



# **NEUTRO-VAC® MD (HOOD SIZES 4" TO 10") WEB CLEANING SYSTEM**

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INSTALLATION AND OPERATING INSTRUCTIONS

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# 1. SAFETY WARNINGS

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**PLEASE READ INSTRUCTIONS COMPLETELY BEFORE STARTING INSTALLATION**

**ALL INSTALLATION AND TROUBLESHOOTING OPERATIONS MUST BE PERFORMED BY QUALIFIED TECHNICAL PERSONNEL**

This instruction manual uses symbols to identify dangerous situations as follows:



**NOTE!** – Statements identified with **NOTE** indicate precautions necessary to avoid potential equipment failure.



**CAUTION** – Statements identified with **CAUTION** indicate potential safety hazards.



**WARNING** – Statements identified with **WARNING** indicate potential serious injury hazards.



**NOTE!** – This equipment must be correctly installed and properly maintained. Adhere to the following notes for safe installation and operation:

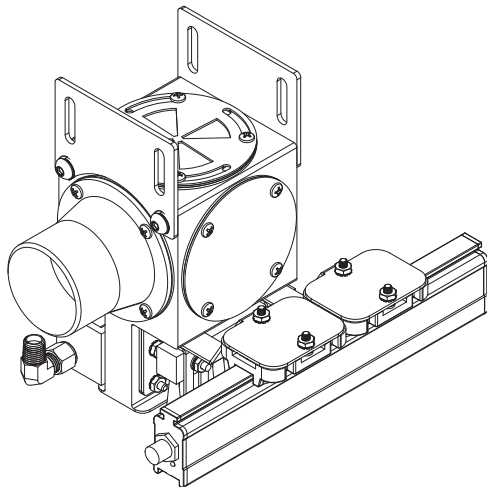
1. Read instruction manual before installing or operating equipment.
2. Only qualified service personnel are to perform installation and repairs.
3. This equipment must be installed and maintained as outlined in this manual. Disconnect and lockout all power before servicing this machine, unless instructions state otherwise. Turn off web drive equipment and remove web, if possible, before performing maintenance.
4. All equipment must be properly grounded, including the machine frame to which the equipment is mounted.
5. Do not pour alcohol or other solvents on static bars or soak static bars in alcohol or other solvents at any time or damage to the static bar may result.
6. To avoid a potential fire hazard caused by sparks in the dust collector, do not mix combustible materials such as buffing lint, paper, wood, dust, aluminum and magnesium with dust generated from grinding ferrous metals.
7. Do not operate system in close proximity to flammable liquids.
8. When the materials being collected by the system create the risk of fire or explosion, the appropriate collection system design must be used to comply with all material (NFPA) and local fire codes. An individual familiar with all the appropriate fire hazards, equipment, and codes should be consulted to ensure proper installation and compliance of the collection system.
9. Consult and comply with all National and Local Fire Codes and/or other appropriate codes when determining the location and operation of dust collection equipment.

## 2. DESCRIPTION

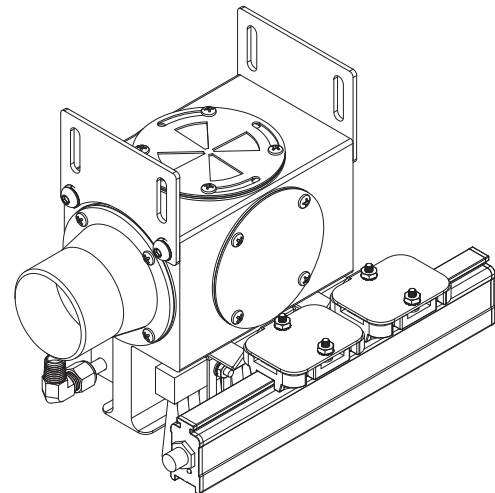
Simco-Ion's Neutro-Vac is a web cleaning and dust collection system that incorporates active static elimination, aggressive particle agitation and vacuum removal of debris to provide efficient cleaning of webs, sheets or parts.

Neutro-Vac MD (Miniature Draft) hoods have a rugged, stainless steel welded air-tight construction that feature adaptability for installation. The vacuum outlets may be configured to accommodate obstacles, such as machine frames, encountered during installation. The hood also feature integrated flow control in the form of air bleed assemblies suitable for use with industrial workshop vacuums. For installation convenience, vacuum requirement and connection is matched with typical industrial workshop vacuums rated at 100 CFM and using standard 2-1/2" vacuum cleaner hose. The hoods come configured with a static bar, brush, and air bar. The static bar eliminates static on the cleaning target (web, etc.), while the brush and air bar work to remove debris. The vacuum hood intake slot then removes and collects the debris. For cleaning targets that are sensitive to contact, the brush may be removed. The static bar, brush, and air bar may also be reoriented on the hood for installation flexibility.

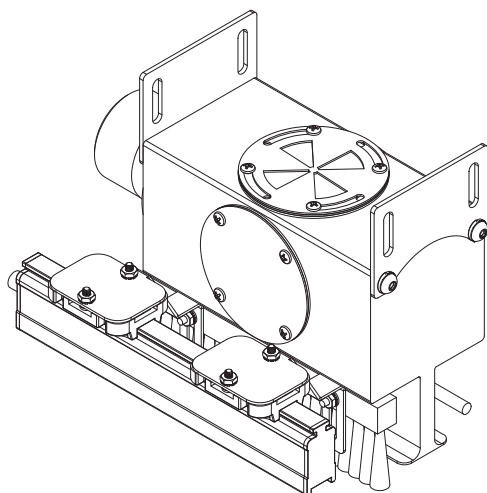
Neutro-Vac MD hoods use the IQ Easy line of static bars. These static bars may be powered by the Simco-Ion IQ Power Control Station which provides power and real-time monitoring of the static elimination function. These static bars may also be powered directly by an AC adapter, providing stand-alone operation. In this mode two LED indicators on the end of the IQ Easy static bar indicate operating status.



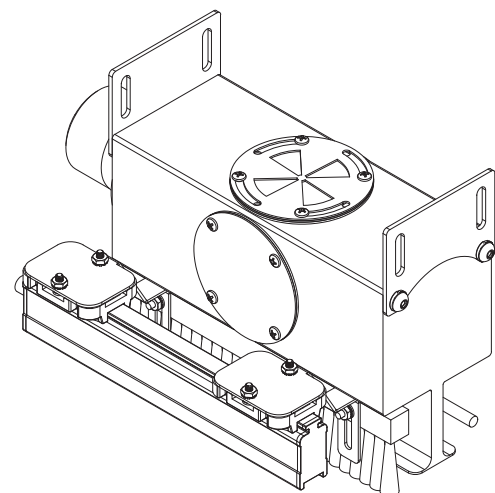
Neutro-Vac 4 MD (Miniature Draft)



Neutro-Vac 6 MD (Miniature Draft)





Neutro-Vac 8 MD (Miniature Draft)



Neutro-Vac 10 MD (Miniature Draft)

### 3. SPECIFICATIONS

<b>Vacuum System</b>	Hood Vacuum	1.2 inches of water
	Hood Flow	100 CFM
<b>Compressed Air</b>	Pressure	5 psi minimum, 20 psi maximum
	Flow	0.25 SCFM per inch of intake slot at 5 psi 0.50 SCFM per inch of intake slot at 10 psi 0.75 SCFM per inch of intake slot at 15 psi
 <b>NOTE!</b> – Compressed air must be clean and dry. Hose and fittings must be of adequate size to provide required airflow.		
<b>Static Bar</b>	Voltage	24 VDC
	Current	0.75A
 <b>NOTE!</b> – Static bar power provided by either IQ Power Control Station or AC adapter. Connection is by standard M12 electrical connector.		
<b>Typical Operating Distance</b>	1/4" to 1/2" (6-12 mm)	
<b>See Dimensional Drawing for additional specifications</b>	4 / 6 / 8 / 10 MD	5001799

## 4. INSTALLATION

### Unpacking

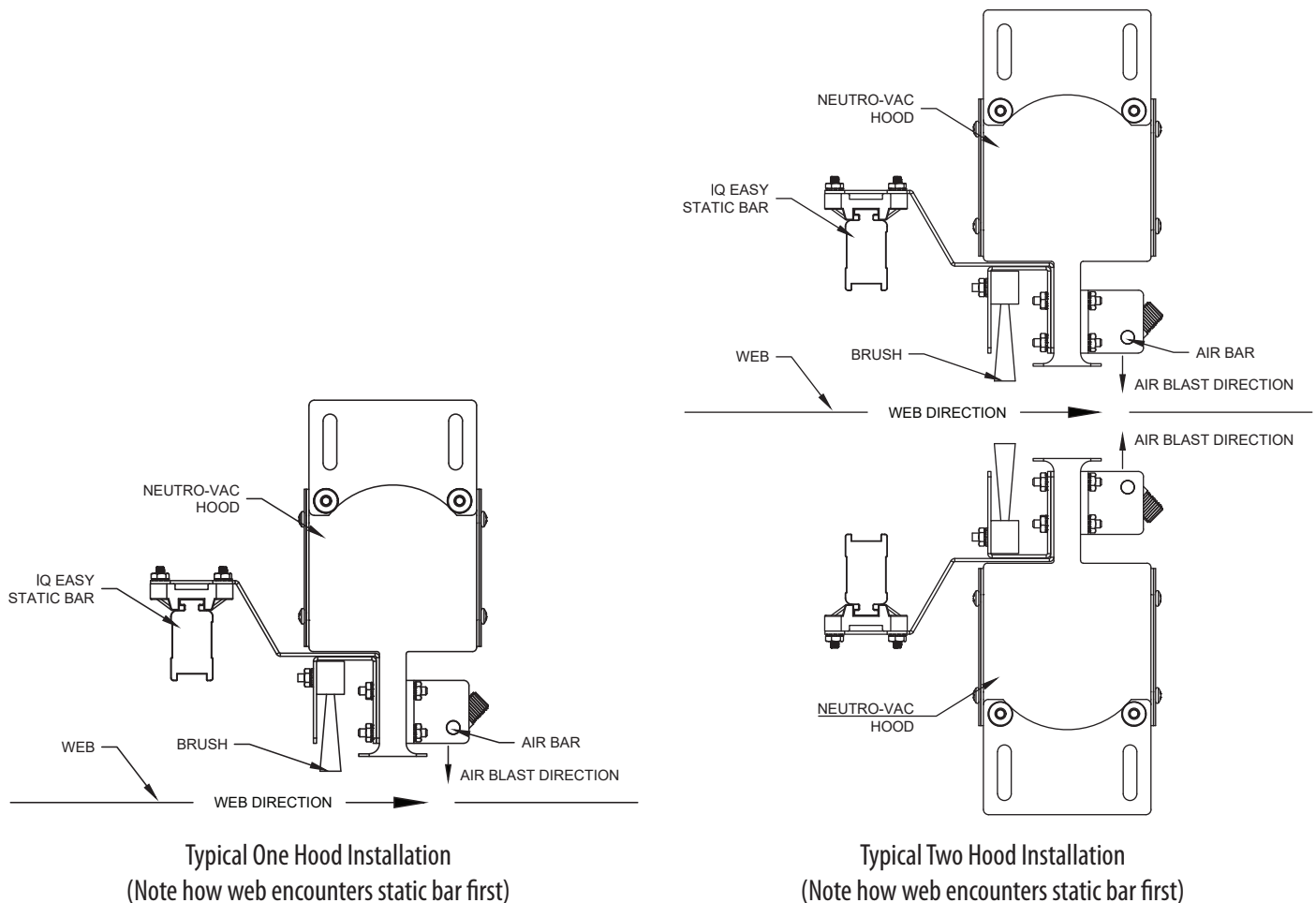
Carefully remove all equipment from its carton and inspect the contents:

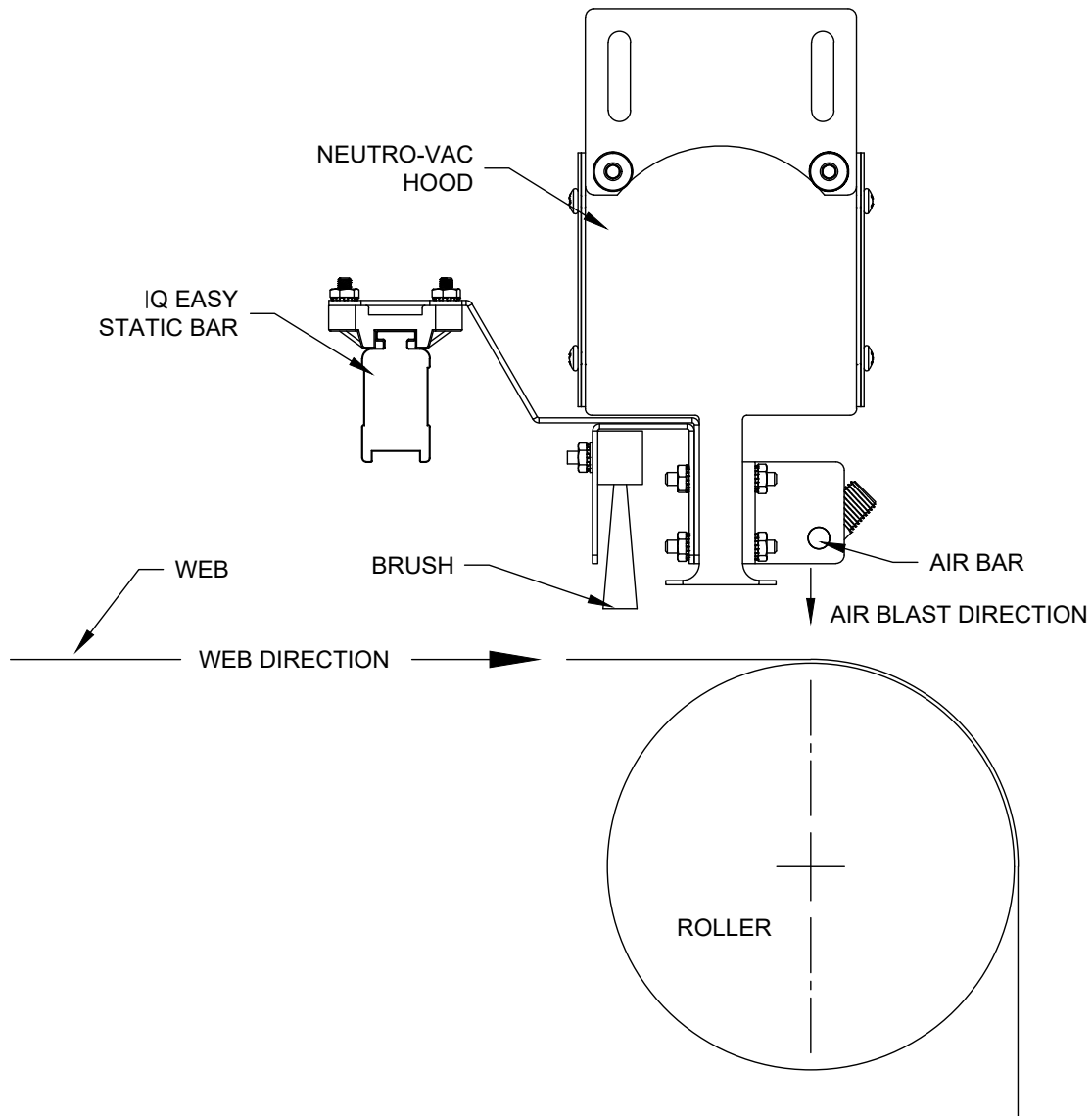
- Check that the details on the packing slip correspond to the details of the product received.
- Check that the equipment is free from damage.
- If any damage has occurred during shipment, notify the local carrier at once. A report should also be forwarded to Simco-Ion, 2257 North Penn Road, Hatfield, PA 19440. See Section 9 of this manual for Return Shipment information.

### Hood Location

Locate hood(s) using the following guidelines:

- Locate near non-crowned (constant diameter) roller
- Web must maintain a fixed location with respect to machine frame (i.e. not near a take-up roller or a roller that swings)
- Web must maintain constant tension where the hood assembly will be installed
- Do not locate static bar(s) on the hood directly over a roller
- Web must be in free air near static bar for the static eliminator to work





Typical Hood Over Roller Installation  
 (Note how web encounters static bar first and static bar is NOT over roller)



**NOTE!** – It is critical that the direction of the surface to be cleaned encounter the static bar first, then the brush (if used), then the vacuum intake slot, and finally the blast from the air bar. This will ensure maximum efficiency and capture of debris.

Contact a Simco-Ion customer service representative for assistance if you have any questions on the proper location of the Neutro-Vac hood assembly.

See above figures to determine how to locate the hood so the web passes in the correct direction. If your hood is not configured for proper installation, switch the accessories in the following steps:

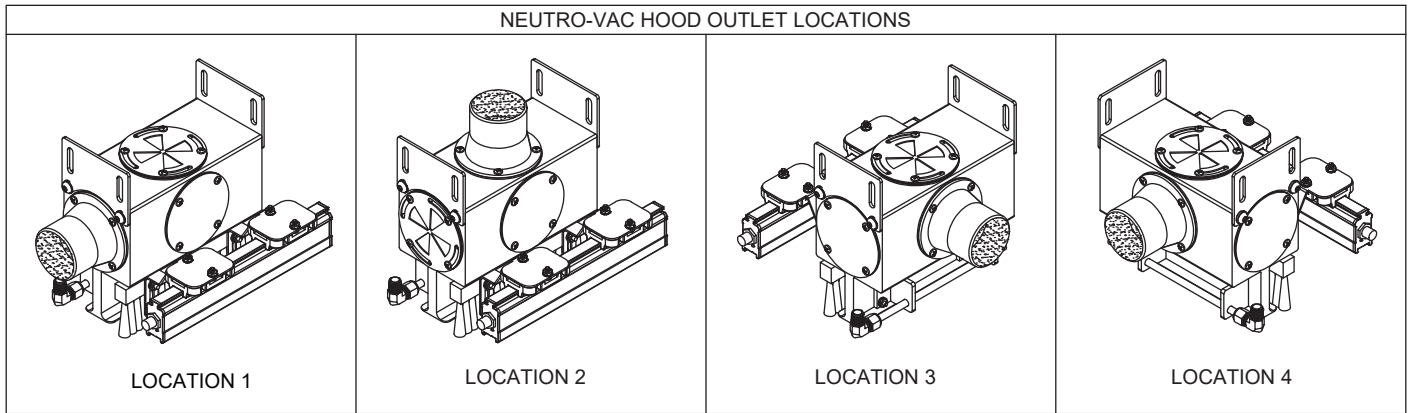
1. Remove nuts securing mounting brackets to studs on hood intake slot.
2. Reverse order of accessories.
3. Replace nuts on studs to secure accessories.



**NOTE!** – If air bar bracket set screws were loosened or air bar removed from brackets, ensure air jet holes providing air blast are pointing directly (perpendicular) to the web before securing air bar in place.

## Vacuum Outlet Repositioning

If installation of the flexible vacuum hose is impeded by machine frame or other process equipment, the vacuum outlet may be repositioned on the hood.



Neutro-Vac Hood Outlet Locations

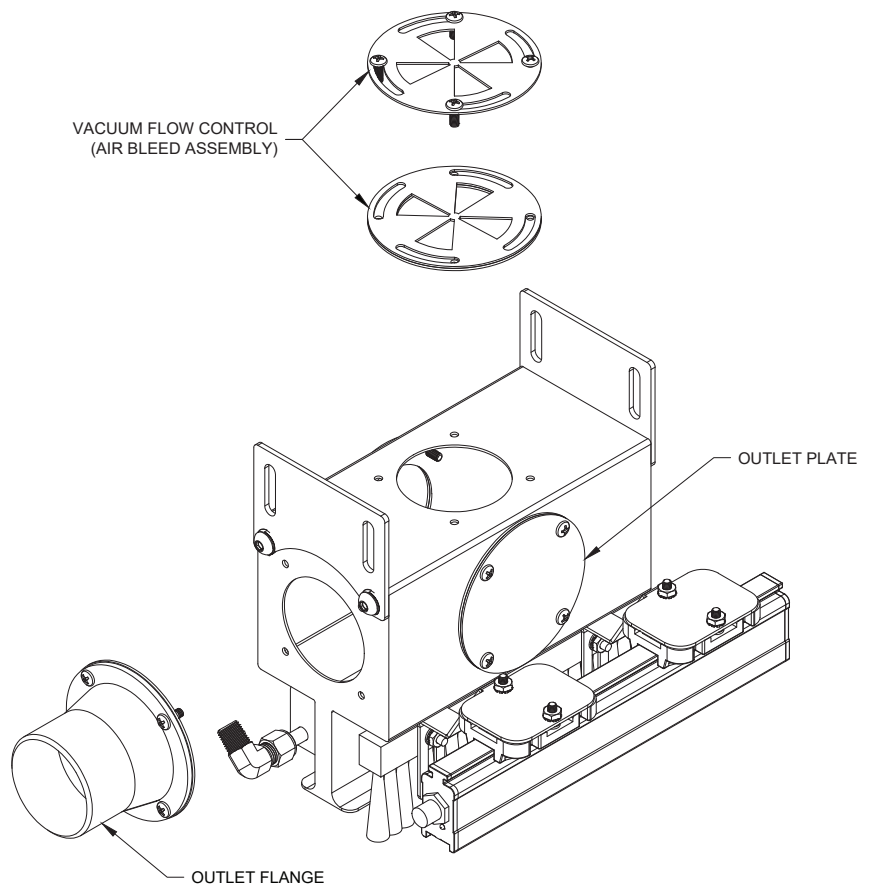
To reposition the outlet, first determine the desired location for the outlet flange. In the example below, the outlet flange has been removed from Location 1 and the vacuum flow control removed from Location 2.

1. Loosen the (4) screws securing the outlet flange to the hood and remove (including the gasket) from the hood. Keep the outlet flange and gasket together during handling.
2. Loosen the (4) screws securing the vacuum flow control (or outlet plate) to the hood and remove the assembly (including the gasket) from the hood.
3. Reinstall the outlet flange and gasket where desired. Tighten screws evenly to remount the outlet flange.



**NOTE!** – **DO NOT** over-tighten screws to prevent stripping.

4. Repeat the process for the vacuum flow control (or outlet plate).



## Intake Shutter Installation

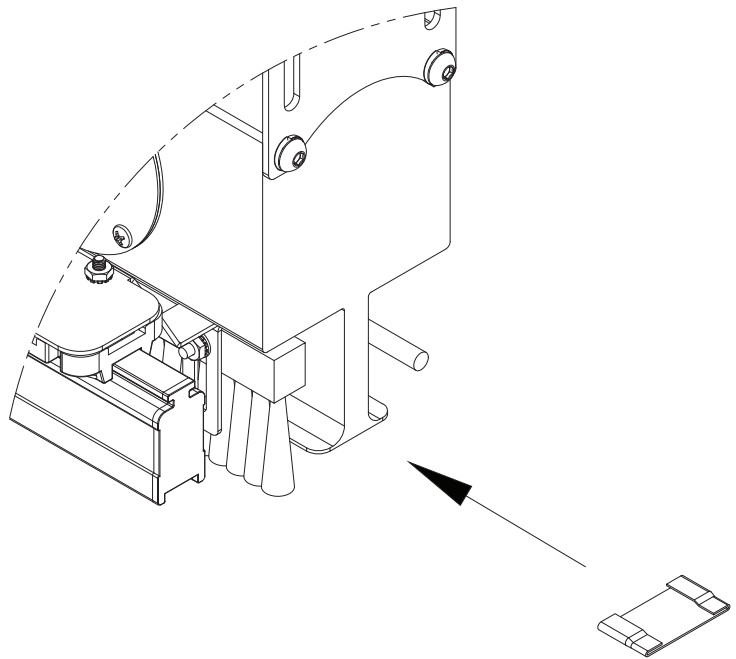
If the web is narrower than the intake slot, minor adjustment of the intake slot width can be made using the included intake shutters. The intake shutters may be trimmed to fit the applications. To install, select the desired shutter and press-fit onto the flange of the intake slot.

## Hood Mounting

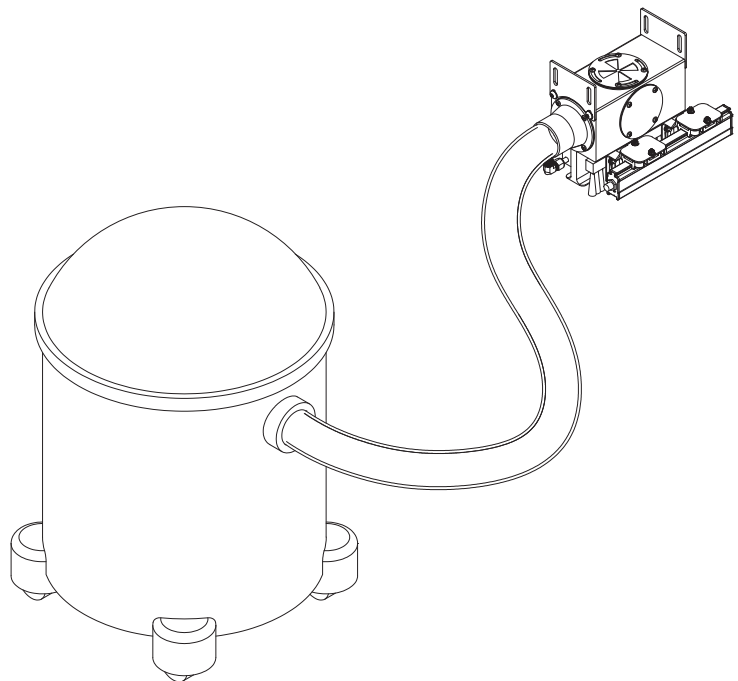
To mount the hood use brackets or build a sturdy sub-frame that will center hood over the web and allow adjustment of intake slot from 0" (touching web) to 1" from web. Typical operating distance between the slot opening and web is 1/4" to 1/2". To accomplish this, hoods are supplied with brackets having slotted adjustment holes. The Dimensional Drawing for your hood will provide you with the dimensions needed for mounting and approximate hood weight. The mounting frame must provide an electrical ground, or a separate ground connection must be connected to ensure proper operation of the system.

## Vacuum System (Ductwork)

The MD series of Neutro-Vac hoods is designed to be compatible with a typical 100 CFM industrial workshop vacuum. Connection may be made using the standard 2-1/2" vacuum hose typically included with the vacuum.



Intake Shutter Installation



Typical Vacuum Connection

If a dust collection system is used with the MD Neutro-Vac hood, it must be capable of providing a vacuum of 1.2” of water and a flow of 100 CFM at the hood. Connection may be made using 2-1/2” flex hose secured with a hose clamp. The following are general guidelines for installation:

- **Keep the length of flexible hose connecting the hood to the system short.** Flexible hose, particularly small diameter, is lossy with regard to vacuum under flow. Secure the flexible hose with hose clamps to ensure sealing and prevent accidental disconnection.
- **Use smooth walled pipe and fittings for the ductwork system.** Smooth walled ducts and fittings minimize vacuum loss under flow; however the small diameter is lossy with regard to vacuum under flow. Keep length of duct as short as practical to point where duct merges into main trunk.

## **Dust Collector**

Where a dust collector (instead of an industrial workshop vacuum) is used, dust collectors are sized by capacity, both in CFM (cubic feet per minute) and in static pressure (inches of water). To determine the CFM of a Neutro-Vac MD system all that is needed is the quantity of outlets (hoods).

Flow has been standardized based on the size of the outlet:

2-1/2” diameter outlet = 100 CFM

Total flow for each MD hood is 100 CFM.

Vacuum level required at each hood is 1.2 inches of water.

## **IQ Easy Static Bar**

The IQ Easy static bar is powered through the sealed M12 connector on the end of the bar and can be powered by various sources.

### **Control Station**

The IQ Power Control Station provides the ultimate in static bar functionality. The Control Station supplies power, provides communication & control and even allows for interfacing with other Simco-Ion static control devices. Cables for connection are available in a variety of lengths and connector styles.

### **AC Adapter**

AC adapters are available to power the IQ Easy static bar. They come with a 15 foot (5 meter) cable with either straight or right angle connection. Used with an AC adapter, the IQ Easy static bar provides “standalone” operation.

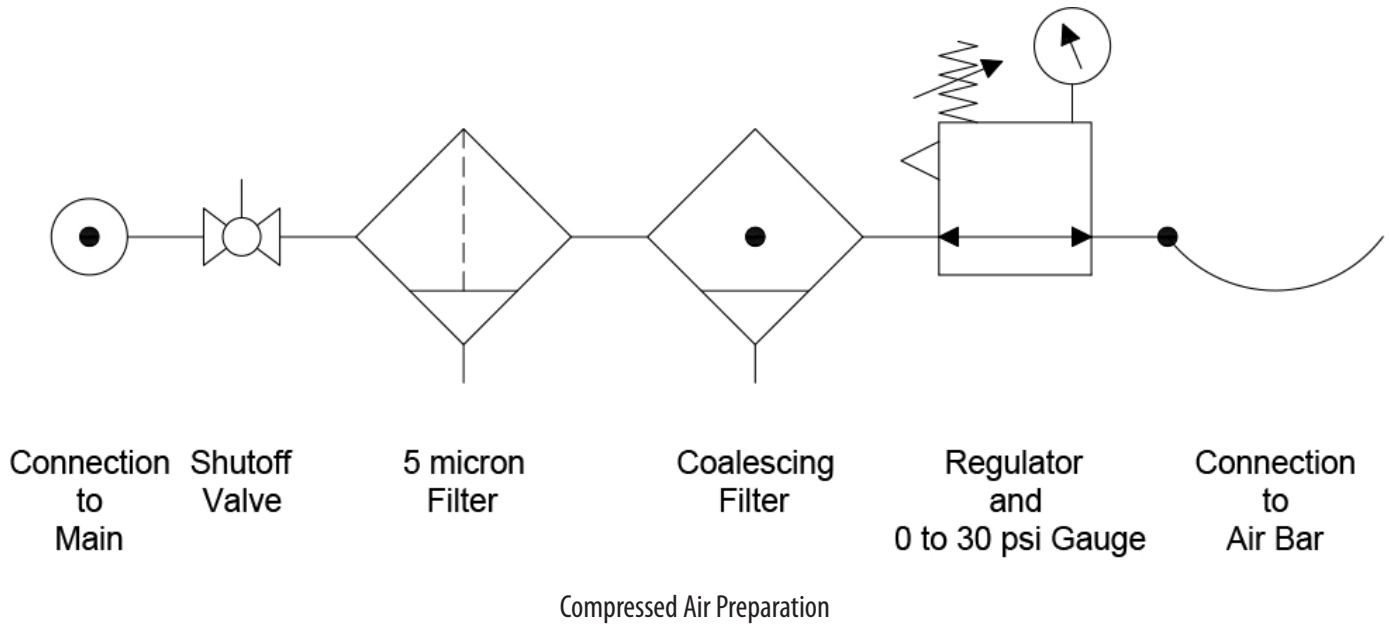
### **User Supplied Power**

The IQ Easy static bar may be powered with 24 VDC (0.75 mA) provided by the user. Several cables are available for connection from Simco-Ion.

For further details, see the [IQ Easy Static Bar instruction manual, 5201223](#).

## Air Bar

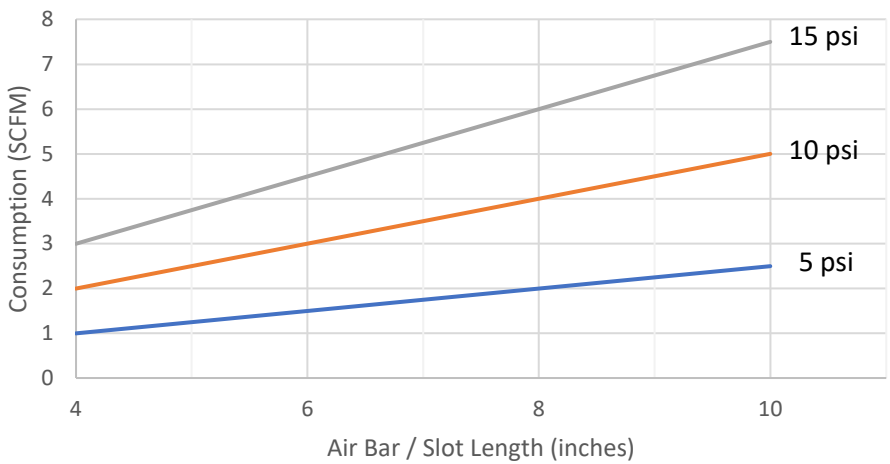
The air bar must be supplied with clean, dry compressed air. The compressed air pressure must be regulated in the range of 5 to 20 psi. The recommended compressed air preparation equipment is shown below. Attention should be paid to capacity (SCFM) to ensure adequate flow for the air bar.



The recommended tubing to hook up the air bars is polyethylene, polypropylene or nylon with a minimum of 100 psi working pressure. This tubing is recommended to provide a clean and safe connection between the air preparation components and Neutro-Vac hood. Use Table below to determine what size tubing and fittings

Hood Type	MD (4-10")
Pipe Fitting Size	1/4 NPT
Minimum Tubing I.D.	1/4" (8 mm)

Compressed Air Consumption



**NOTE!** – If the tubing or fitting is smaller than specified, airflow will be restricted, and performance will be impaired.

## Hood Adjustment

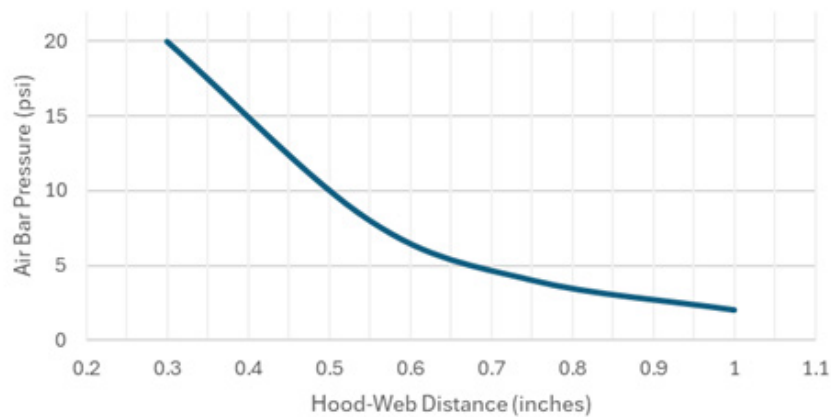
Neutro-Vac hoods can be run with or without the included brush. Operating with the brush provides more aggressive cleaning, but the material being cleaned must tolerate contact. Operating without the brush allows cleaning of sensitive materials that cannot tolerate contact.

### Contact Operation (cleaning with the brush)

Hood(s) should be set with intake slot 1/4" (6mm) from web. Adjust hood height using slotted holes in mounting brackets. The brush is mounted in a channel that may be moved up and down after loosening its mounting nuts. Adjust the brush so it makes very light contact with the web. Re-tighten mounting nuts. At this distance, the air bar pressure can be set to a maximum of 20 psi for the most aggressive cleaning.

### Non-Contact Operation (cleaning without the brush)

Hood(s) should be set with intake slot 1/2" (12 mm) from web. Adjust hood height using slotted holes in mounting brackets. At this distance, air bar pressure should be set to 5 psi. If more aggressive cleaning is desired and web tension allows, set intake slot 1/4" (6 mm) from web and increase air bar pressure to 10 psi. It may be necessary to increase hood-web distance or adjust the flow regulating damper for proper operation. The table below shows the maximum air bar pressure for different hood-web distances when operating in non-contact operation. Exceeding the recommended maximum air bar pressure may result in debris dispersing into the work area.

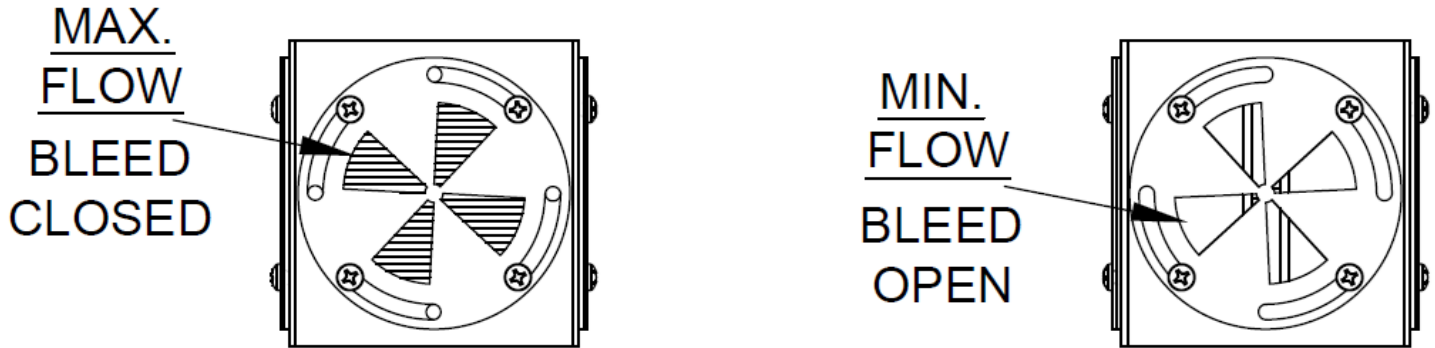


Recommended Maximum Air Bar Pressure

## 5. OPERATION

Once a Neutro-Vac system has been set up, operation consists of activating the dust collector, airflow to the air bar and turning on the static bar.

The vacuum flow through the intake slot may be adjusted using the integrated vacuum flow control (air bleed assembly).



Flow Control

The flow control consists of two plates that may be aligned to control the flow of bleed air into the hood plenum. Bleed closed = maximum vacuum at the hood intake slot. Bleed open = minimum vacuum at the hood intake slot. This type of vacuum control is required to work with typical industrial workshop vacuums.

To adjust the flow control; loosen the four (4) screws, rotate the slotted plates until the desired vacuum level at the hood intake slot is achieved, and tighten the screws.



**NOTE!** – **DO NOT** over-tighten screws to prevent stripping.

During operation, the function of the dust collector, condition of the compressed air filters and status of the static eliminating bar should be regularly checked to ensure satisfactory web cleaning.

## 6. MAINTENANCE

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### Neutro-Vac Hood Assembly



**WARNING** – Disconnect and lock out power to the Neutro-Vac Web Cleaning System before performing all maintenance procedures unless otherwise instructed. Turn off web drive equipment and remove web (if possible) before performing maintenance

#### Weekly

- Examine intake slot of Neutro-Vac hood for even in-draft of air.
- Remove any obstructions in intake slot.



**NOTE!** – At regular intervals inside the intake slot there are small spacers welded in place. These spacers are located between the accessory mounting points. They maintain the intake slot spacing. Do not remove or damage the spacers.

- Examine air bar for even flow. Check regulator for proper pressure. Inspect compressed air filtration.
- Examine brush for proper condition and contact with web (if equipped). Adjust brush as necessary.
- Examine hardware for security, including screws securing flow control air bleed assembly.

#### Monthly

- Wipe exposed surfaces.
- Remove debris from non-exposed surfaces using compressed air.
- Perform static bar cleaning procedure. Clean the emitter points and the static neutralizing bar with a stiff bristle, non-metallic brush. To remove heavy soil, clean the static neutralizing bar using isopropyl alcohol. Be sure to allow the static bar to dry completely before applying power.



**CAUTION** – The emitters are sharp and can cause physical injury.

For further details on [IQ Easy static bar maintenance, see instruction manual, 5201223](#).

### Accessory Mounting

If it becomes necessary to remove the static bar, air bar, or brush for service, be sure to replace it in the correct location relative to the web.

1. IQ Easy Static Bar must be mounted with its points facing the web and centered between mounting brackets. Secure the static bar with set screws in the mounting brackets.
2. When replacing the air bar, the air jet holes must be pointed directly at the web (perpendicular to its surface). Secure the air bar with set screws in mounting brackets.

### Dust Collector Maintenance

Dust collectors must be serviced at regular intervals to ensure satisfactory Neutro-Vac operation. The interval will be determined by the dust loading of the items to be cleaned. For further details regarding the dust collector, see dust collector instruction manual.

## 7. TROUBLESHOOTING



**NOTE!** – Only qualified service personnel are to perform troubleshooting tasks.

PROBLEM	CAUSE	SOLUTION
Insufficient vacuum	Clogged intake	Remove any obstructions in intake slot (see Maintenance section).
	Incorrect setting of flow control on hood	Adjust and lock flow control as per Operation, above.
	Clogged ducting / damaged ducting	Inspect ducting and remove blockage / repair ducting.
	Clogged filter in dust collector	Clean dust collector air filter as per manufacturer's recommendation.
Air bar not providing blow-off	Compressed air filters clogged	Service filters used in compressed air preparation.
	Incorrect air pressure at air bar	Check and set pressure regulator used in compressed air preparation.
Air bar providing uneven blow-off	Clogged air jets	Remove air bar and carefully clear air jets using a fine drill (#70 / Ø.028" / Ø.70 mm). Clean air bar, tubing and compressed air filters before resuming operation.
Brush problems	Brush out of adjustment	Adjust brush in slotted mounting brackets.
	Brush worn out	Replace brush.
Static bar not eliminating static	Static bar needs cleaning	See "Perform static bar cleaning procedure." in Maintenance section, above.
	Static bar malfunction	See Troubleshooting section in <a href="#">IQ Easy Static Bar instruction manual, 5201223</a> .

## 8. PARTS AND ACCESSORIES

Part Description	Part Number
Intake Shutter Kit (1 piece each, 1", 2", 3")	5052143
Neutro-Vac Brush, .010 Diameter Bristles	4672272
Static Bar Cleaning Brush	4670204
M12 Cables for IQ Easy Static Bar (straight connector) to Control Station (straight connector) 5 meter [16.4 foot] Straight / Straight M12 Connector 10 meter [32.8 foot] Straight / Straight M12 Connector 20 meter [65.6 foot] Straight / Straight M12 Connector 30 meter [98.4 foot] Straight / Straight M12 Connector	5051791 5051792 5051793 5051794
M12 Cables for IQ Easy Static Bar (right angle connector) to Control Station (straight connector) 5 meter [16.4 foot] Straight / Right Angle M12 Connector 10 meter [32.8 foot] Straight / Right Angle M12 Connector 20 meter [65.6 foot] Straight / Right Angle M12 Connector 30 meter [98.4 foot] Straight / Right Angle M12 Connector	5051796 5051797 5051798 5051799
AC Adapter for IQ Easy Static Bar in Standalone Mode, does not provide output. 5 meter (16.4 foot) cable w/ straight connector for bar, 120 VAC 5 meter (16.4 foot) cable w/ straight connector for bar, 230 VAC 5 meter (16.4 foot) cable w/right angle connector for bar, 120 VAC 5 meter (16.4 foot) cable w/right angle connector for bar, 230 VAC	5051608 5051609 5051610 5051611
M12 Cables with flying leads for user supplied power to IQ Easy Static Bar with straight connector at bar end. 5 meter (16.4 foot) 10 meter (32.8 foot)	5051606 5051737
M12 Cable with flying leads for user supplied power to IQ Easy Static Bar with right angle connector at bar end. 5 meter (16.4 foot)	5051607

## 9. WARRANTY AND SERVICE

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This product has been carefully tested at the factory and is warranted to be free from any defects in materials or workmanship. Simco Ion will, under this warranty, repair or replace any equipment which proves, upon our examination, to have become defective within one year from the date of purchase.

The equipment being returned under warranty should be shipped by the purchaser to Simco-Ion, 2257 North Penn Road, Hatfield, PA 19440, transportation prepaid and insured for its replacement cost. Prior to returning any goods for any reason, contact Simco-Ion Customer Service at 215-822-6401 for a Return Authorization Number (RMA). This number must accompany all returned items.

This warranty does not apply when the equipment has been tampered with, misused, improperly installed, altered, has received damage through abuse, carelessness, accident, connection to improper line voltage, or has been serviced by anyone other than an authorized factory representative.

The warranty does not apply when Simco-Ion parts and equipment have been energized by other than the appropriate Simco-Ion power supply or generator, or when a Simco-Ion power supply or generator has been used to energize other than Simco-Ion parts and equipment. Simco-Ion makes no warranty, expressed or implied, nor accepts any obligation, liabilities, or responsibility in connection with the use of this product other than the repair or replacement of parts stated herein.

Information in this publication supersedes that in all previous published material. Specifications are subject to change without notice.

**Simco-Ion**

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