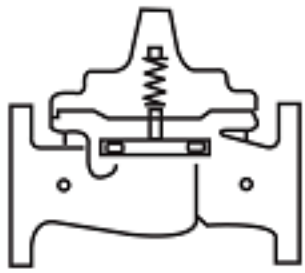
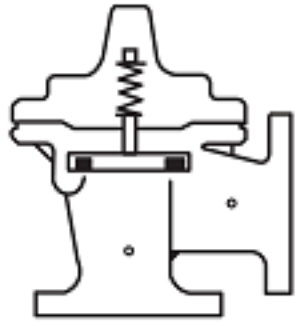
# CLA-VAL
## AUTOMATIC CONTROL VALVES

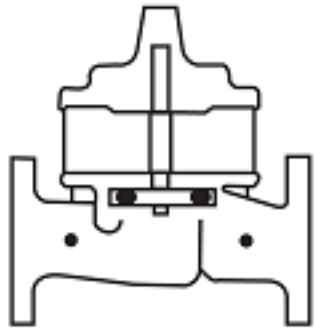
**134-DL**
Place this manual with personnel responsible for maintenance of this valve



## *Installation*



## *Operation*



## *Maintenance*

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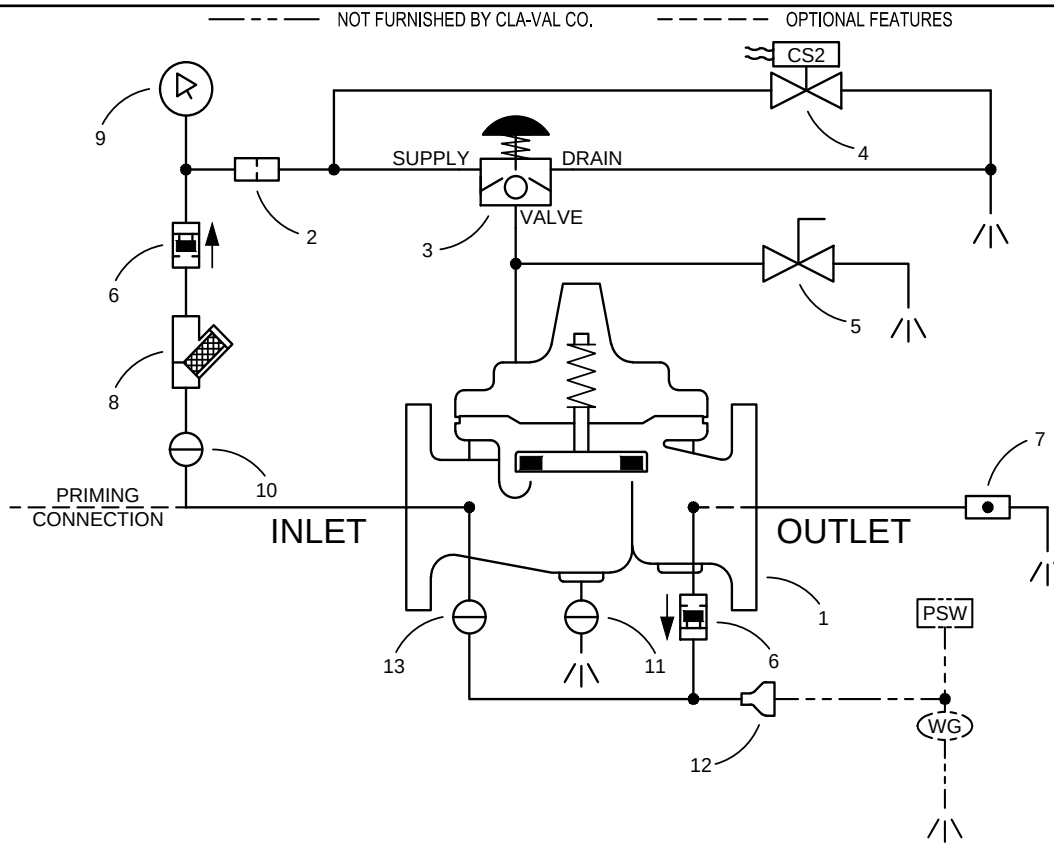
CLA-VAL CANADA LTD. • 4687 Christie Drive • Beamsville, Ontario, LOR 1B4 Canada • (905) 563-4963
**www.cla-val.com • info@cla-val.com**

DRAWING NO. 212550 REV -

# Model 134-DL

## Fire Deluge Solenoid Control Valve Equipped with Manual Reset and Test Circuit




| NO. | BASIC COMPONENTS | QTY |
|---|---|---|
| 1 | 100G/2100G HYTROL (134-DL) MAIN VALVE | 1 |
| 2 | X58C RESTRICTION FITTING | 1 |
| 3 | MANUAL RESET PILOT VALVE | 1 |
| 4 | CS2 SOLENOID CONTROL | 1 |
| 5 | CK2 COCK (MANUAL BYPASS) | 1 |
| 6 | CDC CHECK VALVE | 2 |
| 7 | DRAIN VALVE, BALL DRIP | 1 |
| 8 | X43 "Y" STRAINER | 1 |
| 9 | X141 PRESSURE GAUGE | 1 |
| 10 | CK2 COCK (PRIMING VALVE) | 1 |
| 11 | CK2 COCK (INLET DRAIN VALVE) | 1 |
| 12 | BELL REDUCER | 1 |
| 13 | CK2 COCK (CHECKER VALVE) | 1 |
| PSW | PRESSURE SWITCH -CUSTOMER SUPPLY | 1 |
| WG | WATER GONG-CUSTOMER SUPPLY | 1 |

| NO. | OPTIONAL FEATURES | QTY |
|---|---|---|
| | | |
| | | |

| DESIGN | DRAWN | CHK'D | APV'D |
|---|---|---|---|
| 6-5-19 | AV | VL | VL |
| 6-18-19 | | | |
| 6-18-19 | | | |

CAD REVISION RECORD

| LTR | DESCRIPTION | BY | DATE |
|---|---|---|---|
| - | RELEASED FOR PRODUCTION (ECO 27269) | AV | 6-5-19 |

# Model 134-DL

Fire Deluge Solenoid Control Valve Equipped with Manual Reset and Test Circuit

## ► OPERATING DATA

### Solenoid Control Feature

Solenoid control **(4)** is a direct acting, 2-way solenoid controls that changes position when the coil is de-energized or energized. This applies or relieves pressure in the cover chamber of the main valve **(1)**, providing the operation shown in the following table:

| Solenoid Control **(4)** | | Main Valve **(1)** Position |
|---|---|---|
| Condition | Position | |
| Energized | Open | Open |
| De-energized | Closed | Under command of control **(3)** |

### Deluge Valve Priming

Deluge valve priming and pilot supply pressure is obtained from an independent source customer supplied. Connection is made to priming valve **(10)** inlet. Priming supply is protected with priming valve **(10)**, X43 strainer **(8)**, and cdc check valve **(6)**. Pressure source must be on before attempting to close deluge main valve. **Priming valve (10) must be open during normal operation.**

Note: Deluge valve priming pressure at priming valve **(10) i**nlet must be equal to or greater than pressure at deluge main valve **(1)** inlet at all times.

### Manual Override to Open Feature

Manually open bypass valve **(5)** to vent main valve **(1)** cover pressure, opening the main vale **(1)** regardless of solenoid control **(4)** or manual reset pilot **(3)** flow position. This valve must be closed during normal operation.

### Manual Reset Pilot Feature

The manual reset pilot **(3)** is an automatic latching device that holds the deluge main valve **(1)** in its open position when it has been activated by a releasing device. When set, the manual reset pilot **(3)** blocks inlet pressure from entering the deluge main valve **(1)** cover chamber, thus effectively latches the deluge main valve **(1)** open. The manual reset pilot **(3)** allows the deluge main valve **(1)** to close only upon a local reset, while manually pushing the reset button. The manual reset pilot **(3)** consists of an integrated spring-loaded check valve, a safety ball drip drains any accidental leak to ensure that the deluge main valve **(1)** remains latched.

Note: The manual reset pilot **(3)** drip ball drain must be mounted horizontally.

### Checker Alarm Feature

When the deluge main valve **(1)** is open, pressure applied through check valve **(6)** is directed to the pressure switch for remote indication and to the water gong for local alarm sounding (both are customer supplied). Checker valve **(13)** allows testing of operation of alarms using inlet pressure. **Checker valve (13) must be closed after checking and during normal operation.**

# Model 134-DL

Fire Deluge Solenoid Control Valve Equipped with Manual Reset and Test Circuit

## ► OPERATING DATA

### Drain Down Feature

A. Large manual drain valve **(11)** is opened when desired to drain valve inlet piping. Drain valve **(11)** must be closed during normal operation.

B. A small, ball-drip drain valve **(7)** will drain-down valve outlet piping automatically.

## ► CHECK LIST FOR PROPER OPERATION

☐ System valves open upstream and downstream.

☐ Air removed from the deluge main valve cover and pilot system at all high points.

☐ Periodical cleaning of strainer **(8)** is recommended.

☐ Priming pressure connection made and functional. Priming inlet valve **(10)** must be open.

☐ Correct voltage to solenoid control **(4)**.

☐ Pressure switch and water gong connected and functional override valve **(5)** must be directed to atmospheric break with no back pressure and not be plugged.

☐ Isolation valves **(5)**, **(11)**, and **(13)** closed during normal operation.

CLA-VAL™

— MODELS — 100G/2100G

# Deluge Valve

- **UL Listed / ULC Listed/ABS Approved**
- **Globe or Angle Pattern**
- **Proven Reliable Design**

UL LISTED

Type Approved

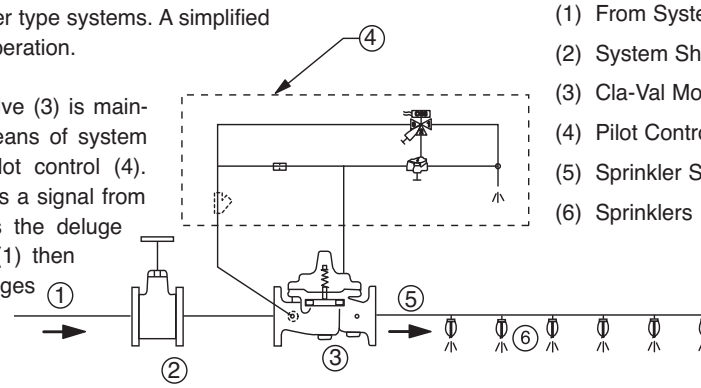
The Cla-Val Model 100G/2100G Deluge Valve is designed for use in controlling water flow to Deluge, Pre-Action, or Foam-Water type fire protection sprinkler systems. This valve is UL Listed in "Special Systems Water Control Valves Class I (VLFT) for both vertical and horizontal installation applications. This valve is UL/ULC Listed for operation manually, electronically, with hydraulic or pneumatic pilot control system for a wet pilot line of sprinklers.

The Model 100G/2100G is a hydraulically-operated, diaphragm-actuated, globe or angle pattern Deluge Valve. It consists of three major components: the body, the cover, and the diaphragm assembly. The only moving part is the diaphragm assembly. Packless construction and simplicity of design assures long service life and dependable low maintenance for this valve. All ferrous parts are fusion epoxy coated internally and externally for added corrosion resistance, along with a Dura-Kleen™ stem.

## Typical Application

The Model 100G/2100G is installed to control the water flow to the sprinklers in Deluge, Pre-Action, or Foam-Water type systems. A simplified system is used to illustrate typical operation.

The Model 100G/2100G Deluge Valve (3) is maintained in the closed position by means of system water pressure controlled by a pilot control (4). When the pilot control valve receives a signal from the fire detection system, it allows the deluge valve to open. Firefighting water (1) then enters system piping (5) and discharges from sprinklers (6).




(1) From System Water Supply
(2) System Shut-off Valve (Visual Stem)
(3) Cla-Val Model 100G or 2100G
(4) Pilot Control System
(5) Sprinkler System Piping
(6) Sprinklers

## Specifications

| | |
|---|---|
| ***Sizes*** | *Globe:* 3" – 12" • *Angle:* 3" – 12" |
| | Ductile Iron 150 ANSI B16.42 flanged |
| ***End Details*** | Ductile Iron 300 Grooved Ends |
| | Cast Steel 150 ANSI B16.5 flanged |
| ***Pressure Rating*** | 150 class, 250 psi maximum (Ductile Iron) |
| | 150 class, 285 psi maximum (All other materials) |
| | 300 class, 300 psi maximum (All materials) |
| ***Temperature Range*** | Water, to 180°F MAX. |
| ***Materials*** | ***Main Valve Body & Cover:*** |

- Ductile Iron ASTM A-536* **UL**, **ULC**
- Cast Steel ASTM A216-WCB* **UL**, **ULC**
- Nickel Aluminum Bronze ASTM B148 **UL**, **ULC**
- Naval Bronze ASTM B61 **UL**, **ULC**
- 316 Stainless Steel - ASTM A743 Grades CF3M and CFM8
- Super Austenitic Stainless Steel - ASTM A351 Grade CK3MCuN (SMO 254)
- Super Duplex Stainless Steel - ASTM A890 Grade 5A (CE3MN)

***Main Valve Internal Trim:***
Bronze ASTM B61 • Monel QQ-N-281 Class B

***Diaphragm and Disc:*** Buna-N® synthetic rubber

***Internally & Externally Epoxy Coated**

## Specifications Seawater Service Option

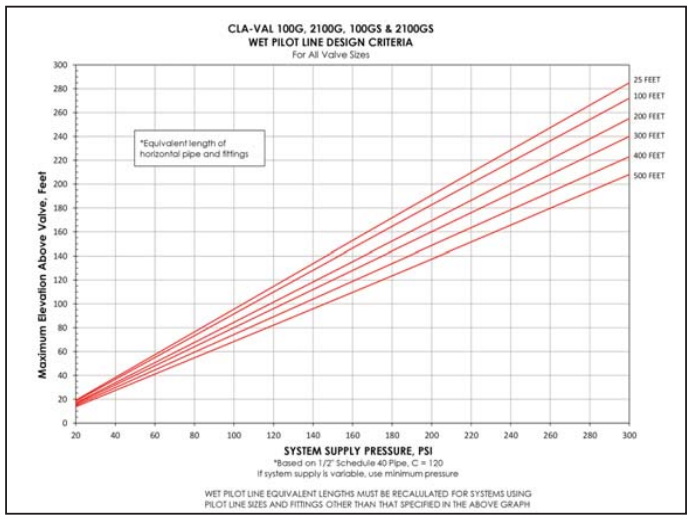
| | |
|---|---|
| ***Sizes*** | *Globe:* 3" - 12" flanged |
| | *Globe:* 3" - 8" grooved |
| | *Angle:* 3" - 12" flanged |

Consult factory for materials and flange ratings.

## When Ordering, Please Specify

1. Model No. 100G or 2100G
2. Size
3. Body and Cover Material
4. Globe or Angle Pattern
5. Pressure Class
6. Internal Trim Material

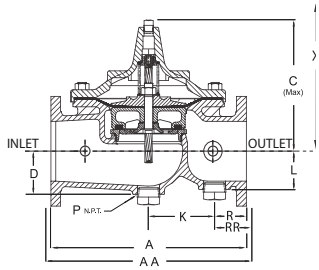
***optional Teflon™ coated seat upon request.**

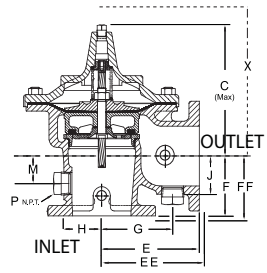


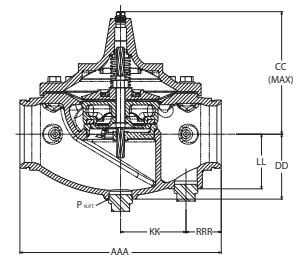

To calculate the maximum wet sprinkler pilot height above the valve, use the graph shown.

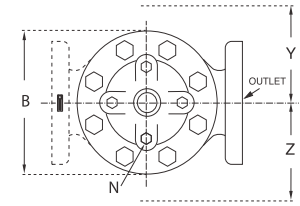
## Functional Data

| Valve Size | | Inches | 3 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|
| | | mm | 80 | 100 | 150 | 200 | 250 | 300 |
| $C_V$ Factor | Globe Pattern | Gal./Min. (gpm) | 115 | 200 | 440 | 770 | 1245 | 1725 |
| | | Litres/Sec. (l/s) | 27.6 | 48 | 105.6 | 184.8 | 299 | 414 |
| | Angle Pattern | Gal./Min. (gpm) | 139 | 240 | 541 | 990 | 1575 | 2500* |
| | | Litres/Sec. (l/s) | 33.4 | 58 | 130 | 238 | 378 | 600 |




| Valve Size (in.) | 3 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|
| **A** 150 ANSI | 12.00 | 15.00 | 20.00 | 25.38 | 29.75 | 34.00 |
| **AA** 300 ANSI | 13.25 | 15.62 | 21.00 | 26.38 | 31.12 | 35.50 |
| **AAA** Grooved | 12.50 | 15.00 | 20.00 | 25.38 | — | — |
| **B** Dia. | 9.12 | 11.50 | 15.75 | 20.00 | 23.62 | 28.00 |
| **C** Max. | 8.19 | 10.62 | 13.38 | 16.00 | 17.12 | 21.00 |
| **CC** Max. | 7.50 | 9.94 | 12.13 | 15.00 | — | — |
| **D** | 2.56 | 3.19 | 4.31 | 5.16 | 8.50 | 9.39 |
| **DD** | 3.62 | 4.50 | 6.31 | 7.81 | — | — |
| **E** 150 ANSI | 7.00 | 8.50 | 10.00 | 12.69 | 14.88 | 17.00 |
| **EE** 300 ANSI | -- | 8.81 | 10.50 | 13.19 | -- | 17.75 |
| **F** 150 ANSI | 4.00 | 4.97 | 6.00 | 8.00 | 8.62 | 13.75 |
| **FF** 300 ANSI | -- | 5.28 | 6.50 | 8.50 | -- | 14.50 |
| **G** | 4.75 | 5.94 | 7.25 | 8.50 | 10.50 | 17.00 |
| **H** | 2.69 | 2.81 | 3.88 | 5.31 | 6.56 | 7.00 |
| **J** | 2.56 | 2.81 | 3.81 | 4.81 | 5.81 | 7.00 |
| **K** | 7.00 | 4.03 | 6.75 | 17.00 | 15.50 | 21.00 |
| **KK** | 3.50 | 4.56 | 6.50 | 7.00 | — | — |
| **L** | 2.56 | 2.81 | 3.81 | 4.81 | 8.50 | 9.39 |
| **LL** | 3.25 | 4.00 | 5.31 | 7.00 | — | — |
| **M** | 1.75 | 2.41 | 2.75 | 4.00 | 4.24 | 8.75 |
| **N** NPT | 1/2 -14 | 3/4 -14 | 3/4 - 14 | 1 - 11-1/2 | 1 - 11-1/2 | 1 - 11-1/2 |
| **P** NPT | 1-1/4 - 11-1/2 | 2 - 11-1/2 | | | | |
| **R** 150 ANSI | 2.50 | 3.47 | 3.25 | 4.19 | 7.12 | 6.50 |
| **RR** 300 ANSI | 3.12 | 3.78 | 3.75 | 4.69 | 7.81 | 7.25 |
| **RRR** Grooved | 2.75 | 2.94 | 3.50 | 5.69 | — | — |
| **X** Pilot System | 15.00 | 17.00 | 29.00 | 31.00 | 33.00 | 35.00 |
| **Y** Pilot System | 11.00 | 12.00 | 20.00 | 22.00 | 24.00 | 26.00 |
| **Z** Pilot System | 11.00 | 12.00 | 20.00 | 22.00 | 24.00 | 26.00 |

| Valve Size (mm) | 80 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|
| **A** 150 ANSI | 305 | 381 | 508 | 645 | 756 | 864 |
| **AA** 300 ANSI | 337 | 397 | 533 | 670 | 791 | 902 |
| **AAA** Grooved | 318 | 381 | 508 | 645 | — | — |
| **B** Dia. | 232 | 292 | 400 | 508 | 600 | 711 |
| **C** Max. | 208 | 270 | 340 | 406 | 435 | 533 |
| **CC** Max. | 191 | 252 | 308 | 381 | — | — |
| **D** | 65 | 81 | 110 | 131 | 216 | 239 |
| **DD** | 92 | 114 | 160 | 198 | — | — |
| **E** 150 ANSI | 178 | 216 | 254 | 322 | 378 | 432 |
| **EE** 300 ANSI | -- | 224 | 267 | 350 | -- | 451 |
| **F** 150 ANSI | 102 | 126 | 152 | 203 | 219 | 349 |
| **FF** 300 ANSI | -- | 134 | 165 | 216 | -- | 368 |
| **G** | 121 | 151 | 184 | 216 | 267 | 432 |
| **H** | 68 | 71 | 99 | 135 | 167 | 178 |
| **J** | 65 | 71 | 97 | 122 | 148 | 178 |
| **K** | 178 | 102 | 171 | 432 | 394 | 533 |
| **KK** | 89 | 116 | 165 | 178 | — | — |
| **L** | 65 | 71 | 97 | 122 | 216 | 239 |
| **LL** | 83 | 102 | 135 | 178 | — | — |
| **M** | 45 | 61 | 70 | 102 | 108 | 222 |
| **N** NPT | 1/2 - 14 | 3/4 - 14 | 3/4 - 14 | 1 - 11-1/2 | 1 - 11-1/2 | 1 - 11-1/2 |
| **P** NPT | 1-1/4 - 11- 1/2 | 2 - 11-1/2 | | | | |
| **R** 150 ANSI | 64 | 88 | 83 | 106 | 181 | 165 |
| **RR** 300 ANSI | 79 | 96 | 95 | 119 | 198 | 184 |
| **RRR** Grooved | 70 | 75 | 89 | 145 | — | — |
| **X** Pilot System | 381 | 432 | 737 | 787 | 838 | 889 |
| **Y** Pilot System | 279 | 305 | 508 | 559 | 610 | 660 |
| **Z** Pilot System | 279 | 305 | 508 | 559 | 610 | 660 |

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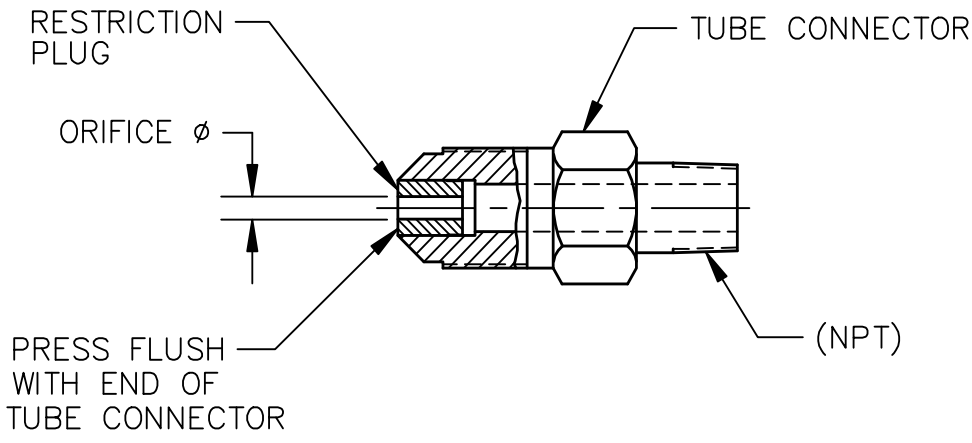
CLA-VAL CO. NEWPORT BEACH, CALIFORNIA

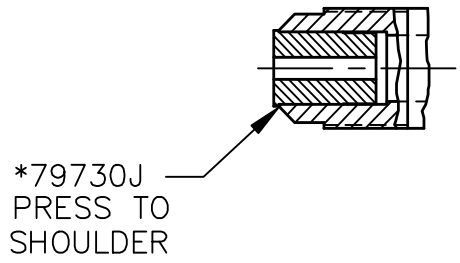
| CATALOG NO. | DRAWING NO. | REV |
|---|---|---|
| X58C | 48834 | AP |

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.
4. SEE SHEETS 3 & 4 FOR UL APPROVED DRAWING.

| 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 | 10-18-94 |
| AN | ADDED PN 48834-05F (NED 43663) | AK | 09-15-98 |
| AP | ADDED PN 48834-06D (NED 75779) | EK | 9-29-11 |

CAD REVISION RECORD - DO NOT REVISE MANUALLY

CLA-VAL CO. NEWPORT BEACH, CALIFORNIA

| CATALOG NO. | DRAWING NO. | REV |
|---|---|---|
| X58C | 48834 | AP |

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 |

| X58C STOCK NO. | TUBE CONNECTOR SIZE TUBE X NPT | TUBE CONNECTOR MATERIAL | RESTRICTION PLUG ORIFICE DIA | RESTRICTION PLUG MATERIAL |
|---|---|---|---|---|
| | 37° FLARE | | | |
| **44734C | 3/8 X 3/8-18 NPT | ALUMINUM | .125 (1/8) | S. STEEL |
| | 45° FLARE | | | |
| *37814B | 1/4 X 1/8-27 NPT | BRASS | .031 (1/32) | S. STEEL |
| *80500C | 1/4 X 1/8-27 NPT | BRASS | .062 (1/16) | S. STEEL |
| *67739D | 3/8 X 1/8-27 NPT | BRASS | .040 | S. STEEL |
| *64672K | 3/8 X 3/8-18 NPT | BRASS | .062 (1/16) | S. STEEL |
| *99329-01D | 3/8 X 3/8-18 NPT | BRASS | .094 (3/32) | S. STEEL |
| **79730J | 1/2 X 1/2-14 NPT | BRASS | .125 (1/8) | S. STEEL |
| **48834-05F | 3/8 X 3/8-18 NPT | BRASS | .125 (1/8) | S. STEEL |
| *85484E | 1/4 X 1/8-27 NPT | BRASS | .031 (1/32) | DELRIN |
| *85486K | 1/4 X 1/8-27 NPT | BRASS | .040 | DELRIN |
| **48834-03A | 1/4 X 1/8-27 NPT | BRASS | .125 (1/8) | DELRIN |
| *48834-04J | 1/4 X 1/8-27 NPT | BRASS | .093 | DELRIN |
| *88409-01G | 3/8 X 1/8-27 NPT | BRASS | .031 (1/32) | DELRIN |
| *88409J | 3/8 X 1/8-27 NPT | BRASS | .052 | DELRIN |
| *42346H | 3/8 X 1/8-27 NPT | BRASS | .062 (1/16) | DELRIN |
| **48834-01E | 3/8 X 1/8-27 NPT | BRASS | .125 (1/8) | DELRIN |
| *42775H | 3/8 X 1/4-18 NPT | BRASS | .062 (1/16) | DELRIN |
| **63604D | 3/8 X 1/4-18 NPT | BRASS | .156 (5/32) | DELRIN |
| *10253D | 3/8 X 3/8-18 NPT | BRASS | .031 (1/32) | DELRIN |
| *46946A | 3/8 X 3/8-18 NPT | BRASS | .062 (1/16) | DELRIN |
| **64673H | 3/8 X 3/8-18 NPT | BRASS | .125 (1/8) | DELRIN |
| *68565B | 3/8 X 3/8-18 NPT | BRASS | .094 (3/32) | DELRIN |
| **43302K | 3/8 X 3/8-18 NPT | BRASS | .188 (3/16) | DELRIN |
| **12900H | 1/2 X 1/2-14 NPT | BRASS | .125 (1/8) | DELRIN |
| **48834-02C | 1/2 X 1/2-14 NPT | BRASS | .188 (3/16) | DELRIN |
| **48834-06D | 1/2 X 1/2-14 NPT | BRASS | .250 (1/4) | DELRIN |

CAD REVISION RECORD - DO NOT REVISE MANUALLY

| LTR | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | SEE SHEET 1 | | |

# X58C Orifice Restriction Fitting Assembly

Suitable for **3"** and smaller valves (color code **BLUE**)

| Size T x NPT | Orifice | Mat'l | Part Number |
|---|---|---|---|
| 3/8" x 3/8" | 0.094 (3/32) | BP | 68565B (standard) |
| 3/8" x 3/8" | 0.094 (3/32) | BS | 9932901D |
| 3/8" x 3/8" | 0.094 (3/32) | TP | 9787003E (SWS) |
| 3/8" x 3/8" | 0.094 (3/32) | TS | 9787015J |
| 3/8" x 3/8" | 0.062 (1/16) | BP | 46946A |
| 3/8" x 3/8" | 0.062 (1/16) | BS | 64672K |
| 3/8" x 3/8" | 0.062 (1/16) | TP | 9787001J |

Suitable for **4"** to 16" valves (color code **RED**)

| Size T x NPT | Orifice | Mat'l | Part Number |
|---|---|---|---|
| 3/8" x 3/8" | 0.125 (1/8) | BP | 64673H (standard) |
| 3/8" x 3/8" | 0.125 (1/8) | BS | 4883405F |
| 3/8" x 3/8" | 0.125 (1/8) | TP | 9787002G (SWS) |
| 3/8" x 3/8" | 0.125 (1/8) | TS | 9787016G |
| 3/8" x 3/8" | 0.188 (3/16) | BP | 43302K |

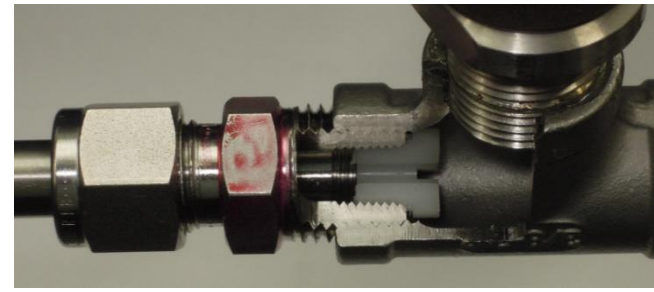
Ref. dwg 48834, TABLE 117, 617

Material CODE Standard = BP

| 1st letter = fitting | 2nd letter = orifice insert |
|---|---|
| B=Brass SAE Flare-Type fitting | P=Delrin Plastic |
| T=316 SS Parker-type single ferrule fitting | S=303 SS |

NOTE:
High Differential Pressure (100+ psiD) conditions over time can cause standard materials to deteriorate and affect valve performance. Suggest replacement upgrade to Stainless Steel.

Made from Brass SAE 45 degree Flare-Type Tube Connector (Male Tube x Male NPT)



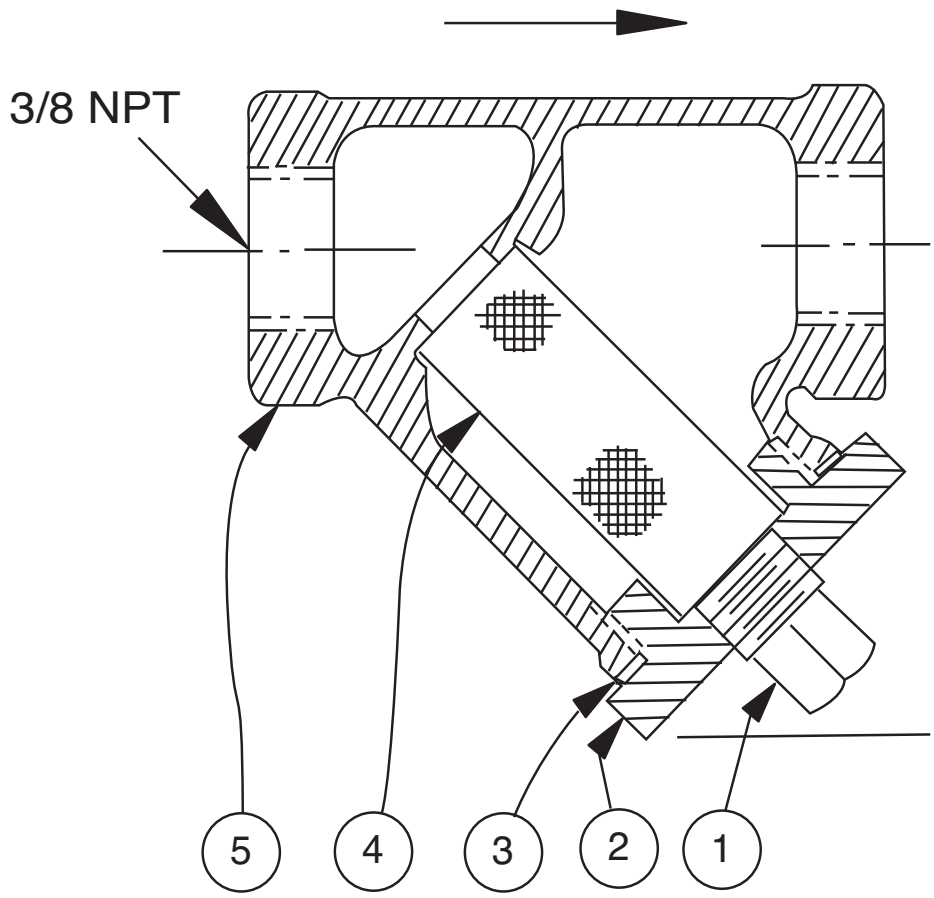
Made from Stainless Steel Parker-Type single-ferrule Tube Connector (Male tube x Male NPT)

# X43
## Strainer

| ITEM | DESCRIPTION | MATERIAL |
|---|---|---|
| 1 | Pipe Plug | Steel |
| 2 | Strainer Plug | Brass |
| 3 | Gasket | Copper |
| 4 | Screen | SST |
| 5 | Body | Brass |
| No parts available. Rreplacement assembly only. | | |

Standard 60 mesh pilot system strainer for fluid service.

| Size | Stock Number |
|---|---|
| 3/8 x 3/8 | 33450J |



# INSTALLATION AND MAINTENANCE INSTRUCTIONS

## 2-WAY INTERNAL PILOT OPERATED SOLENOID VALVES DIAPHRAGM TYPE - 3/8, 1/2 AND 3/4 N.P.T. NORMALLY CLOSED OPERATION

**BULLETINS**
**8210**
**8211**

ASCO
FORM NO. V-5848

### DESCRIPTION

Bulletin 8210's are 2-way, normally closed internal pilot operated solenoid valves. Valve bodies and bonnets are of brass construction. Standard valves have a General Purpose, NEMA Type 1 Solenoid Enclosure.

Bulletin 8211's are the same as Bulletin 8210's except the solenoids are equipped with an enclosure which is designed to meet NEMA Type 4, Watertight, NEMA Type 7 (C or D) Hazardous Locations - Class 1, Group C or D and NEMA Type 9 (E, For G) Hazardous Locations - Class 2, Groups E, F or G. The Explosion-Proof/Watertight Solenoid Enclosures are shown on separate sheets of installation and Maintenance Instructions, Form Numbers V-5380 and V-5391.

### OPERATION

Normally Closed: Valve is closed when solenoid is de-energized and opens when solenoid is energized.

**MANUAL OPERATOR** (Optional)

Valves with Suffix 'MO' in the catalog number are provided with a manual operator which allows manual operation when desired or during an interruption of electrical power. To operate valve manually, push in knurled cap and rotate clockwise 180° Disengage manual operator by rotating knurled cap counterclockwise 180° before operating electrically.

**MANUAL OPERATOR LOCATION** (Refer to Figures 1 and 3)

Manual operator (when shipped from factory) will be located over the valve outlet. Manual operator may be relocated at 90° increments by rotating valve bonnet. Remove bonnet screws (4) and rotate valve bonnet with solenoid to desired position. Replace bonnet screws (4) and torque in a crisscross manner to 110 ± 10 inch pounds.

If valve is installed in the system and is operational, proceed in the following manner: ***WARNING:*** Depressurize valve and turn off electrical power supply.

1. Remove retaining cap or clip and slip the entire solenoid enclosure off the solenoid base sub-assembly. ***CAUTION:*** When metal retaining clip disengages, it will spring upwards.
2. Remove bonnet screws (4) and rotate valve bonnet to desired position.
3. Replace bonnet screws (4) and torque in a crisscross manner to 110 ± 10 inch pounds. Replace solenoid enclosure and retaining clip or cap.

### INSTALLATION

Check nameplate for correct catalog number, pressure, voltage and service.

### TEMPERATURE LIMITATIONS

For maximum valve ambient and fluid temperatures, refer to chart. The temperature limitations listed are for UL applications. For non-UL applications, higher ambient and fluid temperature limitations are available. Consult factory, Check catalog number on nameplate to determine maximum temperatures.

| Construction | Coil Class | Catalog Number Prefix | Max. Ambient Temp.°F | Max. Fluid Temp.°F |
|---|---|---|---|---|
| A-C Construction (Alternating Current) | A | None or DA | 77 | 180 |
| | F | DF or FT | 122 | 180 |
| | H | HT | 140 | 180 |
| D-C Construction (Direct Current) | A, F or H | None, FT or HT | 77 | 150 |

**POSITIONING/MOUNTING**

This valve is designed to perform properly when mounted in any position. However, for optimum life and performance, the solenoid should be mounted vertical and upright so as to reduce the possibility of foreign matter accumulating in the core tube area. For mounting bracket (optional feature) dimensions, refer to Figure 2.

**PIPING**

Connect piping to valve according to markings on valve body. Apply pipe compound sparingly to male pipe threads only; if applied to valve threads, it may enter the valve and cause operational difficulty. Pipe strain should be avoided by proper support and alignment of piping. When tightening the pipe, do not use valve as a lever, Wrenches applied to valve body or piping are to be located as close as possible to connection point.

***IMPORTANT:*** For the protection of the solenoid valve, install a strainer or filter suitable for the service involved in the inlet side as close to the valve as possible. Periodic cleaning Is required depending on the service conditions. See Bulletins 8600, 8601 and 8602 for strainers.

**WIRING**

Wiring must comply with Local and National Electrical Codes. Housings for all solenoids are provided with connections for 1/2 inch conduit. The general purpose solenoid enclosure may be rotated to facilitate wiring by removing the retaining cap or clip. ***CAUTION:*** When metal retaining clip disengages, it will spring upwards. Rotate to desired position. Replace retaining cap or clip before operating.

***NOTE:*** Alternating Current (A-C) and Direct Current (D-C) solenoids are built differently. To convert from one to the other, It Is necessary to change the complete solenoid including the solenoid base sub-assembly and core assembly.

### SOLENOID TEMPERATURE

Standard catalog valves are supplied with coils designed for continuous duty service. When the solenoid is energized for a long period, the solenoid enclosure becomes hot and can be touched with the hand only for an instant. This is a safe operating temperature. Any excessive heating will be indicated by the smoke and odor of burning coil insulation.

### MAINTENANCE

***WARNING:*** Turn off electrical power supply and depressurize valve before making repairs. It Is not necessary to remove the valve from the pipe line for repairs.

**CLEANING**

A periodic cleaning of all solenoid valves is desirable. The time between cleanings will vary, depending on media and service conditions. In general, if the voltage to the coil is correct, sluggish valve operation, excessive leakage or noise will indicate that cleaning is required.

**PREVENTIVE MAINTENANCE**

1. Keep the medium flowing through the valve as free from dirt and foreign material as possible.
2. While in service, operate the valve at least once a month to insure proper opening and closing.
3. Periodic inspection (depending on media and service conditions) of internal valve parts for damage or excessive wear is recommended. Thoroughly clean all parts, Replace any parts that are worn or damaged.

IMPROPER OPERATION

1. **Faulty Control Circuit:** Check the electrical system by energizing the solenoid. A metallic click signifies that the solenoid is operating. Absence of the click indicates loss of power supply. Check for loose or blown-out fuses. open circuited or grounded coil. broken lead wires or splice connections.
2. **Burned-Out Coil:** Check for open circuited coil. Replace coil if necessary.
3. **Low Voltage:** Check voltage across coil leads. Voltage must be at least 85% of nameplate rating.
4. **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
5. **Excessive Leakage:** Disassemble valve and clean all parts. Replace worn or damaged parts with a complete Spare Parts Kit for best results.

**COIL REPLACEMENT** (Refer to Figures 1, 2 and 3)

**Turn off electrical power supply and disconnect coil lead wires. Proceed In the following manner:**

1. Remove retaining cap or clip, nameplate and cover. ***CAUTION:*** When metal retaining clip disengages. it will spring upwards.
2. Slip yoke containing coil, sleeves and insulating washers off the solenoid base sub-assembly. For D-C Construction. slip spring washer. coil and insulating washers off the solenoid base sub-assembly. Insulating washers are omitted when a molded coil is used.
3. Reassemble in reverse order of disassembly paying careful attention to exploded views provided for identification and placement of parts.

***CAUTION:*** Solenoid must be fully reassembled as the housing and internal parts are part of and complete the magnetic circuit. Place insulating washers at each end of con, If required.

**VALVE DISASSEMBLY**

**Depressurize valve and turn off electrical power supply. For A-C Construction, refer to Figures 1 and 2. For D-C Construction, refer to Figure 3. Proceed In the following manner:**

1. Disassemble valve in an orderly fashion. Pay careful attention to exploded views provided for identification of parts.
2. Remove retaining cap or clip and slip the entire solenoid enclosure off the solenoid base sub-assembly. ***CAUTION:*** When metal retaining clip disengages, it will spring upwards.
3. Unscrew solenoid base sub-assembly and remove bonnet gasket. Core assembly and core spring.
4. For A-C Construction without manual operator. remove valve bonnet screws (4). Remove solenoid base sub-assembly. core assembly and core spring.
5. Remove diaphragm spring (A-C Construction only). diaphragm assembly and body gasket.
6. For normal maintenance, it is not necessary to disassemble the manual operator unless external leakage is evident To disassemble, remove stem pin. manual operator stem. stem spring and stem gasket.
7. All parts are now accessible for cleaning or replacement. Replace worn or damaged parts with a complete Spare Parts Kit for best results.

**VALVE REASSEMBLY**

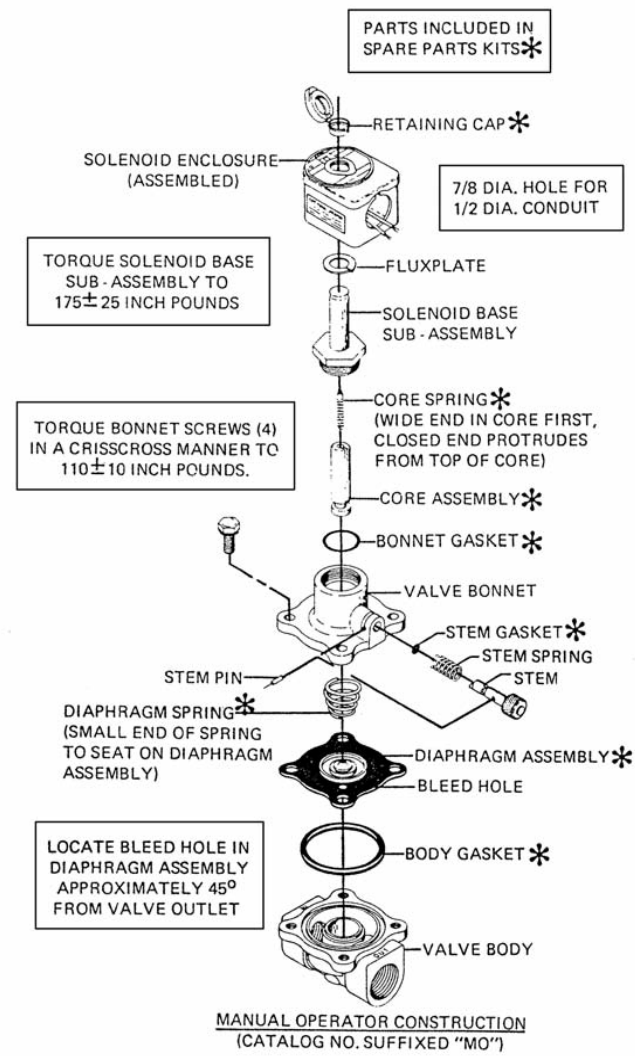
1. Reassemble in reverse order of disassembly paying careful attention to exploded views provided for identification and placement of parts.
2. Replace body gasket and diaphragm assembly. Locate bleed hole in diaphragm assembly approximately 45° from valve outlet.
3. Replace valve bonnet and bonnet screws. Torque bonnet screws (4) in a crisscross manner to 110 ± 10 inch pounds.
4. For A-C Construction, the diaphragm spring. core assembly and core spring must be installed prior to assembly of bonnet as this is the solenoid base sub-assembly. Be sure diaphragm spring is installed properly. Closed turns of spring to seat on diaphragm assembly. For valves with a manual operator (see Figure 1), the small end of diaphragm spring seats on diaphragm assembly.
5. Install core spring in core assembly. Be sure core spring is inserted into core assembly with wide end in first. Closed end protrudes from top of core assembly.
6. Replace bonnet gasket, core assembly, core spring and solenoid base sub-assembly. Torque solenoid base sub-assembly to 175 ± 25 inch pounds
7. If removed, replace manual operator stem gasket. stem spring, stem and stem pin.
8. Replace solenoid enclosure and retaining cap or clip.
9. After maintenance, operate the valve a few times to be sure of proper opening and closing.

## Spare Parts Kits

Spare Parts Kits and Coils are available for ASCO valves. Parts marked with an (*) are supplied in Spare Parts Kits

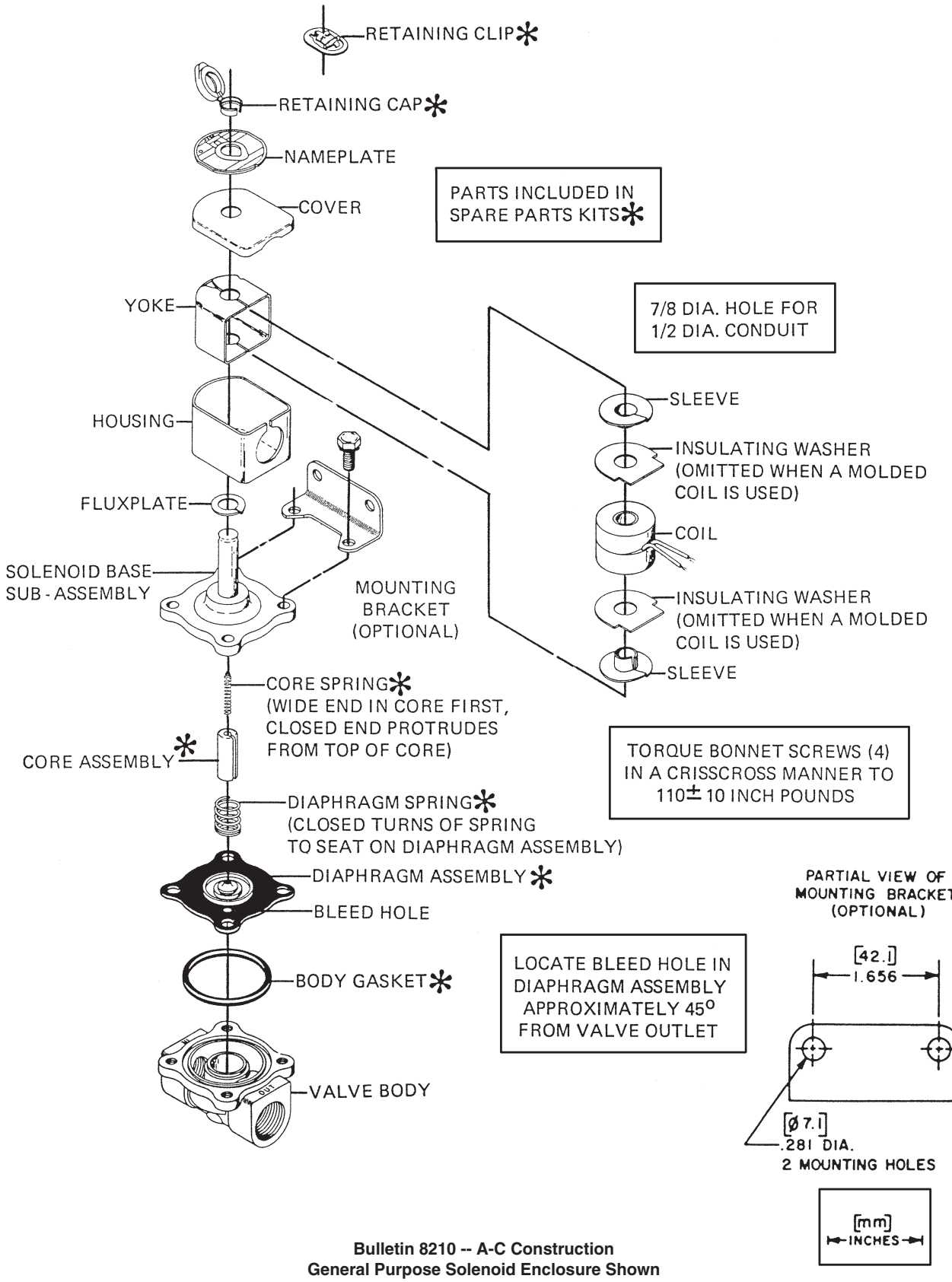
ORDERING INFORMATION
FOR SPARE PARTS KITS

When Ordering Spare Parts Kits or Coils
Specify Valve Catalog Number,
Serial Number and Voltage




**Bulletin 8210 -- A-C Construction**
**Manual Operator**
**(Catalog Number Suffixed "MO")**

Figure 1.

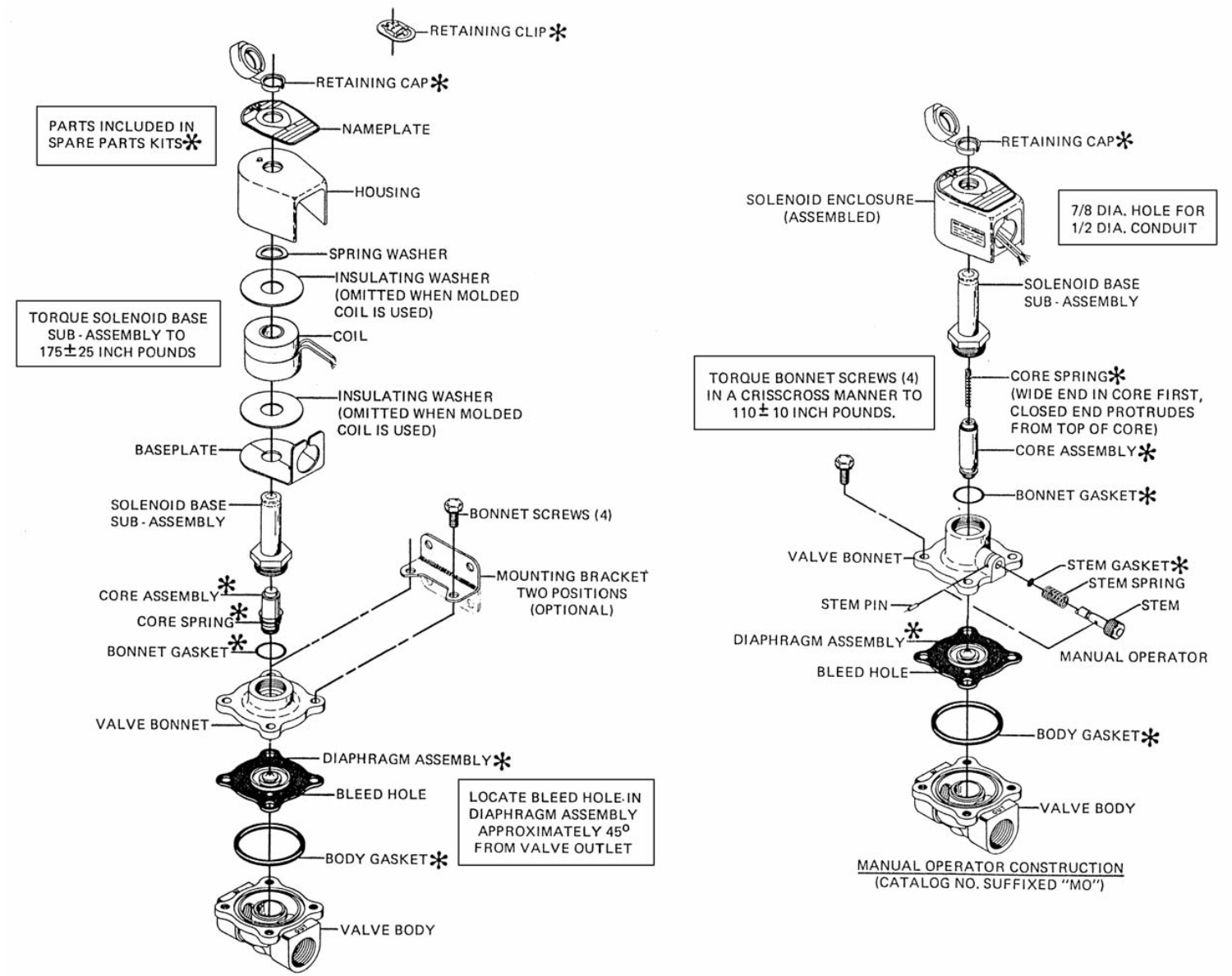



**Bulletin 8210 -- A-C Construction**
**General Purpose Solenoid Enclosure Shown**

Figure 2. **For Explosion-Proof/Watertight Solenoid Enclosure used on Bulletin 8211, see Form No. V-5391.**

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

N-V5848 (R-3/2011)




**Bulletin 8210 -- D-C Construction**
**General Purpose Solenoid Enclosure Shown**

Figure 3. **For Explosion-Proof/Watertight Solenoid Enclosure used on Bulletin 8211, see Form No. V-5390.**

# INSTALLATION AND MAINTENANCE INSTRUCTIONS

**2-WAY DIRECT ACTING SOLENOID VALVES**
**NORMALLY CLOSED OPERATION -- 1/4 N.P.T.**

**BULLETINS 8262**

ASCO FORM NO. V-5927

## DESCRIPTION

Bulletin 8262's are 2-way normally closed, direct acting solenoid valves having bodies of brass construction. Standard valves have a General Purpose NEMA Type 1 Solenoid Enclosure. Valves may also be equipped with a solenoid enclosure which is designed to meet NEMA Type 4 Watertight, NEMA Type 7 (C or D) Hazardous Locations-Class 1, Groups C or D and NEMA Type 9 (E, For G) Hazardous Locations Class 2, Groups E, F or G. Installation and Maintenance Instructions for Explosion-Proof/Watertight Solenoid Enclosures are shown on Form Nos. V-5391 or V-5380.

## OPERATION

Normally Closed: Valve is closed when solenoid is de-energized. Valve opens when solenoid is energized.

***NOTE:*** Inlet port will either be marked "1" or "1N." Outlet port will be marked "2."

***IMPORTANT:*** **No minimum operating pressure required.**

## INSTALLATION

Check nameplate for correct catalog number, pressure, voltage and service.

**TEMPERATURE LIMITATIONS**

For maximum valve ambient and fluid temperature, refer to chart below. For higher ambient and fluid temperatures, consult factory. Check catalog number and watt rating on nameplate to determine the maximum temperatures.

| Wattage | Catalog Number Prefix | Coil Class | Max. Ambient Temp.°F | Max. Fluid Temp.°F |
|---|---|---|---|---|
| 6 | None | A | 77 | 180 |
| | FT | F | 122 | 200 |
| | HT | H | 140 | 200 |
| 9 | None | F | 77 | 180 |
| 9.7 | None, FT or HT | A, F or H | 77 | 120 |
| 11.2* | None, FT or HT | A, F or H | 77 | 150 |
| 16.7* | None | F | 77 | 200 |

*Catalog Nos. 8262C200 and 8262B200 and valves with suffix "W" in the catalog number are limited to 140°F fluid temperature.

**POSITIONING**

Valve is designed to perform properly when mounted in any position. However, for optimum life and performance, the solenoid should be mounted vertical and upright so as to reduce the possibility of foreign matter accumulating in the core tube area.

**MOUNTING**

For valve body and mounting bracket mounting dimensions, refer to Figures 1 and 2.

**PIPING**

Connect piping according to markings on valve body. Apply pipe compound sparingly to male pipe threads only; if applied to valve threads, it may enter valve and cause operational difficulty. Pipe strain should be avoided by proper support and alignment of piping. When tightening the pipe, do not use valve as a lever. Wrenches applied to valve body or piping are to be located as close as possible to connection point.

***IMPORTANT:*** For the protection of the solenoid valve. install a strainer or filter suitable for the service involved in the inlet side as close to the valve as possible. Periodic cleaning is required depending upon service conditions. See Bulletins 8600, 8601 and 8602 for strainers.

**WIRING**

Wiring must comply with Local and National Electrical Codes. Solenoid housings are provided with a 7/8 diameter hole for 1/2 inch conduit. The general purpose solenoid enclosure may be rotated to facilitate wiring by removing the retaining cap or clip. ***CAUTION:*** When metal retaining clip disengages, it will spring upward. Rotate enclosure to desired position. Replace retaining cap or clip before operating.

***NOTE:*** Alternating Current (A-C) and Direct Current (D-C) solenoids are built differently. To convert from one to the other, it is necessary to change the complete solenoid including the core assembly and solenoid base sub-assembly.

## SOLENOID TEMPERATURE

Standard catalog valves are supplied with coils designed for continuous duty service. When the solenoid is energized for a long period, the solenoid enclosure becomes hot and can be touched with the hand only for an instant. This is a safe operating temperature. Any excessive heating will be indicated by the smoke and odor of burning coil insulation.

## MAINTENANCE

***WARNING:*** Turn off electrical power supply and depressurize valve before making repairs. It is not necessary to remove the valve from the pipe line for repairs.

**CLEANING**

A periodic cleaning of all solenoid valves is desirable. The time between cleanings will vary depending upon media and service conditions in general, if the voltage to the coil is correct. sluggish valve operatIon, excessive noise or leakage will indicate that cleaning is required. Clean valve strainer or filter when cleaning solenoid valve.

**PREVENTIVE MAINTENANCE**

1. Keep the medium flowing through the valve as free from dirt and foreign material as possible.
2. While in service, operate the valve at least once a month to insure proper opening and closing.
3. Periodic inspection (depending on media and service conditions) of internal valve parts for damage or excessive wear is recommended Thoroughly clean all parts. Replace any parts that are worn or damaged.

**IMPROPER OPERATION**

1. **Faulty Control Circuit:** Check the electrical system by energizing the solenoid. A metallic click signifies the solenoid is operating. Absence of the click indicates loss of power supply. Check for loose or blownout fuses, open-circuited or grounded coil, broken lead wires or splice connections.
2. **Burned-Out Coil:** Check for open-circuited coil. Replace coil if necessary.
3. **Low Voltage:** Check voltage across the coil leads. Voltage must be at least 85% of nameplate rating.
4. **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
5. **Excessive Leakage:** Disassemble valve and clean all parts. Replace worn or damaged parts with a complete Spare Parts Kit for best results.

**COIL REPLACEMENT**

Turn off electrical power supply and disconnect coil lead wires. Refer to watt rating stamped on nameplate for identification of solenoid construction. When you have determined the watt rating of solenoid, select the correct paragraph below.

FIGURE 3 SHOWS A SOLENOID WITH A WATT RATING OF 6 A-C, 9.7 D.C,OR 9 A-C.

1. Remove retaining cap or clip, nameplate and cover. ***CAUTION:*** When metal retaining clip disengages, it will spring upward.
2. Slip the yoke containing a coil, sleeves and insulating washers off the solenoid base sub-assembly. Insulating washers are omitted when a molded coil is used.
3. Slip coil, sleeves and insulating washers from yoke. 4. Reassemble in reverse order of disassembly paying careful attention to exploded view provided for identification and placement of parts.

**FIGURE 4 SHOWS A SOLENOID WITH A WATT RATING OF 105 A-C, 11.2 D.C OR 16.7 A.C**

1. Remove retaining cap or clip, nameplate and housing. ***CAUTION:*** When metal retaining clip disengages, it will spring upward.
2. Slip spring washer, insulating washer and coil off the solenoid base sub-assembly. Insulating washers are omitted when a molded coil is used.
3. Reassemble in reverse order of disassembly paying careful attention to exploded views provided for identification and placement of parts.

***CAUTION:*** Solenoid must be fully reassembled as the housing and internal parts are part of and complete the magnetic circuit. Place an insulating washer at each end of coil, if required.

**VALVE DISASSEMBLY AND REASSEMBLY**

Depressurize valve and turn off electrical power supply. For valves with a watt rating of 6 A-C, 9.7 D-C or 9 A-C, refer to Figure 3. For valves with a watt rating of 10.5 A-C, 11.2 D-C or 16.7 A-C, refer to Figure 4.

Proceed in the following manner:

1. Remove retaining cap or clip and slip the entire solenoid enclosure off the solenoid base sub-assembly. ***CAUTION:*** When metal retaining clip disengages, it will spring upward.
2. Unscrew solenoid base sub-assembly and remove core assembly, core spring and body gasket.
3. All parts are now accessible for cleaning or replacement. Replace worn or damaged parts with a complete Spare Pans Kit for best results.
4. Reassemble in reverse order of disassembly paying careful attention to exploded views provided for identification and placement of pans.
5. Replace body gasket, core assembly, core spring and solenoid base sub-assembly. Torque solenoid base sub-assembly to 175 ± 25 inch pounds.
6. After maintenance, operate the valve a few times to be sure of proper operation.

## SPARE PARTS KITS

Spare Parts Kits and Coils arc available for ASCO valves.
Parts marked with an asterisk (*) are supplied in Spare Parts Kit.

### ORDERING INFORMATION FOR SPARE PARTS KITS

When Ordering Spare Pans Kits or Coils,
Specify Valve Catalog Number,
Serial Number and Voltage.

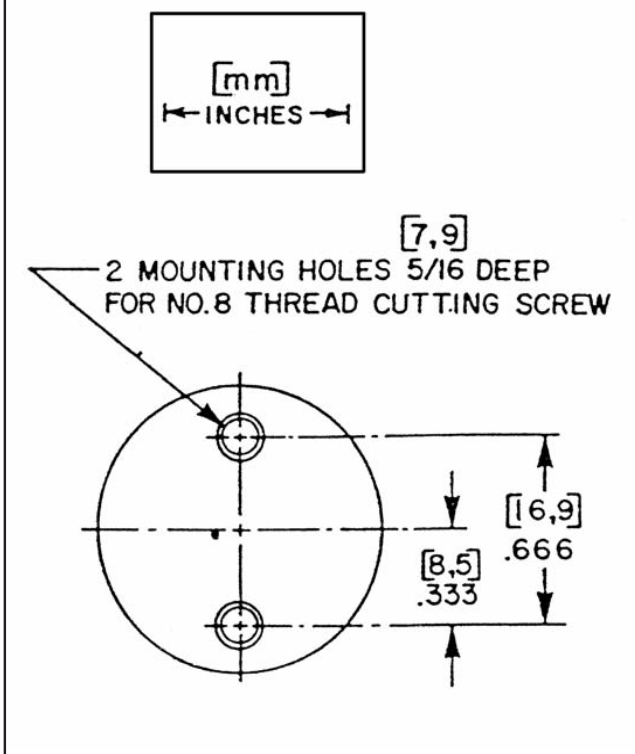



Figure 1 Body Molding

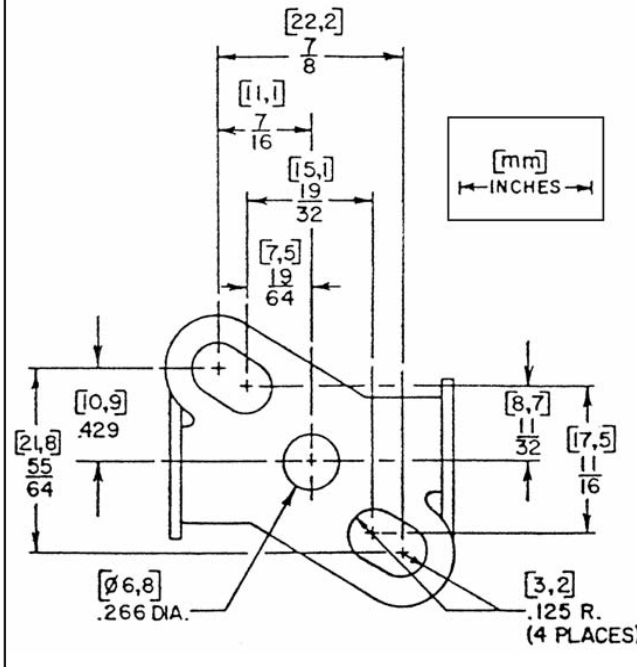
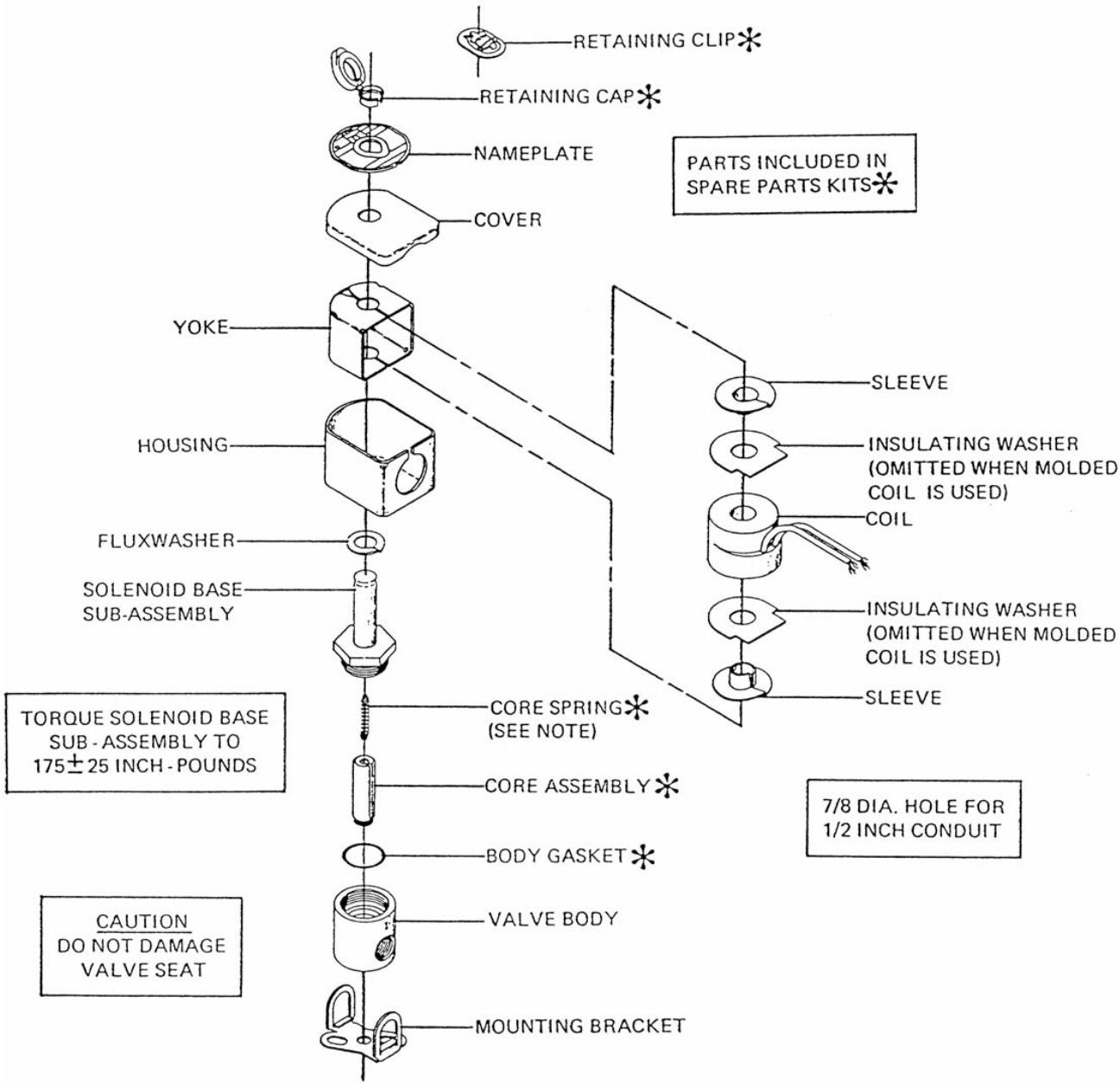
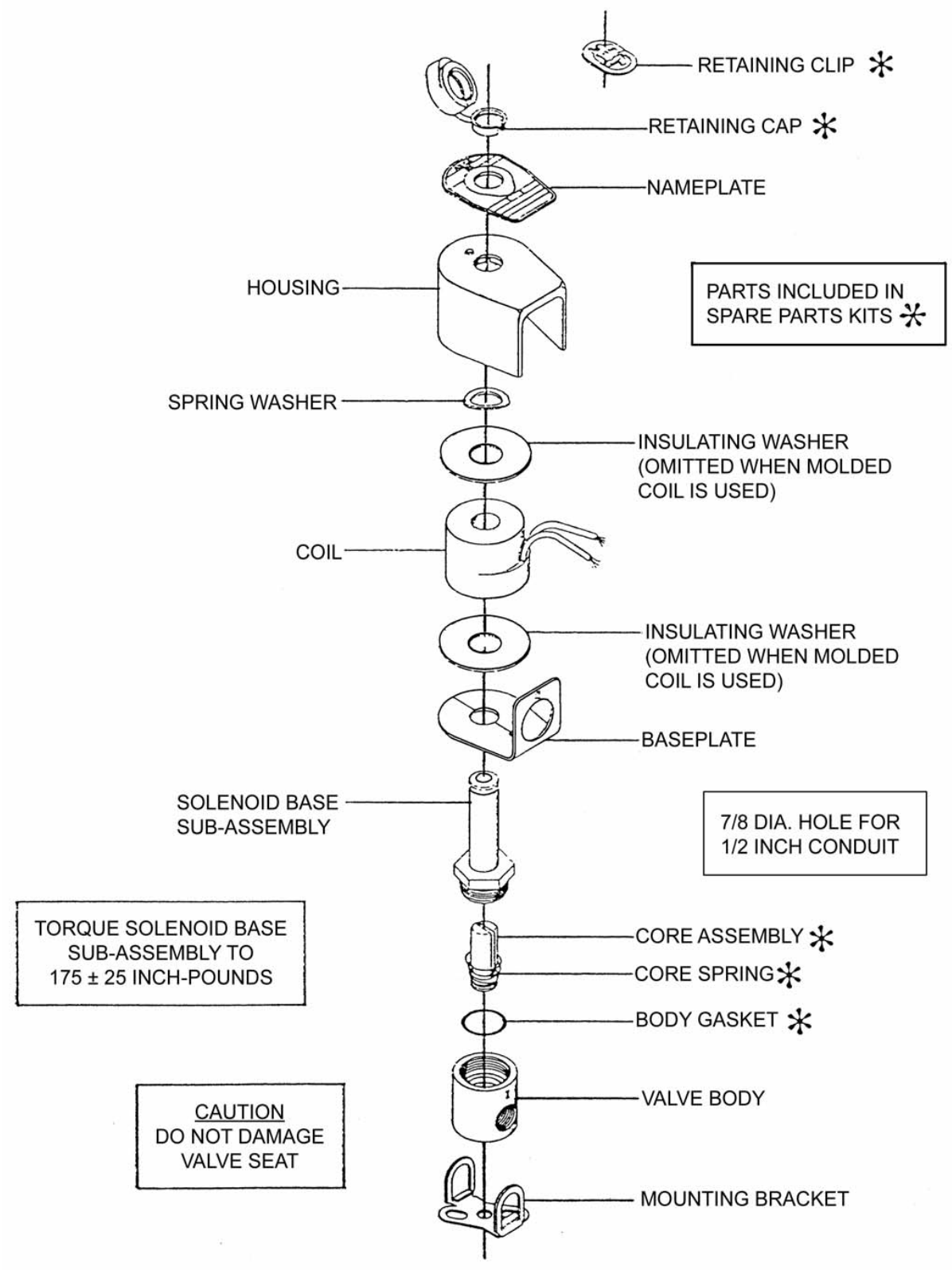



Figure 2 Mounting Bracket Mounting Dimensions




NOTE: A-C (ALTERNATING CURRENT) CONSTRUCTION SHOWN. FOR A-C CONSTRUCTION, EITHER END OF THE SPRING MAY BE INSTALLED INTO TOP OF CORE ASSEMBLY. FOR D-C (DIRECT CURRENT) CONSTRUCTION, INSTALL WIDE END OF CORE SPRING IN CORE ASSEMBLY FIRST, CLOSED END OF CORE SPRING PROTRUDES FROM TOP OF CORE ASSEMBLY.

Bulletin 8262 (6 A-C, 9.7 D-C or 9 Watts A-C)
General Purpose Solenoid Enclosure Shown
Figure 3 For Explosion-Proof/Watertight Solenoid Enclosure, See Form No. V-5391




Bulletin 8262 (10.5 A-C, 11.2 D-C or 16.7 Watts A-C)
General Purpose Solenoid Enclosure Shown
Figure 3 For Explosion-Proof/Watertight Solenoid Enclosure, See Form No. V-5380

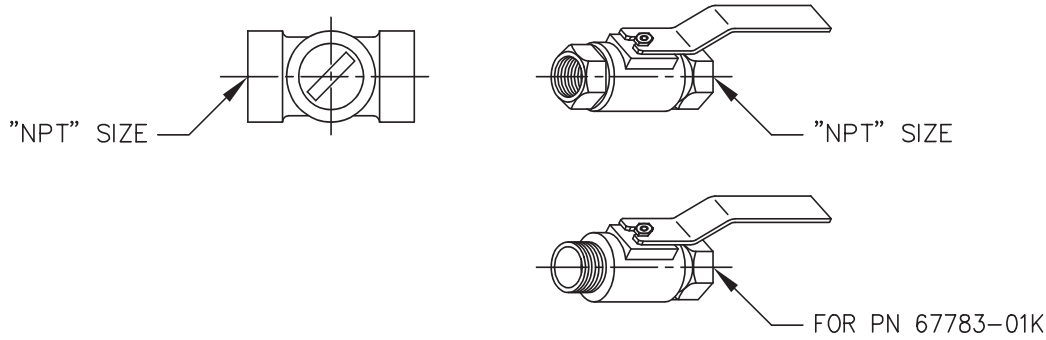
| CLA-VAL CO. NEWPORT BEACH, CALIFORNIA | CATALOG NO. | DRAWING NO. 67783 | REV BD |
|---|---|---|---|

TYPE OF VALVE AND MAIN FEATURES

# CK2 COCK/BALL VALVE

| | | |
|---|---|---|
| DESIGN | | |
| DRAWN | MGR | 4-02-80 |
| CHK'D | KD | 4-03-80 |
| APV'D | CH | 4-07-80 |

SCALE: NONE




CLA-VAL PART NO. AND MATERIAL

| BRONZE WITH HANDLE | STEEL WITH HANDLE | IRON WITH HANDLE | 316 SST WITH HANDLE | 316 SST W/ LOCKING HANDLE | BRONZE WITH HANDLE | MONEL WITH HANDLE | MONEL W/ LOCKING HANDLE | SIZE "NPT" |
|---|---|---|---|---|---|---|---|---|
| 67783-01K* | -09C | -17F | -25J SUPSD BY-26G | | -41F SUPSD BY-01K | | | 1/8" |
| -02H | -10A | -18D | -26G | -51E SUPSD BY-26G<br>-52C | -42D SUPSD BY-02H | -55F | | 1/4" |
| -03F*<br>-59H*** | -11J | -19B | -27E | -46E SUPSD BY-27E<br>-53A | -45G<br>-57B** | -48A SUPSD BY-49J | -63K | 3/8" |
| -04D<br>-60F *** | -12G | -20K | -28C | -54J | -43B SUPSD BY-04D | -49J | -62B | 1/2" |
| -05A<br>-61D *** | -13E | -21H | -29A | -64H | -44K SUPSD BY-05A | -56D | | 3/4" |
| -06J | -14C | -22F | -30J | | | -58K | | 1" |
| -07G | -15K | -23D | -31G | | | | | 1 1/4" |
| -08E | -16H | -24B | -32E | | | | | 1 1/2" |
| -50G | | | -47C | | | | | 2" |

* SEE ENGINEERING APPROVED VENDORS TABLE (SHEET 2 OF 2).

** HAMMOND VALVE 8501 ONLY.

*** WILKINS CK2 (SEE SHEET 2 OF 2)

CAD REVISION RECORD - DO NOT REVISE MANUALLY

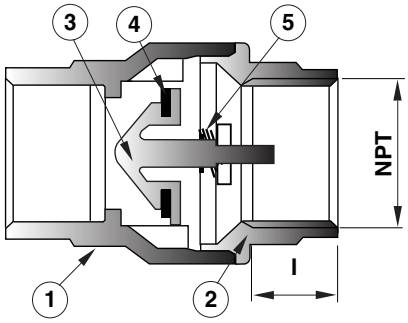
| LTR | DESCRIPTION | BY | DATE |
|---|---|---|---|
| A-AY | SEE REVISION FILE | | |
| BA | ADDED PN'S 67783-59H, 67783-60F & 67783-61D (ECO 20434) | AK | 03-14-06 |
| BB | ADDED PN'S 67783-62B (NED 62200) | AK | 07-10-08 |
| BC | ADDED PN'S 67783-63K (NED 62218) | AK | 08-14-08 |
| BD | ADDED PN 67783-64H (NED 62446) | PC | 10-1-2008 |

CLA-VAL®

—MODEL— **CDC-1**

# Check Valve (Sizes 3/8″ and 1/2″)

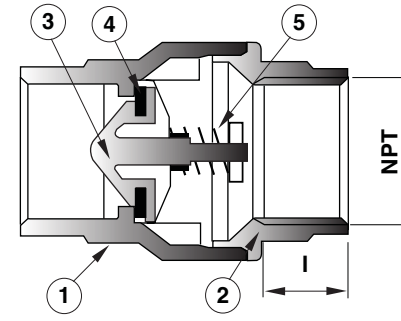

- **NSF 61 Approved**
- **Meets low lead requirements**
- **Soft Seat for Bubble Tight Shutoff, Spring Loaded for Fast Seating Action**
- **Compact Design**
- **Low Cracking Pressure 1/2 psi**
- **Flow Profile Designed to Minimize Head Loss**
- **Perfect Seating both at High and Low Pressure, Wide Temperature Range: +10° to 210°F**
- **Polyethermide Disc to ensure the Best Resistance for Corrosion and Abrasion**
- **Patented Disc Guide to Prevent Any Side Loading**




**Full Open Operation**

| Item | Description | Material |
|---|---|---|
| 1 | Body | Brass |
| 2 | End Connection | Brass |
| 3 | Disc | Polytherimide |
| 4 | Seat | NBR |
| 5 | Spring | Stainless Steel |

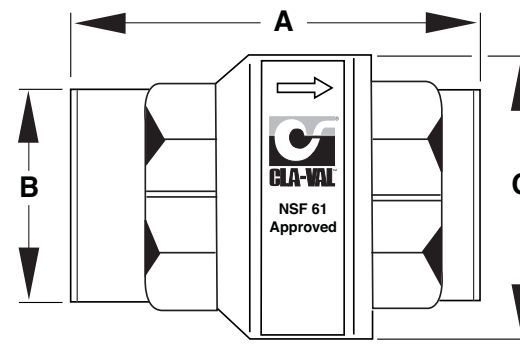
**Available only in replacement assembly.**




**Tight Closing Operation**

**Dimensions**

| Size (NPT) | Stock Number | A | B | C | I | $C_V$ | psi | Wt. |
|---|---|---|---|---|---|---|---|---|
| 3/8" | 9834501A | 1.73 | 0.79 | 1.06 | 0.40 | 4.55 | 400 | 0.37 |
| 1/2" | 9834502J | 2.32 | 0.98 | 1.35 | 0.53 | 6.00 | 400 | 0.32 |

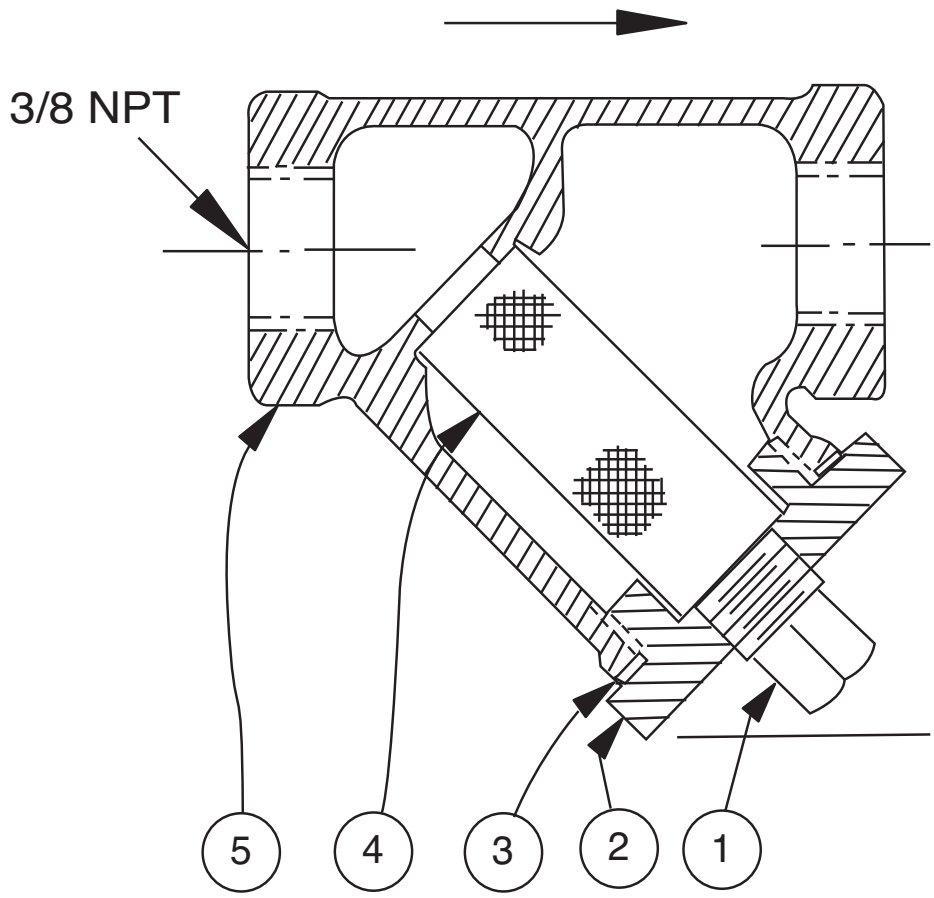


# X43
## Strainer

| ITEM | DESCRIPTION | MATERIAL |
|---|---|---|
| 1 | Pipe Plug | Steel |
| 2 | Strainer Plug | Brass |
| 3 | Gasket | Copper |
| 4 | Screen | SST |
| 5 | Body | Brass |
| No parts available. Rreplacement assembly only. | | |

Standard 60 mesh pilot system strainer for fluid service.

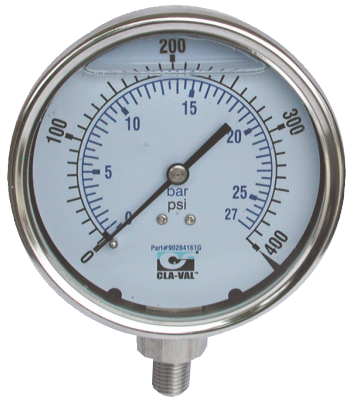
| Size | Stock Number |
|---|---|
| 3/8 x 3/8 | 33450J |



CLA-VAL™

— MODEL — **X141**

# Cla-Val Gauge Option




Model X141
4" Pressure Gauge

- **Liquid-Filled**
- **Dual Scale (PSI / BAR)**
- **Long Life Stainless Steel Construction**
- **Tamper-Resistant Design**
- **2 ½" and 4" Diameter Sizes**
- **Isolation Valve Included**

The Cla-Val Model X141 Pressure Gauge Option consists of glycerin-filled pressure gauges with the Cla-Val Logo and ¼" CK2 Bronze Isolation Valves on the main valve inlet and outlet. Cla-Val gauges are waterproof, shock resistant, and fully enclosed with a stainless steel case and bronze wetted parts. Ambient temperature ratings are -4 Degrees F to +140 Degrees F (-20 Degrees C to +60 Degrees C).

All gauges have dual scale (PSI/BAR) and are supplied with a 1/4" NPT bottom connection. Model X141 gauges are available installed on new valves and must be specified on the customer Purchase Order. Consult factory for other available materials.

## Available Pressure Ranges

X141 Gauge Assembly (2 1/2" Diameter Dial)

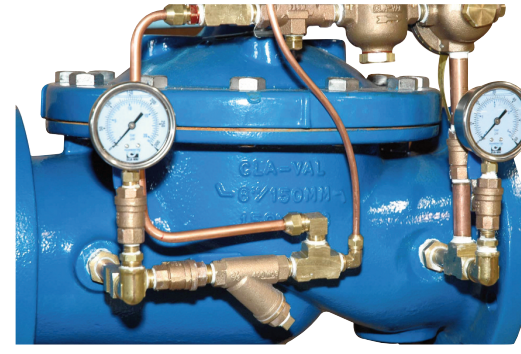
| Pressure Range* | Part Number |
|---|---|
| 0 - 100 psi | 20534302K |
| 0 - 160 psi | 20534311J |
| 0 - 200 psi | 20534303J |
| 0 - 300 psi | 20534304H |
| 0 - 400 psi | 20534305G |

X141 Gauge Assembly (4" Diameter Dial)

| Pressure Range* | Part Number |
|---|---|
| 0 - 100 psi | 20534307E |
| 0 - 200 psi | 20534308D |
| 0 - 300 psi | 20534309C |
| 0 - 400 psi | 20534310K |

## Typical X141 Installation

## Typical Installation with two X141 Gauges



*Specify desired pressure range and valve location (inlet or outlet) on order.

# Cla-Val Product Identification

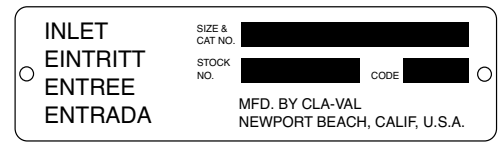
# How to Order

## Proper Identification

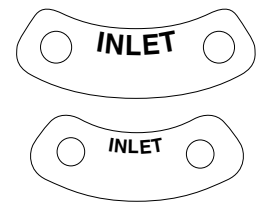
For ordering repair kits, replacement parts, or for inquiries concerning valve operation, it is important to properly identify Cla-Val products already in service by including all nameplate data with your inquiry. Pertinent product data includes valve function, size, material, pressure rating, end details,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

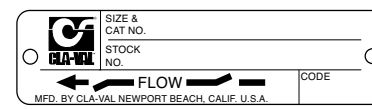



This brass plate appears on valves sized 2 1/2" and larger and is located on the top of the inlet flange.

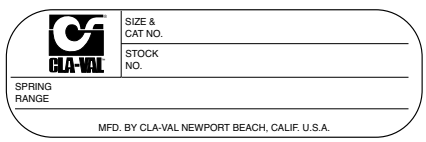



These two brass plates appear on 3/8", 1/2", and 3/4" size valves and are located on the valve cover.

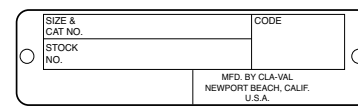

This brass plate appears on altitude valves only and is found on top of the outlet flange.



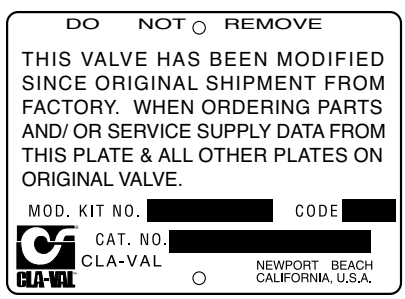

These two brass plates appear on threaded valves 1" through 3" size or flanged valves 1" through 2". It is located on only one side of the valve body.



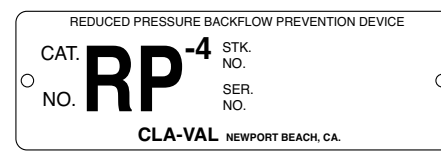

This tag is affixed to the cover of the pilot control valve. The adjustment range appears in the spring range section.




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 $100.00.

### 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% ($100 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-3/2011)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PO Box 1325 Newport Beach CA 92659-0325
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**CLA-VAL EUROPE**
Chemin dés Mesanges 1
CH-1032 Romanel/
Lausanne, Switzerland
Phone: 41-21-643-15-55
Fax: 41-21-643-15-50

www.cla-val.com




Represented By:

CLA-VAL®

# —MODEL— REPAIR KITS

## Model 100-01 Hytrol Main Valve

| BUNA-N MATERIAL | | | | |
|---|---|---|---|---|
| | RUBBER KIT | REPAIR KIT | REBUILD ASSEMBLY | STUD & NUT KIT |
| | STOCK NO. | STOCK NO. | STOCK NO. | STOCK NO. |
| 3/8” | 9169801K | | 21176614B | 21176633J |
| 1/2” | 9169802H | 21176602F | 21176615A | 21176634H |
| 3/4” | 9169802H | 21176602F | 21176615A | 21176634H |
| 1” Non-Guided | 9169803F | 21176601G | 21176616K | 21176636F |
| 1” | 9169804D | 21176603E | 21176617J | 21176636F |
| 1 1/4” | 9169804D | 21176603E | 21176617J | 21176636F |
| 1 1/2” | 9169804D | 21176603E | 21176617J | 21176636F |
| 2” | 9169805A | 21176608K | 21176618H | 21176637E |
| 2 1/2” | 9169811J | 21176609J | 21176619G | 21176638D |
| 3” | 9169812G | 21176604D | 21176620D | 21176639C |
| 4” | 9169813E | 21176605C | 21176621C | 21176640K |
| 6” | 9169815K | 21176606B | 21176622B | 21176641J |
| 8” | 9817901D | 21176607A | 21176623A | 21176642H |
| 10” | 9817902B | 21176610F | 21176624K | 21176643G |
| 12” | 9817903K | 21176611E | 21176625J | 21176644F |
| 14” | 9817904H | 21176612D | 21176626H | 21176645E |
| 16” | 9817905E | 21176613C | 21176627G | 21176645E |

## Model 100-20 Hytrol Main Valve

| BUNA-N MATERIAL | | | | |
|---|---|---|---|---|
| | RUBBER KIT | REPAIR KIT | REBUILD ASSEMBLY | STUD & NUT KIT |
| | STOCK NO. | STOCK NO. | STOCK NO. | STOCK NO. |
| 3” | 9169805A | 21176608K | 21176618H | 21176637E |
| 4” | 9169812G | 21176604D | 21176620D | 21176639C |
| 6” | 9169813E | 21176605C | 21176621C | 21176640K |
| 8” | 9169815K | 21176606B | 21176622B | 21176641J |
| 10” | 9817901D | 21176607A | 21176623A | 21176642H |
| 12” | 9817902B | 21176610F | 21176624K | 21176643G |
| 14” | 9817903K | 21176611E | 21176625J | 21176644F |
| 16” | 9817903K | 21176611E | 21176625J | 21176644F |

Consult factory for larger sizes

**Rubber Kit Includes:** Diaphragm, Disc, Spacer Washers

**Repair Kit Includes:** Diaphragm, Disc, Spacer Washers, Epoxy Coated Disc Retainer, Epoxy Coated Diaphragm Washer, Protective Washer

**Rebuild Assembly Includes:** Diaphragm, Disc, Spacer Washers, Epoxy Coated Disc Retainer, Epoxy Coated Diaphragm Washer, Protective Washer, Stainless Steel Bolts & Washers (6" & Below), Stainless Steel Studs, Nuts, & Washers (8" & Above), Stem, Stem Nut, Disc Guide, Standard Cover Spring, Cover Washer

**Stud & Nut Kit Includes:** Stainless Steel Bolts & Washers (6" & Below), Stainless Steel Studs, Nuts, & Washers (8" & Above)

## Repair Kits for 100-02/100-21 Powertrol and 100-03/100-22 Powercheck Main Valves

***For:*** Powertrol and Powercheck Main Valves—**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 |

Larger Sizes: Consult Factory.

## Repair Kits for 100-04/100-23 Hy-Check Main Valves

***For:*** Hy-Check Main Valves—**150 Pressure Class Only**

**Includes:** Diaphragm, Disc and O-Rings and full set of spare Spacer Washers.

| 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 |

Larger Sizes: Consult Factory.

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

**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-9 | 12223E | CDB-KB | 9170012A |
| CDB-30 | 9170023H | CRA (w/bucking spring) | 9170001D | CRA-KB | N/A |
| CDB-31 | 9170024F | CRD (w/bucking spring) | 9170002B | CRD-KB (w/bucking spring) | 9170008J |
| CDB-7 | 9170017K | CRD (no bucking spring) | 9170003K | CRL-KB | 9170013J |
| CDH-2 | 18225D | CRD-18 | 20275401K | CDHS-2BKB | 9170010E |
| CDHS-2 | 44607A | CRD-22 | 98923G | CDHS-2FKB | 9170011C |
| CDHS-2B | 9170004H | CRL (55F, 55L) | 9170007A | CDHS-18KB (no bucking spring) | 9170009G |
| CDHS-2F | 9170005E | CRL60/55L-60 | 9170033G | 102C-KB | 1726202D |
| CDHS-3C-A2 | 24657K | CRL60/55L60 1" | 9170042H | | |
| 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 | Universal CRL | 9170041K | | |
| CDS-6A | 20349401C | CV | 9170019F | | |
| CFCM-M1 | 1222301C | X105L (O-ring) | 00951E | Buna-N® | |
| CFM-2 | 12223E | 102B-1 | 1502201F | | |
| CFM-7 | 1263901K | 102C-2 | 1726201F | CRD Disc Ret. (Solid) | C5256H |
| CFM-7A | 1263901K | 102C-3 | 1726201F | CRD Disc Ret. (Spring) | C5255K |

## 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**