

ETCS INC ETCS TOOL & DIE LLC

21275 MULLIN AVE, WARREN, MI 48089

PROTOTYPING CAPABILITIES

**Prototype Stamping Dies, Laser
Cutting, CNC Press Brake, TIG/ Pulse/
Laser Welding.**

www.etcsinc.com, ravi@etcsinc.com

2023-2024 ISO 9001 certified



**PROTOTYPE STAMPED PARTS PRODUCED USING
GENERIC DIE SET AND CUSTOM RISER PLATES, INHOUSE
WELD FIXTURE AND ASSEMBLY CHECK FIXTURES.**

SAMPLE PROTOTYPE STAMPED PARTS BY ETCS



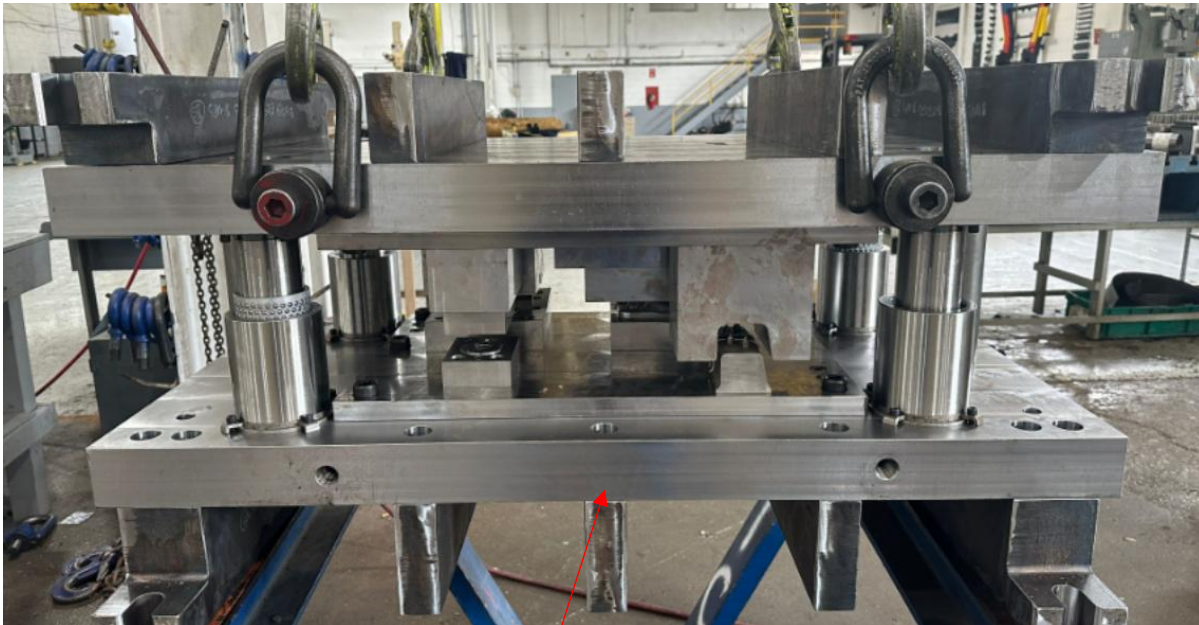
**TIE DOWN BRACKETS
FOR TDM OEM**



MANUFACTURED IN HOUSE BY ETCS



GENERIC PROTOTYPE DIE SETS WITH CUSTOM RISER PLATES AVAILABLE IN HOUSE TO STAMP PROTOTYPE PARTS IN SHORT TURNAROUND TIME



GENERIC DIE SET



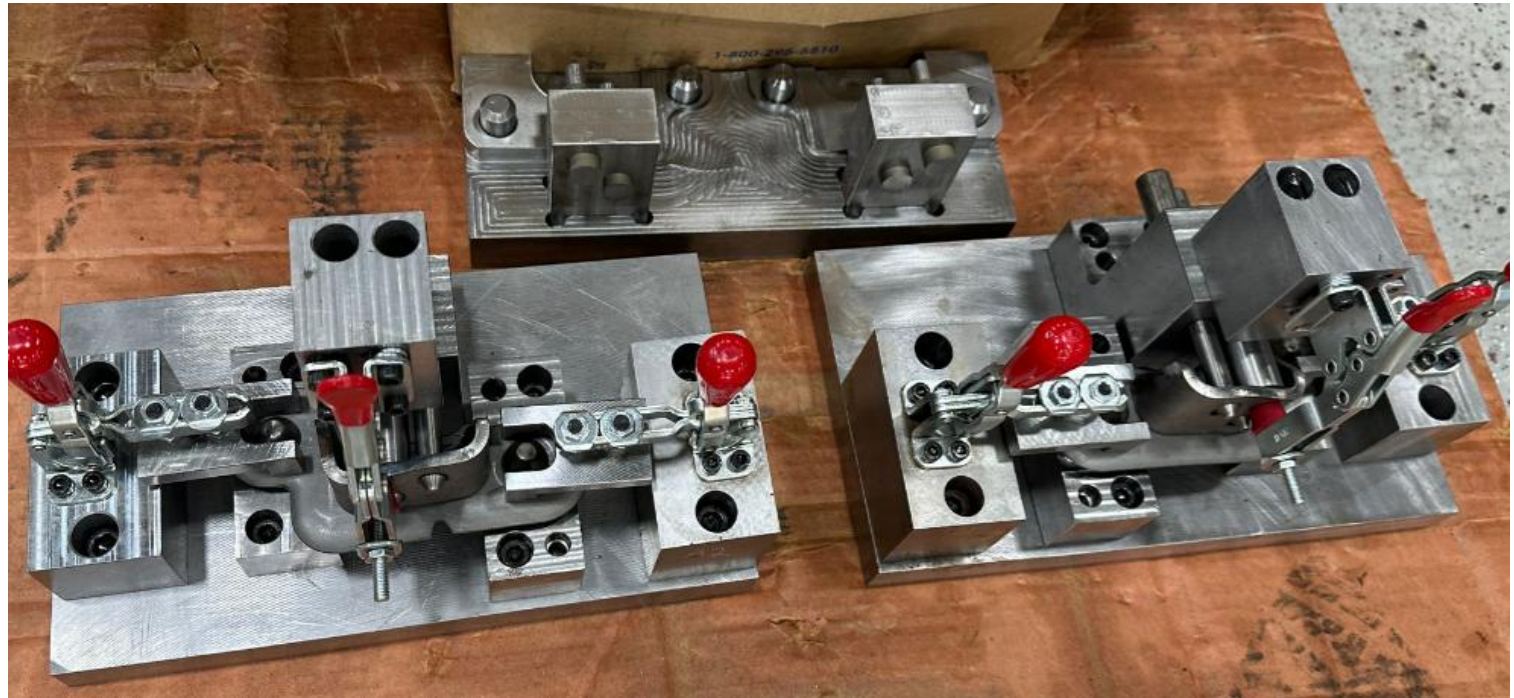
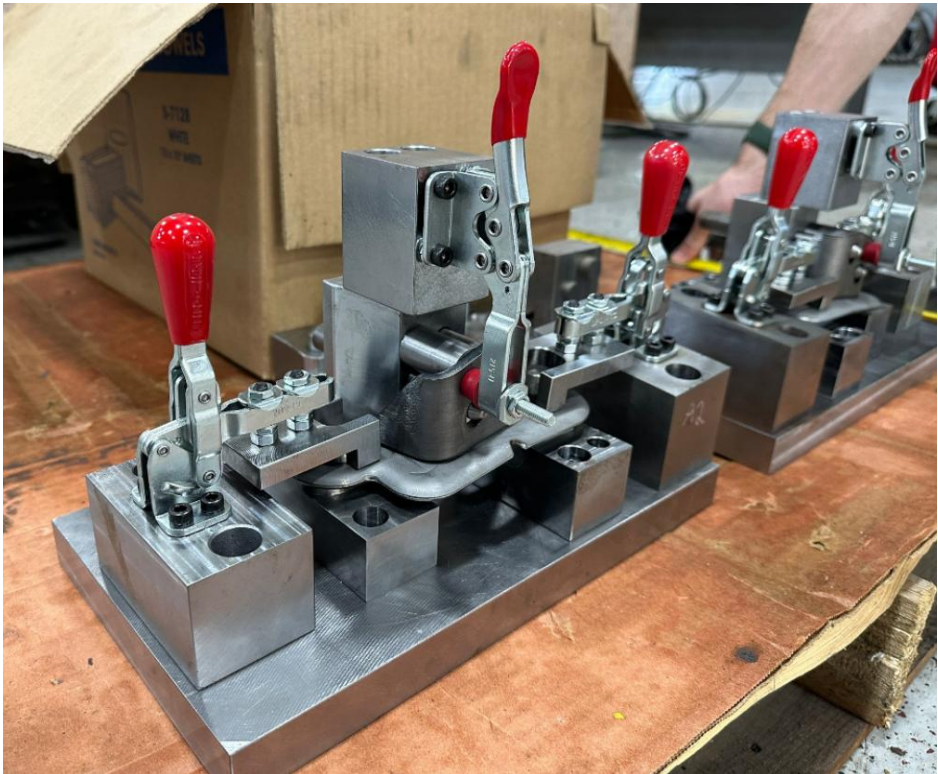
CUSTOM RISER PLATE TO STAMP SMALL TO MEDIUM PROTOTYPE PARTS

TIE DOWN BRACKETS FOR TDM OEM

MANUFACTURED IN HOUSE BY ETCS

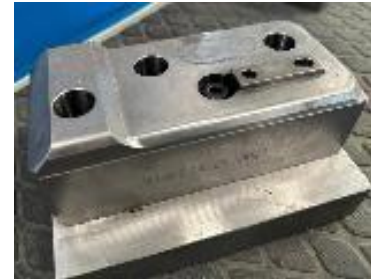


WELD FIXTURE AND ASSEMBLY CHECK FIXTURE FOR TIE DOWN BRACKETS



TIE DOWN BRACKETS FOR TDM (FORD).

MANUFACTURED IN HOUSE BY ETCS



EV BRACKETS FOR KARMA

PRESSES WITH FEEDER AT ETCS



300 T PRESS



1000 T PRESS

EQUIPMENT LIST AT ETCS



**US wheeler EM800A -2 No
800mm X 600mm X 600mm
US/ TAIWANESE VMC**



**US wheeler EM1100A -1 No
1200mm X 800mm X 600mm
US/ TAIWANESE VMC**

EQUIPMENT LIST AT ETCS



PRECISION WIRECUT
400mm X 300mm X 300mm
TAIWANESE COMPANY



SEMI PRECISION WIRECUT
400mm X 300mm X 300mm
TAIWANESE COMPANY

**PROTOTYPE PARTS MADE BY LASER CUT, PRESS BRAKE, WELD
PROCESS, E-COATING & POWDER COATING AS PER DRAWING**

EV-BRACKETS DEVELOPED BY ETCS ...1



Part no: C13ZB12704101
Part weight (Kg): 3.35
Material: ASTM A36



Part no: C13ZB12704301
Part weight (Kg): 4.98
Material: ASTM A36



Part no: C13ZB12703501
Part weight (Kg): 1.3
Material: ASTM A36



Part no: C13ZB12704501
Part weight (Kg): 6.2
Material: ASTM A36

EV-BRACKETS DEVELOPED BY ETCS ...2



Part no: C13ZB18700701
Part weight (Kg): 3.38
Material: ASTM A36



Part no: C13ZB18700901
Part weight (Kg): 3.03
Material: ASTM A36



Part no: C13ZB18707900
Part weight (Kg): 0.17
Material: ASTM A36



Part no: C13ZB18708500
Part weight (Kg): 0.22
Material: ASTM A36



Part no: C13ZB18707701
Part weight (Kg): 7.89
Material: ASTM A36

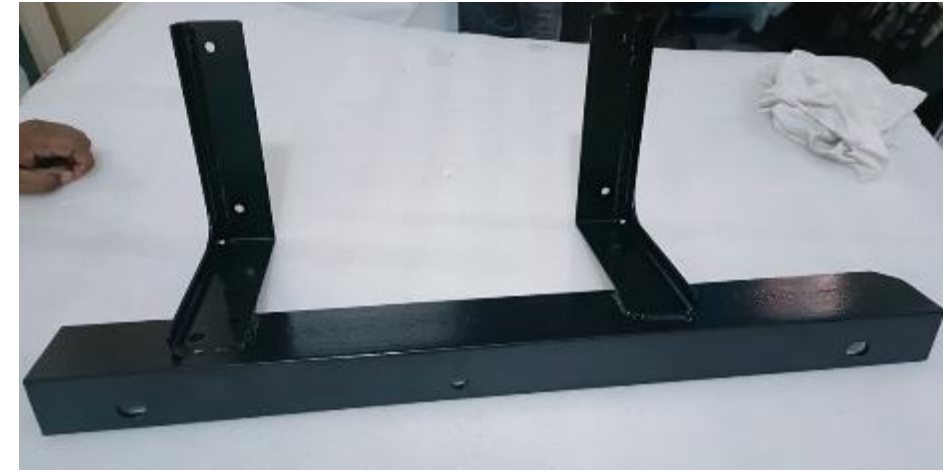
EV-BRACKETS DEVELOPED BY ETCS ...3



Part no: C13ZB18705904
Part weight (Kg): 4.0
Material: ASTM A36



Part no: C13ZB18706103
Part weight (Kg): 3.85
Material: ASTM A36

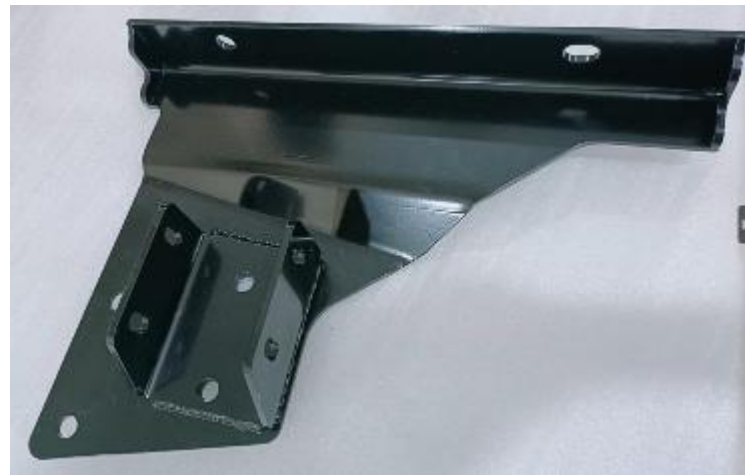


Part no: C13ZB18707300
Part weight (Kg): 4.79
Material: ASTM A36



Part no: C13ZB18705501
Part weight (Kg): 3.2
Material: ASTM A36

EV-BRACKETS DEVELOPED BY ETCS ...4



Part no: C13ZB18702300
Part weight (Kg): 4.4
Material: ASTM A36



Part no: C13ZB18702602
Part weight (Kg): 2.7
Material: ASTM A36



Part no: C13ZB18704901
Part weight (Kg): 2.81
Material: ASTM A36



Part no: C13ZB18705001
Part weight (Kg): 2.61
Material: ASTM A36



Part no: C13ZB18706901
Part weight (Kg):
7.7Material: ASTM A36

EV-BRACKETS DEVELOPED BY ETCS ...5



Part no: C13ZB18703701
Part weight (Kg): 8.5
Material: ASTM A36



Part no: C13ZB18117701
Part weight (Kg): 7.7
Material: ASTM A36



Part no: C13ZB18708904
Part weight (Kg): 3.82
Material: ASTM A36



Part no: C13ZB18707500
Part weight (Kg): 0.28
Material: ASTM A36

EV-BRACKETS DEVELOPED BY ETCS ...6



Part no: C13ZB11701301
Part weight (Kg): 4.3
Material: ASTM A36



Part no: C13ZB20000500
Part weight (Kg): 6.6
Material: ASTM A36



Part no: C13ZB19900700
Part weight (Kg): 0.125
Material: ASTM A36



Part no: C13ZB11701500
Part weight (Kg): 5.0
Material: ASTM A36



Part no: C13ZB19700500
Part weight (Kg): 1.0
Material: ASTM A36

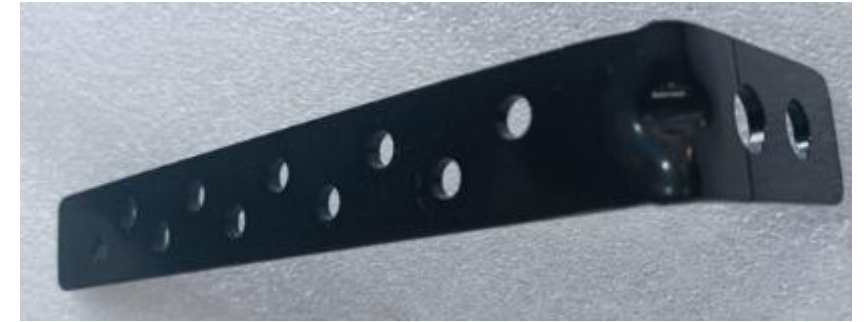
EV-BRACKETS DEVELOPED BY ETCS ...7



Part no: C13ZB38200101
Part weight (Kg): 3.67
Material: ASTM A36



Part no: C13ZB30700300
Part weight (Kg): 3.2
Material: ASTM A36



Part no: C13ZB59300700
Part weight (Kg): 0.14
Material: ASTM A36



Part no: C13ZB38200300
Part weight (Kg): 1.2
Material: ASTM A36



Part no: C13ZB30700100
Part weight (Kg): 1.9
Material: ASTM A36



Part no: C13ZB30700700
Part weight (Kg): 0.15
Material: ASTM A36

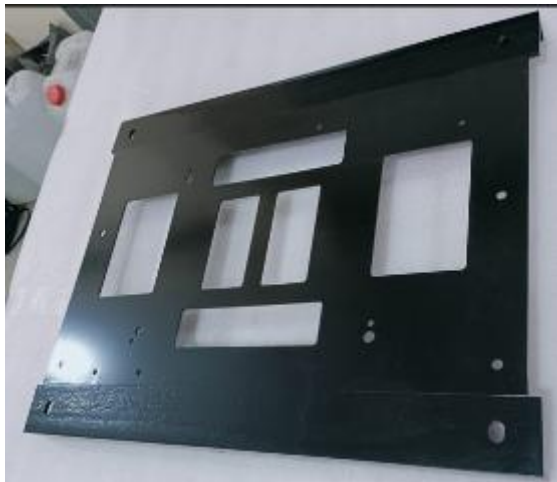
EV-BRACKETS DEVELOPED BY ETCS ...8



Part no: C13ZB18704700
Part weight (Kg): 5.6
Material: ASTM A36



Part no: C13ZB59300101
Part weight (Kg): 1.1
Material: ASTM A36



Part no: C13ZB38200501
Part weight (Kg): 8.37
Material: ASTM A36



Part no: C13ZM52700100
Part weight (Kg): 1.24
Material: AL 6061

EV-BATTERY TRAY FRUNK AND TUNNEL



Final Parts

Part no: C131118156500

Part weight (Kg): 36.9

Material: Steel AISI 1008

Final Parts

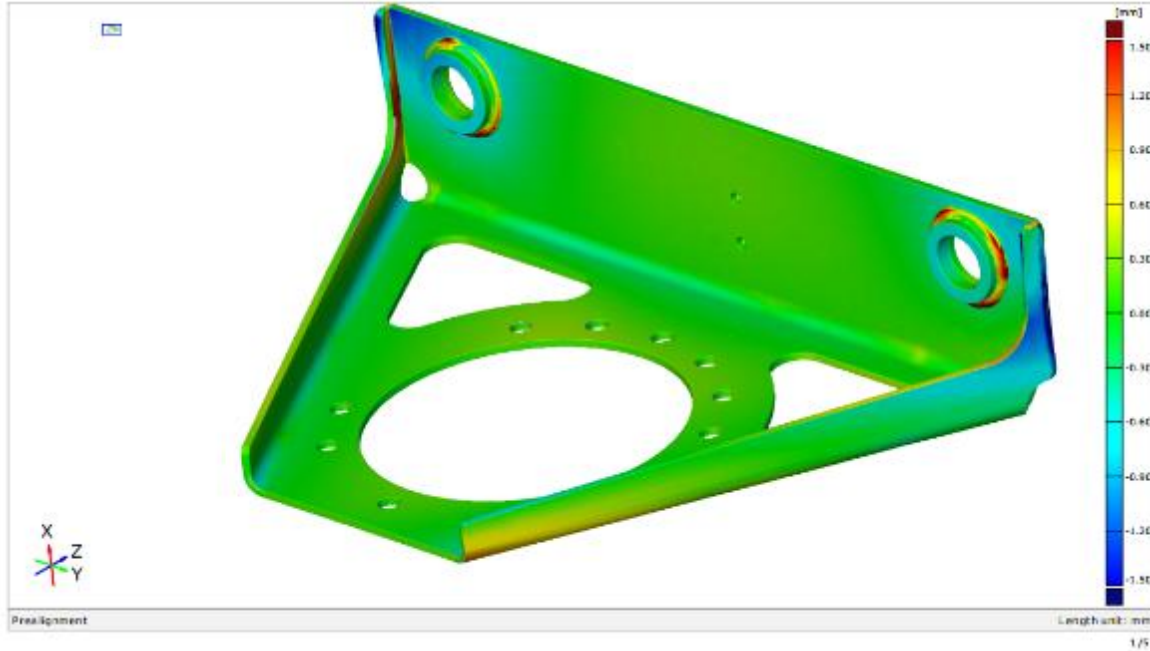
Part no: C131118155300

Part weight (Kg): 8.9

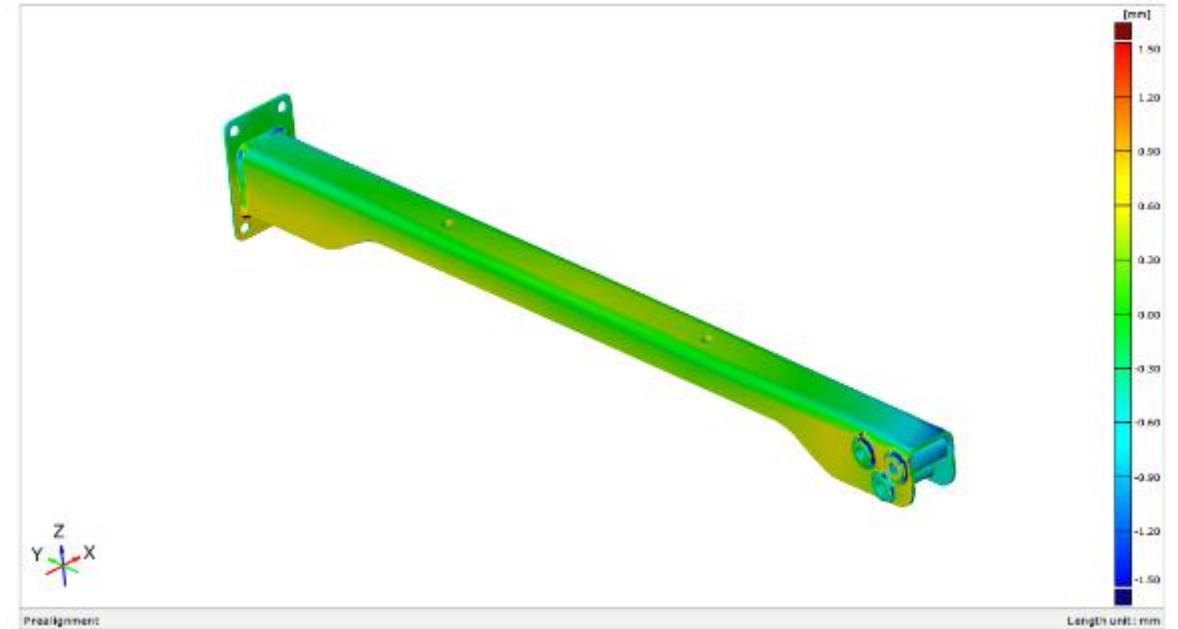
Material: Al AA5754-H11

EV-BRACKETS INSPECTION W.R.T CAD

Laser scan inspection reports

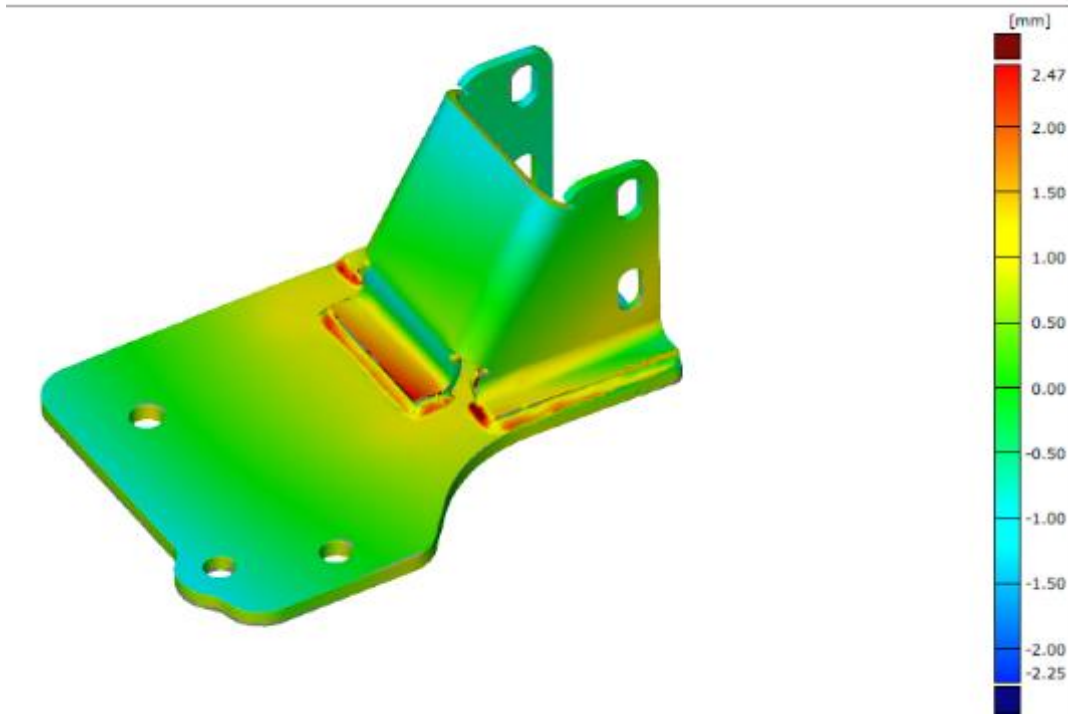


Part no: C13ZB12704301

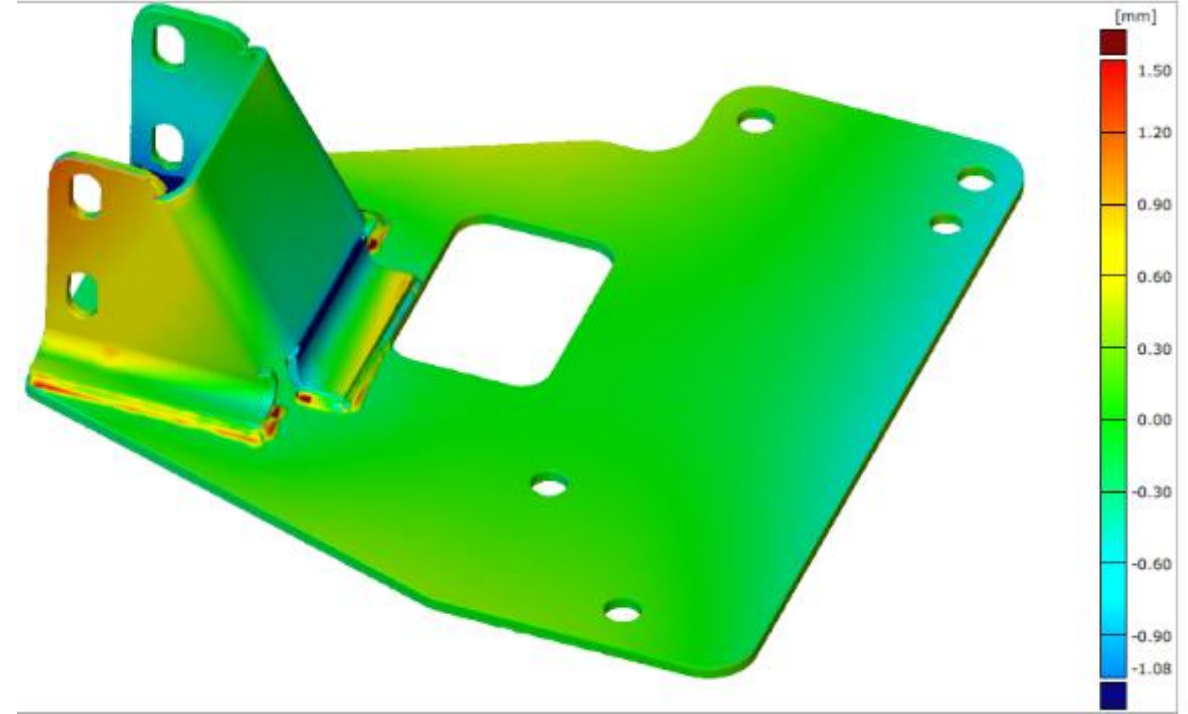


Part no :C13ZB12704701

Laser scan inspection reports



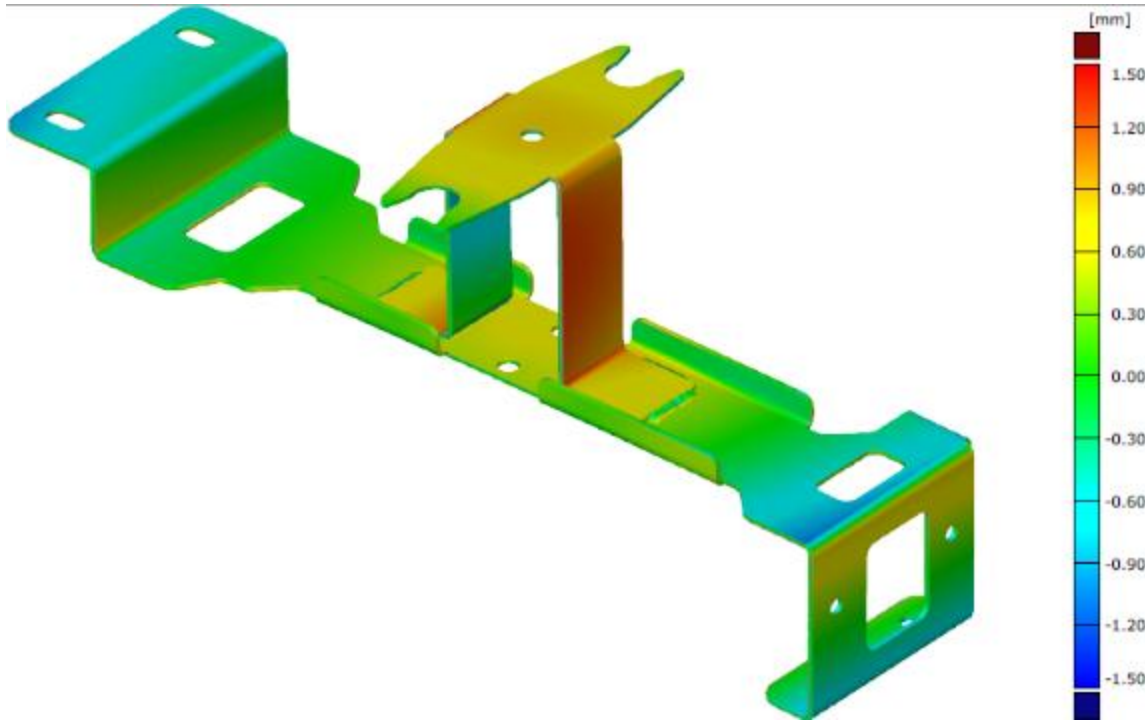
Part no: C13ZB18702502



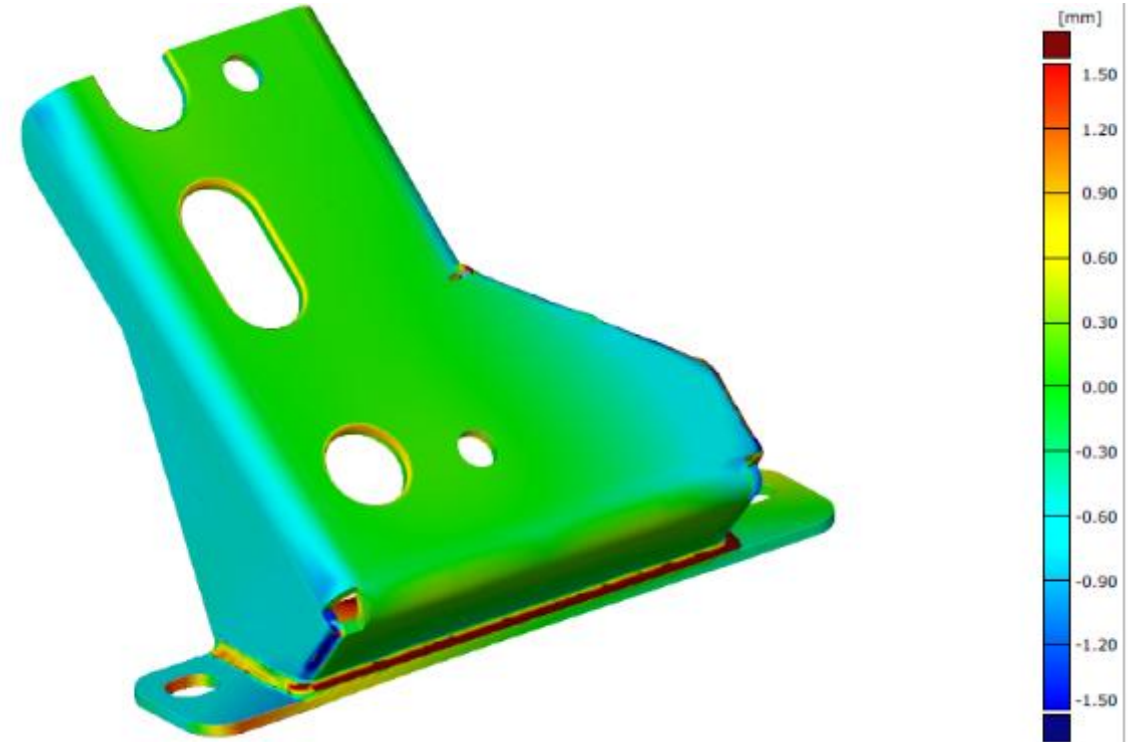
Part no: C13ZB18705904

EV-BRACKETS INSPECTION W.R.T CAD

Laser scan inspection reports



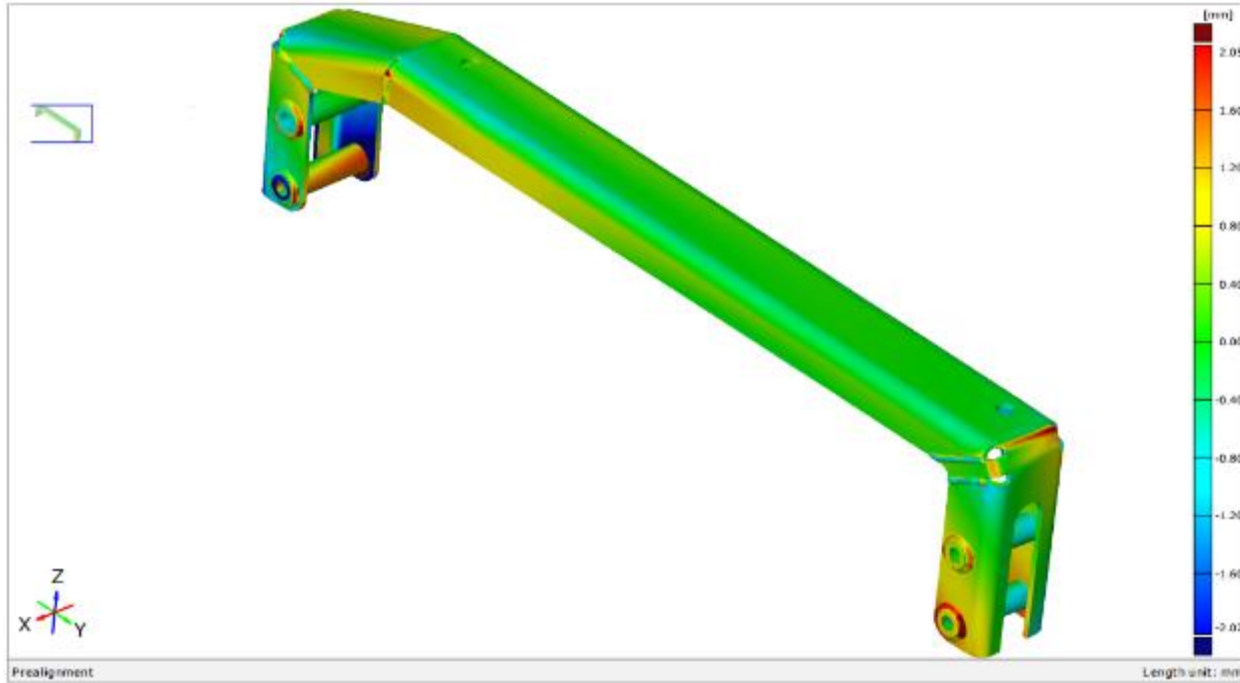
Part no: C13ZB59300100



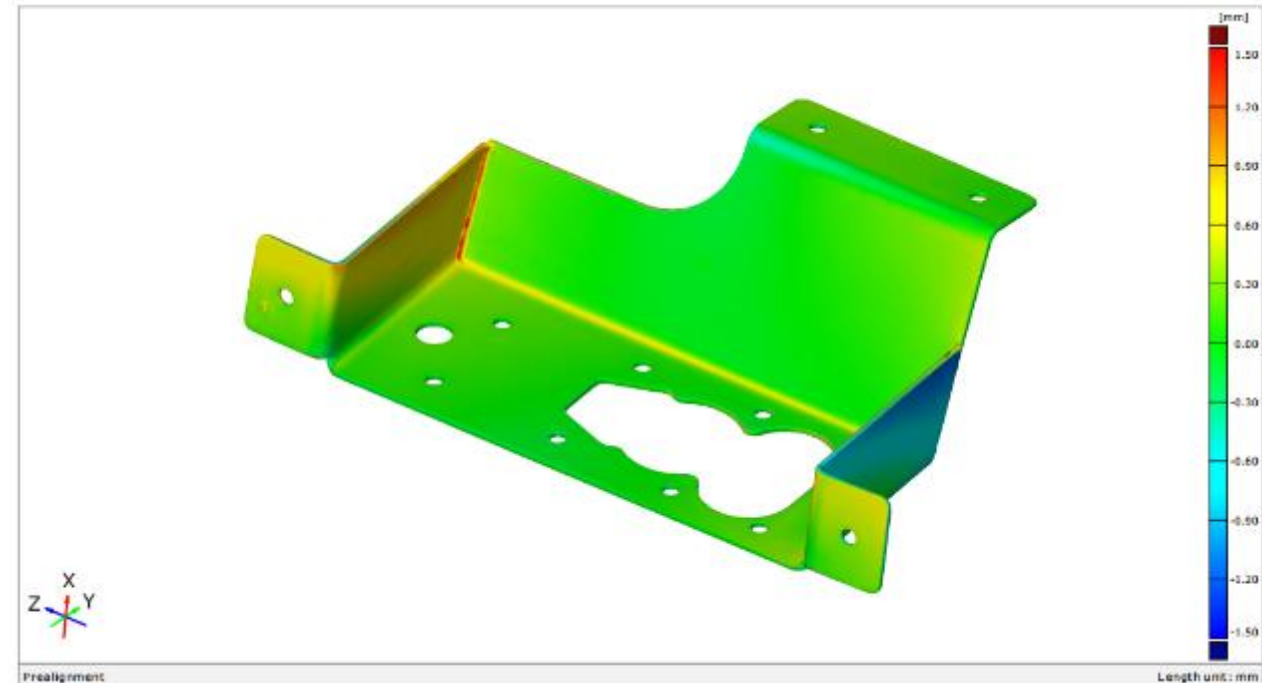
Part no: C13ZB18704901

EV-BRACKETS INSPECTION W.R.T CAD

Laser scan inspection reports



Part no: C13ZB18704700



Part no: C13ZB19700500

EV-BUSBAR BEING DEVELOPED BY ETCS

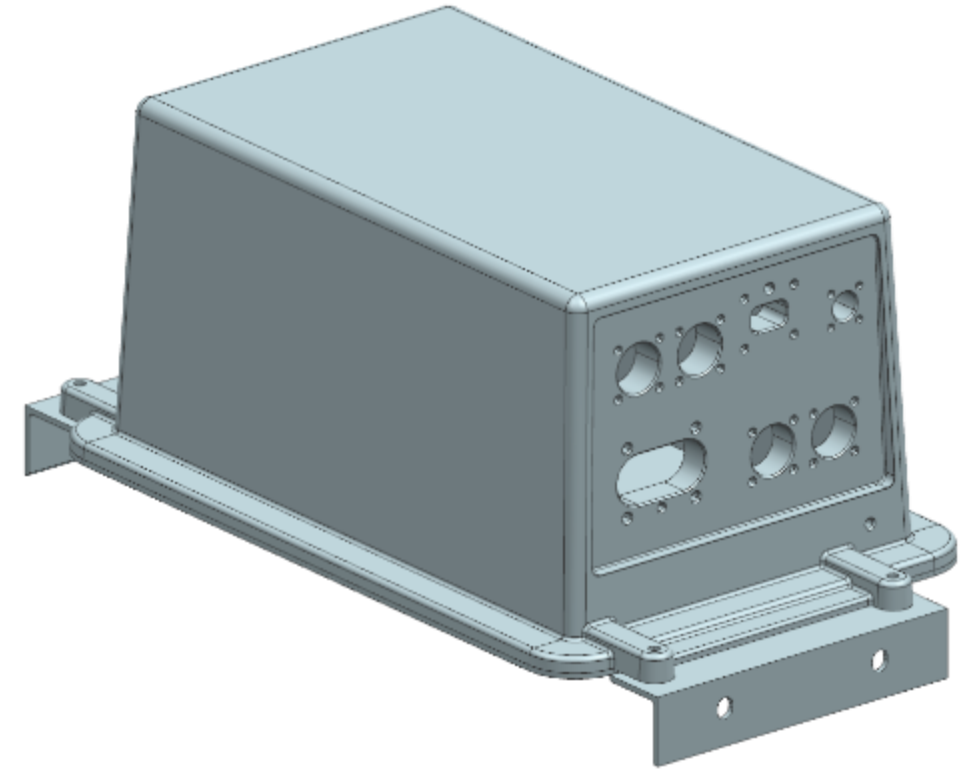
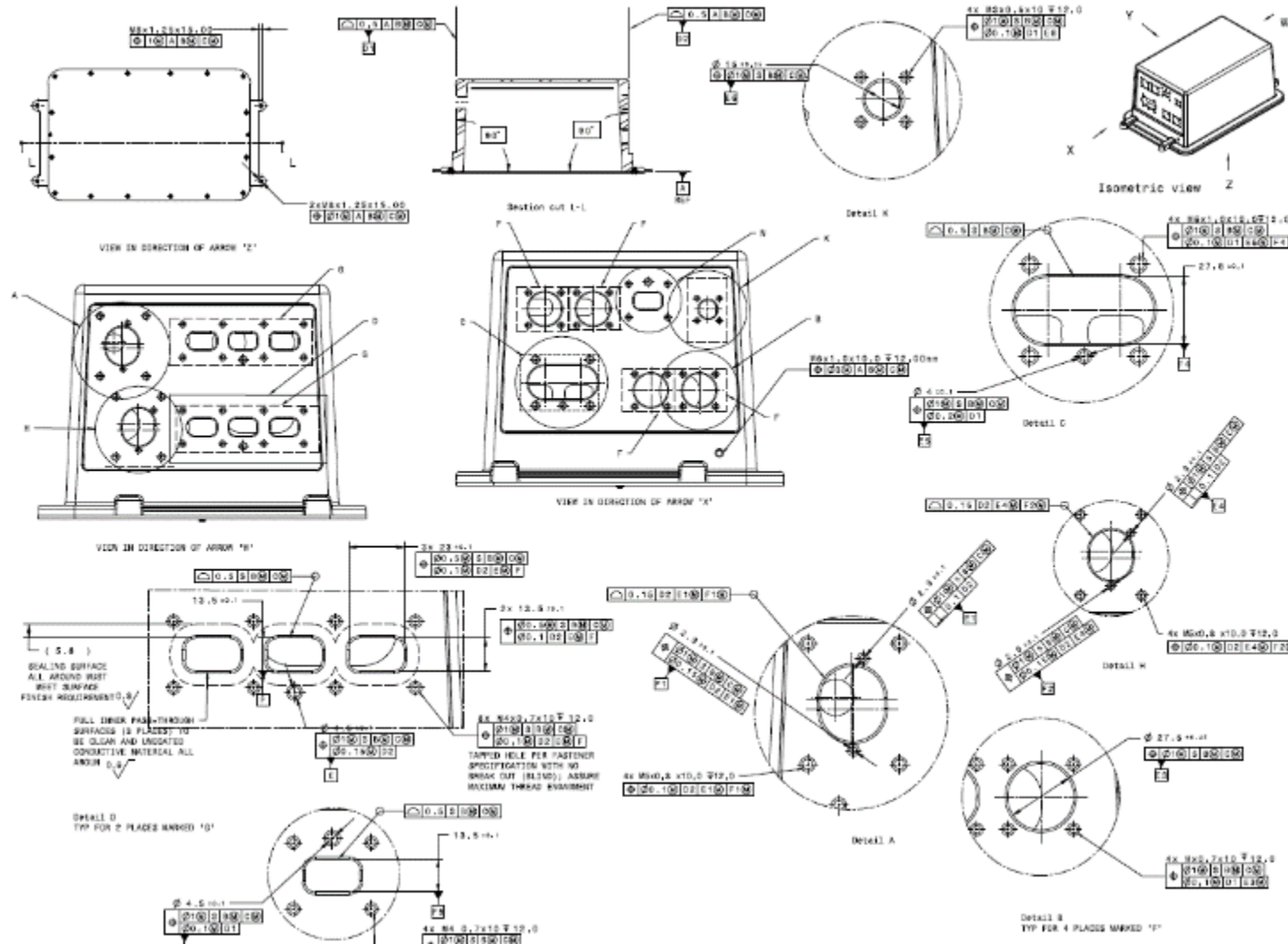


Copper Busbar- Both Flexible and Solid



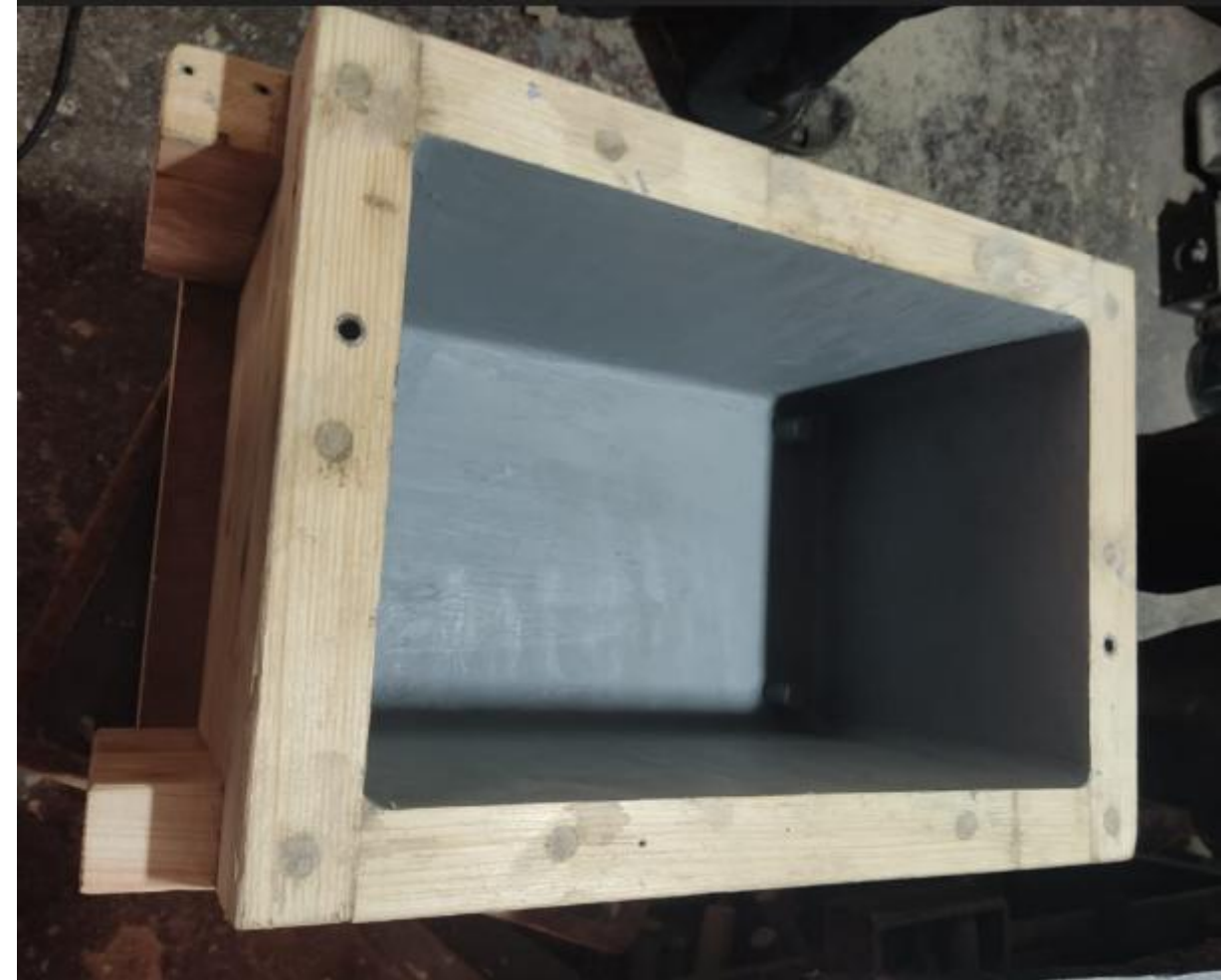
POWER DISTRIBUTION UNIT (PDU) HOUSING PROTOTYPES USING AI DIE CAST PROCESS

PDU BOXES DEVELOPED BY ETCS



Grade: Aluminium A-356
Low Volume: 50 Pcs.

PDU BOXES DEVELOPED BY ETCS



Wooden pattern used for Al casting

PDU BOXES DEVELOPED BY ETCS



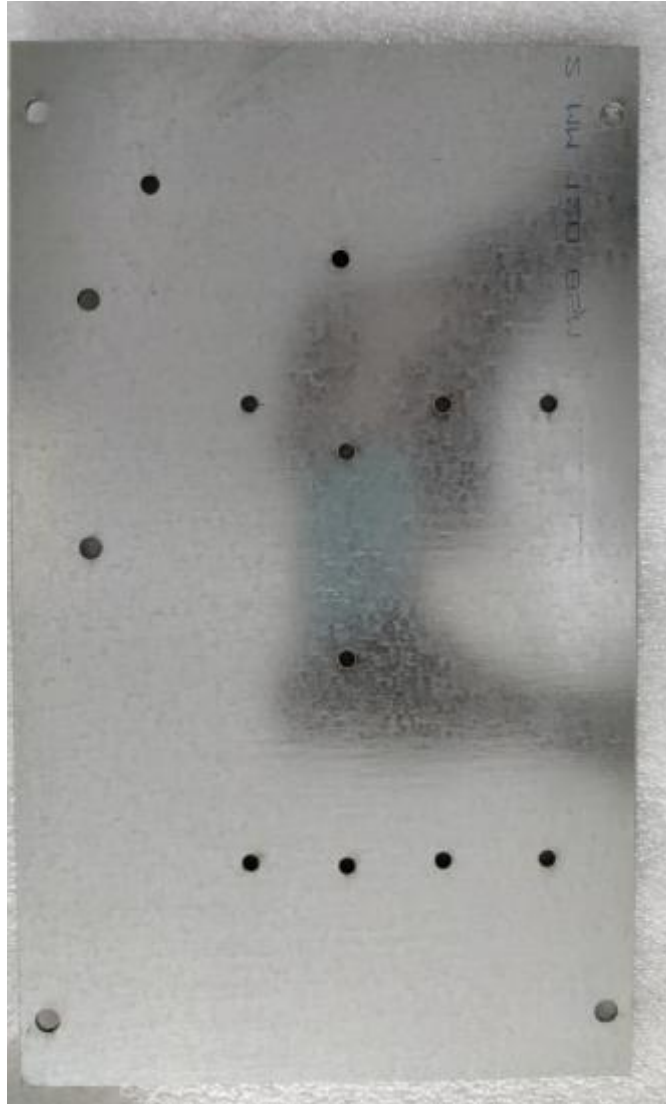
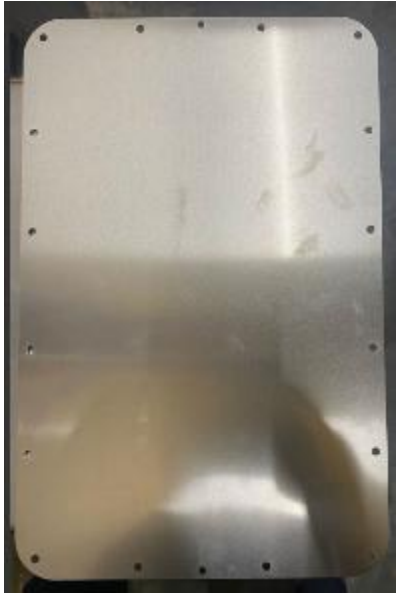
PDU Boxes after Casting

PDU BOXES DEVELOPED BY ETCS



PDU Boxes after Machining

PDU BOXES DEVELOPED BY ETCS



**PDU Lid & Panels: Laser Cut-
CNC Bending- Powder Coating**

PDU BOXES INSPECTION BY ETCS



Radiographic Test Report

RADIOGRAPHIC EXAMINATION REPORT											
Customer : R K S ENGINEERING C-267, 6th Cross Road, 1st Stage, Peenya Industrial Estate Bangalore Bangalore - 560058 (Karnataka, India)			ULR : TC667723000028732F Report No. : PNEC/RT/23-24/N0611 Date : 02/05/2023 Exam. Date : 28/04/2023 Test Carr. Out At : Our Lab Customer Client : Customer D.C. No.: 479 TSRT No. : SL No : 3481								
Type of Job : Casting Job Description : OA-PDU MODIFIED ENCLOSURE CV2.0 Casting Material : Aluminium Material Thick. : 10-30mm PO No. : RKSE/2023-2024 Density Range : 2 to 4 Exposure Tech. : SWSI			Sensitivity : 2% Source Used : Gamma Ray Serial No. : ROL12-13111 Source Strength(KV) : 20.40 Ci Source Size / Focal Spot : Dia 2.7 X 2.1 mm Radiation Source : Ir-192								
Ref. Code/Std. : ASME Sec V Art 2 Proc. & Rev. No. : PNEC/PLR TIC001.Rev 2 Acc. Criteria : ASTM E- 195 Extent of Exam. : 100% Screen (F&B) : 0.1 mm UCM : mm			IQI Type : Wire Placement of IQI : Source Side Placement of Lead Symbol B: Yes Exposure Time : 02 Min to 04 Min Processing Time : 05 Min Shim (in mm) : N/A								
Sr. No.	Identification	Thick. (mm)	SFD	SOD	IQI	Optical Density	Film Size	Loc.	Rad.	Lev.	Result
1	OA-PDU CV2	1030mm	254-508	-	2B11	2 to 4	16 X 12"	1-2	A	II	ACCEPTED
2		1030mm	254-508	-	2B11	2 to 4	16 X 12"	3-4	A	I	ACCEPTED
3		1030mm	254-508	-	2B11	2 to 4	12 X 8	5-6	D	II	ACCEPTED
4		1030mm	254-508	-	2B11	2 to 4	16 X 12"	7-8	D	II	ACCEPTED
5		1030mm	254-508	-	2B11	2 to 4	12 X 8	9-10	A	II	ACCEPTED
6		1030mm	254-508	-	2B11	2 to 4	12 X 4	11-12	C2	II	ACCEPTED
7		1030mm	254-508	-	2B11	2 to 4	16 X 3"	13-14	A	I	ACCEPTED
8		1030mm	254-508	-	2B11	2 to 4	12 X 4	15-16	NSD	NAP	ACCEPTED
9		1030mm	254-508	-	2B11	2 to 4	16 X 3"	17-18	NSD	NAP	ACCEPTED
Total No. of Films : 9 Total Sq. in Inches : 960.00			Film Size : 16 X 12" - 3, 12 X 8 - 2, 12 X 4 - 2, 16 X 3" - 2 Film Brand & Speed : Film - Agfa D7								
Special Note :											
Loc. = Location, Fnd. = Finding, Lev. = Level, SFD = Source to Film Distance, SOD = Source to Object Distance, SOD/D = Source Side of Object to Film Distance STANDARD : ASTM E - 446 A: Gas Porosity, B: Sand & Slag Inclusion, CA: Linear Shrinkage, CB: Feathery Shrinkage, CC: Sponge Shrinkage, CD: Combination of CA, CB, CC Shrinkage, D: Crack, E: Hot Tear, F: Insert, G: Mottling STANDARD : ASTM E - 155 A: Gas Holes, B1: Gas Porosity (Round), B2: Gas Porosity (Elongated), C: Shrinkage Cavity, C2: Shrinkage (Sponge), D: Foreign Material (Less dense) D2: Foreign Material (More dense), E: Micro Shrinkage STANDARD : ASTM E - 582 Category A : porosity Category B : Cold Fill Category C : Shrinkage Category D : Foreign material NAP: Not Applicable NSD : No Significant Defect *Radiographs - Customer to preserve & provide for clarification or review Notes : * Report states items tested only. * Test Results are in compliance with requirements and / or specifications of technique used. * Test Reports shall not be reproduced except full in written approval of the Laboratory. * If balance material is available after testing, it will be retained for 15 days maximum. * Any complaints about the test report should be communicated in writing within 7 Days of issue of this report.											
Examined By Shivakumar S		Witnessed / Reviewed By Shashidhar P Pallaki		For, Pallakki NDT Excellence Center Pvt. Ltd. Sowmya R C							
Radiographer (BARC Level-I) Shiva Kumar S.		ASNT & ISNT Level III ASNT & ISNT Level III		Sowmya							

PNEC/RT/23

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*** END OF REPORT ***

Material Certificate

TEST REPORT				
Customer Name		M/s. VARSHA CASTINGS & ENGG. PVT. LTD.		
Test Report No.		Survey No. 129, Kempasah Estate, Near 9th BMT Depot, Peenya 4th Phase, Peenya Indl. Area, Bangalore-560 058		
ULR NO.		6214/SVRL/MR/2023-24		
Test Conducted		TC5046231000012179		
Customer Reference		Hardness Test		
Date Of Receipt Of Sample		DC No : 043		
Date Of Testing Of Sample		18/04/2023		
Instrument used for test		18/04/2023		
Make		Pencil Hardness Tester		
Model		Acceptor		
Instrument Serial No.		TIL270A		
Temperature		YD/VIB12271196		
Calibration Due On		At Room Temperature 25.8°C		
		03/07/2023		
Hardness Test Report				
Sample Description	Test Parameters	Test Method	Specification Limits	Observed Value In HRN
PANEL-PDU Enclosure CV-2.0 Casting (Part of A-35k Th	Hardness Test	ASTM A958-2017a Shore Rockwell	95-100 HRN	96 HRN
For VARSHA CASTINGS & ENGG PVT. LTD. DC:- 046 Date:- 18-04-23				
Authorized Signatory Quality Manager				

Notes :
1. Test Results Only to Sample Submitter by the Party.
2. Test Report shall not be reproduced except in full.
3. Samples will be disposed after 15 days from the date of issue of Test Report unless otherwise specified.
4. This report has been issued as an electronic document and no original will be issued in any subsequent version without permission in writing.

Ultrasound Test Report

ULTRASONIC EXAMINATION REPORT						
Customer Name : R K S ENGINEERING C-267, 6th Cross Road, 1st Stage, Peenya Industrial Estate Bangalore Bangalore - 560058 (Karnataka, India)			ULR : TC66772300003506F Report No. : PNEC/UT/23-24/N0658 Date : 28/04/2023 Exam. Date : 18/04/2023 Test Carr. Out At : Our Lab Customer DC No.: 442 TS UT No. : SL NO: 828			
Customer Client : Type of Job : Casting Material : A356 Material Thick. : As per Drawing PO No. : CG-442 Ref. Code/Std. : ASTM SA 808 Proc. & Rev. No. : PNEC/PLUTIC/01, Rev 02 Acc. Criteria : PNEC/PLUTIC/01, Rev 02 Technique used : Pulse Echo-Contact Manual Stage of Exam. : Raw material Extent of Exam. : 100 % Inaccessible Area : Nil Welding Process : NA			Surface Cond. : As Cast Surface Temp. : ambient Couplant : Water Cal. Block Used : IRW - V1 Block Cal. Range : 0-30 mm Search Unit Cable : Type & Length : BNC TO Mini Lens Wave Propagation : Compressional Reference Block : Back Reflection 100% Scanning Sensitivity : 50dB Scanning Level : +6dB Scanning Speed : 150mm/sec Welding Configuration : NA UCM : mm			
EQUIPMENT DETAIL						
No.	Equipment	Make	Display	Sr. No.	Calibration Standard	Calibration Technique
1	Einstei II TPT	Modconic	A Scan	E3401-0812	ASTM E317-11	IRW V1
PROBE DETAIL						
No.	Type of Probe	Size of Probe	Reference Angle	Frequency	Probe Sr. No.	
1	TR Probe	20mm	0	4MHz	(424) 27436 - TP20 - 005	
COMPONENT DETAIL						
No.	Description	Material	Thick.	Qty.	Unit	Observation
1	OA-DDU Modified Enclosure CV2.0	A356	As per Drawing	1.00	No.	Surface Roughness observed Right porosity observed
Special Note:						
Notes : * Report states items tested only. * Test Results are in compliance with requirements and / or specifications of technique used. * Test Reports shall not be reproduced except full in written approval of the Laboratory. * If balance material is available after testing, it will be retained for 15 days maximum. * Any complaints about the test report should be communicated in writing within 7 Days of issue of this report.						
Examined By Shivakumar S		Witnessed / Reviewed By Shashidhar P Pallaki		For, Pallakki NDT Excellence Center Pvt. LTD. Hemavathi R Hegde		
ASNT Level II in RT, UT, MT, PT, VT		ASNT & ISNT Level II		Sowmya		

PNEC/UT/23

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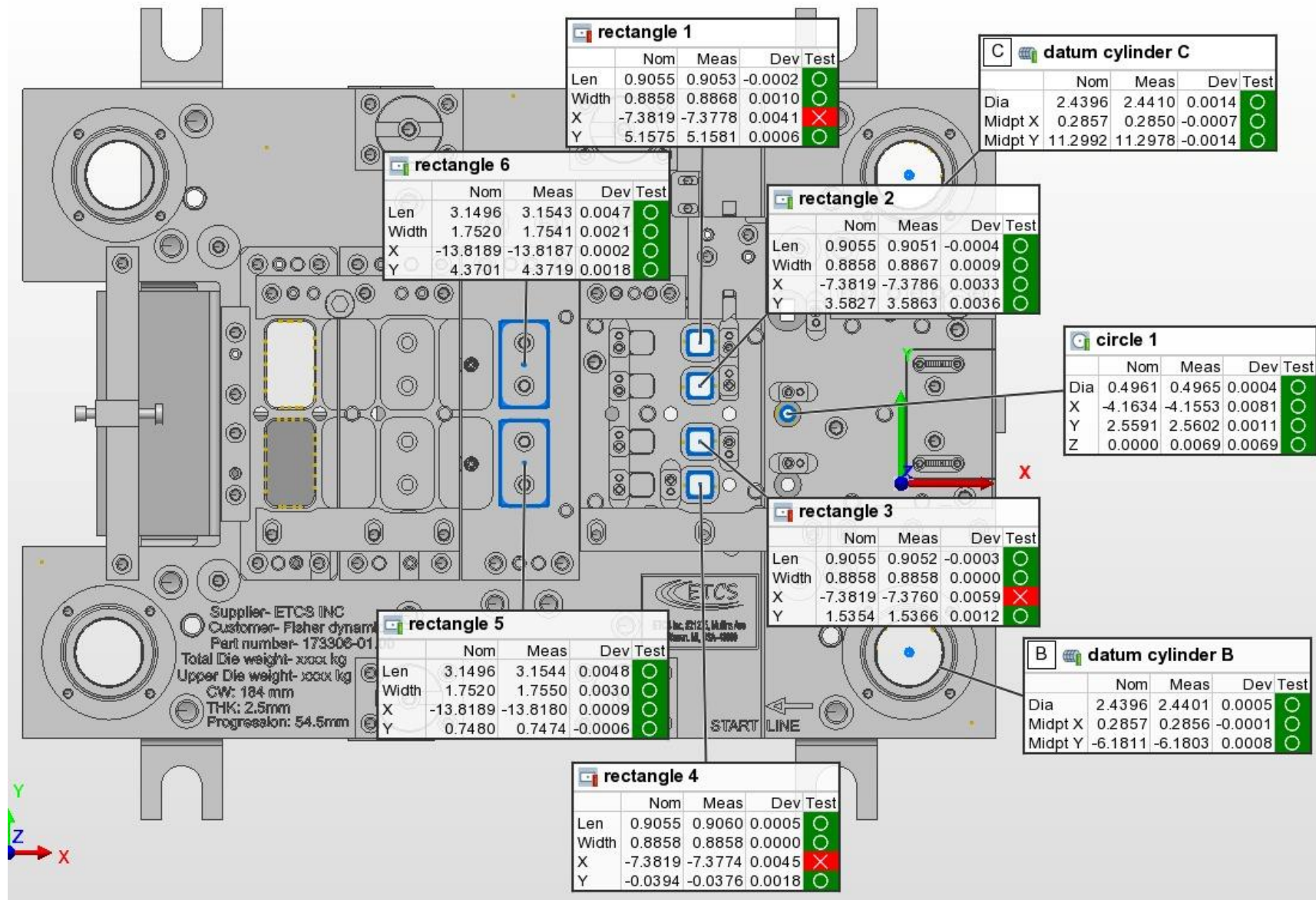
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*** END OF REPORT ***

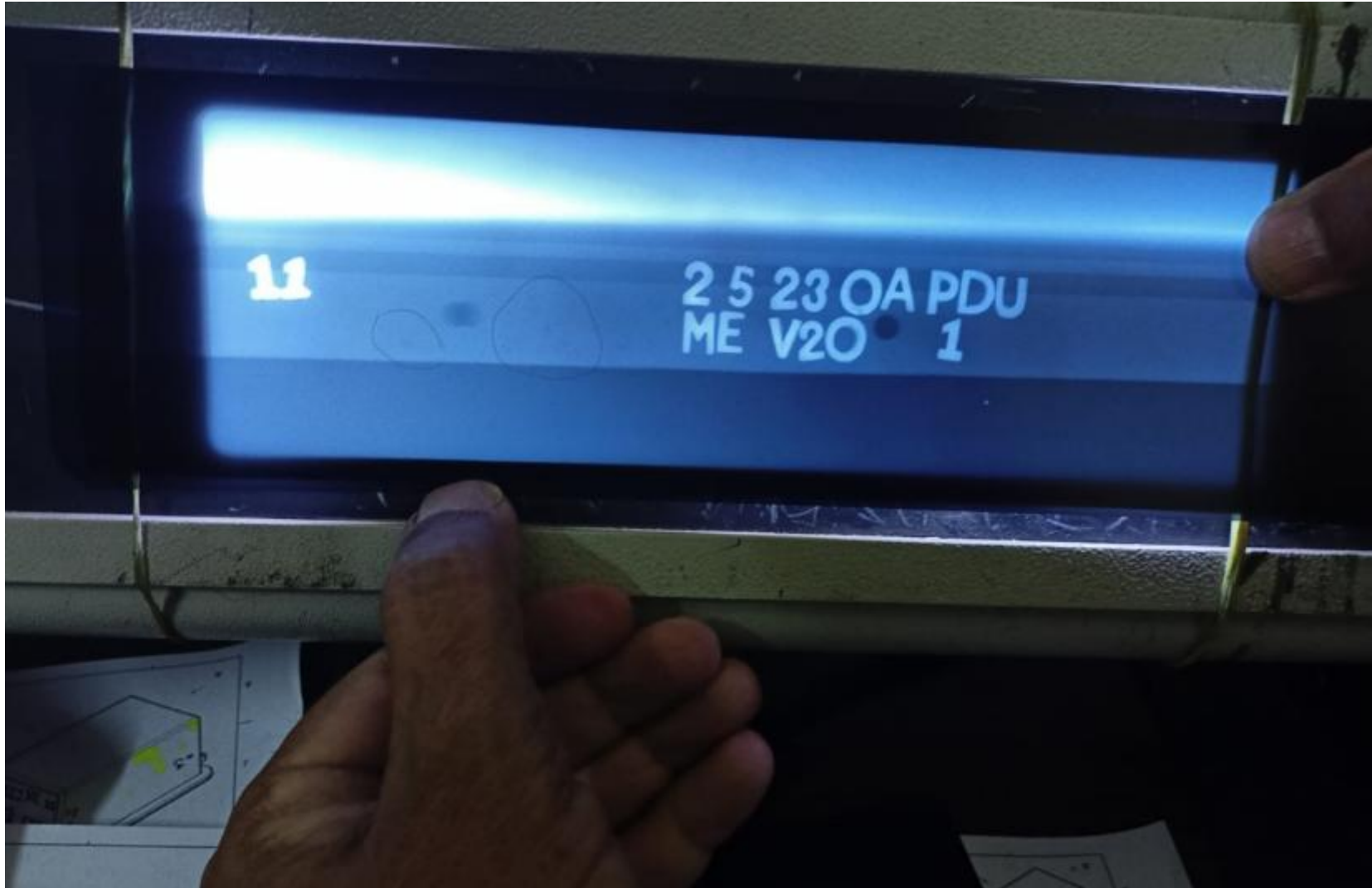
ETCS INSPECTION FACILITY



INSPECTION REPORT



ETCS INSPECTION FACILITY



X Ray Inspection to measure porosity beyond specification

SAMPLE PACKAGING PRIOR TO SHIPPING



Packing to ensure proper safety

SAMPLE PACKAGING PRIOR TO SHIPPING



Packing to ensure proper safety

SAMPLE PACKAGING PRIOR TO SHIPPING



Packing to ensure proper safety



Certificate of Registration

ETCS Tool & Die, Inc.

21275 Mullin Avenue, Warren, MI 48089, USA

have been assessed and approved to:

ISO 9001:2015

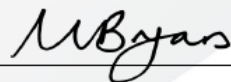
Quality Management System

The approved management system applies to the following scope:

The manufacture of precision dies for the automotive and OEM industries.

Original Approval: 25th September 2020
Current Certificate: 25th September 2025
Certificate Expiry: 25th September 2026
Certificate Number: US4538

Signed: Certification Officer



This certificate remains valid while the holder maintains their administration systems in accordance with the standards and guidelines stated above, which will be audited annually by QAS International. The holder is entitled to display the above registration mark for the duration of this certificate, which should be returned to QAS International upon reasonable request.

Tel: 020 31989788 - info@qas-international.com - <https://www.qas-international.com>
Issuing Office: QAS International, 20 Grosvenor Place, London, England, SW1X 7HN



ETCS ISO 9001:2015 CERTIFICATION

ETCS Tool & Die Major Customers



- ETCS Tool & Die Pvt. Ltd. is a leading manufacturer of stamping tools and sheet metal prototype parts, to its esteemed customers both in India & in the USA. It is headquartered in Bangalore, India.
- Founded to provide comprehensive solutions, ETCS specializes in tool design, the manufacturing of stamping dies and check fixtures.
- Additionally, we offer feasibility studies and simulations using advanced software such as AutoForm and Forming Suite to ensure optimal performance and quality.

Our largest Clients include:



www.etcinc.com





Thank You!

Ravi Kapur
President & CEO



CONTACT NUMBERS:
(248)-763-9467



Email Address:
ravi@etcsinc.com



Address:
ETCS, Inc.
ETCS Tool & Die LLC
21275 Mullin Ave, Warren, MI
48089