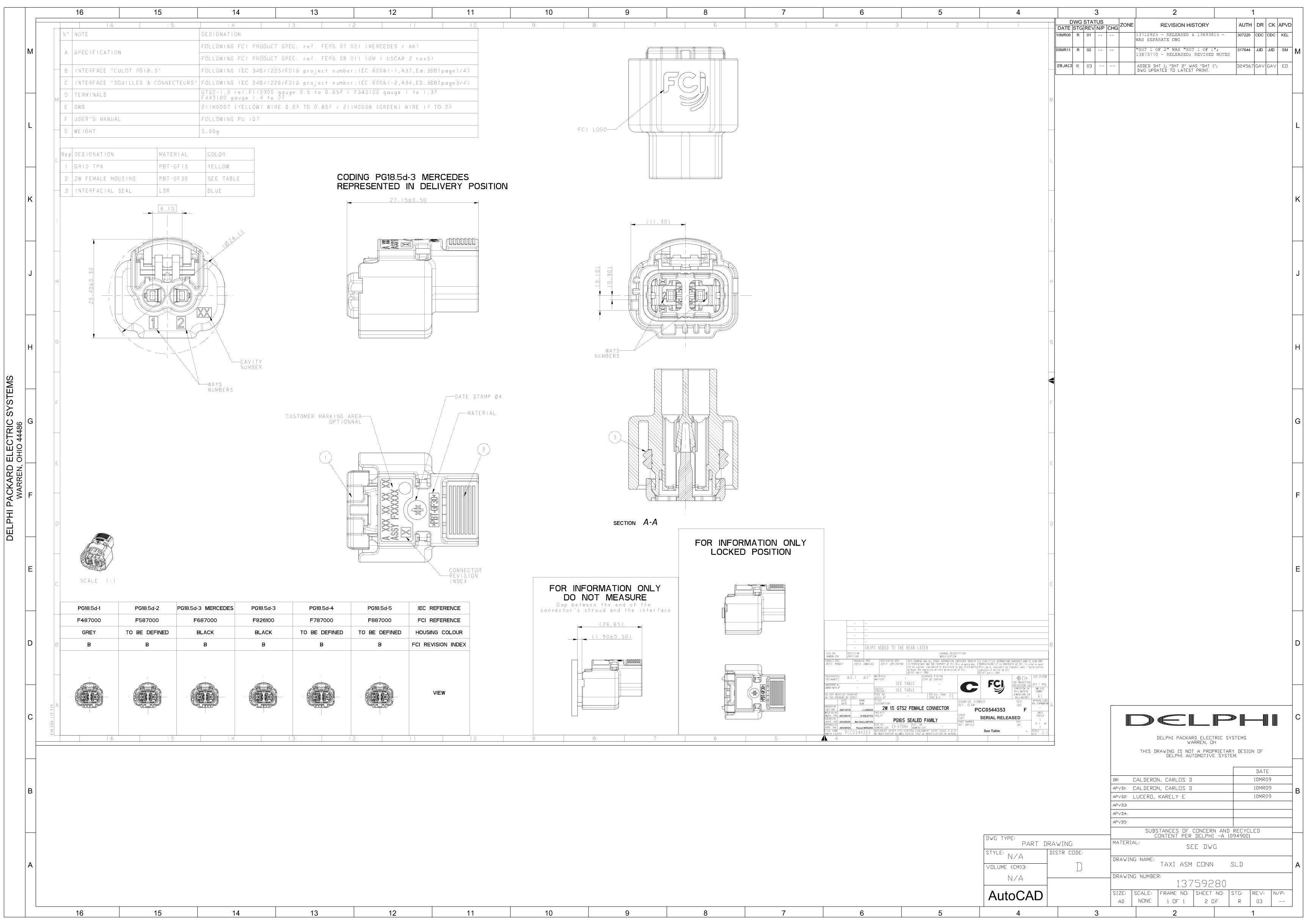
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HIS DEVARING AND ALL OTHER INFORMATION COMPAINED INTERING SPROPRIETARY NO THE PROCEETY OF FCI. This drawing may FRG solution of the spressed written permission of FCI. © FCI April 1999 SURFACE FINISH FTAT DE SURFACE	e copie, reproduit ou transmis sons l'autorisation nesse et écrité de FCI. FCI Avril 1999 🗗 🕞 CAD SYSTEM	_										
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DELPHI SPECIFI	SUPPLIER MUST MEET CATIONS FOR CONNEC	T DELPHI MANUFACTURABILITY ITION SYSTEM:			
Delphi	. Manufacturabilitv	Specifications for Connections Systems			
			1		
Spec No.	Category	Specification Description		Acceptance Criter	ria
1a	Terminal-Connector		For term 15N max.	Neither the conductor nor the terminal may buckle dur	ring the test. The Forward stop must
	l'erminal-Connector			withstand a force greater than the force requi terminal into its cavity.	ired to insert the
2a	Terminal-Connector	Terminal insertion force to Connector	For terminals with 1.0mm wire, the	buckle during the test. The Forward st	top must
			For terminals with >1.0mm ² wire, t	terminal into its cavity.	
3a	Terminal-Connector			may buckle during the test. The Forward withstand a force greater than the force requi	l stop must
100	Terminal-Connector		Terminal Size	Primary Lock only (N Min)	With Secondary lock
	Terminal-Connector	-	050	20	30
11a 12a	Terminal-Connector Terminal-Connector	 — Terminal retention force on Connector	064 ≤1.5	30 45	<u> 60 </u>
13a 14a	Terminal-Connector Terminal-Connector		≤2.8 ≤4.8	60 60	100
15a 16a	Terminal-Connector Terminal-Connector	-	≤6.3 ≤ 9.5	80 100	120 150
17a	Terminal-Connector		>9.5	100	200
20a	Terminal-Connector	Terminal/Cavity Polarization (do not allow incorrect orientation of terminal on the connector)	I erminals inserted in any incorrect	orientation shall not fit or lock into a connector cavity be	eyond the isulation wings (grips) or cable s
21a	Terminal-Connector	Terminal- Connector Cavity Fit	Terminal		
				ample: Female terminals should NOT bend or dam	age male blades/terminals.
22a	Terminal-Connector	Unseated Terminals	Design		
40a	Terminal-Connector	Terminal should not damage Connector seal (Matt seal)		1 Should not cut or damage the m	natt seal
1g	Terminal	Terminal Crimp Validation		rmance Specification for Cable-to-Terminal Electri	ical Crimps based on wire size,
24		Touring contact nucleation	Desi		
2g	l erminal			contact(s).	- 1.114
3g	Terminal	Male terminals blades should have coining			
1h	Terminal-Cable Seal	Cable Seal retention on terminal crimp	Design the te	from the terminal during assembly and handling	
1 h	Connoton	Connector with mixed terminal designs	same Cor	nector). Any incorrect terminal insertion shall not fit or	lock into a connector cavity beyond
di	Connector			strength of the largest applicable wire size, whi	ichever is greater.
2b	Connector	Connector Family designs indexing		part number within Connector family of	or series.
3b	Connector	Open access for wire/terminal assemby		obstructing terminal/wire plugging	area.
4b	Connector	Peripheral Seal retention on Connector	Desig	n connectors with a seal retaining feature so it pre- ssive movement of the peripheral seal during mating	events "bunching" rollover or ig, un-mating connectors and
56	Connector	Potention of Blocked cavities on Connector	Blocke	d cavities on connector should support 30N min ap	oplied directly to the cavity. No
				-	
		Connector (or Housing) to Connector Miss-mated		nnection system must withstand either a minimun	n mis-mating force of 150 N or 3
20b				- Il cavities in the same direction of terminals insertion. If	f not, terminal and connector cavity
21b	Connector	Terminal Forward Stop	Must prov	vide a terminal forward stop that supports a force of 50	
				le access for the harness fixture continuity probe in the	
22b	Connector	Access for Electrical test			
30b	Connector	Housing Inserting force		24N Max	
31b	Connector	Housing Retention force		49N Min	
	Spec 1a 1a 2a 3a 10a 11a 12a 13a 14a 15a 16a 17a 20a 21a 20a 21a 20a 21a 20a 21a 20a 21a 20a 3g 1b 2b 3b 4b 3b 4b 1b 2b 3b 4b 2b 3b 2b 3b 4b 2b 3b 2b 3b 2b 3b 2b 3c 2b 3b 1b 1c 2b 3b	Spec No. Category 1a Terminal-Connector 2a Terminal-Connector 3a Terminal-Connector 10a Terminal-Connector 11a Terminal-Connector 12a Terminal-Connector 14a Terminal-Connector 12b Terminal-Connector 12a Terminal-Connector 12b Terminal 12a Terminal 13g Terminal 140a Terminal 13g Terminal 14 Terminal 15 Connector 16 Connector 17 Connector	No. Certegory Certegory 1a Terminal-Connector 2a Terminal-Connector 3a Terminal-Connector 1b Terminal-Connector 1a Terminal-Connector 1b Terminal-Connector 1c Terminal-Connector 1b Terminal-Connector 1c Terminal-Connector	No. Category Specification Description 13 Treminal Constant Internation Constant 24 Treminal Constant For tenthal constant 25 Tenthal Constant For tenthal constant 26 Tenthal Constant For tenthal constant 27 Tenthal Constant For tenthal constant 28 Tenthal Constant For tenthal constant 29 Tenthal Constant Formal Constant 20 Tenthal Constant Formal Constant 20 Tenthal Constant Formal Constant 21 Tenthal Constant Formal Constant 22 Tenthal Constant Formal Constant 23 Tenthal Constant Tenthal Constant 24 Tenthal Constant Tenthal Constant 24 Tenthal Constant Tenthal Constant 25 Tenthal Constant Tenthal	Specify No. Category No. Specification Description Interact Acceptance Criteria 1 Transit Contract Interact Contract<

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	Uscar 2 or other Specification 40b Connector 1c Cavity Plug	Connector Cavity identification	c	onnector should have cavities identified (starting and end	point of cavity rows)	USCAR 12, G.2 D el phi		
	other Specification	1c	Cavity Plug	Connector Cavity Plug insertion	Cavity	Plug should be assembled with a force of 20N Max (by h	nand or with a manual tool)	Delphi
tor nor the terminal may	5.4.1.3	1d	Locks	PLR detect/correct Unseated Terminals	Not fo	R or Secondary Lock must not seat in its final position e: Close PLR/TPA or Secondary Lock by adding 40 Ne rce required to seat the device when all the terminals prce is 80 Newton for ≥ 1.5 Terminal size and 60 New	wton to the maximum are located properly.	5.4.9
ductor nor the terminal	5.4.1.3	2d	Locks	Cavity damage susceptibility (after closing secondary lock with unseated terminal)		ninal extraction force with secondary lock should me after attempting to close a secondary lock with unso rce applied to secondary lock on test 1d and seat the	eated terminal(s).	5.4.9
	5.4.1.3				second	ary lock and verify that terminal retention meets the s	specifications 10a thru 18a.	
lock (N Min)		10d	Locks	PLR/TPA Insertion force (from pre-stage to lock)		60N Max with terminals installed		5.4.5.4
	Delphi	11d	Locks				5.4.5.4	
	5.4.1.4 5.4.1.4	12d	Locks	TPA Insertion force (from insert to lock)		60N Max with all terminals installed		5.4.5.4
	5.4.1.4	13d	Locks	PLR/TPA Extraction force (remove from pre-stage)		5.4.5.4		
	5.4.1.4	14d	Locks			60N Max (with terminals installed in all available 18N Min	e cavities)	5.4.5.4
	5.4.1.4	15d	Locks	 PLR/TPA extraction force (from lock to pre-stage) 		18N Min after initial removal		5.4.5.4
able seal at a force 1.5 greater.	5.4.1.4	20d	Locks	Insertion force PLR/TPA with one or more incorrectly oriented terminals assembled The TPA/PLR or Secondary Lock must not seat in its final position with an unseated terminal(s). Note: Close PLR/TPA or Secondary Lock by adding 40 Newton to the maximum force required to seat the device when all the terminals are located properly. The minimum force is 80 Newton for ≥ 1.5 Terminal size and 60 Newton for < 1.5 terminal size as apply.				
	Delphi	30d	Locks	CPA Insertion force (insert to lock position)		60N Min (w/connectors un-mated) 22N max w/connectors mated (loose pc. C	SPA)	5.4.5.4
	USCAR 12, E.10	31d	Locks	CPA Insertion force (pre-stage to lock position)		60N Min (w/connectors un-mated) 22N max w/connectors mated		5.4.5.4
		32d	Locks	CPA extraction force (lock to pre-stage position)		10N Min.; 30N Max		5.4.5.4
	USCAR 12, E12 Delphi	33d	Locks	CPA extraction force (from pre-stage position)		60N Min.		5.4.5.4
	5.1.6	40d	Locks	Lever retention force on pre-stage (shipping position)		Forse to maintain on pre-stage (shipping) position	n, 50N Min	5.4.5.4
	USCAR 12, Terminals 19	41d	Locks		If the Maximun Assembly Force is: ≤22N	Then the Minimun Contact Area must be at least: Non minimum requirement	Typical Operator Hand Posture During Assembly: One-finger press	Uscar 25 Uscar 25
	USCAR 12, F4	42d	Locks	Lever insertion force from pre-stage (shipping) to final stage (lock)	≤45N	10mm x 20mm	thumb/2 or more fingers press	Uscar 25
	000AIC 12, 14	43d	Locks		≤75N	10mm x 35mm Two thumbs or palm/heel of hand press		Uscar 25
/ay	USCAR 12, C.4	50d	Locks	Secondary Lock (TPA, PLR, etc.) should not overlaps with terminal when terminal is at final assembled position into Connector		Should not overlap		Delphi
	Delphi	1e	General	Components (with positive retention force, like Connector Clips, Cover, etc.) Insertion force		60N Max		5.4.5.4
	Delphi	2e	General	Components (with positive retention force, like Connector Clips, Cover, etc.) Retention force		110N Min		5.4.5.4
	Delphi	3e	General	Connection drop Test	distance ti test must	nection system, 3 times each one with parts except cable he connector to a hard surface, change orientation to exp not show, any evidence of deterioration, cracks, deformi est evaluates the ability of the connection to withstand im	ose all parts. The device under ties, etc. taht could affect their	5.4.8
	USCAR 12, C.5 & 6	4e	General	Components attached to connector should have a Contrasting color	Attached parts to connector (Conne	ctor seal, secondary locks, PLR, CPA, Matt seal, Cable s	seal, etc.) should have a contrasting color to the connector	USCAR 12, E, F
	Delphi	5e	General	All connection systems parts should be free from defects.	Mecha	nical Performance Exterior Shall be free from detrimental deformation, flash and/or other defects; this prior and		Delphi
	Uscar 25	6e	General	Service an Repair	Connectio	n systems components should be serviceable and repaira	ble without functional damage	Delphi
	5.4.2	7e	General	Components requiring assembly to Connector, incorrect orientation prevention test		y to connector (like Cover, TPA, Clip, CPA, Lever, Housin hand or minimum mis-matting force of 150 N or 3 tin This is NOT applicable for symmetrical de:	nes the normal assembly force.	Delphi
	5.4.4	1f	Testing	Equipment capability of providing a constant Velocity		50mm/min		Delphi
	Delphi	2f	Testing	Accuracy of measurement		≤0.05%		Delphi
	5.4.1	3f	Testing	Tolerance for all tests		±10%		Delphi
	USCAR 12, E.14	Notes	:					

Honda HES D 3217-99A

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Red & Bold Text denotes changes compared with previous Revision Date USCAR can we used as reference on how to perform each test.

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SAE USCAR-2 Revision 5 November 2007

SAE USCAR-12 SAE/USCAR-25 Revision 1 September 2008 Honda HES D 3217-99A Rev 2

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		09MR11	R	02				ADDED SHEET 2	317644	JJD	JJD	SM
		28JA13	R	03				ADDED SHT 1; "SHT 3" WAS "SHT 2"; DWG UPDATED TO LATEST PRINT.	324567	GA∨	GA∨	ΕO

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						DATE]		
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	APVD2:									
	AP∨D3:									
	AP∨D4:									
	AP∨D5:									
DWG TYPE:		SUBSTANCES OF CONCERN AND RECYCLED CONTENT PER DELPHI -A 10949001								
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VOLUME (CM)3;	STR CODE: DRAW	DRAWING NAME: TAXI ASM CONN SLD								
		ING NUMF						A 		
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