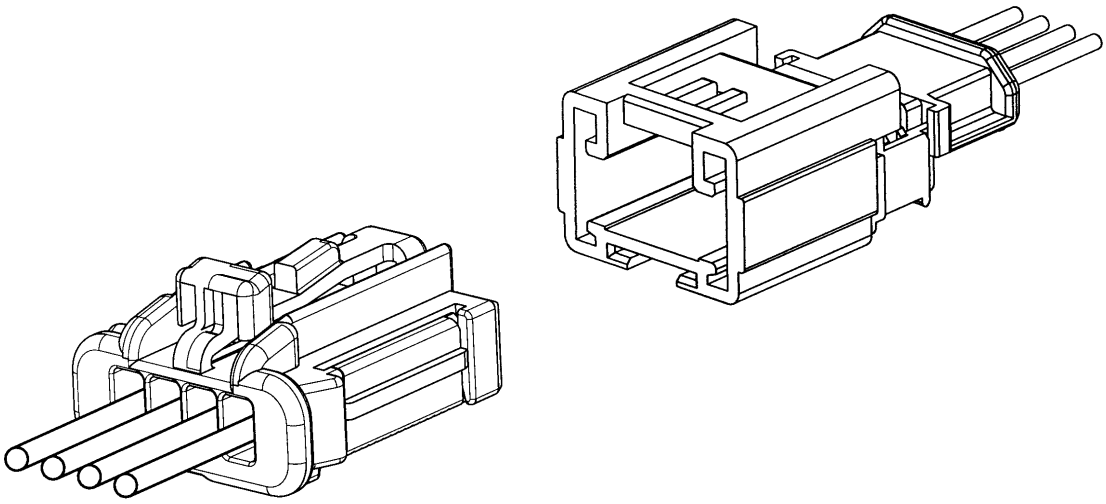
APPLICATION SPECIFICATION

NSCC 1.5, UCC 2.8 AND HYBRID

UNSEALED INLINE CONNECTORS from 2 to 6ckt



REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
E	EC No: **G2015-0195** DATE: **2015/04/24**	**NSCC 1,5mm, UCC2 2,8mm and hybrid UNSEALED INLINE CONNECTORS 2 – 6ckt**	**1** of **30**

DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
AS-98821-001	**A.HERBELIN**	**O.PLESSIS**	**J-L.DUCLOS**

Revision	**MODIFICATION**	**SHEET**	**Date**
A	Preliminary issue for customer	All	2010-09
B	Global update (new MOLEX standards: Presentation, Terminal crimping, Recommendations to harness maker plant, Recommendations for final assembly plant, Connector loading, Electrical continuity checking, Storage conditions…)	All	2012-03-22
C	Typo correction (§1.3)	10 ; 12 ; 13	2012-05-29
D	Molex P/N & Color/Plating correction	10 ; 11 ; 12	2014-11-20
E	Compatible clip-slot definition: specifications references	28	2015-04-24

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1. PRESENTATION

1.1. PRODUCT INTRODUCTION

TYPE	HSG	P/N MOLEX	PITCH
2ckt 1.5	Female	98817-102X	3.33mm
	Male	98822-102X	3.33mm
2ckt 2.8	Female	98819-102X	5.00mm
	Male	98824-102X	5.00mm
3ckt 1.5	Female	98817-103X	3.33mm
	Male	98822-103X	3.33mm
4ckt 1.5	Female	98817-104X	3.33mm
	Male	98822-104X	3.33mm
Hybrid 3ckt	Female	98821-103X	4.20mm / 5.00mm
Hybrid 6ckt	Female	98821-106X	3.33mm / 4.20mm / 5.00mm
	Male	98825-106X	3.33mm / 4.20mm / 5.00mm

Use with: Molex female terminals NSCC (1.5 mm) and UCC2 (2.8 mm)
Crimping wire ∅ 0.35 to 4 mm²

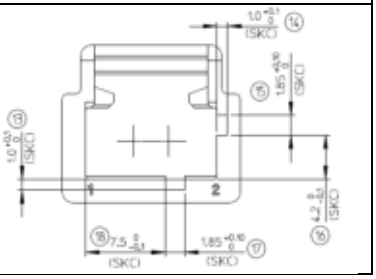
FCI male terminals tin plated SICMA 3* of 1.5 x 0.8 mm
and SICMA 3* of 2.8 x 0.8 mm

Operating temperature range: -40°C to 85°C

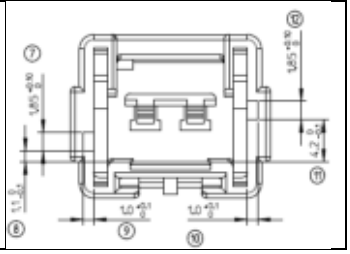
Vibrations: class1

Flammability: HB class

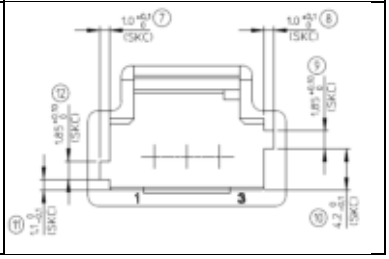
Overview of 2ckt Female Connector interfaces in Standard Version using NSCC (1.5mm)

Connector	2ckt
1.5 mm NSCC (pcs)	2
Existing colors codings	Blk, Gry, Whe, Grn
Connector interface	

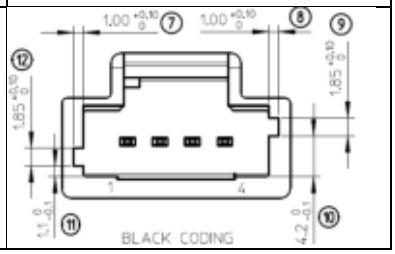
Overview of 2ckt Female Connector interfaces in Standard Version using UCC2 (2.8mm)

Connector	2ckt
2.8 mm UCC2 (pcs)	2
Existing colors codings	Blk, Whe, Grn
Connector interface	

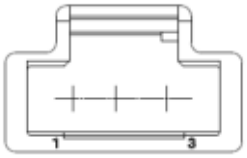
Overview of 3ckt Female Connector interfaces in Standard Version using NSCC (1.5mm)

Connector	3ckt
1.5 mm NSCC (pcs)	3
Existing colors codings	Blk, Whe, Grn
Connector interface	

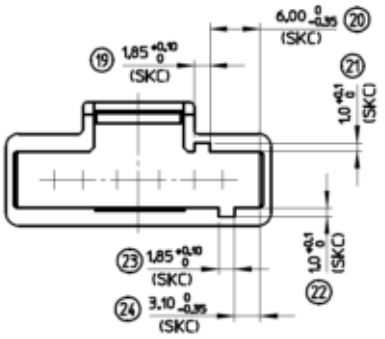
Overview of 4ckt Female Connector interfaces in Standard Version using NSCC (1.5mm)

Connector	4ckt
1.5 mm NSCC (pcs)	4
Existing colors codings	Blk, Gry, Whe, Grn
Connector interface	

Overview of 3ckt Female Hybrid Connector interfaces in Standard Version using NSCC (1.5mm) and UCC2 (2.8mm)

Connector	Hybrid 3ckt
1.5 mm NSCC (pcs)	1
2.8 mm UCC2 (pcs)	2
Existing colors codings	Blk, Brn, Grn, Whe
Connector interface	

Overview of 6ckt Female Hybrid Connector interfaces in Standard Version using NSCC (1.5mm) and UCC2 (2.8mm)

Connector	Hybrid 6ckt
1.5 mm NSCC (pcs)	4
2.8 mm UCC2 (pcs)	2
Existing colors codings	Blk, Grn, Gry, Whe
Connector interface	

1.2. AVAILABLE DOCUMENTS

Operating conditions

Product specifications	PS-98821-001

Mate with headers or connector in accordance with:

CONNECTOR	Female housing:	Mates with:
2ckt 1.5	98817-102X	98822-102X or header per interface drawing SD-98815-002
2ckt 2.8	98819-102X	98824-102X or header per interface drawing SD-98818-002
3ckt 1.5	98817-103X	98822-103X or header per interface drawing SD-98815-003
4ckt 1.5	98817-104X	98822-104X or header per interface drawing SD-98815-004
Hybrid 3ckt	98821-103X	Header per interface drawing SD-98820-001
Hybrid 6ckt	98821-106X	98825-106X or header per interface drawing SD-98820-002

Connector drawings

TYPE	HSG	P/N MOLEX	SD DRAWING
2ckt 1.5	Female	98817-102X	SD-98817-001
	Male	98822-102X	SD-98822-004
2ckt 2.8	Female	98819-102X	SD-98819-001
	Male	98824-102X	SD-98824-002
3ckt 1.5	Female	98817-103X	SD-98817-002
	Male	98822-103X	SD-98822-003
4ckt 1.5	Female	98817-104X	SD-98817-003
	Male	98822-104X	SD-98822-005
Hybrid 3ckt	Female	98821-103X	SD-98821-001
Hybrid 6ckt	Female	98821-106X	SD-98821-002
	Male	98825-106X	SD-98825-002

Packaging

TYPE	HSG	P/N MOLEX	PACKAGING SPECIFICATION
2ckt 1.5	Female	98817-102X	PK-31301-635
	Male	98822-102X	
3ckt 1.5	Female	98817-103X	
	Male	98822-103X	
4ckt 1.5	Female	98817-104X	
	Male	98822-104X	
2ckt 2.8	Female	98819-102X	PK-31301-635
	Male	98824-102X	PK-98824-001
Hybrid 3ckt	Female	98821-103X	PK-31301-635
Hybrid 6ckt	Female	98821-106X	PK-31301-635
	Male	98825-106X	PK-98825-001

Female Terminal drawings

NSCC for 0.8 x 1.5 terminal	SD-98897-050
UCC2 for 0.8 x 2.8 terminal	SD-98898-100

Crimp specification

NSCC	AS-98897-001
UCC2	AS-98898-001

All drawings and prints can be found at www.molex.com

1.3. PART NUMBERS

	DESCRIPTION	MOLEX P/N	COLOR / PLATING
	Female connector 2ckt 1.5	098817-1020 098817-1021 098817-1025 098817-1028	White Black Green Grey
	Male connector 2ckt 1.5	098822-1020 098822-1021 098822-1025 098822-1028	White Black Green Grey
	Female terminal NSCC 1.5mm	098897-1109 098897-1119 098897-1129	Tin
	Male terminal SICMA3* 1.5 x 0.8 mm	Contact FCI	/

	DESCRIPTION	MOLEX P/N	COLOR / PLATING
	Female connector 2ckt 2.8	098819-1020 098819-1021 098819-1025	White Black Green
	Male connector 2ckt 2.8	098824-1010 098824-1021 098824-1025	White Black Green
	Female terminal UCC2 2.8mm	098898-1029 098898-1039 098898-1049	Tin
	Male terminal SICMA3* 2.8 x 0.8 mm	Contact FCI	/

To order please contact your Molex Sales Representative or check www.molex.com

APPLICATION SPECIFICATION

	DESCRIPTION	MOLEX P/N	COLOR / PLATING
	Female connector 3ckt 1.5	098817-1030 098817-1031 098817-1035	White Black Green
	Male connector 3ckt 1.5	098822-1030 098822-1031 098822-1035	White Black Green
	Female terminal NSCC 1.5mm	098897-1109 098897-1119 098897-1129	Tin
	Male terminal SICMA3* 1.5 x 0.8 mm	Contact FCI	/

	DESCRIPTION	MOLEX P/N	COLOR / PLATING
	Female connector 4ckt 1.5	098817-1040 098817-1041 098817-1045 098817-1048	White Black Green Grey
	Male connector 4ckt 1.5	098822-1040 098822-1041 098822-1045	White Black Green
	Female terminal NSCC 1.5mm	098897-1109 098897-1119 098897-1129	Tin
	Male terminal SICMA3* 1.5 x 0.8 mm	Contact FCI	/

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REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
E	EC No: **G2015-0195** DATE: **2015/04/24**	**NSCC 1,5mm, UCC2 2,8mm and hybrid UNSEALED INLINE CONNECTORS 2 – 6ckt**	**11** of **30**

DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
AS-98821-001	**A.HERBELIN**	**O.PLESSIS**	**J-L.DUCLOS**

APPLICATION SPECIFICATION

	DESCRIPTION	MOLEX P/N	COLOR / PLATING
	Female connector 3ckt hybrid	098821-1030 098821-1031 098821-1035 098821-1039	White Black Green Brown
	Female terminal NSCC 1.5mm	098897-1109 098897-1119 098897-1129	Tin
	Female terminal UCC2 2.8mm	098898-1029 098898-1039 098898-1049	Tin
	Male terminal SICMA3* 1.5 x 0.8 mm	Contact FCI	/
	Male terminal SICMA3* 2.8 x 0.8 mm	Contact FCI	/

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APPLICATION SPECIFICATION

	DESCRIPTION	MOLEX P/N	COLOR / PLATING
	Female connector 6ckt hybrid	098821-1060 098821-1061 098821-1065 098821-1068	White Black Green Grey
	Male connector 6ckt hybrid	098825-1060 098825-1061 098825-1065 098825-1068	White Black Green Grey
	Female terminal NSCC 1.5mm	098897-1109 098897-1119 098897-1129	Tin
	Female terminal UCC2 2.8mm	098898-1029 098898-1039 098898-1049	Tin
	Male terminal SICMA3* 1.5 x 0.8 mm	Contact FCI	/
	Male terminal SICMA3* 2.8 x 0.8 mm	Contact FCI	/

*SICMA is a trademark of FCI Incorporated

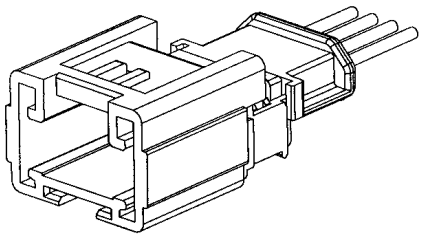
To order please contact your Molex Sales Representative or check www.molex.com

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
E	EC No: **G2015-0195** DATE: **2015/04/24**	**NSCC 1,5mm, UCC2 2,8mm and hybrid UNSEALED INLINE CONNECTORS 2 – 6ckt**	**13** of **30**

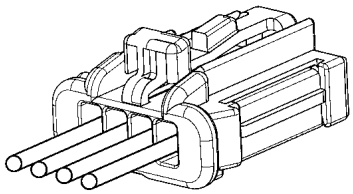
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
AS-98821-001	**A.HERBELIN**	**O.PLESSIS**	**J-L.DUCLOS**

1.4. COMPONENTS

(4ckt 1.5 shown)

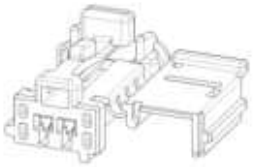


Pin connector (male connector)

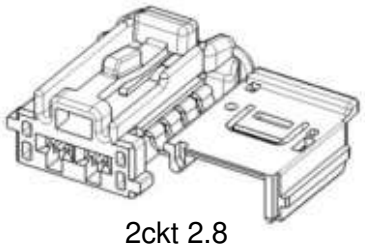


Receptacle housing (female housing)

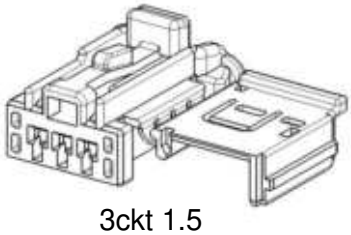
1.5. RECEPTACLE HOUSING RANGE



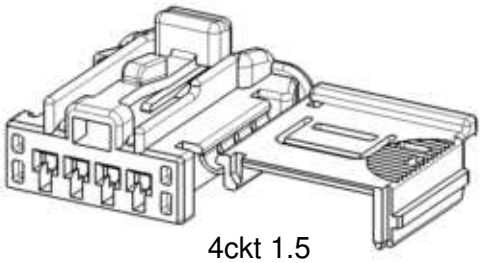
2ckt 1.5



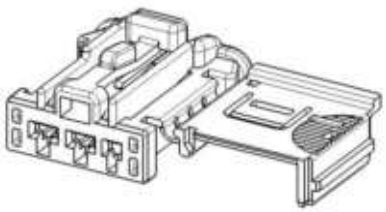
2ckt 2.8



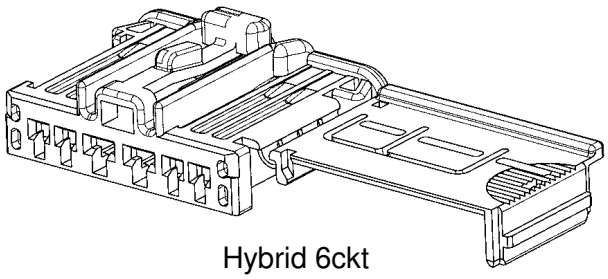
3ckt 1.5



4ckt 1.5

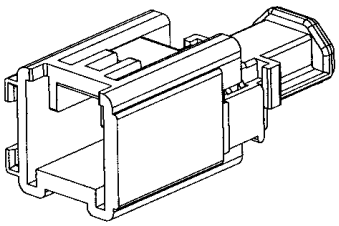


Hybrid 3ckt
(1x1.5 – 2x2.8)

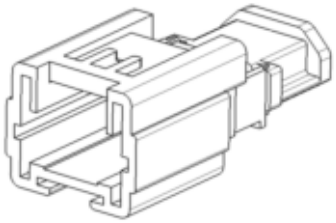


Hybrid 6ckt
(4x1.5 – 2x2.8)

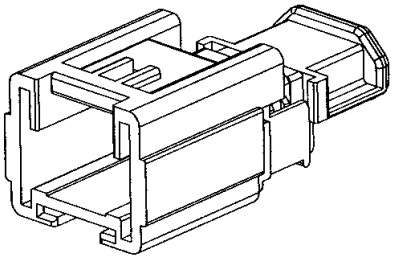
1.6. PIN CONNECTORS RANGE



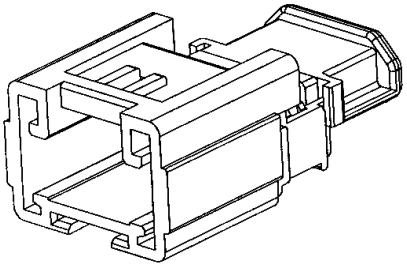
2ckt 1.5



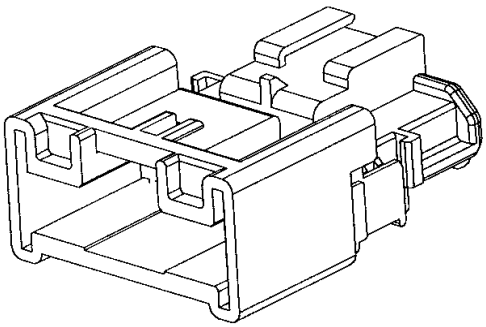
2ckt 2.8



3ckt 1.5



4ckt 1.5

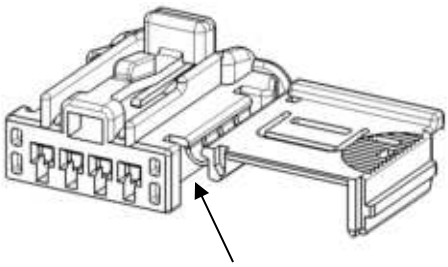


Hybrid 6ckt
(4x1.5 – 2x2.8)

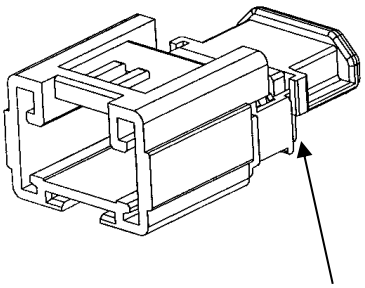
1.7. CONNECTOR PERFORMANCES

(Example shown: 4ckt 1.5)

Receptacle housing

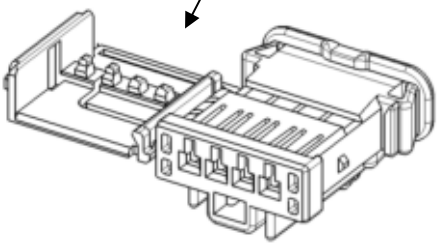


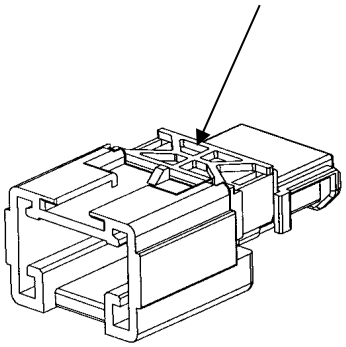
Pin connector



Independent S.L. of terminals

Secondary lock (S.L.) function is linked to the housing through a hinge





Performances :

- Primary lock of the terminals made by plastic latch
- Safe, side loaded, secondary lock of the terminal
- Housing mating by a go/no go system
- On the pin connector: a guide allows to mate a clip-slot to attach on box.
- Different keyings / colors available.

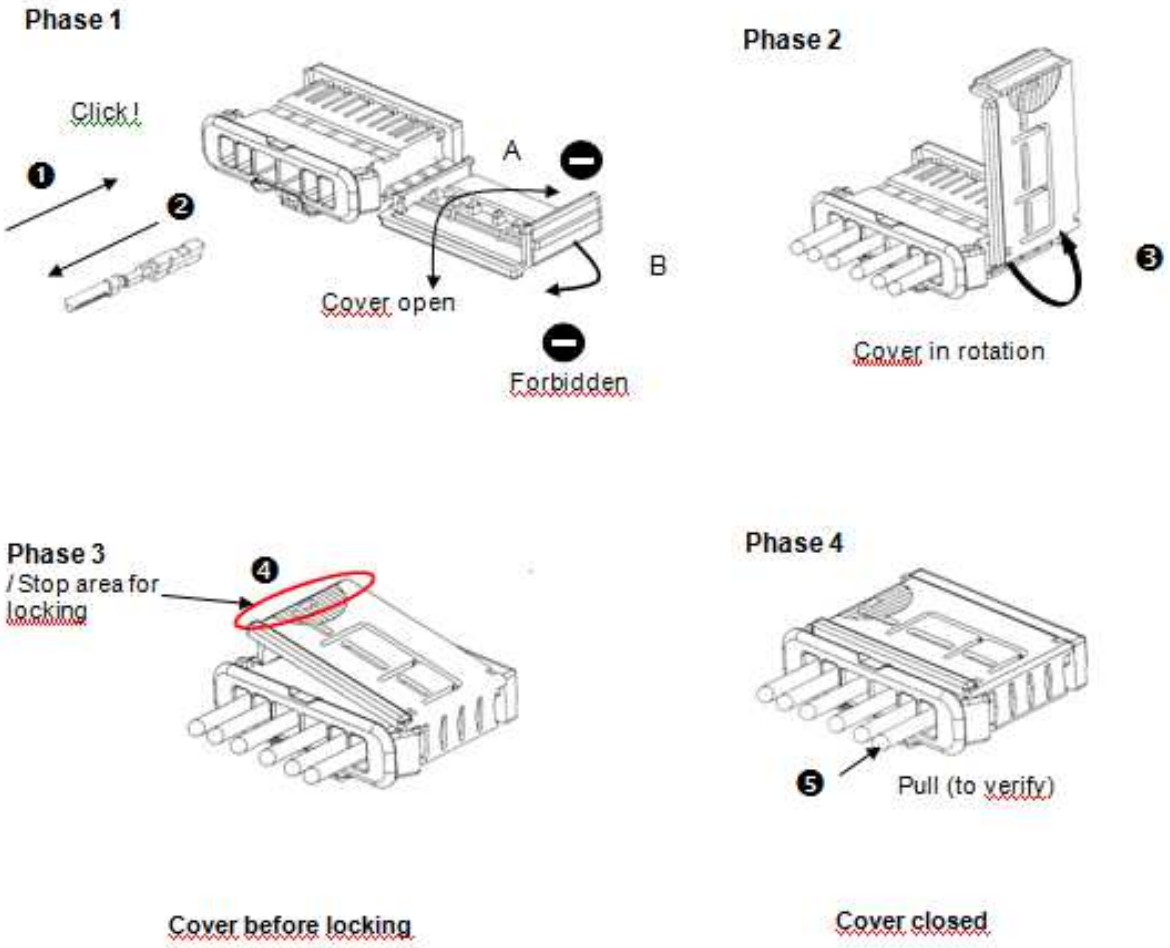
2. CONNECTORS ASSEMBLY PROCESS

2.1. RECOMMENDATION IN HARNESS MAKER PLANT



- Place arrows of cardboard box oriented to the top
- Open packaging with a sharp less tool
- Do unpack the products only when you use them for assembly (to avoid dust…)
- TPAs (Secondary lockings) may become seated during transit. Occurrence rates of this condition will be evaluated using individual boxes versus palletized shipments. Packaging includes bulk, layer and partition styles.
- TPAs that become seated will need to be pulled back from the final seat position to the pre-lock position as shipped. For servicing guidelines to restore the TPA to the correct position please refer to chapter 4.1(stop at “Pre-locked position”).
- Do not change the slider and TPA position during assembly (delivery position)
- The connector should not receive shock during the whole process
- Use only Molex recommended tool

2.2. RECRECEPTACLE HOUSING ASSEMBLY



REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
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DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
AS-98821-001	A.HERBELIN	O.PLESSIS	J-L.DUCLOS

Phase 1 : Receptacle terminal insertion. Push, click and pull to check the good locking of contacts.

⚠ The twist (A) and the rotation of cover (B) toward the side of plastic latch is forbidden.

⚠ Don't handle the receptacle housing by the cover.

Phase 2 : Cover rotation.

Phase 3 : The lock of the cover must be done after having removed all the stress on harness.

Phase 4 : The crimping wings must not go past the connector.

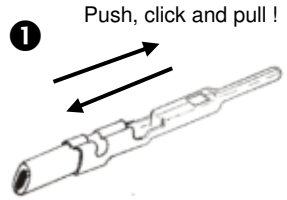
The lock of S.L. must be done manually by a regular effort on the depress area.

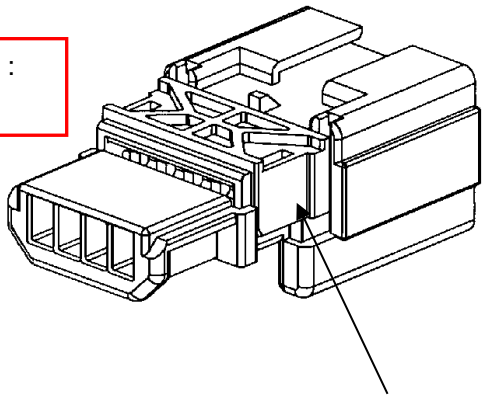
Receptacle housings must be used after storage of 12 hours min, at room temperature (15° C to 35° C).

Check the good insertion of receptacle terminals, in case of problem to lock the S.L.

2.3. PIN CONNECTORS ASSEMBLY

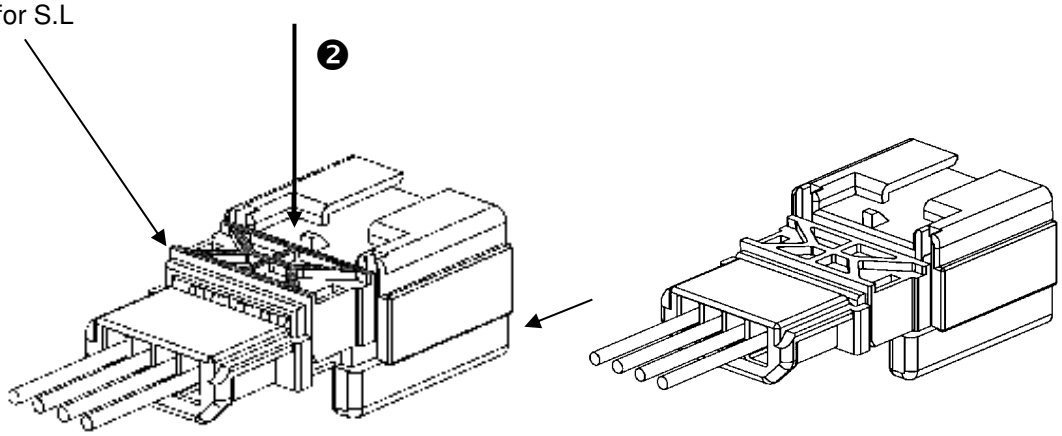
Preferred assembly direction of the terminal : crimping wings turned to the S.L.





S.L. in pre-locked position

Stop area for locking for S.L



Lock S.L. after terminal insertion

❸ Pull (to verify)
Pin connector assembled

⚠ The crimping wings must not go past the connector.

The lock of S.L. can be done manually by a regular force on the depress area.
Verify the good locking of pin terminal, in case of problem to lock the S.L.

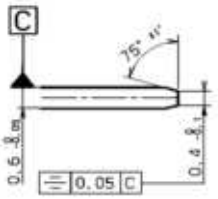
2.4. WIRING CONTROL FIXTURES

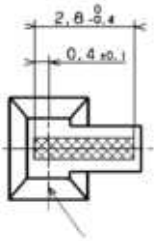
- Interface drawings : see chapter 1.2.
  Interfaces must be kept S.L. pre-locked.
  Don't use latch to lock housing on interface.

- Test counterparts must be in accordance with the receptacle housing guiding area as shown on interface drawing.

- **Receptacle housing**

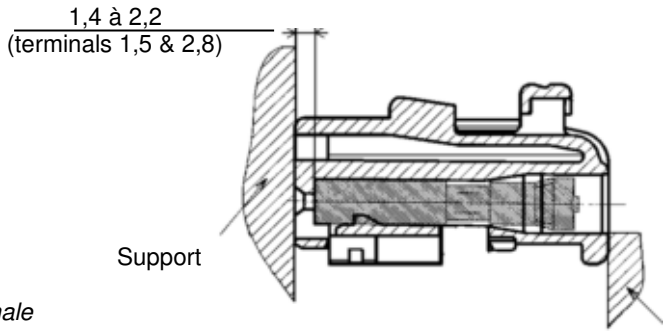
Probe definition





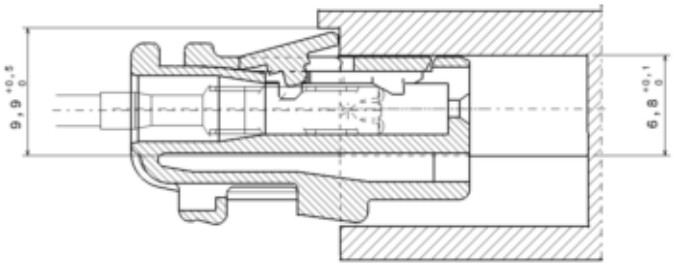
Axis cavity female connector

Probe deflection



Locking area

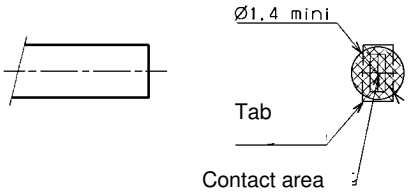
Compression force on receptacle housing : 20 N max.



To optimize the detection of unlocked terminals by the control fixtures, we suggest to add a shoulder (see the above drawing).

- ***Pin connector***

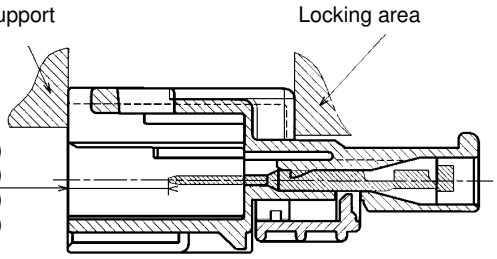
Probe definition



Probe deflection

Compression force on terminal : 10 N max

7,6 à 10,6 (lang 2,8 SICMA 3)
8,2 à 11,1 (lang 2,8 SICMA 2)
7,2 à 10,6 (lang 1,5 SICMA 3)
7,7 à 10,9 (lang 1,5 SICMA 2)



2.5. RECOMMENDATION FOR FINAL ASSEMBLY PLANT

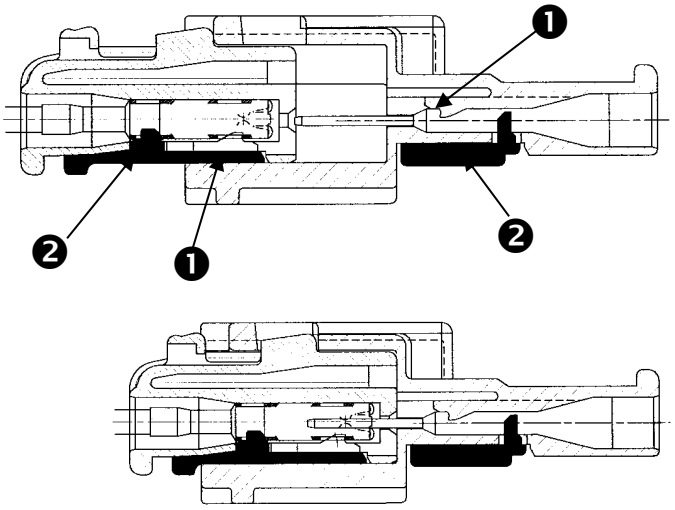
- Do not change the position slider during the assembly process
- The connector should not receive shock during the whole process
- Modify the slider position only on the header

2.6. SECONDARY LOCKING

Standard mating

❶ Terminals are locked by plastic latch.

❷ Secondary lock are locked : S.L. on the back of the contact's box. The detection system is removed and the mating is allowed.



Mated connectors

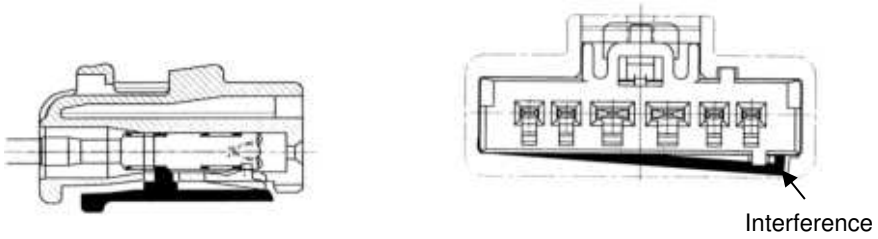
Mating with unlocked terminals and S.L.

An unlocked terminal by plastic latch forbids the locking of S.L. (interference with contact's box).

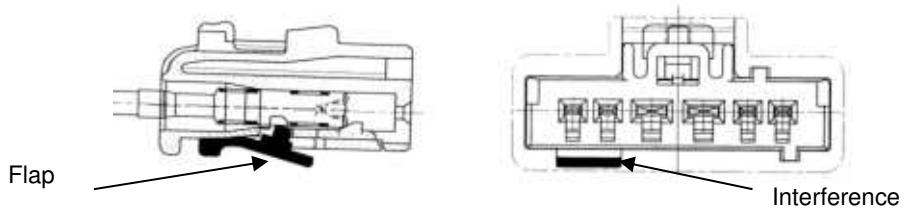
An unlocked S.L. forbids the mating receptacle/pin connector (no electrical contact).

Mating receptacle/pin connectors with unlocked receptacle terminal and S.L.

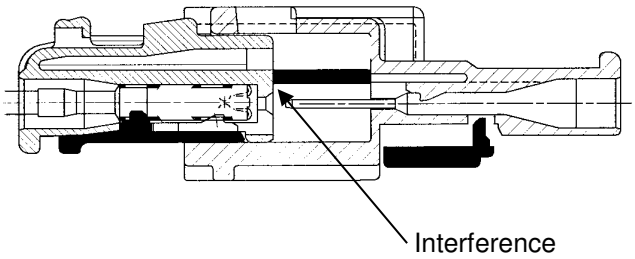
For all housings



6ckt only with flaps



Mating receptacle/pin connectors with unlocked pin terminal and S.L.



3. ELECTRICAL TEST - ELECTRICAL CONTINUITY CHECKING

FOR PROBE DEFINITION, SEE CHAPTER 2.4

Fixtures used for continuity testing must meet the row and the pitch dimensions (See Interface drawing, chapter 1.2).

Fixtures outside these requirements could result in damage to the connector and/or terminals.

Probe pin recommendations:

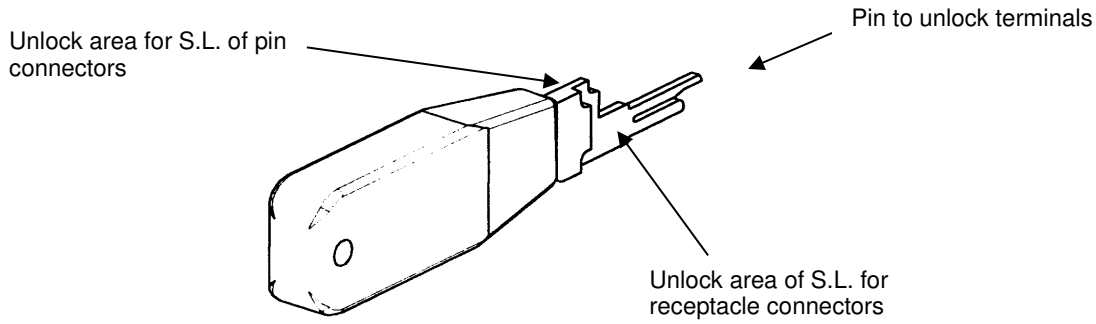
1. When testing the connector for continuity it is imperative that you do not damage the terminals.
2. Pogo pins should be checked for damage or sticking several times a shift. This should assure containment, if an issue is found.
3. First a visual inspection of all the pins for damage should be preformed.
4. As next a testing block should be used to depress all the pogo pins up into the barrel. If there is a bent or sticking pin, it should remain stuck in the barrel of the pogo pin. A damaged or stucked pin should be replaced before any additional testing is preformed.

Probing damage can occur:

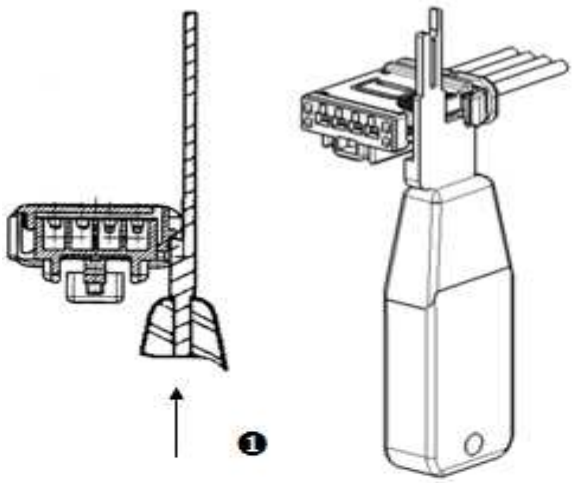
1. If a sharp ended probe is inserted into the contact of the terminal it may damage the plating and increase contact resistance.
2. If an oversized diameter probe is inserted into the terminal, this will overstress the beam in the terminal. This will create an environment for intermittent connections, and increased contact resistance.
3. If a probe is inserted into the connector on an angle or off center it may damage the terminal, and or the connector.

4. REWORK OPERATIONS.

Use MOLEX tool part number 63813-3800



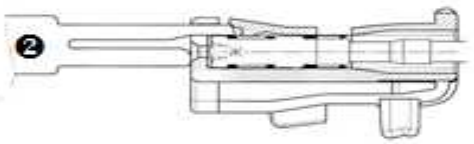
4.1. RECEPTACLE HOUSING REWORK

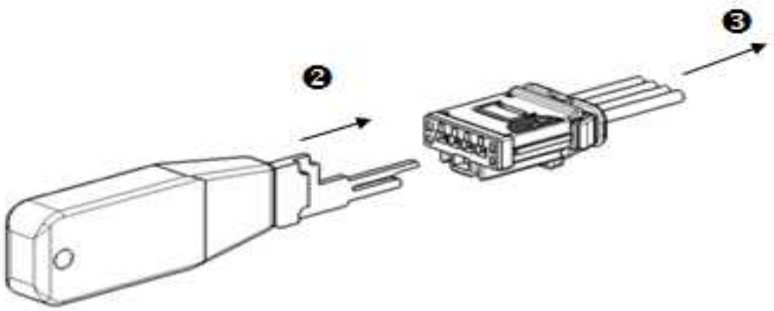


❶ Unlock S.L. on opposite side of the hinge.

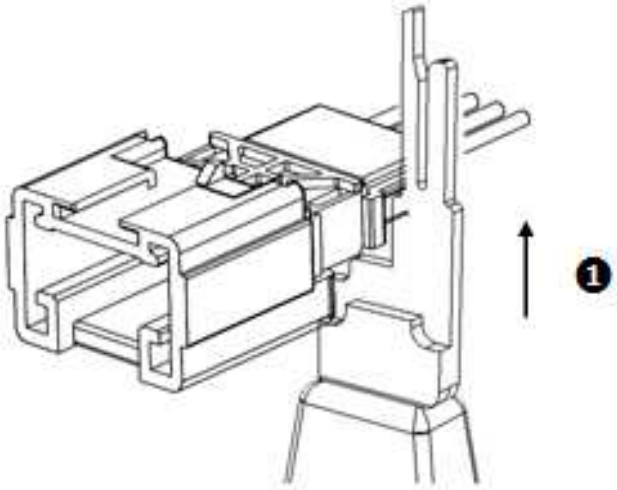
❷ Insert the tool to unlock the receptacle housing without pulling the wire.

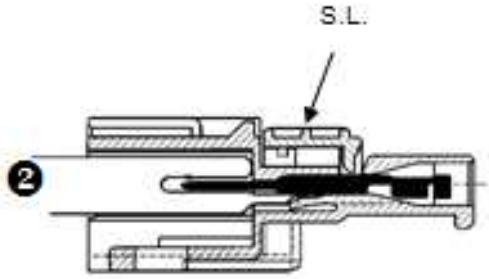
❸ Pull the wire to get it out of receptacle housing and hold the tool in position in the same time.

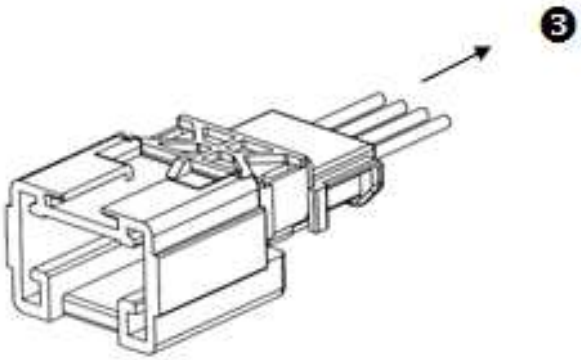


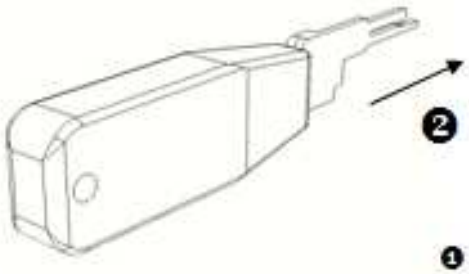


4.2. PIN CONNECTORS REWORK









❶ Unlock the SL on both sides of connector.

❷ Insert the tool to unlock terminal without pulling the wires.

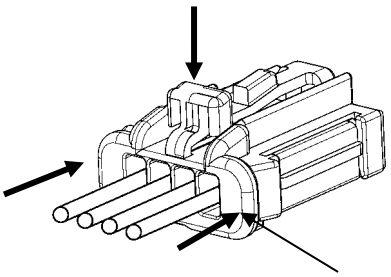
❸ Pull the wire to bring the tab out and hold the tool in position in the same time.

5. ASSEMBLY OPERATIONS ON VEHICLE

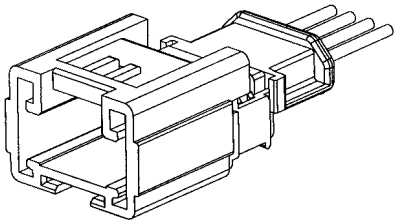
5.1. RECEPTACLE/PIN CONNECTOR MATING

Push on the back of the housing
Do not press plastic latch.

⚠ **Do not press on the plastic latch for the mating**

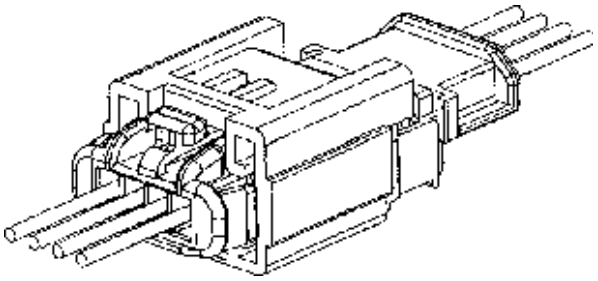


Receptacle housing



Pin connector

Stop area for the mating



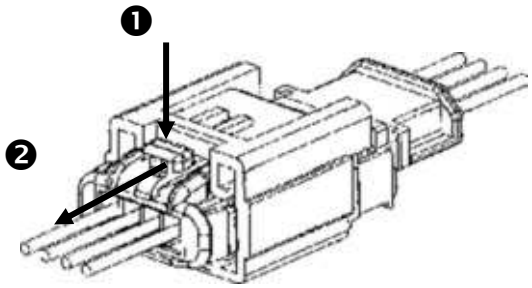
Mated connector

5.2. UNMATING OF ASSEMBLED CONNECTOR FROM THE MALE CONNECTOR OR HEADER

Press plastic latch and pull to unmate housings

Hold ❶ while ❷

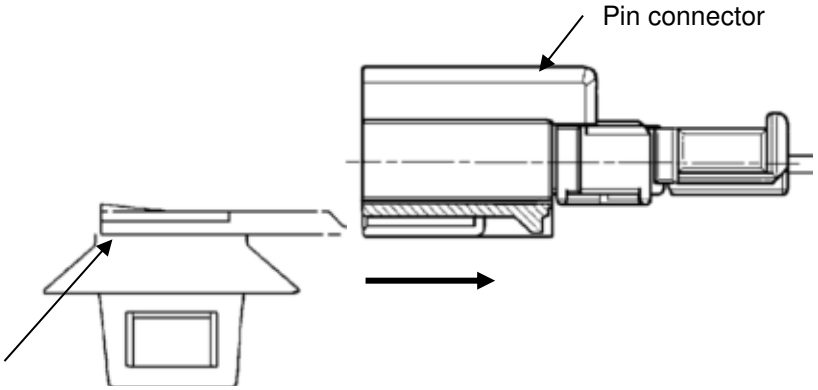
⚠ **DON'T PULL WIRES**



5.3. FIXING ON VEHICLE BODY

Clip-slot on vehicle is fixed on the pin connector as shown below. A "click" must be heard to inform the operation is correctly performed.

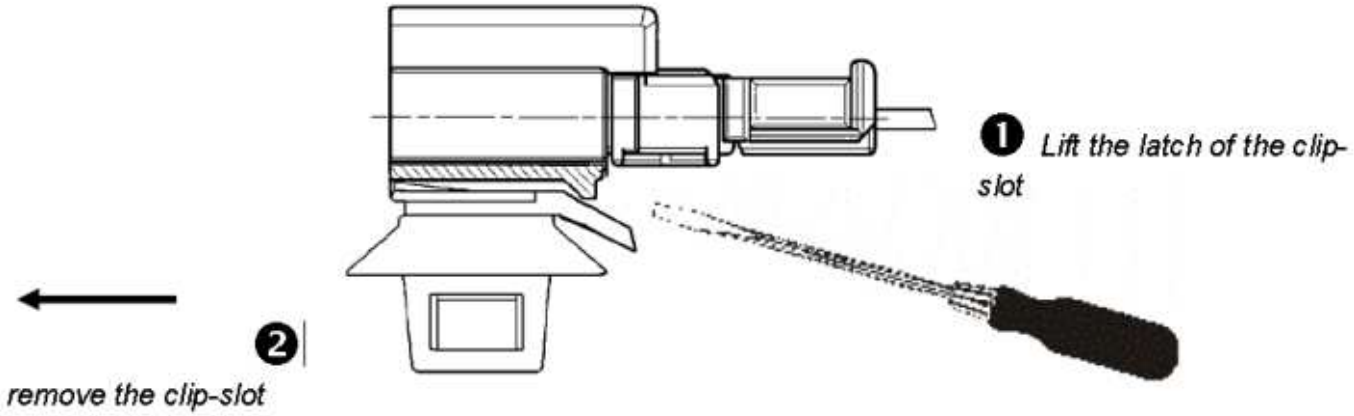
Clip-slot insertion and extraction should be done in the housing axis without any unnecessary strength on pin connector guides.
For example: do not mate the pin connector on pre-mounted Clip-slot to avoid that strength on the harness interferes on the operation.



Fixing system on vehicle body

98817, 98819, 98821, 98822, 98824 and 98825 series connectors are designed to accept clip-sots following PSA STE 9615326199 and RSA 7703077210 specifications. The use of other clip-slots, not compliant to these specifications, is not guaranteed by MOLEX.

To extract the Clip-slot from the pin connector, the Clip-slot latch must be slightly lifted with a screwdriver before separating both parts.



⚠ *Don't try to separate both parts without lifting clip-slot latch.*

6. PACKAGING

See packaging specification: cf. Chapter 1.2

7. STORAGE CONDITIONS

Applicable to all components without seal plug and single wire seal

Temperature: - 40°C up to + 85° C

Duration: 6 months maximum after shipment

Note: Do not use cutting tool to open the original package!

The connectors must be stored in their original package.

In the event of repacking at the wiring station, use only clean plastic box (metal box prohibited), this repacking must be carried out by batch where the number of connectors is less than or equal to that mentioned on the delivery boxes.

During storage and handling, no charge must damage original package.

The connectors and terminals are to be stored so that no shock can deteriorate their mechanical and electrical functions.

Do not store reels in a damp or dusty area.

Store reels in a dry and clean area.

The reels should be protected from direct sunlight.

After harness assembly, connector does not need specific protection. The harness maker must guarantee an appropriate protection regarding storage, transport and/or using conditions.