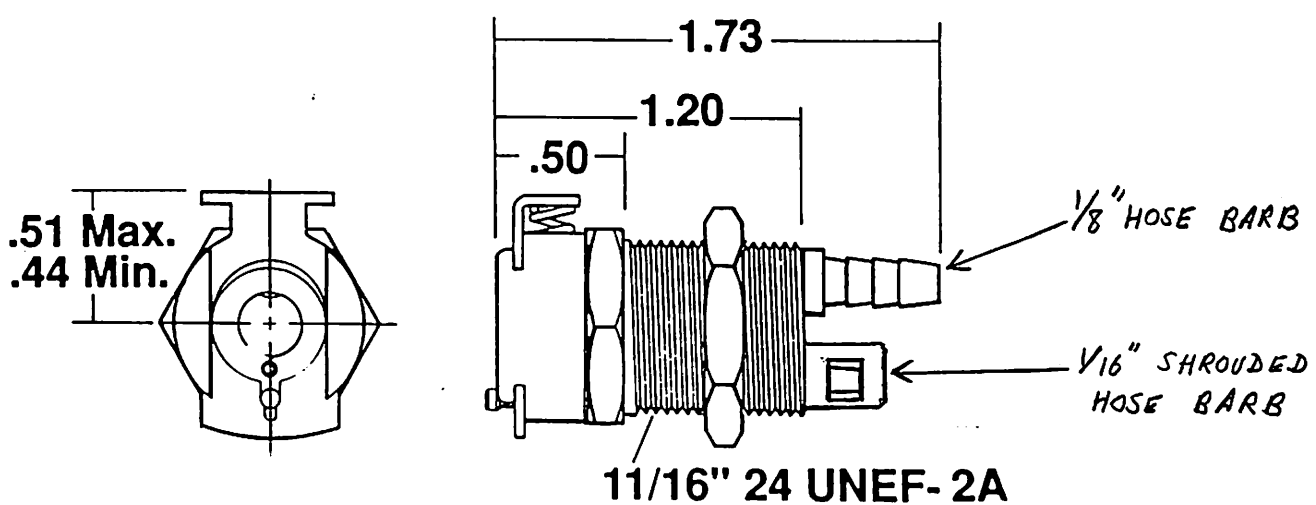


REV.	APPLICATION		REVISIONS			
	NEXT ASSY	USED ON	REV.	DESCRIPTION	DATE	APPROVED

SH
DWG. NO.



Specifications

Working Pressure: Vacuum to 120 psi, 8.3 Bar
 Operating Temperature: -40° to 180° F (82° C) Max.
 Materials: Bodies and Inserts: Delrin Acetal
 Springs and Latch: Stainless steel
 Seals: Buna-N

NOTES:

- 1) COMPONENT IS A MODIFICATION OF STANDARD "TWIN TUBE" COUPLING BODY BY COLDER PRODUCTS COMPANY.
- 2) 1/16" HOSE BARB IS CONNECTED TO THE CENTER CHANNEL OF THE COUPLING BODY.
- 3) MODIFICATION TO BE DONE BY COLDER PRODUCTS CO.

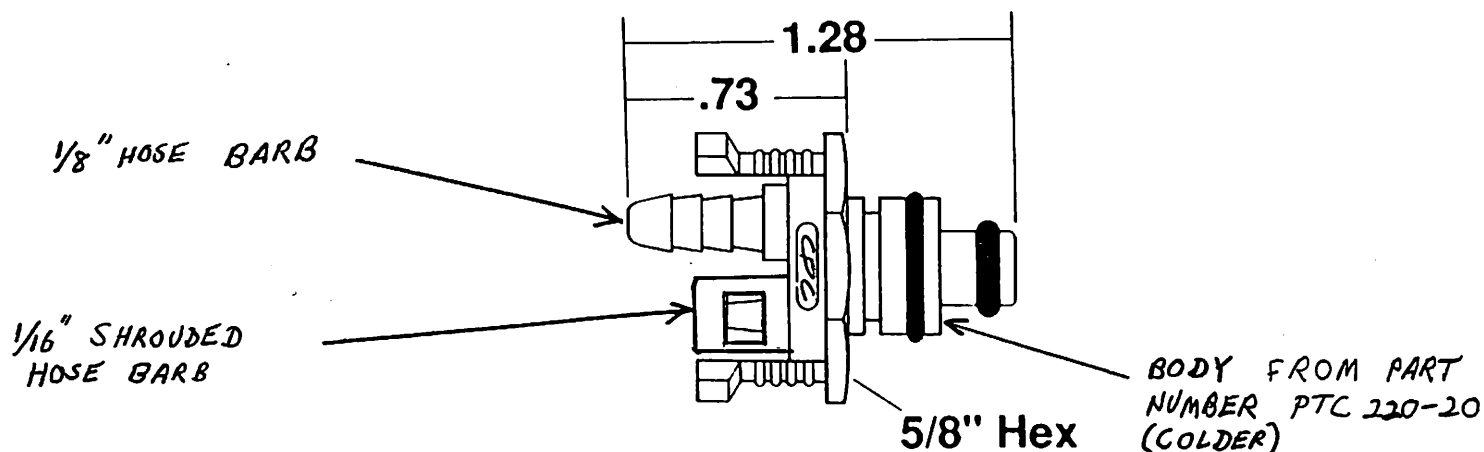
SOURCE:

COLDER PRODUCTS COMPANY, 2367 UNIVERSITY AVE, ST. PAUL, MN. 55114
 VIA CAROLINA FLUID COMPONENTS, CHARLOTTE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES = .XX = = = .XXX = =		CONTRACT NO.		 Carolina Medical Electronics, Inc.			
		APPROVALS					
MATERIAL		DRAWN JC, MD		2/2/90		COAXIAL PNEUMATIC CONNECTOR PANEL MOUNT	
FINISH		CHECKED JC, MD		2/2/90			
DO NOT SCALE DRAWING		ISSUED					
				SIZE A		FSCM NO.	
						DWG. NO. MS-19301	
						REV. A	
				SCALE		SHEET 1 of 1	

REV.
SH
DWG. NO.

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV.	DESCRIPTION	DATE	APPROVED



Specifications

Working Pressure: Vacuum to 120 psi, 8.3 Bar
 Operating Temperature: -40° to 180° F (82° C) Max.
 Materials: Bodies and Inserts: Delrin Acetal
 Springs and Latch: Stainless steel
 Seals: Buna-N

NOTES:

- 1) 1/16" HOSE BARB IS CONNECTED TO THE CENTER CHANNEL OF THE COUPLING BODY.
- 2) MODIFICATION TO BE DONE BY COLDER PRODUCTS CO.

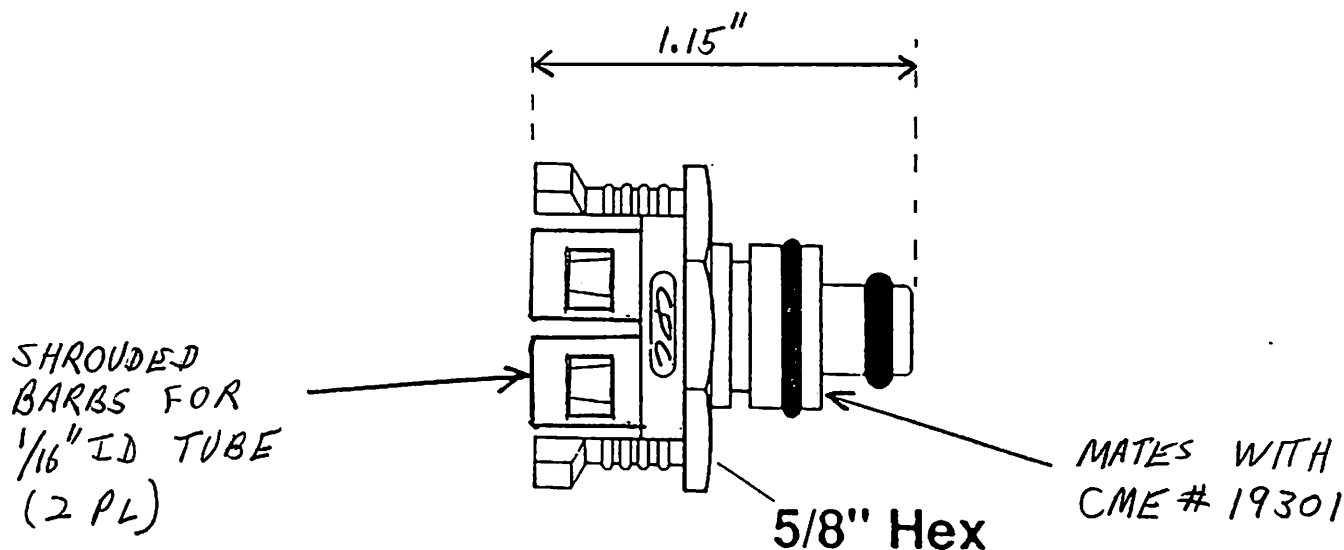
SOURCE: COLDER PRODUCTS COMPANY, 2367 UNIVERSITY AVE, ST. PAUL, MN. 55114.
 VIA CAROLINA FLUID COMPONENTS, CHARLOTTE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± ± ± .XXX ±		CONTRACT NO.		 Carolina Medical Electronics, Inc.	
MATERIAL		APPROVALS	DATE		
FINISH		DRAWN <i>JC MO</i>	2/2/90	COAXIAL PNEUMATIC CONNECTOR FOR 1/8" AND 1/16" TUBE	
DO NOT SCALE DRAWING		CHECKED <i>JC, MO</i>	2/2/90		
		ISSUED		SIZE A	FSCM NO.
				DWG. NO. MS-19349	REV. A
				SCALE <i>J Campbell MO</i>	SHEET 1 of 1

REVISIONS

REV. #	INT.	DESCRIPTION	DATE	APPROVED
1				

MECHANICAL:



Specifications

Working Pressure: Vacuum to 120 psi, 8.3 Bar

Operating Temperature: -40° to 180° F (82° C) Max.

Materials: Bodies and Inserts: Delrin Acetal

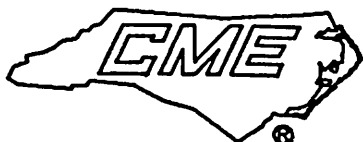
~~Springs and Latch: Stainless steel~~

Seals: Buna-N

SOURCES:

- 1) COLDER PRODUCTS # PTC 220-10 (STANDARD PART)
(VIA CAROLINA FLUID COMPONENTS, CHARLOTTE).

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL DIMENSIONS ±.005 INCHES
ALL ANGULAR DIMENSIONS ±.5°
ALL FRACTIONAL DIMENSIONS ±1/64



CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

MATERIAL:

DRAWN BY: JC, MD
DATE: 24 AUG 90

TITLE

COAXIAL PNEUMATIC CONNECTOR
FOR TWO 1/16" ID TUBES

FINISH:

CHKD BY:
DATE

SIZE
A
SHEET

SCALE
N/A
1 OF 1

DRAWING NO.

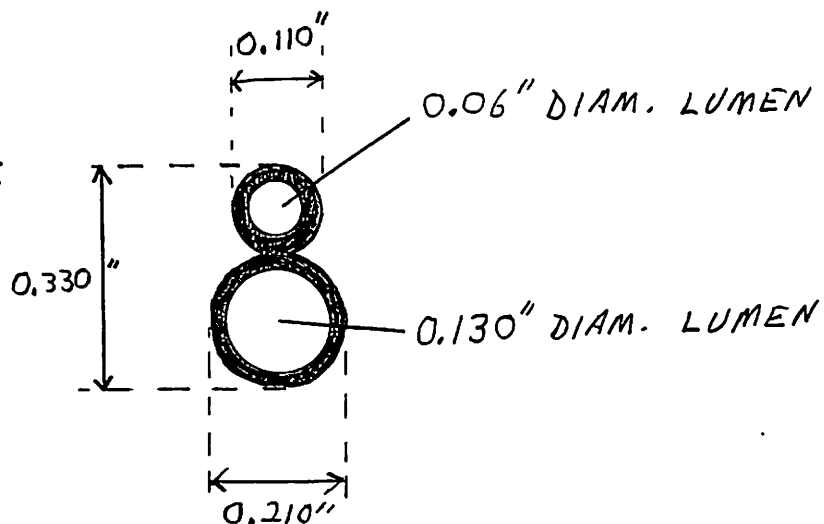
MS-19350

REVISIONS

REV. #	INT.	DESCRIPTION	DATE	APPROVED
1				

MECHANICAL:

CROSS SECTION:



MATERIAL:

BLACK POLYURETHANE

SOURCES

1) FREELIN- WADE CORP

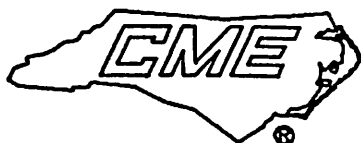
VIA CAROLINA FLUID COMPONENTS, CHARLOTTE

2A-001-01 (1000 FT ROLL)

2D-001-01 (100 FT ROLL)

≈ 50¢/FT.

TOLERANCES:
CALLING OTHERWISE NOTED
ALL DIMENSIONS ±.005 INCHES
ALL ANGULAR DIMENSIONS ±.5°
ALL FRACTIONAL DIMENSIONS ±1/64



CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

MATERIAL:

DRAWN BY: JC, MD
DATE 24 AUG 90

TITLE

DUAL LUMEN TUBING
1/8" ID. AND 1/16" ID.

FINISH:

CHKD BY:
DATE

SIZE
A
SHEET

SCALE
N/A
1 OF 1

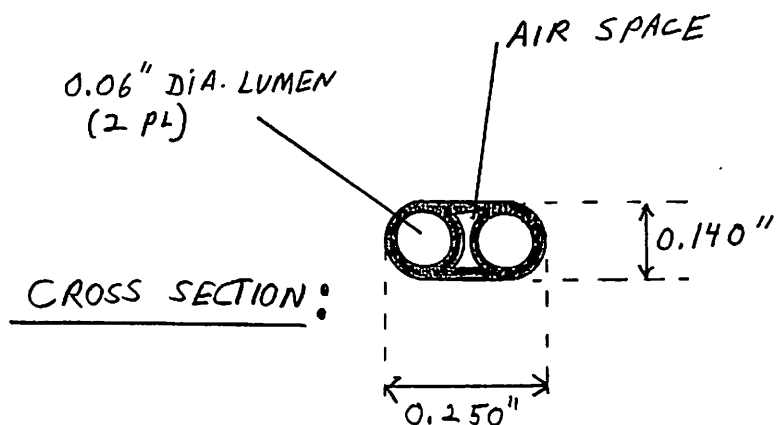
DRAWING NO.

MS-19351

REVISIONS

REV. #	INT.	DESCRIPTION	DATE	APPROVED
1				

MECHANICAL:



MATERIAL:
BLACK POLYURETHANE

SOURCES:

1) FREELIN-WADE CORP, McMinnville, OR.

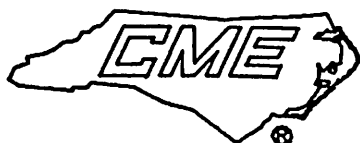
ORDER VIA CAROLINA FLUID COMPONENTS, CHARLOTTE

2B-046-01 (100 FT ROLL)

2D-046-01 (1000 FT ROLL)

≈ 34¢/FT

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL DIMENSIONS ±.005 INCHES
ALL ANGULAR DIMENSIONS ±.5°
ALL FRACTIONAL DIMENSIONS ±1/64



CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

MATERIAL:

DRAWN BY: JC, MD
DATE: 24 AUG 90

TITLE

DUAL LUMEN TUBING

1/16" ID x 2

FINISH:

CHKD BY:
DATE

SIZE
A
SHEET

SCALE
NA

1 OF 1

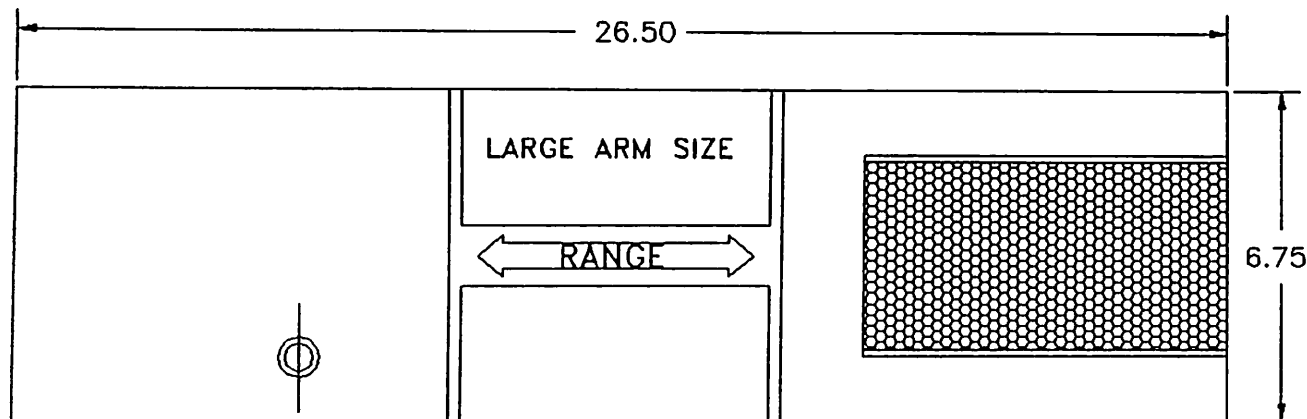
DRAWING NO.

MS-19352

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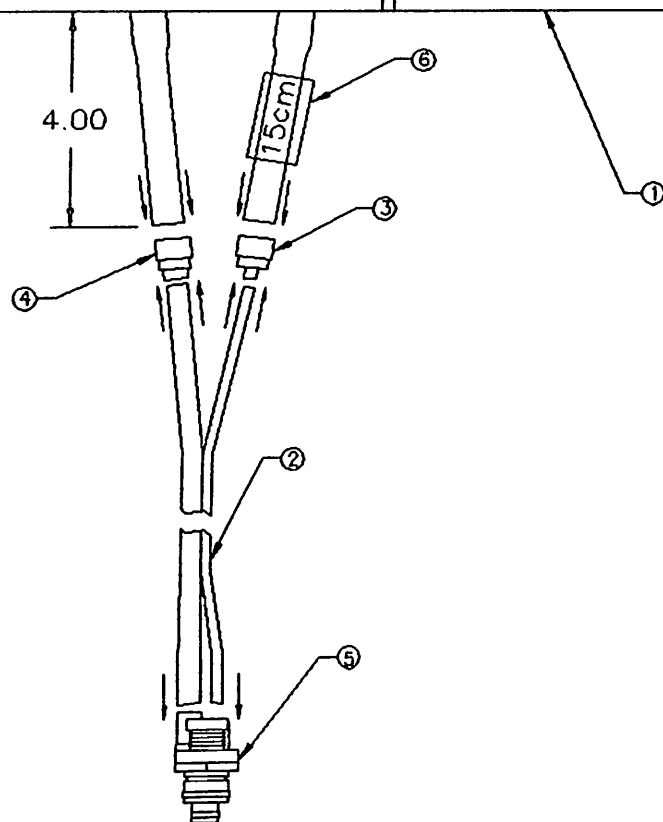
REVISIONS

REV. #	INIT.	DESCRIPTION	DATE	APPROVED



NOTES

- 1) DIP ENDS OF TUBING IN ACETONE FOR EASY ASSEMBLY.
- 2) PLACE COMPLETED ASSEMBLY IN POLY BAG ⑦.



REF	QTY	CME #	DESCRIPTION
7	1	19862	8 X 10 POLY BAG
6	1	19894	SHRINK LABEL 15cm
5	1	19349	COAX PNEUMATIC CONNECTOR, 1/8 AND 1/16
4	1	19348	BARBED CONNECTOR 1/8 TO 5/32
3	1	19347	BARBED CONNECTOR 1/16 TO 5/32
2	5'	19351	DUAL TUBING 1/8 AND 1/16
1	1	19345	BP CUFF AND BAG, 15 X 33 cm

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ±.005
ALL .XX DECIMAL: ±.03
ALL FRACTIONAL: ±1/16
ALL ANGULAR: ±.5°

MATERIAL:

FINISH:



DR. BY:

CWD

DATE

1/9/92

CHKD BY:

012 JC, MD 1/13/92

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

TITLE

VascuMAP
15 CM "LARGE ARM"
CUFF ASSEMBLY

SIZE

A

SCALE

NTS

DRAWING NO.

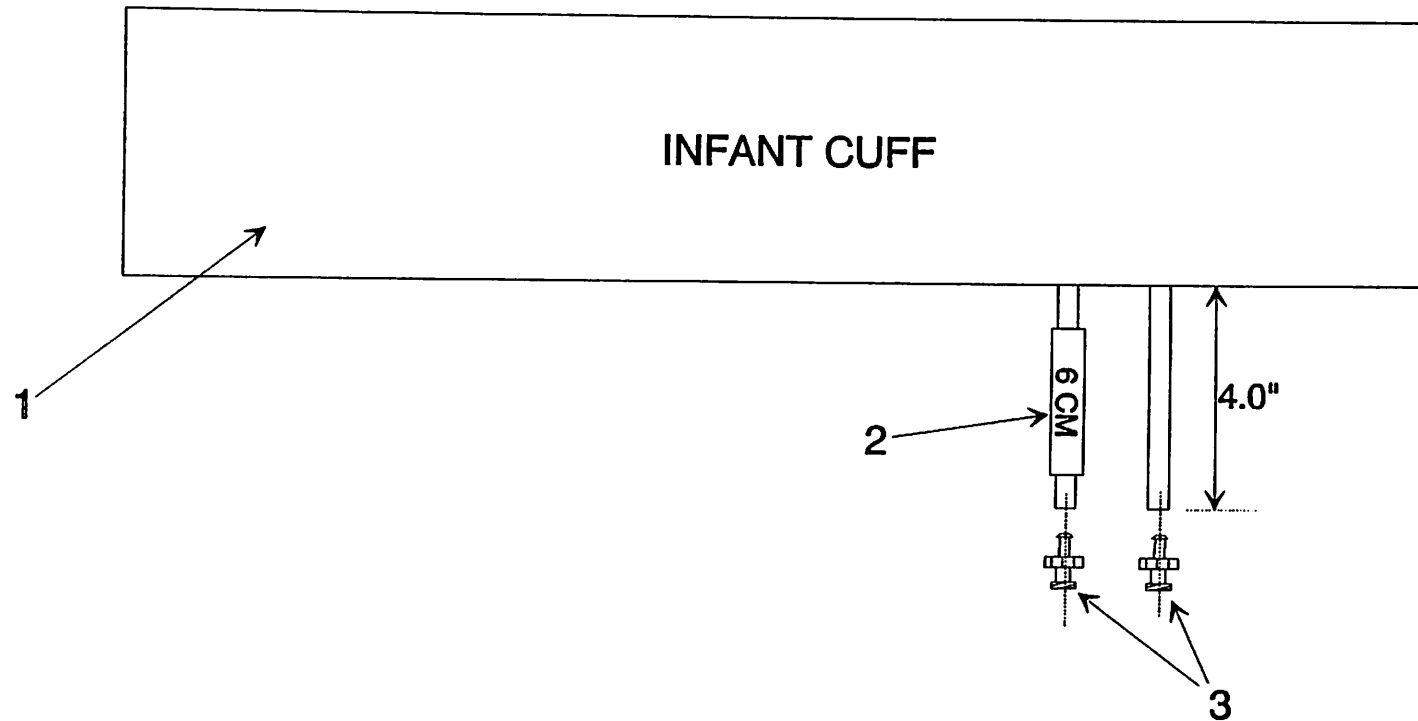
EA19361

APPD.

SHEET

1 OF 1

REVISIONS				
REV. #	INIT.	DESCRIPTION	DATE	APPROVED



NOTES:

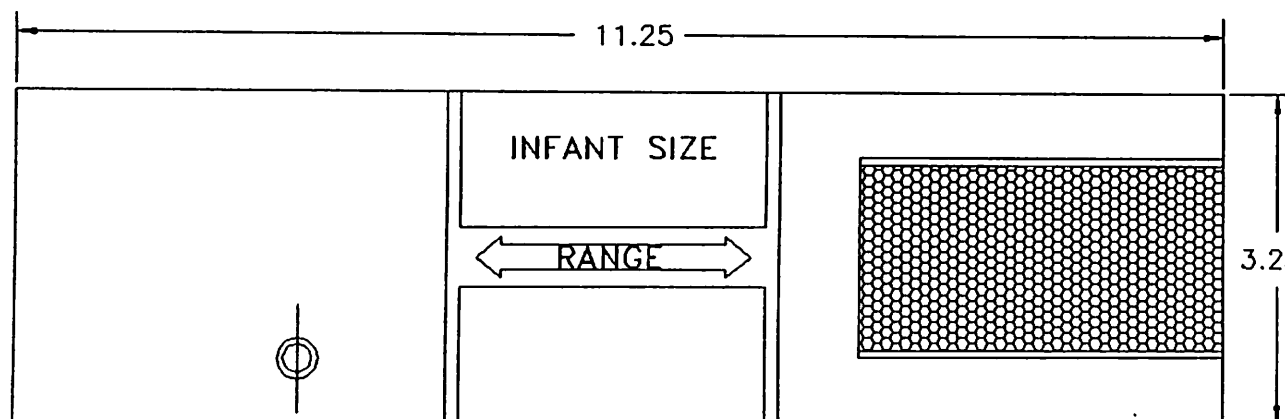
- 1) CUT TUBES OF CUFF (1) TO 4.0" +/- .25" IN LENGTH.
- 2) ORIENT LABEL (2) AS SHOWN AND SHRINK INTO PLACE.
- 3) PLACE COMPLETED ASSY IN POLY BAG (4).

				TOLERANCES: (UNLESS OTHERWISE NOTED) ALL .XXX DECIMAL: ...005 ALL .XX DECIMAL: ...03 ALL FRACTIONAL: ...1/16 ALL ANGULAR: ...5°		CAROLINA MEDICAL ELECTRONICS KING, NORTH CAROLINA U.S.A. 27021		
19857	4	1	5 x 7" POLY BAG			TITLE SINGLE PATIENT CUFF ASSEMBLY - 6 CM		
19911	3	2	CONN - LUER TO 5/32" BARB			DATE 11 DEC 91		
19888	2	1	SHRINK LABEL - 6 CM			DR. BY: JC, MD		
19873	1	1	"INFANT" CUFF	FINISH:	CHKD BY: <i>JC, MD 12/11/91</i>	A	SCALE N/A	DRAWING NO. EA 19926
CME#	REF	QTY	DESCRIPTION			ECS	APPD.	SHEET 1 OF 1

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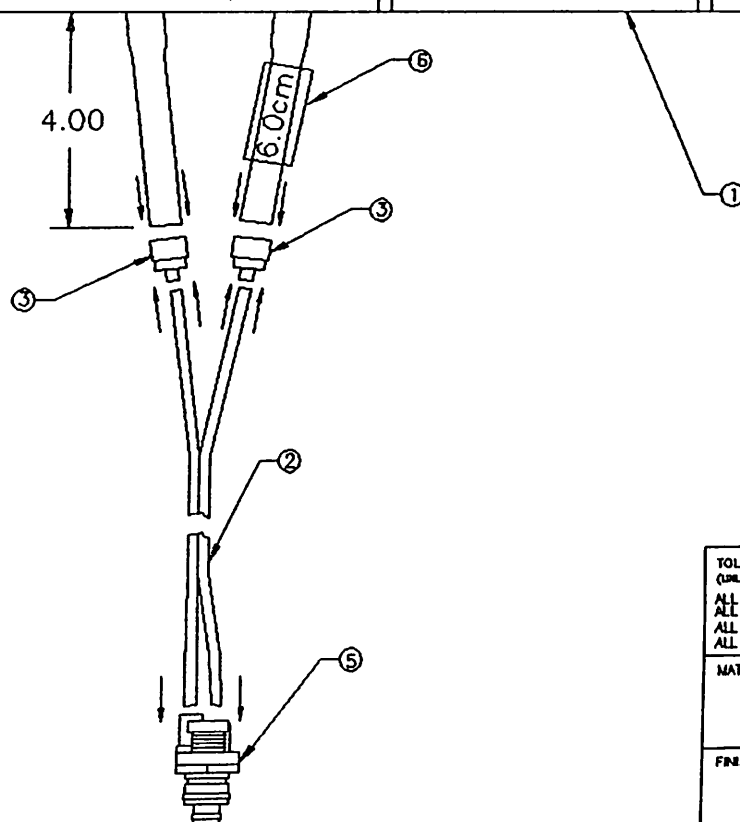
REVISIONS

REV. #	INIT.	DESCRIPTION	DATE	APPROVED



NOTES

- 1) DIP ENDS OF TUBING IN ACETONE FOR EASY ASSEMBLY.
- 2) PLACE COMPLETED ASSEMBLY IN POLY BAG ④



REF	QTY	CME #	DESCRIPTION
6	1	19888	SHRINK LABEL 6 CM
5	1	19350	COAX PNEUMATIC CONNECTOR, 1/16 X 2
4	1	19857	POLY BAG 5 X 7
3	2	19347	BARBED CONNECTOR 1/16 TO 5/32
2	6'	19352	DUAL TUBING 1/16 X 2
1	1	19563	BP CUFF AND BAG, 6 X 12 cm

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ±.005
ALL .XX DECIMAL: ±.03
ALL FRACTIONAL: ±1/16
ALL ANGULAR: ±.5°

MATERIAL:

FINISH:



DR. BY:

CWD

DATE

1/13/92

CHKD BY:

OK JC MO 1/13/92

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

TITLE

VascuMAP
6.0 cm "INFANT"
CUFF ASSEMBLY

SIZE

A

SCALE

NTS

DRAWING NO.

EA19357

APPD.

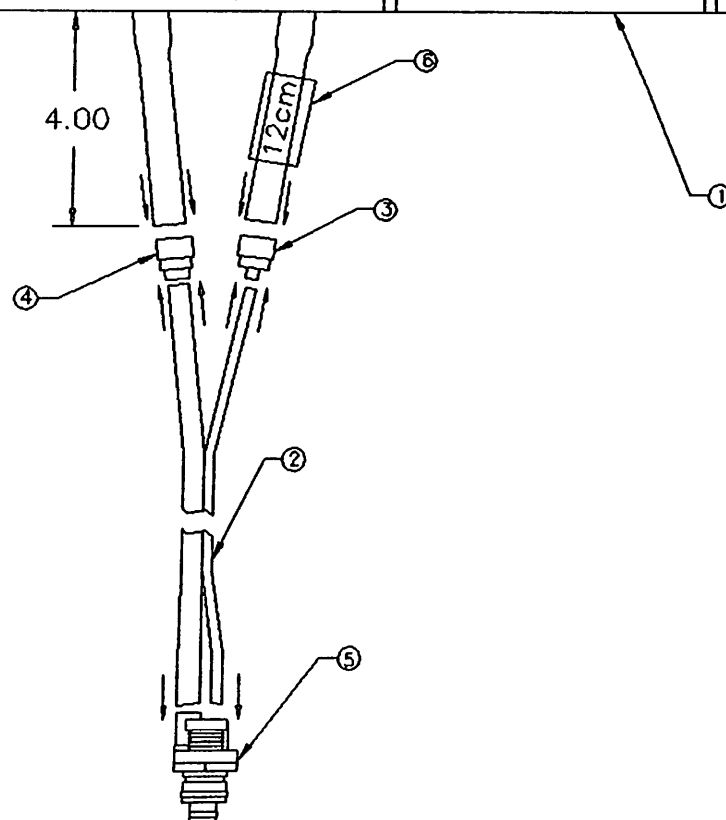
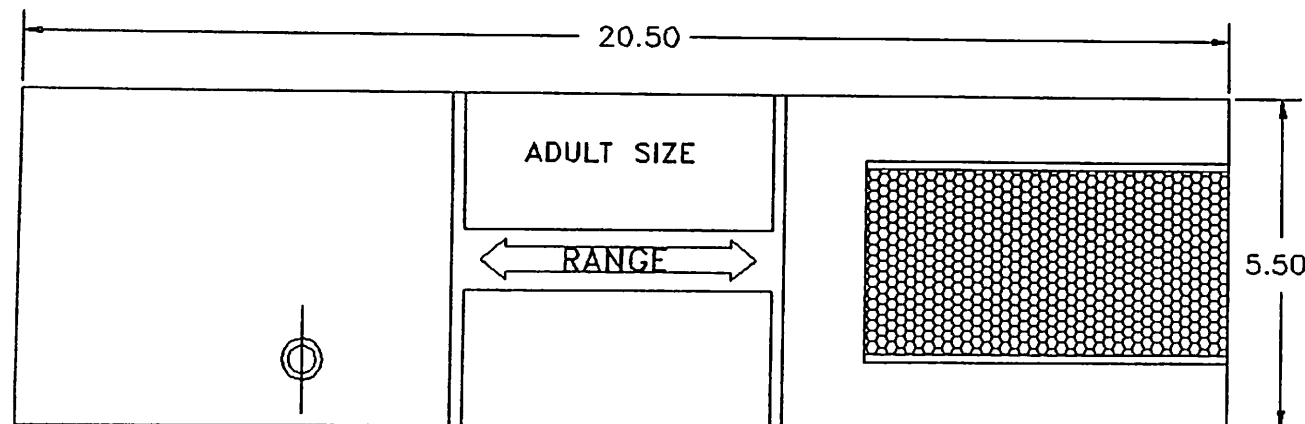
SHEET

1 OF 1

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REVISIONS

REV. #	INIT.	DESCRIPTION	DATE	APPROVED



NOTES

- 1) DIP ENDS OF TUBING IN ACETONE FOR EASY ASSEMBLY.
- 2) PLACE COMPLETED ASSEMBLY IN POLY BAG ⑦.

REF	QTY	CME #	DESCRIPTION
7	1	19861	6 X 9 POLY BAG
6	1	19892	SHRINK LABEL 12cm
5	1	19349	COAX PNEUMATIC CONNECTOR, 1/8 AND 1/16
4	1	19348	BARBED CONNECTOR 1/8 TO 5/32
3	1	19347	BARBED CONNECTOR 1/16 TO 5/32
2	5'	19351	DUAL TUBING 1/8 AND 1/16
1	1	19344	BP CUFF AND BAG, 12 X 23 cm

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ±.005
ALL .XX DECIMAL: ±.03
ALL FRACTIONAL: ±1/16
ALL ANGULAR: ±.5°

MATERIAL:

FINISH:



DR. BY:

CWD

DATE

1/9/92

CHKD BY:

OK JLM 1/13/92

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

TITLE

VascuMAP
12 CM "ADULT ARM"
CUFF ASSEMBLY

SIZE

A

SCALE

NTS

DRAWING NO.

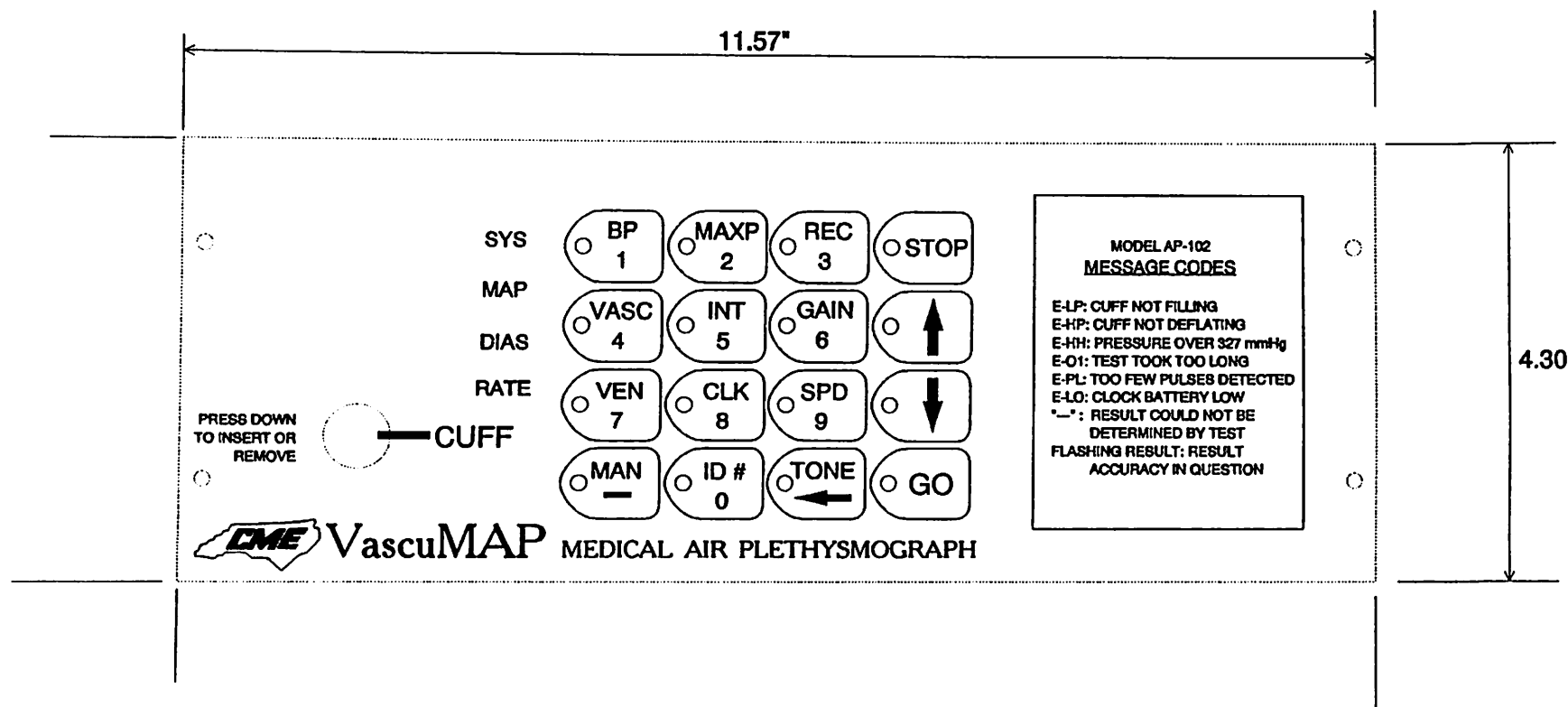
EA19360

APPD.

SHEET

1 OF 1

REVISIONS				
REVISION NUMBER	INITIALS	DESCRIPTION	DATE	APPROVED BY:

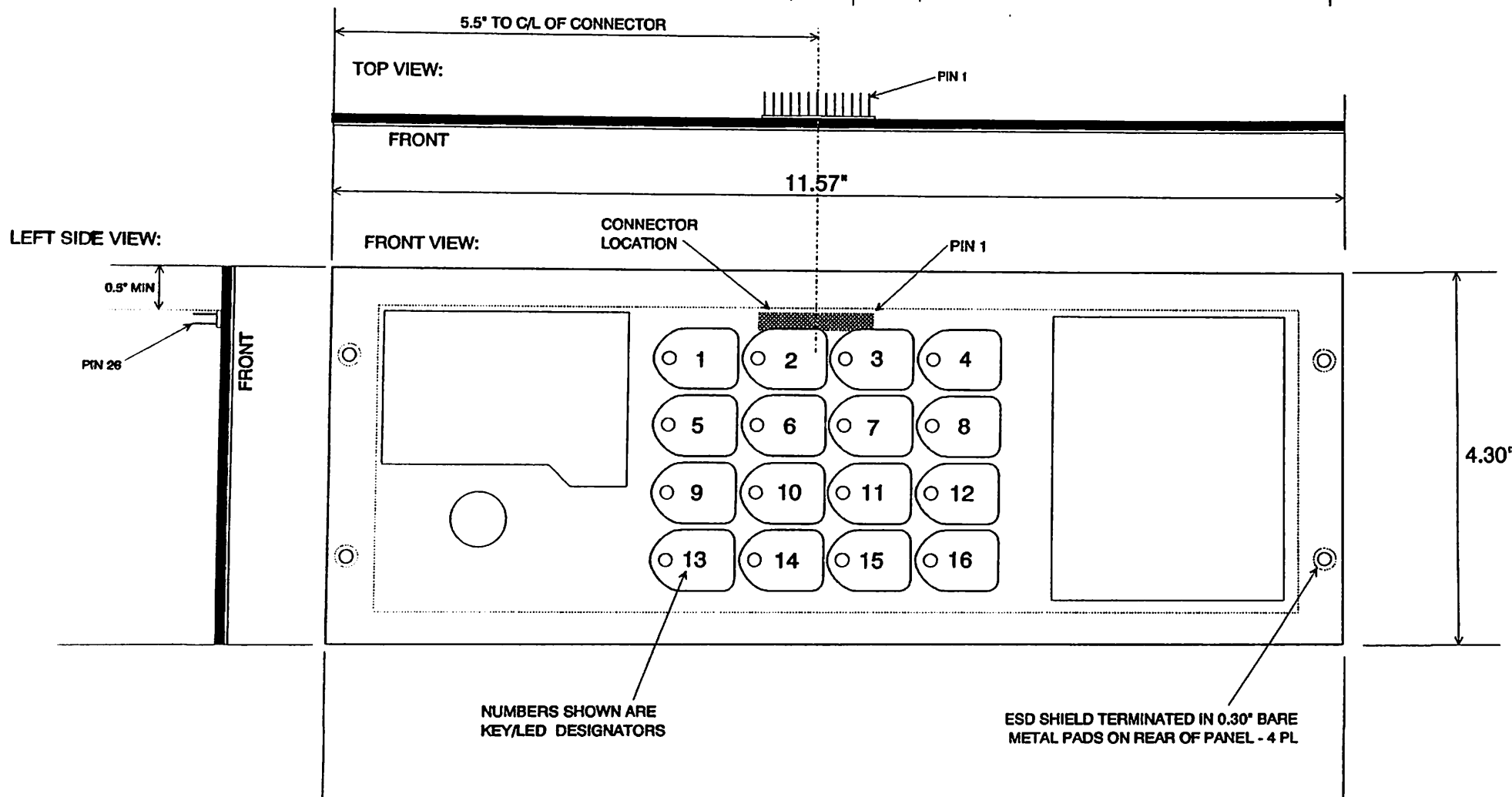


NOTES:

- 1) KEYPAD LETTERING COLOR: BLACK
- 2) OTHER LETTERING: WHITE

TOLERANCES: (UNLESS OTHERWISE NOTED) ALL .XXX DECIMAL: ...005 ALL .XX DECIMAL: ...03 ALL FRACTIONAL: ...1/16 ALL ANGULAR: ...5±			CAROLINA MEDICAL ELECTRONICS, INC. KING, NORTH CAROLINA, 27021		
MATERIAL:			TITLE VascuMAP MEMBRANE KEYPAD ARTWORK - BLACK & WHITE		
FINISH:		DRAWN BY: JC, MD	SIZE A	SCALE DRAWN TO SCALE	MS-19803
		DATE: 11/20/91			
		CHECKED BY: JZ, MD	APPROVED BY:		SHEET: 2 OF 5

REVISIONS				
REVISION NUMBER	INITIALS	DESCRIPTION	DATE	APPROVED BY:



NOTES:

- 1) VIEWS SHOW 26 PIN MALE CONNECTOR IN APPROXIMATE POSITION.
- 2) DOTTED LINE ON FRONT VIEW SHOWS INSIDE CASE CLEARANCE. REAR OF PANEL MUST BE FLAT OUTSIDE THIS BOUNDARY.

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ...005
ALL .XX DECIMAL: ...03
ALL FRACTIONAL: ...1/16
ALL ANGULAR: ...5±

MATERIAL:

FINISH:



DRAWN BY: JC, MD

DATE: 11/22/91

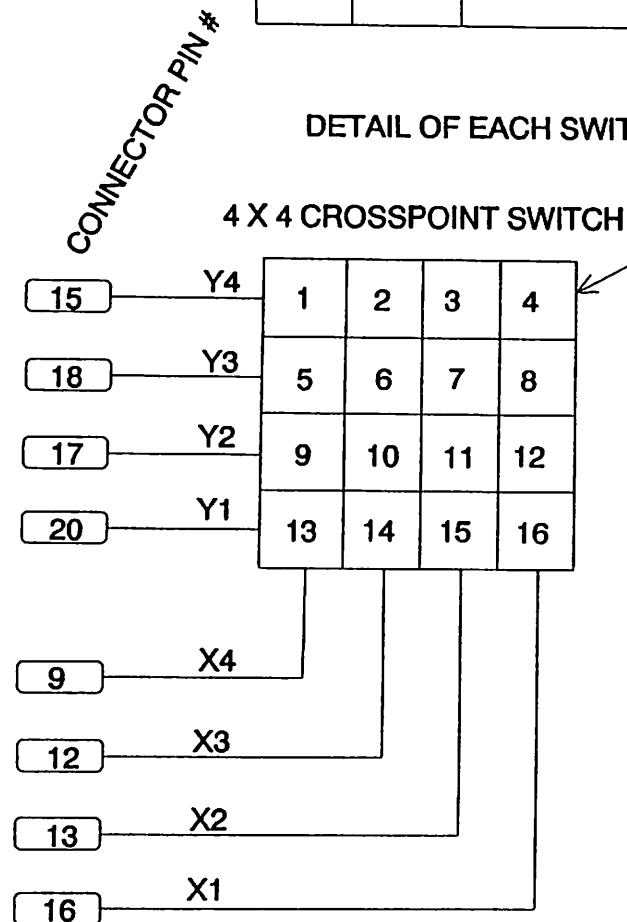
CHECKED BY: JC, MD

CAROLINA MEDICAL ELECTRONICS, INC.
KING, NORTH CAROLINA, 27021

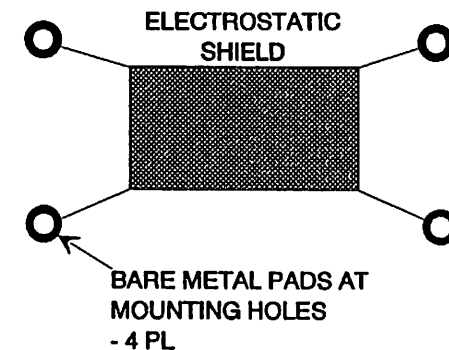
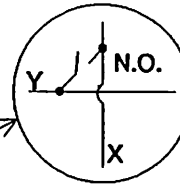
TITLE
VascuMAP
MEMBRANE KEYPAD FRONT PANEL
SHOWING ELECTRICAL CONNECTIONS

SIZE A	SCALE DRAWN TO SCALE	MS-19803
-----------	-------------------------	----------

APPROVED BY: SHEET: 5 OF 5



DETAIL OF EACH SWITCH POINT:



CONNECTOR:
26 PIN DUAL ROW MALE-
.025" SQ. PINS X .25" LONG ON 0.1" CTRS.

REAR VIEW (CABLE SIDE):

[illegible]

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ...005
ALL .XX DECIMAL: ...03
ALL FRACTIONAL: ..1/16
ALL ANGULAR: ...5°

MATERIAL:

FINISH:

DATE 11/22/91

DR. BY: JC,MD

CHKD BY: JC, MD

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A. 27021

TITLE	VascuMAP MEMBRANE KEYPAD ELECTRICAL SCHEMATIC
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A	SCALE N/A	DRAWING NO. MS-19803
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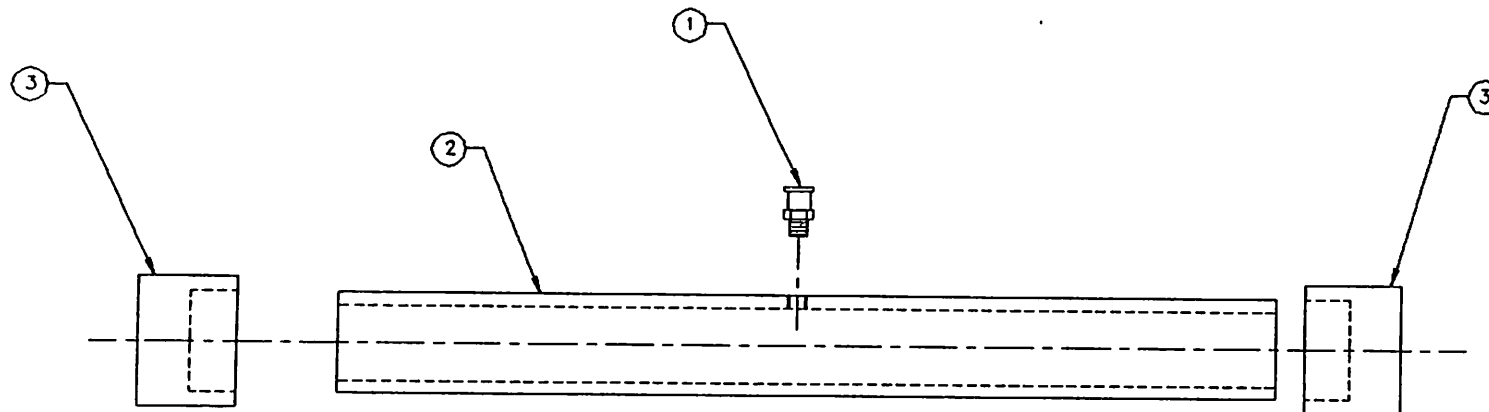
ECS

APPD.

SHEET 4 OF 5

EA 19321

REVISIONS				
REV. #	INIT.	DESCRIPTION	DATE	APPROVED



NOTES

- 1) GLUE END CAPS WITH STANDARD PVC PIPE CEMENT.
- 2) APPLY THREAD SEALANT (#19771) TO 10-32 ADAPTER.

REF.	CME #	QTY.	DESCRIPTION
3	19615	2	3/4" PVC PIPE CAPS
2	19614	1	9.25" LENGTH 3/4" PVC PIPE MODIFIED WITH HOLES FOR ABOVE.
1	19311	1	FEMALE LUER TO 10-32 ADAPTER

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ±.003
ALL .XX DECIMAL: ±.03
ALL FRACTIONAL: ±1/16
ALL ANGULAR: ±.5°

MATERIAL:

FINISH:



DR. BY:

CWD

DATE

12/11/91

CHKD BY:

J. Campbell 2 Mar 92

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

TITLE

VascuMAP
AIR TANK ASSEMBLY

SIZE

A

SCALE

NTS

DRAWING NO.

EA19321

APPD.

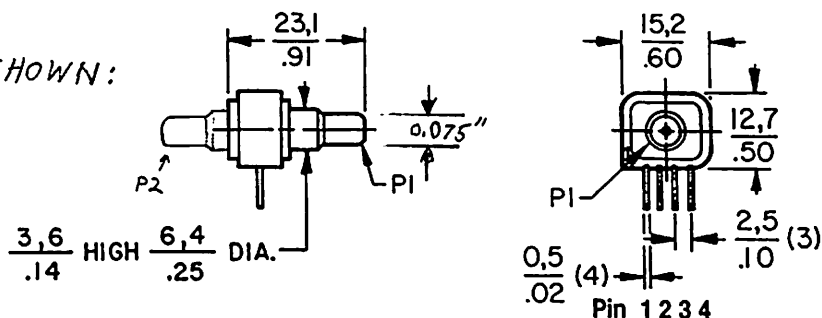
SHEET

1 OF 1

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV.	DESCRIPTION	DATE	APPROVED

MECHANICAL:

PLASTIC CASE AS SHOWN:



ENVIRONMENTAL SPECIFICATIONS

Temperature	Operating	- 40° to 85°C (- 40° to 185°F)
	Storage	- 55° to 100°C (- 67° to 212°F)
	Compensated	0° to 50°C (32° to 122°F) 16/17PC only
Shock	Qualification tested to 150g	
Vibration	Qualification tested to 0 to 2 kHz, 20g sine	
Media	Limited only to those media which will not attack polyester, silica or fluorosilicone.	

ELECTRICAL:

DESIGN CONSIDERATIONS

		Min.	Typ.	Max.
Excitation (VDC)		—		
	16PC/17PC	—	10	16
Response Time (msec)	All	—	—	1.0
Weight (grams)	All	—	7	—
Overpressure (see Accuracy Specifications)				
Input Resistance (Ohms)		—		—
	16PC/17PC	—	10K	—
Output Resistance (Ohms)		—		—
	16PC/17PC	—	2.2K	—
Common mode pressure (psi)		—	—	—
(Differential only)	16PC/17PC	—	—	60

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

FRACTIONS DECIMALS ANGLES
± .XX ± ±
± .XXX ± ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS

DATE

DRAWN

JC, MD

11JUN 90

CHECKED

ISSUED



Carolina Medical
Electronics, Inc.

17PC05DF

Pressure Sensor

SIZE
A

FSCM NO.

DWG. NO.

MS-19281

REV.

SCALE

SHEET

1 OF 2

APPLICATION		REVISIONS																																																
REV.	NEXT ASSY	USED ON	REV.	DESCRIPTION	DATE	APPROVED																																												
INTERNAL CIRCUITRY 16/17PC NOTES 1. Circled numbers refer to sensor termination. 2. $V_o = V_4 - V_2$ (referenced to pin 3). 3. R_b = Strain gage resistors ($\sim 5.0 \text{ k}\Omega$). 4. R_T = Sensitivity temperature compensation resistor. 5. R_S = Sensitivity calibration resistor. When a positive pressure is applied to port P1, the differential voltage $V_4 - V_2$ (voltage at pin 4, with respect to ground, increases and voltage at pin 2 decreases) increases linearly with respect to the input pressure. When a vacuum pressure is pulled at port P1 (or positive pressure applied to port P2) the voltage $V_4 - V_2$ decreases linearly with respect to the input pressure.																																																		
ACCURACY SPECIFICATIONS at $10.0 \pm 0.01 \text{ VDC}$ Excitation, 25°C <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Parameter</th> <th style="width: 10%;">MIN</th> <th style="width: 10%;">TYP</th> <th style="width: 10%;">MAX</th> </tr> </thead> <tbody> <tr> <td>F.S.O.-Full Scale Output (mV)</td> <td>48</td> <td>50</td> <td>52</td> </tr> <tr> <td>Sensitivity mV/psi</td> <td>—</td> <td>23</td> <td>—</td> </tr> <tr> <td>Overpressure (psi)</td> <td>—</td> <td>—</td> <td>20</td> </tr> <tr> <td>Null Offset (mV)</td> <td>-1.5</td> <td>0</td> <td>+1.5</td> </tr> <tr> <td>Null Shift (mV) 0° to 25°C, 25° to 50°C</td> <td>—</td> <td>± 0.5</td> <td>± 0.75</td> </tr> <tr> <td>Linearity - Best Fit Straight Line (%F.S.O.) Port 1 > Port 2</td> <td>—</td> <td>± 0.3</td> <td>± 0.5</td> </tr> <tr> <td>Port 2 > Port 1</td> <td>—</td> <td>± 0.5</td> <td>± 1.0</td> </tr> <tr> <td>Sensitivity Shift (%F.S.O.) 0° to 25°C, 25° to 50°C</td> <td>—</td> <td>± 0.5</td> <td>± 1.0</td> </tr> <tr> <td>Repeatability & Hysteresis (%F.S.O.)</td> <td>—</td> <td>± 0.05</td> <td>± 0.10</td> </tr> <tr> <td>Stability Over One Year (%F.S.O.)</td> <td>—</td> <td>± 1.5</td> <td>—</td> </tr> </tbody> </table>							Parameter	MIN	TYP	MAX	F.S.O.-Full Scale Output (mV)	48	50	52	Sensitivity mV/psi	—	23	—	Overpressure (psi)	—	—	20	Null Offset (mV)	-1.5	0	+1.5	Null Shift (mV) 0° to 25°C, 25° to 50°C	—	± 0.5	± 0.75	Linearity - Best Fit Straight Line (%F.S.O.) Port 1 > Port 2	—	± 0.3	± 0.5	Port 2 > Port 1	—	± 0.5	± 1.0	Sensitivity Shift (%F.S.O.) 0° to 25°C, 25° to 50°C	—	± 0.5	± 1.0	Repeatability & Hysteresis (%F.S.O.)	—	± 0.05	± 0.10	Stability Over One Year (%F.S.O.)	—	± 1.5	—
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SOURCES: 1) HONEYWELL/MICROSWITCH 17PC05DF AVAILABLE DIRECT OR VIA HAMMOND ELECTRONICS,																																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="width: 20%;"> UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES $\pm .XX \pm$ $\pm$ $\pm .XXX \pm$ $\pm$ </td> <td colspan="2" style="width: 20%;"> CONTRACT NO. </td> <td colspan="3" style="width: 60%; text-align: center;"> Carolina Medical Electronics, Inc. </td> </tr> <tr> <td rowspan="3" style="width: 20%;"> MATERIAL </td> <td style="width: 10%;"> APPROVALS </td> <td style="width: 10%;"> DATE </td> <td colspan="4" rowspan="3" style="text-align: center; vertical-align: middle;"> 17PC05DF Pressure Sensor </td> </tr> <tr> <td> DRAWN <i>JC, MD</i> </td> <td> <i>11 JUN 90</i> </td> </tr> <tr> <td> CHECKED </td> <td></td> </tr> <tr> <td> FINISH </td> <td> ISSUED </td> <td></td> <td style="width: 10%;"> SIZE A </td> <td style="width: 15%;"> FSCM NO. </td> <td style="width: 20%;"> DWG. NO. <i>MS-19281</i> </td> <td style="width: 10%;"> REV. </td> </tr> <tr> <td colspan="3"> DO NOT SCALE DRAWING </td> <td colspan="2"> SCALE </td> <td colspan="2"> SHEET <i>2 OF 2</i> </td> </tr> </table>							UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES $\pm .XX \pm$ $\pm$ $\pm .XXX \pm$ $\pm$		CONTRACT NO.		Carolina Medical Electronics, Inc.			MATERIAL	APPROVALS	DATE	17PC05DF Pressure Sensor				DRAWN <i>JC, MD</i>	<i>11 JUN 90</i>	CHECKED		FINISH	ISSUED		SIZE A	FSCM NO.	DWG. NO. <i>MS-19281</i>	REV.	DO NOT SCALE DRAWING			SCALE		SHEET <i>2 OF 2</i>													
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DO NOT SCALE DRAWING			SCALE		SHEET <i>2 OF 2</i>																																													



300282-5, -3
NOTE: USED $F_{CLK} = 10 \text{ MHz}$
FOR 20 Hz = EXACTLY 1/2 Hz.
CP & 100KHz VREF: 16-Bit A/D Converter
Jag

LC²MOS

16-Bit A/D Converter

FEATURES

Monolithic 16-Bit ADC
0.0015% Linearity Error
On-Chip Self-Calibration Circuitry
Programmable Low Pass Filter
0.1 Hz to 10 Hz Corner Frequency
0 to +2.5 V or ± 2.5 V Analog Input Range
4 kSPS Output Data Rate
Flexible Serial Interface
Ultralow Power

APPLICATIONS

Industrial Process Control
Weigh Scales
Portable Instrumentation
Remote Data Acquisition

GENERAL DESCRIPTION

The AD7701 is a 16-bit ADC which uses a sigma delta conversion technique. The analog input is continuously sampled by an analog modulator whose mean output duty cycle is proportional to the input signal. The modulator output is processed by an on-chip digital filter with a six-pole Gaussian response, which updates the output data register with 16-bit binary words at word rates up to 4 kHz. The sampling rate, filter corner frequency and output word rate are set by a master clock input that may be supplied externally, or by a crystal-controlled on-chip clock oscillator.

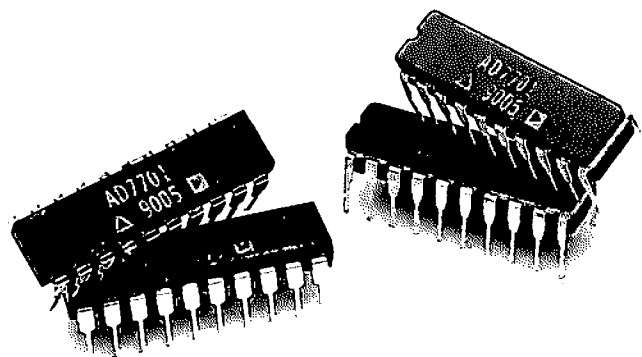
The inherent linearity of the ADC is excellent, and end-point accuracy is ensured by self-calibration of zero and full-scale which may be initiated at any time. The self-calibration scheme can also be extended to null system offset and gain errors in the input channel.

The output data is accessed through a flexible serial port, which has an asynchronous mode compatible with UARTs and two synchronous modes suitable for interfacing to shift registers or the serial ports of industry-standard microcontrollers.

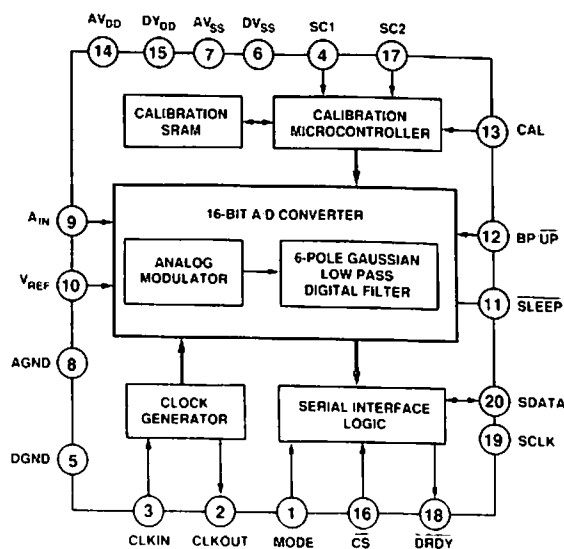
CMOS construction insures low power dissipation, and a power down mode reduces the idle power consumption to only 10 μW .

PRODUCT HIGHLIGHTS

1. The AD7701 offers 16-bit resolution coupled with outstanding 0.0015% accuracy.
2. No missing codes ensures true, usable, 16-bit dynamic range, removing the need for programmable gain and level-setting circuitry.



3. The effects of temperature drift are eliminated by on-chip self-calibration, which removes zero and gain error. External circuits can also be included in the calibration loop to remove system offsets and gain errors.
4. A flexible synchronous/asynchronous interface allows the AD7701 to interface directly to UARTs or to the serial ports of industry-standard microcontrollers.
5. Low operating power consumption and an ultralow power standby mode make the AD7701 ideal for loop-powered remote sensing applications, or battery-powered portable instruments.



AD7701 Functional Block Diagram

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One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106
Tel: 617/329-4700 Fax: 617/326-8703 Twx: 710/394-6577
West Coast Central Atlantic
714/641-9391 214/231-5094 215/643-7790

Dallas Semiconductor **RealTime Clock Plus RAM**

DEVICE OBSOLETE 11.35
 NO DIRECT
 REPLACEMENT - DS1287
 SOURCE 2020
 DISTRIBUTOR = HALL-MARK (800)
 662-7947

FEATURES

- Drop-in replacement for IBM AT computer clock/calendar
- Pin compatible with the MC146818A
- Totally nonvolatile with over 10 years of operation in the absence of power
- Self-contained subsystem includes lithium, quartz and support circuitry
- Counts seconds, minutes, hours, days, day of the week, date, month and year with leap year compensation
- Binary or BCD representation of time, calendar and alarm
- 12- or 24-hour clock with AM and PM in 12-hour mode
- Daylight Savings Time option
- Selectable between Motorola and Intel bus timing
- Multiplex bus for pin efficiency
- Interfaced with software as 64 RAM locations
 - 14 bytes of clock and control registers
 - 50 bytes of general purpose RAM
- Programmable square wave output signal
- Bus compatible interrupt signals ($\overline{\text{IRQ}}$)
- Three interrupts are separately software-maskable and testable
 - Time-of-day alarm once/second to once/day
 - Periodic rates from 122 μs to 500 ms
 - End of clock update cycle

PIN CONNECTIONS

MOT	1	24	VCC
N.C.	2	23	SQW
N.C.	3	22	N.C.
AD0	4	21	N.C.
AD1	5	20	N.C.
AD2	6	19	$\overline{\text{IRQ}}$
AD3	7	18	$\overline{\text{RESET}}$
AD4	8	17	DS
AD5	9	16	N.C.
AD6	10	15	$\overline{\text{RW}}$
AD7	11	14	AS
GND	12	13	$\overline{\text{CS}}$

PIN NAMES

AD0 - AD7	- Multiplexed Address/Data Bus
N.C.	- No Connection
MOT	- Bus Type Selection
$\overline{\text{CS}}$	- Chip Select
AS	- Address Strobe
$\overline{\text{RW}}$	- Read/Write Input
DS	- Data Strobe
$\overline{\text{RESET}}$	- Reset Input
$\overline{\text{IRQ}}$	- Interrupt Request Output
SQW	- Square Wave Output
VCC	- +5 Volt Supply
GND	- Ground

REV. SH DWG. NO.

APPLICATION

REVISIONS

NEXT ASSY

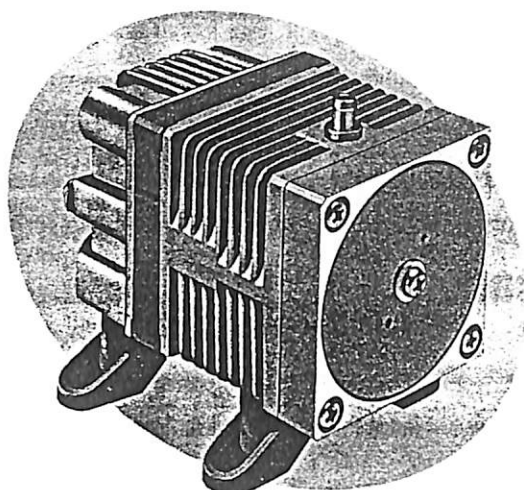
USED ON

REV.

DESCRIPTION

DATE

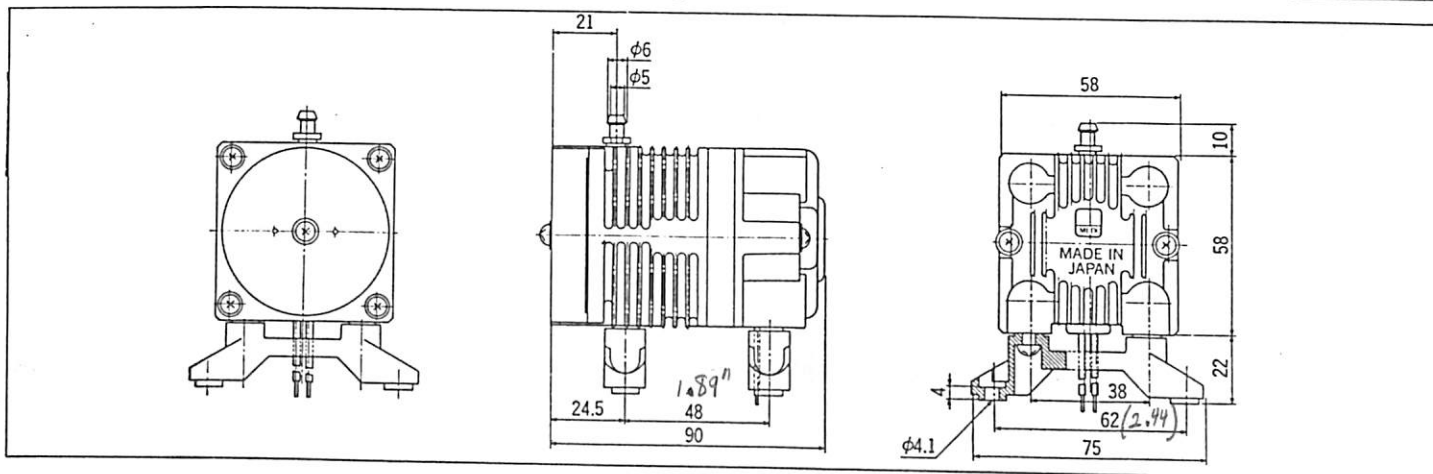
APPROVED



Specifications

Rated pressure	0.2kgf/cm ² (2.84P.S.I.G)
Rated air flow	5Nℓ/min (0.177C.F.M)
Max. pressure	0.4kgf/cm ² (5.69P.S.I.G)
Input power	15/14W
Rated time	Continuous
Life time	3,000hrs.
Outlet size	6mm O.D. hose nipple
Frequency	50/60Hz
Dimensions (mm)	90 (L) × 58 (W) × 80 (H)
(inches)	(3-35/64" × 2-9/32" × 3-9/64")
Mounting dimensions (mm)	48 (L) × 62 (W) (1-57/64" × 2-7/16")
Weight	700gf (1.54lbs.)
Length of lead wire	95mm (3-3/4")

Sketch Drawing and Mounting Dimensions Diagram:mm



MANUFACTURER: MEDO (TOKYO, JAPAN)
MEDO, USA: WOOD DALE, IL. (708) 860-0500

DISTRIBUTOR: VAN-TECH CO., WILMINGTON, N.C., (919) 791-9293

MODEL NUMBER: MEDO: ACO102-A1043D (UL. RECOGNISED)

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

FRACTIONS DECIMALS ANGLES
± .XX ±
± .XXX ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS

DATE

DRAWN

JC, MD

9 MAR 90

CHECKED

ISSUED



Carolina Medical
Electronics, Inc.

PUMP - AIR PRESSURE

2.8 PSIG - 115VAC

SIZE

A

FSCM NO.

DWG. NO.

MS-19295

REV.

1

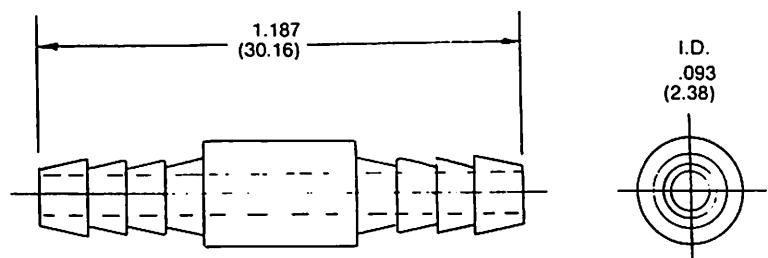
SCALE

J Campbell MD

SHEET

REVISIONS

REV. #	INT.	DESCRIPTION	DATE	APPROVED
1				



() = Metric Dimensions

SPECIFICATIONS

Maximum Supply: 125 PSI
Operating Temperature: 40° to 120° F. (4° to 49° C)

MATERIALS

Housing: Polysulfone
Filter Media: Stainless steel filter screen

MOUNTING

In-line installation

PORT CONNECTIONS

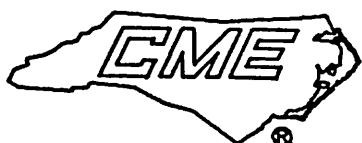
Barbs for 1/8" I.D. flexible tubing

FILTER: 325 x 325 MESH, 43 MICRON.

SOURCES:

1) AIR LOGIC CORP # F-950-43-B85
(VIA CAROLINA FLUID COMPONENTS, CHARLOTTE).

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL DIMENSIONS ±.005 INCHES
ALL ANGULAR DIMENSIONS ±5°
ALL FRACTIONAL DIMENSIONS ±1/64



CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

TITLE

INLINE AIR FILTER
43 MICRON, 1/8" BARBED

MATERIAL:

DRAWN BY: **JC, MD**
DATE: **22 AUG 90**

FINISH:

CHKD BY:
DATE

SIZE
A
SHEET

SCALE
N/A
1 of 1

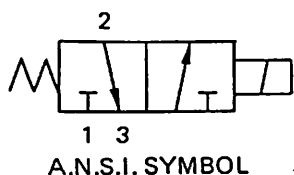
DRAWING NO.

MS-19304

REVISIONS

REV. #	INT.	DESCRIPTION	DATE	APPROVED
1				

PNEUMATIC SPECS:



A.N.S.I. SYMBOL

PRESSURE RANGE:

LS03: 28" Hg. Vac. - 100 PSIG Normally Closed.
28" Hg. Vac. - 50 PSIG Normally Open.

TEMPERATURE RANGE:

All: -10°F to +150°F ambient

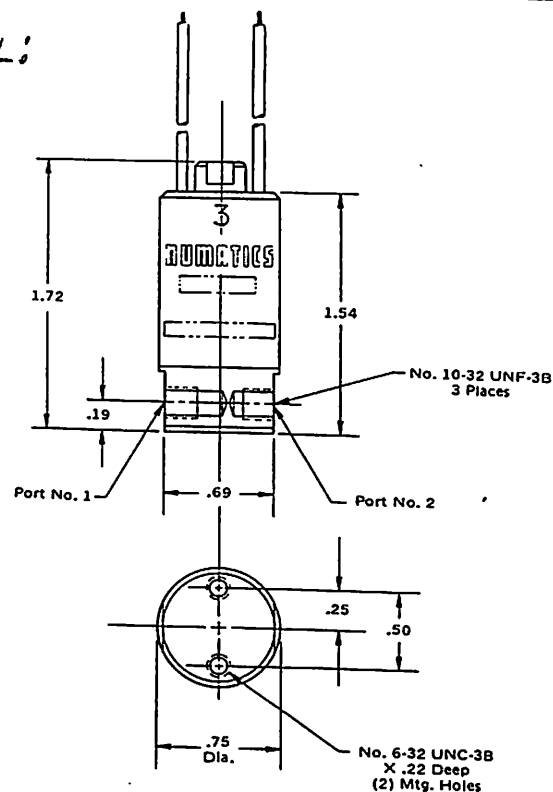
FLOW CAPACITY:

All: C_v = .03

SERVICE: Valves can be used on the following properly filtered media:

Lubricated air, dry (oil-free) air, vacuum, noncorrosive, non-toxic, nonflammable dry gases and water. For other liquid service, consult factory.

MECHANICAL:



ELECTRICAL:

COIL VOLTAGE: 12 V, DC

COIL WATTAGE: 0.65 WATTS

TIME TO ENERGIZE: 5 MILLISECONDS

LEADS: 20gA STRANDED

PIPING ARRANGEMENTS			
APPLICATION	VALVE PORTS		
	Port No. 1	Port No. 2	Port No. 3
Normally-open 2-Way	Plugged	Outlet	Inlet
Normally-closed 2-Way	Inlet	Outlet	Plugged
Normally-open 3-Way	Exhaust	Cylinder	Supply
Normally-closed 3-Way	Supply	Cylinder	Exhaust
Divterter	Normally-closed Outlet	Supply	Normally-open Outlet
Selector	Pressure No. 1	Outlet	Pressure No. 2

SOURCES:

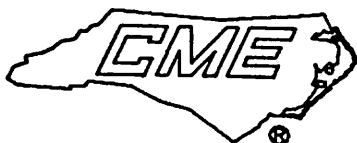
1) NUMATICS CORP: LS03-L-6-H

VIA WARD TECHNICAL SALES, PO 685, PAW CREEK, NC. 28130 394-8933 (704)

2) CLIPPARD CORP: EVO-3-LP-12 (DIRECT REPLACEMENT)

CAROLINA FLUID COMPONENTS, CHARLOTTE

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL DIMENSIONS ±.005 INCHES
ALL ANGULAR DIMENSIONS ±.5°
ALL FRACTIONAL DIMENSIONS ±1/64



CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A.

MATERIAL:

DRAWN BY: JC, MD
DATE: 21 AUG 90

TITLE

3-WAY MINIATURE VALVE

12VDC COIL

FINISH:

CHKD BY:

DATE

SIZE

A

SCALE

N/A

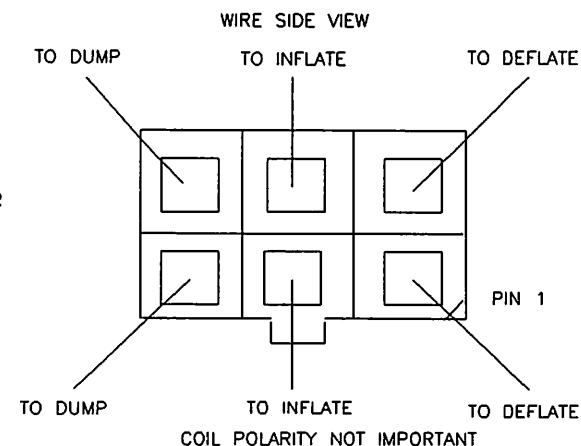
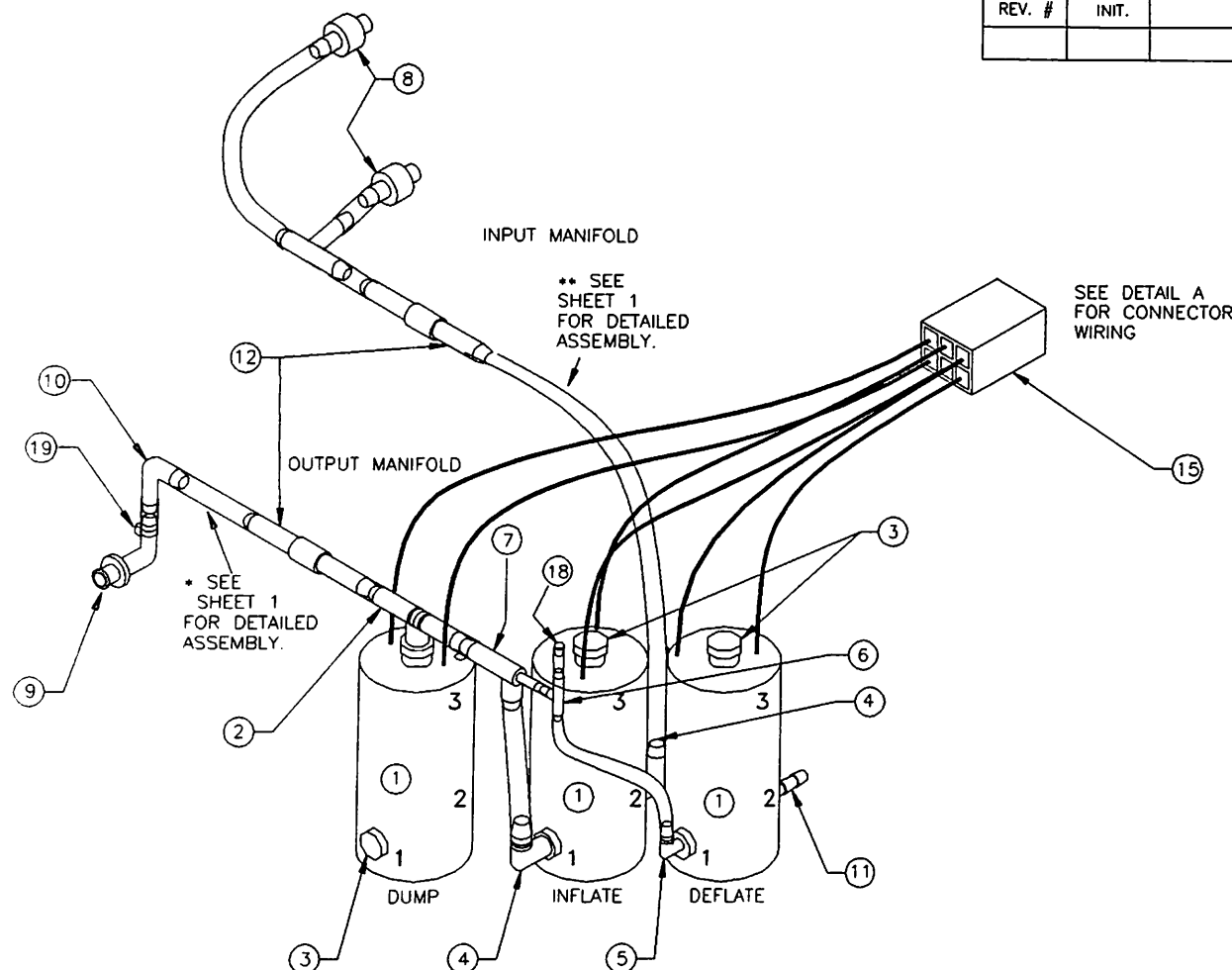
DRAWING NO.

MS-19296

SHEET

1 OF 1

REVISIONS				
REV. #	INIT.	DESCRIPTION	DATE	APPROVED



REF	QTY	CME #	DESCRIPTION
19	1	2196	TIE WRAP, SMALL
18	1	19848	1/16" TUBING PLUG
17	QS	19771	PST PIPE SEALANT
16	6	16315	FEMALE PINS FOR HOUSING
15	1	19300	6-PIN POLARIZED HOUSING
14	3	19313	1/16" PNEUMATIC TUBING
13	18	19312	1/8" PNEUMATIC TUBING
12	2	19304	43 MICRON FILTER, 1/8 BARBED
11	1	19309	.005" ORIFICE, 10-32 THD
10	1	19310	1/8 BARB ELL CONNECTOR
9	1	19850	LUER ELL ADAPTER
8	1	19331	1/8 BARB TO MALE LEUR
7	1	19608	1/8 - 1/8 - 1/16 REDUCTION TEE CONNECTOR
6	1	19849	1/16 TEE CONNECTOR
5	1	19606	1/16 TO 10-32 ELL ADAPTOR
4	2	19308	1/8 TO 10-32 ELL ADAPTOR
3	3	19307	10-32 THREADED PLUG
2	1	19306	1/8 - 10-32 - 1/8 TEE ADAPTOR
1	3	19296	12VDC 3 WAY MINIATURE VALVE

- NOTES:
- 1) USE PST(19771) ON ALL THREADED CONNECTIONS.
 - 2) USE HEAT TO SLIDE TUBING FULLY OVER SHOULDER OF 9. THEN APPLY TIE WRAP.

TOLERANCES:
(UNLESS OTHERWISE SPECIFIED)
ALL XXXX DECIMAL: ±.0005
ALL XXX DECIMAL: ±.003
ALL FRAC DECIMAL: ±.001
ALL ANGULAR: ±.5°

MATERIAL:

FINISH:



DESIGNED BY:

DJ McCREARY

DATE

11-14-91

CHECKED BY:

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA 28114

TITLE
VASCUMAP PNEUMATIC LOGIC SUB-ASSEMBLY

SIZE

C

SCALE

N/A

DRAWING NO.

EA-19322

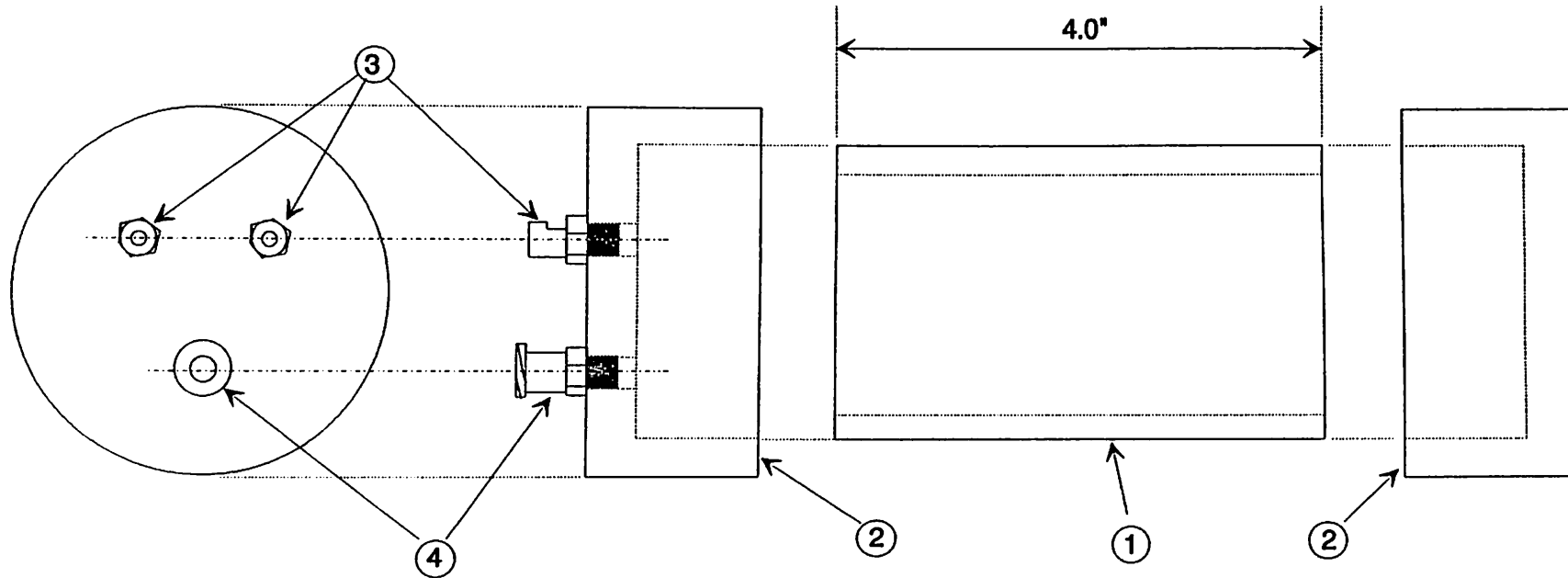
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APPD.

SHEET

2 OF 2

REVISIONS				
REV. #	INIT.	DESCRIPTION	DATE	APPROVED



NOTES:

- 1) DRILL AND TAP THREE (3) 10-32 HOLES IN ONE END CAP APPROX. AS SHOWN.
- 2) GLUE THE END CAPS TO THE PVC PIPE SECTION, USE GLUE SPARINGLY.
- 3) INSTALL THE THREE SMALL FITTINGS USING THREAD SEALANT.

10	1	19861	6 x 9 POLY BAG
9	QS	19242	PVC PIPE CEMENT
8	QS	19771	"PST" THREAD SEALANT
7	1	19350	COAX CONN, 1/16x2
6	5'	19352	DUAL TUBING 1/16 x2
5	1	19938	MALE LUER PLUG
4	1	19311	FEMALE LUER TO 10-32 CONN
3	2	19935	1/16" BARB TO 10-32 CONN.
2	2	19937	2" SCH-40 PVC END CAPS
1	4"	19936	2" SCH-40 PVC PIPE
REF	QTY	CME#	DESCRIPTION

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ...005
ALL .XX DECIMAL: ...03
ALL FRACTIONAL: ...1/16
ALL ANGULAR: ...5°

MATERIAL:

FINISH:



DATE 1/2/92

DR. BY: JC, MD

CHKD BY: JC, MD 1/3/92

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A. 27021

TITLE

VascuMAP
TEST CANNISTER

A

SCALE
N/A

DRAWING NO.

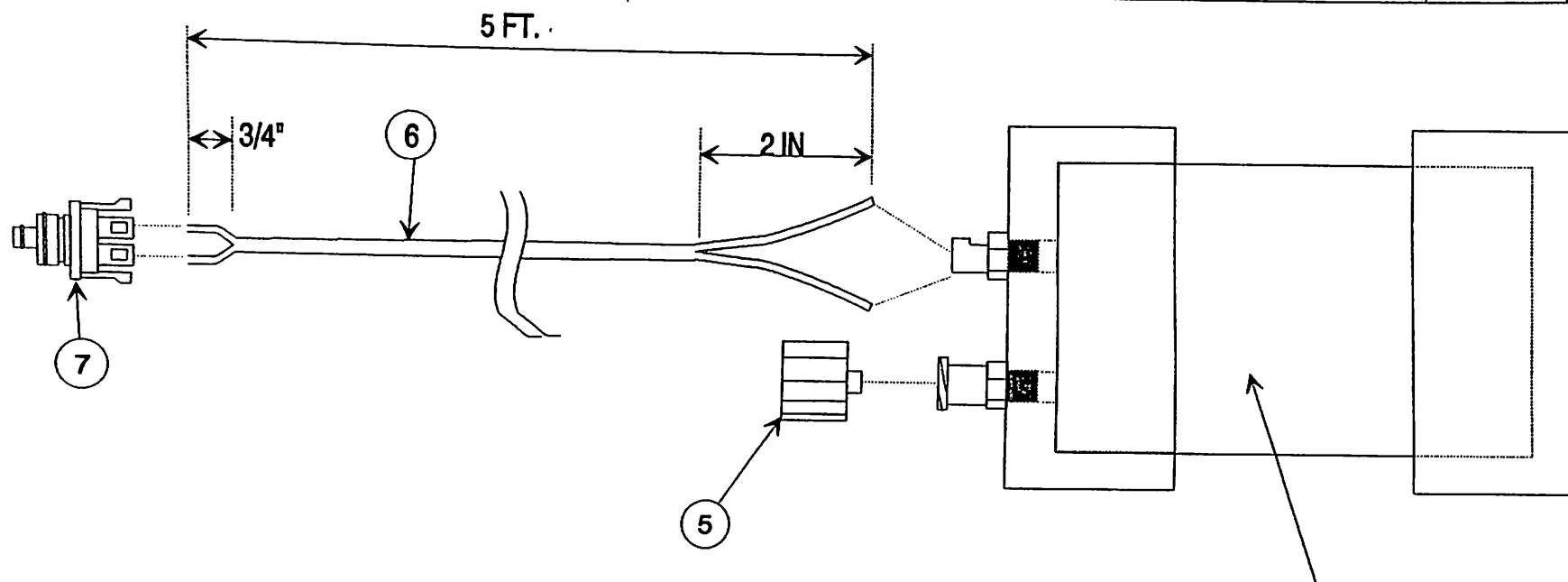
EA-19939

ECS

APPD.

SHEET 1 OF 2

REVISIONS				
REV. #	INIT.	DESCRIPTION	DATE	APPROVED



SEE SHEET 1 FOR THIS ASSY.

NOTES:

- 1) FULLY ATTACH ENDS OF DUAL TUBING TO CONNECTORS.
- 2) TWIST THE LUER PLUG ON THE LUER CONNECTOR AS SHOWN.
- 3) PLACE COMPLETED ASSEMBLY IN POLY BAG.

10	1	19861	6 x 9 POLY BAG
9	QS	19242	PVC PIPE CEMENT
8	QS	19771	"PST" THREAD SEALANT
7	1	19350	COAX CONN, 1/16x2
6	5'	19352	DUAL TUBING 1/16 x2
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1	4"	19936	2" SCH-40 PVC PIPE
REF	QTY	CME#	DESCRIPTION

TOLERANCES:
(UNLESS OTHERWISE NOTED)
ALL .XXX DECIMAL: ...005
ALL .XX DECIMAL: ...03
ALL FRACTIONAL: ...1/16
ALL ANGULAR: ...5°

MATERIAL:

FINISH:



DATE 1/2/92

DR. BY: JC, MD

CHKD BY: JC, MD 1/3/92

CAROLINA MEDICAL ELECTRONICS
KING, NORTH CAROLINA U.S.A. 27021

TITLE

VascuMAP
TEST CANNISTER

A

SCALE

N/A

DRAWING NO.

EA-19939

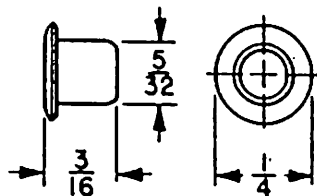
ECS

APPD.

SHEET 2 OF 2

REVISIONS

REV. #	INIT.	DESCRIPTION	DATE	APPROVED



MATERIAL: BRASS

FOR USE ON: 1/16" ID PLASTIC TUBING

MODE OF INSTALLATION: SLIDE GROMMET OVER TUBING WITH FLANGE TOWARD CONNECTOR. INSTALL TUBING ON CONNECTOR, THEN SLIDE GROMMET DOWN OVER CONNECTION.

SOURCES:

- 1) CLIPPARD # 5000-4 (SUPPLIED IN PACKS OF 10).

TOLERANCES: (UNLESS OTHERWISE NOTED) ALL .XXX DECIMAL: ...005 ALL .XX DECIMAL: ...03 ALL FRACTIONAL: ...1/16 ALL ANGULAR: ...5°			CAROLINA MEDICAL ELECTRONICS KING, NORTH CAROLINA U.S.A. 27021		
			TITLE 1/16" HOSE CLAMP GROMMET		
MATERIAL:	DATE 12/6/91		A	SCALE N/A	DRAWING NO. MS-19775
	DR. BY: JC, MD				
FINISH:	CHKD BY:		ECS		APPD.
					SHEET 1 OF 1