



Part Submission Warrant

Part Name SLV WIR CONN FEM Cust. Part Number HU5T-14489-DD
Shown on Drawing Number HU5T-14489-DD Org. Part Number 160044-0114
Engineering Change Level J4 Dated 2020/3/24
Additional Engineering Changes N/A Dated N/A

Safety and/or Government Regulation ☒ Yes ☒ No Purchase Order No. N/A Weight (kg) 0,0774
Checking Aid Number N/A Checking Aid Eng. Change Level N/A Dated N/A

ORGANIZATION MANUFACTURING INFORMATION

Molex Incorporated - Nogales DUNS 812222818
Supplier Name & Supplier/Vendor Code

Calzada Industrial Nuevo Nogales S/N
Street Address

Nogales Sonora 84094 Mexico
City Region Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

Nursan
Customer Name/Division

N/A
Buyer/Buyer Code

N/A
Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? ☒ Yes ☐ No
Submitted by IMDS or other customer format: IMDS ID# 774887228

Are polymeric parts identified with appropriate ISO marking codes? ☒ Yes ☐ No ☐ n/a

REASON FOR SUBMISSION (Check at least one)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Initial submission | <input type="checkbox"/> Change to Optional Construction or Material |
| <input type="checkbox"/> Engineering Change(s) | <input type="checkbox"/> Sub-Supplier or Material Source Change |
| <input type="checkbox"/> Tooling: Transfer, Replacement, Refurbishment, or additional | <input type="checkbox"/> Change in Part Processing |
| <input type="checkbox"/> Correction of Discrepancy | <input type="checkbox"/> Parts produced at Additional Location |
| <input type="checkbox"/> Tooling Inactive > than 1 year | <input type="checkbox"/> Other - please specify |

REQUESTED SUBMISSION LEVEL (Check one)

- ☐ Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
☒ Level 2 - Warrant with product samples and limited supporting data submitted to customer.
☐ Level 3 - Warrant with product samples and complete supporting data submitted to customer.
☐ Level 4 - Warrant and other requirements as defined by customer.
☐ Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.

SUBMISSION RESULTS

The results for ☒ dimensional measurements ☒ material and functional tests ☐ appearance criteria ☐ statistical process package
These results meet all design record requirements: ☒ Yes ☐ NO (If "NO" - Explanation Required)
Mold / Cavity / Production Process Assy process

DECLARATION

I affirm that the samples represented by this warrant are representative of our parts, which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of 1920 pcs / 8 hours. I also certify that documented evidence of such compliance is on file and available for your review. I have noted any deviation from this declaration below.

EXPLANATION/COMMENTS: _____

Is each Customer Tool properly tagged and numbered? ☐ Yes ☐ No ☒ n/a

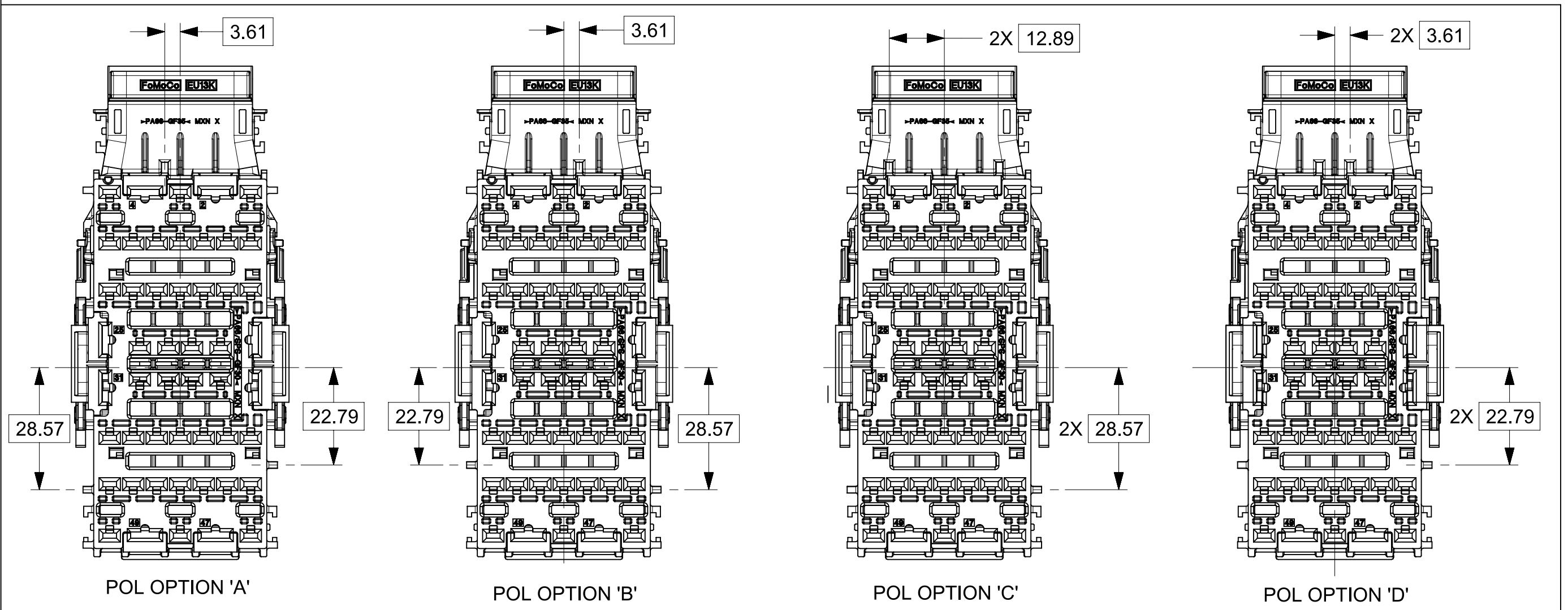
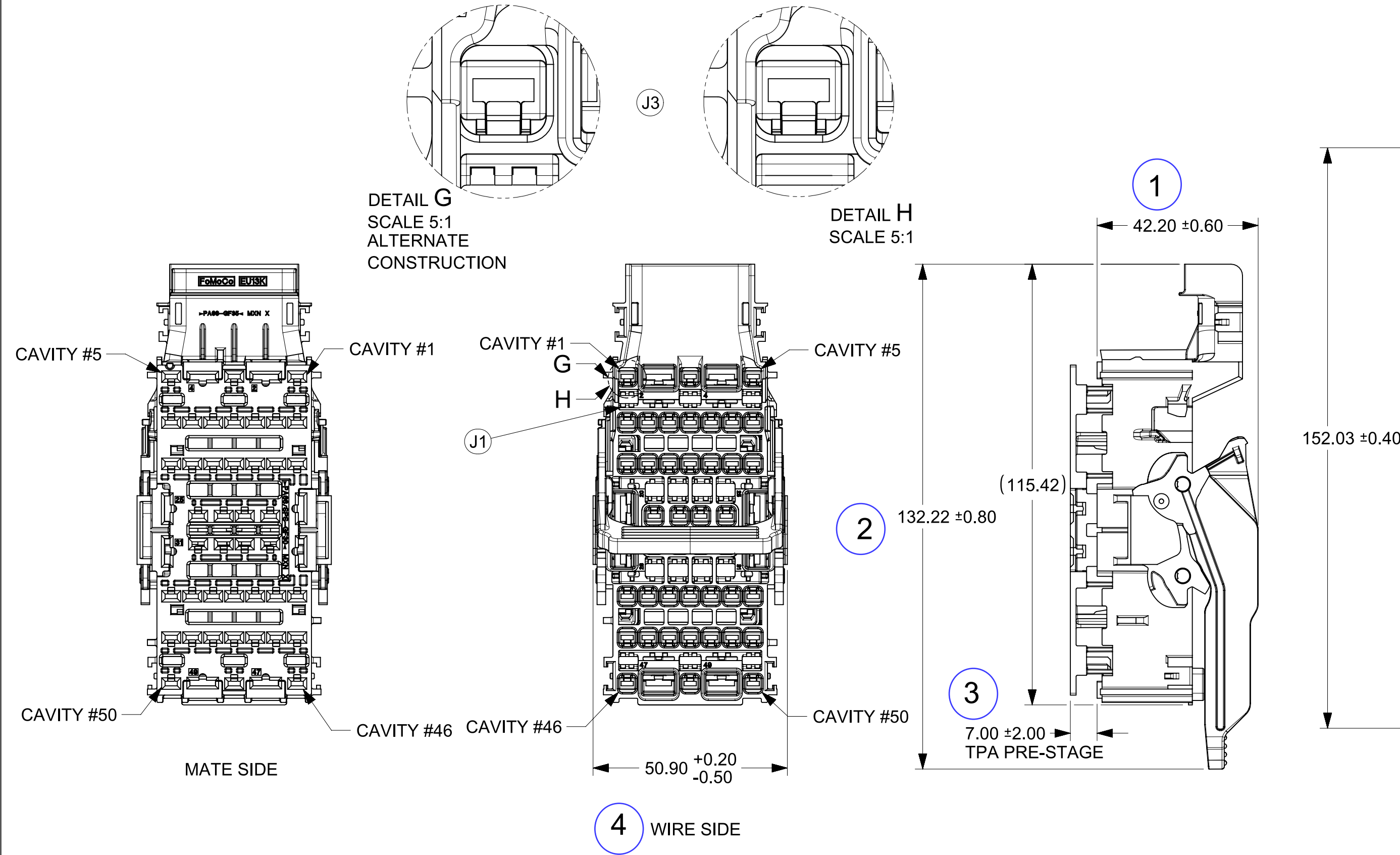
Organization Authorized Signature Kevin Maechtlinger Date 17-Mar-2022
Print Name Kevin Maechtlinger Phone No. +49-7243-335-376 Fax No. -
Title Quality Engineer E-mail kevin.maechtlinger@molex.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

PPAP Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other _____
Customer Signature _____ Date _____
Print Name _____ Customer Tracking Number (optional) _____

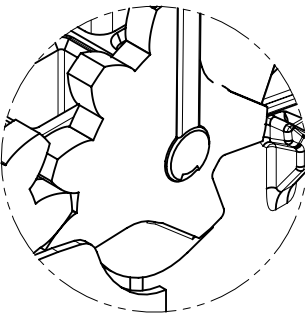
ITEM#	PIA DESCRIPTION:	COLOR:	MOLEX COMPONENT PART NUMBER:	MATERIAL SPEC:	RECYCLING CODE:	WEIGHT (g):	NUMBER OF ITEMS REQUIRED:			
1	RCPT HSG (WATER PROTECTION) POL A	BLACK	160044-0214	GLASS FILLED NYLON	PA66 GF35%	55.47	1			
2	RCPT HSG (WATER PROTECTION) POL B	LT GRAY	160044-0215	GLASS FILLED NYLON	PA66 GF35%	55.47		1		
3	RCPT HSG (WATER PROTECTION) POL C	DK GRAY	160044-0216	GLASS FILLED NYLON	PA66 GF35%	55.62			1	
4	RCPT HSG (WATER PROTECTION) POL D	TBD	160044-0217	GLASS FILLED NYLON	PA66 GF35%	55.62				1
5	TPA	NATURAL	160044-0300	GLASS FILLED SPS/NYLON BLEND	SPS/PA66 GF30%	10.31	1	1	1	1
6	LEVER	GRAY	160044-0401	GLASS FILLED NYLON	PA66 GF50%	9.94	1	1	1	1
7	PINION GEAR	GRAY	160044-0500	GLASS FILLED NYLON	PA66 GF50%	0.70	2	2	2	2

APPLICABLE COMPONENTS:						
ITEM#	DESCRIPTION:	MANDATORY (YES/NO)	TERMINAL CAVITY MIN/MAX OD:	PLATING/MATERIAL:	FORD COMPONENT PART NUMBER:	SUPPLIER COMPONENT PART NUMBER:
1	B828 (1, 3, 5-19, 21-24, 27-30, 32-46, 48, 50) DELPHI APEX TERMINAL/2.8mm (APPLICABLE CAVITIES)	YES	0/4.5mm X 4.7mm	TIN	N/A	N/A
2	B474 (2, 4, 20, 25, 26, 31, 47, 49) DELPHI APEX TERMINAL/6.35mm (APPLICABLE CAVITIES)	YES	0/5.6mm X 8.4mm	TIN	N/A	N/A
3	WIRE DRESS COVER (WATER PROTECTION)	YES	N/A	PA66 GF35%	HU5T-14N003-GD	160044-0606 (MOLEX)

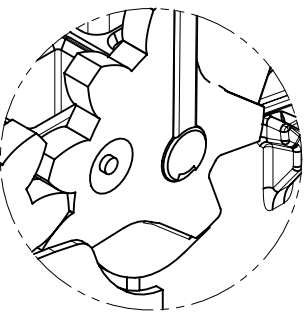


- NOTES: UNLESS OTHERWISE SPECIFIED
- PARTS CONFORM TO THE ELECTRICAL CONNECTION SYSTEM DESIGN SPECIFICATION (SDS) 4-10-2014
 - PART CONFORMS TO USCAR-2 REV 6
 - WIRE DRESS COVER MAXIMUM ENGAGE FORCE LESS THAN 70N
 - MEAN ASSISTED MATING FORCE FULLY POPULATED WITH TIN TERMINALS = 74.7N
 - NO TERMINAL EXTRACTION TOOL EXISTS FOR THESE CAVITIES. MOLEX RECOMMENDS USING TERMINAL EXTRACTION TOOL P/N 63813-3501 FOR BOTH CAVITIES
 - N/A
 - CONNECTOR IS RATED AS EGONOMIC CLASS 3 BASED ON USCAR-25 REV 1. CONNECTOR PUSH SURFACE AREA IS 439.4mm
 - N/A
 - KEEP OUT AREA FOR HEADER INTERFACE PER USCAR-25 (SEE PAGE 4)

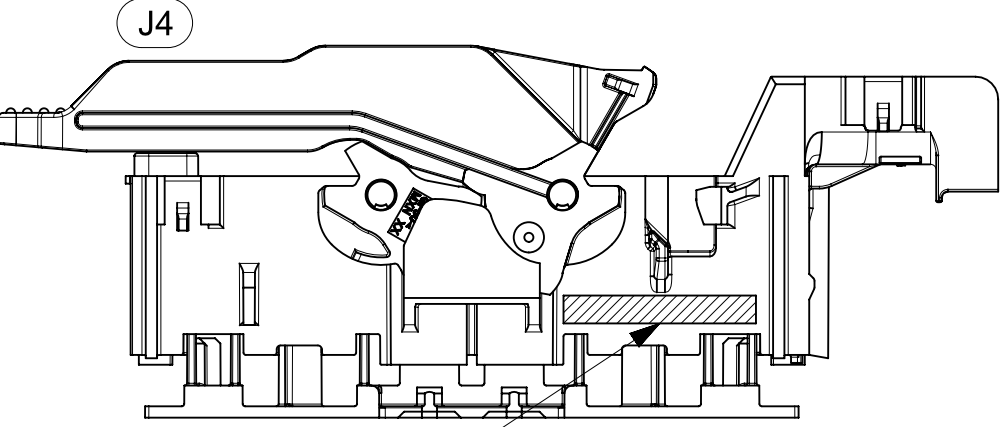
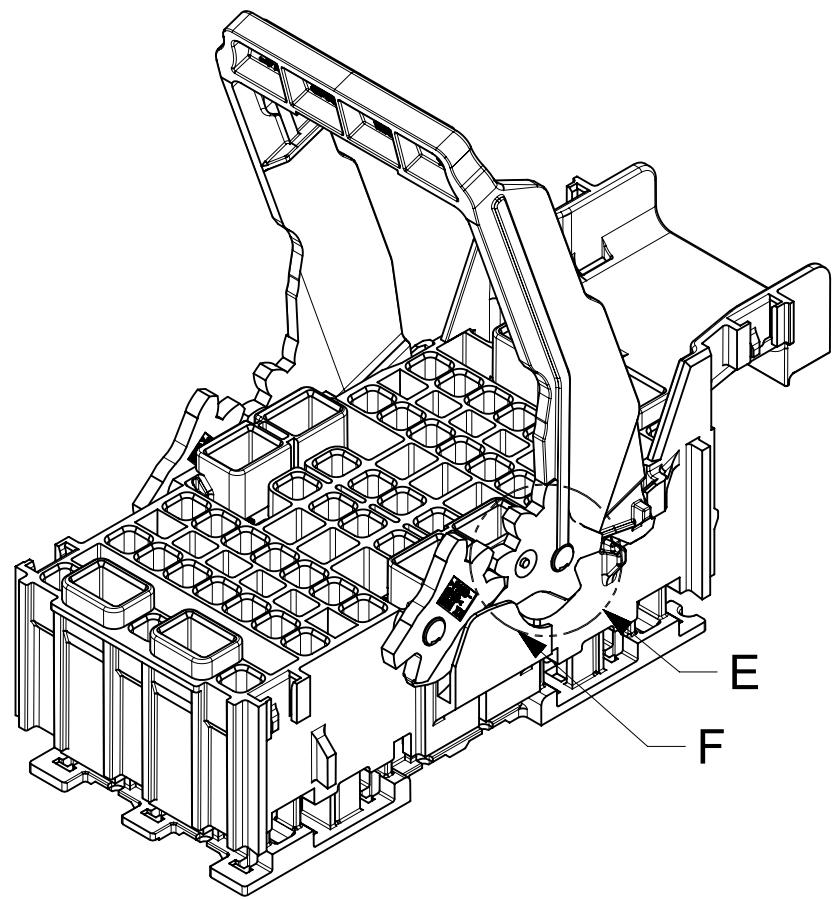
CONNECTOR ASSEMBLY CHART:			
FORD ASSEMBLY PART NUMBER:	MOLEX ASSEMBLY PART NUMBER:	MAX TEMP (°C):	VIBRATION CLASS:
HU5T-14489-DD	160044-0114	105	V1
HU5T-14489-ED	160044-0115		
JU5T-14489-KD	160044-0116		
TBD	160044-0117		



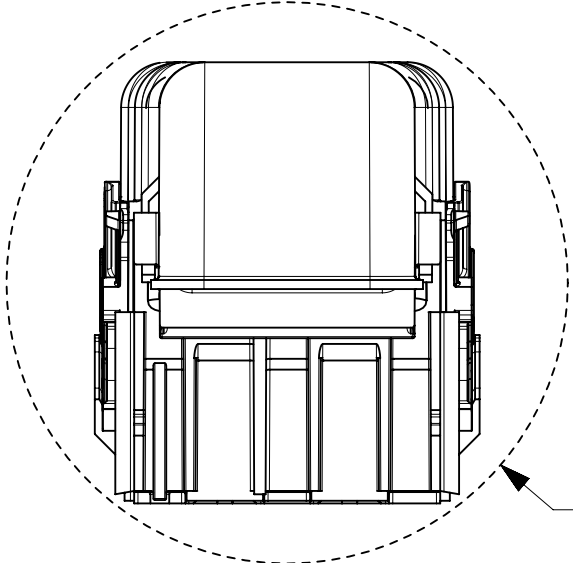
DETAIL F
SCALE 2:1



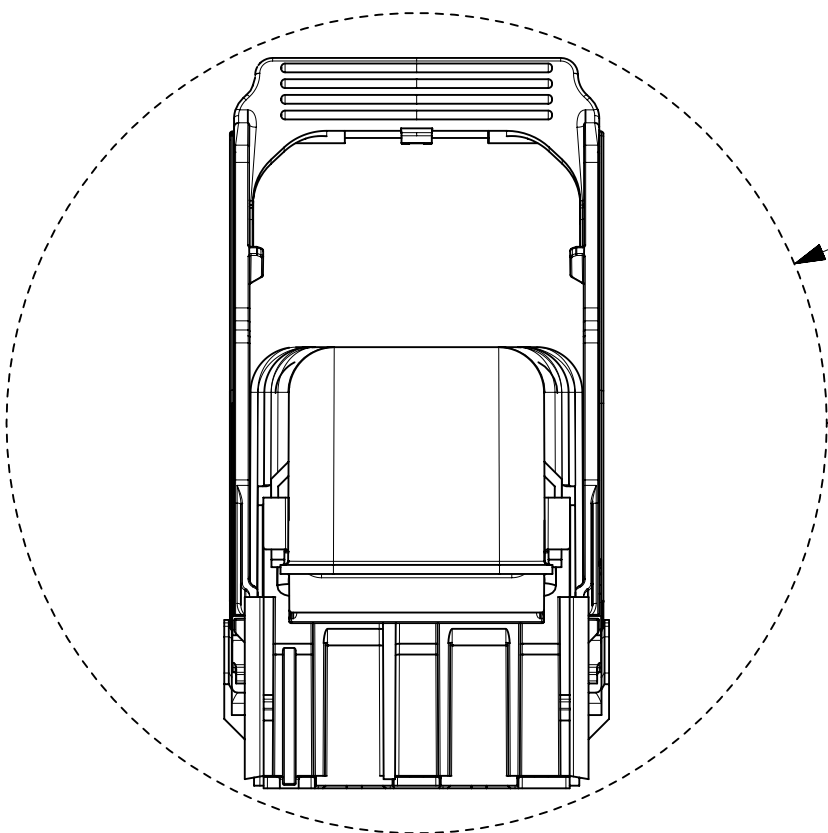
DETAIL E
SCALE 2:1
ALTERNATE
CONSTRUCTION



- LASER MARKING AREA
XXXX-XXXX-XX
DDDY X
- FORD PART NUMBER
 - JULIAN DATE CODE
 - SHIFT CODE
 - HOUSING ALT CONSTRUCTION SYMBOL



(Ø74.25)
PASS THRU DIAMETER
WITH 2mm ADDITIONAL
CLEARANCE W/ LEVER
IN FINAL LOCK



(Ø108.50)
PASS THRU DIAMETER
WITH 2mm ADDITIONAL
CLEARANCE W/ LEVER
IN PRE-LOCK

LTRS.		REVISIONS		
ORIGINATOR		CHECKER	ENGR APP	MATL APP
RELEASED FOLLOWING PART NUMBERS				
HU5T-14489-DA				
HU5T-14489-EA				
AELE-E-119890-823 2014/06/25				
MYOUNG		RBAUMAN	MSALANTA	
F1 WAS B846				
F2 WAS B474				
AELE-E-13113841-132 2017/05/17				
MYOUNG		RBAUMAN	MSALANTA	
G1 WAS "B829"				
G2 WAS "MAXIMUM ASSISTED MATING FORCE				
FULLY POPULATED WITH TIN TERMINALS = 71N"				
G3 REMOVED FORD COMPONENT AND SUPPLIER				
COMPONENT PART NUMBERS				
G4 ADDED CAVITY NUMBERS TO TRCs				
AELE-E-13113841-180 2017/10/31				
MYOUNG		RBAUMAN	MSALANTA	
REMOVED HU5T-14489-DC, HU5T-14489-EC				
AND JU5T-14489-KC				
H1 WAS "160044-0110", modified housing geometry				
H2 WAS "160044-0111", modified housing geometry				
H3 WAS "160044-0112", modified housing geometry				
H4 WAS "160044-0113", modified housing geometry				
H5 WAS "160044-0210", modified housing geometry				
H6 WAS "160044-0211", modified housing geometry				
H7 WAS "160044-0212", modified housing geometry				
H8 WAS "160044-0213", modified housing geometry				
H9 WAS "160044-0400", modified lever geometry				
H10 WAS "55.841"				
H11 WAS "55.839"				
H12 WAS "55.989"				
H13 WAS "55.990"				
H14 WAS "9.922"				
H15 WAS "HU5T-14N003-GC				
H16 WAS "160044-0603				
H17 WAS "(Ø75.40)"				
H18 REMOVED "(62.05)"				
RELEASED HU5T-14489-DD, HU5T-14489-ED				
AND JU5T-14489-KD				
AELE-E-13113841-206 2018/02/07				
MYOUNG		RBAUMAN	MSALANTA	
I1 Alternate construction for lever face				
AELE-E-13113841-224 2018/06/26				
MYOUNG		RBAUMAN	MSALANTA	
J1 HOUSING UPDATED WITH MOLD INTERLOCK DETAILS				
J2 HOUSING PART WEIGHT UPDATED				
J3 ADDED ALTERNATE CONSTRUCTION VIEW SET FOR				
TERMINAL CAVITIES				
J4 ADDED PART VIEW FOR LASER MARKING LOCATION				
AELE-E-13113841-366 2020/3/24				
MYOUNG		KVASANT	MSALANTA	

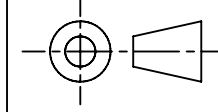

REFERENCE — FORD 50 WAY PDB CONNECTOR				
PART MUST COMPLY WITH MATERIAL SPECIFICATION WSS-M99P9999-A1 TO HELP SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT.				
DRAFTED IN ACCORDANCE WITH FAO ENGINEERING DRAFTING STANDARD CURRENT AT INITIAL RELEASE			3RD ANGLE PROJ DIMENSIONS IN MILLIMETERS	
CAD TYPE TCE	CAD LOC. MOLEX	CAD FILE 1600440114CM		DTMC IS MASTER
OPER. NO.	UNIT EU13K	DRAWING HU5T-14489-DD		
DESIGN MYOUNG01	DETAIL N/A	TITLE SLV WIR CONN FEM		SHT 1 OF 4
CHECKED RBAUMAN	SAFETY N/A			
SCALE 1:1	DATE 2018/02/07	DIVISION PLANT		

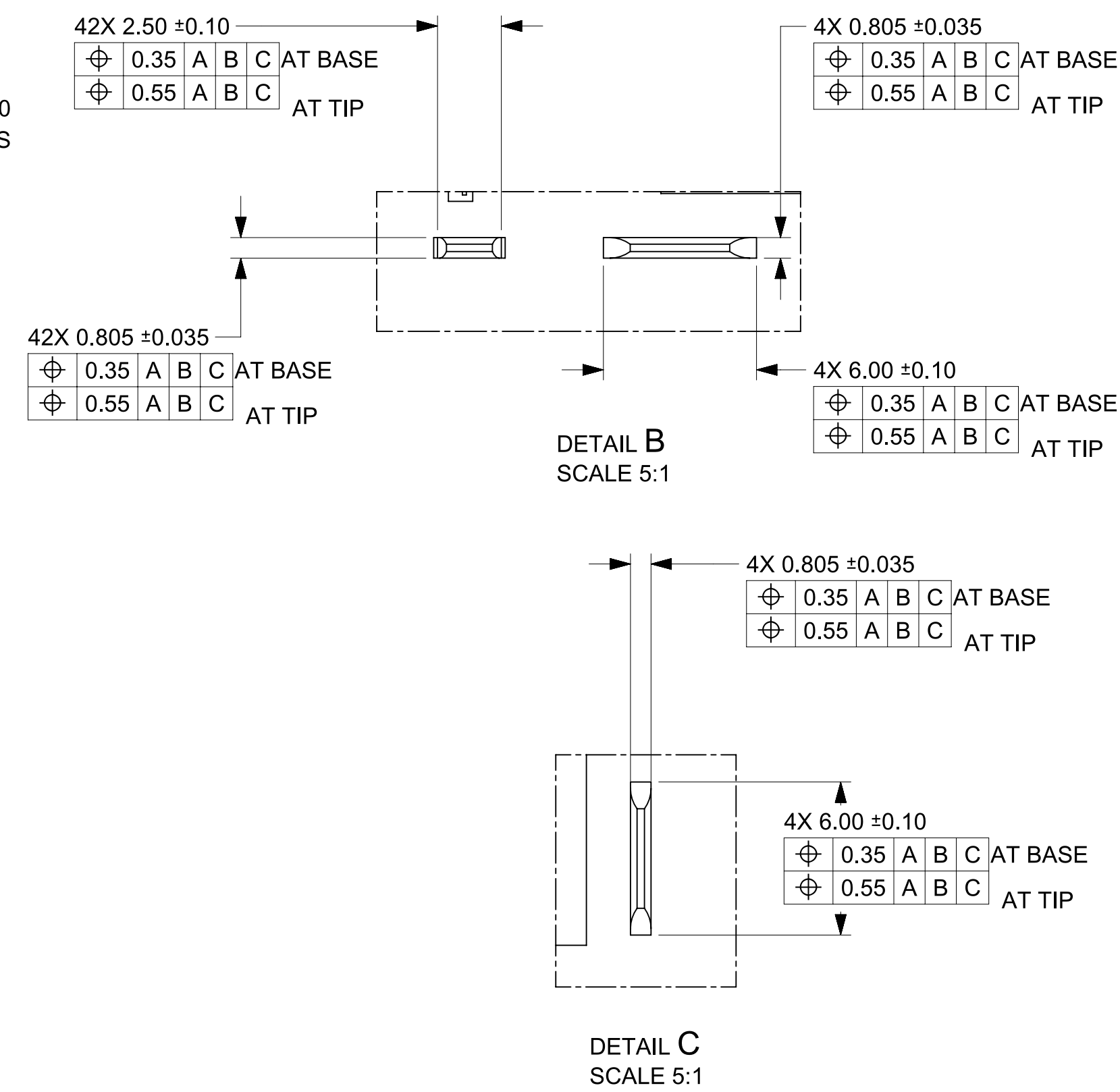
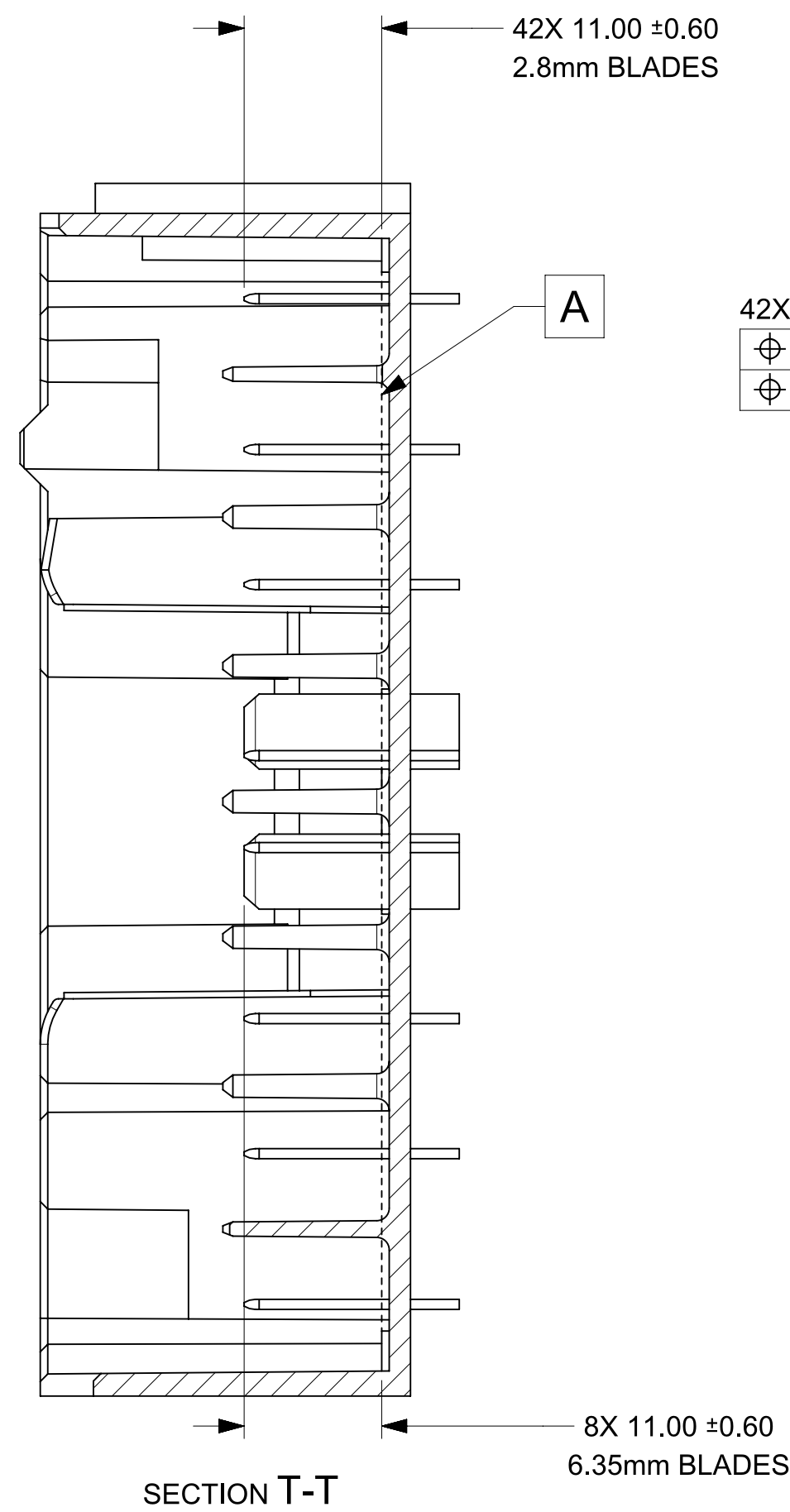
PART NUMBERS

HU5T-14489-ED

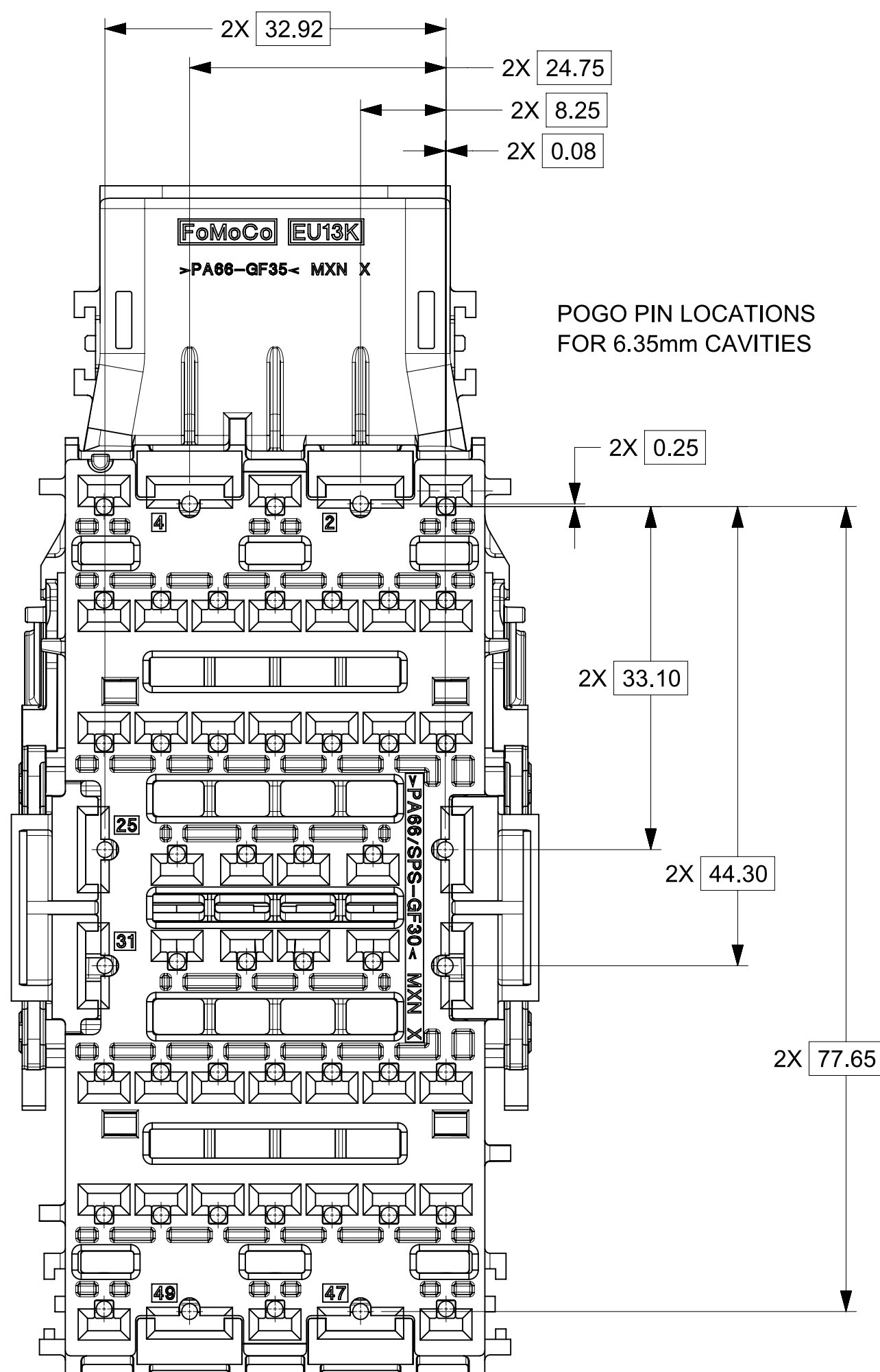
JU5T-14489-KD

DRW SIZE A1/D

REFERENCE		FORD 50 WAY PDB CONNECTOR	
PART MUST COMPLY WITH MATERIAL SPECIFICATION W55-M99P9999-A1 TO HELP SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT.			
DRAFTED IN ACCORDANCE WITH FAO ENGINEERING DRAFTING STANDARD CURRENT AT INITIAL RELEASE		 3RD ANGLE PROJ DIMENSIONS IN MILLIMETERS	
CAD TYPE TCE	CAD LOC. MOLEX	CAD FILE 1600440114CM	DTMC IS MASTER
OPER. NO. EU13K	UNIT EU13K	DRAWING HU5T-14489-DD	
DESIGN MYOONG01	DETAIL N/A	TITLE SLV WIR CONN FEM	SHT 2 OF 4
CHECKED RBAUMAN	SAFETY N/A		
SCALE 2:1	DATE 2018/02/07	DIVISION PLANT	

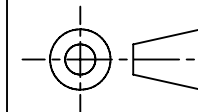



1) BLADE GEOMETRY: PER EWCAP-001
2) RECOMMENDED PLATING: 0.76-1.50µm ELECTROPLATED
TIN (POST REFLOW)

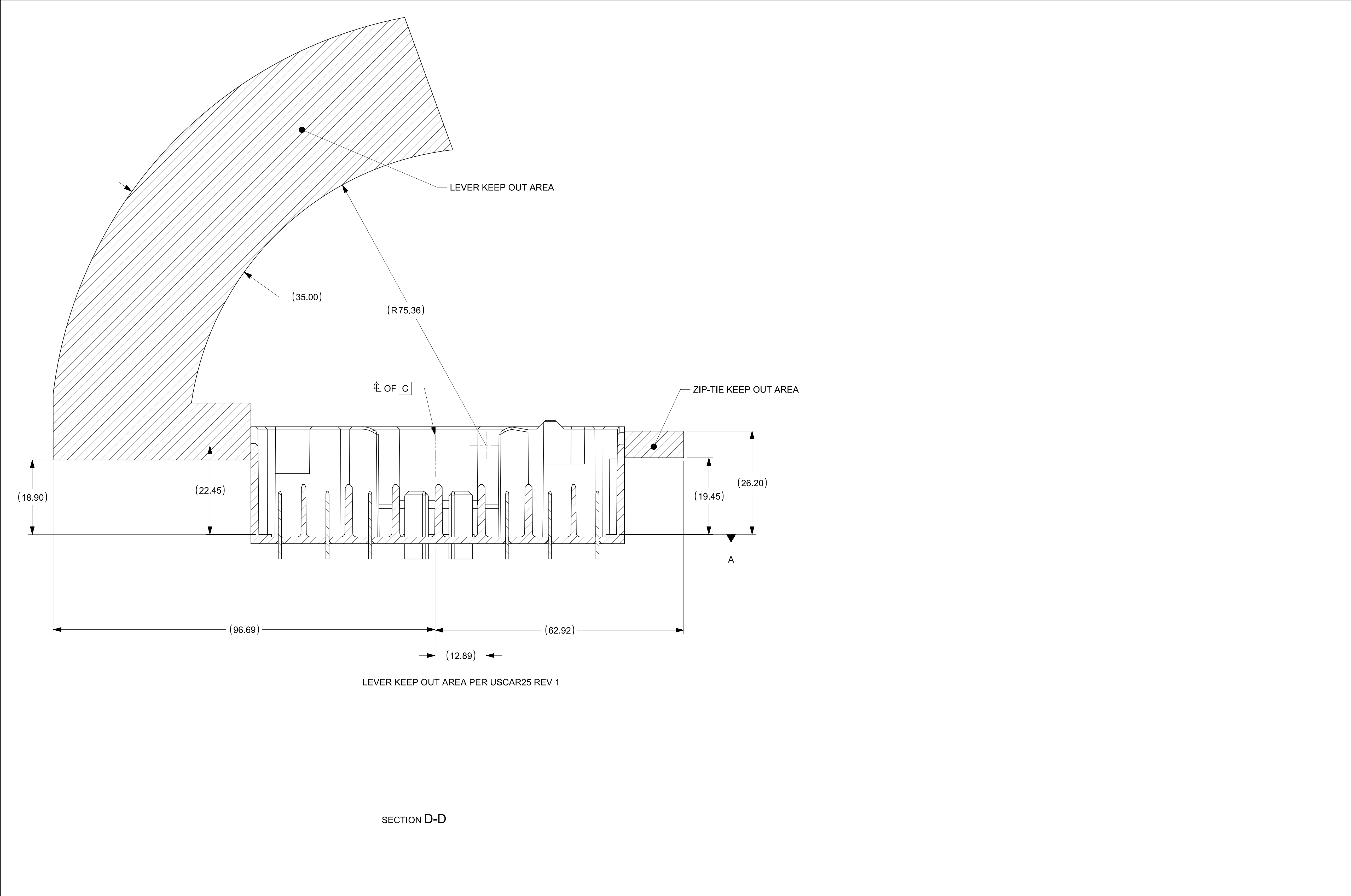


- 1) POGO PIN MANUFACTURER: LONE STAR INDUSTRIAL
- 2) POGO PIN#: LS054R-418
- 3) HEAD DIAMETER: 1.52mm
- 4) HEAD GEOMETRY: FLAT
- 4) STROKE: 6.35mm
- 5) SPRING RATE: 0.1875N/mm (STANDARD)

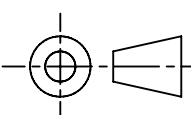

- 1) PROBING FORCE APPLIED TO THE TERMINAL SHOULD NOT EXCEED 3N.
- 2) THE TIP OF THE POGO PIN SHOULD NOT ENTER THE OPENING OF THE TERMINAL.
- 3) IT IS THE RESPONSIBILITY OF THE FIXTURE MANUFACTURER TO PROPERLY ALIGN THE CONNECTOR AND POGO PINS TO PREVENT THE POGO PINS FROM CAUSING DAMAGE TO THE TERMINAL OR CONNECTOR.

REFERENCE		FORD 50 WAY PDB CONNECTOR	
PART MUST COMPLY WITH MATERIAL SPECIFICATION WSS-M99P9999-A1 TO HELP SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT.			
DRAFTED IN ACCORDANCE WITH FAO ENGINEERING DRAFTING STANDARD CURRENT AT INITIAL RELEASE		 3RD ANGLE PROJ DIMENSIONS IN MILLIMETERS	
CAD TYPE TCE	CAD LOC. MOLEX	CAD FILE 1600440114CM	DTMC IS MASTER
OPER. NO.	UNIT EU13K	DRAWING HU5T-14489-DD	
DESIGN MYOUNG01	DETAIL N/A	TITLE SLV WIR CONN FEM	SHT 3 OF 4
CHECKED RBAUMAN	SAFETY N/A		
SCALE 2:1	DATE 2018/02/07		
		DIVISION PLANT	

DRW	SIZE	AI/D
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LTRS.	REVISIONS		
ORIGINATOR	CHECKER	ENGR APP	MATL APP

REFERENCE — FORD 50 WAY PDB CONNECTOR				
PART MUST COMPLY WITH MATERIAL SPECIFICATION WSS-M99P9999-A1 TO HELP SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT.				
DRAFTED IN ACCORDANCE WITH FAO ENGINEERING DRAFTING STANDARD CURRENT AT INITIAL RELEASE			 3RD ANGLE PROJ DIMENSIONS IN MILLIMETERS	
CAD TYPE TCE	CAD LOC. MOLEX	CAD FILE 1600440114CM	DTMC IS MASTER	
OPER. NO.	UNIT EU13K	DRAWING HU5T-14489-DD		
DESIGN MYOUNG01	DETAIL N/A	TITLE SLV WIR CONN FEM		SHT 4 OF 4
CHECKED RBAUMAN	SAFETY N/A			
SCALE 2:1	DATE 2018/02/07	DIVISION PLANT		

DRW SIZE A1/D

Control Plan

<input type="checkbox"/> Prototype <input type="checkbox"/> Pre-launch <input checked="" type="checkbox"/> Production		Control Plan Number CP160044-0101 Rev: 8		Key Contact/Phone Carlos Ibarra / 52-(631) 311-1300 X 311-1330		Date(Orig.) 6-Oct-16		Date (Rev.) 7-May-20				
Part Number / Latest Change Level RCPT HSG Water HSG Short HSG Grommet 160044-0114 160044-0124 160044-0134 160044-0115 160044-0125 160044-0135 160044-0116 160044-0126 160044-0136 160044-0117 160044-0127 160044-0137				Core Team Matt Young, PE; Jared Fatica, ME; Matt Kanninen, MIE; Jack Burton, QE		Review Team Carlos Ibarra Sr. Q.E., Christian Martinez Manuf, Eng. , Guadalupe Tolano Group leader						
Part Name / Description Ford 50-Way PDB GEN 2 Receptacle Assembly				Supplier/Plant Approval/Date NA		Customer Quality Approval/Date(If Req'd) NA						
Supplier / Plant Nogales, Mexico Facility			Supplier Code 54-527-0444	Other Approval Date (If Req'd) NA		Other Approval Date (If Req'd) NA						
Part / Process Number	Process Name / Operation Description	Machine, Device Jig, Tools For Mfg.	Characteristics			Special Char. Class.	Product/Process Specification/ Tolerance	Evaluation Measurement Technique	Methods		Control Method	Reaction Plan
			No	Product	Process				Sample	Size		
1 Material management & setup verification	1.0 Receive Raw material	Step process			- Receive al raw material in plant from suppliers according component drawing	No	Receive correct part number & qty	Checks pack list	100%	Each Lot received.	Procedures RRW01; RRW02 & RRW05	Hold material and report to carrier or supplier.
	1.1 Incoming Inspection			Receptacle Housing 160044-0214 160044-0224 160044-0234		No	Color Black Key "A"	Visual	AQL	Each Lot received.	Conformance to specification record in SAP, Incoming inspection plan. Procedure Q4	Hold Material in QC hold area for disposition. Follow procedure O20, Notify supplier.
				Receptacle Housing 160044-0215 160044-0225 160044-0235		No	Color Light Gray Key "B"	Visual	AQL	Each Lot received.	Conformance to specification record in SAP, Incoming inspection plan. Procedure Q4	Hold Material in QC hold area for disposition. Follow procedure O20, Notify supplier.
				Receptacle Housing 160044-0216 160044-0226 160044-0236		No	Color Dark Gray Key "C"	Visual	AQL	Each Lot received.	Conformance to specification record in SAP, Incoming inspection plan. Procedure Q4	Hold Material in QC hold area for disposition. Follow procedure O20, Notify supplier.

				Receptacle Housing 160044-0217 160044-0227 160044-0237		No	Key "D"	Visual	AQL	Each Lot received.	Conformance to specification record in SAP, Incoming inspection plan. Procedure Q4	Hold Material in QC hold area for disposition. Follow procedure O20, Notify supplier.
				TPA 160044-0300		No	Color Natural	Visual	AQL	Each Lot received.	Conformance to specification record in SAP, Incoming inspection plan. Procedure Q4	Hold Material in QC hold area for disposition. Follow procedure O20, Notify supplier.
				Lever 160044-0401		No	Color Gray	Visual	AQL	Each Lot received.	Conformance to specification record in SAP, Incoming inspection plan. Procedure Q4	Hold Material in QC hold area for disposition. Follow procedure O20, Notify supplier.
				Pinon Gear 160044-0500		No	Color Gray	Visual	AQL	Each Lot received.	Conformance to specification record in SAP, Incoming inspection plan. Procedure Q4	Hold Material in QC hold area for disposition. Follow procedure O20, Notify supplier.
	1.2 Issue material to production order				Correct part number and quantity according work order	No	Correct raw material and qty according work order released	None	100%	Each work order	SAP system, MG01	Notify Planner & group leader
2 TPA Hopper / Bowl feed	2.0 Operator place TPA into the hopper	3105-50WAY-01		Correct part number and quantity according work order	No	Correct TPA	visual	5 Pcs.	Set-Up	Work order, Drawing, Unique TPA part number used in this connector family	Reject Set-up and notify group leader	
					No	Check TPA don't have broken ribs or lock fingers.	Vision system	100%	in process	Golden samples every set-up and shift start.	Scrap TPA	
	2.1 TPA bowl vibratory operation	3105-50WAY-01			No	Check TPA don't have broken ribs or lock fingers.	Vision system	100%	in process	Golden samples every set-up and shift start.	Scrap TPA	
	2.3 TPA orientation check	3105-50WAY-01			No	TPA should be oriented correctly into the housing	Vision system	100%	in process	Golden samples every set-up and shift start.	Reject / Scrap TPA	
3 Pick and place TPA from in-line escapement and place onto machine pallet	3.0 Place TPA onto machine pallet	3105-50WAY-01		TPA properly seated in pallet	No	Correct postion in pallet	vision system and PLC program	100%	in process	Poke Yoke tooling design	Reject / Scrap TPA	
4 TPA Standoff castle and Lock Finger presence check (bed of nails)	4.1 TPA standoff and lock finger presence check (bed of nails)	3105-50WAY-01		TPA free of damages	No	TPA must have all ribs and lock fingers.	Vision system (bed of nails)	100%	in process	Golden samples every set-up and shift start.	Scrap TPA	

5 HSG Hopper / Bowl feed	5.0 Operator loads housing into hopper	3105-50WAY-01			Correct part number and quantity according work order	No	Housing should be correct part number, color and polarization key	Vision system	100%	in process	Golden samples every set-up and shift start.	Reject set-up, notify group leader
						No	Housing should be free of broken features	Vision system	100%	in process	Golden samples every set-up and shift start.	Scrap Housing
	5.1 Bowl vibratory operation (housing)	3105-50WAY-01			Assure feed parts to machine.	No	Housing should be free of broken features	Vision system	100%	in process	Golden samples every set-up and shift start.	Scrap Housing
6 Recept hsg color check	6.1 Color sensor detects proper color of recept hsg	3105-50WAY-01			Detect correct color accoding housing part number	No	Color: (Black, Lt. Gray, Dk Gray)	Color sensor	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader
7 HSG polarization key inspection	7.0 HSG Polarization key inspection	3105-50WAY-01			Detect correct polarization accoding housing part number	No	Polarization (A, B, C)	Vision system	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader
8 Short vs long HSG inspection	8.0 HSG inspection short Vs. Long	3105-50WAY-01			Detect correct housing version accoding housing part number	No	Short & Long	Vision system	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader
9 HSG ribs presence	9.0 HSG rib presence P/N (160044-0234, -0235, 0236 & 0237)	3105-50WAY-01			Detect housing with grommet version accoding housing part number	No	Grommet ribs on housing	Laser detection	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader
10 Recept hsg pre-inspection station	10.0 to 10.2 Key options Check Polarization A, B and C and terminal fingers, cam post inspections	3105-50WAY-01			Correct housing and free of damages	No	Correct housing design / all lock fingers in place	Vision system	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader
11 Place recept hsg onto TPA into pre-lock position	11.0 HSG placement into TPA assy'd into pre-lock position	3105-50WAY-01			TPA in pre-lock position	No	Corret TPA & position (Pre-lock position)	Vision system	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader
12 TPA height	12.0 Correct TPA heighth	3105-50WAY-01				No	7.00 +/- 1.67	Digital indicator	5 PCs.	Set-Up	Poke Yoke tooling design	Stop process and notify group leader

13 Lever Hopper / Bowl feed	13.0 Operator loads parts into hopper	3105-50WAY-01			Correct part number, correct quantity according work order	No	Correct Part number	Visual	5 PCs.	Set-Up	Work order, Drawing, Unique LEVER part number used in this connector family	Reject Set-up and notify group leader
	13.0 Bowl vibratory operation	3105-50WAY-01			free of damages / Broken	No	Damaged	Visual	5 Pcs.	Set-Up	Quality Criteria	Reject Set-up and notify group leader
							Broken lever in lock area	Sensor	100%	Each piece during process	Golden samples every set-up and shift start.	Reject Set-up and notify group leader
14 Place lever onto sub-assy (recept hsg and TPA)	14.0 Proper placement of lever onto sub-assy	3105-50WAY-01			Correct assembly in to the housing	No	Free movement	Sensor	100%	in process	Golden samples every set-up and shift start.	Notify group leader, Scrap parts
15 Lever presence and position in pre load position check (relative to recept conn sub-assy)	15.0 Correct lever position check (pre-lock check)	3105-50WAY-01			Correct LEVER position ("open")	No	In correct assembly	Sensor	100%	in process	Golden samples every set-up and shift start.	Notify group leader, Scrap parts
16 Gear Hopper / Bowl feed	16.0 Operator loads parts into hopper	3105-50WAY-01			Correct part number, correct quantity according work order	No	Correct Part number	Visual	5 PCs.	Set-Up	Work order, Drawing, Unique GEAR part number used in this connector family	Reject Set-up and notify group leader
	16.1 Bowl vibratory operation	3105-50WAY-01			Assure feed parts to machine.	No	Gear should be free of damages	Visual	5 Pcs.	Set-Up	Quality Criteria	Reject Set-up and notify group leader
	16.2 RH & LH gear presence at escapement	3105-50WAY-01				No	2 gears per connector	Sensor	100%	100%	Presence sensor, automatic stop machine	Stop process and notify group leader
17 Place of both RH and LH gears onto recept conn sub-assy	17.0 Placement of RH & LH gear	3105-50WAY-01			assembly 2 gears on housing	No	2 gears per connector	Automatic assembly process	100%	100%	Machine tool design	Stop process and notify group leader
18 Inspection of pinion gears (LH and RH)	18.0 Pinion gear position and presence on receptacle sub-assy (LH and RH)	3105-50WAY-01			assembly 2 gears on housing	No	Correct position of gears on housing and no missing gears	Sensors	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader
19 Position cam lever into final position (shipping position)	19.0 Move/rotate lever into final position (shipping position)	3105-50WAY-01			Engage LEVER and GEAR	No	Gear and Lever should need to rotate easy, no stuck.	Automatic assembly process	100%	in process	Machine tool design, rotatory devise	Stop process and notify group leader

20 Final Inspection Station	20.0 to 20.2 Lever Present & Position, gear presence, TPA in pre-lock Inspect,	3105-50WAY-01			Free of damages and missing components	No	No missing components in connector	Vision system	100%	in process	Golden samples every set-up and shift start.	Stop process and notify group leader / scrap connectors
21 Keyence laser date code of receipt sub-assy	21.0 Laser marking (only good parts)	3105-50WAY-01			Mark parts with customer part number, julian date code and shifth code.	No	Correct and human readable information on laser mark & complete characters (each connector part number)	Visual	5 PCs.	Set-Up	work order, inspection plan, drawing	Stop process and notify group leader / scrap connectors
22 Move the assy to the P&P station	22.0 Move the assy to the P&P station	3105-50WAY-01			Put a piece in P&P area	No	Correct position	sensor	100%	in process	PLC program	Stop process and notify group leader.
23 P&P finish goods	23.0 Unload non- conformant assembly into the reject bin (rejections due to lever issues must be manually)	3105-50WAY-01			Put rejected part in red bin	No	Reject bad parts	Automatic assembly process	100%	in process	Quality Criteria, machine program, golden samples	Stop process and notify group leader.
24 Empty nest check	24.0 Empty nest check	3105-50WAY-01			Empty nest available	No	Nest free of parts	Sensor	100%	in process	PLC program	Stop process and notify group leader.
25 Pallet transfer (return)	25.0 Unload good assembly into the conveyor and part blow-off.	3105-50WAY-01			Take parts out from nest	No	Take parts correctly from nest	Automatic assembly process	100%	in process	PLC program and machine gripper design	Stop process and notify group leader.
	25.1 Pallet transfer (return)	3105-50WAY-01			Empty nest available	No	Process step					
26 Good assy transfer & packing	26.0 “GOOD” Assembly’s transfer to the auto- packing system	3105-50WAY-01			unload good parts	No	Take parts correctly from nest	Automatic assembly process	100%	in process	PLC program and machine gripper design	Stop process and notify group leader / scrap connectors
	26.1 Auto unload the connector assy into packaging tray	3105-50WAY-01			Correct quantity	No	24 connectors per tray.	Automatic assembly process	100%	in process	Drawing PK-31302-351	Stop process and notify group leader.
27 Final inspection	27.0 Final Inspection				Inspect parts for cosmetic issues	No	No damaged, no missing components, correct assembly	Visual	100%	100%	Quality criterias	Scrap defective parts
28 QC Audit	28.0 Q. C. Audit				Inspect parts for cosmetic issues	No	No damaged, no missing components, correct assembly	Visual	10%	Each box / tray	Quality criterias	reject suspect tray / box, follow O20 Procedure

29 Packing & labeling	29.0 Place fully loaded trays into the box (4) & stick the manufacturing label				load correct qty of trays per box	No	4 trays per box (24 parts per tray and 96 Pcs. Per box, correct ID label on box)	Visual	100%	Each box / tray	Drawing PK-31302-351,	reject suspect tray / box, follow O20 Procedure
						No	All trays to be orientated in the same direction in each box	Visual	100%	Each box / tray	Visual inspection and conformance PK-31302-351	reject suspect tray / box, follow O20 Procedure
30 Weight station	30.0 Weight station				Weight boxes	No	96 Pcs. Per box,	Weight	100%	Each box	Drawing Pk-31302-351	reject suspect box, follow O20 Procedure
31 Storage	31.0 Send FG to warehouse				Correct part number and quantity.	No	Assure correct storage location and easy localization	SAP & Visual	100%	Each box.	SAP system, Work instruction W117	Stop Process, report issues to Q.C. Eng. & Warehouse supervisor
					Free of box damages	No	No damaged boxes	Visual	100%	Each Box	Warehouse personnel training	Stop Process, report issues to Q.C. Eng. & Warehouse supervisor
32 Shipping	32.0 Ship to customer				Correct part number and quantity according customer order	No	Send correct assemblies part number, correct qty, on time	SAP reports	100%	each shipment	SAP reports (customer orders) work instruction W101	Stop Process, report issues to Q.C. Eng. & Warehouse supervisor
For any special characteristics not identified in the control plan; reference the appropriate component level control plan (if applicable), PFMEA and /or Qualification Plan for the control methods.												

Rev	Date	Originator	Comments
1	13-Sep-16	Burton	Initial Draft - Pre review with team and Carlos
2	21-Sep-16	Burton / Ibarra	Plant review confirmation
3	29-Sep-16	Burton / Ibarra	Plant review confirmation
4	20-Apr-17	Ibarra	Review C.P. to assure it match with inspection plan and process
5	29-Nov-18	C. Ibarra J. Rios	Review C.P. and add new assembly part numbers
6	22-Mar-19	C. Ibarra J. Rios	Review C.P. to assure it match with FMEA & flow chart
7	10/23/2019	C. Ibarra O. Reyes	Review C.P. per LPA audit
8	5/7/2020	C. Ibarra C. Martinez	Review and add a new failure mode "broken lever in lock area" in step # 13



Molex Initial Sample Inspection Report

Quality Control

SAMPLE DESCRIPTION: SLV WIR CONN FEM	INSPECTOR: S.Graciano	DATE: 3-Mar-2022
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Drawing #: HU5T-14489-DD	REV: J4 2020/3/24	VENDOR: MOLEX
Molex P/N: 160044-0114		
Ford P/N: HU5T-14489-DD		

No.	PRINT SPEC.				Actual Measurements						UNITS	GAGE #	LEGEND
	Nominal	Tolerance			Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6			
1	42.20	+	0.60	- 0.60	42.065	42.063	42.090	42.062	42.094	42.093	MM	I-011	1
2	132.22	+	0.80	- 0.80	132.150	132.151	132.141	132.083	132.168	132.155	MM	CMM-003	1
3	7.00	+	2.00	- 2.00	7.042	7.175	7.231	7.137	7.093	7.075	MM	I-011	1
4	50.90	+	0.20	- 0.50	50.684	50.705	50.707	50.708	50.711	50.687	MM	I-011	1
5	Housing Color " BLACK "				OK	OK	OK	OK	OK	OK			VISUAL
6	TPA Color "NATURAL "				OK	OK	OK	OK	OK	OK			VISUAL
7	Circuit Size " 50 "				OK	OK	OK	OK	OK	OK			VISUAL
8	Weight (kg)				0.0774								
9	Notes: 1,2,3,4,5,6,7,8				OK REVIEWED	OK REVIEWED	OK REVIEWED	OK REVIEWED	OK REVIEWED	OK REVIEWED			

DIMENSION "OUT OF TOLERANCE" MARKED THUS "X"	LEGEND:
	1 Accepted 2 Rejected 3 Conditional 4 Tool life QCC.

Assy part 1600440114

1600440214 PDB GEN2 HSNG RCPT 50CKT WATER BLK POL A
(0899921706)

1600440300 PDB TPA RCPT 50CKT NAT
(0899921447)

1600440401 PDB GEN2 LEVER
(0899922128)

1600440500 PDB PINION GEAR LIGHT GRAY
(0899922128)

Certificate of Analysis

<p>Customer:</p> <p>MOLEX LLC 1400 W BOND CIR LINCOLN NE 68521-3696</p> <p>Attention:</p> <p>FAX:</p> <p>Cust Prod: 0899921706</p> <p>Cust Prod Name: ULT.A3EG7 HP BK23189 726KG 11G</p> <p>Cust P.O.: 1008595006</p> <p>Cust P.O. Line: 10</p>	<p>Product Number : 50155020</p> <p>Product Name : ULTRAMID® A3EG7 HP BK23189 POLYAMIDE 726KG Fibreboard IBC</p> <p>Vehicle :</p> <p>Batch/Lot : WF2005091</p> <p>Manuf.Date : Jan-05-2022</p> <p>Shipped Date :</p> <p>Shipped Quantity : 1,452.000 KG</p> <p>Delivery Date : Mar-01-2022</p> <p>Order Number : 118591592 000010</p> <p>Delivery Note : 146286342 900001</p>
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Inspection Certificate 3.1 according to EN 10204

Characteristic	Result	UOM	----Specification----		Test Method
			Minimum	Maximum	
Ash / Filler Content	34.667	%	33.000	37.000	ASTM5630/ISO3451
Moisture Content	0.03	%		0.15	ASTM D6869 / ISO 15512B
Viscosity Number for Polyamides	131	ml/g	120	150	ISO 307

Comments :

The above results are the means of individual test values determined on samples taken during production of the lot specified.

This product is approved to the following specifications:

WSS-M4D673-B1
M53122

3000 Town Center, Suite 2820,,Southfield,MI 48075 USA,
TEL: 248-355-9590 FAX: 248-355-9330

Certificate of Analysis

To whom it may concern

We hereby certify that the following commodity has been tested by us and its quality corresponds to the description as mentioned below.

Product Name/Grade/Color No./Package	Xarec N WA 7030-02 Natural 740KG		
Lot No.	KK0501QCJ1	Lot Size	2,220.000 kg
Customer Part No.	899921447	Delivery Date	02/22/2022
PO No.	1008736030	Sales Order	1100014982
Customer Name	Molex		

[illegible]

Idemitsu Chemicals U.S.A. Corporation
Date: 02/16/2022

Ryosuke Kondo

Authorized Signature(s)

Certificate of Analysis

Customer:	Product Number	: 50513537
	Product Name	: ULTRAMID*A3EG10 GREY 22906 POLYAMIDE 726KG Fibreboard IBC
MOLEX LLC 700 UPLAND LINCOLN NE 68521-0000	Vehicle	: X11114
	Batch/Lot	: 0210155133
	Manuf.Date	: Dec-16-2021
Attention: MOLDINGCOA@MOLEX.COM	Shipped Date	: Feb-01-2022
eMAIL: moldingcoa@molex.com	Shipped Quantity	: 1,452.000 KG
Cust Prod: 0899922128	Delivery Date	: Feb-03-2022
Cust Prod Name: ULT.A3EG10 GR22906 726KG 11G	Order Number	: 118526111 000010
Cust P.O.: 1008392428		
Cust P.O. Line: 10	Delivery Note	: 146214933 900001

Inspection Certificate 3.1 according to EN 10204

Characteristic	Result	UOM	-----Specification-----		Test Method
			Minimum	Maximum	
Ash / Filler Content	50.58	%	48.00	52.00	ASTM5630/ISO3451
Moisture Content	0.02	%		0.15	ASTM D6869 / ISO 15512B
Viscosity Number for Polyamides	132	ml/g	120	150	ISO 307

Comments :

The data shown is the results of tests performed on the lot specified.

The information contained herein is based either on analytical tests of samples or on statistical process data; it is intended solely for purposes of comparison with the established specifications for the product. Warranties of the product are exclusively as set forth in the applicable contract documents.

THIS CERTIFICATE OF ANALYSIS HAS BEEN PRODUCED ELECTRONICALLY AND IS VALID WITHOUT A SIGNATURE.