



HOSE CO. 2 WESTBURY FIRE DEPT.

TRAINING BULLETIN

Hose Packs

To build standardization within the department, below is the standard in which the following hose packs will be achieved:

Mattydales: (aka: Cross lays)

A Mattydale is a pre-connect with a **set amount of hose**, (*for this department it's always 200' of either 1.75" or 2.5" hose*) this hose is already connected to a discharge outlet of the Engine at one end and the other end has a Nozzle (*Smooth Bore / Solid Stream*) connected, making this line ready for firefighting operations. Having a pre determined amount of hose and nozzle makes the line very easy to put into operation, it allows the pumps operator to have a fixed pump pressure and with very little thought process, equaling a reduced potential for errors.

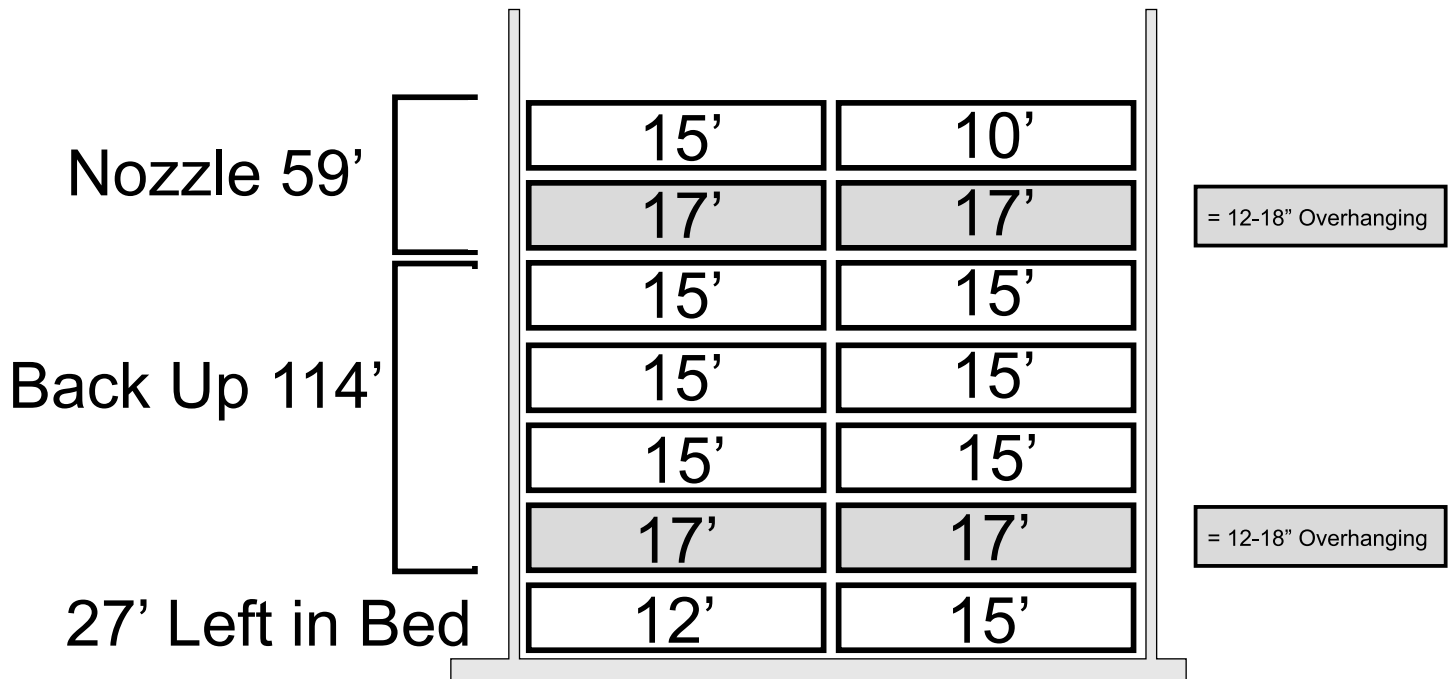
To have consistency in all our lines deployments, a hose team will consist of a **Nozzle** person, **Back Up** person and **Control** person who are responsible to get any of hose our off the rig, this means all lines including the Mattydales need to be packed consistently after each use. This departments ultimate goal is to get as much hose as possible to the fires entry point, having minimal flakes or hose dropped before it's forced out of the carrying members hands. With the Mattydales, the Nozzle person will pull and maintain approximately 50' of hose, the Back up person 100' of hose and the Control person would be responsible to get the remaining hose, which is approximate 50'. These distances of hose will be noted in the bed by placing larger loops (12 - 18"), referencing this set amount of hose is contained in these larger loops and all the hose above them. If the assigned members pulls the loops, in which they are responsible to deploy, they will come off the rig with this predetermined amount of hose. If the members then maintain their folds, only dropping them one at a time, as they are met with resistance by all the hose from the engine to their position being used up, this department should achieve its goal of getting as much hose as possible to the fires entry point, where it then can be dropped and staged for entry into structure.

NOTE: if the crew is light and without a Control Person, for a period of time until 2nd Engine arrives on scene, this line can be deployed without a control person. The back up position will just need to hold firmly of their folds as they walking from Engine, this will ultimately pull the remainder of the hose from the bed as they walk away from the Engine. Once all the remaining hose is out of bed and the back up position is now met with resistance due to all the hose from their position to the engine being laid and used up, they can begin to drop folds as the walk further from engine and closer to the fire building. Again, once they arrive at the deploy point, the nozzle and back up positions will drop any remaining folds, where they will be staged.

Packing a Mattydale:

As stated prior - All Department Pre-connects consist of 200' (4 lengths) of hose - they could be 1.75" or 2.5" hose - as the bed calls for.

When a Mattydale is packed correctly they should look like:

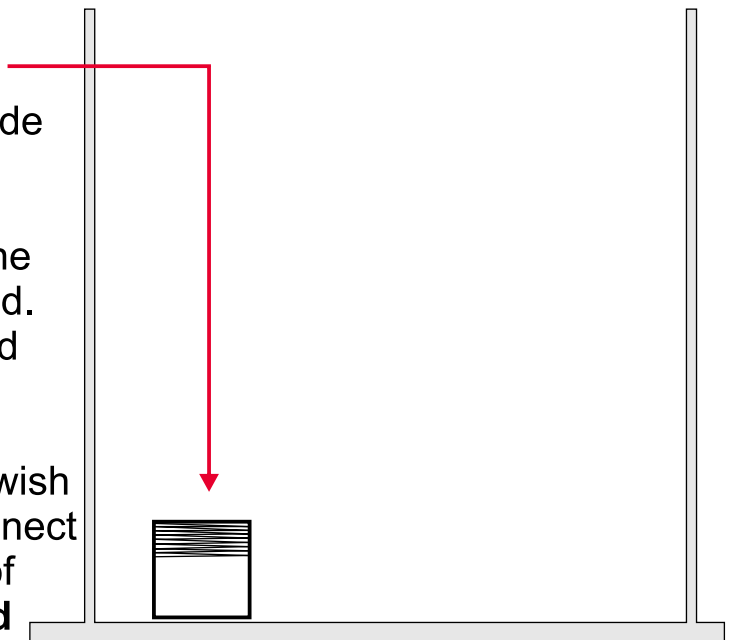


This is achieved by:

In the center of the bed - there is a threaded pipe that can swivel to face either the Drivers side or Passenger side of the engine.

The size of this pipe will determine the size of hose the bed is expected to hold. 2.5" hose will not fit on a 1.75" pipe and vice versa...

Swivel this pipe to the direction you wish to start packing the hose from and connect the female end of the first of 4 length of hose you'll be putting in this bed. **Hand tightening** the coupling, so it doesn't leak and assuring the hose direction is such that it lays flat in the hose bed.

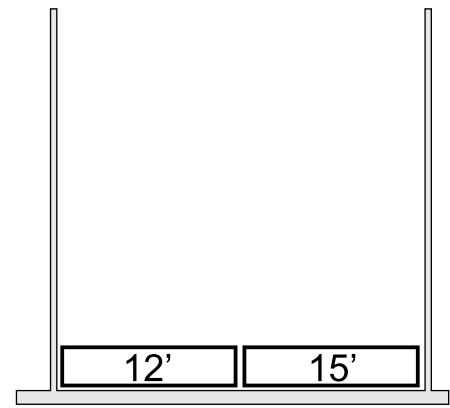


We want to lay the hose in the bed making 1 layer of hose.

We'll start on one side making a layer from the side we started and bringing to the opposite side

If Started on drivers side we'll flake to passenger side or Vice Versa...

We want the folds we place in the hose to line up or be **even with the edge of the bed** —————→ on both the drivers and passenger side of the engine.



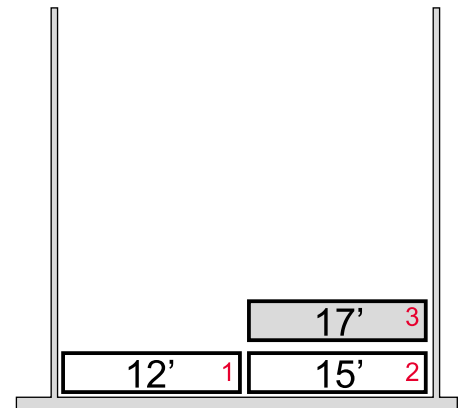
Front View



Side View

Once we have our first layer completed, the next layer will be on the same side as the last layer ends. When we pack hose - whenever we hit a wall or divider, we double that position, creating a new layer and then head that layer in the opposite direction. (3)

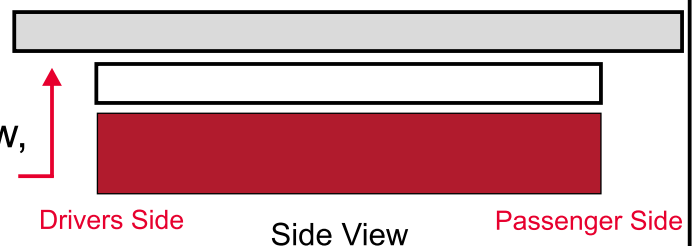
In this case we started to the left - **fold 1** we worked to the right - **fold 2**, we hit a wall doubled it created **fold 3...** (Done on both sides)



Front View

This second layer we'd like to be a **reference point** and is accomplish by making the folds longer than the layer below, extending 12-18" beyond the beds edge,

enough hose to get leverage to pull the hose from the bed and again done on both sides of the Engine. (These larger folds are not made so you can get your arm in, as some may believe, they are only used as reference points and to gain leverage, they should **never** be so long that they block the view of pump gauges on the Engine)

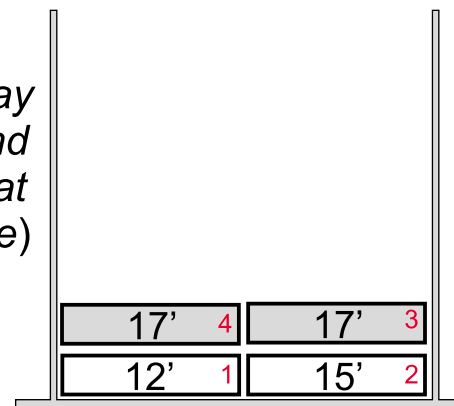


Drivers Side

Side View

Passenger Side

We'll finish this layer, remembering both folds of this layer will be longer - extending beyond the bed edge this 12-18" and both sides of engine.

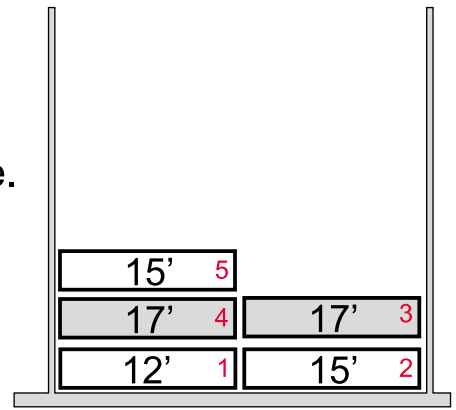


Front View

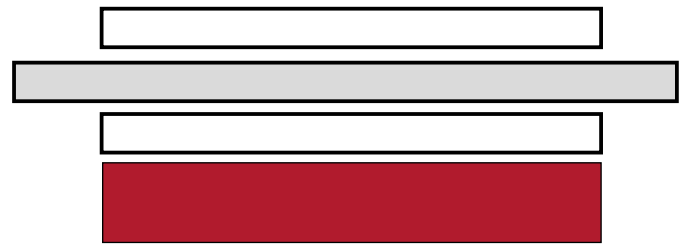
Once we've complete this 2nd layer with the longer folds, for the 3rd layer we will go back to the shorted folds which are even with the beds edge.

Remember this 3rd layer will begin on the wall in which the 2nd layer ended (5)

At some point, the 2nd length of hose will be added to the 1st length, 3rd length to the 2nd length and eventually 4th to the 3rd length = 4 lengths or 200' hose placed into the bed.

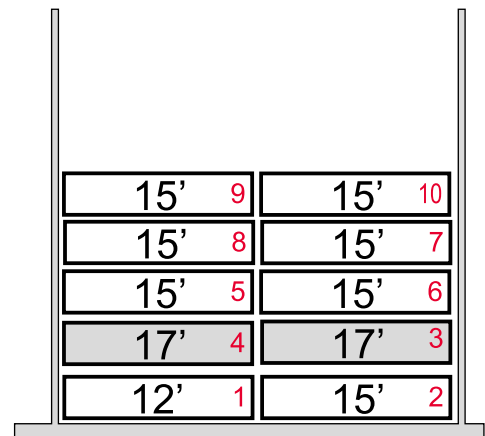


Front View



Side View

We will continue to pack the hose into the bed in this manner, until we achieve 3 layers of hose, even with the edge of the be and above that 2nd layer with the longer fold.

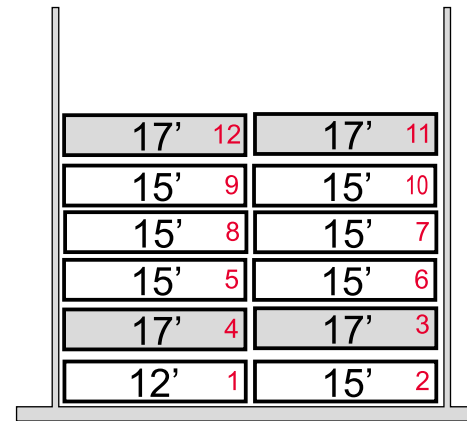


Front View



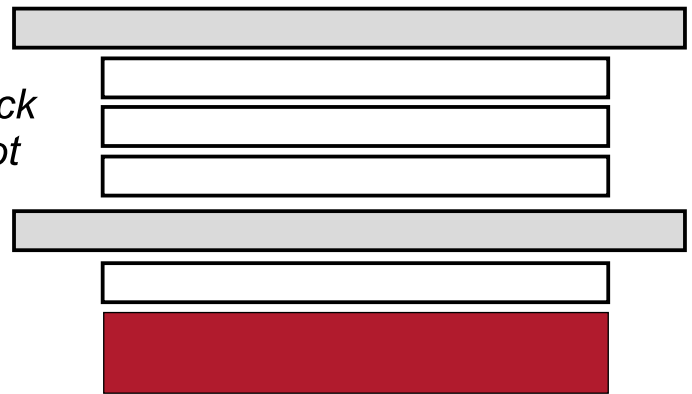
Side View

Once we completed these 3 layers, with folds that are even to bed, we need to create another reference point, (*this time instead of it being for the Back up position like the last ones, these longer fold will be reference for the nozzle position*) so again, we do this by creating a layer of hose that has the longer folds.



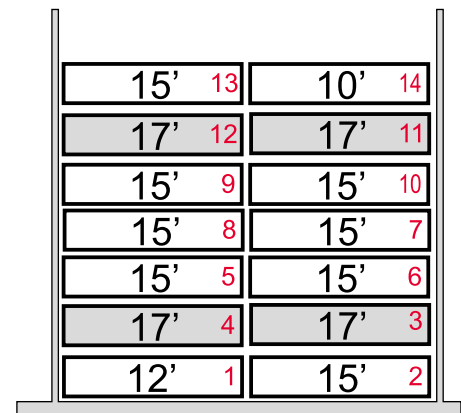
Front View

This 6th Layer will again contain folds that protrude 12-18" beyond the edge of the bed, *again not so long that the block the view of pump gauges if that bed is not pulled*, again noting the lengths above are a reference point for the nozzle position.



Side View

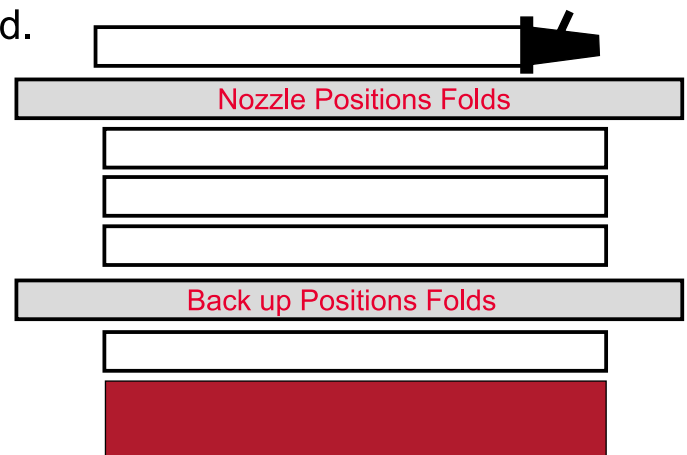
With this 2nd longer layer completed, for the next layer which contain all the remaining hose, will be packed where it's even with the edge of the bed, again both sides of Engine.



Front View

This last length will have a nozzle affixed to the end. The nozzle is placed in the bed.

For the 1.75 - since there are (2) 1.75" Mattydale Beds, one bed should have the nozzle staged to the Drivers side and other one the nozzle should be staged to the Passenger side of the Engine.



Side View

Pre-connects - Out The Rear : (968 - 9610)

The objective or theory behind a Rear Pre- connect is similar to that of a Mattydale, but instead of it being deployed from either side of the Engine, these are solely deployed from the rear. What the department is looking to accomplish is having an assigned member pulls a set amount of hose, the same as the Mattydale. The only real difference between and Mattydale and of a Rear pre-connect, outside the positions of being pulled, is a Rear Pre-connect is single fold wide opposed to the Mattydale which is double fold wide. In the end we are still looking to get the **Nozzle** Person to pull approximately 50' from the Engine, **Back Up** 100' and **Control** the remaining approximate 50'.

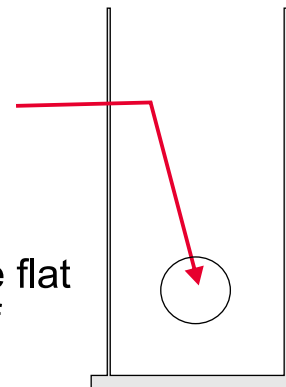
Since the bed lengths of 968 and 9610 are different, assigning a set amount folds before we make our longer folds would make each pack slightly different, so instead we'll set our longer reference folds from a set amount of hose not folds.

This is achieved by:

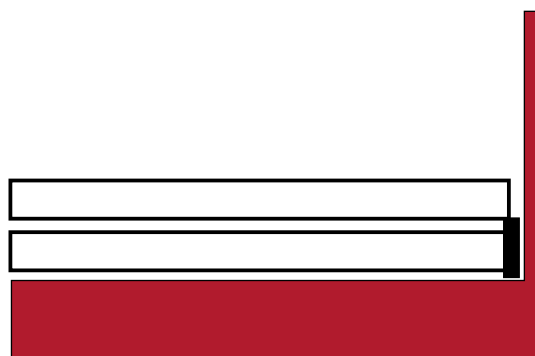
At the back wall of the hose bed there is a discharge outlet in which your first length of the pre-connect will be connected to the engine. (*1st of 4 lengths in the pre - connect*)

Once connected and hand tightened, set the hose flat and then the hose will be flaked one fold on top of each other (Flat Pack). The folds of the hose at this point will be set to the end of the hose bed in the rear, not protruding past that point.

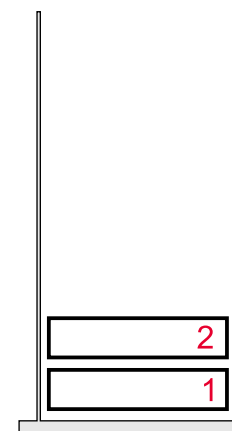
This method will continue until the **1st coupling** is **place onto the bed.**



Front View

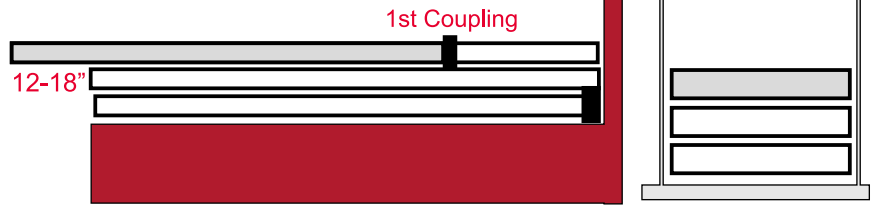


Side View



Front View

Once the 1st coupling is place in the bed, the next fold will be a long fold, protruding 12-18" out of the bed, acting as a reference point or a pull point for the back up person.

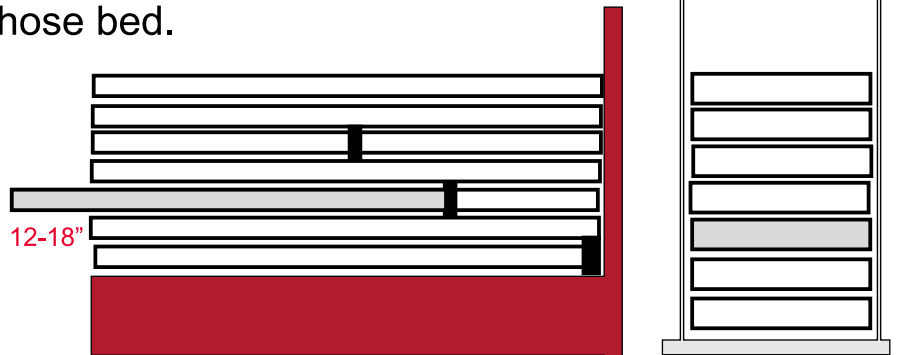


Side View

Front View

Once we've made this longer reference fold, the folds proceeding it we'll go back to setting to the standard size or to the end of the rear hose bed.

This will continue until we connect the 4th length and that coupling is placed into the hose bed.



Side View

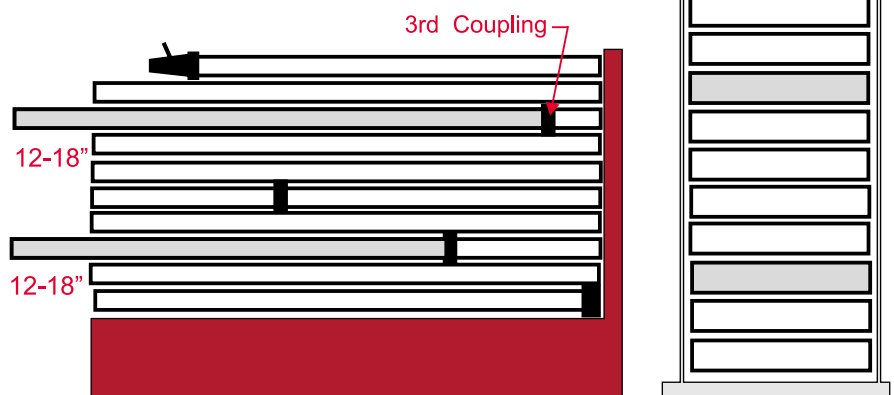
Front View

Once the 3rd and final coupling has been placed into the bed, the next fold will again be another longer reference one, creating a reference/ pull point for the nozzle person.

All folds after this point will be to standard size to the end of the rear bed.

This will continue until the nozzle is place into the bed.

The Nozzle will be staged an arms length into the bed, so it can be grabbed from the back step, along with the nozzle positions folds.



Side View

Front View

Reduced Line: (aka: City Line or Combo Line)

A Westbury FD Reduced Line contains 500' of **dead bed** hose - 300' of 2.5" hose that is reduced to 1.75" and an additional 200' of 1.75" hose connected and packed on top of the 2.5", making the total bed 500' of hose. This reduced line was designed for residential fires where we only need 180 GPM of water for the fire load and prefer the manoeuvrability of the 1.75" but due to the length of the stretch and the friction loss of a 1.75" it makes it difficult or impossible to achieve. By reducing the line from a 2.5", we cover the first 200' with the 1.75 but any additional hose over the 200' is covered by the 2.5" in this bed. This works out well because 2.5" hose only requires 3 lbs per length, opposed to the 25 lbs needed with the 1.75" hose, but the operating end of hose or area of hose that is going to be used inside the structure remains 1.75" for the 180 GPM and manoeuvrability.

Some members may perceive this reduced line to be a Pre-Connect, **it is not**. This is a **dead bed of hose**, allowing the hose team to deploy only the length that is needed for that specific operation: 250', 300', 400' whatever that incident calls for. Once the length is determined, this line will need to be separated from the remaining dead bed of hose, still in the bed (if it's not 500' or entire bed) and connected to the engine discharge in order to get water into this line, it's not already connected to a discharge, or does it requires the entire bed needs to be deployed like with our pre-connects.

Deploying our Reduced Line is the same as if you were called upon to deploy a **dead bed stretch**. This calls for 3 Firefighter - A **Nozzle** Person, A **Back Up** Person and a **Control** Person, just like previously discussed with our Mattydales and Pre-connects. In the previous packs we talked about setting longer folds in the hose for reference points, for our dead beds we still want to stage a set amount of hose for our Nozzle and Back up position but it is done in a different manner. For our dead beds, our preset amount of hose is set inside the bed in what is called a Horseshoe load. The Horseshoe loads contain 50' of hose, that is folded in a way that it can be deployed by 1 person, is maintained as this set amount of hose until it is dropped and staged at its point of deployment. Horseshoe loads are set for both the Nozzle person and the Back up person in **all our Fire attack dead beds** (1.75" or 2.5" hose). With these 2 50' Horseshoes loads, it allows the first 100' of hose in the dead bed to get pulled easily, carried to the incidents entry point in tact, where it can be staged and deployed quickly and easily.

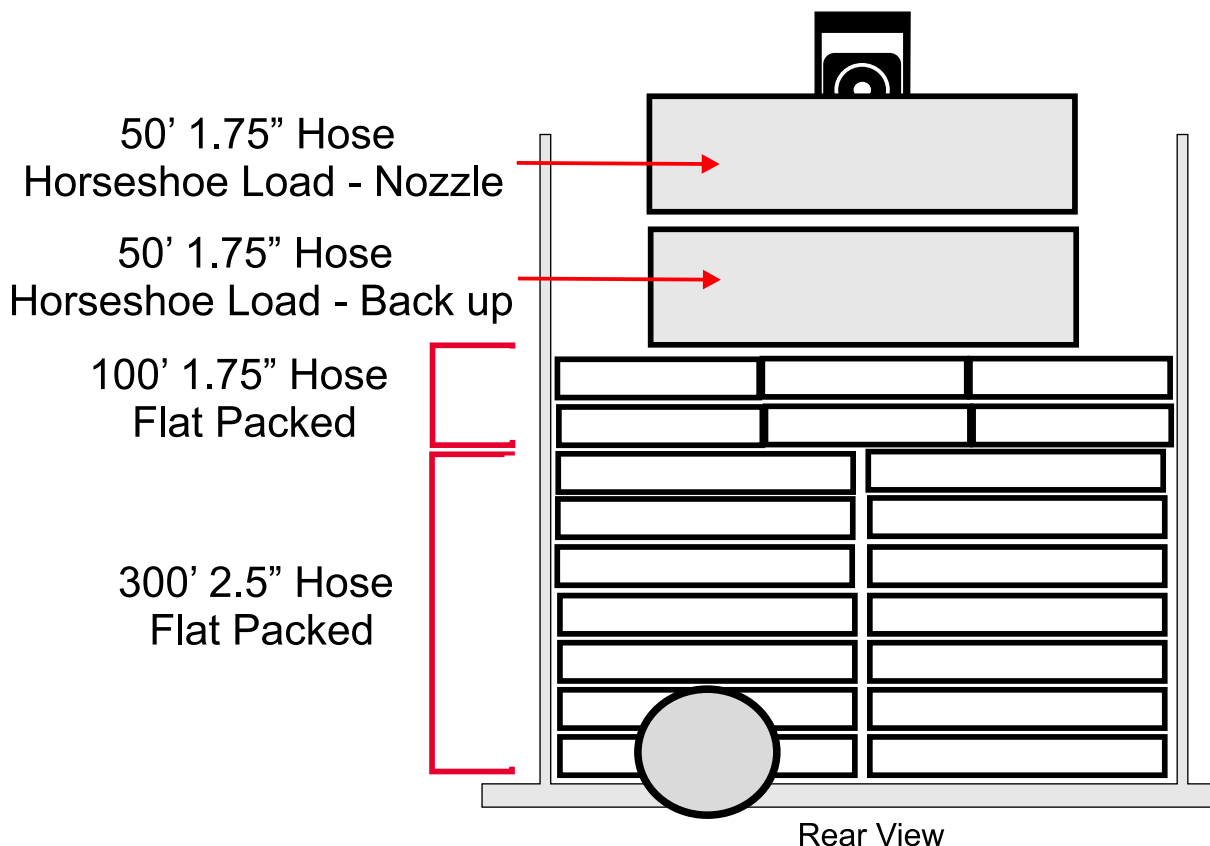
One of the main differences in a dead bed vs. a pre-connect is there is **not a pre-set total amount of hose**, this will need to be figured out, making the **Control** person of this line a very important member of a hose team.

We stated earlier with the pre-connected hose, we had 200' of hose assigned to these beds, but with the reduced line or dead beds the stretch can be whatever the incident calls for or whatever the bed allows it to be. We stated with the pre-connect, the nozzle and back up pull their set amount of hose from the bed and the Control position clears the rest of the bed. With the reduced line or dead bed, this is not the case. If the incident calls for 350' of hose are we are not going to pull all the hose of a 500, 600 or 800' bed? NO. The control position is responsible to count lengths coming off the Engine and breaking it from the rest of the hose in the bed when the required length is achieved, leaving what is not needed in the bed. Counting the total lengths is very important because this total length will dictate the pumping pressure required in that line. Once the length is broken, total length is given to pump operator, and the needed hose is connected to the engine the Control position is responsible from line movement and functionality of all line from the Engine to the Back up position, making the Control position a valuable position for a line success or failure.

Packing a Reduced Line: (Dead Bed)

All of the Department's Reduced Lines are 200' 1.75" hose reduced from and place on top of 300' of 2.5" hose. The 1st (2) length on the top are (2) 50' 1.75" horseshoe loads, (1 for the nozzle position, containing the nozzle attached and 1 for the back up position to deploy).

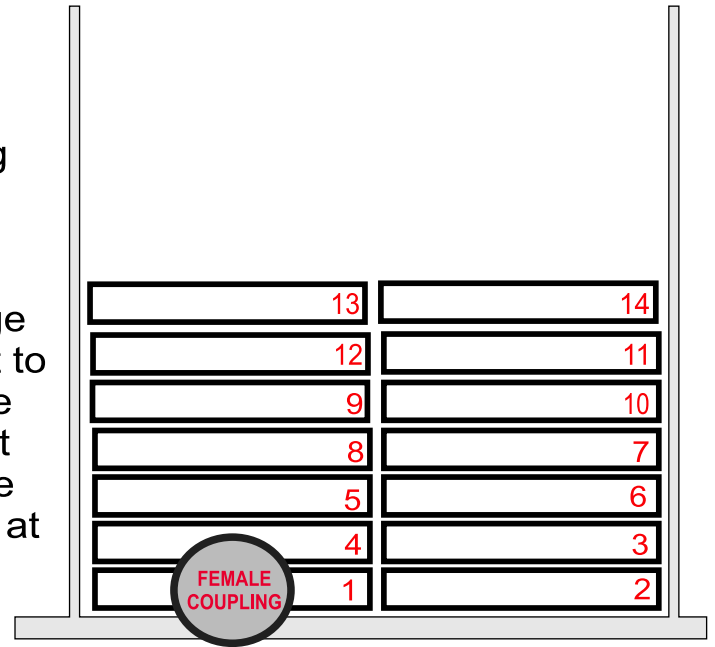
When a Reduced Line bed is packed correctly it should look like:



This is achieved by:

This reduced line (**dead bed**) pack is similar to the other packs we've discussed in that it begins as a flat pack. We'll begin laying the hose flat in the bed, folding the hose once it hits the end of the bed, making the folds even with the end of the bed.

We will pack left to right, beginning with the **female coupling** even with the bed's edge at the left corner, then sending the hose flat to the back wall. When we hit the back wall we send hose forward next to it making our first layer. When we hit a side wall, we'll start the next layer by putting a double layer of folds at the wall and this will begin the next layer, going in opposite direction, now right to left. (**1, 2 then 3, 4 ...**)



Rear View

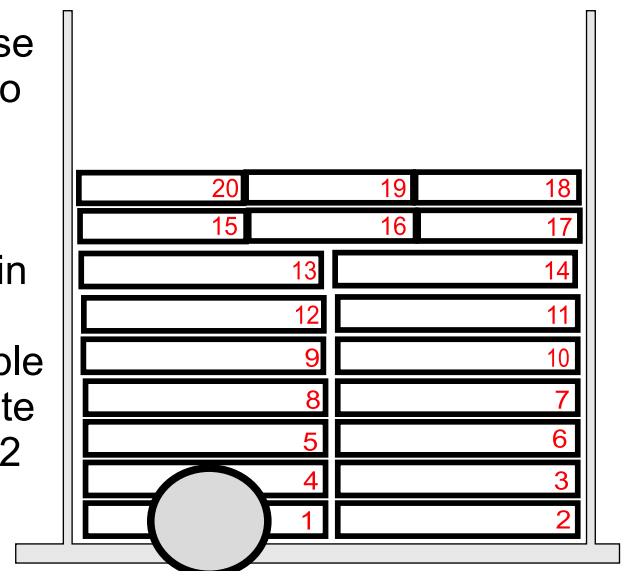
When we finish that layer, coming to divider wall, we'll double that fold, creating a new layer and take that layer left to right... (**5, 6**) This will continue until the entire 300' of 2.5" hose is placed into the bed.

Once the 300' of 2.5" hose is packed into the bed we will connect a 2.5" to 1.5" reducer onto the 2.5" Hose, this allows us to continue packing the bed with the remaining 200' of 1.75" hose as the bed requires.



We will then connect the 1st length of 1.75 hose to the Reducer and begin to flat pack the first two lengths of 1.75" hose on top of the 2.5" hose, beginning from the left side of the bed.

The first 2 lengths of 1.75 hose will be packed in the same manor as the 2.5" - flat packed to the edge of the bed, left to right, hit a side wall, double fold creating a new layer and head in the opposite direction right to left... this will continue until the 2 lengths or 100' of 1.75 hose in place on top of the 2.5" hose.

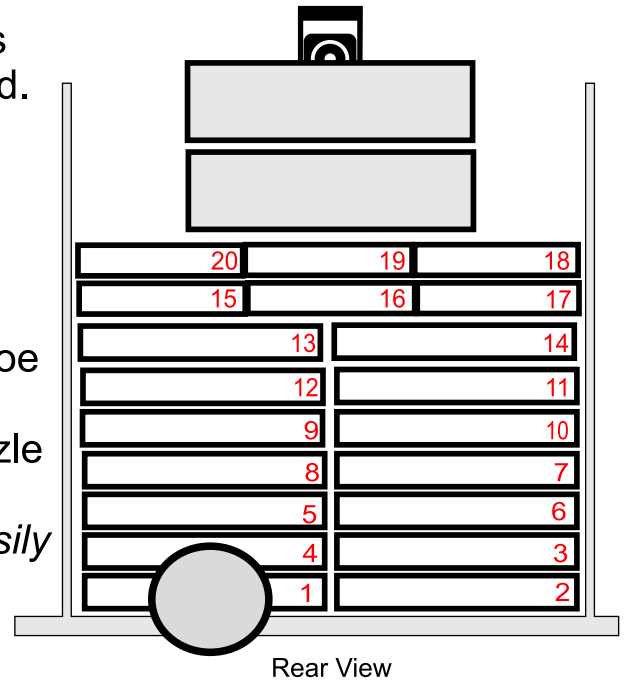


Rear View

Once we have 100' of 1.75 hose in the bed, this is when we'll introduce our Horseshoe loads on top of the 100 1.75" hose that was flat packed.

The horseshoes can be created in the bed, or on the ground, lifted to the bed and then connected to the 1.75" already in the bed.

As stated earlier, there will be (2) 50' horseshoe loads, 1 for the back up, which will be set a bit further back in the bed than the one for the Nozzle person which will be on top of the back-ups horseshoe and set forward more, (*making it easily recognizable as the one that should be pulled first*) and it will contain the nozzle connected to the end.



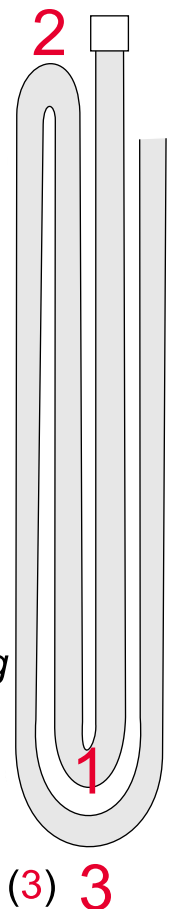
Packing a Horseshoe Load:

A horseshoe load is pack differently than our standard flat pack, **in fact its not flat at all**, these horseshoes will be packed vertically with the hose on its side.

As stated earlier, these can be either packed in the bed or on the ground and then lifted on the bed and connected to the 1.75 already packed, the making of them is the same no matter which you choose.

If were making in the bed we'll first, connect the length of the 1st horseshoe to the 1.75 hose in the bed. We'll bring the coupling about 3/4 back into the bed and stand the hose vertically on its side.

We'll bring the hose forward our wing span (*taking coupling in hand and stretching as far as we can into other hand*) and were we'll fold it (1) and send back towards the coupling. At the coupling we make a fold and send back forward (2) but this time when we hit the length of the fold we previously created towards the front, we will horseshoe it around the fold (3) 3 and send the hose back but this time on the opposite side of that first fold.



We will continue this pattern of folding the hose in the back and creating a horseshoe in the front until the entire 50' of 1.75" is folded together into the Horseshoe load, for the back up position to deploy.

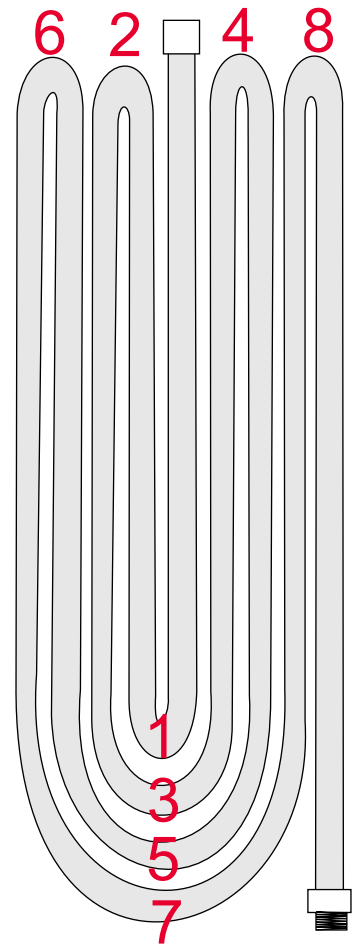
At this point, if the Horseshoe was created on the ground we would then lift it, keeping it in tact and together as packed, placing it on top of the 1.75 that was flat packed and connect it to the this hose.

The back up positions horseshoe should be placed about 2' back from the edge of the hose bed so it can be easily reached from the back step

Deploy from
or location pulled
from bed at



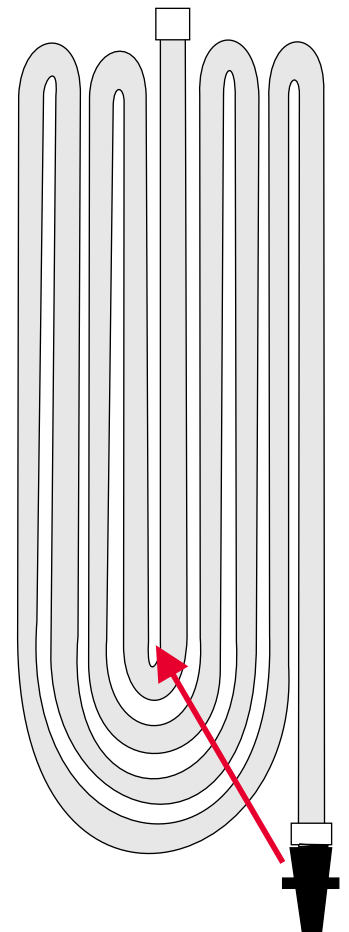
Diagram of a
completed
Horseshoe



The Nozzle's Horseshoe load is created the same way as the Back up. Again it can be made in the bed on top of the back ups or on the ground and lifted in the bed, placed on top of the back ups after their couplings are connected together.

The Nozzle positions Horseshoe load is the last length of hose of the Reduce line dead bed, or any dead bed. This means its is first to be deployed so should always contain a nozzle affixed to the end of the line.

For the Nozzle positions horseshoe the nozzle should be placed in the center of the horseshoe, the horseshoe should be set in the bed more forward than the back up positions horseshoe, making it easily recognizable as the nozzle's and first to be pulled from the bed.



Dead Beds

If you look at the hose beds of all our Engines you'll see they all consist of many different types of hose, divided independently of each other by hose bed dividers. You will also notice the hose going from left to right gets bigger in size, as you go right. ***This is not by accident and done by design.***



From Left to Right you will see (1) our 1.75 dead bed of hose, contains 600' of 1.75" hose. (2) we'll get bigger with our Reduced Line Dead Bed which has our 200' of 1.75" hose over or 300' of 2.5" hose, (3) is our 2.5" dead bed which contains 800' of 2.5" hose and (4) our 5" Dead Bed containing 1000' of 5" hose. The 5" dead bed is always to the right because when the hose is deployed it will be as close to the curb as possible, remaining out of the center of the roadway, allowing other apparatus to come onto the street in which this hose has been dropped.

All of our dead beds, outside of the 5", which is universal and contains sexless couplings, are packed to be attack line, meaning begins with female coupling inside the bed and ends with a male coupling with a Nozzle attached. Packing the dead beds in this manner allows them to be used for fire attack - (to the fire). Dead beds are typically utilized when the length required for the stretch is > our 200' pre-connects.

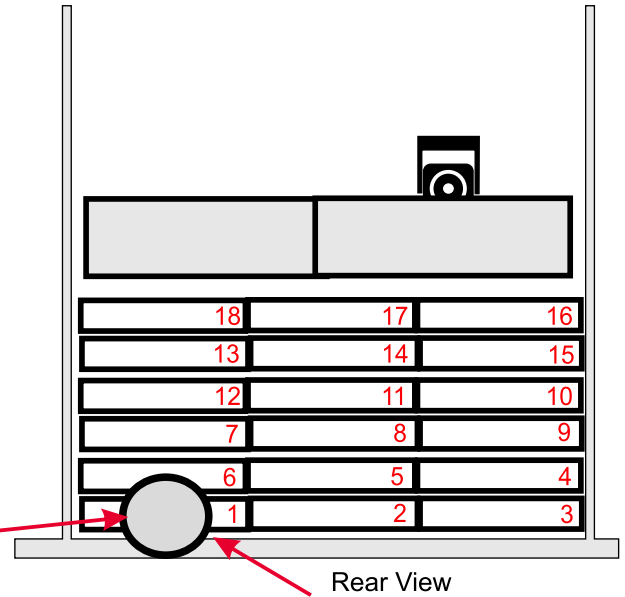
Lengths of hose set in the 1.75" and 2.5' dead beds were designed so each bed would allow for the making of 2 lines: (1.75" = 600' - allows for (2) - 300' hose lines, the maximum allowed before the pressure needs is greater than the lines tested strength). We learned in the Reduced Line Section - when we need over 200' of 1.75" for a incident, the Reduced Line is the Hose bed of choice as the primary line. This doesn't mean if the first line at a house fire was a 200' 1.75 pre-connect, that the second line wouldn't be 250' of 1.75 or 2.5" dead bed, **remember** we always want the second line to be at least equal but **preferable bigger (longer)**. Whenever the required stretch supersedes our pre-connects we will utilize dead bed, remembering our reduced line is also a dead bed and not a pre-connect. Our 2.5 dead beds contains 800' of 2.5" hose, which allowing us to create (2) 400' 2.5 hose lines. Studies of our district have shown, there are very few, if any, cases where we will require a hose stretch greater than 400' of 2.5" hose from engine covering the fire building.

For 5" hose dead bed, **note** it is typically used for input (water from a hydrant to an Engine) but it can also be used as an output or "attack" (Engine to fire), to feed a sprinkler, standpipe, master steam appliance or even supply water to another operating Apparatus, in essence making it an attack line. Due to the sexless couplings, how the hose is packed on to the engine, (starting female or male coupling) isn't a factor.

Packing 1.75 and 2.5" Dead Bed

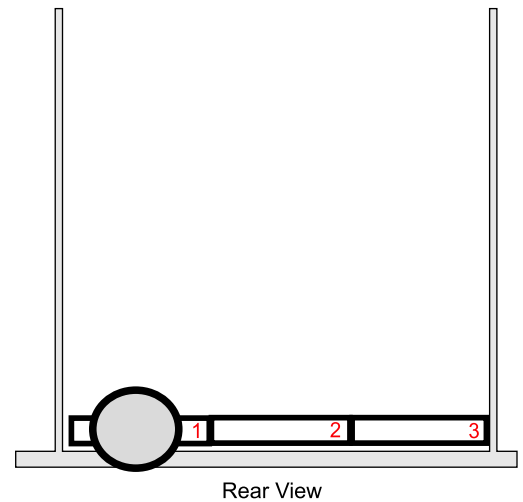
The method of packing a 1.75" or 2.5" dead bed are identical, the only thing that will be different is the width of the hose. Both beds are designed to hold set amount of folds in a layer and this number will differ from Engine to Engine, but their packing will be the same, no matter how many folds a specific layer can hold.

Identifying the difference between a Dead Bed and a Pre-connect: remember the pre-connects were packed where they had longer folds that came out further than the bed. With a dead bed all our folds will be even with the edge of the bed, they and are also *not connected to any discharge*.



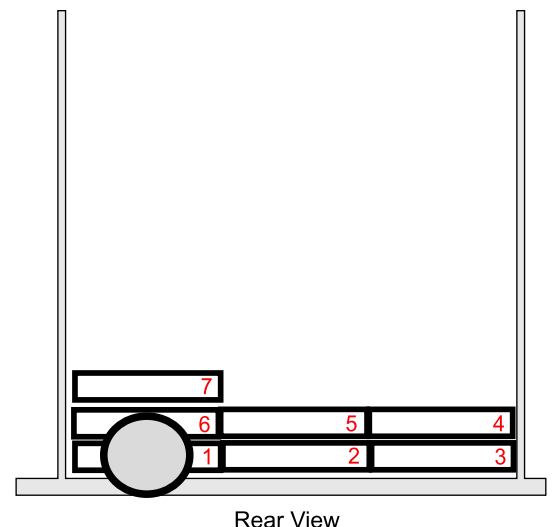
1.75" & 2.5" dead beds begin as flat packs, we'll begin with a **female coupling** placed in the left corner even with the edge of the bed and hose flaked to the back.

When we reach the beds edge, we'll fold the hose even with the edge of the bed and send the hose back to the rear of the bed. When we hit the beds back wall, we will set our next fold next to the fold we started with the female coupling to the right of it. We'll then send the hose, flat, back to the front of the bed. When we hit the front edge, we'll fold even with the edge and send back. This will continue until we complete an entire layer, meaning we hit the bed wall or divider and can't take the folds any more to the right on that layer. (**Ex. 1, 2, 3**)



Once we complete that layer, our next layer will begin by doubling the fold we just created at the wall (**4**). We will then continue to make our flat pack front to back, but instead of going left to right, we'll now be going right to left. We will continue this method until we hit the bed dividing wall in the opposite direction, finishing that layer. (**5,6**)

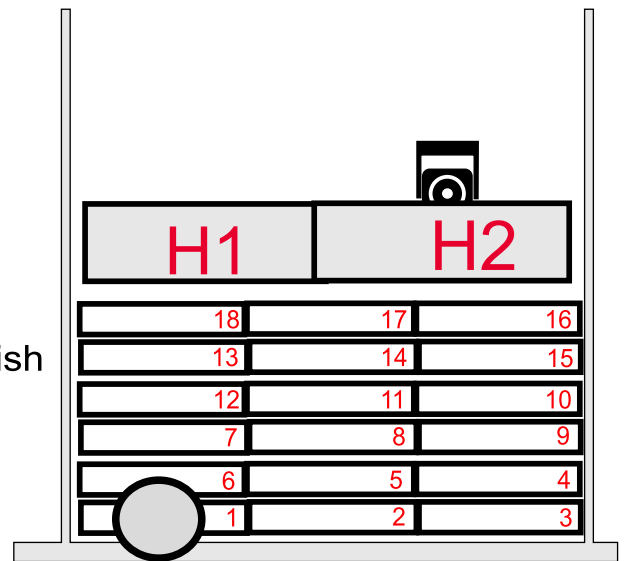
This process of starting a new layer will be the same as the last layer, we will double the fold at the dividing wall, (**7**) and run our hose back left to right.



The method will continue until all hose **except the last 2 length**, that is expected to be placed into the hose bed, are packed into the bed.

Once we have all **but 100'** (2 Lengths) of the 1.75 or 2.5" hose left to be packed into the bed, we will stop packing the bed in the flat pack method.

As we stated in the earlier sections, these beds are designed to be used in fire attacks, we also stated that with our attack lines we wanted to have our Nozzle and Back up positions make it to the entry point with a set amount of hose. We accomplish this by setting 50' **horseshoe loads** for these 2 positions. These 50' horseshoes, when deployed properly, will assure 100' of hose gets staged at our incident point of entry



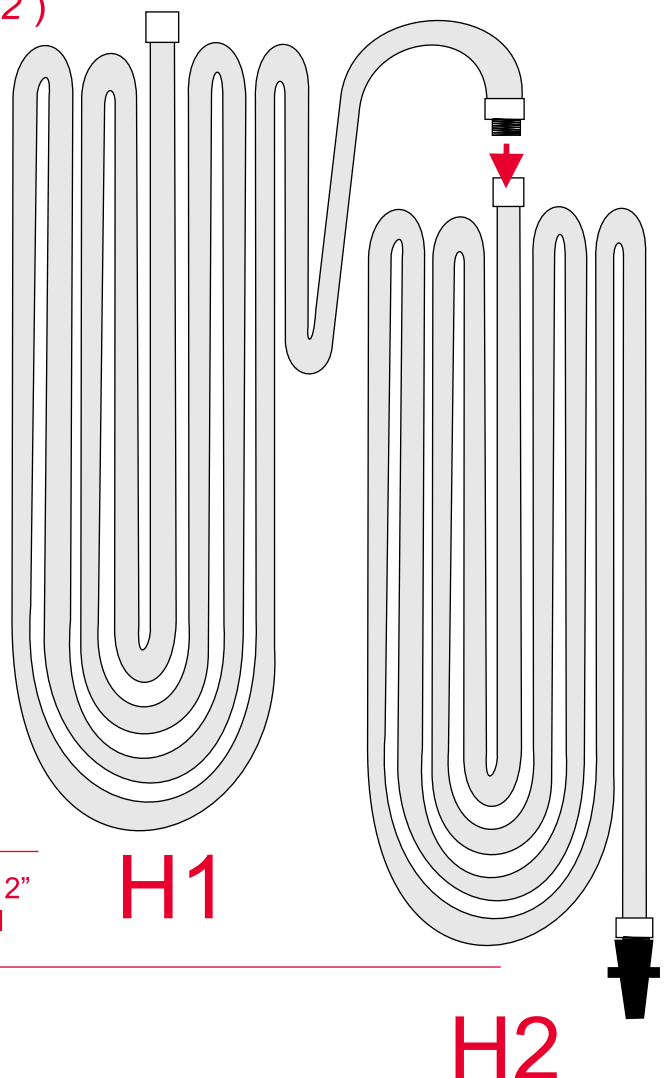
Rear View

Packing the horseshoe was discussed in the previous section, (Refer to page 11 & 12)

As discussed in "Packing a Horseshoe Load" these horseshoe loads can be packed in the dead bed itself or packed on the ground, lifted intact into the bed and connected to the lengths of hose packed prior to it.

The first horseshoe load (**H1**), the back up position's, will be set in the bed further back in the bed than the 2nd horseshoe load (**H2**), which is for the Nozzle position. This is done so it's identifiable as the first one that should be pull, especially when they are set side by side of each other in a wider dead bed. This isn't as detrimental if the bed is narrow and the horseshoe will be place one on top of the other.

Both the 1.75" and the 2.5" dead beds will be pack utilizing this method.



about 12"
forward

Packing 5" Dead Bed

Packing of 5" differs very slightly from the packing of the 1.75" or 2.5" hose. We will begin packing from left to right (1, 2, 3, 4), we are not concerned about if we are starting the pack with a male or female coupling since the coupling are universal and sexless, so this isn't a concern.

When we finish a layer of hose and hit a wall, we'll double that fold at the wall (5) and head in the opposite direction right to left with the hose (6, 7, 8).

We will continue in this method until all the hose is in the bed, we're not setting any Horseshoe loads...

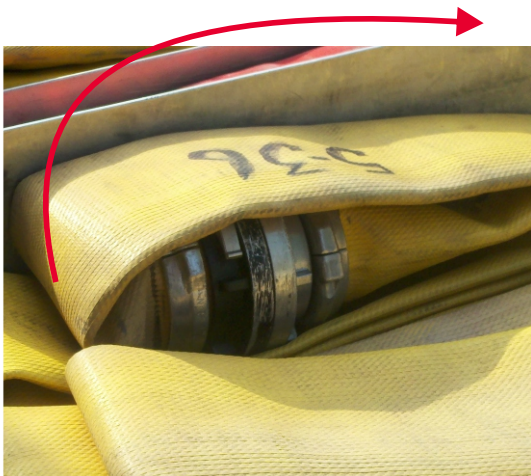
We do have some added concerns when we Pack our 5" Hose:

The couplings - When they are connected to each other we need to make sure the coupling are fastened closed so that the **locking mechanism deploys**, locking the hose together. If we don't and there is a twist in the line, as water is place in the hose the twist can be chased up the line and could twist the coupling undone.

We don't get this with our 1.75 or 2.5, especially if we connected them hand tight, these couplings are designed to swivel and the twist will swivel out.

Our next concern is the couplings flipping in the bed when they are being deployed. This is caused when our hose is packed incorrectly. We always want to set our

couplings so when they are pulled from the bed they come out flat.



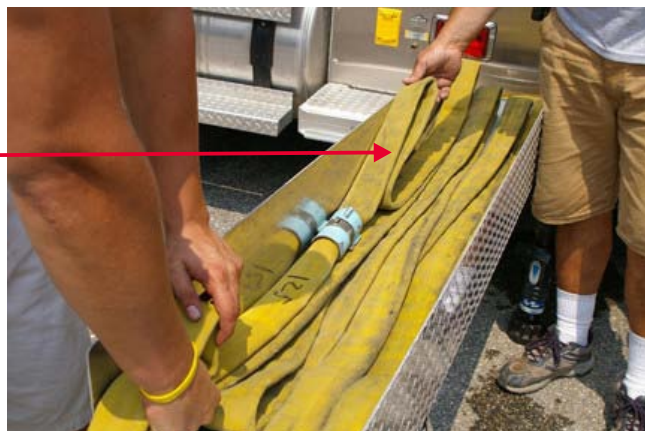
*We can see from the **diagram to the left** if we packed our hose in this manner if the hose was to be pulled from the bed it would flip violently, damaging coupling, throwing it in th air, allowing it to get caught in the ladders above... it creates potential problems for us, especially the faster it comes off the engine - the bigger the potential for a problem.*

Good news is it's a easy fix.

48	47	46	45
41	42	43	44
40	39	38	37
33	34	35	36
32	31	30	29
25	26	27	28
24	23	22	21
17	18	19	20
16	15	14	13
9	10	11	12
8	7	6	5
1	2	3	4

Rear View

To combat the couplings from flipping, keeping them deploying flat, when needed we'll add an extra fold into the hose called a "dutchman", or shorten the load or couplings position.

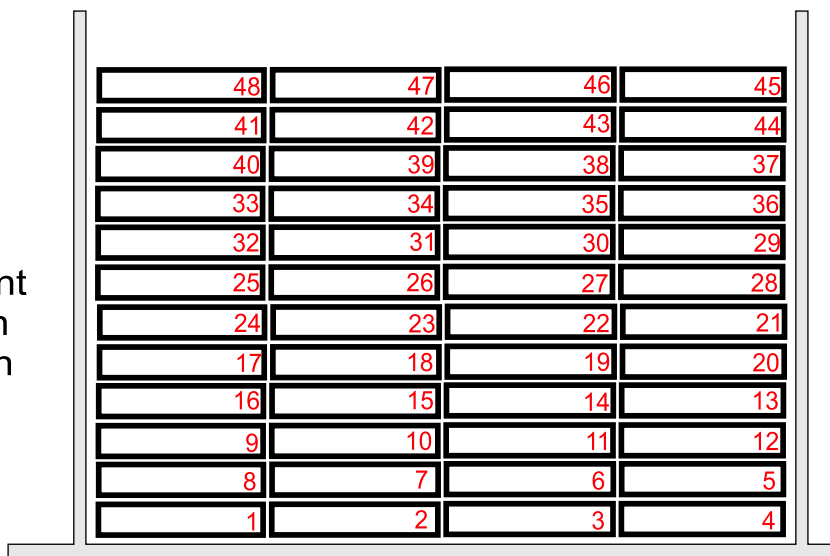


Our ultimate goal is to have the coupling deploy flat, if we create a short fold or reverse fold (dutchman) in the hose this will allow the hose when pulled from the rear to remain deploying flat, eliminating the flip.

These Dutchman can be used to change direction of the coupling or change the location of a coupling, like when two coupling land on top of each other and we'd like to move its position. Dutchman are not only used in 5" hose they can be placed in any size hose to position couplings where we want them and not just where they end up.

We'll pack our entire bed, utilizing a flat pack, placing our coupling in a position the will deploy flat, and assuring they are locked closed.

Once we've complete the pack, we'll place the end coupling to the front of the bed, were it can be easily reach from the back step, but still far enough in that a bump will not throw it from the bed. Once it is where we want it, we'll place the Hydrant bag on top of it, to help hold it in place.



Rear View