	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>		<b>SECTION #3 Engine Co. Operations</b>
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings		<b>Total Pages:</b> 9 <b>Topic #:</b> 25

## ADAPTERS AND FITTINGS

### STORTZ TO 4-1/2" FEMALE ADAPTER:



Five inch Stortz coupling on one end and it has a 4-1/2" female on the other end. The 4-1/2" F threads are national standard threads

This adapter is primarily used to connect 5" hose to a fire hydrant.

It can be used on a discharge of the pumper with other adapters to connect 5" stortz threaded hose to discharge from the pumper.

### STORTZ BLIND CAP:



This cap attaches to Stortz type fittings and adapters, in order to close off the opening.


Be cautious of high pressures with these caps when corrosion or dirt gets in the connection points. They may come off the discharge or end of the charged appliance.

### STORTZ TO 2-1/2 AT A 30 DEGREE ANGLE:



This adapter can be placed in-service in order to convert 5" Stortz connections to 2-1/2" NS. It can be used directly attached to the pump connections on most pumpers, in order to supply 5" hose.

Alternatively, it can be used in reverse, to change a 5" discharge into a 2-1/2" discharge. (Adaptation must be made to change from National Standard (NS) to Cincinnati Special (CS).

	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>		<b>SECTION #3 Engine Co. Operations</b>
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings		<b>Total Pages:</b> 9 <b>Topic #:</b> 25

### **STORTZ TO 4-1/2" AT A 30 ANGLE:**



These adapter, usually found on newer pumpers, adapt from 4-1/2" NS threads to a 5" Stortz. The angled adapter is used pointed down, in order to relieve some of the stress on the hose that is connected to it.

### **2-1/2" MALE TO 2-1/2" FEMALE AT A 30 ANGLE:**



This adapter is found on newer pumpers and is used with the angle down to relieve stress from the hose to which it is attached.


Both ends have CS threads.

### **4-1/2" FEMALE TO 2-1/2" MALE: (STEAMER PLUG CATCHER)**



This adapter is referred to as the "Steamer Plug Catcher" because it can be used to make a 2-1/2" connection to a hydrant with only one 4-1/2" discharge on a hydrant is the 4-1/2".

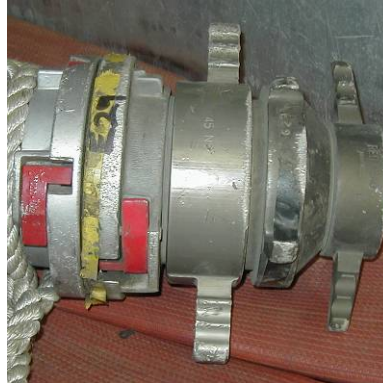
The 4-1/2" female end has NS threads and the 2-1/2" end has CS threads.

	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>		<b>SECTION #3 Engine Co. Operations</b>
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings		<b>Total Pages:</b> 9 <b>Topic #:</b> 25

#### 4-1/2" MALE TO 3" FEMALE:



This adapter is carried on the end of the 5" hose load, attached to the Stortz to 4-1/2" Female to fit the hydrant.



Carried on the end of the 5" hose after the Stortz to 4-1/2" F adapter

#### 3" FEMALE TO 2-1/2" MALE: (PLUG CATCHER)



This adapter has a 3" Female end with NS threads and a 2-1/2" Male end with CS threads.

It USED to be carried on the end of the 2-1/2" hose, along with a female duplex, in order to make hydrant connections with 3" hydrant discharges, thus the nickname "Plug Catcher". This should be kept in the adapter compartment to allow for adaptation in the event of need on the fire ground.


#### 2-1/2" FEMALE TO 1-1/2" MALE:



This adapter has a 2-1/2" end with CS threads and a 1-1/2" end with NS threads. This changes 2-1/2" to 1-1/2" threads for connecting 1-3/4" lines.

On some rear yellow hose loads it is carried on the 2-1/2" hose that is loaded prior to the 1-3/4" hose to allow for a pre-connect longer than 5 sections in length.



	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>		<b>SECTION #3 Engine Co. Operations</b>
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings		<b>Total Pages:</b> 9 <b>Topic #:</b> 25

### 3" MALE TO 2-1/2" FEMALE:




There are two types of this adapter. One is a metal adapter and the other is a composite adapter. The metal adapter has 2-1/2" female CST and 3" male CST and is designed for making a suction connection to a 2-1/2" hydrant discharge with 5" hose.

**The composite adapter has 2-1/2" Female CST and 3" Male NST and is designed for making a ladder pipe hose connection to a Stortz wye. Carried on the Stortz Wye**

### UNIVERSAL THREAD ADAPTER:



The Universal Thread Adapter is used where threads may be damaged or where something other than Cincinnati Special threads are encountered. The Female side of this adapter will fit threads from 2-1/2" to 3". The other side is 2-1/2" Male with CS threads or 3" Male with NS threads. To place this tool in service, grasp the tow handles on in each hand. Depress the ratchet trigger with your thumb and spread the handles fully apart. Place the adapter over the threads to be used and hold the tool in place. Close the handles together as far as they will go. Using the fixed handle, turn the adapter clockwise to tighten.

	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>	<b>SECTION #3 Engine Co. Operations</b>
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings	<b>Total Pages:</b> 9 <b>Topic #:</b> 25

## CFD SIAMESE / WYES:

### STORTZ TO 2-1/2" – 3-WAY WYE:



Used to reduce 5" Stortz hose to three separate connections fitted with 2-1/2" Male CS threads. This adapter can also be used in reverse to supply 5" hose or a large water distribution tool from several smaller lines. The wye is equipped with 'ball' type valves. When the handles wye are in line with the hose, the valve is open. When the handle direction is perpendicular to the hose line, the valve is closed. These ball valves are activated with a 1/4 turn, much like a natural gas valve. Carried on Engine Companies and Ladder Companies.


**3" MALE TO 2-1/2" FEMALE SHOULD BE CARRIED ON THE WYE**

### 2-1/2" FEMALE TO 1-1/2" MALE WYE:



The 2-1/2" F to 1-1/2 M wye is used to reduce a 2-1/2" line into one or two 1-3/4" lines.

The 2-1/2 F end is fitted with CS threads, while the 1-1/2" ends are NS. This wye can also be used in reverse to increase tow 1-3/4" lines into one 2-1/2" line. The valves on this wye are 'ball' type and can be operated with a 1/4 turn. When the handles are in line with the hose line, the valves are opened and when the handles are perpendicular to the line, the valve is in the off position.

	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>	<b>SECTION #3 Engine Co. Operations</b>
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings	<b>Total Pages:</b> 9 <b>Topic #:</b> 25

## 2-1/2" GATED WYE AND SIAMESE

There are two types of 2-1/2" "gated" appliances. One has a single female end and two males ends (wye), while the other has a single male end and two female ends (siamese).

All ends are equipped with 2-1/2" CS threads. Choosing the proper tool for the job when using these appliances will eliminate the need for unnecessary duplexes. The "gate" on these appliances will take several turns to be opened or fully closed.




**2-1/2" GATED WYE**  
 One (F) Connection in  
 and Two (M) Connections out



**2-1/2" SIAMESE**  
 Two (F) Connections in  
 and One (M) Connection Out



	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>	<b>SECTION #3</b> Engine Co. Operations
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings	<b>Total Pages:</b> 9 <b>Topic #:</b> 25

## LADDER PIPE WYES

There are two types of ladder pipe wyes:

### THE MANUAL LADDER PIPE WYE:



This wye is a converted wye which has one 3" male end with NST and two 2-1/2" female ends with CST. This wye can be controlled by utilizing the two gate valves that are provided. This wye allows you to supply a 3" line, which is usually used with ladder pipe operations, with up to two 2-1/2" lines. This wye can also supply two 2-1/2" lines with a single 3" line.


**ACTUALLY A SIAMESE (2 intakes into 1 discharge)**

### THE 3-WAY LADDER PIPE WYE



This wye has a discharge end with 3" male CST or 3" male NST and three intakes with 2-1/2" Female CST. Each of the female intakes are equipped with clapper valves which only allow water to flow in one direction from the source. These clapper valves enable the tool to be supplied with less than the full complement of three 2-1/2" lines. The female ends of this tool can only be used as intakes. This wye allows you to supply a single 3" line, which is usually used with ladder pipe operations. The wyes of this type having 3" Male CST will require an adapter (3" F with CST to 3" M with NST) in order to be connected to 3" hose for ladder pipe operations. This adapter is to be painted green.

**ACTUALLY A SIAMESE (3 intakes into 1 discharge)**

	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>	<b>SECTION #3 Engine Co. Operations</b>
<b>Date:</b> January 2006 <b>Section #:</b> 3	<b>TOPIC TITLE:</b> Adapters and Fittings	<b>Total Pages:</b> 9 <b>Topic #:</b> 25

## MISC. ADAPTERS

**2-1/2" Siamese** – allows a 5" to be supplied from (2) – 2-1/2" hose lines. Carried on Foam 32 and Foam 17 and some engine companies




**4-1/2" Strainer** – used to connect to the end of suction hose to prevent the intake of debris into the pumper while operating from a draft.



**Piston Intake Valve** – used on the intake ports of pumps to allow control of intake flow from 5" supply lines and also allows a method of relief from over-pressure and to drain connections to allow break down of supply after a fire.





	<b>Cincinnati Fire Department Fire Training Supplement DRILL BOOK</b>		<b>SECTION #3</b> Engine Co. Operations
<b>Date:</b> January 2006 <b>Section #: 3</b>	<b>TOPIC TITLE:</b> Adapters and Fittings		<b>Total Pages: 9</b> <b>Topic #: 25</b>

## WRENCHES / SPANNERS



**Stortz wrenches** – used to connect and break apart stortz couplings



**Hose Spanners** – used to connect and break apart regular threaded connections



**Bung Wrench** – used to remove lids from 5 gallon pails of foam

## CARE OF ALL ADAPTER AND FITTINGS:

These tools should be kept clean. Rubber gaskets should be in good condition at all times. Ensure that swivels operate freely. Report any defects in this equipment to your company officer. Check the equipment to make sure the company number is clearly stamped or marked on each tool.