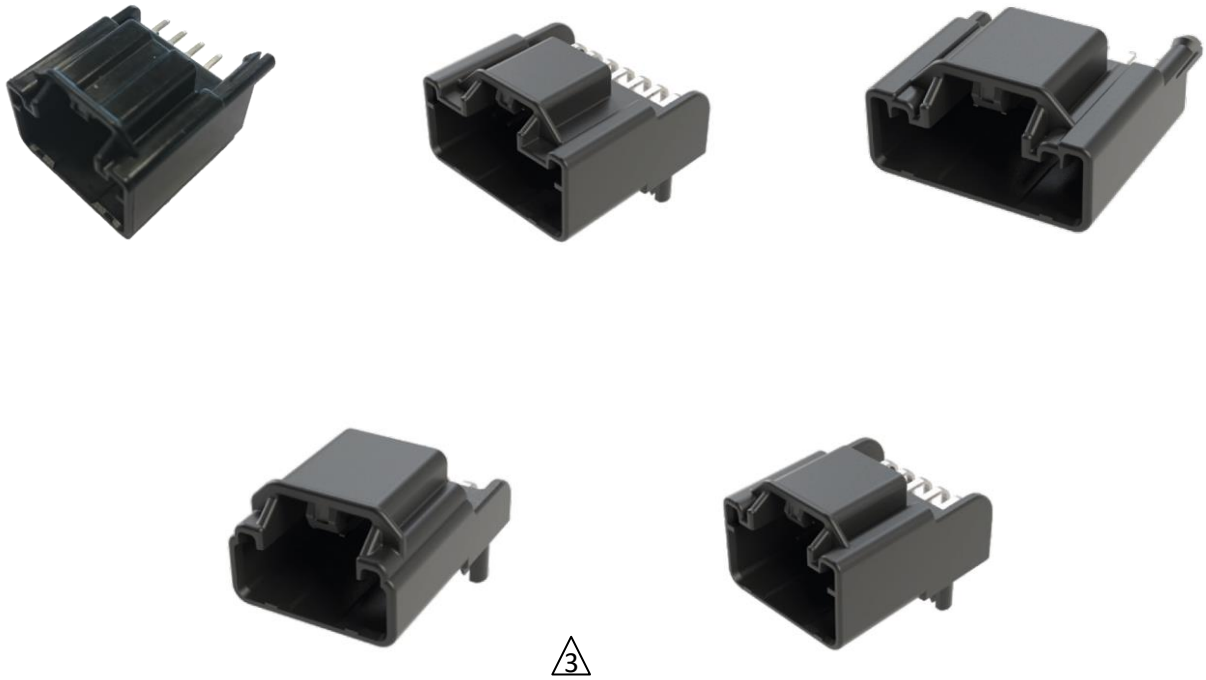
Handling Manual for

1.2 NWP SYSTEM HEADER FAMILY



Prepared	Sign	Checked	Sign	Approved	Sign		
P. Pavlovic		D.Vida		G. Greguric		YAZAKI	
Date: Digitally signed by Petar Pavlovic Date: 2023.11.13 11:54:55 +01'00'		Date	Digitally signed by Dragutin Vida Date: 2023.11.13 12:10:34 +01'00'	Date	Goran Greguric 2023.11.13 12:57:44 +01'00'	Doc.No. YPES-15-1813	Rev. 3

Table of Contents

1 Revision list

REVISION	DESCRIPTION	NAME	DATE
0	New	J. Vlahovic	15.06.2018.
1	Added parts	J. Vlahovic	28.09.2020.
2	Added parts	J. Vlahovic	07.09.2021.
3	Added parts	P. Pavlovic	13.11.2023.

2 Product Overview

This handling manual is a guideline for the YAZAKI 1.2 NWP system connector PCB header family. The headers are designed for signal current applications and used as an electrical connection between the female connector and PCB. This header family contains of 180° and 90° headers.

2.1 Product requirements

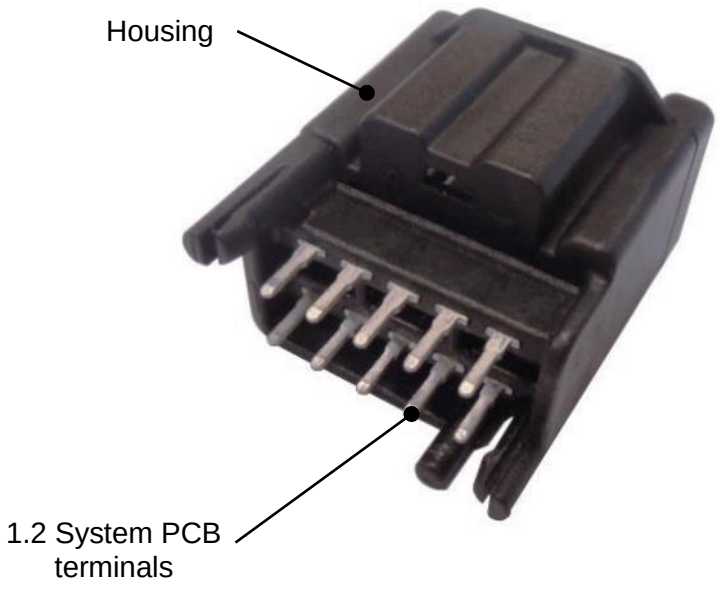
Required properties are described in following table.

Temperature class	T2 (-40°C to +100°C)
Vibration class	V1
Sealing class	S0 (Unsealed)

* According to PSA specification: B21 7050 Rev D - Connectors general requirements, dated March 2016

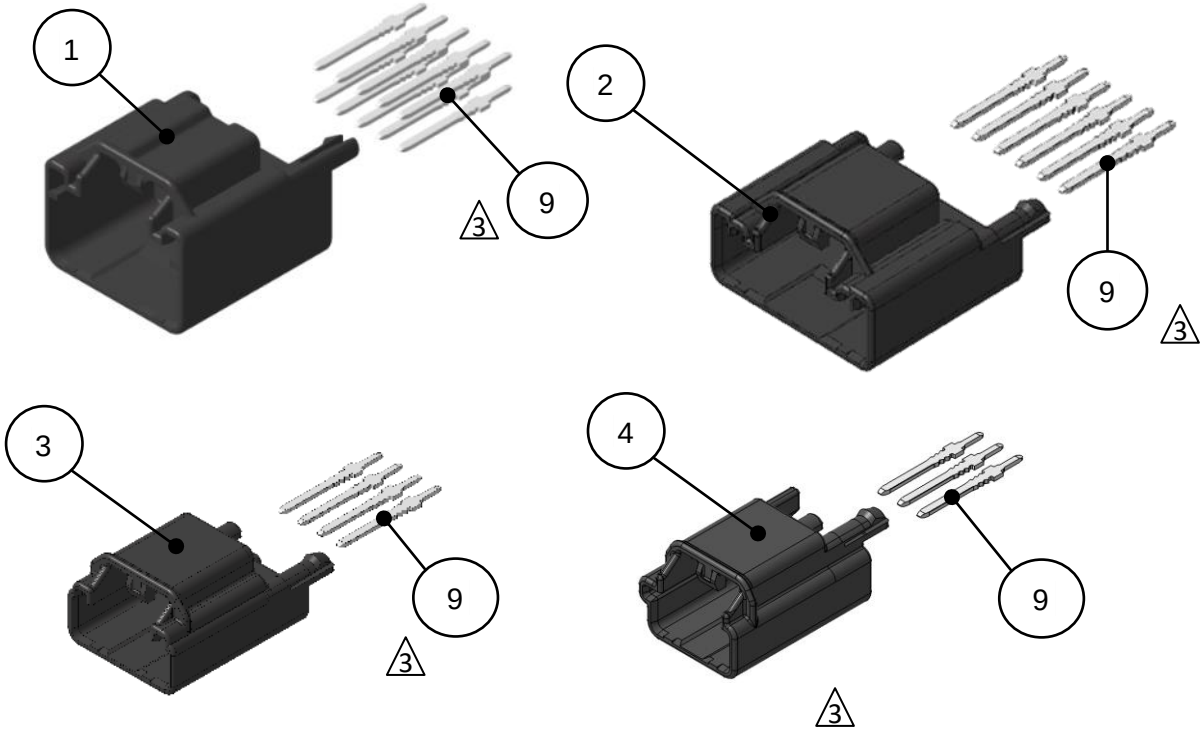
2.2 Delivery Condition

The picture below shows the delivery condition of two different types of header, 90° and 180°. The product is assembly delivered as housing with stitched 1.2 System PCB terminals.



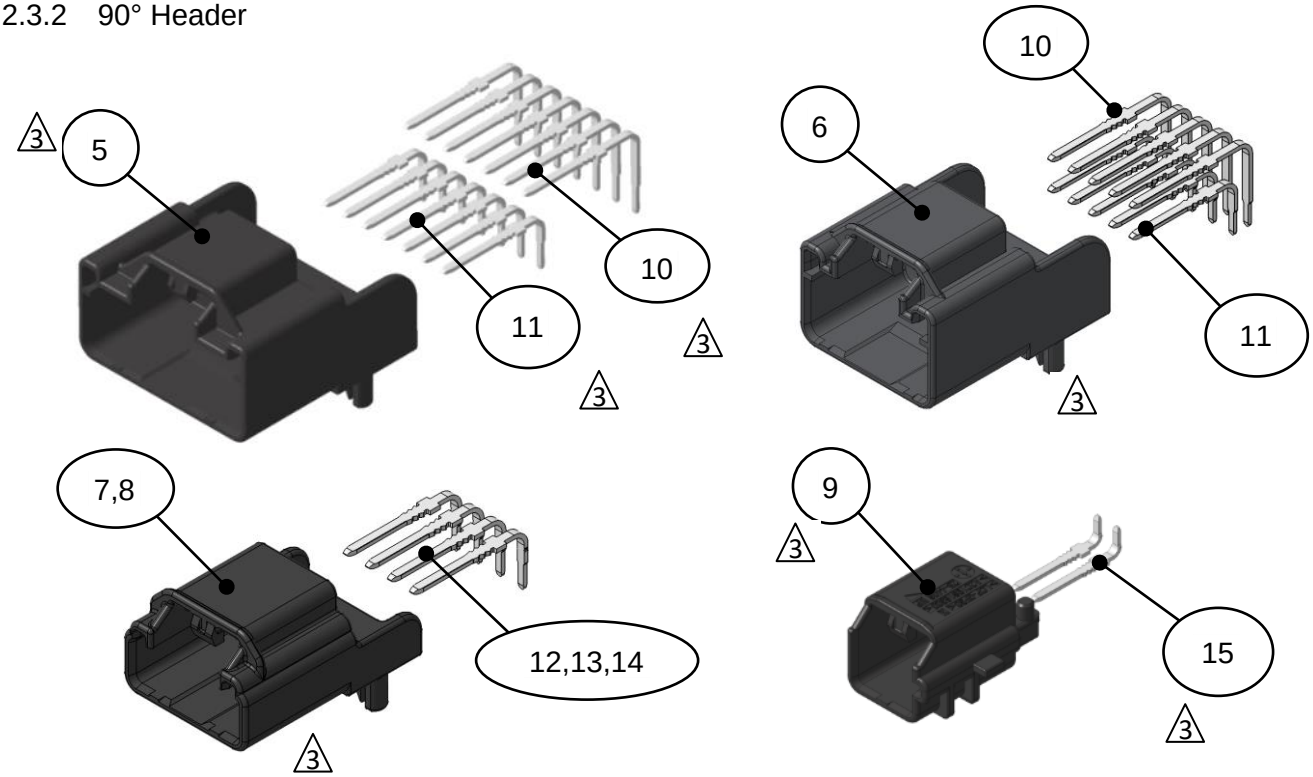
2.3 Exploded View

2.3.1 180° Header



*For part numbers please see table in chapter 2.4

2.3.2 90° Header



*For part numbers please see table in chapter 2.4

2.4 Bill of Material for complete header family

The following table summarizes the materials of individual parts.

No	DESCRIPTION	NUMBER OF POL	YAZAKI PART NUMBER - HOUSING	MATERIAL	COLOR/ PLATING
1	Header housing 180°	10	7188-8945-30	PA6T/6I/66 HI-GF16	Black
			7188-8946-60		Green
			7188-8947-90		Blue
			7188-8948-80		Brown
2		6	7125-4370-30		Black
			7125-4371-60		Green
			7125-4372-90		Blue
			7125-4373-80		Brown
			7125-4374-20		Purple
3		4	7125-4366-30		Black
			7125-4367-60		Green
			7125-4368-90		Blue
			7125-4369-80		Brown
			7125-4365-20		Purple
4		⚠3 3	7125-4446-30		Black
			7125-4442-60		Green
			7125-4443-90		Blue
			7125-4444-80		Brown
			7125-4445-20		Purple
5	Header housing 90°	14	7125-4172-30	PA6T/6I/66 HI-GF16	Black
			7125-4173-60		Green
			7125-4174-90		Blue
			7125-4175-80		Brown
			7125-4176-20		Purple
			7125-4408-30		Black
6		10	7197-6802-30		Black
			7197-6804-60		Green
			7197-6805-90		Blue
			7197-6806-80		Brown
			7197-6811-20		Purple
7		4	7125-4360-30		Black
			7125-4361-60		Green
			7125-4362-90		Blue
			7125-4364-80		Brown
			7125-4359-20		Purple
			7125-4360-30		Black
			7125-4361-60		Green
			7125-4362-90		Blue
			7125-4374-80		Brown
			7125-4359-20		Purple
8		4	7125-4407-30	LCP-GF30	Black
9		2	7125-4406-30		Black

10	1.2 System PCB terminal		7125-1500-02	CuNiSi R520	Sn
11			7125-1522-02		Sn
12			7125-1523-02		Sn
13			7125-1523-08		Au
14			7125-1519-02		Sn
15			7125-1638-02		Sn

The following table summarizes assemblies with consistent terminals.

No	DESCRIPTION	NUMBER OF POL	YAZAKI PART NUMBER - ASSEMBLY	YAZAKI PART NUMBER - HOUSING	ASSEMBLED PARTS					
					TERMINALS					
					7125-1500-02	7125-1522-02	7125-1523-02	7125-1523-08	7125-1638-02	7125-1519-02
1	Header 180°	10	7288-8945-30	7188-8945-30	10					
			7288-8946-60	7188-8946-60	10					
			7288-8947-90	7188-8947-90	10					
			7288-8948-80	7188-8948-80	10					
		6	7225-4370-30	7125-4370-30	6					
			7225-4371-60	7125-4371-60	6					
			7225-4372-90	7125-4372-90	6					
			7225-4373-80	7125-4373-80	6					
			7225-4374-20	7125-4374-20	6					
		4	7225-4366-30	7125-4366-30	4					
			7225-4367-60	7125-4367-60	4					
			7225-4368-90	7125-4368-90	4					
			7225-4369-80	7125-4369-80	4					
			7225-4365-20	7125-4365-20	4					
		⚠3 3	7225-4446-30	7125-4446-30	3					
			7225-4442-60	7125-4442-60	3					
			7225-4443-90	7125-4443-90	3					
			7225-4444-80	7125-4444-80	3					
			7225-4445-20	7125-4445-20	3					
2	Header 90°	14	7225-4172-30	7125-4172-30		7	7			
			7225-4173-60	7125-4173-60		7	7			
			7225-4174-90	7125-4174-90		7	7			
			7225-4175-80	7125-4175-80		7	7			
			7225-4176-20	7125-4176-20		7	7			
			7225-4408-30	7125-4408-30		7	7			
		10	7297-6802-30	7197-6802-30		5	5			
			7297-6804-60	7197-6804-60		5	5			
			7297-6805-90	7197-6805-90		5	5			
			7297-6806-80	7197-6806-80		5	5			
			7297-6811-20	7197-6811-20		5	5			
		4	7225-4360-30	7125-4360-30			4			
			7225-4361-60	7125-4361-60			4			
			7225-4362-90	7125-4362-90			4			
			7225-4363-90	7125-4362-90			2			
			7225-4364-80	7125-4364-80			4			
			7225-4359-20	7125-4359-20			4			
			7225-4395-30	7125-4360-30				4		
			7225-4396-60	7125-4361-60				4		
			7225-4397-90	7125-4362-90				4		
			7225-4399-90	7125-4362-90				2		
			7225-4398-80	7125-4364-80				4		
			7225-4394-20	7125-4359-20				4		
			7225-4407-30	7125-4407-30			4			
										4
		2	7225-4406-30	7125-4406-30					2	

2.5 Coding overview

Within family there are two ways of code definition. Codes defined by coding ribs and codes defined by coding slots.

2.5.1 Coding ribs

Headers with coding ribs based on:

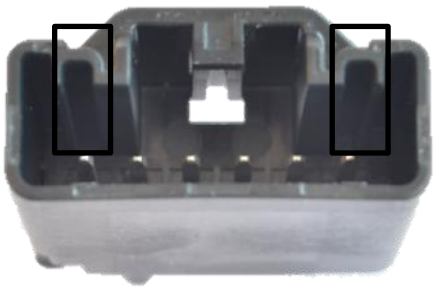
- 10P Interface
- 14P Interface

Example of parts with coding ribs

1.2 NWP System Connector 10P PCB(H) 180° Assembly			
VIEW	**CODE**	**COLOR**	**YAZAKI PART NUMBER**
	A	Black	7288-8945-30
	B	Green	7288-8946-60
	C	Blue	7288-8947-90
	D	Brown	7288-8948-80

2.5.2 Coding slots

Coding slots



Headers with coding slots based on:

- 2P Interface
- 3P Interface ⚠3
- 4P Interface
- 6P Interface

Example of parts with coding slots

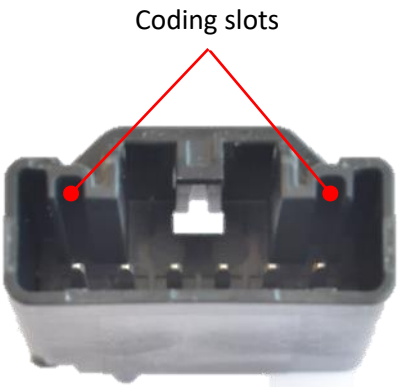
1.2 NWP System Connector 6P PCB Header 180° Assembly			
VIEW	**CODE**	**COLOR**	**YAZAKI PART NUMBER**
	A	Black	7225-4370-30
	B	Green	7225-4371-60
	C	Blue	7225-4372-90
	D	Brown	7225-4373-80
	0	Purple	7225-4374-20

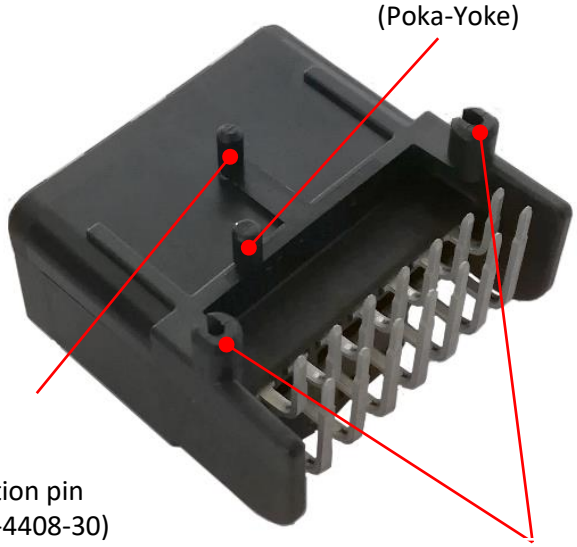
For definition of header delivery conditions as well as color marking see list of YAZAKI customer drawings in chapter 2.7.1.

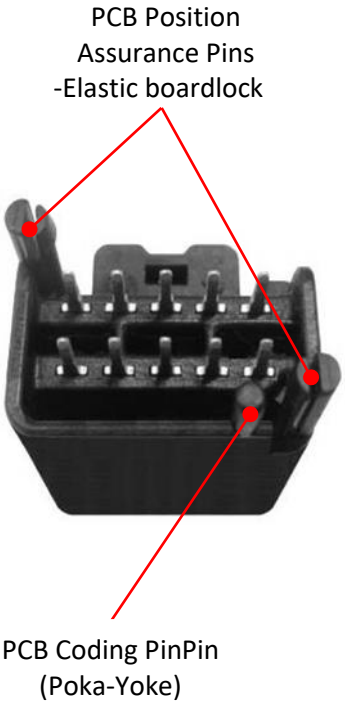
2.6 Features and functions of components

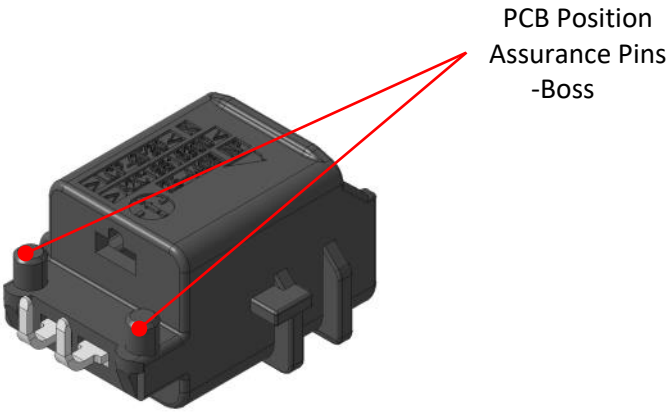
2.6.1 Header assembly

The figures below are showing main features of the headers within this header family. Below are mentioned all features with corresponding descriptions/functions (see table).



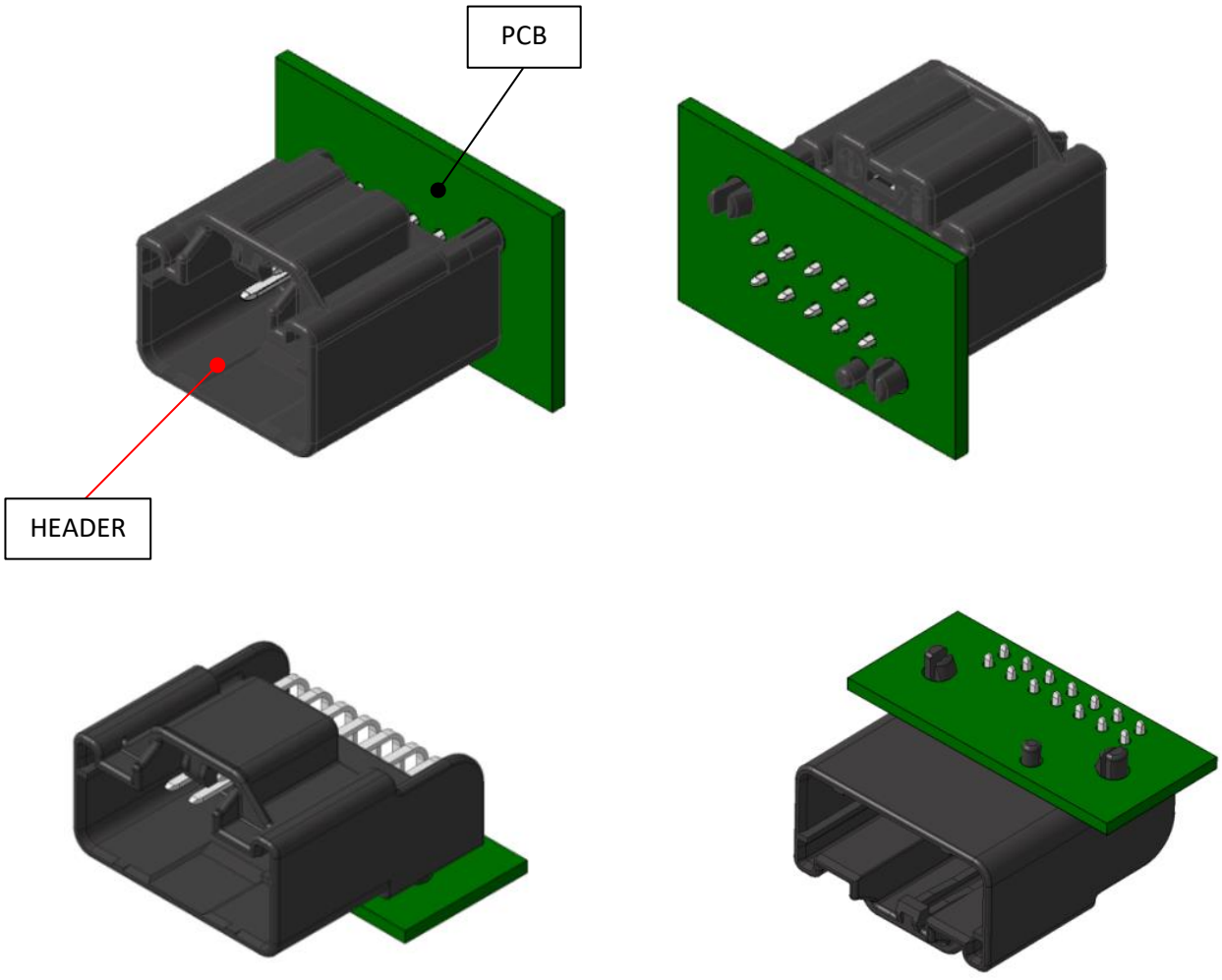






FEATURE		DESCRIPTION / FUNCTION
Locking hook		When female connector is fully mated, its locking arm hooks on header's locking hook. In this way they are locked together.
Coding (polarization)	Ribs	During mating process, coding ribs of Header have to get into the coding slots of female connector. This prevents miss orientation during mating process and makes it impossible to use female connector with wrong code.
	Slots	During mating process, coding ribs of female connector have to get into the coding slots of Header. This prevents miss orientation during mating process and makes it impossible to use female connector with wrong code.
PCB Position assurance pins	Elastic boardlock	PCB position assurance pins are used as guides who enter into the PCB holes and hold header in position before soldering. They will as well decrease possible terminal damages as forces applied on PCB plate are not transferred directly to the terminals.
	Boss	
PCB Coding Pin (Poka-Yoke)		Function of PCB coding pin is to ensure that wrong Header cannot be mounted on the PCB plate.
Stabilization pin		Stabilize pick and place mating process between header and PCB (only 7225-4408-30).

2.6.2 Header mounted on the PCB



2.7 Associated documents

2.7.1 Customer drawings

The dimensions and materials are shown in the YAZAKI Reference drawings:

10P Header 180° - 7288-8945-30:R

6P Header 180° - 7225-4370-30:R

4P Header 180° - 7225-4366-30:R

△3 3P Header 180° - 7225-4446-30:R

14P Header 90° - 7225-4172-30:R

14P Header 90° - 7225-4408-30:BV

10P Header 90° - 7297-6802-30:R

4P Header 90° - 7225-4360-30:R

4P Header 90° - 7225-4407-30:CT

2P Header 90° - 7225-4406-30:CT

3 Handling of components

3.1 Inspection of received items

- Check appropriate part number
- Visual check-parts must be free of foreign objects or inappropriate products
- Parts must be free of cracks, deformation, or other apparent abnormalities.

3.2 Header storage and transportation

- Ensure that the products are not subjected to any external stress or harsh impact during storage and transportation.
- The product should be stored inside, in a clear dry atmosphere, away from direct sunlight.
- Do not store them without packing tray covered with a box or plastic bag. They should be protected especially from water, oil and dust.

3.3 Storage conditions

3.3.1 Material: PA6T/6I/66-HI-GF16

STORAGE CONDITIONS	
Storage time	6 months
Storage temperature	+10°C to +35°C
Relative Humidity	10 to 75%

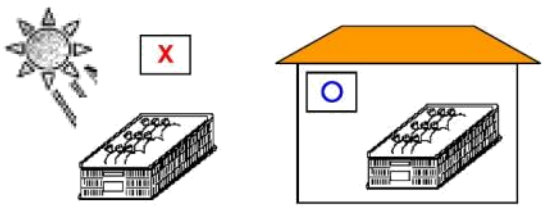
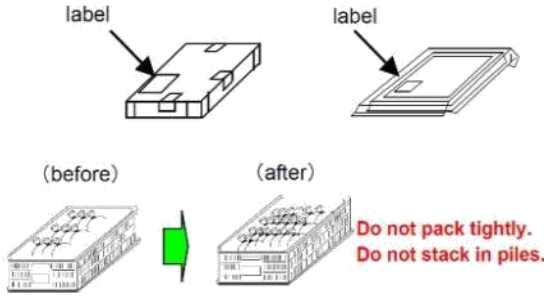
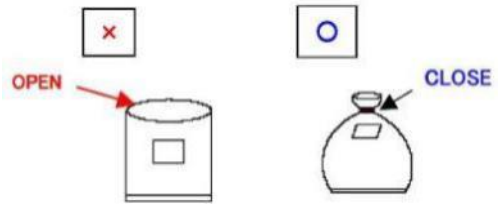
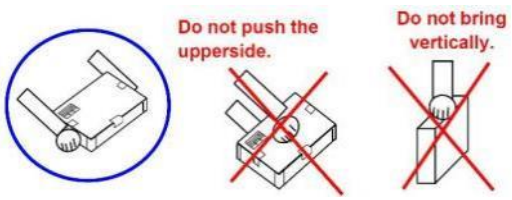
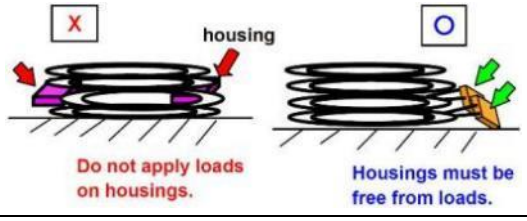
REMARK: If storage time is exceeded parts must be dried before soldering.

3.3.2 LCP-GF30

STORAGE CONDITIONS	
Storage time	12 months
Storage temperature	+10°C to +30°C
Relative Humidity	≤85%

REMARK: If storage time is exceeded parts must be dried before soldering.

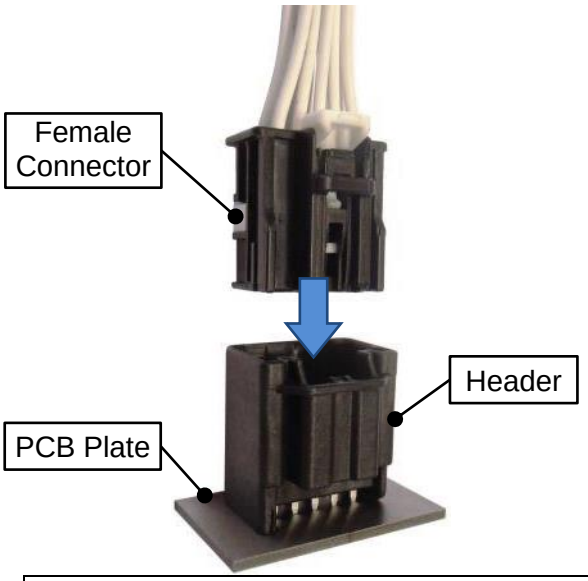
3.4 Handling and storage of header

No.	CONTROL PROCESS	ILLUSTRATION	INFLUENCE ON QUALITY
1	1) Please store plastic and carton cases used for housing storage at room temperature, avoiding moisture and direct sunlight. 2) Please equalize housing temperature with room temperature.		1) There are risks of breakage and discoloration due to housing material degradation. 2) There are risks of damage on lance, hinge and breakage of lock or other problems.
2	1) Please turn the label on packages upward during storage. 2) Please do not apply pressure to housings in bag packages during storage. Please do not replace plastic cases and carton boxes with storage boxes.		There are risks of incorrect position of child parts, deformation or other problems.
3	When carrying housings, please pay attention in order to avoid damage or impact to the products.		There are risks of deformation, breakage, incorrect position of child parts or loss of parts.
4	Please put a cover or close the bag to prevent dust accumulation.		There is a risk of contact defect due to adherence of dust. There is also a possibility of a sealing defect.
5	When carrying housings, please hold the underside of the container with both hands. Do not position the box vertically and not push the upper side of the box.		There are risks of deformation, damage or loss of parts.
6	Please store your products in a way that does not apply a load on housings.		There are risks of deformation due to the pressure from the weight and risks of breakage due to shock.

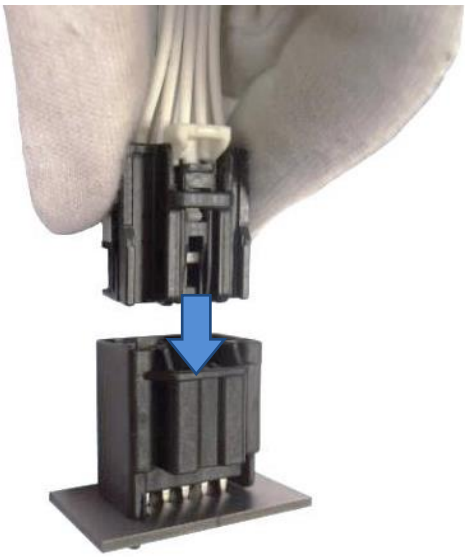
4 Assembly on the car maker's line

4.1 Mating of female connector with header

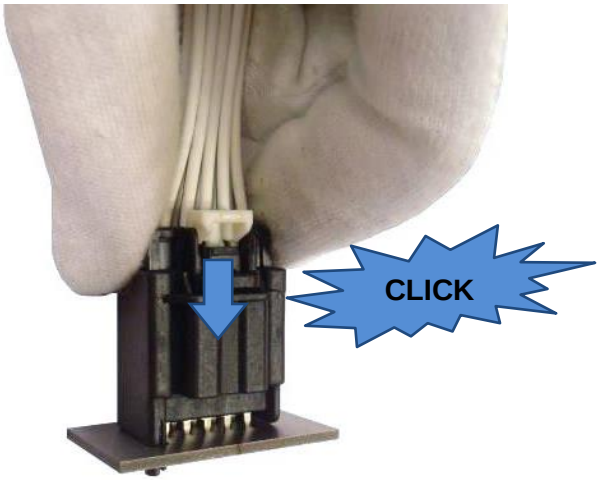
The pictures below are step by step showing mating process of female connector on header.



Blue arrow indicates mating direction. Before insertion, female connector must be filled with appropriate terminals. Header is soldered to PCB plate.



As shown on figure above, position the female connector in-line with header and push it in mating direction.



The female connector is being pushed until you hear a noticeable "CLICK" sound. Afterwards, pull the female connector slightly to check the secure locking.

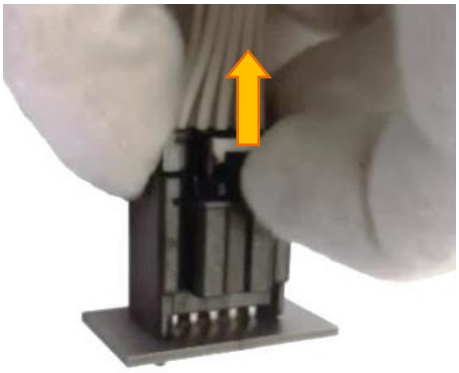
Finally, as shown on figure above, secure the locking by pressing the CPA (Connector Assurance Position) forward, until you hear a noticeable "CLICK" sound.

Precautions:

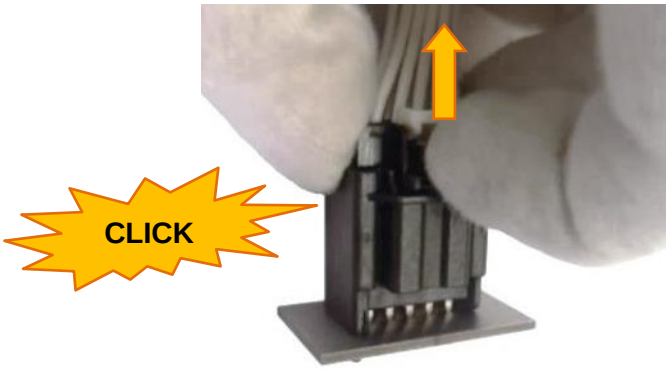
- If connector cannot be mated smoothly stop mating and check all included parts.
- Do not wrench when mating the connector.
- Do not mate by pushing the locking of the housing.

4.2 Unmating of female connector from header

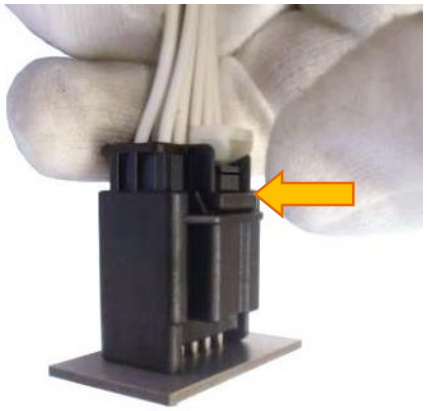
The following pictures are showing step by step unmating process of female connector from header.



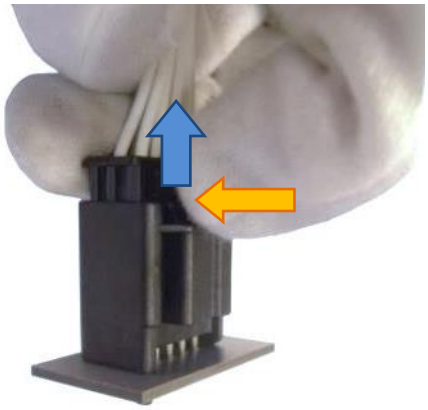
To unmate female connector from ceader, first disable the CPA by pulling it backward as shown on figure above.



The CPA is disabled when you hear a “CLICK” sound.



Now, in order to start removing female connector from header, first press the locking arm with your finger tip (see figure above).



While the locking arm is being pressed, pull the female connector opposite to mating direction.

Finally, pull female connector out of header as shown on figure.

Precautions:

- To avoid damages do not unmate connector by pulling the wires.

5 Service

5.1 Serviceable parts

There are no serviceable parts on the Header.

6 PCB thickness and soldering temperature

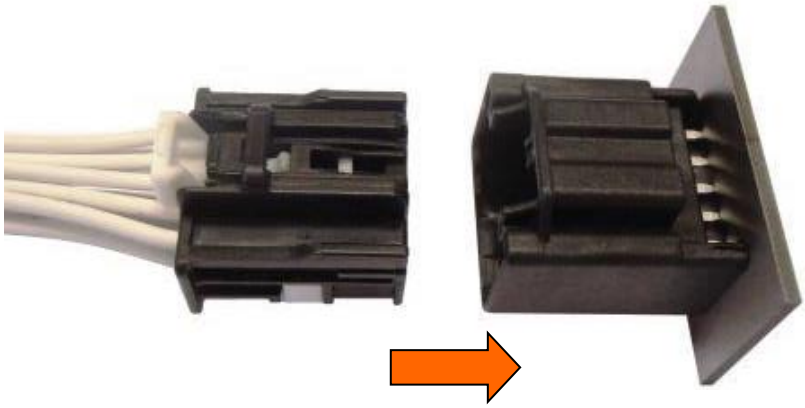
Thickness of the PCB which should be used is 1.6 ± 0.15 mm.

Soldering process to be applied is reflow soldering at the temperature of 260°C.

7 Appendix

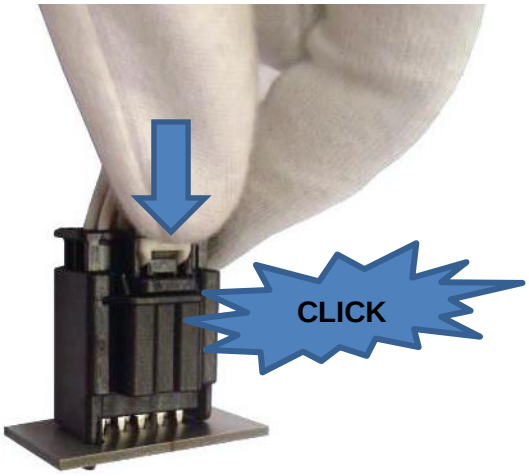
7.1 Mating of the Header with female connector

Position of female connector in line with header



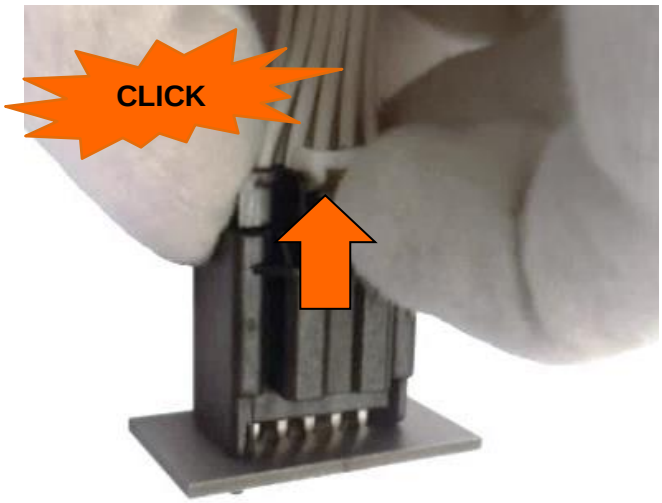
Insertion direction

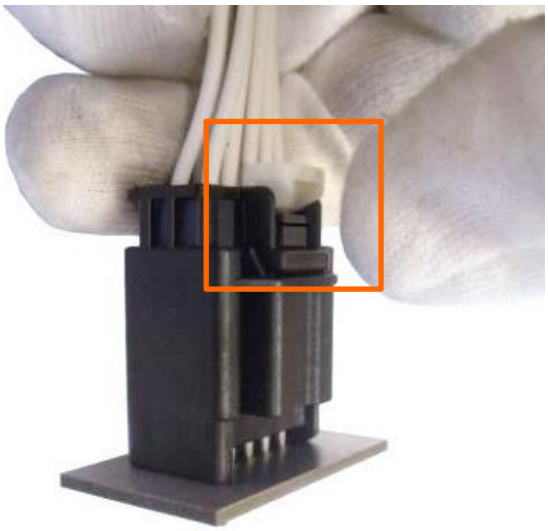
Push the connector until an audible “CLICK” sound is heard.
Push the CPA until click sound is heard.



7.2 Unmating of the female connector from the interface

Unlock the CPA.
Pull the CPA in arrow direction to preset position.





Pull the female connector in arrow direction while the lock is pressed.