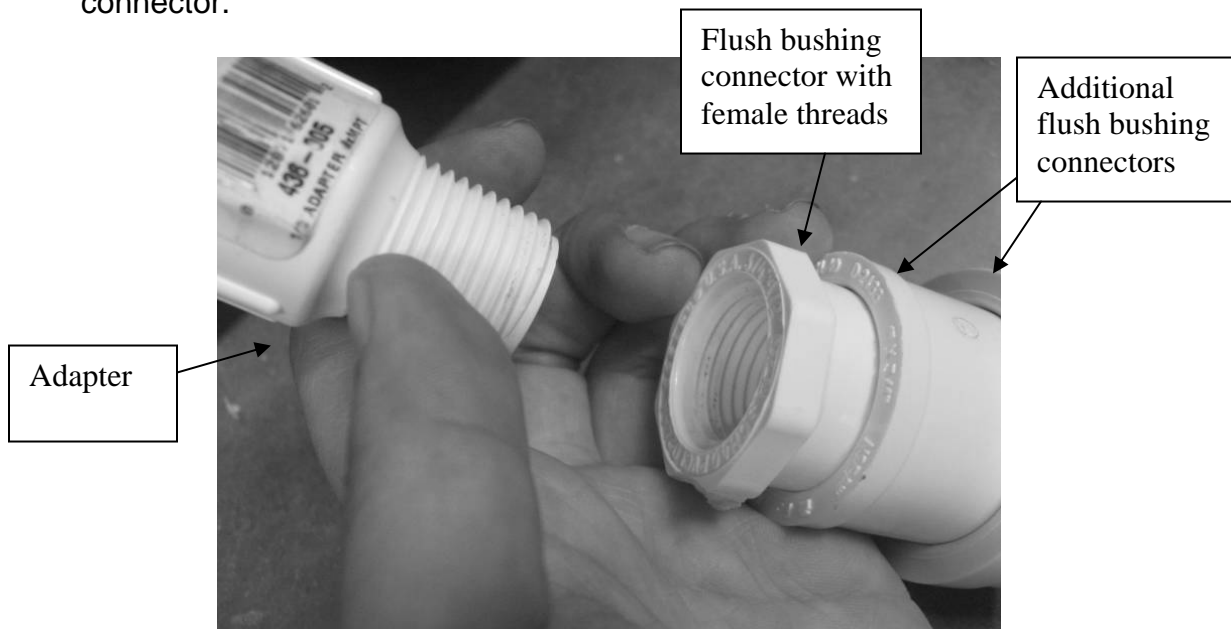


The following is a reference table for the usages of different joint compounds:

Maker	3M	3M	West Marine	Sikaflex	3M	Boatlife	West Marine
Product	5200 Fast Cure	4200 Fast Cure	8200	291 LOT	Silicone	Life-Caulk	Multi-Caulk
Cure time	1 day	1 day	2-3 days	7 days	1 day	7-10 days	1 day
Use on plastic	No	No	No	No	Yes	No	No

***If the pipe does not fit on the connector end of the adapter:***

1. Choose a flush bushing connector with female threads that fits the adapter.
2. Choose another flush bushing connector that will fit into the other side of the first connector.





Complete  
adapter and  
connectors  
apparatus

3. Continue to add smaller or larger diameter flush bushing connectors until you can fit the connectors into place.
4. Add pipe joint glue and putty around the connections. (optional)

### **Exercise**

You will receive two pipes of different sizes, one adapter, and flush bushing connectors of different sizes. Fit the smaller pipe into the pipe end of the adapter. Fit the larger pipe into the connector end of the adapter. Next, fit the pipes into the other ends of the adapter.

Your instructor must verify your work before you continue.

### **Preventative Maintenance and Calibration**

Insure that there are no cracks or leaks in the adapter connections. Regularly check for any leaks after making this repair. Occasionally check for cracks. Always calibrate every medical device before returning it to use.