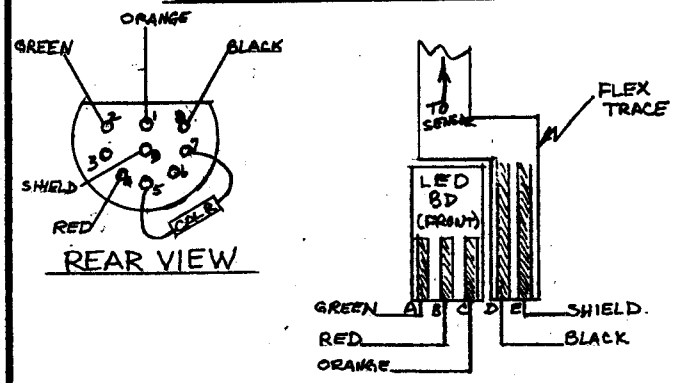
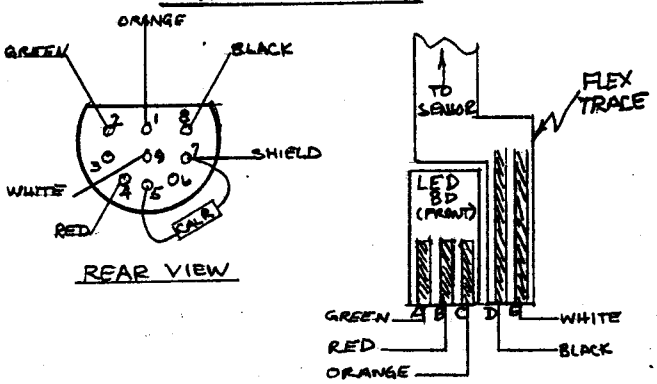
WIRING DIAGRAM

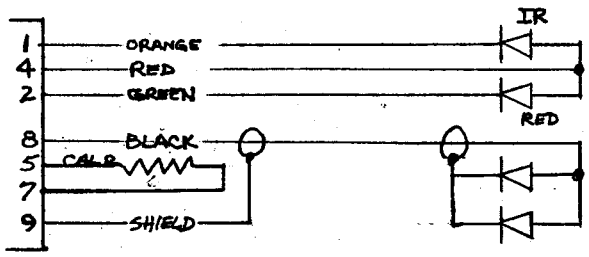
ORIGINAL MODEL

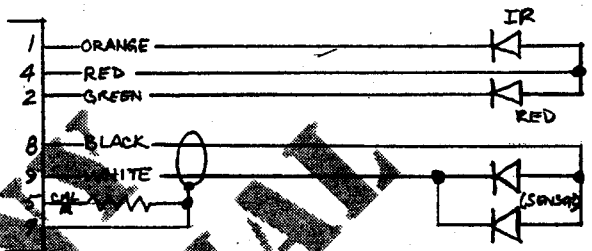


NEW MODEL



SCHEMATIC





PARTS LIST

* 1	X2D05580	CABLE
	X3C00906	CONNECTOR, [illegible] TYP
	X2F01003	STRAIN RELIEF

SPECIAL INSTRUCTIONS

1. NEW MODEL HAS OFFSET CABLE ENTRANCE TO RED FINGER CLIP.
2. USE EPIC P/N X2D05580 CABLE WHEN REPLACING THE DAMAGED CABLE AND FOLLOW THE WIRING DIAGRAM BELOW:

RED	–	PIN 2 TO A
ORANGE	–	4 TO B
YELLOW	–	1 TO C
WHITE	–	8 TO D
BLACK	–	9 TO E
SHIELD	–	7

EPIC MEDICAL EQUIPMENT SERVICES, INC.
Dallas, Texas

SCALE: N/A	APPROVED BY:	DRAWN BY WORLEY
DATE: 1/9/95		REVISED

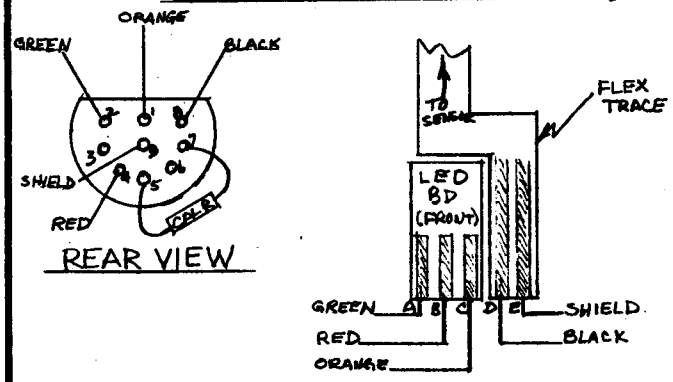
OHMEDA SaO2 CABLE – 8124

REPAIR STANDARDS

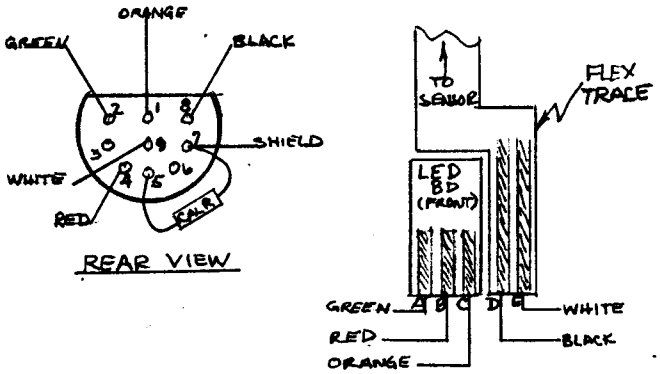
DRAWING NUMBER OHMEDA01

WIRING DIAGRAM

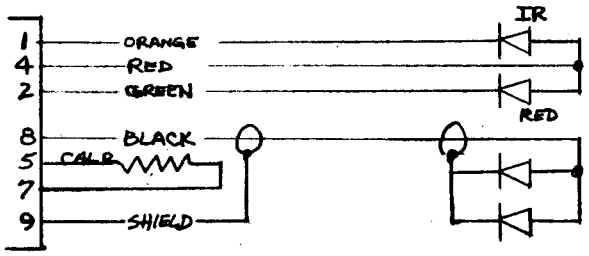
ORIGINAL MODEL (OLD STYLE)

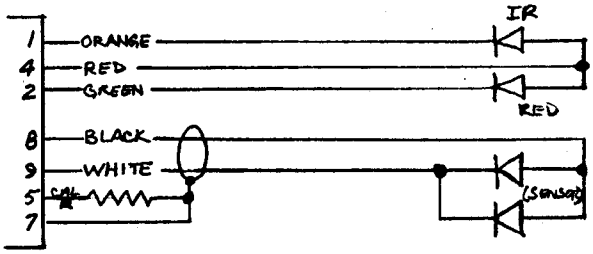


NEW MODEL



SCHEMATIC





PARTS LIST

12'	X2D05580	CABLE
	X3C00906	CONNECTOR, 9PIN HYP (INCL PINS)
	X2F01003	STRAIN RELIEF
1	X3B06192	6.19K RESISTOR

SPECIAL INSTRUCTIONS

1. NEW MODEL HAS OFFSET CABLE ENTRANCE TO LED FINGER CLIP.
2. USE EPIC P/N X2D05580 CABLE WHEN RLPLACING THE DAMAGED CABLE AND FOLLOW THE WIRING DIAGRAM BELOW:

RED	–	PIN 4	TO B
ORANGE	–	1	TO C
YELLOW	–	2	TO A
WHITE	–	9	TO E (OMIT ON ORIGINAL MODEL)
BLACK	–	8	TO D
SHIELD	–	7	NC (TO E ON ORIGINAL MODEL)

EPIC MEDICAL EQUIPMENT SERVICES, INC.
Dallas, Texas

SCALE: N/A	APPROVED BY:	DRAWN BY WORLEY
DATE: 1/9/95		REVISED 2/8/96

OHMEDA SaO2 CABLE – 8124

REPAIR STANDARDS

DRAWING NUMBER OHMEDA01

INTERNATIONAL OXIMETRY SENSORS & CABLES, INC.
DALLAS, TEXAS

QUALITY CONTROL PROCEDURE

REPAIRED SaO2 CABLES

Original Copy - Engineering
Copy #1 - Quality assurance
Copy #2 - Quality Control
Date Initiated 01/09/95 by GW

Rev: Date by

MFR: OHMEDA MODEL: 8124

I. PHYSICAL

A. CONNECTOR
1. Inspect for bent or broken pins.
2. Inspect strain relief.
3. Inspect for proper connector assembly and secure mechanical union.

B. CABLE
1. Inspect for cuts and/or abrasions.
2. Inspect for cleanliness.

C. CLIP
1. Inspect for traces of glue or epoxy.
2. Check for proper assembly of clips, pads, springs and cable retainer.
3. Check that "Company identification" label has been attached.

II. ELECTRICAL

A. LED's

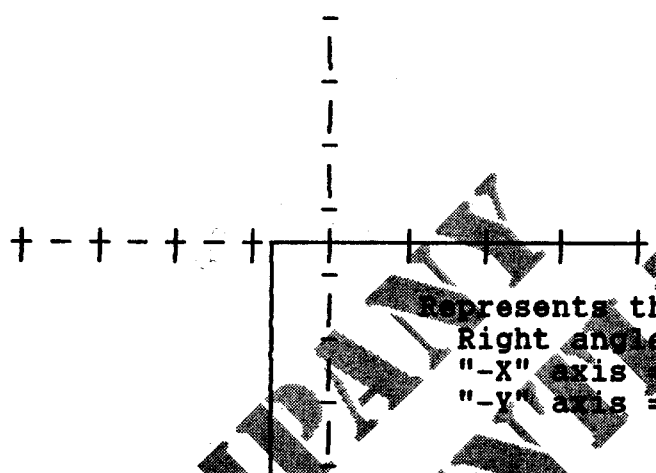
NOTE: Set COMPONENT TESTER to: * - Lo
* - A

1. Connect cable to "B" connector on the text fixture.

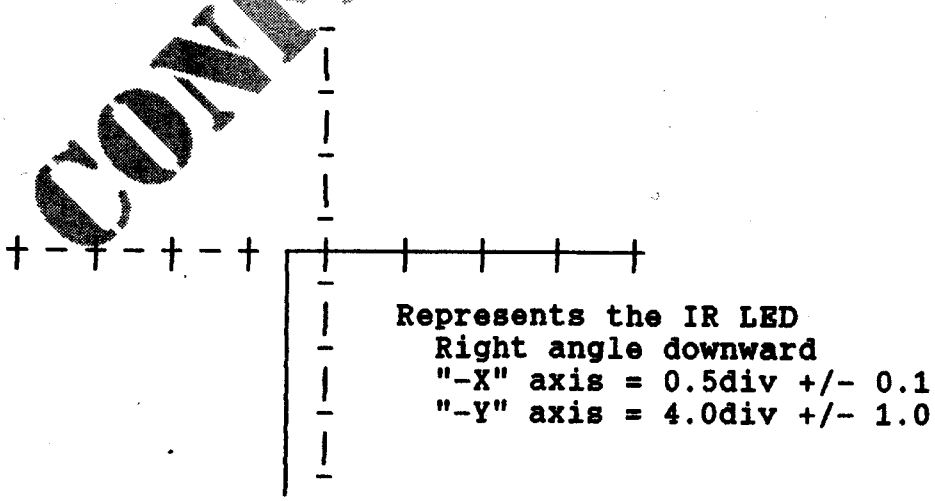
II. ELECTRICAL (cont.)

A. LED's (cont.)

2. Place "BLUE (S1)" switch in position "2". The COMPONENT TESTER should indicate the following pattern.

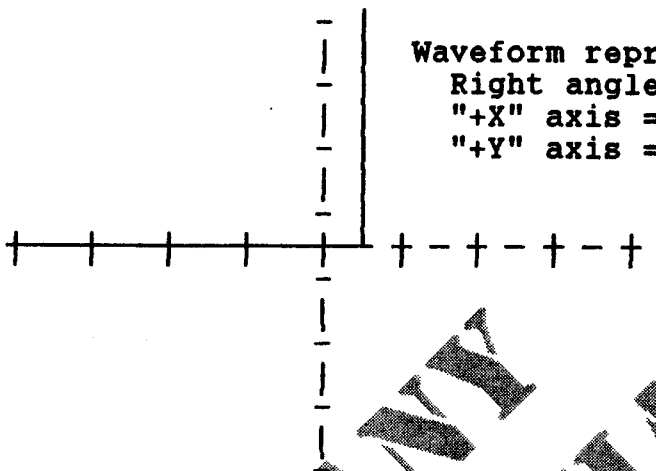


3. Place "BLUE (S1)" switch in position "3". The COMPONENT TESTER should indicate the following pattern.



B. SENSOR

1. Place "BLUE (S1)" switch in position "4". The COMPONENT TESTER should indicate the following pattern.



C. CALIBRATION RESISTANCE

NOTE: Set DVM to "200K" ohm range.

1. Place the "GREEN (S2)" switch in position "1". The DVM should indicate "50K to 85K ohm" nominal.

III. PERFORMANCE (record readings on WORKSHEET)

A. CABLE CONNECTOR

1. Connect the cable to the "OHMEDA" Oximeter Monitor.

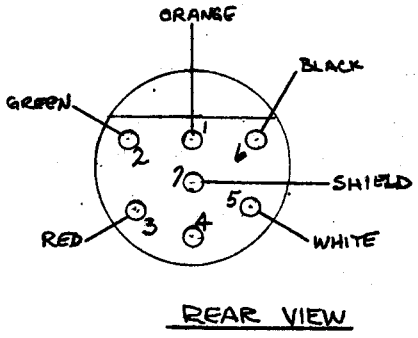
B. SENSOR CLIP

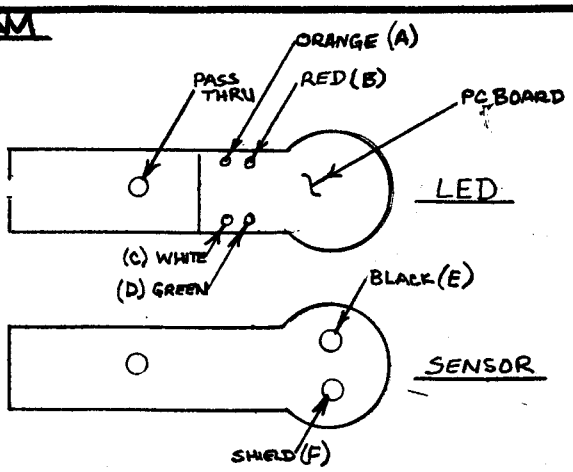
1. Attach the sensor clip to the "RED" Nonin Saturation Test Unit.
2. Pulse the unit about once per second.
3. The Oximeter should read "97"% SaO2 (+/- 2).
4. Attach the Sensor Clip to the "BLACK" Nonin Saturation Test Unit.
5. Pulse the unit about once per second.
6. The Oximeter should read "83"% SaO2 (+/- 2).

IV. GENERAL

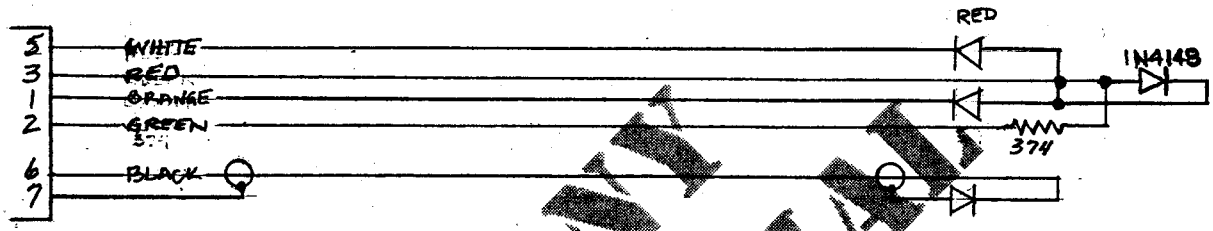
A. Make sure all entries are recorded on worksheet.
B. Indicate "Acceptance" or "Failure".
   NOTE: If unit fails, return to repair technician.
C. If accepted, record the date QC was performed.
D. Send the unit, with the worksheet, to shipping for return to the customer.

WIRING DIAGRAM





SCHEMATIC



PARTS LIST

8'	X2D05580	CABLE
	X3C00706	CONNECTOR 7 PIN HYP
	X2FD1003	STRAIN RELIEF

SPECIAL INSTRUCTIONS

WHEN REPLACING THE CABLE ASSY, USE EPIC PIN X2D05580 CABLE AND FOLLOW THE WIRING DIAGRAM BELOW:

RED	- PIN	5 To	C
ORANGE	-	3	B
YELLOW	-	1	A
WHITE	-	2	D
BLACK	-	6	E
SHEILD	-	7	F

EPIC MEDICAL EQUIPMENT SERVICES, INC.
Dallas, Texas

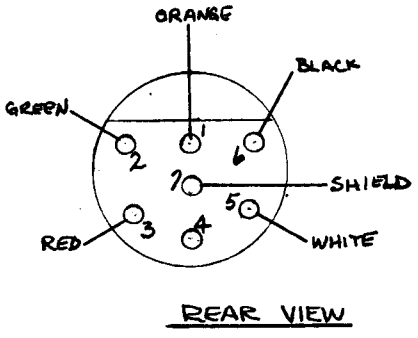
SCALE: N/A	APPROVED BY:	DRAWN BY: WORLEY
DATE: 1/22/96		REVISED

OHMEDA SoO2 CABLE - BIOX IVA EAR

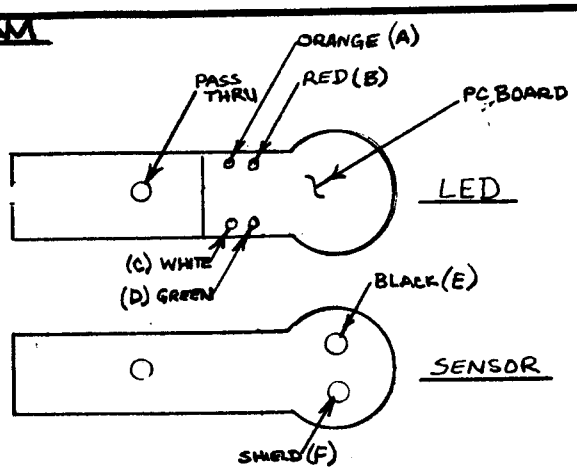
REPAIR STANDARDS

DRAWING NUMBER: OHMEDA Ø2

WIRING DIAGRAM



REAR VIEW



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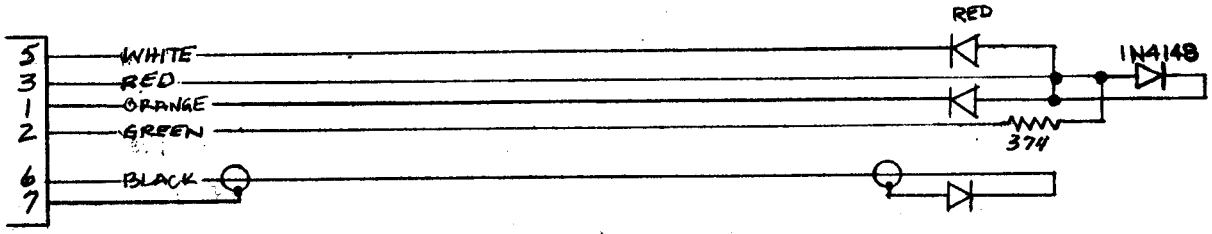


PARTS LIST

8'	X2D05580	CABLE
	X3C00706	CONNECTOR, 7 PIN HYP (INCL PINS)
	X2FD1003	STRAIN RELIEF

SPECIAL INSTRUCTIONS

1. WHEN REPLACING THE CABLE ASSY, USE EPIC PIN X2D05580 CABLE AND FOLLOW THE WIRING DIAGRAM BELOW:

RED	-	PIN 3	To	B
ORANGE	-	1		A
YELLOW	-	2		D
WHITE	-	5		C
BLACK	-	6		E
SHEILD	-	7		F

EPIC MEDICAL EQUIPMENT SERVICES, INC.
Dallas, Texas

SCALE: N/A	APPROVED BY:		DRAWN BY WORLEY
DATE: 1/22/96			REVISED 2/8/96

OHMEDA SaO2 CABLE - BIOX IVA EAR

REPAIR STANDARDS

DRAWING NUMBER OHMEDA Ø2

DC

Ohmeda Finger Probes (old style).

(Old style has small Strain relief at the finger clip end.)

Visual Check

Cracks in probe - Exchange
Nicks in cable - Replace Cable

Required:

1. 9 Pin Connector
2. 7 Connector Pins
3. 61.9 K Ohm Resistor
4. Strain Relief

Cut Resistor Legs :
1 side 0.5 cm
1 side 1.5 cm

Solder a pin to each side of resistor
Place length of heat shrink 2 cm Long - 3.2 mm diameter over resistor.
NOTE Short side of resistor to Pin 5
Insert Resistor into Connector

Cable

Expose 1.5 cm of cable.
Cut and Remove main shield.
Cut and Remove white wire (inside internal shield).
Strip and Tin wires.
Solder pins on each wire including shield.
Insert pins into Connector

NOTE before inserting pins ensure Strain Relief and relevent connector parts are on the cable.

Slide/Stretch Cable sheath down.
Attach Small Cable Tie to Cable.

Note if only re-wireing cable at finger clip end cut the cable by a max of 10-15 cm.

Finger Clip

Rubber band Finger Clip (To hold it open)

DL

Remove bottom Pad -
Use a small screwdriver to prise the pad off (use the small groove)
Desolder old wire
Cut yellow String

Pull Strain relief from the Finger clip.
If necessary score around the strain relief with scalpul
Remove cable

cleanup pads (use a toothbrush)

Remove strain relief from cable
Use a small screwdriver to break the seal between the strain relief and the cable, Use alcohol to pull out cable)

place strain relief on new Cable
place 0.5 cm length of 3.2 mm heat shrink on cable

Cut back 1.5 cm of cable
Remove main shield + string
Remove white wire
Strip and Tin remaining wires
NB sheath should fit in the groove (if not slide sheath down)

Solder on to finger clip as per diagram
Slide down sheathing to fit
Super glue heat shrink onto cable in the grove
Slide down strain relief and glue

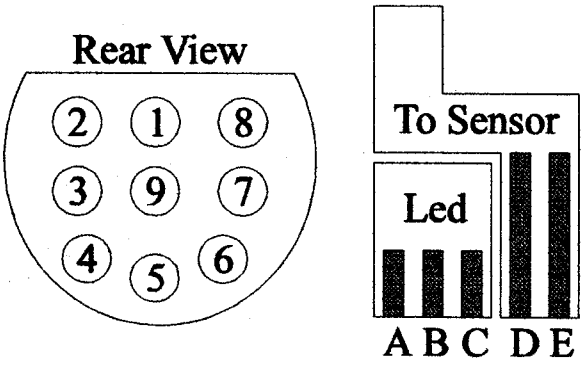
Glue the 4 corners of padding to finger clip

Test Probe.
Resistance between 30KOhm and 80 KOhm

<u>Ohmeda (new Style)</u>

The only differences is a bigger strain relief and the resistor in the connector must be Shielded.

DC



Pin Number	Ohmeda Cable Original Model	Ohmeda Cable New Model	Epic Cable New Model	Epic Cable Original Model
1	Orange	Orange	Orange	Orange
2	Green	Green	Yellow	Yellow
3	-	-	-	-
4	Red	Red	Red	Red
5	Resistor	Resistor	Resistor	Resistor
6	-	-	-	-
7	Resistor	Resistor and Shield	Resistor and Shield	Resistor
8	Black	Black	Black	Black
9	Shield	White	White	~~White~~ Shield
A	Green	Green	Yellow	Yellow
B	Red	Red	Red	Red
C	Orange	Orange	Orange	Orange
D	Black	Black	Black	Black
E	Shield	White	White	Shield

MEDICAL CABLES™

1340 Logan Avenue
Costa Mesa, CA 92626
Phone: (714) 545-3469
(800) 828-1599
Fax: (714) 545-7212

Pulse Oximeter Finger Probe Repair Procedure

Model: P867RA

1.1 P867RA Parts List

Item No.	Description	Quantity	Manufacture	Part Number
	Complete Clip Assembly	1	MCI	MC-P100A
1	Top Shell	1	MCI	MC-P101
2	Bottom Shell	1	MCI	MC-P102
3	Wire Spring	1	MCI	MC-P103
4	Buttons	2	MCI	MC-P104
5	Soft Finger Pad (LED)	1	MCI	MC-P105
6	Hard Finger Pad (Detector)	1	MCI	MC-P106
7	Top Pad Support Frame	1	MCI	MC-P107
8	Bottom Pad Support Frame	1	MCI	MC-P108
9	LED assembly	1	MCI	MC-P867-LED
10	Detector	1	MCI	MC-P867-DET
	Cable Assembly Kit		MCI	MC-P867-CAB
11	Cable	1	MCI	MC-P867-111
12	Connector Strain Relief	1	MCI	MC-P867-112
13	Back Nut	1	MCI	MC-P867-113
14	Plastic Collet	1	MCI	MC-P867-114
15	9 - pin insert (male)	1	MCI	MC-P867-115
16	Shell	1	MCI	MC-P867-116
17	Pins	7	MCI	MC-P867-117
18	Resistor (68kΩ)	1	MCI	MC-P867-118
19	Probe Strain Relief	1	MCI	MC-P867-119
20	Silicone (RTV)			
21	Glue			

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Fax: (714) 545-7212

1.2 P867RA Repair Procedure

1.2.1 Probe Disassembly:

1. Inspect cable, shell, pads and connector for damage or cracks. Note any damage and list part that need to be replaced.

2. Cut and discard cable (item 11) at the probe strain relief (item 18) to remove from the finger probe clip assembly.

3. Remove top pad support frame (item 7) with soft finger pad (item 5) from top shell. Remove soft finger pad from support frame. Remove bottom pad support frame (item 8) with hard finger pad (item 6) from bottom shell (item 2). Remove hard finger pad from support frame.

4. Separate shells (items 1 & 2) and remove spring (item 3) and buttons (item 4) to disassemble finger probe.

1.2.2 Probe Testing:

5. Remove LED assembly (item 9) from top pad. Inspect for physical damage. Test the individual RED and IR LEDs. The test specifications for the LEDs are listed in Table 1 below.
If item 9 is within test specifications then reuse LED assembly. Replace assembly if Red or IR LED failed to meet test specifications.

6. Remove Detector (item 10) from bottom pad. Inspect detector for physical damage and test the Detector. The test specifications for the LEDs are listed in Table 1 below.
If item 10 is within test specifications then reuse detector. Replace item 10 if detector failed to meet test specifications.

Table 1 LED and Detector Test Specifications

	Test		Typ.	Max.	Range	Units	Test Conditions
Red LED	Forward Voltage	V_F	1.8	2.4	± 0.6	volts	I_F = 20 mA
IR LED	Forward Voltage	V_F				volts	
Detector	Forward Voltage	V_F				volts	

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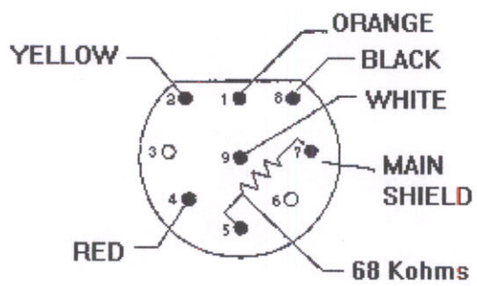
Fax: (714) 545-7212

1.2.3 Probe Reassembly:

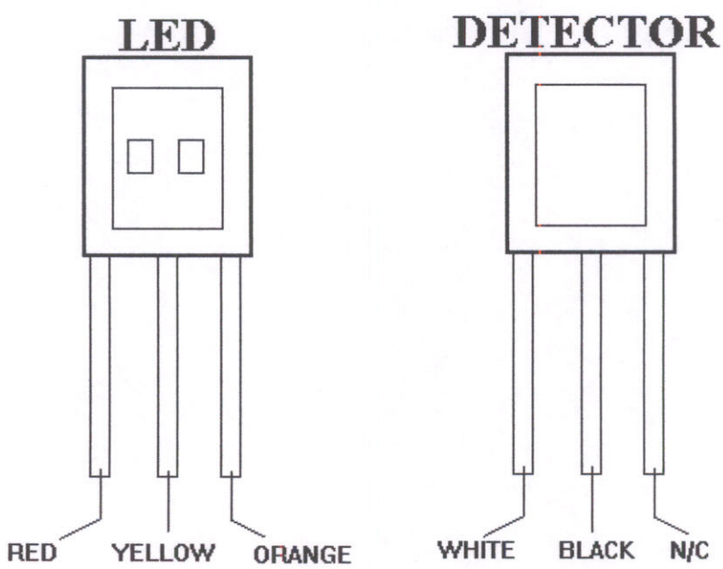
7. Replace cable. Attach back nut (item 13), plastic collet (item 14) and connector strain relief (item 12) onto cable. Attach wires (solder) onto pins (item 17). Solder resistor (item 18) to pins 5 & 7. Solder main shield to resistor. Place pins in insert (item 15) according to connector drawing. Slide items 12, 14, and 15 into shell (item 16). Attach back nut (item 13) to shell.

P867RA

CONNECTOR REAR-VIEW



8. Attach probe strain relief (item 19) to cable (item 11). Strip wires back. Connect wires (solder) to LED and Detector. Connect the red, yellow and orange wires to the Led terminals. Connect the black and white wires to the Detector terminals. Test continuity.



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P867RA Finger Probe Repair continued

9. Inspect finger pads (item 5 & 6) for damage or cracks. Replace finger pads if damaged or cracked. Slide the LED into the top pad and silicone (item 20) into place. Slide the Detector into the bottom pad and silicone (item 20) into place. Let silicone dry.

10. Inspect top and bottom shell, button, and spring for damage or cracks. Replace items if necessary. Attach spring and buttons to top and bottom shell.

11. Inspect support frames and replace if damaged. Attach the top pad to the top support frame with glue (item 21). Attach the bottom pad to the bottom support frame with glue. Snap and glue top and bottom pads into top and bottom shell respectively.

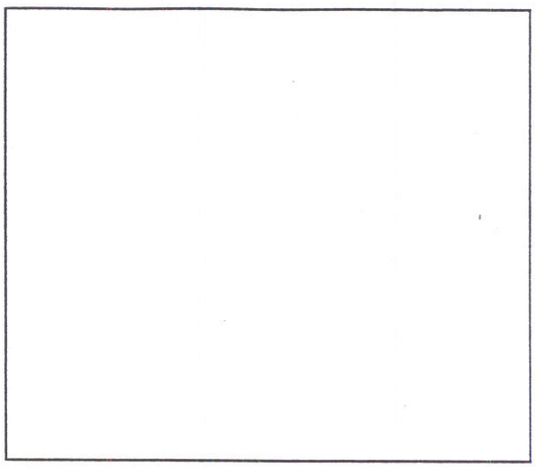
12. Test probe for SpO_2 measurement.

13. Send probe to Quality Control for testing

OHMEDA OXY-TIP SOCKET '3' WITH TEST CABLE.

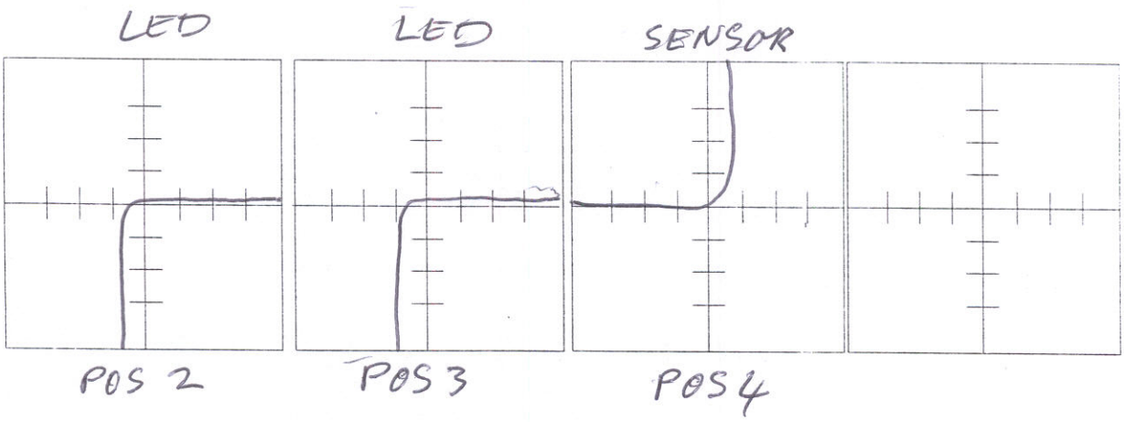
Connector 2 wiring

Pin 1
Pin 2
Pin 3
Pin 4
Pin 5
Pin 6
Pin 7
Pin 8
Pin 9



Test Instructions

Test using Test fixture curve tracer



OHMEDA MONITOR 3700.

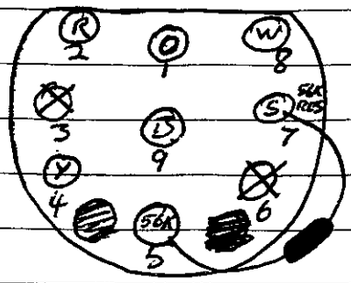
GREATER THAN >Q (REVISION)

Drawn BY	
Date	
Checked By	
Date	
Revised By	
Revision Date	
Revision number	

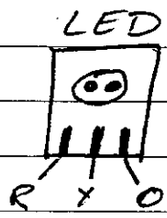
P867RA OHMEDA.

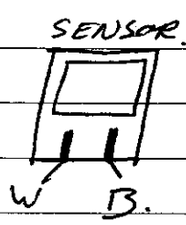
12' CABLE

1 = ORANGE
2 = RED
3 = N/C
4 = YELLOW
5 = 56K RES.

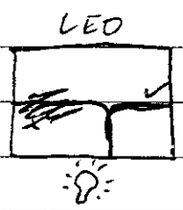


6 = N/C
7 = BOTH SHIELDS / 56K RES
8 = WHITE
9 = BLACK.

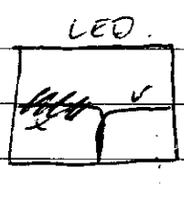




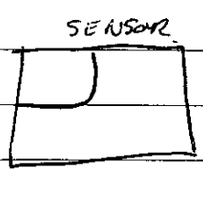
NOTE. BLACK FINGER PADS + GREEN H'S & BUTTONS
0010133 0010182



2



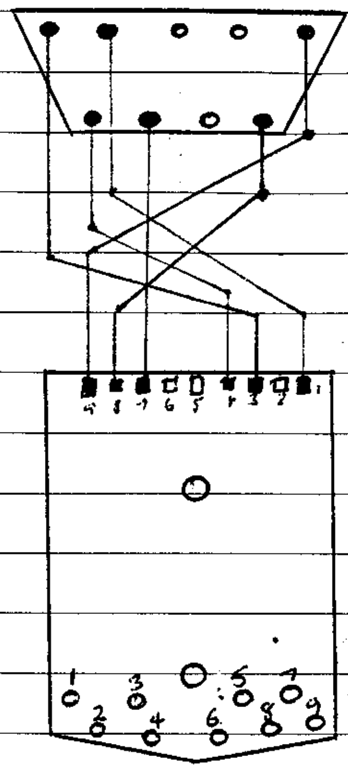
3



4

Nell con
Re-crimp

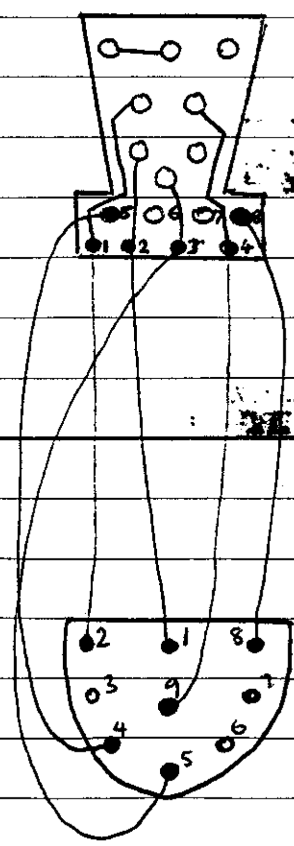
Rear view



These contacts

1 Blue
2 Black
3 Red
4 Brown
5 Green
6 Orange
7 Yellow
8 Purple
9 Grey

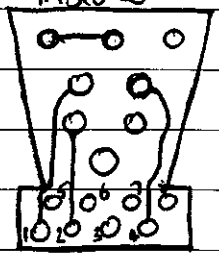
OKYTIP
EXTENSION



1 Green
2 Orange
3 ~~Orange~~ Blue
4 Shield
5 Red
6 n/c
7 Yellow
8 Black

1 Orange
2 Green
3 n/c
4 Red
5 Blue
6 n/c
7 Yellow
8 Black
9 Shield

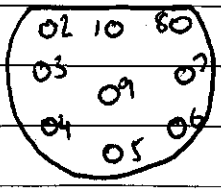
Oxytip extn.



probe end

1 Green	5 Red
2 Orange	6 n/c
3 Blue	7 Yellow
4 Shield	8 Black

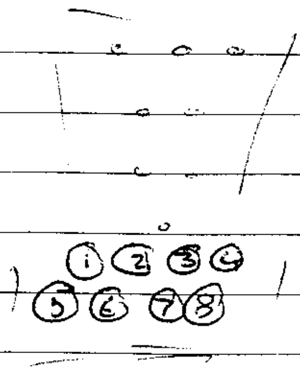
plug end



1 Orange	6 n/c
2 Green	7 Yellow
3 n/c	8 Black
4 Red	9 Shield
5 Blue	

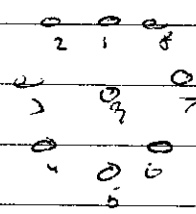
MCI WIRE FOR OXI TIP EXTENTION CABLE

INTERNAL RV



		CAMERA
1, RED		RED
2, *		-
3- Shields		Yellow
4- Black		Black
5, Yellow		~~Orange~~
6, Orange		~~Blue~~
7, Blue		~~Blue~~
8, white.		

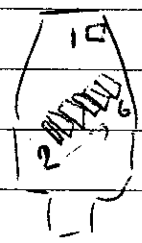
RV

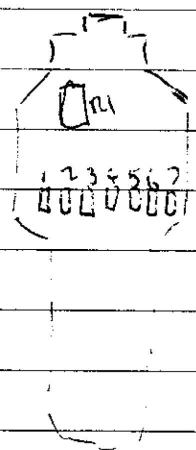


1, Orange
2, Yellow
3, -
4, Red.
5, Blue
6, -
7, Shields
8, Black
9, White

OXI TIP PROBE MCI WIRE

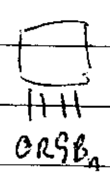
CONN RV



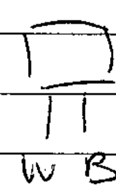


1, Shields
2, Orange
3, Red
4, Green
5, Brown
6, White
7, Black

LED RV



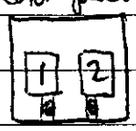
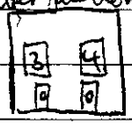
Sensor RV



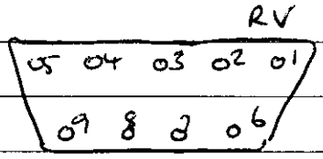
21 700

BB

New Short Dates

	Original Cable	Viaired Cable
Detector face down	1 White	1 White
	2 Green	2 Black
	3 Red	3 Red
Shutter face down	4 Black	4 Yellow
		

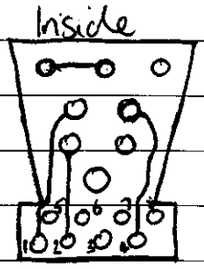
RV



	Original Cable	Viaired Cable
1	link to 6	1 link to 6
2	n/c	2 n/c
3	Red	3 Red
4	n/c	4 n/c
5	White	5 White
6	link to 1	6 link to 1
7	Black	7 Yellow
8	Inner Shield	8 Innershield
9	Green	9 Black

Oxytip extn.

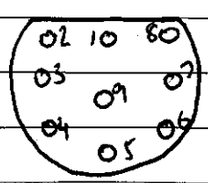
Inside



probe end

1	Green	5 Red
2	Orange	6 n/c
3	Blue	7 Yellow
4	Shield	8 Black

plug end



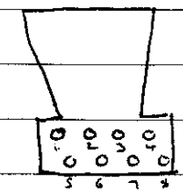
1	Orange	6 n/c
2	Green	7 Yellow
3	n/c	8 Black
4	Red	9 Shield
5	Blue	

21100

Oxytip Extension (ORIGINAL)

Top View

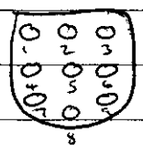
Oxytip Connector:



(Nos are not Marked on connector)

1. Red.
2. N/C
3. Yellow.
4. Black
5. Green.
6. Orange
7. Blue
8. Shield

Ohmeda/Hypertronics connector



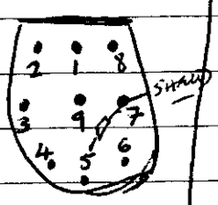
(Nos are not Marked on connector)

R/V

1. Green.
2. Orange
3. Black
4. - N/C
5. Shield
6. Yellow
7. Red
8. Blue
9. —

13/9/00 12½ FT. MICHAEL LYTWYN

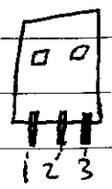
P867RA OHMEDA REPAIRS ONLY



CUT OFF BLUE

1) ORANGE.
2) RED.
3) N/C
4) YELLOW
5) 68KΩ RESISTOR.
6) N/C
7) SHIELDS + 68K RESISTOR.
8) WHITE.
9) BLACK.

LED



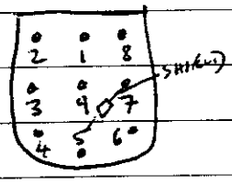
1) RED.
2) YELLOW
3) ORANGE

SENSOR.

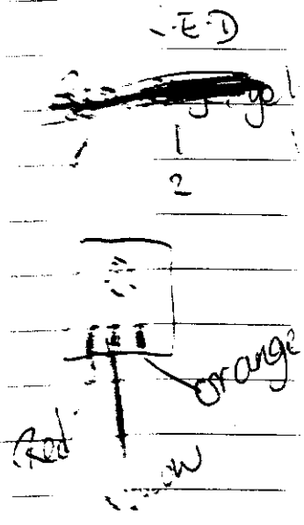
4) WHITE
5) BLK

18/9/00 P867RA OHMEDA FROM SC,2...

CUT OFF BLUE.



1) ORANGE.
2) RED.
3) N/C.
4) YELLOW
5) RESISTOR
6) N/C
7) BOTH SHIELDS.
8) WHITE.
9) BLACK.



LIST OF RESISTORS USED IN OHMEDA
IN Kohms

20·0
21·5
23·2
24·9
26·7
28·7
30·9
33·2 } BIOX 3700
35·7
38·3
41·2
44·2
47·5
51·1
56·2
61·9
68·1
75·0
82·5

OTHERS HAVE BEEN FOUND ON LATER PROBES

EPIC, MEDICAL CONCEPTS - VIAMED DEVELOPMENT ENG
HAVE SEPARATELY CHOSEN 75 kΩ
COLUMNS 2, 3, 4, ARE THE R-CURVE RATIO
POINTS AT 85%, 95%, 99% AT THE RESISTANCE VALUES

NELLCOR ~~[illegible]~~ REPLACEMENTS, EPIC ETC USE 4.5 kΩ

Page 2 of 2

Av = 0.0033

·004 ·0032 ·0028

LIST OF RESISTORS USED IN OHMEDA PROBES (O2)

DIFFERENCE ↓	KΩ	85%	95%	99%
1.5	20.0	0.990	·707	·572
1.7	21.5	·986	·704	·569
1.7	23.2	·982	·700	·566
1.7	24.9	·977	·697	·563
1.7	26.7	·973	·694	·560
2.0	28.7	·969	·691	·558
2.2	30.9	·965	·688	·555
2.3	33.2	·961	·684	·552
2.5	35.7	·957	·681	·549
2.6	38.3	·953	·678	·546
2.9	41.2	·949	·675	·543
3	44.2	·945	·671	·540
3.3	47.5	·941	·668	·538
51	51.1 3.6	·937	·665	·535
~~5~~	56.2 vs 51	·933	·662	·532
6.2	61.9	·929	·659	·529
3700 69	68.1	·925	·655	·526
→ * 75	75.0	·921	·652	·523
8.4	82.5	0.917	·649	0.521
~~22~~	90.9	0.913	0.646	0.518
EXTRA AT 3700	113.0			
16	127.0			
22	143.0			
26	165.0			
35	191.0			
48	226.0			
66	274.0			
	340.0			
102	442.0			

SP02

Seems to be Ohm to 1.000 = 85%

ORIGINAL 19 RESISTORS DIOX 3700

Added since first machines

85% Point on the R-Curve for Resistor Values

95% Point on the R-Curve for Resistor Value

99% Point on the R-Curve for Resistor Value

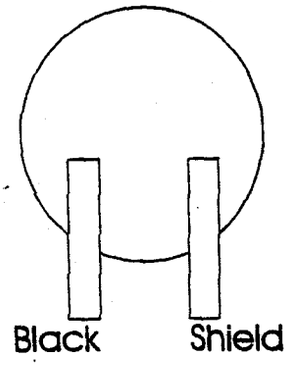
c 1060

~~8122005~~ FYS8149L

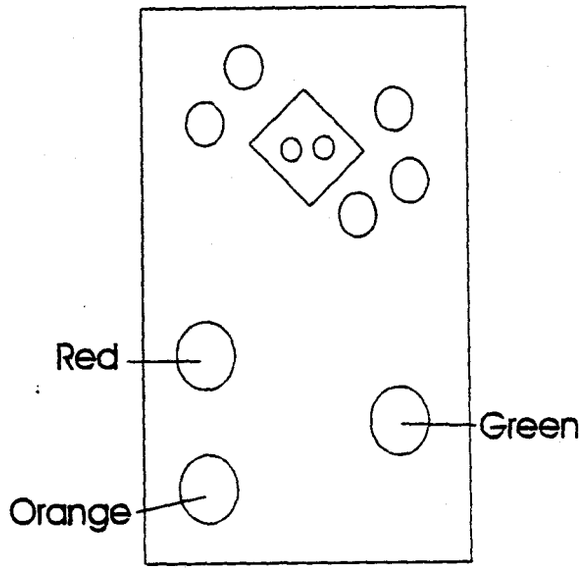
* Appears to be standard ie BOC, Medical Concepts + Ohmeda Development People

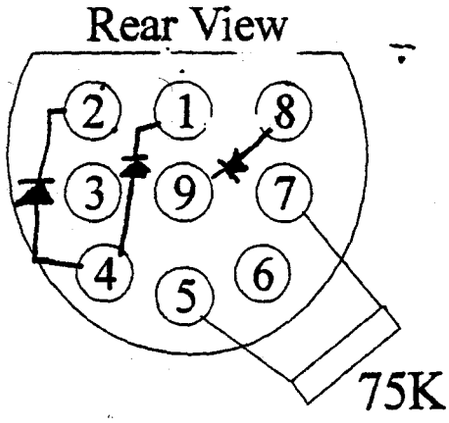
Date	24/03/97	Type	Ohmeda Ear Clip
Ohmear.cmx			Cable 7'9"

SENSOR FACE DOWN



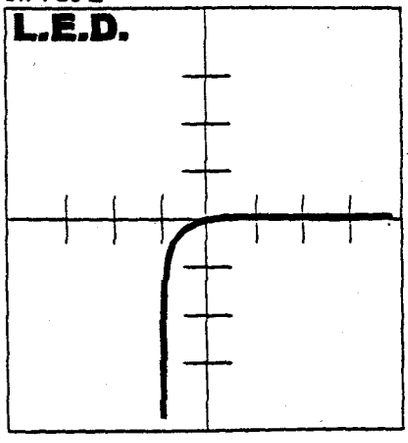
LED FACE DOWN



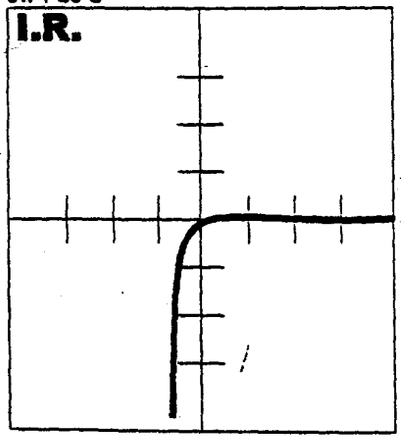


1 Orange
2 Green
3 N/C
4 Red
5 Resistor
6 N/C
7 Resistor
8 Black
9 Shield

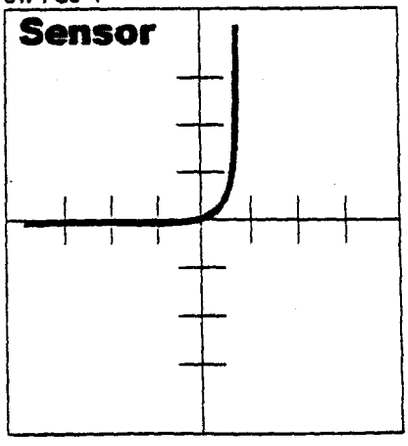
Sw Pos 2



Sw Pos 3



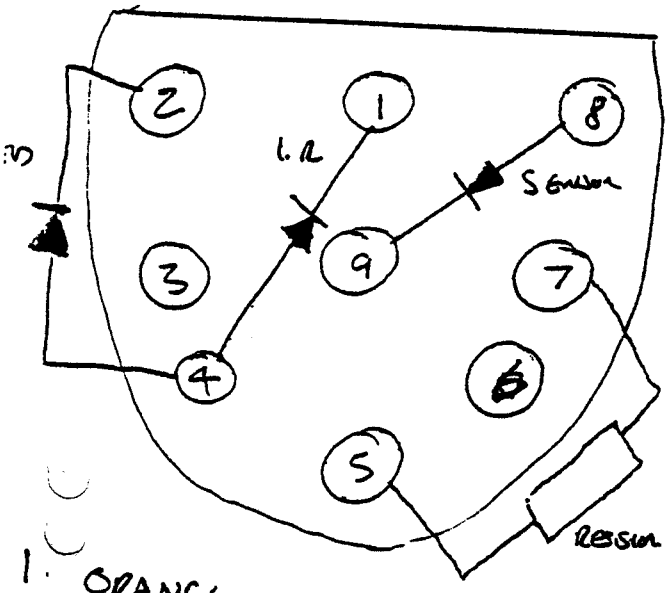
Sw Pos 4

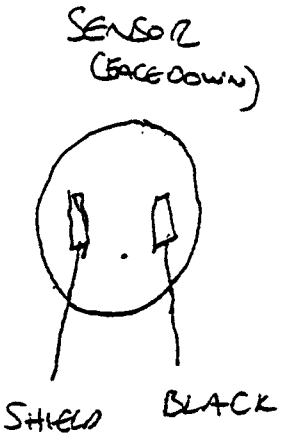


Drawn By:	Derek Lamb	Signed	

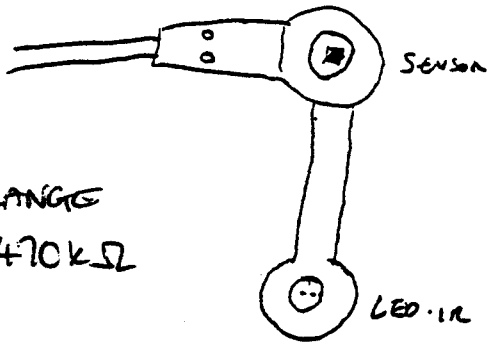
VIAMED

ORIGINAL OHMEDA EAR PROBE

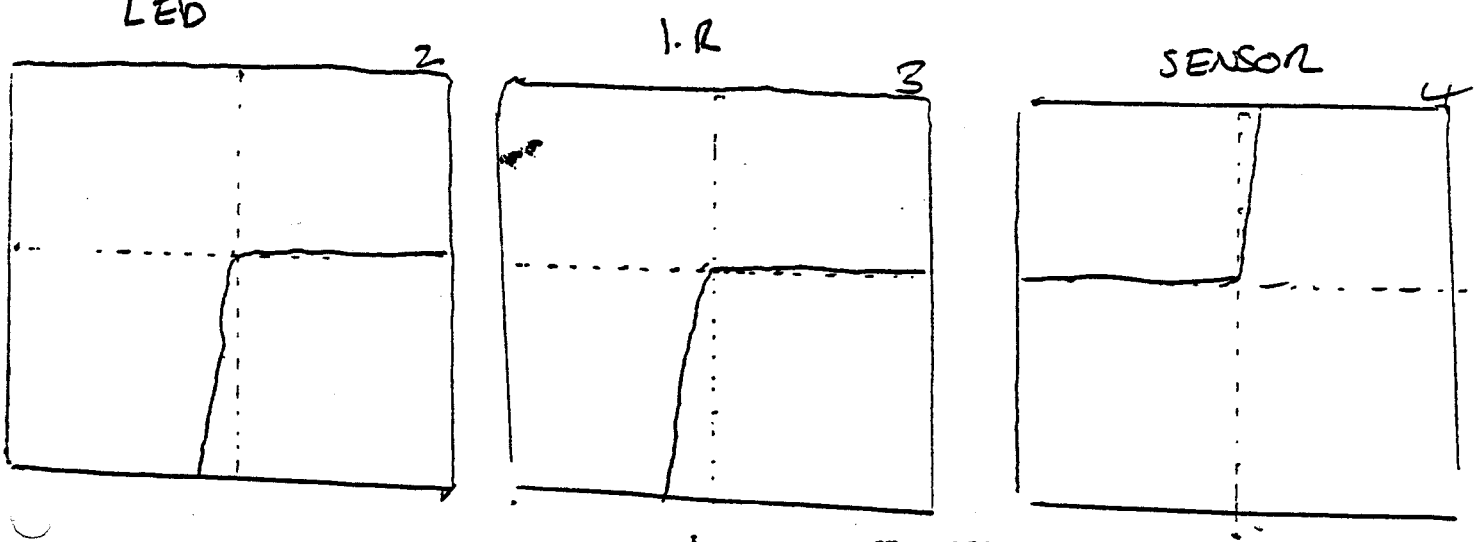




1. ORANGE
2. GREEN
3. N.U
4. RED
5.
6. N.U
7.
8. BLACK
9. SHIELD/WHITE



RESISTOR RANGE
20kΩ → 470kΩ

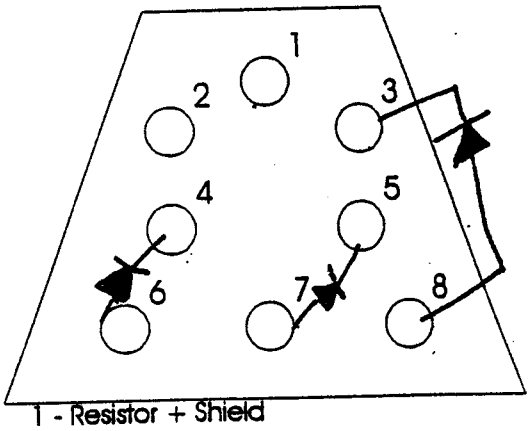


A.P. Bowman
7.10.98

Viamed Limited, 15 Station Road, Cross Hills,
Keighley, West Yorkshire BD20 7DT
Tel +44 (0)1535 634542/636757 Fax +44 (0)1535 635582
Email info@viamed.co.uk
Registration No 12917565 in England

Date	18/06/96	Type	OXI TIP OHMEDA
Schematic's			Cable: 7"

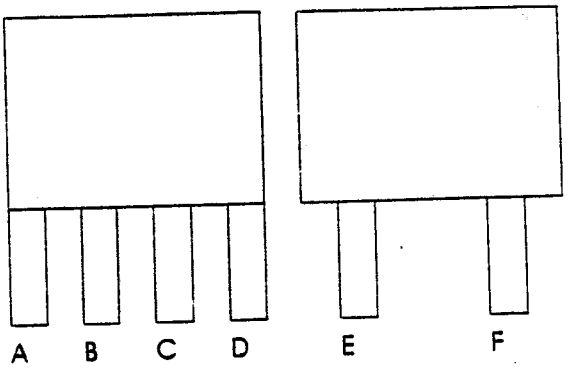
Oxi Tip Connect Pins Pointing out



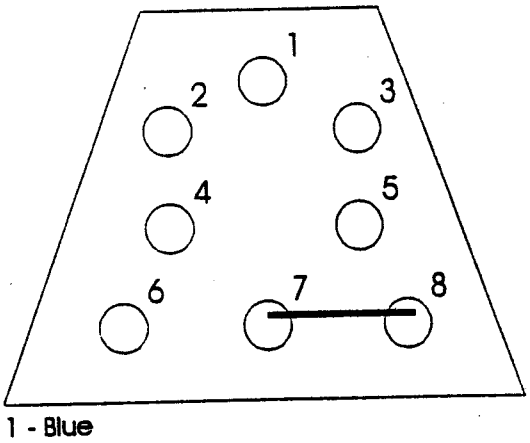
1 - Resistor + Shield
2 - Resistor + Shield
3 - Orange
4 - White
5 - Green
6 - Black
7 - Brown
8 - Red

LED Facing Down

SENSOR Facing Down

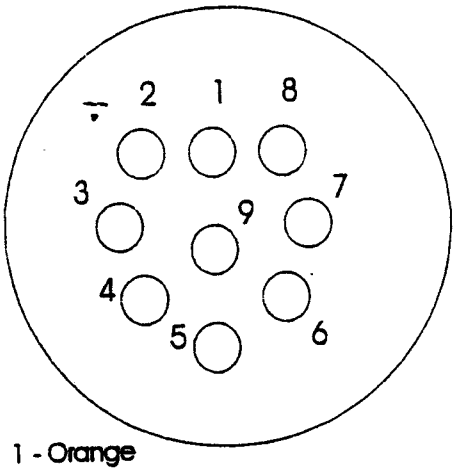


A - Orange (3)
B - Red (8)
C - Green (5)
D - Brown (7)
E - White (4)
F - Black (6)



1 - Blue
2 - Yellow
3 - Orange
4 - Shield
5 - Green
6 - Black
7 - Red
8 - Red

Ohmeda Plug

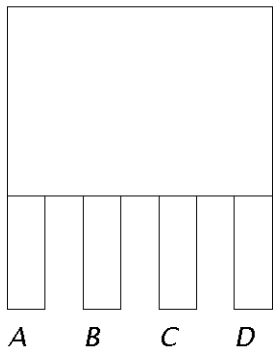


1 - Orange
2 - Green
3 -
4 - Red
5 - Blue
6 -
7 - Yellow
8 - Black
9 - Shield

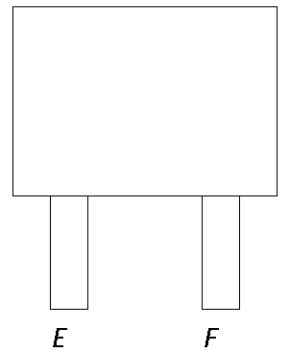
Drawn By:		Signed	

Date	18/06/96	Type	OXI TIP OHMEDA - Replacing Cable
Oxitip2.cmx			

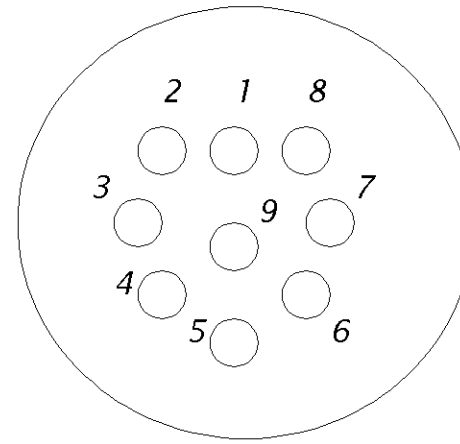
LED Facing Down



SENSOR Facing Down



Ohmeda Plug



ORIGINAL CABLE	REPLACEMENT CABLE
A - Orange (3)	A - Orange
B - Red (8)	B - Red
C - Green (5)	C - Yellow
D - Brown (7)	D - Red
E - White (4)	E - White
F - Black (6)	F - Black
	NB. Short B & D

ORIGINAL CABLE	REPLACEMENT CABLE
1 - Orange	1 - Orange
2 - Green	2 - Yellow
3 -	3 -
4 - Red	4 - Red
5 - Blue	5 - 47K Resistor + Shield
6 -	6 -
7 - Yellow	7 - 47K Resistor + Shield
8 - Black	8 - Black
9 - Shield	9 - White
	NB. Short 5 & 7

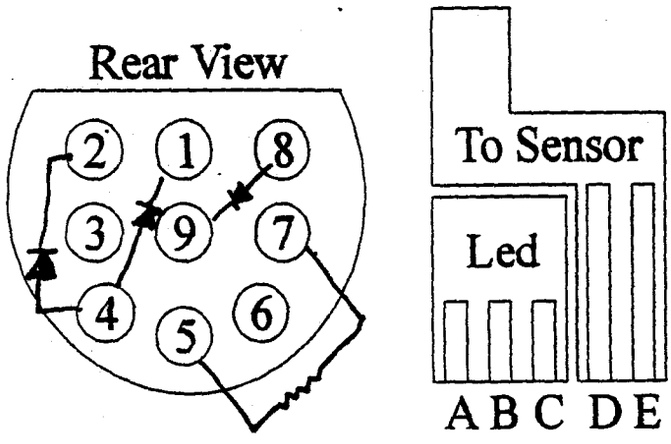
Notes
Leave 3cm of original wire attached to L.E.D. / Sensor when rewiring

When rewiring with replacement cable:
attach wires as follows:

Ohmeda Wire		Epic Wire
Orange	----------	Orange
Green	----------	Yellow
Brown	----------	Red
Red	----------	Red
Black	----------	Black
White	----------	White

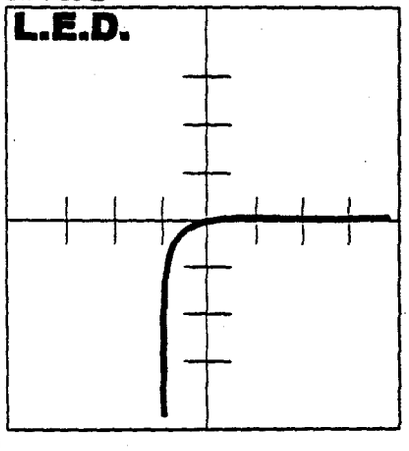
Drawn By:	D.lamb	Signed	

Date		Type	Ohmeda
Schematic's			Cable 8' 8"

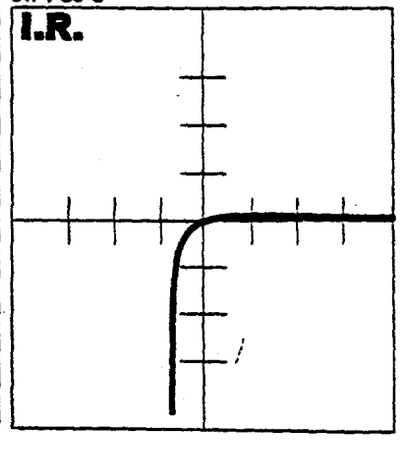


Pin Number	Ohmeda Cable Original Model	Ohmeda Cable New Model	Epic Cable Original Model	Epic Cable New Model
1	Orange	Orange	Orange	Orange
2	Green	Green	Yellow	Yellow
3	-	-	-	-
4	Red	Red	Red	Red
5	Resistor	Resistor	Resistor	Resistor
6	-	-	-	-
7	Resistor	Resistor + Shield	Resistor	Resistor + Shield
8	Black	Black	Black	Black
9	Shield	White	Shield	White
A	Green	Green	Yellow	Yellow
B	Red	Red	Red	Red
C	Orange	Orange	Orange	Orange
D	Black	Black	Black	Black
E	Shield	White	Shield	White

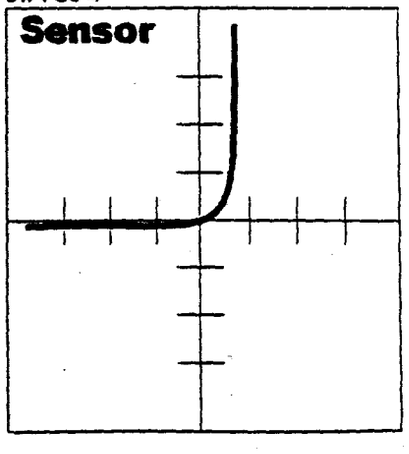
Sw Pos 2



Sw Pos 3



Sw Pos 4



Drawn By:		Signed	

OHMEDA REPAIR

when using replacement cable with Viamed clip and components

Soldering iron set to 250 degrees, to prevent heat damage to components.

1/ Determine fault - check for poor pad alignment, intermittent or non-existent component connection, physical damage to clip, physical damage to cable, physical damage to connector, and intermittent circuitry at points of strain, such as the clip end strain relief and the connector end strain relief. Note that due to the age and design of the probe, it may be advisable to replace the components with compatible Viamed components, in order to ensure that the probe will outlast the warranty period.

2/ Prepare new cable as follows:

a/ Insert 56k2 resistor into connector of "0018677," replacement cable as follows;

i/ cut resistor to required lengths, and bend to make resistor a hairpin.

ii/ solder connector pins to each resistor leg.

iii/ solder the pre-tinned shield within connector to longest resistor leg.

iv/ insert pins as per relevant diagram.

b/ Attach strain relief "0010150," to replacement cable "0018677," and glue in position.

c/ Strip back outer cable cover of exposed end flush to strain relief.

d/ Remove outer shield and paper, and cut off Kevlar fibres and blue wire.

e/ Strip and tin red, yellow, and orange wires to required lengths - approximately 2.5 cm from end of cable cover.

f/ Cut inner white cable to 8.5 cm from end of outer cable cover, strip last centimetre of inner cable cover, cut off inner shield and discard.

g/ Strip and tin ends of black and white wires.

3/ Solder wires to components as per relevant diagram.

4/ Put components into pads as follows:

a/ Position components in drying rack - angle of component position in rack is down to common sense.

b/ Place a small amount of flowable non-corrosive silicone sealant onto the face of the components.

c/ Place pads onto components, ensuring that both emitter and detector are central in pad windows. Note that replacement pads must be the same colour as the original pads, so that components from a white pad must go into a white pad, and component s from a black pad must go into a black pad. Also note that the silicone on the outside of the pad must run to the contour of the pad to make a smooth window - there should be no doming or sinking of the window. Any excess can be removed with a small screwdriver, also any deficit can be topped up with small amounts of silicone from a screwdriver tip - however these steps should be taken within 2 minutes of the pad being placed on the component, before the silicone has had time to become tacky, so that it is still flowing enough to ensure that the window will return to a smooth flat surface.

d/ Leave pads to set for 24 hours.

5/ Assemble the clip as follows:

a/.Glue white inner cable into channel in detector pad

b/ Fill around component with silicone.

c/ Glue pad support onto back of detector pad.

d/ Glue pad support on to back of emitter pad.

e/ Glue white inner cable into channel in emitter pad.

f/ Fill around component with silicone.

g/ Refit replacement springs “0010140,” around pads.

h/ Push pads into position within clip, making sure that the pad support rim is securely underneath the pad retaining lugs - there are four retaining lugs for each pad. If any lugs are not holding the pad support securely, then add a drop of superglue to the relevant lug.

i/ Glue strain relief into position in clip body.

6/ Attach labels to probe as required.

OHMEDA OXYTIP REPAIR

when using original cable with original and replacement connectors

Soldering iron set to 250 degrees, to prevent heat damage to parts.

1/ Determine fault - attach known working Oxytip probe, and test for intermittent or non-existent connections, physical damage to cable, physical damage to connectors, and intermittent circuitry at points of strain, such as the connector end strain reliefs. If cable is not damaged, then it can and should be reused.

2/ When both connectors need repairing, cut the cable at each end, as close to the strain reliefs as possible.

3/ Rewire the monitor end, with replacement connector "0010604," as follows:

a/ Add connector back-nut to cable.

b/ Add connector collet to cable.

c/

5/ Clean excess silicone and dirt from components, ensuring that the contacts are as clean as possible.

6/ Desolder old wiring from components.

7/ Prepare new cable as follows:

a/ Attach strain relief "0010150," to replacement cable "0018767," and glue in position.

b/ Strip back outer cable cover of exposed end flush to strain relief.

c/ Remove outer shield and paper, and cut off Kevlar fibres and blue wire.

d/ Strip and tin red, yellow, and orange wires to required lengths - approximately 2.5 cm from end of cable cover.

e/ Cut inner white cable to 8.5 cm from end of outer cable cover, strip last centimetre of inner cable cover, cut off inner shield and discard.

f/ Strip and tin ends of black and white wires.

8/ Solder wires to components as per relevant diagram.

9/ Put components into pads as follows:

OHMEDA OXYTIP REPAIR

when using original cable with original and replacement connectors

a/ Position components in drying rack - angle of component position in rack is down to common sense.

b/ Place a small amount of flowable non-corrosive silicone sealant onto the face of the components.

c/ Place pads onto components, ensuring that both emitter and detector are central in pad windows. Note that replacement pads must be the same colour as the original pads, so that components from a white pad must go into a white pad, and component s from a black pad must go into a black pad. Also note that the silicone on the outside of the pad must run to the contour of the pad to make a smooth window - there should be no doming or sinking of the window. Any excess can be removed with a small screwdriver, also any deficit can be topped up with small amounts of silicone from a screwdriver tip - however these steps should be taken within 2 minutes of the pad being placed on the component, before the silicone has had time to become tacky, so that it is still flowing enough to ensure that the window will return to a smooth flat surface.

d/ Leave pads to set for 24 hours.

10/ Assemble the clip as follows:

a/.Glue white inner cable into channel in detector pad

b/ Fill around component with silicone.

c/ Glue pad support onto back of detector pad.

d/ Glue pad support on to back of emitter pad.

e/ Glue white inner cable into channel in emitter pad.

f/ Fill around component with silicone.

g/ Refit replacement springs “0010140,” around pads.

h/ Push pads into position within clip, making sure that the pad support rim is securely underneath the pad retaining lugs - there are four retaining lugs for each pad. If any lugs are not holding the pad support securely, then add a drop of superglue to the relevant lug.

i/ Glue strain relief into position in clip body.

11/ Attach labels to probe as required.