

ICX126 Installation Kit  
 AID P/N 705208 Rev. B

The models ICX026, ICX126, ICX226, ICX326, ICX526, ICX626, ICX726 and ICX826 three-field ionization chambers are designed for use with the Fuji Velocity Chest Stand. The specific model ion chamber to be used is determined by the generator / AEC type (refer to the following table).

MODEL	GENERATOR / AEC
ICX026	Toshiba Compatible
ICX026S	Shimadzu Compatible (for Shimadzu generators from 2003 and older – see also ICX126)
ICX126	AID Compatible <sup>1</sup>
ICX226	GEMS/RMS/Fischer/Varian Compatible
ICX326	Philips Compatible (Use ICX126 with Philips Adapter Kit, AID P/N 705206)
ICX526	Bennett Compatible
ICX626	Keithley Compatible
ICX726	Siemens Compatible
ICX826	Picker Compatible

705208 Rev. B

Equipment Required

Each ion chamber includes a 17-foot cable (AID P/N 75062-17<sup>2</sup>) to run from the ion chamber pre-amplifier to the cable exit of the Fuji Velocity CR System. In addition, this kit includes the following items.

PART NO.	DESCRIPTION	QUANTITY
54274	CLAMP, CABLE NYLON 3303 3/16 HEYCO	1
59575	3 X 6 MM PHILLIPS PAN HEAD	5
59588	3 X 6 MM PHILLIPS FLAT HEAD	2
59708	No. 4 FLAT WASHER	5

<sup>1</sup> AID compatible ion chambers are designed for use with Advanced Instrument Development, Inc.'s Expos-AID automatic exposure controls as well as those produced by other original equipment manufacturers such as Acoma, Control-X, CPI, Del Medical (Gendex), Electromed (EMD, Triton), OEC, Quantum Medical Imaging, Sedecal (Innerscan), Shimadzu (with PH CONT-2002 AEC board) Summit Industries, etc.

<sup>2</sup> ICX026 includes a Toshiba interconnection 75069-17 cable in place of the 75062-17 cable. ICX826 includes a Picker compatible 75054-17 cable in place of the 75062-17 cable.

Ion Chamber Mounting:

1. Remove the unit front cover.
2. Remove the grid.
3. Slide the ion chamber into position from below and mount the ion chamber using the two (2) M3 x 6 phillips pan head screws in the upper mounting holes and the two (2) 3 x 6 phillips flat head screws in the lower mounting holes.
4. Reinstall the grid assembly, check its movement for interference with the ion chamber.

Pre-amplifier installation and connection:

Note: When working with the pre-amplifier assembly it is important that electrostatic discharge (ESD) prevention techniques be observed. Turn off power to the pre-amp assembly. Before touching the pre-amp assembly, attach an ESD wrist strap to yourself. Be sure to ground yourself, the ion chamber frame and the pre-amp chassis to dissipate static charges.

Note: The pre-amp assembly is a very delicate and sensitive device. It is important to keep it as clean as possible. Wash and dry your hands thoroughly before working with it and, when possible, use unpowdered latex or cotton gloves. Take care to touch the pre-amp board as little as possible. Take extra care to avoid touching the three air-mounted field inputs. Oils from your fingers on the air-mounts or their components can cause performance degradation.

1. Remove the cover from the remote pre-amp chassis by removing the four (4) 4-40 X 3/16 screws.
2. Mount the remote pre-amp chassis to the IP positioning unit using the two (2) M3X6 phillips pan head screws and four (4) No. 4 flat washers (2 for each screw).
3. Route the remote pre-amp cables through the strain relief in the remote pre-amp chassis and secure the strain relief using the two (2) 2-56 hex nuts. Refer to Figure 1.
4. Note that the conductor wires from the ion chamber are marked with tags that match the mating wires inside the pre-amp assembly. Connect the wires as follows.

Tag	Remote Cable Wire Color	Pre-amp Assembly Wire Color	Description
A	White	White	Field A Output
B	Black	Black	Field B Output
C	Red	Red	Field C Output
HV	White Coaxial	Blue	Bias Voltage (HV+)
GND	Cable Shields	Green	Bias Reference (HV-)

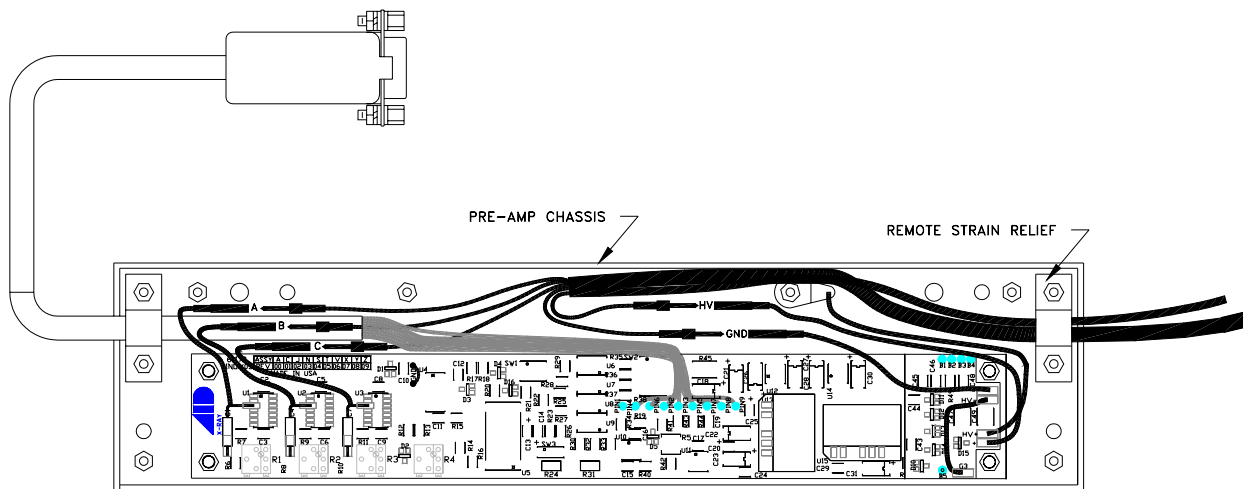
5. Reinstall the cover to the remote pre-amp chassis using the four (4) 4-40 X 3/16 screws removed in Step 1.
6. Route the 17-foot ion chamber cable<sup>3</sup> along existing cable routes through the chest stand avoiding sharp edges and moving parts. Connect the 17-foot ion chamber cable to the pre-amp pigtail 9-pin sub-d connector.

Note: In order to route the 17-foot ion chamber cable, it may be necessary to remove the connector(s) at one end. Refer to Figures 3, 4 and 5 for cable pin-outs.

7. Calibrate the unit as detailed in the calibration instructions included with the ion chamber.
8. After calibration, reinstall of the Fuji Velocity Chest Stand exposure unit front cover.

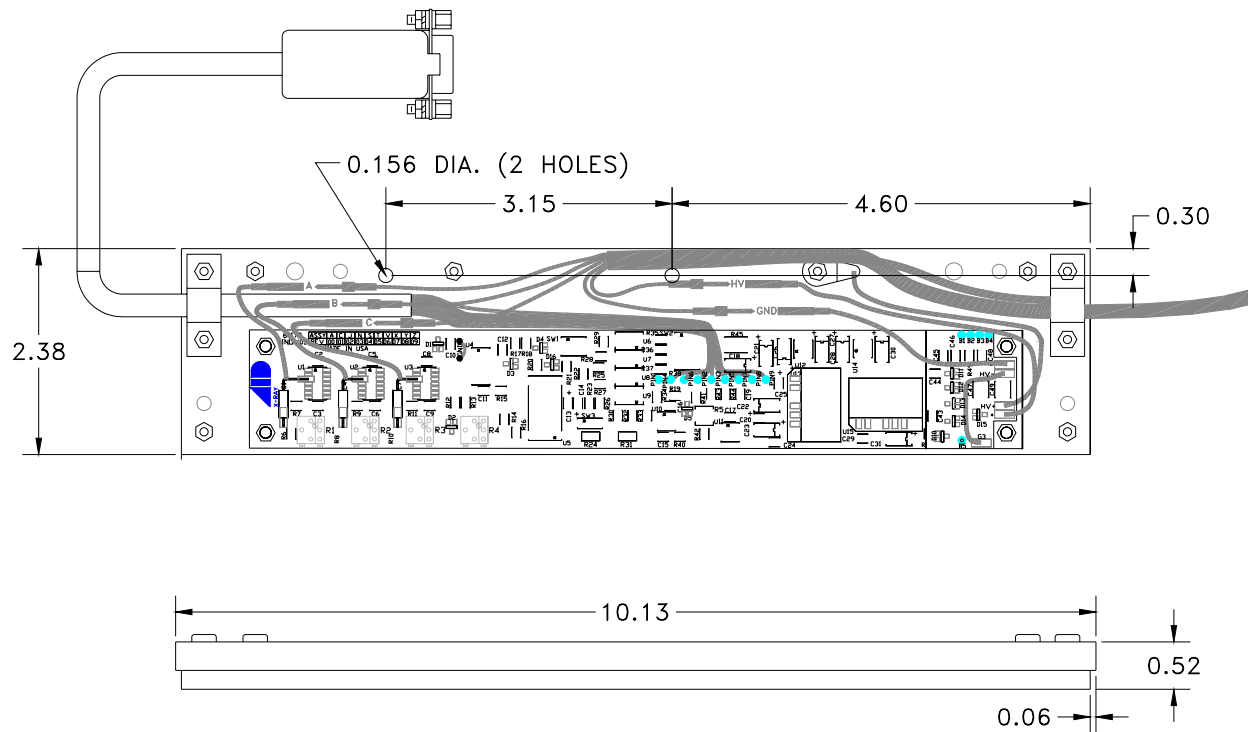
<sup>3</sup> ICX026 includes a Toshiba interconnection 75069-17 cable in place of the 75062-17 cable. ICX826 includes a Picker compatible 75054-17 cable in place of the 75062-17 cable.

Figure 1



The pre-amp chassis uses two (2) 0.156-inch diameter mounting holes, as shown in Figure 2, to mount inside the Velocity IP positioning unit directly below the ion chamber.

Figure 2



Additional cabling will be required to run from the pre-amp to the x-ray generator AEC. The following table lists cables that are available from AID. These cables are available in 45, 65 and 85 foot lengths. Specify cable length as a suffix to the cable part number (-XX). For example, "75035-45" is a 45-foot length of the standard 9-pin sub-d cable.

AID Part Number	Description	Ion Chamber Connector	AEC Connector
75030-XX	GE compatible (MSI, MST & DXS generators)	Female 9-pin sub-d	Male 15-pin AMP Mate-N-Lock (1-480324-0)
75035-XX	Standard ICX cable	Female 9-pin sub-d	Male 9-pin sub-d
75043-XX	RMS/Fischer compatible	Female 9-pin sub-d	Male 14-pin AMP M Series (201355-1)
75045-XX	GE compatible	Female 9-pin sub-d	Male 14-pin AMP M Series (201355-1)
75047-XX	Picker compatible	Female 9-pin sub-d	Female 15-pin Molex (1625-15P)
75048-XX	GE Compatible (MPX generators)	Female 9-pin sub-d	Female 15-pin AMP M Series (205606-3)
75049-XX	ICX cable with flying leads	Female 9-pin sub-d	Supplied by installer
75054-XX	Picker Compatible	Female 9-pin sub-d	Male 3-pin Molex (03-06-1032) And Male 9-pin AMP (1-640511-0)
75059-45	Bennett Compatible (45 foot length only)	Female 9-pin sub-d	Female 11-pin in-line
75061-XX	ICX cable with fork lugs	Female 9-pin sub-d	#6 fork lugs
75062-XX	ICX interconnection cable	Female 9-pin sub-d	Male 9-pin sub-d with fixed mounting hardware
75066-XX	GE Compatible (European Pin-Out MPH Generators)	Female 9-pin sub-d	Male 14-Pin AMP M Series (201355-1)
75067-XX	HMC Compatible	Female 9-pin sub-d	Female 10-Pin 0.1-Inch Center Line AMP (102387-1)
75069-XX	Toshiba Compatible	Female 9-pin sub-d	Female 14-Pin Centronix Parallel
75090-XX	Shimadzu Compatible	Female 9-pin sub-d	Female 9-Pin In-Line

Figure 3

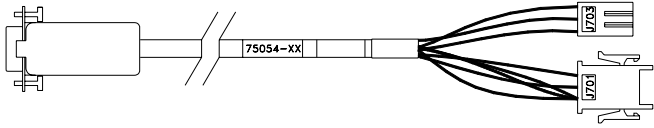
75054-XX			
ION CHAMBER CONNECTOR	ION CHAMBER CABLE PICKER COMPATIBLE		AEC CONNECTOR
FEMALE 9-PIN SUB-D			FEMALE 3-PIN (J703) AND MALE 9-PIN (J701)
PIN NUMBER	WIRE COLOR	FUNCTION	PIN NUMBER
1	BLACK	NONE	N/C
2	BROWN	FIELD 2 SIGNAL	J703-1
3	RED	FIELD 1 SIGNAL	J703-2
4	ORANGE	RESET	J701-8
5	YELLOW	OUTPUT	J701-6
6	GREEN	FIELD 3 SIGNAL	J703-3
7	BLUE	-15VDC	J701-9
8	VIOLET	+15VDC	J701-7
9	WHITE	GROUND	J701-3
9	CLEAR	SHIELD	N/C

Figure 4

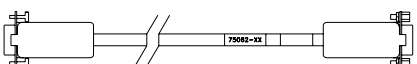
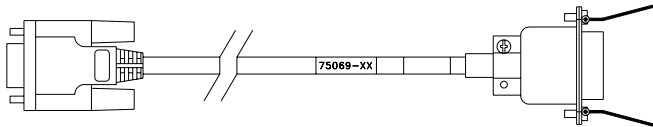
75062-XX			
ION CHAMBER CONNECTOR	ION CHAMBER INTERCONNECTION CABLE		AEC CONNECTOR
FEMALE 9-PIN SUB-D			MALE 9-PIN SUB-D
PIN NUMBER	WIRE COLOR	FUNCTION	PIN NUMBER
1	BLACK	NONE	1
2	BROWN	FIELD 2 SELECT	2
3	RED	FIELD 1 SELECT	3
4	ORANGE	RESET	4
5	YELLOW	OUTPUT	5
6	GREEN	FIELD 3 SELECT	6
7	BLUE	-15VDC	7
8	VIOLET	+15VDC	8
9	WHITE	GROUND	9
9	CLEAR	SHIELD	N/C

Figure 5

75069-XX			
ION CHAMBER CONNECTOR	ION CHAMBER INTERCONNECTION CABLE TOSHIBA COMPATIBLE		AEC CONNECTOR
FEMALE 9-PIN SUB-D			FEMALE 14-PIN CENTRONICS PARALLEL
PIN NUMBER	WIRE COLOR	FUNCTION	PIN NUMBER
1	YELLOW	NONE	N/C
2	ORANGE	FIELD 1 SIGNAL	14
3	WHITE	FIELD 2 SIGNAL	12
4	GREEN	NONE	N/C
5	BLUE	NONE	N/C
6	VIOLET	FIELD 3 SIGNAL	10
7	BROWN	-15VDC	2
8	RED	+15VDC	6
9	BLACK	GROUND	4
9	CLEAR	SHIELD	N/C