



Model 828 Disposable Fluid Path Dispensing Valve

User Guide



About Dymax

Light-curable adhesives. Systems for light curing, fluid dispensing, and fluid packaging.

Dymax manufactures industrial adhesives, light-curable adhesives, epoxy resins, cyanoacrylates, and activator-cured adhesives. We also manufacture a complete line of manual fluid dispensing systems, automatic dispensing systems, and light-curing systems. Light-curing systems include LED light sources, spot, flood, and conveyor systems designed for compatibility and high performance with Dymax adhesives. Dymax adhesives and light-curing systems optimize the speed of automated assembly, allow for 100% in-line inspection, and increase throughput. System designs enable stand-alone configuration or integration into your existing assembly line.

Please note that most dispensing and curing system applications are unique. Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application, and use is strictly limited to that contained in the Dymax standard Conditions of Sale. Dymax recommends that any intended application be evaluated and tested by the user to ensure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation. Data sheets are available for valve controllers or pressure pots upon request.

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Introduction

This guide describes how to use the Dymax Model 828 dispensing valve. Sections in this guide describe how to assemble, use, and maintain the dispensing valve safely and efficiently.

Intended Audience

Dymax prepared this user guide for experienced process engineers, maintenance technicians, and manufacturing personnel. If you are new to pneumatically operated fluid dispensing equipment and do not understand the instructions, contact Dymax Application Engineering to answer your questions before using the equipment.

Where to Get Help

Dymax Customer Support and Application Engineering teams are available in the United States, Monday through Friday, from 8:00 a.m. to 5:30 p.m. Eastern Standard Time. You can also email Dymax at info@dymax.com. Contact information for additional Dymax locations can be found on the back cover of this user guide.

Additional resources are available to ensure a trouble-free experience with our products:

- Detailed product information on www.dymax.com
- Dymax adhesive Product Data Sheets (PDS) on our website
- Safety Data Sheets (SDS) provided with shipments of Dymax adhesives

Safety



WARNING! *If you use this fluid dispensing equipment without first reading and understanding the information in this guide, personal injury can result from the uncontrolled release of high-pressure gas, injection injury, or exposure to chemicals. To reduce the risk of injury, read and understand this guide before assembling and using Dymax fluid dispensing equipment.*

General Safety Considerations

All users of Dymax fluid dispensing equipment should read and understand this user guide before assembling and using the equipment.

To learn about the safe handling and use of dispensing fluids, obtain and read the SDS for each fluid before using the fluid. Dymax includes an SDS with each adhesive sold. SDS for Dymax products can be requested on the Dymax website.

Specific Safety Considerations

Using Safe Operating Pressures

Pressurizing the components in the dispensing system beyond the maximum recommended pressure can result in the rupturing of components and serious personal injury. To minimize the risk of rupturing components and injury, do not exceed the maximum operating pressure of the components in your fluid dispensing system (see system specifications on page 14).

Preventing Injection Injury

Discharging fluids or compressed air with a dispensing tip against your skin can cause very serious injection injury. To minimize the risk of injection injury, do not place the dispensing tip in contact with your skin.

Product Overview

Description of the Model 828 Dispensing Valve

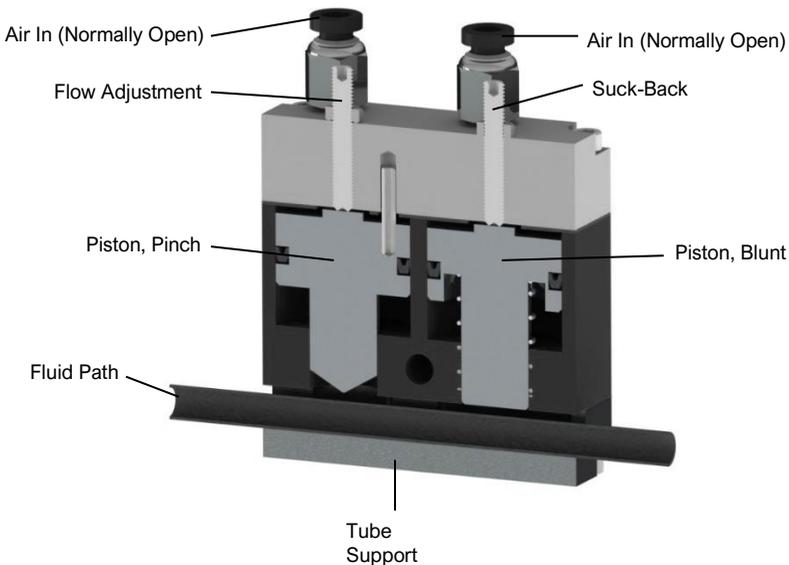
The Model 828 pinch valve is a normally open, disposable fluid path valve designed to provide larger flow rates while still maintaining precise control over flow rate. This dual-piston pinch valve works great with many low-to-medium viscosity materials and features a suck-back control so it can handle stringy and tacky materials with no mess.

The 828 pinch valve can be controlled by a digital controller, such as the DVC-345 digital valve controller, or by a four-way solenoid valve. The Model 828 is featured in several filling systems.



CAUTION! *If there is a loss in air pressure to the valve, the Model 828 valve will no longer have the force to prevent materials from flowing. Precautions should be taken to anticipate unwanted dispensing.*

Figure 1.
Model 828 Component Diagram



Special Features and Benefits of the Model 828

Feature	Benefit
Over-Pinch Adjustment	Prevents tubing damage, allowing users to secure millions of cycles from tubing before replacement is required
Disposable fluid path	Eliminates material contamination during dispense
	Prevent air entrapment during dispensing process
	Allows for easy product changeover with minimal cleanup
	The fluid and valve's inner components never come in contact, reducing valve maintenance and extending valve life
Adjustable Suck Back	Allows a clean shutoff of thick, tacky, and/or stringy materials
	Minimizes skinning over of the dispense tip

Over-Pinch Adjustment

Dymax's disposable fluid path valves all contain a unique over-pinch adjustment. This feature prevents damage to the fluid path, extending the life of the tubing and reducing the amount it needs to be replaced.

Disposable Fluid Path

The Model 828 valve features a disposable fluid path constructed out of tubing. Fluids are carried from the material reservoir to the dispense tip in a completely sealed path, ensuring no contact with the valve's inner parts. This reduces wear to the valve's inner parts, reducing valve maintenance and extending the valve's life. It also insures that fluids remain contaminate free throughout the dispensing process.

The Model 828 is compatible with a variety of different tubing sizes and materials to ensure complete compatibility with the fluid being dispensed. The disposable fluid path is easy to replace and change out, allowing for easy material changeover with little or no clean-up.

Suck-Back Feature

The suck-back feature on the 828 valve allows for the clean shutoff of stringy and tacky materials and prevents the formation of a droplet at the end of the dispense nozzle. The

suck-back feature also minimizes the "skinning" over of materials that tend to dry out at the end of the nozzle.

Assembly and Setup

Unpacking and Inspecting Your Shipment

When your Model 828 dispensing valve arrives, inspect the boxes for damage and notify the shipper of box damage immediately.

Open each box and check for equipment damage. If parts are damaged, notify the shipper and submit a claim for the damaged parts. Contact Dymax so that new parts can be shipped to you immediately.

Check that the parts included in your order match those listed below. If parts are missing, contact your local Dymax representative or Dymax Customer Support to resolve the problem.

Figure 2.
Model 828 Pinch Valve

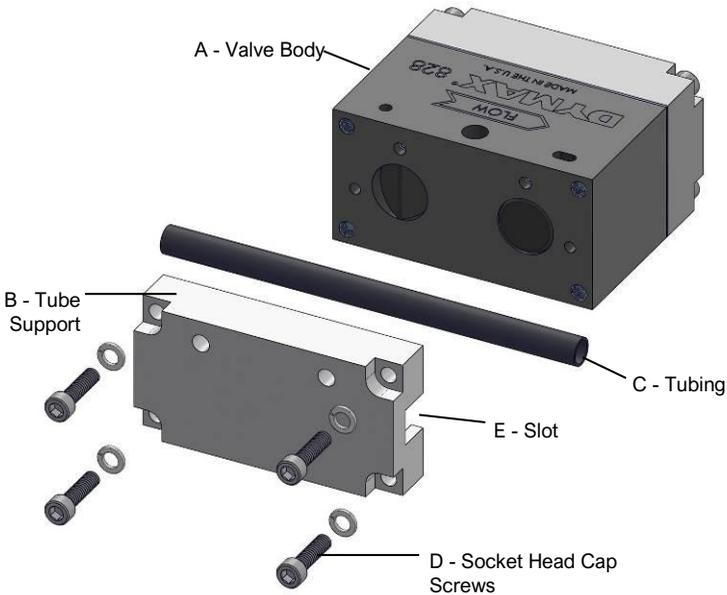


Parts Included

- Model 828 pinch valve
- Model 828 user guide

Tubing Installation

Figure 3.
Tubing Installation Procedure



Note: The Model 828 is not supplied with tubing. Various tubing sizes and materials (including polyethylene, polyurethane, PVC, and silicone) are available for order through Dymax. This valve is compatible with a maximum tubing size of 0.375" [9.53 mm] OD.

1. Separate the Tube Support (Figure 3, A) from the Valve Body (Figure 3, B) by removing the four Socket Head Cap Screws (Figure 3, D).
2. Place the Tubing (Figure 3, C) in the slot (Figure 3, E) on the Tube Support.
3. Reconnect the Tube Support to the Valve Body by reinstalling the four Socket Head Cap Screws.

Mounting

Note: If the dispense valve is to be mounted in an area that limits access to the valve, it is recommended that the set-up operation be done prior to mounting. Access to various surfaces of the valve is necessary for periodic adjustment (see Specifications).

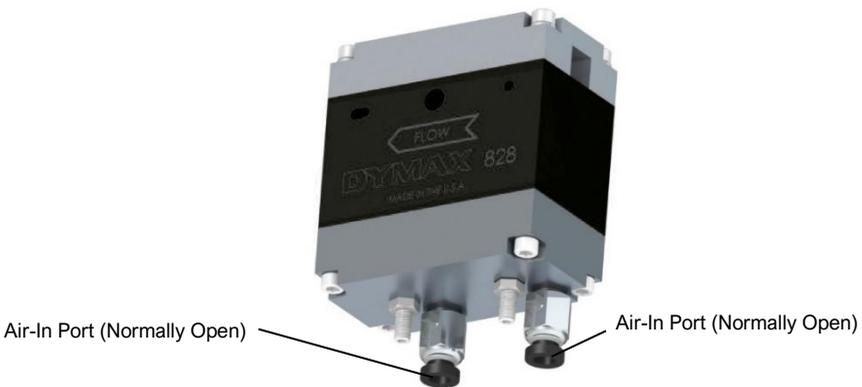
There is a 0.25" [0.64 cm] mounting hole through the side of the dispense valve for mounting purposes (see Figure 8).

System Interconnect

Air

Once the dispense valve is secured to its mounting surface, connect the air lines to the ports provided on the valve (Figure 4). Connect the air supply (75-100 psi [5.1- 6.9 bar]) to the valve controller or 4-way solenoid valve.

Figure 4.
Air-In Port



Valve Adjustments

Adjusting Material Flow

To adjust the flow of the Model 828 valve, turn the Pinch-Piston Flow Adjustment Screw (Figure 5, A) clockwise to decrease material flow or counterclockwise to increase material flow.

Adjusting Suck Back

To adjust the suck back of the Model 828 valve, turn the Suck-Back Adjustment Screw (Figure 5, B) clockwise to decrease suck back or counterclockwise to increase suck back.

Figure 5.
Adjustment Controls



Figure 6. Piston Stop Screw

Suck-Back Piston Stop-Screw: Preset to Close Tube 50%

Pinch-Piston Stop-Screw: to Stop Flow; Do Not Over Pinch



Troubleshooting

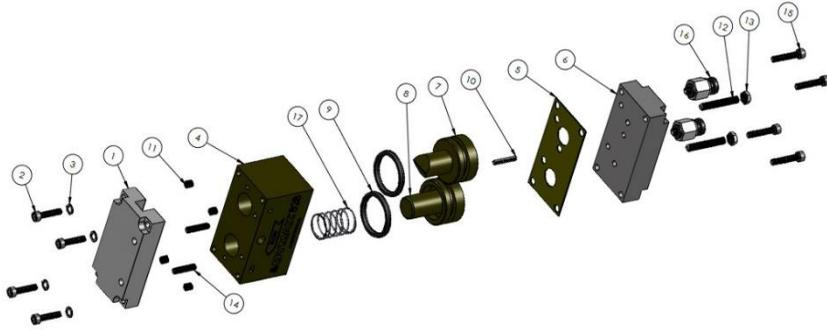
Table 1.

Troubleshooting Chart for Model 828 Dispensing Valve2

Problem	Possible Cause	Corrective Action
The valve does not dispense anything	The supply air pressure is too low	Increase the supply air pressure
	Material is cured in the tip	Disassemble and clean the tip
	The flow adjustment is not properly adjusted	Follow the valve adjustment procedure
There are air bubbles in the fluid	The valve is not properly purged	Point the valve up and cycle it until the air bubbles are removed
	There is a problem with the material reservoir and the fluid delivery system	Diagnose and repair
Material leaks from the valve tip	The pinch stop screw is not properly adjusted	Adjust the pinch stop screw
	There is an air bubble trapped in the fluid section of the valve or in the dispense tip	Point the valve up and cycle it until air bubbles are purged out
The dispense rate is too fast	The fluid pressure is set too high	Decrease the fluid pressure
	The dispense tip gauge is too large	Replace the dispense tip with a smaller size tip
	The flow adjustment is not properly adjusted	Follow the flow adjustment procedure
The dispense rate is too slow	The fluid pressure is set too low	Increase the fluid pressure
	The dispense tip gauge is too small	Replace the dispense tip with a larger size tip
	The flow adjustment is not properly adjusted	Follow the flow adjustment procedure

Spare Parts and Accessories

Figure 7.
Model 828 Replacement Parts



Item	Part Number	Description	Quantity
1	T15239	Model Tube Support, 0.375 OD	1
2	T14178	Socket Head Cap Screw, 8-32 x 0.75	4
3	T12522	Split Lock Washer, 8, SS	4
4	T15236	Model Valve Body	1
5*	T15235	Model 828 Gasket	1
6	T15241	Model Endcap	1
7*	T10423	Model 828 Pinch Piston	1
8*	T10424	Model 828 Blunt Piston	1
9*	T15145	U-Cup, BUNA, 0.125 CS X 1.0 ID X 1.25 OD	2
10	T12447	Pin, Roll, 0.125 OD/0.75, SS	1
11	T12310	Helicoil, Free, 8-32, 0.246	4
12	T14865	Screw, SHSS, 10-32, 1.25, SS	2
13	T12209	Nut, 10-32, Lock, Self Seal	2
14	T12341	Screw, SHSS, 8-32, 0.75, SS, Lock	2
15*	T14214	Socket Head Cap Screw, 8-32, 0.875	4
16*	T11676	Fitting, Straight, 10-32, 0.156od	2
17*	T15977	Spring, .70" X .036" X 1.0" (D X CS X L)	1
18*	T16661	Model 828 Wrench Set	1

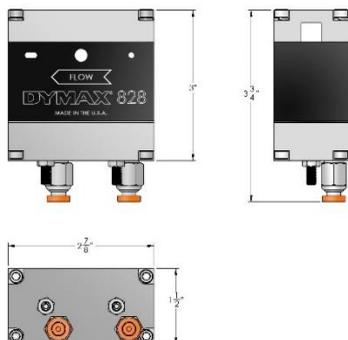
*Items included in valve rebuild kit [T16662](#)

Options/Accessories

Item	Part Number
Air Regulators	
Filter Regulator	T16307
High-Precision Regulator	T16629
Controllers	
DVC-345 Digital Valve Controller	T11146
Stands	
Lab Stand – 24" [60.96 cm]	T15279
Lab Stand – 8" [20.32 cm] with Mounting Rods	T15449
Tubing & Fittings	
Tube Support, Entire Assembly with Luer-Lock Fitting, 0.375" [0.95 cm] OD	T15225
Female Luer-Lock Fitting, Push In	T11978
Misc.	
Model 828 Wrench Set	T16661
Rebuild Kits	
Valve Rebuild Kit	T16662

Specifications

Figure 8.
Model 828 Dimensional Drawing



Property	Specification
Part Numbers	T17057
Valve Type	Pinch with disposable fluid path
Construction Material	Anodized Aluminum
Operating Air Pressure	75-100 psi [5.1- 6.9 bar]
Air Inlet	Accepts 0.156" [0.40 cm] OD, others available
Maximum Inlet Fluid Pressure	Tubing dependent; 100 psi [6.9 bar] typical
Maximum Operating Temperature	150°F [65°C]
Activation	Valve controller or 4-way solenoid valve
Dimensions (W x H x D)	2.98" x 2.91" x 1.50" [7.57 cm x 7.39 cm x 3.81 cm] (See Figure 8)
Weight	0.5 lb [0.23 kg]
Unit Warranty	1 year from purchase date

Warranty

From date of purchase, Dymax Corporation offers a one-year warranty against defects in material and workmanship on all system components with proof of purchase and purchase date. Unauthorized repair, modification, or improper use of equipment may void your warranty benefits. The use of aftermarket replacement parts not supplied or approved by Dymax Corporation will void any effective warranties and may result in damage to the equipment.

IMPORTANT NOTE: *DYMAX CORPORATION RESERVES THE RIGHT TO INVALIDATE ANY WARRANTIES, EXPRESSED OR IMPLIED, DUE TO ANY REPAIRS PERFORMED OR ATTEMPTED ON DYMAX EQUIPMENT WITHOUT WRITTEN AUTHORIZATION FROM DYMAX. THOSE CORRECTIVE ACTIONS LISTED ABOVE ARE LIMITED TO THIS AUTHORIZATION.*



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