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INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

MODEL T4405F & T4406F & T4407F

Skotch® *Trifecta*® VALVE SYSTEM

WARNING

Valves and valve actuators supplied by ITT Engineered Valves, LLC are designed and manufactured using good workmanship and materials, and they meet the applicable industry standards. These valves are available with components of various materials, and they should be used only in services recommended herein or by a company valve 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 products includes use in an application in which the pressure/temperature is exceeded or failure to maintain the equipment as recommended and use of products to handle caustic and/or hazardous substance when not design for that purpose.

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

Technical Manual No. IOT4400F **Effective 8/31/2018**

REV LEVEL B

Record of Revisions

Revision	Description	Date
-	First Issue	6/17/99
A	Supply pressure changed to 70 psi minimum. Added T4407 model	5/15/2013
B	Revised format and text. Added suffix F to model number	08/31/18

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I. DESCRIPTION

The Model T4400F Trifecta Burner Valve System provides all the isolation and venting functions necessary for automated operation of gas-fired burners in utility and industrial power plants. These include 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 with Industrial Risk Insurers (IRI) and National Fire Protection Association (NFPA) recommendations. To satisfy code requirements, Proof of Closure (POC) switches utilizing valve seal over-travel are supplied as standard to prove the valve is closed. Optional switch to monitor valve open position can offer added feedback for plant DCS systems.

The Model T4405F valve system, which is the Fail-in-Last Position model, utilizes a dual coil momentary contact pilot solenoid valve for pneumatic operation and requires compressed air and electric power to open and close. The system fails in last position on loss of air or electric power. It will not hold this position indefinitely if air is lost.

Model T4405F valve systems can never be Factory Mutual (FM) approved due to the mode of failure.

The Model T4406F & T4407F valve systems, which are the Fail Closed models, utilizes a solenoid operated spring return pilot valve for pneumatic operation and requires compressed air and electric power to open. The system closes on a loss of pneumatic or electric power.

Model T4406F valves incorporating specific options 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 T4407F valves are not Factory Mutual listed with valve configuration.

Outside of the solenoid valve that controls the actuator all other aspects of the valve system are the same between the model numbers.

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

Check specific order options and wiring diagrams (60-018 for AC voltage or 60-024 for DC voltage) for electrical terminals supplied inside the junction box.

A. Open Block Valves (Close Vent)

T4405F, T4406F and T4407F valves follow similar opening protocol.

With pneumatic supply pressure regulated to a minimum of 70 psig and a maximum of 120 psig, apply line voltage across terminal points 1 and 2 for AC solenoids (Terminal points 18 and 19 for DC Solenoids) located in the junction box. 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, a cage slides down over a post until first a soft seal, and then a metal back-up 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 actuator 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 positively closed.

B. Close Block Valves (Open Vent)

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

For T4405F valves:

Deleting voltage from terminal 1 and 2, and applying voltage momentarily across terminals 2 and 3 for AC Solenoids (Terminals 20 and 21 for DC solenoids) energizes the exhaust coil and exhausts pneumatic pressure from the cylinder.

CAUTION

Note: Never energize both solenoid coils simultaneously. Doing so, will permanently damage the coils.

For T4406F and T4407F valves:

Deleting voltage from terminals 1 and 2 for AC Solenoids (Terminals 18 and 19 for DC solenoids) 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 flow through the assembly, then its metal back-up. The inlet POC switch trips after the inlet block valve soft seal starts into its seat. Next the vent cage moves off its post, 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 outlet POC switch trips after the outlet block valve soft seal starts into its seat.

C. Notes

The standard Versa pneumatic subassembly is equipped with a built in speed control valve. It is located directly above the cylinder exhaust port and can be adjusted with a 1/8” hex Allen wrench. Turning the adjustment inward or clockwise slows the opening speed. **Note: The speed control function has no effect on closing speed.**

For Model T4405F 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 solenoid valve.**

For Model T4406F & T4407F valves, the solenoid pilot valve is a maintained contact type, rated for continuous duty at the service voltage. Note that terminal number 3 inside the junction box is not supplied as the solenoid is a single coil spring return versus dual coil design.

Proof of Closure (POC) switches are provided for both the inlet and outlet valves to individually monitor the status of each block valve. The outlet valve POC is located on the top or actuator side and the inlet valve POC is located on the bottom of the valve assembly. Logic is shown on the referenced wiring diagram. POC switches change contact states prior to actual commencement of flow. Both POC switches should be used to prove valve closure. It is recommended they be monitored individually. Some valves may be equipped with an optional open limit switch that is located on the bottom of the valve assembly and is tripped by the inlet valve shaft. Valves with the optional open limit switch will have a total of three (3) switches on them.

Note: 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 drawing (60-018 - AC, 60-024 - DC) 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 cylinder.

CAUTION

Note: Valve weighs over 265 lbs in base form. Use proper lifting safety precautions for transporting the valve.

Purge the fuel line prior to installing the valve.

Purge all pneumatic air lines prior to connecting solenoids.

CAUTION

Note: Do not lift or pull on the electrical conduit lines Doing so may cause the POC switches to come out of calibration.

Historically many problems at start-up are due to mishandling of the valve and poor purging of the fuel lines and pneumatic control lines.

B. Valve Installation

WARNING

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.

The T4400F Trifecta Valve System is typically supplied with a female NPT vent connection and flanged end 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 should not be supported by actuator tie rods. 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 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.

C. Pneumatic/Electrical Hook Up

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 connected to the 1/4" NPT inlet port on the solenoid quick exhaust module. Purge all pneumatic lines before connecting to the solenoid assembly. The control air lines should be filtered to 40 microns minimum. Supply air pressure must be 70 to 120 psig at all times.

WARNING

Make certain electrical supply is isolated and tagged out before proceeding with electrical connections.

Note: Some assemblies may include an optional filter regulator that must be mounted by the end user.

CAUTION

Failure to maintain proper pneumatic air line pressure could result in damage to the valve.

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

CAUTION

The exhaust side of the solenoid should not be restricted. This will slow the closing rate of the valve. The exhaust module is supplied with an appropriate exhausting muffler that ensures proper closing rate. Please consult the factory for replacement.

IV. COMMISSIONING

After installation, connections should be tested to confirm integrity. The T4400F Systems are equipped with a 1/4" NPT test port in the protruding end of the outlet valve shaft. See drawing 117923. This port is directly connected to the valve's vent chamber and may be used to confirm seal integrity on start-up and during operation.

V. DISASSEMBLY AND MAINTENANCE INSTRUCTIONS

All T4400F 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 (800) 366-1111 and ask to speak to Skotch, Customer Service for quotation and instructions.

Item numbers refer to drawings, 117923 and 117924.

WARNING

Verify the T4400F gas valve is in CLOSED position. 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: 49088, Spring Compressor T4300F/T4400F. Uses to compress the outlet return spring during disassembly and assembly.
ITT P/N: 49111, Tool Seat Ring Puller T4400F. Use to remove seat rings from valve body.

A. Disassembly

WARNING

Individual valve components can be very heavy and difficult to remove. Use proper caution.

A clean dry area should be provided for valve disassembly. Before disassembling the valves, the location of the junction box, vent and flange subassemblies should be marked to facilitate ease of reassembly. Commence system disassembly by removing accessories such as switch covers, solenoids, switches and junction boxes from mounting surfaces on the top and bottom of the valve. Uncouple the vent connection piping.

Continue as follows (Reference drawings 117923 and 117924):

Unscrew Hex Nuts (Item 13) from Tie Rods (Item 12) and remove Rods.

Remove Junction Box Bracket (Item 122) and Slide off Actuator Top Cap (Item5).

Remove Actuator Shaft Wiper (Item 6), Actuator Shaft Seal (Item 7), Cylinder Seal (Item 4), Snap Ring (Item 9), Bushing (Item 8) and O-ring (Item 10) from Top Cap.

Grasp the wall and vent port of the Cylinder (Item 3), slide it over the Piston (Item 21) and off the assembly. Remove Cylinder Seal (Item 4) from valve body.

Use wrench to hold flats of Actuator Shaft (Item 91) on Outlet Valve Subassembly and loosen top Piston Nut (Item 19). Unscrew top Piston Nut (Item 19) from Outlet Valve Subassembly.

Places the Spring Compressor (P/N 49088) on Piston (Item 21) and secure tie rods to valve body. Wrench tight the tie rods, in uniform increment, to compress the Outlet Return Spring (Item 28) and relieving the spring force on the bottom Piston Nut (Item 19). Unscrew the bottom Piston Nut (Item 19). Do not allow the Outlet Valve Subassembly to rotate during nut removal. Hold on flats of Actuator Shaft (Item 91) to keep from turning.

CAUTION

After removing the bottom Piston Nut it is possible for the Outlet Valve Subassembly to fall from the bottom of the valve. Properly support the Outlet Valve until it is removed.

Slowly unscrew tie rods of the Spring Compressor (P/N 49088). Note the two tie rods must be removed uniformly. The spring will completely relax prior to disengagement.

Slide Washer (Item 20) and Piston (Item 21) off the Actuator Shaft (Item 91) of the Outlet Valve Subassembly.

Discard old Piston Gasket (Item 24) and clean surfaces of sealant.

Remove Piston Seals (Item 22) and Piston Bearing Strip (Item 23).

Remove Outlet Valve Return Spring (Item 28).

Unscrew Hex Nuts (Item 56) from the Flange Studs (Item 55) taking note of the **Warning** below and slip the Bottom Flange (Item 70) out of Body Subassembly (Item 2). Care should be taken to unscrew the nuts evenly around the bolt circle, so Inlet Valve Spring (Item 50) does not bind during disassembly. The spring will completely relax before the nuts are unscrewed.

WARNING

When removing the Hex Nuts (Item 56) from the Flange Studs (Item 55), remove the nuts from the long end of the exposed threads. Removing them from the short end will not properly unload the spring.

Remove the Inlet Valve Return Spring (Item 50).

Grasp the Inlet Shaft (Item 75) of the Inlet Valve Subassembly and pull it out of Inlet Seat Ring (Item 44).

CAUTION

With the removal of Inlet Valve Subassembly, it is possible for the Outlet Valve Subassembly to fall from its seat ring. The Outlet Valve Subassembly should be properly supported.

Remove Shaft Wiper (Item 54) and Shaft Seal (Item 53) from Bottom Flange Subassembly. Care should be used not to scratch the bearing.

Discard old Bottom Flange Gasket (Item 52).

Remove Vent Seal (Item 84) from Inlet Valve Subassembly. There is a small amount of retaining Loctite on the thread of the vent seal retaining screw (Item 86) Discard old Wave Springs (Item 82).

Unscrew seal retainer screws (Item 80) and remove Seal (Item 78) and Retainer (Item 79) from Inlet Valve Subassembly. There are retaining Loctite on the treads of the screws.

Remove Inlet Valve Seat Ring Retaining Screw (Item 45); there are retaining Loctite on the threads of the screws. Seat Ring Puller (P/N 49111) can be uses to extract the Inlet Seat Ring. Insert puller behind the Seat Ring (Item 44) while the longer bar on lower flange of Valve Body (Item 2), turn hex nut on stud to pull the Inlet Seat Ring (Item 44) from Lower Body (Item 2).

Discard old Seat Ring Gasket (Item 46) and clean surfaces of sealant.

Remove the Outlet Valve Subassembly through the bottom of the valve body.

Remove the Outlet Valve Retaining Screw (Item 95) from Outlet Valve Subassembly, there are retaining Loctite on the threads of the screws (Item 95). Lift Outlet seal retainer (Item 94) and remove Seal (Item 93).

Remove Spring Bucket Subassembly by unscrewing Mounting Screws (Item 31), there are retaining Loctite on the threads of the screws. Remove Spring Bucket Gasket (Item 32) and clean the surfaces of sealant. Remove Vent Shaft Seals (Item 30) from Spring Bucket Subassembly. Unthread the Spring Guide (Item 66) from the Spring Bucket (Item 65) and remove the O-ring (Item 64). Caution should be taken not to damage the bushings.

Remove the Outlet Seat Ring retaining screws (Item 37); there are retaining Loctite on the threads of the screws. Seat Ring Puller (P/N 49111) can be uses to extract the Outlet Seat Ring. Insert puller behind the Outlet Seat Ring (Item 36) while the longer bar on the upper flange of Upper Body (Item 1), turn hex nut on stud to pull the Outlet Seat Ring (Item 36) from Upper Body (Item 1) through the top of the body.

Discard old Seat Ring Gasket (Item 38) and clean surfaces of sealant.

Discard all seals that were removed from valves.

B. Maintenance

Periodic leak testing of both block valves and verification of proper operation of both proof of closure switches and open limit switch (when equipped) 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. Wire brush and clean threads of retaining Loctite. Clean gasket surfaces with a good quality solvent.

C. Reassembly

Bottom Flange Subassembly
Lubricate Shaft Wiper (Item 54), Shaft Seals (Item 53) and sealing surfaces in Bottom Flange Subassembly (Item 70 and Item 71) with a suitable lubricant, such as, Dow Corning 55. Install Shaft Wiper (Item 54) and Shaft Seals (Item 53) in Bottom Flange Subassembly (Item 70 and Item 71). Note the orientation of wiper and seal in Detail A of drawing 117923.

Inlet Valve Subassembly
Use Loctite® 222 and recommended primer on cap screws (Item 80) that hold Seal (Item 78) and retainer (Item 79). Uses Inlet Seat Ring (Item 44) as guide to set Seal (Item 78) and ensure Seal (Item 78) is concentrate on Inlet Valve Subassembly.

Stack the three separate Vent Wave Springs (Item 82) on top of one another, in a nested fashion. Ensuring the lap joint of the wave springs is staggered. Slide the wave springs (Item 82) and spring retainer (Item 83) over the Vent Post (Item 76) of the Inlet Valve Subassembly. Lay Vent Seal (Item 84) and Seal Retainer (Item 85) on top of Vent Post. Uses Loctite® 242 and recommended primer on hex head cap screw (Item 86) and secure Vent Seal (Item 84) in place.

Outlet Valve Subassembly
Uses Loctite® 222 and recommended primer on cap screws (Item 95) which hold Seal (Item 93) and Retainer (Item 94) in place. Uses Outlet Seat Ring (Item 36) as guide to set Seal (Item 93) and ensure Seal (Item 93) is concentrate on Outlet Valve Subassembly.

Spring Bucket Subassembly
Lubricate O-ring (Item 64) with sealing surfaces, of Spring Bucket (Item65) & Spring Guide (Item 66), with suitable lubricant, such as Dow Corning 55. Apply antiseize to the Spring Guide threads. With O-ring in place, thread the Spring Guide onto the Spring Bucket until it is fully seated and tight. Lubricate Vent Shaft Seals (Item 30) with a suitable lubricant, such as, Dow Corning 55. Install Vent Shaft Seals (Item 30) in Spring Bucket Subassembly. Note the orientation of the seals in Spring Bucket Subassembly; refer to drawing 117923 Detail B.

Actuator Shaft Bushing
Lubricate O-Ring (Item 10), Shaft Wiper (Item 6) and Shaft Seal (Item 7) with a suitable lubricant, such as, Dow Corning 55. Install O-Ring (Item 10) in Actuator Top Cap (Item 5). Install Shaft Wiper (Item 6) and Shaft Seal (Item 7) in Bushing (Item 8). Note the orientation of wiper and seal in bushing, refer to Detail D on drawing 117923. Install Bushing (Item 8) in Actuator Top Cap (Item 5) and use Snap Ring (Item 9) to secure Bushing (Item 8) in place.

Valve Assembly
Use a suitable gasket compound on all gaskets as noted, such as, Permatex Blue Adhesive Sealant (RTV).

Apply gasket compound to gasket side of Outlet Seat Ring (Item 36). Press the Seat Ring Gasket (Item 38) on to the Outlet Seat Ring (Item 36). Apply gasket compound to other side of Seat Gasket (Item 38). Fasten Outlet Seat Ring (with Gasket) into seat ring holder in Top Body (Item 1). Use Loctite® 242 and recommended primer on cap screws (Item 37). Place all screws in place than tighten in criss-cross pattern.

Lubricate the sealing surface of Outlet Seat Ring (Item 36) and circumference of Seal (Item 93). Slide in Outlet Valve Subassembly from bottom of valve body (Item 2). Care not to damage Outlet Valve Subassembly and it should be supported.

Apply gasket compound to the gasket side of Inlet Seat Ring (Item 44). Press on the Seat Ring Gasket (Item 46) and apply gasket compound to other side of Seat Gasket (item 46). Fasten Inlet Seat Ring (with Gasket) into seat ring holder in Bottom Body (Item 2). Use Loctite® 242 and recommended primer on cap screws (Item 45). Place all screws in place than tighten in criss-cross pattern.

Lubricate the sealing surface of Inlet Seat Ring (Item 44), circumference of Seal (Item 78) and face of Vent Seal (Item 84). Slide in Inlet Valve Subassembly from bottom of valve body (Item 2). Ensuring the Post (Item 76) of Inlet Valve engaged the Cage (Item 97) of Outlet Valve. Engage Inlet Seal (Item 78) into Inlet Seat Ring (Item 44). Slide Inlet Valve Return Spring (Item 50) on Inlet Valve Subassembly. Place a dry Bottom Flange Gasket (Item 52) on Bottom Flange Subassembly. Lubricate lower half of shaft on Inlet Valve (Item 75). Install Bottom Flange on shaft of Inlet Valve Subassembly. Note the orientation of Bottom Flange and rotate it to position. Secure flange in place using Stud (Item 55) and Nut (Item 56). Care should be taken to tighten the nuts evenly around the bolt circle, so Inlet Valve Spring (Item 50) does not bind during assembly. Verify Return Spring (Item 50) is in the recess pockets of Inlet Valve Subassembly and

bearing Holder (Item 71) of Bottom Flange Subassembly. Tighten the flange nuts in a crisscross pattern until snug; making certain flange is not cocked. Torque the nuts to 200 ft-lbs in crisscross pattern and recheck.

Apply gasket compound to the gasket side of Spring Bucket Subassembly. Press on Spring Bucket Gasket (Item 32) and apply gasket compound to other side of Spring Bucket Gasket (item 32). Lubricate the Vent Shaft (Item 90) of Outlet Valve Subassembly. Slide Spring Bucket Subassembly with gasket onto the Vent Shaft of Outlet Valve Subassembly. Care not to damage the Seals in Spring Bucket Subassembly as it slide over the threaded portion of the Outlet Valve Subassembly. Fasten Spring Bucket Subassembly into Top Body (Item 1). Use Loctite® 222 and recommended primer on cap screws (Item 31). Place all screws in place than tighten in crisscross pattern. Ensure to clean excess gasket compound that may spilled into O-ring groove of Valve Body (Item 1). Lubricate Cylinder Seal (Item 4) and install Cylinder Seal (Item 4) on groove of Top Valve Body (Item 1).

Apply gasket compound on the face of the Vent Shaft (Item 90) of Outlet Valve Subassembly. Press on Piston/Shaft Gasket (Item 24) and apply gasket compound to other side of the gasket. Slide Outlet Return Spring (Item 28) over the Outlet Valve Subassembly and on the Spring Bucket Subassembly. Slide Piston (Item 21) over Outlet Valve Subassembly onto Outlet Return Spring (Item 28).

Place the Spring Compressor (P/N 49088) on Piston (Item 21) and secure tie rods to valve body. Wrench tight the tie rods, in uniform increment, to compress the Outlet Return Spring (Item 28). Apply antiseize to the threads of Actuator Shaft (Item 91). Install Washer (Item 20) and Nut (item 19) on Actuator Shaft (Item 91). Do not allow the outlet shaft to rotate during installation. Hold on flats of actuator shaft to keep from turning. With Piston firmly seated on vent shaft, fasten top Piston Nut (Item 19) and secure in place. Remove Spring Compressor (P/N 49088).

Lubricate Piston Seals (Item 22) with a suitable lubricant. Install Piston Seals (Item 22) and Piston Bearing Strip (Item 23) on Piston (Item 21). Note the orientation of the Piston Seals (Item 22) refers to drawing 117923 Detail C and there is a 0.50” to 0.75” gap between either ends of the Bearing Strip (Item 23). Lubricate the inside of the Cylinder (Item 3). Place the cylinder over the actuator piston. Rotate cylinder to require orientation. Lubricate and install Cylinder Seal (Item 4) on Actuator Top Cap (Item 5). Lubricate the Actuator Shaft (Item 91) and place Top Cap (Item 5) on Actuator Shaft (Item 91). Rotate the Actuator Top Cap (Item 5) to proper orientation. Place Junction Box Bracket on Top Cap in the correct orientation and fasten in place with Studs (Item 12) and Nut (Item 13).

Initially tighten the flange nuts in a crisscross pattern until snug. Final torque the nuts to 200 ft-lb in a crisscross pattern and recheck.

Lubricate the solenoid mounting O-Ring with a suitable o-ring lubricant and place on the actuator top cap. Mount the solenoid with quick exhaust subassembly to the actuator top cap using screws and lock washers.

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 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 (400 cc/hr) or less.

B. Outlet Valve

1. Verify the valve is in the closed position.

2. Seal the inlet side of the valve.

3. Connect a suitable leak testing device to the outlet.

4. Pressurize the vent port with a maximum of 50 psig clean dry air, while monitoring the leak rate from the outlet valve. FM specifies a leak rate of 24 in^3/hr (400 cc/hr) or less.

C. Vent Valve

1. Verify the valve is in the full open position.

2. Seal the outlet side of the valve.

3. Pressurize the inlet with a maximum of 50 psig clean dry air, while monitoring the leak rate from the vent or test port. FM specifies a leak rate of 24 in^3/hr (400 cc/hr) or less.

VII. PROOF OF CLOSURE SWITCH TESTING

The intent of the Proof of Closure (POC) switch is to trip during the closure over-travel (flow < 24 in^3/hr) portion of the stroke. The switches should change contact state before flow commences from each individual valve. The Skotch Trifecta® Gas valve consist of two block valves with a corresponding proof of closure switch that must be tested individually.

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

A. Inlet Valve POC Switch

1. **Testing**

   a) With the valve in the closed position, verify the normally closed contacts are made.

   b) Very slowly open the valve until the normally closed contacts are open. At this point stop the movement of the actuator and verify that flow has not commenced by pressurizing the inlet with a maximum pressure of 50 psig and monitoring flow from the outlet. The actuator can be opened slowly by regulating the air pressure to the actuator.

   c) If there is evidence of flow the inlet valve switch needs to be adjusted.

2. **Setting**

   a) With the valve in the closed position, remove the inlet valve switch cover.

b) Loosen the roller switch lever.

c) Place a 1/8" shim between the inlet valve shaft and roller switch lever.

d) While holding the roller firmly against the shim and 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.

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

f) Stroke the valve to the open position. Allow the valve to close slowly while monitoring the flow rate from the outlet of the valve. Flow should cease (<24 in^3/hr) before the normally closed contacts make. If the normally closed contacts do not make, repeat starting at Section VII.A.2.b, but increase the shim thickness by 1/32". If the switch trips before flow commences, repeat starting at Section VII.A.2.b, but decrease the shim thickness by 1/32".

g) Cycle the valve though several complete cycles while monitoring the switch contacts making certain they trip and reset.

h) Replace the inlet valve switch cover.

B. Outlet Valve POC Switch

1. **Testing**

   a) Remove the outlet valve switch cover.

   b) With the valve in the closed position, verify the normally open contacts are made.

   c) Very slowly open the valve until the normally open contacts are open. At this point stop the movement of the actuator and verify that flow has not commenced by pressurizing the vent with a maximum pressure of 20 psig and monitoring flow from the outlet. The actuator can be opened slowly by regulating the air pressure to the actuator.

   d) If there is evidence of flow the outlet valve switch needs to be adjusted.

2. **Setting**

   a) Verify the valve is in the closed position.

   b) Loosen the two screws that hold the POC switch to the L-shaped bracket.

   c) While monitoring the normally open contacts, move the switch downward towards the actuator top cap until the contacts are made. From this point, move the switch an additional 1/32" to 1/16" and tighten the switch mounting screws.

   d) Cycle the valve open several times and confirm that the normally open contacts are made when the valve is in the closed position. If the contacts do not reset, then it is necessary to move switch downward an additional 1/32". Repeat until the switch resets.

   e) Open the valve fully and allow the actuator to close slowly while monitoring the normally open contacts. When the switch trips, verify that there is no flow across the outlet valve by pressurizing the vent to 10 psig and monitoring flow out the outlet valve. If there is evidence of flow before the normally open contacts are

made, then the switch will have to be adjusted upward. If an adjustment is necessary, repeat procedure starting at section VII.B.2.d

C. Open Limit Switch (If equipped)

1. **Testing**

   a) Verify the valve is in the closed position.

   b) Slowly open the valve paying particular attention to when the open limit switch contacts change state (trip). They should trip when the valve is at or near full open or ≥ 70% of inlet valve stroke.

   c) Slowly close the valve making certain the switch resets prior to the inlet valve POC switch tripping.

2. **Setting**

   a) The switch setting is adjusted by repositioning the switch roller on the switch. Loosen the clamp screw and reposition as required.

   b) When desired position is achieved tighten the clamp screw until the tab can not be moved.

VIII. MISCELLANEOUS INSTRUCTIONS FOR SPECIAL OPTIONS

Due to customer requirements, some Series T4000F 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 T4000F Systems Spare Parts should be placed with

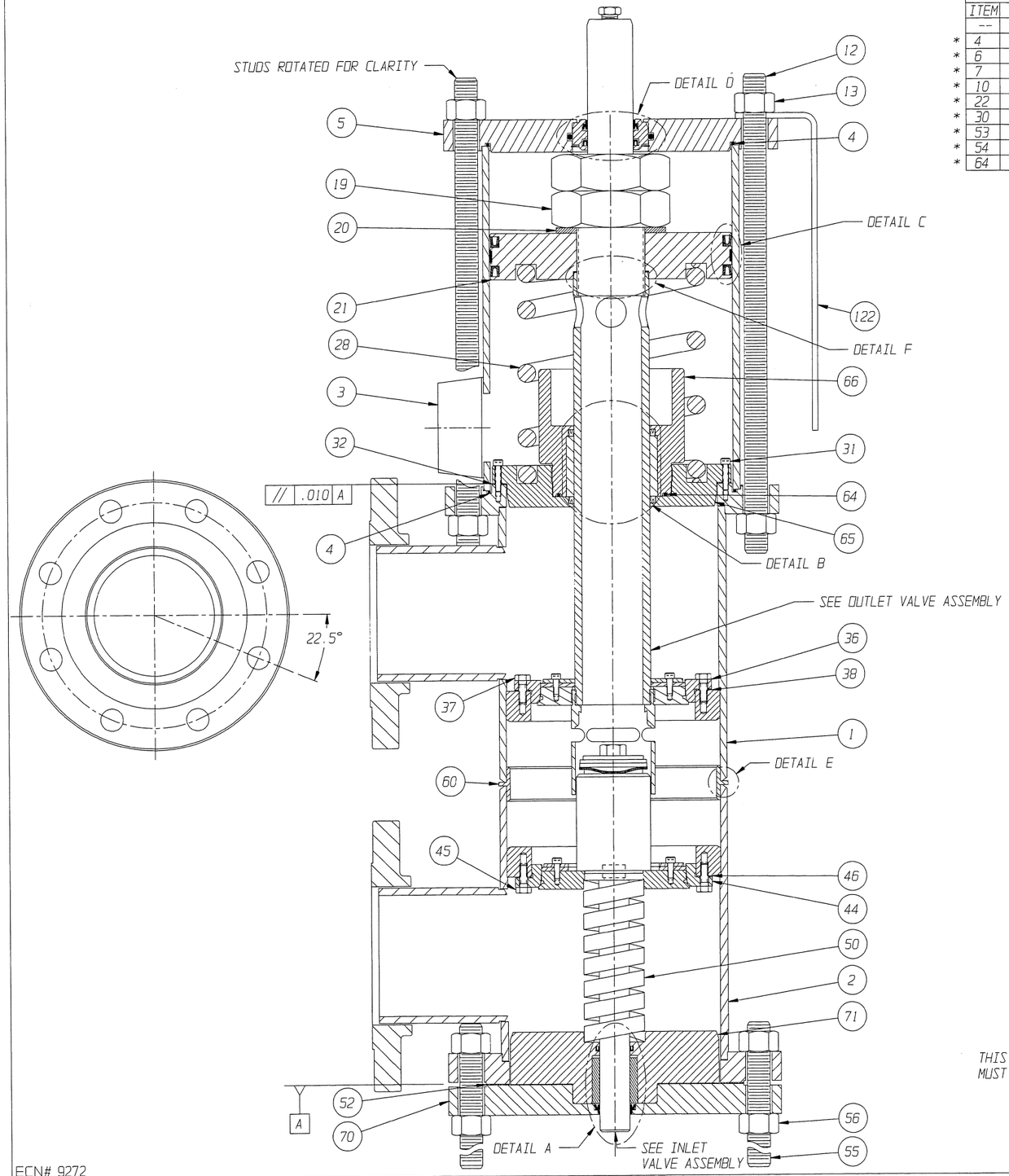
ITT Engineered Valves, LLC
33 Centerville Road
Lancaster, PA 17603-2064

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	QTY.	PART NO.		DESCRIPTION
--	--	(BUNA)	(VITON)	
* 4	2	41995	41996	CYLINDER O-RING #265
* 6	1	41-034-01	41-034-02	WIPER SEAL
* 7	1	41-036-01	41-036-02	SEAL U-CUP
* 10	1	41-075	41-076	O-RING #333
* 22	2	41-031-01	41-031-02	SEAL U-CUP
* 30	2	41-030-01	41-030-02	SEAL U-CUP
* 53	1	41-028-01	41-028-02	SEAL U-CUP
* 54	1	41-027-01	41-027-02	WIPER SEAL
* 64	1	2460	38817	O-RING #237

NOTES:
1. * - DENOTES RECOMMENDED SPARE PART.
2. REPAIR KIT INCLUDES ALL SPARES NOTED. AS WELL AS REPLACEMENT SEALS FOR INLET AND OUTLET VALVE SUBASSEMBLIES. USE PART NO. 09-002-01 FOR BUNA SEALS, 09-002-02 FOR VITON.
3. BODY SHOWN IS OUTLET 0 DEGREES FROM INLET, VENT 0 DEGREES
4. REMOVE NUBS FROM BACKING RING AFTER FIT UP AND TACK WELDING
5. TAG BRACKET TYPICALLY LOCATED ON SAME SIDE AS JUNCTION BOX IN THE POSITION SHOWN. THE BRACKET MAY BE REPOSITIONED ON THE BODY AS REQUIRED BY THE PARTICULAR CONFIGURATION.
6. PAGE 5 CONFIGURATION IS FOR 6.00 FLANGES. ORIENTATION OF INLET AND OUTLET AT 0 DEGREES IS NOT RECOMMENDED. VENT AT SAME ORIENTATION AS OUTLET PIPE IS NOT ALLOWED.
Ⓒ 7. ITEMS MARKED WITH (■) ARE USED ONLY WITH GO PROXIMITY SWITCHES.

LIST OF PARTS				
	ITEM	DWG. NO.	QTY.	DESCRIPTION
Ⓒ	1	119612	1	BODY TOP HALF WELDMENT
Ⓒ	2	119612	1	BODY BOTTOM HALF WELDMENT
	3	07-008	1	CYLINDER SUBASSEMBLY 2.00 FNPT
		07-022	1	CYLINDER SUBASSEMBLY FLANGED
	4	-	2	CYLINDER O-RING #265
	5	117305	1	ACTUATOR TOP CAP
	6	-	1	WIPER SEAL
	7	-	1	SEAL U-CUP
	8	47-050	1	BUSHING FLOATING
	9	-	1	SNAP RING
	10	-	1	O-RING #333
	12	-	4	STUD 0.75-10X15.75
	13	-	8	NUT HEX 0.75-10 REG
	19	-	2	NUT HEX JAM 2.25-12
	20	-	1	WASHER THRUST 2.250X3.625X0.125
	21	06-064	1	PISTON
	22	-	2	SEAL U-CUP
*	23	47-010	1	BEARING STRIP PISTON
*	24	40-015	1	PISTON GASKET
	28	-	1	SPRING OUTLET VALVE RETURN
	30	-	2	SEAL U-CUP
	31	-	12	CAPSCREW HEX SOCKET 10-32X0.88
*	32	40-007	1	GASKET SPRING BUCKET
	36	01-090	1	RING OUTLET SEAT
	37	-	12	CAPSCR HEXHD .25-20X0.75
*	38	40-010	1	GASKET SEAT RING
	44	01-088	1	RING INLET SEAT
	45	-	12	CAPSCR HEXHD .25-20X0.75
*	46	40-010	1	GASKET SEAT RING
	50	-	1	SPRING INLET VALVE RETURN
*	52	40-006	1	GASKET BOTTOM FLANGE
	53	-	1	SEAL U-CUP
	54	-	1	WIPER SEAL
Ⓒ ■	55	-	8	STUD 0.75-10X7.50 STUD 0.75-10X8.00
	56	-	16	NUT HEX 0.75-10 REG
	60	-	1	BACKING RING
	64	-	1	O-RING #237
	65	117953	1	SPRING BUCKET
	66	117952	1	GUIDE SPRING
	67	-	1	BEARING BRZ 2.504 X 3.005 X 2.000
	70	117845	1	BOTTOM END FLANGE
	71	117964	1	BEARING HOLDER
	72	-	1	BEARING BRZ 1.004 X 1.504 X 1.500
	75	01-076	1	INLET SHAFT
	76	01-080	1	VENT POST
	77	01-078	1	DISC INLET VALVE
*	78	41-026	1	SEAL VALVE IN/OUT
	79	01-084	1	RETAINER SEAL
	80	-	8	CAPSCREW HEX SOCKET 10-32X0.50
*	82	-	3	SPRING WAVE
	83	01-086	1	WASHER SPRING RETAINER
*	84	41-024	1	SEAL VENT
	85	01-082	1	RETAINER VENT SEAL
	86	-	1	CAPSCREW HEX .50-20 X 0.75
	90	01-096	1	SHAFT VENT
	91	01-098	1	SHAFT ACTUATOR
	92	01-094	1	DISC OUTLET VALVE
	93	41-024	1	SEAL VALVE IN/OUT
	94	01-082	1	RETAINER SEAL
	95	-	8	CAPSCREW HEX SOCKET 10-32X0.50
	97	01-092	1	CAGE VENT
	98	-	1	PLUG HEX HEAD 0.25 NPT
Ⓒ	122	117058	1	BRACKET J-BOX T4300/4400
		119859	1	BRACKET J-BOX T4300/4400 W/ VENT
	130	117943	1	TAG BRACKET

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

ECN# 9272

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

	WEIGHT	SCALE	
	-	1:2	MAIN ASSEMBLY T4400
		DATE	BY
DWN		9/3/04	DRW
CHKD		9/3/04	-
APVD		9/3/04	-
SUPERSEDES: -			

ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117923	1 OF 5	C

Printed On: 11/14/2016 01:45:23

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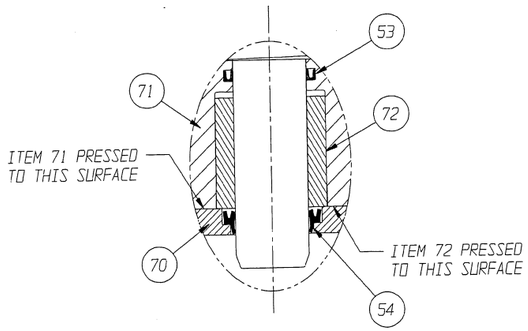
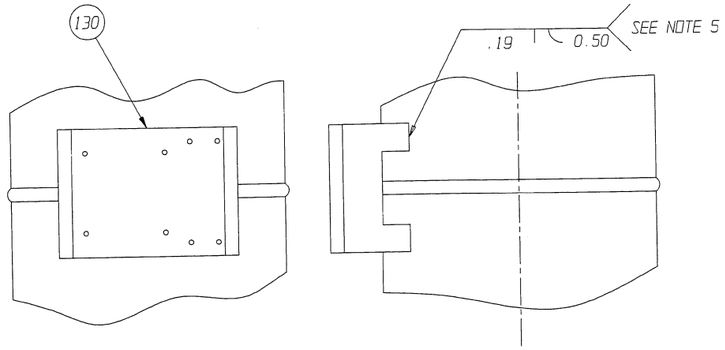
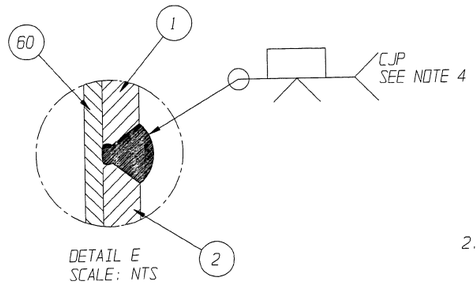


DETAIL A
SCALE 1:1



TAG BRACKET
WELDING DETAIL
SEE NOTE 5



DETAIL E
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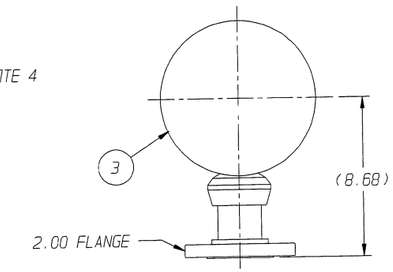
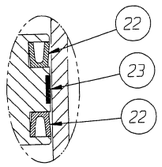


FLANGED VENT ASSEMBLY
ITEM 3
SCALE 1:4



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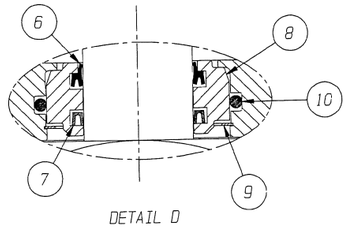
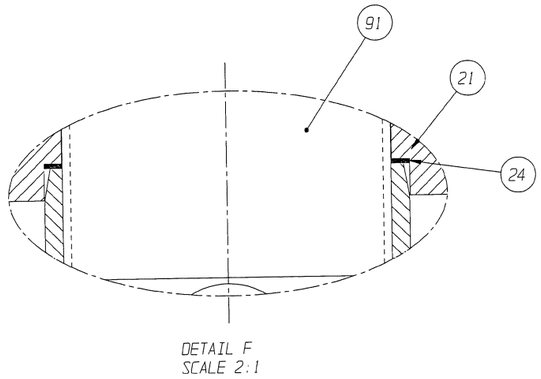
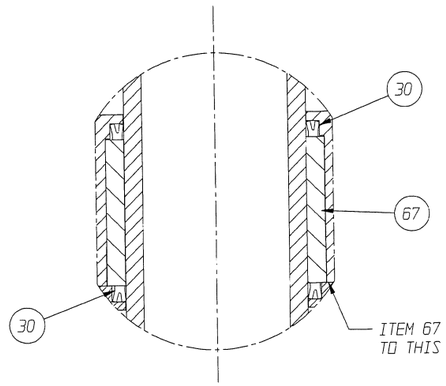


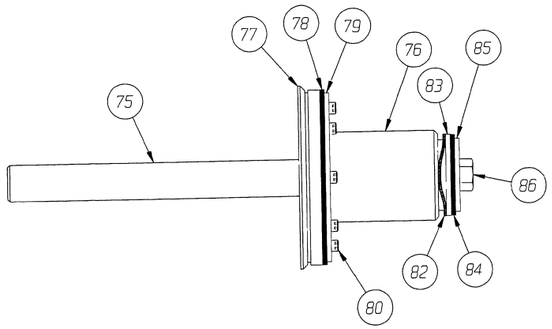
DETAIL D
SCALE 1:1



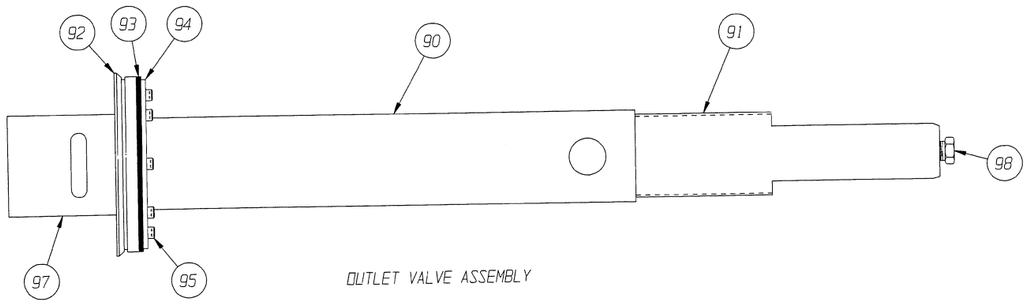
DETAIL F
SCALE 2:1



DETAIL B
SCALE 1:1



INLET VALVE ASSEMBLY



OUTLET VALVE ASSEMBLY

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

ECN# 9272

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED
INCH: X = ± 0.05; .X = ± 0.03; .XX = ± 0.02; .XXX = ± 0.005; X/X = ± 1/16; X° = ± .5°; .X° = ± .1°
MM: (X) = ± (.76); (.X) = ± (.51); (.XX) = ± (.12)
REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE ▽ EXCEPT AS NOTED.

WEIGHT	SCALE	MAIN ASSEMBLY
-	1:2	T4400

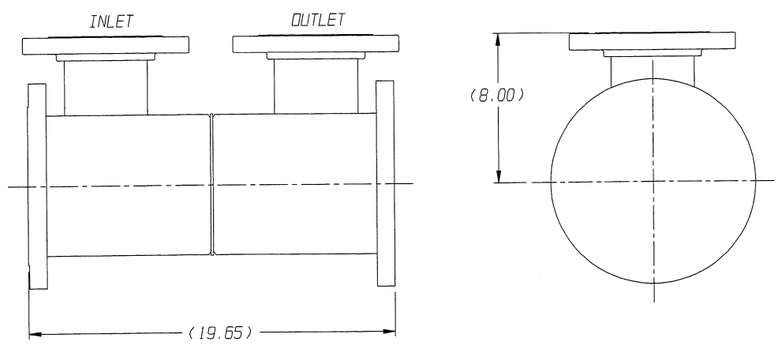
	DATE	BY
DWN	8/31/04	[illegible]
CHKD	9/3/04	[illegible]
APVD	9/3/04	[illegible]

SUPERSEDES: -

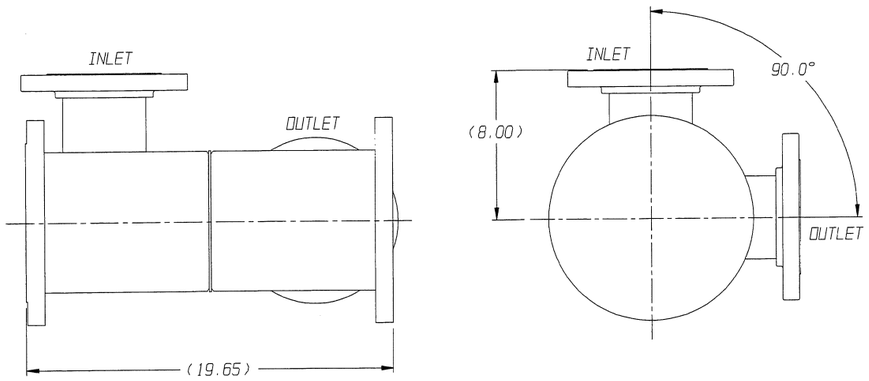
ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117923	2 OF 5	C

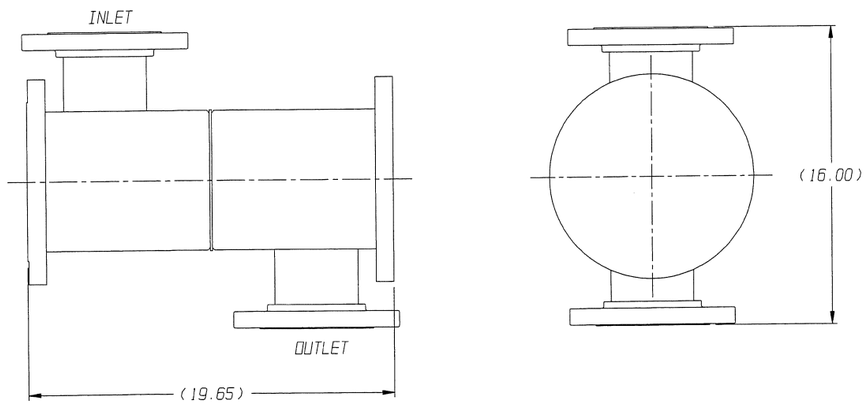
FILE COPY



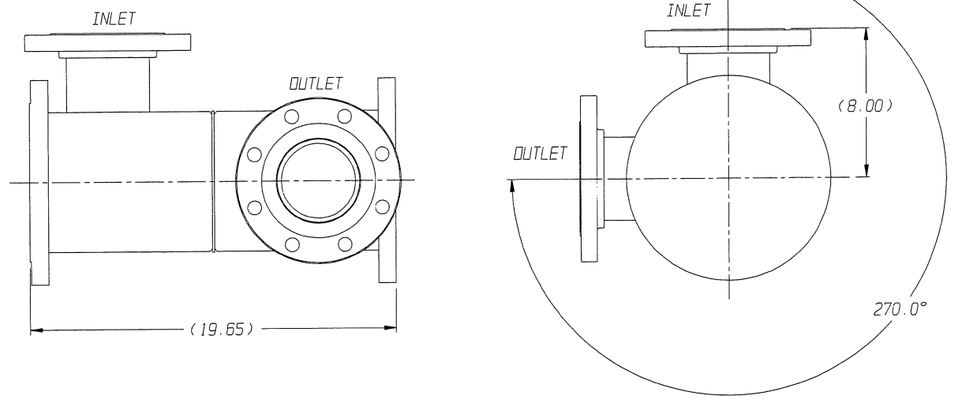
OUTLET AT 0 DEGREES FROM INLET
SCALE 1:4



OUTLET AT 90 DEGREES FROM INLET
SCALE 1:4



OUTLET AT 180 DEGREES FROM INLET
SCALE 1:4



OUTLET AT 270 DEGREES FROM INLET
SCALE 1:4

ECN# 9272

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	[.XX] = ± [.51]
.XXX = ± 0.005	[.XXX] = ± [.127]
X/X = ± 1/16	
"X" = ± 1°	"X" = ± 1°
"X" = ± 1/2°	"X" = ± 1/2°

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

	WEIGHT	SCALE
	-	1:2

	DATE	BY
DWN	8/31/04	QPM
CHKD	9/3/04	RKod
APVD	9/3/04	RKod

MAIN ASSEMBLY
T4400
-
-
-
-
SUPERSEDES: -

ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117923	3 OF 5	C

Printed On: 11/14/2016 01:45:46

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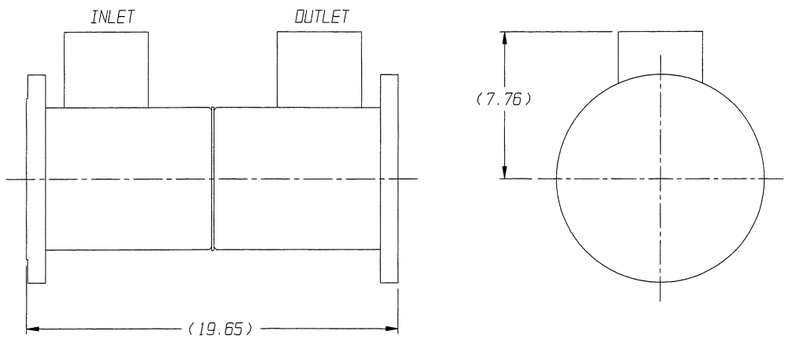
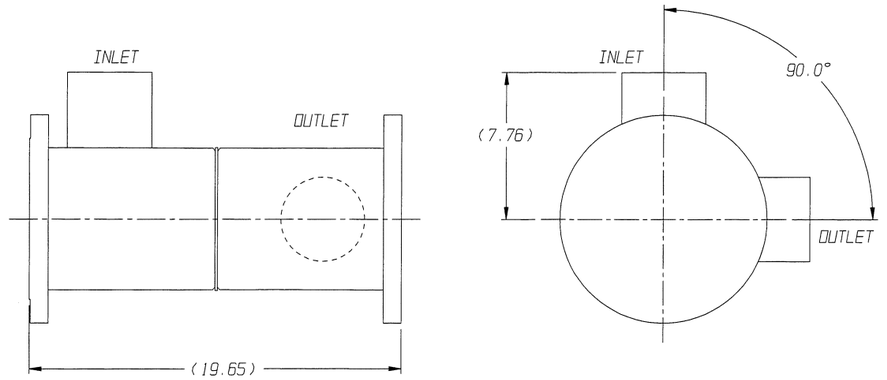
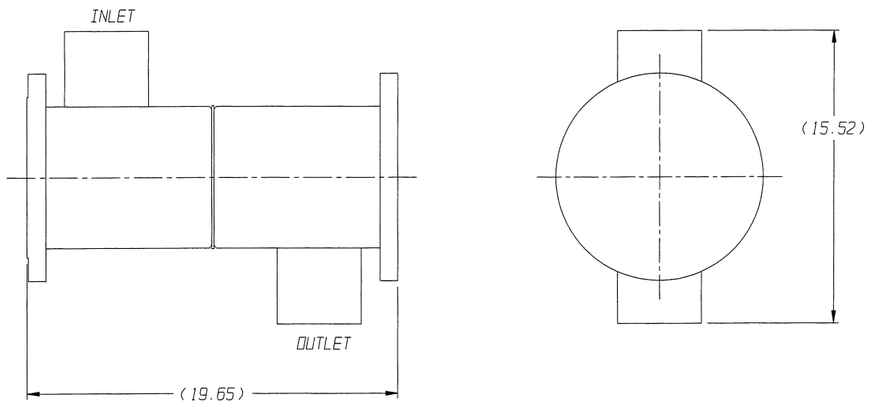


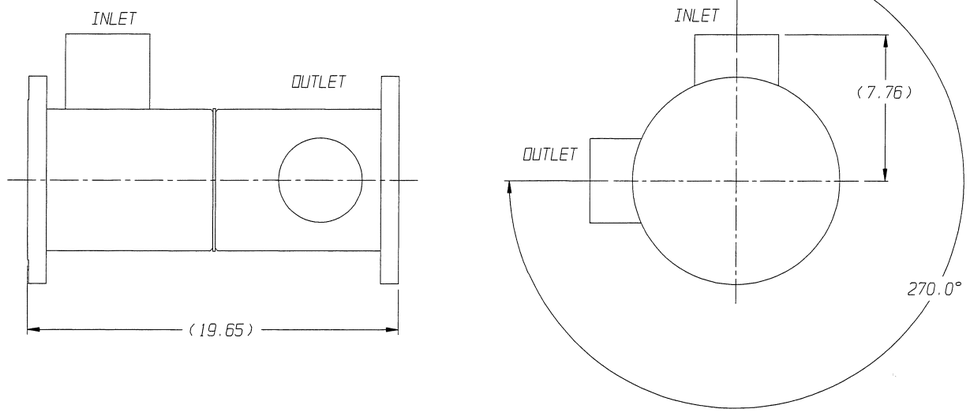
OUTLET AT 0 DEGREES FROM INLET
SCALE 1:4



OUTLET AT 90 DEGREES FROM INLET
SCALE 1:4



OUTLET AT 180 DEGREES FROM INLET
SCALE 1:4



OUTLET AT 270 DEGREES FROM INLET
SCALE 1:4

ECN# 9272

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: X = ± 0.06; .X = ± 0.03; .XX = ± 0.02; .XXX = ± 0.005; X/X = ± 1/16; .X° = ± .5°; .Y° = ± 1°
MM: (X) = ± (.76); (.X) = ± (.5); (.XX) = ± (.12); .X° = ± .5°; .Y° = ± 1°
REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED.

	WEIGHT	SCALE
	-	1:2

	DATE	BY
DWN	8/31/04	QM
CHKD	9/3/04	TKd
APVD	9/3/04	TKd

MAIN ASSEMBLY
T4400
-
-
-
-
SUPERSEDES: -

ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117923	4 OF 5	C

EV.0 03/25/04

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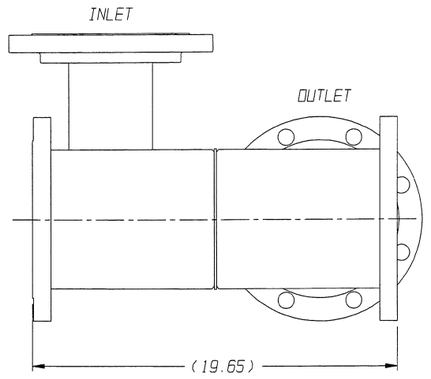
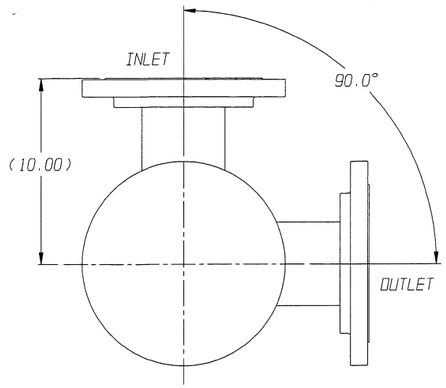
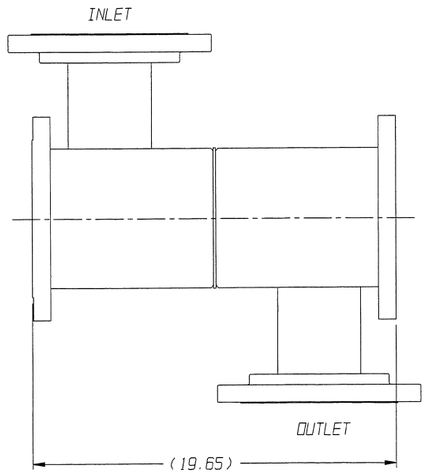
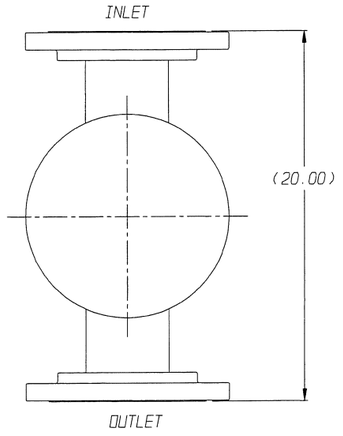


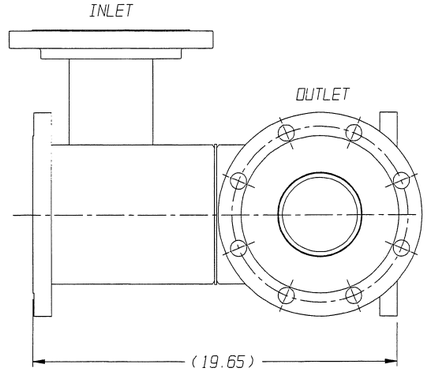


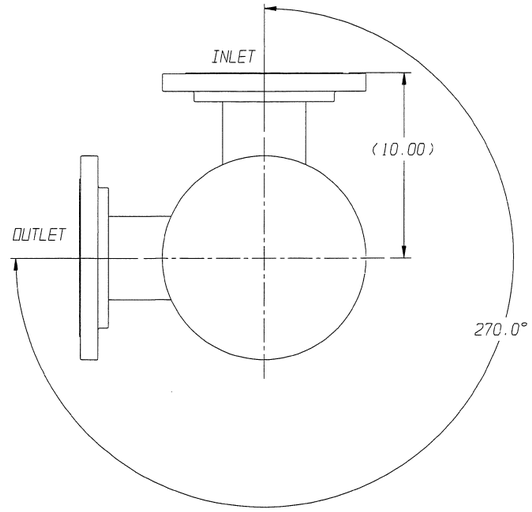
OUTLET AT 90 DEGREES FROM INLET
SCALE 1:4





OUTLET AT 180 DEGREES FROM INLET
SCALE 1:4





OUTLET AT 270 DEGREES FROM INLET
SCALE 1:4

THIS IS A T4400 WITH 6.00 FLANGES
SEE NOTE 6

ECN# 9272

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: X = ± 0.06; .X = ± 0.03; .XX = ± 0.02; .XXX = ± 0.005; X/X = ± 1/16; .XX° = ± .5°; .X° = ± 1°
MM: (X) = ± (.76); (.X) = ± (.5); (.XX) = ± (.12); .X° = ± .5°; X° = ± 1°
REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED.

	WEIGHT	SCALE	
	-	1:2	MAIN ASSEMBLY T4400
		DATE	BY
DWN	8/31/04		-
CHKD	9/3/04		-
APVD	9/3/04		SUPERSEDES: -

ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117923	5 OF 5	C

Printed On: 11/14/2016 01:46:07

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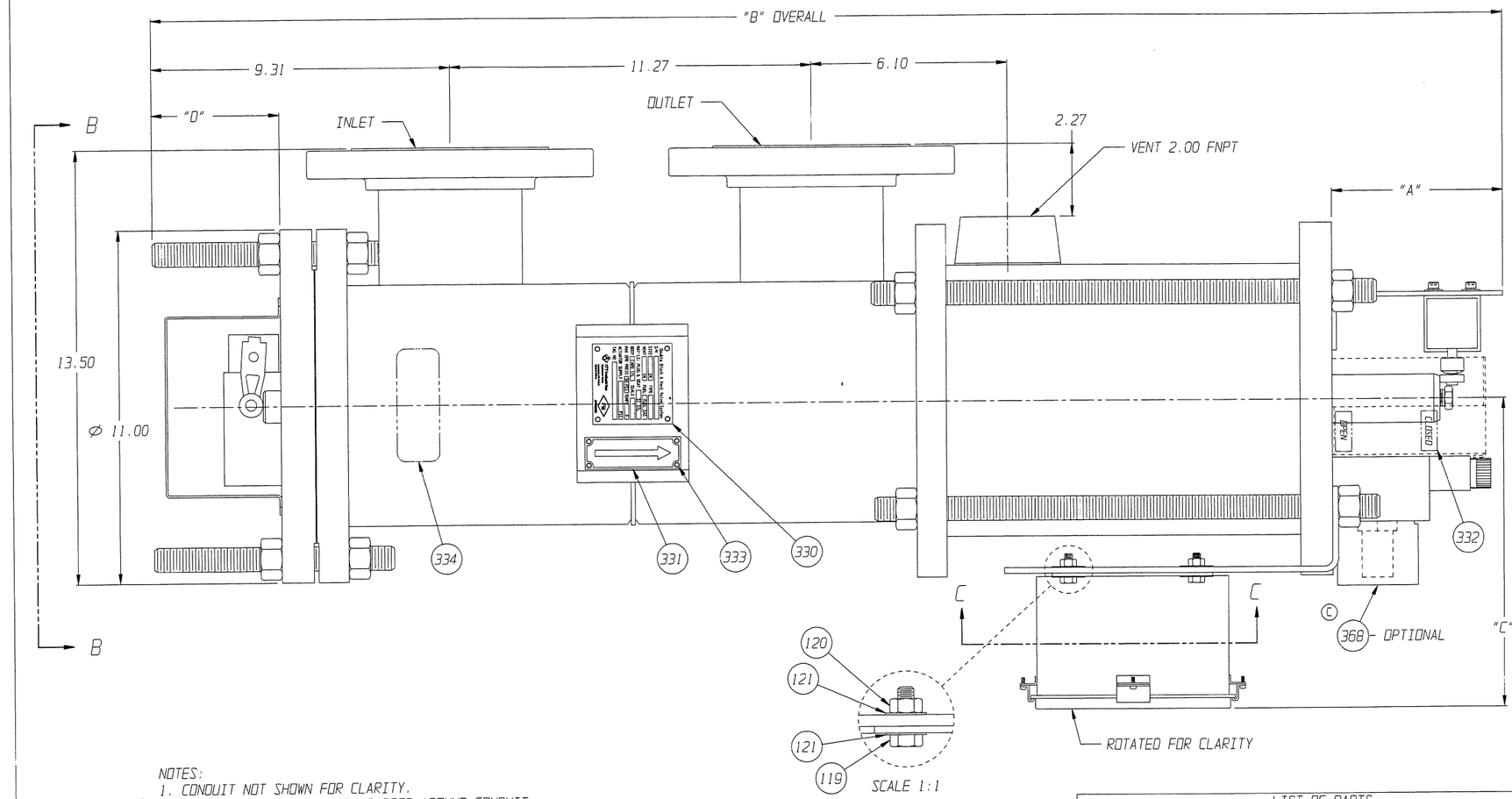


NOTES:
1. CONDUIT NOT SHOWN FOR CLARITY.
2. LABEL, ITEM 341, TO BE WRAPPED AROUND CONDUIT.
3. ALL DIMENSIONS ARE FOR REFERENCE ONLY.
4. RECOMMENDED SPARE PARTS ARE MARKED WITH AN ASTERISK (*) ON THE LIST OF PARTS.
5. FITTINGS MAY BE ROTATED FOR EASE OF ASSEMBLY
6. CLEARANSE REQUIRED FOR IN-LINE DISASSEMBLY:
   11.00 DIA X 13.00 ABOVE TEST PORT PLUG
   11.00 DIA X 14.00 BELOW BOTTOM FLANGE STUDS.
7. VALVE TAGS TYPICALLY LOCATED SAME SIDE AS JUNCTION BOX.
8. ITEMS 214, 274 & 305 TO BE USED WITH STAINLESS STEEL SWITCHES.
(D) 9. ITEMS MARKED WITH (■) ARE USED ONLY WITH GO PROXIMITY SWITCHES.

	"A"	"B"	"C"	"D"
NEMA 4	5.30	42.08	9.63	4.00
NEMA 4X	5.30	42.08	10.13	4.00
NEMA 7	5.60	42.38	9.63	4.00
(D) GO PRX	4.85	41.63	9.63	4.50

LIST OF PARTS

	ITEM	DWG. NO.	QTY.	DESCRIPTION
	101	26-035	1	COVER - OUTLET VALVE POC
	102	-	2	CAPSCR BUTHD 10-32X0.25
(D) ■	107	117848	1	COVER - INLET VALVE POC HOLS COVER - INLET VALVE POC PRSW
	108	-	2	CAPSCR BUTHD 10-32X0.25
(D)	118	29-006	1	J-BOX 6.00 X 6.00 J-BOX 6.00 X 8.00
		119860	1	J-BOX 6.00 X 6.00 MOD
	119	-	4	CAPSCR HEX .25-20 X 0.75
	120	-	4	NUT HEX 0.25-20
	121	-	8	LKWSHR EXT TOOTH 0.25
	123	-	AR	J-BOX SUB-PLATE
*	201	-	1	SWITCH
	202	-	1	SWITCH LEVER
(D) ■	203	26-069 26-068 116759	1	BRACKET SW POC OUTLET NEMA 4 BRACKET SW POC OUTLET NEMA 7 BRACKET PRXSW OUTLET
	204	- -	2	CAPSCR HEXSKT 10-32X0.50 NEMA 4 CAPSCR HEXSKT 0.312-18X0.50 NEMA 7
	205	-	2	WASHER PL 10
	206	-	2	LKWSHR SPR 10
	207	-	2	CAPSCR HEXSKT 10-32X0.50
	208	-	2	LKWSHR SPR 10
	209	-	AR	CONDUIT FITTING LIQTGT .5 90 DEG
	210	-	AR	CONDUIT FITTING LIQTGT .5 45 DEG
	211	-	AR	NIPPLE .5 X CLOSE
	212	-	AR	CONDUIT SEAL FTG .5
	214	-	1	HEX BUSHING, 0.75 X 0.50
*	215	-	1	SWITCH
	216	-	1	SWITCH LEVER
	217	-	2	CAPSCR HEXSKT 10-32X1.75 CAPSCR HEXSKT 10-32X1.62
	218	-	2	LKWSHR SPR 10 HI-COLLAR
	219	-	AR	CONDUIT FITTING LIQTGT .5 STR
	220	-	AR	CONDUIT FITTING LIQTGT .5 90 DEG
	221	-	AR	NIPPLE .5 X 3.50
	222	-	AR	CONDUIT SEAL FTG .5
	223	26-075	1	SWITCH SPACER
	228	-	AR	CONDUIT FITTING .5 90 DEG
(D) ■	229	116753	1	BRACKET PRXSW INLET
(D) ■	230	-	2	CAPSCRW HEXSKT 10-32X0.50
(D) ■	231	-	2	LKWSHR SPR 10
(D) ■	235	116752	1	TARGET PRXSW T4400 INLET
(D) ■	236	116751	1	SPACER INLET PRXSW T4400
(D) ■	237	-	1	CAPSCR HEXSKT 10-32 X 1.25
*	238	-	1	SOLENOID VALVE
	239	-	2	CAPSCR HEXSKT 10-32X3.00
	240	-	2	LKWSHR SPR 10 HI-COLLAR
	241	-	AR	CONDUIT FITTING LIQTGT .5 45 DEG
	242	-	AR	CONDUIT FITTING LIQTGT .5 90 DEG
	245	-	3	CAPSCR, HEXSKT 10-32 X 1.25
	246	-	3	LKWSHR SPR 8 HI-COLLAR
*	247	-	1	QUICK EXHAUST MODULE
	253	-	AR	HUB - CONDUIT
	254	-	AR	HUB - CONDUIT
	255	-	1	MUFFLER
	256	-	1	BREATHER VENT FILTER 0.25
*	257	-	1	O-RING #116
	258	-	1	HUB - CONDUIT
(D) ■	261	116758	1	TARGET PRXSW T4400 OUTLET
(D) ■	262	-	2	CAPSCR HEXSKT 6-32 X 0.38
	266	-	AR	TERMINAL BLOCKS
	267	-	AR	TERMINAL MOUNTING CHANNEL
	268	-	AR	MCHSCR PAN 8-32X0.50
	269	-	AR	TERMINAL RETAINING CLIPS
	270	-	AR	TERMINAL END BARRIER
	274	-	1	HEX BUSHING, 0.75 X 0.50
*	290	-	AR	SWITCH
	291	-	AR	SWITCH LEVER
	292	26-075	AR	SWITCH SPACER
	293	-	AR	CAPSCR HEXSKT 10-32X2.25 CAPSCR HEXSKT 10-32X2.50
	294	-	AR	LKWSHR SPR 10 HI-COLLAR
	295	-	AR	NIPPLE .5 X 3.50
	296	-	AR	CONDUIT FITTING LIQTGT .5 STR

LIST OF PARTS

	ITEM	DWG. NO.	QTY.	DESCRIPTION
	297	-	AR	CONDUIT SEAL FTG. 5
	298	-	AR	CONDUIT FITTING LIQTGT .5 STR
	305	-	1	HEX BUSHING, 0.75 X 0.50
(D) ■	307	116753	1	BRACKET PRXSW INLET
(D) ■	308	-	2	CAPSCR HEXSKT 10-32x 0.50
(D) ■	309	-	2	LKWSHR SPR 10
	330	116879 116703	1	TAG NON FM TAG FM
	331	90-005	1	TAG FLOW
	332	90-011	1	LABEL - POSITION INDICATOR
	333	-	8	RIVET POP 0.125
	334	90-018	1	LABEL - CAUTION SPRING
	336	117760	AR	LABEL - OPEN LIMIT SWITCH
	337	117500	1	LABEL - PROOF OF CLOSURE
	338	117500	1	LABEL - PROOF OF CLOSURE
	341	117503	AR	LABEL - CAUTION CONDUIT

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

ECN# 9272

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)
.XXX = ± 0.005 / (.XX) = ± (.12)
X/X = ± 1/16
X° = ± 1°
.X" = ± 5"
.XX" = ± 1"
REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED

WEIGHT: -
SCALE: 1:2
DATE BY
DWN 9/7/04 AM
CHKD 9-9-04 RCd
APVD 9-9-04 RCd

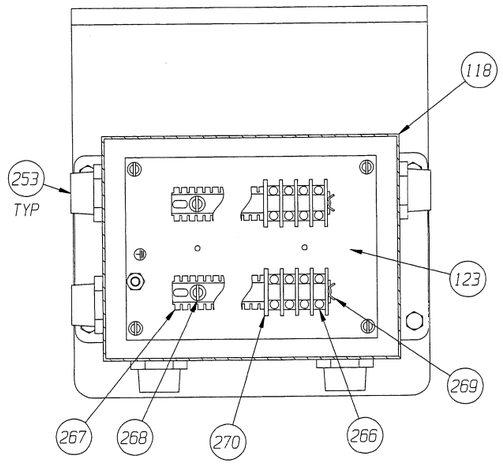
ACCESSORY ASSEMBLY T4400

SUPERSEDES: -

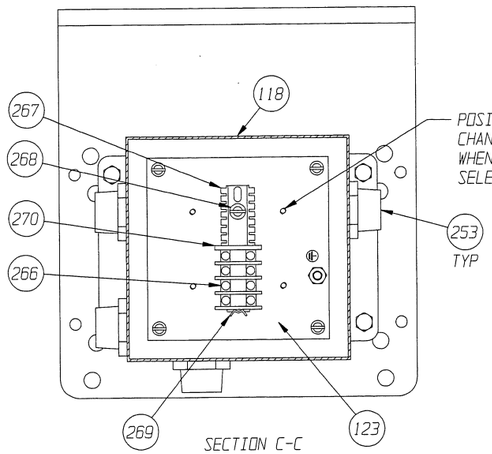
ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117924	1 OF 5	D

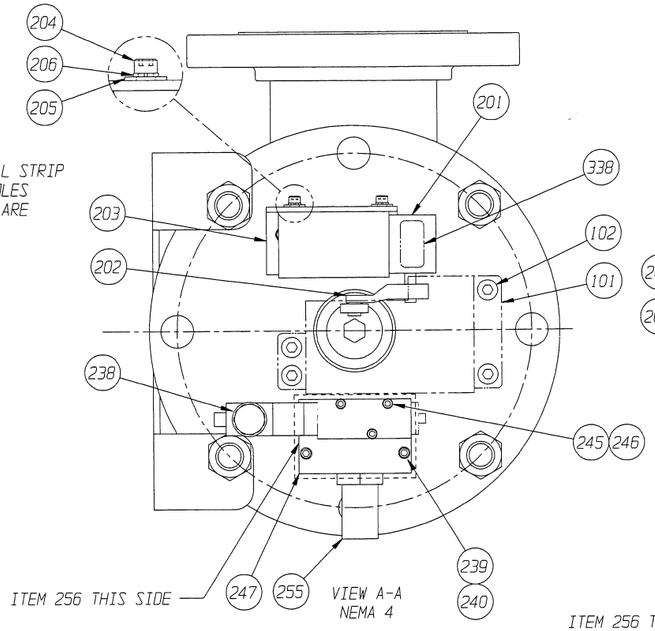
FILE COPY



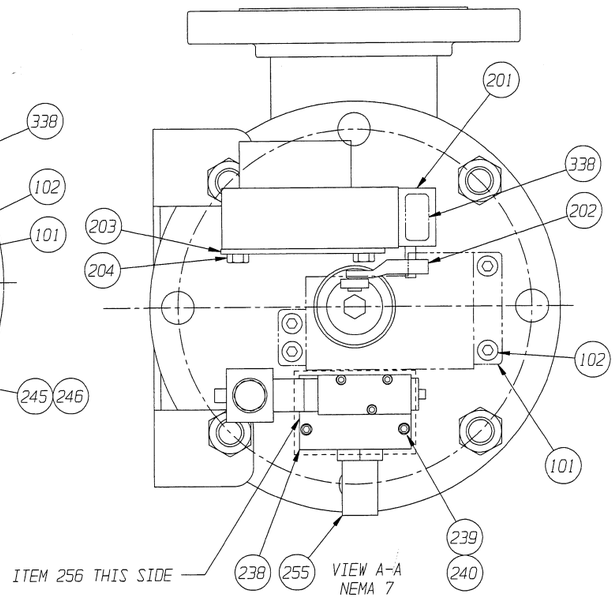
SECTION C-C
6X8 JUNCTION BOX
INTERNAL DETAIL
USED W/ THIRD SWITCH



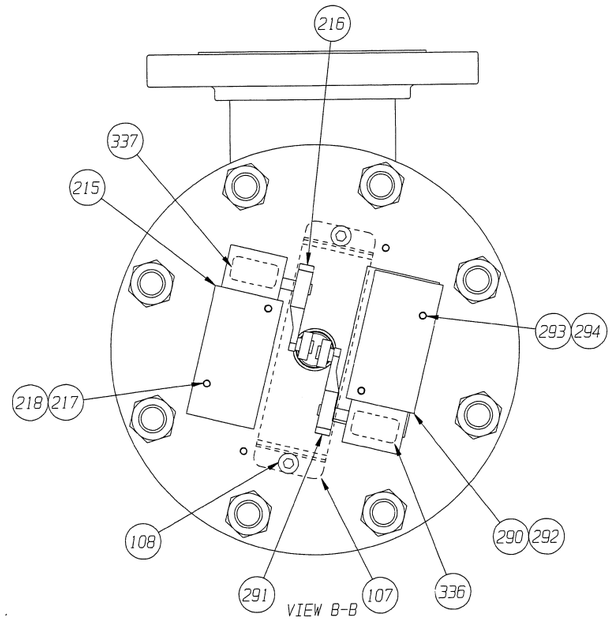
SECTION C-C
6X6 JUNCTION BOX
INTERNAL DETAIL



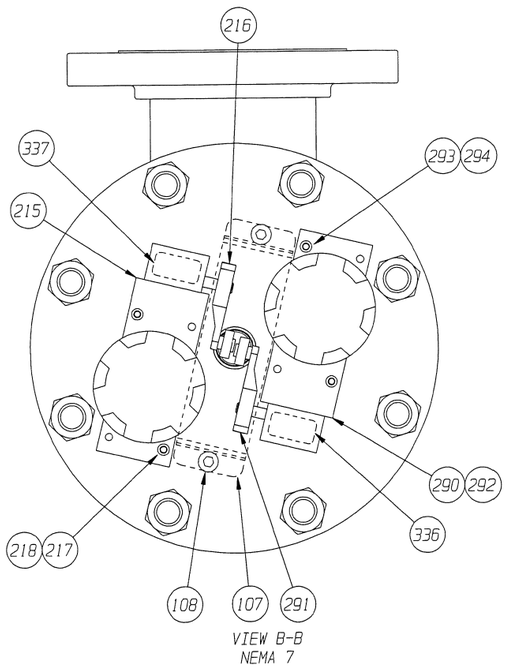
VIEW A-A
NEMA 4



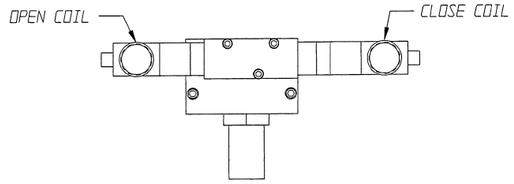
VIEW A-A
NEMA 7



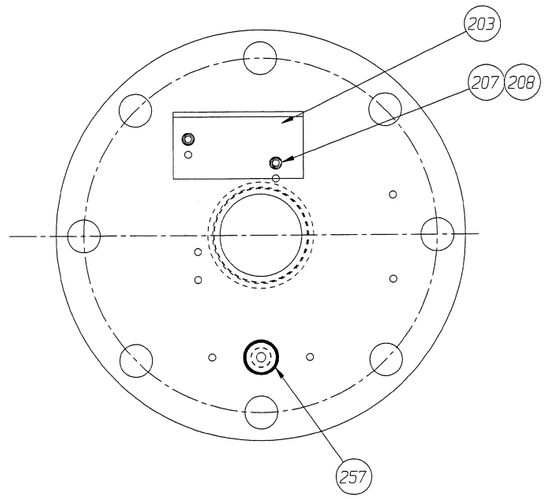
VIEW B-B
NEMA 4



VIEW B-B
NEMA 7



DUAL COIL SOLENOID DETAIL



VIEW A-A
NEMA 4 & 7 W/ SWITCH
& SOLENOID REMOVED

ECN# 9272

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: X = ± 0.06; .X = ± 0.03; .XX = ± 0.02; .XXX = ± 0.005; X/X = ± 1/16; X° = ± .5°; .X° = ± .1°
MM: (.X) = ± (.76); (.XX) = ± (.5); (.XXX) = ± (.12); X° = ± .5°; .X° = ± .1°
REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED.

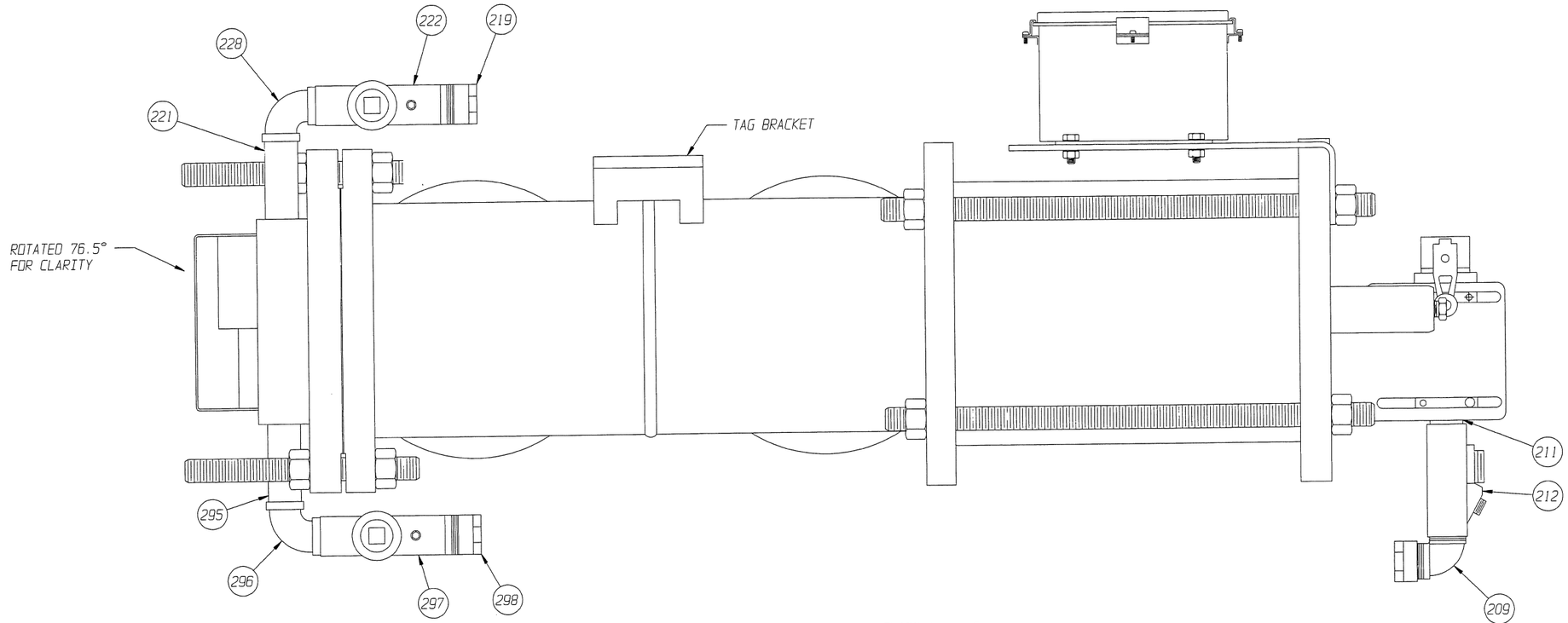
WEIGHT	SCALE	ACCESSORY ASSEMBLY	
-	1:2	T4400	
	DATE	BY	
DWN	9/7/04	AM	-
CHKD	9-9-04	KC	-
APVD	9-09-04	KC	-

SUPERSEDES: -

ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117924	2 OF 5	D

EV.0 03/25/04



CLASS 1 DIV 2
HARD CONDUIT DETAIL

ECN# 9272

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

THIRD ANGLE PROJECTION

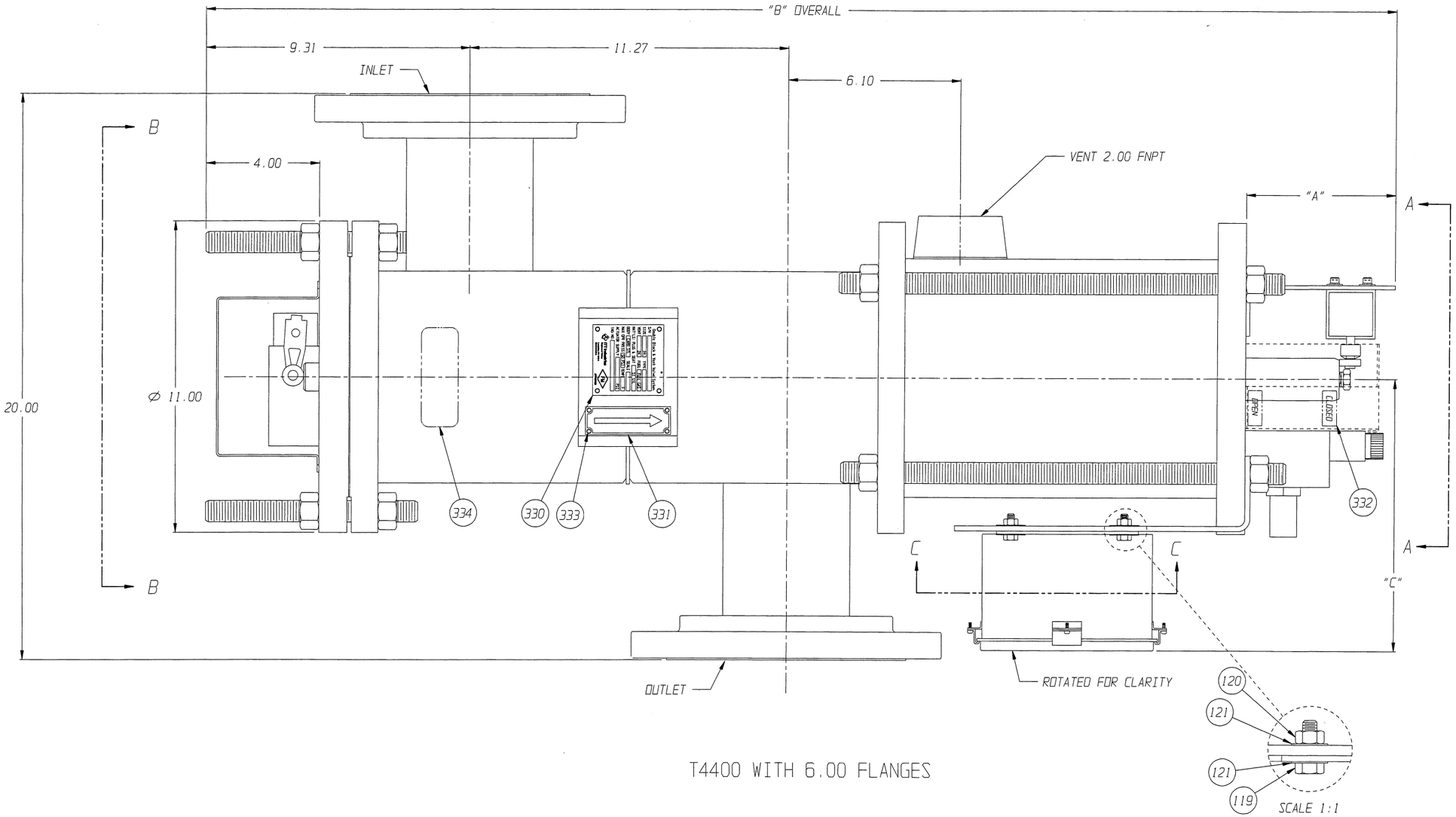
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED
INCH: X = ± 0.05; .X = ± 0.03; .XX = ± 0.02; .XXX = ± 0.025; X/X = ± 1/16; X° = ± .5°; .X° = ± 1°
MM: [.X] = ± [.76]; [.X] = ± [.5]; [.XX] = ± [.12]; .X° = ± .5°; .X° = ± 1°
REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 125 EXCEPT AS NOTED.

	WEIGHT	SCALE	
	-	1:2	ACCESSORY ASSEMBLY T4400
	DATE	BY	
DWN	9/7/04	AM	-
CHKD	9-9-04	KCd	-
APVD	9-9-04	KCd	SUPERSEDES: -

ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117924	3 OF 5	D



T4400 WITH 6.00 FLANGES

	"A"	"B"	"C"
NEMA 4	5.30	42.08	9.63
NEMA 4X	5.30	42.08	10.13
NEMA 7	5.60	42.38	9.63
Ⓓ GO PRX	4.85	41.63	9.63

ECN# 9272

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

EV_D 03/25/04

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

UNLESS OTHERWISE NOTED
INCH: X = ± 0.06, .XX = ± 0.03, .XXX = ± 0.02, .XXX = ± 0.005, X/X = ± 1/16, "X = ± 5°, "X = ± 1°
MM: [X] = ± [.76], [.XX] = ± [.51], [.XXX] = ± [.12], "X = ± 5°, "X = ± 1°
REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE ▽ EXCEPT AS NOTED.

WEIGHT: -
SCALE: 1:2

	DATE	BY
DWN	9/7/04	-
CHKD	9-9-04	-
APVD	9-9-04	-

SUPERSEDES: -

ACCESSORY ASSEMBLY
T4400

ITT Industries
Engineered Valves Group
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117924	4 OF 5	D

FILE COPY

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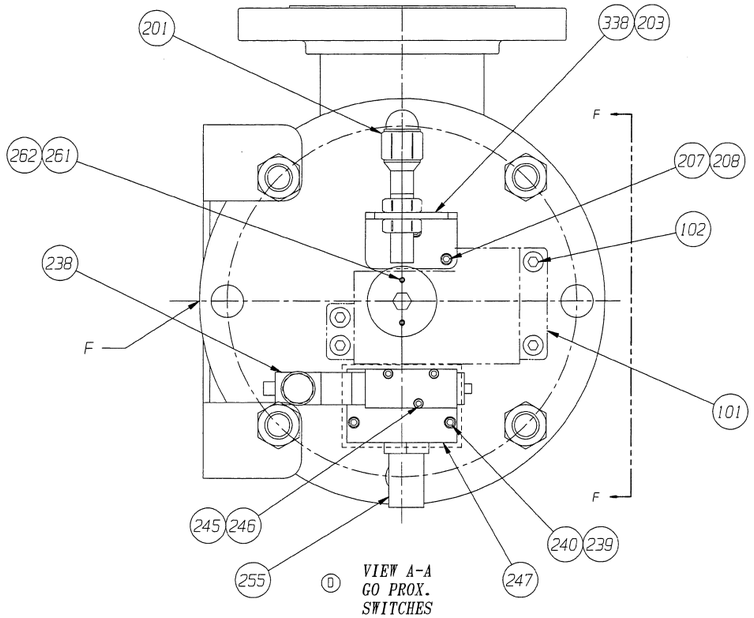
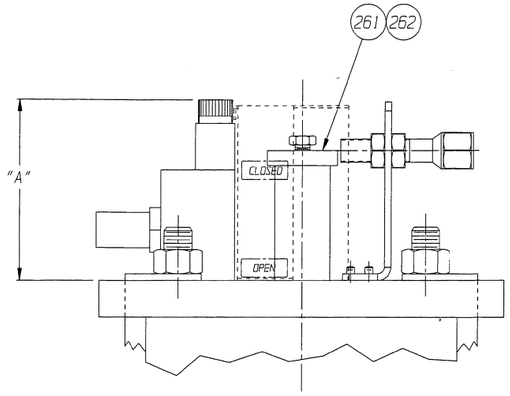
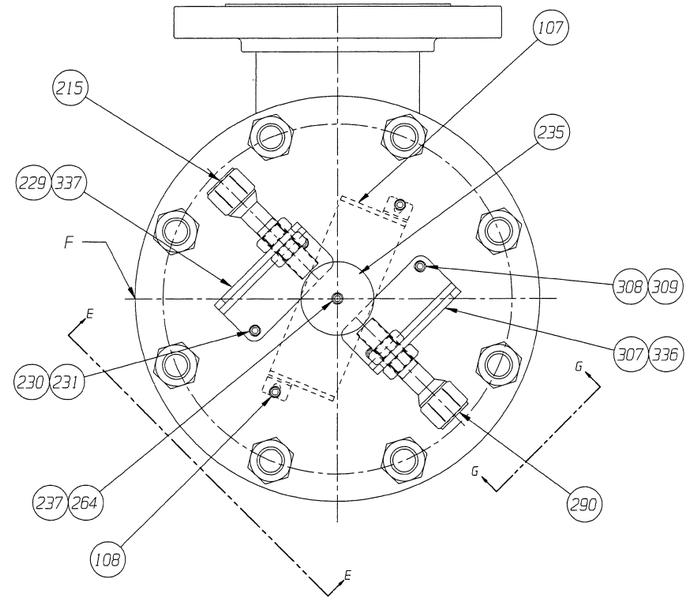


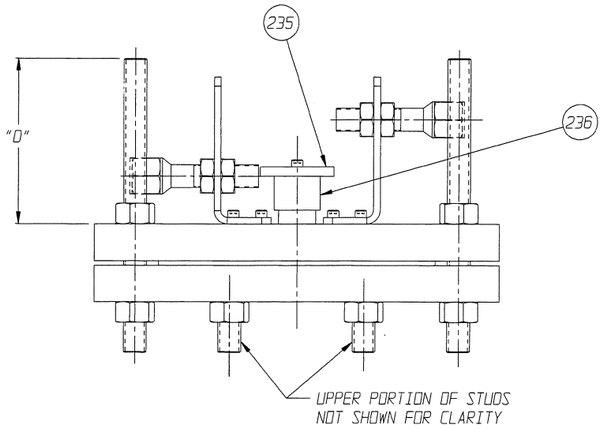
D VIEW A-A
GO PROX.
SWITCHES
TOP



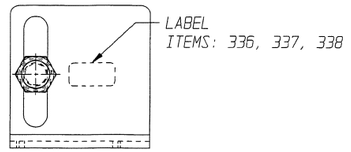
D VIEW F-F



D VIEW D-D
GO PROX.
SWITCHES
BOTTOM



D VIEW E-E



VIEW G-G
GO PROX. SWITCH
LABELING
(TYPICAL)

ECN# 9272

PATTERN NO. -

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

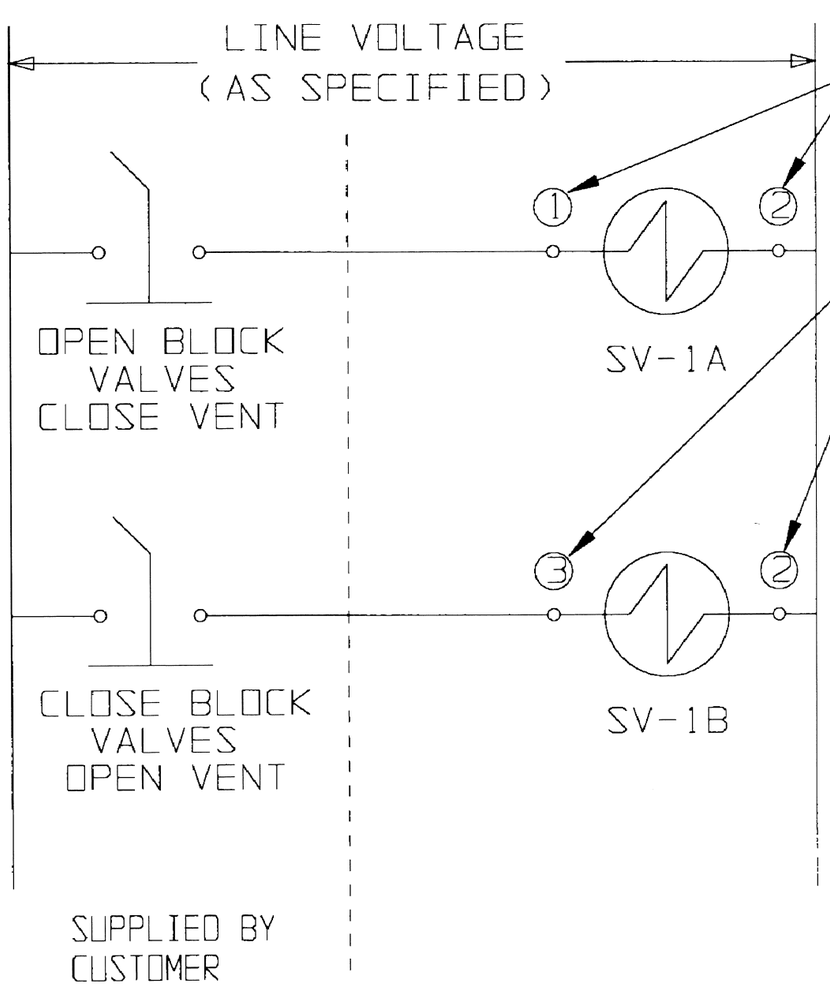
UNLESS OTHERWISE NOTED
X ± .38 (1.5mm)
.X ± .03 (.76mm)
.XX ± .02 (.5mm)
.XXX ± .005 (.12mm)
X/X ± 1/16 (1.5mm)
X° ± 1°
REMOVE ALL BURRS AND SHARP EDGES
ALL MACHINED SURFACES TO BE 125
EXCEPT AS NOTED

	DATE	BY
DWN	9/9/04	
CHKD	9-9-04	
APVD	9-9-04	

WEIGHT -
SCALE 1:2
ACCESSORY ASSEMBLY T4400
SUPERSEDES: -

ITT Industries
Engineered Valves
Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	117924	5 OF 5	D



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 SPECIFCATION 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	JRB	MJS	MJS
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
-	-

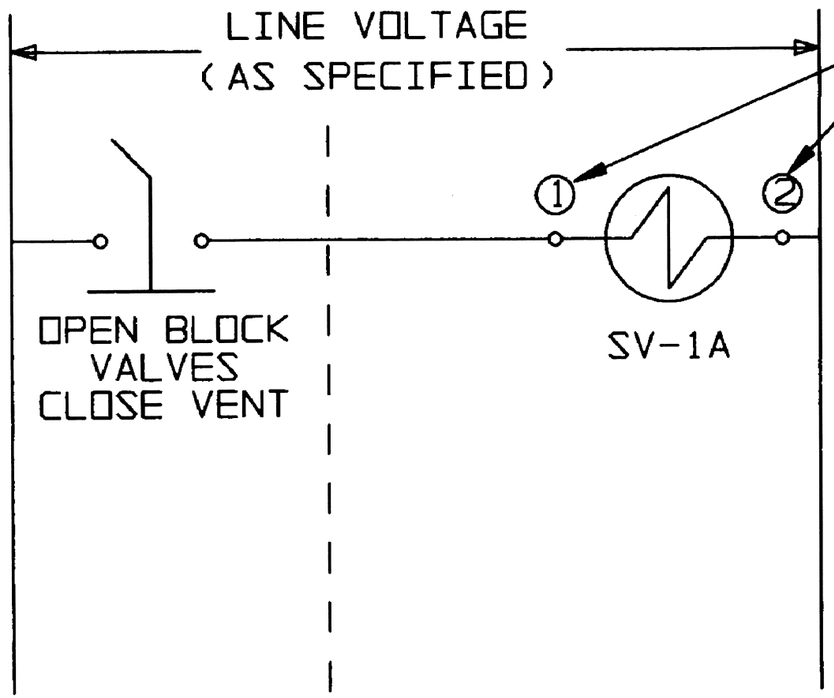
	DATE	BY
DWN	1/89	GCS
CHKD	1/89	JRB
APVD		

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



NOTES:
1. SV-1A IS A SINGLE COIL SPRING RTN SOLENOID VALVE CONTROLLING GAS FLOW.
C 2. 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.
C 5. 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.

WR#-

PART NO.-

PATTERN NO. -

REV	DATE	ECN NBR	BY	CHKD	APVD
-	-	-	-	-	-
-	-	-	-	-	-
C	10/11/94	1002	DJL	MPO	MPO
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
-	-

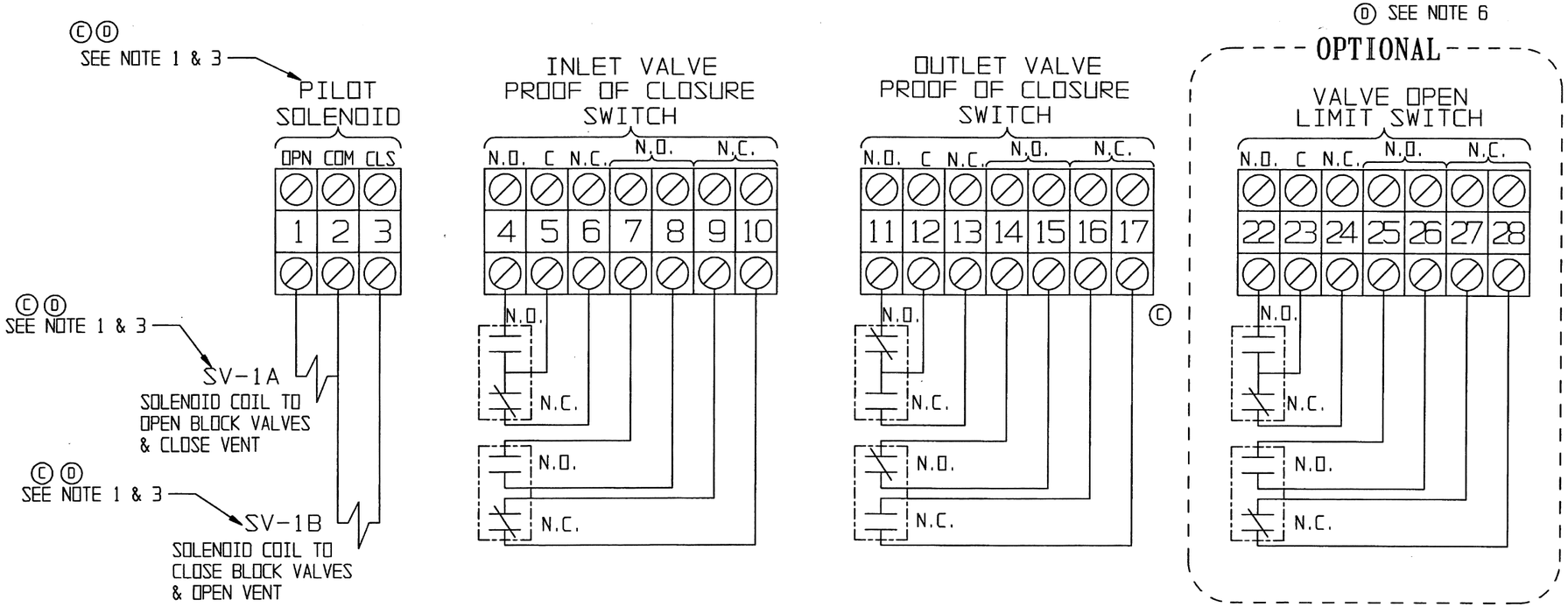
	DATE	BY
DWN	1/89	GCS
CHKD	1/89	JRB
APVD	.	.

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

SUPERSEDES:-

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

.	A	60-022	REV C



SWITCH LOGIC Ⓓ

SWITCH TYPE	INLET VALVE P.O.C. SWITCH				OUTLET VALVE P.O.C. SWITCH				VALVE OPEN LIMIT SWITCH			
TERMINALS	4-5	5-6	7-8 *	9-10*	11-12	12-13	14-15*	16-17*	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.

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

Ⓒ Ⓓ

NOTES:

1. SOLENOID VOLTAGE IS AC. CONSULT ORDER SPECIFICATION OR SOLENOID NAMEPLATE FOR SOLENOID VOLTAGE RATING.
2. ALL SWITCHES SHOWN WITH BLOCK VALVES IN CLOSED POSITION & VENT OPEN.
3. SV-1A & SV-2A REPRESENT THE MAGNETIC COILS ON THE SOLENOID. FOR FAIL CLOSED VALVES (MODEL 4X06), ONLY SV-1A IS SUPPLIED. THIS IS A MAINTAINED CONTACT SOLENOID. WHEN ENERGIZED THE VALVE OPENS.
   FAIL-IN-LAST VALVES (MODEL 4X05), SV-2A IS USED IN ADDITION TO SV-1A. THESE REQUIRE MOMENTARY CONTACTS IN THIS APPLICATION. BOTH COILS CANNOT BE ENERGIZED SIMULTANEOUSLY OR DAMAGE WILL OCCUR. "X" IN MODEL NUMBER DENOTES VALVE LINE SIZE.
4. WIRING SHOWN FOR DPDT SWITCHES. FOR SPDT DELETE WIRE NUMBERS 7,8,9,10,14,15,16,17,25,26,27 AND 28. SEE ORDER SPECIFICATION FOR TYPE AND RATING.
5. APPLICABILITY - ALL T4000 SYSTEMS WITH AC SOLENOIDS.
6. NOT NORMALLY SUPPLIED.

ECN#-

PART NO. -

PATTERN NO. -

REV	DATE	ECN NBR	BY	CHKD	APVD
-	-	-	-	-	-
D	10/13/95	-	JDW	MJD	MJD
C	10/4/94	1017	JRD	MJD	MJD
B	10/90	-	JRB	-	-
A	01/89	-	JRB	-	-

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 NONE

	DATE	BY
DWN	01/89	GCS
CHKD	01/89	JRB
APVD	.	.

WIRING DIAGRAM
GAS BURNER VALVE
PNEUMATIC - AC SOLENOIDS
-
-
-

SUPERSEDES:-

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

SIZE	DRAWING NUMBER	REV
C	60-018	D

FILE COPY

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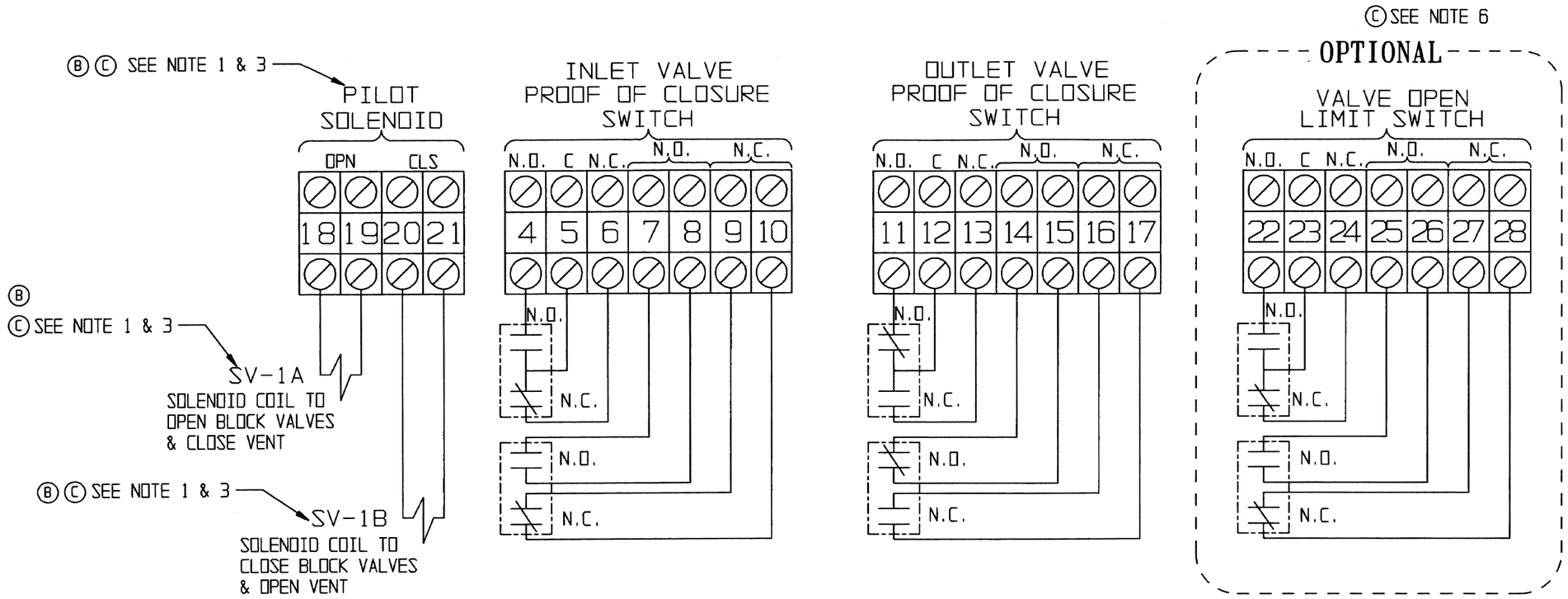


SWITCH LOGIC Ⓒ

SWITCH TYPE	INLET VALVE P.O.C. SWITCH				OUTLET VALVE P.O.C. SWITCH				VALVE OPEN LIMIT SWITCH			
TERMINALS	4-5	5-6	7-8*	9-10*	11-12	12-13	14-15*	16-17*	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.

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

Ⓑ Ⓒ

NOTES:

1. SOLENOID VOLTAGE IS DC. CONSULT ORDER SPECIFICATION OR SOLENOID NAMEPLATE FOR SOLENOID VOLTAGE RATING.
2. ALL SWITCHES SHOWN WITH BLOCK VALVES IN CLOSED POSITION & VENT OPEN.
3. SV-1A & SV-2A REPRESENT THE MAGNETIC COILS ON THE SOLENOID. FOR FAIL CLOSED VALVES (MODEL 4X06), ONLY SV-1A IS SUPPLIED. THIS IS A MAINTAINED CONTACT SOLENOID. WHEN ENERGIZED THE VALVE OPENS.
   FAIL-IN-LAST VALVES (MODEL 4X05), SV-2A IS USED IN ADDITION TO SV-1A. THESE REQUIRE MOMENTARY CONTACTS IN THIS APPLICATION. BOTH COILS CANNOT BE ENERGIZED SIMULTANEOUSLY OR DAMAGE WILL OCCUR. "X" IN MODEL NUMBER DENOTES VALVE LINE SIZE.
4. WIRING SHOWN FOR DPDT SWITCHES. FOR SPDT DELETE WIRE NUMBERS 7,8,9,10,14,15,16,17,25,26,27 AND 28. SEE ORDER SPECIFICATION FOR TYPE AND RATING.
5. APPLICABILITY - ALL T4000 SYSTEMS WITH DC SOLENOIDS.
6. NOT NORMALLY SUPPLIED.

WR# -

PART NO. -

PATTERN NO. -

REV	DATE	ECN NBR	BY	CHKD	APVD
-	-	-	-	-	-
-	-	-	-	-	-
C	10/13/95	-	JDA	MJD	MJD
B	10/4/94	1018	JRD	MJD	MJD
A	10/90	-	JRB	-	-

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 -

	DATE	BY
DWN	01/89	GCS
CHKD	01/89	JRB
APVD	.	.

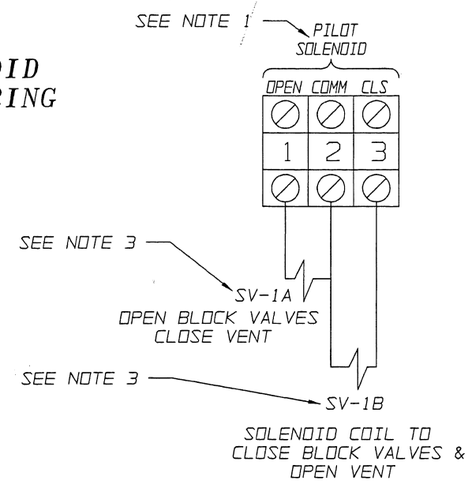
WIRING DIAGRAM
GAS BURNER VALVE
PNEUMATIC - DC SOLENOIDS
-
-
-

SUPERSEDES: -

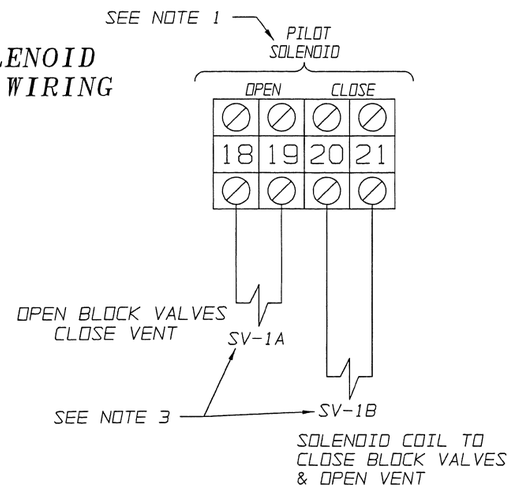
ITT Engineered Valves
ITT Fluid Technology Corporation
Lancaster, Pa
SHEET 1 OF 1

SIZE	DRAWING NUMBER	REV
C	60-024	C

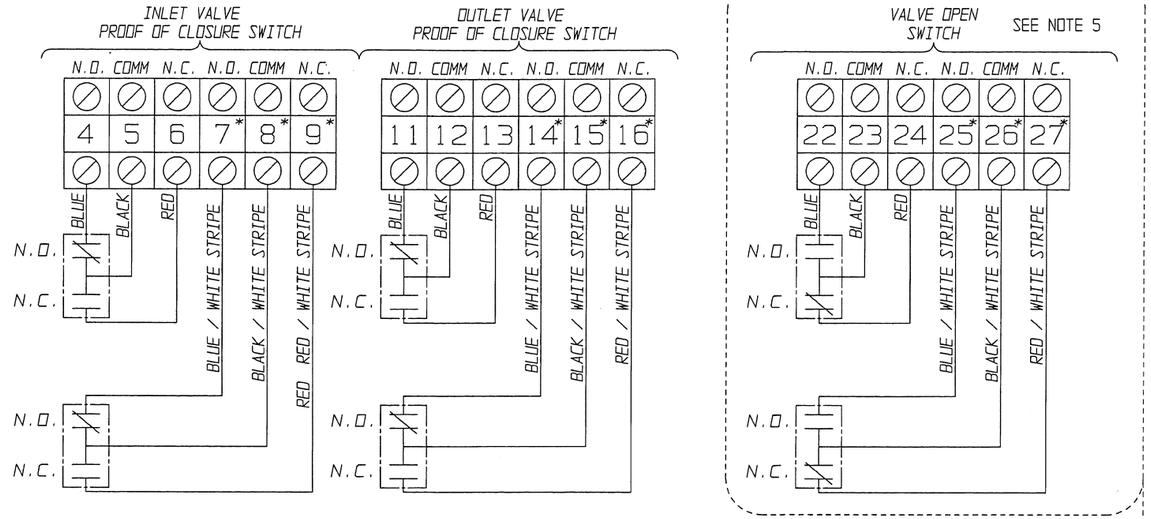
A.C. SOLENOID VOLTAGE WIRING DIAGRAM



D.C. SOLENOID VOLTAGE WIRING DIAGRAM



SWITCH WIRING DIAGRAM ©



SWITCH LOGIC

SWITCH TYPE	INLET VALVE P.O.C. SWITCH				OUTLET VALVE P.O.C. SWITCH				VALVE OPEN SWITCH			
TERMINALS	4-5	5-6	7-8 *	8-9 *	11-12	12-13	14-15*	15-16*	22-23	23-24	25-26*	26-27*
BLOCK VALVES CLOSED VENT OPEN	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢
BLOCK VALVES OPEN VENT CLOSED	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣/⊢	⊣⊢	⊣/⊢	⊣⊢

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

NOTES:
1. SEE ORDER SPECIFICATION FOR SOLENOID VOLTAGE RATING.
2. ALL SWITCHES SHOWN WITH BLOCK VALVES IN CLOSED POSITION AND VENT OPEN.
3. SV-1A AND SV-1B REPRESENT THE MAGNETIC COILS ON THE SOLENOID. FOR FAIL CLOSED VALVES (MODEL T4X06), ONLY SV-1A IS SUPPLIED. THIS IS A MAINTAINED CONTACT SOLENOID. WHEN ENGERGIZED THE VALVE OPENS. FAIL IN LAST POSITION VALVES (MODEL T4X05), SV-1B IS USED IN ADDITION TO SV-1A. THESE REQUIRE MOMENTARY CONTACTS IN THIS APPLICATION. BOTH COILS CANNOT BE ENGERGIZED SIMULTAINEOUSLY OR DAMAGE WILL OCCUR. "X" IN MODEL NUMBER DENOTES VALVE LINE SIZE.
4. WIRING SHOWN FOR DPDT SWITCHES. FOR SPDT DELETE WIRE NUMBERS 7,8,9,14,15,16,25,26 AND 27. SEE ORDER SPECIFICATION FOR TYPE AND RATING.
5. NOT NORMALLY SUPPLIED.

ECN# 12642

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 — X = ± 0.05, .X = ± 0.03, .XX = ± 0.02, .XXX = ± 0.005, X/2 = ± 1/16, X° = ± 1°, X' = ± 1'; MM — [X] = ± [.76], [.X] = ± [.51], [.XX] = ± [.12], [X'] = ± [1°]. REMOVE ALL BURRS AND SHARP EDGES. MACHINED SURFACES TO BE 250 EXCEPT AS NOTED.

	WEIGHT	SCALE
	-	-
	DATE	BY
DWN	9/1/09	JL
CHKD	9/2/09	MG
APVD	9/2/09	MG

WIRING DIAGRAM
T4000F GAS BURNER VALVE
WITH GO PRX SWITCHES
AC & DC SOLENOIDS
-
-

SUPERSEDES: -

ITT Engineered Valves Group Lancaster, PA USA

SIZE	DRAWING NUMBER	SHEET	REV
D	116763	1 OF 1	C

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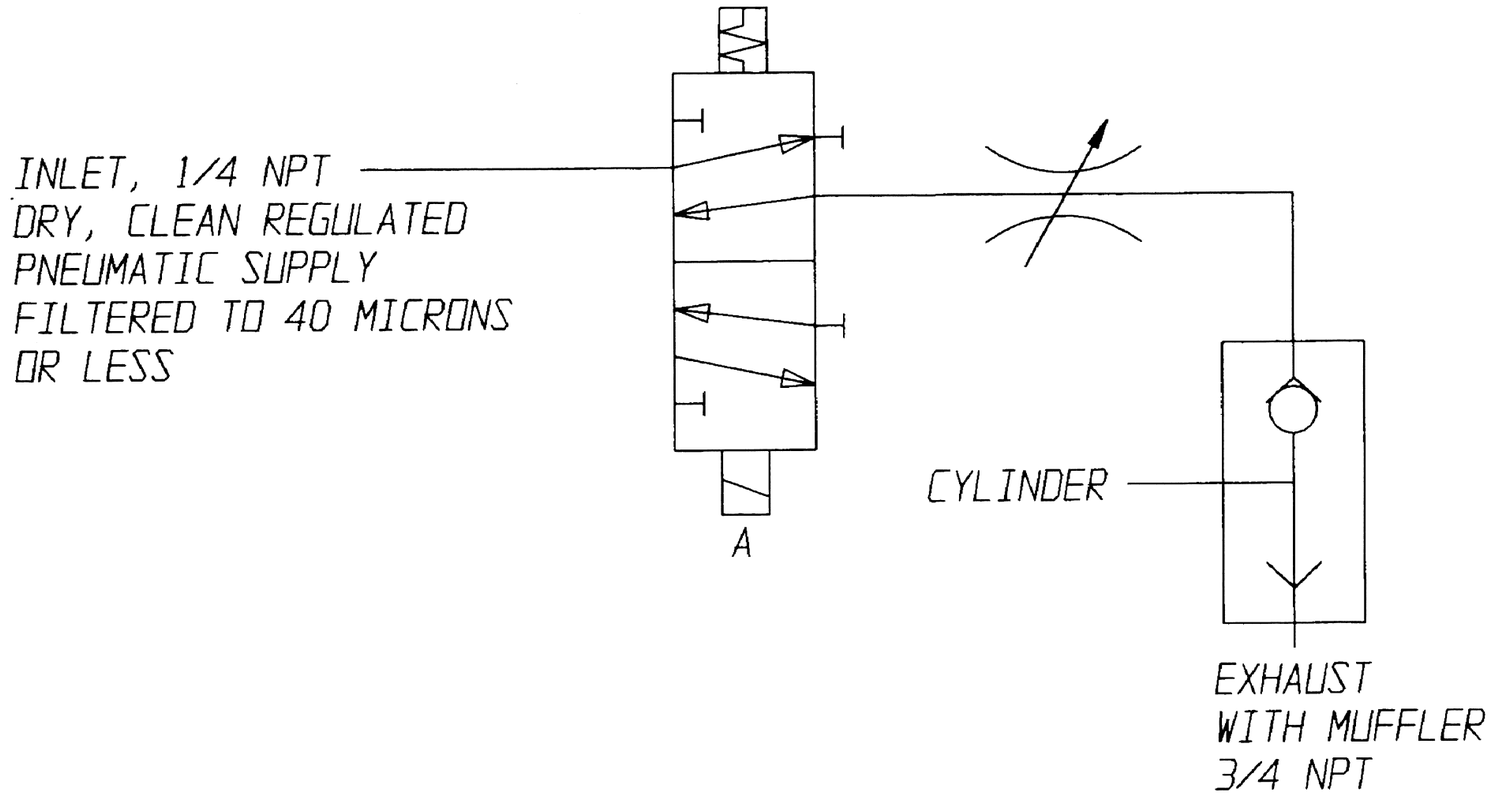


ECN#2515

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

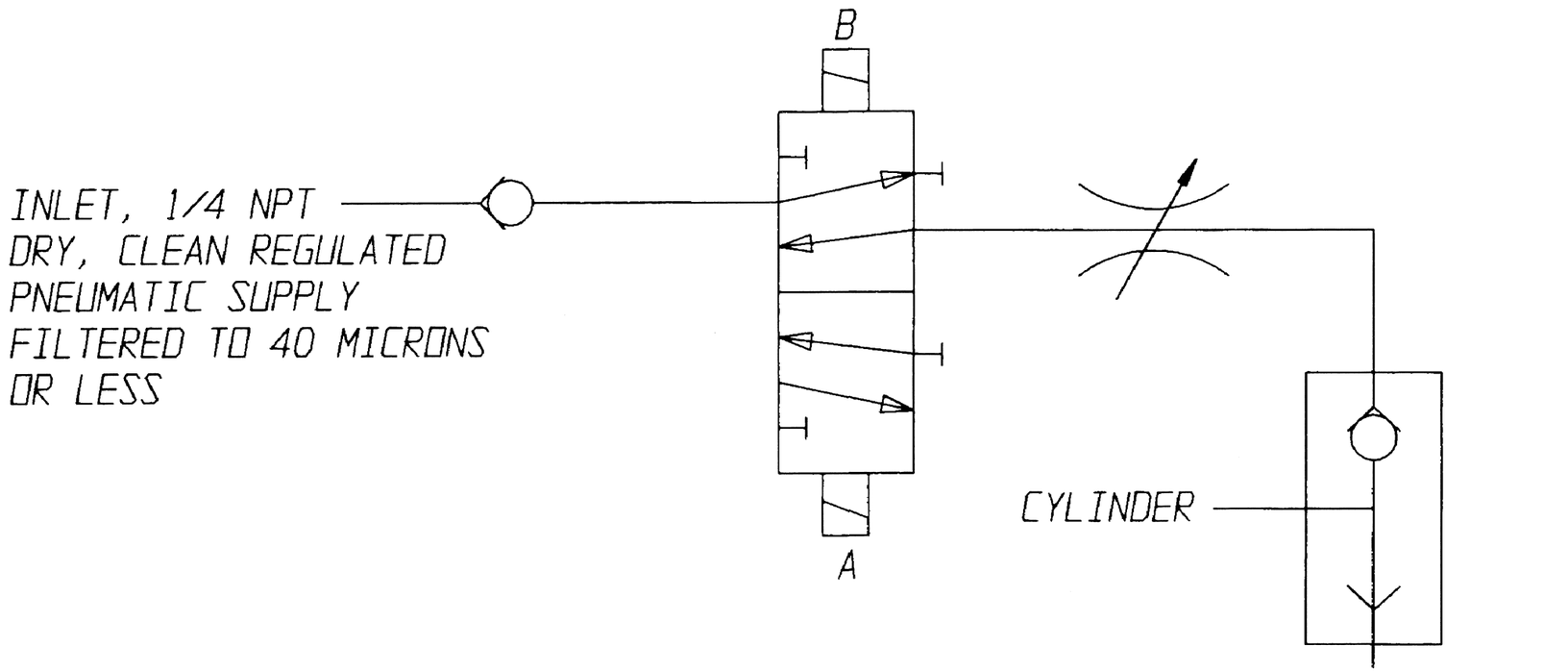
	DATE	BY
DWN	10/28/97	JDN
CHKD	10/29/97	
APVD	10/29/97	

PNEUMATIC SUPPLY
GAS BURNER VALVE
T4200 - T4600
VERSA SINGLE COIL
-
-

SUPERSEDES:-

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

SIZE	DRAWING NUMBER	REV
A	117473	-



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

ECN#2515

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	PNEUMATIC SUPPLY GAS BURNER VALVE T4200 - T4600 VERSA DUAL COIL - -	ITT Engineered Valves ITT Fluid Technology Corporation Lancaster, Pa SHEET 1 OF 1	

	DATE	BY
DWN	10/28/97	JDN
CHKD	10/29/97	[illegible]
APVD	10/29/97	[illegible]

SUPERSEDES:-

SIZE	DRAWING NUMBER	REV
A	117474	-