WIRE SIZE AWG	WIRE SIZE METRIC	INSULATION DIAMETER REF.	MVL UNSEALED PART NO.	MVL SEALED PART NO.	DELPHI UNSEALED PLATED PART NO.	DELPHI PART REV.	DELPHI UNPLATED PART NO.*	DELPHI PART REV.	MVL SEALED PART NO.	DELPHI SEALED PLATED PART NO.	DELPHI PART REV.	DELPHI UNPLATED PART NO.*	DELPHI PART REV.	GAGE STAMP	A	B	Ø (C1)	C2	Ø (D1)	D2	K	L	(V)	(W)	TYPE OF GRIP
10/12	4.0/6.0	4.3/3.0	---	2,7	33400512	01			54001027	1,5	15516298	01		10AG	5.6	7.6	2.30	3.4	5.00	6.0	0.30	1.10	31.2	8.0	SEALED
			54001020	2,3	15512730	01	15519823	01						10AG		6.8			3.20	4.5		1.00	30.7	7.5	UNSEALED
			54001001	1,5	10762774	03								10											
2.5	2.5/3.0	3.4/3.0							F235410	2,7				12AG	5.6	7.6	2.30	3.2	4.60	5.7	0.30	1.00	31.2	8.0	SEALED
									F335410	3,6				12TS											
									F808800	1,5	15509074	01		12											
														12AG		---	---	---	---	---	---	---	---	---	UNSEALED NOT AVAILABLE
														12TS											
														12											
14/16	1.0/1.5	2.8/2.1	---	2,7	33400514	01			F035410	2,7				14AG	4.3	6.4	1.45	2.6	4.20	5.6	---	1.40	31.2	8.0	SEALED
									F335410	3,6				14TS											
			---	2,4	33400515	01			54001447	1,5				14											
			54001441	2,3	13681974	01	15519825	01						14AG		5.1			2.25	3.5		0.60	30.7	7.5	UNSEALED
			54001401	1,5	10757692	03								14AUA											
2(18/20)	2(1.0/0.5)	2(2.2/1.4)	54001301	1,5	10757693	03								14											
														13	4.4	6.3	1.00	3.1	1.75	4.3	---	0.60	30.7	7.5	UNSEALED
									F135410	2,7				18AG		5.5			3.60	4.5		1.10	31.2	8.0	SEALED
									F435410	3,6				18TS											
									54001877	1,5				18											
18/20	1.0/0.5	2.2/1.4	---	2,7	33400516	01								18AG	3.4	4.2	1.00	2.3	1.75	3.0	---	0.60	30.7	7.5	UNSEALED
			F875200	2,4	15509076	01	15520221	01						18AUA											
			54001819	2,2	15425613	02	15519829	01						18AUD											
			54001818	2,3	15435215	01	15519827	01						18AUS											
			54001804	2,1	13805590	01	15519824	01						18AU											
			54001801	1,5	10762775	03								18											
22	0.35	1.8/1.2	F975200	2,4	15520916	01	15520917	01						22AUA	3.1	3.6	1.00	2.2	1.40	2.7	---	0.60	30.7	7.5	UNSEALED
			54002230	2,3	33501642	01								22AUS											
			54002229	2,2	15520890	01	15520918	01						22AUD											
			54002228	2,1										22AU											
			54002201	1,5	10762776	03								22											

* NOT VERIFIED TO USCAR-21

CABLE + SEAL (CS) UNSEALED (US)	WIRE SIZE AWG	WIRE SPEC. AWG	WIRE SIZE METRIC	WIRE SPEC METRIC	CONDUCTOR CRIMP HEIGHT AWG (SECT C-C) (+/-0.05)	CONDUCTOR CRIMP HEIGHT METRIC (SECT C-C) (+/-0.05)	CONDUCTOR CRIMP WIDTH (SECT C-C) (+/-0.10)	INSULATION CRIMP HEIGHT AWG (SECT D-D) (+/-0.05)	INSULATION CRIMP HEIGHT METRIC (SECT D-D) (+/-0.05)	INSULATION CRIMP WIDTH (SECT D-D) (+/-0.10)	INSULATION CRIMP PUNCH OPTION	INSL GRIP FORM TYPE SECT D
US	22		0.35		1.40	1.30	2.05	1.95	1.95	2.60		2
CS	18		0.75/1.00		1.50	1.30/1.50		4.20*	4.15/4.20*	4.10*		2
	20		0.50		1.30	1.25	2.45	4.05*	4.05			2
US	18		0.75/1.00		1.50	1.30/1.50		2.35	2.35/2.45	2.80		2
	20		0.50		1.30	1.25		2.20	2.20		OPTION 2	2
CS	14	ESB-M1123-A AS-5288	2.00/2.50	FLRY-A-B ISO-6722	1.95	1.75/1.80		5.00*	4.80/5.00*	5.20*		2
	16		1.50		1.80	1.70	3.05	4.50/3.5*	4.50*			2
US	14		2.00/2.50		1.95	1.75/1.80		3.20	3.10*/3.25	3.60		2
	16		1.50		1.80	1.70		2.90	3.00			2
US	2(18/20)		2(1.0-0.5)		1.90-1.60*	1.90-1.60*	3.25	3.7-2.3*	3.7-2.3*	4.30*	OPTION 1	1
CS	N/A		2.5		N/A	1.80	3.45	N/A	5.00	5.20		2
US	N/A		2.5					N/A	N/A	N/A	OPTION 2	2
CS	10		5.00/6.00		2.45	2.40*/2.50*		5.70*	5.7/5.9*	5.80*		2
	12		4.00		2.20	2.05	3.85	5.30*	5.50*			2
US	10		5.00/6.00		2.45	2.40*/2.50*		3.70	4.30	4.35	OPTION 1	1
	12		4.00		2.20	2.30		USE 12 GA TERMINAL	4.20			1

CRIMP WIDTH	CORE/ INSULATION	INSULATION CRIMP OPTION	E ±0.03	T ±0.03	G ±0.03	J ±0.03	K ±0.03	±0.03 OFFSET BETWEEN ANVILS	M ±0.03	N ±0.03	P ±0.03	R ±0.03	S ±0.03	T ±0.03	U ±0.03
2.05	CONDUCTOR	---	0.92	0.53	0.12	2.56	1.99	---	1.97	---	---	---	---	---	---
2.45	CONDUCTOR	---	1.09	0.63	0.16	3.06	2.38	---	2.36	---	---	---	---	---	---
2.60	INSULATION	2	---	---	---	---	---	0.60	---	0.16	3.25	2.53	2.50	N/A	N/A
2.80	INSULATION	2	---	---	---	---	---	0.60	---	0.18	3.50	2.72	2.69	N/A	N/A
3.05	CONDUCTOR	---	1.36	0.79	0.22	3.81	2.96	---	---	---	---	---	---	---	---
3.25	CONDUCTOR	---	1.45	0.84	0.22	4.06	3.12	---	---	---	---	---	---	---	---
3.45	CONDUCTOR	---	1.54	0.89	0.24	4.31	3.35	---	3.32	---	---	---	---	---	---
3.60	INSULATION	2	---	---	---	---	---	0.60	---	0.25	4.50	3.50	3.46	N/A	N/A
3.85	CONDUCTOR	---	1.72	0.99	0.28	4.81	3.70	---	---	---	---	---	---	---	---
4.10	INSULATION	2	---	---	---	---	---	0.60	---	0.30	5.12	3.98	3.94	N/A	N/A
4.30	INSULATION	1	---	---	---	---	---	0.60	---	0.32	5.38	4.17	4.13	1.92	1.11
4.35	INSULATION	1	---	---	---	---	---	1.10	---	0.38	5.10	4.70	4.64	---	---
5.20	INSULATION	2	---	---	---	---	---	1.00	---	0.40	5.50	5.00	4.94	---	---
5.80	INSULATION	2	---	---	---	---	---	1.00	---	0.47	6.10	5.60	5.52	---	---

MATERIAL TYPE: PLATING OPT.	TYPE 2 OPTION # 1	TYPE 2 OPTION # 2	TYPE 2 OPTION # 3	TYPE 2 OPTION # 4	TYPE 1 OPTION # 5	TYPE 3 OPTION # 6	TYPE 2 OPTION # 7
PLATING	POST GOLD FLASH PALLADIUM (SHORTING BAR)	POST GOLD (SHORTING BAR)	POST HEAVY PALLADIUM-GOLD FLASH (IN LINE)	POST PALLADIUM- GOLD (IN LINE)	PRE-HOT DIP TIN (IN LINE)	PRE TIN/SILVER (INLINE)	POST SILVER (IN LINE)
ZONE "A"	SULFIMATE DUCTILE NICKEL (54)	SULFIMATE DUCTILE NICKEL (57)	SULFIMATE DUCTILE NICKEL (61)	SULFIMATE DUCTILE NICKEL (65)	HOT DIP TIN PLATE (69)	TIN SILVER PLATE (72)	ELECTRO DEPOSITED PURE SILVER, NICKLE UNDERPLATE NOT REQ. (75)
ZONE "B"	ELECTRO MATT TIN PLATE (55)	ELECTRO MATT TIN PLATE (58)	ELECTRO MATT TIN PLATE (62)	ELECTRO MATT TIN PLATE (66)	HOT DIP TIN PLATE (70)	TIN SILVER PLATE (73)	ELECTRO MATT TIN PLATE (76)
ZONE "C"	C-1, C-3: PLATE WITH HARD GOLD CAP OVER PURE PALLADIUM.	C-1, C-3: PLATE WITH HARD GOLD CAP (59)	C2 ONLY: PLATE WITH HARD GOLD CAP OVER PURE PALLADIUM (63)	C2 ONLY: PLATE WITH HARD GOLD CAP OVER PALLADIUM (67)	----	----	----
ZONE "D"	ELECTRO MATT TIN PLATE (56)	ELECTRO MATT TIN PLATE (60)	ELECTRO MATT TIN PLATE (64)	ELECTRO MATT TIN PLATE (68)	HOT DIP TIN PLATE (71)	TIN SILVER PLATE (74)	ELECTRO MATT TIN PLATE (77)

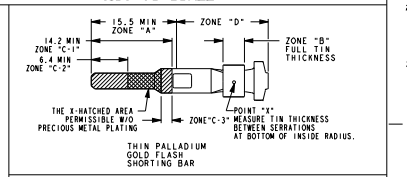
5400100	RWC	15512726	01	54001001	10762774
F808800	RWA	15512734	01	F808800	15509074
5400144	1RWC	15522351	01	54001441	13681974
5400140	1RWA	15425613	02	54001401	10757692
5400140	1RWC	13969990	01		
5400130	1RWA	13681974	01	54001301	10757693
5400181	9RWA	15512733	01	54001819	15425613
5400181	9RWC	15513652	01		
5400181	8RWA	15516296	01	54001818	15435215
5400181	8RWC	13971791	01		
5400180	4RWA	15512732	01	54001804	13805590
5400180	4RWC	15516297	01		
5400180	1RWA	15516294	01	54001801	10762775
5400180	1RWC	13751022	01		
5400223	0RWA	15512731	01	54002230	33501642
5400220	1RWA	15512725	01	54002201	10762776
5400220	1RWC	13969981	01		

NVL REWOUND PART NO.	DELPHI REWOUND PART NO.	DELPHI REV.	MVL PART NO.	DELPHI PART NO.
			MADE FROM	
Available Types RWA or RWC				

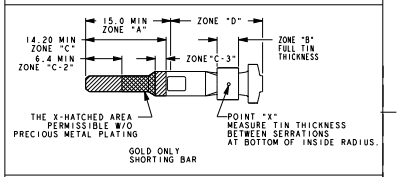
SEE REELING OPTIONS VIEW BELOW

VIEW OF PRECIOUS PLATING NOT TO SCALE

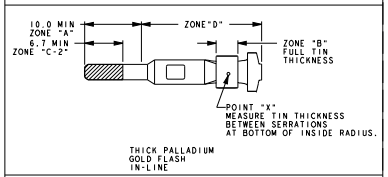
PLATING OPTION #1



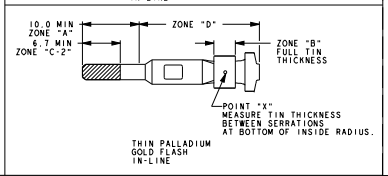
PLATING OPTION #2



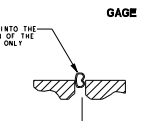
PLATING OPTION #3



PLATING OPTION #4



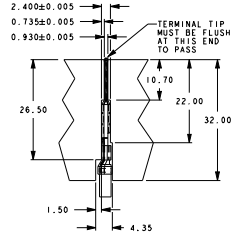
GAGE REQUIREMENTS

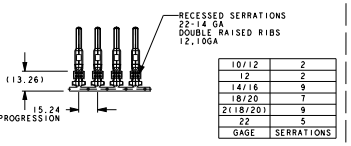


SECTION THRU CORE WING

UNLESS OTHERWISE SPECIFIED:

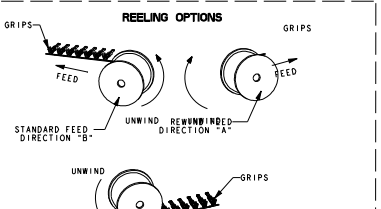
1. BLADE TERMINAL CRIMPING GAGE FOR ALL TERMINALS WITH WIRE CODE 18, 14 AND 13
2. ALL CRIMPED PARTS MUST PASS BOTH THIS GAGE AND PULL TEST REQUIREMENTS. A MINIMUM OF THREE PARTS PER APPLICATOR DIE MUST BE CHECKED HOURLY OR FOR EACH 3000 PIECE LOT, WHICHEVER COMES FIRST.
3. CRIMPED PARTS, INCLUDING WIRE STRANDS MUST FREELY INSTALL INTO GAGE SHOWN ABOVE TO BE ACCEPTABLE. ANY PARTS THAT DO NOT PASS THIS GAGE MUST BE EITHER SCRAPPED OR 100% REWORKED.





GAGE	SERRATIONS
10/12	2
12	2
14/16	9
18/20	7
2(18/20)	9
22	5

REELING OPTIONS



VIEW NOT TO SCALE

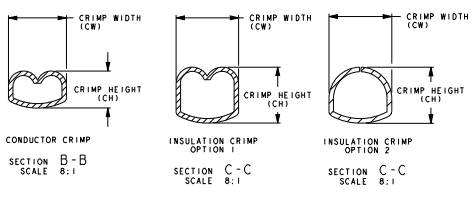
TERMINALS TO FEED AS SHOWN AFTER BEING REELED OFF PRODUCTION TOOL.
PACKAGING: PANCAKE REELS WITH PAPER INTERLEAF

NOTE:

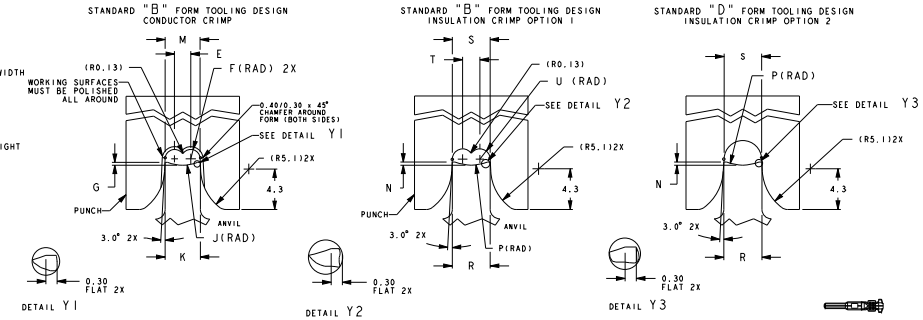
1) DO NOT USE MVL PART NUMBERS FOR NEW ORDERS. MVL PART NUMBERS FOR REFERENCE ONLY

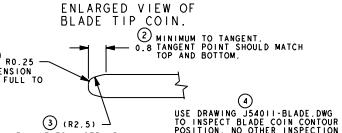
2) WHEN USING DELPHI PART NUMBERS, ORDER "DELPHI REWOUND PART NUMBER" (EX: 15512726)

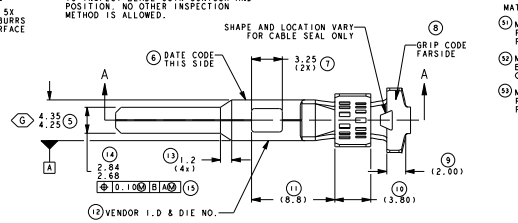
3) IF DELPHI PART NUMBER IS NOT AVAILABLE REQUEST DELPHI PLATED PART NUMBER THEN "REWIND DIRECTION (AorC) (EX: 15520890 REWIND A)

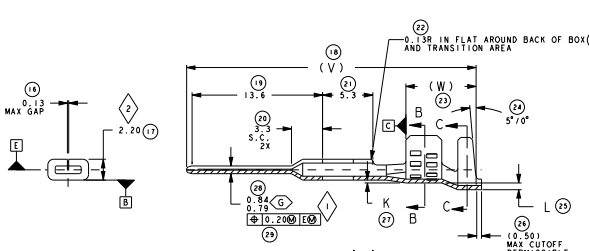


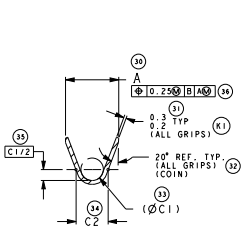
CRIMP TOOL INFORMATION (REF. ONLY)

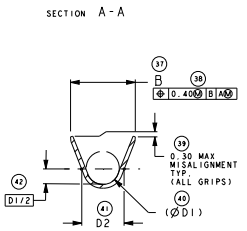


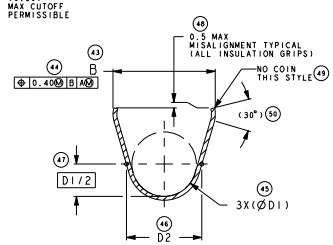












MATERIALS:

51) MATERIAL TYPE 1: COPPER ALLOY PRE PLATED, SEE PLATING CHART FOR INFORMATION

52) MATERIAL TYPE 2: COPPER ALLOY BARE MATERIAL, POST PLATED, SEE PLATING CHART FOR INFORMATION.

53) MATERIAL TYPE 3: COPPER ALLOY PRE PLATED, SEE PLATING CHART FOR INFORMATION

NOTES:

1) CONFORMS TO ALL APPLICABLE SECTIONS OF SAE/USCAR-2 REV.3 EXCEPT TERMINAL BEND RESISTANCE SECTION 5.2.2 SAE/USCAR-12 REV 2 SAE/USCAR-21 FORD SDS VER 11

2) TERMINAL SYMMETRICAL ABOUT CENTERLINE EXCEPT AS SHOWN.

3) DIMENSIONAL TOLERANCE: 1 PLACE ±0.25 2 PLACE ±0.10 ANGULAR ±3°

4) FOR CAVITY SPECIFICATION INFORMATION REFERENCE F.C.I. DRAWING 15007 FOR UNSEALED CAVITY AND F.C.I. DRAWING C15006 FOR SEALED CAVITY

5) SEE USCAR DRAWING EWCAP-001 FOR DIRECT CONNECT MATING BLADE INFORMATION

6) QUALITY ASSURANCE REQUIREMENTS PER USCAR REQUIREMENTS.(2)

7) INDICATES IN-PROCESS INSPECTION FOR MANUFACTURING DIMENSIONS OR SPECIFICATIONS. (3)

8) INDICATES IN-PROCESS GAGE INSPECTION FOR MANUFACTURING DIMENSIONS. (2)

9) ONLY BALLOON DIMENSIONS AND NOTES ARE REQUIRED TO BE MEASURED AT PPAP. ALL OTHER DIMENSIONS AND NOTES WITHOUT BALLOONS SHOULD BE TREATED AS INFORMATIONAL.

10) LAST BALLOON NUMBER: 77

CRIMP NOTES:

1. THE CRIMP AND CRIMP TOOLING DIMENSIONS HAVE BEEN ESTABLISHED AND VALIDATED TO USCAR-21 USING FCI TOOLS, MACHINES, AND PROCESSES. THE DIMENSIONS SHOWN ARE FOR REFERENCE.

2. WIRING SUPPLIERES ARE TO DEVELOP AND VALID THIER CRIMPING SPECIFICATIONS AND PROCESSES ACCORDING TO ALL ASPECTS OF USCAR-21 REV.2. NOTE THAT AS STATED IN USCAR-21, WIRING SUPPLIER DEFINED CRIMPING SPECIFICATIONS AND CRIMPING PROCESSES MAY IMPACT CONNECTOR FUNCTIONS. (SEE USCAR-21 REV.2 4.2.5.1); CONTACT DELPHI ENGINEERING FOR ANY NEEDED ASSISTANCE IN THIS REGARD.

3. DESIGN REFERENCE INFORMATION: IT IS RECOMMENDED THAT THE NOMINAL NOMINAL OFFSET BETWEEN THE CONDUCTOR GRIP AND INSULATION GRIP NOT BE CHANGED BY THE CRIMPING PROCESS. RESIZING THIS FEATURE DURING CRIMPING CAN NEGATIVELY IMPACT CONNECTOR SYSTEM FUNCTION. ACCEPTBILITY OF THE ACTUAL NOTED CRMPED OFFSET, CRIMPING SPECIFICATION, AND CRIMPING PROCESS USED IS TO BE DETERMINED AS DIFINED IN CRIMP NOTE 2.

4. DESIGN FEFERENCE INFORMATION: CRIMPED TERMINALS ARE USED ON VARIOUS CONNECTOR APPLICATIONS. NORMALLY, FOR DESIGN PURPOSES, A CONDUTOR AND INSULATION CRIMP ANGLE TOLERANCE OF +/-3 DEGREES RELATIVE TO TERMINAL DATUM "B" CAN BE ASSUMED. ACTUAL CRIMP TOLERANCES DEFINED WITHIN A HARNESS MAKER'S CRIMPING PROCESS FOR A SPECIFIC CONNECTOR APPLICATION MUST BE VARIFIED AS SUITABLE BY FULL VALIDATION TO ALL ASPECTS OF USCAR-21 INCLUDING SECTION 4.2.5.

13-00039	EC0421054 - DELPHI PART NUMBERS ADDED	
	REVISED AND REDRAWN IN PDS.	
ECN NO.	ZONE	CHANGE DESCRIPTION

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DELPHI

DELPHI PACKARD ELECTRIC SYSTEMS

DRAWN	
ENGINEER	
CHECKED	
QUALITY	
MFG ENG	
PROJECT ENG	
APPROVED	

SIGNATURE PROJECT	
DATE	
PART NUMBER	
REV	

SEE NOTES	
C15004-CUST	
DO NOT REORDER DRAWING	

IMPACT PRINT	
COLOR	
TOOL NO.	D472
SCR Con. Con.	AN

DRAWING NUMBER	C15005-CUST
TITLE	BLADE TYPE - MALE
	APEX 280MM SYSTEM
ECN NO.	SERIAL RELEASED
DOCUMENT UNDER PDS CONTROL NO MODIFICATIONS ALLOWED OUTSIDE	

SPECIAL APPR.	
REV	U
SHEET	1
OF	1
SIZE	A0
SCALE	See Table

C15005-CUST