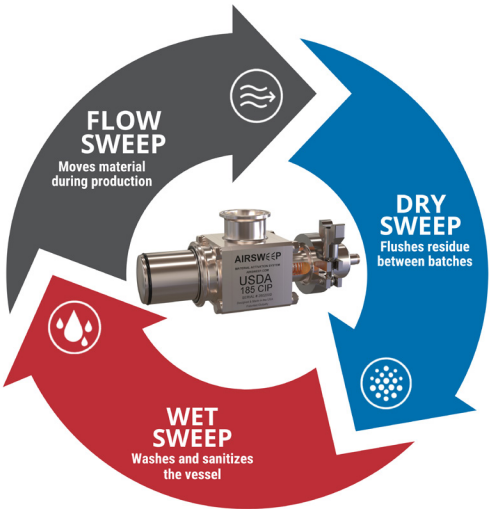
AIRSWEEP® CIP
FLOW, FLUSH AND CLEAN WITH ONE DEVICE

MODEL USDA-185-CIP

FIRST FLOW AID WITH BUILT-IN CIP (Clean-in-Place) FUNCTIONALITY

Combines material activation, dry cleaning, and wet cleaning in one sanitary device



Traditional flow aids only move material; standard CIP devices only clean. AirSweep can switch between three operating modes with no interruption or intervention.

- **Flow Sweep:** Pressurized air or gas prevents bridging, ratholing, and material buildup during production.
- **Dry Sweep:** High-pressure pulses remove residual material between batches.
- **Wet Sweep:** High-pressure liquid pulses scour, soak, and sanitize the vessel walls.
- **Dry Pulse (optional):** Heated air dries the vessel after cleaning.

PRODUCT HIGHLIGHTS

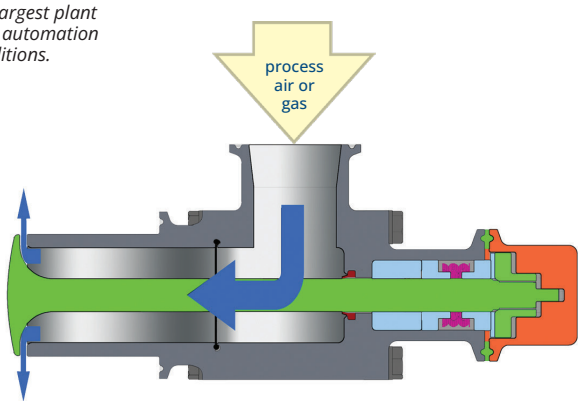
- Designed and fabricated according to global sanitary design principles
- Up to 83% faster than CIP spray balls†
- Non-invasive, reducing risk of bacterial contamination
- Uses less water and cleaning chemicals
- Quick and easy removal for cleaning with simple hand tools
- All surfaces resistant to corrosive products and cleaning/sanitizing chemicals
- Manufactured from high-grade solid stock 316L Stainless Steel for long service life (material certificates available upon request)
- Products serialized for traceability

†Based on an independent trial with one of the world's largest plant engineering OEMs for bulk material, powder, and liquid automation systems. Results may vary depending on operating conditions.

Model	Performance, per unit*	
USDA-185-CIP	Material Activation Area (diameter on a flat surface)	Approx. Air Consumption*
	Up to 8 feet (2.44 m)	2.15 scf (0.06 m^3) @ 90 PSI (6.21 Bar)
	Water Supply Requirements	
	Water Flow Rate	Line Pressure
	37 to 45 gallons/minute (140 to 170 liters/min)	36.25 to 43.51 PSI (2.5 to 3.0 Bar)

Based on the AirSweep USDA Sanitary Pulse Valve (42Cv). Material activation area can be affected by the type of material and the shape or surface of the vessel.
**Average in 75 lb/ft3 material; 250 millisecond air pulse*

Easily retrofits to spray dryers, mixers, silos, hoppers, ducts, blenders, troughs, sifters, chutes, cyclones or ANY bulk powder process requiring sanitary equipment.



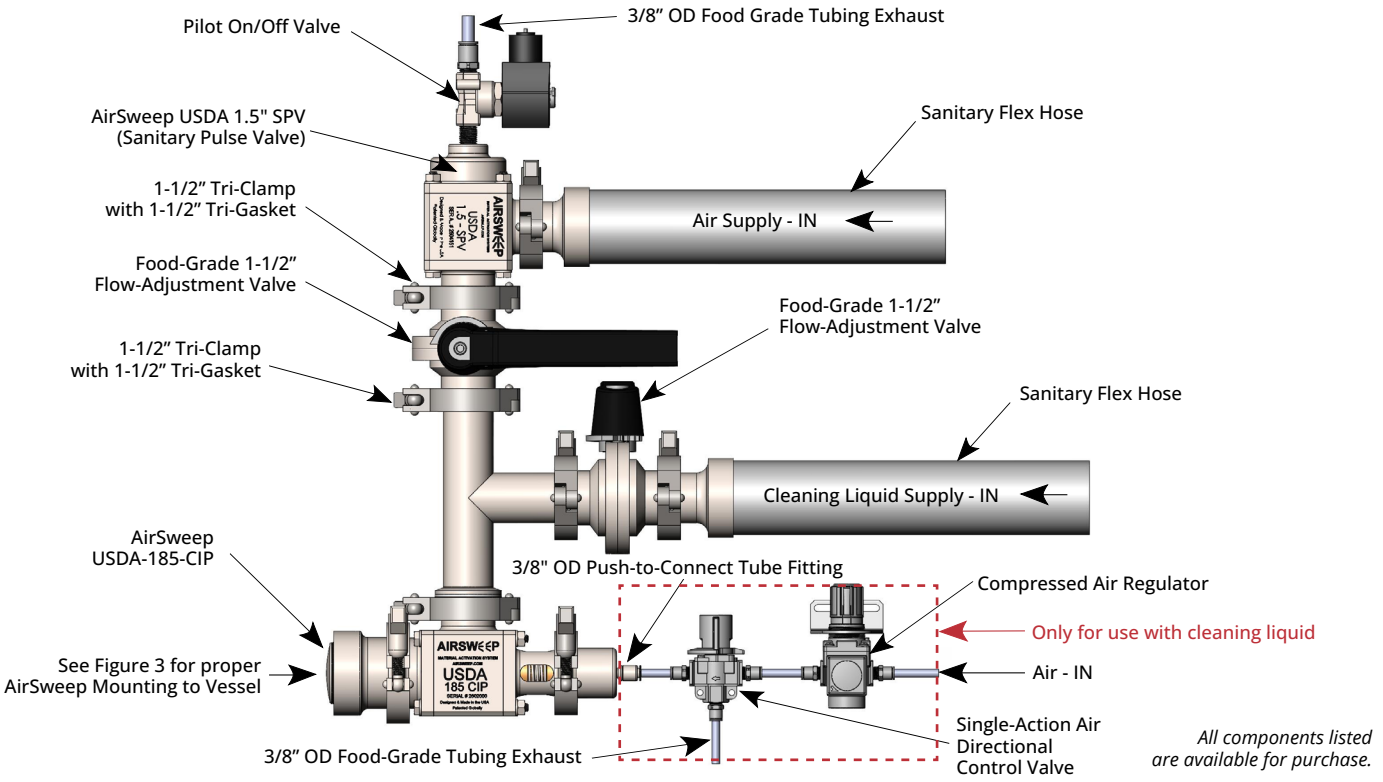
Cleans interior vessel walls and is highly effective for flushing material from mixers, blenders, cyclones and spray dryers.

Specifications subject to change without notice.

Contact us for a detailed AirSweep® System proposal, engineered specifically for your application.

AIRSWEEP Manufactured by Control Concepts, Inc.
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TYPICAL AIRSWEEP® USDA-185-CIP SYSTEM



TYPICAL AIRSWEEP CIP SYSTEM COMPONENTS

USDA-Accepted AirSweep®	**Model USDA-185-CIP**
AirSweep USDA 1.5" SPV (Sanitary Pulse Valve)	High-performance non-diaphragm pneumatic valve designed to deliver a rapid pulse of compressed air to activate the AirSweep system • Constructed with sanitary materials and designed for reliable operation in hygienic processing environments
Pilot On/Off Valve	Electrically actuated valve that controls and activates the flow of compressed air by opening or closing the AirSweep SPV based on a signal from the control system
Single Action Directional Control Valve	Pneumatic control valve that directs compressed air flow to the AirSweep actuator, allowing precise control of the AirSweep's extension and retraction cycle
Compressed Air Regulator	Pressure-regulating device that maintains a consistent and adjustable air supply to the AirSweep system, ensuring optimal performance while protecting pneumatic components from excessive pressure
Sanitary Flex Hose Assembly	Flexible sanitary air hose assembly that connects pneumatic components while allowing for movement, easy installation, and compliance with hygienic processing requirements
Sanitary Flow-Adjustment Valve	Sanitary valve used to regulate the AirSweep system, allowing the switching back and forth between air and liquid
1-1/2" (38.1 mm) Tri-Clamp with1-1/2" PTFE Gasket	Stainless steel sanitary clamp that securely connects tri-clamp compatible components while allowing quick disassembly for cleaning, inspection, and maintenance • Food-grade PTFE sealing gasket installed between tri-clamp connections creates a leak-tight sanitary seal with excellent chemical resistance and durability
3/8" (9.5 mm) OD Push-to-Connect Tube Fitting	Pneumatic fittings designed for quick and secure connection of 3/8" (9.5 mm) outside diameter tubing, allowing simple installation and reliable compressed air delivery
3/8" (9.5 mm) OD Food-Grade Tubing	FDA-compliant food-grade tubing used to transport compressed air between pneumatic components while maintaining cleanliness and suitability for sanitary application

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USDA-185-CIP MOUNTING COUPLING INSTALLATION

1. Drill or cut a hole in the vessel wall. Recommended hole size for AirSweep USDA-185-CIP mounting coupling: 2.578" (65.48 mm)
2. Align the coupling flush with the inside of the vessel wall. Insert the heat sink to protect the mounting coupling from warping, and stitch weld to evenly distribute heat to the exterior of the wall. **(See Figure 1 below)**
3. Ensure that the O-rings are installed on the AirSweep USDA-185-CIP barrel. **(See Figure 2 below)**
4. Insert the AirSweep fully into the mounting coupling, ensuring the O-rings are sandwiched between them.
5. Install the 2" (50.8 mm) clamp around the front of the AirSweep and the mount coupling flange then tighten. **(See Figure 3 on page 4)**
6. Install the 1-1/2" (38.1 mm) sanitary gasket to the inlet of the AirSweep USDA-185 center body. **(See Figure 4 on page 4)**
7. Position the inlet adapter and USDA-185 center body flange with the 1-1/2" (38.1 mm) sanitary gasket sandwiched between the two parts. **(See Figure 4 on page 4)**
8. Install a 1-1/2" (38.1 mm) tri-clamp around the flanges and tighten. **(See Figure 4 on page 4)**

NOTES:

- On sharply curved vessel walls, the front surface of the mounting coupling may extend slightly into the vessel at the top and bottom (12:00 & 6:00 positions) and should be flush at sides (3:00 & 6:00 positions). The weep hole must be positioned at the lowest point of the mounting coupling for proper installation.
- The mounting coupling and heat sink are made of dissimilar materials. It is recommended to use an anti-seize lubricant. The purpose of the heat sink is to prevent the mounting coupling from warping during the welding procedure.
- For maximum effectiveness, use a direct connection between the AirSweep USDA-185-CIP air inlet **(See Figure 4 on page 4)** and AirSweep USDA Sanitary Pulse Valve outlet. If additional pipe length is required, consult with the AirSweep application engineering team to design the most efficient system layout between the AirSweep USDA SPV air outlet and AirSweep USDA-185-CIP air inlet.

FIGURE 1

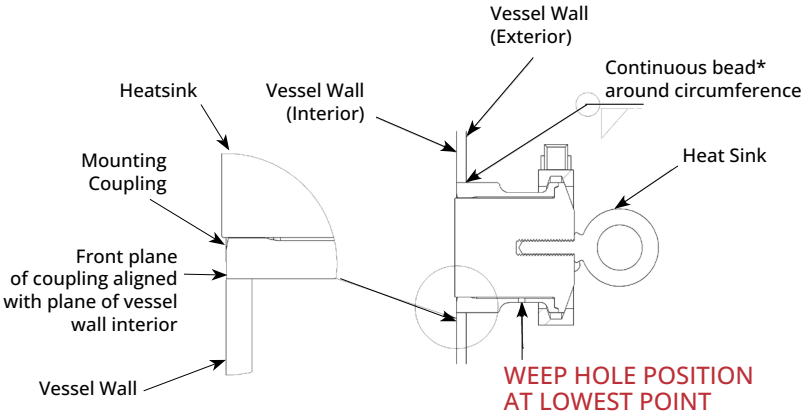
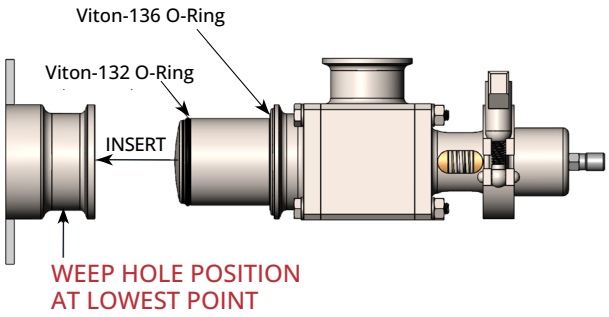


FIGURE 2



*The welding procedure should be done in accordance with the American Welding Society (AWS) standards as supported by ASME (American Society of Mechanical Engineers).

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FIGURE 3

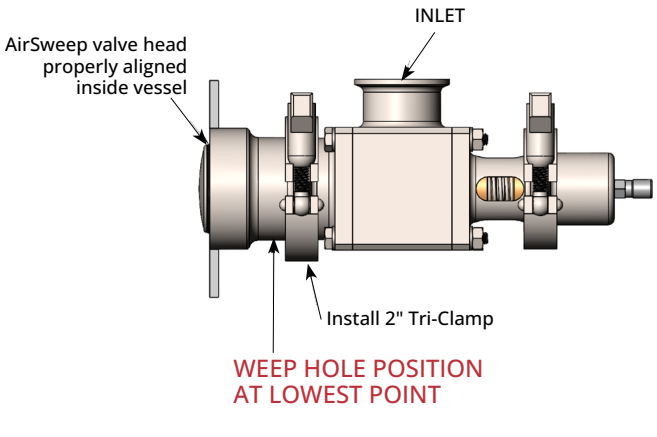
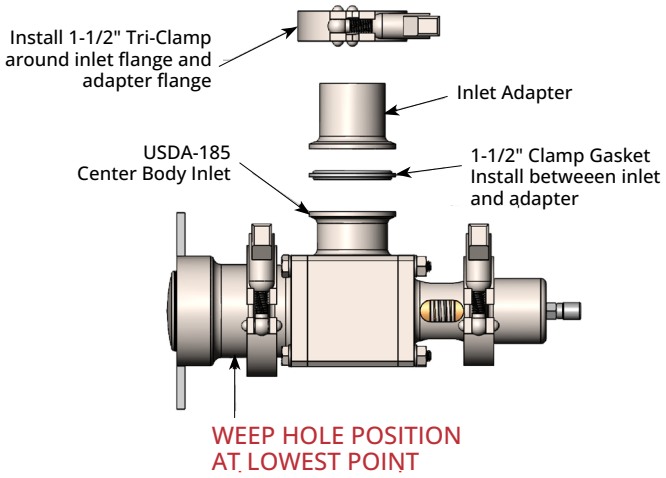
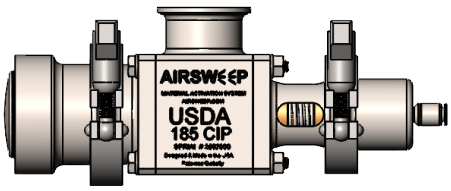
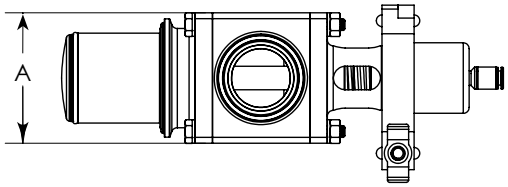


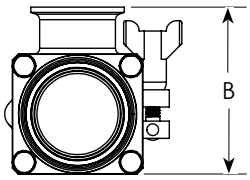
FIGURE 4

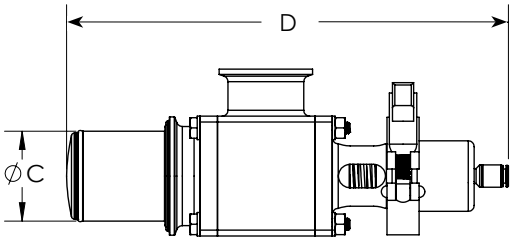


USDA-185-CIP MODEL SPECIFICATIONS

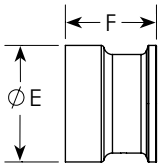








Mounting Coupling



	Main Unit				Mounting Coupling		Total Weight
Model	A	B	Ø C	D	Ø E	F	
USDA-185-CIP	2.78" (70.61 mm)	3.55" (90.71 mm)	1.92" (48.77 mm)	9.40" (238.76 mm)	2.52" (64.00 mm)	1.97" (50.04 mm)	9.29 lb (4.21 kg)

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