

Shipping and Installation Guide

It is important to have all of the project specific drawings supplied with your order during the installation and operation of the unit. Contact your TMI representative if you require these documents.

General Information:

- This document, along with the project specific documents must be adhered to for the safe installation of this equipment. These tasks should be performed by trained, qualified personnel, and all appropriate safety measures should be taken during these processes.

Shipping:

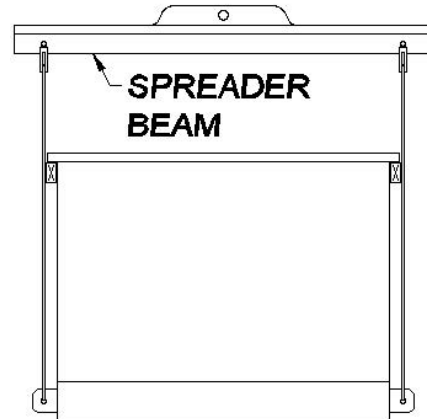
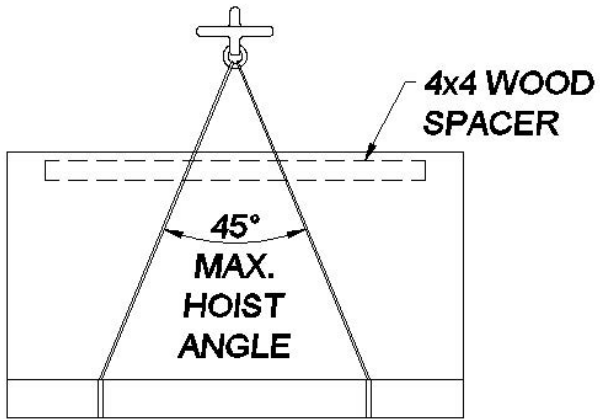
- At TMI we take the utmost care to protect the units we fabricate during transit, it is standard that all units may be completely shrink wrapped for protection. With the size of many of these units, damage during transit can occur. It is imperative that any damage to the unit is documented before the unit is unloaded. Pictures must be taken, and the damage must be noted on the shipping documentation. Follow the lifting instructions provided for off-loading procedures and review the shipping accessories list prior to off-loading the units, in many cases items such as lifting lugs may be removed for shipment.

Hoisting/Rigging:

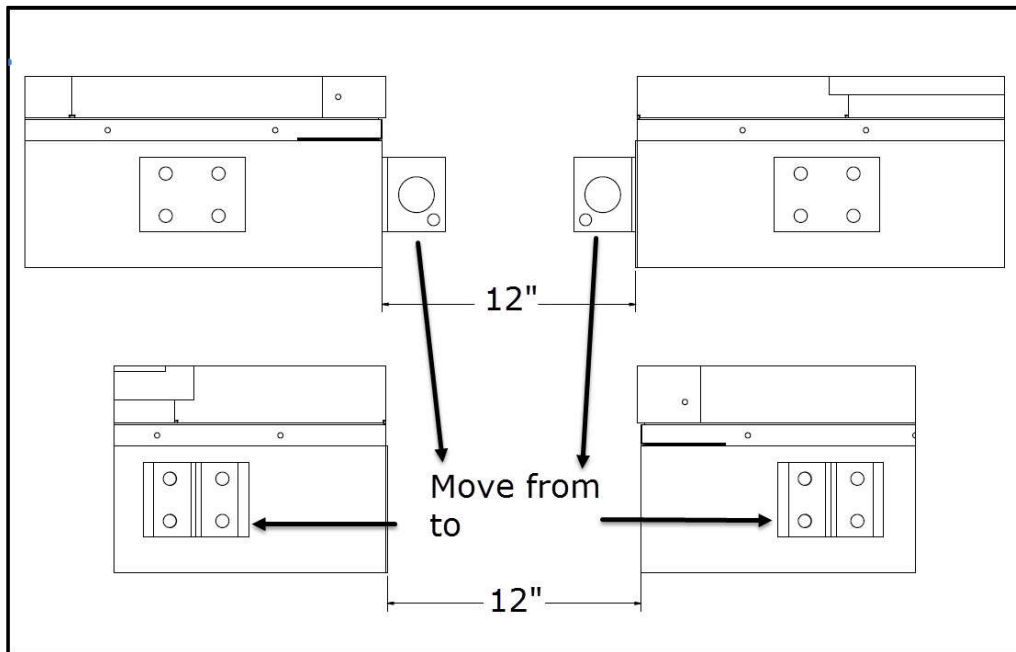
- Inspect and unload unit modules. Never use a forklift to lift modules. Units are designed to be lifted from the bottom using all the lifting lugs provided on the unit base. Shackle through the 1 3/4" lifting eye on the lifting lugs. Units should preferably be lifted using spreader bars (see Detail 1), and if the units are not lifted using spreader bars, sufficiently long cables should be used so that the lugs are not choked together more than 45°, such would reduce the lifting capacity of the lifting lugs (see Detail 1).
- Installing Contractor to ensure that unit support steel is level, any irregularities in the steel will need to be shimmed up so that the modules can be installed in a level condition. All modules must be level within 1/8" per 25ft. & no two points are to be greater than 1/4" from level throughout the entire unit.
- It is important to protect the product and delivered components from the elements during the installation period.

Installation:

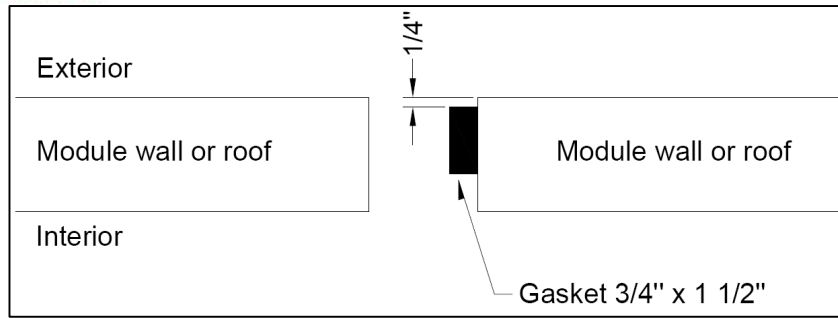
- Carefully remove all protective wrapping from modules prior to lifting.
- Lift modules into place using the aforementioned lifting instructions.
Note: If any large air supply house components are to be lifted separately, such as the supply fan, make sure that appropriate modules are lifted first to facilitate lifting components into them.
- Modules should be set approximately 12" away from one another. (See Detail 2)
- If applicable, remove lifting lugs between modules and reinstall them outside the module joint (in the front and in the back of the unit) to pull modules together. (See Detail 2)
- Install gasket 3/4" on the perimeter of the modular joint (floor, walls and roof). (See Details 3a, 3b and 3c). If the unit is factory tested, this gasket will already be installed. If so, ignore this step.
- Pulling the modules together should be done from the base frames using the lifting lugs located on the base frame. Modules should never be pulled together using threaded rod from the walls or roofs. Module joint gasket need to be compressed until the gap between the modules is 3/8" +/- 1/8". (See Detail 4a, 4b, 4c and 4d)
- Secure all modules using threaded rod 1/2", washers & nuts provided by T.M.I. Make sure the unit is completely sealed to prevent air bypass through the floors, walls and roofs.
- Wall Modular joints: Using the provided material, cap all siding joints at module splits. Use gray caulking for TMI standard gray units, and clear caulking for custom color units. (See Detail 4c)
- Roof Modular joints: For outdoor units, using the Third Layer Roof material and tooling, cap all roofing joints at module splits. (See Detail 5 & 6).
For indoor units, refer to detail 4c.
- Optional: For aesthetic purposes, modular floor caps can be installed at modular joints. They can be installed using caulking or a few screws. Note that these caps are supplied at standard lengths, they must be cut-to-length on site (see detail 4e)
- For outdoor units, apply sealant between each floor to prevent water intrusion. (See detail 7)
- After units have been set into place, inspect the area around the units and seal as necessary.
- Optional: After the addition of modular seals, threaded rods can be removed for aesthetic reason, if necessary.
- Mount all shipped loose items, such as: hoods, sensors, piping, etc.
- Connect any coil water supply and return lines to plant main.
- Reconnect electrical wiring at module splits.
- Verify all electrical connections are properly torqued prior to applying power as connections may have become loose during transit. Failure to do so may result in personal injury, equipment damage or fire.
- Remove fan isolators shipping/tie-down bolts. Final adjustment to be done to all fan isolators per isolator manufactures recommendations by installing contractor.



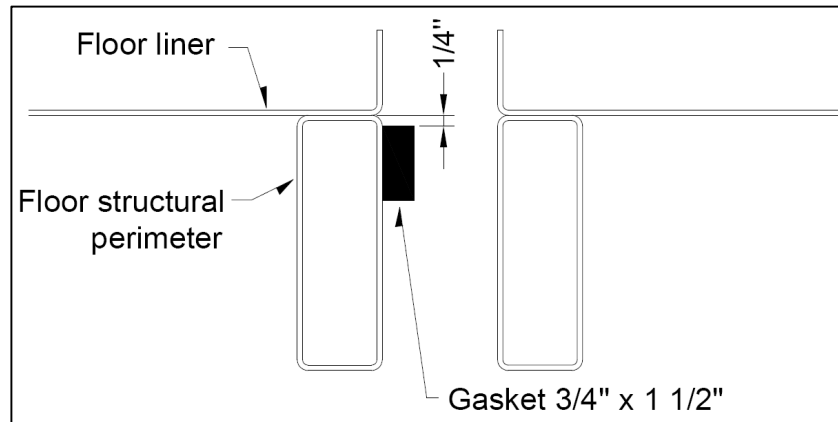
Detail 1 - Lifting lugs in base for hoisting.
Place 4x4 wood spacers at roof line to prevent damage



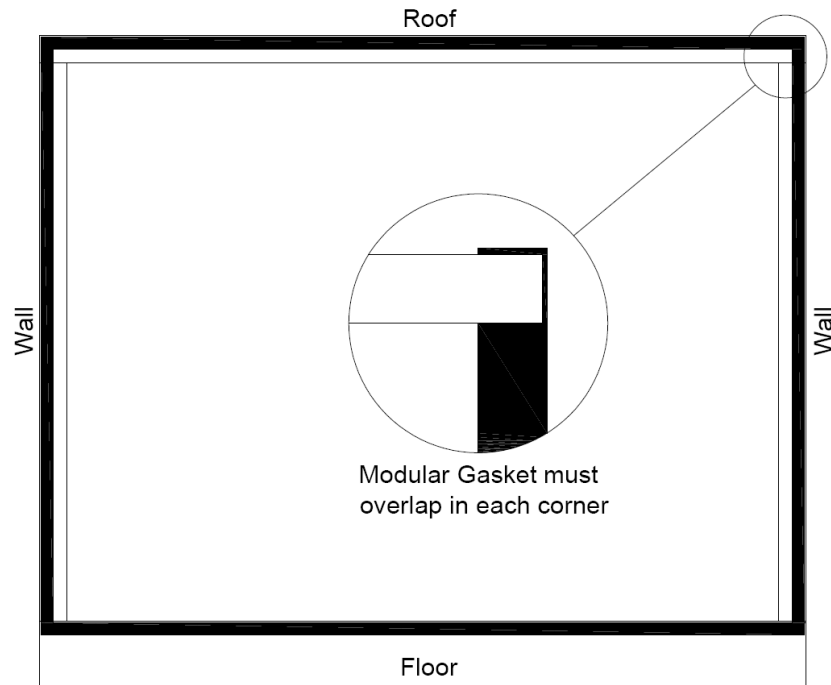
Detail 2 - Modular lifting lug detail



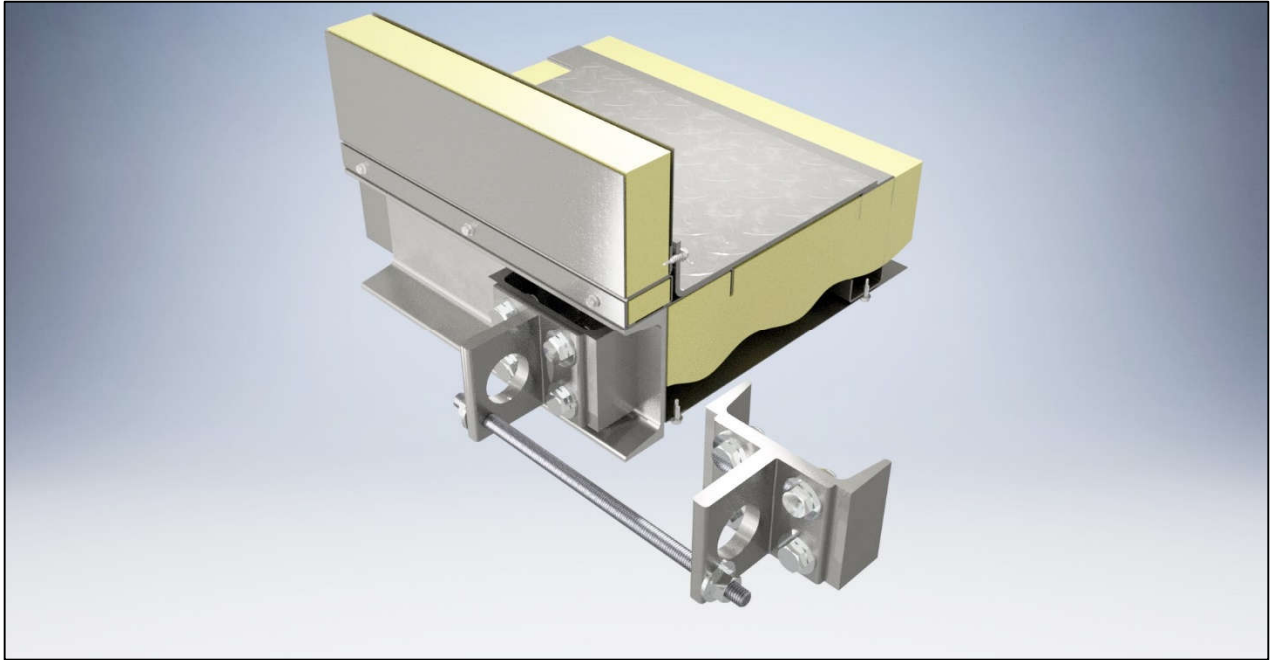
Detail 3a - Wall and roof modular gasket position



Detail 3b - Floor modular gasket position



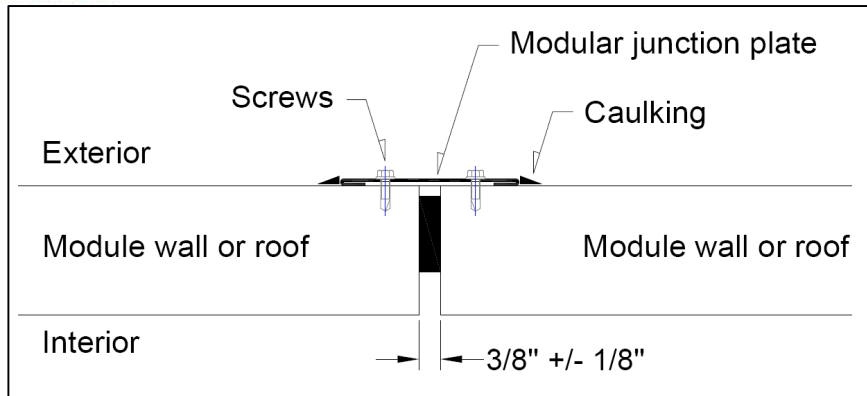
Detail 3c - Modular gasket installation in corners



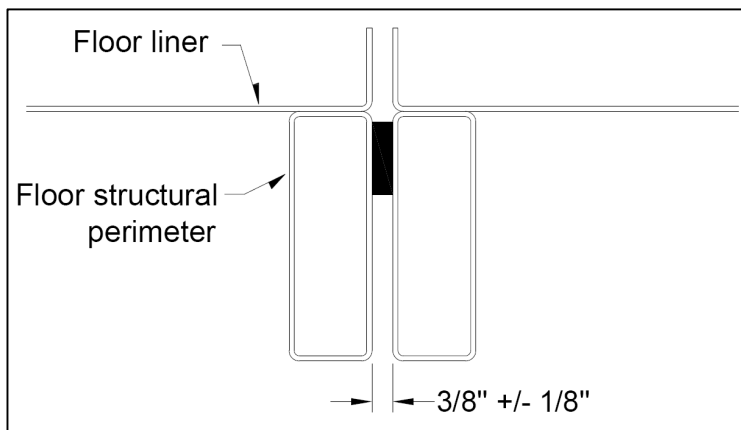
Detail 4a - Typical module floor connection detail



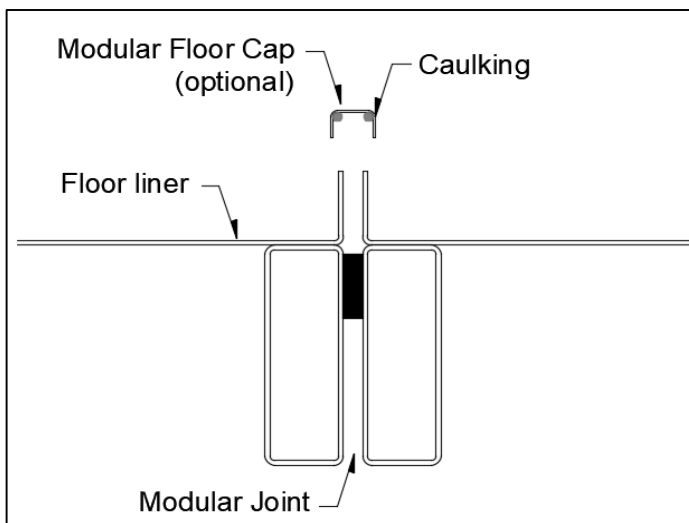
Detail 4b - Typical module roof connection detail



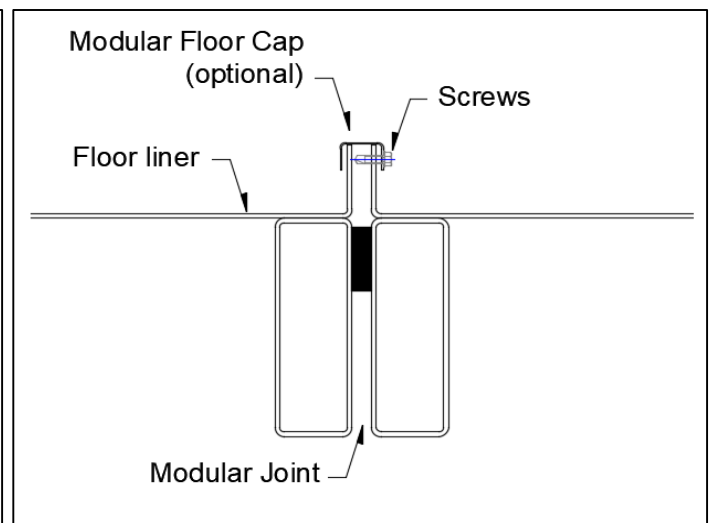
Detail 4c - Wall Siding and Indoor Unit Roof Detail.
Not applicable for Outdoor Unit Roof



Detail 4d - Floor module junction detail

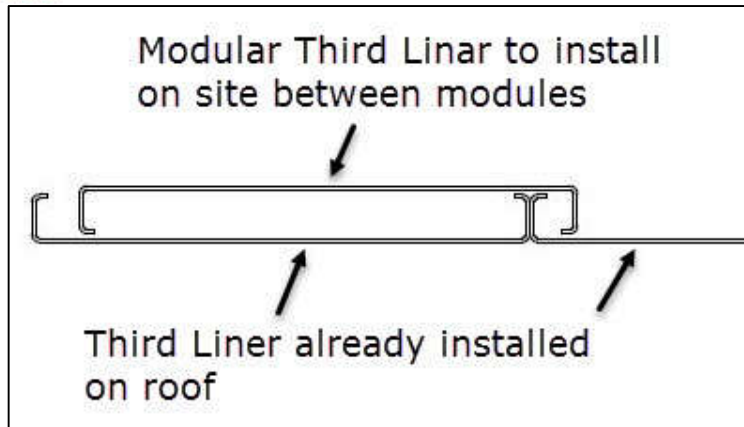


Installation with caulking

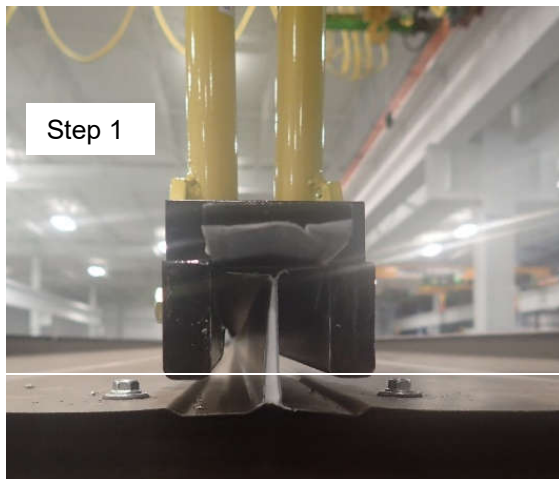


Installation with screws

Detail 4e - Optional Modular Floor Cap detail (optional)



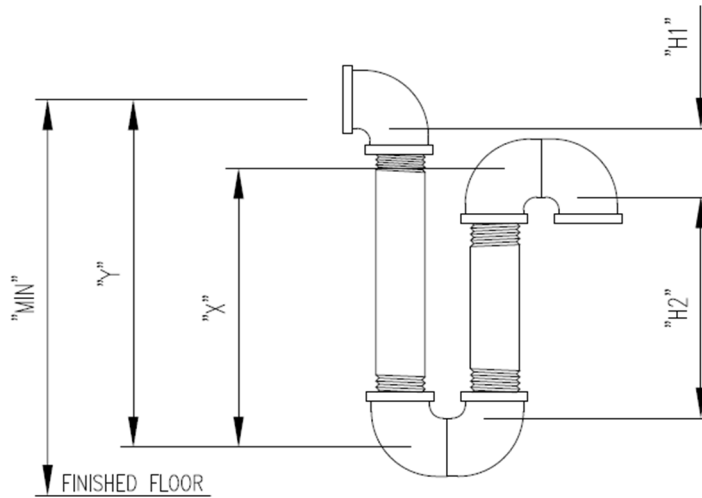
Detail 5 - Modular roof third liner detail (exterior Unit Only)



Detail 6 - Modular Third Liner Cap Installation using tool (Outdoor unit only)



Detail 7 - Sealant Application Between Floors (Outdoor Unit Only)



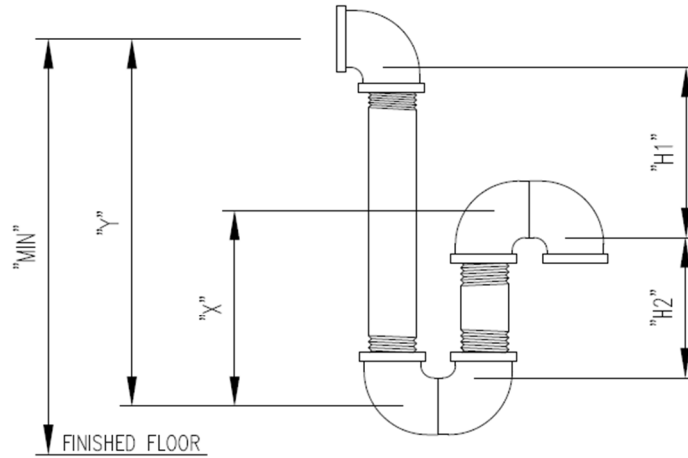
POSITIVE TRAP (BY OTHERS)

POSITIVE CONDENSATE DRAIN TRAP
 H1= 1/2" MNIMUM
 H2= STATIC PRESSURE + SAFETY FACTOR
 X = H2 + PIPE I.D.
 Y = H1 + H2 + PIPE I.D.

Positive Pressure Compartment Drain Trap Height Chart

USE COMPARTMENT STATIC PRESSURE, NOT FAN TSP FOR TRAP HEIGHT										
Compartment Static Pressure	2" Drain Trap					1-1/4" Drain Trap				
	H1	H2	X	Y	Min*	H1	H2	X	Y	Min*
2.0" w.c.	0.5"	2.5"	4.5"	5.0"	7.0"	0.5"	2.5"	3.8"	4.3"	5.5"
2.5" w.c.	0.5"	3.0"	5.0"	5.5"	7.5"	0.5"	3.0"	4.3"	4.8"	6.0"
3.0" w.c.	0.5"	3.5"	5.5"	6.0"	8.0"	0.5"	3.5"	4.8"	5.3"	6.5"
3.5" w.c.	0.5"	4.0"	6.0"	6.5"	8.5"	0.5"	4.0"	5.3"	5.8"	7.0"
4.0" w.c.	0.5"	4.5"	6.5"	7.0"	9.0"	0.5"	4.5"	5.8"	6.3"	7.5"
4.5" w.c.	0.5"	5.0"	7.0"	7.5"	9.5"	0.5"	5.0"	6.3"	6.8"	8.0"
5.0" w.c.	0.5"	5.5"	7.5"	8.0"	10.0"	0.5"	5.5"	6.8"	7.3"	8.5"
5.5" w.c.	0.5"	6.0"	8.0"	8.5"	10.5"	0.5"	6.0"	7.3"	7.8"	9.0"
6.0" w.c.	0.5"	6.5"	8.5"	9.0"	11.0"	0.5"	6.5"	7.8"	8.3"	9.5"
6.5" w.c.	0.5"	7.0"	9.0"	9.5"	11.5"	0.5"	7.0"	8.3"	8.8"	10.0"
7.0" w.c.	0.5"	7.5"	9.5"	10.0"	12.0"	0.5"	7.5"	8.8"	9.3"	10.5"
7.5" w.c.	0.5"	8.0"	10.0"	10.5"	12.5"	0.5"	8.0"	9.3"	9.8"	11.0"
8.0" w.c.	0.5"	8.5"	10.5"	11.0"	13.0"	0.5"	8.5"	9.8"	10.3"	11.5"
8.5" w.c.	0.5"	9.0"	11.0"	11.5"	13.5"	0.5"	9.0"	10.3"	10.8"	12.0"
9.0" w.c.	0.5"	9.5"	11.5"	12.0"	14.0"	0.5"	9.5"	10.8"	11.3"	12.5"
9.5" w.c.	0.5"	10.0"	12.0"	12.5"	14.5"	0.5"	10.0"	11.3"	11.8"	13.0"
10.0" w.c.	0.5"	10.5"	12.5"	13.0"	15.0"	0.5"	10.5"	11.8"	12.3"	13.5"
10.5" w.c.	0.5"	11.0"	13.0"	13.5"	15.5"	0.5"	11.0"	12.3"	12.8"	14.0"
11.0" w.c.	0.5"	11.5"	13.5"	14.0"	16.0"	0.5"	11.5"	12.8"	13.3"	14.5"
11.5" w.c.	0.5"	12.0"	14.0"	14.5"	16.5"	0.5"	12.0"	13.3"	13.8"	15.0"
12.0" w.c.	0.5"	12.5"	14.5"	15.0"	17.0"	0.5"	12.5"	13.8"	14.3"	15.5"

Notes:
 Safety factor: 0.5" w.c.
 * Distance from drain centerline to bottom of trap



NEGATIVE TRAP (BY OTHERS)

NEGATIVE CONDENSATE DRAIN TRAP
 $H1 = \text{COMPARTMENT PRESSURE} + \text{SAFETY FACTOR}$
 $H2 = (H1)/2$
 $X = H2 + \text{PIPE I.D.}$
 $Y = H1 + H2 + \text{PIPE I.D.}$

Negative Pressure Compartment Drain Trap Height Chart										
USE COMPARTMENT STATIC PRESSURE, NOT FAN TSP FOR TRAP HEIGHT										
Compartment Static Pressure	2" Drain Trap					1-1/4" Drain Trap				
	H1	H2	X	Y	Min*	H1	H2	X	Y	Min*
-2.0" w.c.	2.5"	1.3"	3.3"	5.8"	7.8"	2.5"	1.3"	2.5"	5.0"	6.3"
-2.5" w.c.	3.0"	1.5"	3.5"	6.5"	8.5"	3.0"	1.5"	2.8"	5.8"	7.0"
-3.0" w.c.	3.5"	1.8"	3.8"	7.3"	9.3"	3.5"	1.8"	3.0"	6.5"	7.8"
-3.5" w.c.	4.0"	2.0"	4.0"	8.0"	10.0"	4.0"	2.0"	3.3"	7.3"	8.5"
-4.0" w.c.	4.5"	2.3"	4.3"	8.8"	10.8"	4.5"	2.3"	3.5"	8.0"	9.3"
-4.5" w.c.	5.0"	2.5"	4.5"	9.5"	11.5"	5.0"	2.5"	3.8"	8.8"	10.0"
-5.0" w.c.	5.5"	2.8"	4.8"	10.3"	12.3"	5.5"	2.8"	4.0"	9.5"	10.8"
-5.5" w.c.	6.0"	3.0"	5.0"	11.0"	13.0"	6.0"	3.0"	4.3"	10.3"	11.5"
-6.0" w.c.	6.5"	3.3"	5.3"	11.8"	13.8"	6.5"	3.3"	4.5"	11.0"	12.3"
-6.5" w.c.	7.0"	3.5"	5.5"	12.5"	14.5"	7.0"	3.5"	4.8"	11.8"	13.0"
-7.0" w.c.	7.5"	3.8"	5.8"	13.3"	15.3"	7.5"	3.8"	5.0"	12.5"	13.8"
-7.5" w.c.	8.0"	4.0"	6.0"	14.0"	16.0"	8.0"	4.0"	5.3"	13.3"	14.5"
-8.0" w.c.	8.5"	4.3"	6.3"	14.8"	16.8"	8.5"	4.3"	5.5"	14.0"	15.3"
-8.5" w.c.	9.0"	4.5"	6.5"	15.5"	17.5"	9.0"	4.5"	5.8"	14.8"	16.0"
-9.0" w.c.	9.5"	4.8"	6.8"	16.3"	18.3"	9.5"	4.8"	6.0"	15.5"	16.8"
-9.5" w.c.	10.0"	5.0"	7.0"	17.0"	19.0"	10.0"	5.0"	6.3"	16.3"	17.5"
-10.0" w.c.	10.5"	5.3"	7.3"	17.8"	19.8"	10.5"	5.3"	6.5"	17.0"	18.3"
-10.5" w.c.	11.0"	5.5"	7.5"	18.5"	20.5"	11.0"	5.5"	6.8"	17.8"	19.0"
-11.0" w.c.	11.5"	5.8"	7.8"	19.3"	21.3"	11.5"	5.8"	7.0"	18.5"	19.8"
-11.5" w.c.	12.0"	6.0"	8.0"	20.0"	22.0"	12.0"	6.0"	7.3"	19.3"	20.5"
-12.0" w.c.	12.5"	6.3"	8.3"	20.8"	22.8"	12.5"	6.3"	7.5"	20.0"	21.3"

Notes:
 Safety factor: 0.5" w.c.
 * Distance from drain centerline to bottom of trap