

CABLINE[®]-UY

Plug Insertion Through Hinge Simulation

Part No. Plug : 20857-0**T-01

Technical Report

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Rev.	ECN	Date	Prepared by	Checked by	Approved by

CABLINE-UY Plug Insertion Through Hinge Simulation

1. Purpose

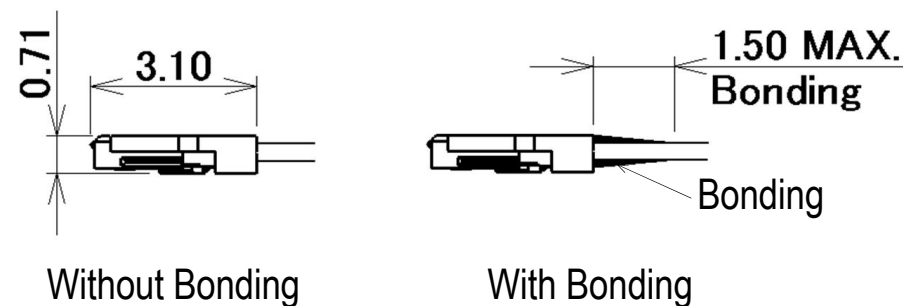
This report presents the simulation results for the minimum hinge diameter required to fit the CABLINE-UY plug connector and cable.

2. Simulation Conditions

- Connector: CABLINE-UY Plug Cable Assembly (P/N: 20857-0**T-01)
- Number of Pins: 5, 10 and 12.
- Cable: Micro-coaxial cable AWG #40 , #42 (see Table 1 for jacket diameter).
The cable is connected to all pins.
- Bonding: Bonding of the cable terminals is recommended to secure the cable.
If bonding is applied, the cable must not be bent in the bonding area.

Table 1. Cable Jacket Outer Diameter (mm)

AWG#	Impedance Matching	
	45 ohms	50 ohms
40	0.33	-
42	0.29	0.33



The simulation results presented in this report are not guaranteed and are provided for reference purposes only. The minimum hinge diameter that allows passage may vary depending on the harness processing method and the type of cable used. Bonding is recommended.

CABLINE-UY Plug Insertion Through Hinge Simulation

3. Simulation Results

The simulation results are shown in Table 2 and 3.
Details are provided on the following pages.

Table 2. Minimum Hinge Inner Diameter with Bonding (mm)

Cable	Size	AWG #40	AWG #42	
	Impedance Matching	45 ohms	45 ohms	50 ohms
	Jacket Diameter	0.33	0.29	0.33
Minimum Hinge Inner Diameter	5-Pin Connector	3.91	3.91	
	10-Pin Connector	5.60	5.55	5.60
	12-Pin Connector			

Table 3. Minimum Hinge Inner Diameter without Bonding (mm)

Cable	Size	AWG #40	AWG #42	
	Impedance Matching	45 ohms	45 ohms	50 ohms
	Jacket Diameter	0.33	0.29	0.33
Minimum Hinge Inner Diameter	5-Pin Connector	3.91	3.91	
	10-Pin Connector	4.21	4.15	4.21
	12-Pin Connector			

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CABLIME-UY Plug Insertion Through Hinge Simulation

3. Simulation Results

3.1 With Bonding

For the 5-pin connector with bonding, the minimum hinge inner diameter was obtained when the connector passed through the hinge, as shown in Figure 1.

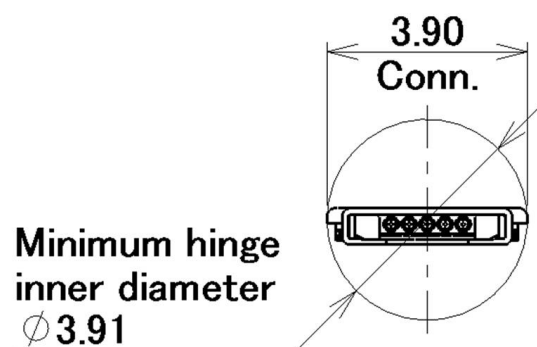


Figure 1.

5-Pin Connector

(AWG #40 and #42, 45 and 50 ohms)

No Cable Bending

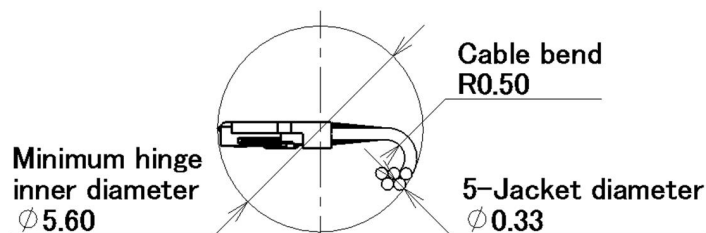


Figure 2.

5-Pin Connector (AWG #40, 45 ohms)

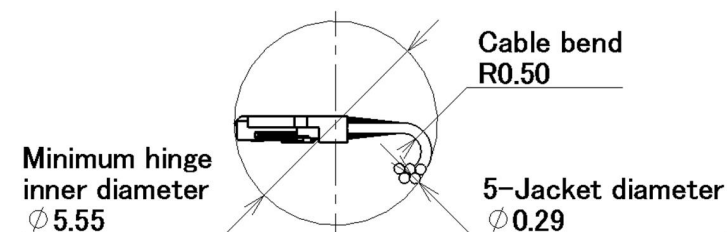


Figure 3.

5-Pin Connector (AWG #42, 45 ohms)

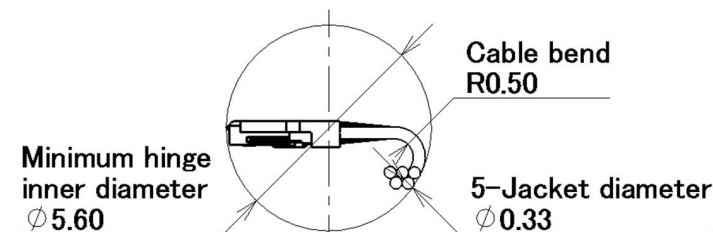


Figure 4.

5-Pin Connector (AWG #42, 50 ohms)

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CABLINE-UY Plug Insertion Through Hinge Simulation

3. Simulation Results

3.1 With Bonding

For the 10-pin connector with bonding, the minimum hinge inner diameter was obtained when the connector passed through the hinge, as shown in Figure 6 , 7 and 8.

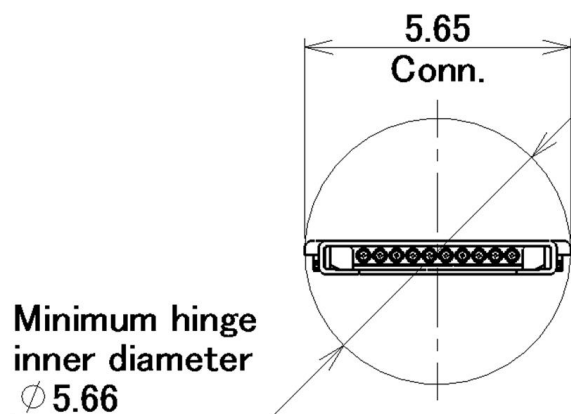


Figure 5.

**10-Pin Connector
(AWG #40 and #42, 45 and 50 ohms)
No Cable Bending**

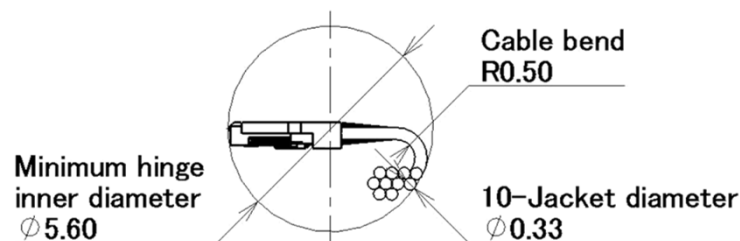


Figure 6.

10-Pin Connector (AWG #40, 45 ohms)

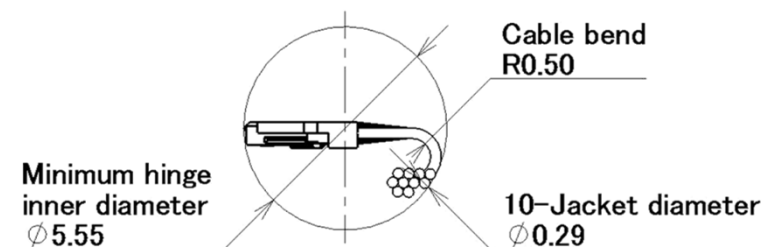


Figure 7.

10-Pin Connector (AWG #42, 45 ohms)

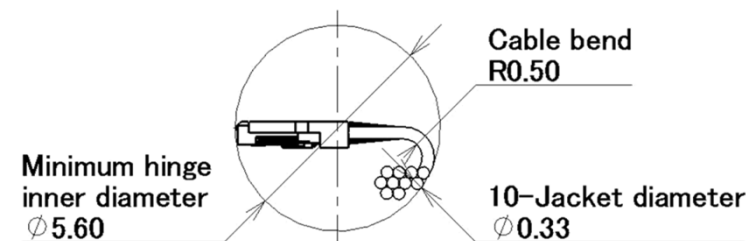


Figure 8.

10-Pin Connector (AWG #42, 50 ohms)

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CABLINE-UY Plug Insertion Through Hinge Simulation

3. Simulation Results

3.1 With Bonding

For the 12-pin connector with bonding, the minimum hinge inner diameter was obtained when the connector passed through the hinge, as shown in Figure 10, 11 and 12.

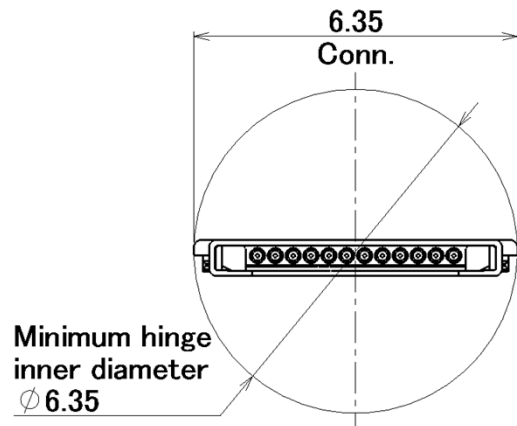


Figure 9.

12-Pin Connector
(AWG #40 and #42, 45 and 50 ohms)
No Cable Bending

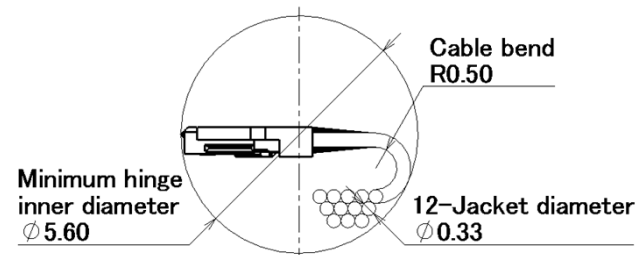


Figure 10.

12-Pin Connector (AWG #40, 45 ohms)

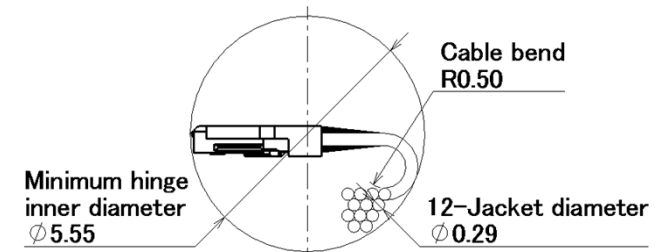


Figure 11.

12-Pin Connector (AWG #42, 45 ohms)

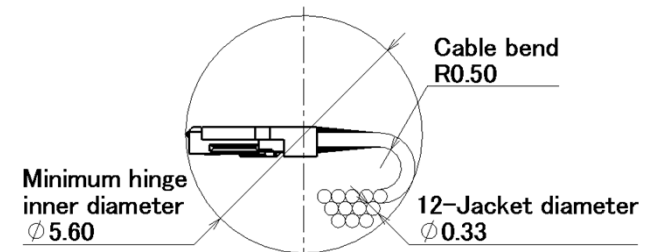


Figure 12.

12-Pin Connector (AWG #42, 50 ohms)

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CABLINE-UY Plug Insertion Through Hinge Simulation

3. Simulation Results

3.2 Without bonding

For the 5-pin connector without bonding, the minimum hinge inner diameter was obtained when the connector passed through the hinge, as shown in Figure 13.

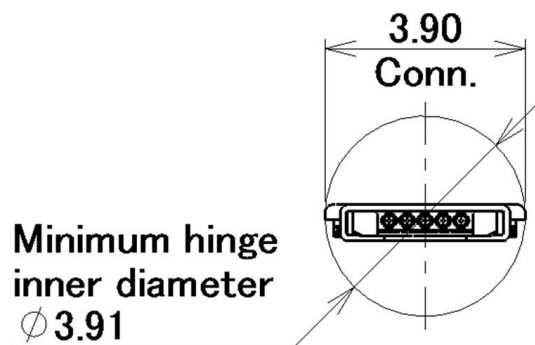


Figure 13.

5-Pin Connector

(AWG #40 and #42, 45 and 50 ohms)

No Cable Bending

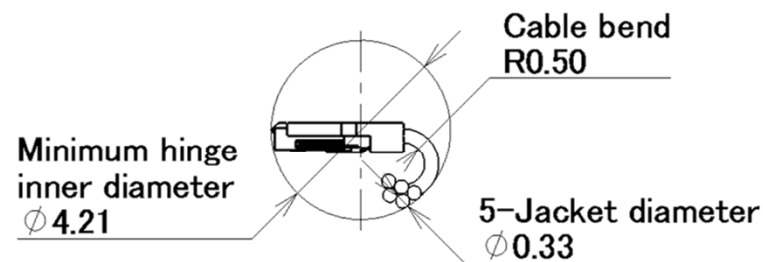


Figure 14.

5-Pin Connector (AWG #40, 45 ohms)

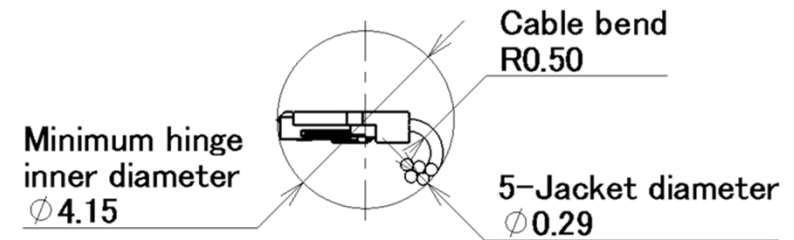


Figure 15.

5-Pin Connector (AWG #42, 45 ohms)

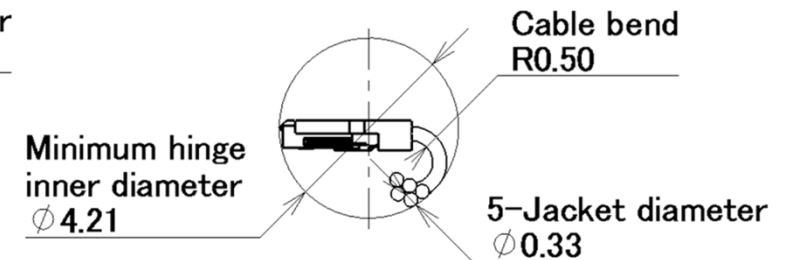


Figure 16.

5-Pin Connector (AWG #42, 50 ohms)

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CABLINE-UY Plug Insertion Through Hinge Simulation

3. Simulation Results

3.2 Without bonding

For the 10-pin connector without bonding, the minimum hinge inner diameter was obtained when the connector passed through the hinge, as shown in Figure 18, 19 and 20.

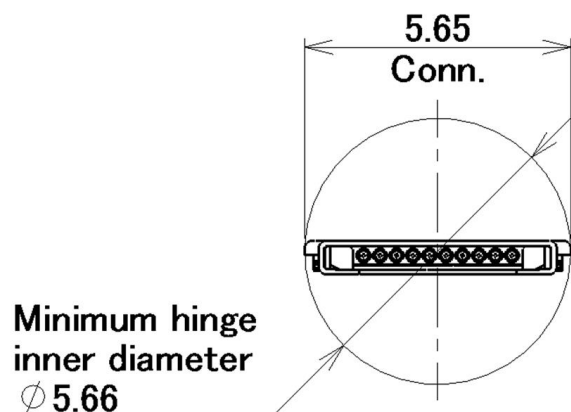


Figure 17.

10-Pin Connector

(AWG #40 and #42, 45 and 50 ohms)

No Cable Bending

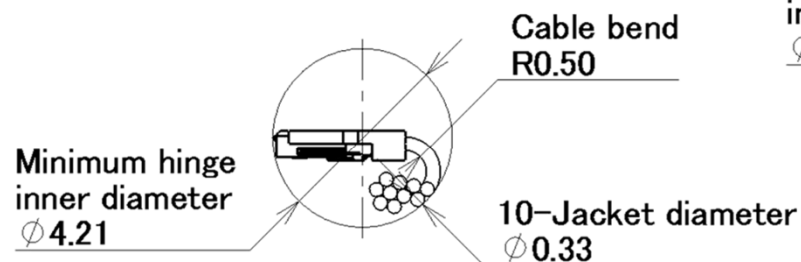


Figure 18.

10-Pin Connector (AWG #40, 45 ohms)

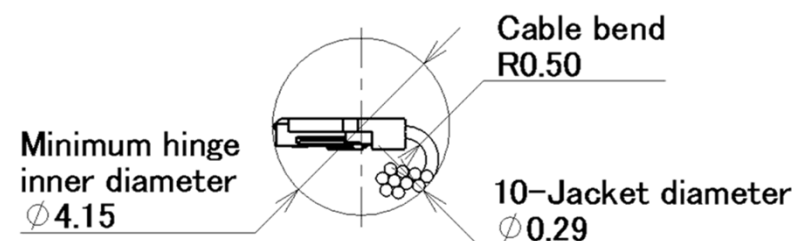


Figure 19.

10-Pin Connector (AWG #42, 45 ohms)

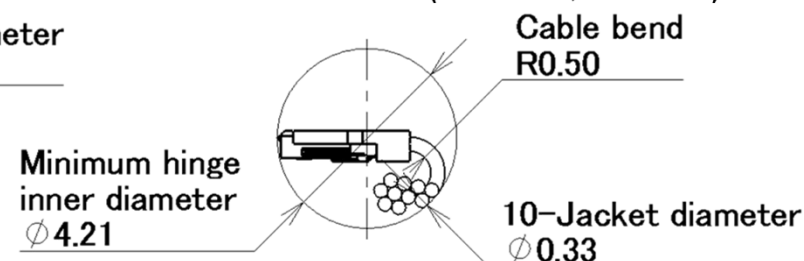


Figure 20.

10-Pin Connector (AWG #42, 50 ohms)

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CABLINE-UY Plug Insertion Through Hinge Simulation

3. Simulation Results

3.2 Without bonding

For the 12-pin connector without bonding, the minimum hinge inner diameter was obtained when the connector passed through the hinge, as shown in Figure 22, 23 and 24.

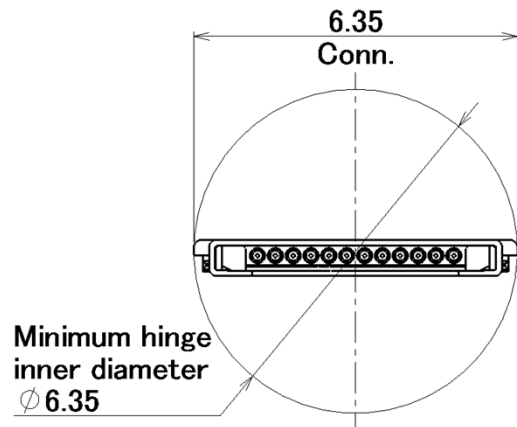


Figure 21.

**12-Pin Connector
(AWG #40 and #42, 45 and 50 ohms)
No Cable Bending**

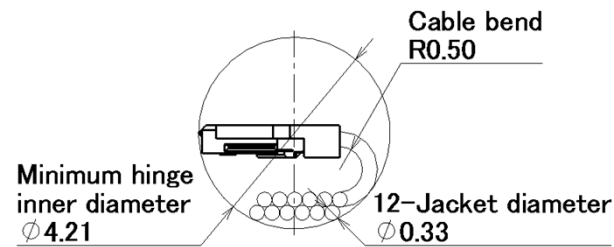


Figure 22.

12-Pin Connector (AWG #40, 45 ohms)

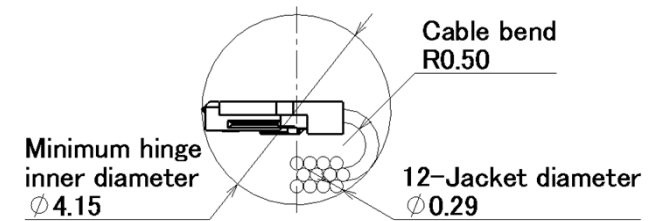


Figure 23.

12-Pin Connector (AWG #42, 45 ohms)

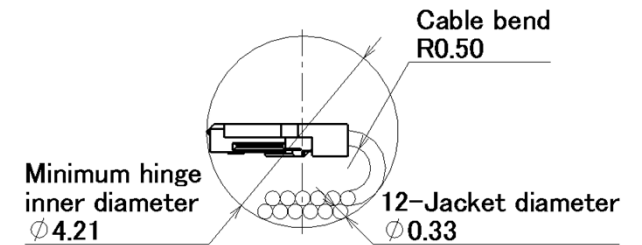


Figure 24.

12-Pin Connector (AWG #42, 50 ohms)

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