

## UTILITY STACK MINI

Part Number: 56600

### Assembly & Installation Instructions

**Important:** Make sure that the correct Utility Rack is used for the corresponding sized utility systems being installed. Air Techniques also recommends the following:

- Install the vacuum pumps (VacStar or STS) closest to the incoming vacuum line (from the operator) in order to decrease the workload of the vacuum pump.
- When using sub-floor plumbing, install the vacuum line below the compressor line.
- Install the vacuum line over the compressor line when using overhead plumbing.

**Introduction.** This document provides the instructions necessary to assembly the Utility Stack Mini, P/N 56600 used to consolidate the installation of utility systems manufactured by Air Techniques, Inc. Make sure to read this entire document before proceeding.

**Accessory Kits.** Contact your dealer for optional and mandatory accessory kits available for use with the Utility Stack Mini. The kits currently available for separate purchased include:

Optional Accessory Kits -

Drip Tray Kit, P/N 56635: provides protect equipment installed under the top rails.

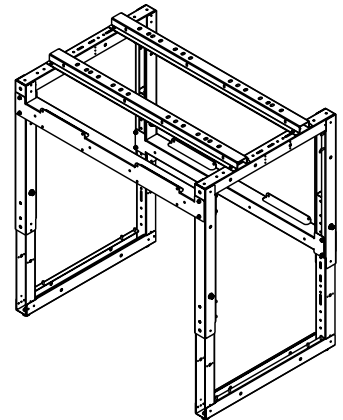
Wall Mount Kit, P/N 54145: secures the Utility Stack to the installation site wall.

Mandatory Accessory Kit -

Top Shelf Mount Kit, P/N 56645: must be used for VacStar 20 & 40 Pump Installations as needed.

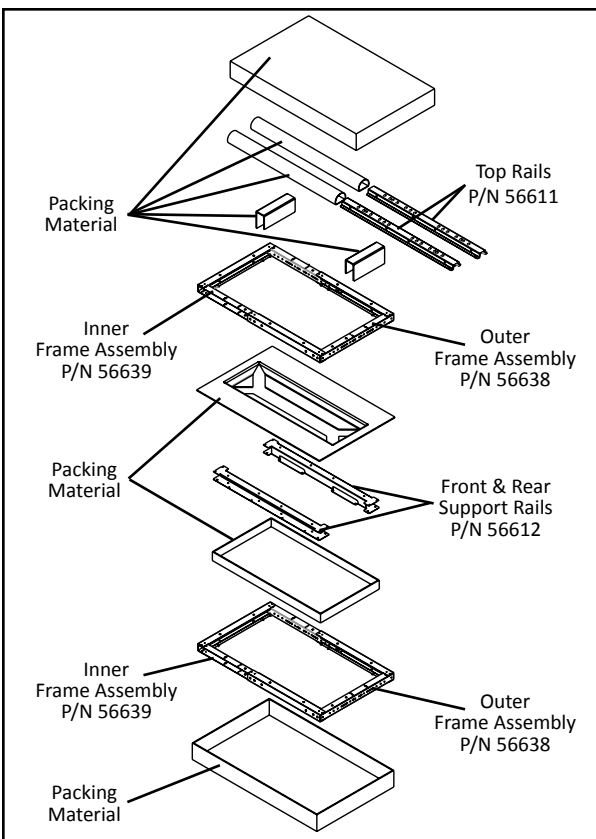
**Procedure Summary.** The assemble tasks included are summarized below:

- ☐ **Included System Components.** Lists the supplied components comprising the Utility Stack .
- ☐ **Assembling Inner and Outer Frame Assemblies, P/N 56638 & 56639.** Provides the instructions to assemble the two pairs of Inner and Outer Frame assemblies and set the height of the rack.
- ☐ **Installation of Front and Rear Support Rails P/N 56612.** Provides instructions to install the Front and Rear Support Rails.
- ☐ **Installation of Top Rails P/N 56611.** Provides instructions to install the Top Rails in the locations necessary for the installation of corresponding utility system.
- ☐ **Installation of Associated Utility System.** Provides instructions to install the associated utility system onto the Top Rails of the stack rack.



Utility Stack Mini,  
P/N 56600

**Included System Components.** The Utility Stack Mini consists of the indicated assemblies and installation hardware kits listed below. Verify that all listed items were received. If any item is missing, notify your dealer.



Utility Stack Mini, P/N 56600  
Supplied Components & Packaging

Utility Stack Mini, Part Number 56600

Part No.	Description	Qty
56611	Top Rails	2
56612	Front & Rear Support Rails	2
56638	Outer Frame Assembly	2
56639	Inner Frame Assembly	2
56615	Installation Hardware Kit	1
55487	Leveling Foot Installation Kit	1

Installation Hardware Kit, Part Number 56615

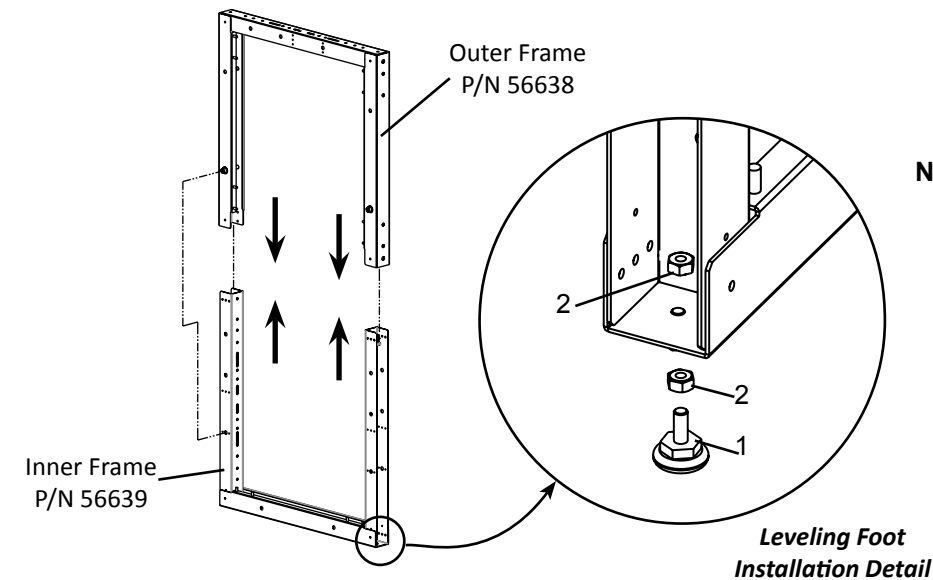
Part No.	Description	Qty	Use Code
30803	Bolt; 1/4-20 X 1/2, Hex Head, Plated	16	A
31854	Cap Plug; .234 Diameter X .500 Long	16	A
31536	Bolt; 3/8-16 X 2-3/4 inch, Hex Head	4	A
30164	Washer; Flat; 3/8 inch, Plated	8	A
30324	Washer; 3/8 inch, Lock, Split, Plated	4	A
30128	Nut; 3/8-16, Hex, Plated	4	A
30222	Washer; 1/4 inch, Lock, Split, Plated	28	A & I
30049	Nut; 1/4-20, Hex, Plated	20	A & I
31453	Bolt; 1/4-20 X 1-3/4 inch, Hex Head, Grad	4	I
30610	Washer; Flat; 1/4 inch, Plated	8	I

**Use Code A:** Identifies fastening hardware used to assemble the stack rack for use.

**Use Code I:** Identifies fastening hardware used to install applicable utility system onto the assembled stack rack.

**Assembling Inner and Outer Frame Assemblies, P/N 56638 & 56639.** Assemble the two pairs of Inner and Outer Frame Assemblies to form the left and right side supports by performing the following steps.

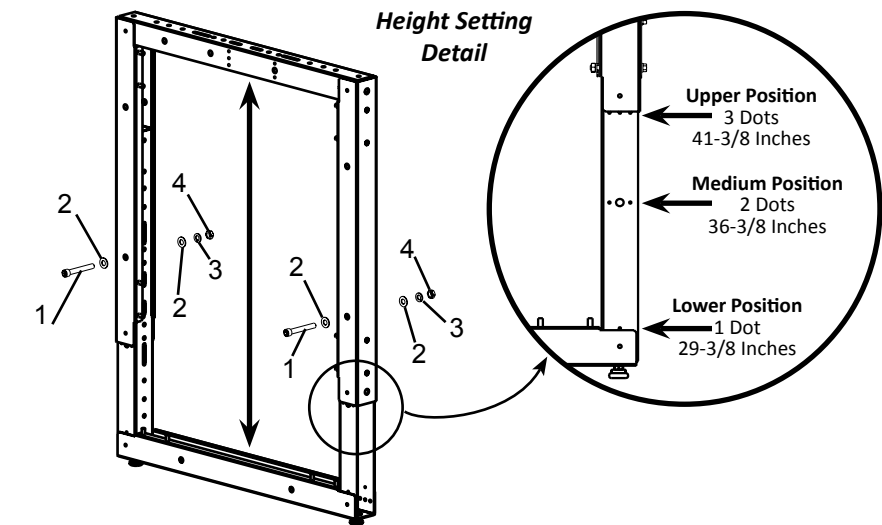
1. Slide the Inner Frame into the Outer Frame and Install Leveling Feet onto each side of the Inner Frame.
2. Refer to Table 1 and 2 and set the height of the top shelf for the equipment configuration to be installed. This is done by sliding the edges of Outer Frame to one of the three height position settings on the Inner Frame marked by 1, 2 or 3 dots.
3. Secure the setting with the supplied height locking hardware listed below.



**Note:** Leveling feet add a minimum of 1 inch when set in the lowest position and a maximum of 2 inches at the highest setting.

**Leveling Foot Installation Hardware**

Item	Description	Part No.	Quantity
1	Leveling Foot	85473	4
2	Hex Nut	30128	8



**Important:** Refer to Table 1 and 2 for the height level of the top shelf required for the utility equipment configuration to be installed.

**Height Locking Hardware (both sides)**

Item	Description	Part No.	Quantity
1	Hex Head Bolt	31536	2
2	Flat Washer	30164	4
3	Split Lock Washer	30324	2
4	Hex Nut	30128	2

Table 1. Utility Stacking of AirStar and VacStar Equipment

Top Equipment	Bottom Equipment VacStar on left & Acadia on right	Height Position of Upper Shelf		
		Position	Dot Setting	Dimension (Inches)
AirStar 10	VS20 & Acadia	Lower	1 Dot	30 3/8
AirStar 10	VS20H & Acadia	Middle	2 Dots	37 3/8
AirStar 10C	VS20 & Acadia	Lower	1 Dot	30 3/8
AirStar 10C	VS20H & Acadia	Middle	2 Dots	37 3/8
AirStar 21	VS40 & Acadia	Lower	1 Dot	30 3/8
AirStar 21	VS40H & Acadia	Middle	2 Dots	37 3/8
AirStar 21C	VS40 & Acadia	Lower	1 Dot	30 3/8
AirStar 21C	VS40H & Acadia	Middle	2 Dots	37 3/8
AirStar 22	VS40 & Acadia	Lower	1 Dot	30 3/8
AirStar 22	VS40H & Acadia	Middle	2 Dots	37 3/8
AirStar 22C	VS40 & Acadia	Lower	1 Dot	30 3/8
AirStar 22C	VS40H & Acadia	Lower	1 Dot	30 3/8
Top Equipment VacStar-No Acadia	Bottom Equipment	Position	Dot Setting	Dimension (Inches)
VS50	Air Star 30	Middle	2 Dots	37 3/8
VS50	AirStar 30C	Upper	3 Dots	42 3/8
VS50H	Air Star 30	Middle	2 Dots	37 3/8
VS50H	Air Star 30C	Upper	3 Dots	42 3/8

Top Equipment	Bottom Equipment VacStar-No Acadia	Height Position of Upper Shelf		
		Position	Dot Setting	Dimension (Inches)
Air Star 30	VS50	Middle	2 Dots	37 3/8
AirStar 30C	VS50	Middle	2 Dots	37 3/8
AirStar 30	VS50H	Upper	3 Dots	41 3/8
AirStar 30C	VS50H	Upper	3 Dots	41 3/8
AirStar 30	VS80	Middle	2 Dots	37 3/8
AirStar 30C	VS80	Middle	2 Dots	37 3/8
AirStar 30	VS80H	Upper	3 Dots	41 3/8
AirStar 30C	VS80H	Upper	3 Dots	41 3/8
Top Equipment VacStar on right & Acadia on left	Bottom Equipment	Position	Dot Setting	Dimension (Inches)
Acadia & VS20	AirStar 10	Lower	1 Dot	30 3/8
Acadia & VS20	Air Star 10C	Middle	2 Dots	37 3/8
Acadia & VS40	Air Star 21	Middle	2 Dots	37 3/8
Acadia & VS40	Air Star 21C	Upper	3 Dots	41 3/8
Acadia & VS40	AirStar 22	Middle	2 Dots	37 3/8
Acadia & VS40	AirStar 22C	Upper	3 Dots	41 3/8

**Note:** All height levels are approximate and are based on setting the leveling feet in the lowest position.  
The height level will increase by approximately an additional inch when the leveling feet are set in the Highest position.

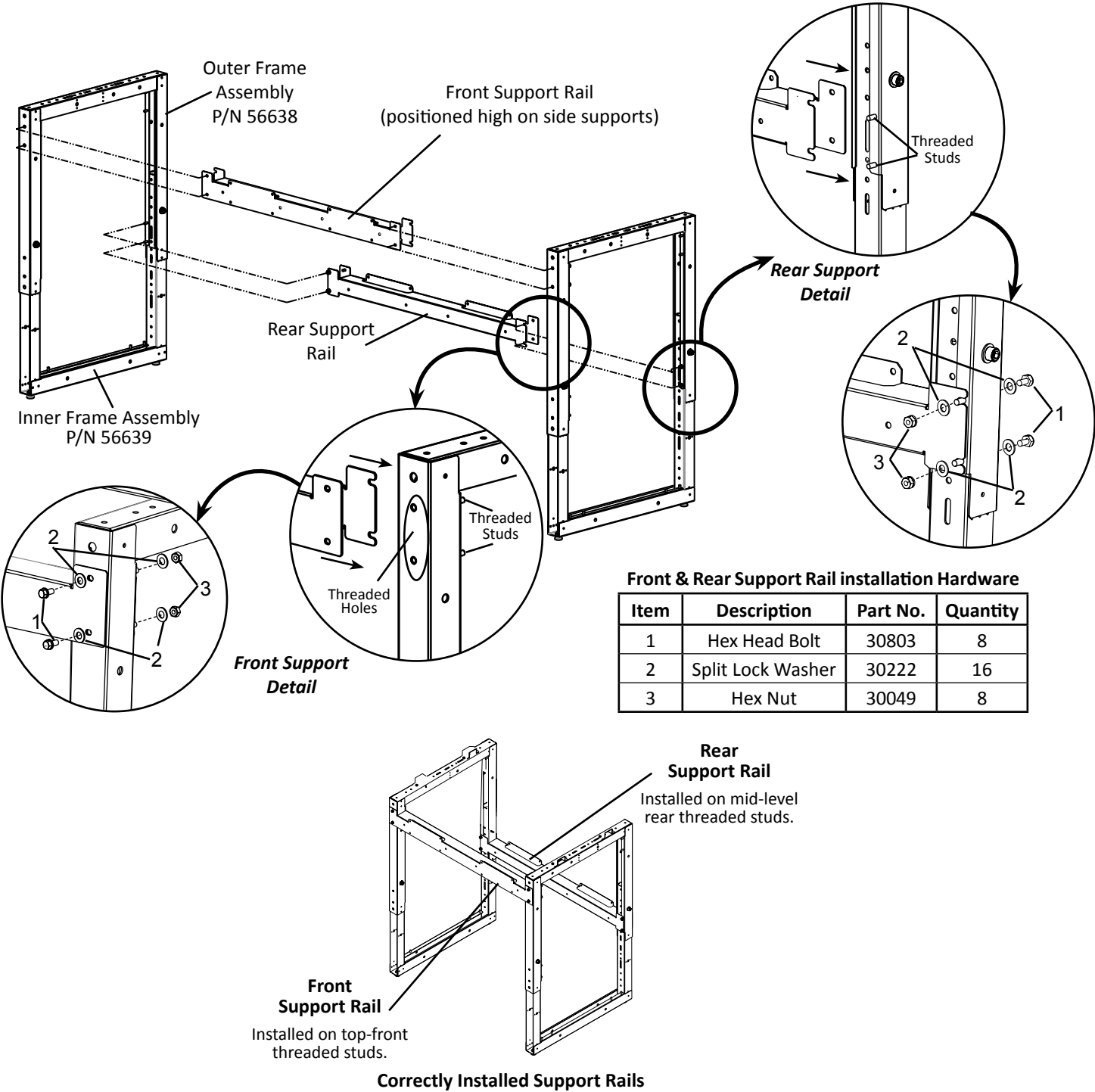
Table 2. Utility Stacking of AirStar and STS Equipment

Top Equipment	Bottom Equipment STS pump turned with an 8 Gallon Tank	Height Position of Upper Shelf		
		Position	Dot Setting	Dimension (Inches)
AirStar 10	STS-3	Upper	3 Dots	42 3/8
Air Star 10C	STS-3	Upper	3 Dots	42 3/8
Air Star 21	STS-3	Upper	3 Dots	42 3/8
Air Star 21C	STS-3	Upper	3 Dots	42 3/8
AirStar 22	STS-3	Upper	3 Dots	42 3/8
AirStar 22C	STS-3	Upper	3 Dots	42 3/8
Air Star 30	STS-3	Upper	3 Dots	42 3/8
AirStar 30C	STS-3	Upper	3 Dots	42 3/8
Air Star 30	STS-5	Upper	3 Dots	42 3/8
Air Star 30C	STS-5	Upper	3 Dots	42 3/8
Air Star 30	STS-6	Upper	3 Dots	42 3/8
AirStar 30C	STS-6	Upper	3 Dots	42 3/8
Top Equipment STS pump turned with an 8 Gallon Tank	Bottom Equipment	Position	Dot Setting	Dimension (Inches)
STS-3	AirStar 10	Lower	1 Dot	30 3/8
STS-3	Air Star 10C	Middle	2 Dots	37 3/8
STS-3	Air Star 21	Middle	2 Dots	37 3/8
STS-3	Air Star 21C	Upper	3 Dots	42 3/8
STS-3	AirStar 22	Middle	2 Dots	37 3/8
STS-3	AirStar 22C	Upper	3 Dots	42 3/8
STS-3	Air Star 30	Middle	2 Dots	37 3/8
STS-3	AirStar 30C	Upper	3 Dots	42 3/8
STS-5	Air Star 30	Middle	2 Dots	37 3/8
STS-5	Air Star 30C	Upper	3 Dots	42 3/8
STS-6	Air Star 30	Middle	2 Dots	37 3/8
STS-6	Air Star 30C	Upper	3 Dots	42 3/8

**Note:** All height levels are approximate and are based on setting the leveling feet in the lowest position.  
The height level will increase by approximately an additional inch when the leveling feet are set in the Highest position.

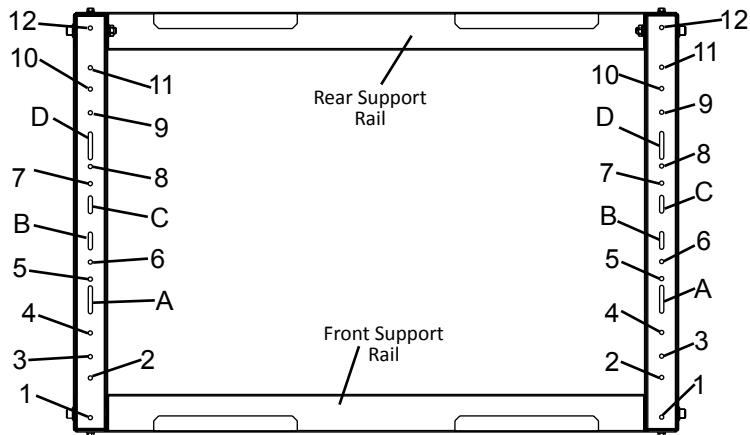
**Installation of Front and Rear Support Rails P/N 56612.** As shown by Detail A below, each support rail is designed to attach to both sides of the associated side supports of the rack. Slots on one side slide into threaded studs and are secured by nuts while the threaded holes on the other side are secured with bolts. Install the Front and Rear Support Rails between the left and right side supports formed by the two pairs of assembled Inner and Outer Frame assemblies by performing the following steps.

- 1. Align both ends of the support rail to be installed with the threaded studs and slide the rail into the studs.
- 2. Loosely install the supplied split lock washers (P/N 30222) and hex nuts (P/N 30049) to the threaded studs at both ends
- 3. Secure each support rail by installing the bolts (P/N 30803) and split lock washers (P/N 30222) into the two threaded holes on both ends.
- 4. Tighten the hex nuts (P/N 30049) on the threaded stud side at both ends.
- 5. Install the 16 supplied Cap Plugs (P/N 31854, not shown) onto all exposed unused threaded studs

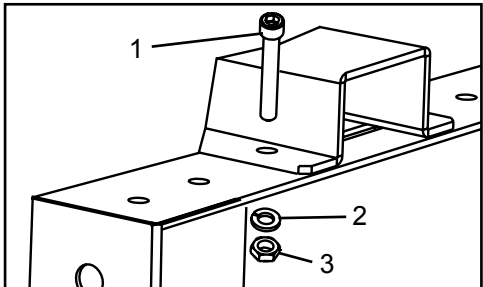


**Installation of Top Rails P/N 56611.** Refer to the drawings below and install the Top Rails in the location shown for the applicable utility system to be installed onto the stack rack . Note that the position of each Top Rail is dependant on the utility system to be installed. Make sure to locate each rail as shown. Secure the rails with the supplied attaching hardware listed below by performing the following steps.

- 1. Align the holes of both ends of the top rail to be installed with the holes of the left and right side supports making sure to locate each rail as shown (correctly numbered hole and/or slot locations) for the utility system installation.
- 2. Install two hex head bolts (P/N 30803) into the holes of both ends of the top rail.
- 3. Secure each support rail by installing the supplied split lock washers (P/N 30222) and hex nuts (P/N 30049) to the hex head bolts as shown below.



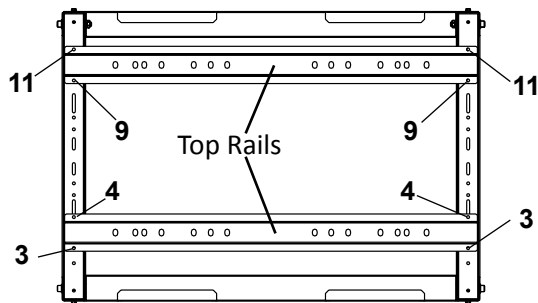
Hole and Slot Locations for Top Rail Installation



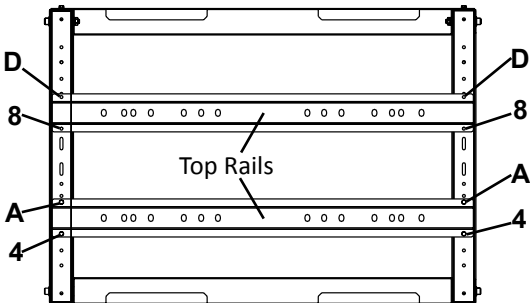
Typical Attaching Hardware Installation Order

Top Rails installation Hardware

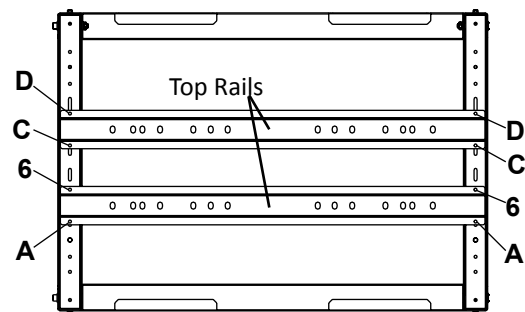
Item	Description	Part No.	Quantity
1	Hex Head Bolt	30803	8
2	Split Lock Washer	30222	8
3	Hex Nut	30049	8



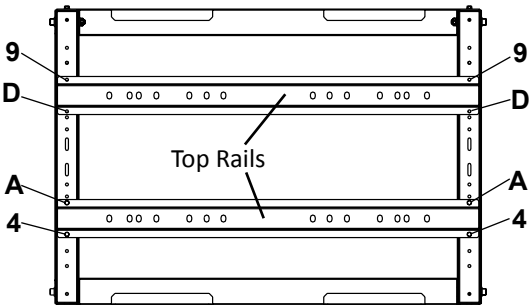
STS 3 & 5 Installations



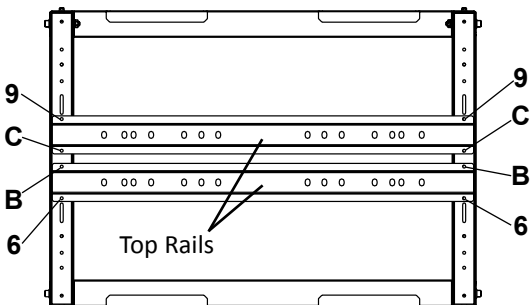
AirStar 10 Installations



VacStar 20 & 40 Installations

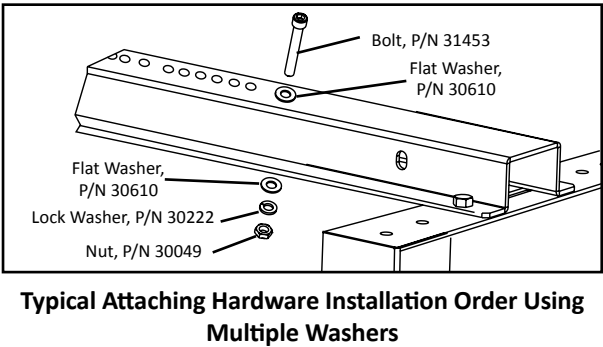
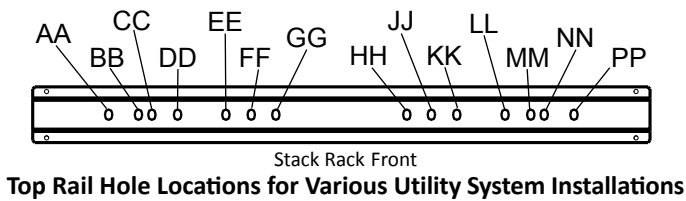


AirStar 21, 22, & 30 Installations



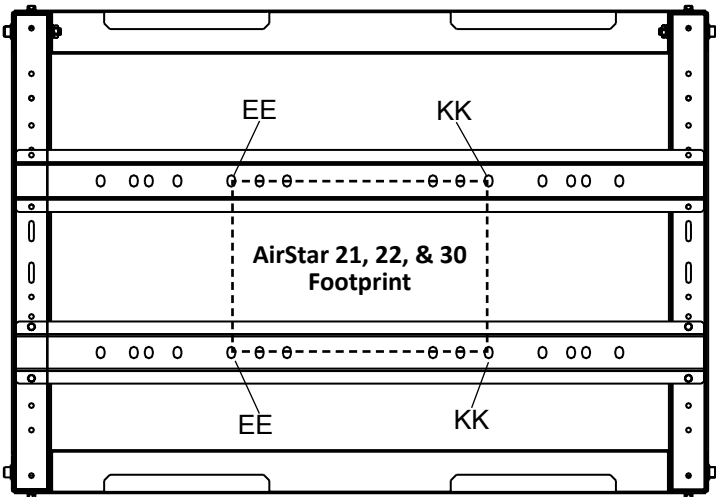
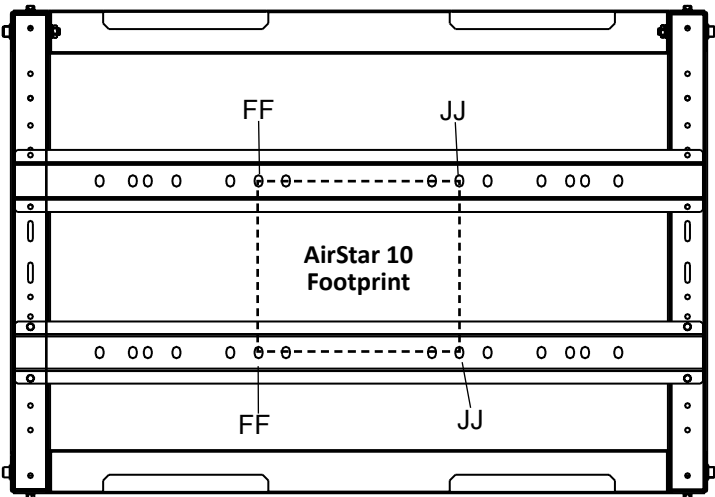
VacStar 50 Installations

**Installation of Utility System Being Installed.** Refer to the drawings below and install the associated utility system onto the Top Rails of the stack rack unit. Note that the specific holes used on each Top Rail for system installation is dependant on the utility system being installed. Make sure to use corresponding rail holes as shown for applicable system. Secure with the required attaching hardware listed for each utility system installation.



**Important:** Make sure that each rail located as shown. The position of each Top Rail is dependant on the utility system to be installed.

**AirStar Installation Procedure.** Refer to the drawings below and install the AirStar unit on the properly spaced Top Rails of the stack rack.



**AirStar Compressor Installation Position Views**

**Important:** Make sure to save all hardware securing the AirStar to the shipping pallet. This attaching hardware is reused to install the AirStar to the stack rack.

**AirStar Installation and Attaching Hardware**

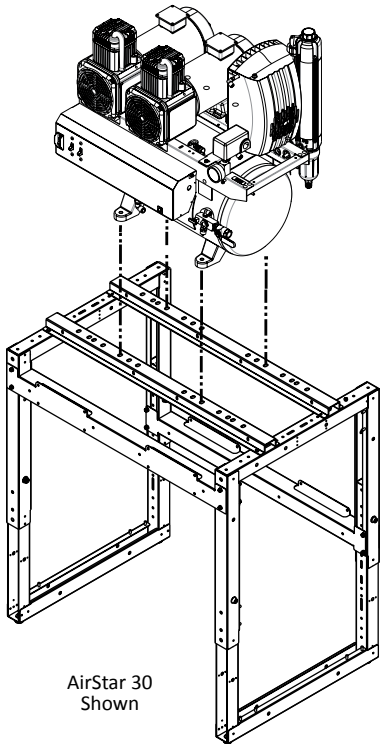
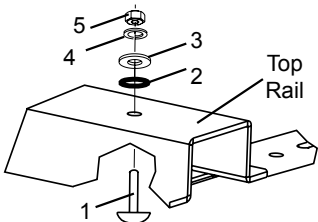
AirStar compressors are mounted on top of the Top Rails of the stack rack at corresponding locations as shown by AirStar Compressor Installation Position Views above. The compressor is installed reusing the attaching hardware used to secure the AirStar to the shipping pallet.

Install the AirStar compressor by performing the following steps.

1. Remove the AirStar from the shipping pallet by removing the hardware securing each foot to the shipping pallet. Save the hardware for reuse.
2. Orient the AirStar to be installed with its front facing forward
3. Refer to Detail A and align the four holes of the Top Rails with the holes of the feet of the AirStar to be installed.
4. Refer to Detail B and install bolt (item 1) from under the top rail and through the foot hole.
5. Secure each foot of the compressor to the rails by installing rubber washer (item 2), flat washer (item 3) split lock washer (item 4) and hex nuts (item 5) to the hex head bolts. Tighten all nuts.

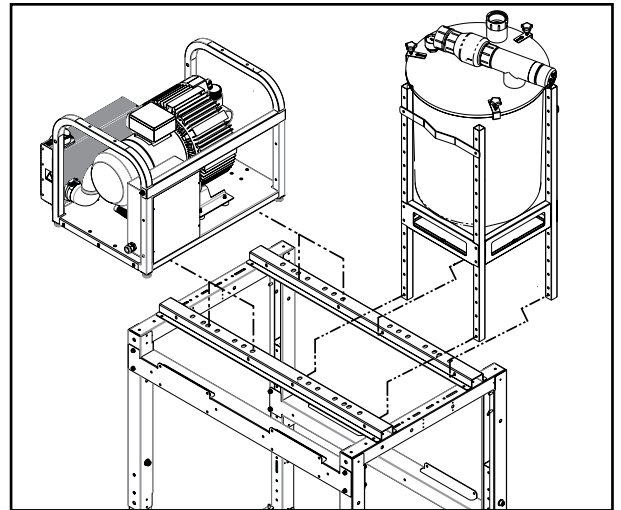
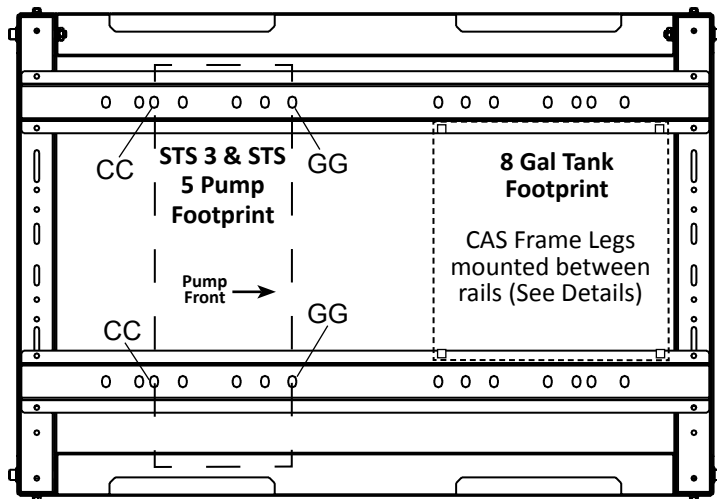
AirStar Installation Hardware			
Item	Description	Part No.	Quantity
1	Bolt	31742	4
2	Rubber Washer	84106	4
3	Flat Washer	30164	4
4	Split Lock Washer	30324	4
5	Hex Nut	30069	4

Re-use Hardware from shipping pallet



**Important:** Make sure that each rail is located as shown. The position of each Top Rail is dependant on the utility system to be installed.

**CAS & STS Installation Procedure.** Refer to the drawings below and install the STS 3 & 5 Pump and CAS Tank units on the properly spaced Top Rails of the stack rack.



**STS 3 and STS 5 Pump and CAS Tank Installation Position Views**

### STS Pump Installation and Attaching Hardware

STS pumps are mounted on top of the Top Rails at corresponding locations shown by Details A & B. The pump frame is secured using the attaching hardware supplied with this Kit, P/N 56615.

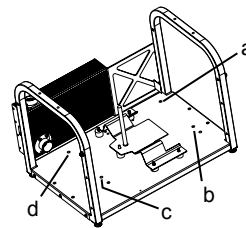
Install either STS pump by performing the following steps.

1. Orient the pump to be installed with its front facing right.
2. Refer to Details A & B and align the rear holes of the pump with the holes (CC & GG) of the rear top rail.
3. Install a hex head bolt (item 1) and flat washer (item 2) into position a and b holes of the pump frame and the rear top rail as shown by Details A & B.
4. Install hex head bolt (item 1) and flat washer (item 2) into position c and d holes of the pump frame.
5. Secure the pump to the rails by installing flat washers (item 2), split lock washers (item 3) and hex nuts (item 4) to the installed hex head bolts. Tighten all nuts.

### STS Pump Installation Hardware

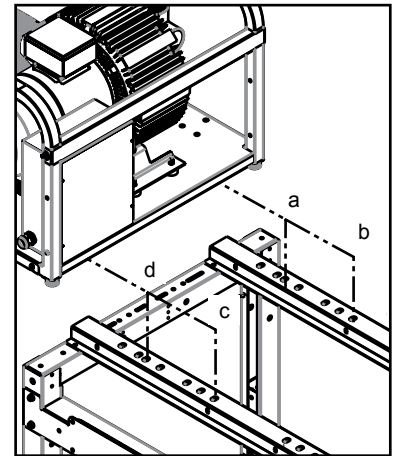
Item	Description	Part No.	Quantity
1	Hex Head Bolt	31453	4
2	Flat Washer	30610	8
3	Split Lock Washer	30222	4
4	Hex Nut	30049	4

Hardware supplied with Kit, P/N 56615



**Detail A**

STS Frame Mating Hole Positions



**Detail B**

Stack Rack Mating Hole Positions

### CAS Tank Installation and Attaching Hardware

As shown by Details A, B & C, the CAS Tank Frame Legs are mounted between the Top Rails and secured from the side of the Top Rails using the attaching hardware supplied with the Drip Shield Kit, P/N 54133, normally used with the CAS tank.

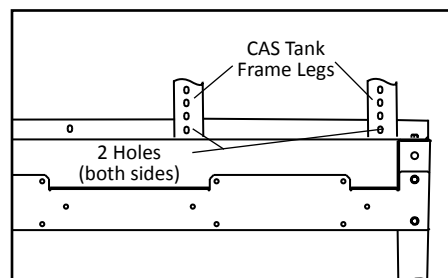
Install the CAS tank by performing the following steps.

1. Align the holes of each CAS Frame leg (set between rails) with the side holes of the of the top rails.
2. Install a hex head bolt (item 1) and flat washer (item 2) into each hole located on the inside of the top rail as shown by Detail C.
3. Secure each CAS Frame leg by installing flat washer (item 2) split lock washers (item 3) and hex nuts (item 4) to the hex head bolts. Tighten all nuts.

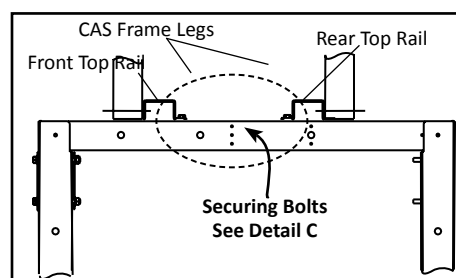
### CAS Tank Installation Hardware

Item	Description	Part No.	Quantity
1	Hex Head Bolt	30813	4
2	Flat Washer	30958	8
3	Split Lock Washer	30920	4
4	Hex Nut	40183	4

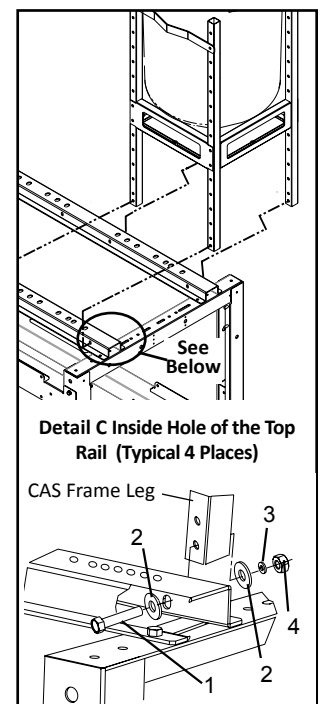
Use Hardware from Drip Shield Kit, P/N 54133



**Detail A Stack Rack Front View**



**Detail B Stack Rack Side View**

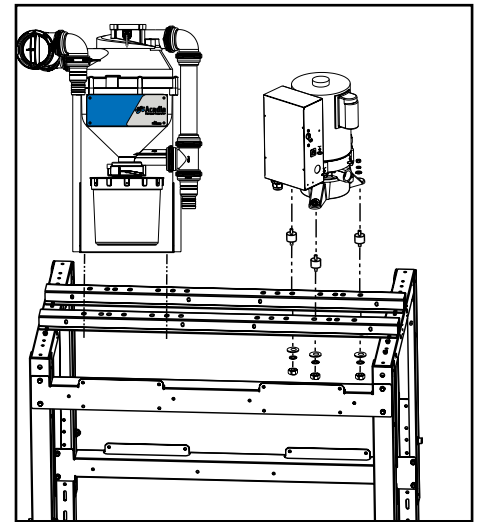
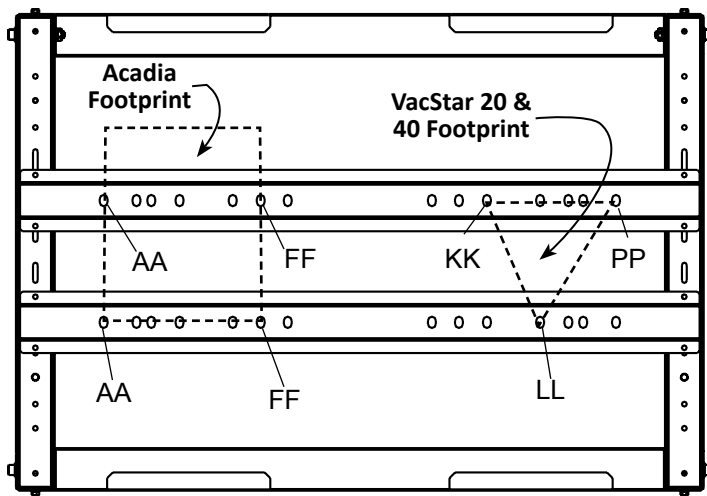


**Detail C Inside Hole of the Top Rail (Typical 4 Places)**



**Important:** Make sure that each rail located as shown. The position of each Top Rail is dependant on the utility system to be installed.

**VacStar 20 & 40 Installation Procedure.** Refer to the drawings below and install the VacStar and Acadia units on the properly spaced Top Rails of the stack rack.



**Important:** VacStar 20/40 Top Shelf Mount Kit (P/N 56645) must be used on all VacStar 20 & 40 Pump Installations.

#### VacStar 20 & 40 Acadia and Installation Position Views

##### VacStar 20 & 40 Installation and Attaching Hardware

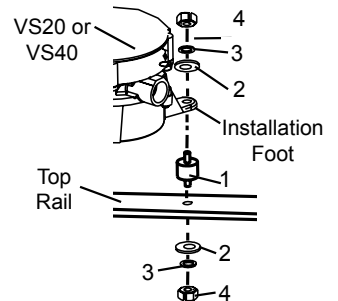
The VacStar 20/40 Top Shelf Mount Kit (P/N 56645), purchased separately, must be used to secure the VacStar pump onto the Top Rails of the stack rack. Install VacStar 20 & 40 units by performing the following steps.

1. Refer to Detail A and install the three vibration mounts (item 1) into the holes (KK, LL & PP) of the Top Rails.
2. Secure the vibration mounts to the Top Rails by installing flat washers (item 2), split lock washers (item 3) and hex nuts (item 4) to each installed mount. Tighten all nuts.
3. Carefully align the holes of the VacStar installation feet with the threaded studs of the vibration mounts and install the VacStar onto the Top Rails making sure that the electrical box is facing the left front as shown by the illustration above.
4. Install a flat washer (item 2), split lock washer (item 3) and hex nut (item 4) to each threaded stud of the vibration mount installed at the VacStar installation feet. Tighten all nuts.

**VacStar 20/40 Top Shelf Mount Kit, P/N56645**

Item	Description	Part No.	Quantity
1	Vibration Mount	55907	3
2	Flat Washer	30958	6
3	Split Lock Washer	30920	6
4	Hex Nut	30049	6

**Important:** The Top Shelf Mount Kit must be used on VS20 and VS40 Installations.

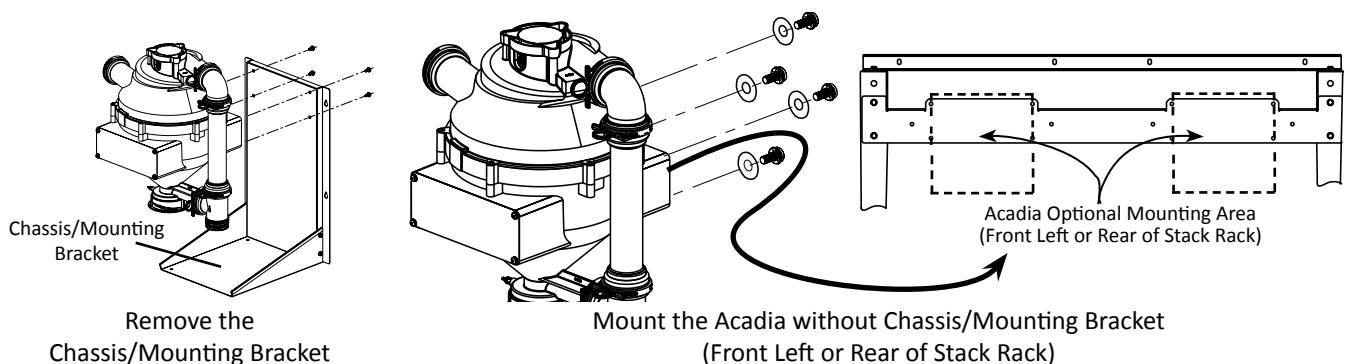


**Detail A Typical Top Shelf Mount Kit Hardware Installation Order**

##### Acadia Amalgam Separator Mounting Options.

The Acadia, when used, can be installed on the Top Rails or hung from the front side (left or right) of the stack rack. When installing the Acadia on the top rails, the unit can be left in its Chassis/Mounting Bracket and simply set on Top Rails or secured with 2 bolts washers and nuts installed into the front or back holes (AA & FF). Make sure to install the hardware from the top down (through the bracket then the rail) when securing to the Top Rails. This eliminates any interference with the filter of the Acadia.

When hanging the Acadia on the front side of the rack, the Chassis/Mounting Bracket must be removed as shown by the drawing below. The Acadia is then installed on the selected front (left or right) area using the same mounting area and hardware (4 screws and flat washers) that secured the unit to the Chassis/Mounting Bracket.

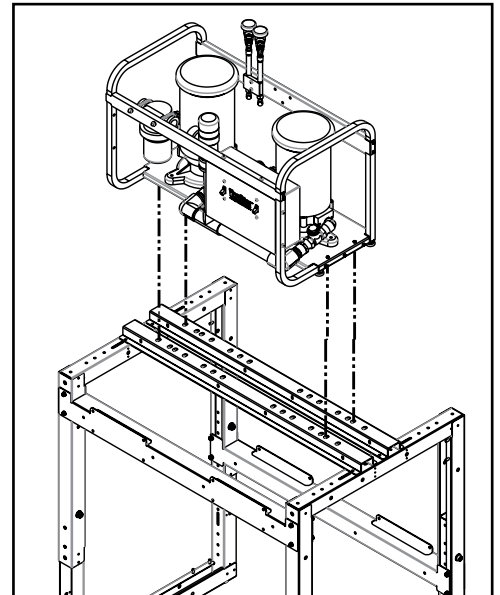
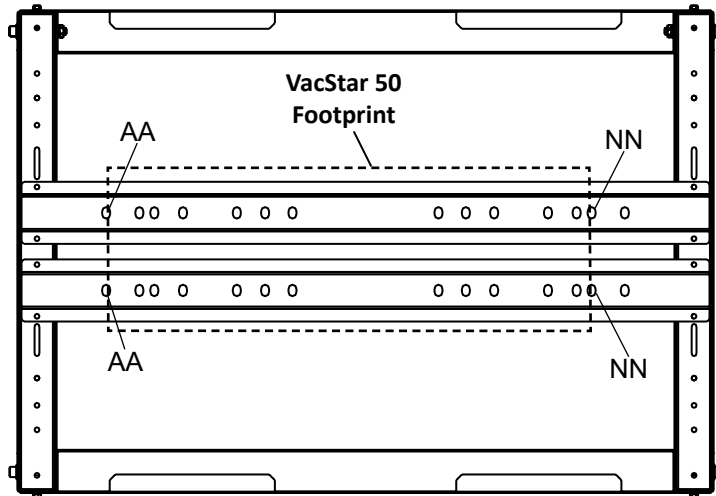


**Acadia Amalgam Separator Mounting Options.**



**Important:** Make sure that each rail located as shown. The position of each Top Rail is dependant on the utility system to be installed.

**VacStar 50 Installation Procedure.** Refer to the drawings below and install the VacStar on the properly spaced Top Rails of the stack rack.



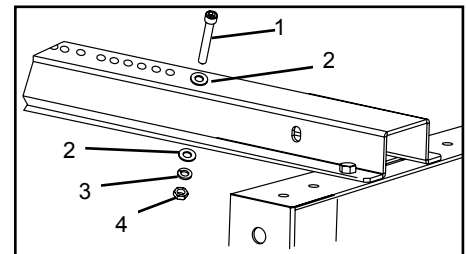
**VacStar 50 Installation Position Views**

#### VacStar 50 Installation and Attaching Hardware

VacStar 50 units are mounted on top of the Top Rails at corresponding locations as shown above. The VacStar frame is secured using the attaching hardware supplied with this Kit, P/N 56615.

Install the VacStar 50 unit by performing the following steps.

1. Orient the pump to be installed with its front facing forward.
2. Refer to the VacStar 50 Installation Position View above and align the rear holes of the VacStar with the holes (AA & NN) of the Top Rails.
3. Install four hex head bolts (item 1) and flat washers (item 2) into the corresponding holes of the VacStar frame and the Top Rail as shown by Details A & B.
4. Refer to Detail A and secure the pump to the rails by installing a flat washer (item 2), split lock washer (item 3) and hex nut (item 4) to each installed hex head bolts. Tighten all nuts.

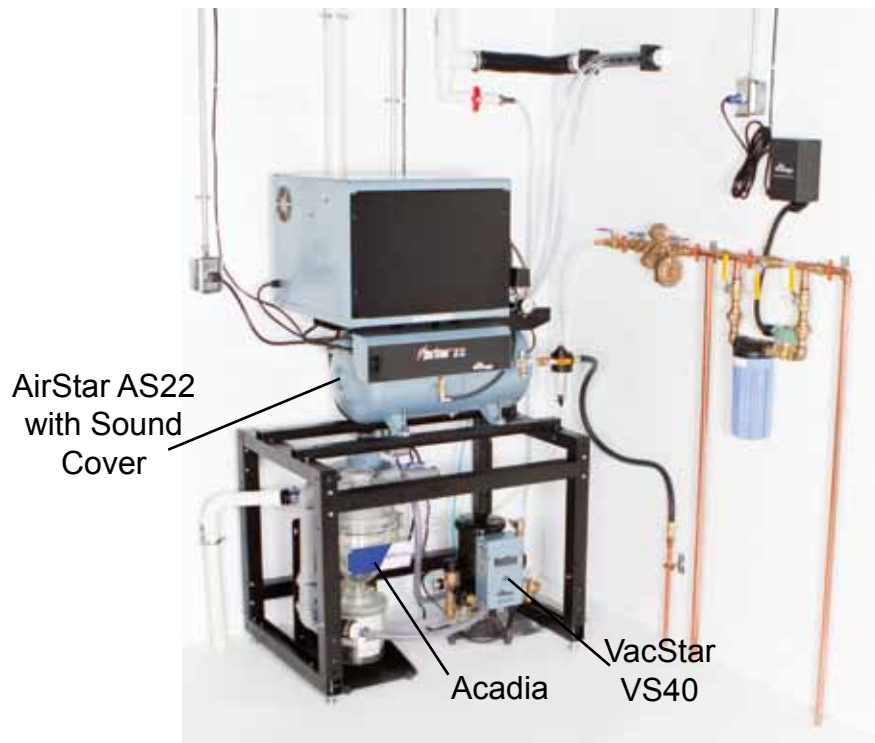


#### Attaching Hardware Installation Order

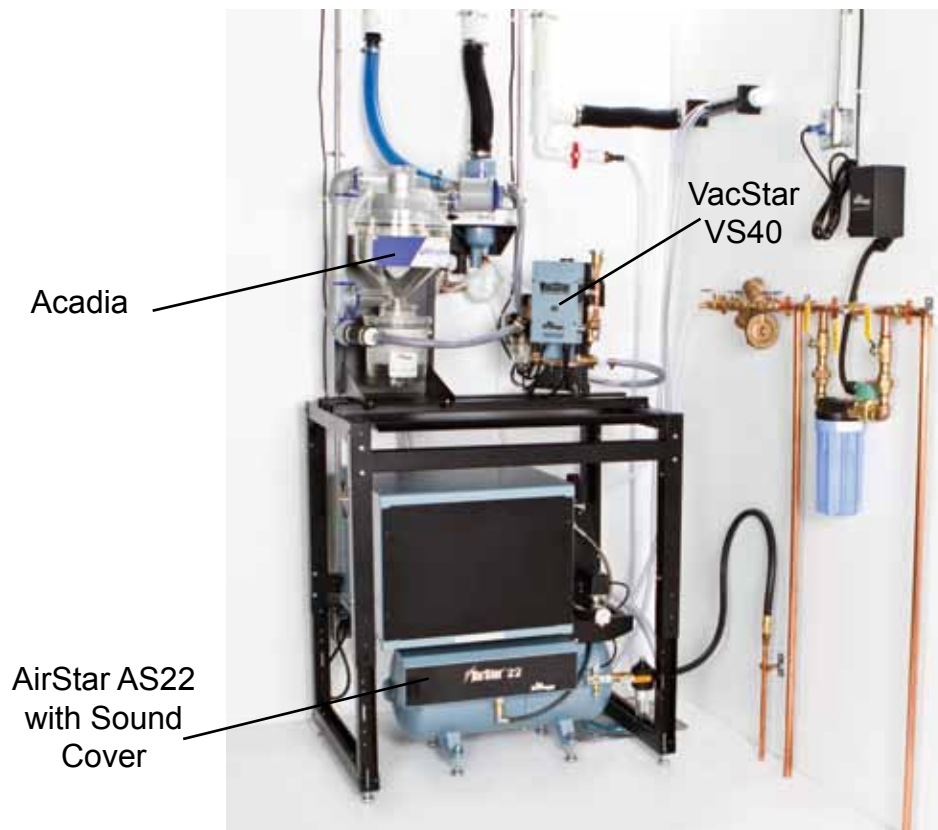
##### VacStar 50 Installation Hardware

Item	Description	Part No.	Quantity
1	Hex Head Bolt	31453	4
2	Flat Washer	30610	8
3	Split Lock Washer	30222	4
4	Hex Nut	30049	4

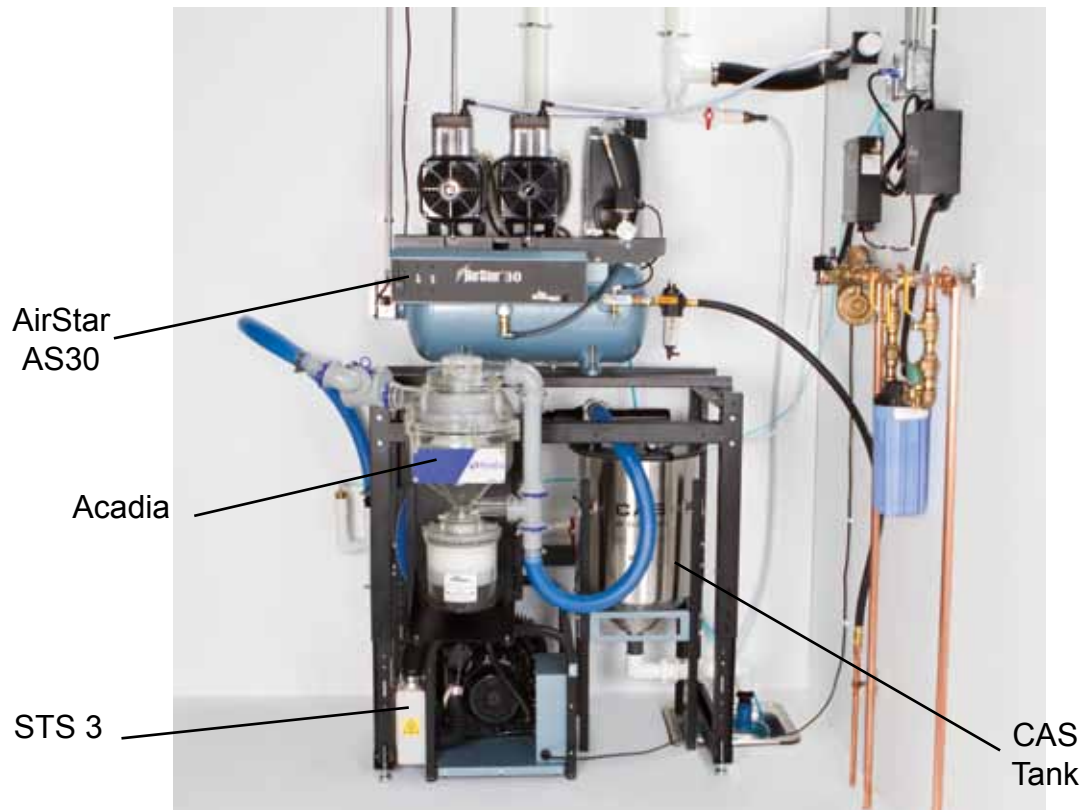
Hardware supplied with Kit, P/N 56615



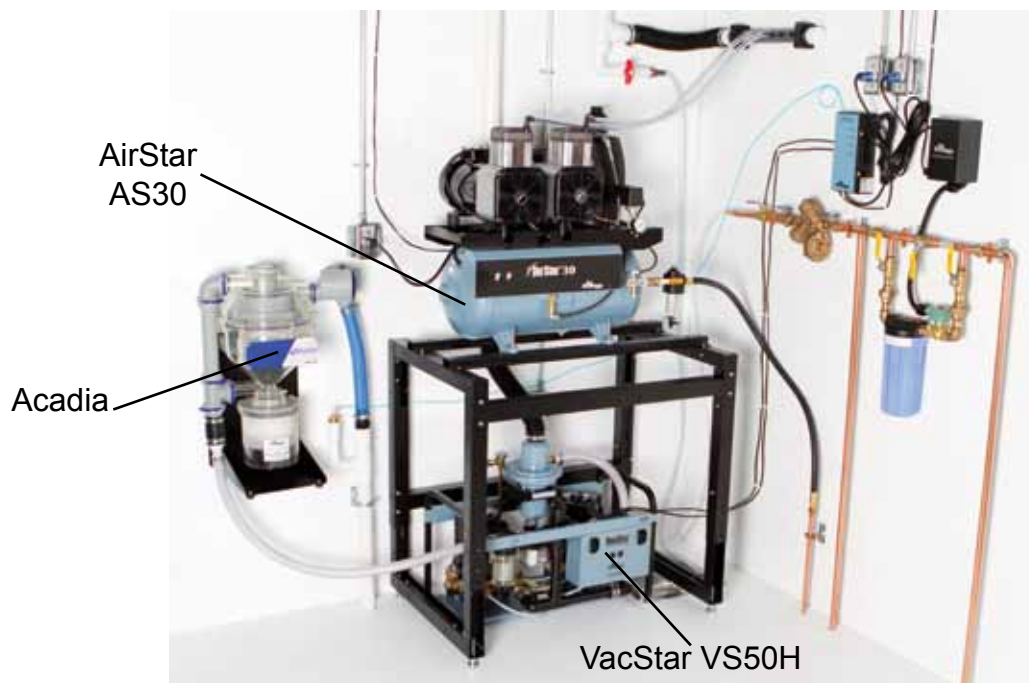
Typical Stack Rack Installation  
(AirStar AS22 mounted on top)



Typical Stack Rack Installation  
(Acadia and VacStar VS40 on top  
AirStar AS22 mounted on bottom)



Typical Stack Rack Installation  
(AirStar AS30 mounted on top  
Acadia and STS3/CAS on bottom)



Typical Stack Rack Installation  
(AirStar AS30 mounted on top VacStar VS50H on bottom  
and an Acadia mounted on wall)



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