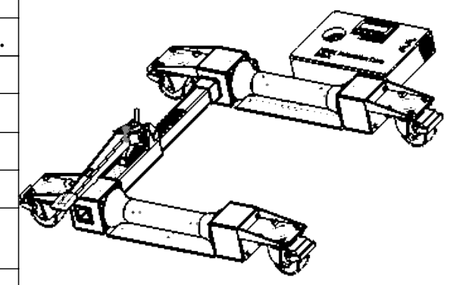
BOM Table			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PP3	SKF Bearing	4
2	P5	Active Connecting Block	1
3	P7	Passive Connecting Block	1
4	P8	Passive End Block	1
5	P12	Block Spacer Bracket	2
6	P2	L-bracket	4
7	P6	Active End Block	1
8	P3	Motor Roller Coupler	2
9	PP5	Motor	2
10	P4	Motor Mount	2
11	P13	Wire U-bracket	1
12	PP4	Caster Wheels	4
13	P14	Node Box	1
14	AS 1420 - 1973 - M4 x 10	ISO metric hexagon socket head cap screws	4
15	PP15	High Current Motor Wire	6
16	PP18	Anderson Collar Node Box	2
17	AS 1420 - 1973 - M3 x 20	ISO metric hexagon socket head cap screws	4
18	AS 1474 - M3(2)	Hex Nut	4
19	93245A114	Alloy Steel Flat-Tip Set Screws	4
20	92095A453	Button Head Hex Drive Screw	6
21	92095A208	Button Head Hex Drive Screw	16
22	92095A190	Button Head Hex Drive Screw	8
23	92095A127	Button Head Hex Drive Screw	16
24	94500A246	316 Stainless Steel Button Head Hex Drive Screws	16
25	94920A600	Medium-Strength Steel Serrated Flange Locknut	16
26	P9	Roller	2
27	P10	Roller end collar	4
28	PP1	6mm_grommet	6
29	PP2	8mm grommet	1
30	92095A182	Button Head Hex Drive Screw	4
31	P1	Custom Plastic grommet	1
32	92095A182	Button Head Hex Drive Screw	4
33	P11	Roller Centering Collar	4
34	PP17	IEC Power switch	1
35	PP8	Arduino Nano	1
36	PP6	Motor PSU	1

BOM Table			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
37	P15	E Box	1
38	P16	E box Top	1
39	PP22	Anderson Collar E Box Part1	1
40	PP23	Anderson Collar E Box Part 2	1
41	CNS 4560 - M4 x 10_1	Recessed Countersunk Head Screw	4
42	CNS 4560 - M4 x 14_1	Recessed Countersunk Head Screw	2
43	AS 1474 - M4_1	Hex Nut	2
44	CNS 4560 - M3 x 20_1	Recessed Countersunk Head Screw	3
45	Insert M3 D5 L5mm_1		7
46	PP10	N-type Mosfet	2
47	PP9	12C LCD Dsiplay	1
48	PP12	UI buttons	4
49	PP7	Microcontroller PSU	1
50	PP11	Solid State Relay	1
51	PP24	Universal Board 1	1
52	PP25	Universal Board 2	1
53	PP26	15mm Spacer	4
54	AS 1427 - M3 x 25	Phillips ISO machine screws	4
55	AS 1427 - M3 x 8	Phillips ISO machine screws	2
56	AS 1474 - M3	Hex Nut	6
57	AS 1427 - M3 x 16	Phillips ISO machine screws	4
58	6011_02		1
59	6011_03		1
60	PP4	Caster Wheels	1
61	SA9	Ratcheting Memeber	1



		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	JAL	12/13/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
			COMMENTS:		
		MATERIAL N/A			
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

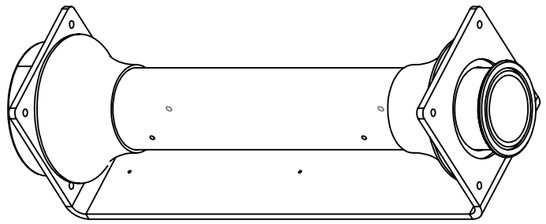
Team 6: Automotive

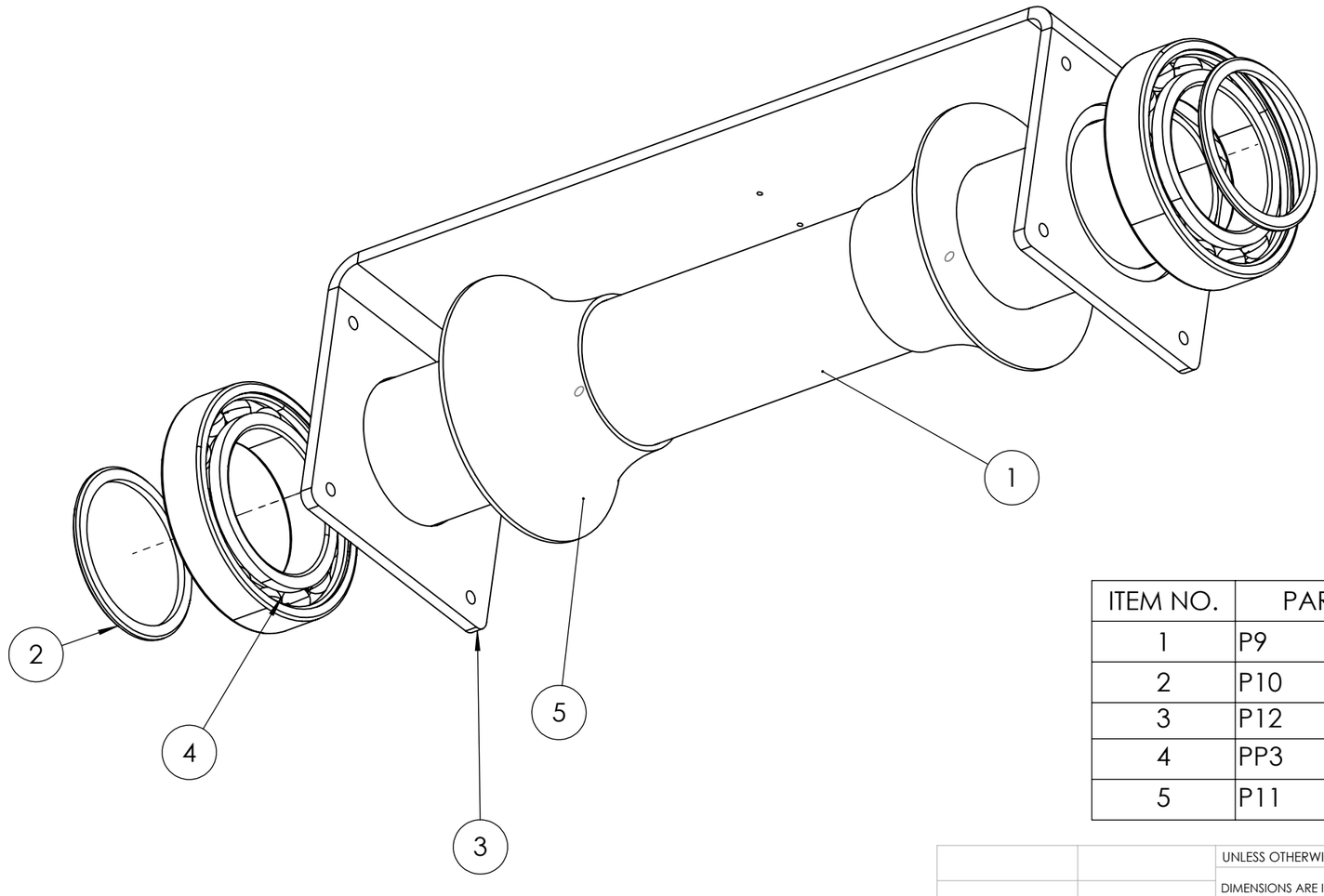
TITLE:
Bill of Materials Assembly

SIZE	DWG. NO.	REV
B	A1	
SCALE: 1:12	WEIGHT:	SHEET 1 OF 1

Assembly Instructions:

1. Slide all parts together as indicated.
2. Weld the roller end caps (2) to either end of the roller (1) so that the outside faces of the two parts are coincident (See sheet 2).
3. Weld the roller centering collars (5) to the roller (1) as indicated (see sheet 2).





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	P9	Roller	1
2	P10	Roller end collar	2
3	P12	Block spacer bracket	1
4	PP3	SKF bearing	2
5	P11	Roller centering collar	2

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	JAL	12/09/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1011:2023	Q.A.		
		MATERIAL N/A	COMMENTS:		
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

Team 6: Automotive

TITLE:

Roller Sub Assembly 1

SIZE	DWG. NO.	REV
B	SA1	

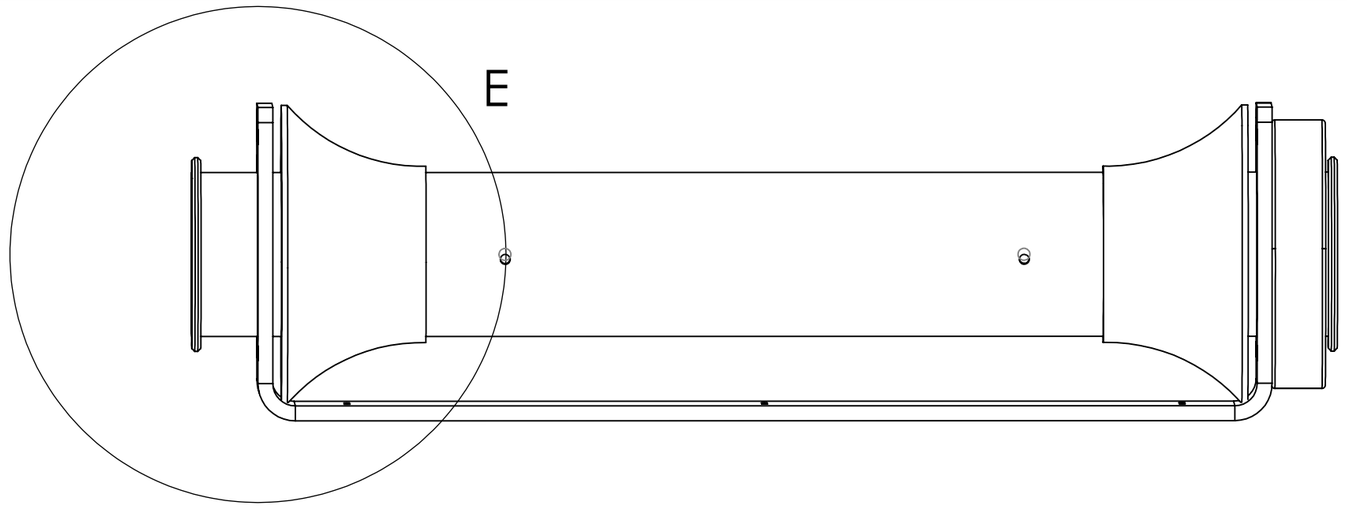
SCALE: 1:8 | WEIGHT: | SHEET 1 OF 2

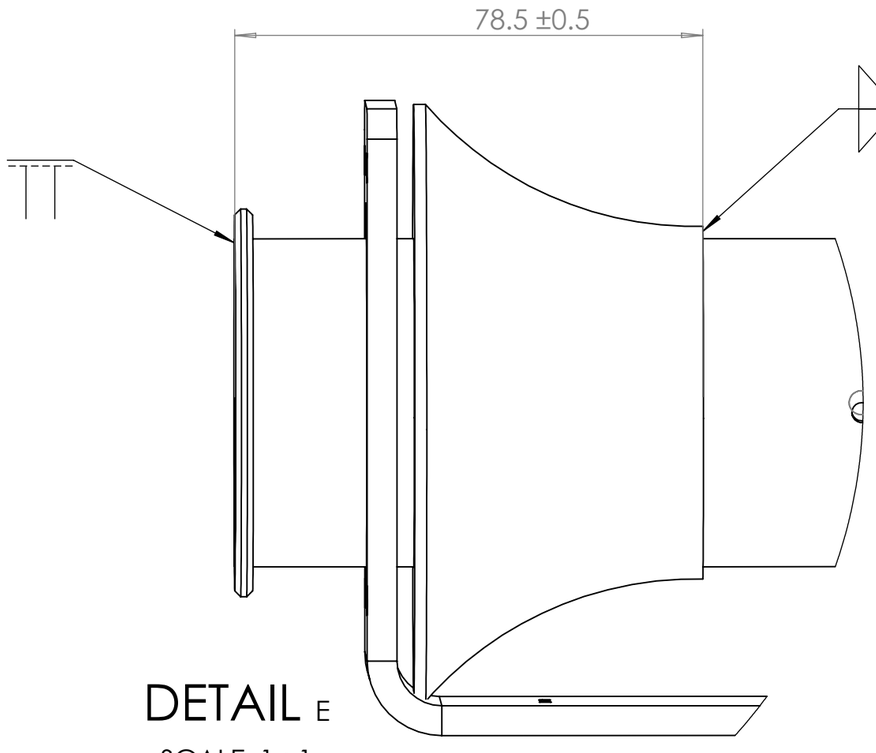
Note 1:

Welding Instructions:
1. Weld using GMAW process. Clean and remove mill scale, oil,and rust before welding
2. Remove weld splatter and grind smooth

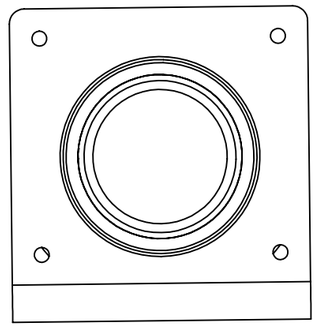
Note 2:

The bearing has been hidden on the left side of roller for clarity in the drawing but should be between the roller end collar and the block spacer bracket as it appears on the right side of the part.





DETAIL E
SCALE 1 : 1



		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	JAL	12/11/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1011:2023	Q.A.		
		MATERIAL N/A	COMMENTS:		
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

Team 6: Automotive

TITLE:

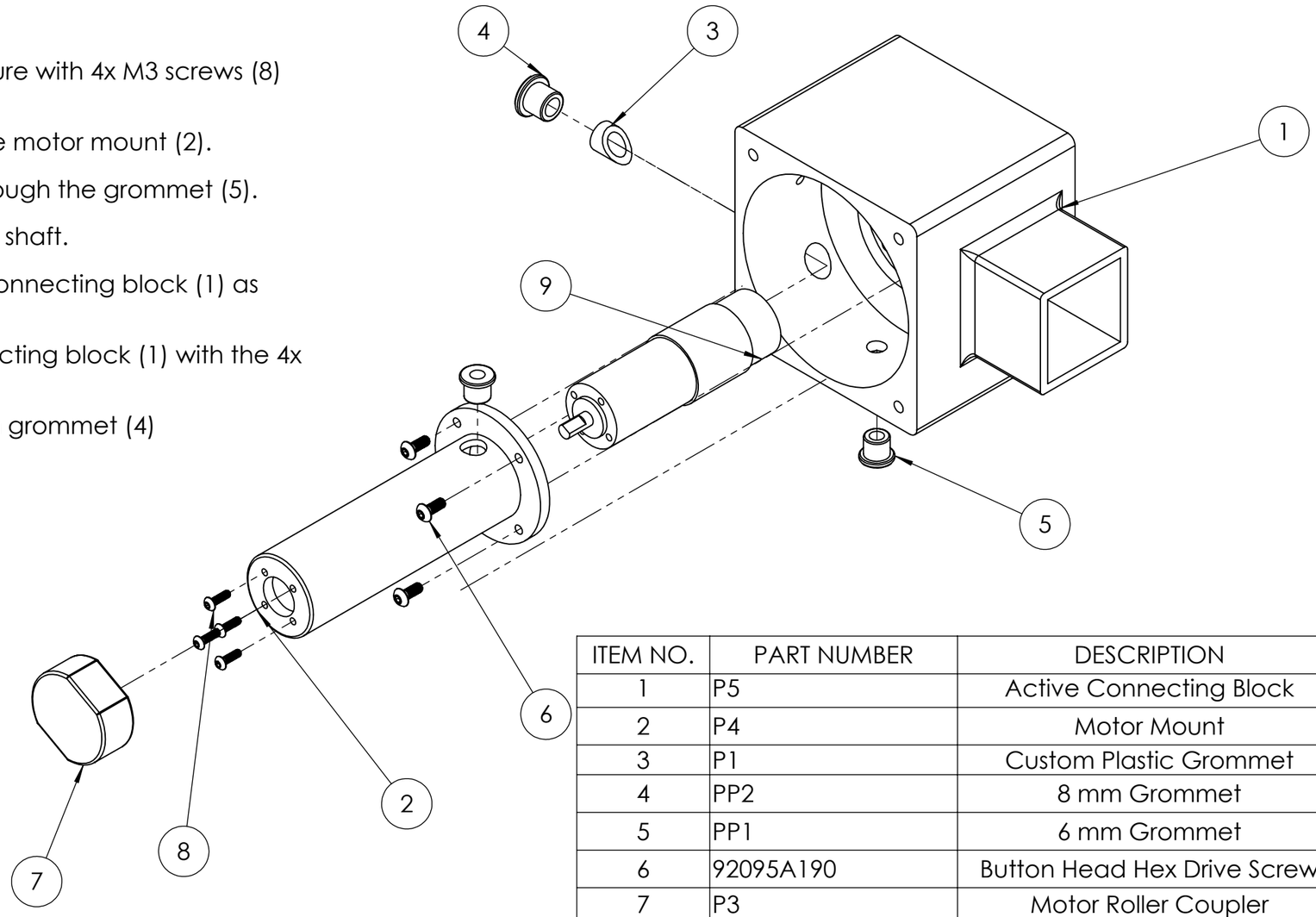
Roller sub assembly 1

SIZE	DWG. NO.	REV
B	SA1	
SCALE: 1:4	WEIGHT:	SHEET 2 OF 2

Note 1:

Assembly Instructions:

1. Slide motor (9) into the motor mount (2) and secure with 4x M3 screws (8) torquing to 1.5 Nm.
2. Insert grommet (5) into the hole on the side of the motor mount (2).
3. Thread the wires at the back of the motor (9) through the grommet (5).
4. Slide the motor roller coupler (7) onto the motor's shaft.
5. Insert grommets (4), (3), and (5) into the active connecting block (1) as indicated.
6. Secure the motor mount (2) to the active connecting block (1) with the 4x M4 screws torquing to 3.6 Nm.
7. Thread the wires out of the side through the 8mm grommet (4)



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	P5	Active Connecting Block	1
2	P4	Motor Mount	1
3	P1	Custom Plastic Grommet	1
4	PP2	8 mm Grommet	1
5	PP1	6 mm Grommet	2
6	92095A190	Button Head Hex Drive Screw	4
7	P3	Motor Roller Coupler	1
8	92095A182	Button Head Hex Drive Screw	4
9	PP5	Motor	1

UNLESS OTHERWISE SPECIFIED:		NAME / DATE
DIMENSIONS ARE IN MILLIMETERS	DRAWN	JAL 12/11/2025
	CHECKED	
	ENG APPR.	
	MFG APPR.	
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1011:2023	Q.A.	
MATERIAL N/A	COMMENTS:	
FINISH N/A		
NEXT ASSY / USED ON		
APPLICATION	DO NOT SCALE DRAWING	

Team 6: Automotive

TITLE:

Roller sub assembly 2

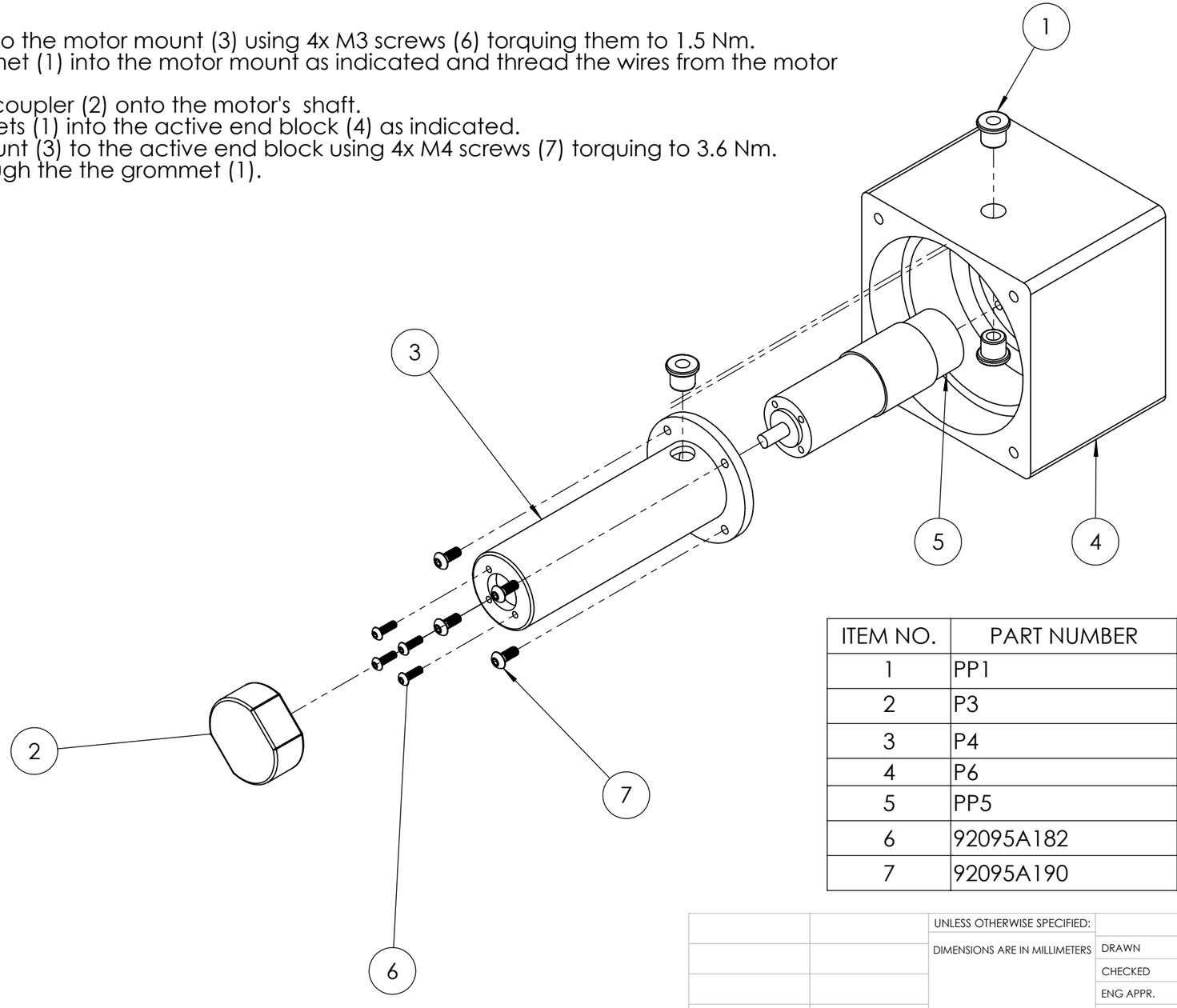
SIZE	DWG. NO.	REV
B	SA2	

SCALE: 1:4 | WEIGHT: | SHEET 1 OF 1

Note 1:

Assembly Instructions:

1. Secure the motor (2) to the motor mount (3) using 4x M3 screws (6) torquing them to 1.5 Nm.
2. Insert the 6mm grommet (1) into the motor mount as indicated and thread the wires from the motor through it.
3. Slide the motor roller coupler (2) onto the motor's shaft.
4. Insert 2x 6mm grommets (1) into the active end block (4) as indicated.
5. Secure the motor mount (3) to the active end block using 4x M4 screws (7) torquing to 3.6 Nm.
6. Thread the wires through the the grommet (1).



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PP1	6mm grommet	3
2	P3	Motor roller coupler	1
3	P4	Motor Mount	1
4	P6	Active End Block	1
5	PP5	Motor	1
6	92095A182	Button Head Hex Drive Screw	4
7	92095A190	Button Head Hex Drive Screw	4

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL N/A

FINISH N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/11/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

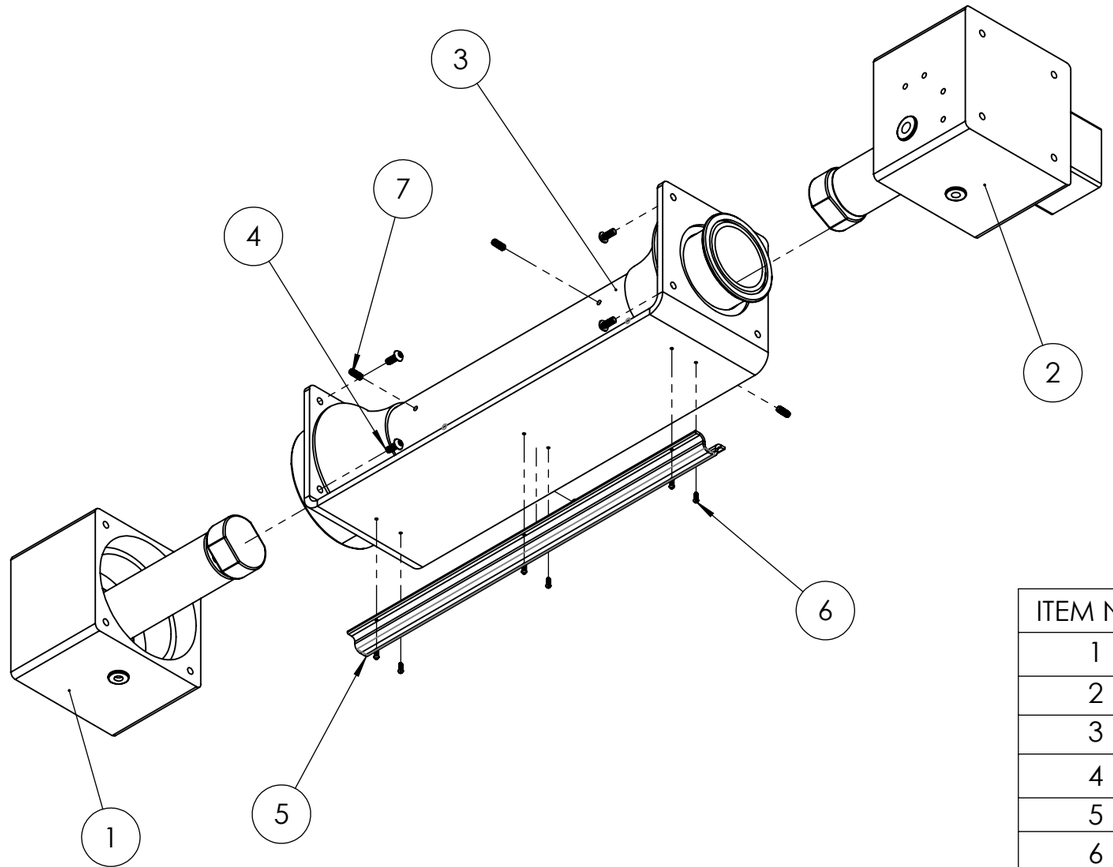
Roller sub assembly 3

SIZE	DWG. NO.	REV
B	SA3	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

Note 1:

Assembly Instructions:

1. Secure the wire u-bracket (5) to the bottom of the spacer bracket using 6x M4 screws (6) torquing to 3.6 Nm.
2. Rotate The motor roller couplers so that the flat surfaces are parallel with the top of the active side blocks.
3. Press fit the bearings into the side blocks as indicated.
4. Secure the block spacer bracket using 8x M5 screws(4) torquing to 7 Nm.
5. Thread the lead screws (7) into the holes on the roller until they make contact with the motor roller couplers.
6. Thread the wires from the left side block through the u-bracket and into the right side block and out the 8mm grommet.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SA3	Roller sub assembly 3	1
2	SA2	Roller sub assembly 2	1
3	SA1	Roller sub assembly 1	1
4	92095A190	Button Head Hex Drive Screw	8
5	P13	Wire U bracket	1
6	92095A453	Button Head Hex Drive Screw	6
7	93245A114	Alloy Steel Flat-Tip Set Screws	4

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: N/A

FINISH: N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/11/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

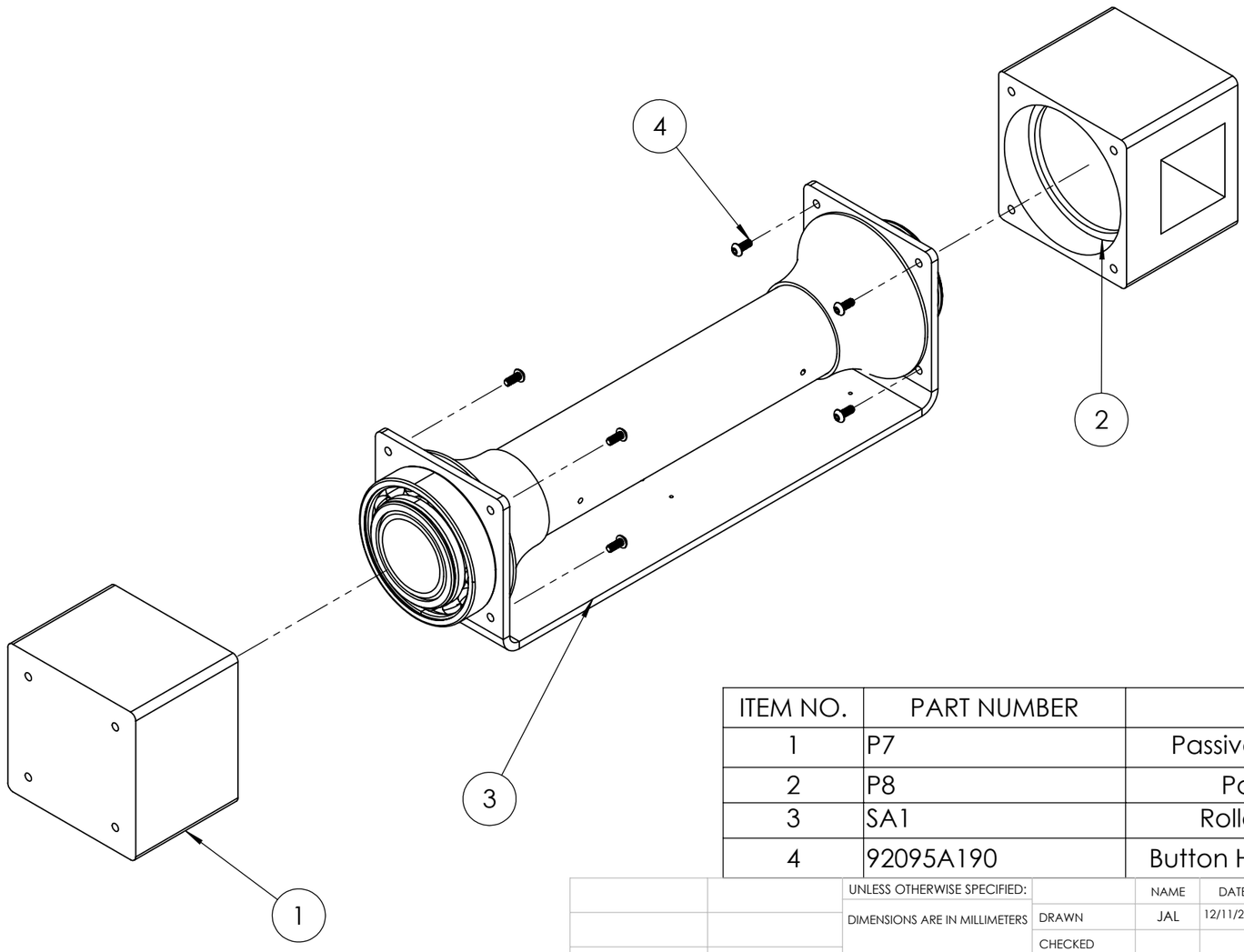
Roller sub assembly 4

SIZE	DWG. NO.	REV
B	SA4	
SCALE: 1:12	WEIGHT:	SHEET 1 OF 1

Note 1:

Assembly Instructions:

1. Press fit the bearings into the side blocks as indicated.
2. Secure the spacer bracket to the side blocks using 8x M5 screws (4) torquing to 7 Nm.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	P7	Passive Connecting Block	1
2	P8	Passive End Block	1
3	SA1	Roller sub assembly 1	1
4	92095A190	Button Head Hex Drive Screw	8

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: N/A

FINISH: N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/11/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

Roller sub assembly 5

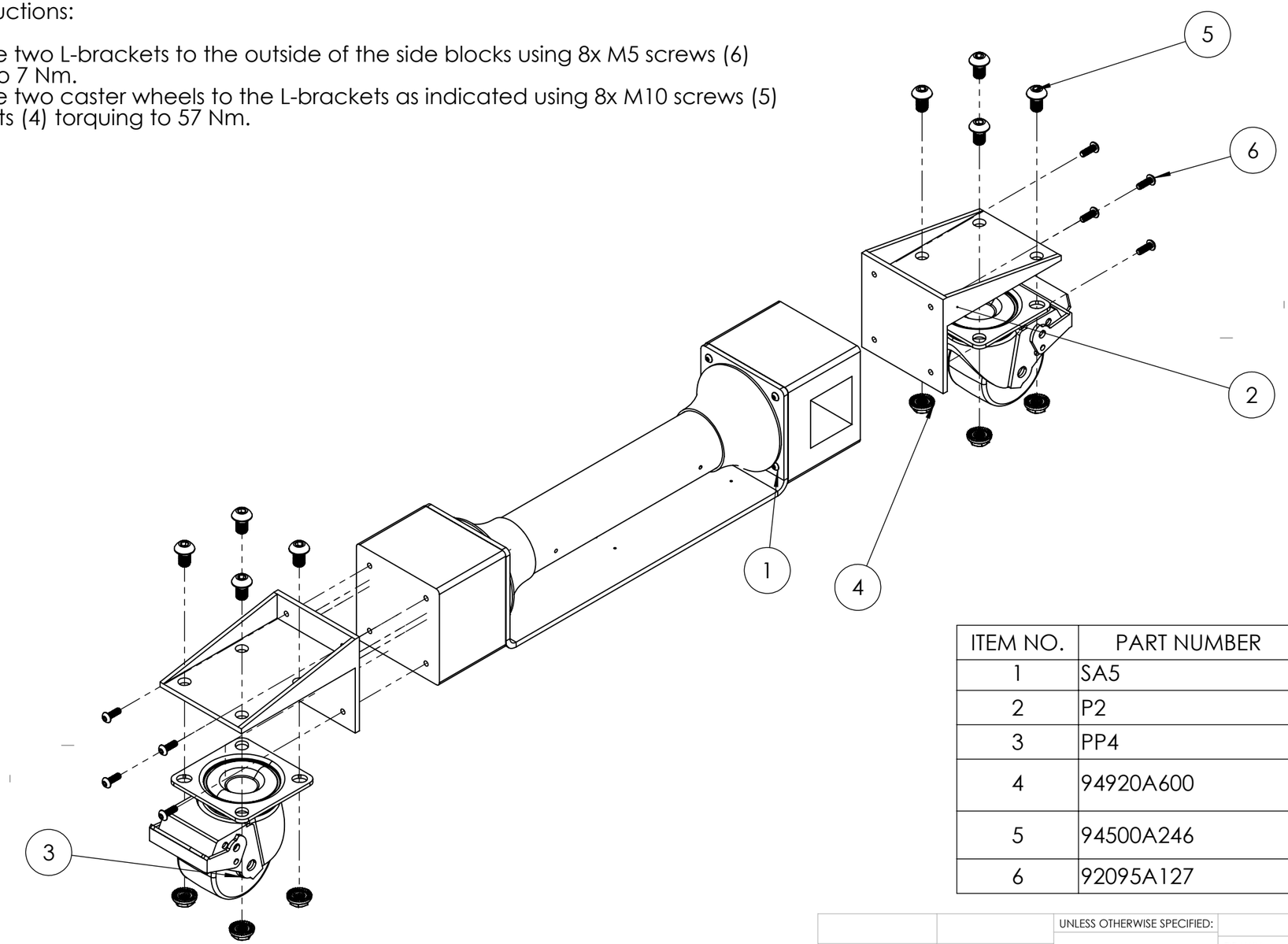
SIZE	DWG. NO.	REV
B	SA5	

SCALE: 1:8 | WEIGHT: | SHEET 1 OF 1

Note 1:

Assembly Instructions:

1. Secure the two L-brackets to the outside of the side blocks using 8x M5 screws (6) torquing to 7 Nm.
2. Secure the two caster wheels to the L-brackets as indicated using 8x M10 screws (5) and 8x nuts (4) torquing to 57 Nm.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SA5	Roller sub assembly 5	1
2	P2	L-bracket	2
3	PP4	Caster Wheel	2
4	94920A600	Medium-Strength Steel Serrated Flange Locknut	8
5	94500A246	316 Stainless Steel Button Head Hex Drive Screws	8
6	92095A127	Button Head Hex Drive Screw	8

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL N/A

FINISH N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/11/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

Roller sub assembly 6

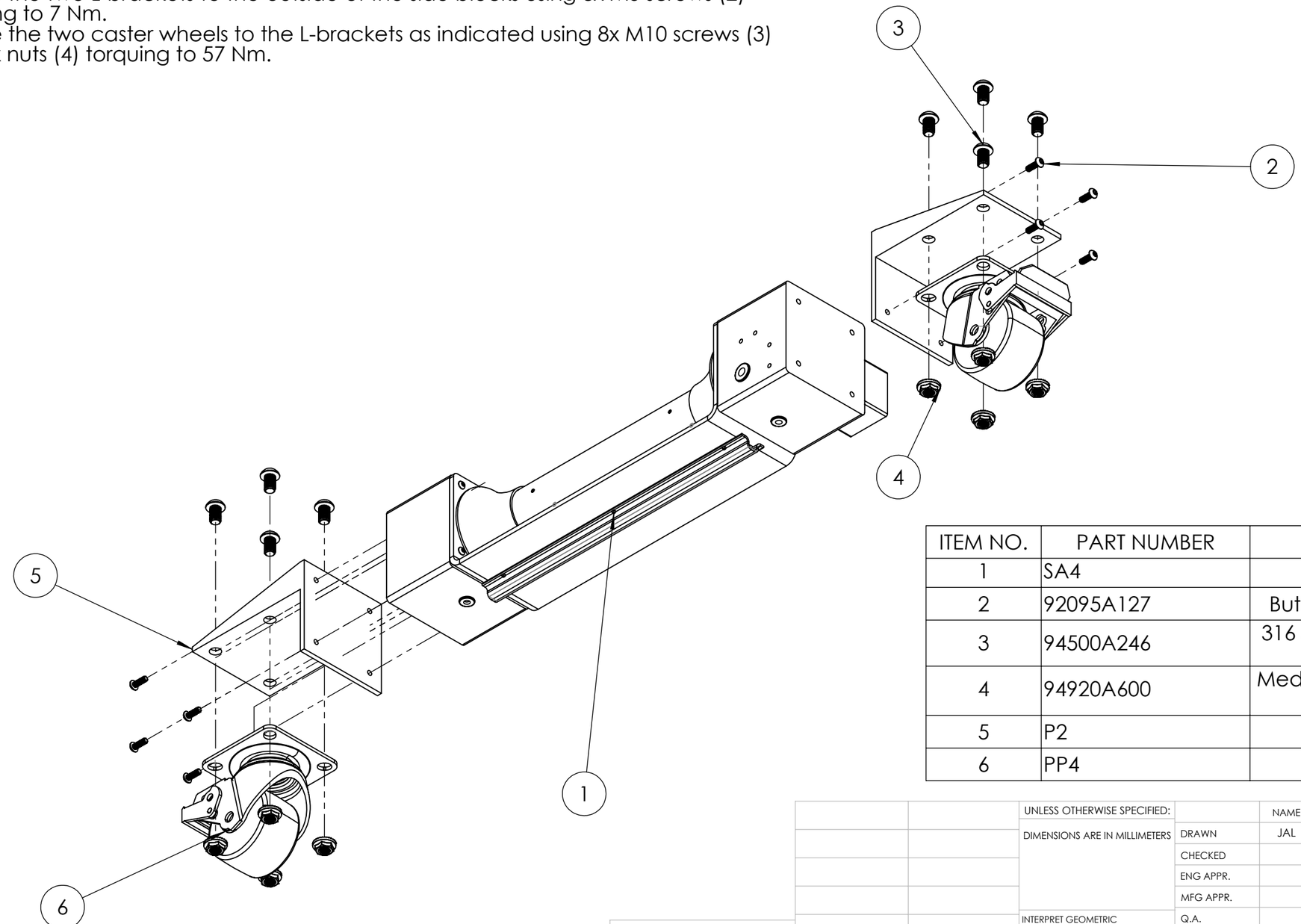
SIZE	DWG. NO.	REV
B	SA6	

SCALE: 1:8 | WEIGHT: | SHEET 1 OF 1

Note 1:

Assembly Instructions:

1. Secure the two L-brackets to the outside of the side blocks using 8x M5 screws (2) torquing to 7 Nm.
2. Secure the two caster wheels to the L-brackets as indicated using 8x M10 screws (3) and 8x nuts (4) torquing to 57 Nm.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SA4	Roller sub assembly 4	1
2	92095A127	Button Head Hex Drive Screw	8
3	94500A246	316 Stainless Steel Button Head Hex Drive Screws	8
4	94920A600	Medium-Strength Steel Serrated Flange Locknut	8
5	P2	L-bracket	2
6	PP4	Caster Wheel	2

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL N/A

FINISH N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/11/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE: Roller sub assembly 7

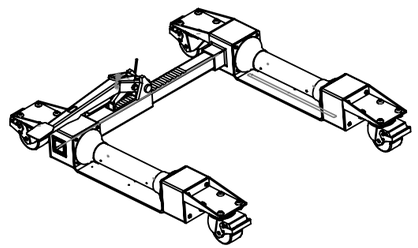
SIZE	DWG. NO.	REV
B	SA7	

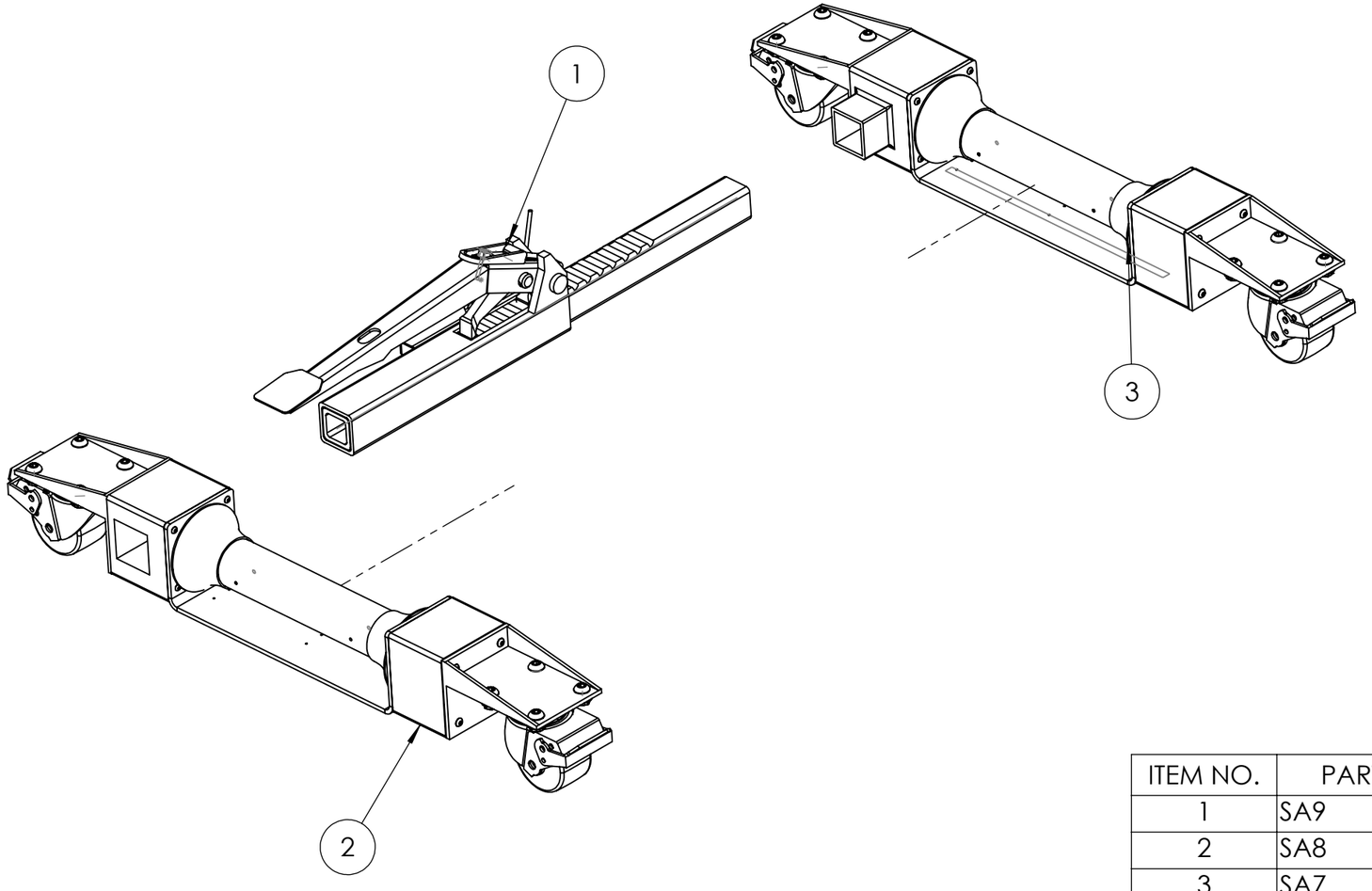
SCALE: 1:12 | WEIGHT: | SHEET 1 OF 1

Note 1:

ASSEMBLY INSTRUCTIONS:

1. SLIDE THE TWO ROLLER ASSEMBLIES (2 AND 3) ONTO THE ENDS OF THE RATCHETINGASSEMBLY (1) AS INDICATED
2. WELD AS INDICATED ON SHEET 2.





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SA9	Ratcheting Member	1
2	SA8	Roller sub assembly 8	1
3	SA7	Roller sub assembly 7	1

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	JAL	12/12/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
			COMMENTS:		
		MATERIAL N/A			
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

Team 6: Automotive

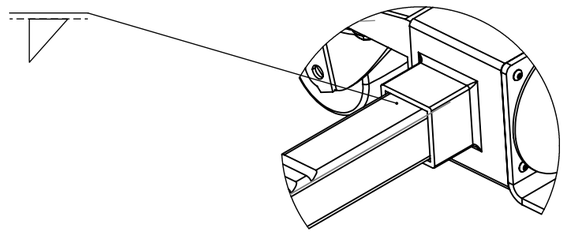
TITLE: Roller sub assembly 8

SIZE	DWG. NO.	REV
B	SA8	

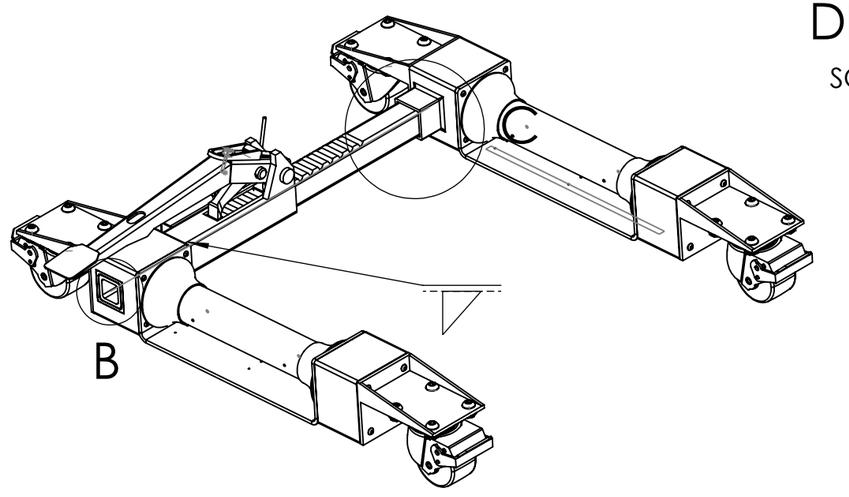
SCALE: 1:16 | WEIGHT: | SHEET 1 OF 2

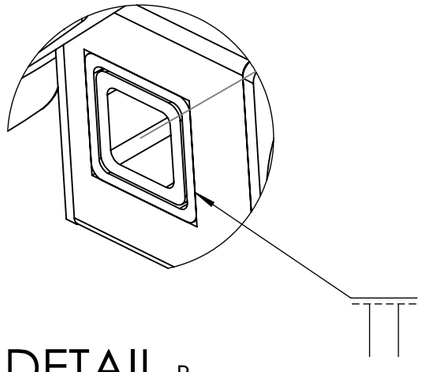
Note 1:

Welding Instructions:
1. Weld using MIG (GMAW) process. Clean and remove mill scale, oil,and rust before welding
2. Remove weld splatter and grind smooth



DETAIL C
SCALE 1 : 4





DETAIL B
SCALE 1 : 2

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
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			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL N/A	COMMENTS:		
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

Team 6: Automotive

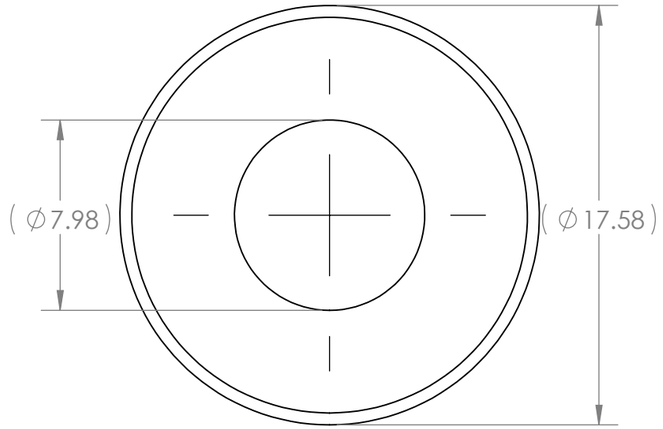
TITLE: Roller sub assembly 8

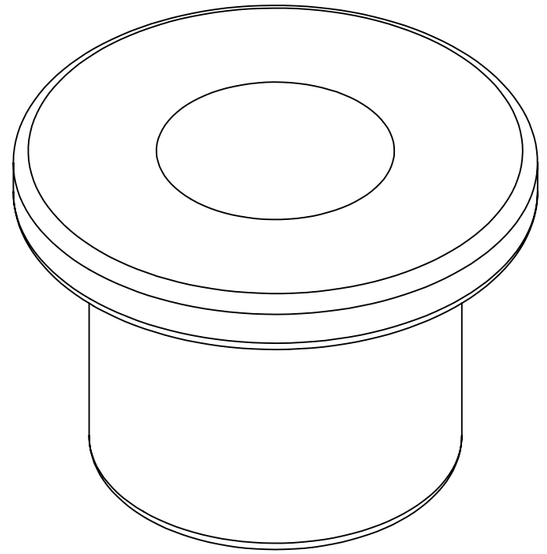
SIZE	DWG. NO.	REV
B	SA8	
SCALE: 1:16	WEIGHT:	SHEET 2 OF 2

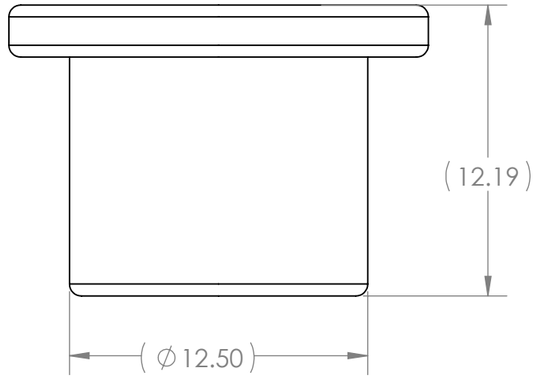
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: B0F2216J96

OR EQUIVALENT APPROVED BY
ENGINEER







		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
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			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL SILICONE	COMMENTS:		
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

Team 6: Automotive

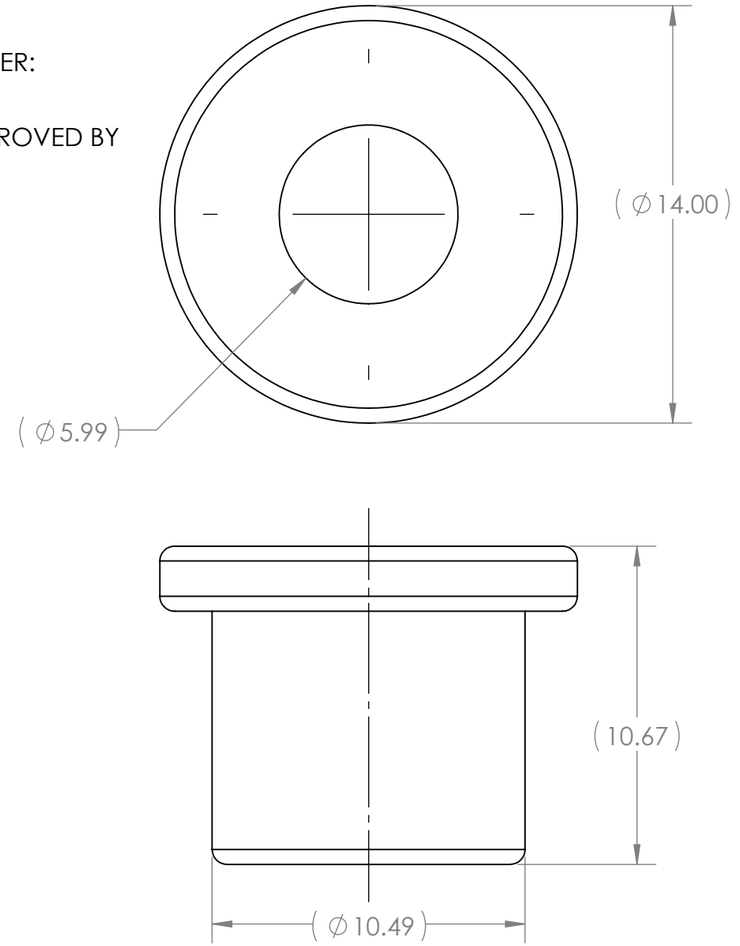
TITLE:
8 MM GROMMET

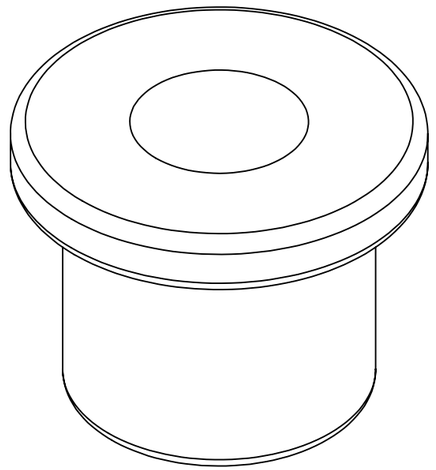
SIZE	DWG. NO.	REV
B	PP2	
SCALE: 5:1	WEIGHT:	SHEET 1 OF 1

NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER:
B0F2216J96

OR EQUIVALENT APPROVED BY
ENGINEER



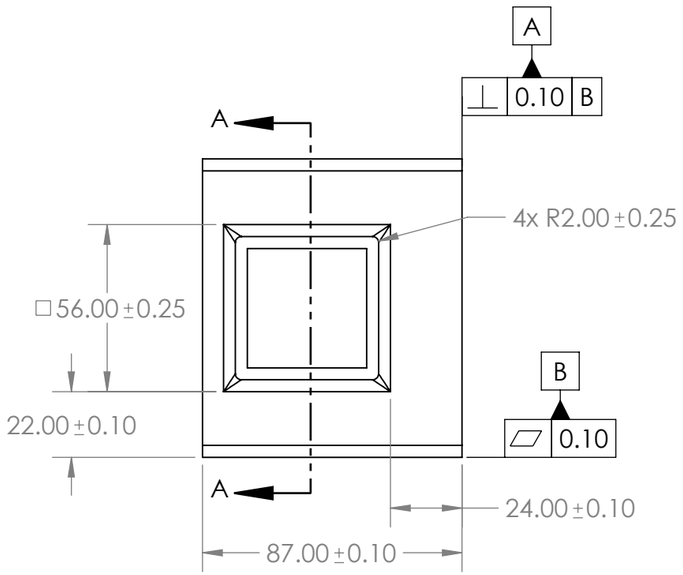


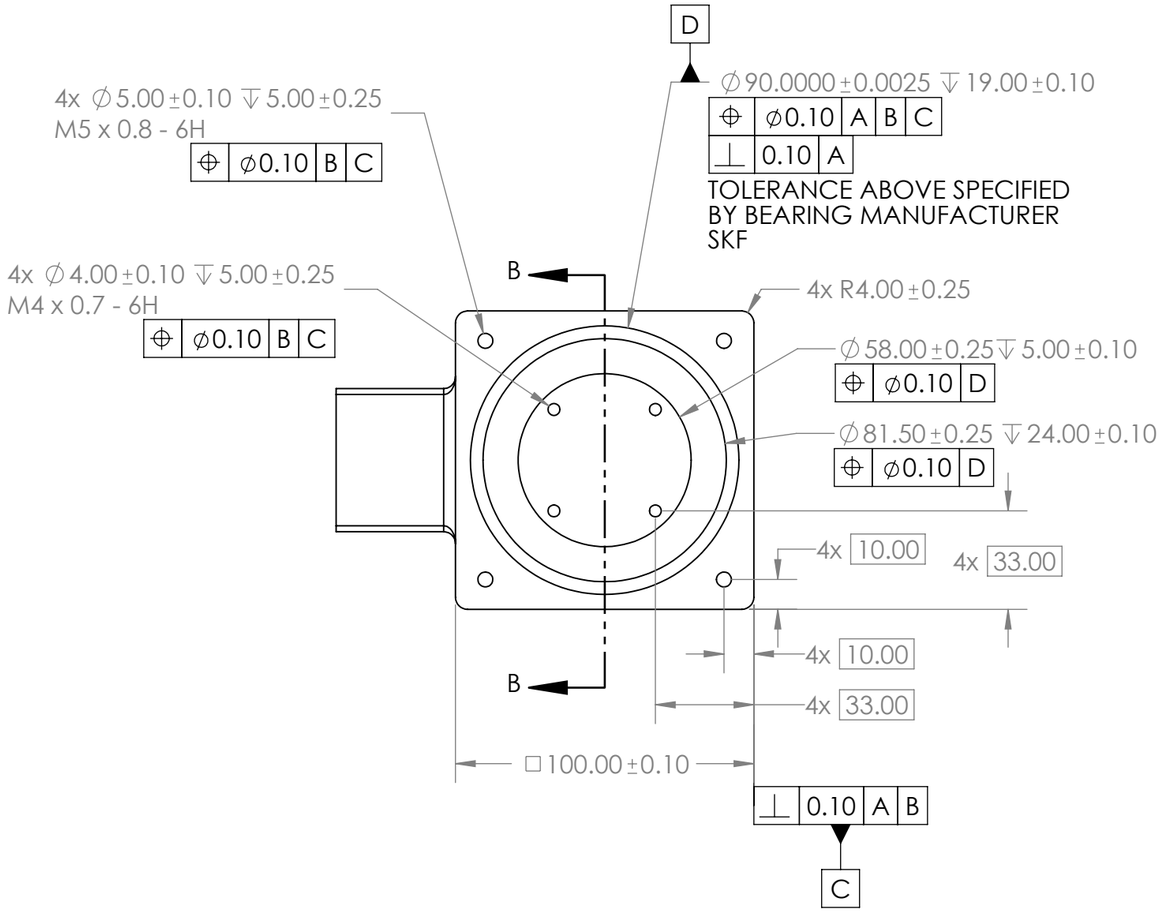
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	NPB	12/12/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL SILICONE	COMMENTS:		
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

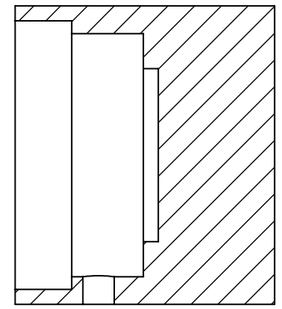
Team 6: Automotive

TITLE:
6 MM GROMMET

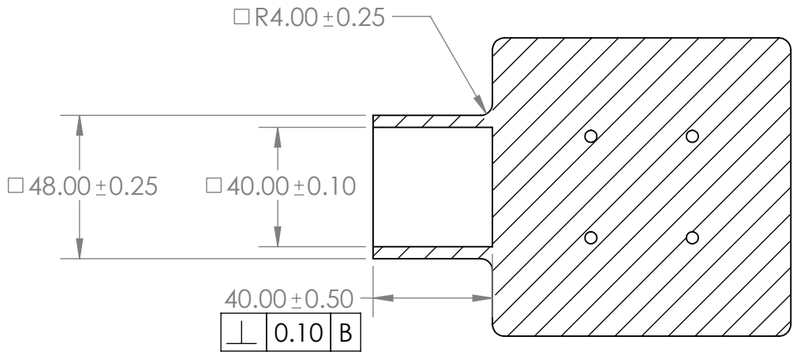
SIZE	DWG. NO.	REV
B	PP1	
SCALE: 5:1	WEIGHT:	SHEET 1 OF 1







SECTION B-B



SECTION A-A

Note 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

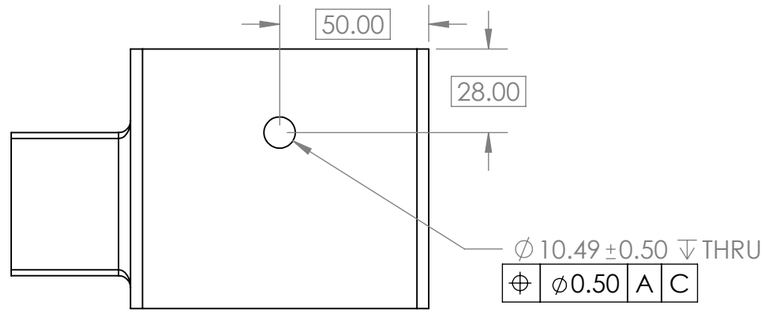
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	CAO	12/12/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL Aluminium 6061-T6	COMMENTS:		
NEXT ASSY	USED ON	FINISH See note 1			
APPLICATION		DO NOT SCALE DRAWING			

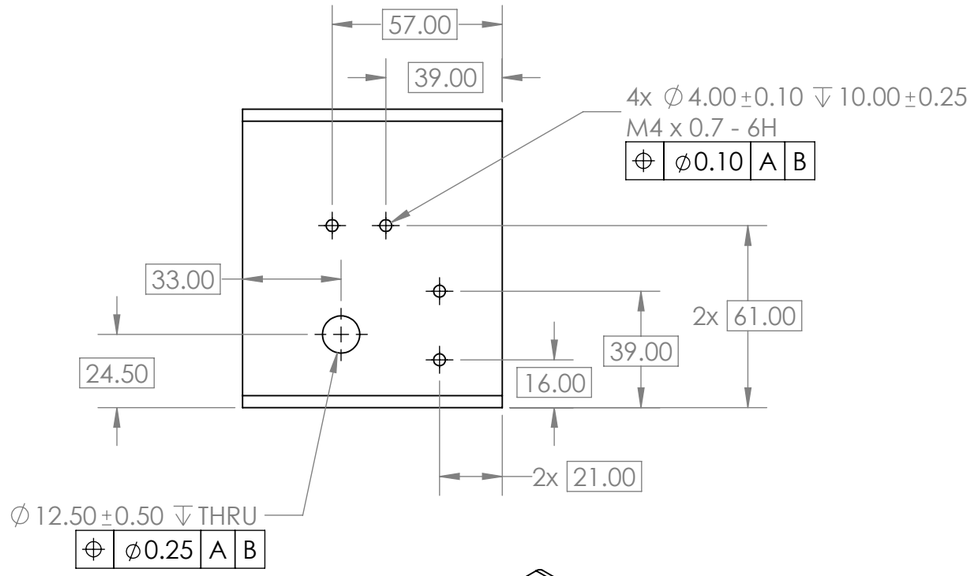
Team 6: Automotive

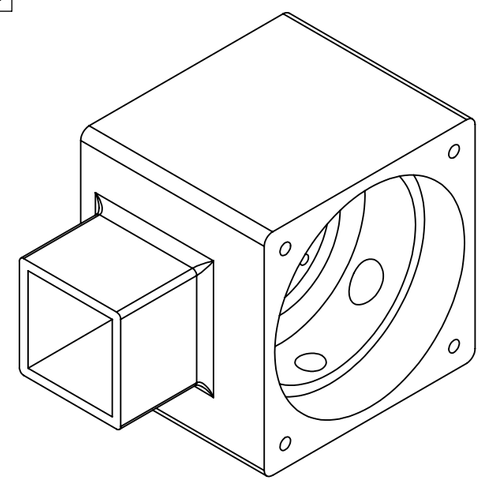
TITLE:
Active Connecting Block

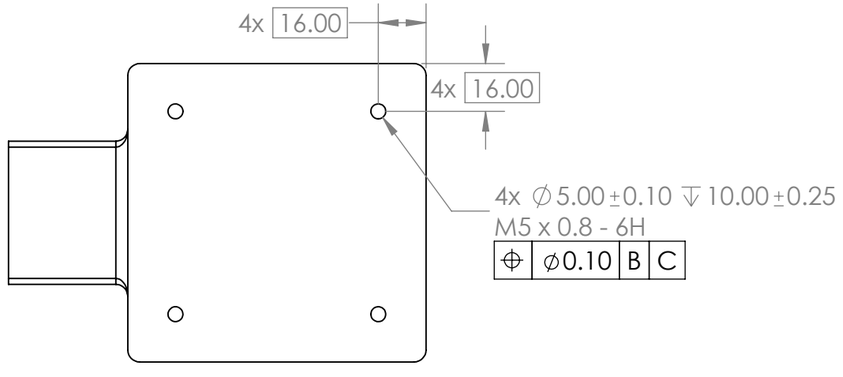
SIZE	DWG. NO.	REV
B	P5	

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 2









		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	CAO	12/12/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL Aluminium 6061-T6	COMMENTS:		
NEXT ASSY	USED ON	FINISH See note 1			
APPLICATION		DO NOT SCALE DRAWING			

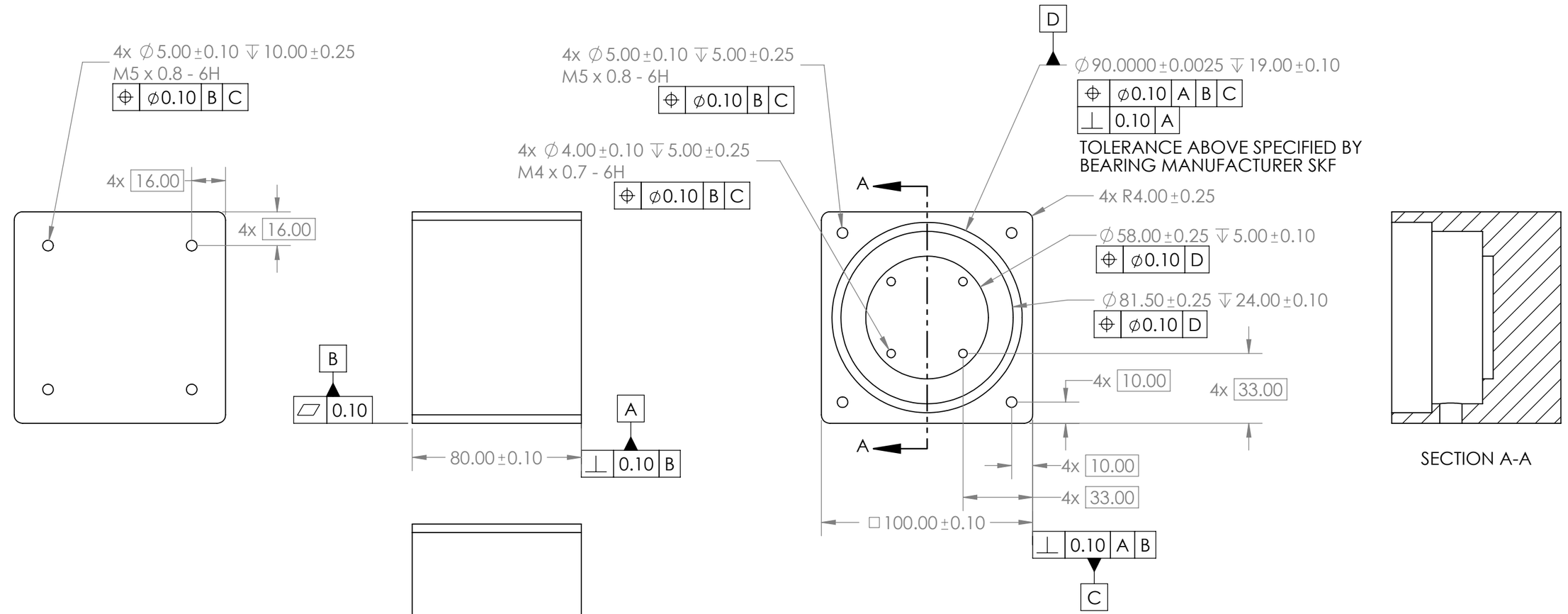
Team 6: Automotive

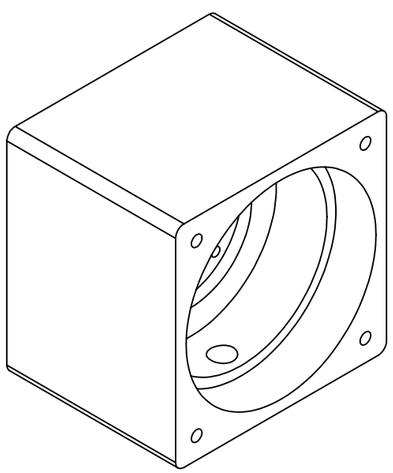
TITLE:

Active Connecting Block

SIZE	DWG. NO.	REV
B	P5	

SCALE: 1:2 | WEIGHT: | SHEET 2 OF 2





Note 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN MILLIMETERS		
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023		
MATERIAL	Aluminium 6061-T6	
FINISH	See note 1	
DO NOT SCALE DRAWING		

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

NEXT ASSY	USED ON
APPLICATION	

Team 6: Automotive

TITLE:

Active End Block

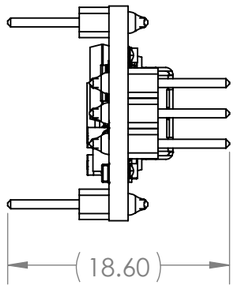
SIZE	DWG. NO.	REV
B	P6	

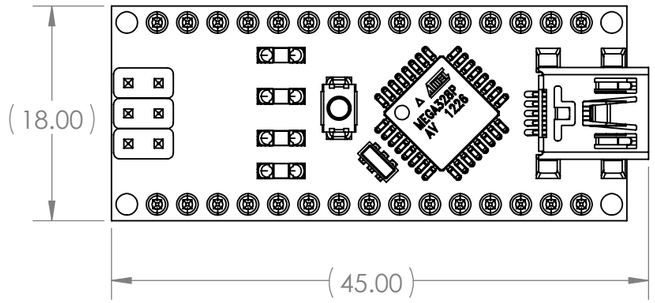
SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

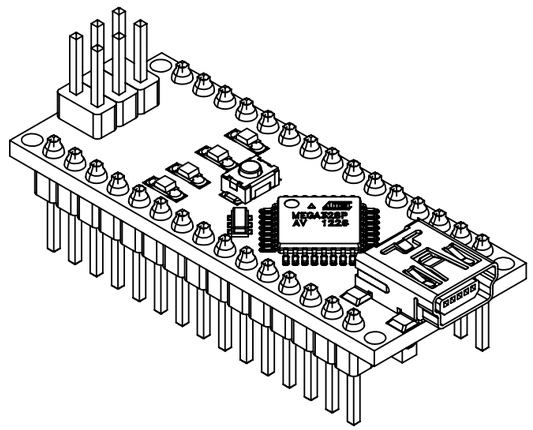
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: 8541582500

OR EQUIVALENT APPROVED BY ENGINEERING.







NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023
MATERIAL N/A
FINISH N/A
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

Arduino Nano

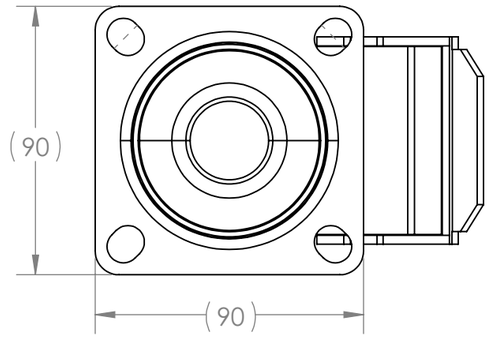
SIZE	DWG. NO.	REV
B	PP8	

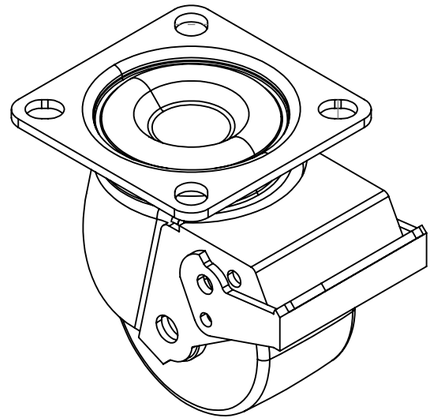
SCALE: 2:1 | WEIGHT: | SHEET 1 OF 1

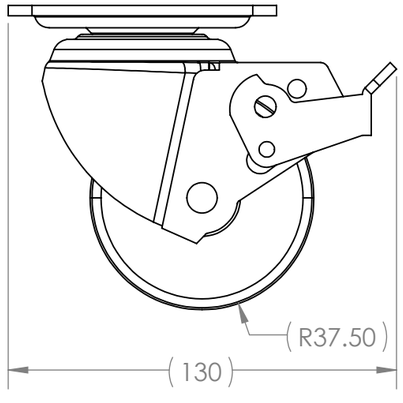
NOTE 1:

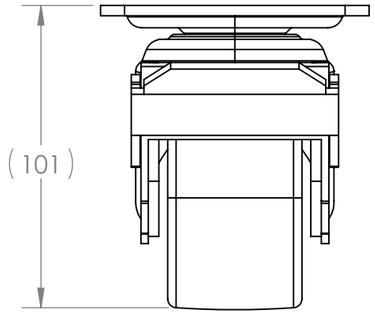
PURCHASED PART
VENDOR: EDL CASTER
VENDOR PART NUMBER: M45323E-M453-16

OR EQUIVALENT APPROVED BY ENGINEERING.









NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023
MATERIAL: Hot-Rolled Plate
FINISH: Electrophoresis
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

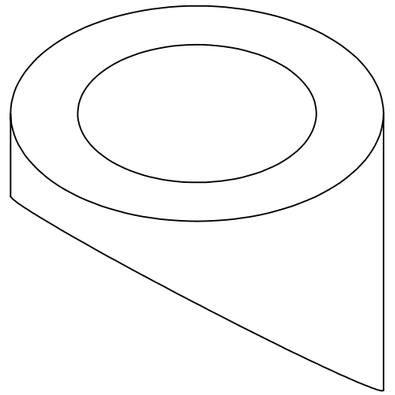
COMMENTS:

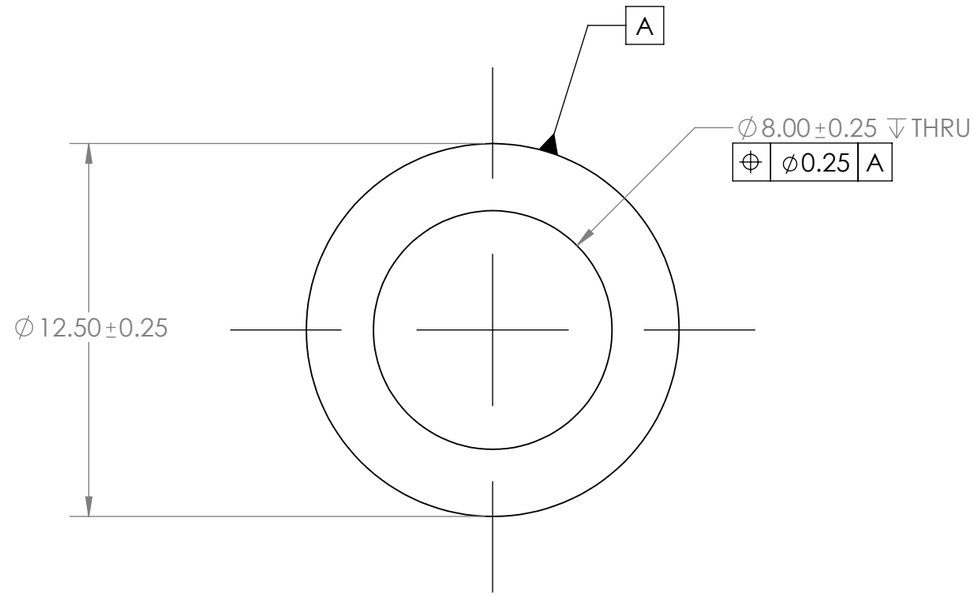
Team 6: Automotive

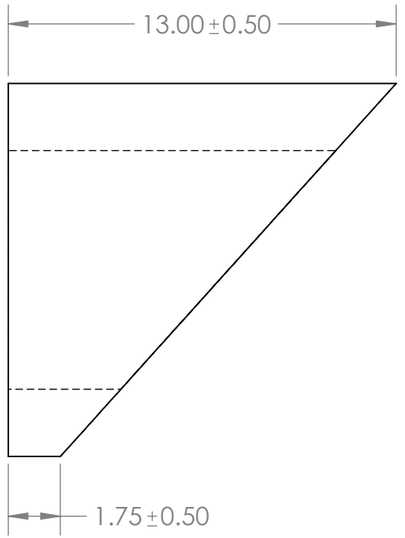
TITLE: Caster Wheel

SIZE	DWG. NO.	REV
B	PP4	

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1







NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMITERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: TPU

FINISH: As printed

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

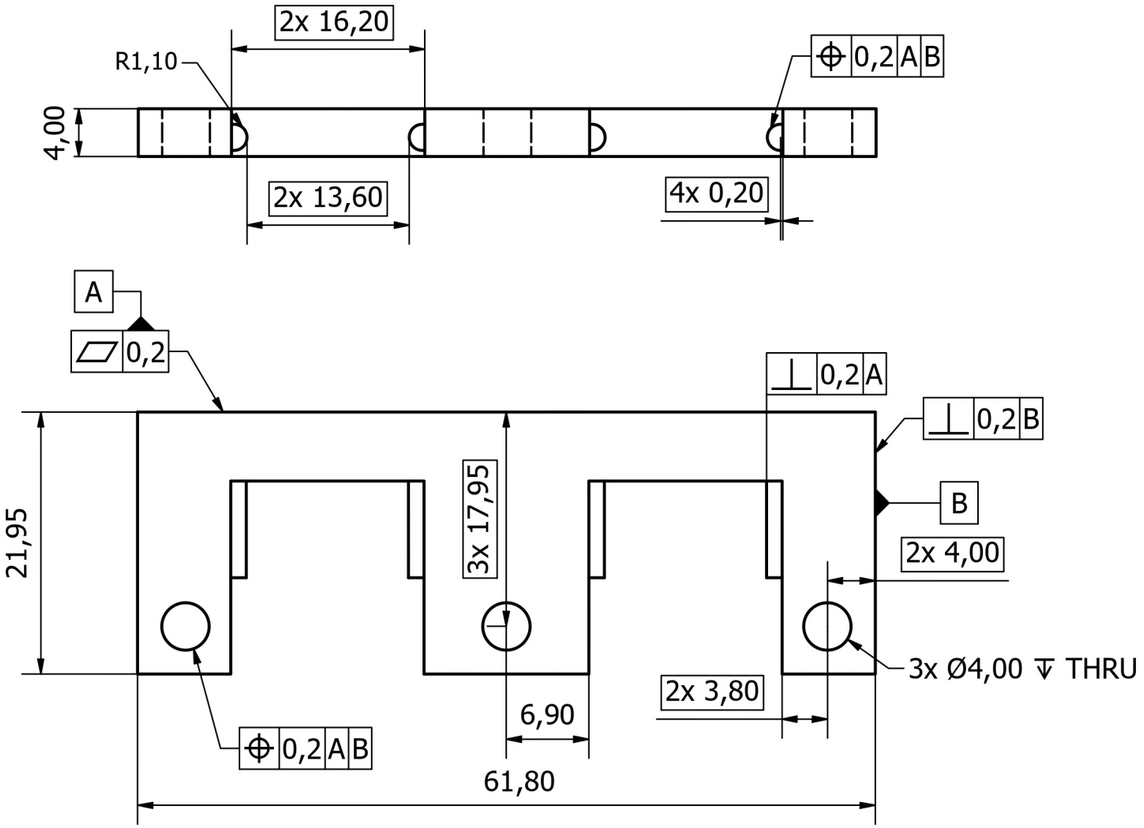
COMMENTS:

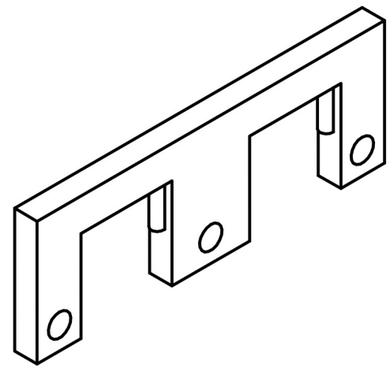
Team 6: Automotive

TITLE: Custom Grommet

SIZE	DWG. NO.	REV
B	P1	

SCALE: 5:1 | WEIGHT: | SHEET 1 OF 1





NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES: 0.1
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±0.05
THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: PLA

FINISH: PLA

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	Usukhbayar Amgalanbat	12/10/25
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

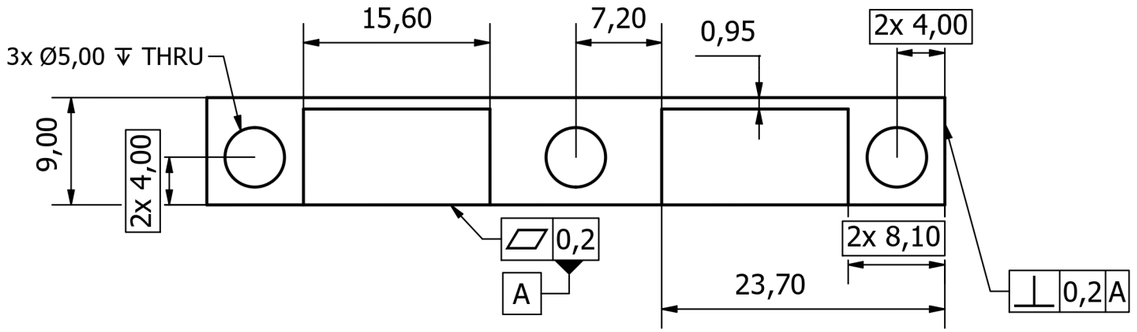
COMMENTS:

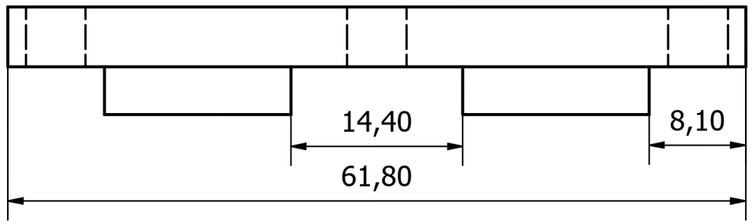
TITLE:

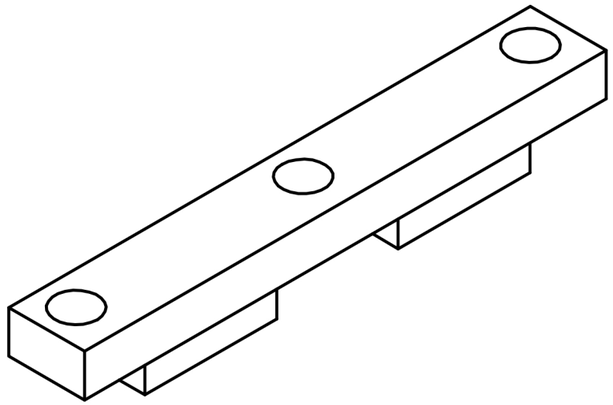
E-Box Anderson Collar Part 1

SIZE	DWG. NO.	REV
B	PP22	1

SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1







NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES: 0.1
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±0.05
THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: PLA

FINISH: PLA

DO NOT SCALE DRAWING

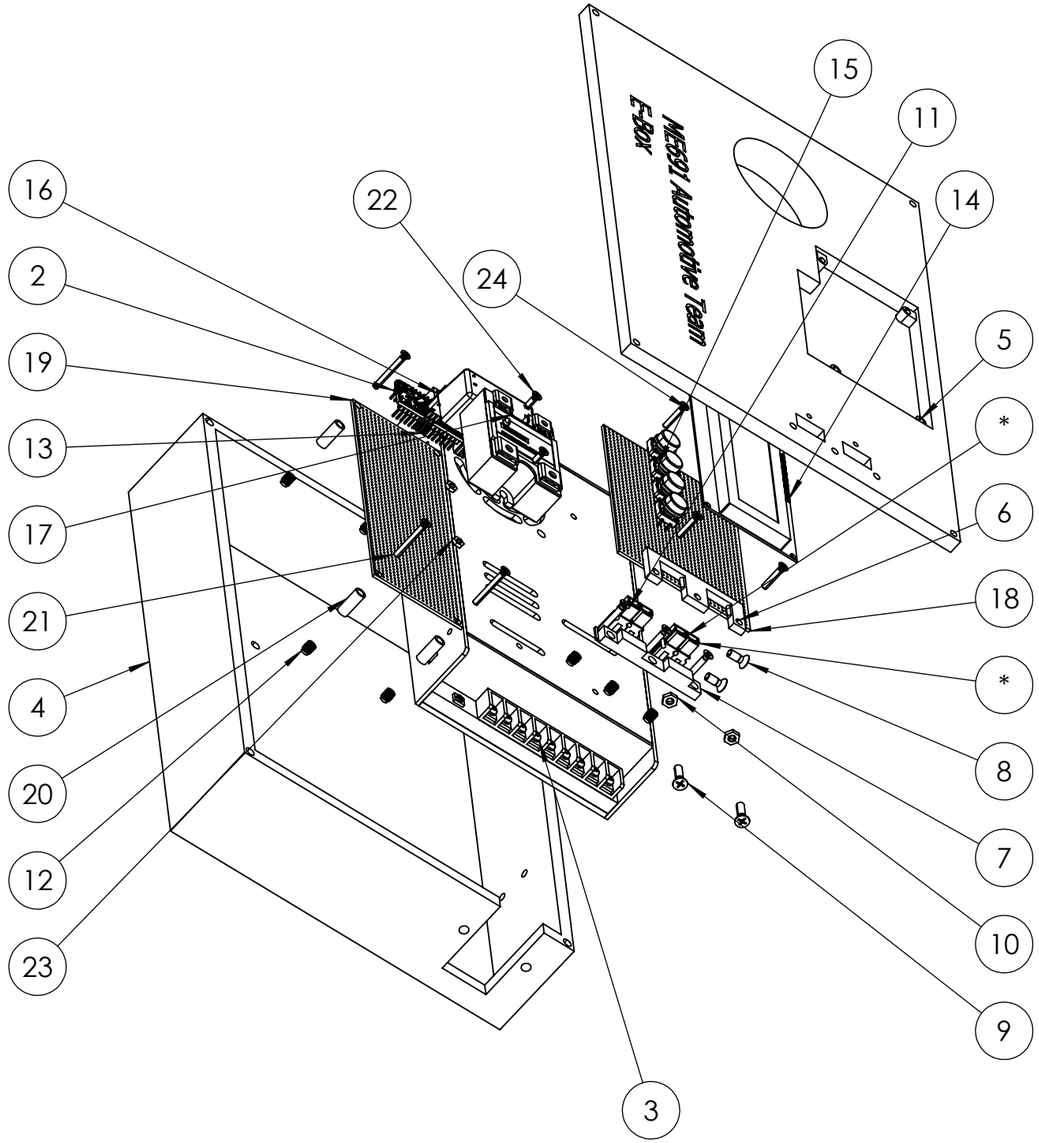
	NAME	DATE
DRAWN	Usukhbayar Amgalanbat	12/10/25
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

TITLE: E-Box Anderson Collar Part 2

SIZE	DWG. NO.	REV
B	PP23	1

SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PP17	IEC Power Switch	1
2	PP8	Arduino Nano	1
3	PP6	Motor PSU	1
4	P15	E Box	1
5	P16	E Box Top	1
6	PP22	Anderson Collar E Box Part 1	1
7	PP23	Anderson Collar E Box Part 2	1
8	CNS 4560 - M4 x 10_1	Recessed Countersunk Head Screw	4
9	CNS 4560 - M4 x 14_1	Recessed Countersunk Head Screw	2
10	AS 1474 - M4_1	Hex Nut	2
11	CNS 4560 - M3 x 20_1	Recessed Countersunk Head Screw	3
12	Insert M3 D5 L5mm_1		7
13	PP10	N-type Mosfet	2
14	PP9	12C LCD Display	1
15	PP12	UI Bottons	4
16	PP7	Microcontroller PSU	1
17	PP11	Solid State Relay	1
18	PP24	Universal Board 1	1
19	PP25	Universal Board 25	1
20	PP26	15mm spacer	4
21	AS 1427 - M3 x 25	Phillips ISO machine screws	4
22	AS 1427 - M3 x 8	Phillips ISO machine screws	2
23	AS 1474 - M3	Hex Nut	6
24	AS 1427 - M3 x 16	Phillips ISO machine screws	4

Note 1:

For assembly and soldring instructions refer directly to the Electical Assembly Instructions document as well as the CAD model and the circuit diagram.

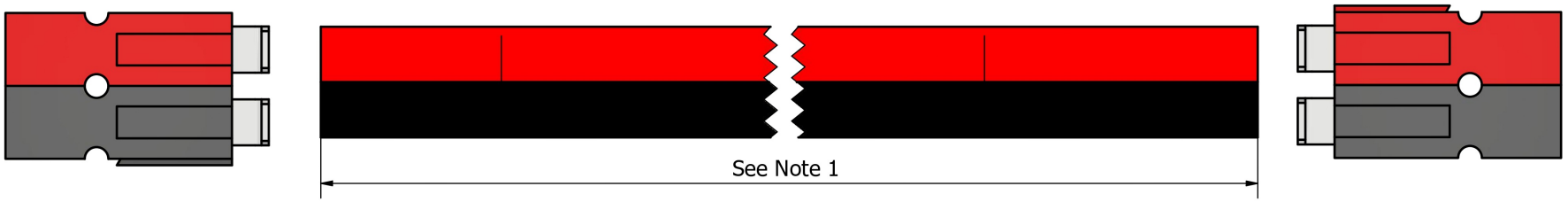
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	JAL	12/13/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL N/A	COMMENTS:		
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

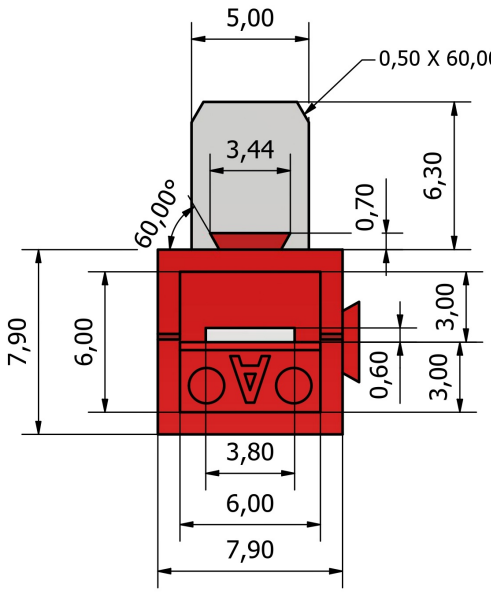
Team 6: Automotive

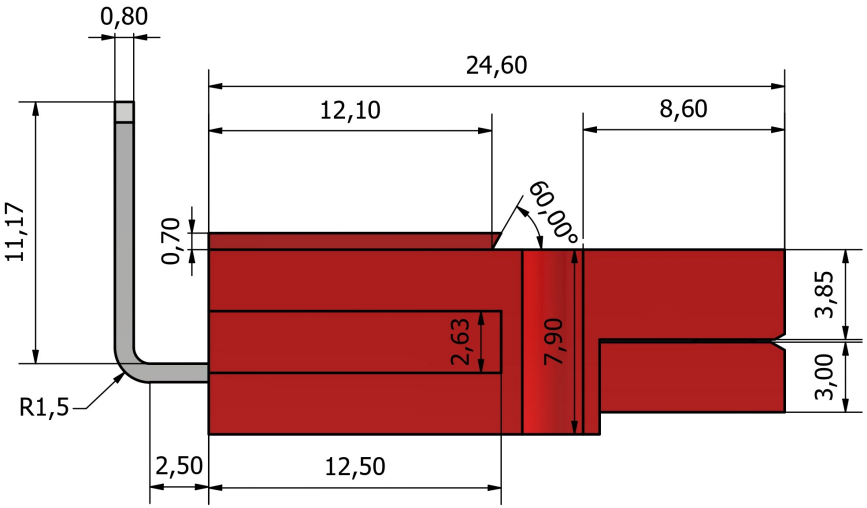
TITLE:

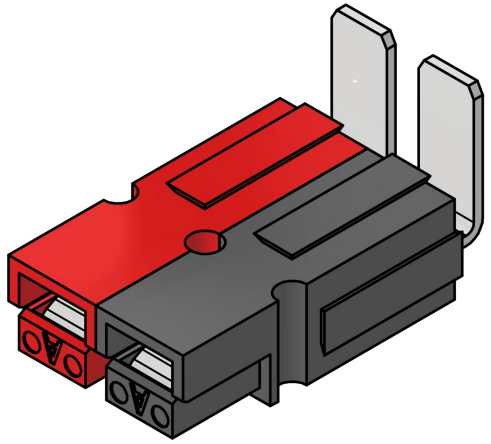
E Box Assembly

SIZE	DWG. NO.	REV
B	A2	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1









Note 1: The length of the 16AWG wire running from

- E-Box to the rear node is 1.5m
- Rear node to front node is 3.1m

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETER TOLERANCES: ± 0.2 FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ±0.05 THREE PLACE DECIMAL ±	DRAWN	Usukhbayar Amgalanbat	12/10/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL N/A	COMMENTS:		
NEXT ASSY	USED ON	FINISH N/A			
APPLICATION		DO NOT SCALE DRAWING			

TITLE: High Current Motor Wire

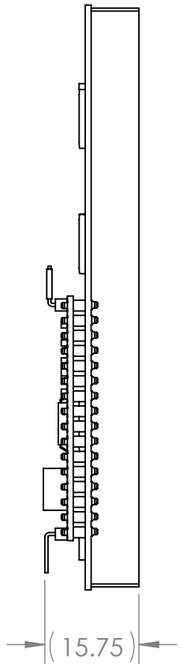
SIZE	DWG. NO.	REV
B	PP15	1

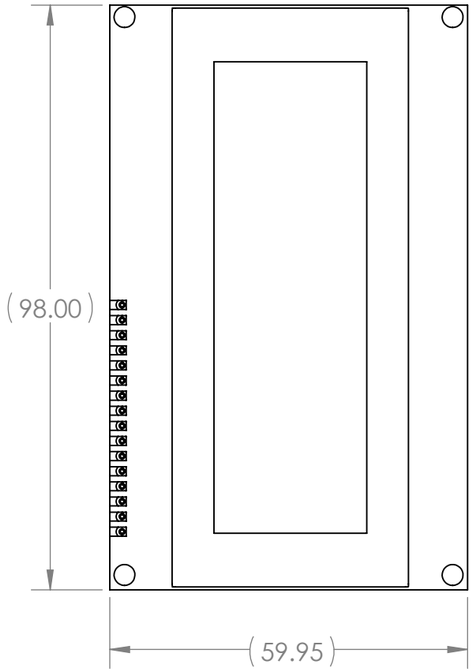
SCALE: 1:1 WEIGHT: SHEET 1 OF 1

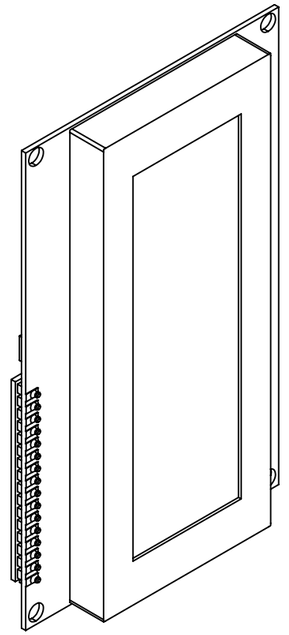
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: TS0351

OR EQUIVALENT APPROVED BY ENGINEERING.







NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: N/A

FINISH: N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

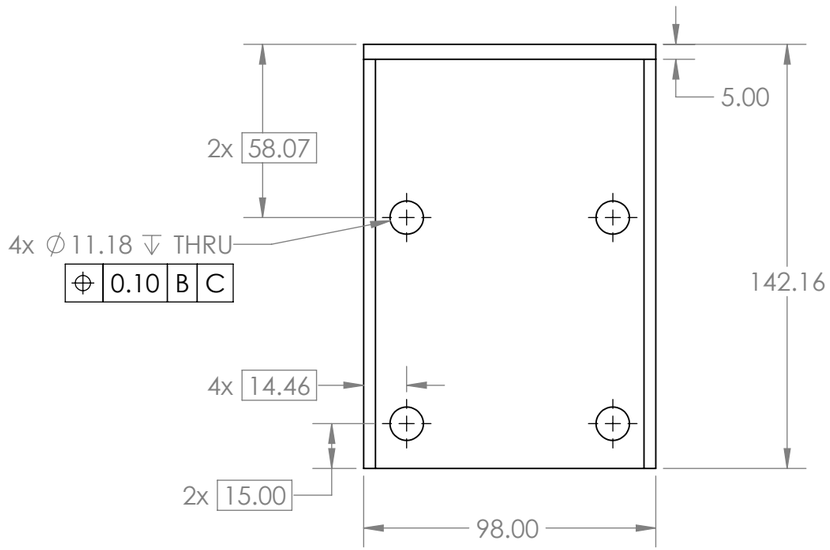
Team 6: Automotive

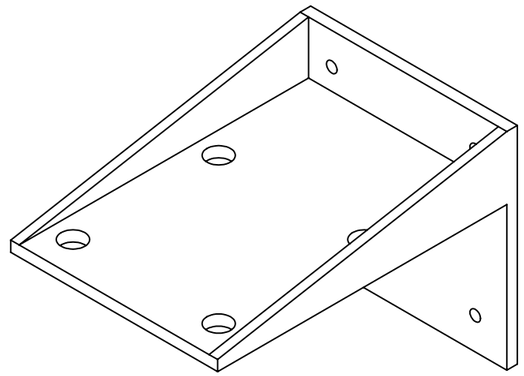
TITLE:

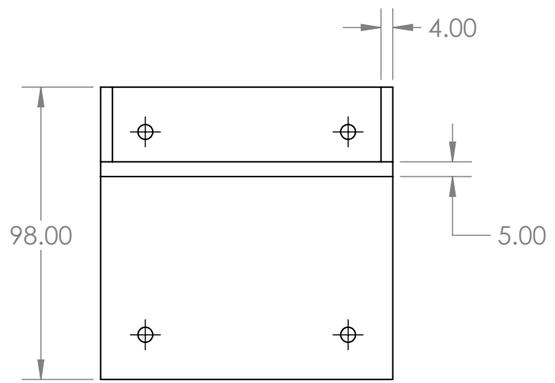
I2C LCD Display

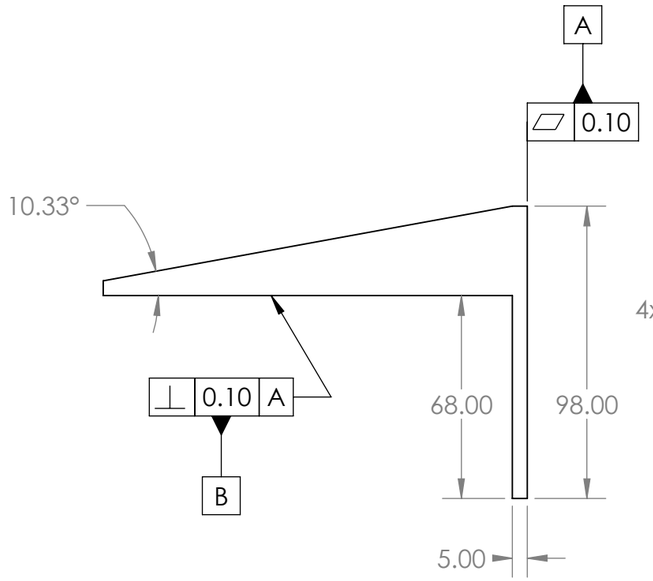
SIZE	DWG. NO.	REV
B	PP9	

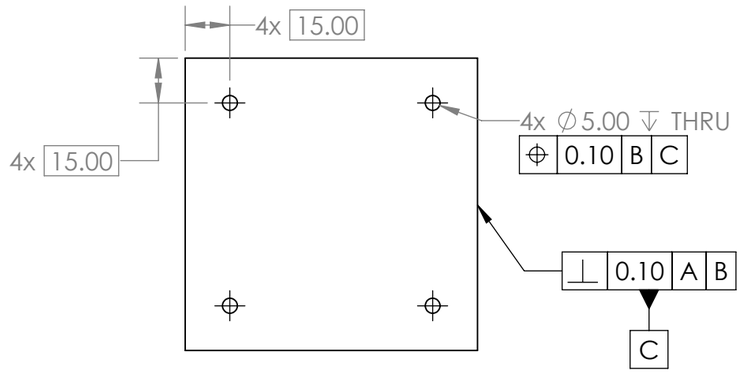
SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1











NOTE 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN MILLIMETER TOLERANCES: ANGULAR: ±0.1° TWO PLACE DECIMAL ±0.10		
INTERPRET GEOMETRIC TOLERANCING PER:		
MATERIAL ALLOY STEEL (AISI 4140)		
FINISH SEE NOTE 1	NEXT ASSY	USED ON
DO NOT SCALE DRAWING	APPLICATION	

	NAME	DATE
DRAWN	NPB	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

Team 6: Automotive

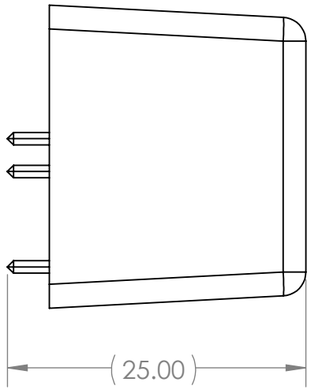
TITLE:
CASTER MOUNTING BRACKET

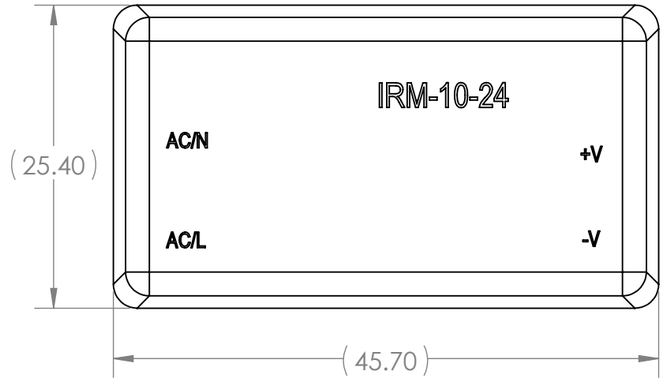
SIZE	DWG. NO.	REV
B	P2	1
SCALE: 1:2	WEIGHT:	SHEET 1 OF 1

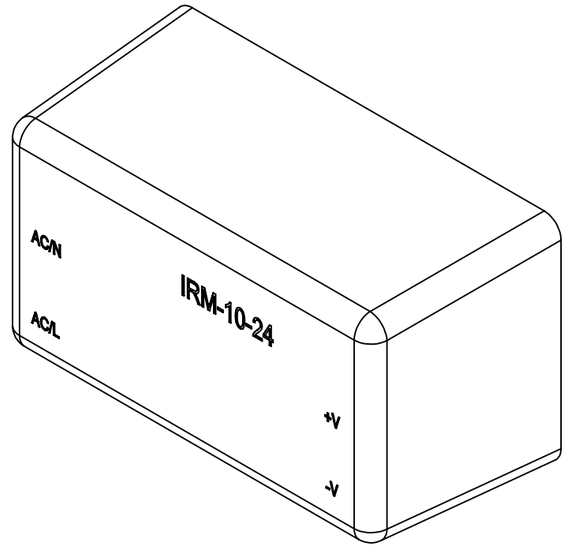
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: IRM-10-24 24V 0.42A

OR EQUIVALENT APPROVED BY ENGINEERING.







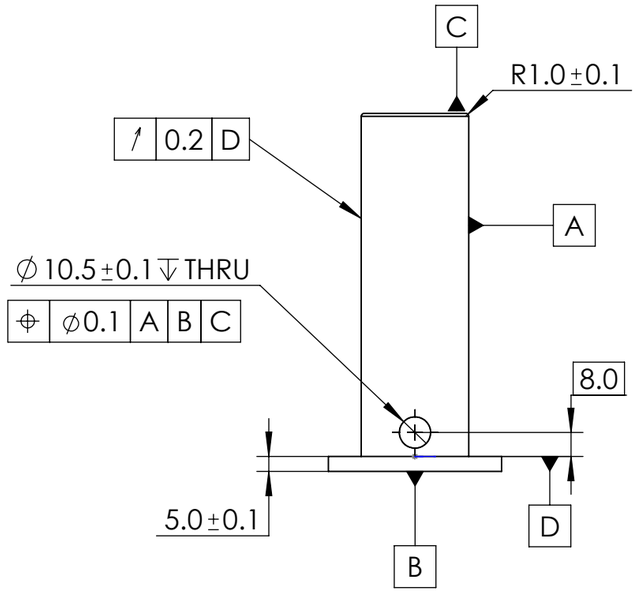
UNLESS OTHERWISE SPECIFIED:		NAME / DATE
DIMENSIONS ARE IN MILLIMETERS	DRAWN	CAO 12/12/2025
	CHECKED	
	ENG APPR.	
	MFG APPR.	
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.	
MATERIAL N/A	COMMENTS:	
FINISH N/A		
NEXT ASSY / USED ON		
APPLICATION	DO NOT SCALE DRAWING	

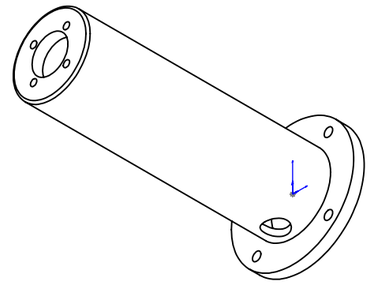
Team 6: Automotive

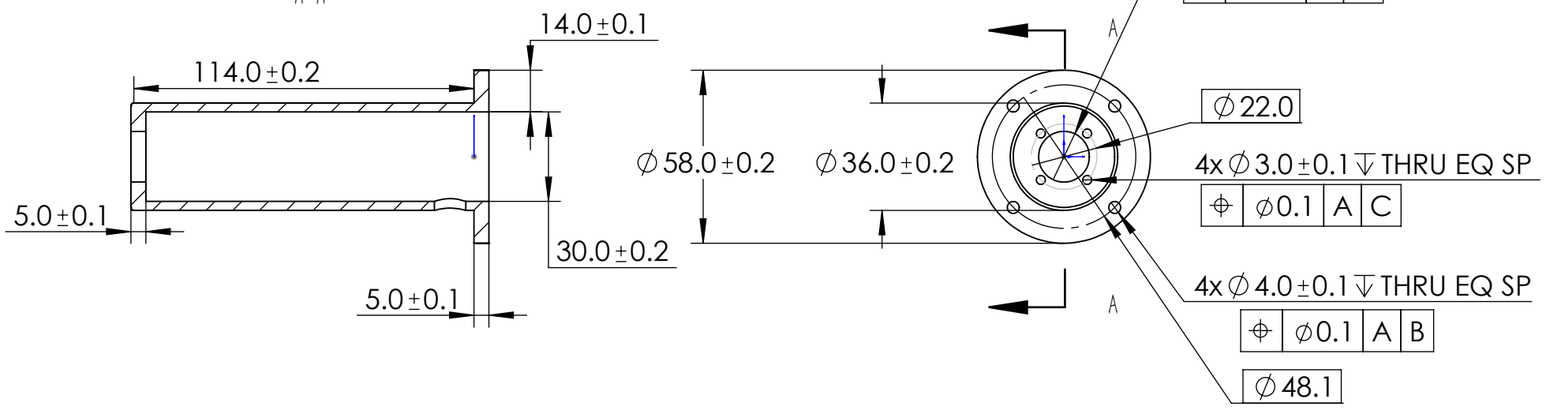
TITLE:
Microcontroller PSU

SIZE	DWG. NO.	REV
B	PP7	

SCALE: 2:1 | WEIGHT: | SHEET 1 OF 1







NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETER
TOLERANCES: ±0.1

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101: 2023

MATERIAL
ALUMINIUM 6061-T1

FINISH
Mill Finish

	NAME	DATE
DRAWN	JC	12/8/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

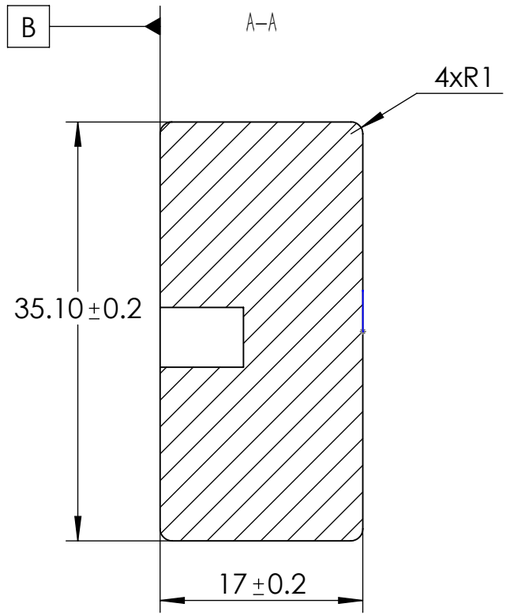
TEAM 6: AUTOMOTIVE

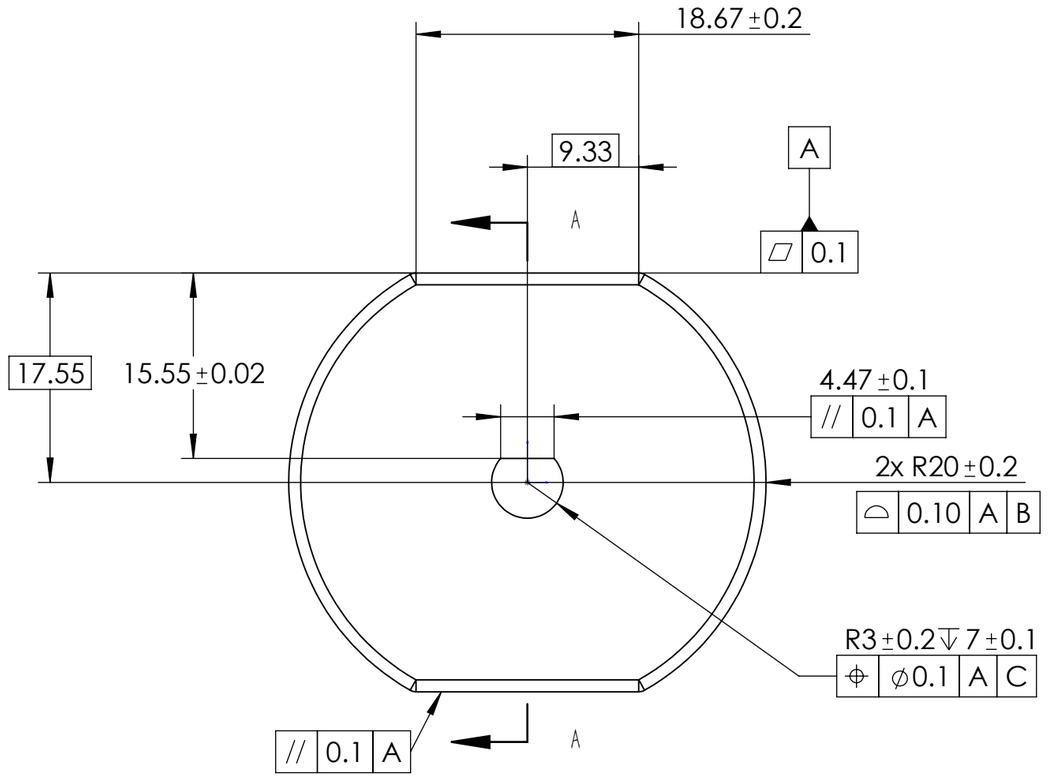
TITLE:

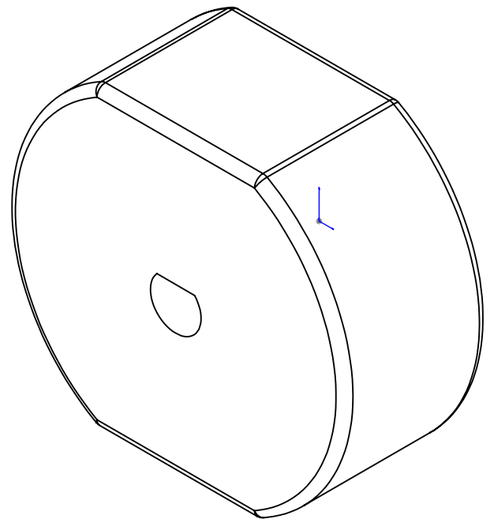
Motor Mount

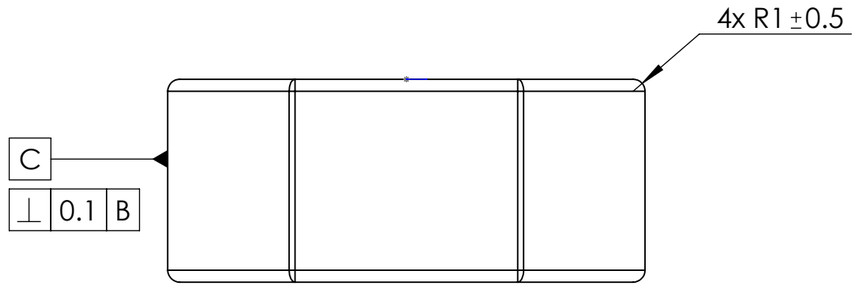
SIZE	DWG. NO.	REV
B	P4	

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1









PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <INSERT COMPANY NAME HERE>. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <INSERT COMPANY NAME HERE> IS PROHIBITED.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETER
TOLERANCES: ±0.2

INTERPRET GEOMETRIC TOLERANCING PER:ISO 1101:2023

MATERIAL
ALUMINIUM 6061 - T6

FINISH
Mill finish

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JC	12/8/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

TEAM 6 :AUTOMOTIVE

TITLE:

Motor Roller Coupler

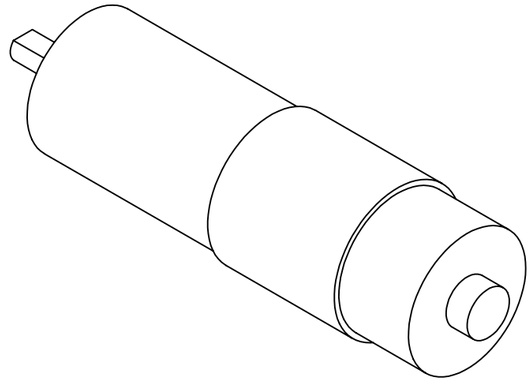
SIZE	DWG. NO.	REV
B	P3	

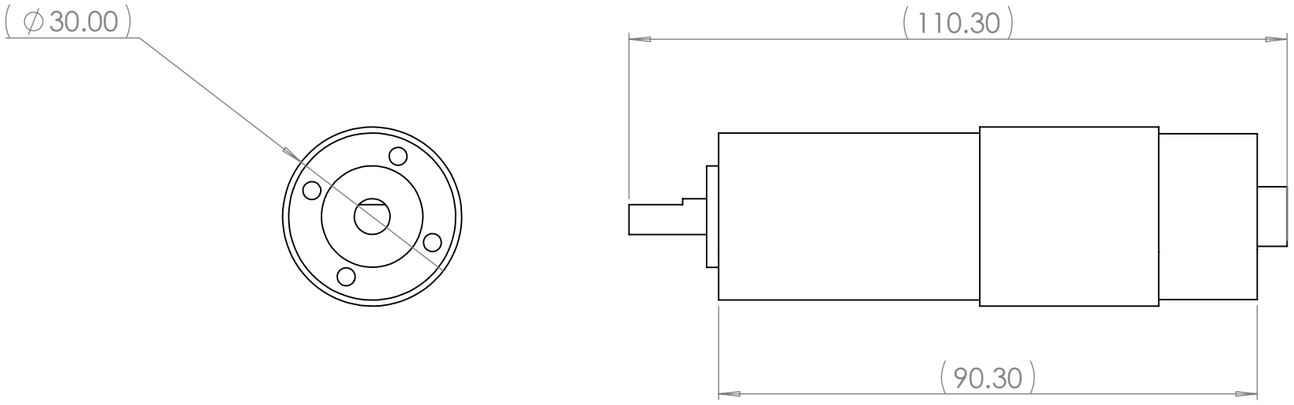
SCALE: 2:1 | WEIGHT: | SHEET 1 OF 1

NOTE 1:

PURCHASED PART
VENDOR: TWIRL
VENDOR PART NUMBER: PG28M395

OR EQUIVALENT APPROVED BY EGINEERING





PROPRIETARY AND CONFIDENTIAL

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		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN MILLIMETERS
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023
		MATERIAL N/A
NEXT ASSY	USED ON	FINISH N/A
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/09/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

Team 6: Automotive

TITLE:

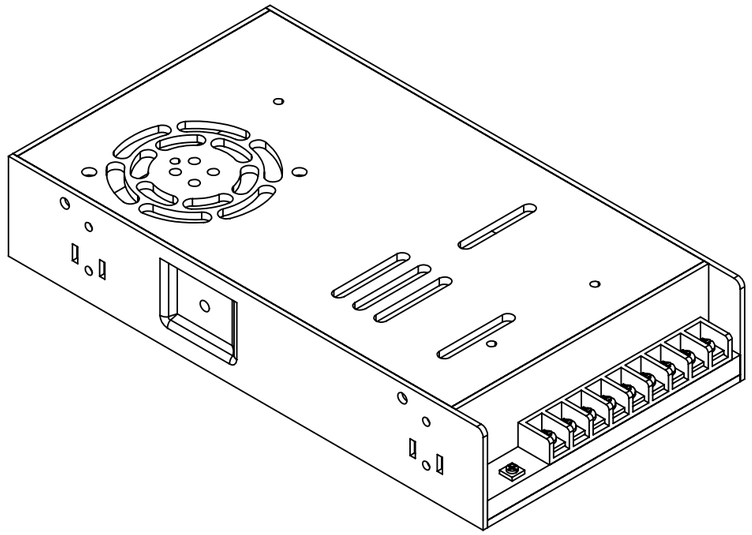
Motor

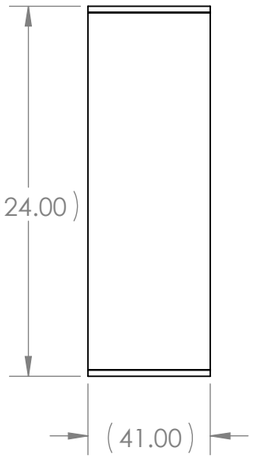
SIZE	DWG. NO.	REV
B	PP5	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

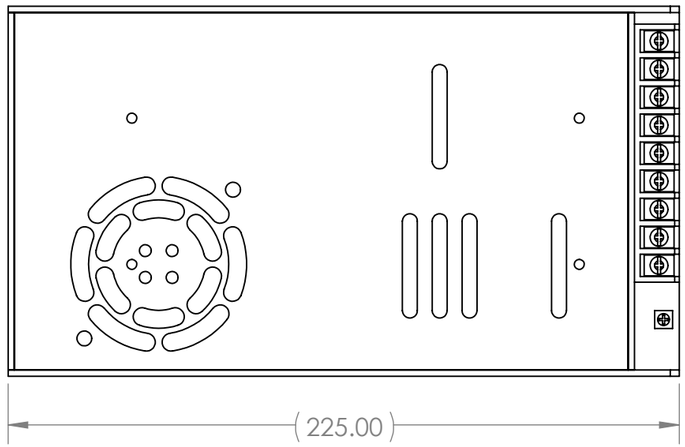
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: MW(LRS-600-24)

OR EQUIVALENT APPROVED BY ENGINEERING.







NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: N/A

FINISH: N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

Motor PSU

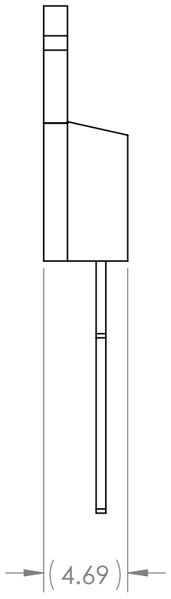
SIZE	DWG. NO.	REV
B	PP6	

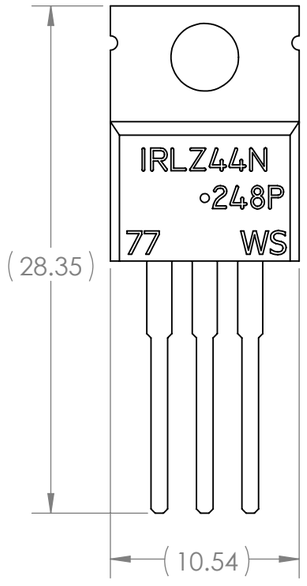
SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

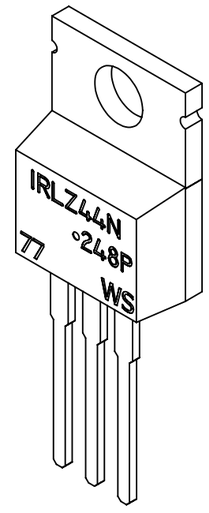
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: IRFZ44N

OR EQUIVALENT APPROVED BY ENGINEERING.







NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023
MATERIAL: N/A
FINISH: N/A

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

N-Type Mosfet

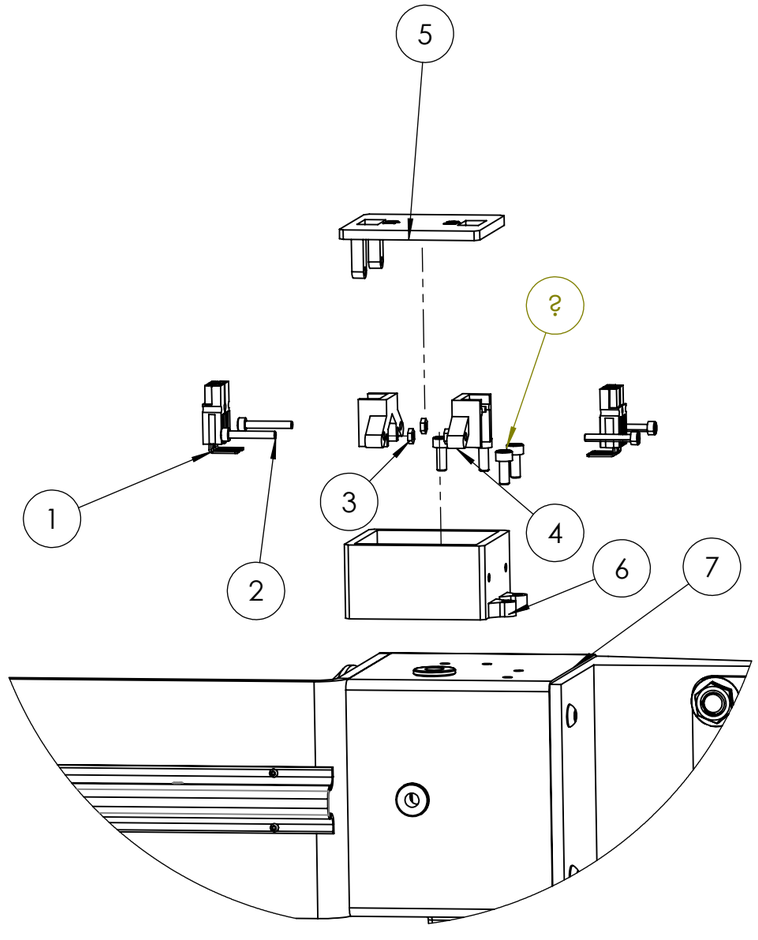
SIZE	DWG. NO.	REV
B	PP10	

SCALE: 2:1 | WEIGHT: | SHEET 1 OF 1

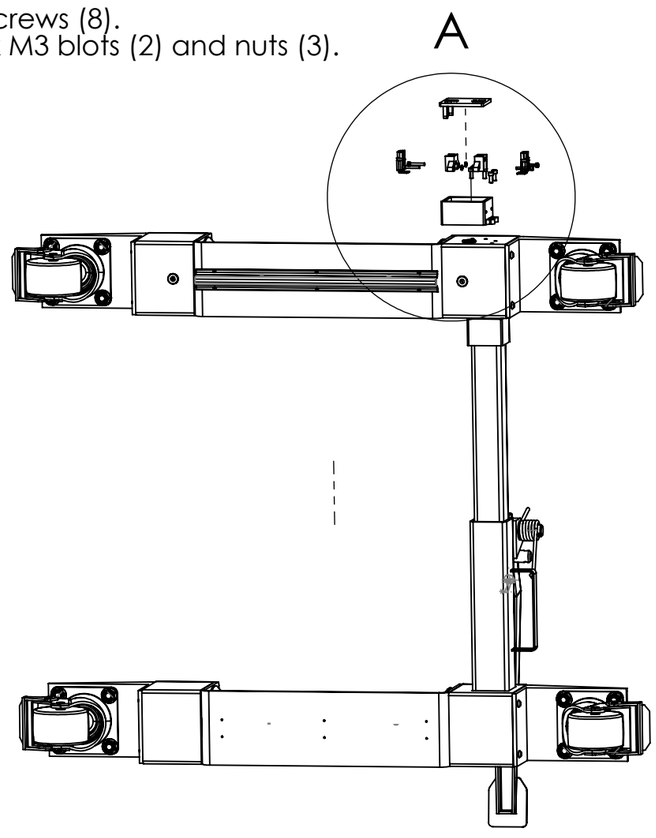
Note 1:

Assembly Instructions:

1. Slide the four anderson connectors (1) into the anderson collar (4) as indicated.
2. Feed the wires from the active connecting block through the hole in the back of the node box and solder to the enderson connectors as indicated by the circuit diagram.
3. Secure the node box (6) to the active connecting block (7) using 4x M4 screws (8).
4. Secure the anderson collars (4) and the lid (5) to the node box (6) using 4x M3 blots (2) and nuts (3).



DETAIL A
SCALE 2 : 5



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PP15	Anderson Connector	1
2	PP19	ISO metric hexagon socket head cap screws	4
3	PP21	M3 Nuts	4
4	PP18	Anderson Collar	1
5	P16	E box top	1
6	P14	Node Box	1
7	SA8	Roller sub assembly 8	1
8	PP20	ISO metric hexagon socket head cap screws	4

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1102:2023
MATERIAL N/A
FINISH N/A
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/13/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

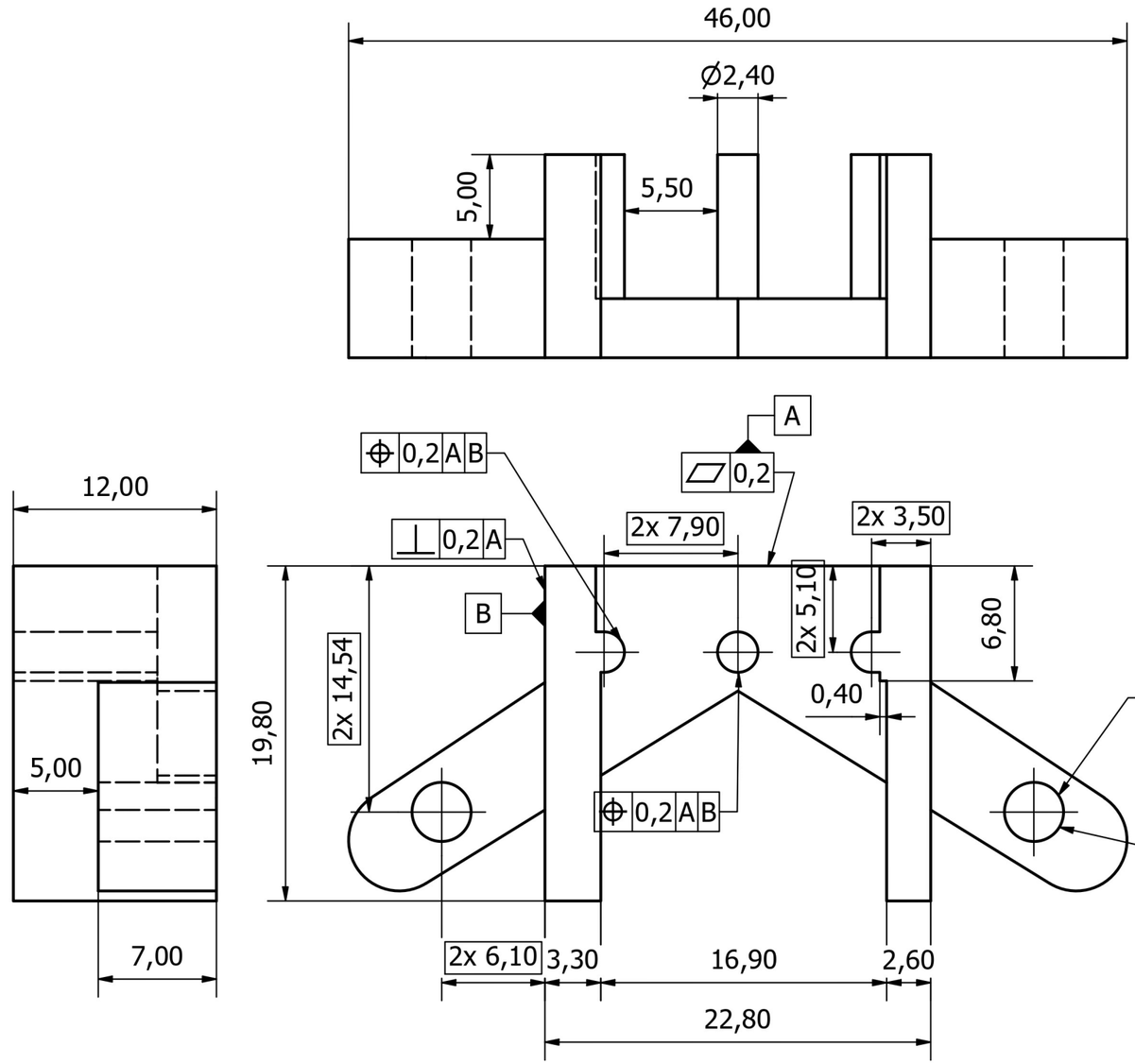
COMMENTS:

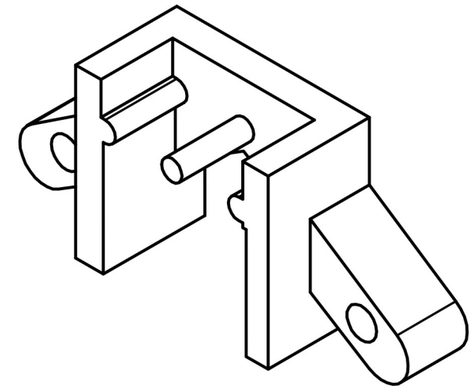
Team 6: Automotive

TITLE:
Roller sub assembly 10

SIZE	DWG. NO.	REV
B	SA10	

SCALE: 1:12 | WEIGHT: | SHEET 1 OF 1





PROPRIETARY AND CONFIDENTIAL

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		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES TOLERANCES: 0.1 FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ±0.05 THREE PLACE DECIMAL ±
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023
		MATERIAL PLA
NEXT ASSY	USED ON	FINISH PLA
APPLICATION		DO NOT SCALE DRAWING

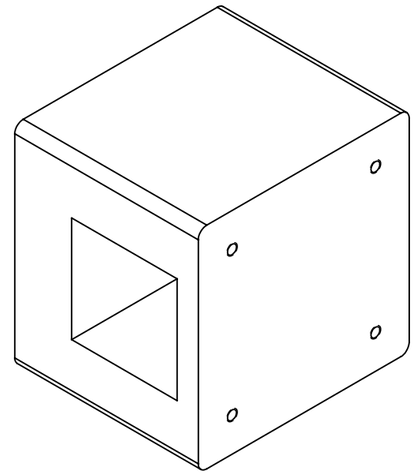
	NAME	DATE
DRAWN	Usukhbayar Amgalanbat	12/10/25
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

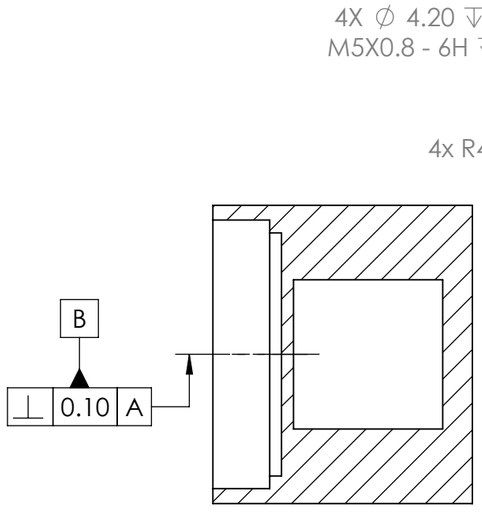
COMMENTS:

TITLE:

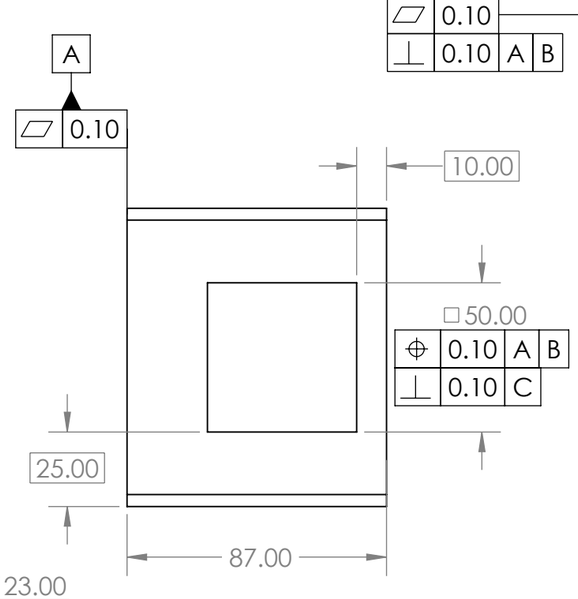
Node-Box Anderson Collar

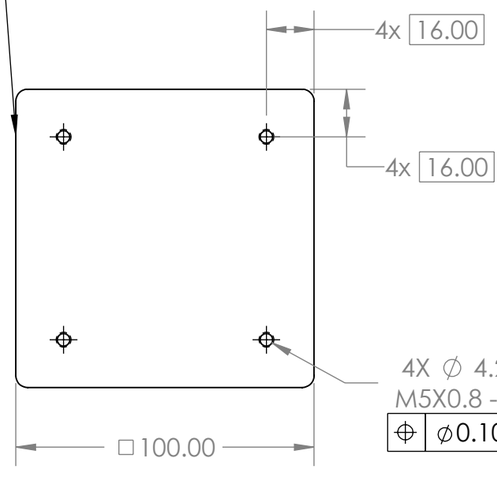
SIZE	DWG. NO.	REV
B	PP18	1
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1





SECTION A-A





NOTE 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS
TOLERANCES:
TWO PLACE DECIMAL ±0.10

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL
ALUMINIUM 6061-T6

FINISH
SEE NOTE 1

DO NOT SCALE DRAWING

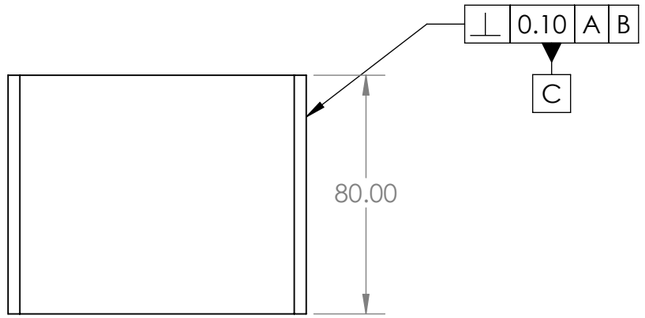
	NAME	DATE
DRAWN	NPB	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

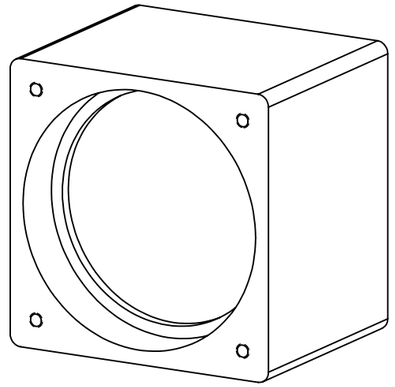
Team 6: Automotive

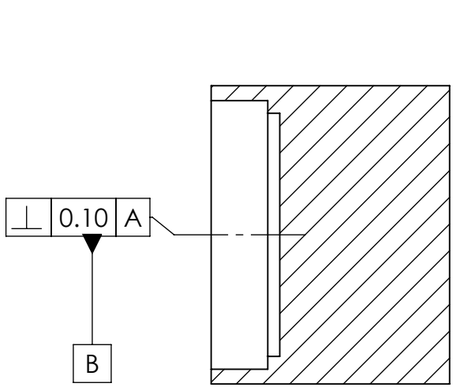
TITLE:
PASSIVE CONNECTING BLOCK

SIZE	DWG. NO.	REV
B	P8	

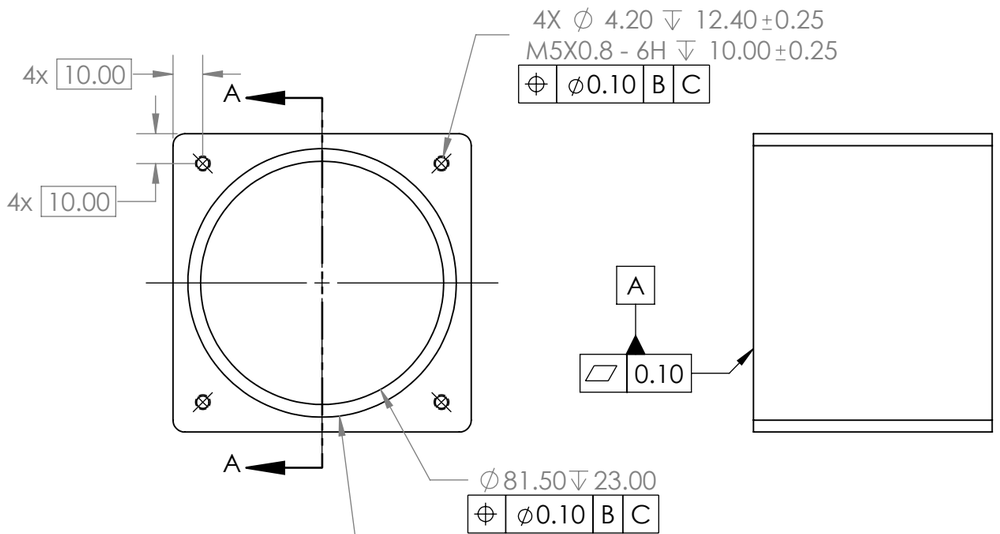
SCALE: 1:2	WEIGHT:	SHEET 1 OF 1



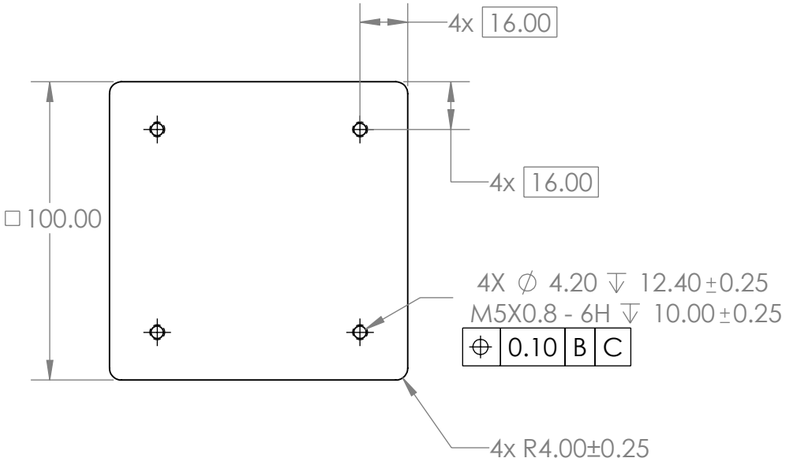




SECTION A-A



TOLERANCES FROM SKF
FOR SPECIFIED BEARING



NOTE 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETER
TOLERANCES:
TWO PLACE DECIMAL ±0.10

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL
ALUMINIUM 6061-T6

FINISH
SEE NOTE 1

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	NPB	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:
Passive End Block

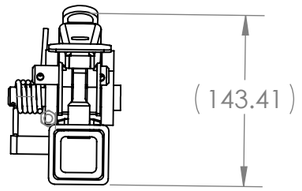
SIZE	DWG. NO.	REV
B	P7	1

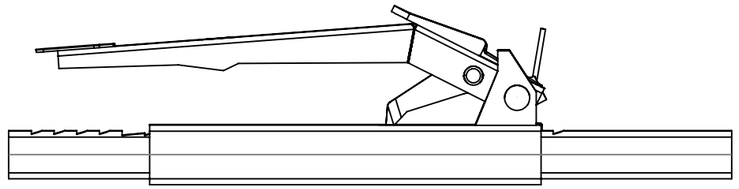
SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

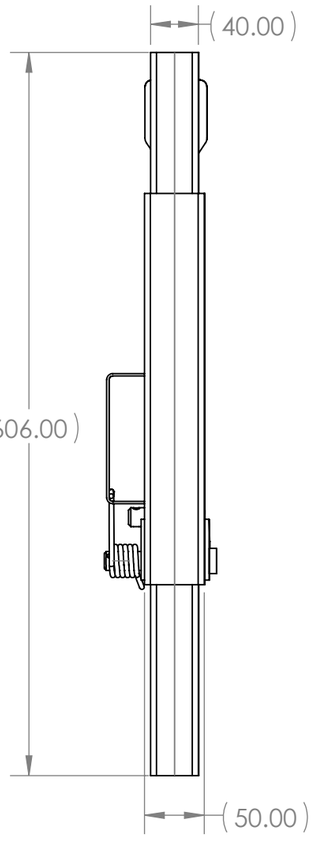
NOTE 1:

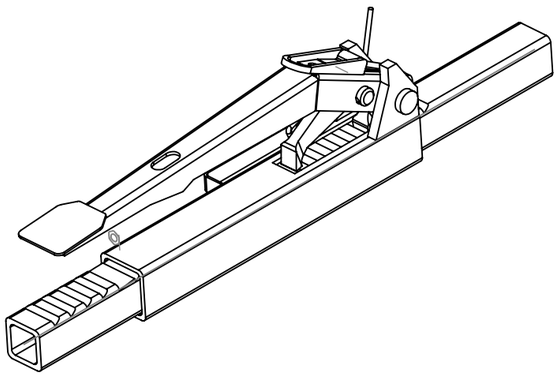
PURCHASED PART
VENDOR: GOJACK
VENDOR PART NUMBER: 620

OR EQUIVALENT APPROVED BY
ENGINEER









UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN MILLIMETERS		
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023		
MATERIAL	N/A	
FINISH	N/A	
APPLICATION	DO NOT SCALE DRAWING	

	NAME	DATE
DRAWN	NPB	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

NEXT ASSY | USED ON

TEAM 6: AUTOMOTIVE

TITLE:

Ratcheting Member

SIZE	DWG. NO.	REV
B	SA9	

SCALE: 1:5 | WEIGHT: | SHEET 1 OF 1

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS TOLERANCES: ANGULAR: MACH ±0.5° ONE PLACE DECIMAL ±0.1	DRAWN	JAL	12/09/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL Alloy steel (AISIS 4140)	COMMENTS:		
NEXT ASSY	USED ON	FINISH Mill Finish			
APPLICATION		DO NOT SCALE DRAWING			

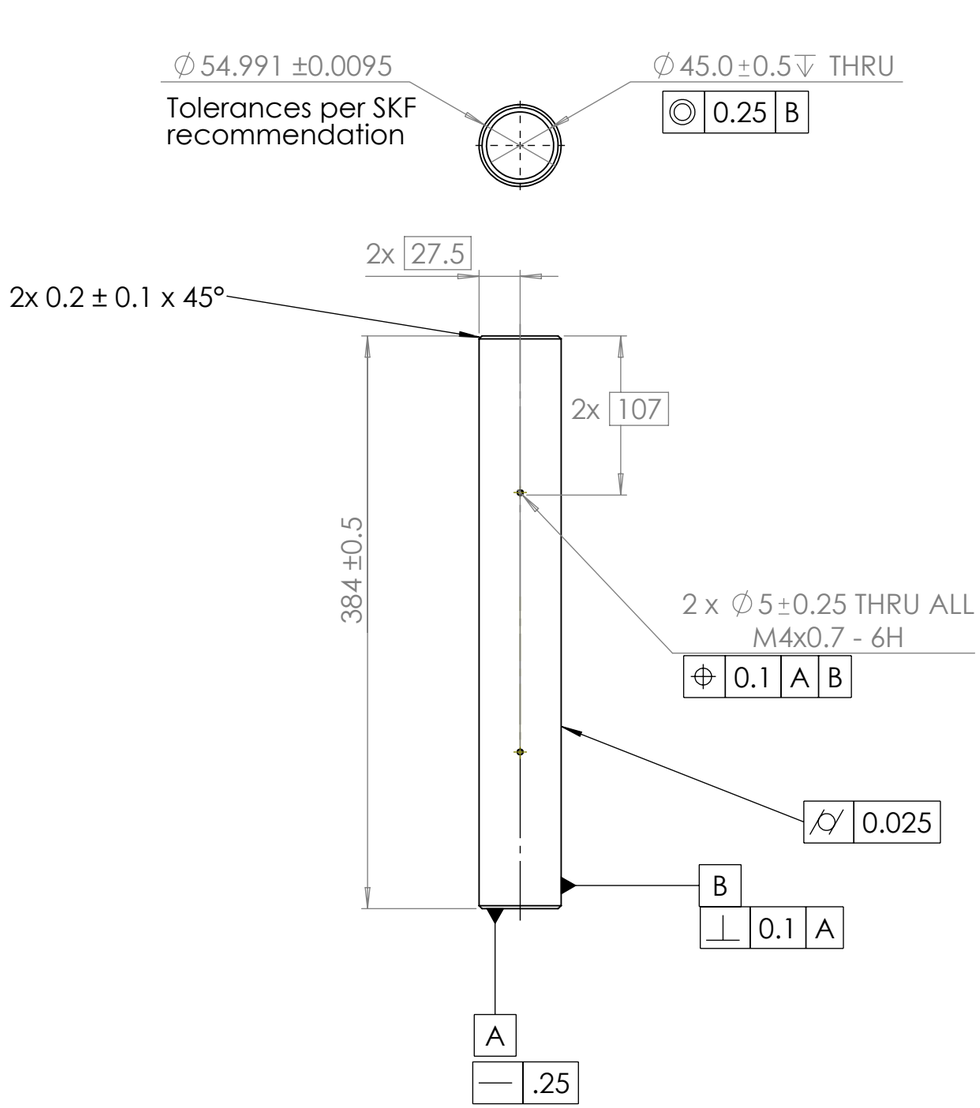
Team 6: Automotive

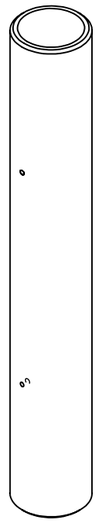
TITLE:

Roller end collar

SIZE	DWG. NO.	REV
B	P10	

SCALE: 2:1 | WEIGHT: | SHEET 1 OF 1





Note 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN MILLIMETERS TOLERANCES: TWO PLACE DECIMAL ±0.25 THREE PLACE DECIMAL ±0.025		
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023		
MATERIAL Alloy steel (AISIS 4140)		
FINISH See note 1	NEXT ASSY	USED ON
DO NOT SCALE DRAWING	APPLICATION	

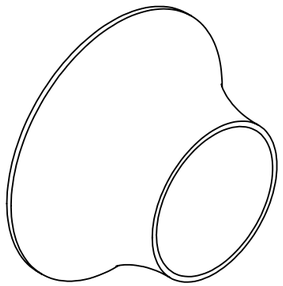
	NAME	DATE
DRAWN	JAL	12/06/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

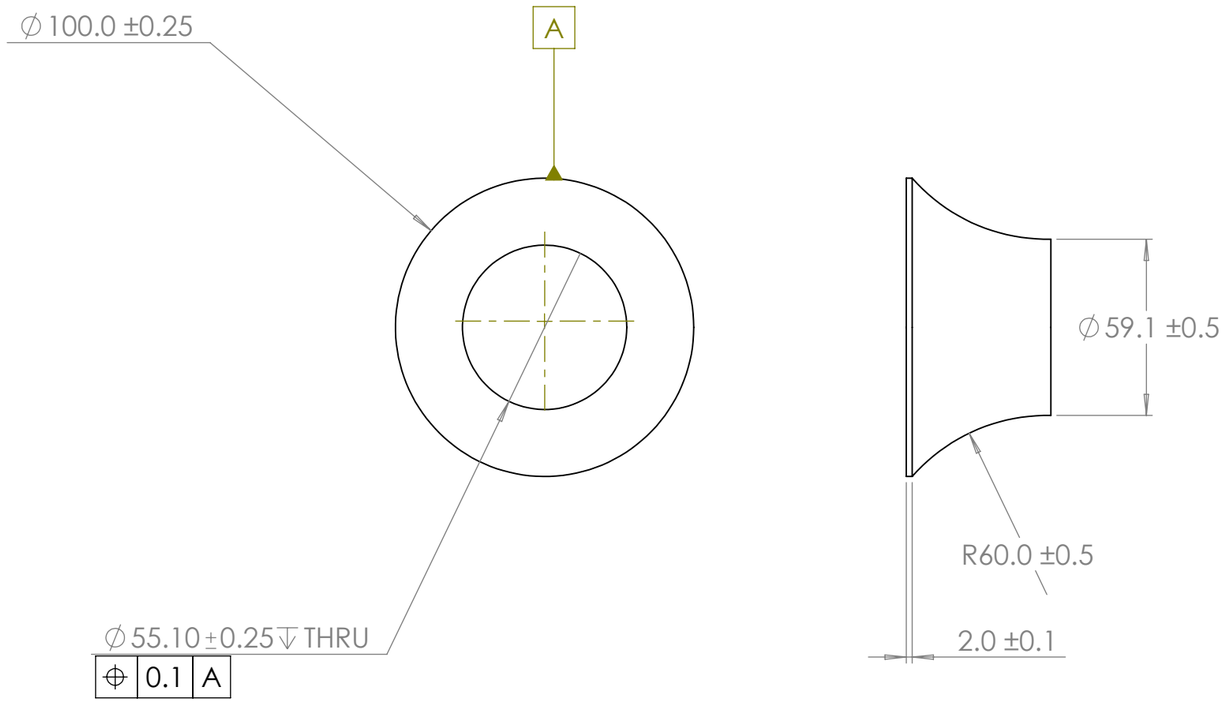
Team 6: Automotive

TITLE:

Roller

SIZE	DWG. NO.	REV
B	P9	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1





Note 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS
TOLERANCES:
TWO PLACE DECIMAL ± 0.25

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL
Alloy steel (AISI 4140)

FINISH
See note 1

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/09/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

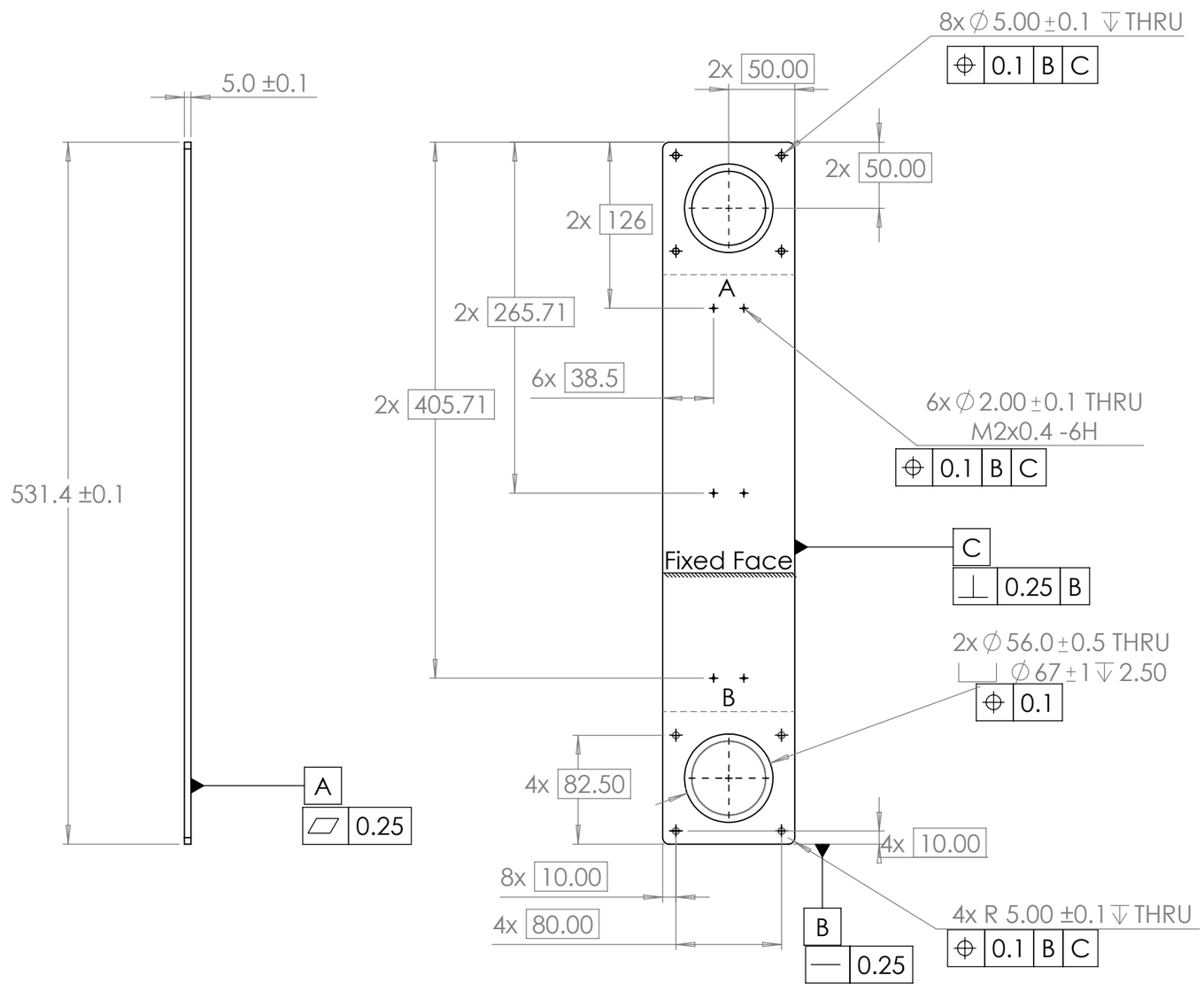
Team 6: Automotive

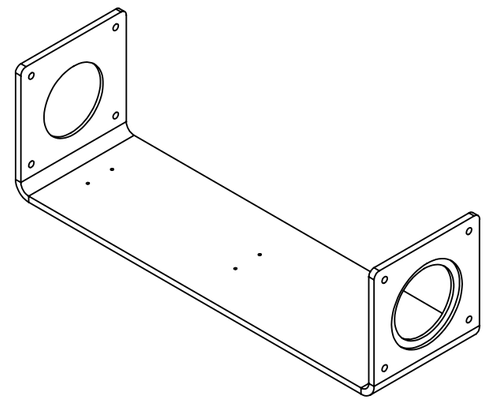
TITLE:
Roller Centering Collar

SIZE	DWG. NO.	REV
B	P11	

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

Tag	Direction	Angle	Inner Radius
A	DOWN	90°	7.5
B	DOWN	90°	7.5





Note 1:
FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10 .
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS
TOLERANCES:
ANGULAR: MACH ± 0.5°
BEND ±0.5°
TWO PLACE DECIMAL ±0.25
THREE PLACE DECIMAL ±0.025

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL
Mild steel (ASTM A36)

FINISH
See note 1

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/7/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:
Block Spacer Bracket

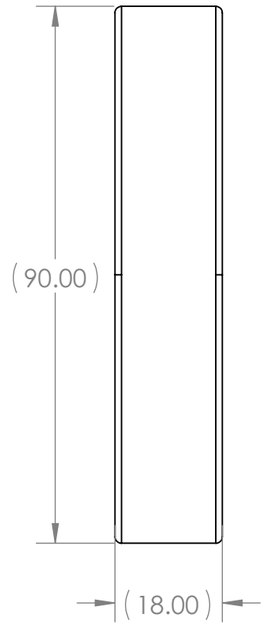
SIZE	DWG. NO.	REV
B	P12	

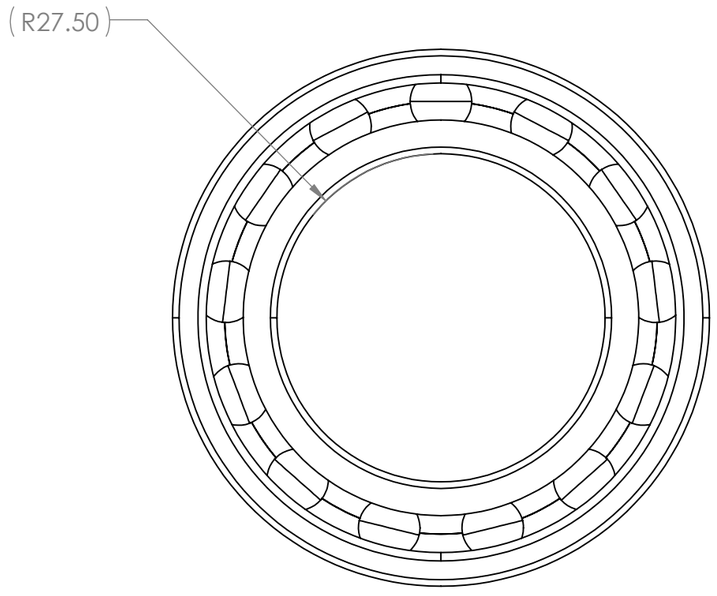
SCALE: 1:4 | WEIGHT: | SHEET 1 OF 1

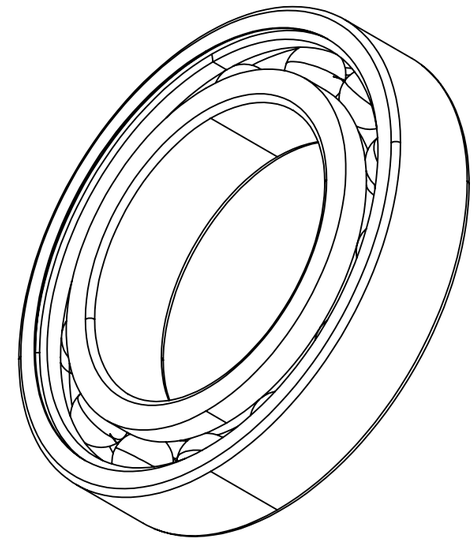
NOTE 1:

PURCHASED PART
VENDOR: SKF
VENDOR PART NUMBER: 6011

OR EQUIVALENT APPROVED BY ENGINEERING.







		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN MILLIMETERS	DRAWN	CAO	12/12/2025
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023	Q.A.		
		MATERIAL Bearing Steel	COMMENTS:		
NEXT ASSY	USED ON	FINISH As specified by SKF			
APPLICATION		DO NOT SCALE DRAWING			

Team 6: Automotive

TITLE:

SKF Bearing

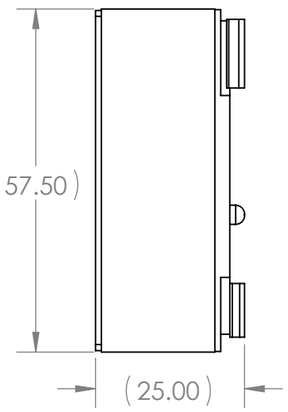
SIZE	DWG. NO.	REV
B	PP3	

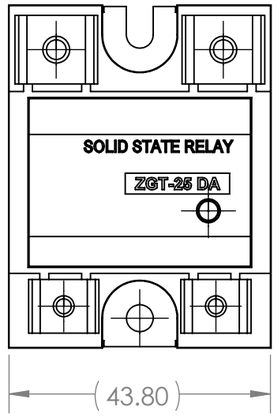
SCALE: 1:2	WEIGHT:	SHEET 1 OF 1

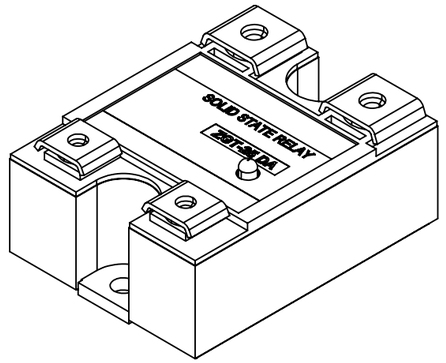
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: SSR-25DA

OR EQUIVALENT APPROVED BY ENGINEERING.







NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023
MATERIAL: N/A
FINISH: N/A
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

Solid State Relay

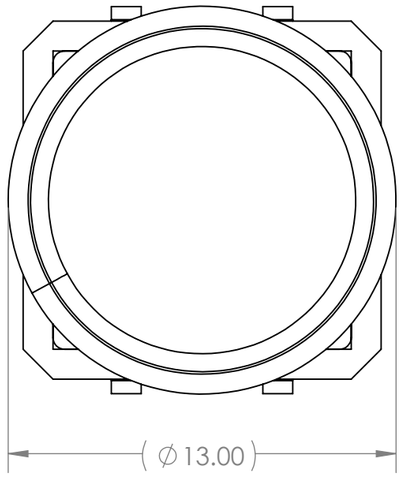
SIZE	DWG. NO.	REV
B	PP11	

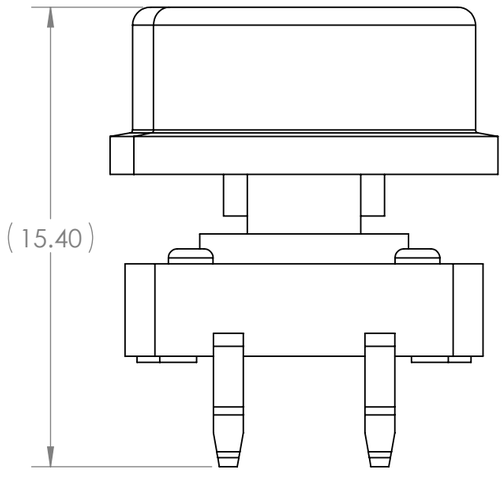
SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1

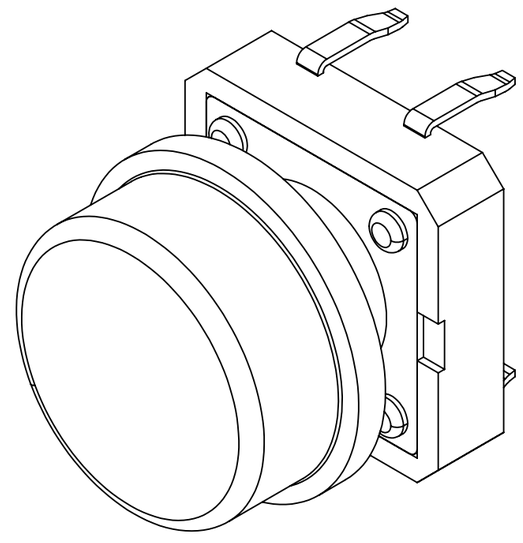
NOTE 1:

PURCHASED PART
VENDOR: AMAZON
VENDOR PART NUMBER: 4 PIN PUSH BUTTON JIQI

OR EQUIVALENT APPROVED BY ENGINEERING.







NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: N/A

FINISH: N/A

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	CAO	12/12/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

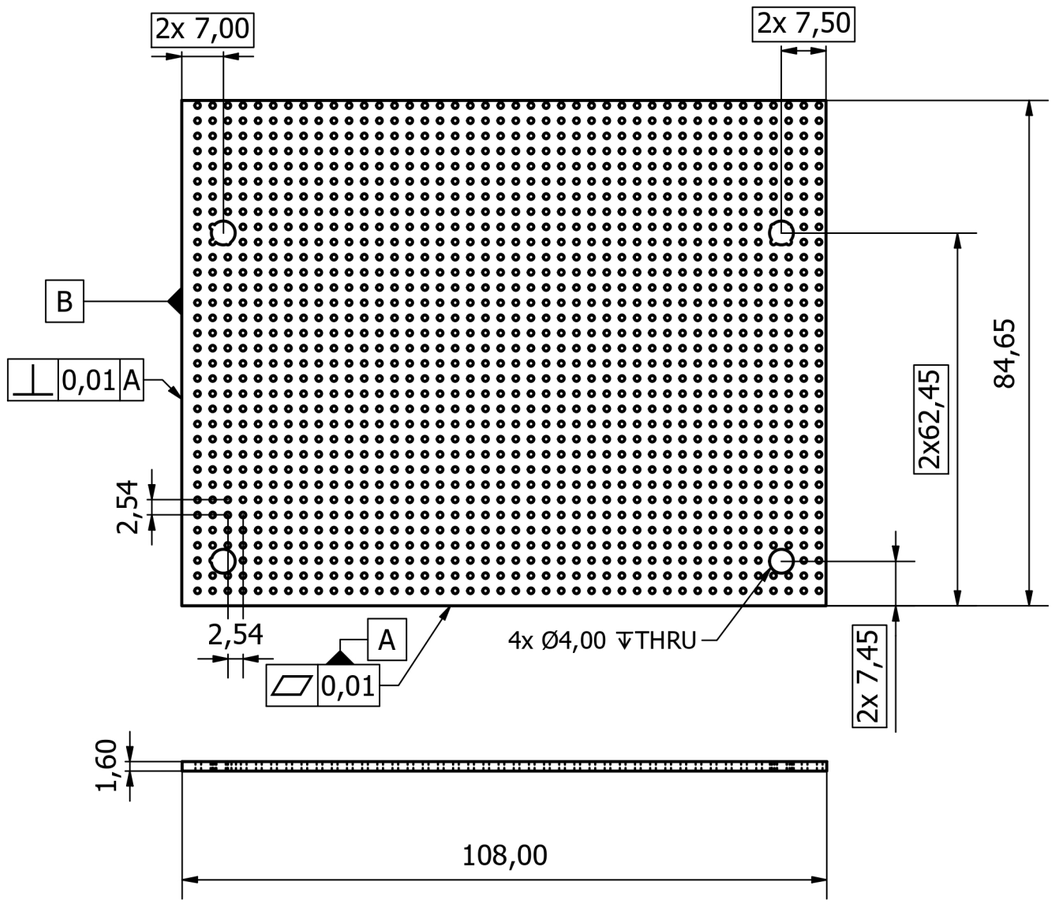
TITLE:

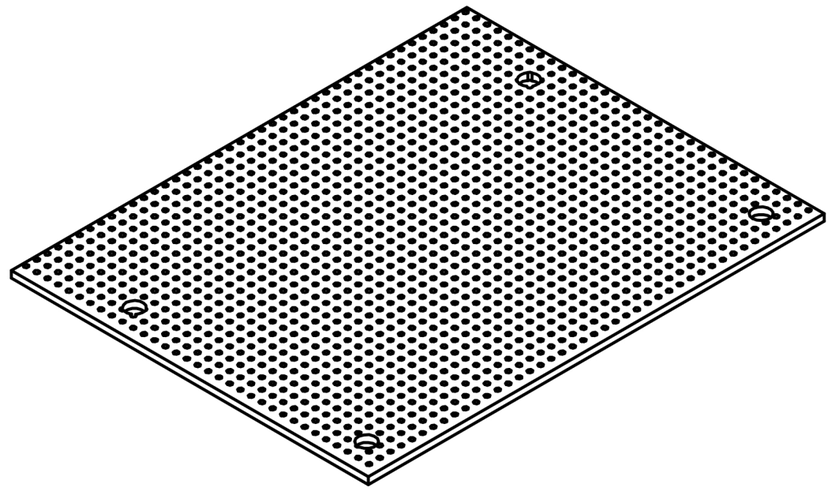
UI Button

SIZE	DWG. NO.	REV
B	PP12	

SCALE: 5:1	WEIGHT:	SHEET 1 OF 1

Universal Board 1





PROPRIETARY AND CONFIDENTIAL

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		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES TOLERANCES: 0.1 FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ±0.05 THREE PLACE DECIMAL ±
		INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023
		MATERIAL PLA
NEXT ASSY	USED ON	FINISH PLA
APPLICATION		DO NOT SCALE DRAWING

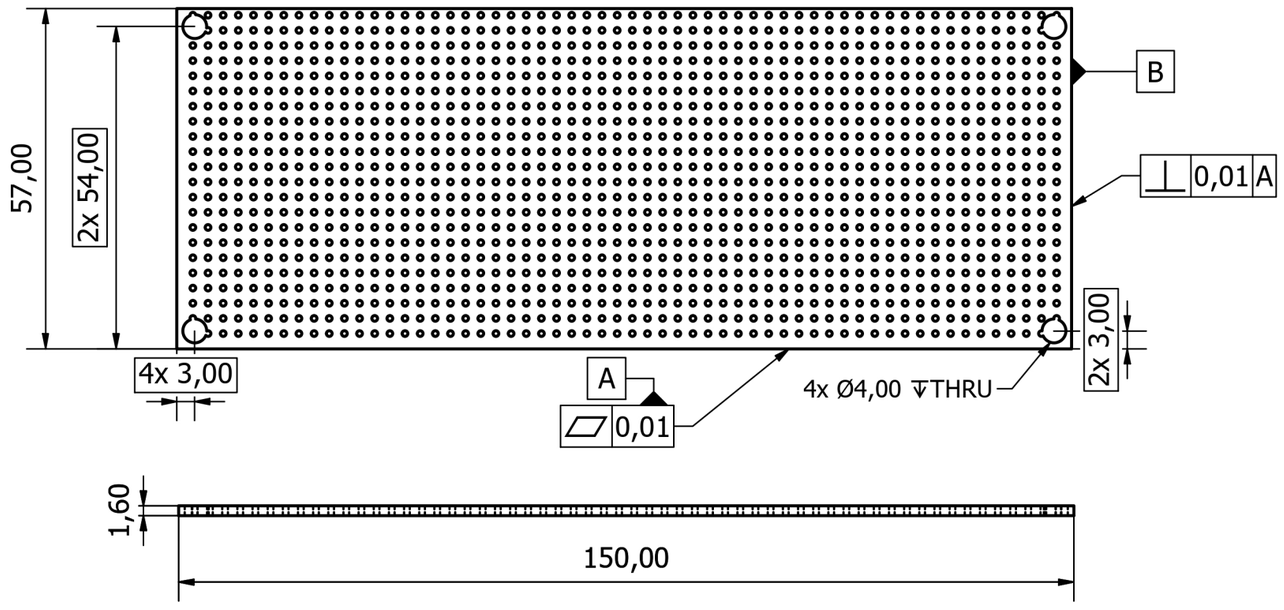
	NAME	DATE
DRAWN	Usukhbayar Amgalanbat	12/10/25
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

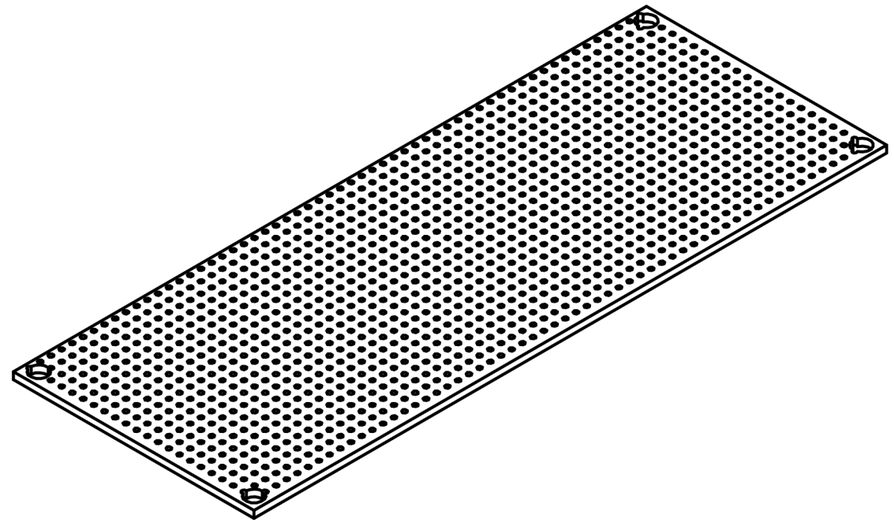
COMMENTS:

TITLE: Universal board 1

SIZE	DWG. NO.	REV
B	PP24	1
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

Universal Board 2





NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES: 0.1
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±0.05
THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: PLA

FINISH: PLA

	NAME	DATE
DRAWN	Usukhbayar Amgalanbat	12/10/25
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

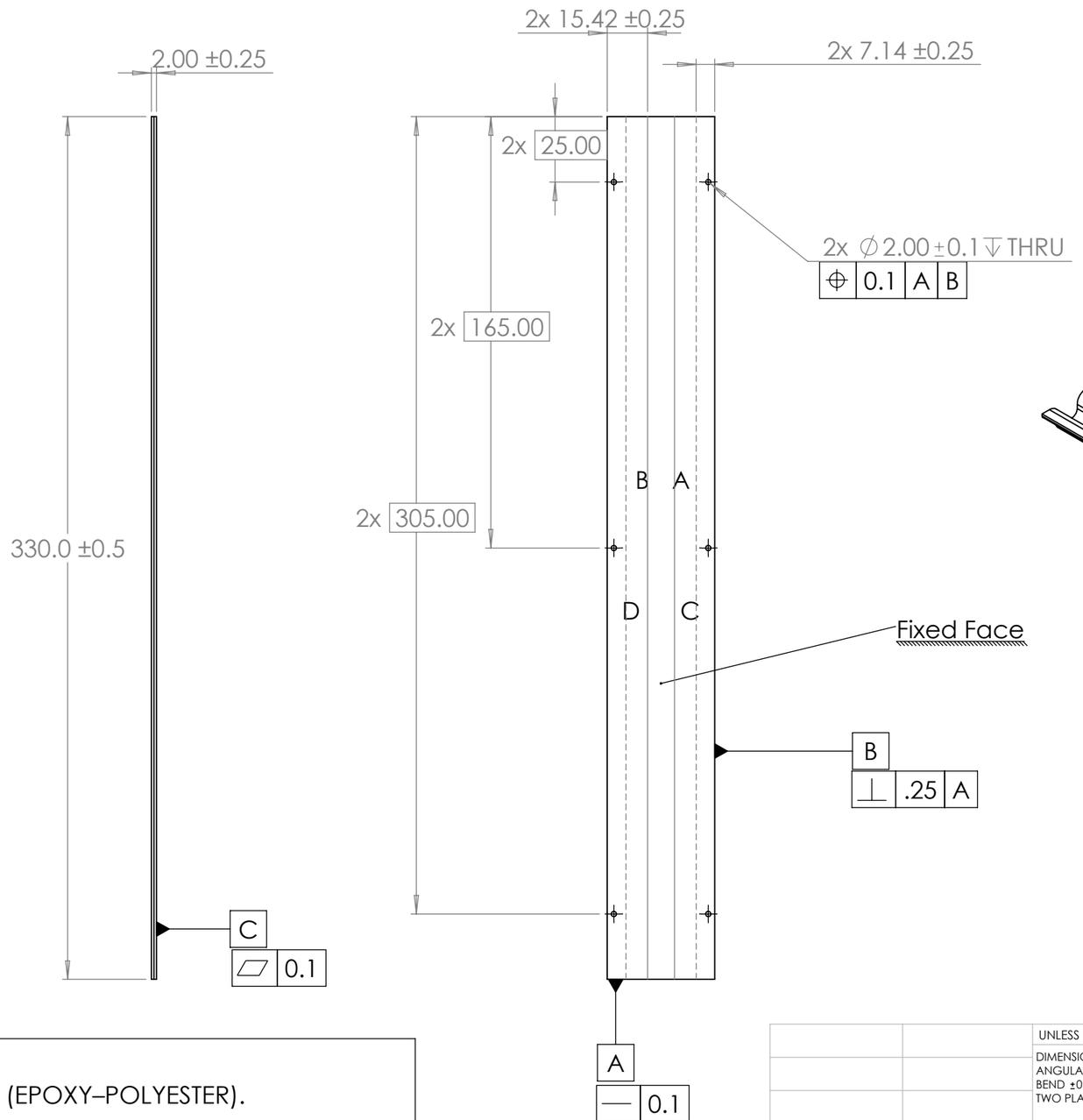
COMMENTS:

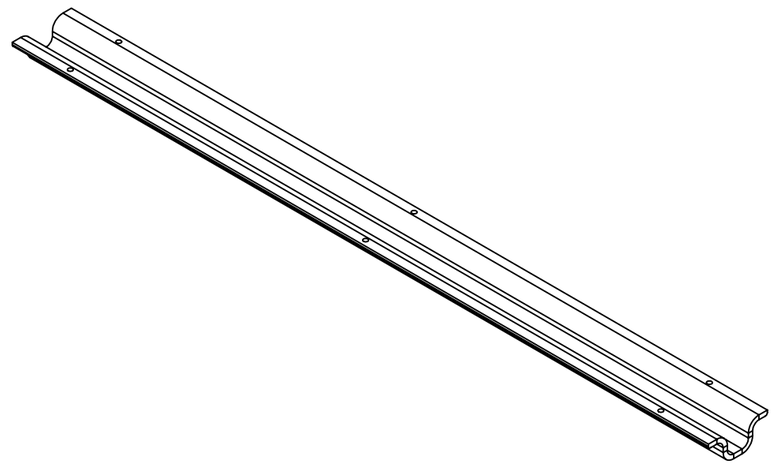
TITLE: Universal board 2

SIZE	DWG. NO.	REV
B	PP25	1

SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1

Tag	Direction	Angle	Inner Radius
A	DOWN	90°	3
B	DOWN	90°	3
C	UP	90°	3
D	UP	90°	3





Note 1:

FINISH: POWDER COAT (EPOXY–POLYESTER).
COLOR: RAL 7016
SURFACE PREP: CLEAN, DEGREASE, AND ABRASIVE-BLAST TO SSPC-SP10.
TARGET DRY FILM THICKNESS: 60–80 µm (2.4–3.2 mil).
MASK ALL THREADED HOLES AND CRITICAL INTERFACES.

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
ANGULAR: MACH ±0.1°
BEND ±0.1°
TWO PLACE DECIMAL ±0.25

INTERPRET GEOMETRIC TOLERANCING PER: ISO 1101:2023

MATERIAL: Mild steel (ASTM A36)

FINISH: See note 1

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	JAL	12/09/2025
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Team 6: Automotive

TITLE:

Wire U-bracket

SIZE	DWG. NO.	REV
B	P13	

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1