

NOZZLETECH CEV00 SERIES

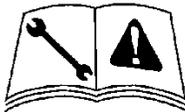
COMPACT ELECTRIC VALVES FOR EXTRUSION RELATED PATTERNS



WARNING: The fluid supply system on which this applicator is used may be pressurized! Relieve system fluid pressure before breaking any connection. Failure to relieve the system fluid pressure can result in the uncontrolled release of fluid that can cause personal injury, including death.



DANGER: Never work on any equipment with electrical power on or compressed air connected. Failure to disconnect energy sources can result in injury, including death, to themselves and others, and damage to the equipment



WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. Allowing untrained or inexperienced personnel to do so can result in injury, including death, to themselves and others, damage to equipment, or a chemical spill.

GENERAL DESCRIPTION:

The Nozzletech CEV00 Compact Electric Valve for extrusion applications is designed to dispense low to medium viscosity, non-flammable fluids such as light adhesives, marking inks, paints, perfumes, silicones, surfactants, and other cold fluids. It is ideally suited for applications requiring small repetitive amounts to be applied at high rates of speed where accurate registration is essential.

Its miniaturization and low weight, makes it ideal for use in confined areas, or on rapidly moving automatic equipment.

The Nozzletech CEV00 Compact Electric Valve can be used with various extrusion tips, and be controlled by timing electronics to provide a variety of patterns including dots, lines multiple lines, etc., for filling, marking, and dispensing operations

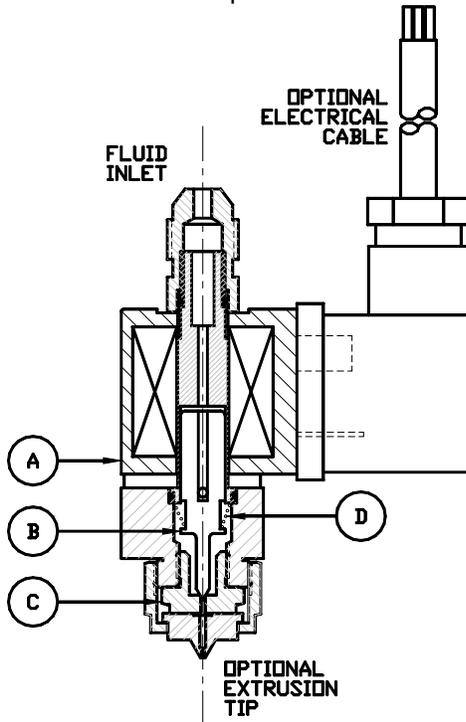
When the solenoid coil is energized, the fluid plunger moves to allow fluid to pass through the applicator.

The Compact Electric Valve is used in a similar manner to any valve type mechanism. The fluid being used should be clean and suitable for this type of application. The tip orifice size should be selected in accordance with the viscosity of the fluid being used, the operating pressure, and the amount of fluid required.

The Compact Electric Valve is made of 300 Series stainless steel and uses Viton o-rings to seal the body to the fluid tube. Make sure the fluid being dispensed is compatible with these materials.

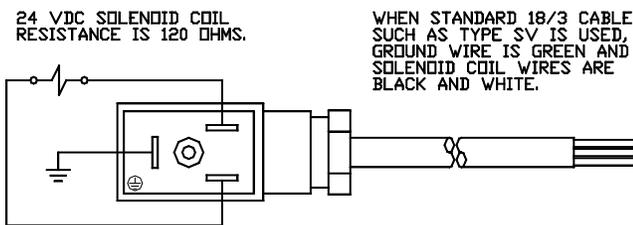
OPERATION

The Compact Electric Valve is fitted with a solenoid coil (A), that when energized, causes the plunger (B) to lift, allowing fluid to be extruded from the seat (C). When the coil is de-energized, the plunger spring (D) closes the plunger assembly against the seat, and flow of material stops.



ELECTRICAL REQUIREMENTS

A plug-in connector is provided for the termination of an optional electrical cable. An 18 gauge, 3 conductor cable with an outside diameter of this cable being .23 to .31 inches is recommended.

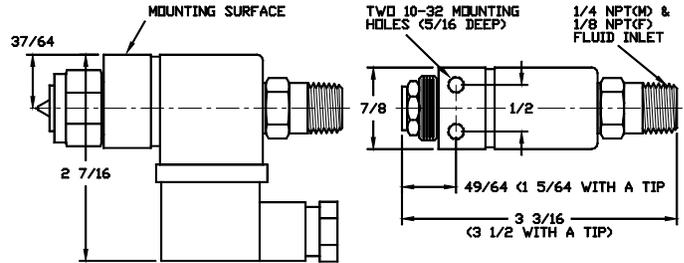


In some cases, the power source for the Compact Electric Valve actuation will be supplied internally from the pattern control/timer unit, so that the user will need only to supply a DC signal or passive contacts to activate the applicator.

For small repeatable amounts of fluid, where accurate control is required, a DC Timer should be used. The source of electrical power for the Compact Electric Valve (and possibly the related applicator head driver) MUST have an electrical disconnect method suitable for the machine and environment. This will also require Emergency Stop controls that are part of the main machine or independent.

MOUNTING

The Compact Electric Valve may be mounted in any position by bolting it directly to a simple bracket using the two #10-32 tapped holes in the gun body.



FLUID INLET CONNECTION

Fluid is supplied to rear of the applicator head via the input connector (inside is female 1/8 NPT and outside is male 1/4 NPT).

200 PSI (14 Bar) is the maximum working pressure.

Start Up

After installation, fluid must be purged through the applicator. Even small amounts of air in the fluid system can cause significant changes in the amount dispensed and store unexpected amounts of energy.

First, activate the applicator using the TEST function and allow fluid to flow. Be prepared for possible leaks or unexpected operation.

Verify typical operation with machine controls and/or pattern control.

Tip or Nozzle REMOVAL

Under normal production operating conditions with clean fluids, the applicator will provide millions of trouble free dispensing cycles.

The tip or nozzle, has the smallest passage in this system and is the most likely to clog.

Never install or remove a tip or nozzle from a pressurized applicator or system. Always relieve all pressure sources and remove power before servicing. See the fluid supply system instructions for details on how to remove pressure sources.

Even with pressure off it is likely there will be fluid on the parts and gloves and eye protection are required.

Clean the tip and replace it.

Tip Locknut torque is 90 inch-Lb (10Nm)

FLUID SECTION DISASSEMBLY

Under normal production operating conditions, foreign matter may partially or completely block the fluid nozzle causing erratic fluid ejection. Should this happen, removal of the entire applicator from service is not necessary. All fluid parts are easily removable from the applicator while it is in place.

Never work on a pressurized applicator or system. Always relieve all pressure sources and remove power before servicing. See the fluid supply system for details on how to remove pressure sources.

Verify the fluid inlet pressure has been relieved by actuating the applicator head to bleed off any remaining fluid pressure, and disconnect the fluid supply hose. Even with pressure off, it is likely there will be fluid on the parts and gloves and eye protection are required.

In most cases, only the removal of the seat (item 7) is required for cleaning. To do this, remove

the locknut (item 8) and the extrusion tip, then unscrew the seat from the gun body (item 5). After cleaning, replace the seat.

To disassemble the fluid tube and plunger, disconnect the fluid supply hose and remove the fluid inlet adapter (item 1). This will allow the solenoid coil (item 3) to slide off fluid tube (item 2), exposing four (4) screws (item 15) that secure the clamp plate (item 14). After the four screws and clamp plate are removed, simply pull the fluid tube out of the gun body (item 5) and remove the plunger/spring (item 12).

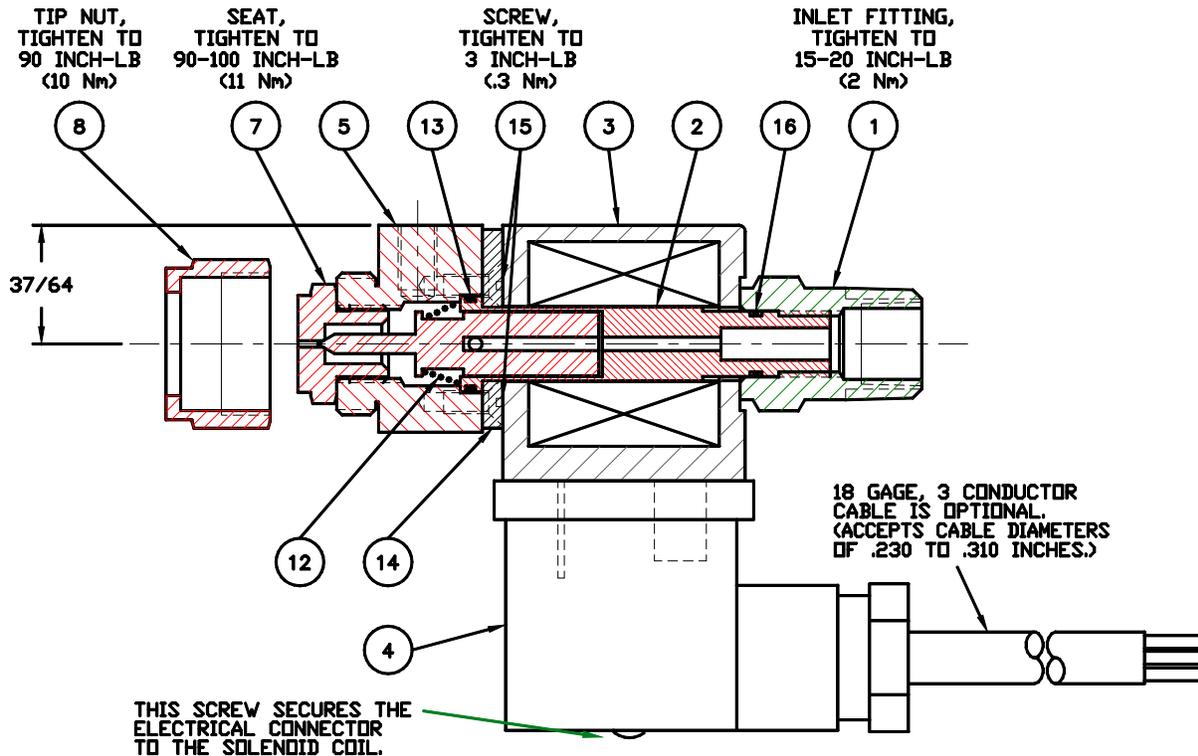
Assembly is the same steps in reverse.

Seat torque is 90-100 inch-Lb (11Nm)

Clamp Plate screw torque is 3 inch-Lb (.3Nm)

Inlet Fitting torque is 15-20 inch-Lb (2Nm)

NOTE: O-rings (items 13, & 16) are Viton.



ITEM #	DESCRIPTION	PART #	ITEM #	DESCRIPTION	PART #
1	Fluid Inlet Fitting		12	Plunger w/Spring Installed	CEVP0003
2	Fluid Tube		13	O-ring (Gun Body)	CEVP0013
3	Solenoid Coil (24 VDC)	CEVP0001	14	Clamp Plate	
4	Electrical Connector	CEVP0002	15	Screw (Qty. 4)	
5	Gun Body		16	O-ring (Fluid Inlet)	CEVP0010
7	Soft Seat, .032	CEVP0032	17	Decal	
8	Locknut			Extrusion Tip	See Chart

CLEANING & NORMAL PARTS REPLACEMENT

Normally there would be no need to carry out any cleaning operation on this equipment. The only parts that will require replacement, after considerable use, are the seat (item 7) and the plunger/spring (item 12). This replacement will be due to wear, damage, or change in pattern requirements.

TROUBLESHOOTING

ELECTRICAL PROBLEMS

NOTE: The solenoid coil can be checked by unplugging the electrical connector and using the pins on the solenoid coil. Pin designation is shown on page 2. The 24 VDC solenoid coil resistance is 120 ohms. Also, ensure that applicator electrical cable leads are not shorted or open.

I. APPLICATOR DOES NOT DISPENSE

A. Follow instructions for the applicator not dispensing inside the MECHANICAL PROBLEMS section that follows.

B. Check control circuit (ensure that correct electrical signal is being applied to applicator). This may involve many components if DC timing has been provided. The timer, applicator driver, and auto/off/test switch should be checked for correct operation as described in their respective instructions.

Remove applicator cable at applicator head and check across coil contacts of connector for 20-24 VDC signal when control or test is activated. Note that some timer/pattern controls use a higher voltage to rapidly open the applicator and then keep the applicator open with a lower voltage. See the timer/pattern control instructions for more details.

If no voltage is obtained, check input device that actuates the timer or power pack.

If input signal is OK, check timer or power pack in accordance with their instructions.

C. If voltage is obtained, check solenoid coil for correct resistance (120 ohms) and ensure no shorts to ground.

D. Check electrical cable and plug-in connector for broken or shorted wires.

II. DISASSEMBLE HEAD TO REPLACE COIL

A. Turn off fluid pressure, activate the applicator to bleed off pressure, disconnect the fluid supply hose.

B. Loosen the screw that holds the electrical connector to the solenoid coil and unplug.

C. Remove the fluid inlet adapter (item 1) at fluid entry end of the applicator by unscrewing it.

D. Slide the solenoid coil (item 3) off fluid tube.

Inlet fitting torque is 15-20 inch-lb (2 Nm).

MECHANICAL PROBLEMS

I. CONTROL CIRCUIT IS ACTIVATED AND NO EXTRUSION OF MATERIAL OCCURS

A. Never install or remove a fluid nozzle from a pressurized applicator or system. Always relieve all pressure sources and remove power before serving. See the fluid supply system for details on how to remove pressure sources.

Even with pressure off it is likely there will be fluid on the parts and gloves and eye protection are required.

Unscrew locknut (item 8), and replace the tip or nozzle. If applicator head now extrudes, nozzle is clogged and should be cleaned or replaced. If no material extruded:

B. Check for adequate liquid material available in supply container.

C. Check fluid supply for sufficient pressure.

D. Check if plunger/spring (item 12) are free and not restricted when control circuit is activated, by listening for distinct "click" when operated.

E. Check that excessively high fluid pressure is not impeding the plunger from retracting.

IF NOT CORRECTED:

- A. Turn off fluid supply.
- B. Never install or remove a fluid nozzle from a pressurized applicator or system. Always relieve all pressure sources and remove power before servicing. See the fluid supply system for details on how to remove pressure sources.

Even with pressure off it is likely there will be fluid on the parts and gloves and eye protection are required.

- C. Remove the seat (item 7) carefully if pressure has not been positively relieved.
- D. Energize solenoid. Plunger/spring (item 12) should partially retract (NOTE: With seat removed, travel of plunger will be longer than would normally be with seat installed. For this reason, plunger may need to be partially pushed in and solenoid coil actuated. When actuated, plunger should retract into applicator head.)
- E. If plunger is restricted, it may be due to foreign matter lodged behind plunger. Disassemble and clean the fluid section.
- F. If plunger does not retract, and there is no foreign matter restricting the plunger, check solenoid coil as in the ELECTRICAL PROBLEMS section preceding.

II. APPLICATOR EXTRUDES SLUGGISHLY AND/OR ERRATICALLY

- A. Check seat for foreign matter in seating area after relieving pressure and clean or replace.

- B. Check plunger/spring for any foreign matter behind plunger and also check plunger assembly for straightness, damage, etc.
- C. Check control circuit for erratic operation.
- D. Check fluid to see if viscosity is correct for application.
- E. Check fluid pressure.

III. SHUT OFF IS NOT CLEAN, HEAD DRIPS OR WILL NOT SHUT OFF

- A. If timing is of short duration, actuate head for several seconds at high pressure to possibly clear any stoppage in seat area by "blowing through".
- B. Shut off fluid supply, bleed pressure, and remove seat. Reverse blow seat to remove any particles of dirt that would not allow plunger to seat correctly.
- C. Fluid viscosity may be too high for a particular operation.
- D. Should applicator head not shut off, also check control circuit for malfunction.

IV. FREQUENT CLOGGING OF FLUID NOZZLE

- A. Check filtering system in fluid supply for damage or clogging.
- B. Inspect fluid for foreign matter, dirt, etc.
- C. Nozzle/tip orifice may be too small for the fluid being used (increasing tip size may greatly reduce clogging).

Model	Type	Angle	Tip Orifice Diameter Inch (mm)	Flow At 5/20 PSI Water in Grams per min.	Tip Part Number
CEV 01	Extrusion	0°	0.010 (.25mm)	15/30	11000-010
CEV 02	Extrusion	0°	0.014 (.35mm)	30/60	11000-014
CEV 03	Extrusion	0°	0.020 (.50mm)	50/100	11000-020
CEV 04	Extrusion	0°	0.028 (.71mm)	100/200	11000-028

ALL PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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