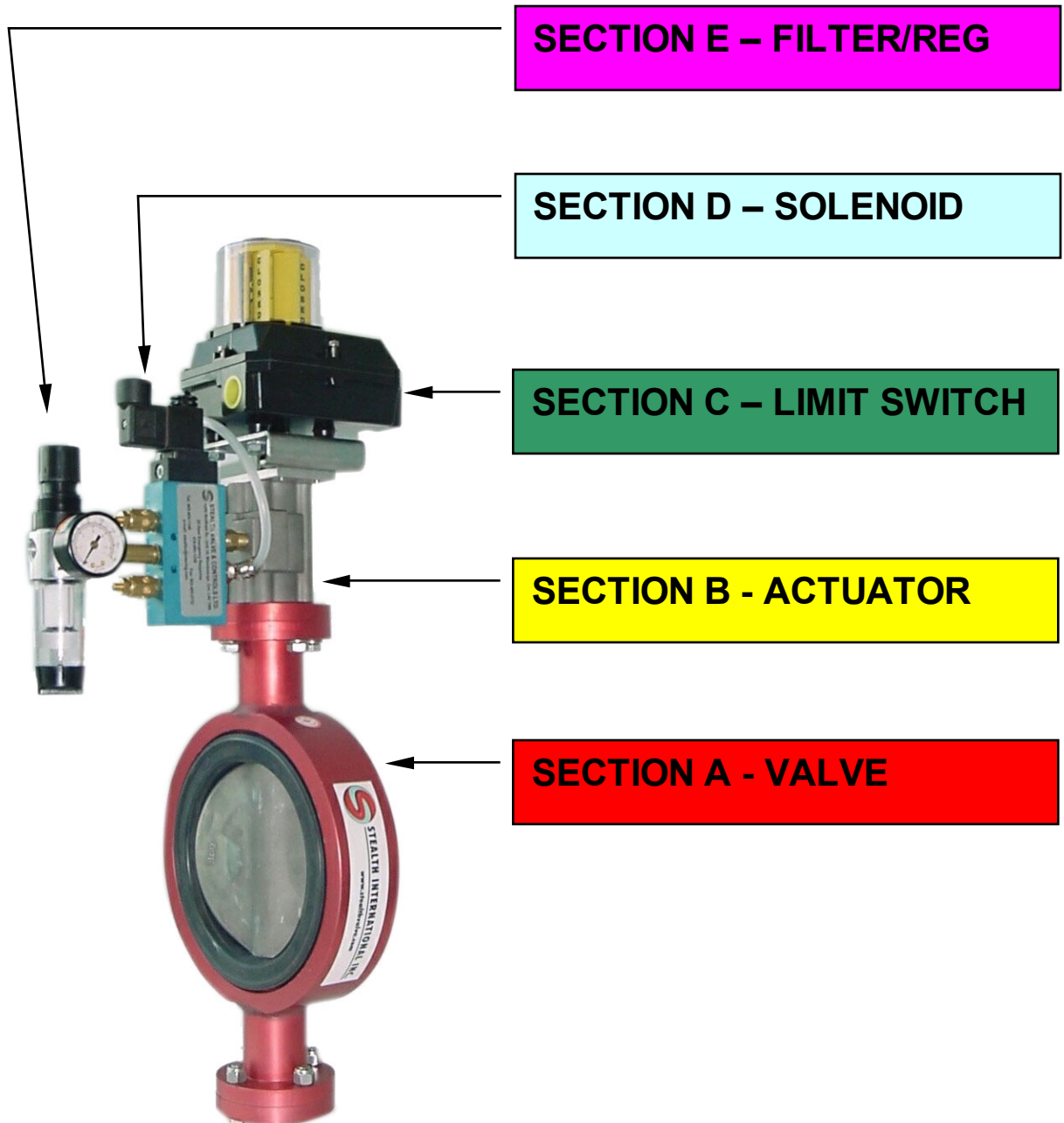




# STJ-Z-4216 Zenon Cyclic Valve



**Operating, Maintenance and Installation Instructions**



# STJ-Z Zenon Cyclic Valve



**The Zenon Advantage:** Designed specifically for Zenon, the STJ-Z Cyclic Valve offers a **3 Year Warranty** on the performance and operation of all actuators and valves with an SO tracking system. The unique patented design offers external packing and seal replacement eliminating valve removal from the piping system. This design was formulated specifically for aeration/high cycle applications minimizing valve and actuator wear typically experienced in traditional designs.

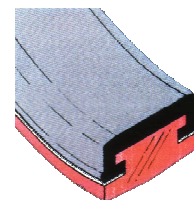


## **Valve**

**External Roller Bearings:** All valves incorporate external, recessed, sealed and lubricated roller bearings. This unique design provides full shaft support and eliminates frictional torque in the shaft journal. In addition, valve shafts do not contact the valve body journal, eliminating potential shaft to journal seizure that exists in typical butterfly valve designs when the media is exposed to shaft journals.



**Valve Seats:** All seats are high temperature Food Grade NSF Approved. These peroxide cured seats are designed to operate under sustained high temperature at 250°F for high cycle applications. Our standard seat and unique formula eliminates



post curing and durometer instability. **Independent seat testing has successfully surpassed 3 million cycles on more aggressive applications.**

**Discs:** All discs are designed for maximum sealing capacities while minimizing seat wear based on the floating disc design and engineered tolerances between the disc and sealing surface.

**Actuation:** This unique actuator received the **1999 Innovative award in the Flow Control Magazine.**



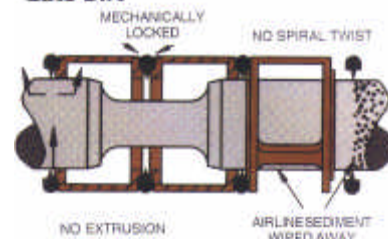
Offset pistons eliminate internal, life shortening, cantilever loads while the patented saddle assembly contributes to having the lowest friction actuator on the market. Extremely low internal friction combined with the linear rack and pinion torque curve enable precise position selection. Outward piston travel reduces trapped air volume that causes 'jump' on common R&P actuators. All 316 stainless steel construction - inside and out - provides unsurpassed resistance to corrosion. Investment cast and machined surfaces provide a quality, sanitary appearance for 'show place' applications. Enlarged or

multiple cylinders allow full torque output with 30 and 40 psi supply pressures. No cantilever forces or piston side loads > low friction, less wear. Patented 'saddle' assembly eliminates sliding friction and wear. Successfully tested at full load to 1,000,000 cycles. **Guaranteed for minimum 3 million cycles under load.**

**Rhodium TTL:** The choice for reliable low power 24 VDC switching applications. Rhodium contacts have 80% less contact resistance than Tungsten TTL. Rated to 1A - 24VDC. **MTBF 1,000,000 cycles.**

**Solenoid Coils:** **Lifetime warranty**, with non-stick tapered Tee seals mechanically locked. Tested to 20 million cycles. Nitrile Seals.

## **Tapered Tee Seal.... Eats Dirt**



**Bi-directional tapered lip  
flexes to clean spool**



# STJ-Z Zenon Cyclic Valve



## ZENON AERATION VALVES

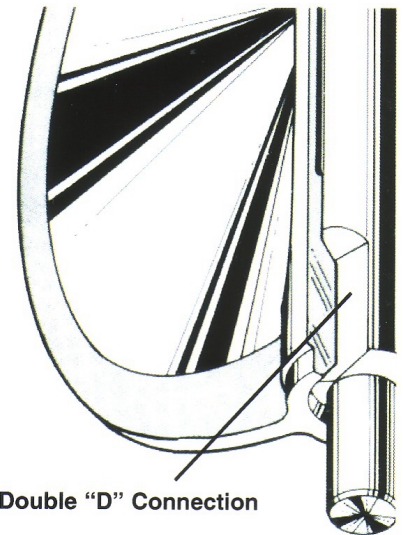
### WATER TREATMENT AND SEWAGE TREATMENT APPLICATIONS BLOWER INLET AND OUTLET

#### SUPERIOR PERFORMANCE ADVANTAGES IT'S IN THE "SEAT"

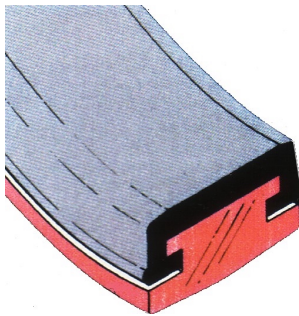


#### SPECIFY PEROXIDE CURED SEATS

- Extended temperature range (-40 to 250 F)
- Peroxide cured seats prevent post curing eliminating seat hardening, brittleness and high torque preventing premature valve replacement. Seat life is extended 3 times longer on blower inlet, outlet and entire aeration systems based on elastomer formulas.
- Reduced pressure ratings from full Vacuum to 50 psig with undercut discs, decreasing torques and increasing cycle life.
- The disc is spherically machined, hand polished for bubble-tight shut off, minimum torque, and extended seat life in dry air service. Specially machined discs are designed to reduced torque and prevent seat wear. The Double "D" internal disc & stem connection eliminates typical exposed disc to shaft connections from the media. This design has eliminated disc screws and taper pins, which cause



Double "D" Connection



leak paths, corrosion, and control failures.

- Body meets ANSI 125/150 (or BS 10D&E, DIN 10, and JIS 10) drillings. Mechanically retained stem in the body is standard. Valve Shaft and body is isolated from the line media.
- Tongue-and-groove seat design and molded seat face o-ring is suitable for Weld-neck, Slip-on, and Vanstone flanges for full Automation Pressure or Vacuum applications without de-rating the valve.



## STEALTH VALVE & CONTROLS LTD.

1273 North Service Road E., Unit F6, Oakville, Ontario, L6H 1A7 • Phone: 905-845-4500 • Fax: 905-845-4505





# STEALTH VALVE & CONTROLS LTD.

## THE "APPLICATION" SOLUTION COMPANY

1273 North Service Road E. Unit # F6  
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www.stealthvalve.com  
e-mail: stealthv@interlog.com  
EMERGENCY VALVE RESPONSE: 416-945-1258

**Quality**  
Established Century old  
product lines proven design

## STJZ High Cyclic Damper Valve

**Service**  
Over 75 years of  
combined experience

### Superior Performance and Design

The STJ Damper Valve is specially designed for high-speed, high-cycle applications. The patented live loaded dual internal shaft seal feature and dual external roller bearings are contained in the valve body. This proven shaft and bearing design eliminates typical journal corrosion and internal bearing failure. This unique design eliminates valve removal, disruption to the operating system and costly maintenance. The dual thrust-bearing feature allows for installation of the valve and actuator in any orientation and the valve is fully bi-directional.

#### MODELS:

MODEL # STJ-WO(4)-4216-3-6-3-Q0\*(3)-DA-R Aluminum (Anodized)

Model number includes complete assembly Valve, 316 stainless steel Actuator, 4 way NEMA 4 120/1/60 Solenoid and FMYB 5T20 Limit Switch Box containing proximity switches. All Solenoids are fail open on electrical failure.

- (4) Depicts valve size and changes per valve size required.  
\*(3) Shows actuator size, changes to 4 on 10" valves and larger.

#### PRESSURE RATING: BUBBLE TIGHT

- All valves are suitable for 15 psig bi-directional shut-off in the fully closed position

#### TEMPERATURE RATING:

Configuration		Minimum	Maximum	Class	Body
Disc	Metal 316 ST.ST.	-40°F	250°F	B.T.	Wafer
Seat	EPDM				



Bubble-Tight  
High Cycle  
Dampers

#### ENGINEERING DATA:

##### FEATURES & BENEFITS

- Wafer construction
- Flange drilling to suit ANSI/AWWA/B5/ODEE/DIN/JIS
- High capacity flow construction  
ΔP, fully closed 15 psig
- Thru shaft design
- Bi-directional shut-off
- Dual thrust bearing
- Fixed Disc / Stem assembly Internal Drive
- Solid bodies & discs
- Low torque for smaller actuator sizing
- Direct mount actuation ISO 5211
- Face to face ISO 5752 (MSS-SP-67)(API)
- Replaceable bearing without removing the valve from service
- Full penetration welds
- Made in Canada
- External removeable bearings
- Corrosion proof shaft journal construction
- Patent pending packing design

#### MATERIALS OF CONSTRUCTION:

Component	Standard	Options
Body	Wafer Aluminum	Anodized / Epoxy Coated / Flanged
Disc	316 ST.ST.	Bronze / Ductile Iron
Shaft	316 ST.ST.	17-4 PH / Hastalloy
Seat	EPDM	Viton / BUNA-N
Packing - Adjustable	Dual Chevron / Delron	(Patent Pending)
Internal Bearings	Mini Roller - Removable	Permanent Grease Packed



# STEALTH VALVE & CONTROLS LTD.

## THE "APPLICATION" SOLUTION COMPANY

1273 North Service Road E. Unit # F6  
Oakville, Ontario • L6H 1A7  
Tel: 905-845-4500 • Fax: 905-845-4505  
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e-mail: stealthv@interlog.com  
EMERGENCY VALVE RESPONSE: 416-945-1258

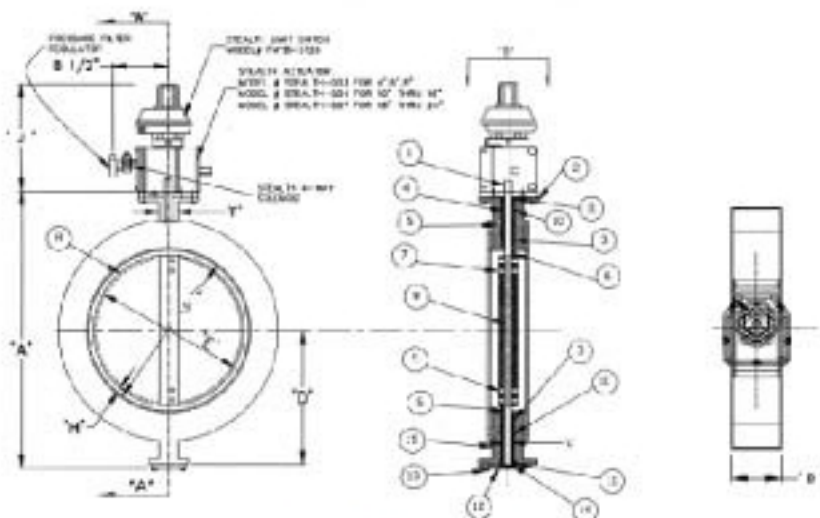
**Quality**  
Established Century old  
product lines proven design

**Service**  
Over 75 years of  
combined experience

### Valve Dimensions: 3" - 24" (75mm - 600mm)

Size		A	B	C	D	E	F	G	H	J	BC	No. Holes	Hole Dia.
mm	Inches												
75	3"	11.5	1.75	3	5.75	2.75	2	0.75	0.25	10.5	2.76	4	0.38
100	4"	12.5	2.00	4.02	6.25	3.77	2	0.75	0.25	10.5	2.76	4	0.38
125	5"	13.5	2.12	5.04	6.75	4.79	2	0.75	0.38	10.5	2.76	4	0.38
150	6"	14.5	2.12	6.06	7.25	5.81	2	0.75	0.38	10.5	2.76	4	0.38
200	8"	17	2.50	7.98	8.5	7.75	2	0.75	0.38	10.5	2.76	4	0.38
250	10"	21.5	2.50	10.02	10.75	9.75	2.37	1.25	0.38	11.5	4.02	4	0.38
300	12"	24.5	3.00	12	12.25	11.75	2.37	1.25	0.38	11.5	4.02	4	0.38
350	14"	26.5	3.00	13.25	13.25	13.25	2.37	1.25	0.38	11.5	4.02	4	0.56
400	16"	29	4.00	15.25	14.5	15.25	2.37	1.25	0.38	11.5	4.02	4	0.56
450	18"	30.5	4.25	17.25	15.25	17.25	2.5	1.5	0.38	13.5	4.02	4	0.56
500	20"	33	5.00	19.25	16.5	19.25	2.5	1.5	0.38	13.5	4.02	4	0.56
600	24"	37.5	5.94	23.25	18.75	23.25	2.75	1.62	0.38	13.5	4.02	4	0.56

Note: 3" - 8" = Q03-DA, 10" - 16" = Q04-DA, 18" - 24" = Q07-DA



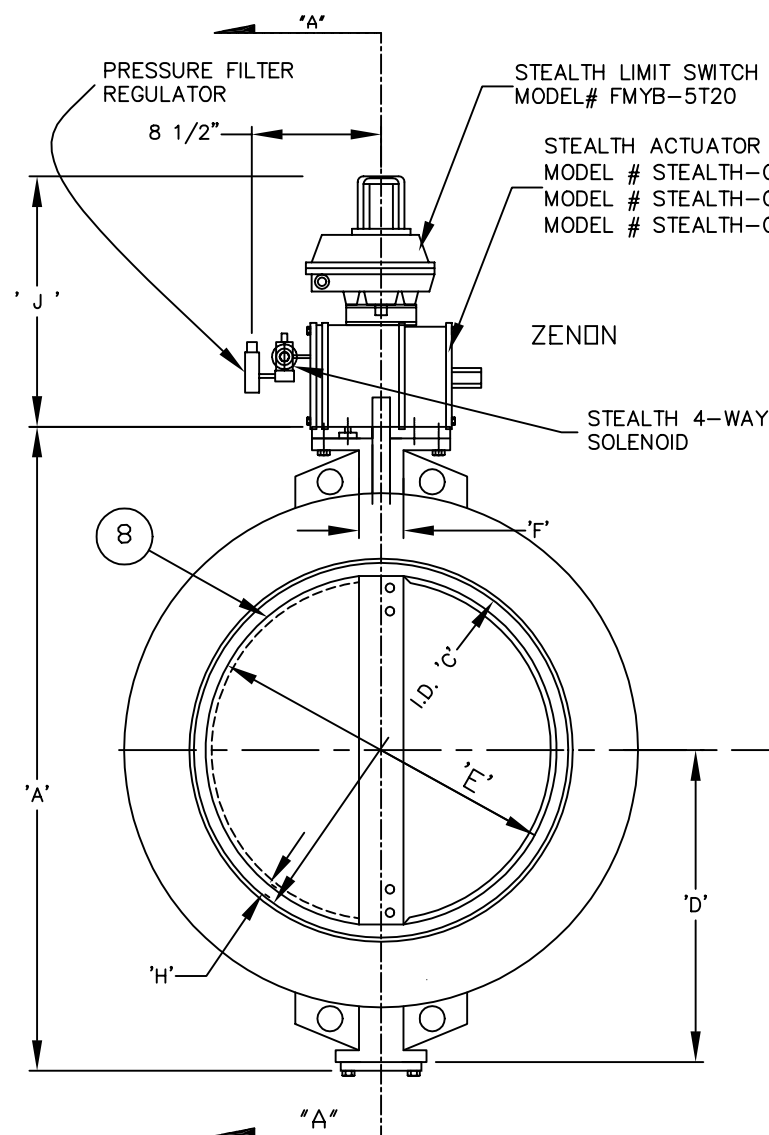
### NOTES

1. VALVES TO SUIT ANSI 150 FLANGES
2. FACE TO FACE DIMENSIONS TO API-609 INTERCHANGEABLE WITH HIGH PERFORMANCE BUTTERFLY VALVES CONFORMING TO THIS STANDARD.
3. ALL VALVES ARE CLOCKWISE TO CLOSE.
4. ALL SOLENOIDS ARE ENERGIZE TO CLOSE FAIL OPEN
5. PRODUCT CODE NUMBER INCLUDES ALL COMPONENTS SHOWN

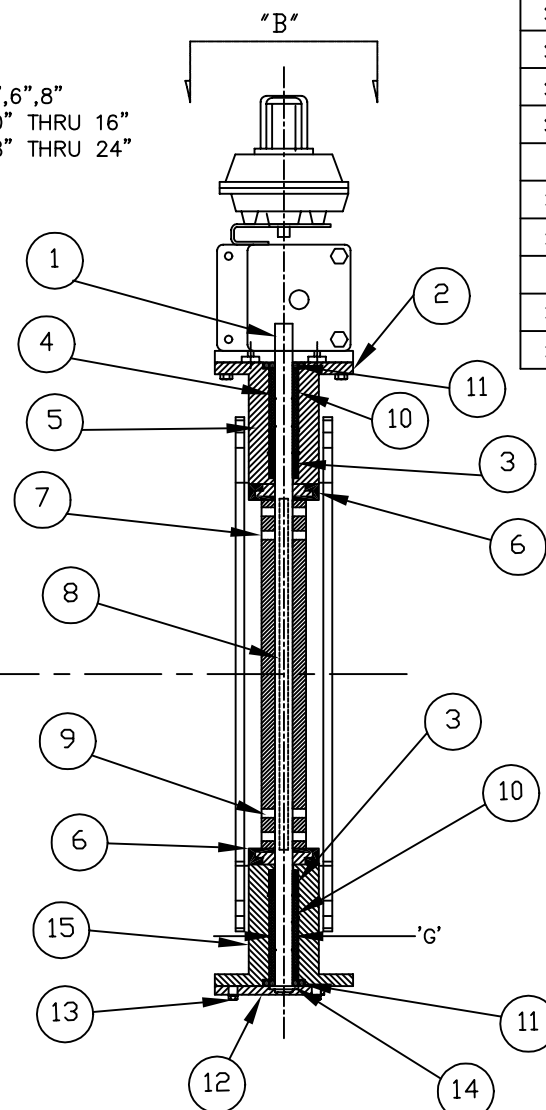


### C, Value - Valve Sizing co-efficient:

Valve Size		Disc Position (degrees)								
Inches	mm	90°	80°	70°	60°	50°	40°	30°	20°	10°
3	80	461	364	267	154	96	61	35	15	1.76
4	100	841	701	496	274	171	109	62	27	3.13
5	125	1376	1146	775	428	268	170	98	43	5
6	150	1850	1542	1025	567	354	225	129	56	6
8	200	3316	2842	1862	1081	680	421	241	102	12
10	250	5430	4525	2948	1710	1076	667	382	162	19
12	300	8077	6731	4393	2563	1594	1005	555	235	27
14	350	10538	8874	5939	3384	2149	1320	756	299	34
16	400	13966	11761	7867	4483	2847	1749	1001	397	45
18	450	17214	14496	10065	5736	3643	2237	1281	507	58
20	500	22339	18812	12535	7144	4536	2786	1595	632	72
24	600	32693	27718	17981	10421	6618	4064	2327	922	211



DO NOT COPY / PROPRIETARY  
INFORMATION TO ZENON



SECTION "A-A"

DIMENSIONS													TOP PLATE		
PRODUCT CODE		SIZE	A	B	C	D	E	F	G	H	J		BC	Holes	Dia.
STJZ-W03-4216-3-6-3-Q03-DA-R		75mm	3"	11.5	1.75	3.00	5.75	2.75	2	0.75	0.25	10.5	2.76	4	0.38
STJZ-W04-4216-3-6-3-Q03-DA-R		100mm	4"	12.5	2.00	4.02	6.25	3.77	2	0.75	0.25	10.5	2.76	4	0.38
STJZ-W05-4216-3-6-3-Q03-DA-R		125mm	5"	13.5	2.12	5.04	6.75	4.79	2	0.75	0.38	10.5	2.76	4	0.38
STJZ-W06-4216-3-6-3-Q03-DA-R		150mm	6"	14.5	2.12	6.06	7.25	5.81	2	0.75	0.38	10.5	2.76	4	0.38
STJZ-W08-4216-3-6-3-Q03-DA-R		200mm	8"	17.0	2.50	7.98	8.50	7.75	2	0.75	0.38	10.5	2.76	4	0.38
STJZ-W10-4216-3-6-3-Q04-DA-R		250mm	10"	21.5	2.50	10.02	10.75	9.75	2.37	1.25	0.38	11.5	4.02	4	0.38
STJZ-W12-4216-3-6-3-Q04-DA-R		300mm	12"	24.5	3.00	12.00	12.25	11.75	2.37	1.25	0.38	11.5	4.02	4	0.38
STJZ-W14-4216-3-6-3-Q04-DA-R		350mm	14"	26.5	3.00	13.25	13.25	13.25	2.37	1.25	0.38	11.5	4.02	4	0.56
STJZ-W16-4216-3-6-3-Q04-DA-R		400mm	16"	29.0	4.00	15.25	14.50	15.25	2.37	1.25	0.38	11.5	4.02	4	0.56
STJZ-W18-4216-3-6-3-Q07-DA-R		450mm	18"	30.5	4.25	17.25	15.25	17.25	2.50	1.50	0.38	13.5	4.02	4	0.56
STJZ-W20-4216-3-6-3-Q07-DA-R		500mm	20"	33.0	5.00	19.25	16.50	19.25	2.50	1.50	0.38	13.5	4.02	4	0.56
STJZ-W24-4216-3-6-3-Q07-DA-R		600mm	24"	37.5	5.94	23.25	18.75	23.25	2.75	1.62	0.38	13.5	4.02	4	0.56

NOTE : 3" - 8" = Q03-DA, 10" - 16" = Q04-DA, 18" - 24" = Q07-DA

4 HOLES @  $\phi 0.38"$   
ON A  $\phi 2.76$  B.C.D

TO SUIT STEALTH  
ST. STEEL ACTUATOR

STEALTH LIMIT  
SWITCH - MODEL  
FMYB-5T20

SECTION "B"

SIZE	B DIMENSION DIFFERENCE
3"	- 0.28
4"	- 0.03
5"	- 0.11
6"	- 0.11
8"	0.10
10"	- 0.25
12"	- 0.08
14"	- 0.27
16"	- 0.11
18"	- 0.36
20"	- 0.03
24"	- 0.06

#### NOTES

- VALVES TO SUIT ANSI 150 FLANGES
- FACE TO FACE DIMENSIONS TO API-609 INTERCHANGEABLE WITH HIGH PERFORMANCE BUTTERFLY VALVES CONFORMING TO THIS STANDARD.
- ALL VALVES ARE CLOCKWISE TO CLOSE.
- ALL SOLENOIDS ARE ENERGIZE TO CLOSE FAIL OPEN
- PRODUCT CODE NUMBER INCLUDES ALL COMPONENTS SHOWN

# STEALTH INTERNATIONAL INC.

www.stealthvalve.com

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1273 North Service Rd. E. - Unit F6 - Oakville, Ontario L6H-1A7 (905) 845-4500

**ZENON CYCLIC DAMPER VALVE**  $\Delta P$ : 10 PSIG  
**ALUMINUM WAFER STYLE**

SCALE:	DRWN BY:	DATE:	CHKD. BY:	APPR. BY:
N.T.S	M. LARKIN	19/04/01	B. JAMES	REV. 3 SEAT (ZF) 08/02/01
PO# - - SO# -		MATERIAL ALUMINUM	DWG. NO. STJZ-WA-4216-3-6-3-R	





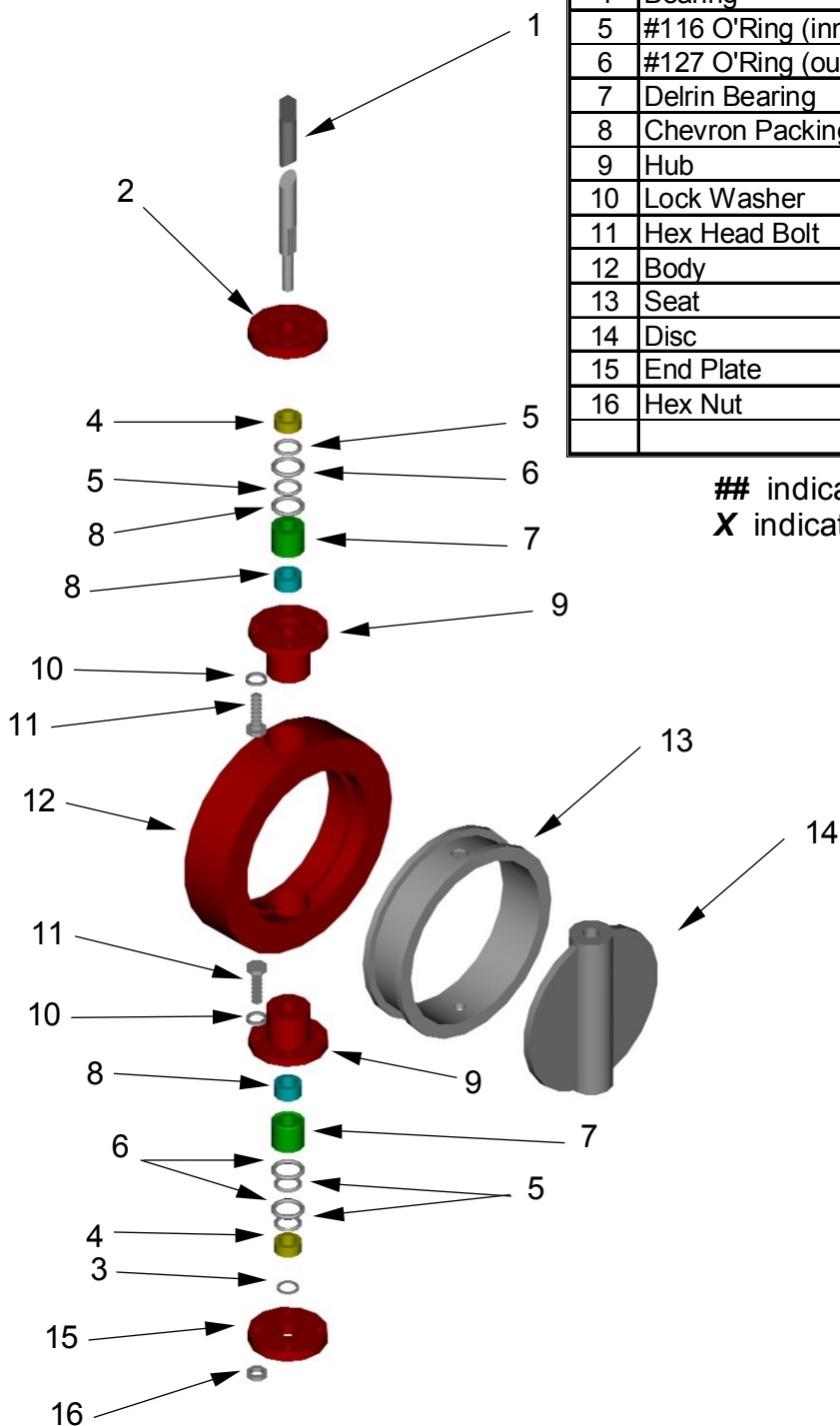
# STJ-Z-4216 Zenon Cyclic Valve

## Valve Parts Break Down

NO.	Part Name	Material	QTY	Part Number
1	Shaft	Stainless Steel	1	STJZ-SH001-##-SS
2	Actuator Mtg Plate	Aluminum	1	STJZ-AP002-##-AL
3	C-Clip	Stainless Steel	1	STJZ-CC003-##-SS
4	Bearing	Stainless Steel	2	STJZ-BE004-##-SS
5	#116 O'Ring (inner)	Buna-N	4	STJZ-OR005-##-BU
6	#127 O'Ring (outer)	Buna-N	4	STJZ-OR006-##-BU
7	Delrin Bearing	Delrin	2	STJZ-DB007-##-DE
8	Chevron Packing		2	STJZ-CP008-##-
9	Hub	Aluminum	2	STJZ-HU009-##-AL
10	Lock Washer	Stainless Steel	8	STJZ-LW010-##-SS
11	Hex Head Bolt	Stainless Steel	8	STJZ-HB011-##-SS
12	Body	Aluminum	1	STJZ-BX012-##-AL
13	Seat	EPDM	1	STJZ-SE013-##-EP
14	Disc	Stainless Steel	1	STJZ-DI014-##-SS
15	End Plate	Aluminum	1	STJZ-EP015-##-AL
16	Hex Nut	Stainless Steel	4	STJZ-HN016-##-SS

## indicates Valve size: i.e. 3" Valve = 03

X indicates Wafer or Lug Style Valve: i.e. W = Wafer  
F = Flanged



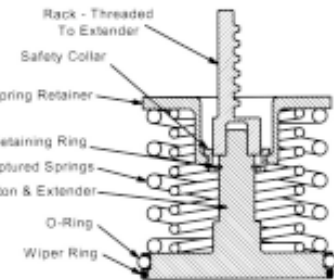
316 STAINLESS STEEL FOR CHALLENGING APPLICATIONS ... .. FEATURING UNIVERSAL FLUSH MOUNTING

FEATURES

- Rack & Pinion**  
Provides linear torque output and control capabilities
- Offset Cylinders**  
Eliminates wear-causing cantilever loads
- Patented Rack Support**  
Reduces friction for throttling control and long life
- Pistons Travel Outward to Close**  
Eliminates opening ‘jump’ and allows end cap travel stop
- Fully Captured Springs**  
Safe, maintenance free SpringpaQ™ eliminate need to decompress springs for actuator disassembly

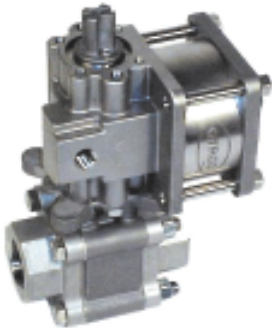


Rack Support



Safety SpringpaQ

Sectional Views



Q03DA Direct Mounted on 1 inch Ball Valve

APPLICATIONS

- On / Off**  
Without the opening ‘jump’ associated with R&P actuators
- Throttling Control**  
Low internal friction assures smooth, precise valve positioning
- High Speed**  
100 milli- second cycle times with available enlarged air ports
- High Temperature**  
Standard 180F, 450F with PEEK bushings and Viton o-rings
- High Cycles**  
Low friction design provides exceptional cycle life
- Corrosive and Sanitary Service**  
316 SS to resist corrosion and to allow washdown
- Water Service**  
Submerge in, or power with water without corrosion
- Low Pressure**  
Alternate piston sizes provide full torque as low as 20 PSIG
- Zero Teflon™, Zero Silicone**  
Available options

Typical NAMUR Accessory (Efector™ limit switch shown)

Accepts all accessories ...

NAMUR Mounting Plate (Not required on sizes 07, 10, 12 & 14)

NAMUR Drive Adapter

Q Series Actuator

Valve Shaft Sleeve Adapter

Universal Mounting Plate

Butterfly, Ball or Plug Valve

... and flush mounts to most 1/4 turn valves

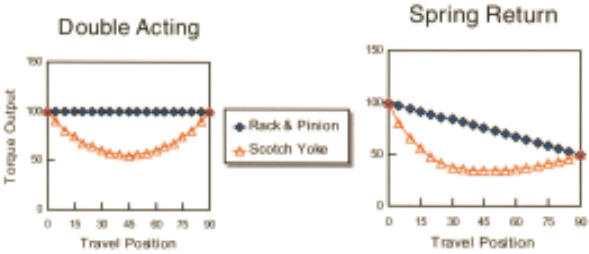
“Q” SERIES MOUNTING SYSTEM

Female shaft “Q” Series actuators incorporate several innovative mounting concepts to provide optimum flexibility for new and replacement applications. Eight (8) threaded mounting holes are used in the fully ISO 5211 compliant bolt pattern in place of the standard four. These allow attachment of a Universal Mounting Plate to convert the actuator mounting geometry to match that of nearly any valve. Oversized double square female shafting allows use of a Sleeve Adapter to match the valve shaft geometry to the actuator.

Both top and bottom sides of the “Q” Series actuators are identical so that either may be used to drive the valve. Fail-open or fail-closed operation is achieved simply by choosing which side to use to drive the valve.

Accessories may be driven by either side of the actuator using the NAMUR Drive Adapter and NAMUR Mounting Plate.

TORQUE CHARACTERISTICS



**Rack & Pinion Vs Scotch Yoke Designs**

Rack and pinion mechanisms provide a linear torque characteristic at all travel positions. Scotch yoke designs exhibit a “Torque Belly” with mid-travel torques that are considerably less than their start (break) torque. For optimum valve operation, it is necessary to assure adequate mid-travel as well as break torque values.





11250A Timber Tech  
Tomball, TX 77375  
Phn: 281-516-0277  
Fax: 281-516-0288

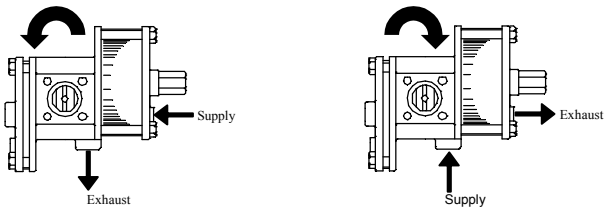
# INSTALLATION INSTRUCTIONS

**Double Acting Models: Q03DA, Q04DA, Q07DA and Q12DA**

December 2000

## Principle of Operation:

The actuator models shown above are double acting (DA) having a quarter turn rotary output. Supply pressure is required on either one side of the piston or the other to operate the actuator. Typically, when the piston is fully extended to the end cap, the valve is considered to be in the closed or clockwise position. To change the position, supply pressure enters the actuator through the end cap (Port B) causing a counter-clockwise rotation (as viewed from above) of the actuator into the valve closed position. Supply pressure entering the body (Port A) will return the actuator/valve to the original closed (CW) position.



## INSTALLATION

### Out of the Box:

All QTRCO actuators are supplied from the factory fully lubricated and with the closed (CW) travel stop pre-set to 0° rotation. No additional settings or modifications are normally required.

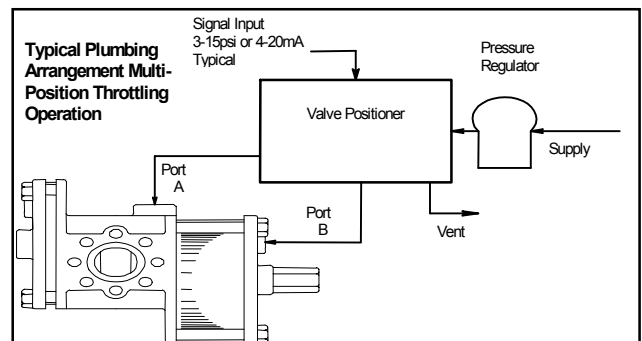
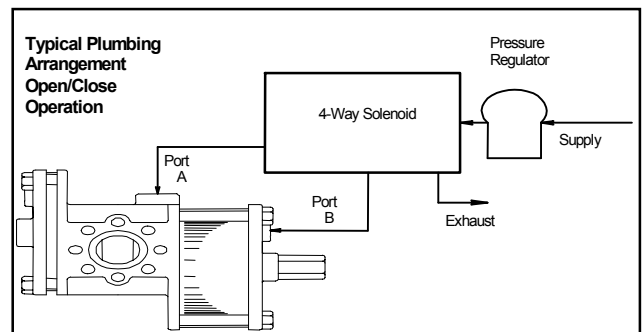
### Valve Mounting:

The Q-Series actuator line has been designed to meet ISO 5211 standards for bolt circle location and square female output drive connections. In some cases the actuator will be able to bolt directly to the valve while others may require additional components. See your QTRCO Distributor or the QTRCO factory for specific instructions.



## Plumbing:

Double acting actuators require a 4-Way solenoid valve for open/close two-position operation or a positioner for multi-position throttling operation. Typical plumbing arrangements are shown below. For assistance on specific mounting and plumbing instructions, contact your QTRCO Distributor or the QTRCO factory.



## Instrument Mounting:

Most modern control devices (switches, positioners & etc.) have been designed to the NAMUR standards allowing direct attachment to modern actuators. QTRCO has incorporated the NAMUR standards into the design however, models Q03, Q04 and Q07, because of their size, requires an optional NAMUR mounting plate. See your QTRCO Distributor or the QTRCO factory for more information.





11250A Timber Tech  
Tomball, TX 77375  
Phn: 281-516-0277  
Fax: 281-516-0288

## TECHNICAL INFORMATION RELEASE

Subject: **Q- Series Typical Product Specification**

April 2001

To insure that quality QTRCO actuators are utilized, the following sample specification has been developed to define the product. All QTRCO actuators are suitable for operation of ball, butterfly, or plug valves as well as dampers and any other quarter-turn devices.

### Actuator Specification:

1. The actuator shall be quarter-turn rack & pinion design available in both double acting and spring return configurations with no external moving parts.
2. Double acting actuators shall be offered for operation from 10 to 120 psig and spring return actuators from 20 to 120 psig.
3. The actuator shall be available for operation on air, water or oil medias.
4. Trims shall be available for ambient operating temperature ranges from -40°F to +450°F (-40°C to +232°C).
5. With the exception of bearings, sealing materials and springs (spring return models), the actuator shall be constructed of 316 stainless steel, to include the body, cylinder(s), end cap(s), output shaft/pinion, piston, rack and all fasteners.
6. The actuator shall be designed to substantially reduce internal friction, provide precise positioning control and supply longer operating life by incorporating the use of off set cylinder(s) to eliminate piston cantilever loads and rotating saddle bushing(s) to insure superior rack to pinion engagement.
7. The actuator shall have two identical mounting surfaces (top & bottom) complete with attachment bolt circle, threaded holes and square female output drive in accordance with ISO 5211 standards.
8. Spring return models shall be capable of reversing the fail position (fail clockwise to counter-clockwise or the opposite) without any disassembly of the actuator.
9. Spring return actuators shall incorporate the use of a fully captured spring module design allowing the change out of different spring ratings and/or disassembly of the actuator in complete safety.
10. The actuator's cylinder wall shall be a minimum of 1/8 inch thick to resist handling and "dropped wrench" damage.
11. Disassemble of the actuator shall require no special tools.
12. The actuator manufacturer shall offer a minimum three year warranty that includes corrective action against defects in material, workmanship and premature wear.
13. The actuator shall also be capable of being ordered with such options as an integral lockout, electro polished finish, fast acting and, for spring return models, a stainless steel jackscrew manual override with stainless steel handwheel.
14. The actuator shall be manufactured by QTRCO, Incorporated located in Tomball, Texas U.S.A.

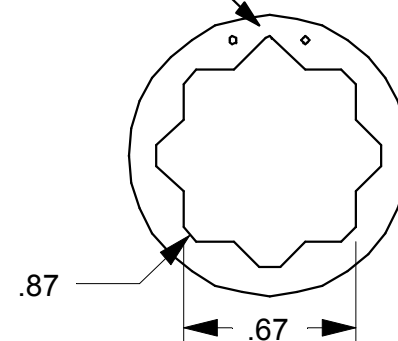
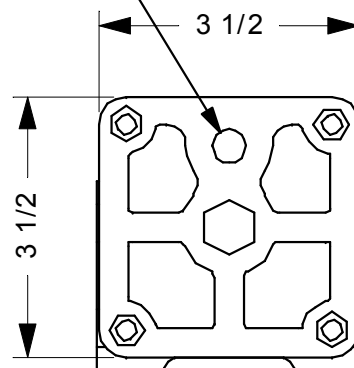
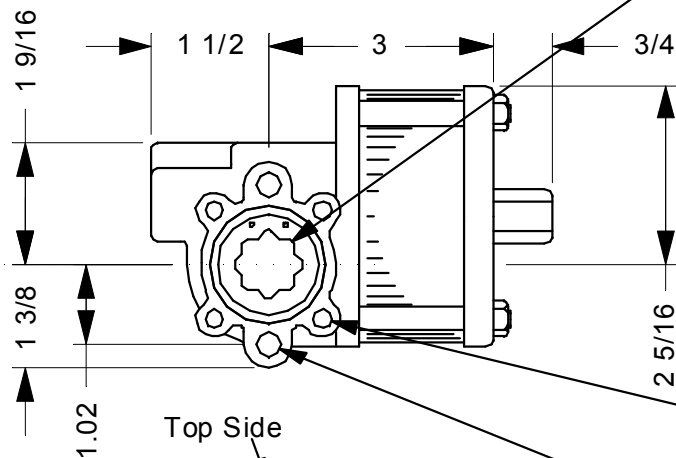
1/4 NPT Body port

Double Acting, shown looking down onto Top Side, with piston fully outward toward the end cap

Double Square Female Shaft x 1 Deep

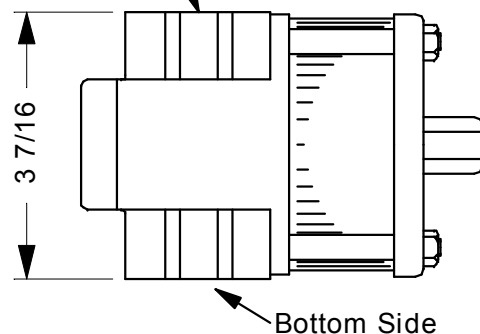
One corner - indicated by indents - has 1/16 R to cause proper orientation of valve shaft and Namur sleeve adaptors. Top and bottom shaft dimensions are identical.

1/4 NPT End Cap port



Top and Bottom Female Shaft Dimensions

4 holes on 1.97 BCD, Tapped 6 mm 5/8 Deep  
2 holes, 5/16 x 18 x 5/8 Deep



Top and Bottom Sides are Identical and actuator may be inverted to reverse the direction of operation. Either side may be used to drive valves or accessories. Looking down onto top side, application of pressure to the end cap port drives the piston inward causing counter-clockwise rotation of the shaft. Application of pressure to the body port drives the piston outward, causing a clockwise rotation of the shaft.

On valve drive side use Valve Shaft Sleeve Adaptors to mount directly to valve. On accessory side, use Namur Plate and Namur Shaft Adaptor to mount and drive accessories. Namur pattern is 80mm x 30mm x 20mm shaft height

Recipient

Quotation

Order

Submittal Date

All Dimensions are Inches Except as Noted

Property of QTRCO, Inc.  
Do not use, copy, display or  
transfer this drawing without  
written authorization.

QTRCO, Inc.

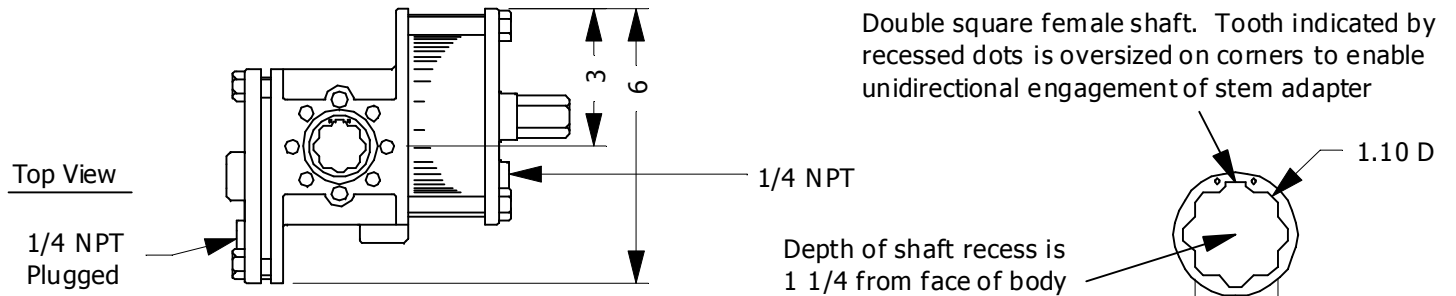
Q03 Dbl Acting  
Dimensional Sheet  
Female Shaft

Dwg DQ03DA Rev C

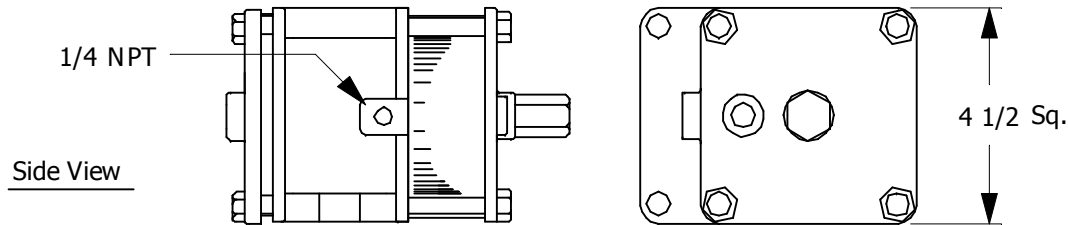
By: EGH 6/6/00



Use QTRCO Namur drive adapter R05C140 and Namur plate R05C620 to make either top or bottom ends fully Namur compatible

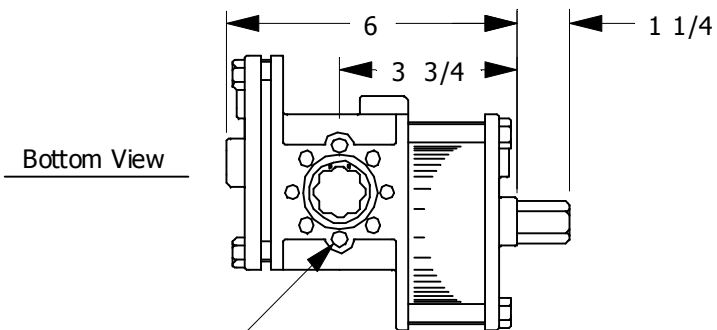


Use QTRCO Shaft adapter R05C130 with applicable Bore Geometry to adapt female shaft of actuator to the valve shaft



Top and Bottom Female Shaft Dimensions

If valve top plate dimensions do not meet ISO 5211 size F05 use QTRCO Universal Transition mounting plate R051206, drilled and tapped to suit valve mounting, to mount actuator to valve without brackets or couplings. Fasteners for mounting plate to actuator are included.



1/4 NPT Pipe Threads, 3 Locations (Marked NPT). End Cap Ports (Qty 1 each) Drive Pistons Inward And Produce Counter-Clockwise Motion (Looking Down On Top Of Actuator). Body Port (Qty 1) Drives Pistons Outward.

Top and Bottom Ends - Qty 8 M6 Threaded Bolt Holes On 1.97 BCD F05, 1/2 Deep. Only 4 Bolts Required For Mounting To Valve (ISO 5211 size F05)

QTRCO, Inc.  
11250A Timber Tech Ave.  
Tomball, TX 77375  
Phone 281-516-0277

Q04DA Double Acting  
Dimensional Data Sheet  
Stainless Steel

Dwg DQ04DA Rev B

By: EGH 6/6/00

All dimensions are inches except as shown

Recipient:

Quotation:

Order:

Submittal Date:

## Intelligent Part Number System

<b>F</b>	<b>M</b>	<b>Y</b>	<b>B</b>	<b>-</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>0</b>
Series	Cover	Moniteur	Bearing		Shaft	Switch	Quantity	Conduit

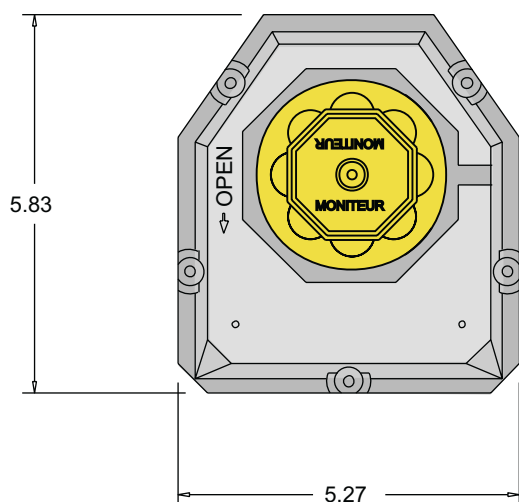
**Base unit includes:** Black / Yellow indicator  
Aluminum Enclosure  
(2) 1/2" NPT conduit entries

2 SPDT 15A mechanical switches  
Bronze bearings  
Low profile NAMUR shaft

Description	Code	Description	Code	Description	Code
<b>Series: Watchman</b>	F	<b>Bearing</b>		Rhodium TTL 1A	
<b>Cover</b>		303 Stainless Steel	S	SPDT Non-Contact	T
Moniteur	M	<b>Shaft</b>		Bifurcated TTL	
Flat Cover	F	Standard 303 SS	1	SPST Non-Contact	B
<b>Moniteur</b>		Standard 316 SS	3	P&F NJ2-V3 NAMUR	
No Indicator	N	NAMUR 303 SS	5	Inductive Sensor	8
Black / Yellow	Y	NAMUR 316 SS	7	Moniteur NEO-X 0.3A	
3-Way Path O,T, F	O,T, F	Long NAMUR 303 SS	E	NO Sensor	A
4-Way Path	S	<b>Switch Type (2 switches)</b>		<b>Switch Quantity</b>	1-4
180 degree T port	1	Cherry 15A		<b>Conduit</b>	
120 degree	3	SPDT Mechanical	1	(2) 1/2" F NPT	0
Green / White	G	Tungsten TTL 3A		(3) 1/2" F NPT	6
Red / White	R	SPDT Non-Contact	2	(1) 1/2" F + (1) 1/2" M NPT	8
Blue / White	B	Prism Gold Plated 1A		<b>Options</b>	
Green / Red	A	SPDT Mechanical	3	Current 4 - 20mA	- 420
Red / Green	C	ITW 10A		Resistive 0 - 1k	- 1K
0-100%	P	DPDT Mechanical	4	High Temperature	-T1

## Dimensions

## Top View



## NAMUR STD.

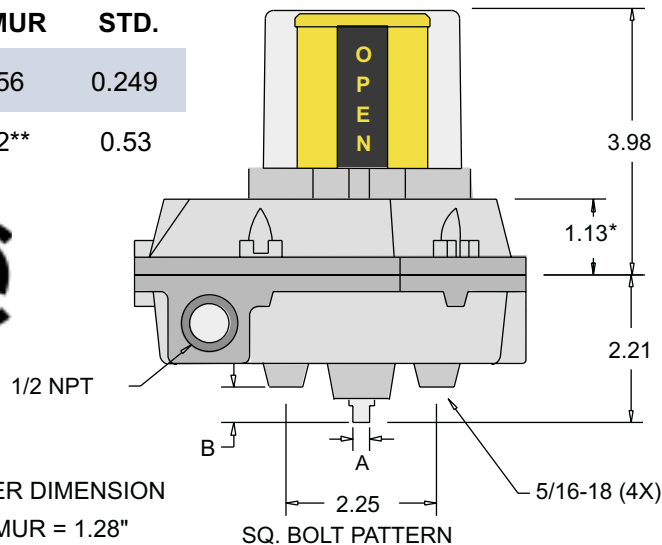
A	0.156	0.249
B	0.62**	0.53



\* - FLAT COVER DIMENSION

\*\* - LONG NAMUR = 1.28"

## Side View





The Moniteur TTL sensing system is an advanced and reliable method of position monitoring developed for today's sophisticated process control systems. The highest quality reed-type switching elements available are enclosed and encapsulated in a flexible moisture-proof bedding compound, protecting them from contaminants and shock to 38g. Switching elements are actuated with neodymium magnets sealed in their cams to protect and prevent dislodgement and subsequent system failure. An internal stainless steel Loc-Ring is employed to prevent vertical shaft motion from corrupting output signals. Many different switching elements are available, each meeting different user needs.

### Applications

- \* Areas with corrosive or humid environments that could corrode exposed contacts
- \* Critical position monitoring applications requiring reliability and higher cycle life
- \* Explosion-proof environments. Moniteur *Sentinel* series is UL listed and CSA\*\* approved for Class I, Division 2 - Groups A, B, Class 1, Division 1 Groups C, D and Class II, Division 1, Groups E, F, G.
- \* Nonincendive (Class 1, Division 2) environments. Article 501-3 (b) of the NEC (National Electric Code) permits the use of general purpose enclosures (such as the Moniteur *Watchman* or *Survivor* Series) in Class 1, Division 2 locations when the current interrupting contacts are sealed within a hermetically sealed chamber.
- \* Intrinsically safe environments. TTL switches are passive devices and can be used in Intrinsically Safe applications with an approved current and voltage-limiting barrier.

### TTL Switching Elements Available

**TUNGSTEN TTL** - The choice for high power AC and DC switching applications. Durable tungsten contacts handle up to 3A - 120VAC / 2A - 24VDC. TUNGSTEN TTL HV switches can handle 100 W at voltages up to 500 VAC or VDC. MTBF for both is 800,000 cycles.

**RHODIUM TTL** - The choice for reliable low power 24 VDC switching applications. Rhodium contacts have 80% less contact resistance than Tungsten TTL. Rated to 1A - 24VDC. MTBF 1,000,000 cycles.

**BIFURCATED TTL** - Premium Bifurcated SPST contacts with "wiping action" assure outstanding reliability for ultra low power / voltage applications (10mA @ 5 VDC minimum). MTBF 2,000,000 cycles.

**KRYSTAL TTL** - Rhodium TTL contacts combined with LED set lights make switch setting easier in the field. Rated to 0.3A - 120 VAC / 0.3A - 24 VDC. MTBF 1,000,000 cycles.

### Specifications - TTL Switches

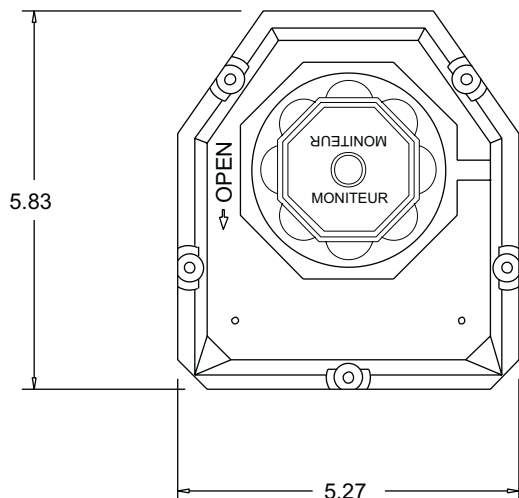
Switch Type	AC Rating	DC Rating	Contacts	Form	MTBF (cycles)
TUNGSTEN TTL	3A - 120V	2A - 24V	SPDT	C	800,000
RHODIUM TTL	1A - 120V	1A - 24V	SPDT	C	1,000,000
BIFURCATED TTL	2A - 120V	2A - 24V	SPST	A	2,000,000
KRYSTAL TTL	0.3A - 120V	0.3A - 24V	SPDT	C	1,000,000

\*\* Rhodium TTL only



## Dimensions

## Top View



## NAMUR STD.

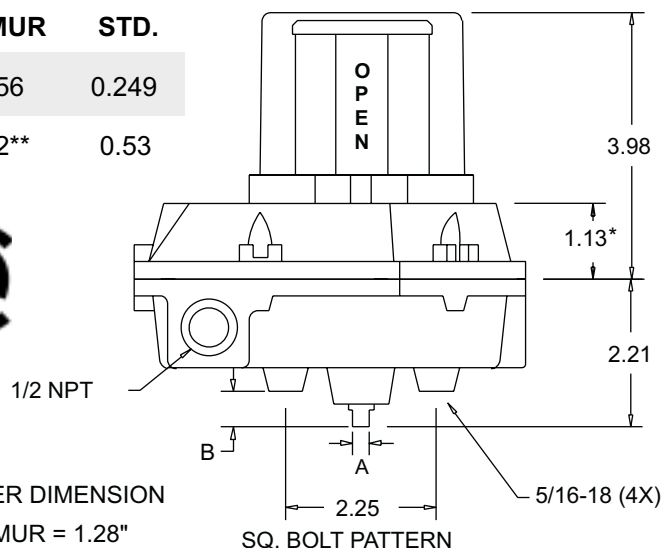
A	0.156	0.249
B	0.62**	0.53



\* - FLAT COVER DIMENSION

\*\* - LONG NAMUR = 1.28"

## Side View



## General Specifications

Nema Rating	4,4x
Housing / Cover	Aluminum
Indicator Cover	Ektar
Seals	BUNA-N
Fasteners	Stainless Steel
Terminal Points	8
Weight	3.0 lbs.
Operating Temp.	-40° F to 175° F
Agency Approvals	CSA

## How To Specify

Valve position transmitter shall be Moniteur model \_\_\_\_\_. Enclosure shall be aluminum with a polyurethane coating and rated Nema 4, 4x. Visual indicator shall have 100% display change, 360° visibility and full set point adjustability. Indicator cover shall be free of decals or paint and sealed with an O-ring. Enclosure shall have captive cover bolts. Enclosure shaft shall be attached to the housing with an internal stainless steel locking ring, environmentally protected with an O-ring. The switch/sensor type shall be \_\_\_\_\_. All switches and terminals must be enclosed and marked for identification. Terminal strip must be angle-mounted for easier installation.

## Intelligent Part Numbering System - place your part number in the boxes below

<b>F</b>				-			
Series	Cover	Moniteur	Bearing		Shaft	Switch	Quantity

Description	Code	Description	Code	Description	Code
<b>Series: Watchman</b>	F	<b>Bearing</b>		Rhodium TTL 1A	
<b>Cover</b>		Bronze	B	SPDT Non-Contact	T
With Moniteur	M	303 Stainless Steel	S	Bifurcated TTL	
Flat Cover (No Moniteur)	F	<b>Shaft</b>		SPST Non-Contact	B
<b>Moniteur</b>		Standard 303 SS	1	P&F NJ2-V3 NAMUR	
No Indicator	N	Standard 316 SS	3	Inductive Sensor	8
Black / Yellow	Y	NAMUR 303 SS	5	Moniteur NAMUR	
3-Way Path O, T, F	O, T, F	NAMUR 316 SS	7	Inductive Sensor	M
4-Way Path	S	Long NAMUR 303 SS	E	<b>Switch Quantity</b>	1-4
180 degree T-port	1	<b>Switch Type</b>		<b>Conduit</b>	
120 degree	3	Cherry 15A		(2) 1/2" F NPT	0
180 degree L-port	5	SPDT Mechanical	1	(3) 1/2" F NPT	6
Green / White	G	Tungsten TTL 3A		(1) 1/2" F NPT + (1) 1/2" M NPT	8
Red / White	R	SPDT Non-Contact	2	<b>Output (add suffix to part number)</b>	
Blue / White	B	Prism Gold Plated 1A		Current 4 - 20mA	- 420
Green / Red	A	SPDT Mechanical	3	Resistive 0 - 1k	- 1K
Red / Green	C	ITW 10A			
0-100%	P	DPDT Mechanical	4		

### INSTALLATION - ADJUSTING THE VISUAL INDICATOR

1. Mount the valve position transmitter to the valve or actuator with the correct mounting bracket.
2. Determine the true valve position and compare the Moniteur's Indication with the true valve position. If the Moniteur display is synchronized, proceed to Step 12. If it is not, continue to Step 3.
3. Remove the clear Moniteur cover by turning it counter-clockwise to disengage the detent and then lift it off. Determine the level of adjustment that needs to be made. If only a small adjustment is necessary (less than 20 degrees in either direction), proceed to step 4. If a larger adjustment is required, such as 45, 90 or 135 degrees from default, proceed to step 7.
4. Remove the Moniteur Visual Indicator by lifting it upward off the shaft and the Infinite Adjusting Ring. Loosen screws B and C shown in fig. 1 (do not remove screws). The Infinite adjusting ring should rotate freely over the enclosure cover of the Valve Position Transmitter.
5. Return the Moniteur Indicator to the output shaft. As it slides down along the shaft, be sure that the Moniteur Indicator's base engages the Infinite Adjusting Ring on pins "E". (fig.1)
6. Rotate the Moniteur Indicator by applying a light rotational force to the vertical vanes to synchronize it with the true valve position. Once aligned, proceed to Step 9. If further adjustment is necessary, you will need to continue with Step 7.
7. Remove the Moniteur Visual Indicator by lifting it upward off the shaft and the Infinite Adjusting Ring. Remove screws B and C from the Infinite Adjusting Ring. Rotate the setting ring and match the number on the plastic ring with the number cast into the enclosure, according to the following requirements:  
**90 - 90:** as shipped from the factory - shipped as "Open".  
**45 - 45:** "Open" is 45 degrees CCW in travel from default.  
**135 - 135:** "Open" is 45 degrees CW in travel from default.  
**180 - 180:** "Open" is 90 degrees CW or CCW from default.  
 (This is the setting to switch default indication from Open to Closed.)  
 Return screws B and C to their appropriate threaded holes, but do not tighten them completely. Now return the Moniteur Indicator to the output shaft. Be sure that the Indicator's base engages the infinite adjusting ring on pins "E". (fig.1)
8. Rotate the Moniteur Indicator by applying a light rotational force to the vertical vanes to further synchronize the Indicator with the true valve position.
9. Remove the Moniteur Indicator, being careful not to rotate the Infinite Adjustment Ring. Hold Ring stationary and tighten screws B and C.
10. Return the Moniteur Indicator being certain that both the output shaft and pins "E" of the Infinite Adjusting Ring are engaged.
11. Return the clear Moniteur cover by inserting it into the breach lock on the enclosure cover and turning it Clock-wise until the unit engages the detent.
12. Cycle the valve to the opposite extremity. If the Moniteur Indicator is displaying the correct valve position, installation is complete. If not, it is probably because the actuator is not moving exactly 90 degrees. Adjust the stroke of the actuator so that it is rotating 90 degrees and the Moniteur Indicator will indicate the correct valve position. Installation is now complete.

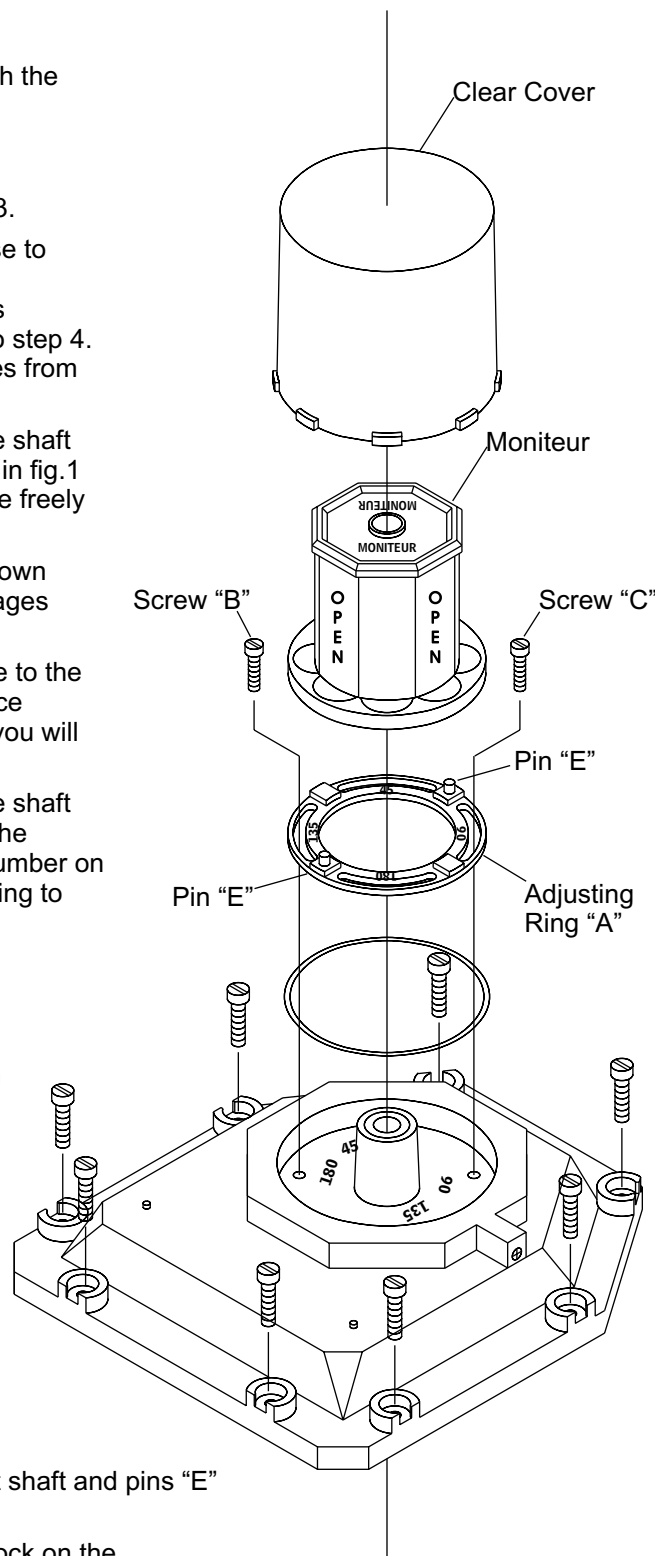
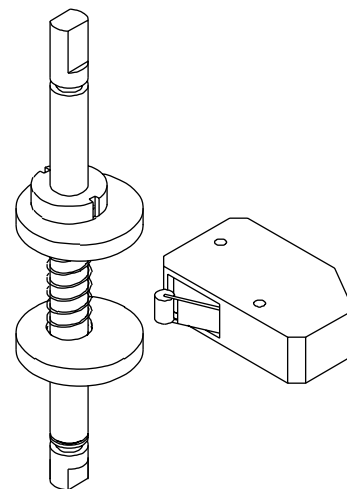


Fig. 1

**! WARNING:** To prevent the possibility of personal injury or property damage, turn off electrical power before inspection, adjustment, or removal of the valve position transmitter.

### INSTALLATION - SETTING MECHANICAL SWITCHES (Switch Types 1, 3 and 4)

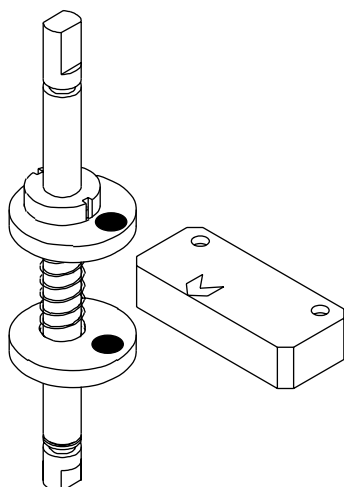
1. Remove VPT cover from the housing by loosening the screws holding the housing and cover assembly together.
2. Move the valve or valve actuator assembly to a position where one or more of the switches will be required to operate noting the direction of VPT shaft rotation.
3. Determine which switch is to be set and lift or depress the corresponding cam as required. Rotate the cam in the direction of shaft rotation until the cam engages the switch and closes the normally open contact for SPDT and DPDT switches.
4. Repeat Steps 2 and 3 until all of the switches are set.
5. Replace the VPT cover and tighten the screws. To ensure that the shaft alignment is secured, bring all of the screws in contact with the cover and then tighten them in stages moving from one screw to its diagonal counterpart.



### INSTALLATION - SETTING TTL MAGNETIC SWITCHES (Switch Types 2, T and B)

**NOTE:** To properly set switches, an ohm meter or equivalent devices will be required.

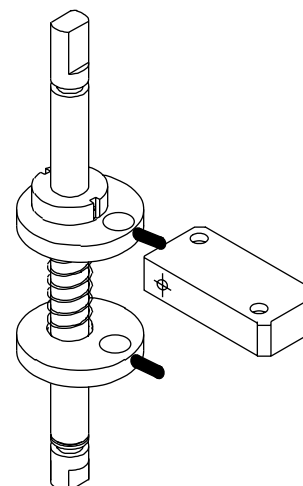
1. Remove VPT cover from the housing by loosening the screws holding the housing and cover assembly together.
2. Move the valve or valve actuator assembly to a position where one or more of the switches will be required to operate noting the direction of VPT shaft rotation.
3. Determine which switch is to be set and lift or depress the corresponding cam as required. Using the arrow only as a guide, rotate the cam in the direction of shaft rotation until the circle on the cam and the arrow on the switch are aligned with each other. **IMPORTANT** - To be sure the normally open contact is now closed, you must use an ohm meter or equivalent device to check the setting.
4. Repeat Steps 2 and 3 until all of the switches are set.
5. Replace the VPT cover and tighten the screws. To ensure that the shaft alignment is secured, bring all of the screws in contact with the cover and then tighten them in stages moving from one screw to its diagonal counterpart.



### INSTALLATION - SETTING INDUCTIVE SENSORS (Switch Types 8, K and M)

**NOTE:** To properly set sensors, an appropriate sensor tester will be required.

1. Remove VPT cover from the housing by loosening the screws holding the housing and cover assembly together.
2. Move the valve or valve actuator assembly to a position where one or more of the sensors will be required to operate noting the direction of VPT shaft rotation.
3. Determine which switch is to be set and lift or depress the corresponding cam as required. Using the target area only as a guide, rotate the cam in the direction of shaft rotation until the pin on the cam and the target area on the sensor are aligned with each other. If the sensor has an LED, it should light now. **IMPORTANT** - To be sure the sensor is now actuated you must use an appropriate sensor tester.
4. Repeat Steps 2 and 3 until all of the sensors are set.
5. Replace the VPT cover and tighten the screws. To ensure that the shaft alignment is secured, bring all of the screws in contact with the cover and then tighten them in stages moving from one screw to its diagonal counterpart.







**CAUTION:** Always check that the electrical load is within the range stated on the nameplate. Failure to remain within electrical ratings may result in damage to or premature failure of the electrical switches or sensors.

### ELECTRICAL SPECIFICATIONS

MECH.	Code	Switch Type	AC Rating	DC Rating	Form
	1	Cherry - SPDT	15A - 250V	2.5A - 24V	C
	3	Prism Gold Plated - SPDT	1A - 120V	1A - 24V	C
	4	ITW - DPDT	10A - 250V	7A - 24V	CC

TTL	Code	Switch Type	AC Rating	DC Rating	Form
	2	Tungsten TTL - SPDT	3A - 120V	2A - 24V	C
	E	Tungsten TTL HV - SPDT	0.4A - 240V	0.4A - 240 V	C
	7	Rhodium TTL - SPST	1A - 120V	1A - 24V	A
	T	Rhodium TTL - SPDT	1A - 120V	1A - 24V	C
	L	Krystal TTL - SPDT	0.3A - 120V	0.3A - 24V	C
	B	Bifurcated TTL - SPST	3A - 120V	2A - 24V	A

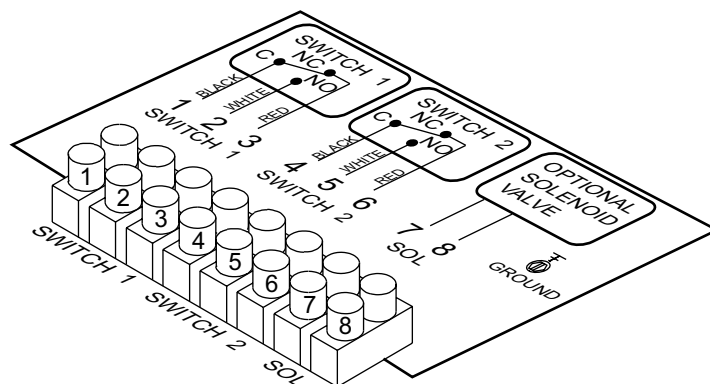
INDUCTIVE	Code	Sensor	Supply Voltage	Load Current / Target Absent	Load Current / Target Present	Operation
	8	P & F NJ2-V3	5-25 VDC	< 1 mA	3 - 15 mA	NAMUR
	K	P & F NBB3-V3-Z4	5-60 VDC	< 0.7 mA	4 - 100 mA	PNP
	M	Moniteur NAMUR	5-25 VDC	< 1 mA	3 - 15 mA	NAMUR



**WARNING:** All Inductive Sensors must be connected with the appropriate PLC, microprocessor or relay load. Otherwise, damage can result to the sensors. Check the sensor installation sheet included in the box.

### WIRING OF VALVE POSITION TRANSMITTER

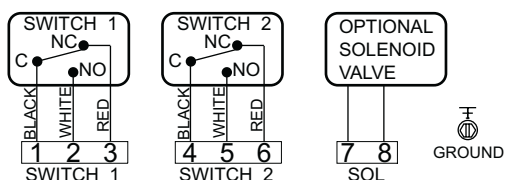
1. Remove VPT cover from the housing by loosening the screws. Holding the housing and cover assembly together, lift the cover from the housing.
2. Follow the wiring diagram located inside the cover of the VPT. Be sure to secure all the appropriate connections including the ground. The diagram at left relates the wiring diagram to the terminal block.
3. Replace the VPT cover and tighten the screws. To ensure that the shaft alignment mechanism functions properly, bring all of the screws in contact with the cover and then tighten them in stages moving from one screw to its diagonal counterpart.



**TERMINAL BLOCK AND WIRING DIAGRAM**

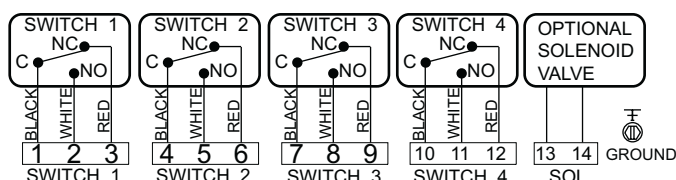


**WARNING (FOR ENCLOSURE TYPES 4, 4x, 7 and 9 ONLY) -** To prevent fire or explosion, use only with a seal fitting within 18 inches of the position transmitter enclosure.



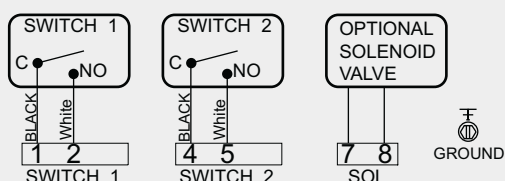
**2 SPDT switches (Form C)**

Cherry Mechanical  
Tungsten TTL  
Rhodium TTL



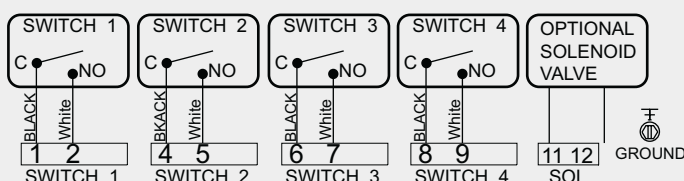
**4 SPDT switches (Form C)**

Cherry Mechanical  
Tungsten TTL  
Rhodium TTL



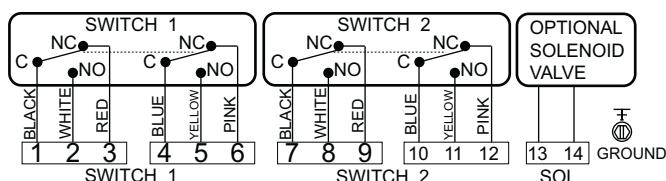
**2 SPST switches (Form A)**

Bifurcated TTL



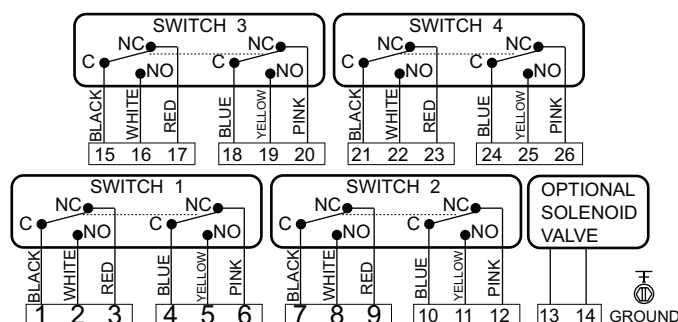
**4 SPST switches (Form A)**

Bifurcated TTL



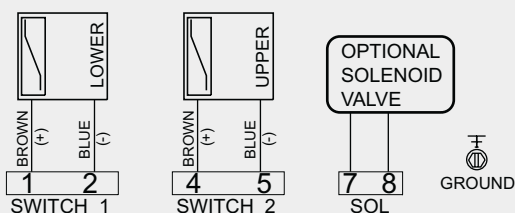
**2 DPDT switches (Form ZZ)**

ITW

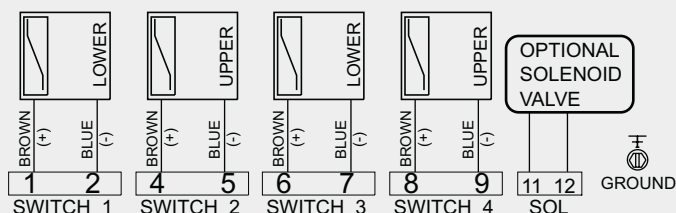


**4 DPDT switches (Form ZZ)**

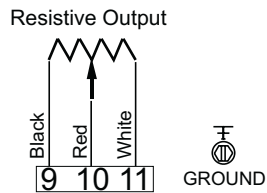
ITW



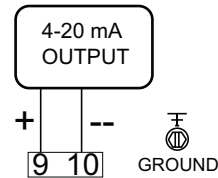
**2 - 2-wire Inductive Sensors**  
any type



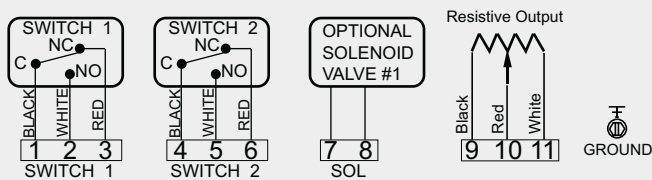
**4 - 2-wire Inductive Sensors**  
any type



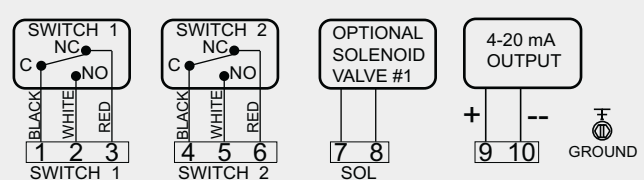
**Resistive Output**  
0 - 1000 ohm  
0 - 50 ohm



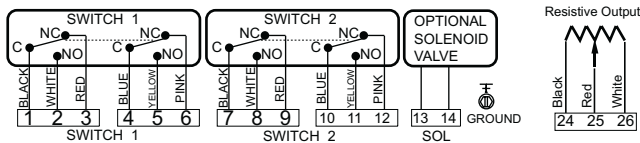
**Current Output**  
4 - 20 mA



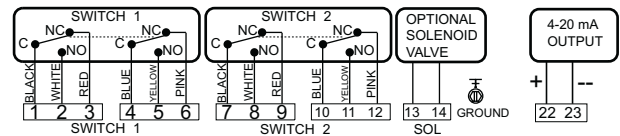
**2 SPDT switches (Form C)  
with Resistive Output**  
Cherry Mechanical  
Tungsten TTL  
Rhodium TTL



**2 SPDT switches (Form C)  
with Current Output**  
Cherry Mechanical  
Tungsten TTL  
Rhodium TTL



**2 DPDT switches (Form ZZ)  
with Resistive Output**  
ITW



**2 DPDT switches (Form ZZ)  
with Current Output**  
ITW

*for additional wiring diagrams for products not listed here, please contact Moniteur*

**Type 1 - General Purpose - Indoor**

The enclosure prevents accidental contact of personnel with the enclosed equipment and against falling dirt.

**Type 2 - Drip-Proof - Indoor**

The enclosure protects against limited amounts of falling liquid and dirt

**Type 3 - Dust-tight, rain-tight and sleet resistant**

The enclosure protects against windblown dust, rain, sleet and external ice formation

**Type 3R - Dust-tight, rain-tight and sleet resistant**

Same as type 3 except not dust-tight

**Type 3S - Dust-tight, rain-tight and sleet resistant**

Same as type 3 but provides for operation of external mechanism when ice-laden

**Type 4 - Watertight and Dust-tight**

The enclosure protects against windblown dust and rain, splashing water and hose directed water

**Type 4X - Watertight, Dust-tight, Corrosion Resistant**

Same as type 4 except also corrosion resistant

**Type 5 - Dust-tight - Indoor**

Protects against dust and falling dirt

**Type 6 - Submersible, water-tight, and dust-tight**

Protects against water entry during occasional submersion to a limited depth

**Type 6P - Submersible, water-tight, and dust-tight**

Same as Type 6 except for prolonged submersion

**Type 7 - Class I, Indoor hazardous locations - Explosion-proof**

May be classified Groups A, B, C or D depending on specific design as defined by the NEC

**Type 8 - Class I, Indoor or outdoor hazardous locations - Oil-immersed equipment**

May be classified Groups A, B, C or D depending on specific design as defined by the NEC

**Type 9 - Class II, Indoor hazardous locations - Explosion-proof**

May be classified Groups E, F or G depending on specific design as defined by the NEC

**Type 10 - Mining Enforcement Safety Administration - Explosion-proof**

For use in mines with atmospheres containing methane or natural gas, with or without coal dust

**Type 11 - Corrosion resistant and drip-proof - Oil immersion - Indoor**

Enclosure provides, by oil immersion, protection against the corrosive effects of liquids and gases

**Type 12 - Dust-tight and Drip-tight - Indoor**

Protects against dust, falling dirt, and dripping non-corrosive liquids

**Type 12K - Dust-tight and Drip-tight - Indoor**

Same as Type 12 except that enclosures have knockouts

**Type 13 - Oil tight and Dust-tight - Indoor**

Protects against dust, spraying of water, oil and non-corrosive coolant







Moniteur Devices manufactures its Moniteur clear covers from Eastman Kodak's Ektar grade of Copolyesters. Combined with its high chemical resistance and excellent impact strength, the Ektar clear cover provides the necessary protection from corrosive environments and caustic washdowns. With an extra tough construction, the cover resists horizontal and vertical impacts. Combined with an O-ring seal, the Moniteur is an excellent opponent to the elements and your plant environment.

### PHYSICAL PROPERTIES

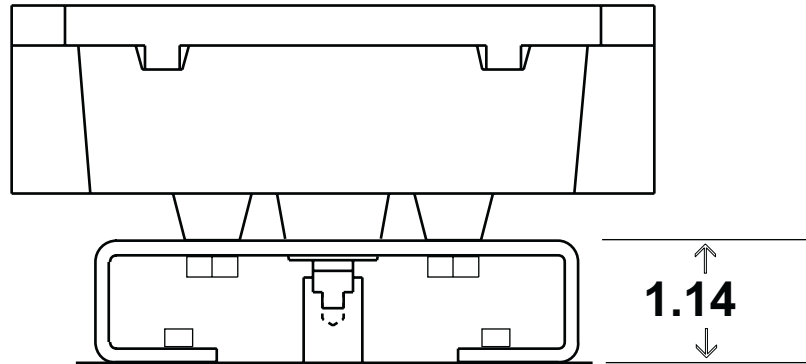
UV Resistance	Yes
Clarity	Yes
Tensile Strength	6,400 psi
Izod Impact Strength, Notched @73 F	> 16
Heat Deflection Temperature @264psi	151 F

## Chemical Stability @ 23 C

REAGENT	OBSERVATION
Benzyl Alcohol	No Visible Effect
Chlorox Bleach, 5% Solution	No Visible Effect
Ethanol	No Visible Effect
Gasoline, regular	No Visible Effect
Heptane	No Visible Effect
Hydraulic Fluid	No Visible Effect
Methanol	No Visible Effect
Methyl Cellosolve	No Visible Effect
Methyl Isobutyl Carbinol	No Visible Effect
Motor Oil, 10-30 Wt.	No Visible Effect
Transmission Fluid	No Visible Effect
20% Sulfuric Acid	No Visible Effect
10% Sodium Hydroxide	No Visible Effect

Ektar is a registered trademark of Eastman Chemical  
Chart provided courtesy of Eastman Chemical

### ***Direct Mounting To Namur Standard Actuators***



### ***The NAMUR standard***

The process industry's requirement for interchangeable mounting hardware dimensions has been addressed with the NAMUR mounting specifications, developed by NAMUR (the Standards committee of Measurement and Control in Europe). These mounting specifications govern accessory and solenoid valve mounting procedures. More and more, actuators for automated valves are built to these NAMUR standards. This allows accessories such as limit switches, solenoid valves, and mounting hardware to mount to any NAMUR standard actuator. Moniteur Devices offers an output shaft for their complete line of VPTs designed to directly interface (without a transition coupler) with the NAMUR standard accessory mounting pattern *at no extra cost*.

### ***Benefits***

- Direct shaft to shaft contact, eliminating the need for a transition coupler
- Reduction of shaft play and backlash
- Lower profile of VPTs
- Standardization of mounting hardware
- Self-aligning design

### ***Options***

- A full range of bracket kits in plated and stainless steel, and engineered resin.
- Standard NAMUR output shaft length (1.77")



# STEALTH VALVE & CONTROLS LTD.

*"THE APPLICATION SOLUTION COMPANY"*

1273 North Service Road E., Unit F6

Oakville, Ontario • L6H 1A7

Phone: 905-845-4500

Fax: 905-845-4505

## WEATHER-PROOF SOLENOID MODELS



L07



L20

**SINGLE SOLENOID**








L45



L65

**DOUBLE SOLENOID**

## MODEL NUMBERS

SERIES	PORT SIZE	Cv (l/min)	5/2		5/3			BODY MATERIAL	SEAL MATERIAL	Kg (LB)
										
			SINGLE	DOUBLE	BLOCK	EXHAUST	PRESSURE			
L07	1/8	0.7 (690)	L0702AAWR*	L0702ABWW*	L0702CBWDW*	L0702DBWDW*	L0702EBWDW*	ALUMINUM	NBR	.3 (.6)
	1/4		L0703AAWR*	L0703ABWW*	L0703CBWDW*	L0703DBWDW*	L0703EBWDW*			
L20	1/4	1.6 (1770)	L2003AAWR*	L2003ABWW*	L2003CBWDW*	L2003DBWDW*	L2003EBWDW*	ALUMINUM	NBR	.5 (.9)
	3/8	2.0 (1970)	L2004AAWR*	L2004ABWW*	L2004CBWDW*	L2004DBWDW*	L2004EBWDW*			
L45	1/2	4.5 (4430)	L4505AAWR*	L4505ABWW*	L4505CBWDW*	L4505DBWDW*	L4505EBWDW*	ALUMINUM	NBR	.9 (1.9)
L65	3/4	9.0 (8860)	L6506BAWR*	L6506BBWW*	L6506CBWDW*	L6506DBWDW*	L6506EBWDW*	ALUMINUM	NBR	1.88 (4.1)
	1	9.5 (9390)	L6507BAWR*	L6507BBWW*	L6507CBWDW*	L6507DBWDW*	L6507EBWDW*			

\*Coils sold separately. Refer to Electrical Section for selection.

**BUTTERFLY  
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**BALL  
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VALVES**

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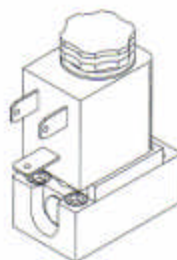
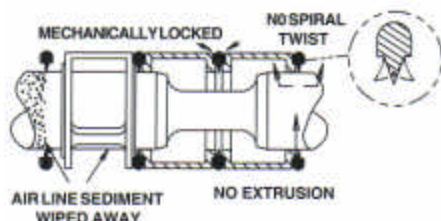


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## DESIGN FEATURES



### VALVES

- Proven design with 10+ years OEM experience.
- Options available to meet your requirements: Nema 7, stainless steel, manual override configurations.

#### TAPERED TEE-SEAL ..... Eats Dirt

- Bi-directional tapered Tee-Seal flexes to clean spool. Eliminates Monday morning sticking problems.
- Tested tough and proven reliable according to SAE specifications: Rust and water injected every 864,000 cycles for 20 million cycles.

#### SOLENOID ... Guaranteed Against Burnout

- Three-way pilot uses full air line pressure to shift the valve.
- Pilot is internally supplied when the pressure at port 1 is 35 to 150 PSIG (240 to 1030 kPa).
- Coil is hermetically sealed as an integral watertight molded unit.
- Intrinsically-safe and explosion-proof versions available.

#### PRODUCTS CERTIFIED TO INCLUDE:

- CSA - (C22 NO. 139)
- PTB - (EEExmIIT5) (EEExiaIICT6)
- UL - (STD 429)
- CE - (73/23/EEC), (89/336/EEC)





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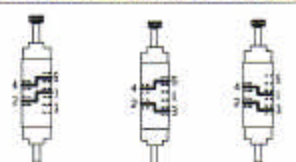

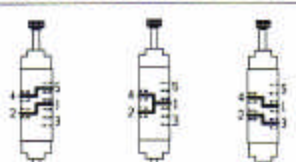




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## SPECIFICATIONS

VALVE OPERATION			
 <b>L07</b>		 <b>L45</b>	
 <b>L20</b>		 <b>L65</b>	
 DE-ENERGIZED      ENERGIZED		 ENERGIZED      DE-ENERGIZED      ENERGIZED	
 DE-ENERGIZED      ENERGIZED		 ENERGIZED      DE-ENERGIZED      ENERGIZED	
 DE-ENERGIZED      ENERGIZED		 ENERGIZED      DE-ENERGIZED      ENERGIZED	
<b>5/2 SINGLE</b> - 4 way 2 position single operator valves shift, apply pressure from port 1 to 4, and exhaust pressure from port 2 to 3 when a maintained signal is applied to operator 1-4. Valves reset, apply pressure from port 1 to 2, exhaust pressure from port 4 to 5 when the signal is removed.		<b>5/3 BLOCK</b> - 4 way 3 position blocked center valves operate like 5/2 double valves except shift when a maintained signal is applied to either 1-2 or 1-4. Valves reset to center position when signal is removed with all ports blocked.	
<b>5/2 DOUBLE</b> - 4 way 2 position double operator valves shift, apply pressure from port 1 to 4, and exhaust pressure from 2 to 3 when a momentary signal is applied to operator 1-4. Valves shift, apply pressure from port 1 to 2, and exhaust pressure from 4 to 5 when a momentary signal is applied to operator 1-2.		<b>5/3 EXHAUST</b> - 4 way 3 position exhaust center valves operate like 5/2 double valves except shift when a maintained signal is applied to either 1-2 or 1-4. Valves reset to center position when signal is removed with port 2 open to 3, port 4 open to 5, and port 1 blocked.	
<b>5/3 PRESURE</b> - 4 way 3 position pressure center valves operate like 5/2 double valves except shift when a maintained signal is applied to either 1-2 or 1-4. Valves reset to center position when signal is removed with port 1 open to ports 2 and 4, and ports 3 and 5 are blocked.			
<b>OPERATING TEMPERATURES</b> 	<b>SOLENOID PILOT OPERATED</b>		<b>TREATED BUNA-N SEALS (TREATED NBR, Standard)</b>
	Standard High Temp Coil (Option T)		<b>FLUOROELASTOMER SEALS (FKM, Option A)</b>
<b>OPERATING PRESSURES</b> 	<b>SOLENOID PILOT OPERATED</b>		<b>INLET PORT</b>
	Standard 2 Position Standard 3 Position External Pilot (Option B)		<b>EXTERNAL PILOT PORT</b>
<b>FILTRATION AND LUBRICATION</b>  	Standard 2 Position Standard 3 Position External Pilot (Option B)		Not Required Not Required 240 - 1030 kPa (35 - 150 PSIG)
	Standard 2 Position Standard 3 Position External Pilot (Option B)		240 - 1030 kPa (35 - 150 PSIG) 345 - 1030 kPa (50 - 150 PSIG) Vacuum - 240 kPa (Vacuum - 35 PSIG)
Lubrication of Automatic Valve products is not required but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 viscosity, and have an aniline range of 82°C (180°F) and 99°C (210°F). Refer to Maintenance section of catalog for recommended lubricants.			
Filter to 50 microns or better. For temperatures below 40°F, air must be dry to prevent formation of ice.			

## MODEL NUMBER CHART

L20	0	3	C	B	Y	D	Y	-AA	A
SERIES	BODY TYPE	PORT SIZE	FUNCTION	BODY DESIGN	OPERATOR 1	CENTER OPERATOR	OPERATOR 2	VOLTAGE	OPTIONS
L07	0	1/8 3/4	A 4 WAY 2 POSITION B 4 WAY 2 POSITION METAL C 4 WAY 3 POSITION BLOCK D 4 WAY 3 POSITION EXHAUST E 4 WAY 3 POSITION PRESSURE	A SINGLE B DOUBLE	A AIR PILOT F HAND LEVER - LINE G HAND LEVER - MANIFOLD J PALM BUTTON K CAM L FOOT TREADLE V INTRINSICALLY-SAFE SOLENOID W WEATHER-PROOF SOLENOID Y EXPLOSION-PROOF SOLENOID	D 3 POSITION SPRING	A AIR PILOT C 3 POSITION SPRING MANUAL M 2 POSITION DETENT MANUAL N 3 POSITION DETENT MANUAL R 2 POSITION SPRING INTRINSICALLY-SAFE SOLENOID V WEATHER-PROOF SOLENOID Y EXPLOSION-PROOF SOLENOID	AA 110/50, 120/60 AB 220/90, 240/90, 125VDC DA 22/50, 24/60, 12VDC DB 24VDC DBL 24VDC LOW WATT - (V)	A FLUOROELASTOMER SEALS B EXTERNAL PILOT CONNECTION D DUSTPROOF S STAINLESS STEEL BODY (L20-1/4" L45 ONLY)
L20		3/4 1/4 3/8							
L45		1/2							
L65		3/4 1							

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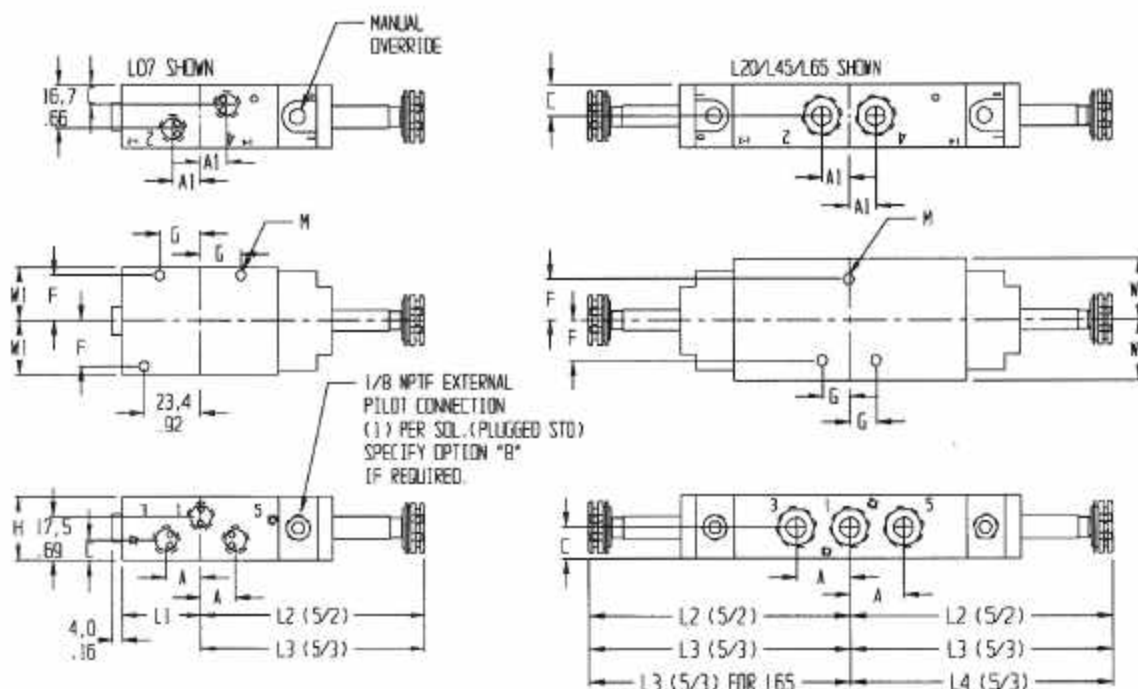
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Phone: 905-845-4500

Fax: 905-845-4505

## DIMENSIONAL INFORMATION



SERIES	A	A1	C	F	G	H	L1	L2	L3	L4	M	W1
L07	14,3 .56	7,9 .31	7,9 .31	18,3 .72	16,9 .66	25,4 1.00	32,3 1.27	92,7 3.65	92,7 3.65	-	4,0 .16	21,0 .83
L20	22,2 .88	11,1 .44	12,7 .50	16,1 .64	10,9 .43	25,4 1.00	48,2 1.90	108 4.25	108 4.25	-	4,4 .17	24,6 .97
L45	31,8 1.25	15,9 .63	15,9 .63	23,8 .94	15,1 .59	31,8 1.25	69,0 2.72	137 5.38	137 5.38	-	6,7 .27	31,8 1.25
L65	50,8 2.00	25,4 1.00	28,6 1.12	23,4 .92	25,4 1.00	57,2 2.25	117 4.61	175 6.88	175 6.88	219 8.63	9,14 .35	36,5 1.44

Units of Measure: Top - mm, Bottom - inches

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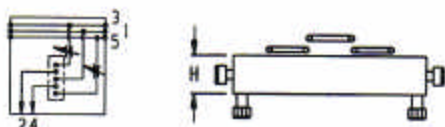
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## ACCESSORIES

### SANDWICH FLOW CONTROL



SERIES	MODEL NUMBER	DIMENSION H	WGT Kg (LB)
L07	B7106-005	12,7 .50	.06 (.14)
L20	B8022-005	12,7 .50	.09 (.19)

Units of Measure: Top - mm, Bottom - inches

### FEATURES

- Restricts air flow from port 2 to port 3 and from port 4 to port 5.
- Mounts between valve and sub-base or between valve and single pressure regulator.
- Vibration proof metering control.

## OPTIONS

(LISTED AT THE END OF THE MODEL NUMBER IN ALPHA-NUMERIC ORDER)

### A - FLUOROELASTOMER SEALS

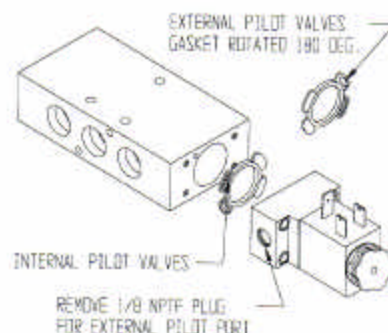
For applications where fluid media or ambient conditions are not compatible with nitrile seals. Note: Fluorocarbon seals do not increase the effective temperature range of the valve. For high temperature applications, consult the factory.

### B - EXTERNAL PILOT

For solenoid applications when the pressure to port is less than 35 PSIG (2 BAR). See example below for field conversion.

#### FIELD CONVERSION

- Remove solenoid and cap from valve body.
- Rotate gasket 180 degrees so that the internal pilot hole in the valve body is covered by the gasket.
- Reassemble the gasket, cap and solenoid to the valve body. Make sure gasket completely covers internal pilot hole before tightening screws.
- Remove the 1/8 NPTF pipe plug from the cap and make the external pilot connection.



### D - DUSTPROOF

For applications in extremely dusty and contaminated environments. Standard vent ports are plugged. Operators breathe through the exhaust ports via flats on the end of the spools.

### S - STAINLESS STEEL

Stainless steel body, all other external parts corrosive resistant; for corrosive environment applications.



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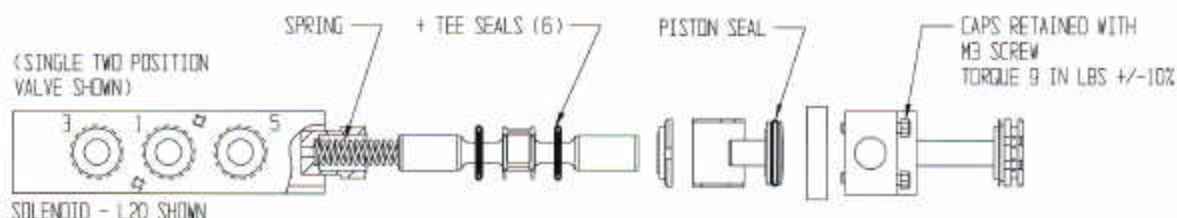
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## SERVICE KIT INFORMATION



+Lubrication of Automatic Valve products is not required but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 or lighter viscosity, and have an aniline point between 82°C (180°F) and 99°C (210°F). Refer to Maintenance section of catalog for recommended lubricants.

## MODEL NUMBERS

SERIES	FUNCTION			
	SINGLE		DOUBLE	
	PART NUMBER	DESCRIPTION	PART NUMBER	DESCRIPTION
L07	K-L07-SGL	Tee Seals (6)	K-L07-DBL	Tee Seals (6)
	K-L07-SGL-A (Fluoroelastomer)	Piston Seal (1) Spring (1)	K-L07-DBL-A (Fluoroelastomer)	Piston Seal (2)
L20	K-L20-SGL	Tee Seals (6)	K-L20-DBL	Tee Seals (6)
	K-L20-SGL-A (Fluoroelastomer)	Piston Seal (1) Spring (1)	K-L20-DBL-A (Fluoroelastomer)	Piston Seal (2)
L45	K-L45-SGL	Tee Seals (6)	K-L45-DBL	Tee Seals (6)
	K-L45-SGL-A (Fluoroelastomer)	Piston Seal Spring (1)	K-L45-DBL-A (Fluoroelastomer)	Piston Seal (2)
L65	K-L65-SGL	Tee Seals (6)	K-L65-DBL	Tee Seals (6)
	K-L65-SGL-A (Fluoroelastomer)	Piston Seal (1) Spring (1)	K-L65-DBL-A (Fluoroelastomer)	Piston Seal (2)

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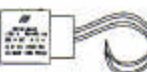
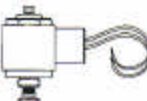

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## ELECTRICAL INFORMATION

DESCRIPTION		WHEN THE 8TH CHARACTER OF MODEL NUMBER IS:	INSTRUCTIONS	COIL PART NUMBER ** = VOLTAGE
NEMA 4X WITH DIN 43650 CONNECTION		W	Order coil separately (specify voltage code from below)	7019-9**
NEMA 4X WITH 18" LEADS		W	Order coil separately (specify voltage code from below)	7019-9**G
NEMA 4X 1/2" CONDUIT WITH 30" LEADS		W	Order coil separately (specify voltage code from below)	7019-9**C 7019-9**CT (high temperature 82°C maximum)
EXPLOSION-PROOF 1/2" CONDUIT WITH 24" LEADS (NEMA: 4, 4X, 7C, 7D, 9E, 9F & 9G. UL: CLASS I, DIV. 2 GROUPS A & B; CLASS I, DIV. 1, GROUPS C & D; CLASS II, DIV. 1, GROUPS E, F, & G; TEMP CODE T3C (160° C).)		Y	Coil included (for coil other than low wattage, specify voltage code from below)	A6848-**F A6848-DBLF (low wattage)
INTRINSICALLY-SAFE WITH STRAIN RELIEF (EEx Ia IICt6)		V	Coil included (24VDC only)	A7106-374

VOLTAGE ±10 %	** C O D E	CURRENT (AMPS)						RESISTANCE (OHMS @ 20° C)			POWER (WATTS)		
		INRUSH			HOLDING								
		W	Y	V	W	Y	V	W	Y	V	W	Y	V
22/50 24/60	DA	.40	.55	-	.40	.32	-	31	19	-	4.8	6	-
110/50 120/60	AA	.08	.13	-	.06	.06	-	840	475	-	4.8	6	-
220/50 240/60	AB	.04	.05	-	.03	.03	-	3400	2000	-	6.0	6	-
12 VDC	DA	.40	-	-	.40	.60	-	31	19	-	4.8	7	-
24 VDC	DB	.20	-	.03	.20	.30	.03	121	75	275	4.8	7	2.1
24 VDC	DBL	-	-	-	-	.07	-	-	320	-	-	1.8	-
125 VDC	AB	.04	-	-	.04	.06	-	3400	2000	-	4.8	7	-

DIN 43650 CONNECTORS							
TYPE	Strain Relief Without Cord	1/2" Conduit Without Cord	Molded With 6' Cord	Strain Relief With Light		Strain Relief With Light + 6' Cord	
				100-240 AC 48-120 DC	6-48 AC/DC	100-240 AC 48-120 DC	6-48 AC/DC
PART NUMBER	7020-001	7039-001	7020-006	7020-AA	7020-DB	A7094-006	A7094-007

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# ORDERING INFORMATION

## MINIATURE



Ports NPTF	Automatic Drain Filt/Reg	Manual Drain Filt/Reg	Rated Air Flow SCFM (Liter/Sec)	Dimensions (max) Inches (cm)			Depth	Std. Product Weight
				A	B	C		
1/8	CFDR55-1 CFDR56-1	CFR55-1 CFR56-1	10 (4.70)	1 5/8 (4.13)	3 5/8 (9.21)	2 9/16 (6.51)	1 5/8 (4.13)	7 oz .20 kg
1/4	CFDR55-2 CFDR56-2	CFR55-2 CFR56-2	20 (9.40)					

## SENTRY MODULAR (Miniature)



No Port	CFDR10	CFR10	30 (14.15)	1 5/8 (4.13)	3 5/8 (9.21)	2 5/8 (6.67)	1 25/32 (4.52)	5 oz .15 kg
1/8	CFDR10-1	CFR10-1		3 (7.62)				8.5 oz .24 kg
1/4	CFDR10-2	CFR10-2						

Models below have instant fittings for tubing.

1/4	CFDR10-04	CFR10-04	30 (14.15)	3 (7.62)	3 5/8 (9.21)	2 5/8 (6.67)	1 25/32 (4.52)	8.2 oz .23 kg
3/8	CFDR10-06	CFR10-06						
4mm*	CFDR10-M4	CFR10-M4						
6mm	CFDR10-M6	CFR10-M6		3 1/2 (8.89)				
8mm*	CFDR10-M8	CFR10-M8						
10mm	CFDR10-M10	CFR10-M10						

\*4mm=5/32 8mm=5/16.

Max. Temp. 125° F (51.7° C)

For diaphragm regulator substitute 11 for 10 in model number of Sentry Regulators.

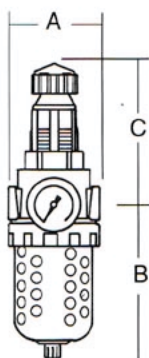
## GUARDSMAN MODULAR (Intermediate Size)



1/4	CFDR60-2	CFR60-2	45 (21.24)	2 21/32 (6.75)	4 9/16 (11.58)	3 9/32 (8.33)	2 3/8 (6.03)	23 oz .65 kg
3/8	CFDR60-3	CFR60-3	65 (30.65)					
1/2	CFDR60-4	CFR60-4	75 (35.35)					

Max. Temp. 125° F (51.7° C)

## VANGUARD MODULAR (Full Size)



1/4	CFDR100-2	CFR100-2	45 (21.24)	3 1/2 (8.89)	5 3/4 (14.60)	5 3/4 (14.60)	3 1/2 (8.89)	40 oz 1.15 kg.
3/8	CFDR100-3	CFR100-3	80 (37.75)					
1/2	CFDR100-4	CFR100-4	120 (56.63)					
3/4	CFDR100-6	CFR100-6	140 (66.07)					

### OPTIONS

	Prefix	Suffix
Metal bowl (Vanguard thru 1" has sight gauge as std)	B	
5 Micrometer Filter Element (Sintered Bronze)		E5
20 Micrometer Filter Element (Sintered Bronze)		E4
40 Micrometer Filter Element (Sintered Bronze)		E3
Less Drain (1/4 NPT Female Port at Drain)		LDC
BSP (Whitworth threads)		W
Less Gauge		NG
No Gauge, No Port		NGG (Series CFDR55, 56 and 10)
No Port		NP (Series CFDR55, 56 and 10)

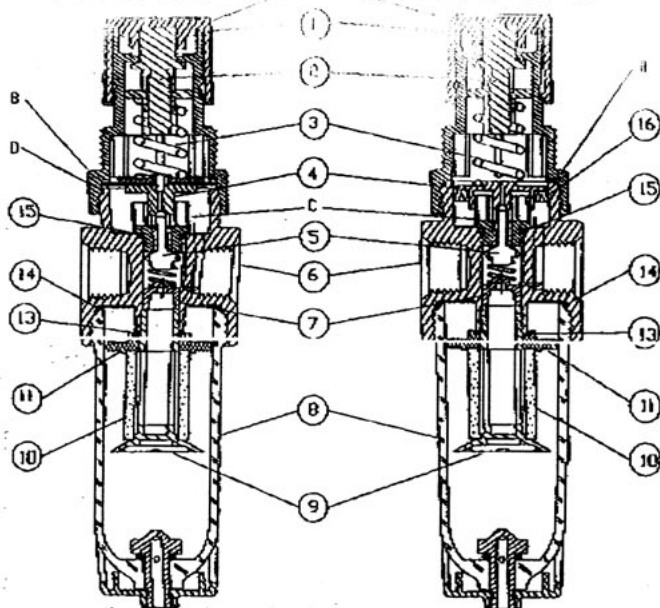
### NOTES:

AIR FLOW RATINGS: 5 psi (.35 bar) pressure drop at 100 psi (6.9 bar) supply pressure.  
 OPERATING PRESSURES: 150 psi (10.3 bar) at 125° F (51.7° C) for plastic bowls.  
 200 psi (13.8 bar) at 175° F (79° C) for metal bowls.  
 Bowl guards standard for Guardsman and Vanguard products with plastic bowls.  
 See literature pages for other product options. Add suffix options in alphabetical order,  
 starting with Filters, then Regulators.



MODEL CTR56-W

MODEL CTR56-W

**INSTALLATION:**

Install unit as near as possible to the device it is to serve. Filters separate water and heavier solids by the centrifugal action of the baffles #11. Water and heavier solids are trapped in the bowl by stem #8. Solids too light to be removed by centrifugal force are retained by filter element #10. Water is discharged by automatic internal drain (AID) incorporated in the PA10F-130 bowl assembly. The AID is operated whenever pressure fluctuations occur in the bowl assembly PA10F-130. The manual drain assembly is operated by pushing up on the bottom of bowl assembly PA10F-130. The regulator reduces supply air pressure to the required operating pressure by spring #2 loading on diaphragm assembly #4 (or piston assembly). Reduced operating pressure is sensed by diaphragm (piston assembly), which opens and closes valve #5. To maintain set pressure with flow thru the regulator, overpressure is relieved when pressure on the diaphragm (piston assembly) exceeds the spring loading on the diaphragm (piston assembly).

**ADJUSTMENT:**

Decrease turning of adjustment knob "A" will increase secondary pressure. Push down on adjustment knob to lock. If air supply is kept clean, regulator should provide long periods of uninterrupted service. Erratic operation or loss of regulation is usually due to dirt or a leaking seal.

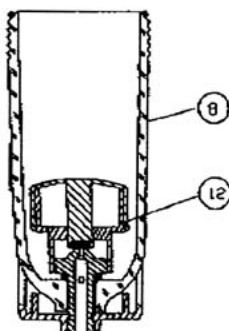
**FILTER MAINTENANCE:**

To clean or service the unit, shut off air pressure and disconnect unit. Remove bowl assembly #8 by turning counterclockwise. To remove the filter element #10, insert a screwdriver in the slot located at the bottom of stem #8. Turn stem counterclockwise until it is free of the body #6. Do not clean element in cleaning agent. Replacement is recommended. Plastic bands may be cleaned with soap and water or kerosene.

To service the AID, disassemble end cover. Order 050 for replacement or order PA10F-130 for new bowl assembly with AID installed.

**REGULATOR REPAIR INSTRUCTIONS:**

To repair regulator, shut off air supply, reduce spring load to zero by adjusting knob counterclockwise. The diaphragm (piston assembly) can then be removed. The supply valve can be removed by unscrewing valve seat "C". If the regulator cannot be repaired by cleaning, the operating parts should be replaced. See parts list. After the regulator is reassembled, make sure all seals are correctly located. The v-rings #16 must be generously lubricated with Parker Oiling Lube upon reassembly. The valve seat should be torqued to 3-5 in-lbs. The clamping washer "D" should be between the diaphragm and the dome. The dome should be torqued to 10-50 in-lbs.



KEY	DESCRIPTION	CTR56	CTR56	CTR56
1	DOME KIT	KA10R-02	KA10R-02	KA10R-02
2	ADJ. SCREW ASSEMBLY	A33-75	A33-75	A33-75
3	SPRING KIT	KV33-104	KV33-104	KV33-104
4	PISTON/DIAPHRAGM KIT	KA10R-07	KA10R-09	KA10R-09
5	VALVE KIT	KAA33-09M	KAA33-09M	KAA33-09M
6	BODY	33-262-A	33-262-A	33-262-A
7	SPRING REST	10C-02	10C-02	10C-02
8	BOWL ASSEMBLY	PA10F-130	PA10F-130	PA10F-130
9	STEM	10F-03	10F-03	10F-03
10	ELEMENT**	130-27	130-27	130-27
11	BAFFLE	10F-02	10F-02	10F-02
12	AUTOMATIC INT. DRAIN			050
13	O-RING	103-95	103-95	103-95
14	O-RING	KX406-23	KX406-23	KX406-23
15	O-RING	KV35-20	KV35-20	KV35-20
16	U-CUP		40B-41	40B-41

\* = SPECIFY 1/8" OR 1/4" PIPE PORTS

\*\* = ORDER KIT KA130-27 FOR O-RINGS THAT HAVE A ONE PIECE ELEMENT ASSEMBLY. THESE ASSEMBLIES WERE USED IN CTR'S THAT WERE ORDERED BEFORE DECEMBER 1989.

KEY	DESCRIPTION	PART. KIT. SALES ASSEMBLY	CTR56
1	DOME KIT	KA10R-02	KA10R-02
2	ADJ. SCREW ASSEMBLY	A33-75	A33-75
3	SPRING KIT	KV33-104	KV33-104
4	DIAPHRAGM/PISTON ASSY	KA10R-08	KA10R-07
5	VALVE KIT	KAA33-09M	KAA33-09M
6	BODY	33-386-A	33-386-A
7	CARTRIDGE ASSEMBLY	A10F-09	A10F-09
8	BOWL ASSEMBLY	PA10F-130	PA10F-130
9	O-RING	KX406-23	KX406-23
10	O-RING	KV35-20	KV35-20
11	U-CUP	40B-41	
12	AUTOMATIC INT. DRAIN		

\* = SPECIFY 1/8" OR 1/4" PIPE PORTS

70WDD	60WDD	30WDD
0-160 PSI	0-10.5 BAR	0-80 PSI
0-4 BAR	0-30 PSI	0-2 BAR

**OPTIONS**

PREFIX	DESCRIPTION
B	METAL BOWL
SUFFIX	DESCRIPTION
NO	NO GAGE PORTS
L	LIGHT SPRING 0-30 PSI (0-3.4 BAR) PART #33-104L
L15	LIGHT SPRING 0-15 PSI (0-1 BAR) PART #33-113
L30	LIGHT SPRING 0-30 PSI (0-2 BAR) PART #33-114
P	PANEL MOUNT 1-7/8" HOLE REQUIRED. PANEL THICKNESS UP TO 5/32" PART #10R-26
M	BRITISH BSP THREADS
D	CONSTANT BLEED DRAIN FOR COALESCENT O/R'S

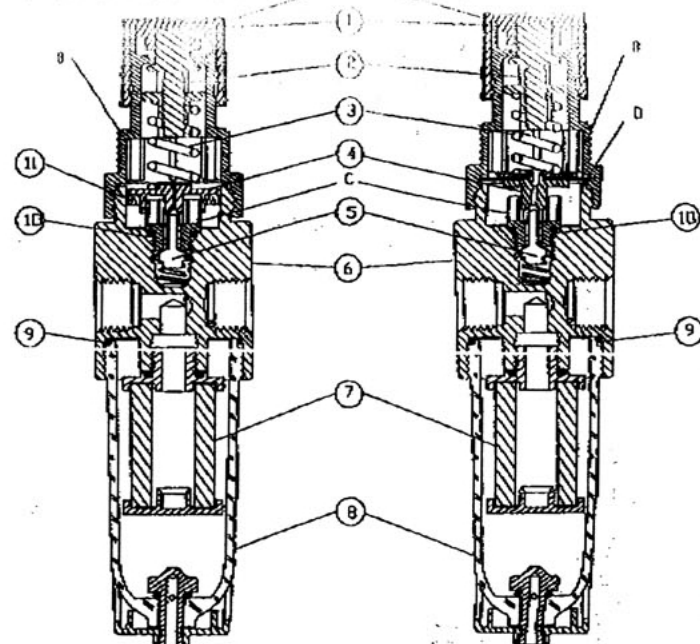
**CAUTION:**

Plastic bowls may deteriorate and fail if exposed to paint thinners and solvents, certain degreasing fluids & synthetic cleaning solvents and chemicals such as acetone, Ethyl Acetate, Ethylene Dichloride, Toluene or any fluids which contain these chemicals. The bowls can be damaged by contact with Phosphate Ester or other synthetic lubricants.

Use only original equipment O-rings in contact with bowl. Standard O-ring will cause bowl to crack.

MODEL CTR56-W

MODEL CTR56-W

**INSTALLATION:**

Unit should be installed downstream of conventional NPS filter with the standard 5 microneter filter element to extend the life of the consequent cartridge. The cartridge #7 should be replaced when the pressure differential across the cartridge reaches 8 to 10 psi (0.55 to 0.68 bar). The pump area should be drained when liquid level reaches the bottom of the cartridge or as automatic drain filter should be used. Pressure regulator reduces the supply air pressure to the required operating pressure by spring #2 loading on diaphragm assembly #4 (or piston assembly). Reduced operating pressure is sensed by diaphragm (piston assembly), which opens and closes valve #5 to maintain set pressure with flow thru regulator. Overpressure is relieved when pressure on the diaphragm (piston assembly) exceeds the spring loading on the diaphragm (piston assembly).

**ADJUSTMENT:**

Decrease turning of adjustment knob "A" will increase secondary pressure. Push down on adjustment knob to lock. If air supply is kept clean, regulator should provide long periods of uninterrupted service. Erratic operation or loss of regulation is usually due to dirt or a leaking seal.

**REPAIR INSTRUCTIONS:**

Replace the cartridge assembly by shutting off the air pressure and removing the bowl assembly #8, and unscrewing the cartridge assembly #7. Be sure the O-ring is seated when the new cartridge assembly is installed. Cartridge should be installed hand tight.

**REGULATOR REPAIR INSTRUCTIONS:**

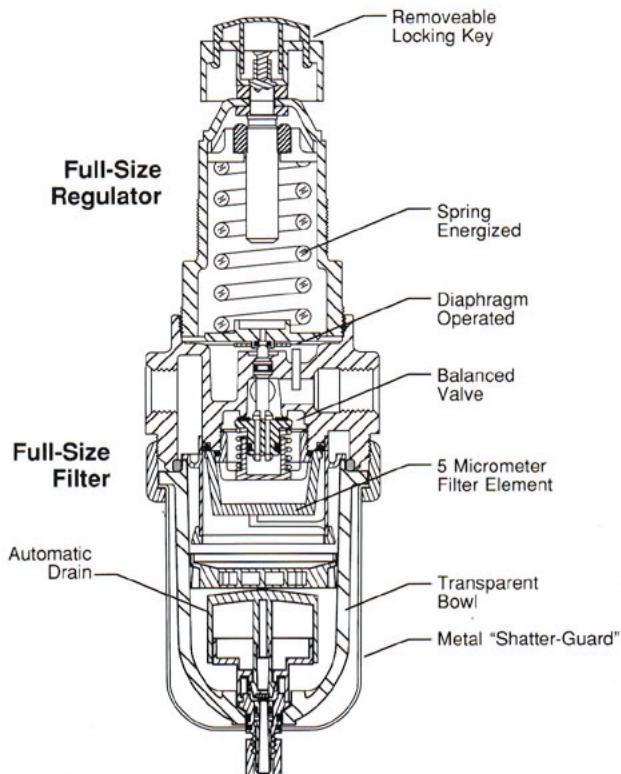
To repair regulator, shut off air supply, reduce spring load to zero by adjusting knob counterclockwise. The dome "D" can be removed by unscrewing R counterclockwise. The diaphragm (piston assembly) can then be removed. The supply valve can be removed by unscrewing valve seat "C". If the regulator cannot be repaired by cleaning, the operating parts should be replaced. The valve seat should be torqued to 3-5 in-lbs. The clamping washer "D" should be between the diaphragm and the dome. The dome should be torqued to 10-50 in-lbs.

TITLE	DRAWN BY	CHK BY	SCALE	DWG NO
	NET 10/12/89		FULL	A781

# INTEGRAL FILTER/REGULATORS with Gauges



Vanguard Series CFDR100



## INTEGRAL FILTER/REGULATORS

These units have essentially the same performance characteristics and features of individual filters and regulators, but provide economy of size and a lower cost. They are particularly useful where horizontal space is limited.

Reliable, internal, automatic drains are available for all sizes and series. Gauge and two regulator gauge ports are standard. Self-relieving regulators are standard; non-relieving models are optional.

Other options include regulating springs for various pressure ranges, metal bowls, mounting brackets, optional filter elements and BSP (British Whitworth) pipe threads.

### VANGUARD Series

M/P's *Full-Size* models are available in 1/4" through 3/4" pipe sizes. Filters are available with either the recommended internal, or external, Hydro-Jector drains. Regulators are diaphragm operated. Locking key adjustment is standard. All sizes may be modularly connected to lubricators, or other components.

### GUARDSMAN Series

*Intermediate-Size* units provide high-capacity performance at lower cost. Regulators are piston operated. Combination is available with 1/4", 3/8" and 1/2" pipe threads. Also suitable for modular connectors.

### SENTRY Modular Miniature Series

Modular styling. Molded from corrosion-resistant materials. Filter has excellent water removal capability. Available with either piston or diaphragm regulator. Pipe threads are 1/8" or 1/4". Also available with a choice of six sizes of instant tube fittings.

### MINIATURE Series

Built to the same performance standards as the Sentry Series, but non-modular and lower in cost. Pipe sizes are 1/8" and 1/4".