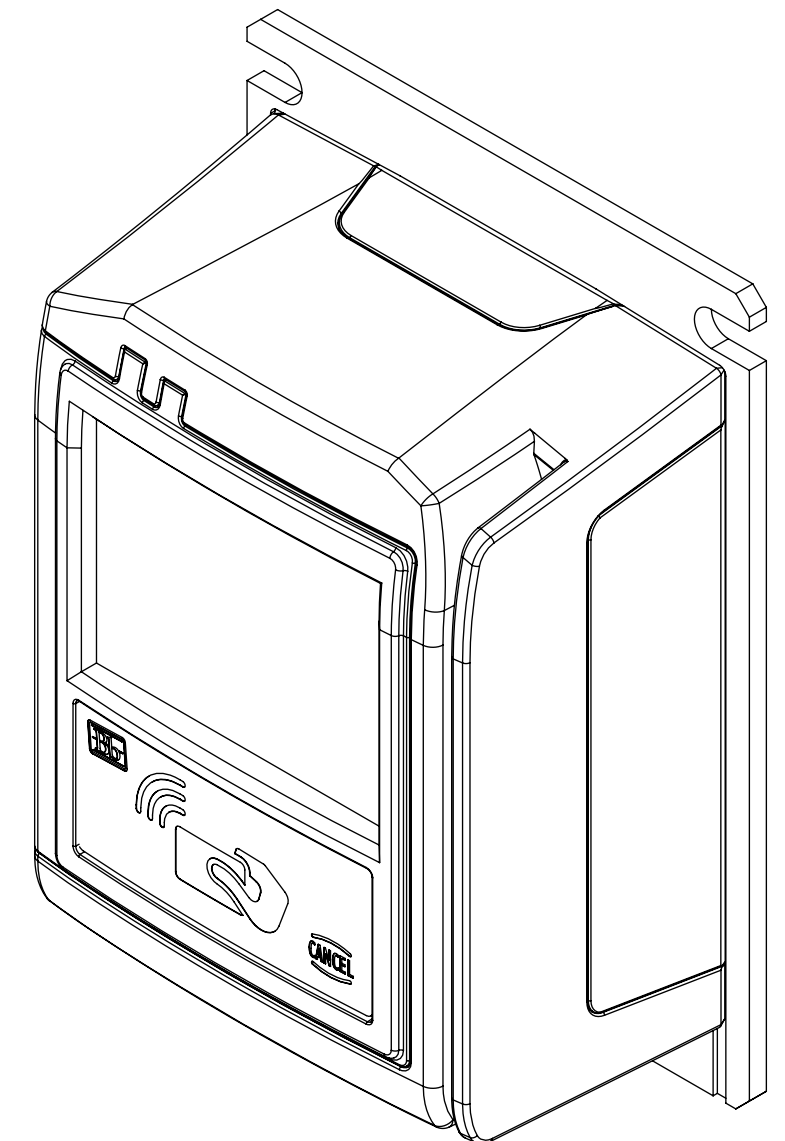
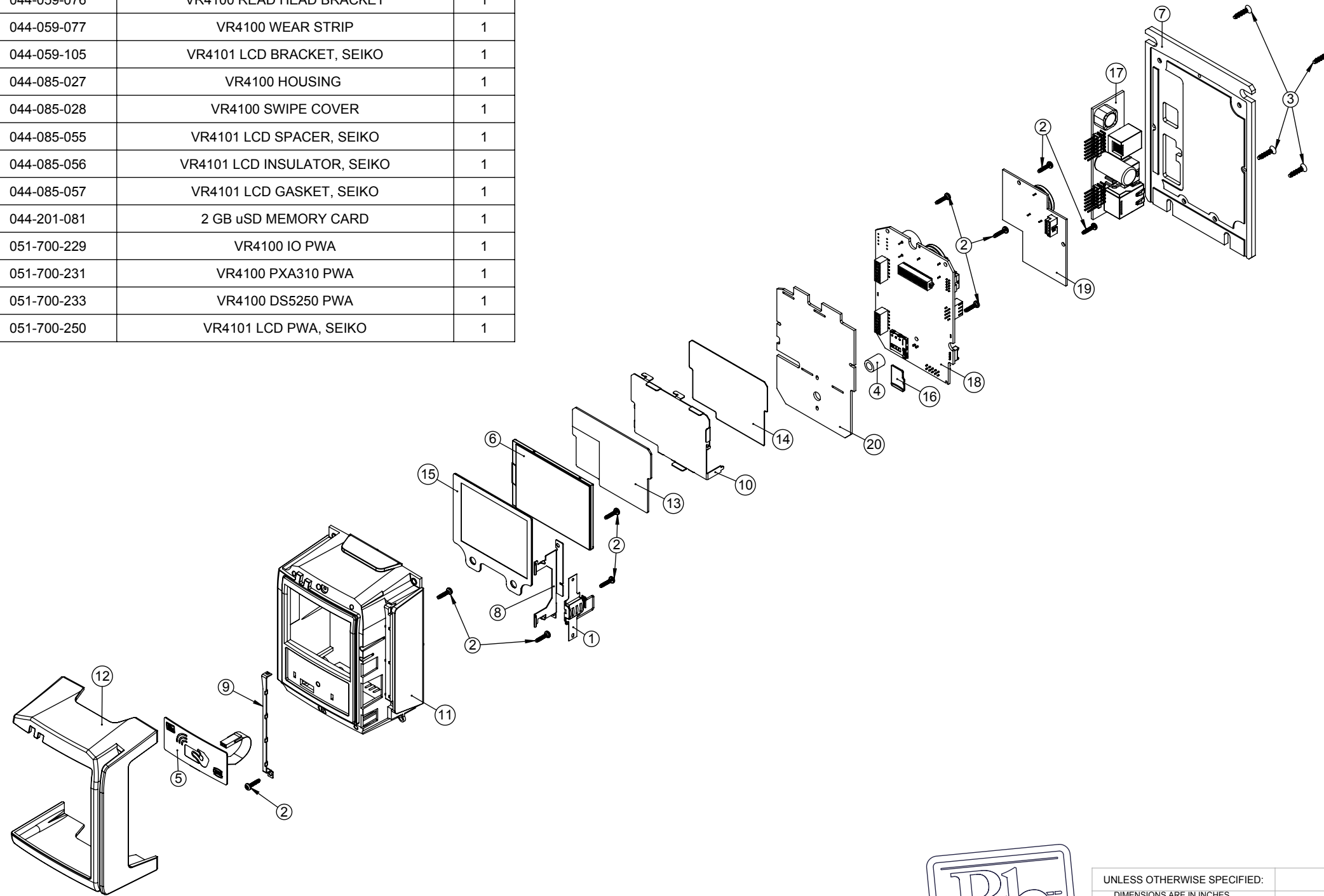
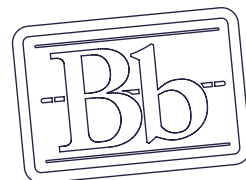


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	044-022-009	3 TRACK INTELLIHEAD	1
2	044-028-A12	2-28 X 3/8" TORX PANHEAD PLASTITE SCREW	10
3	044-028-C32	#4 X 1/2 FLAT HEAD SCREW, PHILLIPS	4
4	044-030-H01	NYLON SPACER O.D.8mm X 10mm LENGTH	1
5	044-039-153	VR4100 MEMBRANE SWITCH	1
6	044-041-046	2.8" QVGA FFS TFT WITH TOUCH SCREEN	1
7	044-059-074	VR4100 MOUNTING PLATE	1
8	044-059-076	VR4100 READ HEAD BRACKET	1
9	044-059-077	VR4100 WEAR STRIP	1
10	044-059-105	VR4101 LCD BRACKET, SEIKO	1
11	044-085-027	VR4100 HOUSING	1
12	044-085-028	VR4100 SWIPE COVER	1
13	044-085-055	VR4101 LCD SPACER, SEIKO	1
14	044-085-056	VR4101 LCD INSULATOR, SEIKO	1
15	044-085-057	VR4101 LCD GASKET, SEIKO	1
16	044-201-081	2 GB uSD MEMORY CARD	1
17	051-700-229	VR4100 IO PWA	1
18	051-700-231	VR4100 PXA310 PWA	1
19	051-700-233	VR4100 DS5250 PWA	1
20	051-700-250	VR4101 LCD PWA, SEIKO	1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	ECO10012, PRODUCTION RELEASE	06/13/2011	CNC



ISOMETRIC VIEW
SCALE 1:1

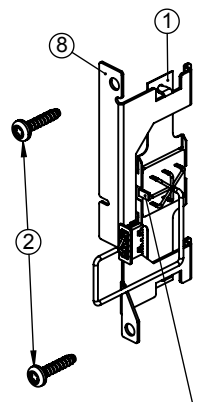


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INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5	CNC	05/04/2011
MATERIAL: SEE BOM	CHECKED	
FINISH: N/A	ENG APPR.	
DO NOT SCALE DRAWING	MFG APPR.	
	Q.A.	
	COMMENTS:	

Blackboard Inc. Phoenix, Arizona		
TITLE: VR4101 ASSEMBLY, SEIKO		
SIZE: B	DWG. NO. 823-016-000	REV A
SCALE: 1:3	SHEET 1 OF 4	

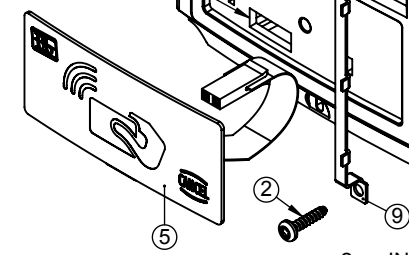
REMOVE PLASTIC TAB FROM THIS LOCATION IF PRESENT



BLACK LEAD (GROUND)

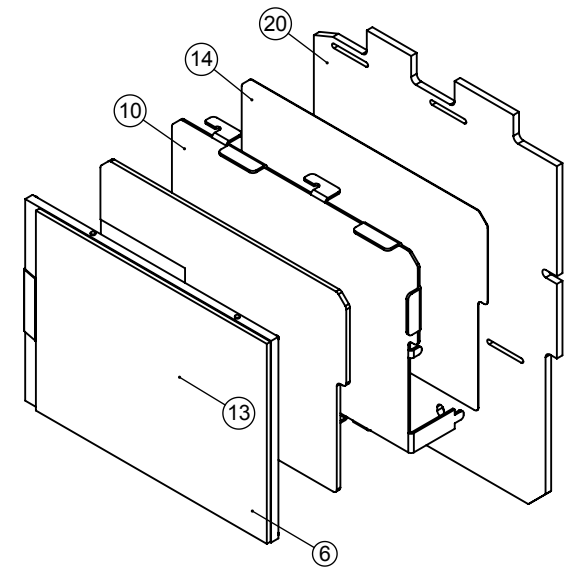
1. PLACE THE READ HEAD (ITEM 1) ON THE READ HEAD BRACKET (ITEM 8) WITH THE BLACK WIRE OF THE LEADS ORIENTATED AS SHOWN. THE PIVOT PINS OF THE BRACKET MUST PROTRUDE THROUGH THE HOLES OF READ HEAD SPRING. INSTALL BOTH PARTS INTO THE HOUSING (ITEM 11) AND SECURE WITH TWO (2) SCREWS (ITEM 2). INSPECT THE ASSEMBLY TO VERIFY THAT THE PIVOT PINS PROTRUDE THROUGH THE SPRING HOLES AND THAT THE READ HEAD IS CAPTIVE IN THE HOUSING.

GUIDE MEMBRANE SWITCH TAIL THROUGH THIS OPENING

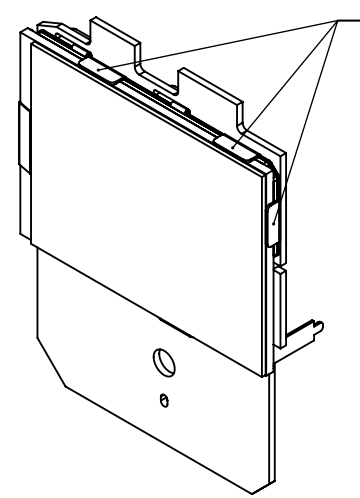
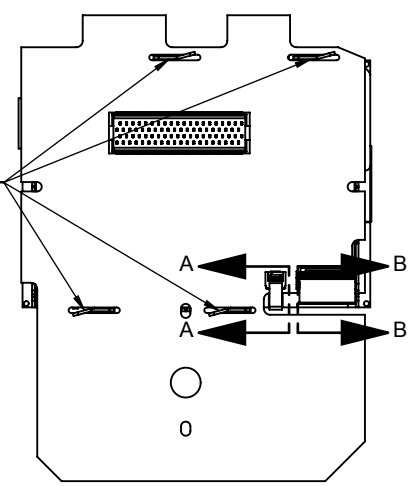


2. INSTALL THE WEAR STRIP (ITEM 9) ON TO THE HOUSING (ITEM 11). ANGLE THE WEAR STRIP SO SQUARE NOTCH LATCHES ON TO THE RETAINING PIN OF THE HOUSING. SECURE OTHER THE END OF THE WEAR STRIP WITH A SCREW (ITEM 2).
3. REMOVE THE PROTECTIVE BACKING FROM THE MEMBRANE SWITCH (ITEM 5). INSERT THE TAIL OF THE MEMBRANE SWITCH THROUGH THE OPENING IN THE HOUSING (ITEM 11) AND INSTALL THE MEMBRANE SWITCH INTO RECESSED POCKET OF THE HOUSING AS SHOWN. APPLY PRESSURE ON THE MEMBRANE SWITCH TO ADHERE IT TO THE HOUSING.

THE LCD MUST ALIGN WITH THESE TABS

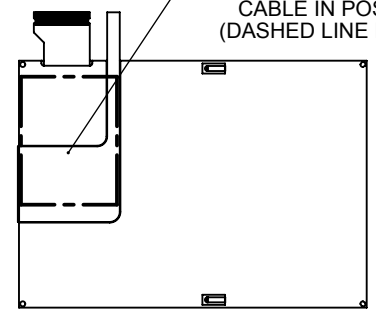


BEND TABS AS SHOWN

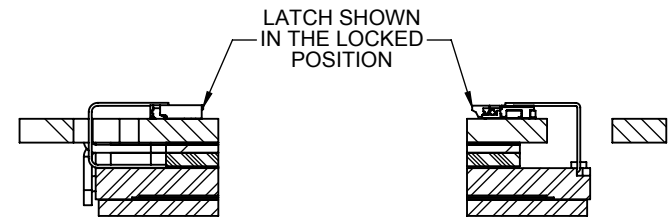


4. PLACE THE LCD INSULATOR (ITEM 14) ON TO THE BACK OF THE LCD TRAY (ITEM 10) AS SHOWN AND INSTALL ON TO THE LCD PWA (ITEM 20) WITH THE COMPONENT SIDE FACING AWAY FROM THE LCD TRAY. ALIGN THE TABS OF THE LCD HOLDER WITH THE SLOTS OF THE PWB AS SHOWN. PRESS THE LCD TRAY AND LCD PWA TOGETHER SO THEY SEAT FLUSH WITH EACH OTHER. BEND THE FOUR (4) TABS OF THE LCD HOLDER OUTWARD AS SHOWN TO SECURE THE PWA TO HOLDER.
5. REMOVE THE PROTECTIVE BACKING OF THE LCD SPACER (ITEM 13) THAT ADHERES TO THE LCD TRAY (ITEM 10). DO NOT REMOVE THE PROTECTIVE BACKING OF THE LCD SPACER THAT FACES THE LCD (ITEM 6). THE SPACER MUST BE CENTERED SO THAT ALL SIDES ARE EQUALLY SPACED ALONG THE SIDES OF THE LCD TRAY. PRESS THE SPACER DOWN FIRMLY TO ADHERE IT TO THE LCD TRAY.
6. FOLD OVER AND TAPE DOWN THE TOUCH SCREENS FLEX CABLE AS SHOWN IN THE LCD DETAIL. REMOVE THE PROTECTIVE BACKING OF LCD SPACER (ITEM 13) AND ALIGN THE LCD WITH THE THREE (3) TABS OF THE LCD TRAY AS SHOWN. CAREFULLY GUIDE THE LCD ON TO THE LCD SPACER AND PRESS TOGETHER SO LCD FITS SNUG AGAINST THE TABS AND LCD ADHERES TO THE SPACER.
7. INSTALL THE FLEX CABLES OF THE LCD (ITEM 6) INTO THE ZIF CONNECTORS OF THE LCD PWA (ITEM 20). LIFT UP THE LATCHES OF THE ZIF CONNECTORS TO THE OPEN POSITION. GUIDE THE FLEX CABLES THOUGH THE SLOT IN THE PWB AND BEND THEM TO SEAT SQUARELY INTO THE CONNECTORS. PLACE THE LATCH OF THE ZIF CONNECTORS INTO THE LOCKED POSITION AS SHOWN. SEE SECTIONS A-A AND B-B.

FOLD THE TOUCH SCREEN FLEX CABLE ONTO THE BACK OF THE LCD ALIGNING WITH THE INDENTED MARKS ON THE LCD'S BACKING PLATE. TAPE THE FLEX CABLE IN POSITION AS SHOWN (DASHED LINE IS TAPE LOCATION).

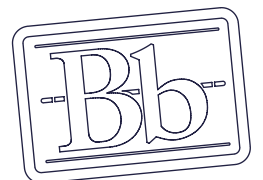


LCD DETAIL



SECTION A-A SCALE 2 : 1

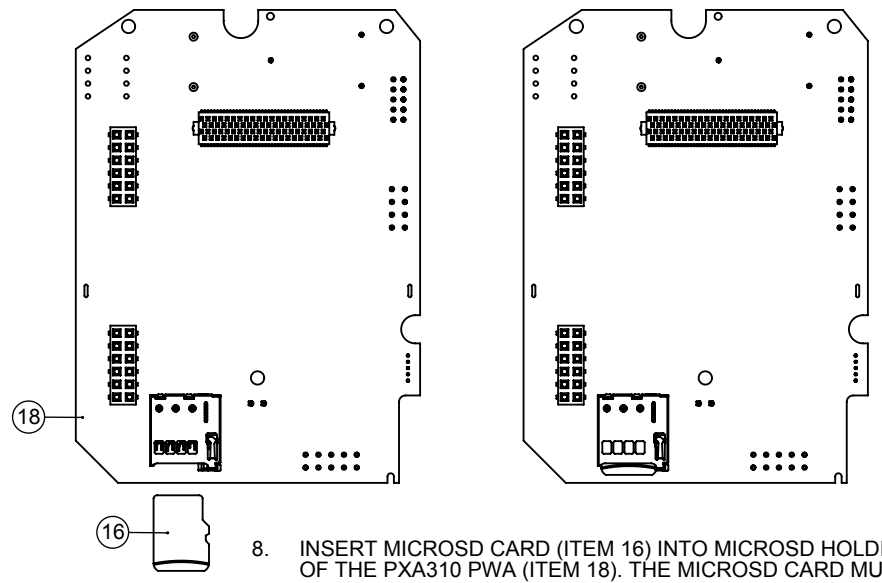
SECTION B-B SCALE 2 : 1



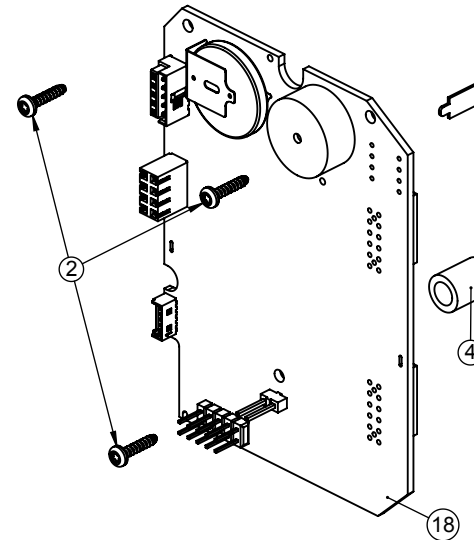
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DIMENSIONS ARE IN INCHES DEBURR AND BREAK ALL SHARPS		DRAWN	CNC 05/04/2011
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FRACTIONS: ANGULAR: ± 1/64 ± .5°		ENG APPR.	
INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5		MFG APPR.	
MATERIAL: SEE BOM		Q.A.	
FINISH: N/A		COMMENTS:	
DO NOT SCALE DRAWING			

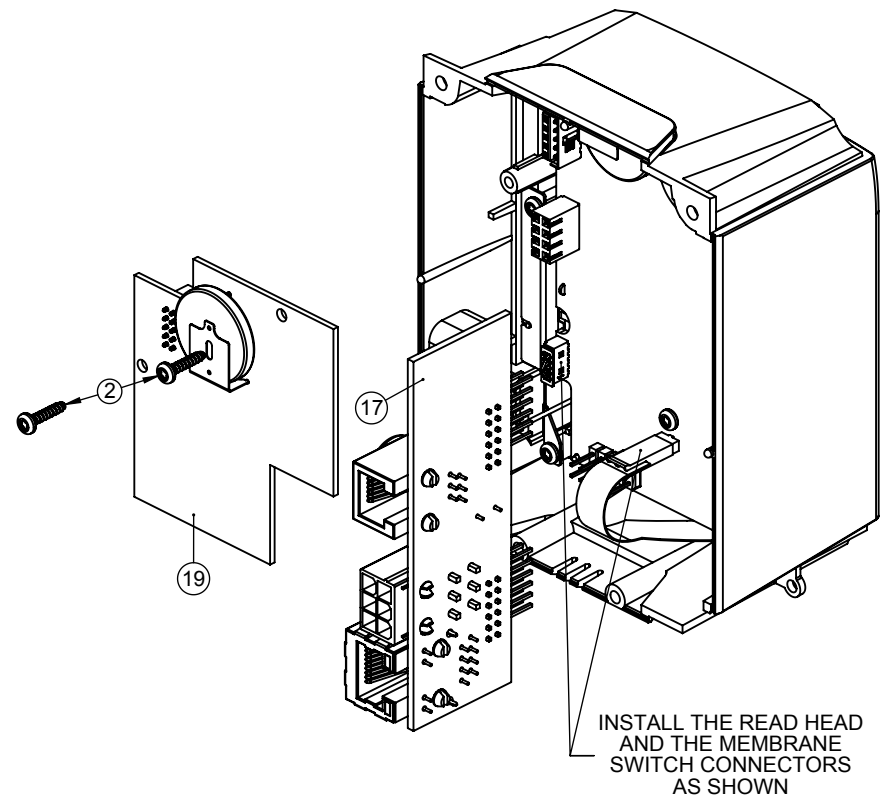
Blackboard Inc. Phoenix, Arizona			
TITLE: VR4101 ASSEMBLY, SEIKO			
SIZE	DWG. NO.	REV	
B	823-016-000	A	
SCALE: 1:1.5		SHEET 2 OF 4	



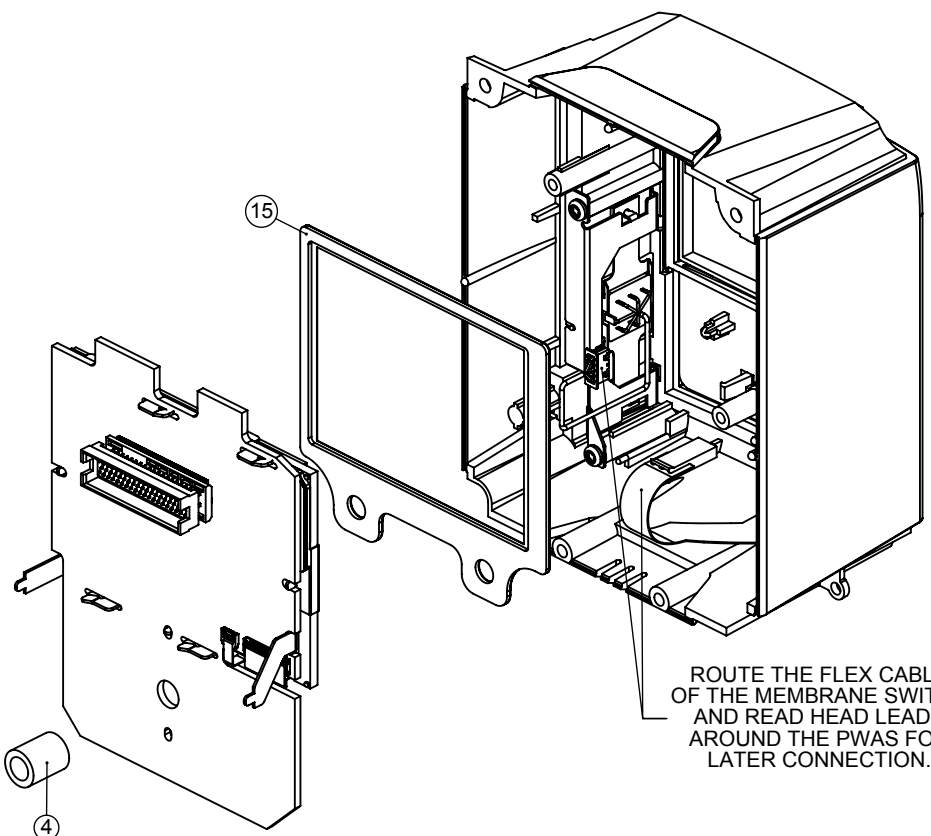
8. INSERT MICROSD CARD (ITEM 16) INTO MICROSD HOLDER OF THE PXA310 PWA (ITEM 18). THE MICROSD CARD MUST BE INSERTED INTO THE LOCKED POSITION AS SHOWN.



- 12. INSTALL THE READ HEAD CONNECTOR ON TO THE CONNECTOR OF THE PXA310 PWA (ITEM 18). ROUTE THE WIRES OF THE READ HEAD THROUGH THE RECTANGULAR SLOT AS SHOWN.
- 13. INSTALL THE MEMBRANE SWITCH CONNECTOR ON TO THE 2-PIN HEADER OF THE PXA310 PWA (ITEM 18).
- 14. INSTALL THE IO PWA (ITEM 17) ON TO THE PXA310 PWA (ITEM 18) AS SHOWN. THE RIGHT-ANGLE HEADERS ON THE IO PWA MATE TO THE BOTTOM ENTRY CONNECTORS (HOLES IN PWB). THE BOARD EDGE OF THE IO PWA SHOULD SEAT FLUSH AGAINST THE PXA310 PWB.
- 15. INSTALL THE DS5250 PWA (ITEM 19) INTO THE HOUSING AS SHOWN. PRESS DOWN ON THE DS5250 PWA TO ENSURE THAT THE 2 X 5 CONNECTOR ENGAGES PROPERLY WITH THE MATING CONNECTOR ON THE PXA310 PWA. SECURE THE DS5250 PWA TO THE HOUSING WITH TWO (2) SCREWS (ITEM 2).

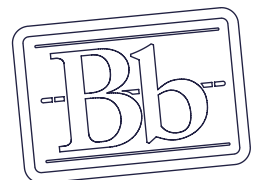


INSTALL THE READ HEAD AND THE MEMBRANE SWITCH CONNECTORS AS SHOWN



ROUTE THE FLEX CABLE OF THE MEMBRANE SWITCH AND READ HEAD LEADS AROUND THE PWAS FOR LATER CONNECTION.

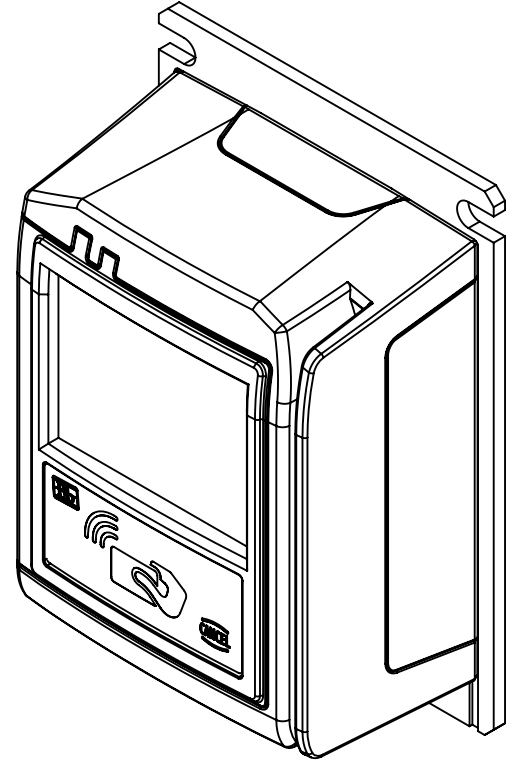
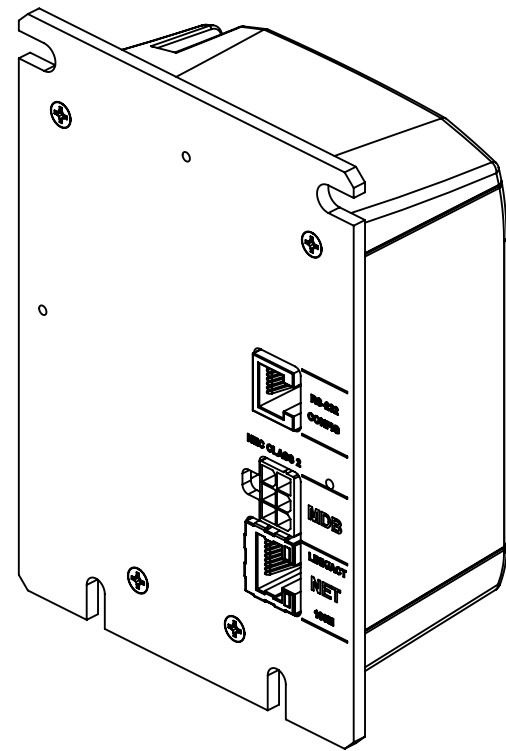
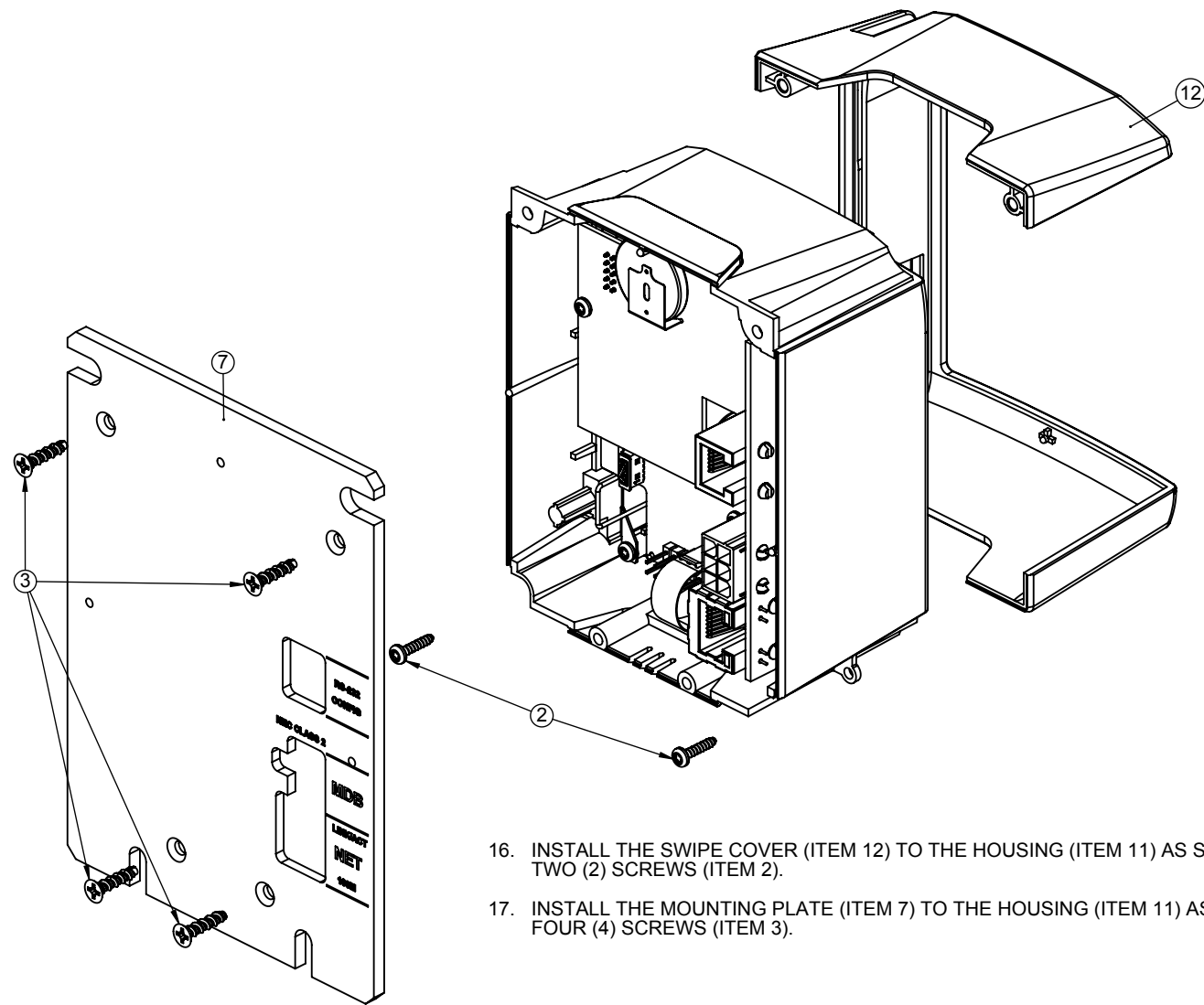
- 9. PLACE THE LCD GASKET (ITEM 15) INTO THE HOUSING SUBASSEMBLY. THE CLEAR SIDE RESTS AGAINST THE HOUSING AND THE HOLES FIT OVER THE CROSS SHAPED BOSSES.
- 10. INSTALL THE PXA310 PWA (ITEM 18) ON TO THE LCD SUBASSEMBLY. PLACE THE SPACER (ITEM 4) BETWEEN THE PWAS AS SHOWN. USE A SCREW TO POSITION THE SPACER TO KEEP IT ALIGNED WITH THE HOLES OF THE PWA'S. PRESS THE TWO PWA'S TOGETHER SO THE 4 X 20 CONNECTORS MATE COMPLETELY AND THE TABS ON THE LCD HOLDER PROTRUDE THROUGH THE MATING SLOTS OF THE PXA310 PWA.
- 11. PLACE THE PXA310 / LCD SUBASSEMBLY INTO THE HOUSING. ENSURE THAT THE READ HEAD CABLE AND FLEX CABLE OF THE MEMBRANE SWITCH ARE ROUTED AROUND THE PWA AS SHOWN. VERIFY THAT THE ASSEMBLY RESTS AGAINST BOSSES OF THE HOUSING AND THAT THE LCD GASKET IS NOT VISIBLE IN THE LCD OPENING OF THE HOUSING. INSPECT THE GAP AROUND THE LCD AND HOUSING TO VERIFY THAT THE ASSEMBLY IS SQUARELY SEATED IN THE HOUSING. INSTALL THREE (3) SCREWS (ITEM 2) TO SECURE THE PXA310 / LCD SUBASSEMBLY INTO THE HOUSING AS SHOWN.



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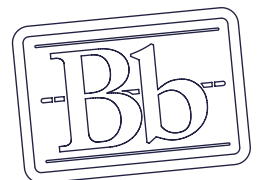
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ANGULAR: ± .5°		MFG APPR.	
INTERPRET GEOMETRIC TOLERANCING PER: ANSI Y14.5		Q.A.	
MATERIAL: SEE BOM		COMMENTS:	
FINISH: N/A			
DO NOT SCALE DRAWING			

Blackboard Inc. Phoenix, Arizona		
TITLE: VR4101 ASSEMBLY, SEIKO		
SIZE: B	DWG. NO.: 823-016-000	REV: A
SCALE: 1:1.5		SHEET 3 OF 4



- 16. INSTALL THE SWIPE COVER (ITEM 12) TO THE HOUSING (ITEM 11) AS SHOWN. SECURE WITH TWO (2) SCREWS (ITEM 2).
- 17. INSTALL THE MOUNTING PLATE (ITEM 7) TO THE HOUSING (ITEM 11) AS SHOWN. SECURE WITH FOUR (4) SCREWS (ITEM 3).

18. INSPECT AND CLEAN UNIT



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MATERIAL: SEE BOM		Q.A.	
FINISH: N/A		COMMENTS:	
DO NOT SCALE DRAWING			

Blackboard Inc. Phoenix, Arizona		
TITLE: VR4101 ASSEMBLY, SEIKO		
SIZE B	DWG. NO. 823-016-000	REV A
SCALE: 1:1.5		SHEET 4 OF 4