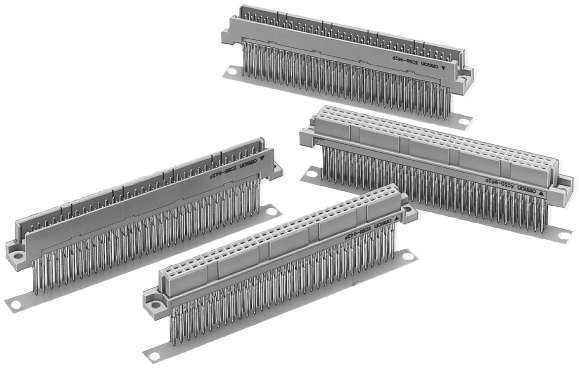
OMRON

DIN Fine-fit Connectors

XC5

International DIN standards; Solderless Connection Series (Fine Fit)

- Backplane systems can be designed with ease with XC5 Connectors as conforming with DIN standards.
- Using unique W-shaped pins, these Connectors prevent contacts from being bent or falling out. Ensures highly reliable connections.
- Less damage to the through-holes in circuit boards.
- Uses highly-reliable Twin-contact Sockets.
- A special Press-fit Tool is available.



■ Ratings and Characteristics

Rated current	2 A
Rated voltage	300 VAC
Contact resistance	20 mΩ max. (at 20 mV, 100 mA max.)
Insulation resistance	10^6 MΩ min. (at 100 VDC)
Dielectric strength	1,000 VAC for 1 min (leakage current: 1 mA min.)
Total insertion force	0.59 N max. per contact
Removal force	0.15 N min. (with test gauge, t = 0.56 mm)
Insertion durability	200 times
Ambient operating temperature	−55 to 125°C (with no icing at low temperature)

■ Materials and Finish

Type		Plugs	Sockets
Housings		Fiber-glass reinforced PBT resin (UL94 V-0)/gray	
Contacts (See note.)	Mating end	Copper alloy/nickel base, 0.4-μm gold plating	
	Fine fit	Copper alloy/nickel base, gold flash plating	
	Terminal	Copper alloy/nickel base, 0.15-μm gold plating (See note.)	

Note: For non-standard plating specifications, contact your OMRON representative.

■ Applicable Wrap Post Wire Sizes

AWG30, AWG28, AWG26, or AWG24
(Solid wire: 0.25 to 0.51 mm dia.)

■ Wrap Post Length

3 wires for the 13-mm contacts
4 wires for the 17-mm contacts

■ Ratings for Fine-fit Connectors

Rated current	2 A
Contact resistance	5 mΩ max. (at 20 mV, 100 mA max.)
Pressure input	196 N max. per contact
Holding force	44.1 N min.
Unit torque durability	0.022 N-m min.
Vibration	At 10 to 2,000 Hz, 1.52-mm amplitude, or 147 m/s^2 will not interrupt current for more than 1 μ sec.
Shock	At 980 m/s^2, will not break current for more than 1 μ sec.

■ Applicable Fine-fit Boards

- Width 1.6 to 3.2 mm
- Through-hole diameter 1.0 ±0.08 mm (Drill diameter 1.15 ±0.05 mm)
  Plating: Copper 25 mm min., or solder 5 mm min. on a copper base at least 25 mm thick.
- Pitch error: ±0.03 mm max.

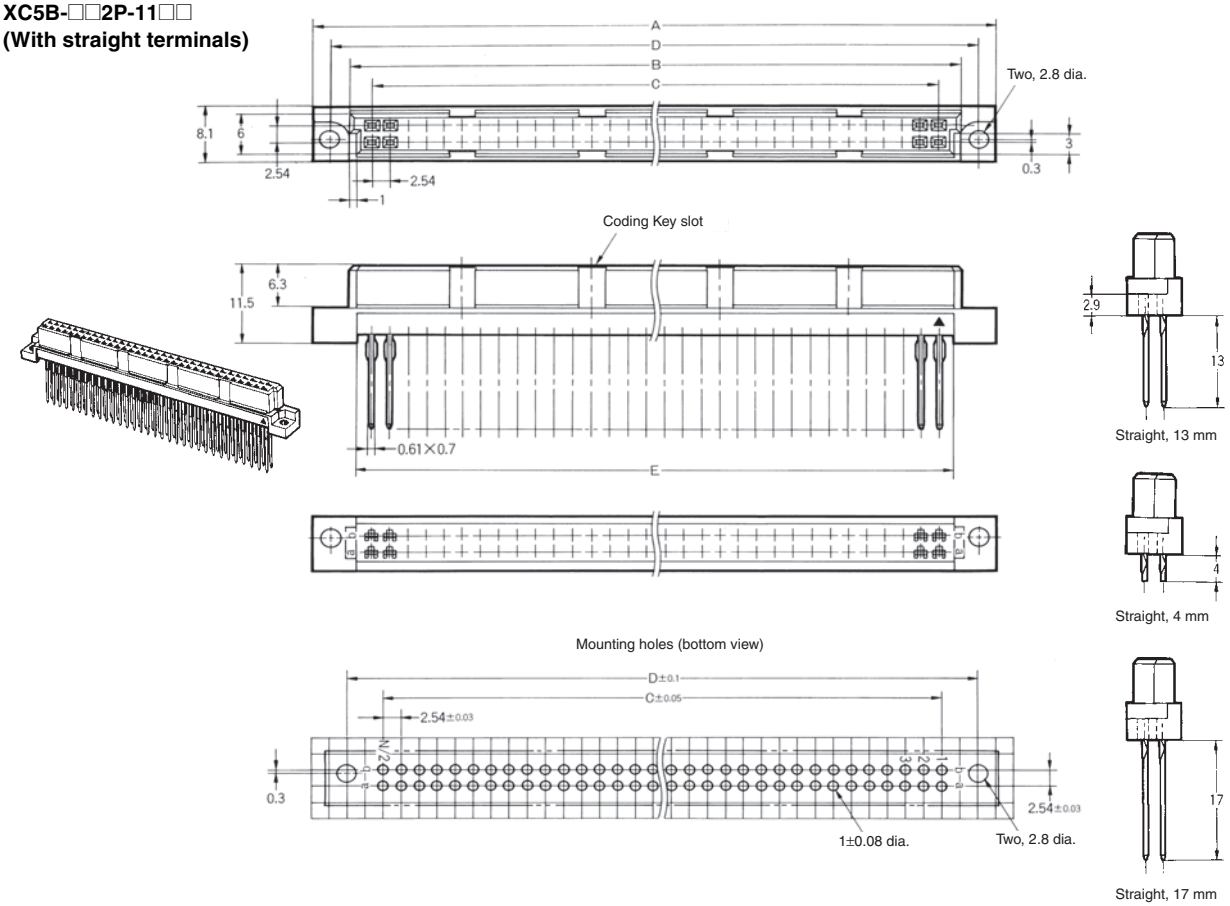
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XC5B Double-row Sockets, DIN B-type, Fine-fit

■ Dimensions

(unit: mm)

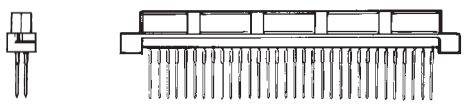
XC5B-□□2P-11□□
(With straight terminals)



Dimensions

No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
32	54.2	44.4	38.10	49.36	42.3	5, 12
64	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27
100	140.5	130.7	124.46	135.72	128.7	10, 20, 31, 41

■ Ordering Information

Appearance			
No. of contacts	**Terminal type**		
	Straight terminals, 4 mm	**Straight terminals, 13 mm**	**Straight terminals, 17 mm**
32	XC5B-322P-1140	XC5B-322P-1131	XC5B-322P-1132
64	XC5B-642P-1140	XC5B-642P-1131	XC5B-642P-1132

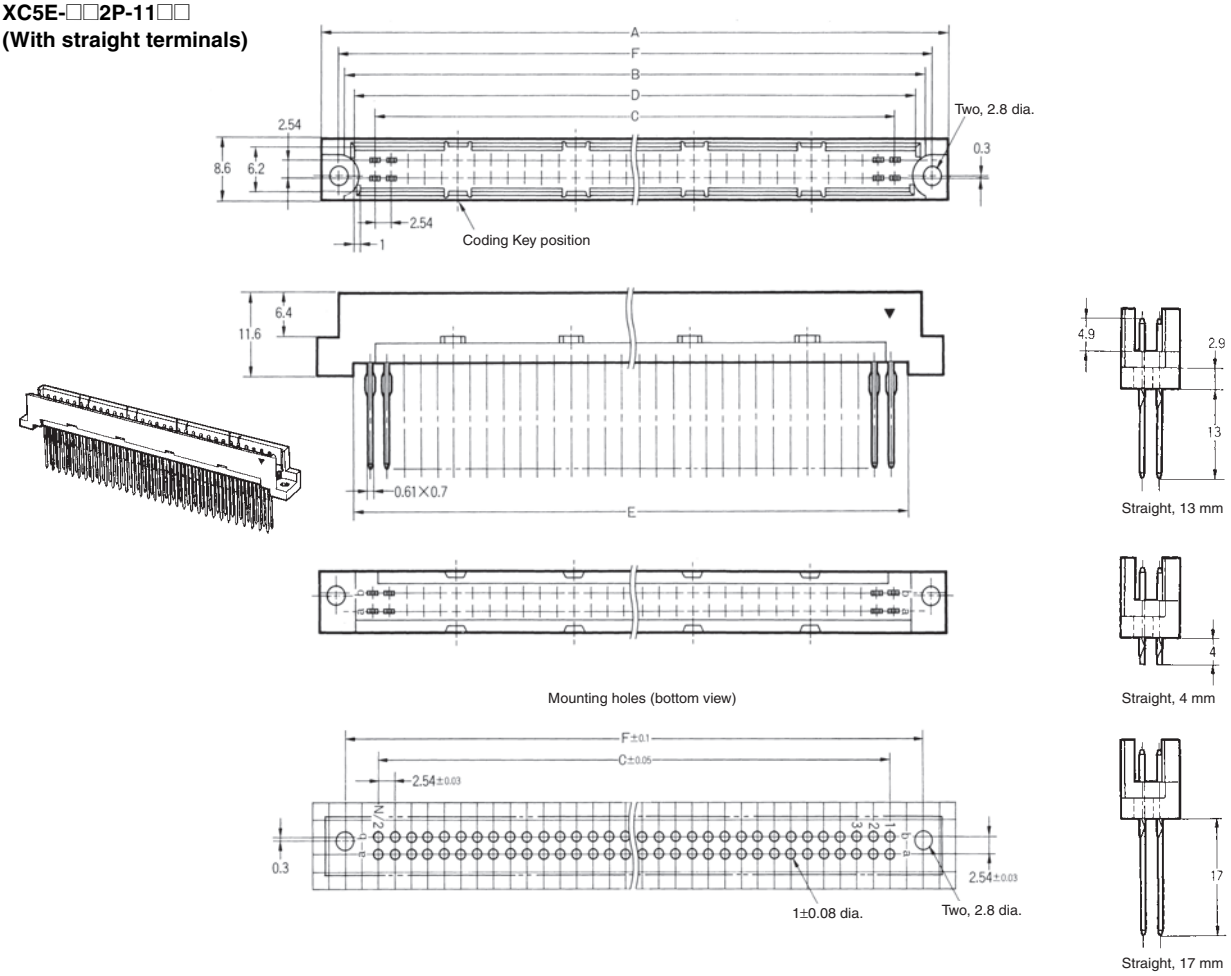
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XC5E Double-row Plugs, DIN Q-type, Fine-fit

■ Dimensions

(unit: mm)

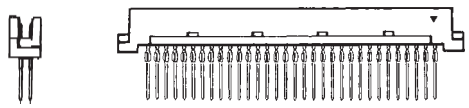
XC5E-□□2P-11□□
(With straight terminals)



Dimensions

No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
32	54.2	47.4	38.10	44.6	43.3	49.36	5, 12
64	94.8	88.0	78.74	85.2	83.9	90.00	6, 13, 20, 27
100	140.5	133.7	124.46	130.9	129.7	135.72	10, 20, 31, 41

■ Ordering Information

Appear-ance			
No. of contacts	Terminal type		
	Straight terminals, 4 mm	Straight terminals, 13 mm	Straight terminals, 17 mm
32	XC5E-322P-1140	XC5E-322P-1131	XC5E-322P-1132
64	XC5E-642P-1140	XC5E-642P-1131	XC5E-642P-1132

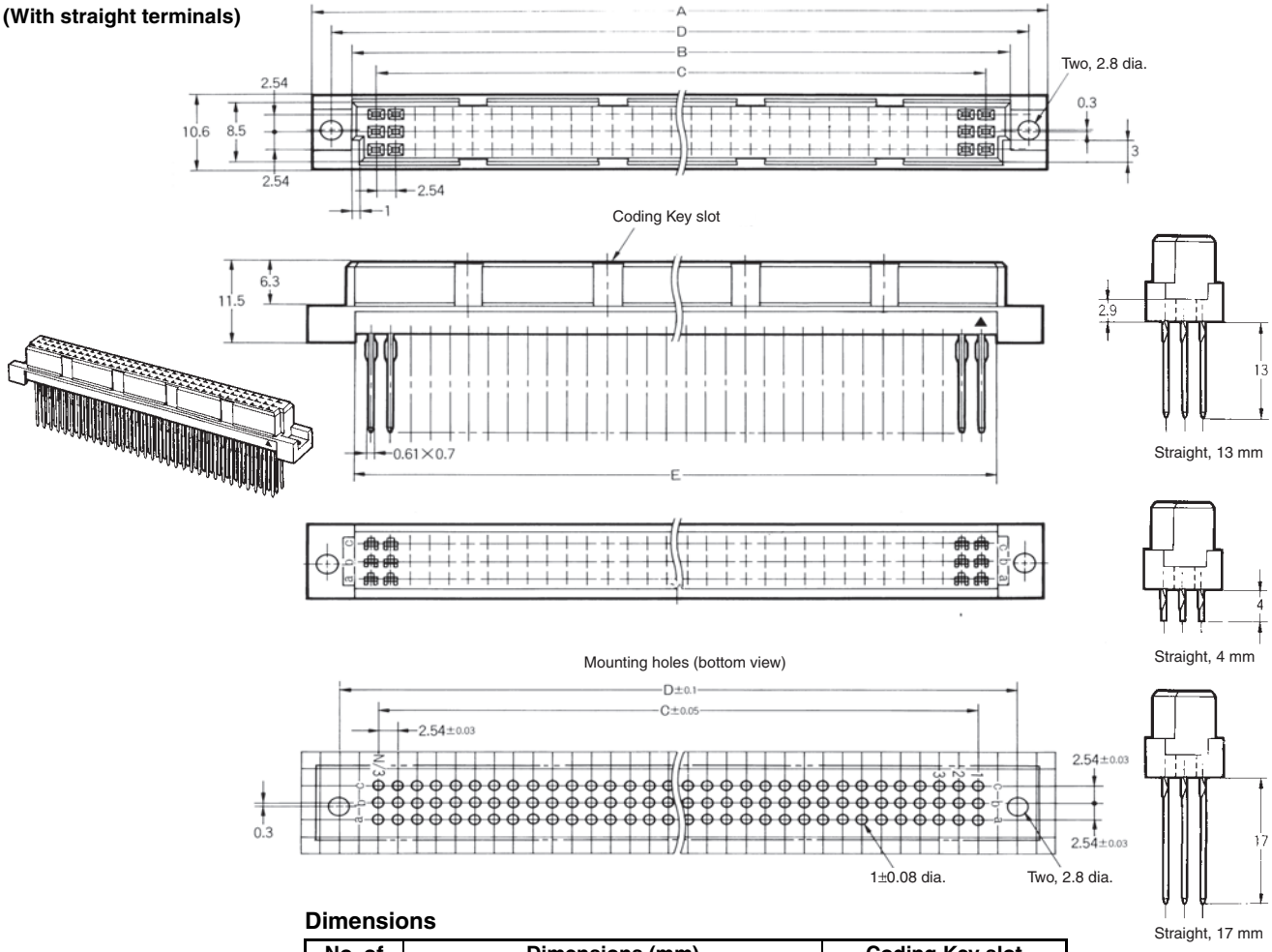
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XC5D Triple-row Sockets, DIN C-type, Fine-fit

■ Dimensions

(unit: mm)

XC5D-□□2P-11□□
(With straight terminals)

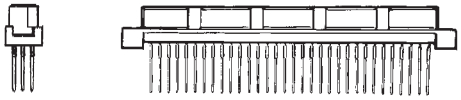


Dimensions

No. of contacts	Dimensions (mm)					Coding Key slot positions (contact No.)
	A	B	C	D	E	
48	54.2	44.4	38.10	49.36	42.3	5, 12
64*	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27
96	94.8	85.0	78.74	90.00	82.9	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

Appear-ance			
No. of contacts	**Terminal type**		
	Straight terminals, 4 mm	**Straight terminals, 13 mm**	**Straight terminals, 17 mm**
48	XC5D-482P-1140	XC5D-482P-1131	XC5D-482P-1132
64*	XC5D-642P-1140	XC5D-642P-1131	XC5D-642P-1132
96	XC5D-962P-1140	XC5D-962P-1131	XC5D-962P-1132

*Has no center row (row b).

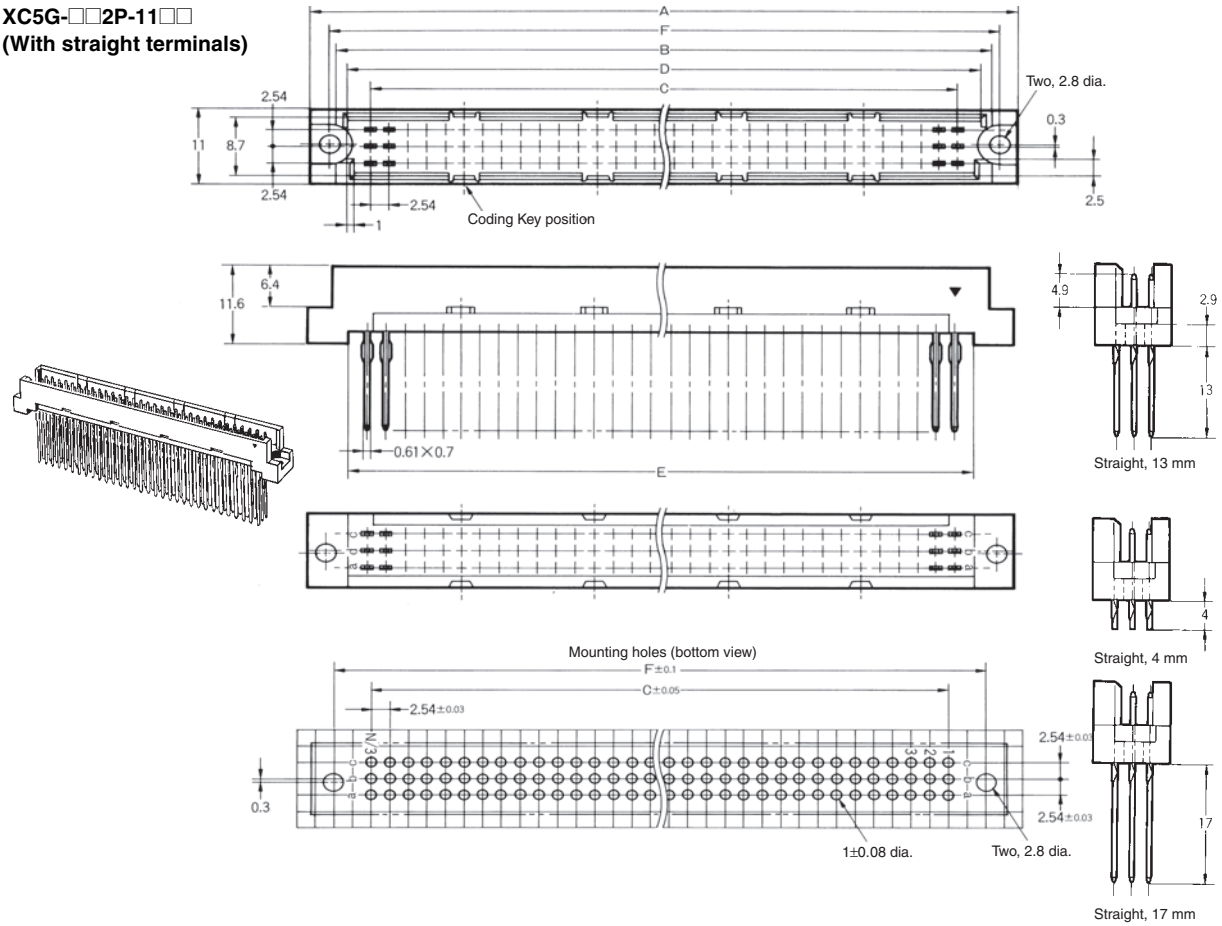
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XC5G Triple-row Plugs, DIN R-type, Fine-fit

■ Dimensions

(unit: mm)

XC5G-□□2P-11□□
(With straight terminals)

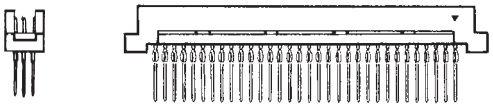


Dimensions

No. of contacts	Dimensions (mm)						Coding Key positions (contact No.)
	A	B	C	D	E	F	
48	54.2	47.4	38.10	44.6	43.3	49.36	5, 12
64*	94.8	88.0	78.74	85.2	83.9	90.00	6, 13, 20, 27
96	94.8	88.0	78.74	85.2	83.9	90.00	6, 13, 20, 27

*Has no center row (row b).

■ Ordering Information

Appear-ance			
No. of contacts	Terminal type		
	Straight terminals, 4 mm	Straight terminals, 13 mm	Straight terminals, 17 mm
48	XC5G-482P-1140	XC5G-482P-1131	XC5G-482P-1132
64*	XC5G-642P-1140	XC5G-642P-1131	XC5G-642P-1132
96	XC5G-962P-1140	XC5G-962P-1131	XC5G-962P-1132

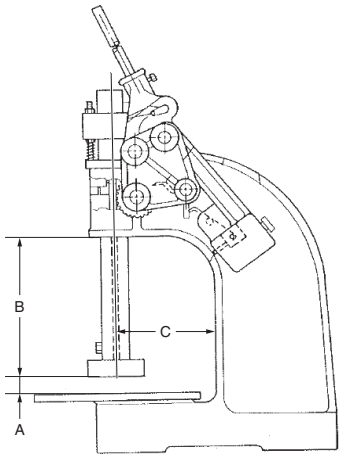
*Has no center row (row b).

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■ XC5 Accessories

Press-Fit Tool (XY2D-1005)

- Use a commercial Press-Fit Tool compliant with the recommended specifications in the table on the right.
- The Fine-Fit Connector Press-Fit Tool user's manual is available separately. The user's manual must be ordered separately.



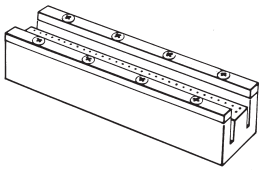
Recommended Specifications

Pressure input	**2 t min.**
Press-Fit speed	**20 mm/sec max.**
Press-Fit stopper position (dimension A)	**50 to 60 mm**
Press-Fit stroke (dimensions A + B)	**200 mm min.**
Press-Fit throat length (dimension C)	**100mm min.**

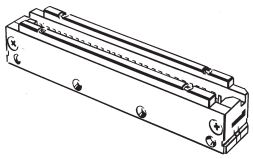
Contact Repair Tools

- The tool works on top of the Connector.
- This tool is used for correcting mistakes made with the Press-fit Tool. (plugs only)
- For details on use, see the Fine-fit Connector Press-fit Tool User's Manual. The User's manual must be ordered separately.

For plugs



For sockets



For Plugs

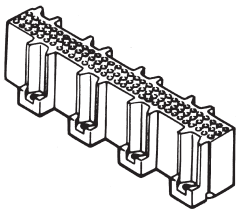
Rows	No. of contacts	Model
Double rows (XC5E)	32	XY2D-1007
	64	XY2D-1006
Triple rows (XC5G)	48	XY2D-1009
	96 (64)	XY2D-1008

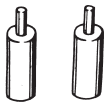
For Sockets

Rows	No. of contacts	Model
Double rows (XC5B)	32	XY2D-1011
	64	XY2D-1010
Triple rows (XC5D)	48	XY2D-1013
	96 (64)	XY2D-1012

Support Block and Plungers

- The Support Block and Plungers (2) are set on top of the base board.
- The Support Block is used to protect the fine-fit pins while the Press-fit Tool is being used.
- The Plunger is inserted into the mounting holes. It functions as a positioner for the Connector and cushions the Contact Repair Tool.





Support Blocks

Rows	No. of contacts	Model
Double rows	64	XY2D-1014
Triple rows	96	XY2D-1015

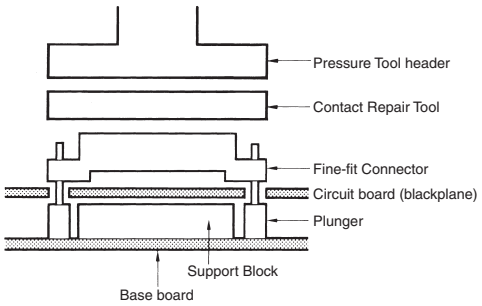
Note: Cut the XY2D-1014 when using Double-row Connectors with 100 or 32 contacts. Cut the XY2D-1015 when using Triple-row Connectors with 100 or 32 contacts (no center row).

Plungers

Applicable board thickness	Model
1.6 to 3.2 mm	XY2D-1017

Setting the Repair Tool, Support Block, and Plunger

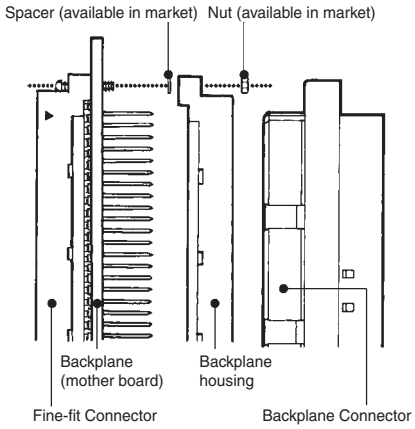
- Base board is not supplied by OMRON.
- The base board including the Support Block and Plunger are collectively called the Support Assembly.
- Place the circuit board on top of the Support Assembly and place the whole thing on the Press-fit Tool.
- Insert the Fine-fit Connectors into the board one at a time by moving the Support Assembly left and right.



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Accessories for Backplane Systems

Daughter board side **Rear Side**



Note: When ordering the following Housings, order according to the number per box.

Backplane Housings (for DIN Connectors)

Double-row Type

No. of contacts	Model
32	XC5E-32
64	XC5E-64

Triple-row Type

No. of contacts	Model
48	XC5G-48
96 (64)	XC5G-96

Spacer

When using the housing, use the correct spacer for the board as shown below.

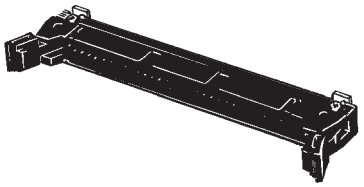
Terminal length	2.4-mm board	3.2-mm board	1.6-mm board
13 mm	0.5 mm	(See note.)	1.3 mm
17 mm	4.5 mm	3.7 mm	5.3 mm

Note: For wrap terminals only.

Backplane Housing (MIL Flat, Double-row Type)

No. of contacts	Model
64	XG4A-64A

Note: The housing can be used only when the board thickness is 2.4 mm.
It can be used only when the length of the DIN Fine-fit Connector is 17 mm.



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Precautions

Correct Use

Basic Mating Dimensions

The basic mating dimensions conform to those of the XC5. See page 11 of DIN Twin-contact Connectors XC5.

Press-fit Tools and Press-fit Precautions

OMRON provides manuals for Press-fit Tools and precautions. Contact your OMRON representative to request copies.

Through-hole Diameters

Holes with 1.0 mm dia. are required by the above Fine-fit Connector.

Storage

If the XG4A is stored with the lock half open, the resin parts may deteriorate, causing the lock to feel loose.
When a Connector is not used, close or open the lock completely before you store the Connector.

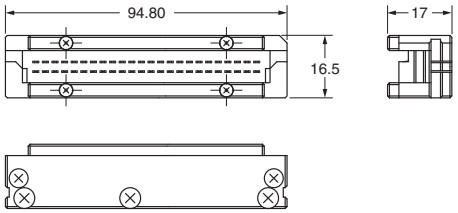
Mounting Prohibited area

Top jig side: Mounting of parts is prohibited in the area of the max. outer shape + 1 mm.

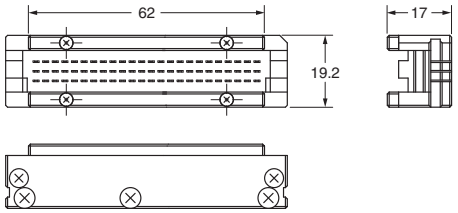
Bottom jig: Mounting of parts is prohibited in an area of the support block max. outer shape and plunger max. outer shape.

Top jig (Unit: mm)

Double rows

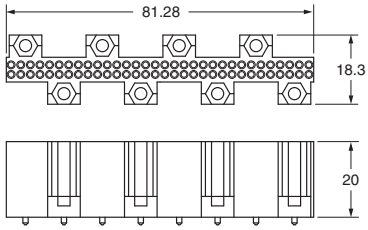


Triple rows

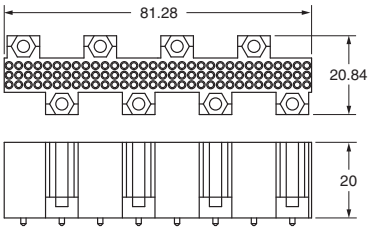


Support Blocks (unit: mm)

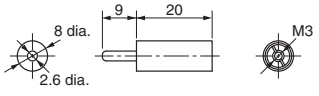
Double rows



Triple rows



Plungers (unit: mm)



Note: An outline drawing of the 64-pin and 96-pin top jigs and support blocks is shown as a sample. For parts with other number of pins, contact your OMRON sales representative.

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Approval Standard

The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

Model	Standard	File No.	Rating
XC5B-□□2P-11□□	UL certified product (Recognized)	E103202	300 V, 2 A
XC5E-□□2P-11□□	UL certified product (Recognized)	E103202	300 V, 2 A
XC5D-□□2P-11□□	UL certified product (Recognized)	E103202	300 V, 2 A
XC5G-□□2P-11□□	UL certified product (Recognized)	E103202	300 V, 2 A
XY2D-10□□	Non Approved Models	---	---
XC5E-32	Non Approved Models	---	---
XC5E-64	Non Approved Models	---	---
XC5G-48	Non Approved Models	---	---
XC5G-96	Non Approved Models	---	---
XG4A-64A	Non Approved Models	---	---

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