MODEL 123

BACK PRESSURE / RELIEF REGULATOR

SECTION I

I. DESCRIPTION AND SCOPE

The Model 123 is a back pressure relief regulator used to control upstream (inlet or P_1) pressure. Sizes are 1/2", 3/4", 1", 1-1/2" and 2" (DN15, 20, 25, 40 and 50). With proper trim utilization, the unit is suitable for liquid, gaseous, or steam service. Refer to Technical Bulletin 123-TB for design conditions and selection recommendations.

⚠ CAUTION

This is not a safety device and must not be substituted for a code approved pressure safety relief valve or rupture disc.

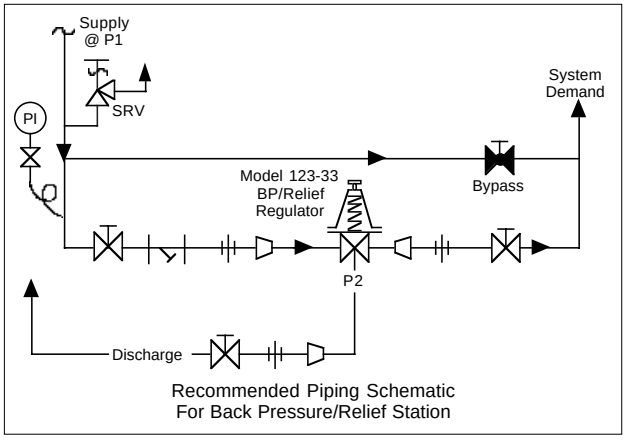
SECTION II

II. INSTALLATION

1. An inlet block valve should always be installed.
2. If service application is continuous such that shutdown is not readily accomplished, it is recommended that an inlet block valve, outlet block valve, and a manual bypass valve be installed.
3. Pipe unions should be installed to allow removal from piping.
4. An inlet pressure gauge should be located approximately ten pipe diameters upstream and within sight. An outlet pressure gauge is optional.
5. All installations should include an upstream relief device if the inlet pressure could exceed the pressure rating of any equipment or the maximum inlet pressure rating of the unit.
6. Clean the piping of all foreign material including chips, welding scale, oil, grease and dirt before installing the valve. Strainers are recommended.

⚠ WARNING

The maximum inlet pressure is equal to 1.5 times the larger number of the stated range spring on the nameplate, and is the recommended "upper operative limit" for the sensing diaphragm. Higher pressures could damage the diaphragm. (Field hydrostatic tests frequently destroy diaphragms. DO NOT HYDROSTATIC TEST THROUGH AN INSTALLED UNIT; ISOLATE FROM TEST.)



Recommended Piping Schematic
For Back Pressure/Relief Station

7. In placing thread sealant on pipe ends prior to engagement, ensure that excess material is removed and not allowed to enter the valve upon startup.
8. Flow Direction: Install so the flow direction matches the arrow cast on the body. The body has an angle configuration with a side inlet and bottom outlet.
9. Regulator may be installed in a vertical or horizontal pipe. If it is a steam system, ensure the piping is properly trapped and oriented.

10.A. Basic Regulator- (See Figure 1): Regulator may be rotated around the pipe axis 360°. Recommended positions are with spring chamber vertical upwards, or horizontal. Orient such that the spring chamber vent hole does not collect rainwater or debris.

10.B. Cryogenic Regulator - Option 123-5 or 123-36 (See Figure 2):
   a. Recommended installation is with spring chamber hanging directly below the body in a vertical downwards orientation. Allow water to drain; i.e. rain water.
   b. Recommend inert purge gas to spring chamber through vent hole and out drain hole.

10. C. Differential Regulator - Option 123-1+6 (See Figure 3):
   a. Recommended installation is with the spring chamber directed upwards.
   b. No corrosive or lethal fluid should be utilized for spring chamber loading.

11. Regulators are not to be direct buried underground.

12. For insulated piping systems, recommendation is to not insulate regulator.

13. Socket Weld Ends - Option 123-39: For regulators supplied with composition diaphragms or seats, care must be exhibited during the welding process to eliminate excessive heat to these “soft” parts.

SECTION III

III. PRINCIPLE OF OPERATION

1. Movement occurs as pressure variations register on the diaphragm. The registering pressure is the inlet, P_1 or upstream pressure. The range spring opposes diaphragm movement. As inlet pressure drops, the range spring pushes the diaphragm down, closing the port; as inlet pressure increases, the diaphragm pushes up and the port opens.

2. A complete diaphragm failure may cause the valve to fail closed.

SECTION IV

IV. STARTUP:

1. Start with the block valves closed. A bypass valve may be used to maintain inlet pressure in the upstream system without changing the following steps.

2. Relax the range spring by turning the adjusting screw counterclockwise (CCW) a minimum of three (3) full revolutions. This reduces the inlet (upstream) pressure setpoint.

3. If it is a “hot” piping system, and equipped with a bypass valve, slowly open the bypass valve to pre-heat the system piping and to allow slow expansion of the piping. Ensure proper steam trap operation if installed. Closely monitor inlet (upstream) pressure, via gauge, to assure not over-pressurizing. ***NOTE:*** *If no bypass valve is installed, extra caution should be used in starting up a cold system; i.e. do everything slowly.*

4. Crack open the inlet (upstream) block valve.

5. Slowly open the outlet (downstream) block valve observing the inlet (upstream) pressure gauge. Determine if the regulator is flowing. If not, slowly rotate the regulator adjusting screw counterclockwise (CCW) until flow begins.

6. Continue to slowly open the outlet (downstream) block valve until fully open.

7. Observing the inlet (upstream) pressure gauge, rotate the adjusting screw clockwise (CW) slowly until the inlet pressure begins to rise. Rotate CW until the desired setpoint is reached.

8. Continue to slowly open the inlet (upstream) block valve. If the inlet (upstream) pressure exceeds the desired setpoint pressure, rotate the adjusting screw CCW until the pressure decreases.

9. When flow is established steady enough that both the outlet and inlet block valves are fully open, begin to slowly close the bypass valve if installed.

10. Develop system flow to a level near its expected normal rate, and reset the regulator setpoint by turning the adjusting screw CW to increase inlet pressure, or CCW to reduce inlet pressure.

11. Reduce system flow to a minimum level and observe setpoint. Inlet pressure will rise from the setpoint of Step 9. (Ensure that this rise does not exceed the stated upper limit of the range spring by greater than 50% i.e.30-80 psig (2.07 - 5.52 Barg) range spring, at maximum flow the inlet pressure should not exceed 1.5 x 80 psig (5.6 Barg), or 120 psig (8.3 Barg). If it does, consult factory.)

12. Increase flow to maximum level if possible. Inlet (upstream or P_1) pressure should fall off. Readjust setpoint as necessary at the normal flow rate.

SECTION V

V. SHUTDOWN:

1. On systems with a bypass valve, and where system pressure is to be maintained as the regulator is shut down, slowly open the bypass valve while closing the inlet (upstream) block valve. Fully close the inlet (upstream) block valve. (When on bypass, the system pressure must be constantly observed and manually regulated. Close the outlet (downstream) block valve.

⚠ CAUTION

Do not walk away and leave a bypassed regulator unattended.

2. If the regulator and system are both to be shutdown, slowly close the inlet (upstream) block valve. Close the outlet (downstream) valve only if regulator removal is required.

SECTION VI

VI. MAINTENANCE:

⚠ WARNING

SYSTEM UNDER PRESSURE. Prior to performing any maintenance, isolate the regulator from the system and relieve all pressure. Failure to do so could result in personal injury.

A. General:

1. Maintenance procedures hereinafter are based upon removal of the regulator unit from the pipeline where installed.
2. Owner should refer to owner's procedures for removal, handling, cleaning and disposal of non-reuseable parts, i.e. gaskets, etc.
3. Refer to Figure 1 for basic regulator, Figure 2 for cryogenic regulator, and Figure 3 for differential regulator. See Figure 4 for blow-up of the composition seat trim.

B. Diaphragm Replacement:

⚠ WARNING

SPRING UNDER COMPRESSION. Prior to removing spring chamber, relieve spring compression by backing out the adjusting screw. Failure to do so may result in flying parts that could cause personal injury.

1. Securely install the body (1) in a vise with the spring chamber (2) directed upwards.
2. Relax range spring (18) by turning adjusting screw (17) CCW until removed from spring chamber (2).
3. Draw or embed a match mark between body casting (1) and spring chamber casting (2) along flanged area.
4. Remove all diaphragm flange nuts (8) and bolts (7).
5. Remove spring chamber (2), range spring (18) and spring button (19).
6. Remove the diaphragm sub-assembly consisting of the diaphragm(s) (3), pressure plate (2), lock washer (13), piston (14), piston nut (6) and pusher plate gasket (5). ***NOTE:*** *Refer to the quantity of diaphragms (12) incorporated per the bill of materials listing. Depending on inlet pressure level, multiple metal diaphragms may be "stacked".*
7. Loosen piston nut (6) and separate all parts (3, 5, 13, 14 & 20) of the diaphragm sub-assembly. Clean pusher plate gasket (5) surface on piston (14) if piston (14) is to be reused.
8. Inspect pressure plate (20) to assure no deformation due to over-pressurization. If deformed, replace.
9. Remove diaphragm gasket (4) for metal diaphragm. ***NOTE:*** *No diaphragm gasket (4) for composition diaphragm.*
10. Clean body (1) and diaphragm flange. ***NOTE:*** *On regulators originally supplied as "special cleaned", option 123-5, 123-36 or 123-55, maintenance must include a level of cleanliness equal to Cashco's cleaning standard #S-1134. Contact factory for details.*
11. Place diaphragm gasket (4) on body (1) flange, if provided. A light coat of gasket/thread sealant is recommended for metal diaphragms (3).
12. Reassemble diaphragm sub-assembly by placing piston (14) in a vise, post upwards, grasping on the hexagonal surface. Place the pusher plate gasket (5), diaphragm(s) (3), pressure plate (20) and lock washer (13) over the threaded post. Ensure that the pressure plate (20) is placed with curved outer rim down next to the diaphragm (3) surface. Place a thread sealant compound similar to Loctite #721 on the threads of the piston (14) post prior to tightening the piston nut (6) to the following torques:

Diaphragm	Regulator Size	Piston Material	Torque
Metal	1/2"	Brass	20-25 Ft#
	3/4" - 2"	Brass	35 Ft#
	1/2" - 2"	SST	
Composition	1/2"	Brass	20-25 Ft#
	3/4" - 2"	Brass	20 Ft#
	1/2" - 2"	SST	

13. Insert the diaphragm sub-assembly into the body (1). Rotate the assembly to ensure that the piston (14) is not binding in the cylinder (12).
14. Place the range spring (18) onto the retainer hub of the pressure plate (20).
15. Place multi-purpose, high temperature grease into depression of spring button (19) where adjusting screw bears. Set spring button (19) onto range spring (18); ensure spring button (19) is laying flat.
16. Aligning the matchmarks, place spring chamber (2) over the above stacked parts. Install all bolts (7) and nuts (8) by hand tightening. Mechanically tighten bolting (7 & 8) in a cross pattern that allows spring chamber (2) to be pulled down evenly. Recommended torques are as follows:

Regulator Size	Bolt Size	Metal Diaph.	Comp. Diaph.
1/2"	3/8-24	25 Ft/Lb	22 Ft/Lb
3/4" thru 2"	7/16-20	35 Ft/Lb	30 Ft/Lb

NOTE: *Never replace bolting (7 & 8) with just any bolting if lost. Bolt heads and nuts are marked with specification identification markings. Use only proper grades as replacements.*

17. Reinstall adjusting screw (17) with locknut (9).

18. Soap solution test around bolting (7 & 8) and body (1) and spring chamber (2) flanges for leakage. Ensure that an inlet pressure is maintained during this leak test of at least mid-range spring level; i.e. 20-60 psig (1.38 - 4.14 Barg) range spring, 40 psig (2.8 Barg) test pressure minimum.

C. Special Instructions for Diaphragm Removal:

1. If the 123-1+6 Option, differential construction, is utilized, the following extra procedures will be required:
   a. Upon reassembly of the regulator, procedure remains the same through reassembly of diaphragm assembly. For -1+6 option, position pusher plate (21) over threaded post of piston (14) prior to placement of parts (5, 3, 20 & 13).
   b. For metal diaphragm(s) (3) only, install a second diaphragm gasket (4) on the top side of the diaphragm(s) (3).
   c. Clean the diaphragm flange area of the spring chamber (2) thoroughly before replacing.
   d. Follow regular reassembly for diaphragm replacement.
   e. Install closing cap (22) after regulator setpoint is established.

D. Trim Replacement:

1. Trim removal requires that diaphragm sub-assembly be removed. Refer to previous procedure, Section VI.B.

2. Using a deep socket with a 24 inch lever length, place the socket over the cylinder sub-assembly (12) hex surfaces. Rap the lever arm with a hammer to loosen (CCW). Remove the cylinder sub-assembly (12).

3. Inspect inside surface of cylinder (12.1) at four points:
   a. Seat (12.2) ring erosion/wear on seating surfaces. If wear is excessive consider utilizing Option 123-15, stellited seat surfaces.
   b. Seat (12.2) wire drawing between cylinder (12.1) and seat (12.2) where pressed in. If wear exists here, consult factory.
   c. At metal-to-metal surface between body and cylinder (12). If wear exists here, consult factory.
   d. Where the piston (24) ribbed guides bear (guide zone).

   If wear is significant at any of these points, both cylinder sub-assembly (12) and piston sub-assembly (14, or 14, 15 and 16) should be replaced. (Cashco, Inc., does not recommend attempting to replace the seat (12.2) by pressing out and then repressing in. Cashco recommends that a cylinder sub-assembly (12) and piston (14, or 14, 15 and 16) be replaced as a set. Composition seat discs (15) may be replaced individually.)

4. If a compositon (soft) seat trim design is utilized, use the following sub-steps:
   a. Tighten the “flats” of the seat disc screw (16) within a vise. Firmly hand-grip the piston (14) and turn CCW to loosen the seat disc screw (16). If too tight, place a wrench on the hex portion of the piston (14), and rotate. Remove the piston (14).
   b. Remove the seat disc (15) and clean the recessed piston (14) area where the seat disc (15) is placed. If the edges which form the recess of the piston (14) are worn, also replace piston (14) and seat disc screw (16).
   c. Place seat disc (15) into recessed end of piston (14).
   d. Place thread sealant on threaded portion of seat disc screw (16), and manually rotate piston (14) into seat disc screw (16) (still fixed in vise) to secure seat disc (15). Tighten seat disc screw (16) firmly. Do not over-tighten to the point of embedding the seat disc screw (16) into the seat disc (15); the seat disc (15) should lay flat with no rounded surface. A mechanical aid is normally not required; hand tightening is normally sufficient.

5. If stellited seat surfaces are utilized, follow a procedure similar to the removal of the seat disc screw (16) with composition seat above. The stellited seat cone (36) will, however, require that it be tightened as much as possible.

6. Clean the body (1) cavity. Clean all parts to be reused. **NOTE:** *On regulators originally supplied with Option 123-55 "cleaned for oxygen service", maintenance must include a level of cleanliness equal to Cashco cleaning standard #S-1134. Contact factory for details.*

7. Use special care cleaning the flat mating surfaces of the body (1) and cylinder (12) shoulder, as this pressurized joint is metal-to-metal with no gasket.

8. Lubricate the cylinder (12) threads lightly with thread sealant, insert the cylinder (12) into the body (1) and screw CW until tightly seated. Using the hammer and wrench handle, impact the cylinder (12) into the body (1).

9. Reinstall diaphragm sub-assembly in accordance with Section VI.B., Diaphragm Replacement.

10. Bench test unit for suitable operation. ***NOTE:*** *Regulators are not tight shutoff devices. Even if pressure falls below set point, a regulator may or may not develop bubble tight shutoff. In general, tighter shutoff can be expected with composition* seat.

11. Soap solution test around body (1) flange for leakage. Test pressure should be the maximum allowed.

SECTION VII

VII. TROUBLE SHOOTING GUIDE

1. Erratic Operation; chattering

Possible Causes	Remedies
A. Oversized regulator.	A1. Check actual flow conditions, resize regulator for minimum and maximum flow. A2. Increase flow rate. A3. Decrease regulator pressure drop; decrease inlet pressure by placing throttling orifice in inlet piping union. A4. Install next step higher range spring. A5. Before replacing regulator, contact factory.
B. Inadequate rangeability.	B1. Increase flow rate. B2. Decrease regulator pressure drop. B3. Install next step higher range spring.
C. Worn piston/cylinder; inadequate guiding.	C. Replace trim.

2. Regulator inlet (upstream) pressure too high.

Possible Causes	Remedies
A. Regulator undersized.	A1. Confirm by opening bypass valve together with regulator. A2. Check actual flow conditions, resize regulator; if regulator has inadequate capacity, replace with larger unit.
B. Plugged inlet strainer	B. Remove strainer screen and clean; consider leaving screen out.
C. Plugged trim.	C. Remove trim and check for plugged holes in cylinder.
D. Incorrect range spring (screwing out CCW of adjusting screw does not allow bringing pressure level to a stable and proper level).	D. Replace range spring with proper lower range.
E. Too much proportional band (rise).	E1. Review P.B. (rise) expected. E2. Contact factory.
F. Restricted diaphragm movement.	F. Ensure no moisture in spring chamber at temperatures below freezing. Ensure no dust or debris entering vent opening. If rainwater or debris can enter, re-orient spring chamber.

3. Leakage through the spring chamber vent hole.

Possible Causes	Remedies
A. Normal-life diaphragm failure.	A. Replace diaphragm.
B. Abnormal short-life diaphragm failure.	B1. Can be caused by excessive chattering. See No. 1 to remedy chatter. B2. Can be caused by corrosive action. Consider alternate diaphragm material. B3. For composition diaphragms, ensure not subjecting to over-temperature conditions. B4. Upstream (inlet) pressure buildup occuring that overstresses diaphragms.

4. Sluggish Operation.

Possible Causes	Remedies
A. Plugged spring chamber vent.	A. Clean vent opening.
B. Plugged piston guides	B. Remove trim and clean.
C. Fluid too viscous	C. Heat fluid. Contact factory.

SECTION VIII

VIII. PARTS ORDERING INFORMATION

There are three methods to obtain parts ordering information/numbers. These methods are listed below, in order of ease of entering. The least expensive method is to utilize parts in kits where possible.

METHOD A - USE OF PRODUCT CODE.

Step 1. If available, obtain the 18 character product code number from:
   a. The Bill of Materials sheet attached herein.
   b. The metal tag attached to the regulator.

□□□-□□□7-□□□□□□□□□

NOTE: *Some regulators may not have the product code located on the metal tag.*

Step 2. Identify which kits or parts are desired from the following:
   a. The Bill of Materials sheet attached herein, or refer to the cross-sectional drawings.

Step 2 (Cont.) b .Standard maintenance parts for a basic regulator (no options) and the cryogenic regulator are included in the Parts Kit Number table below. Kit "A" contains seal(s), diaphragm(s) and gasket(s). Kit "B" contains trim replacement parts plus seal(s), diaphragm(s) and gasket(s).

Step 3. Contact your local Cashco, Inc., Sales Representative and specify the product code number along with a description of any parts not included in the kits. Costs of required parts (and kits) can be given by the Sales Representative.

METHOD B - NO PRODUCT CODE AVAILABLE - DISASSEMBLED REGULATOR.

Step 1. Determine all available information from regulator's metal tag.
a. Serial number (5-digit).
b. Regulator "Type" or "Model" number.
c. Size (may have to observe body tap).
d. Spring range.
e. Trim designation number (if available).

Step 2. Determine construction of trim.
a. Metal or composition (soft) seat?
b. Metal or composition (soft) diaphragm?
c. Is trim SST or brass?
d. Is 316 SST needed over standard 416 SST?
e. What material are the gaskets? (Our standard non-asbestos is light gray in color, asbestos is a very dark gray, and TFE is white.)

Step 3. With the information from Steps 1 and 2 above, contact your local Cashco, Inc., Sales Representative for the proper identification numbers to use, and the parts costs.

METHOD C - NO PRODUCT CODE AVAILABLE - ASSEMBLED REGULATOR IN SERVICE.

Step 1. Determine all available information from metal tag using Step 1, Method B.

Step 2. Contact your local Cashco, Inc., Sales Rep with the above information.

Step 3. Sales Representative will contact the factory to determine the original internal construction. Factory will relay information to the Sales Representative.

Step 4. Await the Sales Representative's return contact with the proper part numbers and cost.

MODEL 123
PARTS KIT NUMBERS
(KIT NOS. SHADED)

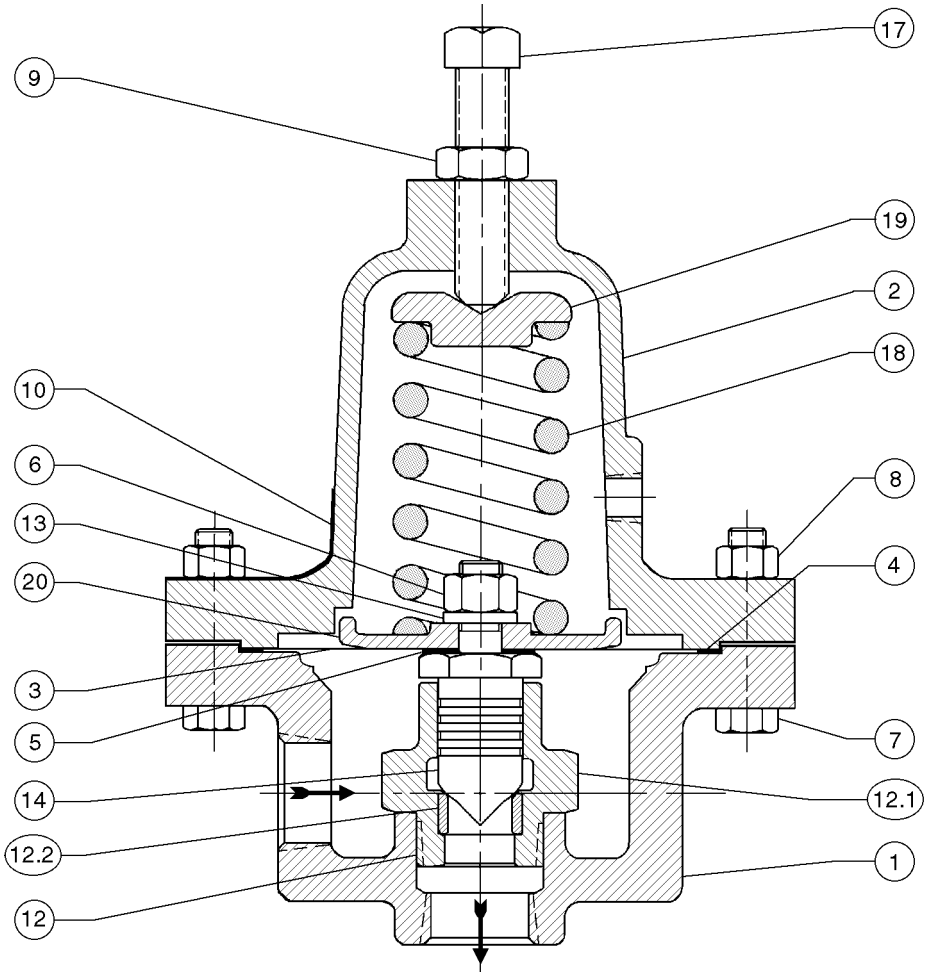
The shaded parts kit numbers below represent an abbreviated identification number for a basic regulator (no options), unless otherwise indicated.

BASIC MODEL 123 REGULATOR					
Trim Desig. No.	Kit Abbre.	SIZE			
		1/2"	3/4" & 1"	1-1/2"	2"
B1, S1, & S2	A	8B4-AB1K-A	8B5-AB1K-A	8B8-AB1K-A	8B9-AB1K-A
B1	B	8B4-BB1K-A	8B5-BB1K-A	8B8-BB1K-A	8B9-BB1K-A
B2	A	8B4-AB2K-A	8B5-AB2K-A	8B8-AB2K-A	8B9-AB2K-A
	B	8B4-BB2K-A	8B5-BB2K-A	8B8-BB2K-A	8B9-BB2K-A
B5	A	8B4-AB5K-A	8B5-AB5K-A	8B8-AB5K-A	8B9-AB5K-A
	B	8B4-BB5K-A	8B5-BB5K-A	8B8-BB5K-A	8B9-BB5K-A
S1	B	8B4-BS1K-A	8B5-BS1K-A	8B8-BS1K-A	8B9-BS1K-A
S2	B	8B4-BS2K-A	8B5-BS2K-A	8B8-BS2K-A	8B9-BS2K-A
S36	A	8B4-A36K-A	8B5-A36K-A	8B8-A36K-A	8B9-A36K-A
	B	8B4-B36K-A	8B5-B36K-A	8B8-B36K-A	8B9-B36K-A
MODEL 123 CRYOGENIC REGULATOR					
Trim Desig. No.	Kit Abbre.	SIZE			
		1/2"	3/4" & 1"	1-1/2"	2"
B5	A	8C4-AB5K-A	8C5-AB5K-A	8C8-AB5K-A	8C9-AB5K-A
	B	8C4-BB5K-A	8C5-BB5K-A	8C8-BB5K-A	8C9-BB5K-A
S36	A	8C4-A36K-A	8C5-A36K-A	8C8-A36K-A	8C9-A36K-A
	B	8C4-B36K-A	8C5-B36K-A	8C8-B36K-A	8C9-B36K-A

MODEL 123
COLOR-CODED SPRING CHART

Size	Standard Construction			Cryogenic -5 or -36 Construction		
	Steel Range Spring psig	Part Number	(Color)	SST Range Spring psig	Part Number	(Color)
1/2"	2–30	830-69-5-00209-99	(Green)	2–30	830-78-5-00209-00	(Green)
	25–50	830-69-5-00114-99	(Blue)	20–60	830-78-5-00115-00	(Light Blue)
	40–100	830-69-5-00116-99	(Brown)	50–110	830-78-5-00118-00	(Brown)
	80–150	830-69-5-00119-99	(White)	90–150	830-78-5-00121-00	(White)
	120–215	830-69-5-00120-99	(Navy)	120–245	830-78-5-06076-00	(Navy)
	150–350	830-M5-5-02123-99	(Black)	220–300	830-K4-5-02126-00	(Maroon)
3/4" & 1"	2–20	830-69-5-00209-99	(Green)	2–25	830-78-5-00209-00	(Green)
	15–40	830-69-5-00115-99	(Red)	20–45	830-78-5-00114-00	(Blue)
	30–80	830-69-5-00117-99	(Dark Green)	35–100	830-78-5-00119-00	(Brown)
	65–160	830-69-5-00122-99	(White)			
	130–205	830-69-5-00328-99	(Navy)	80–210	830-78-5-00328-00	(Navy)
	165–350	830-M6-5-02124-99	(Maroon)	170–300	830-K4-5-02127-00	(Maroon)
1-1/2" & 2"	2–15	830-69-5-00209-99	(Green)	2–15	830-78-5-00209-00	(Green)
	10–25	830-69-5-00114-99	(Blue)	10–30	830-78-5-00114-00	(Blue)
	20–55	830-69-5-00117-99	(Dark Green)	25–55	830-78-5-00118-00	(Brown)
	45–105	830-69-5-00122-89	(White)	45–95	830-78-5-06076-00	(Navy)
	85–230	830-M6-5-02124-99	(Maroon)	75–130	830-78-5-06076-00	(Navy)
	180–350	830-M6-5-02125-99	(Navy)	110–300	830-K4-5-02125-00	(Maroon)

NOTE: If it becomes necessary to change a regulator's range spring and install a new spring for a different pressure range, A NEW CASHCO, INC., NAMEPLATE MUST BE AFFIXED TO THE REGULATOR. Contact you local Cashco Sales Representative and specify the new pressure range and the serial number off the existing name plate. They will contact the factory who will review unit's original internal construction and determine new operating pressure limits. Await the Sales Representative's return contact with the proper part numbers and cost.



ITEM NO.	DESCRIPTION
1	Body
2	Spring chamber
3	Diaphragm
4	Diaphragm Gasket
5	Piston Gasket or Pusher Plate Gasket
6	Piston Nut
7	Cap Screw
8	Nut
9	Adjusting Screw Lock Nut
10	Nameplate
12	Cylinder Subassembly
12.1	Cylinder
12.2	Seat
13	Lock Washer
14	Piston
15	Seat Disc
16	Seat Disc Screw
17	Adjusting Screw
18	Spring
19	Spring Button
20	Pressure Plate
ITEMS NOT SHOWN	
27	Sealing Washer (1-1/2" & 2" Differential Only)
35	Pipe Plug (Body)
36	Stellited Seat Cone

FIGURE 1
Basic Model 123
Metal Seat

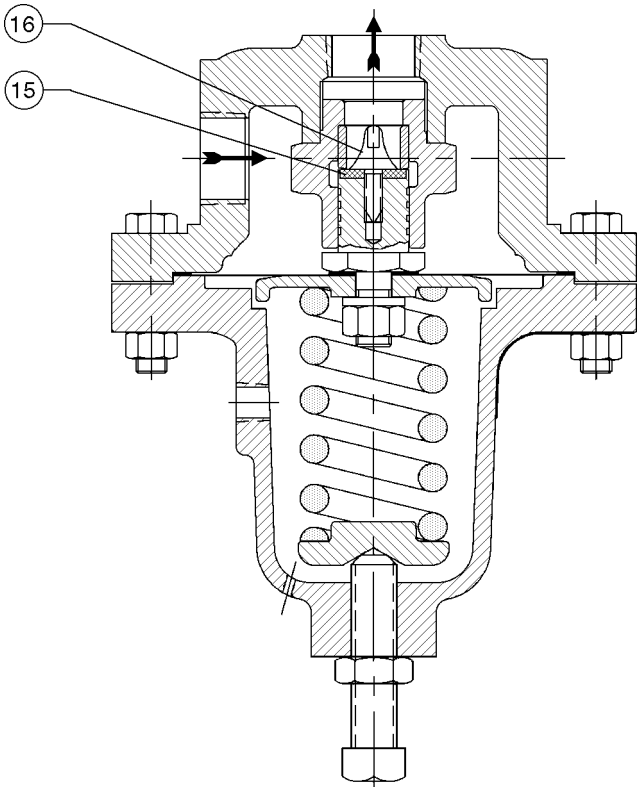


FIGURE 2
Cryogenic Model 123
Composition Seat
-5 or -36 Option

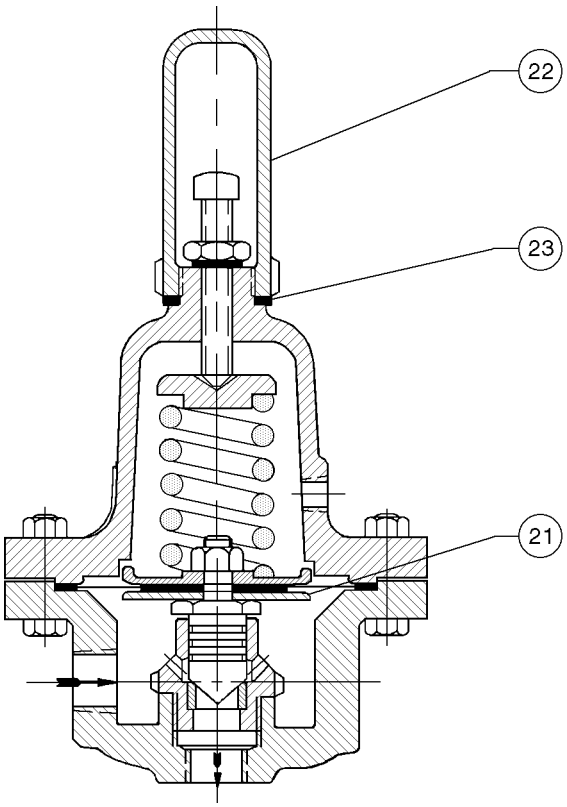


FIGURE 3
Differential Model 123
Metal Seat
-1+6 Option

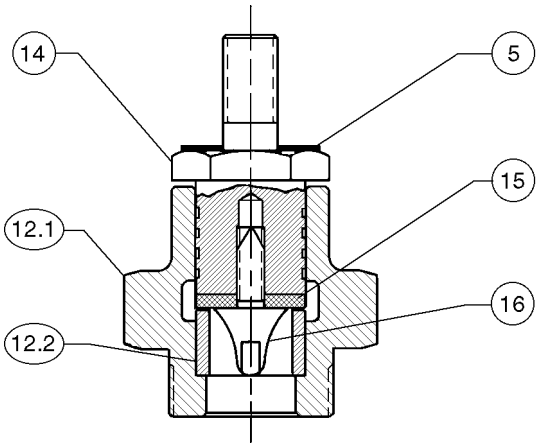


FIGURE 4
Composition Seat

ITEM NO.	DESCRIPTION
5	Piston Gasket or Pusher Plate Gasket
12	Cylinder Subassembly
12.1	Cylinder
12.2	Seat
14	Piston
15	Seat Disc
16	Seat Disc Screw
21	Pusher Plate
22	Closing Cap
23	Closing Cap Gasket

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