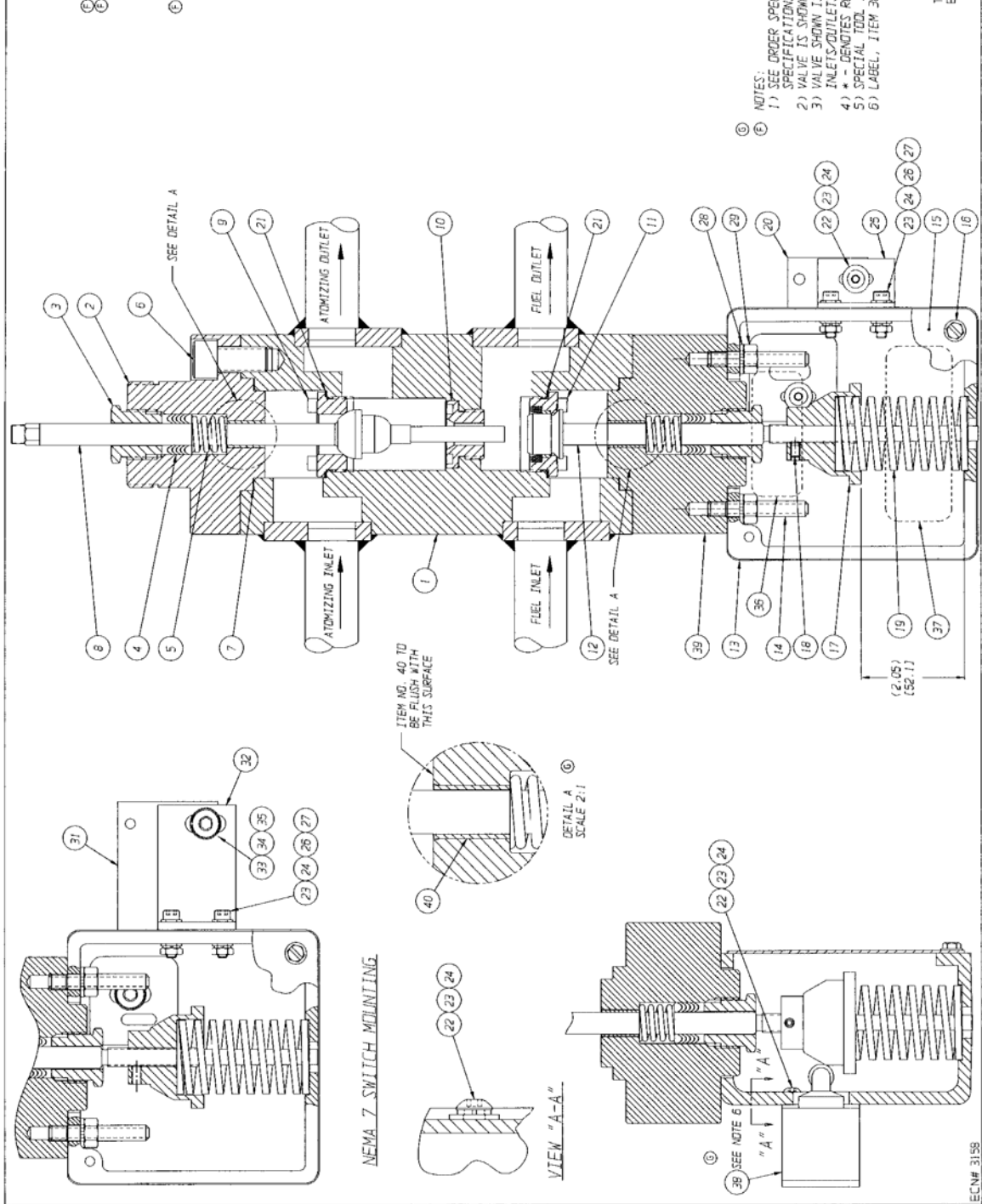


ITEM NO.	QTY	DESCRIPTION
1	1	VALVE BODY SUBASSEMBLY
2	1	END FLANGE STEAM SIDE
3	1	PACKING NUT
4	2	PACKING SET
5	2	PACKING SPRING
6	2	0.50-13 X 1.00 LG. SOCKET HEAD CAP SCREW
7	2	BODY GASKET
8	2	0.31-18 X 0.75 LG. HEX SOCKET HD CAP SCREW
9	1	MAIN STEM
10	1	FLAT WASHER
11	1	0.31-18 X 0.75 LG. HEX SOCKET HD CAP SCREW
12	1	OIL VALVE SEAT RING ASSEMBLY
13	1	OIL STEM
14	1	LIMIT SWITCH BOX
15	2	STAD (0.31-18 UNC)
16	2	LIMIT SWITCH BOX COVER
17	1	12-24 X 0.50 LG. HEX WASHER HEAD SCREW
18	1	SPRING SEAT
19	1	10-32 X 0.25 LG. SOCKET HEAD SET SCREW
20	1	OIL VALVE RETURN SPRING
21	1	OIL VALVE PROOF OF CLOSURE SWITCH NEMA 4
22	2	16-32 RING WASHER
23	2	0.31-18 X 0.75 LG. HEX SOCKET HD CAP SCR
24	2	#10 FLAT WASHER
25	2	#10 LOCK WASHER
26	2	SWITCH MOUNTING BRACKET (NEMA 4)
27	2	#10-32 X 0.75 LG. HEX SOCKET HD CAP SCREW
28	2	0.31 LOCK WASHER
29	2	0.31-18 HEX NUT
30	1	OIL VALVE PROOF OF CLOSURE SWITCH NEMA 7
31	1	SWITCH MOUNTING BRACKET (NEMA 7)
32	1	0.31 FLAT WASHER
33	1	0.31-18 X 0.75 LG. HEX SOCKET HD CAP SCR
34	1	LABEL - CAUTION STEM PACKING
35	1	LABEL - CAUTION SPRING
36	1	LABEL - PROOF OF CLOSURE
37	1	END FLANGE OIL SIDE
38	1	BEARING
39	2	BEARING



- NOTES:
- SEE ORDER SPECIFICATION FOR MAIN VALVE AND ACCESSORY/OPTIONS SPECIFICATIONS.
 - VALVE IS SHOWN IN CLOSED POSITION.
 - VALVE SHOWN IS LEFT TO RIGHT FLOW. FOR RIGHT TO LEFT FLOW, INLETS/OUTLETS ARE REVERSED.
 - DIMENSIONS RECOMMENDED SPARE PART.
 - SPECIAL TOOL IS REQUIRED TO REMOVE SEATS. CONSULT FACTORY.
 - LABEL, ITEM 36, TO BE PLACED ON TOP OF SWITCH HEAD.

ITEM NO.	QTY	DESCRIPTION
22	2	NEMA 4, NEMA 7
23	6	4
24	4	2
25	1	1
32	-	1
33	-	2
34	-	2
35	-	2

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ECN# 3158

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SCALE: 1" = 1" (2.05) (52.11)

ITEM DATE: 10/1/88

REVISIONS:

1	REVISED	10/1/88
2	REVISED	10/1/88
3	REVISED	10/1/88
4	REVISED	10/1/88
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38	REVISED	10/1/88
39	REVISED	10/1/88
40	REVISED	10/1/88

IT Engineered Valves

117 Field Technology Center

11775 W. 11th Street

Overland Park, KS 66204

TEL: 913-646-1000

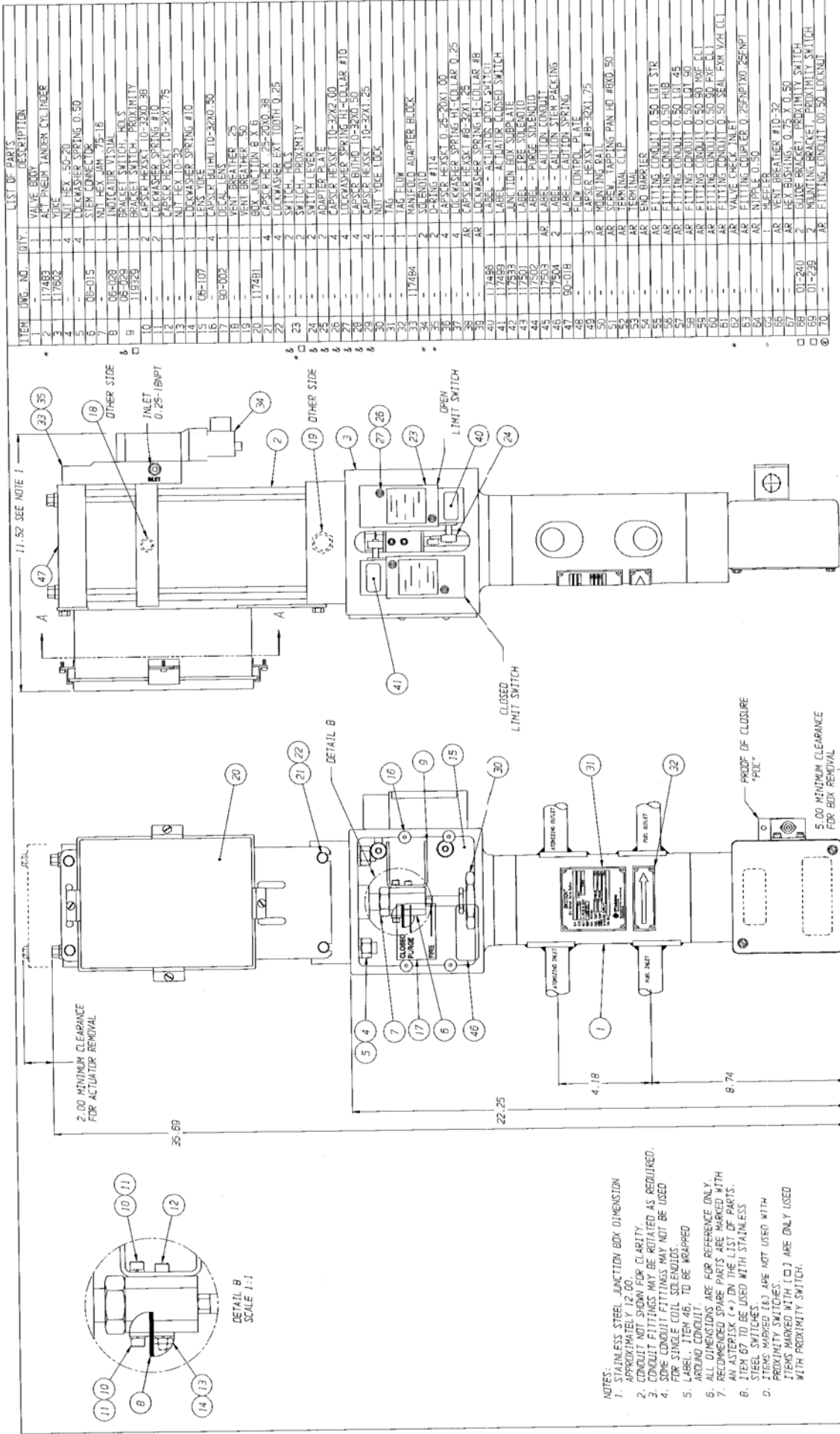
FAX: 913-646-1001

TEST: 913-646-1002

PART NO. 03-001

PATTERN NO. 03-001

FILE COPY

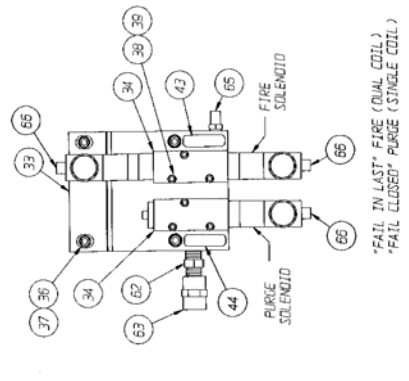
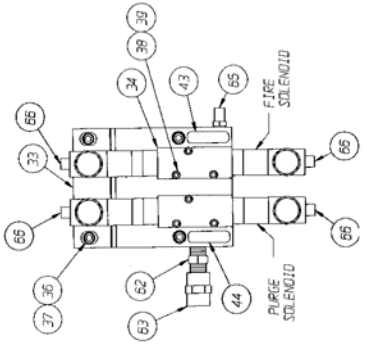
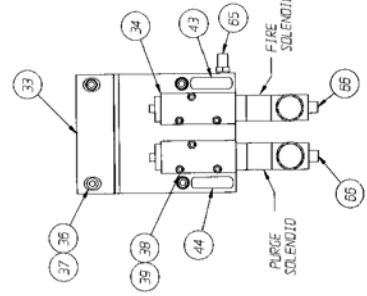
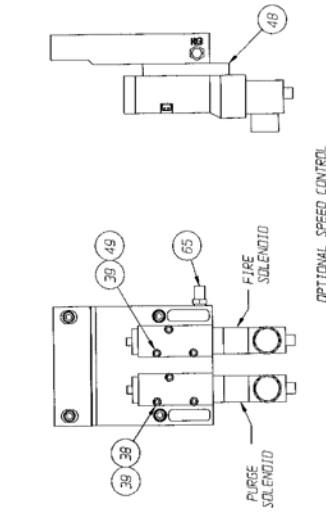
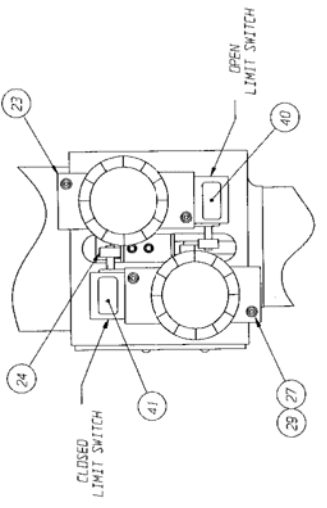
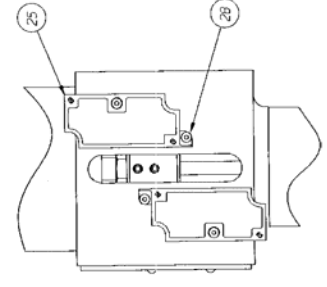
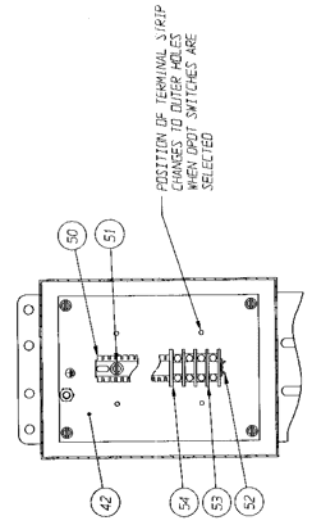


ITEM	QTY.	DESCRIPTION
1	1	VALVE BODY
2	1	ACT. PNEUM. TANDEN CYLINDER
3	1	YRKE
4	4	NUT HEX .50-20
5	4	LOCKWASHER SPRING 0.50
6	1	STEM CONNECTOR
7	1	NUT HEX JAM .75-16
8	1	INDICATOR VISUAL
9	1	BRACKET SWITCH HOLDS
10	1	BRACKET SWITCH PROXIMITY
11	2	CAPSCR HEXAST 10-32X0.36
12	2	LOCKWASHER SPRING #10
13	2	CAPSCR HEXAST 10-32X1.75
14	1	NUT HEX .50-20
15	1	LOCKWASHER SPRING #10
16	1	LINK WIRE
17	4	CLAN P BALLUT 10-32X0.50
18	1	DECAL LENS
19	1	VENT BREATHER .25
20	1	VENT BREATHER .50
21	1	BOX ANCHOR 8 X B
22	4	CAPSCR HEX .25-20X0.36
23	4	LOCKWASHER EXT 100TH 0.25
24	2	SWITCH, PROXIMITY
25	2	SWITCH LEVER
26	2	ADAPTER PLATE
27	4	LOCKWASHER SPRING 10-32X1.00
28	4	LOCKWASHER SPRING 10-COLLAR #10
29	4	CAPSCR BRIDG 10-32X0.50
30	4	CAPSCR HEXAST 10-32X1.25
31	1	NUT YRKE LOCK
32	1	TAG
33	1	VAC FLOW
34	1	MANIFOLD ADAPTER BLOCK
35	2	SOLENOID
36	1	O-RING #14
37	4	CAPSCR HEXAST 0.25-20X1.00
38	4	LOCKWASHER SPRING 10-COLLAR 0.25
39	4	CAPSCR HEXAST #8-32X1.25
40	1	AR LOCKWASHER SPRING 10-COLLAR #8
41	1	AR LABEL - ACTUATOR CLOSED SWITCH
42	1	AR LABEL - FIBRE SOLENOID
43	1	AR LABEL - FIBRE SOLENOID
44	1	AR LABEL - FIBRE SOLENOID
45	1	AR LABEL - CAUTION CONDUIT
46	2	AR LABEL - CAUTION STEM PACKING
47	1	AR FLOW CONTROL PLATE
48	1	AR FLOW CONTROL PLATE
49	3	AR CAPSCR HEXAST #8-32X1.75
50	1	AR POINTING BALL
51	1	AR SUPER. TAPPING PAN HD #8X0.50
52	1	AR TERMINAL CLIP
53	1	AR TERMINAL
54	1	AR END BUSHING
55	1	AR FITTING CONDUIT 0.50 LOT STR
56	1	AR FITTING CONDUIT 0.50 HUB
57	1	AR FITTING CONDUIT 0.50 LOT 45
58	1	AR FITTING CONDUIT 0.50 LOT 50
59	1	AR FITTING CONDUIT 0.50 W/F CL1
60	1	AR FITTING CONDUIT 0.50 F/W CL1
61	1	AR FITTING CONDUIT 0.50 SEAL F/W CL1
62	1	AR VALVE CHECK INLET
63	1	AR FITTING COUPLER 0.25 FNPT X 0.25 FNPT
64	1	AR NIPPLE 0.50
65	1	AR SAEFFER
66	1	AR VENT BREATHER #10-32
67	1	AR HEX BUSHING 0.25 X 0.50
68	1	AR GUIDE BRACKET PRESSURE SWITCH
69	1	AR POINTING BRACKET PROXIMITY SWITCH
70	1	AR FITTING CONDUIT 0.50 LOT 50

ECN# 8025

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- NOTES:
1. STAINLESS STEEL JUNCTION BOX DIMENSION APPROXIMATELY 12.00.
 2. CONDUIT NOT SHOWN FOR CLARITY.
 3. CONDUIT FITTINGS MAY BE ROTATED AS REQUIRED.
 4. SOME CONDUIT FITTINGS MAY NOT BE USED FOR SINGLE COIL SOLENOIDS.
 5. LABEL, ITEM 46, TO BE WRAPPED AROUND CONDUIT.
 6. ALL DIMENSIONS ARE FOR REFERENCE ONLY. RECOMMENDED SPARE PARTS ARE MARKED WITH AN ASTERISK (*) IN THE LIST OF PARTS.
 7. ITEM 67 TO BE USED WITH STAINLESS STEEL SWITCHES.
 8. ITEMS MARKED E&J ARE NOT USED WITH PROXIMITY SWITCHES.
 9. ITEMS MARKED WITH (C) ARE ONLY USED WITH PROXIMITY SWITCH.



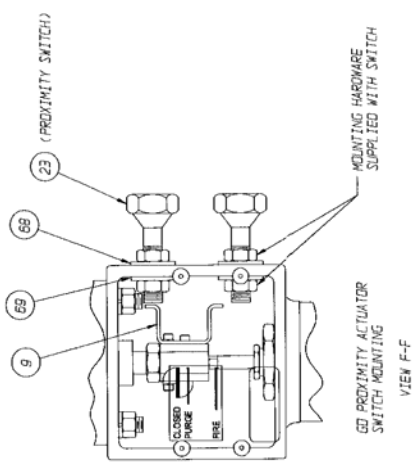
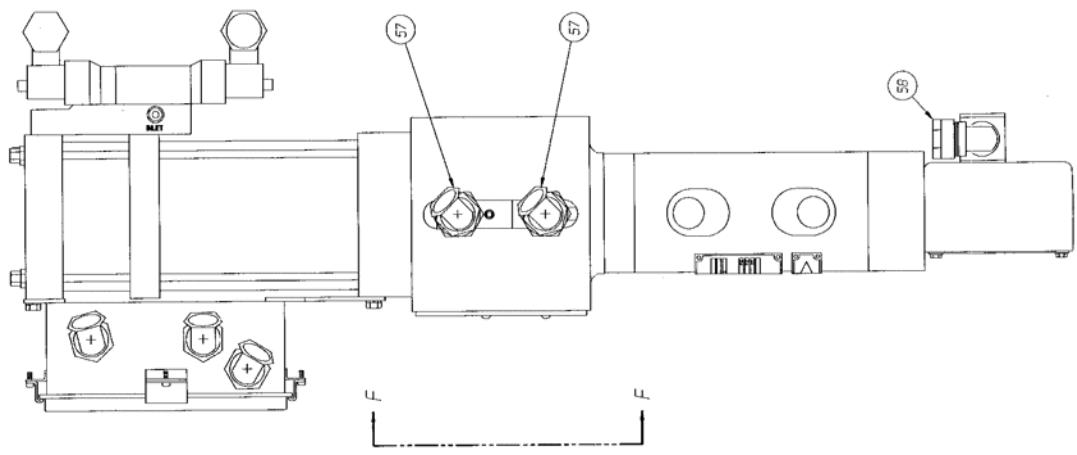
ECN# 9025

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REV	99	DATE	07/04/81
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IT Industries
Engineered Valves
Lancaster, PA USA

117479

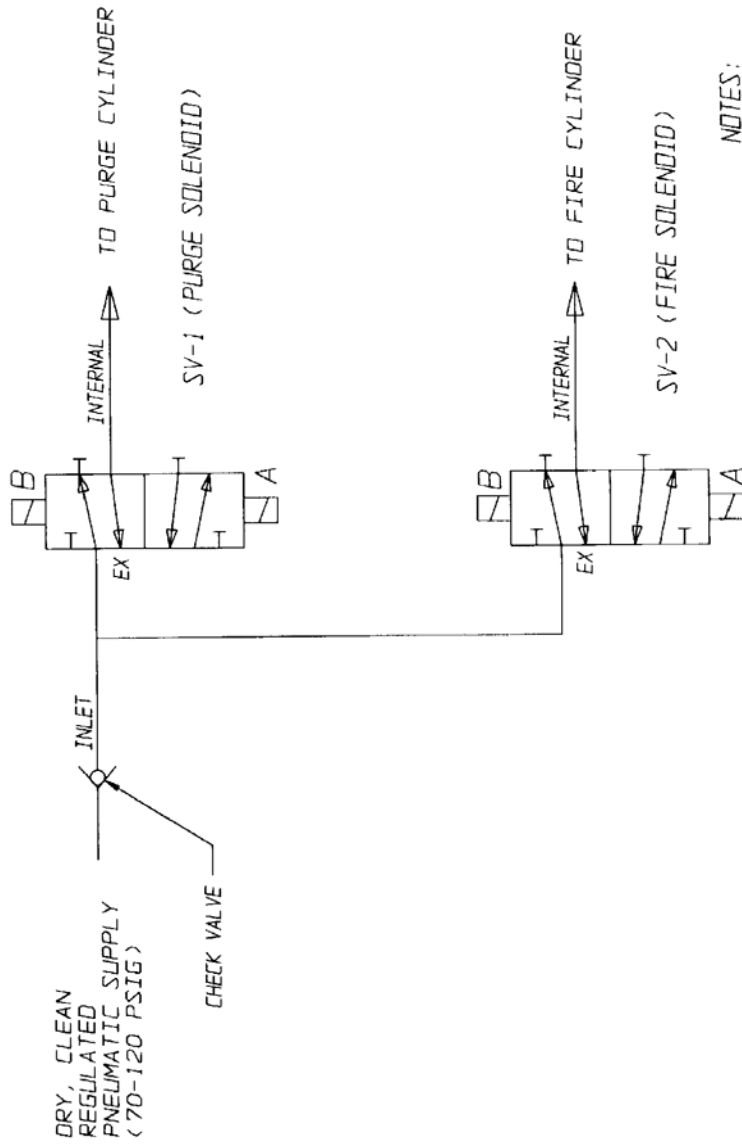


PROXIMITY SWITCH

PATTERN NO. -		VALVE/ACTUATOR ASSEMBLY	
ITT Industries		1000	
Lancaster, PA, USA		1000	
YEAR 11/74/79		D	
D		117479	
SHEET 1		4	
REV		K	

ECN# 0025

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NOTES:

1. SV-1 AND SV-2 ARE MANIFOLDED, DUAL COIL, MOMENTARY CONTACT SOLENOID VALVES.
2. VALVES SHOWN WITH COIL "B" LAST ENERGIZED.
3. PORT IDENTIFICATION REFERENCES MANIFOLD BLOCK

ECN# 3158

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TOLERANCES EXCEPT AS NOTED
 DECIMALS ± .02
 .XX ± .06
 .XXX ± .08
 ANGLES ± .05
 HOLE AND REAMER ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED
 SURFACES TO BE FINISHED UNLESS OTHERWISE NOTED
 125° EXCEPT AS NOTED

WEIGHT	SCALE	DATE	BY
-	-	11/6/97	JDM
CHKD	11/21/98	WJC	
APVD	11/21/98	WJC	

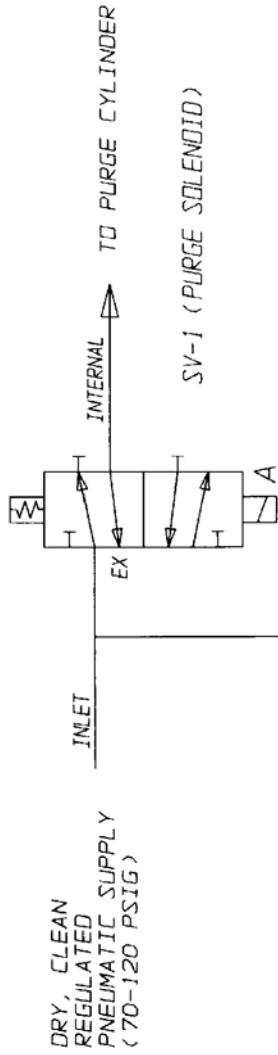
PNEUMATIC SCHEMATIC
 OIL BURNER VALVE
 FAIL IN LAST POSITION

PART NO. -

PATTERN NO. -

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

SIZE	DRAWING NUMBER	REV
B	117485	-



DRY, CLEAN
REGULATED
PNEUMATIC SUPPLY
(70-120 PSIG)

INTERNAL TO PURGE CYLINDER

SV-1 (PURGE SOLENOID)

INTERNAL TO FIRE CYLINDER

SV-2 (FIRE SOLENOID)

NOTES:

1. SV-1 AND SV-2 ARE MANIFOLDED, SINGLE COIL, SPRING RETURN MAINTAINED CONTACT SOLENOID VALVES.
2. VALVES SHOWN WITH COIL "A" DE-ENERGIZED.
3. PORT IDENTIFICATION REFERENCES MANIFOLD BLOCK

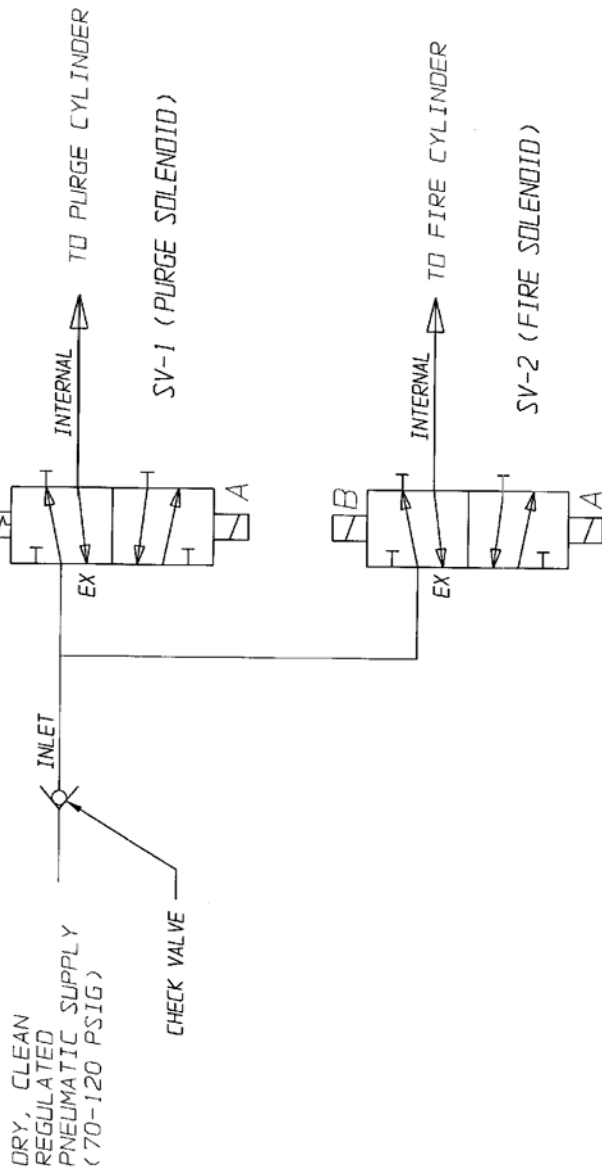
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ECN# 3158

PART NO. -

PATTERN NO. -

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<p>THIS IS A FACTORY MUTUAL CONTROLLED DOCUMENT. CHANGES MUST BE APPROVED BY FM PRIOR TO IMPLEMENTING.</p>		<p>ECN# 3158</p>		<p>PART NO. -</p>		<p>PATTERN NO. -</p>		<p>SIZE B DRAWING NUMBER 117486 REV -</p>	
<p>ITT Engineered Valves Lancaster, Pa</p>		<p>DATE 11/6/97 BY JDM</p>		<p>CHKD 1/21/98 APVD 1/21/98</p>		<p>PNEUMATIC SCHEMATIC OIL BURNER VALVE FAIL CLOSED</p>		<p>SIZE B DRAWING NUMBER 117486 REV -</p>	



NOTES:

1. SV-2 IS MANIFOLDED, DUAL COIL, MOMENTARY CONTACT SOLENOID VALVE, SHOWN WITH COIL "B" LAST ENERGIZED.
2. SV-1 IS MANIFOLDED, SINGLE COIL, SPRING RETURN MAINTAINED CONTACT SOLENOID VALVE, SHOWN WITH COIL "A" DE-ENERGIZED.
3. PORT IDENTIFICATION REFERENCES MANIFOLD BLOCK

ECN#8319

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THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.

UNLESS OTHERWISE NOTED

FINISH	MI
X = ± 0.06	(.25)
XX = ± 0.03	(.12)
XXX = ± 0.015	(.06)
XX = ± 1/16	
X° = ± 1°	
X° = ± 1/2°	
X° = ± 1/4°	

REMOVE ALL CORNERS AND SWAMP EDGES (MACHINE) SURFACES TO BE ∇ EXCEPT AS NOTED.

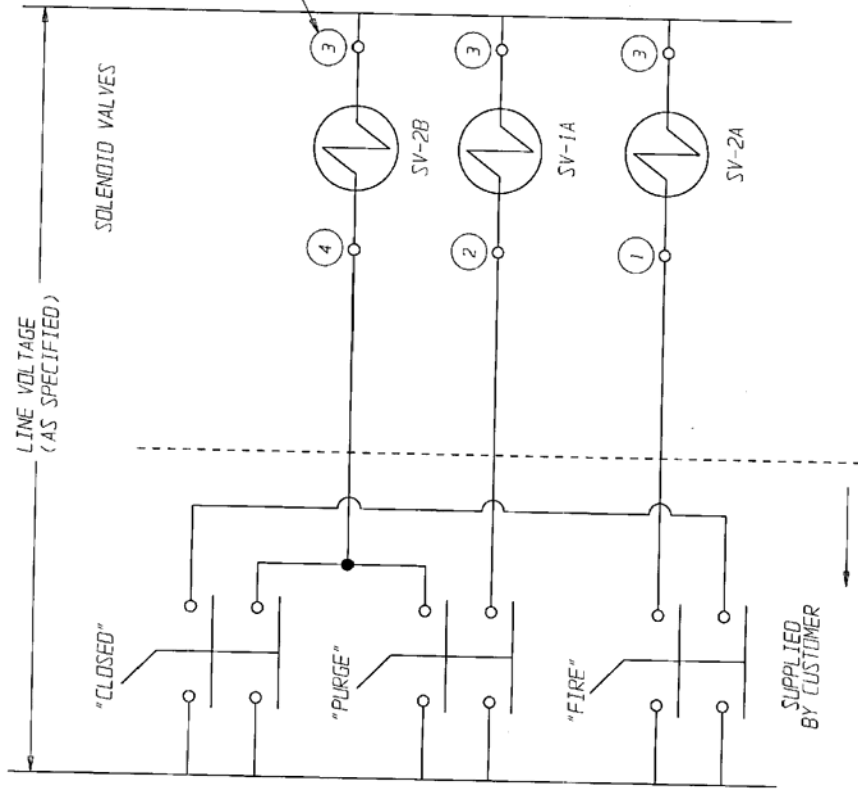
WEIGHT	SCALE
-	NTS
DATE	BY
3-17-04	AS
DATE	BY
3-17-04	AS
CHKD	APVD
3-17-04	3-17-04
APVD	3-17-04

PNEUMATIC SCHEMATIC
OIL BURNER VALVE
FAIL IN LAST FIRE
FAIL CLOSED PURGE

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

ITT Industries
Engineered Valves
Lancaster, PA USA

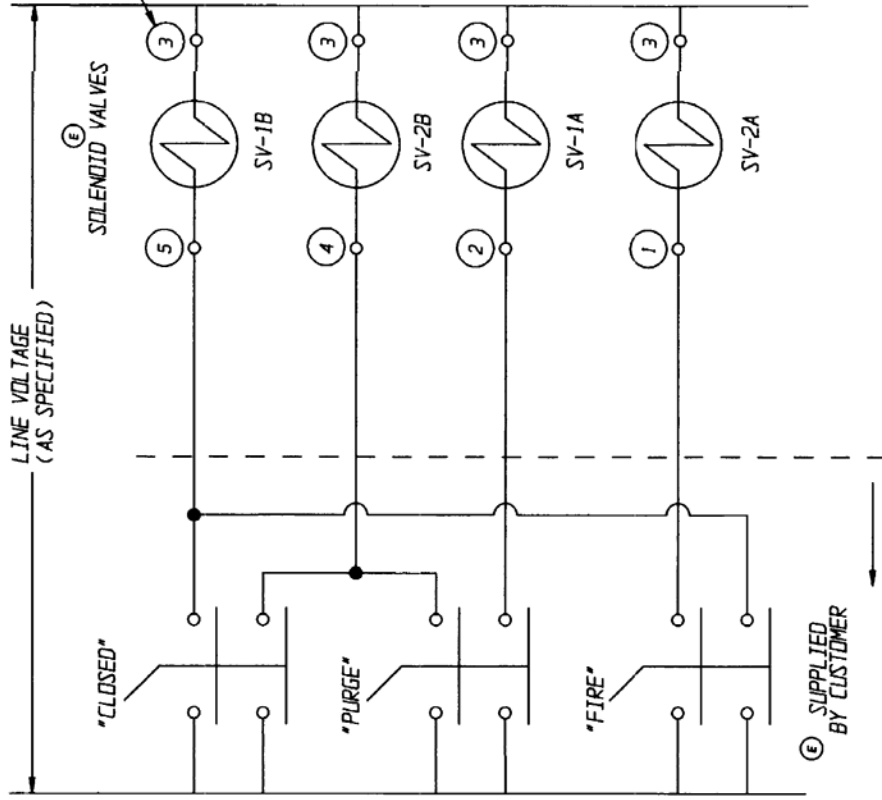
SIZE	DRAWING NUMBER	SHEET	REV
B	119746	1	DF1



- NOTES:
1. COIL SV-1A IS A SPRING RETURN SOLENOID VALVE CONTROLLING PURGE FLOW.
 2. COILS SV-2A AND SV-2B FORM A DUAL COIL SOLENOID VALVE CONTROLLING FUEL FLOW.
 3. SWITCHES ARE MOMENTARY CONTACT TYPE.
 4. O - REPRESENTS A WIRE NUMBER.
 5. SEE ORDER SPECIFICATION FOR SOLENOID VOLTAGE RATING.
 6. APPLICATION: ALL FAIL IN LAST FIRE AND FAIL CLOSED PURGE OIL VALVES.
 7. DO NOT ENERGIZE SOLENOID COILS SV-2A AND SV-2B SIMULTANEOUSLY OR SOLENOID DAMAGE CAN OCCUR.
 8. WIRE MARKER NUMBERS SHOWN ARE FOR AC SOLENOIDS. SEE DRAWING 60-009 FOR DC WIRE MARKER NUMBERS.

ECN#8319

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- (E) NOTES:
1. COILS SV-1A AND SV-1B FORM A DUAL COIL SOLENOID VALVE CONTROLLING PURGE FLOW.
 2. COILS SV-2A AND SV-2B FORM A DUAL COIL SOLENOID VALVE CONTROLLING FUEL FLOW.
 3. SWITCHES ARE MOMENTARY CONTACT TYPE.
 4. O - REPRESENTS A WIRE NUMBER.
 5. SEE ORDER SPECIFICATION FOR SOLENOID VOLTAGE RATING.
 6. APPLICATION: ALL FAIL IN LAST OIL VALVES.
 7. DO NOT ENERGIZE SOLENOID COILS SV-1A AND SV-1B OR SV-2A AND SV-2B SIMULTANEOUSLY OR SOLENOID DAMAGE CAN OCCUR.
 8. WIRE MARKER NUMBERS SHOWN ARE FOR AC SOLENOIDS. SEE DRAWING 60-009 FOR DC WIRE MARKER NUMBERS.

FILE COPY

WR# - _____ PART NO. - _____ PATTERN NO. - _____

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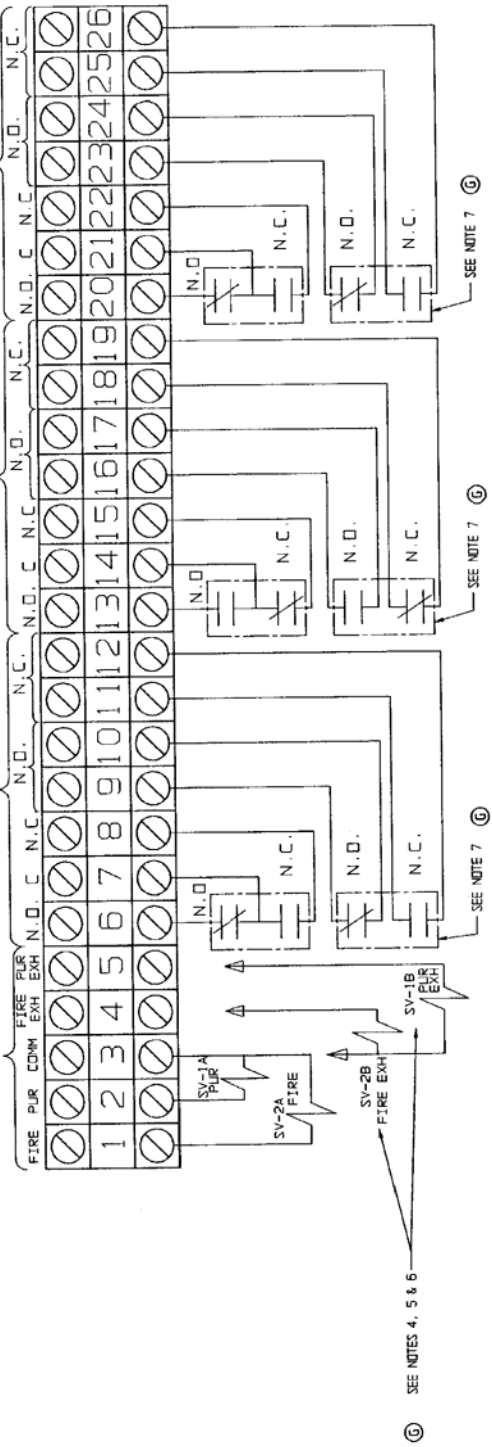
REV	DATE	V.P.	BY	CHKD	APVD	TOLERANCES EXCEPT AS NOTED DECIMALS .XX ± .02 .XXX ± .005 UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS UNLESS OTHERWISE NOTED.	WEIGHT	SCALE	ELECTRICAL SCHEMATIC OIL BURNER VALVE PNEUMATIC - FAIL IN LAST	ITT Engineered Valves ITT Fluid Technology Corporation Lancaster, Pa
E	12/26/51	ZSS	MIB				DWN	10/50	GCS	SIZE B
D	10/50	JRB					CHKD	10/50	JRB	DRAWING NUMBER 60-003
							APVD			REV E
										SHEET 1 OF 1

ACTUATOR WIRING

CLOSED ACTUATOR LIMIT SWITCH

OPEN ACTUATOR LIMIT SWITCH

OIL VALVE PROOF OF CLOSURE LIMIT SWITCH



SWITCH LOGIC

SWITCH TYPE	CLOSED ACTUATOR (SPOT)	7-8	6-7	7-8	9-10	11-12	13-14	14-15	15-16	16-17	18-19	20-21	21-22	23-24	25-26
TERMINALS	6-7	7-8	6-7	7-8	9-10	11-12	13-14	14-15	15-16	16-17	18-19	20-21	21-22	23-24	25-26
POSITION: CLOSE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
POSITION: PURGE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
POSITION: FIRE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

- NOTES:
- SOLENOID VOLTAGE IS A.C.
 - ALL SWITCHES SHOWN WITH MAIN VALVE IN CLOSED POSITION.
 - SEE ORDER SPECIFICATION FOR SOLENOID VOLTAGE RATING.
 - FOR T506, T1006 & T2006 DELETE SV-1B & SV-2B.
 - FOR T505, T1005 & T2005 INCORPORATE SV-1B & SV-2B.
 - FOR T1007 INCORPORATE SV-2B. DELETE SV-1B.
 - WIRING SHOWN FOR DPDT SWITCHES. FOR SPDT SWITCHES, DELETE WIRE NO.'S 9, 10, 11, 12, 16, 17, 18, 19, 23, 24, 25 & 26.
 - FOR PURGE INDICATION, WIRE N.C. CONTACTS OF OPEN ACTUATOR AND CLOSED ACTUATOR LIMIT SWITCHES IN SERIES.
 - PUR = PURGE.

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

ECN#8319

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

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THIRD ANGLE PROJECTION

WIRING DIAGRAM
OIL BURNER VALVE
PNEUMATIC - AC SOLENOIDS

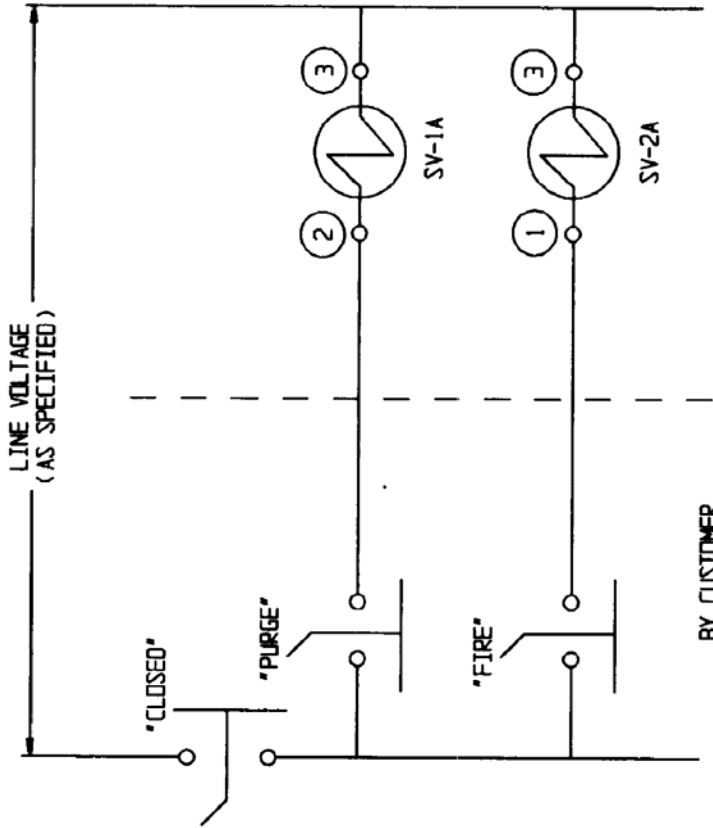
ITT Industries
Engineered Valves
Lancaster, PA USA

SIZE: DRAWING NUMBER: 60-008
SHEET: 1 OF 1
REV: 5

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. SURFACES TO BE BY EXCEPT AS NOTED.

UNLESS OTHERWISE NOTED: WEIGHT: N/A
SCALE: N/A
DATE: 3-17-04
BY: DWI
CHKD: J-H-P
APPROVED: J-H-P

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- NOTES: 1) SV-1A AND SV-2A ARE MANIFOLDED SINGLE COIL SPRING RETURN SOLENOID VALVES.
 2) SWITCHES ARE MAINTAINED CONTACT TYPE.
 3) O REPRESENTS A WIRE NUMBER.
 4) WIRE NUMBERS ARE FOR A.C. SOLENOIDS. SEE 60-009 FOR D.C. SOLENOID WIRE NUMBERS.
 5) SV-1A CONTROLS PURGE FLOW. SV-2A CONTROLS FUEL OR FUEL AND ATOMIZING FLOW.
 6) SEE ORDER SPECIFICATION FOR SOLENOID VOLTAGE RATING.

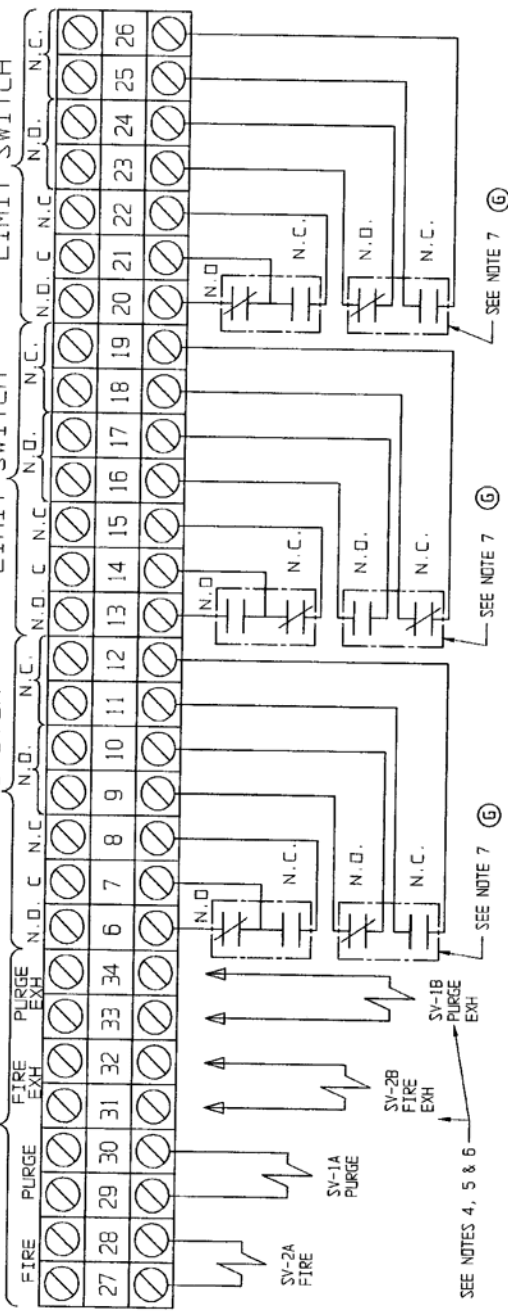
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FILE COPY

PART NO. 60-004 PATTERN NO. -

REV	DATE	BY	CHKD	APVD	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 N/A	SCALE N/A	ELECTRICAL SCHEMATIC OIL BURNER VALVE PNEUMATIC - FAIL CLOSED	ITT Engineered Valves ITT Fluid Technology Corporation Lancaster, Pa
A	11/03/94	1057	WBR	APVD	ALL MACHINED SURFACES TO BE 125 EXCEPT AS NOTED	DWN	10/90	GCS	SIZE A
REV	DATE	BY	CHKD	APVD	APVD	CHKD	10/90	JRB	DRAWING NUMBER 60-004
									SHEET 1 OF 1
									REV A

ACTUATOR WIRING



SWITCH LOGIC

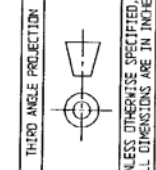
SWITCH TYPE	CLOSED ACTUATOR (SPDT)	CLOSED ACTUATOR (SPDT)	OPEN ACTUATOR (SPDT)	OPEN ACTUATOR (SPDT)	P.D.C. SPDT	P.D.C. (DPDT)
TERMINALS	6-7	7-8	9-10	11-12	13-14	15-16
POSITION: CLOSE	-	-	-	-	-	-
POSITION: PURGE	-	-	-	-	-	-
POSITION: FIRE	-	-	-	-	-	-

- NOTES:
- SOLENOID VOLTAGE IS D.C.
 - ALL SWITCHES SHOWN WITH MAIN VALVE IN CLOSED POSITION.
 - SEE ORDER SPECIFICATION FOR SOLENOID VOLTAGE RATING.
 - FOR T506, T1006 OR T2006, FAIL CLOSED, SV-1B & SV-2B (EXHAUST COILS) ARE NOT SUPPLIED. SOLENOIDS REQUIRE MAINTAINED CONTACT SWITCHES.
 - FOR T505, T1005 OR T2005, FAIL IN LAST POSITION, SV-1B & SV-2B (EXHAUST COILS) ARE SUPPLIED. SOLENOIDS REQUIRE MOMENTARY CONTACT SWITCHES.
 - FOR T1007, FAIL IN LAST FIRE, FAIL CLOSED PURGE, SV-1B (EXHAUST COIL) IS NOT SUPPLIED. PURGE SOLENOID REQUIRES MAINTAINED CONTACT SWITCH, FIRE SOLENOID REQUIRES MOMENTARY CONTACT SWITCH.
 - WIRING SHOWN FOR DPDT SWITCHES FOR SPOT SWITCHES DELETE WIRE NO'S 9, 10, 11, 12, 16, 17, 18, 19, 23, 24, 25, 26.
 - FOR PURGE INDICATION, WIRE N.C. CONTACTS OF OPEN ACTUATOR AND CLOSED ACTUATOR LIMIT SWITCHES IN SERIES.

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UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN BRACKETS ARE MILLIMETERS. PATTERN NO. -	UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. APPROVED TO BE EXCEPT AS NOTED.																				
<table border="1"> <tr> <td>DATE</td> <td>SCALE</td> </tr> <tr> <td>3/17/04</td> <td>1/8" = 1"</td> </tr> <tr> <td>3/17/04</td> <td>1/4" = 1"</td> </tr> <tr> <td>3/17/04</td> <td>3/8" = 1"</td> </tr> <tr> <td>3/17/04</td> <td>1/2" = 1"</td> </tr> <tr> <td>3/17/04</td> <td>3/4" = 1"</td> </tr> <tr> <td>3/17/04</td> <td>1" = 1"</td> </tr> </table>	DATE	SCALE	3/17/04	1/8" = 1"	3/17/04	1/4" = 1"	3/17/04	3/8" = 1"	3/17/04	1/2" = 1"	3/17/04	3/4" = 1"	3/17/04	1" = 1"	<table border="1"> <tr> <td>WIRING DIAGRAM</td> <td>SCALE</td> </tr> <tr> <td>OIL BURNER VALVE</td> <td>1/8" = 1"</td> </tr> <tr> <td>PNEUMATIC - DC SOLENOIDS</td> <td>1/4" = 1"</td> </tr> </table>	WIRING DIAGRAM	SCALE	OIL BURNER VALVE	1/8" = 1"	PNEUMATIC - DC SOLENOIDS	1/4" = 1"
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ITT Industries
Engineered Valves
Lancaster, PA USA

SIZE: C
DRAWING NUMBER: 60-009
SHEET: 1 OF 1
REV: G