ENGINEERED FOR LIFE

ITT Engineered Valves, LLC

33 CENTERVILLE ROAD
LANCASTER PA 17603-2064

TEL: (717) 509-2200
FAX: (717) 509-2336

www.engvalves.com

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

MODEL T4105C, T4106C & T4107C

Skotch® *Trifecta*® VALVE SYSTEM

WARNING

Valve systems supplied by ITT Engineered Valves, LLC are designed and manufactured using good workmanship and materials, and they meet all applicable industry standards. These valves are manufactured with various materials, and they should be used only in services recommended by a company engineer. Misapplication of the product may result in injuries or property damage. A selection of valve components of the proper material and consistent with the particular performance requirement is important for proper application.

Examples of misapplication or misuse of any ITT Engineered Valves, LLC products include use in an application in which the pressure/temperature rating is exceeded or failure to maintain valve as recommended and use of products to handle caustic and/or hazardous substances when not designed for that purpose.

If valve exhibits any indication of leakage, do not operate. Isolate valve and either repair or replace.

Technical Manual No. IOT4100C **Effective 8/31/2018**

REV LEVEL C

Record of Revisions

Revision	Description	Date
-	First Issue	08/13/99
A	Updated for new “WARNING” block, company name, and Item No. changes to match product drawing revisions	07/21/04
B	Updated Company name and added T4107C	03/20/12
C	Updated Wiring diagrams, Revised Sect VI	08/31/18

TABLE OF CONTENTS

DRAWINGS

I. DESCRIPTION

The Series T4100C Skotch® Burner Valve System provides all the isolation and venting functions necessary for automated operation of gas-fired burners in utility and industrial power plants. This includes double block of the main gas line and venting the chamber between blocks to atmosphere. Hence, the term "Double Block and Vent" or “Double Block and Bleed”. The vents are sized in accordance to IRI’s (Industrial Risk Insurers) and NFPA (National Fire Protections Association) recommended vent sizes. To satisfy code requirements, a Proof of Closure (POC) switch utilizing valve seal overtravel is supplied as standard to prove the valve is closed.

The Model T4105C valve system, which is the Fail-in-Last Position model, utilizes a dual coil momentary contact pilot solenoid for pneumatic operation and requires compressed air and electric power to open and close. The system fails in the last position on loss of pneumatic or electric power. It will not hold this position indefinitely if air is lost.

Due to the failure mode, Model T4105C valve systems can never be Factory Mutual (FM) approved.

The Model T4106C & T4107C valve systems, which is the Fail Closed model, utilizes a single coil maintain contact spring return pilot solenoid for pneumatic operation and requires compressed air and electric power to open. The system closes on a loss of pneumatic or electric power.

Model T4106C valves incorporating specific options which are Factory Mutual approved for Natural Gas Safety Shutoff Valves per FM Approval Standard Class 7400. Valves meeting the requirements of FM are tagged as such.

Model T4107C valves incorporating specific options may not be Factory Mutual listed with valve configuration. Due to specific options the valves are not Factory Mutual (FM) approved.

A single Skotch gas valve is typically installed in place of a multiple valve arrangement.

Consult order specification for detailed specifications of equipment supplied on each project.

II. OPERATION

Refer to solenoid assembly nameplate or purchase order specifications to determine appropriate line voltage and type. Operation is in accordance with referenced drawings.

A. Open Block Valves (Close Vent)

T4105C, T4106C and T4107C valves follow similar opening protocol.

With pneumatic supply pressure regulated to a minimum of 60 psig and a maximum of 120 psig, apply line voltage across terminal points 1 and 2 for AC (DC voltage, apply across terminal points 18 and 19). This energizes the pilot solenoid, allowing pneumatic pressure into the cylinder.

As pressure is admitted to the cylinder, the outlet valve return spring is compressed and the outlet valve plug moves out of its seat ring. Concurrently, the vent valve moves into its seat until first the soft seal and then a metal to metal backup seal is made closing the vent.

Upon vent closure, the piston continues to stroke. This pushes the inlet valve plug out of its seat ring, compressing the inlet valve return spring. Stroking stops when the piston contacts a travel stop in the actuator section. Flow commences only after the inlet plug clears its seat. Thus, no flow occurs until the vent is closed.

B. Close Block Valves (Open Vent)

How the valve is commanded Closed differs between different model numbers.

For T4105C valves:

Deleting voltage from terminals 1 and 2 and applying momentarily voltage to terminals 2 and 3 energizes the exhaust coil and exhausts pneumatic pressure from the cylinder (for DC voltage, delete voltage from terminals 18 and 19; apply voltage to terminals 20 and 21). **Note: Never energize both solenoid coils simultaneously. Doing so, will permanently damage the coils.**

For T4106C and T4107C valves:

Deleting voltage from terminals 1 and 2 (for DC, delete voltage from terminals 18 and 19) de-energizes the pilot solenoid and exhausts pneumatic pressure from the cylinder.

For all models:

Upon exhausting the cylinder, both inlet and outlet return springs move their respective plugs toward their seat rings. First the inlet valve soft seal makes, halting gas flow through the assembly, then its metal back-up. Next the vent moves off its seat, opening the vent and relieving downstream pressure. Finally, the outlet valve soft seal, followed by its metal back-up close, completing the cycle. Two independent blocks are formed between system inlet and outlet, with the chamber between the block valves ported to vent. The POC switch trips when the outlet valve soft seal enters its seat.

C. Notes

For Model T4105C valves, the solenoid pilot valve is a dual coil momentary contact type, rated for continuous duty at the service voltage. **Note: Never energize both solenoid coils simultaneously. Doing so, will permanently damage the coils.**

For Model T4106C and T4107C valves, the solenoid pilot valve is a maintained contact type, rated for continuous duty at the service voltage.

A proof of closure (POC) switch is provided as standard for the outlet valve. The outlet valve POC is located either inside the yoke or mounted above the cylinder depending on customer requirements. Logic is shown on the referenced wiring diagram. Some valves may be equipped with an optional open limit switch located either in the yoke or mounted on the top of the actuator.

Note: Switches located inside the yoke can only be supplied with SPDT contact configuration. External switches may be either SPDT or DPDT contact configuration. Assemblies supplied with DPDT Switches provide all terminal points noted on Wiring Diagram. Valves supplied with SPDT switches have a reduce number of terminals. Reference wiring diagram for details.

III. INSTALLATION

A. Unpacking

- ☑ Do not remove protective plastic plugs until ready to install.
- ☑ Verify no debris or foreign objects are inside the valve.
- ☑ Transporting - use proper hoisting procedures to avoid damage to valve. If using a sling, it should be placed on the body, not the actuator.
- ☑ Purge the gas line prior to installing the valve.
- ☑ Purge all air lines prior to connecting solenoids.
- ☑ Do not pull on the wires located inside the yoke for the internally mounted switches. Doing so can cause the switches to loose calibration.
- ☑ Historically many problems at start-up are due to mishandling of the valve and poor purging of the fuel and pneumatic control lines.

B. *Valve Installation*

- ☑ The T4100C Skotch Trifecta Valve System is typically supplied with a female NPT vent connection and spigot inlet and outlet connections. (Note: Other end configurations available upon request.) Refer to order specification or purchase order specifications for type supplied. Valve installation should be in accordance with standard practices for end connection provided. Flanges are raised face carbon steel per ANSI B16.5. Threads are per ANSI B2.1. Ensure the weight of the system is properly supported to prevent excessive stresses. Valve may be installed in any orientation. Ensure flow direction is appropriate for intended installation. Valves incorporating welded ends should follow special precaution to insure weld heat does not damage the valve seals and gaskets. Temperatures in these areas should be kept below 200° F.

CAUTION

Vent pipe size should be equivalent to the vent fitting size supplied. Reducing vent size may result in insufficient flow capacity. *Under NO circumstance should the vent be blocked or plugged.*

<u>NOTE:</u>

Prior to installation and/or start-up, piping should be verified as being free of dirt, grit, welding slag, or other particulate contamination. Failure to do so may result in damage to valve internals.

C. *Pneumatic/Electrical Hook Up*

- ☑ Purge pneumatic supply lines prior to connecting to the solenoid.

- ☑ Utilities required for operation are electrical power and clean dry compressed air. Wiring should be in accordance with referenced drawings and all applicable codes. Supply air should be filtered to 40 microns minimum and connected per referenced drawing. Supply air pressure should be 60 to 120 psig at all times.

- ☑ For internal switches, do not pull on the wires. Doing so may cause the switch to come out of adjustment.

☑ Note: Some assemblies may include a filter regulator (Optional).

Use suitable thread sealing compound only. Do not use PTFE tape.

The exhaust side of the solenoid should not be restricted. This will slow the closing rate of the valve.

IV. COMMISSIONING

After installation, connections should be tested to confirm integrity.

V. DISASSEMBLY AND MAINTENANCE INSTRUCTIONS

All T4100C Systems may be completely disassembled without removal from the piping. However, it is recommended that it be rebuilt in a shop with suitable fixturing, hoisting equipment and tools.

NOTE: Customers that do not feel comfortable with rebuilding and testing Skotch valves can have them rebuilt by the factory. Call the number located on the front cover or (866) 812-8302 and ask to speak to Skotch, Customer Service for quotation and instructions.

Item numbers refer to referenced drawings. Ensure all manual isolation valves are closed and tagged out, all electrical circuits are de-energized and that the pneumatic supply and valve are isolated and depressurized before performing any work on the valves.

IMPORTANT: Special tools are needed for disassembly and assembly. They should be procured before work begins.

Special tools include:

ITT P/N: 38861, Seat Ring Wrench. Needed to remove the seat from the body
ITT P/N: 85-034, Spring Assembly Tool. Needed to safely compress/release the outlet valve return spring
ITT P/N: 38988, Protective sleeve. Needed during installation of outlet valve

Disassembly

A clean dry area should be provided for valve disassembly.

Continue as follows (Reference drawing 03-014):

Remove valve actuator from valve by loosening the three set screws (item 103 drawing, 117591) and sliding it off the valve.

Unscrew vent connector (Item 40) from the valve body (Item 1). Remove o-ring (Item 29), vent shaft seal (Item 28) and thrust washer (Item 27).

Slide out inlet valve return spring (Item 26) and inlet valve subassembly. Remove inlet valve seal (Item 47) by unthreading inlet plug (Item 46) from the vent shaft (item 35).

Remove button head screw (Item 6) and stem cap (Item 7) from outlet valve stem.

Remove hex nut (Item 8) using P/N 85-034 disassembly tool. Thread the assembly tool to the end of the outlet valve shaft. Engage the socket over the nut. While holding the tool rod stationary unthread the hex nut using the socket portion of the tool. Do not remove the assembly tool from the end of the outlet valve until the spring is completely relaxed.

CAUTION

This nut (Item 8) is under spring tension. The tool must be used to unscrew this nut and relieve outlet valve spring (Item 11) tension. If it is not used, serious injury may result.

After nut is removed, remove thrust washer (Item 9) and piston (Item 10). Slide outlet valve assembly out through the bottom of the valve. The sleeve (Item 12) will fall out. Remove vent seal (Item 56) and outlet valve seal (Item 52) by unthreading the cap screw (Item 57) and outlet plug (Item 53) from the outlet valve stem (Item 50).

Unscrew spring holder (Item 37) from body (Item 1). Remove retaining ring (Item 16) and remove the seal washer (Item 15), outlet valve shaft seal (Item 14), u-cup seal (Item 38) and washer (Item 39). Remove o-ring (Item 13). Using the seat ring wrench, P/N 38861, remove the valve seat ring (Item 21) and o-ring (Item 22).

The valve is now completely disassembled.

A. Actuator Removal with Internal Limit Switches

Reference Drawing 117591:

Remove four cylinder mounting screws (Item 102) and separate cylinder assembly (Item 165) from yoke (Item 101).

B. Actuator Removal with External Limit Switches

Reference Drawing 117591:

Remove limit switch by unscrewing switch mounting screw (Item 117). If auxiliary switch is provided it must also be removed.

Remove four cylinder mounting screws (Item 102) and separate cylinder assembly (Item 165) from yoke assembly (Item 101).

C. Maintenance

Periodic leak testing of both block valves and verification of proper operation of proof of closure switch is recommended per applicable codes. See Section VI for leak testing and Section VII for switch setting techniques.

Upon disassembly, all sealing and bearing surfaces, including metal back-up seats, should be inspected for nicks or other surface finish damage. Damaged items should be replaced. Prior to reassembly, scrape any remaining gasket material from mating surfaces. Clean gasket surfaces with a good quality solvent.

D. Reassembly

To reassemble system, reverse steps of Section A and make certain all components are clean and undamaged. Lubricate o-rings and seals with a suitable lubricant, such as, Dow Corning 55. Threaded joints on the inlet valve subassembly, outlet valve subassembly, spring holder, vent connection and button head screw (Item 6 on drawing 03-014) should be assembled using Loctite 242 and appropriate primer to ensure that these parts do not come apart during operation. When installing the outlet valve assembly through the spring holder a special tool (P/N: 38988) is needed to ensure the u-cup seals (Items 14 and 38) are not damaged during assembly. To use, thread the protective sleeve to the outlet valve stem subassembly until it shoulders. Slide the stem through the seals and bushings in the spring holder. Once the outlet valve assembly is in place remove the tool and proceed with assembly. After reassembly, the valve and switches should be tested per the following procedures in Sections VI and VII.

VI. LEAK TESTING

It is necessary to leak test each block valve and the vent valve individually to properly qualify the status of each seal. The valves are named in accordance to their position and function within the valve system.

A. Inlet Valve

1. Verify the valve is in the closed position.

2. Seal the outlet of the valve.

3. Pressurize inlet with 50 psig clean dry air while monitoring leak rate from the vent port. FM specifies a leak rate of 24 in^3/hr or less.

B. Outlet Valve

1. Verify the valve is in the closed position.

2. Seal the inlet side of the valve.

3. Pressurize the vent with 50 psig clean dry air while monitoring leak rate from the outlet. FM specifies a leak rate of 24 in^3/hr or less.

C. Vent Valve

1. Verify the valve is in the open position.

2. Seal the outlet port.

3. Pressurize the inlet with a maximum of 50 psig clean dry air, while monitoring the leak rate from the vent port. FM specifies a leak rate of 24 in^3/hr or less.

VII. PROOF OF CLOSURE SWITCH TESTING

The T4100C valve system is provided with one proof of closure switch as standard. It can be provided with an optional open switch. The valves can also be provided with an external POC switch as well as an external open switch. Check the order specification for configuration provided.

The intent of the POC switch is to trip during valve seal overtravel of the outlet valve. Valve seal overtravel is the additional travel the valve strokes after flow stops. For reference FM defines the point of valve closure when flow $< 24\ in^3$/hr. The switches should only change contact state when there is no flow. For example: When going from open to close, gas flow should stop and then the POC switch trip. Conversely, when going from closed to open the POC switch should change contact states prior to flow starting.

The POC switches should be tested after the valve has been leak tested.

A. Testing Internal POC Switch

1. Testing

a) Verify the valve is in the closed position and the normally closed contacts are made.

b) Plug the inlet port. Stroke the valve very slowly until the switch trips. At this point, stop movement of the actuator and verify flow has not commenced (< 24 in^3/hr) by pressurizing the vent port to 20 psig and measuring flow at the outlet. The actuator can be stroked slowly by regulating air pressure to the actuator.

c) If there is evidence of flow prior to the POC switch tripping, the POC switch needs to be adjusted.

2. Setting with Internal Switch

a) Ensure the valve is in the fully closed position then remove the actuator from the valve by loosening the three set screws holding the actuator to the body.

b) Measure the distance from the base of the cylinder actuator to the outside edge of the switch roller lever. The distance should be between 0.840" and 0.870" and the roller should be resting approximately half way up the 45° chamfer on the actuator shaft.

c) If the switch is too far down on the shaft, i.e. greater than 0.870", bend the switch mounting bracket slightly away from the shaft to a position within the specified measurements. The switch mounting bracket should be bent the opposite direction if the roller is riding too far up on the shaft, i.e. less than 0.840".

d) Stroke the actuator. The normally open contacts of the limit switch should change state. If they do not, slightly bend the switch mounting bracket. Continue until switch contacts change state.

e) Place the actuator on the valve and retest per section VII. A. 1.

B. Testing Valve with External Limit Switches

1. Testing

a) Check switch setting per section VII.A.1.

2. Setting

a) Loosen the roller switch lever (Item 161 or 151).

b) Place an 1/8" shim between the switch actuator (Item 147) and the roller switch lever.

c) While holding the roller firmly against the actuator shaft, rotate the switch actuator shaft until the normally closed contacts of the switch break. At this point securely fasten the lever to the switch actuator shaft.

d) Remove the spacer. The roller switch lever should be firmly resting on the switch shaft and the normally closed contacts made.

e) Check switch setting by stroking the valve to the open position. Pressurize the vent with 20 psig and monitor the flow at the outlet valve. If the switch trips before flow ceases, repeat but decrease shim thickness by 1/32". If the switch does not reset, increase the shim thickness by 1/32".

C. Testing Valve with External GO Switches

1. Testing

a) Check switch setting per section VII.A.1.

2. Setting

a) Loosen switch from mounting bracket and slide switch to desired position.

b) Tighten switch to mounting bracket ensuring the distance between the end of switch and target is per manufacturer’s recommendations.

c) Check switch setting by stroking the valve to the open position. Pressurize the vent with 20 psig and monitor the flow at the outlet valve. If the switch trips before flow ceases, repeat slide switch away from top of actuator.

VIII. MISCELLANEOUS INSTRUCTIONS FOR SPECIAL OPTIONS

Due to customer requirements, some T4100C Systems incorporate special options. Any special procedures not covered in the above material can be found in the Reference Section of this manual as addenda.

IX. SPARE PARTS ORDERING INFORMATION

Orders for T4100C Systems Spare Parts should be placed with

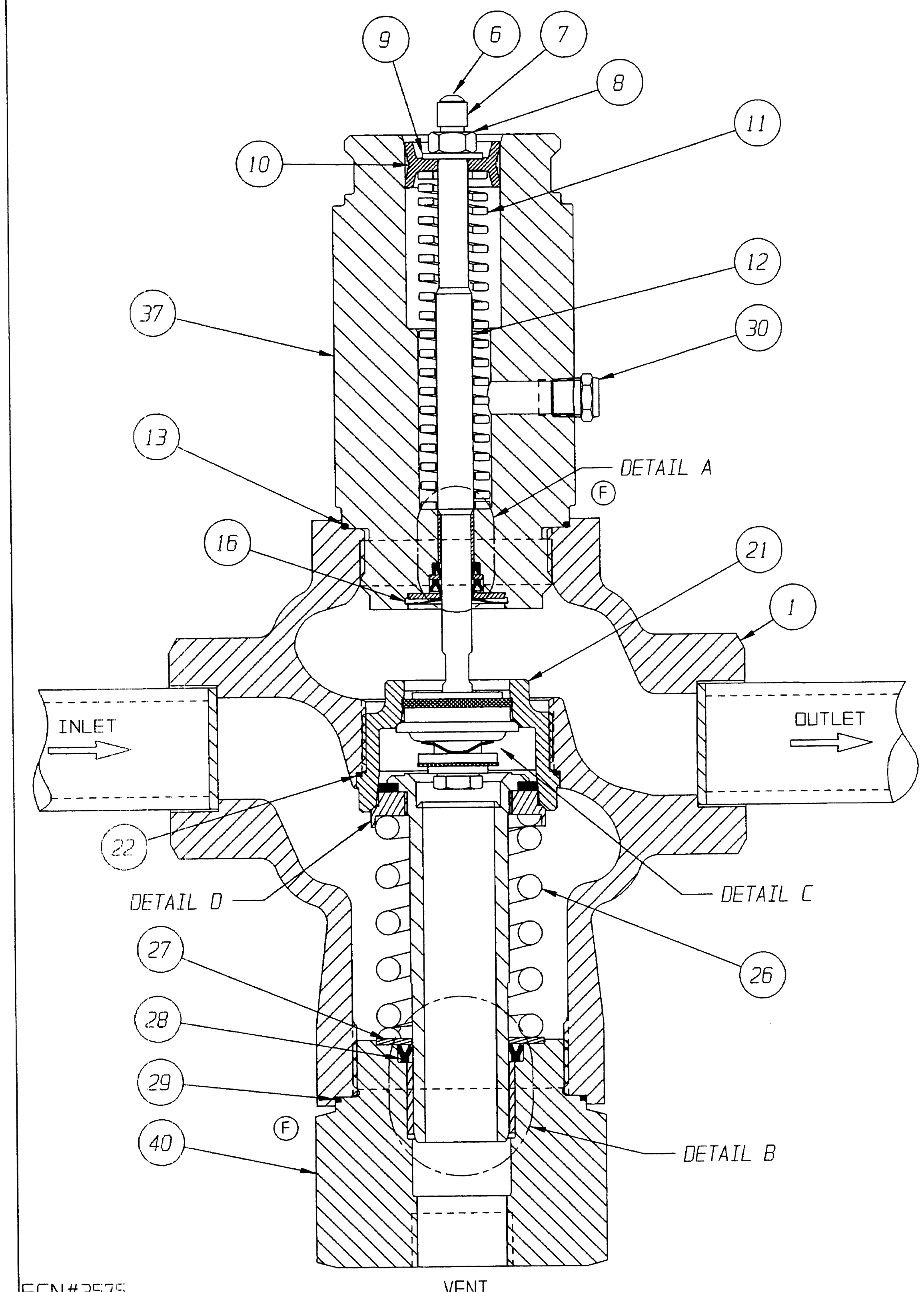
ITT Engineered Valves, LLC
33 Centerville Road
Lancaster, PA 17603-2064

Phone: 717-509-2200
Fax: 800-348-9000

Please be advised that spare parts should be ordered directly from ITT Engineered Valves, as such materials are specially designed for Skotch Trifecta Valve Systems. Other replacement parts, although they may be similar in function, will void the FM rating. To maintain FM Approval, FM also requires technicians servicing/repairing the Skotch Trifecta Valve Systems to be trained by ITT Engineered Valves.

X. REFERENCE INFORMATION

The following pages contain drawings and reference information alluded to in above sections.



LIST OF PARTS				
	ITEM	DWG. NO.	QTY.	DESCRIPTION
	1	02-100	1	VALVE BODY
	6	-	1	SOC BUTTON HD SCREW, #6-32UNCx0.25
	7	01-215	1	STEM CAP
	8	-	1	HEX NUT, 0.25-28UNF
	9	-	1	THRUST WASHER 0.63 O.D.
*	10	-	1	PISTON
	11	-	1	OUTLET VALVE SPRING
	12	47-033	1	SLEEVE
*	13	-	1	O-RING #035
*	14	-	1	OUTLET SHAFT SEAL U-CUP
(F)	15	-	1	SEAL WASHER
	16	-	1	RING RETAINING
	21	01-214	1	SEAT RING
*	22	-	1	O-RING #033
	26	-	1	INLET VALVE SPRING
	27	-	1	THRUST WASHER 1.75 O.D.
*	28	-	1	VENT SHAFT SEAL U-CUP
*	29	-	1	O-RING #037
	30	-	1	BREATHER VENT 0.125 NPT
	35	-	1	BEARING 0.312X0.375X0.50
(F)	37	118006	1	SPRING HOLDER
(F) *	38	-	1	SEAL U-CUP
(F)	39	-	1	WASHER
	40	01-210	1	VENT CONNECTOR
	41	-	1	BEARING 1.000X1.125X0.750
	45	01-208	1	VENT SHAFT
	46	01-209	1	INLET PLUG
*	47	41-062	1	INLET SEAL
	50	01-203	1	OUTLET VALVE STEM
	51	01-204	1	OUTLET SEAL RETAINER
*	52	41-060	1	OUTLET SEAL
	53	01-205	1	OUTLET PLUG
	54	-	1	WAVE SPRING
	55	01-206	1	SPRING RETAINING WASHER
*	56	41-061	1	VENT SEAL
	57	-	1	HEX HEAD CAP SCREW 0.25-28UNFx0.38
	58	01-250	1	VENT SEAL RETAINER

NOTES:
1. * - DENOTES RECOMMENDED SPARE PARTS
2. LUBRICATE ALL SEALS WITH A GOOD QUALITY SILICONE GREASE ON ASSEMBLY.

THIS IS A FACTORY MUTUAL CONTROLLED DOCUMENT, CHANGES MUST BE APPROVED BY FM PRIOR TO IMPLEMENTING.

ECN#3575

PART NO. -

PATTERN NO. -

REV	DATE	ECN NBR	BY	CHKD	APVD
-	-	-	-	-	-
F	6/18/99	4814	JDN	[illegible]	[illegible]
E	4/28/99	4622	JDN	MJD	MJD
D	12/15/98	3575	JDN	MJD	MJD
C	4/3/98	3575	JDN	MJD	MJD

TOLERANCES EXCEPT AS NOTED
DECIMALS
.XX ± .02
.XXX ± .005
ANGLES ±0.50°
REMOVE ALL BURRS AND SHARP EDGES
ALL MACHINED SURFACES TO BE 125 EXCEPT AS NOTED

WEIGHT	SCALE
-	1:1

	DATE	BY
DWN	4/3/98	JDN
CHKD	4/16/98	MJD
APVD	4/16/98	MJD

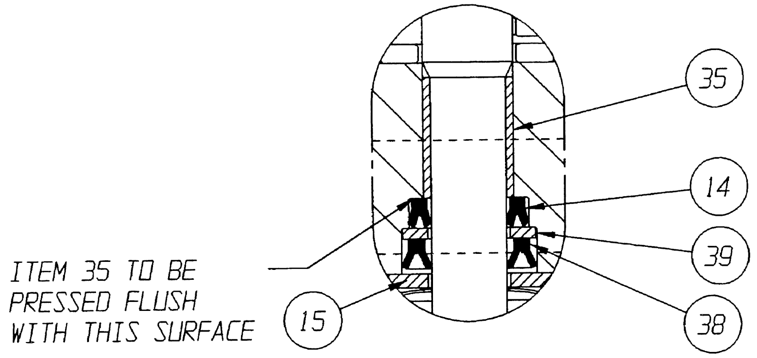
MAIN VALVE ASSEMBLY
SERIES T4100
-
-
-
-

SUPERSEDES: -

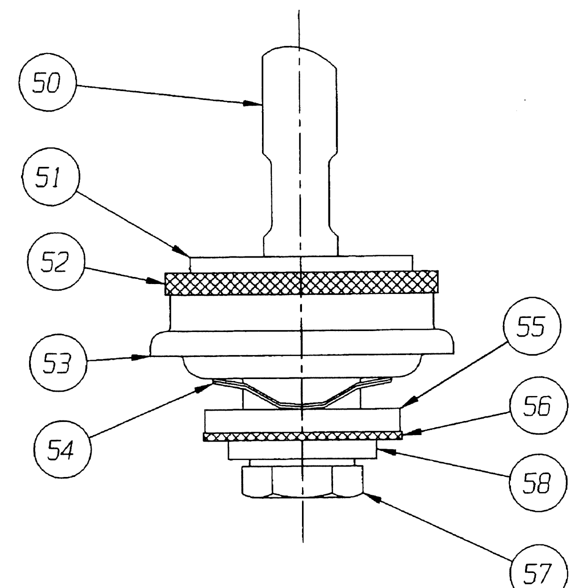
ITT Engineered Valves
ITT Fluid Technology Corporation
Lancaster, Pa
SHEET 1 OF 2

SIZE	DRAWING NUMBER	REV
C	03-014	F

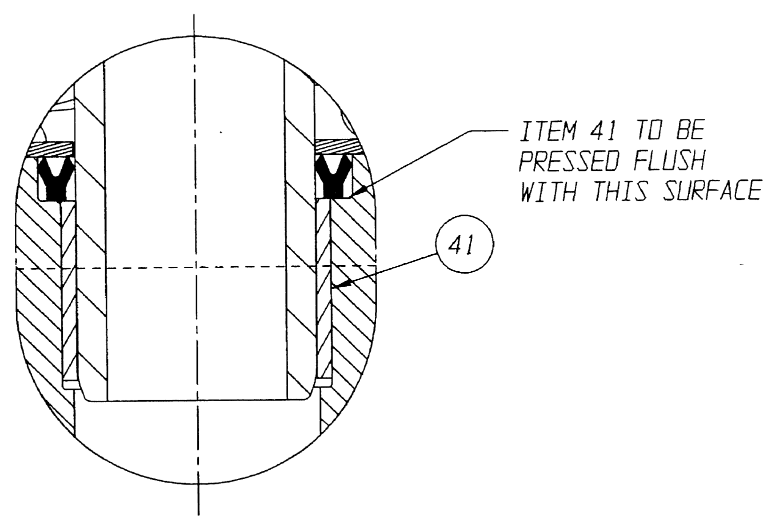
Printed On: 11/11/2016 09:28:34



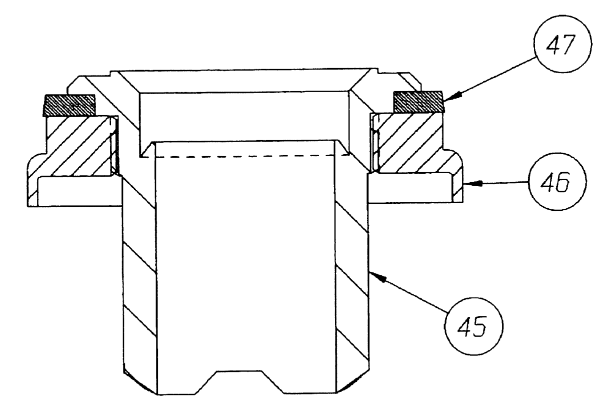
DETAIL A
SCALE 2:1



DETAIL C
SCALE 2:1



DETAIL B
SCALE 2:1



DETAIL D
SCALE 2:1

ECN#3575

REV	DATE	ECN NBR	BY	CHKD	APVD
-	-	-	-	-	-
F	6/18/99	4814	JDN	MJO	MJO
E	4/28/99	4622	JDN	MJO	MJO
D	12/15/98	3575	JDN	MJO	MJO
C	4/3/98	3575	JDN	MJO	MJO

TOLERANCES EXCEPT AS NOTED
DECIMALS
.XX ± .02
.XXX ±.005
ANGLES ±0.50°
REMOVE ALL BURRS AND SHARP EDGES
ALL MACHINED SURFACES TO BE 125 EXCEPT AS NOTED

	DATE	BY
DWN	4/3/98	JDN
CHKD	4/16/98	MJO
APVD	4/16/98	MJO

WEIGHT -
SCALE 1:1

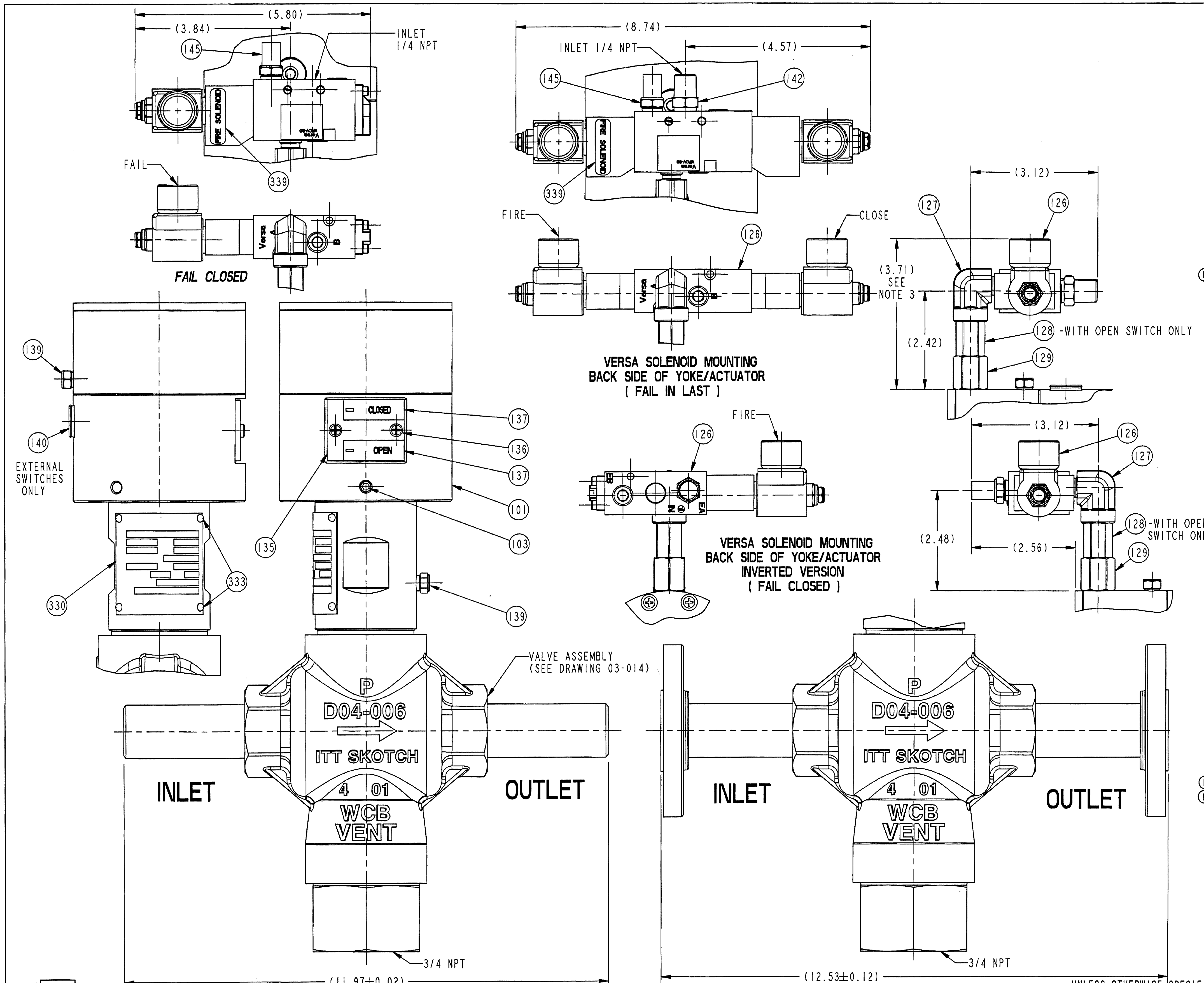
PART NO. -
PATTERN NO. -

MAIN VALVE ASSEMBLY
SERIES T4100
-
-
-
-

SUPERSEDES: -

ITT Engineered Valves
ITT Fluid Technology Corporation
Lancaster, Pa
SHEET 2 OF 2

SIZE C
DRAWING NUMBER 03-014
REV F



	LIST OF PARTS			
	ITEM	DWG. NO.	QTY.	DESCRIPTION
	101	-	1	YOKE T4100
	102	C2-2.1	4	CAPSCR-HEXSKT .25-20X2.75 CS (INT SWT)
			2	CAPSCR-HEXSKT .25-20X3.25 CS (EX SW NO POO)
			A/R	CAPSCR-HEXSKT .25-20X3.50 CS (EX SW,POC,POO)
	103	C2-2.5	3	SETSCR-HXSK 0.31-18UNC X 0.50 LG
	104	-	4	LOCKWASHER-SPRING HI-COLLAR 0.25
	106	-	1	SWITCH-LIM-4XE1 (INTERNAL) POC
	107	26-031	1	BRACKET-SWITCH-MOUNTING (POC)
	111	-	2	CAPSCR-HEXSKT 6-32X0.188 CS
	113	117587	1	PLATE-ACTR-LIMSW-T4100 AL
	115	-	A/R	SWITCH-LIM-4XE1 (INTERNAL) POO
	116	26-032	A/R	BRACKET-SWITCH-MOUNTING (POO)
	117	-	A/R	CAPSCR-HEXSKT 10-32X1.75 SS (EX N4 SW)
			A/R	CAPSCR-HEXSKT 10-32X1.50 SS (EX N7 SW)
			A/R	CAPSCR-HEXSKT 6-32X0.188 CS (INT POC/POO)
	119	-	A/R	LKWSHR-SPR-10 HI-COLLAR AS
	122	26-033	1	WIRING-BARRIER
	123	-	2	CAPSCR-HEXSKT 6-32X0.188 CS
(E)	125	117587	A/R	PLATE-ACTR-LIMSW-T4100 AL
		120209	A/R	PLATE-ACTR-LIMSW-T4100 W/COVER
	126	20-033	1	SOLV-SC-PETER PAUL
		-	1	SOLV-SC-VERSA-VPCV-60
			1	SOLV-DC-VERSA-VPCV-60
	127	-	1	FTG-0.25MNPTX0.25FNPT 90
			1	FTG-0.25MNPTX0.25MNPT 90
	128	-	1	NIPPLE-.125X1.00 BS (PETER PAUL, INT SW)
			1	NIPPLE-.125NPTX2.50 BRS (PETER PAUL EX SW)
			1	FTG-0.25MNPTX0.25MNPT STR (VERSA SC/DC)
	129	-	1	FTG-0.25FNPTX0.12MNPT ADPTR (VERSA SC/DC)
	135	06-102	1	LENS
	136	-	2	MCHSCR-PAN HD 8-32X0.250 CS PLATED
	137	90-016	1	DECAL-SET
	139	-	1	VENT-BREATHER .125 MNPT
	140	-	1	CONDUIT-PLUG .5
	142	-	1	VALVE-CHECK-INLET-CMMQ20
	145	-	1	MUFFLER-ALWITCO-PM-MODEL-P28 (VERSA ONLY)
	147	117589	1	ACT-LIMSW-EXT-T4100 SS
		117398	1	TARGET-PRXSW T4100
	150	-	A/R	SWITCH-LIMIT-NEMA4 (POO)
			A/R	SWITCH-LIMIT-NEMA7 (POO)
	151	-	A/R	SWITCH-LEVER-STD-STEEL-ROLLER (POO)
			A/R	SWITCH-LEVER-NEMA7-NYLON-ROLLER (POO)
	152	-	A/R	SWITCH-PRX (POO)
	153	117404	A/R	BRKT-SW-T4100 (POO)
	154	-	A/R	SWITCH ROLLER ACT KIT JM-5 (POO)
	157	-	1	CAPSCR-HEX .50-20X2.25
	158	-	1	LKWSHR-SPR 0.50 SS
	159	117436	1	SPCR-T4100-PF AL
	160	-	1	SWITCH-LIMIT-NEMA4 (POC)
			1	SWITCH-LIMIT-NEMA7 (POC)
	161	-	1	SWITCH-LEVER-STD-STEEL-ROLLER (POC)
			1	SWITCH-LEVER-NEMA7-NYLON-ROLLER (POC)
	162	-	1	SWITCH-PRX (POC)
	163	117404	1	BRKT-SW-T4100 (POC)
	164	-	1	SWITCH-ROLLER-ACT-KIT JM-5 (POC)
	165	07-025	1	CYLINDER-PNEUMATIC-T4100
		07-027	1	CYLINDER-DBL-ROD-END-T4100
	166	06-101	1	CONNECTOR-STEM-T4100
	167	36-154	1	DOWEL-PIN 0.19X1.75 SS
(E)	220	120210	1	COVER-SWITCH MEMA 7
(E)	221	-	4	CAPSCR-BUTHD 10-32 X.50
	330	119107	1	TAG-VALVE-NON-FM-SS
		119106	1	TAG-VALVE-FM-SS
	333	-	4	RIVET
	336	117760	A/R	LABEL-OPEN-LIMIT-SWITCH
	338	117500	1	LABEL-POC-SWITCH
	339	117501	1	LABEL-FIRE-SOLENOID

NOTES:
1. AUXILLIARY (OPEN) SWITCH MAY NOT BE REQUIRED.
2. ACTUATOR MAY BE ROTATED AS REQUIRED.
3. THIS DIMENSION DECREASES IF OPEN SWITCH IS NOT INSTALLED.

ECN# 10317

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN BRACKETS ARE MILLIMETERS. PATTERN NO.

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED

INCH	MM
X = ± 0.06	[X] = ± [.76]
.X = ± 0.03	[.X] = ± [.5]
.XX = ± 0.02	[.XX] = ± [.12]
.XXX = ± 0.005	
X/X = ± 1/16	
.X° = ± .5°	.X° = ± .5°
X° = ± 1°	X° = ± 1°

REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE ✓ EXCEPT AS NOTED.

WEIGHT		SCALE 4:5
	DATE	BY
DWN	3/10/06	JJW
CHKD	3/10/06	HCL
APVD	3/10/06	HCL

VALVE ACTUATOR ASSY
T4100
-
-
-

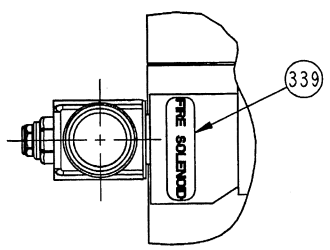
SUPERSEDES:

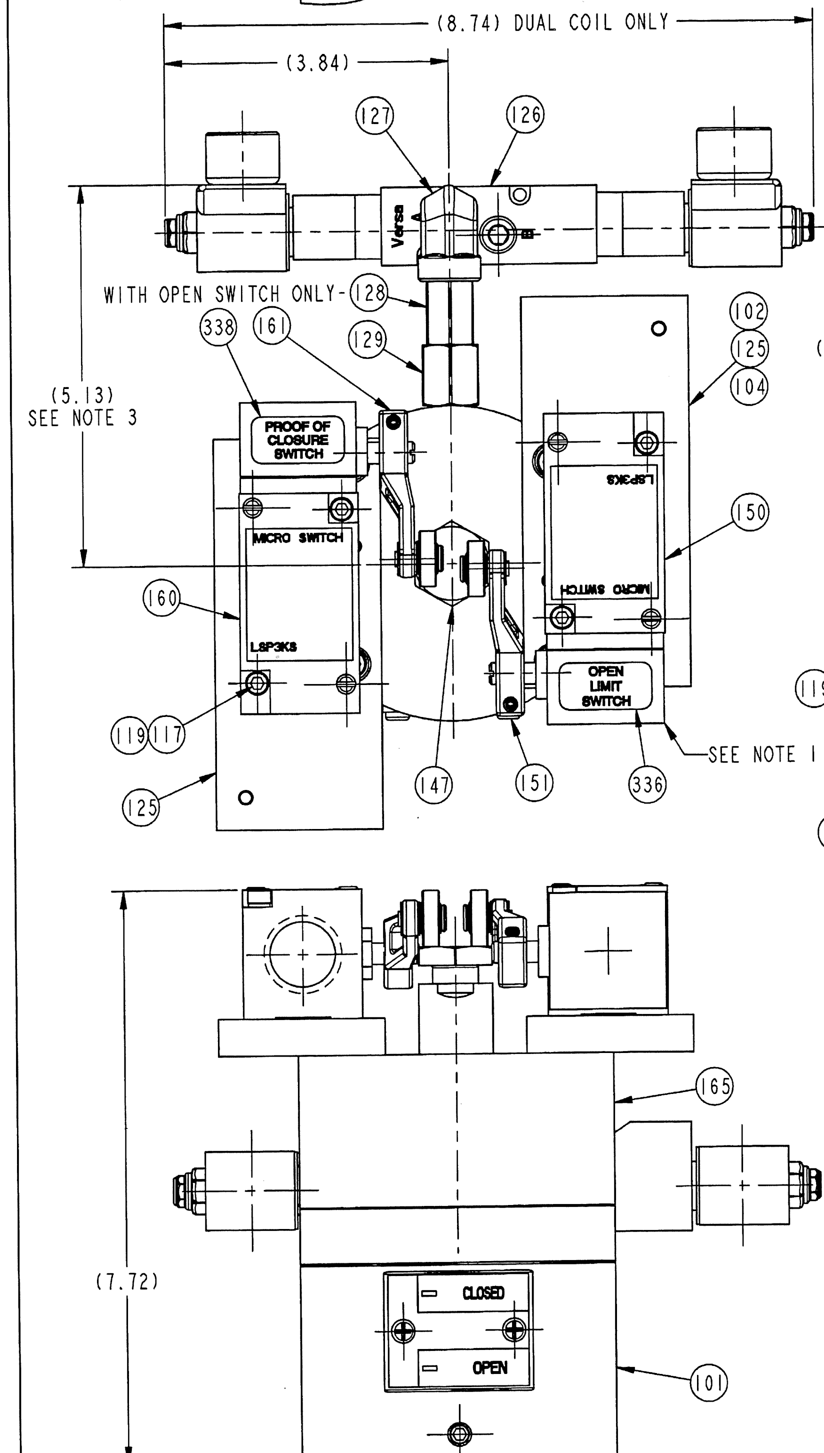
ITT
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117591	1 OF 3	E

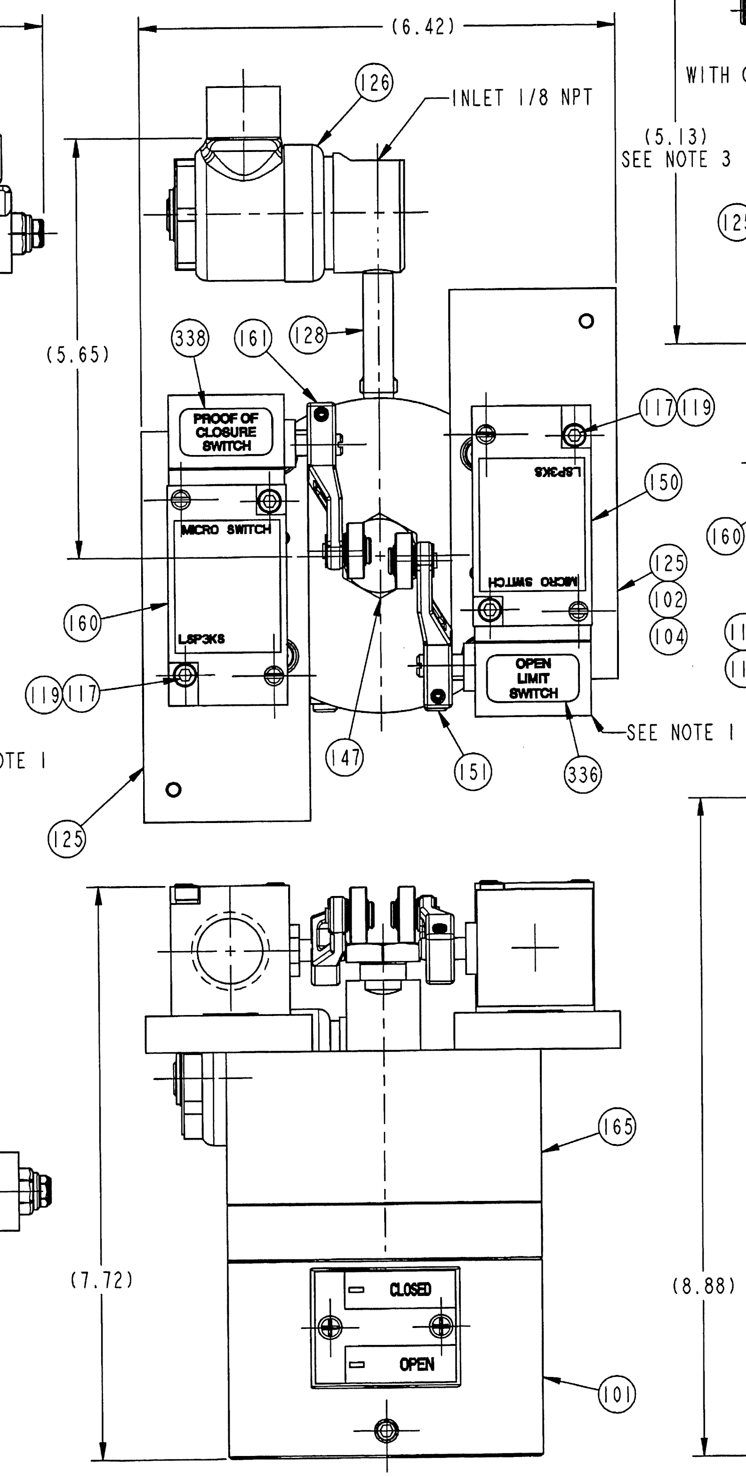
EV_D 01/20/06

FILE COPY

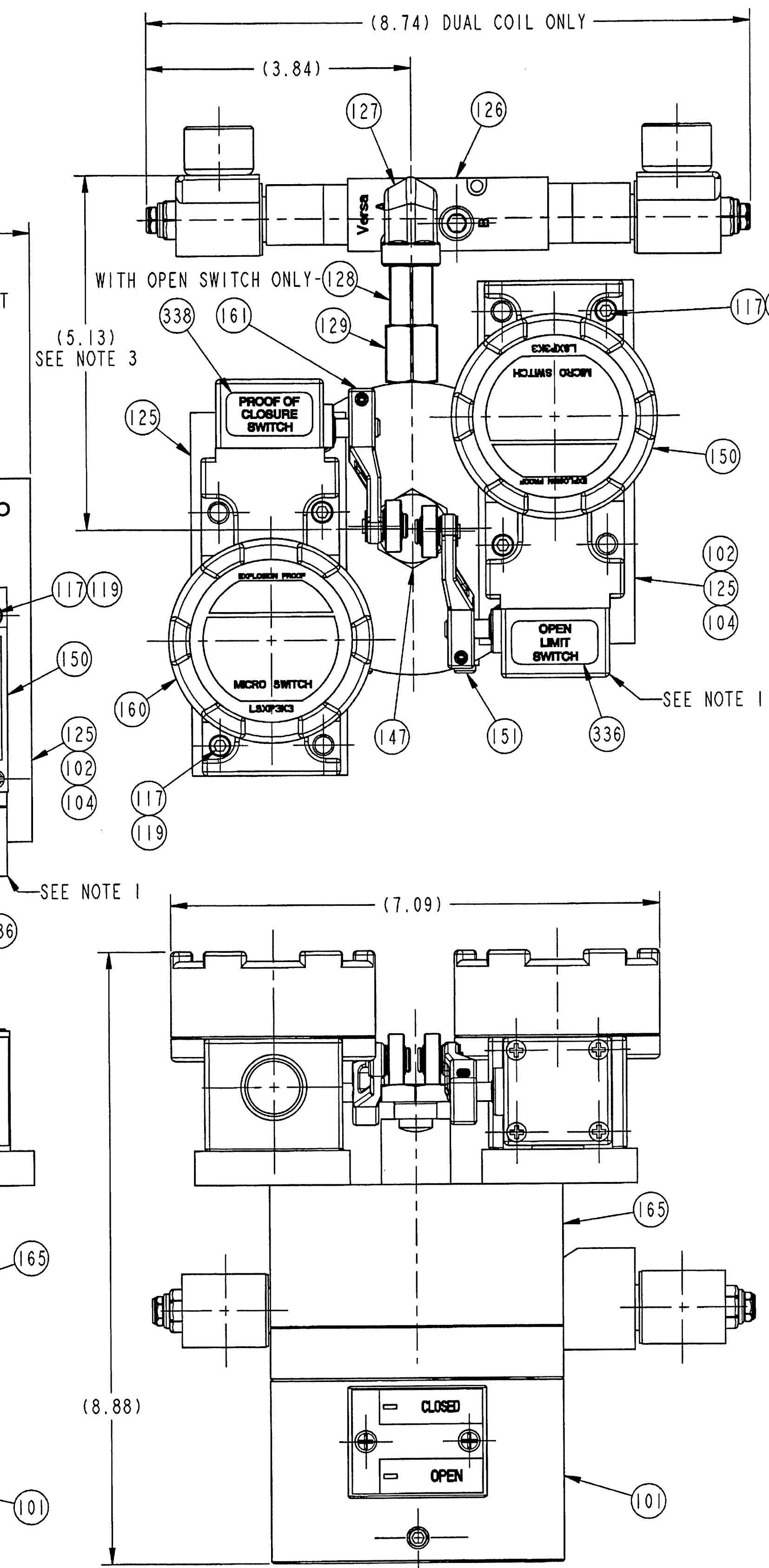




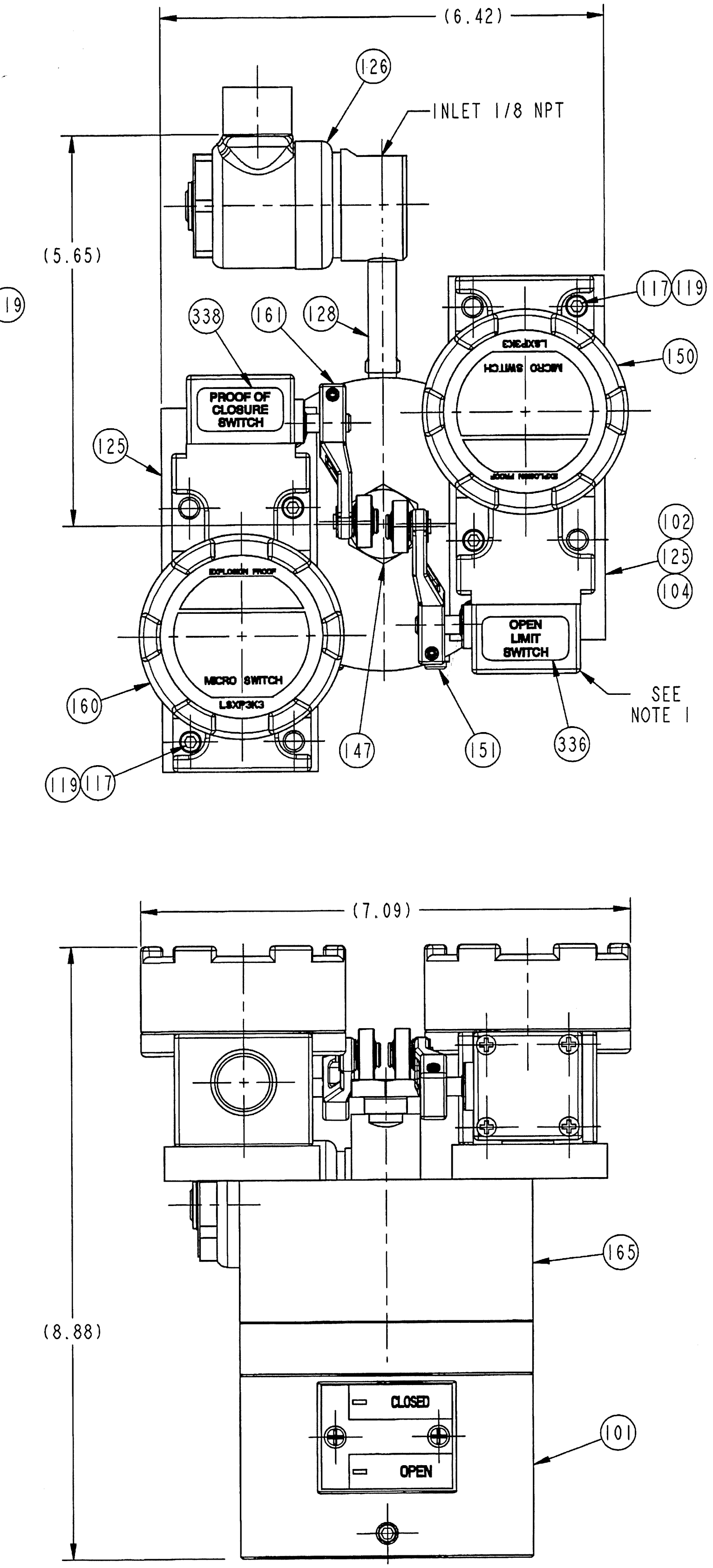
NEMA 4 W/ VERSA SOLENOID



NEMA 4 W/ PETER-PAUL SOLENOID



NEMA 7 W/ VERSA SOLENOID



NEMA 7 W/ PETER-PAUL SOLENOID

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN BRACKETS ARE MILLIMETERS. PATTERN NO.

ECN# 10317

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED

INCH	MM
.X = ± 0.06	(X) = ± [.76]
.XX = ± 0.03	(.X) = ± [.51]
.XXX = ± 0.005	(.XX) = ± [.12]
X/X = ± 1/16	

REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE EXCEPT AS NOTED.

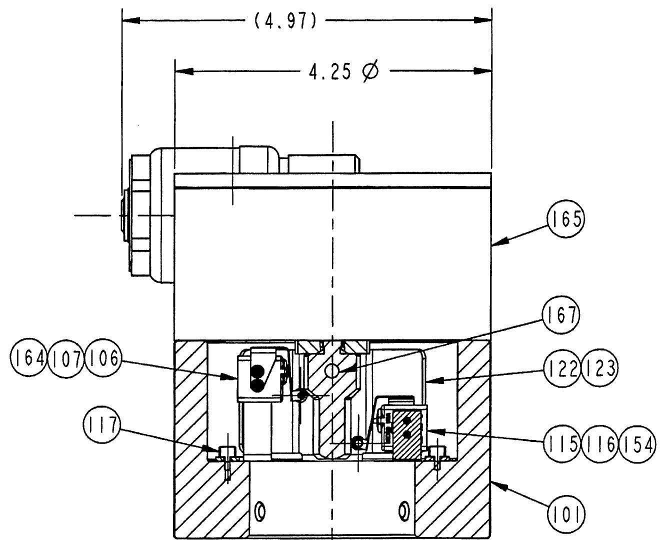
WEIGHT	SCALE 4:5	
	DATE	BY
DWN	3/10/06	
CHKD	3/10/06	HCL
APVD	3/10/06	HCL

VALVE ACTUATOR ASSY
T4100

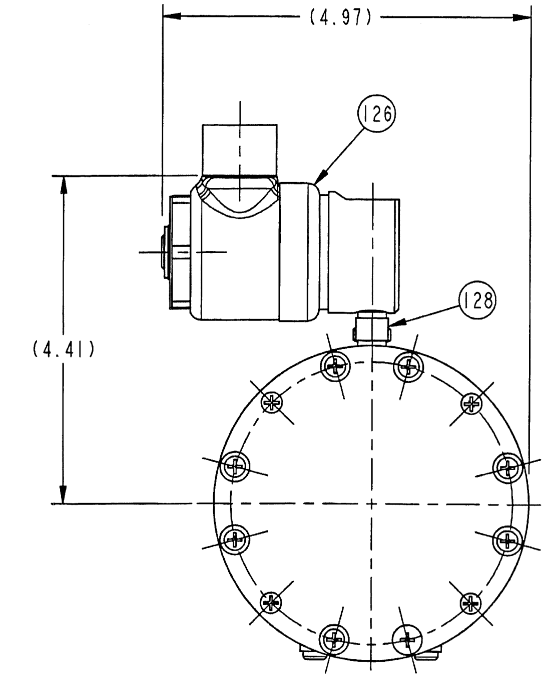
SUPERSEDES:

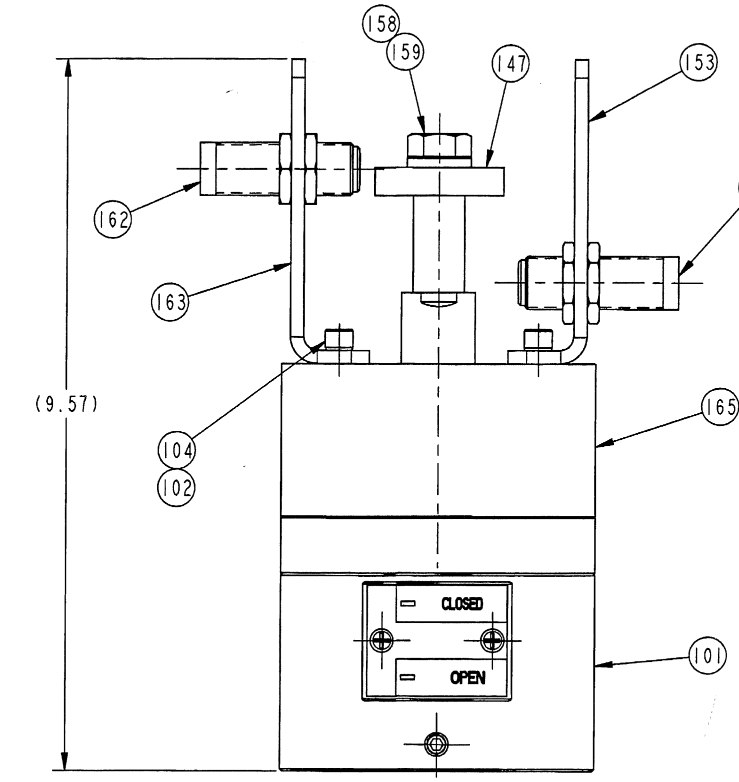
ITT Engineered Valves Group Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117591	2 OF 3	E

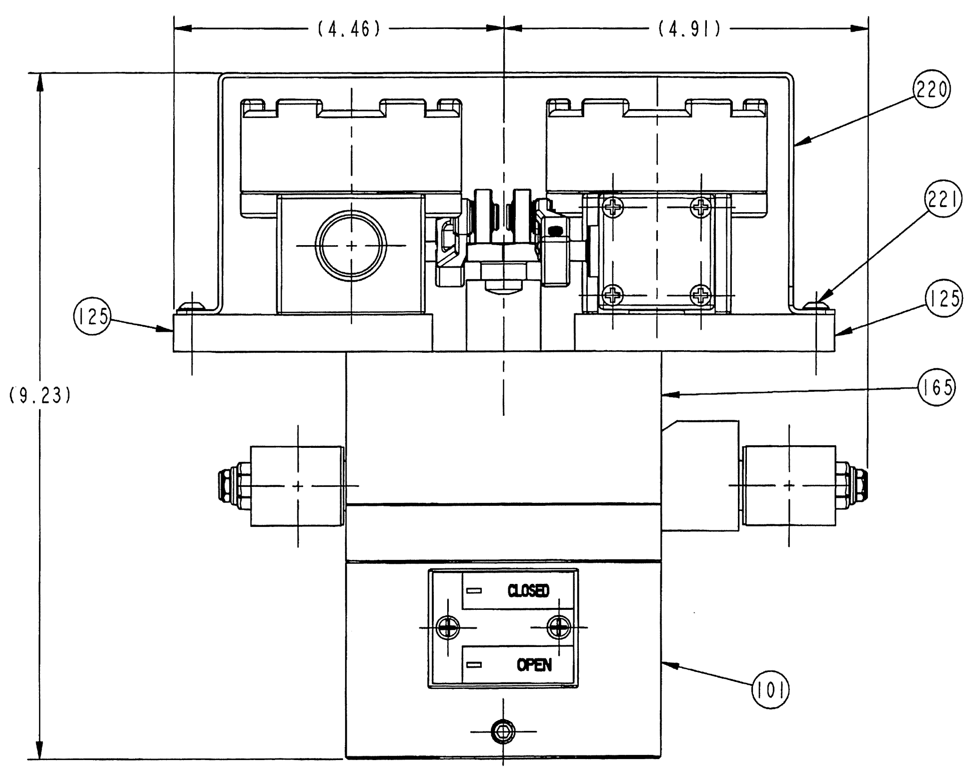


INTERNAL SWITCH



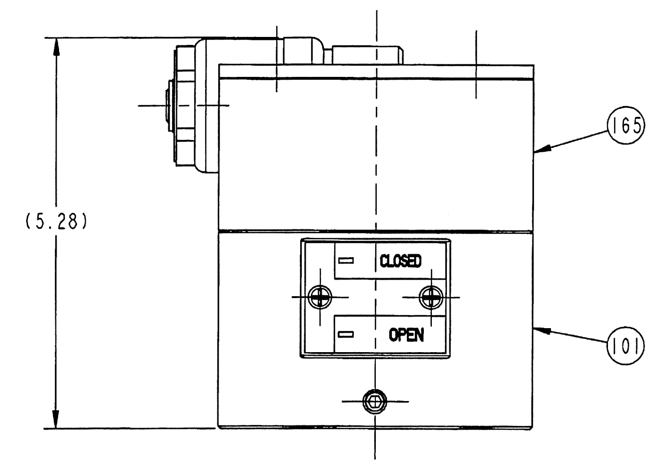


PROXIMITY SWITCHES

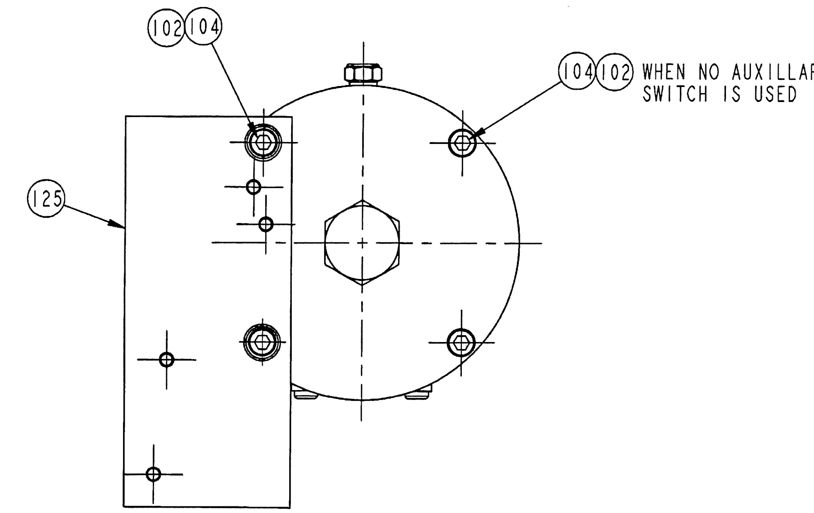


E

NEMA 7 W/ VERSA SOLENOID
AND SWITCH COVER



INTERNAL SWITCH
W/ PETER-PAUL SOLENOID



ADAPTER BLOCK DETAIL

ECN# 10317

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN BRACKETS ARE MILLIMETERS. PATTERN NO.

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED INCH	MM
X = ± 0.06	
.X = ± 0.03	[X] = ± [.76]
.XX = ± 0.02	[.X] = ± [.5]
.XXX = ± 0.005	[.XX] = ± [.12]
X/X = ± 1/16	
.X° = ± .5°	.X° = ± .5°
X° = ± 1°	X° = ± 1°

REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED.

	DATE	BY
DWN	3/10/06	GJW
CHKD	3/10/06	HCL
APVD	3/10/06	HCL

WEIGHT | SCALE 3:50

VALVE ACTUATOR ASSY
T4100
-
-
-

SUPERSEDES:

ITT Engineered Valves Group Lancaster, PA USA

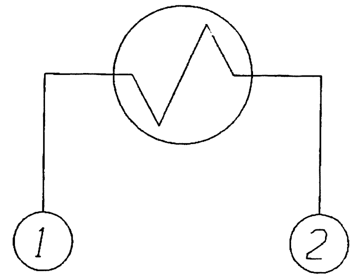
SIZE	DRAWING NUMBER	SHEET	REV
D	117591	3 OF 3	E

EV.D 01/20/06

Printed On: 11/11/2016 09:38:58

FILE COPY

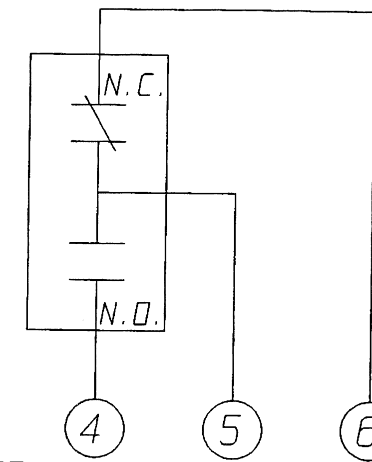
FAIL CLOSED PILOT SOLENOID
COIL A "FIRE"



COMMON

OPEN BLOCK VALVES CLOSE VENT

(A) PROOF OF CLOSURE SWITCH

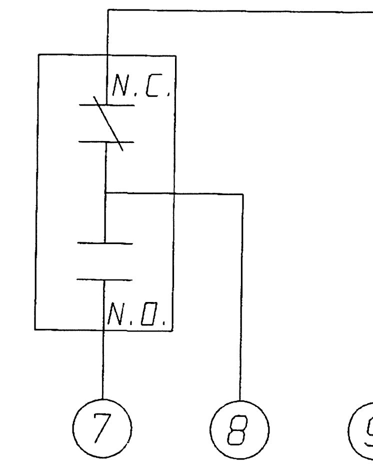


NORMALLY OPEN CONTACT

COMMON

NORMALLY CLOSED CONTACT

(A) AUXILLIARY OR OPEN SWITCH (OPTIONAL)

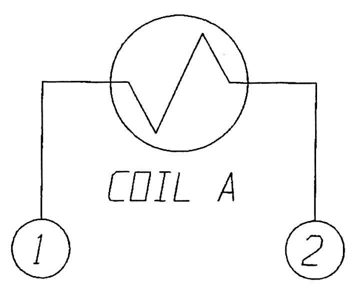


NORMALLY OPEN CONTACT

COMMON

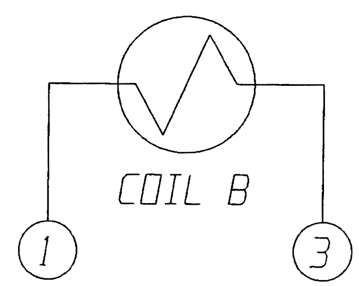
NORMALLY CLOSED CONTACT

FAIL IN LAST PILOT SOLENOID
COIL A "FIRE" & COIL B "CLOSED"



COMMON

OPEN BLOCK VALVES CLOSE VENT



COMMON

CLOSE BLOCK VALVES OPEN VENT

NOTES:

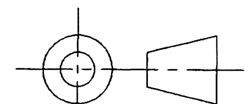
1. ALL SWITCHES SHOWN WITH BLOCK VALVES CLOSED. VENT OPEN
2. PROOF OF CLOSURE SWITCH CHANGES STATE ON INITIAL STEM MOVEMENT. AUXILLIARY OR OPEN SWITCH (IF SUPPLIED) CHANGES STATE WHEN OPEN.
3. O - REPRESENTS A WIRE MARKER NUMBER
4. FOR EXTERNAL MOUNTED SWITCHES (OPTIONAL) SEE SWITCH NAMEPLATE
5. IF EQUIPPED GREEN WIRE FOR GROUND IS NOT MARKED WITH WIRE NUMBERS
6. (A) FOR OPTIONAL GO PROXIMITY SWITCHES, WIRE IDENTIFICATION IS AS FOLLOWS:
   - NORMALLY OPEN: BLUE WIRE
   - COMMON: BLACK WIRE
   - NORMALLY CLOSED: RED WIRE

ECN#09272

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN BRACKETS ARE MILLIMETERS. PATTERN NO. -

EV B 03/25/04

THIRD ANGLE PROJECTION



UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED

INCH	MM
X = ± 0.06	
.X = ± 0.03	[X] = ± [.76]
.XX = ± 0.02	[.X] = ± [.5]
.XXX = ± 0.005	[.XX] = ± [.12]
X/X = ± 1/16	
.X° = ± .5°	.X° = ± .5°
X° = ± 1°	X° = ± 1°

REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED.

	DATE	BY
WEIGHT -	SCALE -	
DWN	9/3/04	HCd
CHKD	9/3/04	HCd
APVD	9/3/04	HCd

WIRING DIAGRAM
T4100C
-
-
-
-

SUPERSEDES: -

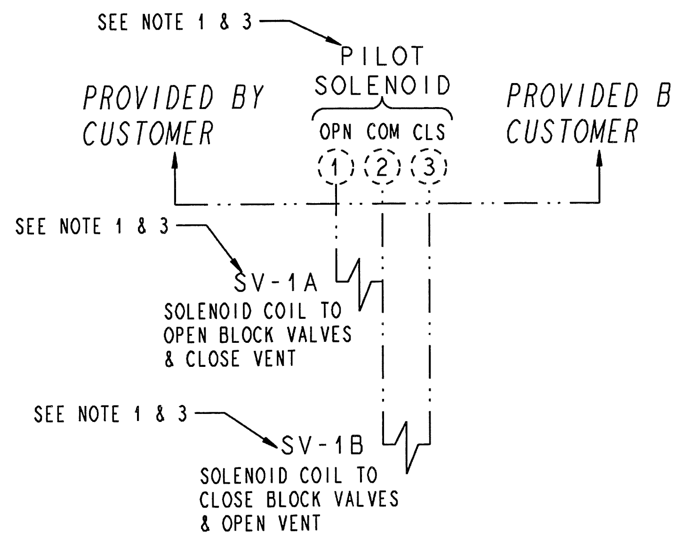
ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
B	117620	1 OF 1	A

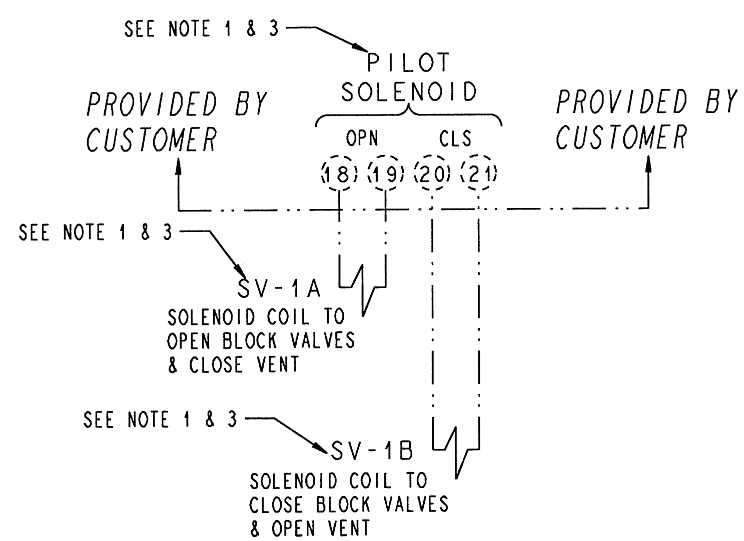
FILE COPY

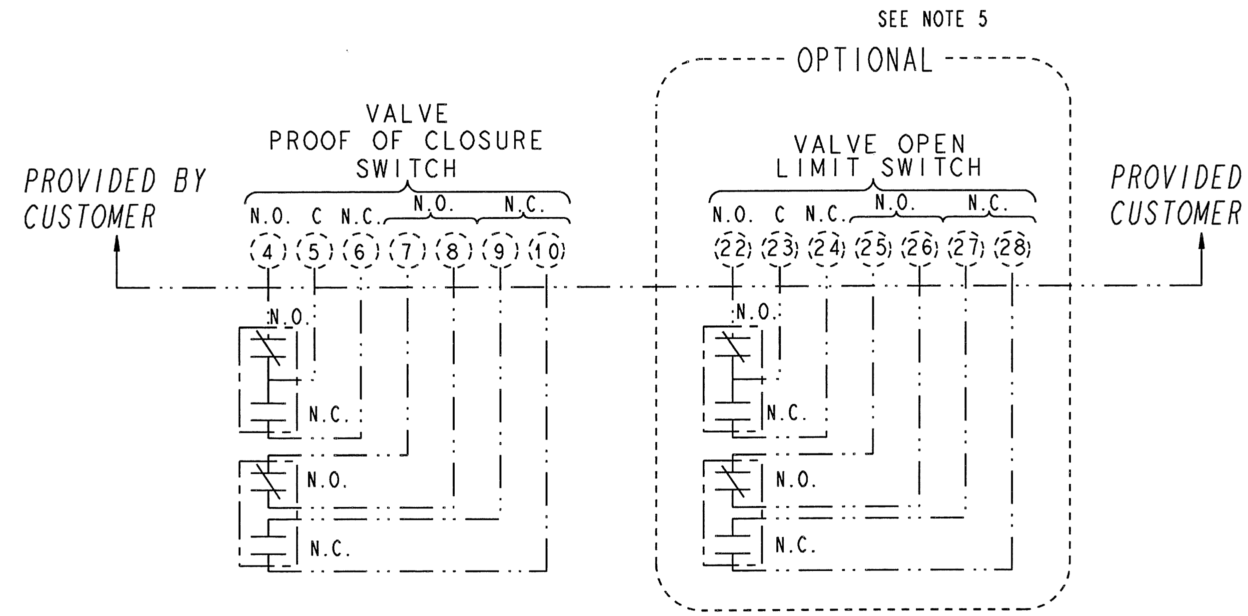
Printed On: 11/11/2016 09:49:25

AC SOLENOID



DC SOLENOID





SWITCH LOGIC

SWITCH TYPE	VALVE P.O.C. SWITCH				VALVE OPEN LIMIT SWITCH			
TERMINALS	4-5	5-6	7-8*	9-10*	22-23	23-24	25-26*	27-28*
BLOCK VALVES CLOSED VENT OPEN	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢
BLOCK VALVES OPEN VENT CLOSED	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢

*THESE TERMINALS ONLY PROVIDED ON ORDERS SUPPLIED WITH DPDT SWITCH CONTACT CONFIGURATION.

NOTES:
1. CONSULT ORDER SPECIFICATION OR SOLENOID NAMEPLATE FOR SOLENOID VOLTAGE RATING AND TYPE.
2. ALL SWITCHES SHOWN WITH BLOCK VALVES IN CLOSED POSITION & VENT OPEN.
3. SV-1A & SV-1B REPRESENT THE MAGNETIC COILS ON THE SOLENOID. FOR FAIL CLOSED VALVES ONLY SV-1A IS SUPPLIED. THIS IS A MAINTAINED CONTACT SOLENOID. WHEN ENERGIZED THE VALVE OPENS. FAIL-IN-LAST VALVES SV-1B IS USED IN ADDITION TO SV-1A. THESE REQUIRE MOMENTARY CONTACTS IN THIS APPLICATION. BOTH COILS CANNOT BE ENERGIZED SIMULTANEOUSLY OR DAMAGE WILL OCCUR.
4. WIRING SHOWN FOR DPDT SWITCHES. FOR SPDT DELETED WIRE NUMBERS 7,8,9,10, 25,26,27 AND 28. SEE ORDER SPECIFICATION FOR TYPE AND RATING.
5. NOT NORMALLY SUPPLIED.

THIS IS A FACTORY MUTUAL CONTROLLED DOCUMENT. CHANGES MUST BE APPROVED BY FM PRIOR TO IMPLEMENTING.

PATTERN NO. -

ECN# 17150

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES, IN BRACKETS [ ] ARE MILLIMETERS

WEIGHT	SCALE
-	-

	DATE	BY
DWN	02/05/18	DJS
CHKD	02/05/18	HCL
APVD	02/05/18	HCL

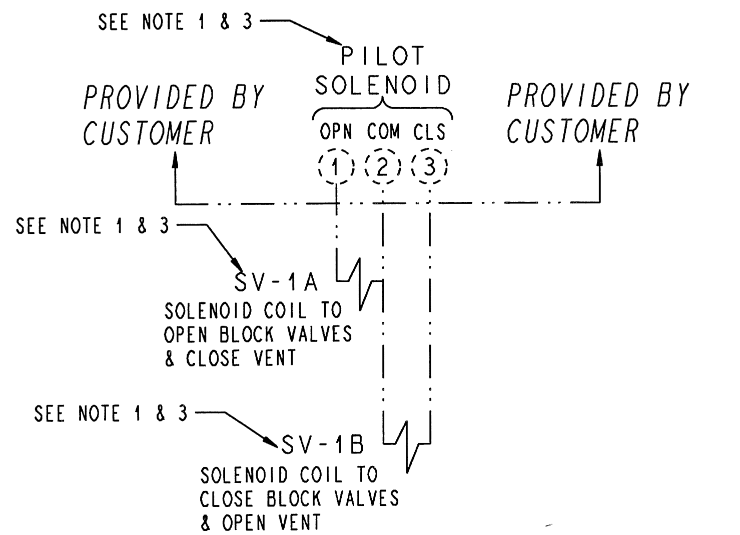
WIRING DIAGRAM
T4100C EXTERNAL
LIMIT SWITCH

SUPERSEDES: -

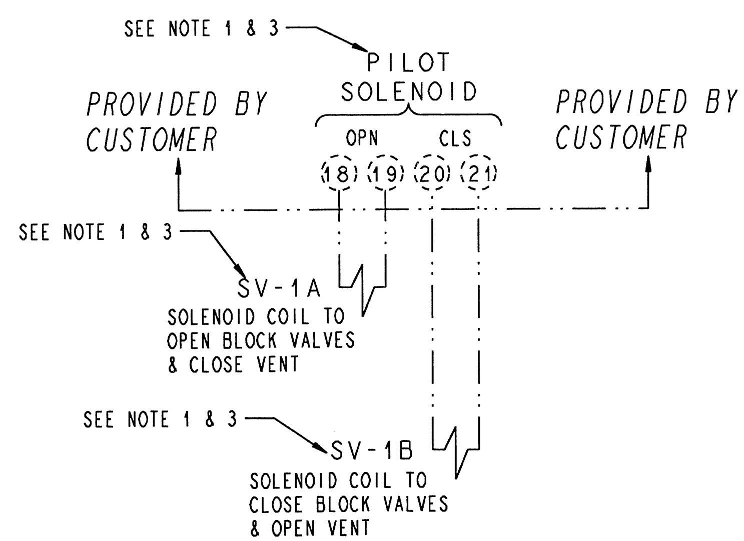
ITT LANCASTER, PA USA

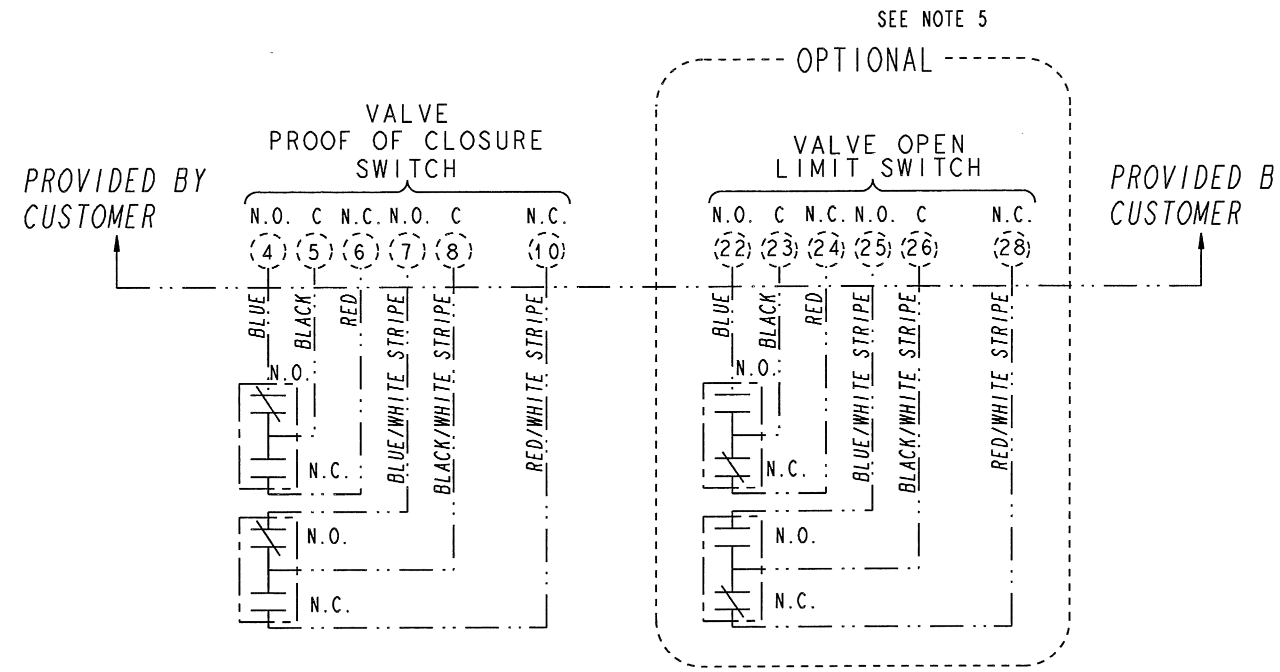
SIZE	DRAWING NUMBER	SHEET	REV
D	123979	1 OF 1	-

AC SOLENOID



DC SOLENOID





SWITCH LOGIC

SWITCH TYPE	VALVE P.O.C. SWITCH				VALVE OPEN LIMIT SWITCH			
TERMINALS	4-5	5-6	7-8*	8-10*	22-23	23-24	25-26*	26-28*
BLOCK VALVES CLOSED VENT OPEN	-|/|-	-||-	-|/|-	-||-	-||-	-|/|-	-||-	-|/|-
BLOCK VALVES OPEN VENT CLOSED	-||-	-|/|-	-||-	-|/|-	-|/|-	-||-	-|/|-	-||-

*THESE TERMINALS ONLY PROVIDED ON ORDERS SUPPLIED WITH DPDT SWITCH CONTACT CONFIGURATION.

NOTES:
1. CONSULT ORDER SPECIFICATION OR SOLENOID NAMEPLATE FOR SOLENOID VOLTAGE RATING AND TYPE.
2. ALL SWITCHES SHOWN WITH BLOCK VALVES IN CLOSED POSITION & VENT OPEN.
3. SV-1A & SV-1B REPRESENT THE MAGNETIC COILS ON THE SOLENOID.
   FOR FAIL CLOSED VALVES ONLY SV-1A IS SUPPLIED. THIS IS A MAINTAINED CONTACT SOLENOID. WHEN ENERGIZED THE VALVE OPENS.
   FAIL-IN-LAST VALVES SV-1B IS USED IN ADDITION TO SV-1A. THESE REQUIRE MOMENTARY CONTACTS IN THIS APPLICATION. BOTH COILS CANNOT BE ENERGIZED SIMULTANEOUSLY OR DAMAGE WILL OCCUR.
4. WIRING SHOWN FOR DPDT SWITCHES. FOR SPDT DELETED WIRE NUMBERS 7,8,10, 25,26 AND 28. SEE ORDER SPECIFICATION FOR TYPE AND RATING.
5. NOT NORMALLY SUPPLIED.

THIS IS A FACTORY MUTUAL CONTROLLED DOCUMENT. CHANGES MUST BE APPROVED BY FM PRIOR TO IMPLEMENTING.

PATTERN NO. -

ECN# 17150

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES, IN BRACKETS [ ] ARE MILLIMETERS

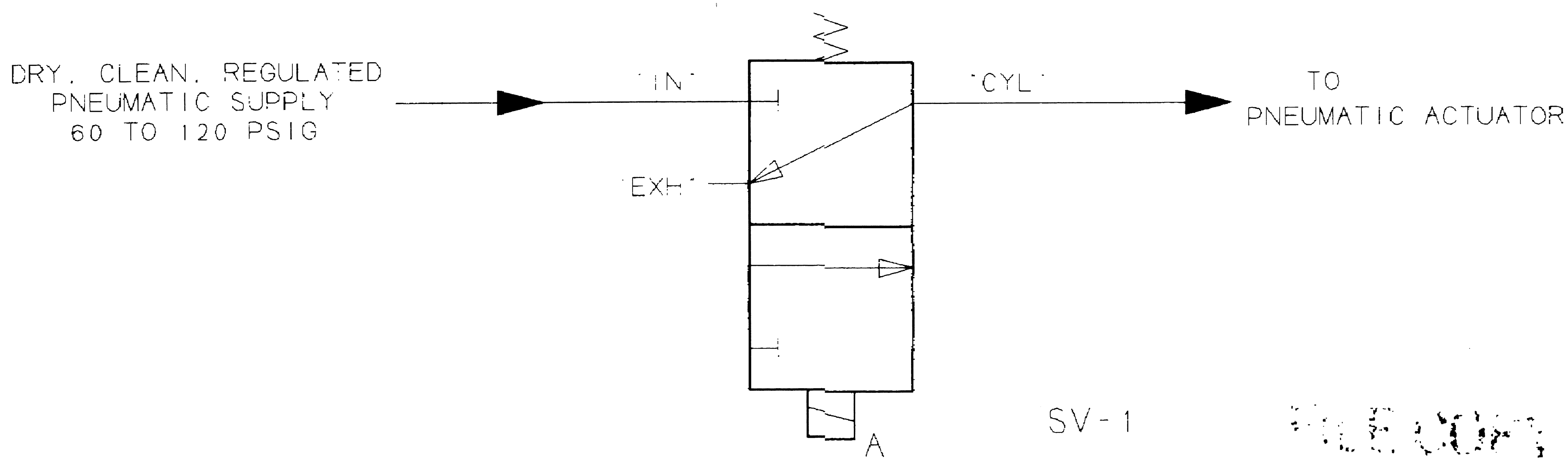
DWN	02/05/18 DJS
CHKD	02/05/18 HCL
APVD	02/05/18 HCL

WIRING DIAGRAM T4100C EXTERNAL GO SWITCH

SUPERSEDES: -

ITT LANCASTER, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	123980	1 OF 1	-



NOTES:

2) PILOT VALVE SHOWN IN DE-ENERGIZED STATE.

1) SV-1A IS A SINGLE COIL, SPRING RETURN, SOLENOID OPERATED PILOT VALVE, MAINTAINED CONTACT TYPE, WHICH CONTROLS THE MAIN VALVE'S POSITION.

LTR	DESCRIPTION	BY	DATE

REVISIONS

NEXT ASSY: ALL T4106 SYSTEMS

DWN BY: GCS — DATE: 9/91

CHKD BY: JRB — DATE: 9/91

APPROVAL

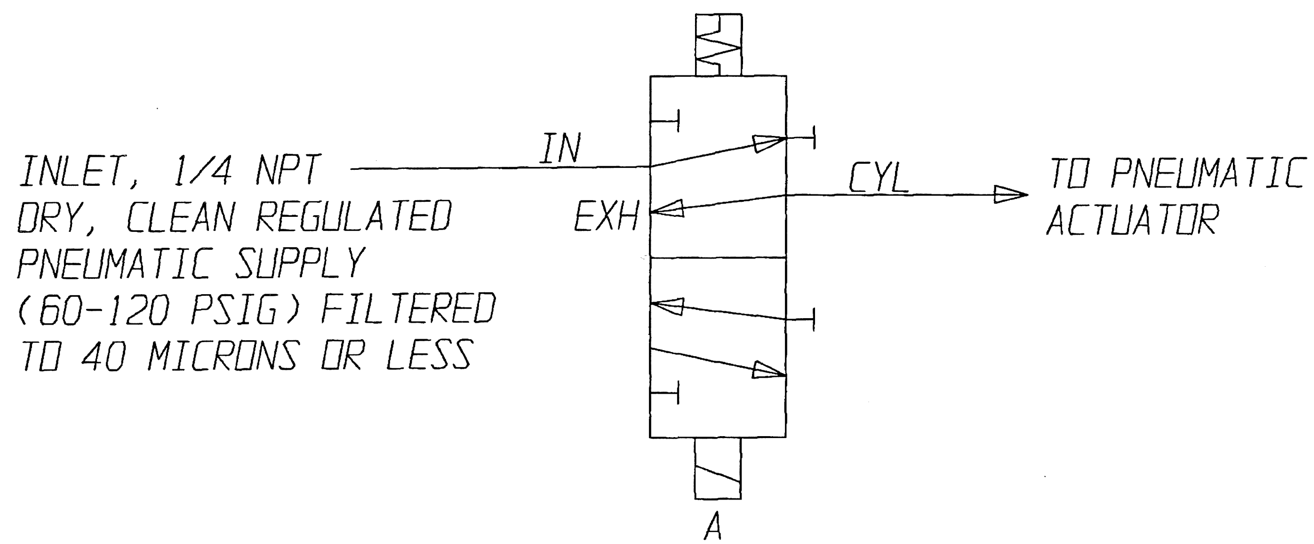
ITT Engineered Valves
ITT Fluid Technology Corporation
Lancaster, Pennsylvania U.S.A.

CODE IDENT: 3V292

TITLE: PNEUMATIC SCHEMATIC MODEL T4106 TRIFECTA VALVE

SIZE: A — DRAWING NO: A62-010

SCALE NONE — WGT N/A — SHT 1 OF 1



NOTES:

1. SV-1A IS A SINGLE COIL SPRING RETURN SOLENOID OPERATED PILOT VALVE, MAINTAINED CONTACT TYPE, WHICH CONTROLS THE MAIN VALVES POSITION.
2. PILOT VALVE SHOWN IS IN DE-ENERGIZED STATE.

ECN#6510

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN BRACKETS ARE MILLIMETERS. PATTERN NO. -

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED

INCH	MM
X = ± 0.06	
.X = ± 0.03	[X] = ± [.76]
.XX = ± 0.02	[.X] = ± [.5]
.XXX = ± 0.005	[.XX] = ± [.12]
X/X = ± 1/16	
.X° = ± .5°	.X° = ± .5°
X° = ± 1°	X° = ± 1°

REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED.

WEIGHT	SCALE
-	-

	DATE	BY
DWN	05/20/2003	JMG
CHKD	05/20/2003	[illegible]
APVD	05/20/2003	[illegible]

PNEUMATIC SUPPLY
GAS IGNITER VALVE
T4150C, T4200C
VERSA SINGLE COIL
-
-
-

SUPERSEDES: -

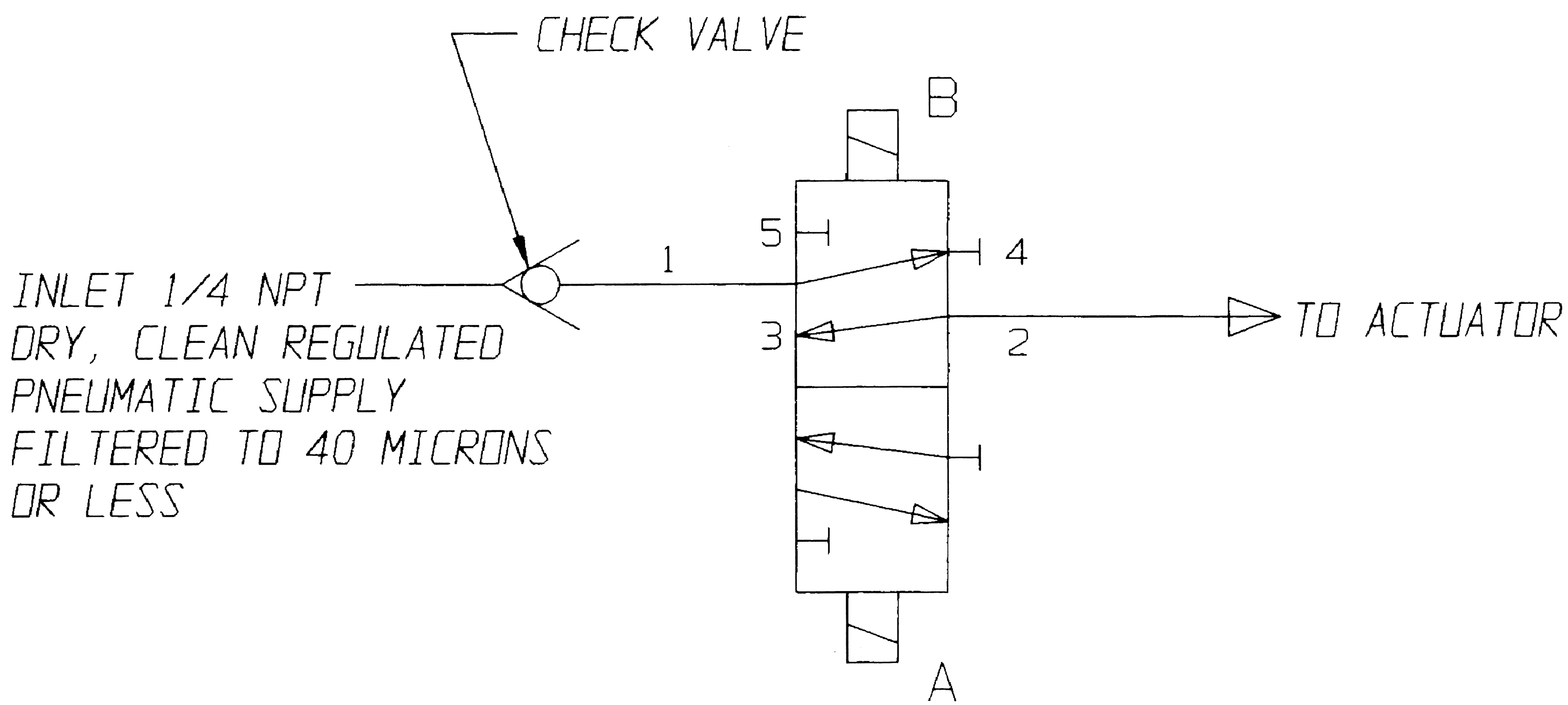
ITT Industries
Engineered Valves
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
B	119429	1 OF 1	-

EV B 02/28/03

FILE COPY

PORTS		
SUPPLY	1	IN
ACTUATOR	2	A
CYL EXH	3	EA
PLUG	4	B
PLUG	5	EB



NOTES:
1. VALVE SHOWN WITH COIL B LAST ENERGIZED.

ECN#3575

PART NO. -

PATTERN NO. -

TOLERANCES EXCEPT AS NOTED
DECIMALS
.XX ± .02
.XXX ± .005
ANGLES ±0.50°
REMOVE ALL BURRS AND SHARP EDGES
ALL MACHINED SURFACES TO BE 125 EXCEPT AS NOTED

WEIGHT	SCALE
-	NTS

	DATE	BY
DWN	4/22/98	JDW
CHKD	4/22/98	MJC
APVD	4/22/98	MJC

PNEUMATIC SUPPLY
GAS BURNER VALVE
T4100
FAIL IN LAST
-
-

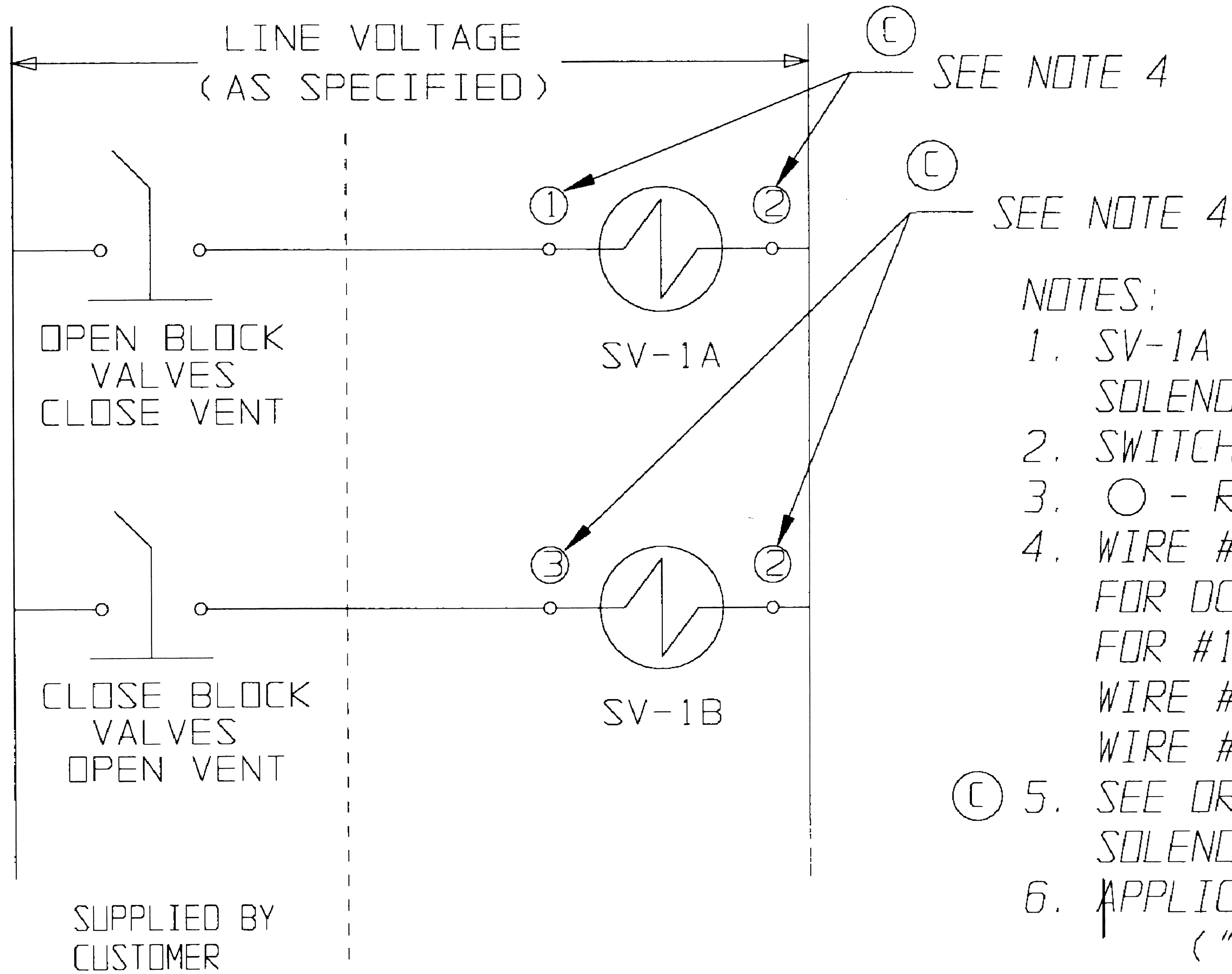
SUPERSEDES: -

ITT Engineered Valves
ITT Fluid Technology Corporation
Lancaster, Pa

SHEET 1 OF 1

SIZE	DRAWING NUMBER	REV
A	117624	-

Printed On: 11/11/2016 10:45:03



FILE COPY

NOTES:

1. SV-1A AND SV-1B FORM A DUAL COIL SOLENOID VALVE CONTROLLING GAS FLOW.
2. SWITCHES ARE MOMENTARY CONTACT TYPE.
3. ○ - REPRESENTS A WIRE #.
4. WIRE #'S SHOWN ARE FOR AC SOLENOIDS. FOR DC VOLTAGE, SUBSTITUTE WIRE #18 FOR #1, WIRE #19 FOR SV-1A COIL WIRE #2, WIRE #20 FOR #3, AND WIRE #21 FOR SV-1B COIL WIRE #2.
5. (C) SEE ORDER SPECFCATION FOR SOLENOID VOLTAGE RATING.
6. APPLICATION - ALL T4X05 SYSTEMS ("X" DENOTES LINE SIZE).

WR# -

PART NO. -

PATTERN NO. -

REV	DATE	ECN NBR	BY	CHKD	APVD
-	-	-	-	-	-
-	-	-	-	-	-
C	10/24/94	1035	[illegible]	MJB	MJB
B	10/90	-	JRB	-	-
A	1/89	-	JRB	-	-

TOLERANCES EXCEPT AS NOTED
DECIMALS
.XX ± .02
.XXX ± .005
ANGLES ±0°-30'
REMOVE ALL BURRS AND SHARP EDGES
ALL MACHINED SURFACES TO BE 125 EXCEPT AS NOTED

WEIGHT -
SCALE -

	DATE	BY
DWN	1/89	GCS
CHKD	1/89	JRB
APVD		

ELECTRICAL SCHEMATIC
GAS BURNER VALVE
PNEUMATIC - FAIL IN LAST
-
-
-

SUPERSEDES: -

ITT Engineered Valves
ITT Fluid Technology Corporation
Lancaster, Pa
SHEET 1 OF 1

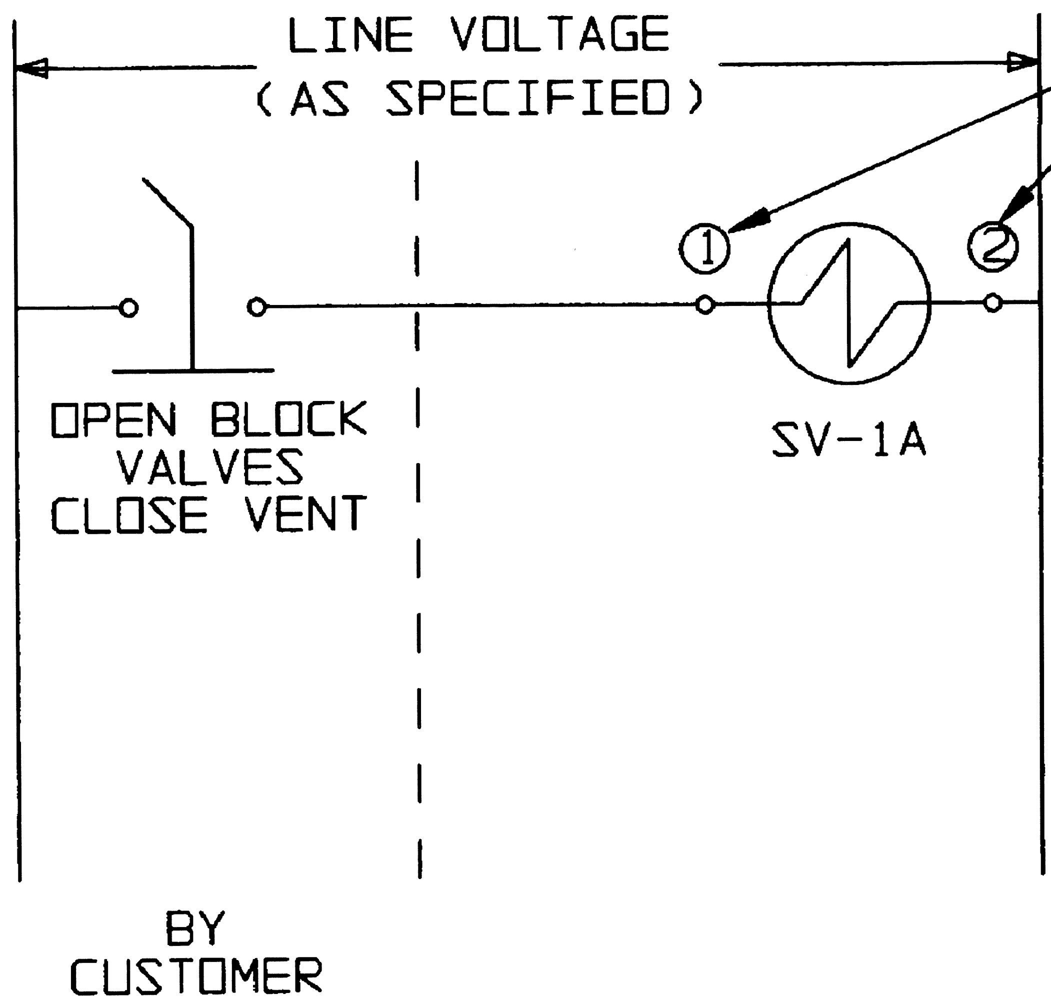
A
60-021
REV C

Printed On: 11/15/2016 11:50:23

THIS DOCUMENT IS THE PROPERTY OF ITT ENGINEERED VALVES AND IS LOANED SUBJECT TO RETURN. IT IS ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED, OR COPIED, OR DISCLOSED IN WHOLE OR IN PART, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALES OF APPARATUS WITHOUT THE EXPRESS WRITTEN CONSENT OF ITT ENGINEERED VALVES.

C

SEE NOTE 4



NOTES:

1. SV-1A IS A SINGLE COIL SPRING RTN SOLENOID VALVE CONTROLLING GAS FLOW.
2. (C) SWITCHES ARE MAINTAINED CONTACT TYPE.
3. □ - REPRESENTS A WIRE NUMBER.
4. WIRE #'S SHOWN ARE FOR AC SOLENOIDS. FOR DC VOLTAGE, SUBSTITUTE WIRE #18 FOR #1, WIRE #19 FOR #2.
5. (C) SEE ORDER SPECIFICATION OR SOLENOID NAMEPLATE FOR SOLENOID VOLTAGE RATING.
6. APPLICATION - ALL T4x06 SYSTEMS ("x" DENOTES LINE SIZE).

C

THIS IS A FACTORY MUTUAL CONTROLLED DOCUMENT. CHANGES MUST BE APPROVED BY FM PRIOR TO IMPLEMENTING.

FILE COPY

WR#-

PART NO.-

PATTERN NO. -

REV	DATE	ECN NBR	BY	CHKD	APVD
-	-	-	-	-	-
-	-	-	-	-	-
C	10/1/94	1002	DJL	MJP	MJP
B	10/90	-	JRB	-	-
A	1/89	-	JRB	-	-

TOLERANCES EXCEPT AS NOTED
DECIMALS
.XX ± .02
.XXX ±.005
ANGLES ±0°-30'
REMOVE ALL BURRS AND SHARP EDGES
ALL MACHINED SURFACES TO BE 125 EXCEPT AS NOTED

WEIGHT	SCALE
-	-

	DATE	BY
DWN	1/89	GCS
CHKD	1/89	JRB
APVD	.	.

ELECTRIC SCHEMATIC
GAS BURNER VALVE
PNEUMATIC - FAIL CLOSED
-
-
-

SUPERSEDES:-

ITT Engineered Valves
ITT Fluid Technology Corporation
Lancaster, Pa
SHEET 1 OF 1

	SIZE	DWG NO.	REV
.	A	60-022	C