

Model *UV8350* UV Cure Adhesive Dispenser



LIMITED WARRANTY

Ventrex, inc., warrants the model *UV8350* UV adhesive dispenser to be free of all defects in material and workmanship for one year from date of original purchase. This warranty does not apply to any defects caused by improper installation, negligence, misuse, accidents, or to modifications.

Within the period of this warranty, Ventrex, inc. will repair or replace at our service center located in Ventura, California, any part proving defective in material or workmanship. All expenses related to replacing or repairing a defective part under this warranty will be assumed by Ventrex, inc., except for the cost of shipping.

The buyer must notify Ventrex, inc. of any defect, malfunction, or nonconformity promptly upon discovery. Within twenty (20) business days after receiving the product at our service center, Ventrex, inc. will repair or replace the defective part.

We reserve the right to make changes or improvements in our products without incurring any obligation to similarly alter products previously purchased.

Designed and Manufactured by:



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P/N VF00008 Rev. D

7/20/98

OPERATING INSTRUCTIONS

Model *UV8350* and *UV8350S* UV Adhesive Dispensers

PRINCIPLE OF OPERATION

The model *UV8350* consists of two primary subsystems: The pump drive module is pneumatically operated to allow operation wherever compressed air is available. Plant line air is coupled to the dispenser with a standard quick disconnect fitting. A dual acting air cylinder is controlled by an air bearing, pneumatically piloted control valve. This bi-directional valve is speed controlled by a precision regulator and a timing circuit consisting of an air accumulator and series of flow restrictors. This allows repeatable metering of UV cure adhesive.

The adhesive delivery module consists of a primary reservoir, a positive displacement pump, a secondary reservoir, and an adhesive applicator. UV adhesive is transported from the primary reservoir to the secondary reservoir by a fully submerged piston pump. This pump is actuated by the pump drive module described above. The adhesive is then gravity fed from the secondary reservoir into the application area. An adhesive film is uniformly applied to the desired component by transfer from specially selected porous materials contained in the applicator.

UV CURE ADHESIVE APPLICATOR

To assure precise and uniform bonding, a specific dispensing applicator is necessary for each diameter component to be bonded. Your *UV8350* has been shipped with one applicator. If you require additional applicators for other components, please contact Ventrex, inc.

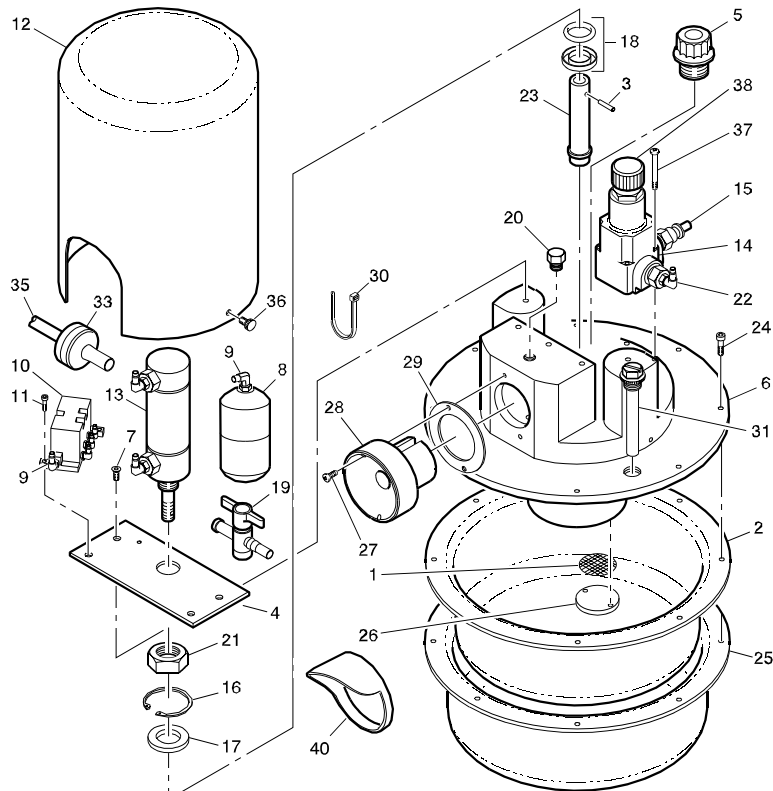
DISPENSER SET-UP AND OPERATION

A. LOCATION:

Place the dispenser on a flat surface to assure optimum performance. If necessary, the model *UV8350* may be placed on a slightly sloping surface. However, care must be taken not to over fill the reservoir.

B. FILLING OF RESERVOIR:

The reservoir has a useable capacity of 1.0 liters. To fill, first disconnect the air line. Remove the black dispenser top cover by loosening the two black cover retaining screws on either side and then lifting the cover off. Next, unscrew the red filler cap on the pump body. Using a funnel or similar device, pour UV adhesive into the reservoir while observing the fill level by checking the level on the dip stick (pg. 6 find no. 31) or through the filler hole. Avoid overfilling to minimize adhesive spillage.



FIND	DESCRIPTION	P/N	FIND	DESCRIPTION	P/N	FIND	DESCRIPTION	P/N
1	Strainer Cloth	VB00011	17	Retainer, Seal	VC00080	33	Check Valve	VC00071
2	Liner, Reservoir	VB00037	18	Wiper Seal	VC00030	35	Pneum Tubing	VC00023
3	Roll Pin	VC00053	19	1W Stopcock	VC00072	36	Cover Screws	VB00005
4	Mounting Plate	VB00023	20	Pipe Plug	VC00084	37	4-40 X 1.25 Screw	VC00063
5	Filler Cap	VB00017	21	locking nut	see 13	38	Knob, Adjustment	VC00069
6	Pump Housing	VB00025	22	1/8 NPT Plug	VC00045	40	Max CAP	VB00031
7	4-40 X 3/8 Screw	VC00109	23	Piston Assembly	VB00007			
8	Accumulator	VB00004	24	6-32 X 7/16 Screw	VC00027			
9	Elbow Fitting	VC00051	25	Reservoir	VB00024			
10	Control Valve	VC00013	26	Strainer Washer	VC00081			
11	4-40 X 1/2 Screw	VC00050	27	4-40 X 3/4 Screw	VC00093			
12	Top Cover	VB00026	28	Applicator	sold sep			
13	Air Cylinder	VB00014	29	Gasket, Applic	VA00014			
14	Speed Regulator	VC00031	30	Cable Tie	VC00086			
15	Quick Disconnect	VC00024	31	Dip Stick	VB00038			
16	Retaining Ring	VC00048						

C. CONNECTING AIR LINE:

Connect a regulated compressed air line (**delivering clean, dry, non-lubricated air**) to the 1/8" male NPT quick disconnect coupling on the back of the dispenser. Set the **inlet air pressure to between 60-90 PSI (4.2-6.3 kgf/cm²)**. Lower or higher input pressures may be used if necessary. However, optimal performance will be obtained in the range specified.

If your compressed air lines incorporate couplings incompatible with the one supplied on the regulator, simply remove the male coupling and replace it with a suitable one.

D. PRIMING THE DISPENSER:

After connecting the air line, the dispenser will prime itself within a few strokes. Once primed, allow the dispenser to operate for at least five minutes to assure the porous materials contained in the applicator are fully wet.

E. Bonding Components:

To apply UV cure adhesive to the component to be bonded simply insert the end of the component into the applicator until it "bottoms out" at the back of the applicator. **Although it is not generally necessary to rotate the part for complete wetting, a more uniform coating will occur on some components by doing so.** Immediately after insertion, remove the component from the applicator and complete the bond.

F. ADJUSTING THE UV ADHESIVE DELIVERY RATE:

The UV8350 is designed to operate in one of two pump speed ranges : **LOW RANGE - 2-6 strokes per minute. HIGH RANGE - 7-10 strokes per minute.** To select the low speed range assure the bypass stopcock is closed (opposite that depicted on page two). To select the high range, open the bypass stopcock so the handle is in line with the stopcock body (as depicted on page two). **NOTE:** If your part requires a pump speed greater than 10 strokes per minute, the factory can advise you how to make a simple modification which will allow operation up to 30 strokes per minute.

Optimal UV bonds will generally be achieved by applying a uniform non-excessive film of adhesive to one of the components to be bonded. Therefore, it is important to adjust the adhesive delivery rate to the components being bonded. To optimize the delivery rate, have an operator bond 10 to 20 components to simulate continuous production conditions. After these are complete, have the operator apply UV adhesive to five more parts. The technician, manufacturing/process engineer or other designated person should then inspect the film of adhesive being applied and the completeness of the bond. If insufficient adhesive is being applied, turn the speed control regulator knob clockwise until delivery is adequate. If excessive adhesive is being applied slow the pump speed by turning the speed control knob counterclockwise. **NOTE: The speed control regulator is a high resolution device. Therefore, several turns of the knob may be required to make significant speed adjustments. It may also take several moments for the porous materials contained in the applicator to reach a new "steady state" following adjustment.**

You may wish to record the optimum setting to facilitate future adjustments. The pump stroke speed can be quickly determined by counting the number of strokes per minute. As an alternative to counting the number of strokes, a small pressure gauge can be connected to one of the auxiliary output ports of the speed control regulator. Output pressure is directly proportional to pump stroke rate.

Once the optimal setting is made, the speed control adjustment knob may be removed to prevent unauthorized adjustment. To remove the knob loosen the hex head set screw in the side and lift the knob off the regulator adjustment shaft. Reverse this procedure to replace it.

G. CONTROLLING UNWANTED CAPILLARY FILLING:

Small inside diameter components are prone to capillary filling during low viscosity UV adhesive application. Because the adhesive delivery rate is fully adjustable on the model *UV8350* and due to the design of the porous materials contained in the applicator, capillary action can be minimized or eliminated.

If capillary filling occurs, slow the pump speed until a minimum uniform film of adhesive is applied to the part and capillary action ceases. **NOTE: After slowing the pump speed, it will take a few moments for the excess adhesive to drain from the porous materials.** Always check the bond before finalizing adjustment.

H. REPLACING APPLICATOR:

To remove and replace an applicator, remove the two screws holding the applicator to the pump body. Grasp the face of the applicator and pull it out. **NOTE: Exercise care when removing the applicator as it likely is wet with adhesive.** To replace an applicator, place a new gasket over the applicator (gaskets may be reused a limited number of times) and assure that it is in the upright position. The elongated slot should be on the underside, while the adhesive inlet hole is on top. Slide the applicator into the pump body and align the holes (*the holes will not line up if the applicator is upside down*). Replace the screws and tighten snugly.

I. CHANGING UV ADHESIVES:

To change UV adhesives first disconnect the line air and drain the reservoir of any remaining adhesive. Next follow the steps under "Reservoir Cleaning" below *except* do not reattach the reservoir to the pump body. Remove the applicator from the pump body and clean it by following the steps listed under "APPLICATOR CLEANING" below. Fill the reservoir/liner with clean acetone. Place the pump body onto the reservoir/liner. DO NOT screw the reservoir to the pump body at this time. Re- connect the air line and allow the dispenser to flush itself with the acetone. This is best accomplished by increasing the stroke speed to maximum (see step F on page 3) for at least 10 minutes. Lift the pump body off of the reservoir/liner and completely dry the pump body by blowing it down with compressed air. **CAUTION: Always wear safety glasses and other protective gear when using compressed air.** The fluid path should also be completely blown dry. To do this, assure the piston (pg. 6 find no. 23) is in its' up stroke. Blow air into the inlet screen (pg. 6 find no. 2). Acetone will be blown out through the applicator opening. **Exercise caution to assure the acetone flow is directed into a safe area.** Drain, wipe down, and dry the reservoir/liner. Re attach the reservoir/liner to the pump body using the eight screws. Replace the applicator and fill with the new adhesive.

ROUTINE MAINTENANCE

The dispenser should work maintenance free over a long period of time. However the following routine maintenance is recommended:

APPLICATOR CLEANING:

The applicator should be removed periodically and inspected for contamination. If the porous material is excessively dirty, it can be cleaned by submerging it in an ultrasonic cleaner containing clean acetone over night and then blowing it dry using a protected compressed air source. **CAUTION: Always wear protective eye wear and clothing when using compressed air. An explosion proof ultrasonic cleaner should be used in the presence of acetone.**

If the above steps do not sufficiently clean the porous materials, or if the porous materials are deformed, or the applicator outer surface is damaged, a new applicator will be required.

The applicator gasket may be reused under certain conditions. If adhesive leaks around the applicator after replacing it, a new gasket should be installed. Additional gaskets are available from the factory.

RESERVOIR CLEANING:

The reservoir may require periodic cleaning. It is recommended that the reservoir be removed and

it. Clean all exposed surfaces with acetone. If the pump body inlet screen (pg. 6 find no. 1) is excessively contaminated, remove it and completely clean and reinstall. A new reservoir liner should be installed. Replacements are available from the factory. Reattach the reservoir to the pump body.

GENERAL CLEANING:

The external surface of the dispenser should be routinely wiped clean using a soft towel and acetone.

LONG TERM STORAGE

If the dispenser will be out of service for a period of time it should be completely cleaned. Follow step "I" on page 4. In addition, the applicator should be completely cleaned as described in the ROUTINE MAINTENANCE section on page 4.

TROUBLESHOOTING TIPS

INSUFFICIENT/NO ADHESIVE DELIVERY:

If insufficient or no adhesive is transferred to your components it may be caused by:

- Adhesive level in reservoir too low to be drawn up by pump. Check adhesive level.
- Pump speed too slow. To rectify, remove the top cover and turn the speed control regulator clockwise until sufficient adhesive is dispensed.
- Applicator porous material is clogged. Follow the steps for applicator cleaning listed under ROUTINE MAINTENANCE on page 4. If the porous material is still clogged, it may be necessary to replace it.
- Check valve is sticking or contaminated. To check, **disconnect the line air** and remove the top cover and 1/8 NPT plug in the top of the secondary reservoir. Next remove the applicator. Turn the speed control regulator to a slow speed and then reconnect the line air. Wearing eye protection, place a polyethylene glove over your hand and using your index finger, occlude the secondary reservoir orifice from the inside of the applicator housing. Let the pump stroke two or three cycles. The level in the secondary reservoir should rise rapidly and not drain back into the primary reservoir. If it does drain back call the factory for instructions on how to correct the problem, or return the unit to Ventrex.

EXCESSIVE ADHESIVE DELIVERY:

- Excessive adhesive applied or capillary action into the I.D. of the component can be corrected by slowing the pump speed until the correct amount is dispensed.
- Applicator may be in upside down. Remove applicator and assure the inlet hole is on top while the elongated drain slot is on the bottom.

PUMP WILL NOT STROKE:

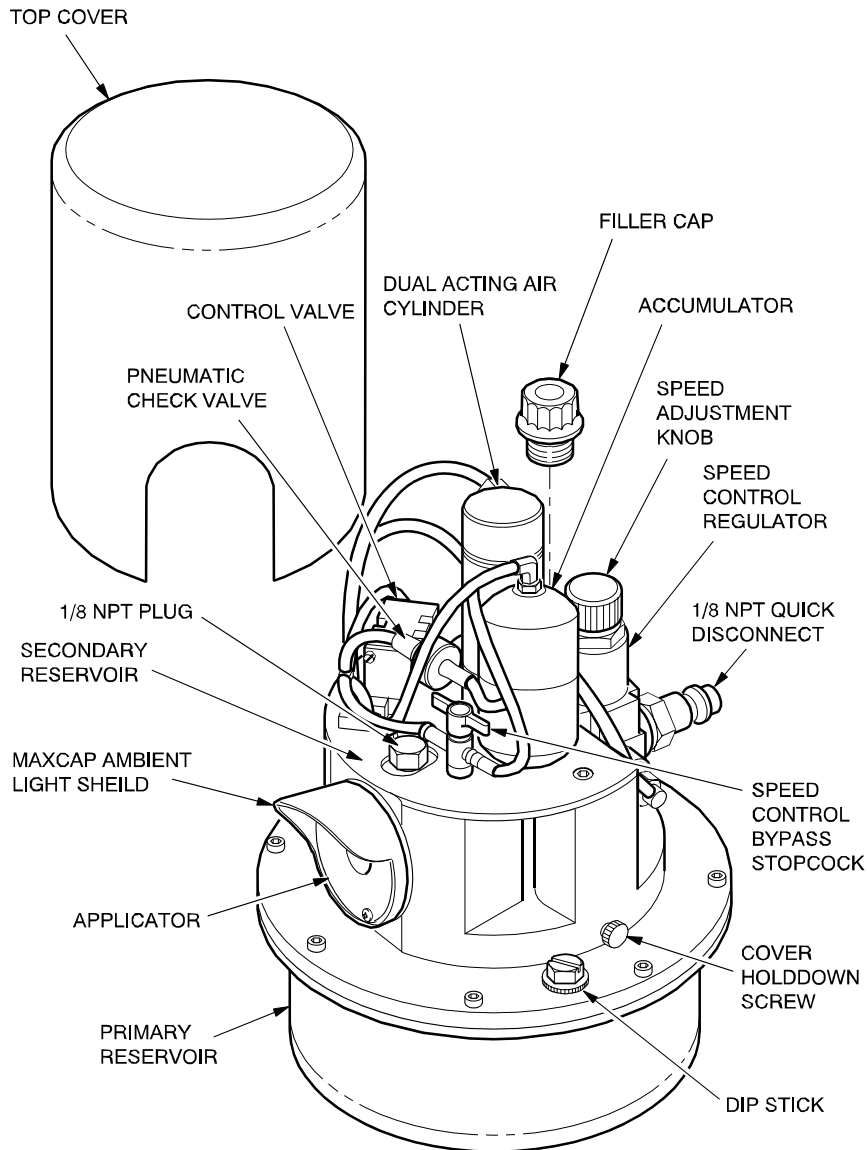
- Turn the speed control regulator up until the pump starts stroking. If turning the speed control regulator up results in too fast a stroke speed, shift the pump to the low speed range as described in section "F" on page 3.

PUMP STROKES AND A DOUBLE AIR RELEASE IS HEARD:

- The air pressure is set too high. Check the line air pressure to assure it is set between 60-90 PSI (4.2-6.3 kgf/cm²). If the inlet pressure range is correct, the *UV8350* speed control regulator is set too high. Reduce the speed by turning the adjusting knob on the speed control regulator counterclockwise. If the resulting pump speed is too slow once the "double air release is eliminated", change the dispenser to the high speed range as described in section "F" on page 3.

cleaned at least once per month. To do this, disconnect the air line and completely drain the dispenser. Remove the eight screws holding the reservoir to the pump body. Remove the reservoir liner (pg. 6 find no. 2) and discard

MODEL UV8350 UV CURE ADHESIVE DISPENSER



Power Requirements	60-90 PSI (4.2-6.3 kgf/cm ²) regulated clean, dry air supply
Pneumatic Coupling Supplied	Quick disconnect male plug, 1/8" male NPT (ISO 1/8 28 7/1)
Air Consumption	7.2 cc (.44 cu. in)/stroke : 0125 cu meters (.15 cu ft)/hr @ maximum recommended speed
Compatible UV Cure Adhesives	Up to 1000cPs viscosity
Operating Temperature Range	0°C to 46°C (50°F to 115°F)
Dispensing Surface Range	

External Surface	DIAMETER	
	Internal Surface	O.D./I.D. Surface
1.5 - 19.1 mm	2.5 mm - 25.4 mm	3.8 mm/2.5 mm - 19.1mm/15.2 mm
.060" to .750"	.100" to 1.00"	.150"/.100" to .750"/.600"

Component Geometry	Cylindrical or oval surfaces*
Dispensing Length Range	Up to 25.4 mm (1 inch)
Pump Displacement	1.3 cc typical
Maximum Recommended Speed	7 to 10 strokes per minute (in high range)
Minimum Recommended Speed	2-6 strokes per minute (in low range)
Adhesive Volume Applied	Dependent on component size, length of dispensing, and pump speed
Size	26.0 cm high x 19.7 cm diameter : 10.3" high x 7.8" diameter
Weight (dry)	3.7 kg : 8.2 lbs.
Usable UV Adhesive Capacity	1.0 liters
Construction	Anodized aluminum, stainless steel, PTFE, Delrin®, UHMW polypropylene

* Dispensing onto many irregular shaped components is possible. Please contact Ventrex for more information.