

# EQUILIBAR®

PRECISION FLUID CONTROL



## Model 10

Low-Medium Pressure Reducing Regulator

# General Specifications & Performance Characteristics

The Model 10 is a pressure reducing regulator useful in a wide variety of applications.

The Model 10 is available in ranges to regulate pressures of 0 to 2 psi up to 0 to 400 psi.

A poppet valve which is balanced by utilizing a rolling diaphragm, ensures a constant output pressure even during wide supply pressure variations. Stability of regulated pressure is maintained under varying flow conditions through the use of an aspirator tube which adjusts the air supply in accordance with the flow velocity.

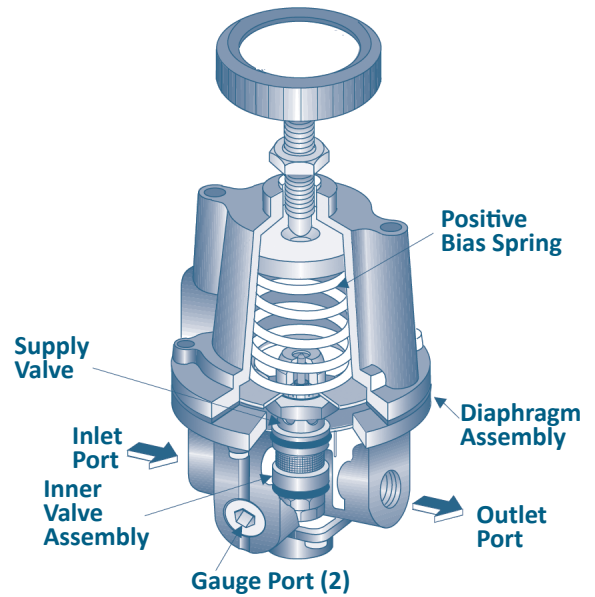
## FEATURES

- Control sensitivity of 1/8" water column allows use in precision processes. Pressure balanced supply valve prevents supply pressure changes from affecting the setpoint.
- Separate control chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- An aspirator tube compensates downstream pressure droop under flow conditions.
- Canadian Registration Number (CRN) certification for all territories and provinces.

## OPERATING PRINCIPLES

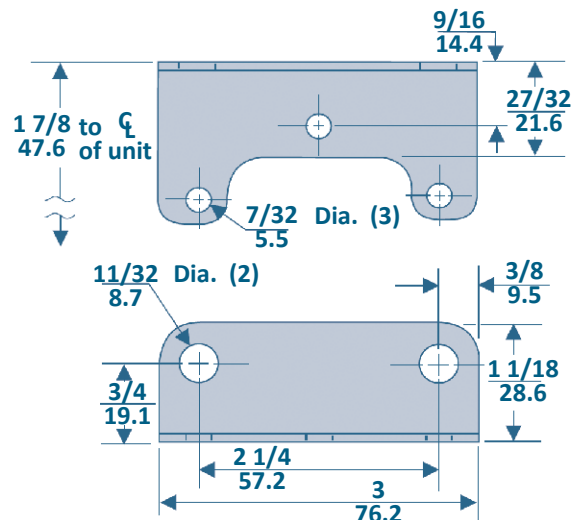
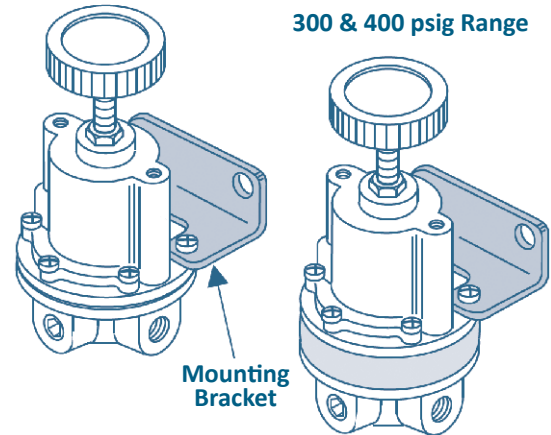
The Model 10 Series regulator uses the force balance principal to control the movement of the Valve Assembly that controls the output pressure. When the regulator is adjusted for a specific set point, the downward force of the Positive Bias Spring moves the Diaphragm Assembly downward. The Supply Valve opens and allows air to pass to the Outlet Port. As the set point is reached, the downward force exerted by the Positive Bias Spring is balanced by the force of the downstream pressure that acts on the Diaphragm Assembly. The resultant force moves the Supply Valve upward to reduce the flow of air to the Outlet Port.

Outlet pressure is maintained as a result of balance between forces acting on the top and bottom of the Diaphragm Assembly.



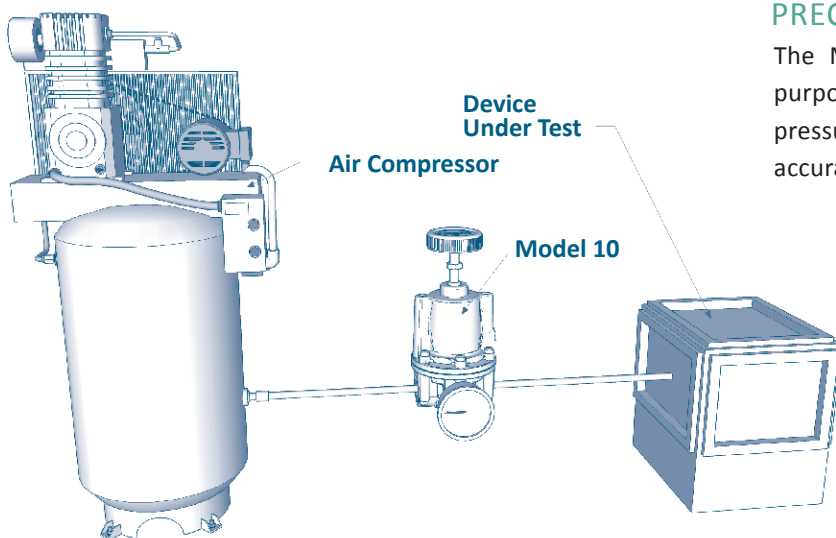
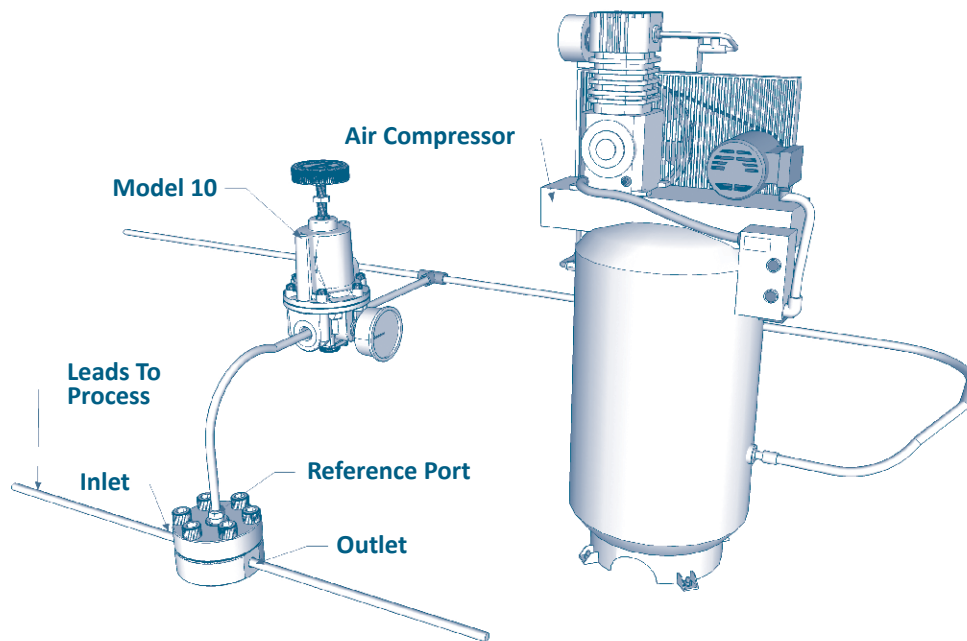
2-200 psig Range

300 & 400 psig Range



# Application Highlight

The Model 10 Pressure Reducing Regulator is often used to pilot operate an [Equilibar® Back Pressure Regulator](#). This is static pressure and is not under constant flow. Because the Model 10 is isolated from the process fluid by the diaphragm in the Equilibar, it is not necessary for the wetted parts of the Model 10 to be compatible with process fluids. In most applications it will only see air or inert gases.



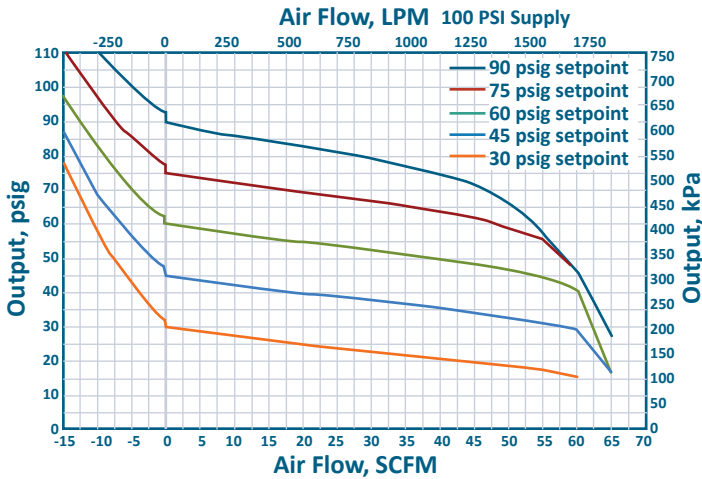
## PRECISION GAS DELIVERY APPLICATION

The Model 10 is useful as a stand-alone general purpose regulator in any application where a higher pressure supply must be regulated down to an accurate lower pressure.

# Technical & Ordering Information

## TECHNICAL INFORMATION

Model 10262D - Regulated Pressure vs. Flow Performance Curve



Performance Curves display typical decrease in outlet pressure as flow increases. Similar response to be expected for other supply pressures and setpoints. Performance data outside of these curves is not available.

## ORDERING INFORMATION

PART NUMBER	PRESSURE RANGE		
	psig	BAR	kPa
10212D	0-2	0-0.15	0-15
10222D	0-10	0-0.70	0-70
10202D	0-20	0-1.5	0-150
10232D	0.5-30	0.03-2	3-200
10242D	1-60	0.1-4	10-400
10262D	2-150	0.1-10	15-1000
10272D	3-200	0.2-14	20-1400
10282D	5-300	0.3-21	35-2100
10292D	5-400	0.3-28	35-2100

## SPECIFICATIONS

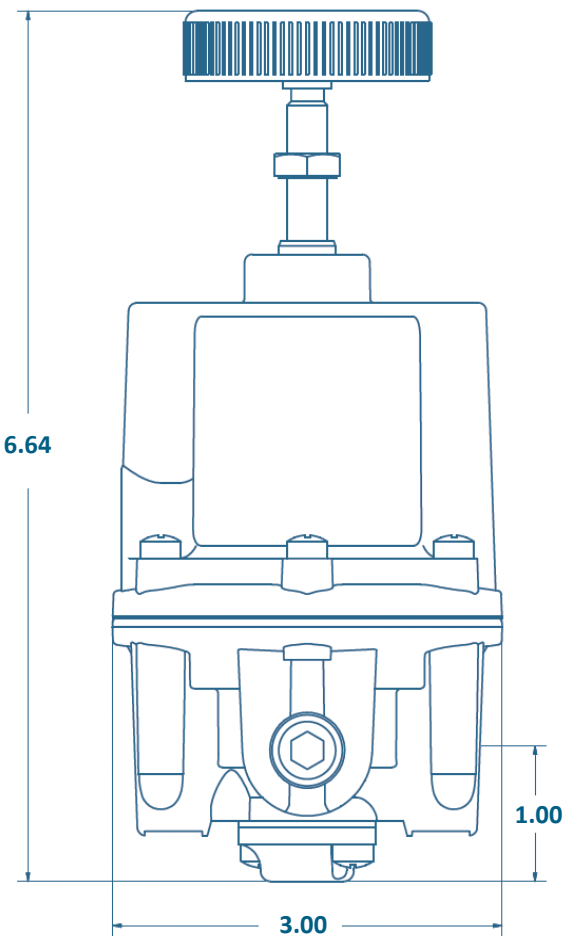
SUPPLY PRESSURE	500 psig, [35.0 BAR], (3500 kPa) Maximum
PIPE SIZE	1/4" NPT Inlet Outlet Gauge
FLOW CAPACITY	40 SCFM (68 m <sup>3</sup> /HR) @ 100 psig, [7.0 BAR], (700 kPa) supply and 20 psig, [1.5 BAR], (150 kPa) setpoint
EXHAUST CAPACITY	5.5 SCFM (9.35 m <sup>3</sup> /HR) where downstream pressure is 5 psig, [.35 BAR], (35 kPa) above 20 psig, [1.5 BAR], (150 kPa) setpoint
SUPPLY PRESSURE EFFECT	Less than 0.1 psig, [.007 BAR], (.7 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure
AMBIENT TEMPERATURE	-40°F to +200°F, (-40°C to 93.3°C)
HAZARDOUS LOCATIONS	Acceptable for use in Zones 1 and 2 for gas atmospheres; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

## MATERIALS OF CONSTRUCTION

BODY AND HOUSING	Aluminum
DIAPHRAGMS	Buna N on Dacron
TRIM	Brass, Zinc Plated Steel

## MODEL 10 REGULATOR KITS & ACCESSORIES

Mounting Bracket Kit - 14523 (316 Stainless Steel)





# About Equilibar

Equilibar provides innovative and robust pressure control technology for researchers and engineers worldwide. We are proud to design, manufacture, and test our patented back pressure regulators in our factory overlooking the Blue Ridge Mountains near Asheville, NC.

## APPLICATION ENGINEERING— WHAT SETS US APART

Unlike mass-market regulator distributors, we focus on working with you, the scientist or engineer with a complex pressure control scenario.

Our application engineers work collaboratively with clients to identify the optimal model, trim, and diaphragm for each application's unique challenges. No matter where you are on the globe, you can stay in close contact with your engineer by email, telephone, videoconferencing, or fax.

After installation, your application engineer will support you with start-up information and fine-tuning as needed.



Each application is reviewed by our engineering team to ensure quality performance of our products.



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Our engineers offer custom designed solutions for the most difficult pressure control challenges. Feel free to contact us to discuss your situation.



Made in the  
**USA**

Equilibar's quality system is  
**ISO 9001:2015** certified.