

APPLICATION EQUIPMENT

# Patented Millennium Cyclone



## Low Pressure Pump Cart (by Garlock)

### DESCRIPTION

Patented Millennium Cyclone\* low pressure adhesive pump cart is a bulk delivery system specifically designed to dispense two component 1 : 1 ratio low viscosity polyurethane adhesives. These adhesives are widely used to adhere rigid insulation and cover boards to structural roof decks as well as to adhere fleecebacked single-ply membranes in both new roofing and recover applications. The Cyclone includes 1 applicator nozzle and 50 feet of hose.

### START UP

Make sure the manifold valves are in the OFF mode and motor is turned off.

1. Insert adhesive bladder labeled Part 1 into the tray labeled Part 1. Apply small amount of non-lithium grease to female end of quick connect coupling. Attach quick connect fitting on bladder to the Part 1 pump inlet hose.\*\*
2. Insert adhesive bladder labeled Part 2 into the tray labeled Part 2. Apply small amount of non-lithium grease to female end of quick connect coupling. Attach quick connect fitting on bladder to the Part 2 pump inlet hose.
3. With the manifold in the OFF mode, flip power switch to "on".
4. Slowly open manifold valves, motor will start automatically. Let a small amount of material flow out into a waste container to ensure that an equal amount of material is coming out of each manifold port.
5. Shut off manifold valves, motor will stop automatically when shut-off pressure is reached.
6. Wipe threaded portion of manifold clean with rag, apply non-lithium grease to threaded portion of manifold.
7. Attach static mixing nozzle to applicator manifold using retaining nut or one piece mixing nozzle. Ensure that it is completely seated and then begin applying adhesive.
8. Apply adhesive directly to the substrate as recommended by the product manufacturer.

\*US 9,573,150 B2; US 9,566,594 B2

\*\*US 9,174,234 B2; CA 2,806,690 C

### SAFETY

Protective equipment such as safety glasses and protective gloves must be worn when operating or servicing the Millennium Cyclone pump cart.

The Patented Millennium Cyclone pump cart runs on 110 volt 60Hz AC current. Use a grounded power cord that is in good condition, rated for outdoor use, and a minimum of 14- gauge construction. Servicing electrical components should only be done by trained personnel and only after disconnecting power to the equipment. CAUTION: The electrical circuitry is not of explosion proof design and should not be used in any environment requiring such a design.

The Patented Millennium Cyclone pump cart operates with pressure. The applicator should never be pointed toward people. The applicator should never be actuated when the outlet tip is blocked or restricted by cured adhesive or any object.

Consult product label and Safety Data Sheet (SDS) for necessary safety precautions.

### FEATURES

### BENEFITS

Lightweight / Portable	Easy to maneuver
Clean, contained delivery system	Applicator and hoses stay clean and free flowing, low maintenance
Quick and easy application	Perfect for large congested rooftops
Solid core tires	Prevents flat tires
Adjustable gun assembly	Ergonomic design
Dual pump system	Reduces risk of catastrophic pump failure / lowers maintenance cost
Single aperture	Easy connections



## SHUT DOWN AND EXTENDED BREAKS

1. Close manifold valves.
2. Turn off power.
3. Remove static mixing tip and retaining nut (if needed) and discard.
4. Relieve any pressure in hoses by opening and closing applicator valves.
5. Pump a non-lithium grease into both grease fittings on the gun manifold until it flows out of the tip. Install grease into the part 1 (A) grease fitting first.

**CAUTION:** Remove static mixing nozzle during any pause in application or operation. Do not allow pressure to build up in the static mixing nozzle. If static mixing nozzle remains on applicator manifold, material can react and harden in the manifold and possibly the ends of the hoses. During removal and attachment of static mixing nozzles, a wrench may be necessary for removal. Clean manifold threads and re-grease frequently.

## LIMITATIONS

- Do not apply to wet or damp surfaces.
- Not recommended for use with insulation boards larger than 4' x 4' (1.2m x 1.2m).
- Do not use warped or curled insulation boards. All insulation boards must lay flat upon the roof surface.
- Pump grade adhesives are designed for application temperatures of 40°F and above.

## SURFACE PREPARATION

All work surfaces should be clean, dry, and free of dirt, dust, debris, oils, loose and/or embedded gravel, un-adhered coatings, deteriorated membrane and other contaminants that may result in a surface that is not sound or is uneven. In recover applications Millennium Surface Treatment or Millennium Universal Primer may be required. Contact H.B. Fuller's Technical Service Department for more information.



For more information about our company, visit [www.hbfuller.com/roofing](http://www.hbfuller.com/roofing).

## MACHINE STORAGE

Long term storage (30 days +) will require that the pump system and hoses are flushed with Millennium Cyclone System Solution. (Refer to Millennium Cyclone System Solution Product Information Sheet and Technical Bulletin for detailed instructions). After extended storage the gravity feed supply lines and quick connects may need to be replaced.

Material can be allowed to stand in the machine for short periods of time, however, it is very important that Part 1 not be exposed to air or moisture to prevent crystallization.

Material should be run through the pump and hoses every three to four weeks when the pump is not in use. Cyclone System Solution can be run through the pump for this purpose.

## MATERIAL PACKAGING AND COVERAGE

Millennium PG-1 Fleeceback Membrane Adhesive and Low Viscosity Insulation Adhesive kit:

Part 1 (A) - 5 gallon (18.9L) Box : PG-IA5B-A01

Part 2 (B) - 5 gallon (18.9L) Box : PG-IA5B-B01

Part 1 (A) and Part 2 (B) (complete kit) mixed through the Patented Millennium Cyclone low pressure pump cart will produce approximately 2,000 to 2,500 sq. ft. (186m<sup>2</sup> - 232m<sup>2</sup>) when properly mixed and applied over a semi-smooth substrate. Coverage estimates indicate total square feet of insulation attachment per 10 gallon kit. Larger beads may be required for rough surfaces or fleeceback membrane adhesive applications. For fleeceback applications consult your waterproofing membrane manufacturer's guidelines. Rates are based on an application pattern of 4 ribbons, 1/2" - 3/4" (1.3cm- 1.9cm) wide, 12" (30cm) o.c. per 4' x 4' (1.2m x 1.2m) insulation board.

Patented Millennium Cyclone can be used with any brand of 2-part urethane roofing adhesives and Cubitainer® packaging. Utilizing the easy-to-install conversion kit, the Cyclone can be converted to handle 15 gallon drum sets.

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