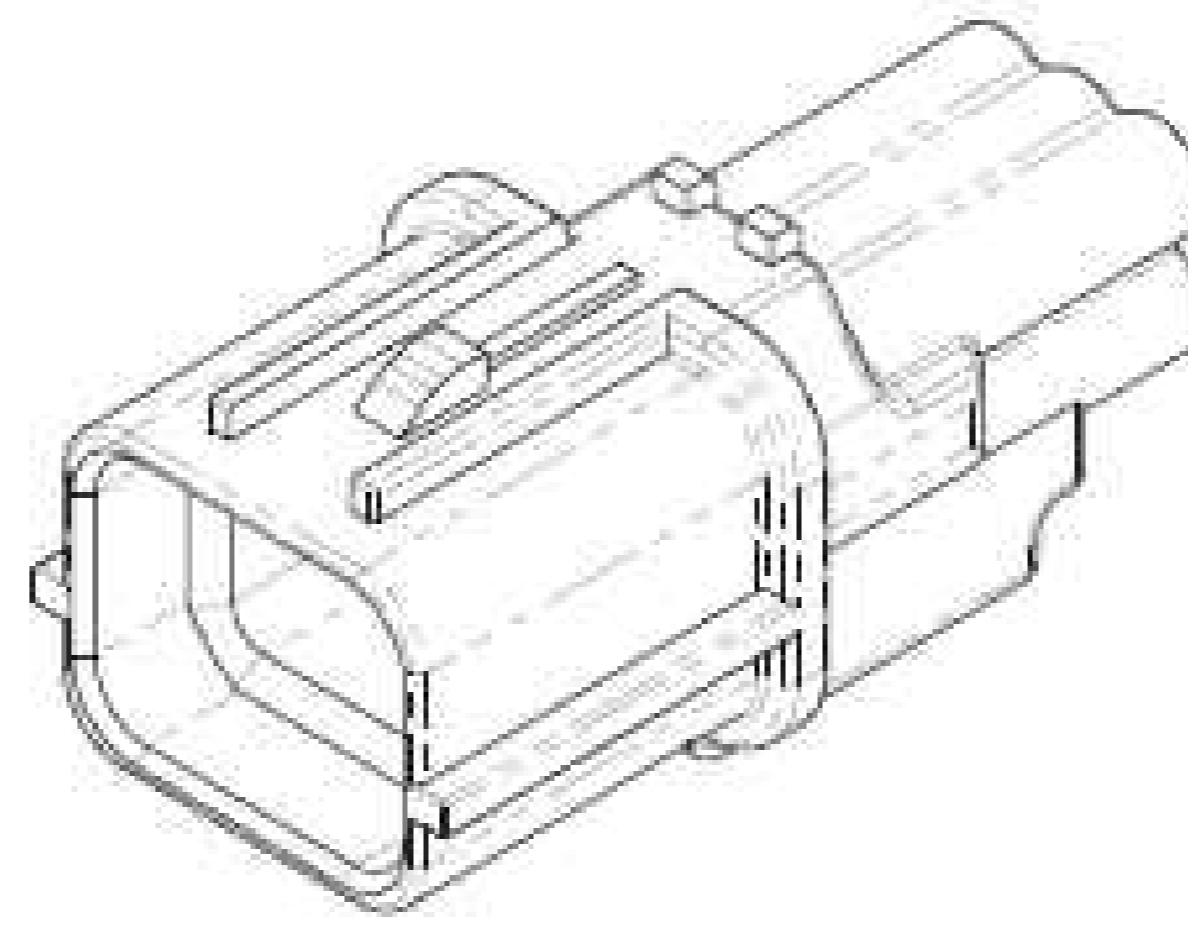
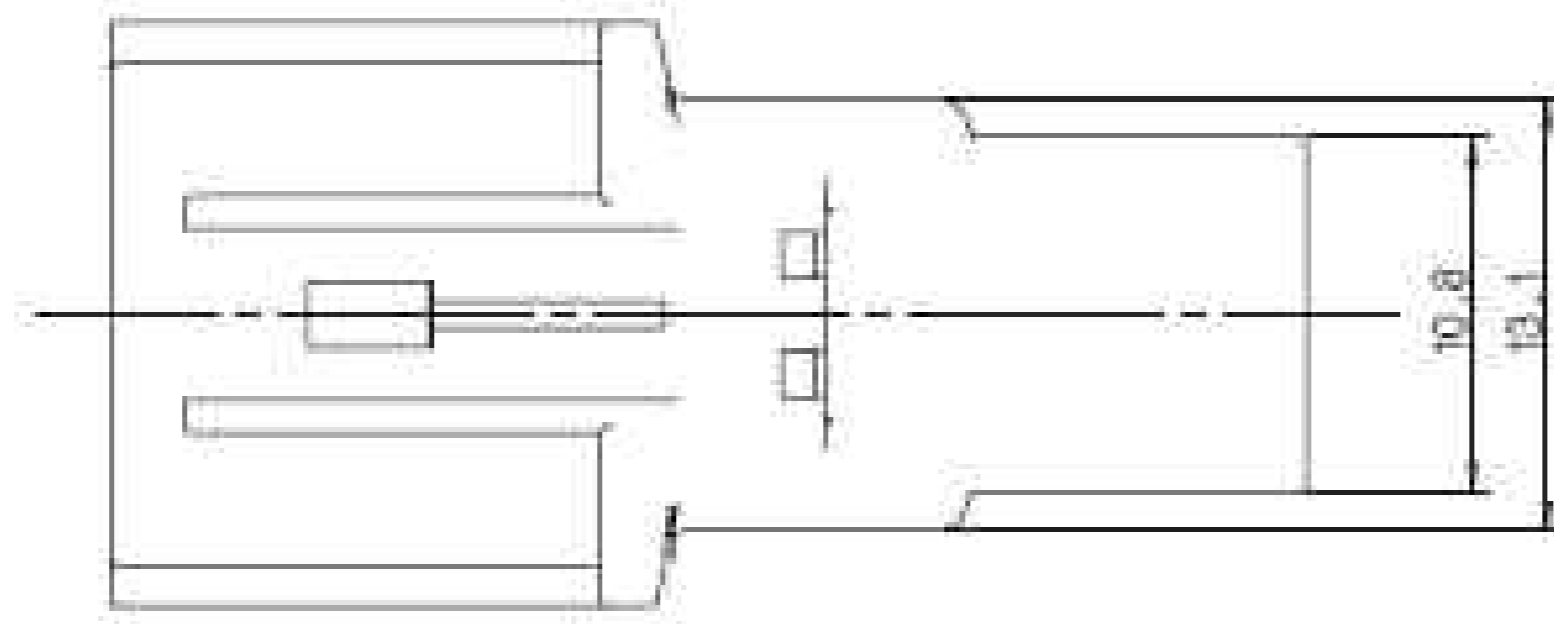


CUSTOMER DRAWING

①②③④⑤⑥ TWPO6M



ISO VIEW

- 주 기 -

1. 사용상 유해한 흠, BURR등이 없을 것.
2. 명시되지 않은 공차는 일반공차에 준할 것.
3. CAV. No. 및 MARKING은 당사규격에 준하여 각인할 것.

4. ASSY 부품

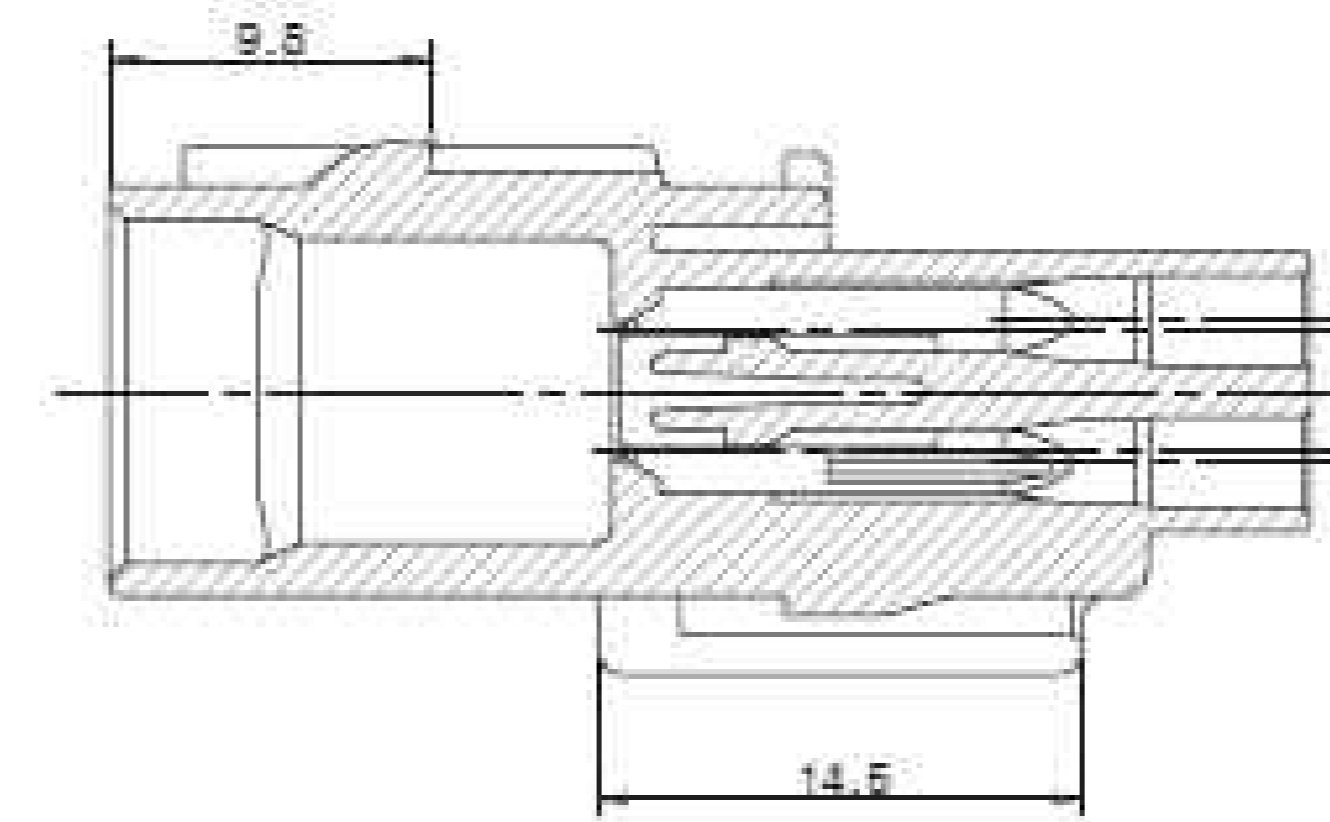
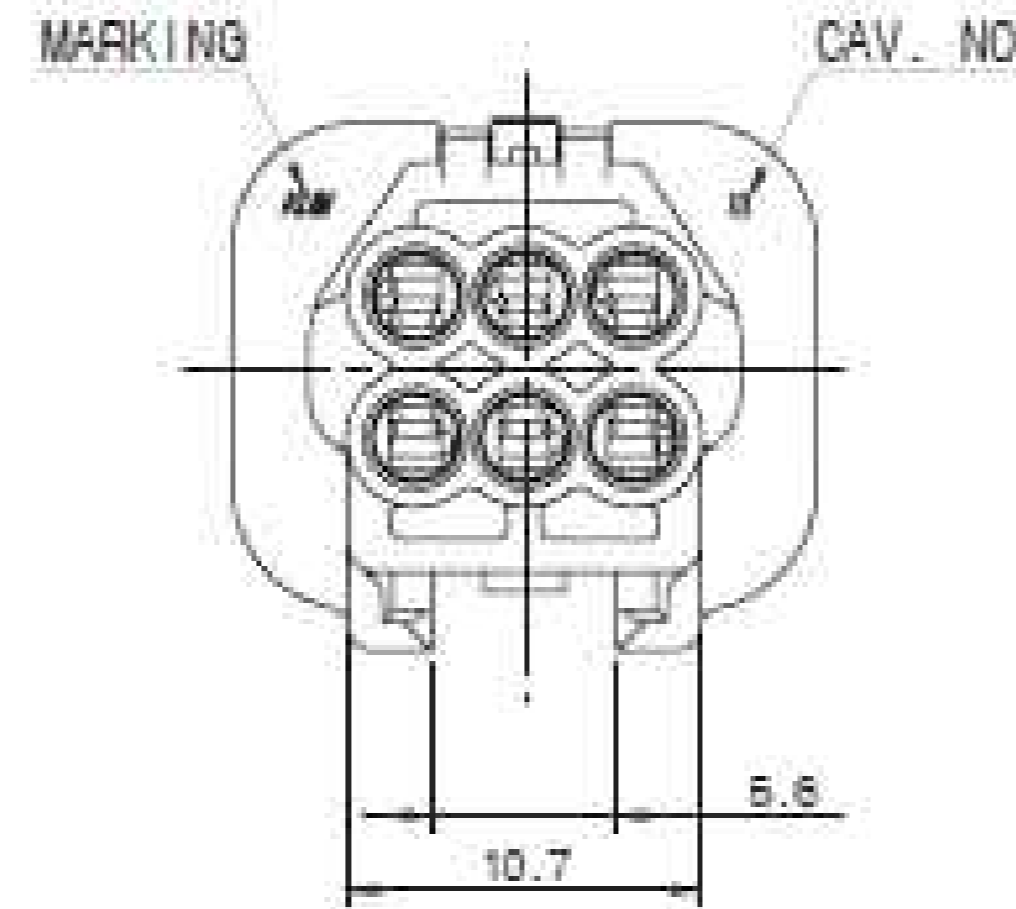
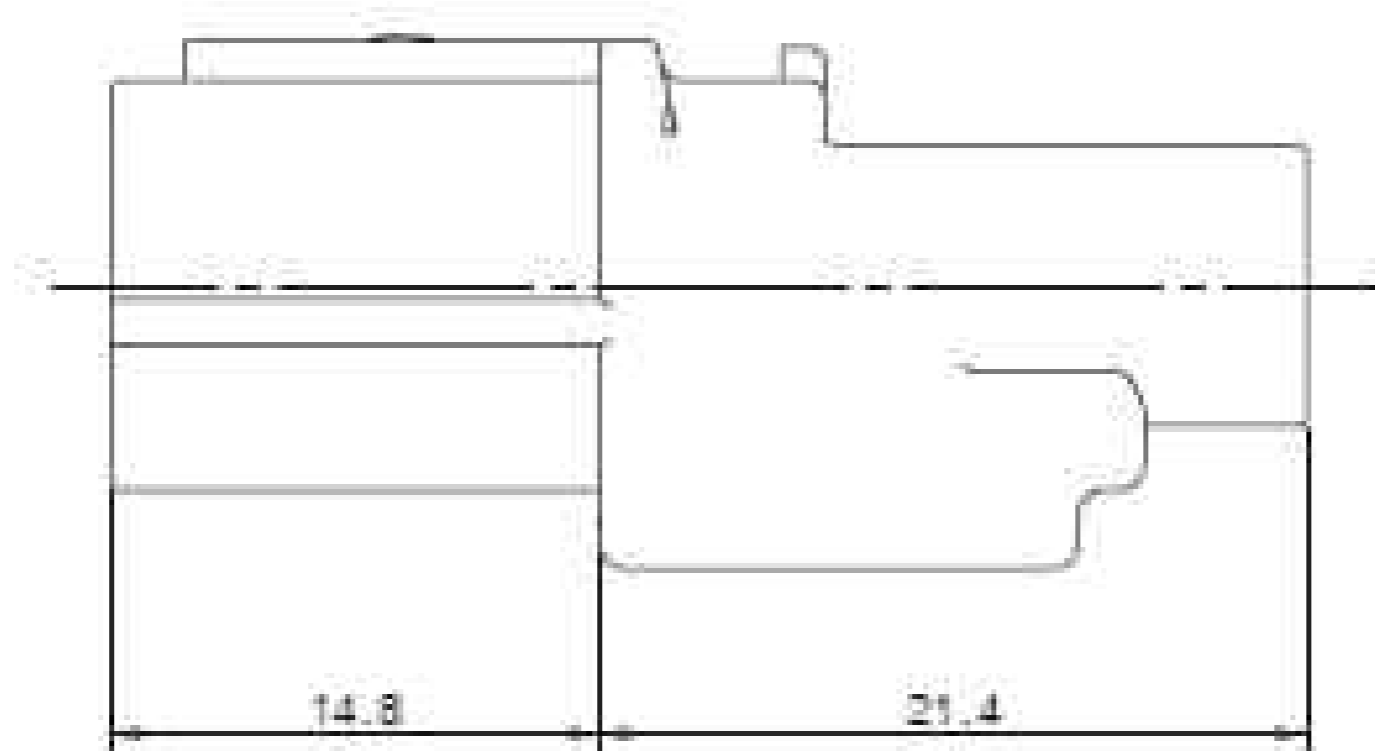
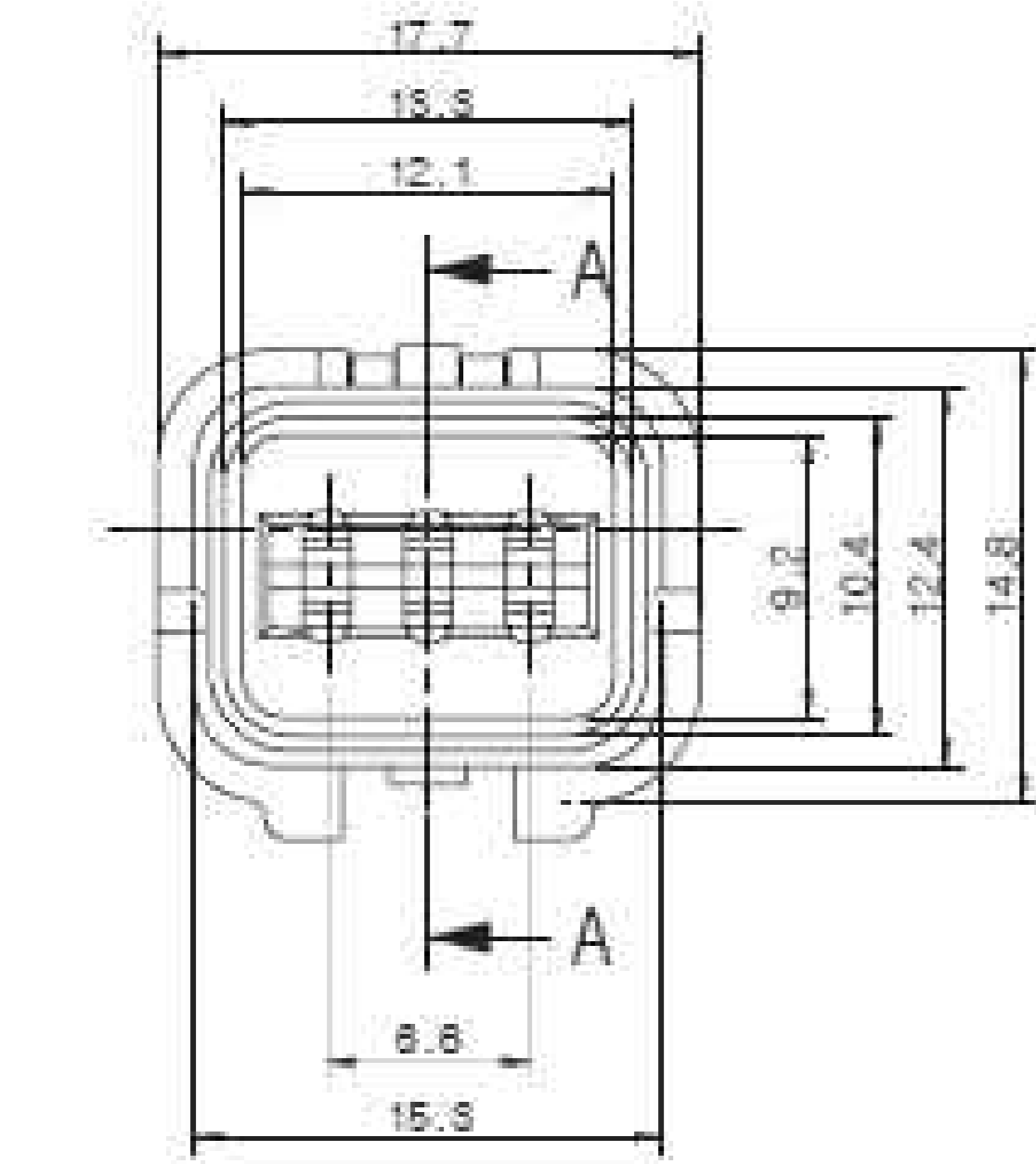
- 1) FRONT HOLDER: HP291-06040
- 2) TERMINAL

적용 권선(SQ)	PART NAME	PART NO.
AESSXF 0.22	TWP-M-SS	TP101-00400
AESSXF 0.3-0.6	TWP-M-S	TP101-00100
AESSXF 0.22	TWP-M-SS-Au	TP101-00410
AESSXF 0.3-0.6	TWP-M-S-Au	TP101-00110

5) WIRE SEAL

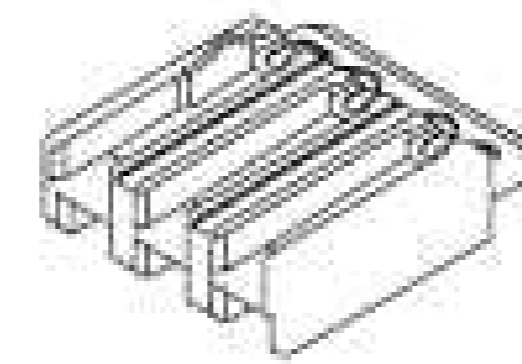
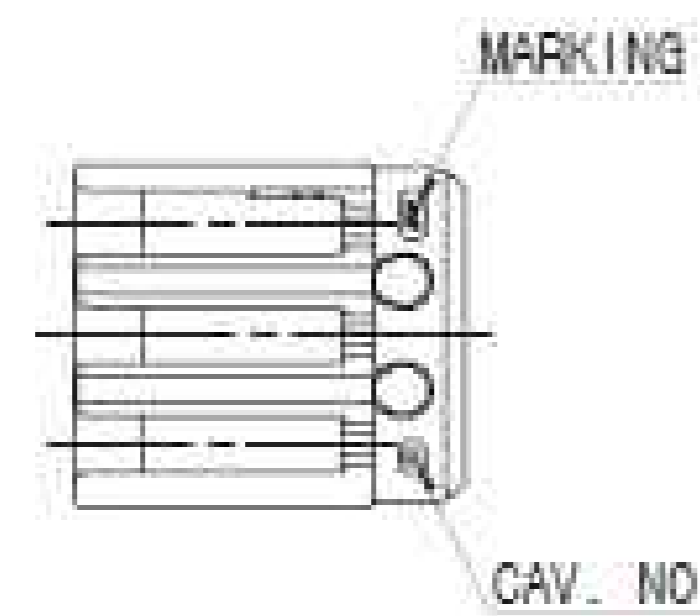
적용 권선	표준사양명	PART NAME	PART NO.
Φ0.9	W/S TWP-0.9S(MB)	EU020-01140	
Φ1.4	W/S TWP-1.4S(BR)	EU020-01060	
Φ1.6	W/S TWP-1.6S(GN)	EU020-00030	
-	W/S TWP-V(R)	EU020-00060	

6. 본 부품은 방수형 CONNECTOR 임.

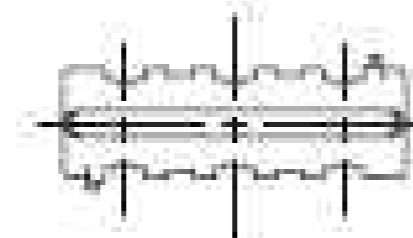
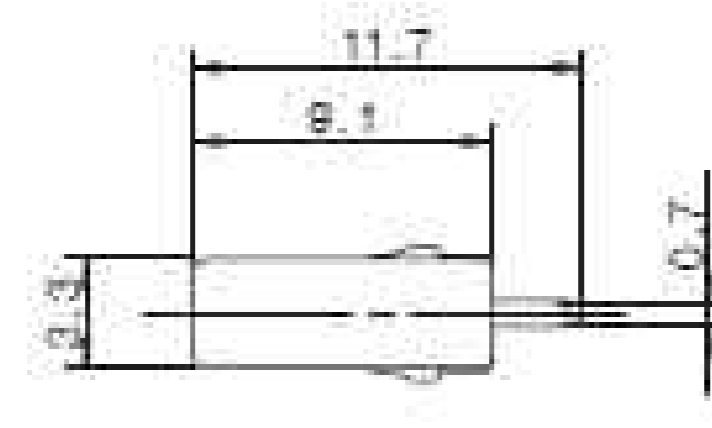
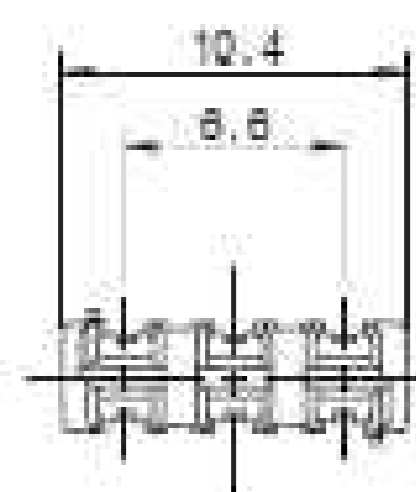


SECTION A-A

⑦ F/H TWPO6M



ISO VIEW



GENERAL TOLERANCE

	10MAX	50MAX	100MAX	150MAX	200MAX	200VR	ANGLE
A	±0.2	±0.3	±0.5	±0.8	±1.0	±1.4	±30'

NO.	PART NAME	PART No.	COLOR	MATERIAL
⑨	F/H TWPO6M-L	HP291-06040	BLUE	PBT
⑥	TWPO6M-R	HP281-06060	RED	PBT
⑦	TWPO6M-Y	HP281-06070	YELLOW	PBT
⑥	TWPO6M-GY	HP281-06120	GRAY	PBT
⑤	TWPO6M-BR	HP281-06050	BROWN	PBT
④	TWPO6M-L	HP281-06040	BLUE	PBT
③	TWPO6M-G	HP281-06030	GREEN	PBT
②	TWPO6M-W	HP281-06010	WHITE	PBT
①	TWPO6M-B	HP281-06020	BLACK	PBT

THIRD ANGLE PROJECTION	A	2/1	KOT	CWJ	KNJ	CJW
TOLERANCE						
SCALE						
DESIGN						
DRAWN						
CHECKED						
APPROVED						

CJW	18.05.20	E013-0115	△B	색상 추가(2개소)	CWJ
CJW	12.07.04	E012-0078	△A	색상 추가(5개소)	KHR
CJW	09.04.29	E009-0093	△	신 규	LWY
승인	DATE	NOTE No.	SYM	ALTERATION	담당

DRAWING NAME TWPO6M-B  
DRAWING No. HP281-06020-001B

**KUM**

케이유엠주식회사

Data\_Server: /도면 / ... /TWP / ... /A0

1. REF KOREA UNION MACHINERY P/N.  
2. DELPHI PACKARD ELECTRIC SYSTEMS IS NOT RESPONSIBLE FOR DESIGN CONTROL OF PURCHASED "OFF-SHELF" COMPONENTS.  
3. SUPPLIER SHOULD COMPLY WITH DELPHI SPECIFICATION(SHEET 2).

35084896	01	--	ACTIVE	HP281-06020			
PART NO.	REV	N/P	STATUS	REF SUPPLIER P/N	SUPPLIER REV	COMMENTS	

DWG TYPE TAXI DRAWING	
STYLE	
VOLUME (DW)	D
DATE	
DR	RAKESH NAYAK
APV01	SUN SELINA
APV02	RAKESH NAYAK
APV03	
APV04	
APV05	
SUBSTANCES OF CONCERN AND RECYCLED CONTENT PER DELPHI 10449001	
MATERIAL	
SEE DWG	
DRAWING NAME TAXI CONN 6 M 064 SLD	
DRAWING NUMBER 35084897	
SCALE	1 OF 1
SIZE	A0
REV	01
N/P	

**DELPHI**  
DELPHI PACKARD ELECTRICAL/ELECTRONIC ARCHITECTURE  
EVAL AP  
THIS DRAWING IS NOT A PROPRIETARY DESIGN OF DELPHI AUTOMOTIVE SYSTEM.

DATE: 18MAY17  
DR: RAKESH NAYAK  
APV01: SUN SELINA  
APV02: RAKESH NAYAK  
APV03:   
APV04:   
APV05:   
SUBSTANCES OF CONCERN AND RECYCLED CONTENT PER DELPHI 10449001  
MATERIAL  
SEE DWG  
DRAWING NAME: TAXI CONN 6 M 064 SLD  
DRAWING NUMBER: 35084897  
SCALE: 1 OF 1  
SIZE: A0  
REV: 01  
N/P:

DELPHI PACKARD ELECTRIC SYSTEMS

**Delphi. Manufacturability Specifications for Connection Systems**

Spec No.	Category	Specification Description	Acceptance Criteria		
1a	Terminal-Connector	Terminal Insertion force to Connector	For terminals with < 1.0mm <sup>2</sup> wire, the engagement force to fully seat and lock the terminal shall be 15N max. Neither the conductor nor the terminal may buckle during the test. The Forward stop must withstand a force greater than the force required to insert the terminal into its cavity.		
2a	Terminal-Connector		For looms with 1.0mm <sup>2</sup> wire, the engagement force to fully seat and lock the terminal shall be 20N max. Neither the conductor nor the terminal may buckle during the test. The Forward stop must withstand a force greater than the force required to insert the terminal into its cavity.		
3a	Terminal-Connector	Terminal retention force on Connector	For terminals with < 1.0mm <sup>2</sup> wire, the engagement force to fully seat and lock the terminal shall be 30N max. Neither the conductor nor the terminal may buckle during the test. The Forward stop must withstand a force greater than the force required to insert the terminal into its cavity.		
10a	Terminal-Connector		Terminal Size	Primary Lock only (N Min)	With Secondary lock (N Min)
11a	Terminal-Connector		050	20	50
12a	Terminal-Connector		064	30	60
13a	Terminal-Connector		078	45	70
14a	Terminal-Connector		092	60	100
15a	Terminal-Connector		106	80	130
16a	Terminal-Connector		120	100	150
17a	Terminal-Connector		134	120	180
18a	Terminal-Connector		148	150	200
20a	Terminal-Connector	Terminal/Cavity Polarization (do not allow incorrect orientation of terminal on the connector)	For any Non symmetrical design, terminals locked in any incorrect orientation shall not fit or lock into a connector cavity beyond the resistance wire (strip) or cable seal at a force 1.5 times the normal insertion force, 15N, or the column strength of the largest applicable wire size, whichever is greater.		
21a	Terminal-Connector	Terminal-Connector Cavity Fit	Female terminals should NOT bend or damage male blades/terminals. Example: Terminal should not move or rotate excessively inside the connector cavity so that damage could occur when mating connectors.		
22a	Terminal-Connector	Unsealed Terminals	Design connectors with a feature to detect and/or correct partially sealed terminals like PLU's. Unsealed terminal condition is created when terminal and/or cable seal is not visible when viewed from a perspective side of plugging area and terminal is not fully seated/locked into connector.		
30a	Terminal-Connector	Terminal Insertion on Connector with closed TPA or PLR	< 1.0 mm <sup>2</sup> Wire size The engagement force to fully seat and lock the terminal shall be 30N min. Alternately, the terminal shall not be capable of being seated and locked due to interference between the TPA and the terminal.		
31a			1.0 mm <sup>2</sup> Wire size The engagement force to fully seat and lock the terminal shall be 40N min. Alternately, the terminal shall not be capable of being seated and locked due to interference between the TPA and the terminal.		
32a			> 1.0 mm <sup>2</sup> Wire size The engagement force to fully seat and lock the terminal shall be 50N min. Alternately, the terminal shall not be capable of being seated and locked due to interference between the TPA and the terminal.		
1b	Connector	Connector with mixed terminal designs	Terminal and connector cavity design should avoid ability to insert an incorrect terminal (within the same Connector). Any incorrect terminal insertion shall not fit or lock into a connector cavity beyond the insulation wings (strip) or at a force 1.5 times the normal insertion force, 15N, or the column strength of the largest applicable wire size, whichever is greater.		
2b	Connector	Connector Family designs indexing	Connector Family designs should have an index to differentiate physically between each connector part number within Connector family or series.		
3b	Connector	Open access for wire/terminal assembly	Connectors should have open access for terminal/wire assembly. Example: Lever should not be obstructing terminal/wire plugging area.		
10b	Connector	Connector to Connector mating force (with all contacts installed)	70 N Max		
11b	Connector	Connector to Connector Unmating force	110 N Min with locks (even) enable except CPA		
12b	Connector	Connector (or Housing) to Connector Mismatch Prevention test	Shall not be miss mated by hand (with all contacts) or by applying 196N		
20b	Connector	Cavities Terminal Insertion direction	Provide all cavities in the same direction of terminal insertion. If not, terminal and connector cavity should avoid attempt to plug on any incorrect orientation.		
21b	Connector	Terminal Forward Stop	Must provide a terminal forward stop that supports a force of 50N minimum on the biggest wire size buckles.		
22b	Connector	Access for Electrical test	Provide access on connector for contacts electrical test. Access will locate correct final position and orientation of terminal into connector cavity. If there is a particular requirement for Electrical Test of the connector, supplier must provide all related information to Delphi.		

**Delphi. Manufacturability Specifications for Connection Systems**

Spec No.	Category	Specification Description	Acceptance Criteria
30b	Connector	Connector	24N Max
31b	Connector	Connector	49N Min
40b	Connector	Connector	Connector should have cavities identified (starting and end point of cavity rows)
1c	Cavity Plug	Connector Cavity Plug insertion	Cavity Plug should be assembled with a force of 20N Max (by hand or with a manual tool)
1d	Locks	PLR detect/Correct Unsealed Terminals	PLR should detect (requires 3 times more force than normal conditions to close) and/or correct partially sealed terminals
10d	Locks	PLR/TPA Insertion force (from pre-stage to lock)	60 N max with terminals installed
11d	Locks		15N Min without terminals installed
12d	Locks	PLR/TPA Insertion force (from insert to lock)	60 N Max with all terminals installed
13d	Locks	PLR/TPA Extraction force (remove from pre-stage)	25N Min
14d	Locks	PLR/TPA extraction force (from lock to pre stage)	50N Max (with terminals installed in all available cavities)
15d	Locks		15N Min
20d	Locks	Insertion force for PLU/TPA with one or more incorrectly oriented terminals assembled	PLU/TPA should NOT be able to lock when there is one or more terminals assembled with incorrect orientation Or insertion force should be 1.5 times the normal force or 49N, whichever is greater
30d	Locks	CPA Insertion force (insert to lock position)	60 N Min (w/connectors un mated) 22 N max w/connectors mated (loose pc. CPA)
31d	Locks	CPA Insertion force (pre-stage to lock position)	60 N Min (w/connectors un-mated) 22 N Max w/connectors mated
32d	Locks	CPA extraction force (lock to pre-stage position)	10 N Min.; 30 N Max.
33d	Locks	CPA extraction force (from pre-stage position)	60 N Min.
40d	Locks	Lever Retention force on pre-stage (shipping position)	Force to maintain on pre-stage (shipping) position: 50N Min
41d	Locks	Lever insertion force from pre-stage (shipping) to final stage (lock)	If the Maximum Assembly Force is: Then the Minimum Contact Area must be at least: Typical Operator Hand Posture During Assembly:
42d	Locks		≤ 22 N Non minimum requirement One-finger press
43d	Locks		≤ 45 N 10mm x 20 mm thumb/2 or more fingers press
1e	General	Components (with positive retention force, like Connector Clips, Cover, etc.) Insertion force	60N Max
2e	General	Components (with positive retention force, like Connector Clips, Cover, etc.) Retention force	110 N Min
3e	General	Connection drop Test	Test 10 connection systems, 3 times each one with parts except cable and terminals. Drop from a 1m distance the connector to a hard surface, change orientation to expose all parts. The device under test must not show any evidence of deterioration, cracks, deformities, etc. that could affect their functionality. This test evaluates the ability of the connection to withstand impact due to dropping on a hard surface.
4c	General	Components attached to connector should have a Contrasting color	Attached parts to connector (Connector seal, secondary locks, PLR, CPA, Matt seal, Cable seal, etc.) should have a contrasting color to the connector.
5e	General	All connection systems parts should be free from defects.	Mechanical Performance Exterior Shall be free from detrimental cracking, rust, pitting, flow, deformation, flash and/or other defects; this prior and during usage.
6e	General	Service and Repair	Connection systems components should be serviceable and repairable without functional damage
7e	General	Components requiring assembly to connector, incorrect orientation prevention test	All components requiring assembly to connector (like Cover, TPA, Clip, CPA, Lever, Housing, etc.) shall not be incorrectly assembled (incorrect orientation) by hand or by applying 196N. This is NOT applicable for symmetrical designs.
11	Testing	Equipment capability of providing a constant Velocity	50mm/min
21	Testing	Accuracy of measurement	± 0.05%
31	Testing	Tolerance for all tests	± 10%

Notes:  
USCAR can be used as reference on how to perform each test.

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35084896	01	--	ACTIVE	HP281-0620			
PART NO.	REV	N/P	STATUS	REF SUPPLIER P/N	SUPPLIER REV	COMMENTS	

DWG TYPE TAXI DRAWING	
STYLE	
VOLUME (DWG)	DISTR CODE <b>D</b>
REFERENCE	
DO NOT SCALE	AUTOCAD

**DELPHI**  
DELPHI PACKARD ELECTRICAL/ELECTRONIC ARCHITECTURE  
E.V. AP  
THIS DRAWING IS NOT A PROPRIETARY DESIGN OF DELPHI AUTOMOTIVE SYSTEM.

DR	RAKESH NAYAK	DATE	10MAY17
APV01	SUN SELINA	10MAY17	
APV02	RAKESH NAYAK	10MAY17	
APV03			
APV04			
APV05			

SUBSTANCES OF CONCERN AND RECYCLED CONTENT PER DELPHI 10449001

MATERIAL

SEE DWG

DRAWING NAME  
TAXI CONN 6 M 064 SLD

DRAWING NUMBER  
35084897

SIZE	A0	SCALE	NONE	FRAME NO	1	SHEET NO	2	OF	2	STG	REV	N/P

DELPHI PACKARD ELECTRIC SYSTEMS