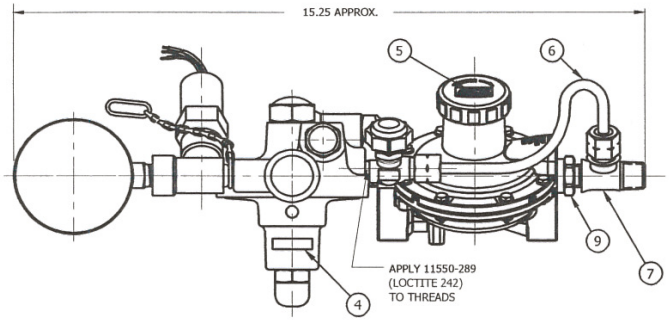
REVISION HISTORY		
REV	DATE	DESCRIPTION
A-S		REV
T	F299, 4-27-87	REV
U	AG082, 1-30-09	REV
V	2011-293, 7-12-11	REV





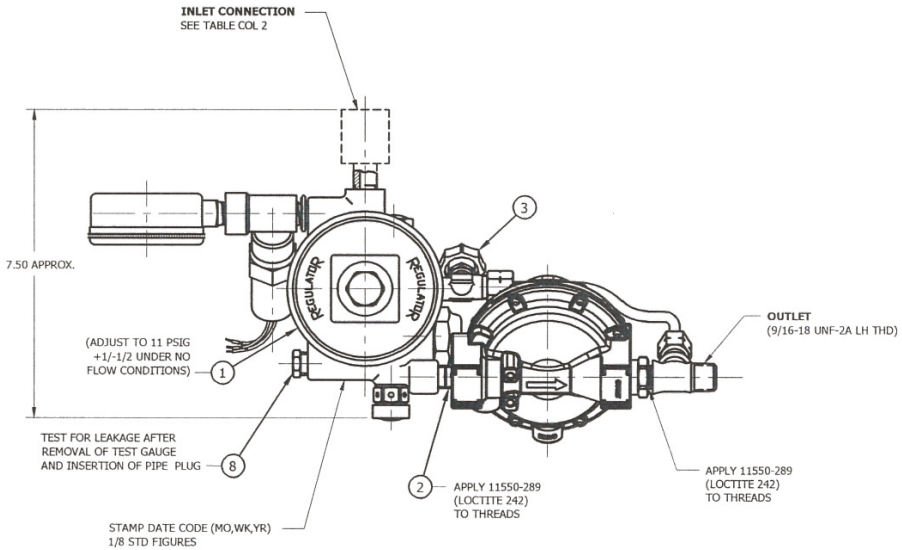
CGA 580 CONN
(.960-14 NGO RH EXT THD)
(11565-31 CLOSURE)

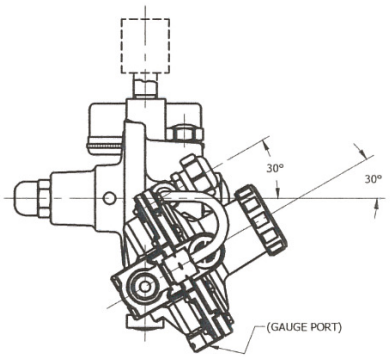


982 CONN
(.908-14 NGO-LH-INT THD)
(11565-16 CLOSURE)

INLET CONNECTIONS

TABLE		
ASSEMBLY NUMBER	COL 1 USE REGULATOR NUMBER	COL 2 CONNECTION
4289A	4289A-2	982 CONN
4289AG	4289A-2G	CGA580





	ITEM	QTY	TITLE	PART NUMBER
V				
U	9	1	BUSHING	LV4289-3
	8	1	PLUG	985BT
	7	1	TEE	4285-6
	6	1	PIGTAIL	4289-1
U	5	1	REGULATOR	LV4289-10
	4	1	SERIAL NUMBER LABEL	11573-300
	3	1	NEEDLE VALVE	1318WA
	2	1	NIPPLE	1025-15
	1	1	REGULATOR	SEE TABLE COL 1

NOTES:

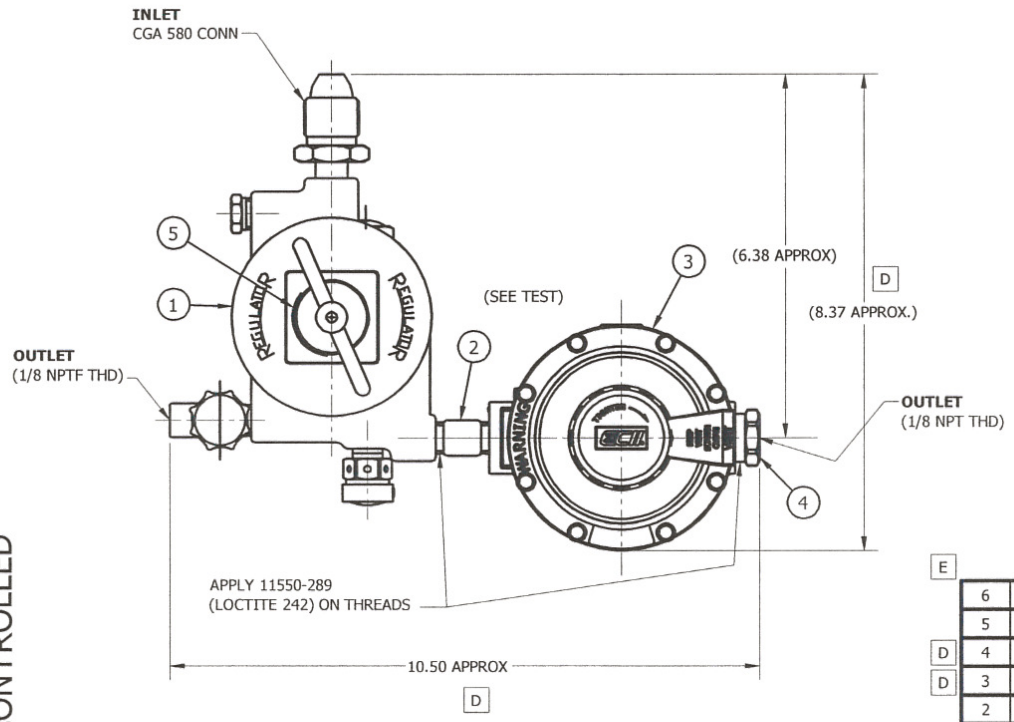
1. TEST PER 4289-101B

DRAWN: B.ANDREW	ISSUED DATE: 4-27-87	ENGINEERED CONTROLS INTERNATIONAL, LLC.	
CHECKED	CHECKED DATE	RESO ELON, N.C. 27244	RESO CRYO-FLOW BURLINGTON, N.C. 27215
INSPECTED	INSPECTED DATE	THIS DRAWING IS ECI PROPRIETARY INFORMATION. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	
APPROVED	APPROVED DATE	TITLE: OUTFIT, SPECIAL INERTROL	
REFERENCE NUMBER	IDENTIFIER		
PROJECT NUM: CR732	VARIANT DIM	SCALE: 1:1	REV LEVEL: V
DRAWING NUMBER: 4289A SER			DWG SIZE: C

UNLESS OTHERWISE SPECIFIED: ▼ ±.015; 2 PL DEC ±.02; 3 PL DEC ±.005; 4 PL DEC ±.0005; ANGLES ± 1°
CONCENTRICITY .010 FIM
FINISH 125 MAX, REMOVE BURRS, BREAK SHARP EDGES R.015 MAX
INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994
A CHANGES GAUGES 1

APPROVED/CONTROLLED

REVISION HISTORY		
REV	DATE	DESCRIPTION
A-B		REV & MF
C	A287, 3-08-00	REV & REDRAWN
D	AG082, 1-30-09	REV
E	2011-293, 7-12-11	REV



APPROVED/CONTROLLED

ITEM	QTY.	DESCRIPTION	NUMBER
6	1	CLOSURE (NOT SHOWN)	11565-16
5	2	CLOSURE (NOT SHOWN)	11557-10
4	1	ADAPTER	LV4286B-3
3	1	REGULATOR	LV4286-10-8
2	1	NIPPLE	1025-15
1	1	REGULATOR	4286A-2NW

NOTES:

1. TEST PER 4286-100A.

DRAWN: T.TICKLE	ISSUED DATE: 4-27-87		
CHECKED: N.LEE	CHECKED DATE: 8-10-11		
INSPECTED: T.CASSIDY	INSPECTED DATE: 8-18-11		
APPROVED: D.GENTILE	APPROVED DATE: 9-15-11		
REFERENCE NUMBER	IDENTIFIER		
PROJECT NUM: LC0806	VARIANT DIM	SCALE: 1:2	REV LEVEL: E

UNLESS OTHERWISE SPECIFIED:
▼ ±.015
2 PL DEC ±.02
3 PL DEC ±.005
4 PL DEC ±.0005
ANGLES ±1°
CONCENTRICITY .010 FIM
FINISH 125 MAX, REMOVE BURRS, BREAK SHARP EDGES R.015 MAX
INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994
A -CHANGES
GAUGES- 1

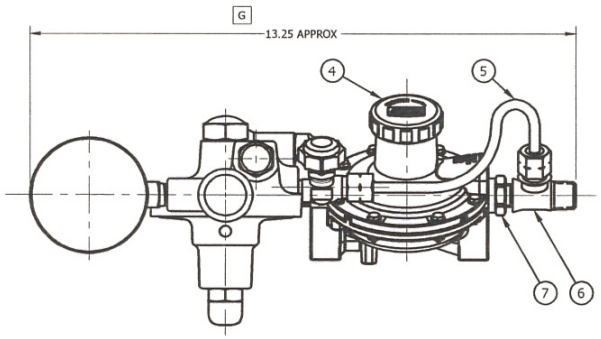
REGO CRYO-FLOW PRODUCTS
BURLINGTON, N.C. 27215

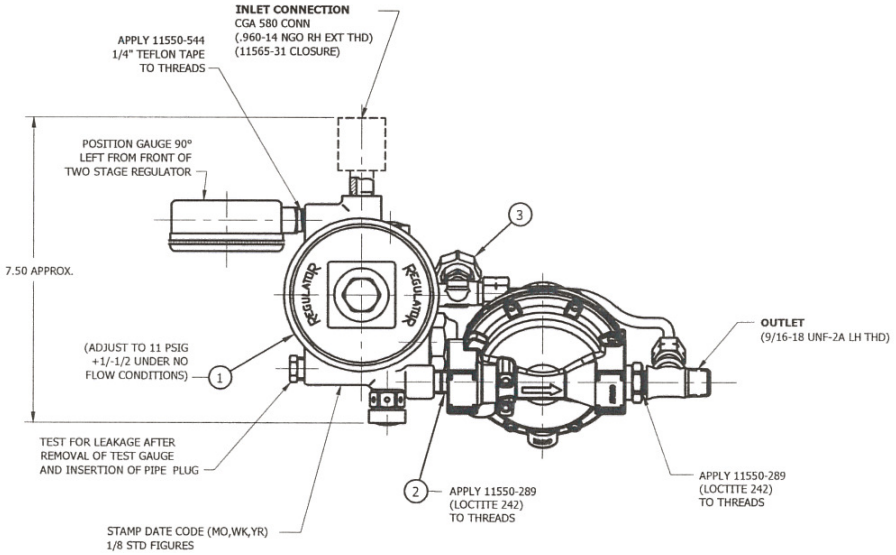
THIS DRAWING IS ECII PROPRIETARY INFORMATION.
ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

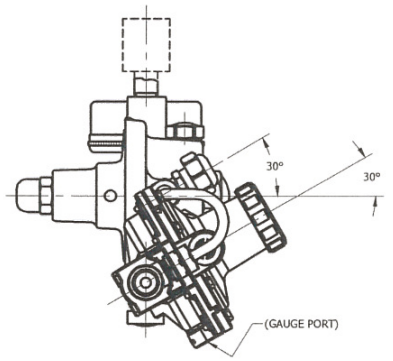
TITLE: OUTFIT, INERTROL FOR NITROGEN

DRAWING NUMBER: 4286A580 | DWG SIZE: B

REVISION HISTORY		
REV	DATE	DESCRIPTION
A-E		REV
F	P384, 9-26-94	REV
G	AG082, 1-30-09	REV
H	2011-293, 7-12-11	REV







NOTES:

1. TEST PER 4289-101A.

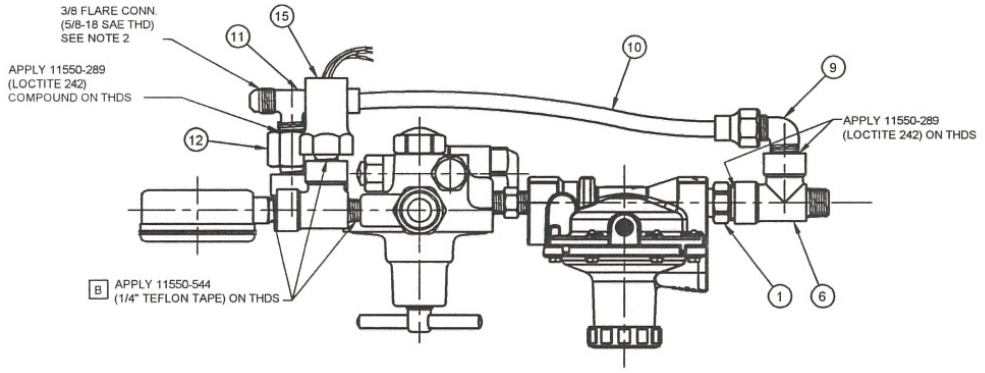
ITEM	QTY	TITLE	PART NUMBER
7	1	BUSHING	LV4289-3
6	1	TEE	4285-6
5	1	PIGTAIL	4289-1
4	1	REGULATOR	LV4289-10
3	1	NEEDLE VALVE	1318WA
2	1	NIPPLE	1025-15
1	1	REGULATOR	4289-2G

DRAWN: B.ANDREW	ISSUED DATE: 11-22-91	ENGINEERED CONTROLS INTERNATIONAL, LLC.	
CHECKED: N.LEE	CHECKED DATE: 8-10-11	RE/O ELON, N.C. 27244	RE/O CRYO-FLOW BURLINGTON, N.C. 27215
INSPECTED: T.CASSIDY	INSPECTED DATE: 8-18-11	THIS DRAWING IS ECI PROPRIETARY INFORMATION. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	
APPROVED: D.GENTILE	APPROVED DATE: 9-15-11	TITLE: OUTFIT, SPECIAL INERTROL	
REFERENCE NUMBER	IDENTIFIER		
PROJECT NUM: LC0806	VARIANT DIM	SCALE: 1:1	REV LEVEL: H
DRAWING NUMBER: 4289G		DWG SIZE: C	

UNLESS OTHERWISE SPECIFIED: ± .015; 2 PL DEC ±.02; 3 PL DEC ±.005; 4 PL DEC ±.0005; ANGLES ± 1°. CONCENTRICITY .010 FIM. FINISH 125 MAX, REMOVE BURRS, BREAK SHARP EDGES 8.015 MAX. INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994. A -CHANGES -GAUGES- 1

APPROVED/CONTROLLED

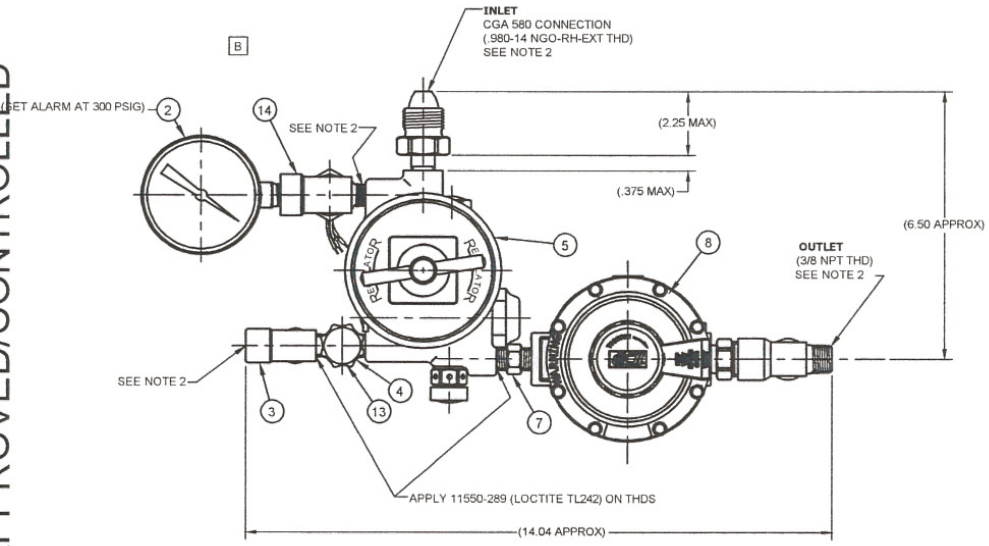
REVISION HISTORY		
REV	DATE	DESCRIPTION
A	2012-229, 5-15-12	ISSUED
B	2012-386, 9-17-12	REV



ASSEMBLY NUMBER	(2) GAUGE	(14) TEE	(15) PRESSURE SWITCH
4291A	5563	4285-3A	4285D
4291AS	NONE	NONE	NONE

NOTES:

1. TEST PER 4291-100A.
2. ATTACH CLOSURES TO ALL END CONNECTIONS TO PROTECT AND SEAL OPENINGS.
3. FOR 4291A, TEST PRESSURE SWITCH PER 4285-100B.

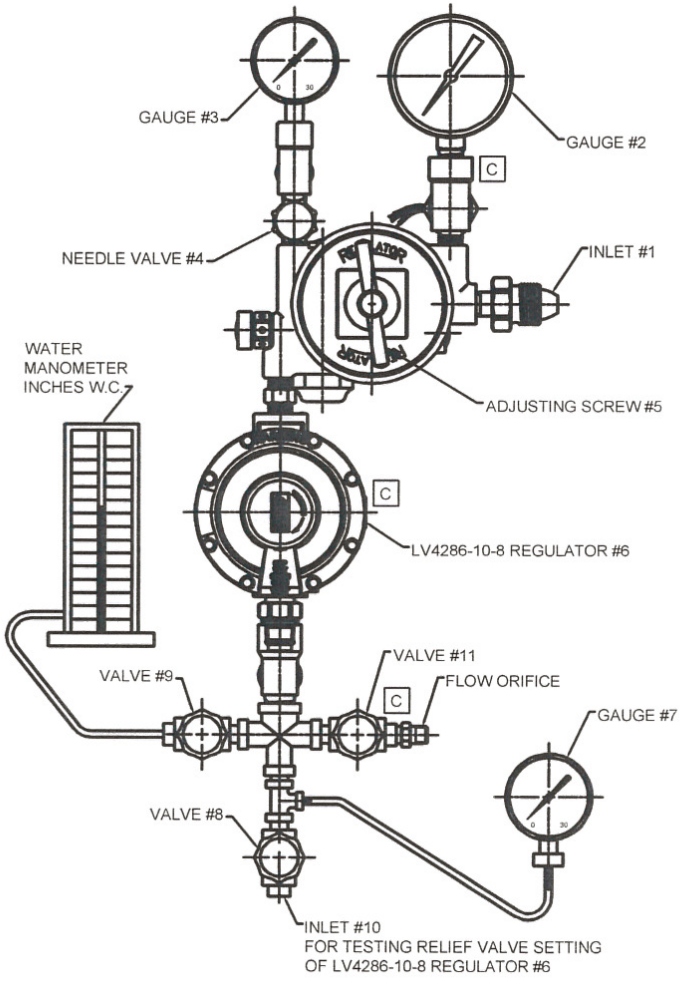


APPROVED/CONTROLLED

ITEM	QTY	TITLE	PART NUMBER
15	1	PRESSURE SWITCH	SEE TABLE
14	1	TEE, 1/4 NPT STREET	SEE TABLE
13	1	STEM ASSEMBLY	936-15AX
12	1	ADAPTER	4291-6
11	1	TEE, 3/8 MALE BRANCH (45° FLARE)	4291A-4
10	1	TUBING ASSEMBLY	4291A-3
9	1	ELBOW	4291A-2
8	1	REGULATOR	LV4286-10-8
7	1	NIPPLE	1025-15
6	1	TEE, 3/8 NPT STREET	4291A-1
5	1	INERTROL REGULATOR	4291B-2
4	1	NEEDLE VALVE BODY	1224-1X
3	1	TEE, 1/4 NPT	4659-4
2	1	GAUGE	SEE TABLE
1	1	NIPPLE	6016-12E

DRAWN: T.TICKLE	ISSUED DATE: 5-15-12	UNLESS OTHERWISE SPECIFIED: ▼ ±.015; 2 PL DEC ±.02; 3 PL DEC ±.005; 4 PL DEC ±.0005; ANGLES ±1°	ENGINEERED CONTROLS INTERNATIONAL, LLC. RESO / RESO CRYO-FLOW ELON, N.C. 27244 / BURLINGTON, N.C. 27215
CHECKED: T.TICKLE	CHECKED DATE: 10-3-12	CONCENTRICITY .010 FIM; FINISH 125 MAX, REMOVE BURRS, BREAK SHARP EDGES R.015 MAX; INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994	THIS DRAWING IS ECI PROPRIETARY INFORMATION. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.
INSPECTED: P.MOREFIELD	INSPECTED DATE: 10-18-12		TITLE: OUTFIT, SPECIAL INERTROL
APPROVED: D.GENTILE	APPROVED DATE: 10-22-12		
REFERENCE NUMBER	IDENTIFIER	A CHANGES GAUGES 1	DRAWING NUMBER: 4291A SER
PROJECT NUM: CF947	VARIANT DIM	SCALE: .5:1	REV LEVEL: B
			DWG SIZE: C

REVISION HISTORY		
REV	DATE	DESCRIPTION
A	12-24-75	ISSUED
B	CC040, 3-14-06	REV & REDRAWN
C	2011-293, 7-21-11	REV



APPROVED/CONTROLLED

TEST PROCEDURE

C 1. CONNECT INLET (#1) TO A 2000 MINIMUM PSI PRESSURE SOURCE BY MEANS OF A SPECIAL ADAPTER ON THE TEST MANIFOLD.

2. ATTACH GAUGE (#3) TO 4659-4 TEE.

B 3. OPEN NEEDLE VALVE (#4). TURN ADJUSTING SCREW (#5) UNTIL A DELIVERY PRESSURE OF 10 PSI IS READ ON GAUGE (#3). SOAP WATER TEST FOR LEAKS.

C 4. RE-ADJUST ADJUSTING SCREW (#5) UNTIL A DELIVERY PRESSURE OF 4.5 PSI IS READ ON GAUGE (#3).

C 5. TEST RELIEF VALVE SETTING OF LV4286-10-8 REGULATOR (#6) IN ACCORDANCE WITH 4286-101 TEST SPECIFICATION FOR 8 PSI RELIEF. INITIAL LEAK OF 7.75-8.25 PSI. RESEAL IS NOT TO BE LOWER THAN 7 PSI. FOR THE TEST, VALVE (#9) IS TO BE CLOSED. A PRESSURE SOURCE CONNECTED TO INLET (#10) IS CONTROLLED BY VALVE (#8) AND READING GAUGE (#7).

C 6. TEST LOCKUP PRESSURE SETTING OF LV4286-10-8 REGULATOR (#6) IN ACCORDANCE WITH 4286-101 TEST SPECIFICATION. REDUCE PRESSURE IN REGULATOR BELOW 14" W.C. BY OPENING VALVE (#11). LOCKUP REGULATOR BY CLOSING VALVE (#11). LOCK UP PRESSURE TO BE 14"-15" W.C.

DRAWN: T.TICKLE	ISSUED DATE: 12-24-75		
CHECKED: N.LEE	CHECKED DATE: 8-10-11		
INSPECTED: T.CASSIDY	INSPECTED DATE: 8-18-11		
APPROVED: D.GENTILE	APPROVED DATE: 9-15-11		
REFERENCE NUMBER	IDENTIFIER		
PROJECT NUM	VARIANT DIM	SCALE: .75:1	REV LEVEL: C

UNLESS OTHERWISE SPECIFIED: ± .015; 2 PL DEC ±.02; 3 PL DEC ±.005; 4 PL DEC ±.0005; ANGLES ± 1°
CONCENTRICITY .010 FIM
FINISH 125 MAX, REMOVE BURRS, BREAK SHARP EDGES R.015 MAX
INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994
A -CHANGES GAUGES- 1

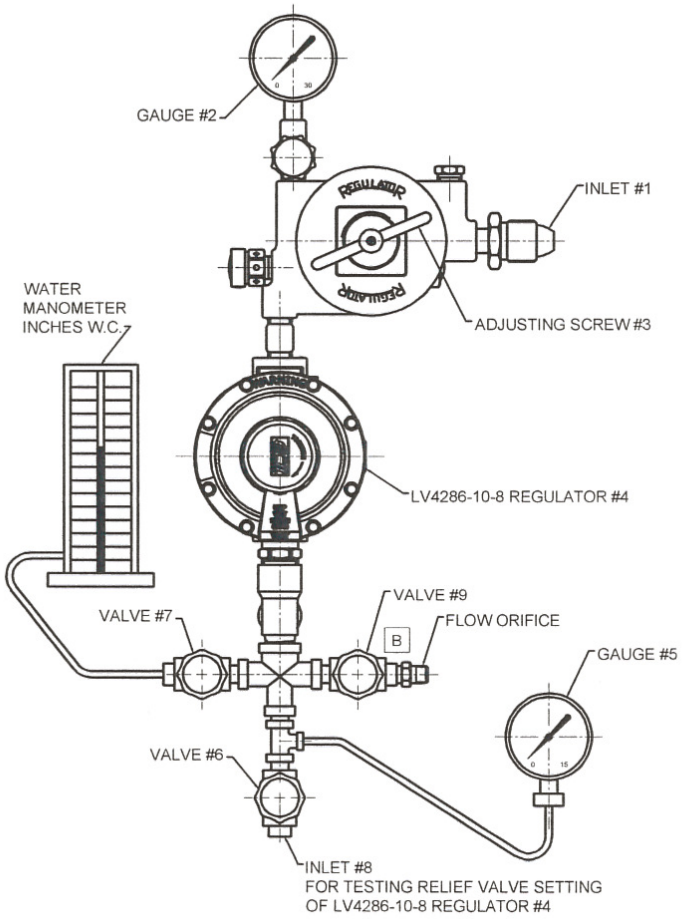
ENGINEERED CONTROLS INTERNATIONAL, LLC.
REGO ELON, N.C. 27244 — REGO CRYO-FLOW BURLINGTON, N.C. 27215

THIS DRAWING IS ECI PROPRIETARY INFORMATION.
ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TITLE: PROCEDURE, TEST
FOR SPECIAL INERTROL OUTFIT

DRAWING NUMBER: 4291-100A — DWG SIZE: B

REVISION HISTORY		
REV	DATE	DESCRIPTION
A	12-24-75	ISSUED
B	2011-293, 7-12-11	REV & REDRAWN



APPROVED/CONTROLLED

TEST PROCEDURE

B 1. CONNECT INLET (#1) TO A 2000 MINIMUM PSI PRESSURE SOURCE BY MEANS OF A SPECIAL ADAPTER ON THE TEST MANIFOLD.

2. ATTACH GAUGE (#2) TO REGULATOR. TURN ADJUSTING SCREW (#3) UNTIL A DELIVERY PRESSURE OF 10 PSI IS READ ON GAUGE (#2). SOAP WATER TEST FOR LEAKS.

B 3. RE-ADJUST ADJUSTING SCREW (#3) UNTIL A DELIVERY PRESSURE OF 4.5 PSI IS READ ON GAUGE (#2).

B 4. TEST RELIEF VALVE SETTING OF LV4286-10-8 REGULATOR (#4) IN ACCORDANCE WITH 4286-101 TEST SPECIFICATION FOR 8 PSI RELIEF. INITIAL LEAK OF 7.75-8.25 PSI. RESEAL IS NOT TO BE LOWER THAN 7 PSI. FOR THE TEST, VALVE (#7) IS TO BE CLOSED. A PRESSURE SOURCE CONNECTED TO INLET (#8) IS CONTROLLED BY VALVE (#6) AND READING GAUGE (#5).

B 5. TEST LOCKUP PRESSURE SETTING OF LV4286-10-8 REGULATOR (#4) IN ACCORDANCE WITH 4286-101 TEST SPECIFICATION. REDUCE PRESSURE IN REGULATOR BELOW 14" W.C. BY OPENING VALVE (#9). LOCK UP PRESSURE TO BE 14"-15" W.C.

DRAWN: N.LEE	ISSUED DATE: 12-24-75		
CHECKED: N.LEE	CHECKED DATE: 8-10-11		
INSPECTED: T.CASSIDY	INSPECTED DATE: 8-18-11		
APPROVED: D.GENTILE	APPROVED DATE: 9-15-11		
REFERENCE NUMBER	IDENTIFIER		
PROJECT NUM	VARIANT DIM	SCALE: .75:1	REV LEVEL: B

UNLESS OTHERWISE SPECIFIED: ±.015; 2 PL DEC ±.02; 3 PL DEC ±.005; 4 PL DEC ±.0005; ANGLES ± 1°
CONCENTRICITY .010 FIM FINISH 125 MAX, REMOVE BURRS, BREAK SHARP EDGES R.015 MAX INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994
A -CHANGES GAUGES- 1

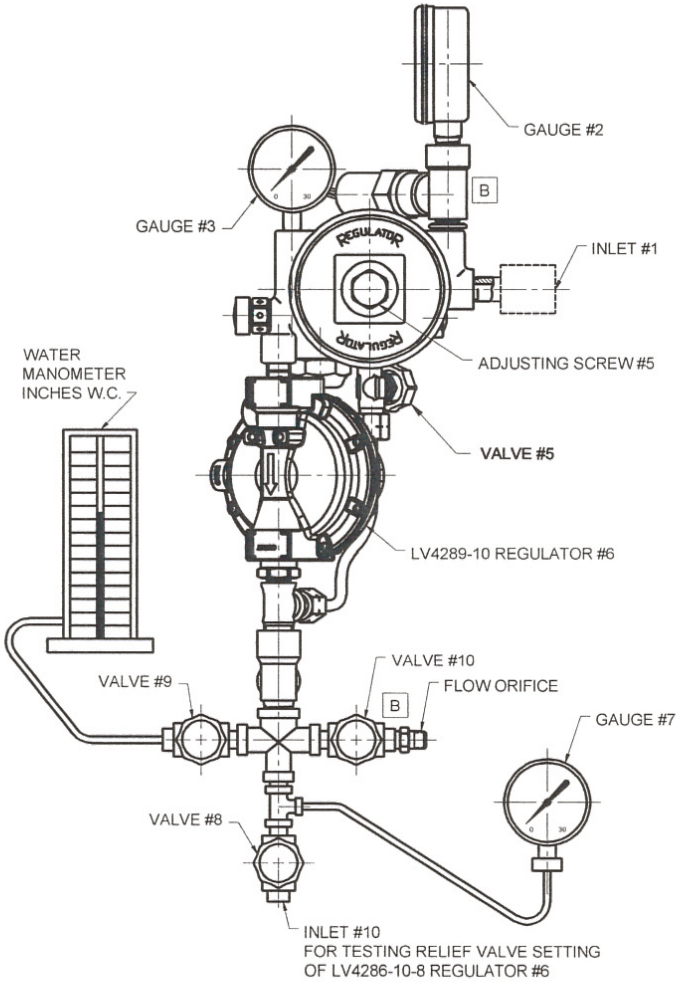
ENGINEERED CONTROLS INTERNATIONAL, LLC.
REGO ELON, N.C. 27244 — REGO CRYO-FLOW BURLINGTON, N.C. 27215

THIS DRAWING IS ECI PROPRIETARY INFORMATION.
ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TITLE: PROCEDURE, TEST
FOR NITROGEN INERTROL OUTFIT

DRAWING NUMBER: 4286-100A — DWG SIZE: B

REVISION HISTORY		
REV	DATE	DESCRIPTION
A	CC040, 3-14-06	REV & REDRAWN
B	2011-293, 7-21-11	REV



APPROVED/CONTROLLED

TEST PROCEDURE

B 1. CONNECT INLET (#1) TO A 2000 MINIMUM PSI PRESSURE SOURCE BY MEANS OF A SPECIAL ADAPTER ON THE TEST MANIFOLD.

2. ATTACH GAUGE (#3) TO REGULATOR.

B 3. LV4289-10 REGULATOR (#6) HAS NO RELIEF VALVE BUT MUST BE CHECKED FOR LEAKS WITH 10 PSI PRESSURE IN ACCORDANCE WITH 4289-100 TEST SPECIFICATION. FOR THIS TEST, VALVE (#5) AND (#9) ARE CLOSED. A PRESSURE SOURCE CONNECTED TO INLET (#10) IS CONTROLLED BY VALVE (#8) AND READING GAUGE (#7).

B 4. TEST LOCKUP PRESSURE SETTING OF LV4289-10 REGULATOR (#6) IN ACCORDANCE WITH 4289-100 TEST SPECIFICATION. TURN ADJUSTING SCREW (#4) AND ADJUST 1ST-STAGE REGULATOR TO 9-10 PSI ON GAUGE (#3). REDUCE PRESSURE IN REGULATOR BELOW 14" W.C. BY OPENING VALVE (#10). LOCKUP REGULATOR BY CLOSING VALVE (#10). LOCK UP PRESSURE TO BE 14"-15" W.C.

B 5. RE-ADJUST 1ST-STAGE REGULATOR. TURN ADJUSTING SCREW (#4) AND ADJUST NO-FLOW PRESSURE TO 10.5-12 PSI. SOAP WATER TEST FOR LEAKS. LOCK AND SEAL ADJUSTING SCREW.

DRAWN: T.TICKLE	ISSUED DATE: 12-24-75		
CHECKED: N.LEE	CHECKED DATE: 8-10-11		
INSPECTED: T.CASSIDY	INSPECTED DATE: 8-18-11		
APPROVED: D.GENTILE	APPROVED DATE: 9-15-11		
REFERENCE NUMBER	IDENTIFIER		
PROJECT NUM / VARIANT DIM	SCALE: .75:1	REV LEVEL: B	

UNLESS OTHERWISE SPECIFIED: ▼ ±.015; 2 PL DEC ±.02; 3 PL DEC ±.005; 4 PL DEC ±.0005; ANGLES ±1°
CONCENTRICITY .010 FIM FINISH 125 MAX, REMOVE BURRS, BREAK SHARP EDGES R.015 MAX INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994
A -CHANGES GAUGES- 1

ENGINEERED CONTROLS INTERNATIONAL, LLC.
REGO — ELON, N.C. 27244
REGO CRYO-FLOW — BURLINGTON, N.C. 27215

THIS DRAWING IS ECI PROPRIETARY INFORMATION.
ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TITLE: PROCEDURE, TEST
FOR SPECIAL INERTROL OUTFIT

DRAWING NUMBER: 4289-101B
DWG SIZE: B