CLA-VAL

—MODEL—

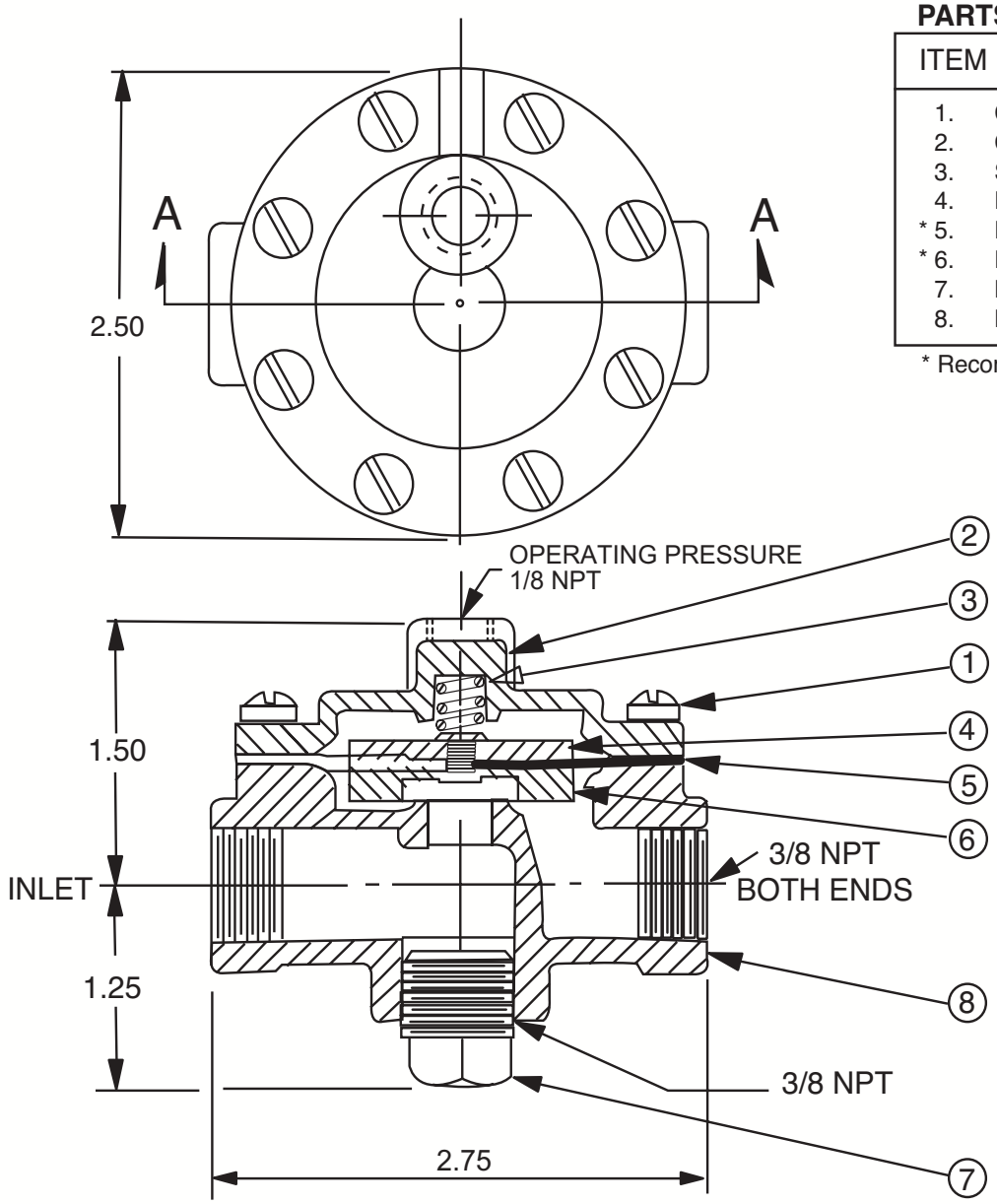
100-01

3/8"-1 Hytrol Valve

PARTS LIST

ITEM	DESCRIPTION
1.	Cover Screw (8 Required)
2.	Cover
3.	Spring
4.	Diaphragm Washer
* 5.	Diaphragm
* 6.	Disc Retainer Assembly
7.	Body Plug (3/8 NPT)
8.	Body

* Recommended Spare Parts



SECTION AA

100-01 3/8" HYTROL VALVE

When Ordering parts, please specify

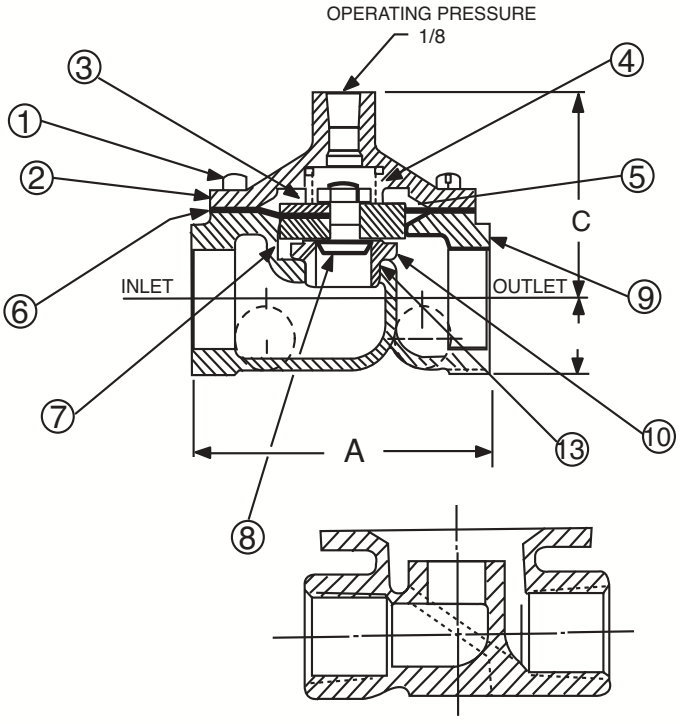
- All nameplate data
- Description
- Item Number
- Material

CLA-VAL

—MODEL— **100-01**

1/2"-3/4"-1" Hytrol Valve

100-01 3/4" & 1/2" Hytrol Valve



PARTS LIST

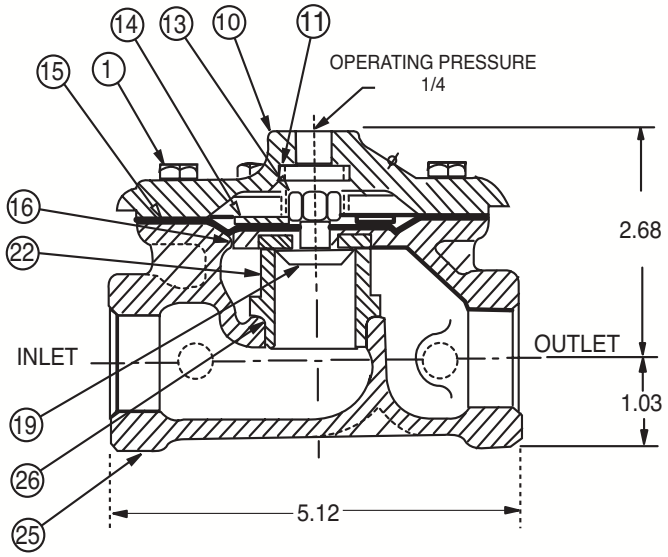
ITEM	DESCRIPTION
1	COVER SCREW
2	COVER
3	SPRING
4	STEM NUT
5	DIAPHRAGM WASHER
*6	DIAPHRAGM
*7	DISC RETAINER ASSEMBLY
8	DISC GUIDE & STEM
9	BODY
10	SEAT
11	NAMEPLATE
12	BODY PLUG HEX HD.
13	O-RING SEAT (FOR OLD STYLE BODY ONLY)

* Recommended Spare Parts

	1/2	3/4
A	1-7/16	3-1/2
C (MAXIMUM)	2-3/8	2-3/8
D	25/32	29/32

When Ordering parts, please specify
- All nameplate data
- Description
- Item Number
- Material

100-01 1" Hytrol Valve



PARTS LIST

ITEM	DESCRIPTION
1	COVER SCREW
2	NAMEPLATE
3	NAMEPLATE SCREW
10	COVER
11	SPRING
13	STEM NUT
14	DIAPHRAGM WASHER
15	DIAPHRAGM
16	DISC RETAINER ASSEMBLY
19	DISC GUIDE
22	SEAT
24	BODY PLUG
25	BODY
26	O-RING, SEAT

* Recommended Spare Parts

CVCL 1 (2) 3 4 DIST CODE 048 SHEET 1 OF 2

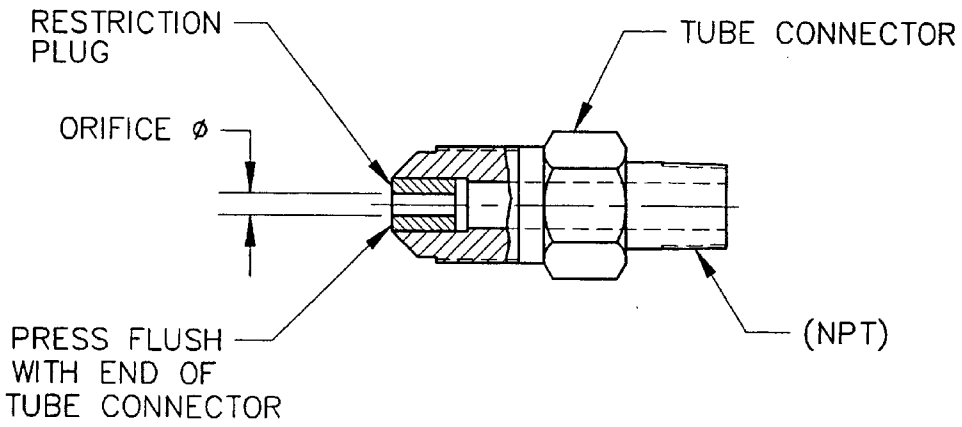
CLA-VAL CO. NEWPORT BEACH, CALIFORNIA

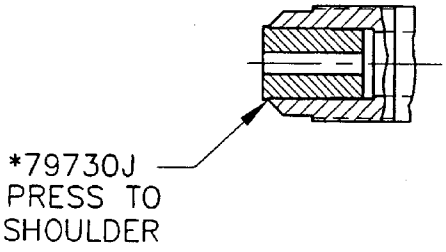
CATALOG NO.	DRAWING NO.	REV
X58C	48834	AN

TYPE OF VALVE AND MAIN FEATURES

X58C RESTRICTION ASSEMBLIES

DESIGN		
DRAWN	JC	12-3-85
CHK'D	JC	12-4-85
APV'D	CH	12-11-85





NOTES:

1. *FOR IDENTIFICATION, THESE STOCK NO'S ARE TO BE STAINED BLUE WITH 74234-03.
2. **FOR IDENTIFICATION, THESE STOCK NO'S ARE TO BE STAINED RED WITH 74234-05.
3. SEE DWG 76740 FOR STAINLESS STEEL X58C.

CAD REVISION RECORD - DO NOT REVISE MANUALLY

LTR	DESCRIPTION	BY	DATE
A-AK	SEE REVISION FILE		
AL	REDRAWN ON CAD (ECO 14229)	EK	11-18-93
AM	REINSTATED PN 68565B & 64673H (ECO 15043)	TLC	-18-94
AN	ADDED PN 48834-05F (NED 43663)	AK	-J-15-98

CLA-VAL

— MODEL — **CRD**

Pressure Reducing Control

DESCRIPTION

The Cla-Val Model CRD Pressure Reducing Control automatically reduces a higher inlet pressure to a lower outlet pressure. It is a direct acting, spring loaded, diaphragm type control that operates hydraulically or pneumatically. It may be used as a self-contained valve or as a pilot control for a Cla-Val main valve. It will hold a constant downstream pressure within very close pressure limits.

OPERATION

The CRD Pressure Reducing Control is normally held open by the force of the compression spring above the diaphragm; and delivery pressure acts on the underside of the diaphragm. Flow through the valve responds to changes in downstream demand to maintain a pressure.

INSTALLATION

The CRD Pressure Reducing Control may be installed in any position. There is one inlet port and two outlets, for either straight or angle installation. The second outlet port can be used for a gage connection. A flow arrow is marked on the body casting.

ADJUSTMENT PROCEDURE

The CRD Pressure Reducing Control can be adjusted to provide a delivery pressure range as specified on the nameplate.

Pressure adjustment is made by turning the adjustment screw to vary the spring pressure on the diaphragm. The greater the compression on the spring the higher the pressure setting.

1. Turn the adjustment screw in (clockwise) to increase delivery pressure.
2. Turn the adjustment screw out (counter-clockwise) to decrease the delivery pressure.
3. When pressure adjustment is completed tighten jam nut on adjusting screw and replace protective cap.
4. When this control is used, as a pilot control on a Cla-Val main valve, the adjustment should be made under flowing conditions. The flow rate is not critical, but generally should be somewhat lower than normal in order to provide an inlet pressure several psi higher than the desired setting

The approximate minimum flow rates given in the table are for the main valve on which the CRD is installed.

Valve Size	1 1/4" -3"	4"-8"	10"-16"
Minimum Flow GPM	15-30	50-200	300-650

SYMPTOM	PROBABLE CAUSE	REMEDY
Fails to open when deliver pressure lowers	No spring compression	Tighten adjusting screw
	Damaged spring	Disassemble and replace
	Spring guide (8) is not in place	Assemble properly
	Yoke dragging on inlet nozzle	Disassemble and reassemble properly (refer to Reassembly)
Fails to close when delivery pressure rises	Spring compressed solid	Back off adjusting screw
	Mechanical obstruction	Disassemble and reassemble properly (refer to Reassembly)
	Worn disc	Disassemble remove and replace disc retainer assembly
	Yoke dragging on inlet nozzle	Disassemble and reassemble properly (refer to Reassembly)
Leakage from cover vent hole	Damaged diaphragm	Disassemble and replace
	Loose diaphragm nut	Remove cover and tighten nut

MAINTENANCE

Disassembly

To disassemble follow the sequence of the item numbers assigned to parts in the sectional illustration.

Reassembly

Reassembly is the reverse of disassembly. Caution must be taken to avoid having the yoke (17) drag on the inlet nozzle of the body (18). Follow this procedure:

1. Place yoke (17) in body and screw the disc retainer assembly (16) until it bottoms.
2. Install gasket (14) and spring (19) for 2-30 and 2-6.5 psi range onto plug (13) and fasten into body. Disc retainer must enter guide hole in plug as it is assembled. Screw the plug in by hand. Use wrench to tighten only.
3. Place diaphragm (12) diaphragm washer (11) and belleville washer (20) on yoke. Screw on hex nut (10).
4. Hold the diaphragm so that the screw holes in the diaphragm and body align. Tighten diaphragm nut with a wrench. At the final tightening release the diaphragm and permit it to rotate 5° to 10°. The diaphragm holes should now be properly aligned with the body holes.

To check for proper alignment proceed as follows:
Rotate diaphragm clockwise and counterclockwise as far as possible. Diaphragm screw holes should rotate equal distance on either side of body screw holes ±1/8".

Repeat assembly procedure until diaphragm and yoke are properly aligned. There must be no contact between yoke and body nozzle during its normal movement. To simulate this movement hold body and diaphragm holes aligned. Move yoke to open and closed positions. There must be no evidence of contact or dragging.

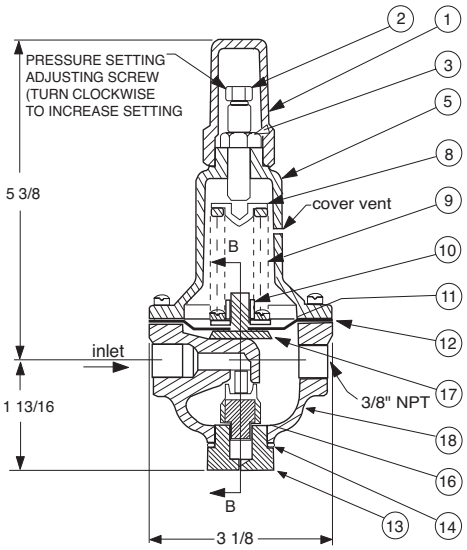
5. Install spring (9) with spring guide (8).
6. Install cover (5), adjusting screw (2) and nut (3), then cap (1).

CLA-VAL P.O. Box 1325 • Newport Beach, CA 92659-0325 • Phone: 949-722-4800 • Fax: 949-548-5441 • E-mail: claval@cla-val.com • Website cla-val.com

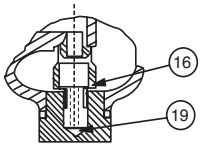
CLA-VAL

CRD

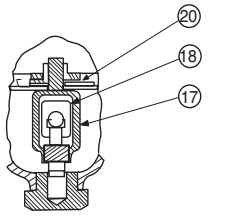
Pressure Reducing Control



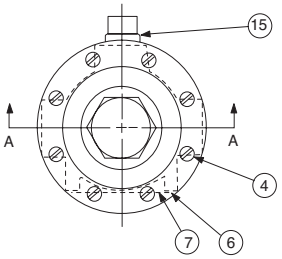
SECTION A-A
OPEN POSTION
FOR HIGH PRESSURE CONTROL



Body and Disc
Retainer Detail
for Low Pressure
Control



SECTION B-B
CLOSED POSITION



Size (inch)	Stock Number	Adjustment Range	
		psi	Ft of Water
3/8	71943-07A	2 - 6.5	4.5 - 15
3/8	71943-08J	2 - 30	4.5 - 69
3/8	71943-03K	15 - 75	35 - 173
3/8	71943-11C	20 - 105	46 - 242
3/8	71943-04H	30 - 300	69 - 692

Factory Set Pressure	PSI per Turn*
2 - 6.5 set @ 3.5 psi	.61
2 - 30 set @ 10 psi	3.0
15 - 75 set @ 20 psi	9.0
20 - 105 set @ 60 psi	12.0
30 - 300 set @ 60 psi	27.0

*Approximate-Final Adjustment should be with a pressure gauge and with flow.

When ordering parts specify:

- All nameplate data
- Item Description
- Item number

Item	Description	Material	Part Number	List Price
1	Cap	PL	67628J	
2	Adjusting Screw	BRS	7188201D	
3	Jam Nut (3/8-16)	SS	6780106J	
4*	Machine Screw (Fil.Hd.) 8 Req'd	303	6757821B	
5	Cover	BRS	C2544K	
6	Nameplate Screw	SS	67999D	
7	Nameplate	BRS	C0022001G	
8	Spring Guide	302	71881H	
	Spring Guide (20 - 105 psi)	303	205620F	
9	Spring (15-75 psi)	CHR/VAN	71884B	
	Spring (2 - 6.5 psi)	SS	82575C	
	Spring (2 - 30 psi)	SS	81594E	
	Spring (20 - 105 psi)	316	20632101E	
	Spring (30 - 300 psi)	CHR/VAN	71885J	
10	Hex Nut	303	71883D	
11	Diaphragm Washer	302	71891G	
12*	Diaphragm	NBR	C6936D	
13	Plug, Body	BRS	V5653A	
14*	Gasket	Fiber	40174F	
15	Plug	BRS	6766003F	
16*	Disc Retainer Assy. (15 - 75 psi)	BZ/Rub	C5256H	
	Disc Retainer Assy. (2 - 30 psi)	BZ/Rub	C5255K	
	Disc Retainer Assy. (20 - 105 psi)	BZ/Rub	C5256H	
	Disc Retainer Assy. (30 - 300 psi)	BZ/Rub	C5256H	
17	Yoke	VBZ	V6951H	
18	Body & 1/4" Seat Assy	BR/SS	8339702G	
19*	Bucking Spring (2 - 6.5 psi)(2 - 30psi)	302	V0558G	
20	Belleville Washer	STL	7055007E	
*	Repair Kit (No Bucking Spring)	Buna®-N	9170003K	
*	Repair Kit (with Bucking Spring)	Buna®-N	9170002B	

*SUGGESTED REPAIR PARTS

CLA-VAL

— MODEL — **CRL**

Pressure Relief Control

DESCRIPTION

The CRL Pressure Relief Control is a direct acting, spring loaded, diaphragm type relief valve. It may be used as a self-contained valve or as a pilot control for a Cla-Val Main valve. It opens and closes within very close pressure limits.

INSTALLATION

The CRL Pressure Relief Control may be installed in any position. The control body (7) has one inlet and one outlet port with a side pipe plug (24) at each port. These plugs are used for control connections or gauge applications. The inlet in the power unit body (6) is the sensing line port. A flow arrow is marked on the body casting.

OPERATION

The CRL Pressure Relief Control is normally held closed by the force of the compression spring above the diaphragm; control pressure is applied under the diaphragm.

When the controlling pressure exceeds the spring setting, the disc is lifted off its seat, permitting flow through the control.

When controlling pressure drops below spring setting, the spring returns the control to its normally closed position.

ADJUSTMENT PROCEDURE

The CRL Pressure Relief Control can be adjusted to provide a relief setting at any point within the range found on the nameplate.

Pressure adjustment is made by turning the adjustment screw (9) to vary the spring pressure on the diaphragm. Turning the adjustment screw clockwise increases the pressure required to open the valve. Counterclockwise decreases the pressure required to open the valve.

When pressure adjustments are complete the jam nut (10) should be tightened and the protective cap (1) replaced. If there is a problem of tampering, lock wire holes have been provided in cap and cover. Wire the cap to cover and secure with lead seal.

DISASSEMBLY

The CRL Pressure Relief Control does not need to be removed from the line for disassembly. Make sure that pressure shut down is accompanied prior to disassembly. If the CRL is removed from the line for disassembly be sure to use a soft jawed vise to hold body during work.

Refer to Parts List Drawing for Item Numbers.

1. Remove cap (1), loosen jam nut (10) and turn adjusting screw counterclockwise until spring tension is relieved.
2. Remove the eight screws (4) holding the cover (3) and powerunit body (6). Hold the cover and powerunit together and place on a suitable work surface.
   See NOTE under REASSEMBLY.
3. Remove the cover (3) from powerunit body (6). The spring (12) and two spring guides (11).
4. Remove nut (13) from stem (19) and slide off the belleville washer (14), the upper diaphragm washer (15) and the diaphragm (16).
5. Pull the stem (19) with the disc retainer assembly (21) through the bottom of powerunit. The lower diaphragm washer (17) will slide off of stem top.
6. Remove jam nut (23) and disc retainer assembly (21) from stem. Use soft jawed pliers or vise to hold stem. The polished surface of stem must not be scored or scratched.
7. The seat (22) need not be removed unless it is damaged. If removal is necessary use proper size socket wrench and turn counterclockwise. Note: Some models have an integral seat in the body (7).

INSPECTION

Inspect all parts for damage, or evidence of cross threading. Check diaphragm and disc retainer assembly for tears, abrasions or other damage. Check all metal parts for damage, corrosion or excessive wear.

REPAIR AND REPLACEMENT

Minor nicks and scratches may be polished out using 400 grit wet or dry sandpaper fine emery or crocus cloth. Replace all O-rings and any damaged parts.

When ordering replacement parts, be sure to specify parts list item number and all nameplate data.

REASSEMBLY

In general, reassembly is the reverse of disassembly. However, the following steps should be observed:

1. Lubricate the O-Ring (18) with a small amount of a good grade of waterproof grease, (Dow Corning 44 medium grade or equal). Use grease sparingly and install O-ring in powerunit body (6).
2. Install stem (19) in powerunit body (6). Use a rotating motion with minimum pressure to let stem pass through O-ring.

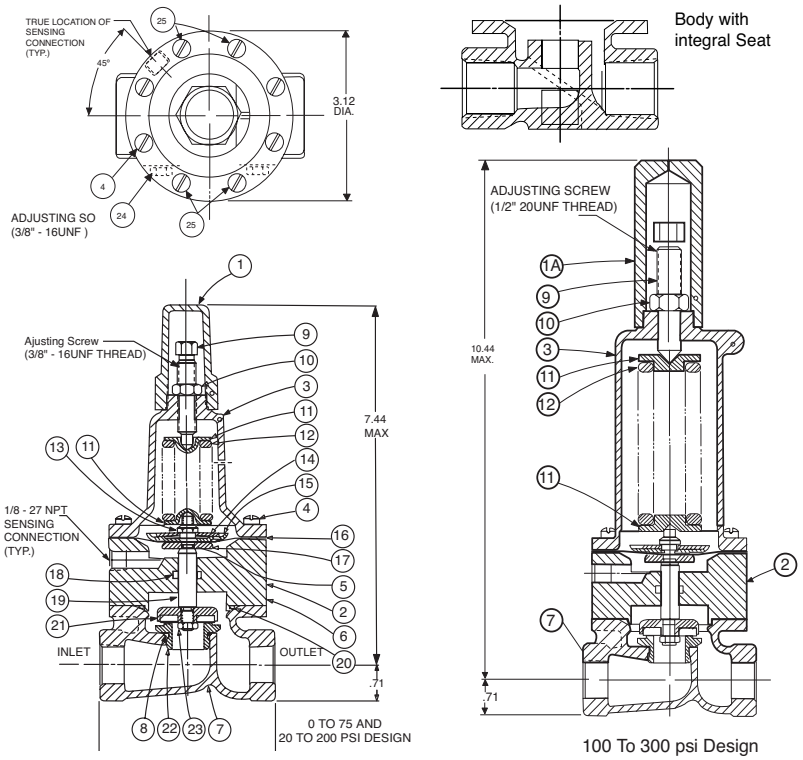
   Do Not Cut O-Ring.
3. Install O-ring (5) at top of stem (19). Place lower diaphragm washer (17) on the stem with the serrated side up. Position diaphragm (16), upper diaphragm washer (15), with serration down, and belleville washer (14) with concave side down.
4. Position powerunit body (6) as shown on parts list drawing (top view).
5. Continue reassembly as outlined in disassembly steps 1 through 3.

Note: Item (4) Screw will have a quantity of 8 for the 0-75 and 20-200psi design and a quantity of 4 for the 100-300psi design. Item (25) Screw is used on the 100-300psi design only. Install item (25), before item (4) for preload of item (12) spring.

SYMPTOM	PROBABLE CAUSE	REMEDY
Fails to open.	Controlling pressure too low.	Back off adjusting screw until valve opens.
Fails to open with spring compression removed.	Mechanical obstruction, corrosion, scale build-up on stem.	Disassemble, locate,and remove obstruction, scale.
Leakage from cover vent hole when controlling pressure is applied.	Diaphragm Damage	Disassembly replace damaged diaphragm.
	Loose diaphragm assembly.	Tighten upper diaphragm washer.
Fails to close.	No spring compression.	Re-set pressure adjustment.
Fails to close with spring compressed.	Mechanical obstruction.	Disassemble, locate and remove obstruction.

CRL

1/2" & 3/4" PRESSURE RELIEF CONTROL



SIZE	SPRING RANGE	PART NUMBER
1/2"	0-75 PSI	79222-01E
1/2"	20-200 PSI	79222-02C
1/2"	100-300 PSI	82809-01D
3/4"	0-75 PSI	79229-01K
3/4"	20-200 PSI	79229-02H
3/4"	100-300 PSI	86005-01E
For 100-450 PSI Contact Factory		

CRL RANGE PSI	APPROX. INCREASE FOR EACH CLOCK-WISE TURN OF ADJUSTING SCREW
0 to 75	8.5 PSI
20 to 200	28.0 PSI
100 to 300	18.0 PSI

When ordering parts please specify:
1. All Nameplate Data
2. Item Part Number
3. Item Description

Item	Description	Material	Part Number	Part Number	Part Number
			0-75	**20-200**	**100-300**
1	Cap	Plastic	67628J	67628J	1257601D
1A	Cap 100 to 300 psi Design	Plastic	1257601D	1257601D	1257601D
2	Nameplate	Brass	--	--	--
3	Cover	Bronze	C2544K	C2544K	44587E
4*	Screw Fil.Hd.10-32 x 1.88	303 SS	6757867E	6757867E	6757867E
5*	0-Ring	Rubber	00902H	00902H	00902H
6	Body, Powerunit	Bronze	7920504D	7920504D	7920504D
7	1/2" Body	Bronze	C7928K	C7928K	C7928K
	3/4" Body	Bronze	C9083B	C9083B	C9083B
8*	0-Ring, Seat	Rubber	00718H	00718H	00718H
9	Screw, Adjusting	Brass	7188201D	7188201D	7188201D
10	Nut Hex (Locking)	303 SS	6780106J	6780106J	6780106J
11	Guide, Spring	303 SS	71881H	71881H	1630301J
12	Spring,	CHR/VAN	71884B	71885J	1630201A
13	Nut, Stem, Upper	Bronze	73034B	73034B	73034B
14	Washer, Belleville	Steel	7055007E	7055007E	7055007E
15	Washer, Diaphragm (upper)	303 SS	71891G	71891G	71891G
16*	Diaphragm	Rubber	C1505B	C1505B	C1505B
17	Washer, Diaphragm (lower)	303 SS	45871B	45871B	45871B
18*	0-Ring, Stem	Rubber	00746J	00746J	00746J
19	Stem	303 SS	8982401F	8982401F	8982401F
20*	0-Ring, Body	Rubber	00767E	00767E	00767E
21*	Retainer Assembly, Disc	303 SS	C8964D	C8964D	C8964D
22	Seat	303 SS	62187A	62187A	62187A
23	Nut, hex, Stem, Lower	Bronze	6779806G	6779806G	6779806G
24	Pipe Plug	Bronze	6784701C	6784701C	6784701C
25*	Screw Fil.Hd, 10-32 x 2.25 (Qty 4 on 100-300 psi)	303 SS	6757867E	6757867E	6757867E
	FACTORY SET POINT		**50 PSI**	**60 PSI**	**100 PSI**
	REPAIR KIT*		9170007A	9170007A	9170007A

CLA-VAL™

MODELS

CV
CVS-1

Flow Controls

Model CV

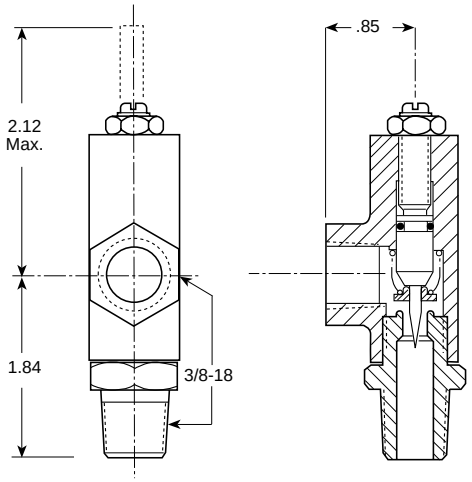
- **Corrosion Resistant**
- **Automatic Operation**
- **Operates In Any Position**
- **Easy Adjustments**
- **No Lubrication**
- **Easy Maintenance**

The CV Control is an adjustable restriction which acts as a needle valve when flow is in the direction of the stem. When flow is in the reverse direction, the port area opens fully to allow unrestricted flow. When installed in the control system of a Cla-Val automatic valve, it can be arranged to function as either an opening or closing speed control.

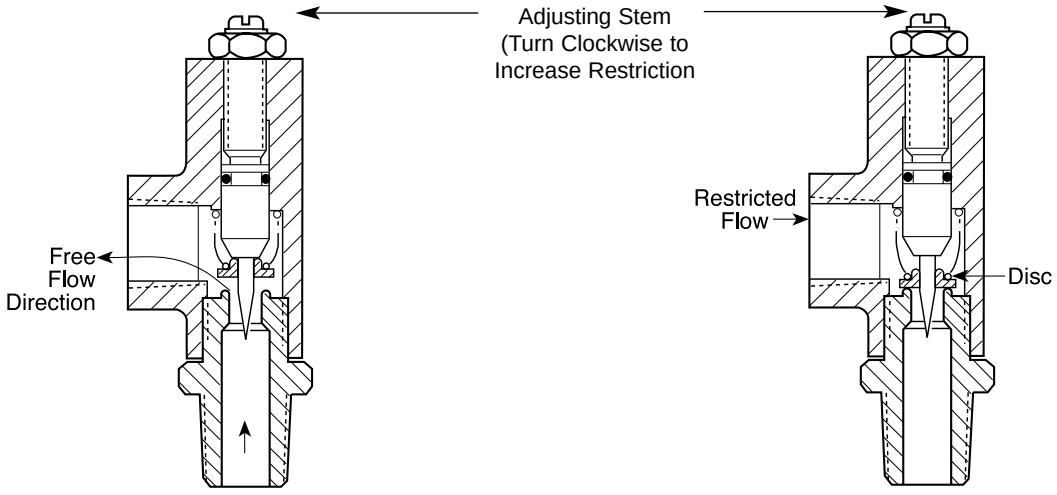
Specifications

Size	3/8"
End Detail	3/8" NPT – One connection male & one connection female
Pressure Rating	400 psi Max.
Temperature Range	250°F Max.
Materials	Housing: Bronze ASTM B61
	Trim: Stainless Steel 303
	Other Materials available: All Stainless Steel, Bronze & Monel

Dimensions
(In Inches)



Principle of Operation



Free Flow, is against the direction of the needle. The disc is forced off its seat by line pressure allowing full capacity flow through the control

Restricted Flow, is in the direction of the needle. This disc is forced against its seat by line pressure. Flow is metered through the control by the fine taper of the needle and the small openings in the disc.

CLA-VAL™

Model CVS-1

- **No Lubrication**
- **Corrosion Resistant**
- **One Moving Part**
- **Replaceable Teflon Coated Seal**
- **Fast Acting, Non-Sticking**
- **Easy Maintenance**

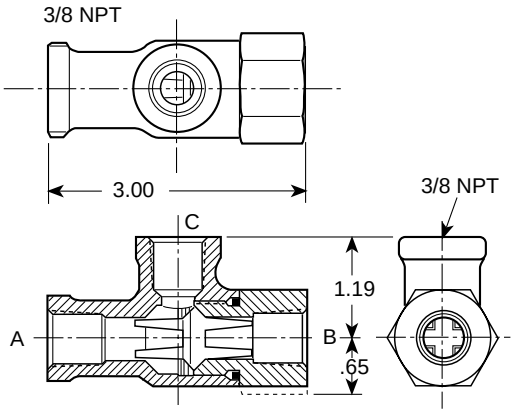
The CVS-1 Shuttle Valve is precision engineered for lasting dependable service. The CVS-1 combines instantaneous action with one moving part designed for smooth positive operation with minimum wear. The flow pattern interconnects the highest pressure from two separate pressure zones (ports "A" or "B") to a common port "C". The two pressure zones, ports A or B can never flow to one another.

The design incorporates precision sealing required for low pressure or high pressure operation. The seal is teflon coated to prevent sticking under the most adverse conditions of exposure or prolonged actuation in one position. The CVS-1 Shuttle Valve incorporates all the required features for lasting dependable service.

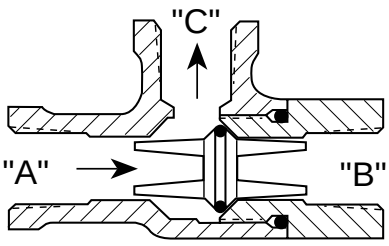
Specifications

Size	3/8"	
End Detail	3/8" NPT — Three Female Connections	
Pressure Rating	400 psi Max.	
Shifting Differential	10” Water Column Differential	
CV Factor	“A” to “C” 3.5	
	“B” to “C” 3.1	
Temperature Range	Water to 140°F	
Materials	**Body**	Cast Bronze ASTM B-62
	Internal Trim	Delrin
	Rubber Parts	
	Static Seal	Buna-N® Synthetic Rubber
	Shuttle Seal	Buna-N® Synthetic Rubber Teflon Coated

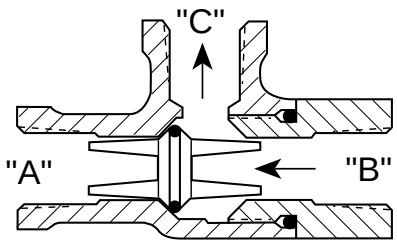
Dimensions



Principle of Operation



Flow Direction "A" to "C"



Flow Direction "B" to "C"

When Ordering, Please Specify

1. Catalog Number
2. Minimum-maximum line pressure
3. Fluid to be handled
4. Temperature
5. Materials

CLA-VAL
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www.cla-val.com

Represented By:

E-CV/CVS-1 (R-11/01)

Cla-Val Product Identification

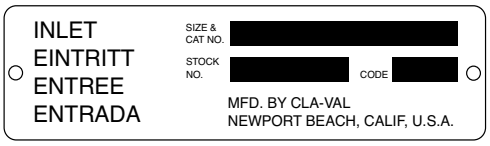
How to Order

Proper Identification

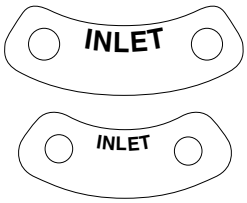
For ordering repair kits, replacement parts, or for inquiries concerning valve operation, it is important to properly identify Cla-Val products already in service by including all nameplate data with your inquiry. Pertinent product data includes valve function, size, material, pressure rating, end details, type of pilot controls used and control adjustment ranges.

Identification Plates

For product identification, cast-in body markings are supplemented by identification plates as illustrated on this page. The plates, depending on type and size of product, are mounted in the most practical position. **It is extremely important that these identification plates are not painted over, removed, or in any other way rendered illegible.**

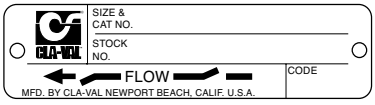


This brass plate appears on valves sized $2^1/_2$" and larger and is located on the top of the inlet flange.

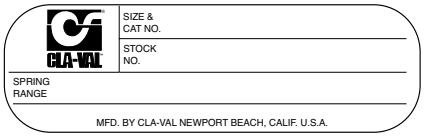


These two brass plates appear on $^3/_8$", $^1/_2$", and $^3/_4$" size valves and are located on the valve cover.

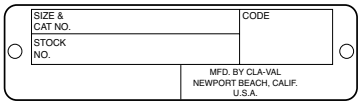
This brass plate appears on altitude valves only and is found on top of the outlet flange.



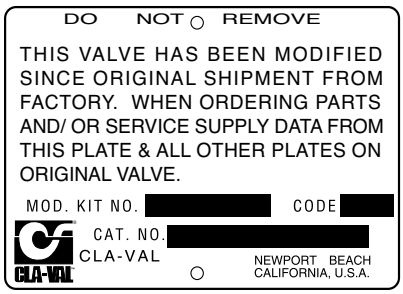
These two brass plates appear on threaded valves 1" through 3" size or flanged valves 1" through 2". It is located on only one side of the valve body.



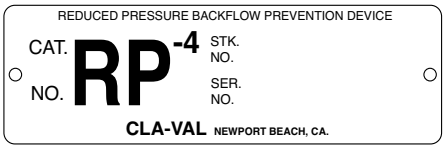
This tag is affixed to the cover of the pilot control valve. The adjustment range appears in the spring range section.



This brass plate is used to identify pilot control valves. The adjustment range is stamped into the plate.



This aluminum plate is included in pilot system modification kits and is to be wired to the new pilot control system after installation.



This brass plate is used on our backflow prevention assemblies. It is located on the side of the Number Two check (2" through 10"). The serial number of the assembly is also stamped on the top of the inlet flange of the Number One check.

HOW TO ORDER

Because of the vast number of possible configurations and combinations available, many valves and controls are not shown in published product and price lists. For ordering information, price and availability on product that are not listed, please contact your local Cla-Val office or our factory office located at:

P. O. Box 1325
Newport Beach, California 92659-0325
(949) 722-4800
FAX (949) 548-5441

SPECIFY WHEN ORDERING

- Model Number
- Globe or Angle Pattern
- Adjustment Range (As Applicable)
- Valve Size
- Threaded or Flanged
- Body and Trim Materials
- Optional Features
- Pressure Class

UNLESS OTHERWISE SPECIFIED

- Globe or angle pattern are the same price
- Ductile iron body and bronze trim are standard
- X46 Flow Clean Strainer or X43 "Y" Strainer are included
- CK2 Isolation Valves are included in price on 4" and larger valve sizes (6" and larger on 600 Series)

LIMITED WARRANTY

Automatic valves and controls as manufactured by Cla-Val are warranted for three years from date of shipment against manufacturing defects in material and workmanship that develop in the service for which they are designed, provided the products are installed and used in accordance with all applicable instructions and limitations issued by Cla-Val. Electronic components manufactured by Cla-Val are warranted for one year from the date of shipment.

We will repair or replace defective material, free of charge, that is returned to our factory, transportation charges prepaid, if upon inspection, the material is found to have been defective at time of original shipment. This warranty is expressly conditioned on the purchaser's providing written notification to Cla-Val immediate upon discovery of the defect.

Components used by Cla-Val but manufactured by others, are warranted only to the extent of that manufacturer's guarantee.

This warranty shall not apply if the product has been altered or repaired by others, Cla-Val shall make no allowance or credit for such repairs or alterations unless authorized in writing by Cla-Val.

DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITY

The foregoing warranty is exclusive and in lieu of all other warranties and representations, whether expressed, implied, oral or written, including but not limited to any implied warranties or merchantability or fitness for a particular purpose. All such other warranties and representations are hereby cancelled.

Cla-Val shall not be liable for any incidental or consequential loss, damage or expense arising directly or indirectly from the use of the product. Cla-Val shall not be liable for any damages or charges for labor or expense in making repairs or adjustments to the product. Cla-Val shall not be liable for any damages or charges sustained in the adaptation or use of its engineering data and services. No representative of Cla-Val may change any of the foregoing or assume any additional liability or responsibility in connection with the product. The liability of Cla-Val is limited to material replacements F.O.B. Newport Beach, California.

TERMS OF SALE

ACCEPTANCE OF ORDERS

All orders are subject to acceptance by our main office at Newport Beach, California.

CREDIT TERMS

Credit terms are net thirty (30) days from date of invoice.

PURCHASE ORDER FORMS

Orders submitted on customer's own purchase order forms will be accepted only with the express understanding that no statements, clauses, or conditions contained in said order form will be binding on the Seller if they in any way modify the Seller's own terms and conditions of sales.

PRODUCT CHANGES

The right is reserved to make changes in pattern, design or materials when deemed necessary, without prior notice.

PRICES

All prices are F.O.B. Newport Beach, California unless expressly stated otherwise on our acknowledgement of the order. Prices are subject to change without notice. The prices at which any order is accepted are subject to adjustment to the Seller's price in effect at the time of shipment. Prices do not include sales, excise, municipal, state or any other Government taxes. Minimum order charge $75.00.

RESPONSIBILITY

We will not be responsible for delays resulting from strikes, accidents, negligence of carriers, or other causes beyond our control. Also, we will not be liable for any unauthorized product alterations or charges accruing there from.

RISK

All goods are shipped at the risk of the purchaser after they have been delivered by us to the carrier. Claims for error, shortages, etc., must be made upon receipt of goods.

EXPORT SHIPMENTS

Export shipments are subject to an additional charge for export packing.

RETURNED GOODS

1. Customers must obtain written approval from Cla-Val prior to returning any material.
2. Cla-Val reserves the right to refuse the return of any products.
3. Products more than six (6) months old cannot be returned for credit.
4. Specially produced, non-standard models cannot be returned for credit.
5. Rubber goods such as diaphragms, discs, o-rings, etc., cannot be returned for credit, unless as part of an unopened vacuum sealed repair kit which is less than six months old.
6. Goods authorized for return are subject to a 35% ($75 minimum) restocking charge and a service charge for inspection, reconditioning, replacement of rubber parts, retesting, repainting and repackaging as required.
7. Authorized returned goods must be packaged and shipped prepaid to Cla-Val, 1701 Placentia Avenue, Costa Mesa, California 92627.

CLA-VAL®

E-Product I.D. (R-12//07)

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www.cla-val.com

Represented By:

CLA-VAL

— MODEL — REPAIR KITS

Complete Replacement Diaphragm Assemblies for 100-01 and 100-20 Hytrol Main Valves
For: Hytrol Main Valves with Ductile Iron, Bronze Trim Materials—**125/150 Pressure Class Only.**
FACTORY ASSEMBLED
Includes: Stem, Disc Guide, Disc, Disc Retainer, Spacer Washers, Diaphragm, Diaphragm Washer and Stem Nut.

Valve Size		Diaphragm Assembly Stock Number 100-01	100-20	Valve Size	Diaphragm Assembly Stock Number 100-01	100-20
3/8"	(Also 81-01)	49097K	N/A	6"	40456G	33273E
1/2" - 3/4"	(Also 81-01)	C2518D	N/A	8"	45276D	40456G
1"		C2520K	N/A	10"	81752J	45276D
1 1/4"-1 1/2"		C2522 F	N/A	12"	85533J	81752J
2"		C2524B	N/A	14"	89067D	N/A
2 1/2"		C2523D	N/A	16"	89068B	85533J
3"		C2525J	C2524B	20"	N/A	89068B
4"		33273E	C2525J	24"	N/A	89068B

Repair Kits for 100-01/100-20 Hytrol Valves
For: Hytrol Main Valves—**125/150 Pressure Class Only.**
Includes: Diaphragm, Disc (or Disc Assembly) and spare Spacer Washers.

Buna-N® Standard Material				Viton (For KB Valves)			
Valve Size		Repair Kit Stock Number 100-01	100-20	Valve Size		Repair Kit Stock Number 100-01	100-20
3/8"	(Also 81-01)	9169801K	N/A	3/8"	(Also 81-01)	9169806J	N/A
1/2" - 3/4"	(Also 81-01)	9169802H	N/A	1/2" - 3/4"	(Also 81-01)	9169807G	N/A
1"		9169803F	N/A	1"		9169808E	N/A
1 1/4" - 1 1/2"		9169804D	N/A	1 1/4” - 1 1/2"		9169809C	N/A
2"		9169805A	N/A	2"		9169810A	N/A
2 1/2"		9169811J	N/A	2 1/2"		9169817F	N/A
3"		9169812G	9169805A	3"		9169818D	9169810A
4"		9169813E	9169812G	4"		9169819B	9169818D
6"		9169815K	9169813E	6"		9169820K	9169819B
8"		9817901D	9169815K	8"		9169834A	9169820K
10"		9817902B	9817901D				
12"		9817903K	9817902B				
14"		9817904H	N/A				
16"		9817905E	9817903K				
20"		N/A	9817905E				
24"		9817906C	9817905E				

When ordering, please give complete nameplate data of the valve and/or control being repaired.
MINIMUM ORDER CHARGE APPLIES.

Repair Kits for 100-02/100-21 Powertrol and 100-03/100-22 Powercheck Main Valves
For: Powertrol and Powercheck Main Valves—**125/150 Pressure Class Only**
Includes: Diaphragm, Disc (or Disc Assembly) and O-rings and full set of spare Spacer Washers.

Valve Size	Kit Stock Number 100-02	Valve Size	Kit Stock Number	
			100-02 & 100-03	100-21 & 100-22
⅜"	9169901H	2½"	9169910J	N/A
½" & ¾"	9169902F	3"	9169911G	9169905J
1"	9169903D	4"	9169912E	9169911G
1¼" & 1½"	9169904B	6"	9169913C	9169912E
2"	9169905J	8"	99116G	9169913C
		10"	9169939H	99116G
		12"	9169937B	9169939H

Repair Kits for 100-04/100-23 Hy-Check Main Valves
For: Hy-Check Main Valves—**125/150 Pressure Class Only**
Includes: Diaphragm, Disc and O-Rings and full set of spare Spacer Washers.

Larger Sizes: Consult Factory.

Valve Size	Kit Stock Number		Valve Size	Kit Stock Number	
	100-04	100-23		100-04	100-23
4"	20210901B	N/A	12"	20210905H	20210904J
6"	20210902A	20210901B	14"	20210906G	N/A
8"	20210903K	20210902A	16"	20210907F	20210905H
10"	20210904J	20210903K	20"	N/A	20210907F
			24"	N/A	20210907F

Repair Kits for Pilot Control Valves (In Standard Materials Only)

Larger Sizes: Consult Factory.

Includes: Diaphragm, Disc (or Disc Assembly), O-Rings, Gaskets or spare Screws as appropriate.

BUNA-N® (Standard Material)				**VITON** (For KB Controls)	
Pilot Control	Kit Stock Number	Pilot Control	Kit Stock Number	Pilot Control	Kit Stock Number
CDB	9170006C	CFM-7	1263901K	CDB-KB	9170012A
CDB-30	9170023H	CFM-7A	1263901K	CRA-KB	N/A
CDB-31	9170024F	CFM-9	12223E	CRD-KB (w/bucking spring)	9170008J
CDB-7	9170017K	CRA (w/bucking spring)	9170001D	CRL-KB	9170013J
CDH-2	18225D	CRD (w/bucking spring)	9170002B	CDHS-2BKB	9170010E
CDHS-2	44607A	CRD (no bucking spring)	9170003K	CDHS-2FKB	9170011C
CDHS-2B	9170004H	CRD-18	20275401K	CDHS-18KB (no bucking spring)	9170009G
CDHS-2F	9170005E	CRD-22	98923G	102C-KB	1726202D
CDHS-3C-A2	24657K	CRL (55F, 55L)	9170007A		
CDHS-8A	2666901A	CRL-4A	43413E		
CDHS-18	9170003K	CRL-5 (55B)	65755B		
CDS-4	9170014G	CRL-5A (55G)	20666E		
CDS-5	14200A	CRL-18	20309801C		
CDS-6	20119301A	CV	9170019F	Buna-N®	
CDS-6A	20349401C	X105L (O-ring)	00951E		
CFCM-M1	1222301C	102B-1	1502201F	CRD Disc Ret. (Solid)	C5256H
CFM-2	12223E	102C-2	1726201F	CRD Disc Ret. (Spring)	C5255K
		102C-3	1726201F		

Repair Assemblies (In Standard Materials Only)

Control	Description	Stock Number
CF1-C1	Pilot Assembly Only	89541H
CF1-Cl	Complete Float Control less Ball and Rod	89016A
CFC2-C1	Disc, Distributor and Seals	2674701E
CSM 11-A2-2	Mechanical Parts Assembly	97544B
CSM 11-A2-2	Pilot Assembly Only	18053K
33A 1"	Complete Internal Assembly and Seal	2036030B
33A 2"	Complete Internal Assembly and Seal	2040830J

When ordering, please give complete nameplate data of the valve and/or control being repaired. MINIMUM ORDER CHARGE APPLIES