EMUSKi

ULTRAVIOLETTE AUTOMOTIVE PRIVATE LIMITED

PROJECT DELIVERY REPORT
PO -UV/PO/05757

For Enquiry

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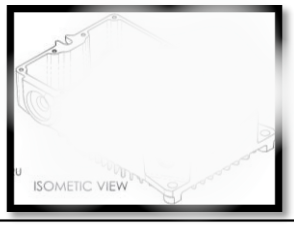
TABLE OF CONTENT

DELIVERY REPORT

EMUSKI

S.no	Description	Value
1	Customer Name	
2	Address	
3	Buyer Name	
4	Email id	
5	Contact Number	
6	Order type	
7	Purchase Order Number & Date	
8	No of Line item/ Part	
9	PO Delivery Date	
10	Project Scope	
11	Incoterms	
12	Packing Type	
13	Tax invoice number & Date	
14	Actual Delivery date	

2 Part details- VQ240210_0.B

Part details		3D Image
Line Item -No	1	
Item number		
Drawing number		
Part Description		
Revision number		
Material Grade		

2.1 MANUFACTURING PROCESS PLAN

Op No	Process Name	Symbol	Specification	Equipment Selection	Control Mechanism/ Inspection type/Remarks
10	Raw Material inward Inspection		AL- 6061 T6	-	Third party inspection
20	Band Saw Cutting		150 x 225 x 70	Cutting Machine	Measuring Tape Inspection
30	Machining Operation		As per 2D Drawing	VMC Machine	Vernier Calliper, Height Gauge
40	Inspection		As per Balloon Drawing	Manual	Vernier Calliper, Height Gauge
50	Packing		As per Agreed Packing method	Manual	Corrugated box
60	Delivery		As per Inco terms	Road Transport	Door Step Delivery

2.2RAW MATERIAL INSPCTION REPORT

Inspection Details	
Material Grade	AL- 6061 T6
Inspection type -	Chemical anaylsis
Tested at –	Micro Lab
Report Number -	TRH/24/10247-1
Inspected Date -	14-02-2025

MTC

Customer:	Report No :	TRH/24-25/10247-1
	Sample Received Date:	14-02-2025
	Date Of Completion:	14-02-2025

Samples drawn by Customer

Sample Description: *Material : Aluminium (6061-T6), Qty : 1 No.*

Discipline : Chemical, Group : METALS & ALLOYS,Product Type:Aluminium & Aluminium Alloys

SPECTRO CHEMICAL ANALYSIS **Test Method : ASTM E1251:2017a**

Verified By: Roshini **Tested on : 14-02-2025**

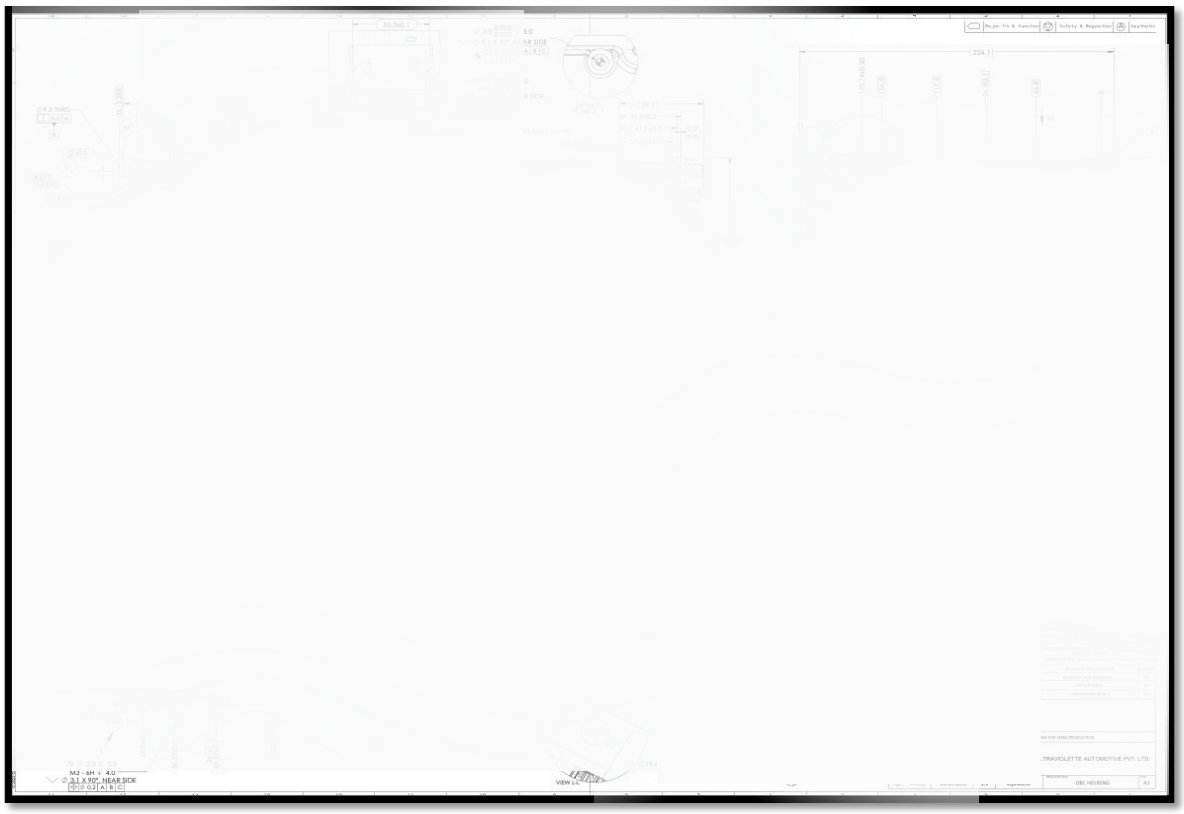
Test Parameters	Result	Requirement	Test Method
% Silicon	0.577	0.40-0.80	ASTM E1251:2017a
% Iron	0.436	0.70 max.	ASTM E1251:2017a
% Copper	0.181	0.15-0.40	ASTM E1251:2017a
% Manganese	0.099	0.15 max.	ASTM E1251:2017a
% Magnesium	0.934	0.80-1.20	ASTM E1251:2017a
% Chromium	0.272	0.040-0.35	ASTM E1251:2017a
% Zinc	0.018	0.25 max.	ASTM E1251:2017a
% Titanium	0.023	0.15 max.	ASTM E1251:2017a
% Aluminium	Remainder	Remainder	ASTM E1251:2017a

Remark: The above result(s) meets the specified requirements of ASTM B209 Alloy 6061 with respect to elements analysed.

Authorized Signatory

------------------------------ **End of Test Report** ------------------------------

2.32D DRAWING



2.4FINAL INSPECTION REPORT

Part /item Number:	VQ240210_0.B	Company Name	EMuski
Part Name	OBC Housing	Address	
Revision Number	F	Inspection Date	13-02-2025

Name	Measured value	Nominal value	+Tol	-Tol	Deviation	+/-
7.Y Value_Circle4	-84.2252	-84.2380	0.1000	-0.1000	0.0128	
8.Y Value_Circle3	-102.4538	-102.4690	0.1000	-0.1000	0.0152	
12.X Value_Intersection2	14.0392	14.0400	0.1000	-0.1000	-0.0008	
14.1 X Value_Circle4	61.1491	61.2000	0.1000	-0.1000	-0.0509	
14.2 X Value_Circle3	61.1323	61.2000	0.1000	-0.1000	-0.0677	
16.X Value_Circle8	180.1301	180.1500	0.1000	-0.1000	-0.0199	
18.Y Value_Circle8	-73.3733	-73.3500	0.1000	-0.1000	-0.0233	
20.Y Value_Circle9	-48.2249	-48.2100	0.1000	-0.1000	-0.0149	
22.Y Value_Circle5	-38.5539	-38.5600	0.1000	-0.1000	0.0061	
23.Y Value_Circle6	-15.5725	-15.5700	0.1000	-0.1000	-0.0025	
24.Y Value_Circle7	-9.8221	-9.8300	0.1000	-0.1000	0.0079	
27.X Value_Circle9	180.5126	180.5000	0.1000	-0.1000	0.0126	
30.X Value_Circle7	122.2101	122.2000	0.1000	-0.1000	0.0101	
32.X Value_Circle5	91.1967	91.2000	0.1000	-0.1000	-0.0033	
33.X Value_Circle6	90.6946	90.7000	0.1000	-0.1000	-0.0054	
38.X Value_Intersection1	12.9397	12.8600	0.1000	-0.1000	0.0797	
39.Diameter_Cylinder1	15.9787	16.0000	0.1000	-0.1000	-0.0213	
43.Z Value_Symmetry1	-6.5874	-6.5000	0.1000	-0.1000	-0.0874	
44.C Distance1_X	44.8423	44.8000	0.1000	-0.1000	0.0423	
45.C Distance1_X	54.6217	54.6000	0.1000	-0.1000	0.0217	
46.C Distance1_X	6.9733	7.0000	0.1000	-0.1000	-0.0267	
47.1 Radius1	1.5104	1.5000	0.1000	-0.1000	0.0104	
47.2 Radius2	1.4850	1.5000	0.1000	-0.1000	-0.0150	
56.X Value_Circle10	170.7365	170.7400	0.1000	-0.1000	-0.0035	

Name	Measured value	Nominal value	+Tol	-Tol	Deviation +/-
59.Z Value_Point2	-41.0937	-41.1000	0.1000	-0.1000	0.0063
60.Z Value_Point1	-37.6066	-37.6000	0.1000	-0.1000	-0.0066
61.Flatness1	0.0069	0.0000	0.2000	0.0000	0.0069
62.Z Value_Plane7	-43.5897	-43.6000	0.1000	-0.1000	0.0103
65.Y Value_Circle11	-67.3306	-67.3855	0.1000	-0.1000	0.0549
66.Y Value_Circle15	-104.3647	-104.3730	0.1000	-0.1000	0.0083
67.Y Value_Circle1	-126.3906	-126.4000	0.1000	-0.1000	0.0094
68.X Value_Circle29	36.5584	36.5880	0.1000	-0.1000	-0.0296
69.X Value_Circle28	74.3613	74.4030	0.1000	-0.1000	-0.0417
70.X Value_Circle11	88.9014	88.9480	0.1000	-0.1000	-0.0466
71.X Value_Circle27	134.3930	134.4040	0.1000	-0.1000	-0.0110
72.X Value_Circle36	146.3159	146.3520	0.1000	-0.1000	-0.0361
73.X Value_Circle35	198.6283	198.6500	0.1000	-0.1000	-0.0217
74.1 X Value_Circle23	204.7145	204.7450	0.1000	-0.1000	-0.0305
74.2 X Value_Circle24	204.7362	204.7450	0.1000	-0.1000	-0.0088
74.3 X Value_Circle25	204.7384	204.7450	0.1000	-0.1000	-0.0066
74.4 X Value_Circle26	204.7333	204.7450	0.1000	-0.1000	-0.0117
75.1 Y Value_Circle26	-125.1038	-125.2000	0.1000	-0.1000	0.0962
75.2 Y Value_Circle27	-125.1154	-125.2000	0.1000	-0.1000	0.0846
75.3 Y Value_Circle28	-125.1555	-125.2000	0.1000	-0.1000	0.0445
75.4 Y Value_Circle29	-125.1818	-125.2000	0.1000	-0.1000	0.0182
76.Y Value_Circle36	-118.7479	-118.7950	0.1000	-0.1000	0.0471
77.Y Value_Circle35	-112.3060	-112.3690	0.1000	-0.1000	0.0630
78.Y Value_Circle25	-82.9528	-82.9990	0.1000	-0.1000	0.0462
79.Y Value_Circle37	-63.1409	-63.2000	0.2000	-0.2000	0.0591
80.Y Value_Circle24	-43.3421	-43.3990	0.1000	-0.1000	0.0569
81.Y Value_Circle34	-8.8225	-8.8640	0.1000	-0.1000	0.0415
82.1 Y Value_Circle20	1.7971	1.8000	0.1000	-0.1000	-0.0029
82.2 Y Value_Circle21	1.8321	1.8000	0.1000	-0.1000	0.0321

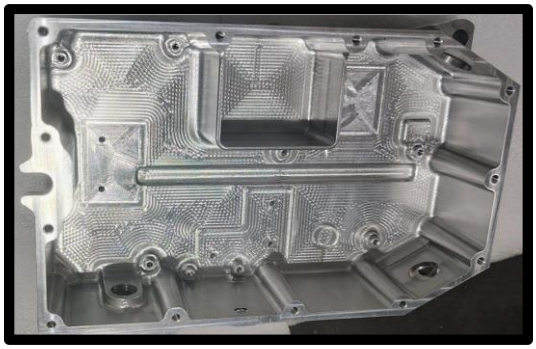
	Name	Measured value	Nominal value	+Tol	-Tol	Deviation	+/-
Y	82.3 Y Value_Circle22	1.8290	1.8000	0.1000	-0.1000	0.0290	
Y	82.4 Y Value_Circle23	1.8763	1.8000	0.1000	-0.1000	0.0763	
X	85.X Value_Circle37	207.2550	207.2000	0.2000	-0.2000	0.0550	
X	86.X Value_Circle34	156.4789	156.4860	0.1000	-0.1000	-0.0071	
X	87.X Value_Circle22	148.7290	148.7450	0.1000	-0.1000	-0.0160	
X	88.X Value_Circle32	108.9916	109.0140	0.1000	-0.1000	-0.0224	
X	89.X Value_Circle21	91.6310	91.6690	0.1000	-0.1000	-0.0380	
X	92.X Value_Circle33	135.1800	135.2040	0.1000	-0.1000	-0.0240	
X	93.X Value_Circle31	32.8748	32.8900	0.1000	-0.1000	-0.0152	
X	94.X Value_Circle20	35.6078	35.6690	0.1000	-0.1000	-0.0612	
X	95.X Value_Circle30	13.6301	13.6370	0.1000	-0.1000	-0.0069	
X	96.1 X Value_Circle15	-3.2798	-3.2550	0.1000	-0.1000	-0.0248	
X	96.2 X Value_Circle18	-3.2574	-3.2550	0.1000	-0.1000	-0.0024	
X	96.3 X Value_Circle19	-3.2235	-3.2550	0.1000	-0.1000	0.0315	
Y	97.Y Value_Circle33	-2.6497	-2.6930	0.1000	-0.1000	0.0433	
Y	98.Y Value_Circle32	-3.9777	-4.0130	0.1000	-0.1000	0.0353	
Y	99.Y Value_Circle31	-16.8344	-16.8400	0.1000	-0.1000	0.0056	
Y	100.Y Value_Circle19	-19.8910	-19.9250	0.1000	-0.1000	0.0340	
Y	101.Y Value_Circle18	-62.2027	-62.2000	0.1000	-0.1000	-0.0027	
Y	102.Y Value_Circle30	-67.0929	-67.1320	0.1000	-0.1000	0.0391	

	Name	Measured value	Nominal value	+Tol	-Tol	Deviation	+/-
Y	48.Y Value_Circle7	-96.9674	-97.0000	0.1500	-0.1500	0.0326	
Y	49.1 Y Value_Circle4	-61.7105	-61.7000	0.1500	-0.1500	-0.0105	
Y	49.2 Y Value_Circle6	-61.6675	-61.7000	0.1500	-0.1500	0.0325	
Y	50.Y Value_Circle3	-68.0621	-68.1000	0.1500	-0.1500	0.0379	
Y	51.Y Value_Circle5	-26.3914	-26.4000	0.1000	-0.1000	0.0086	
X	52.X Value_Circle6	-46.8375	-46.8000	0.1500	-0.1500	-0.0375	
X	53.1 X Value_Circle5	-82.1201	-82.1000	0.1500	-0.1500	-0.0201	
X	53.2 X Value_Circle7	-82.1058	-82.1000	0.1500	-0.1500	-0.0058	
X	54.X Value_Circle4	-117.3937	-117.4000	0.1500	-0.1500	0.0063	
X	55.X Value_Circle3	-156.8228	-156.8000	0.2000	-0.2000	-0.0228	

2.5DOCK AUDIT CHECK SHEET

S. No	ACTIVITY	SPECIFIED	OBSERVATION	
			OK	Value
1	Documents	PDI report with latest drawing revision number	✓	
2	Cleaning	Free from dust stains	✓	
3	Oiling	All surfaces are covered, no excess oil		
4	Stretch film cover packing	All surfaces are covered with Stretch film	✓	
5	VCI bag condition	Free from damage, No oil seepage	✓	
6	No. Of parts in each bag/packing	Verify part Qty		3
7	No. Of bags/packing	Verify no of bag /pack Qty		1
8	Sealing of VCI bag with adhesive tape	Free from gaps	✓	
9	Identification Tag	Verify the part no, Description, Qty	✓	
10	Invoice	Verify the invoice as per PO	✓	
11	Whom & When	Verified by & Date of verification		15-Feb
Checked by : Thiru				

2.6 PRODUCT IMAGES



3 KEYLEARNINGS

Key Considerations for Machining Processes - OBC Housing

Pocket ID Depth Machining:

Machining the pocket ID depth is critical, requiring precise control. Tool selection plays a major role in achieving the correct depth while minimizing vibrations that could affect surface quality or tool life.

Vibration Issues: Vibrations during machining, especially at deeper depths, can negatively impact the precision of the pocket and the finish of the part. Proper tool selection and speed/feed adjustments are necessary to minimize this.

Clamping Method: The part must be properly clamped to avoid any movement during machining. If not properly clamped, vibrations from the tool can cause the part to shift, leading to inaccuracies in the depth and finish.

OD Draft Machining:

OD draft machining needs to be ensured for accuracy, with vibrations again posing a risk to the quality of the surface finish. A proper clamping method reduces the risk of displacement during the operation, which can help maintain a consistent angle and taper.

Clamping and Vibration: Inadequate clamping or improper vibration damping could lead to uneven tapering or tool deflection, affecting the overall geometry of the part.

Floor Radius R1:

Maintaining the floor radius (R1) is critical, as an improper radius can affect part performance. Vibrations can cause tool deflection, which will affect the radius and finish.

Tool Failure: Vibration can also accelerate tool wear or lead to tool failure. Effective clamping ensures that the part remains in place, reducing tool wear caused by unintended movement.

Process Parameters for Tapping:

Tapping is crucial, and ensuring the correct length of the tap is essential for thread quality and part integrity. Vibrations during tapping can lead to broken taps or poor thread formation.

Vibration Control: Proper clamping during tapping is essential, as any part movement or vibration can lead to misalignment, resulting in incomplete or damaged threads.

Adjusting Parameters: Speed, feed, and cutting depth need to be adjusted based on both tool and part specifications to reduce vibration. This adjustment helps to ensure smooth and accurate tapping.

Clamping Method:

Proper Clamping: Proper clamping is fundamental to ensure the part stays in place during machining operations. Loose clamping can cause vibrations or even displace the part during the process, leading to inaccuracies and defects.

Clamping Considerations: The clamping system should be robust and secure enough to handle the forces generated during machining, especially in processes that involve deeper cuts or tapping.