



February 2004

Installation and Start-Up

1. Remove the shipping plugs from both the regulator inlet and outlet connections.
2. Make certain that the inside of the piping and the regulator inlet and outlet are clean – they must be free of dirt, pipe dope, and other debris.
3. Use pipe joint material on the male threads of the pipe being connected to the regulator.
4. Install the regulator in the line. Make certain that the gas flow through the regulator is in the direction indicated by the arrow on the regulator body.

The regulator may be installed in any position: right side up, up side down, vertical piping, diagonal piping, etc. If required, the diaphragm case may be rotated 360° in any number of increments. To rotate diaphragm case assembly to another position in relation to the body loosen coupling nut. Make certain it is retightened to 35 to 50 ft.-lb. to hold diaphragm case assembly in new position and to reseal.

The diaphragm case vent must be positioned to protect against flooding, drain water, ice formation, traffic, tampering, etc. The vent must be protected against nest building animals to prevent vent blockage and to minimize the chances of foreign material collecting in the vent side of the regulator diaphragm.

CAUTION

Turn gas on very slowly. If an outlet stop valve is used, it should be opened first. Do not overload the diaphragm with a sudden surge of inlet pressure. Monitor the outlet pressure during start-up to prevent an outlet pressure overload.

5. Turn gas on very slowly.
6. Make certain that there are no leaks and that all connections are tight.
7. Adjust set-point (outlet pressure) by turning adjustment screw. Turn clockwise to increase and counterclockwise to decrease. Be sure to tighten lock nut after adjustment is completed. Do not adjust when regulator is closed (no flow). Only adjust when gas is flowing through regulator (approx. 250 SCFH).

Except for lock-up (regulator closed), the outlet pressure during normal operation must not go higher than the maximum limit of the spring range. Whenever it goes higher the spring could be overstressed. Also, the higher pressure springs

could compress solid and thereby keep the regulator from closing.

Therefore, whenever set-point is within the upper third of spring range, set-point adjustment should be made to low flow (Approx. 250 SCFH). If set-point adjustment must be made when flow is greater, use the next higher range spring.

CAUTION

It is the user's responsibility to assure that all regulator vents and/or vent lines exhaust to a non-hazardous location away from any potential sources of ignition. Where vent lines are used, it is the user's responsibility to assure that each regulator is individually vented and that common vent lines are not used.

8. The vent connection is an escape path for flammable gas and it must be located and/or piped so that potential discharge occurs in a safe area away from buildings, open flames, collection areas, arcing devices, etc. Regulators that are installed indoors or in a non-vented area must be vented to the outside. Simply run vent piping (minimum 1/4" NPT) from the regulator vent connection to a non-hazardous location on the outside away from any potential sources of ignition. The outlet of the vent piping must allow for the free and unobstructed passage of air and gas.
9. For outdoor installations the regulator should be installed so that that regulator vent faces downward.
10. For application on combustible gas with a specific gravity greater than 1.0 it is recommended that the gas be vented outdoors where the gas will not collect in low areas and away from possible ignition sources.

CAUTION

Regulators are pressure control devices with numerous moving parts subject to wear. Regulator wear is dependent upon particular operating conditions. To assure continuous satisfactory operation, a periodic inspection schedule must be adhered to with the frequency of inspection determined by the severity of the service and applicable laws and regulations.

Model 5646

Installation, Operation and Maintenance Instructions

Service

1. Make sure regulator is entirely de-pressured before disassembling.
2. Carefully note location and position of each part during disassembly to make certain reassembly is correct. Replace all worn, damaged, or otherwise unsatisfactory parts.
3. Loosen coupling nut and separate diaphragm case assembly from body.
4. Remove and inspect body to lower case seal ring. Replace if damaged. To remove valve, first remove snap clip. Orifice unscrews from body using 1" hex socket wrench "thin-wall" type. Use moderate amount of pipe dope on sealing surface (male threads) when replacing orifice.
5. During reassembly, make sure seal ring is correctly positioned. Tighten coupling nut with a torque of 35 to 50 ft-lbs.
6. To change spring: turn adjustment screw counterclockwise to remove spring load. Remove screws and upper diaphragm case and upper spring retainer. Make sure new spring is correctly nested on the diaphragm plate and install spring retainer at reassembly. Also, make sure diaphragm is not pinched.
7. To replace diaphragm, follow step 6 during disassembly and reassembly. Remove screw to disassemble diaphragm assembly and remove diaphragm. Assemble the diaphragm in reverse order. Align coupling pin parallel and square to diaphragm centerline. Make sure roll pin is correctly positioned. On reassembly, tighten screws evenly to a torque of 125 in.-lbs. The screws must be tight enough to prevent leakage but not so tight as to crush or damage the diaphragm. The diaphragm coupling roll pin must be assembled parallel and square to the diaphragm centerline to prevent binding of the coupling and lever. Also, the diaphragm must not be twisted or pinched.
8. Upon completing servicing, make sure regulator is free of leaks.

Model Number Information

Sample Model Number: 5646B - 1 D C - B 4 S

BODY SIZE	CODE
3/4"	7
1"	1
2"	2

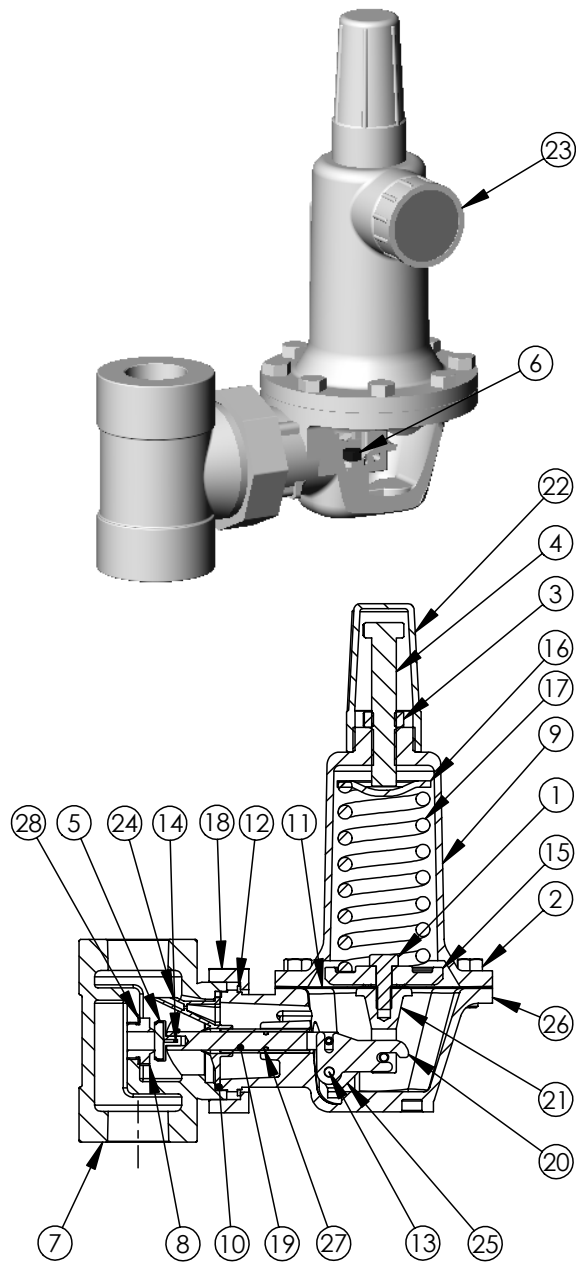
BODY MATERIAL	CODE
Ductile Iron	D

OUTLET PRESSURE	CODE
3 to 10 psig	A
8 to 20 psig	B
15 to 52 psig	C
50 to 125 psig	E
100 to 200 psig	F

TRIM MATERIAL	CODE
Brass / Polyurethane	P
Brass / Buna	B
Stainless Steel / Polyurethane	U
Stainless Steel / Buna	S
Stainless Steel / Viton	V

PORT DIAMETER	CODE
1/8"	2
3/16"	3
1/4"	4
3/8"	6
1/2"	8

OPTIONS	CODE
None	S
Viton Seals	V



ITEM NO.	DESCRIPTION	MATERIAL	PART NO.	QTY.
1	Diaphragm Plate Screw	Steel	56409	1
2	Bonnet Screw	Steel	56412	8
3	Adjusting Screw Jam Nut	Steel	51303	1
4	Adjusting Screw	Steel	51300	1
* 5	Seat Assembly	SST/Buna	56463	1
		Brass/Buna	56463-2	
		SST/Viton	56463-4	
6	Pivot Bracket Screw	SST	56464	2
7	Body - .750" NPT	Ductile Iron	56462	1
	Body - 1.00" NPT		56466	
	Body - 2.00" NPT		56476	
8	Orifice 1/8"	SST	56469	1
		Brass	56469-2	
		SST	56468	
		Brass	56468-2	
		SST	56467	
		Brass	56467-2	
		SST	56465	
Brass	56465-2			
9	Bonnet	SST	56470	1
		Brass	56470-2	
		Aluminum	56471	
* 10	Body O-Ring	Buna	56472	1
		Viton	56472-1	
* 11	Diaphragm	Buna	56473	1
		Viton	56473-2	
12	Retainer	Steel	56474	1
13	Pivot Pin	Steel	56394	1
* 14	Hairpin	SST	56395	1
15	Diaphragm Plate	Steel	56481	1
16	Upper Spring Retainer	Steel	56482	1
17	Spring - 3 - 10 PSIG - YELLOW	Spring Wire	56403	1
			56404	
			56483	
			56405	
			56406	
			56407	
18	Coupling Nut	Steel	56484	1
19	Valve Stem	Brass	56417	1
		SST	56417-1	
20	Lever	Steel	56489	1
21	Diaphragm Coupling	Steel	56418	1
22	Cap	Plastic	56491	1
23	Vent Cap	Plastic	56492	1
24	Boost Tube	Plastic	56494	1
25	Pivot Bracket	Steel	56495	1
26	Lower Housing	Aluminum	56505	1
27	O-ring	Buna	60082	1
		Viton	60084	
28	Nameplate	Aluminum	10731	1
28	Gasket Orifice	Comp.	56509	1

* INCLUDED IN REPAIR KIT

REPAIR KITS	
DESCRIPTION	PART NO.
SST/BUNA	87005
BRASS/BUNA	87006