



TA 201 PROJECT REPORT (TANK)

Group No.10 (Monday)

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Course Staff In-Charge: Mr. Indra Pal Singh

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- | | |
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Acknowledgement

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Special thanks to our TAs, (Swastika Paul and Praveen Kumar Pandey) for giving us their valuable time.

Overall, we thank our instructor-in-charge, Dr. Nilesh Badwe, for providing us with this opportunity to learn, explore and make something valuable using the different manufacturing processes.

Introduction

An army tank is an armoured fighting vehicle intended as a primary offensive weapon in front-line ground combat. Army tank designs are a balance of heavy firepower, strong armour, and good battlefield mobility. The main armament of modern tanks is a large-caliber tank gun mounted on a turret which can rotate making tank a versatile weapon. The most important aspect of an army tank is the co-ordination between its firepower and mobility. Firepower is achieved with the use of main gun which is mounted on the turret. Talking about mobility, it can move over a range of terrain ranging from sand to mountains.

Keeping the above things in mind, we have tried to replicate a scale model of an army tank, with a mechanism that depicts the coordination between the turret and the locomotion of the tank using gear systems.

Motivation

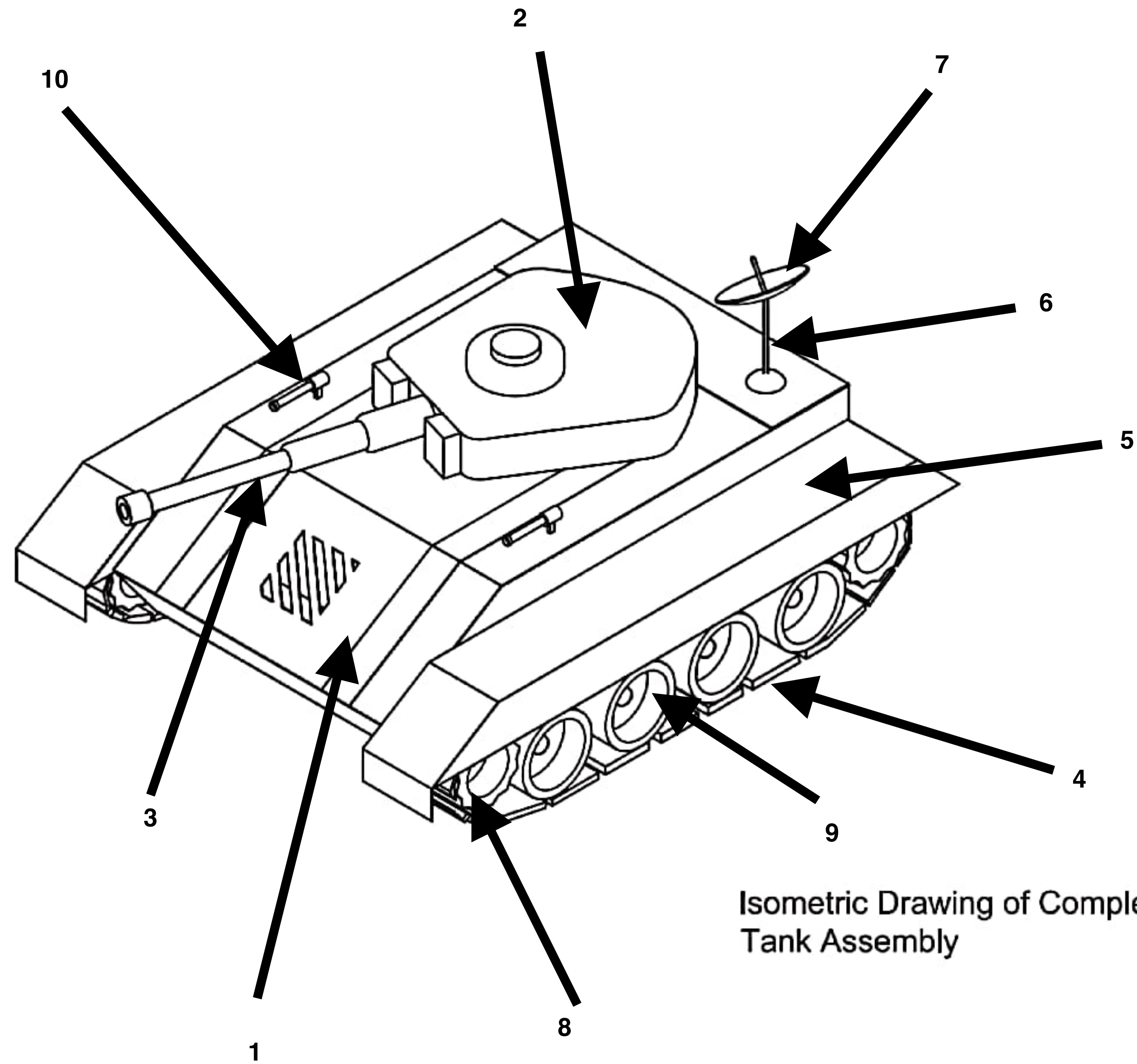
Our project is army tank. The motivation behind this is to understand the structural and functional aspects of a battle army tank, which are a very valuable asset of the nation. We want to learn and apply the various techniques as well as use the machinery taught to us in TA201 to give us a feel of how does the processes work in real life systems.

Work Distribution

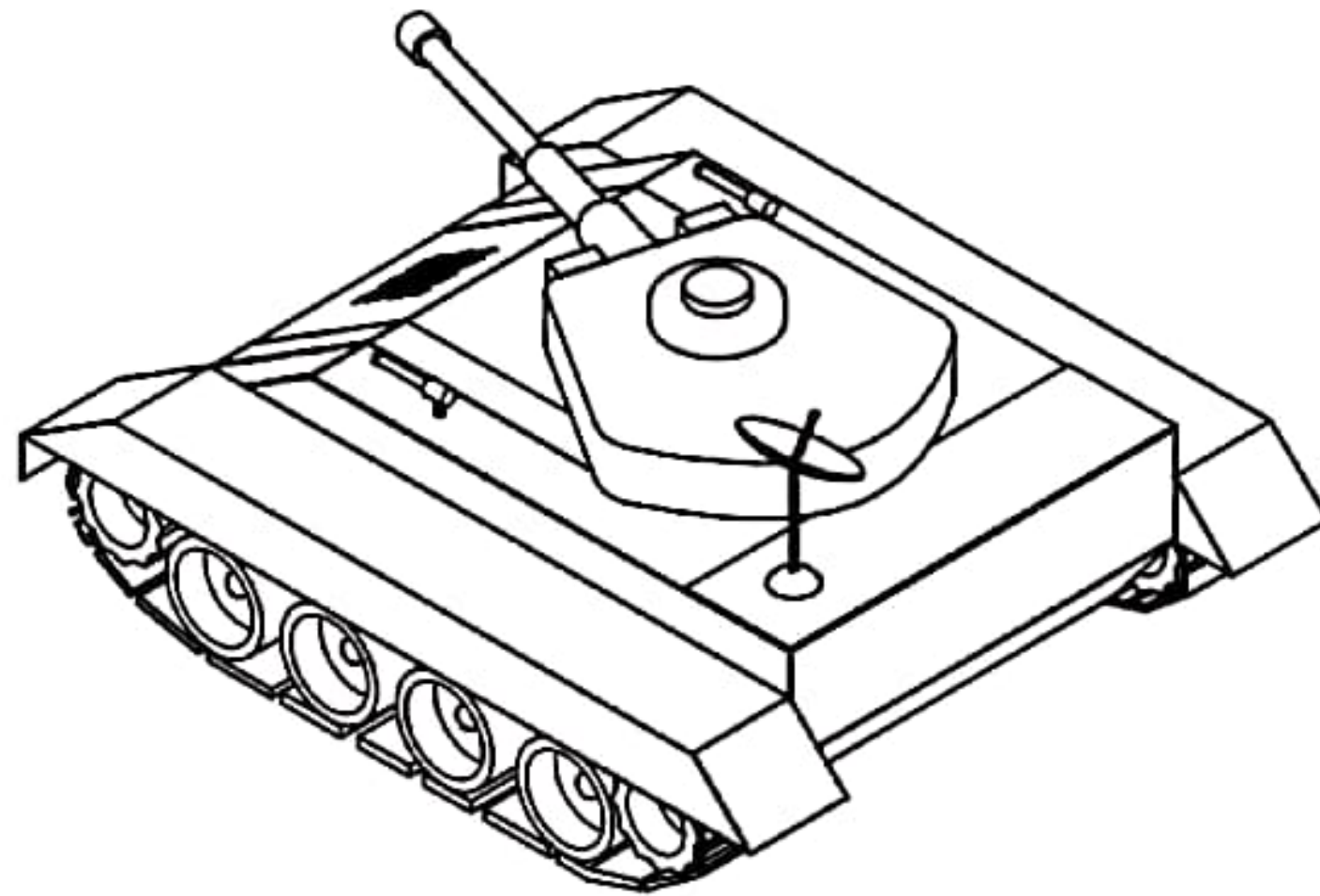
Members	Week I	Week II	Week III	Week IV	Week V
Pulkit Sharma	Main Body Formation	Main Body Formation	Belt Assembly	Belt Assembly	Assembly
Rachit Gupta	Main Body Formation	Main Body Formation	Belt Assembly	Belt Assembly	Assembly
Rajat Phogat	Main Body Formation	Main Body Formation	Antenna & Dish Formation	Assembly	Assembly
Raushan Kumar	Turret Formation	Turret Formation	Antenna & Dish Formation	Assembly	Assembly
Rishabh Pandey	Turret Formation	Turret Formation	Wheel Formation	Assembly	Assembly
Rishiet Sharma	Barrel Formation	Barrel Formation	Wheel Formation	Assembly	Assembly
Ritam Acharya	Barrel Formation	Barrel Formation	Wheel(type 2)Formation	Assembly	Assembly
Rohan Batra	Mud Guard Formation	Mud Guard Formation	Wheel(type 2)Formation	Assembly	Assembly

Materials Used

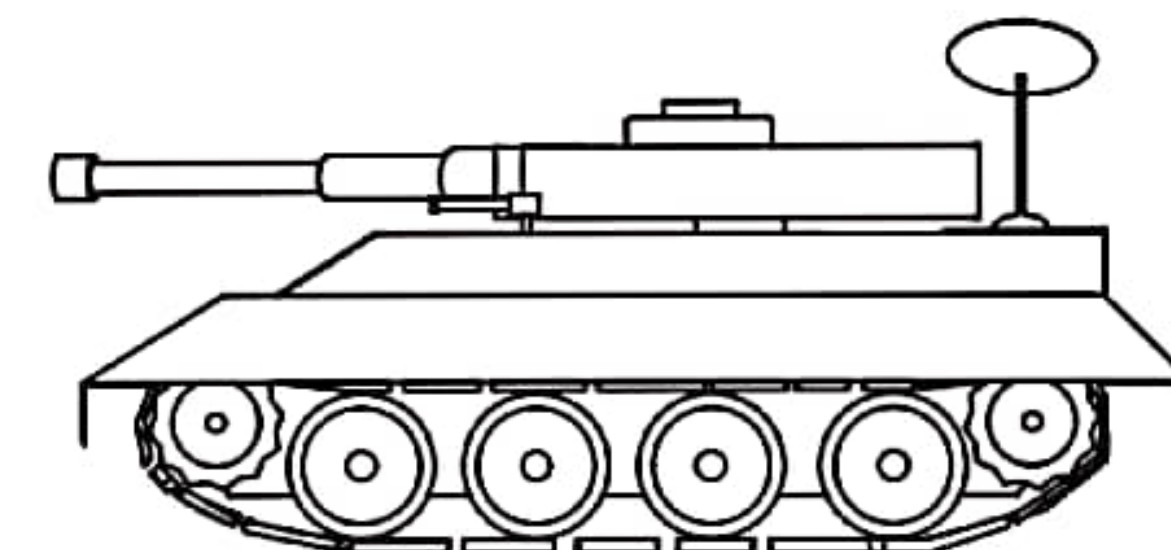
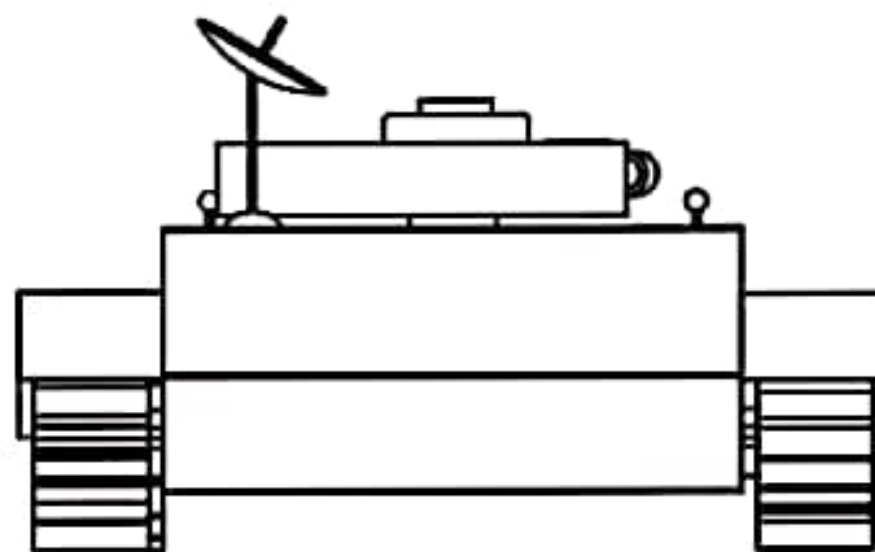
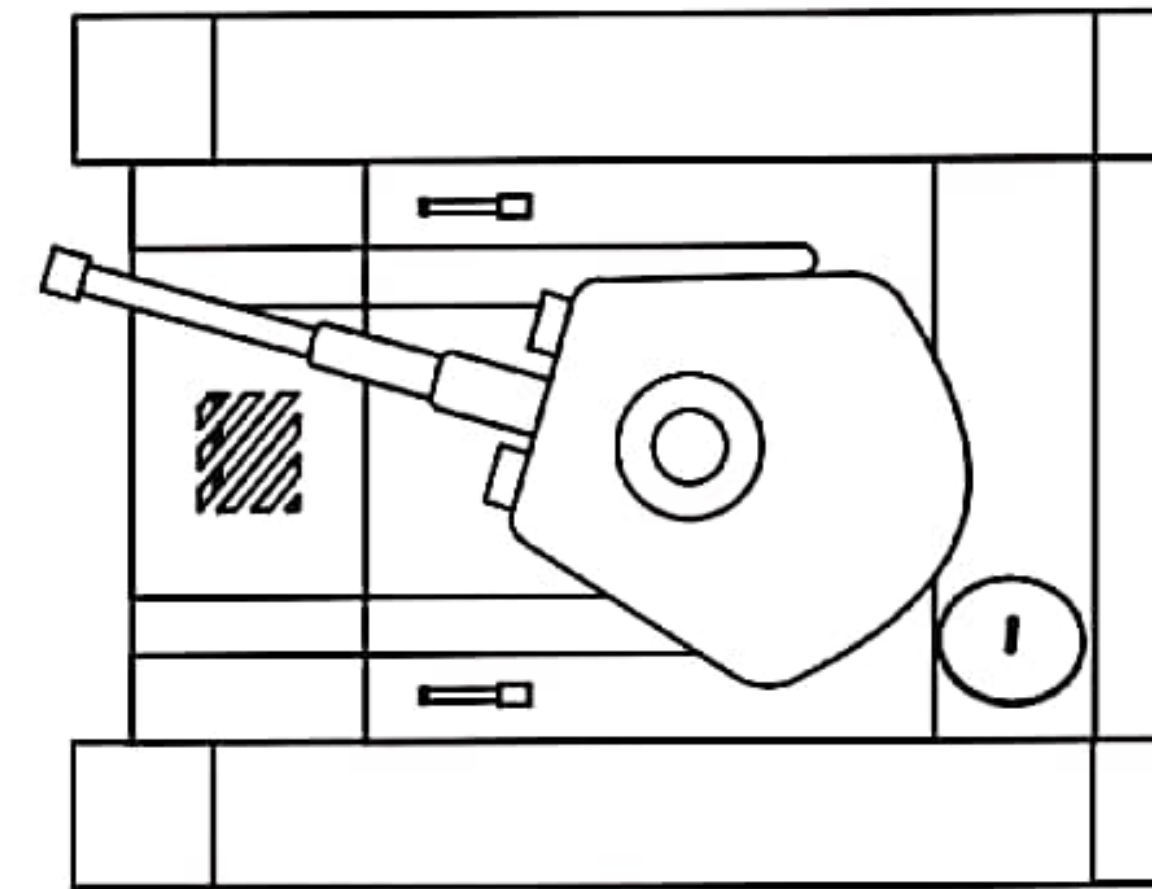
S.No	Name	Materials Required	Quantity	Process used
1	Mild Steel Sheet Metal	4ft*8ft*0.5mm	1	Sheet metal
2	Mild Steel Sheet Metal	4ft*8ft*0.35mm	1	Sheet Metal, Welding
3	Mild Steel round Rod	1inch Diameter 20 cm Length	1	Object Fabrication
4	Aluminium	INGOTS	3	Moulding and casting
5	Disc	Ready made	2	Welding, Object fabrication
6	Thermocole	1000cm*500cm *12mm	1	Moulding and Casting
7	Stopper Pins	Ready made	16	Object Fabrication



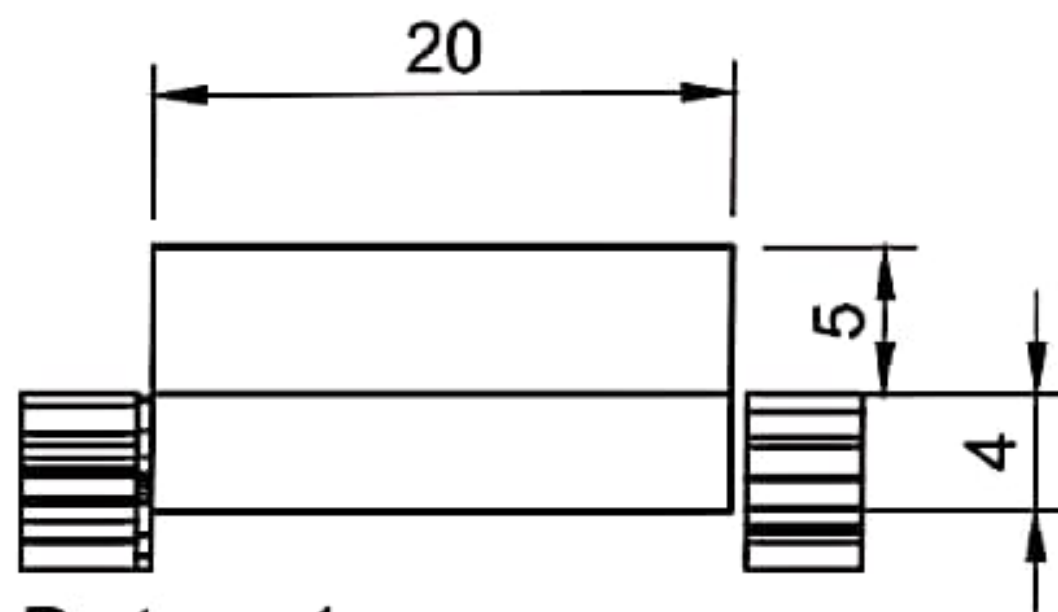
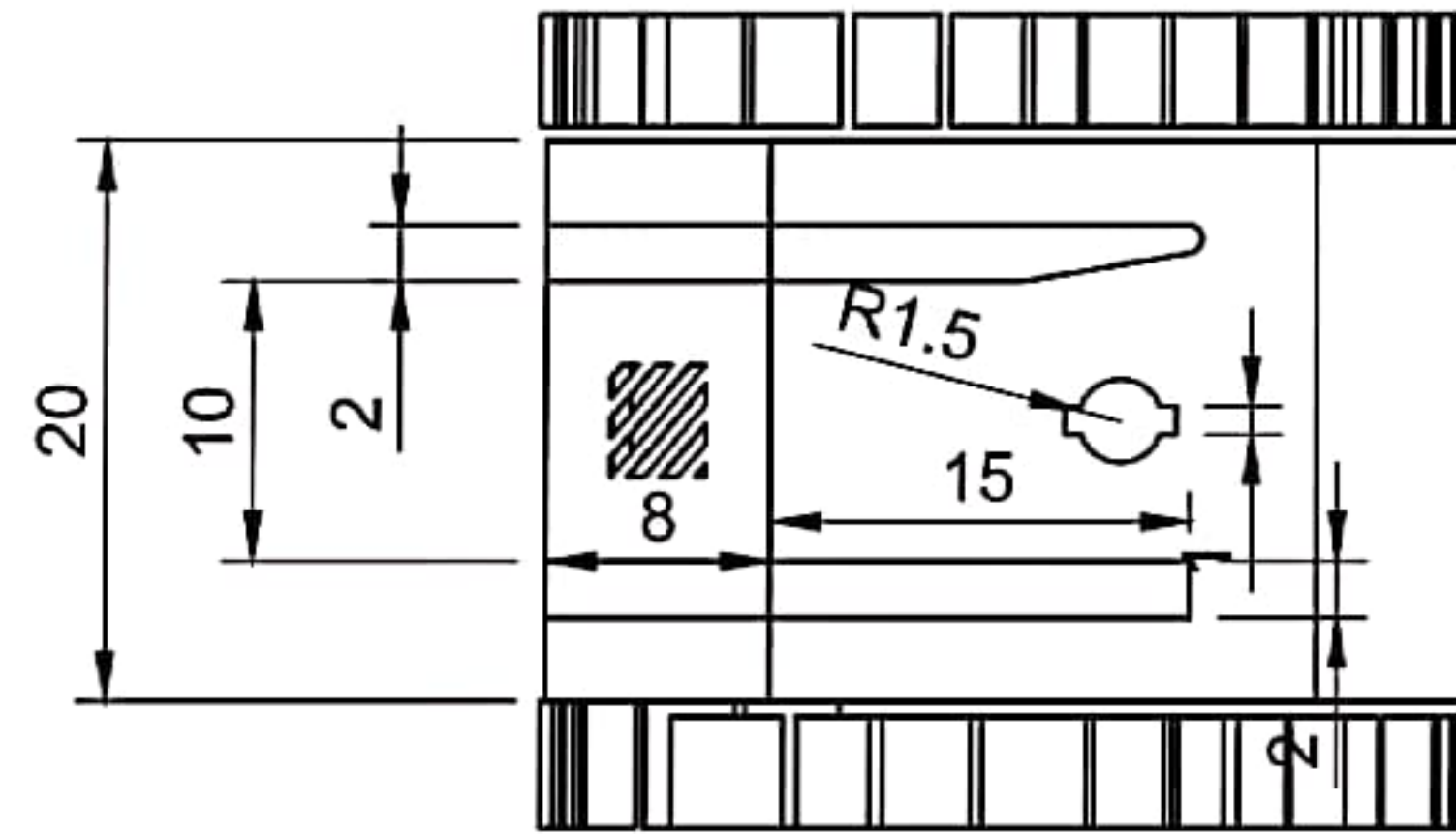
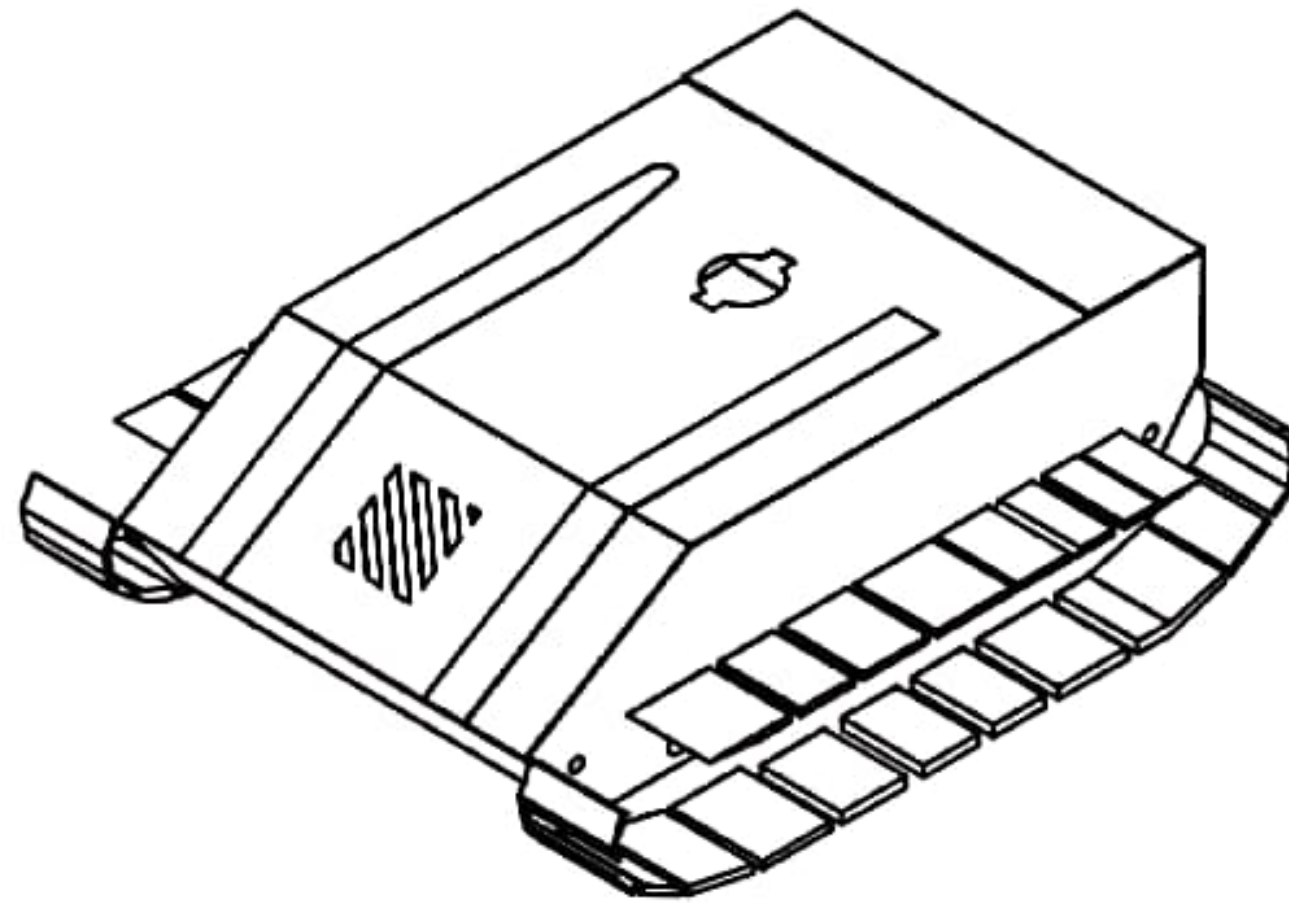
Isometric Drawing of Complete
Tank Assembly



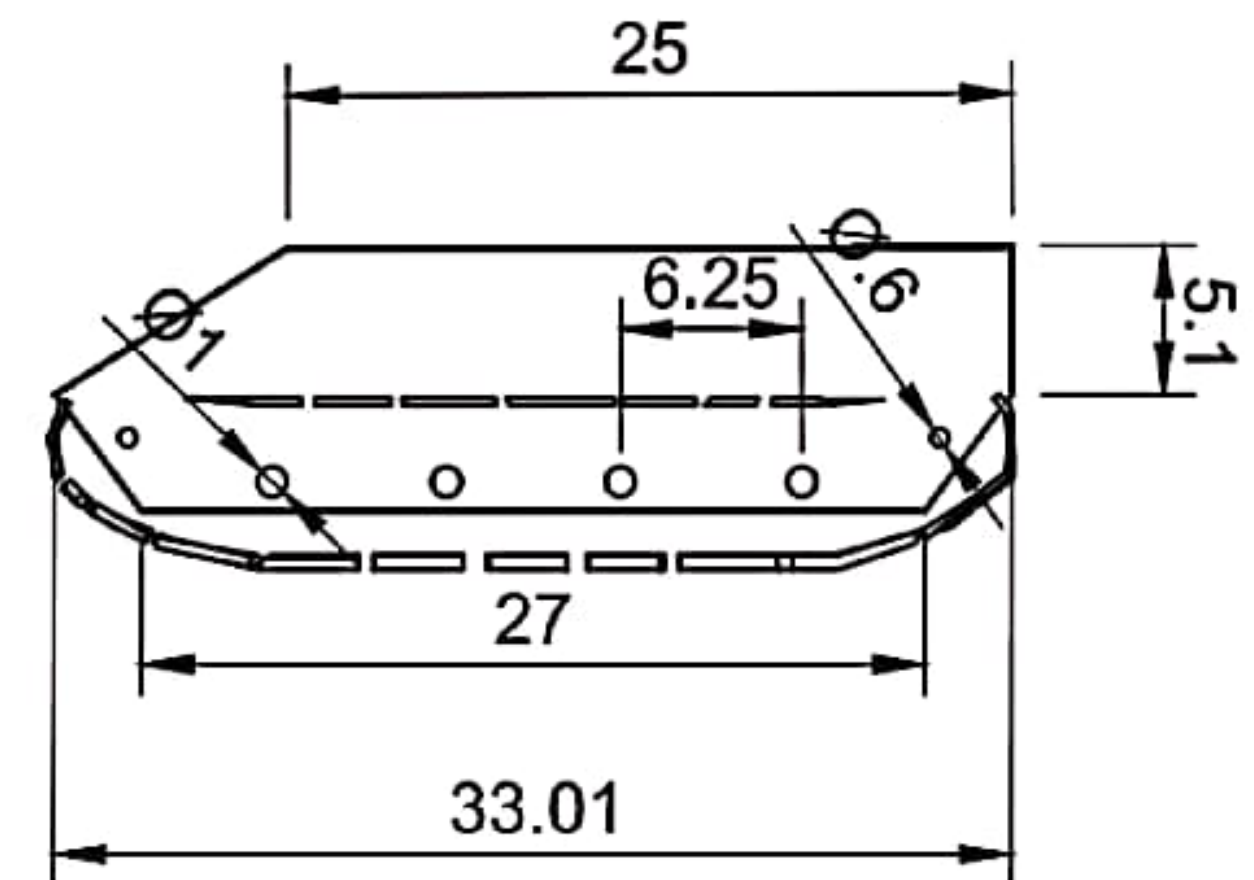
Scale 2:1

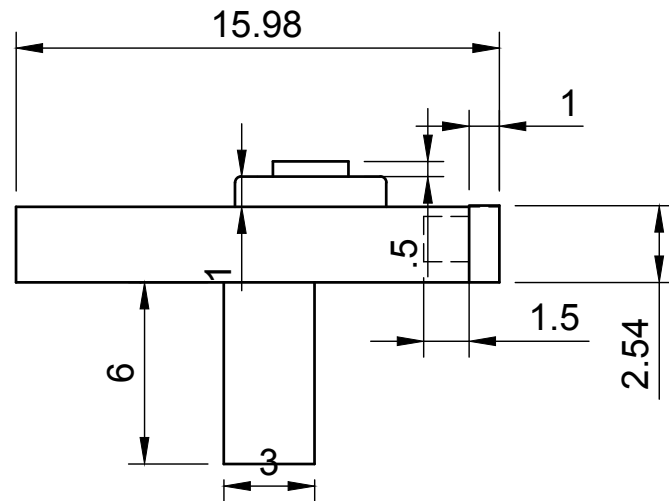
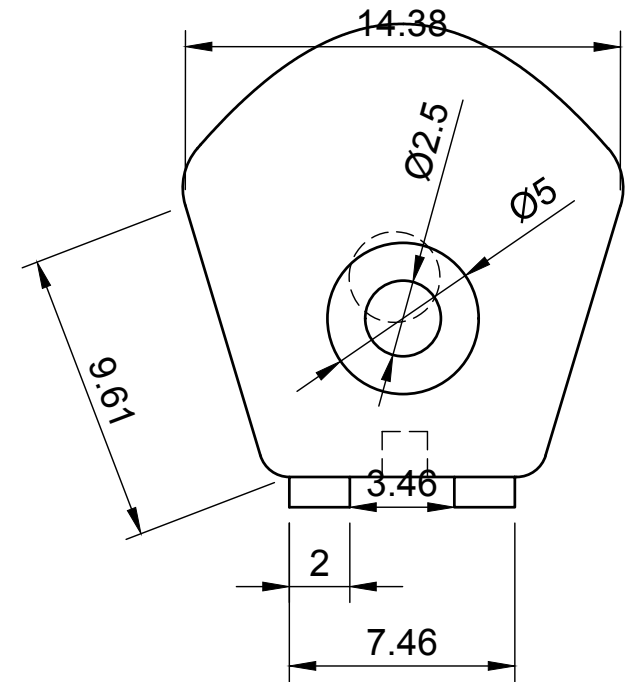
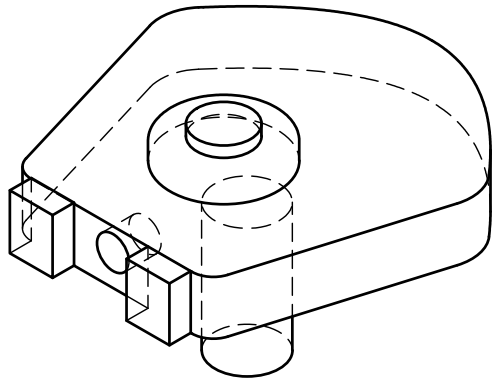


Orthographic Projections



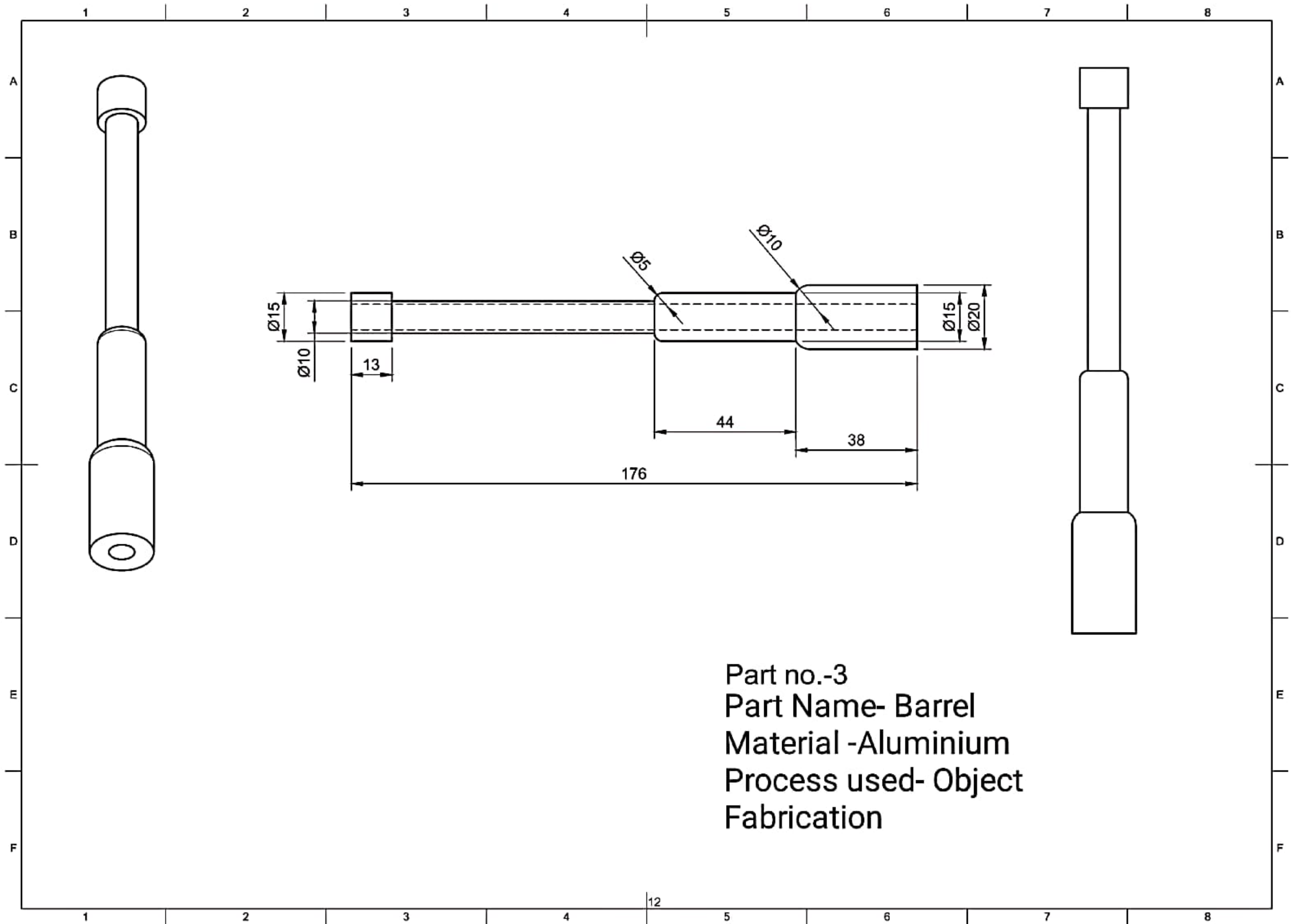
Part no.-1
 Part Name:Main Body
 Material MS Sheet Metal 0.5mm
 Process Used:Brazing

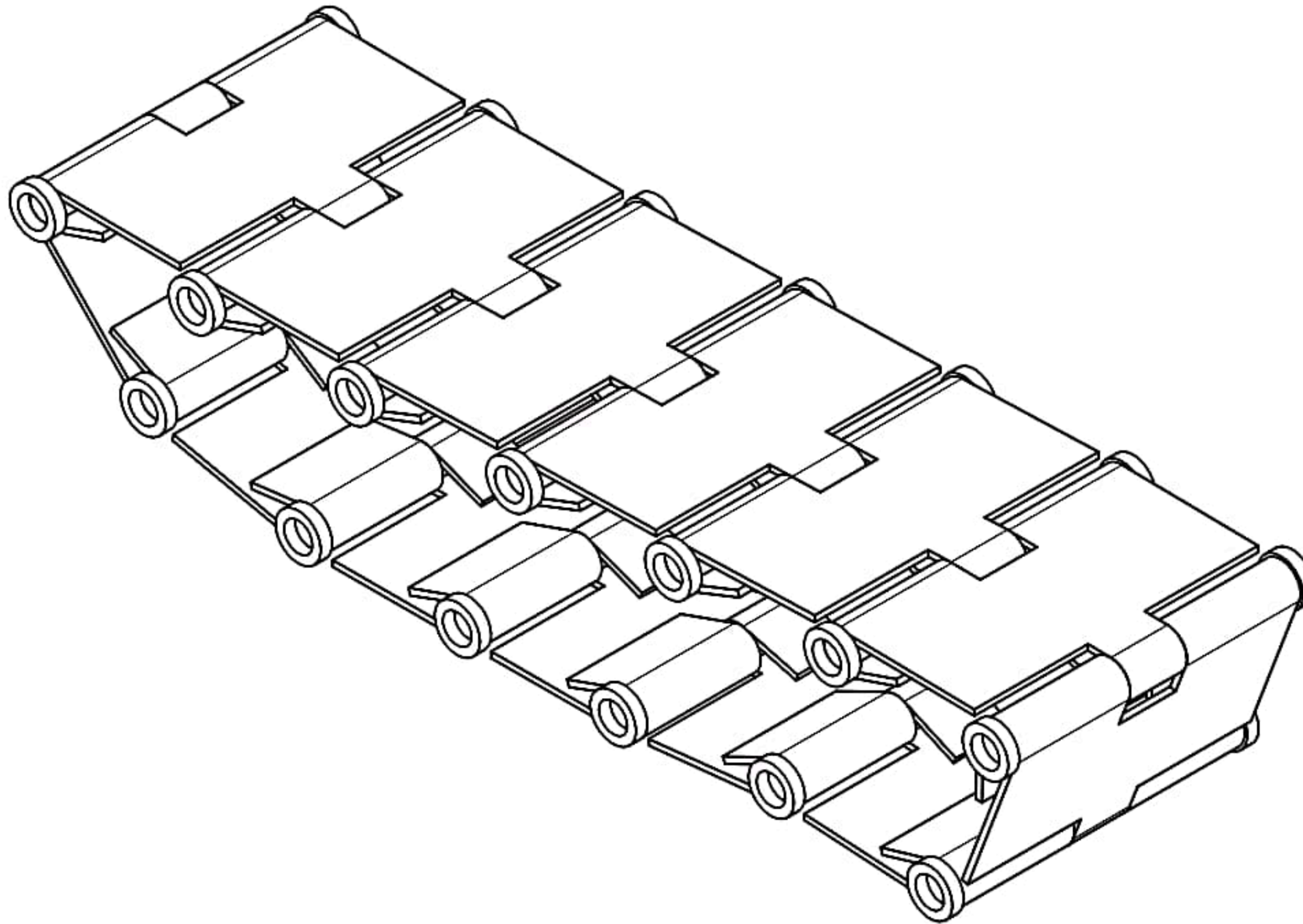




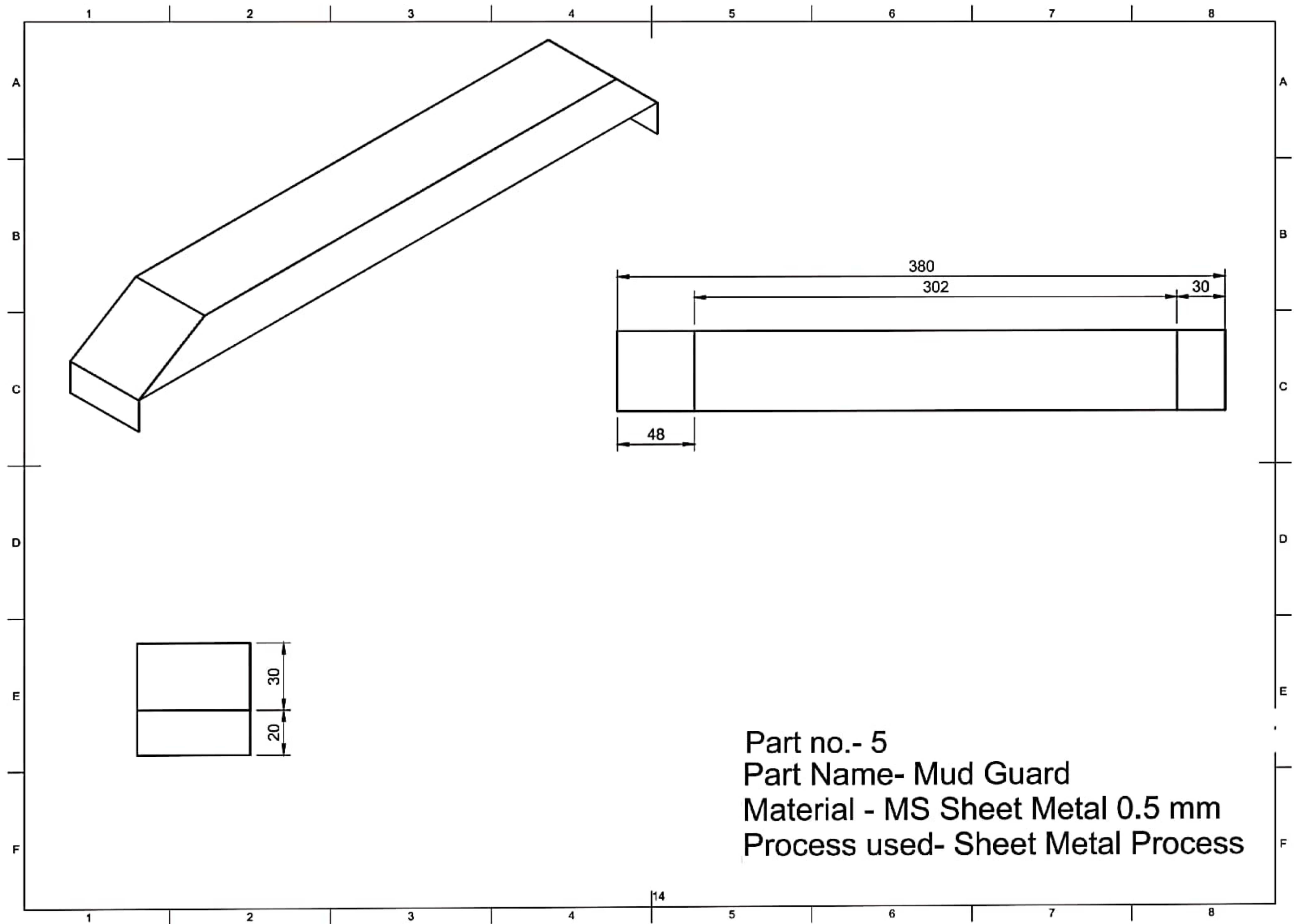
Part No. 2
 Part Name:Turret
 Material:MS Sheet Metal 1mm
 Process used-Brazing and Welding

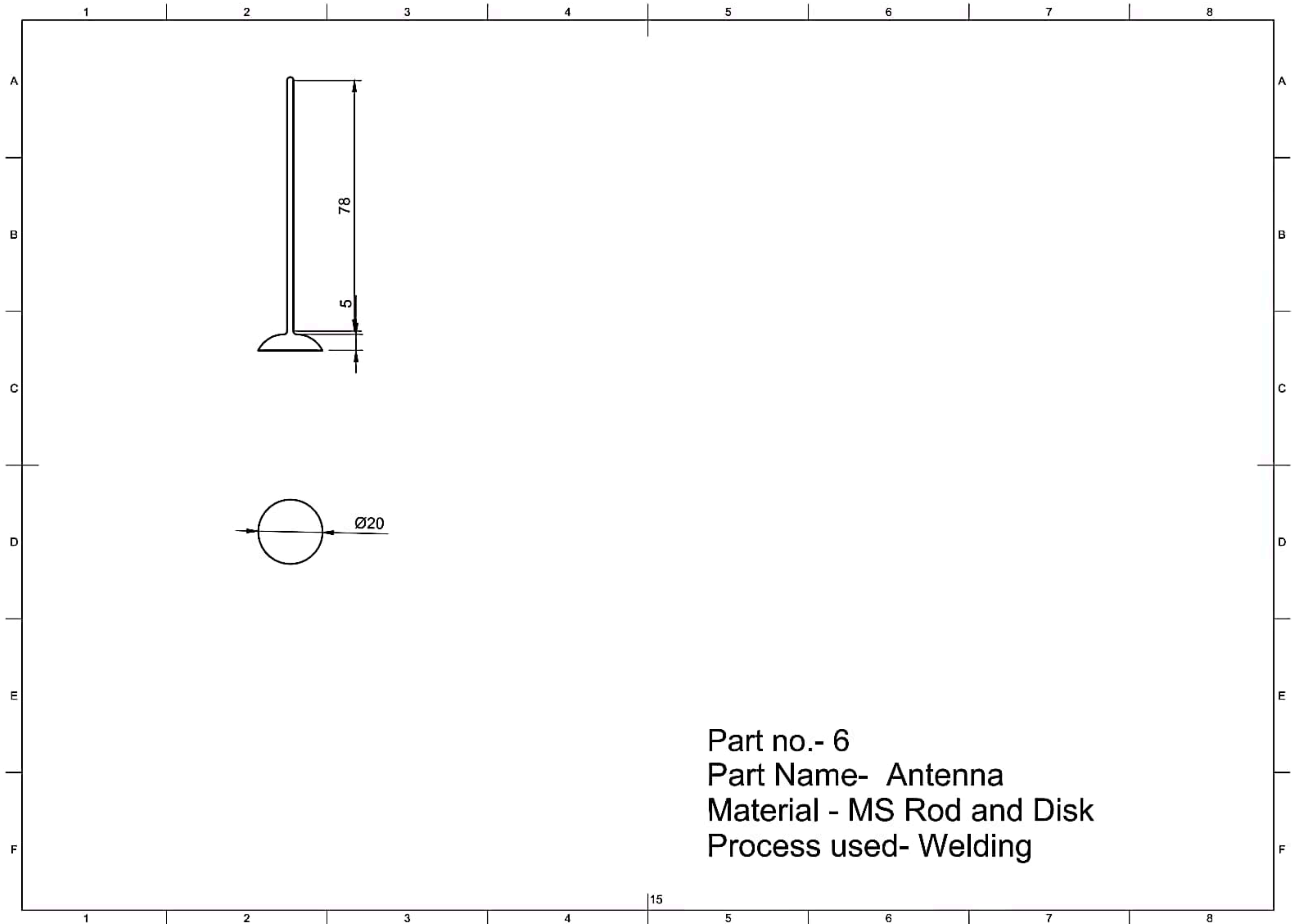
Units:cm



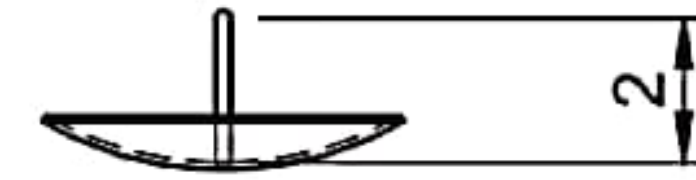
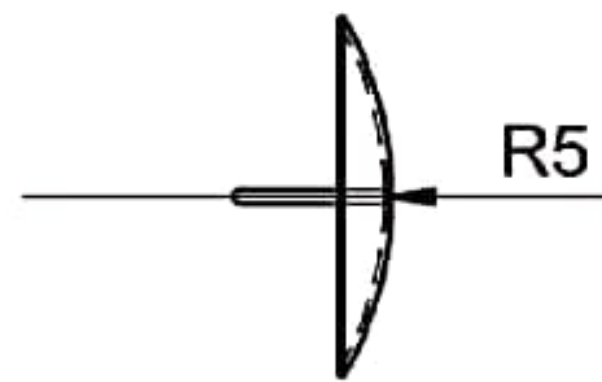


Part no. = 4
Part Name- Belt Assembly
Material - Sheet Metal 0.35mm
Process used- Object Fabrication

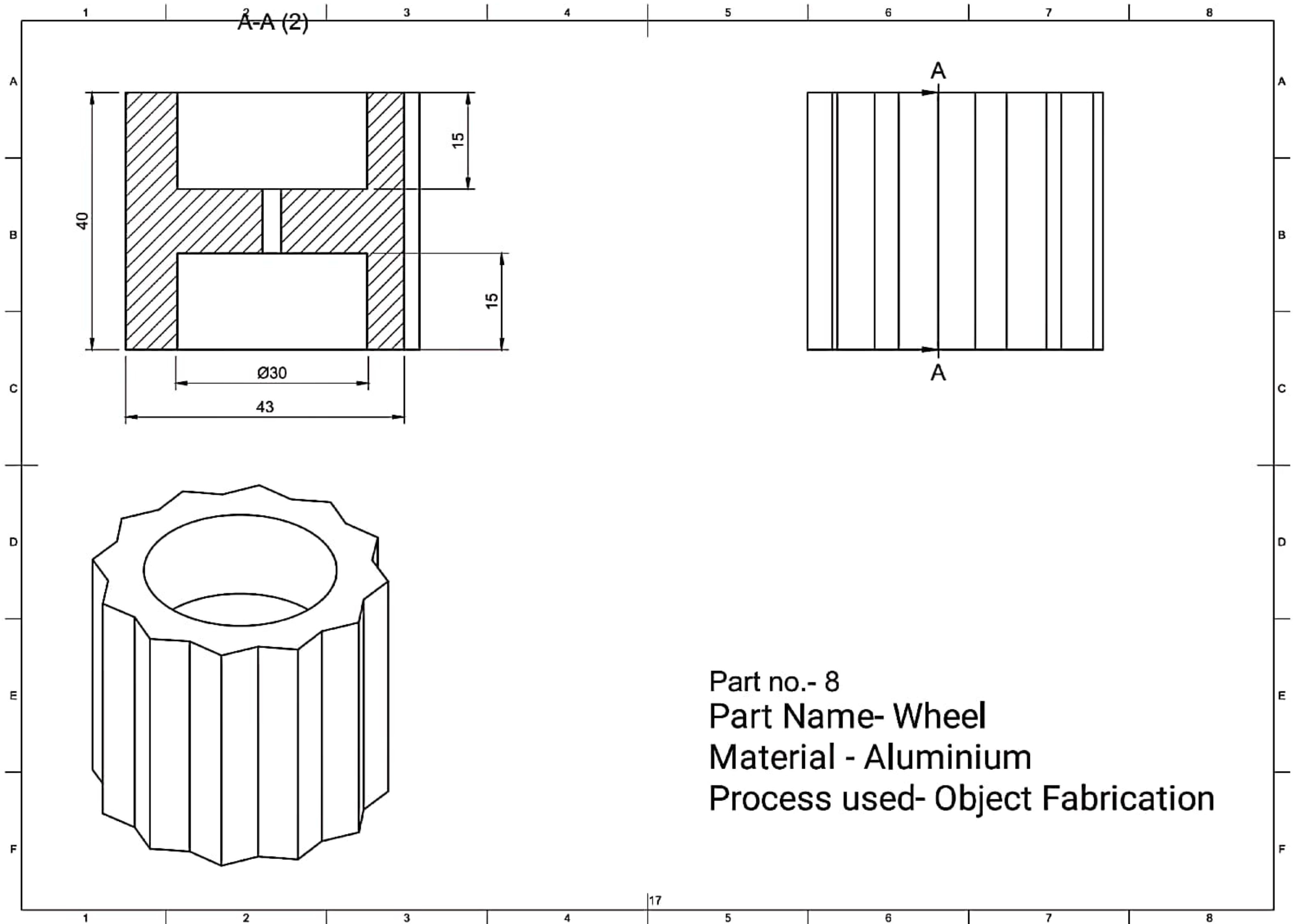




Part no.- 6
Part Name- Antenna
Material - MS Rod and Disk
Process used- Welding

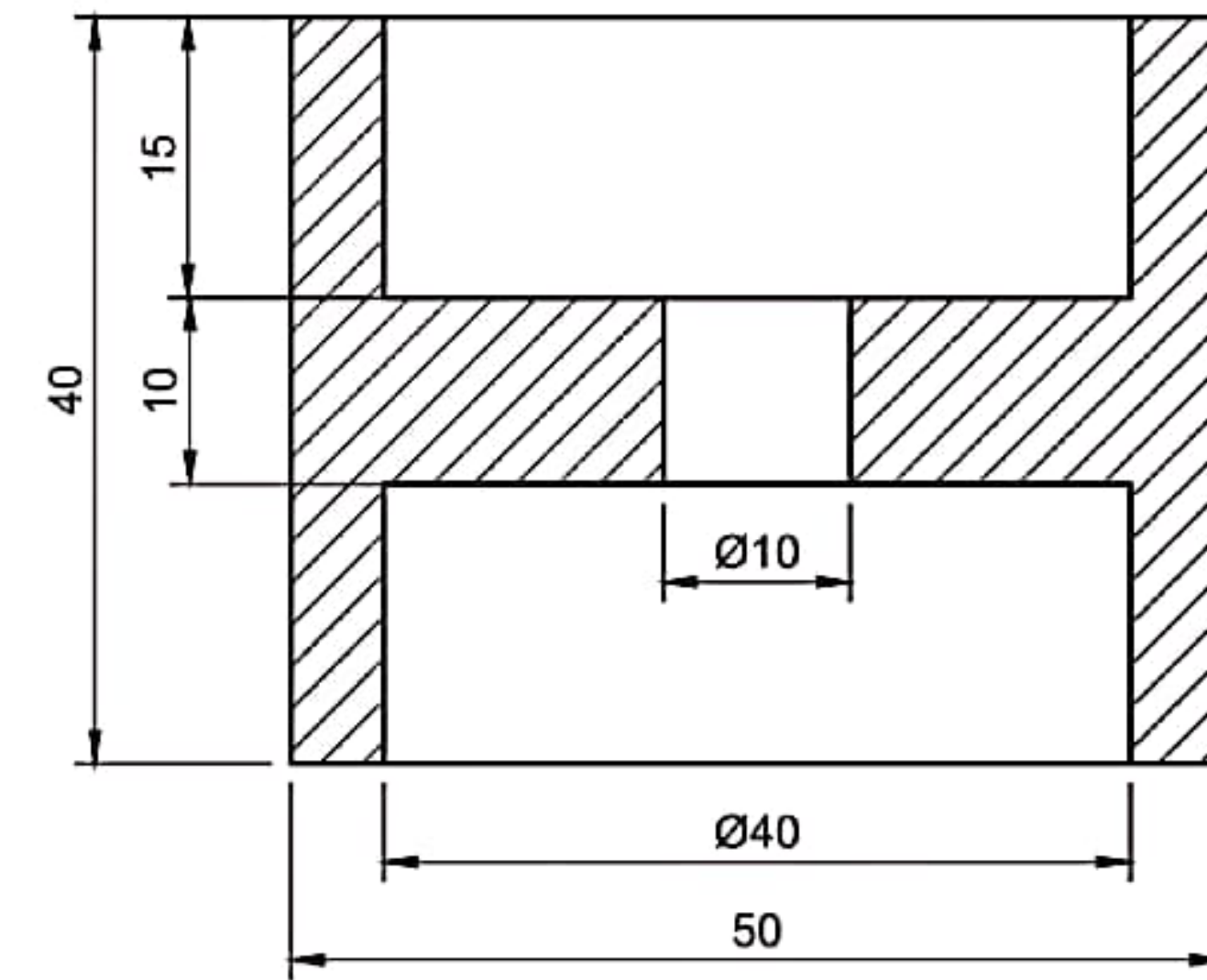
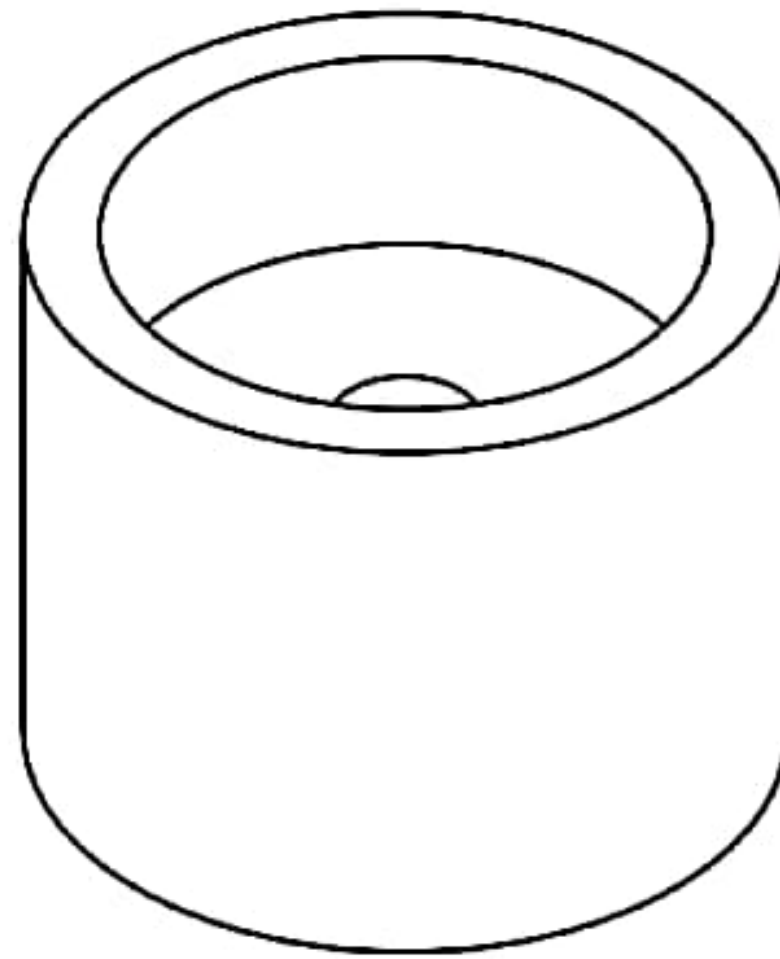


Part no.- 7
Part Name:Dish
Process Used:Welding and Sheet Metal Formation

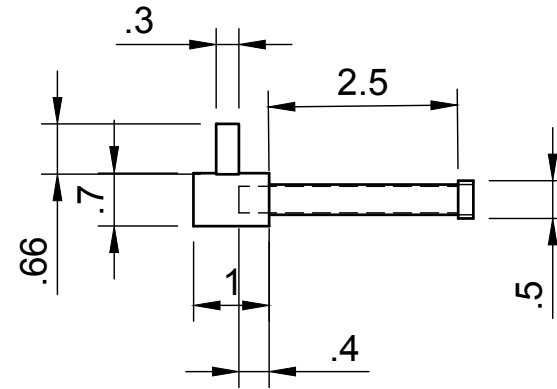
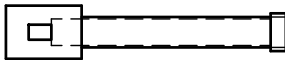
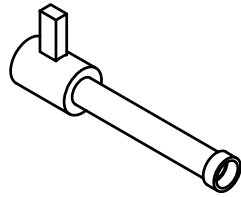


Part no.- 8
 Part Name- Wheel
 Material - Aluminium
 Process used- Object Fabrication

A-A (2)



Part no.- 9
Part Name- Wheel Type 2
Material - Aluminium
Process used- Object Fabrication



Scale 10:1

Part No.10

Part Name: Gun

Process Used:Object Fabrication