

4/5/23
REV 2



Utilis Simia: Blinds Controller Drawing Package



DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY		
OH	2	4/05/23	DRAWING NAME: Title Page		
COMMENTS:					
QUANTITY			SIZE A	DWG. NO. US01-TP01	SHEET 1 of 6

STANDARD ELECTRICAL SYMBOLS


CONNECTED
WIRES 

BJT
TRANSISTOR 

PUSHBUTTON 

UNCONNECTED
WIRES 


MOSFET
TRANSISTOR 

Piezo 

RESISTOR 

LIGHT
DEPENDENT
RESISTOR 

POTENTIOMETER 

LED 

DIODE 

BATTERY 

POLARIZED
CAPACITOR 

CAPACITOR 

STEPPER MOTOR 

GROUND 

SWITCH 

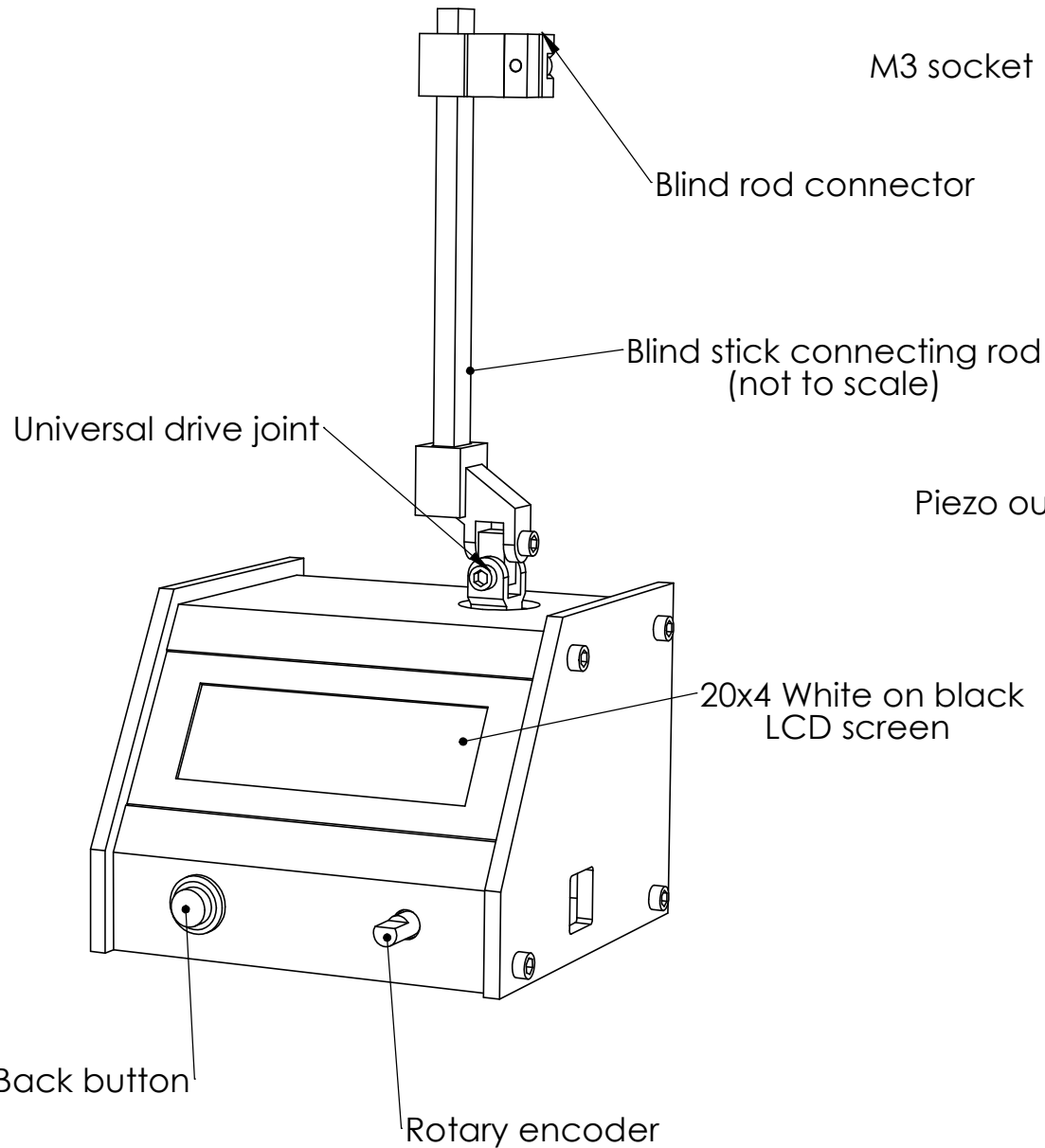
Rotary Encoder 

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
OH	2	4/05/23		
COMMENTS: All Standard Electrical symbols in the wiring details drawing will be shown here			DRAWING NAME: Table of Standard Electrical Symbols	
QUANTITY			SIZE A	SHEET 2 of 6

DWG. NO.
US01-ES01

Front Side View

Rear Side View



M3 socket head screws

Blind rod connector

Blind stick connecting rod
(not to scale)

Universal drive joint

20x4 White on black
LCD screen

Back button

Rotary encoder

Piezo outlet

Power cable port

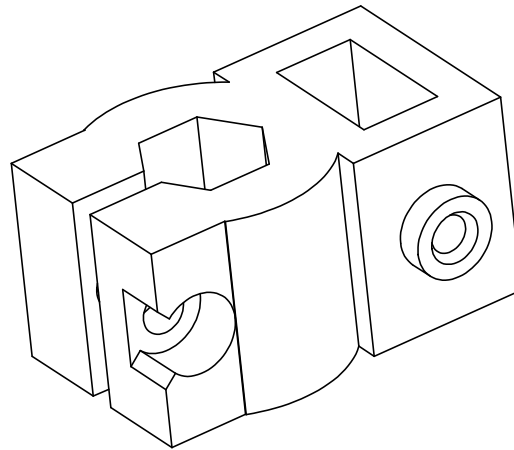
Manual drivetrain
release

Photoresistor port

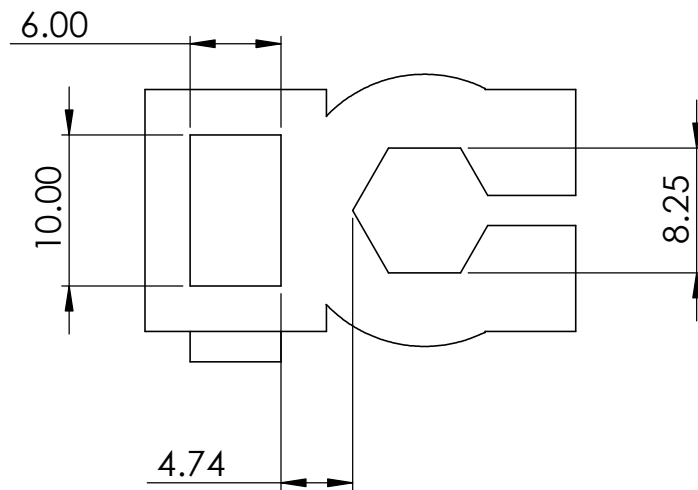
Scale: 1:1.5

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY		
TU	2	4/5/2023	DRAWING NAME:		
COMMENTS:			Mechanical Overview		
OVERALL DRAWING OF THE MECHANICAL SYSTEM					
QUANTITY	1 of 1	SIZE	DWG. NO.	SHEET	
		A	SS01-MO01	3	

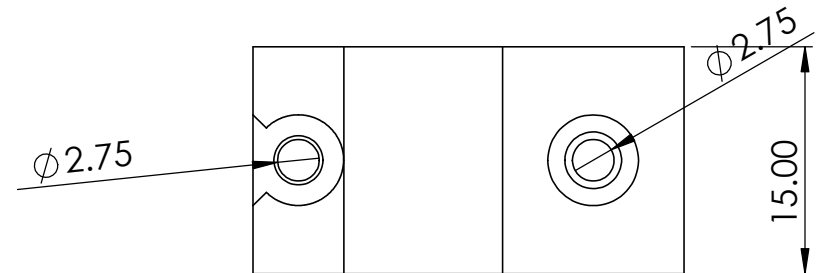
Isometric View



Top View



Side View

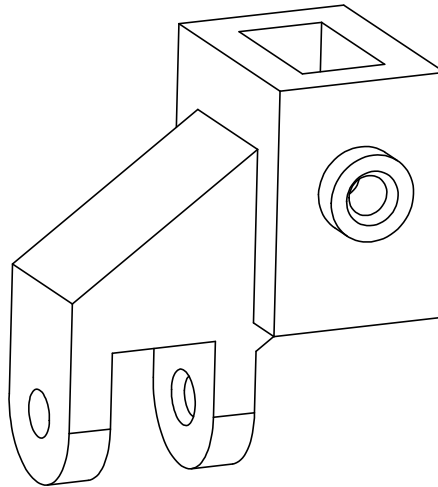


Units: MMGS

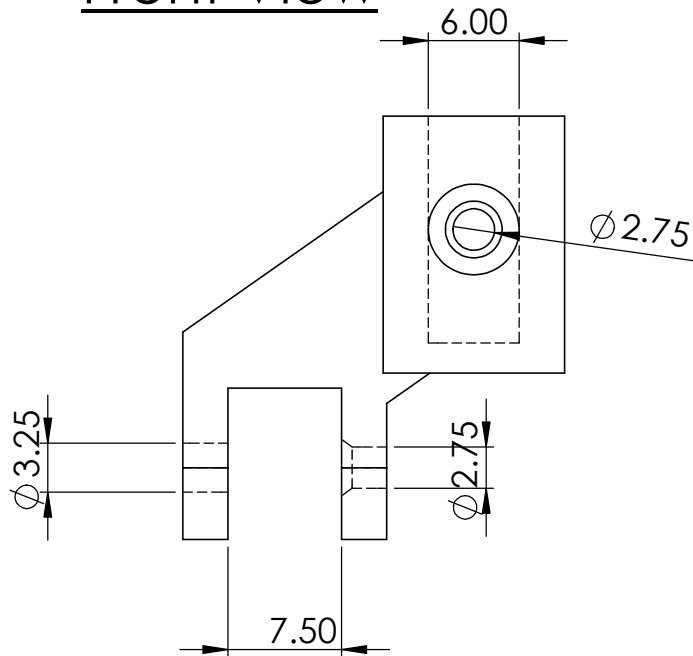
Scale: 2:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023		
COMMENTS: Blind rod interface			DRAWING NAME: Mechanical Details Drawing	
QUANTITY	1 of 13	SIZE A	DWG. NO. SS01-MO01	SHEET 4 of 6

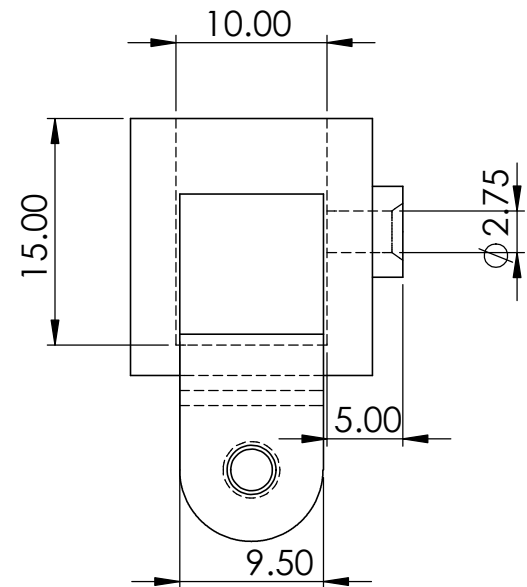
Isometric View



Front View



Side View

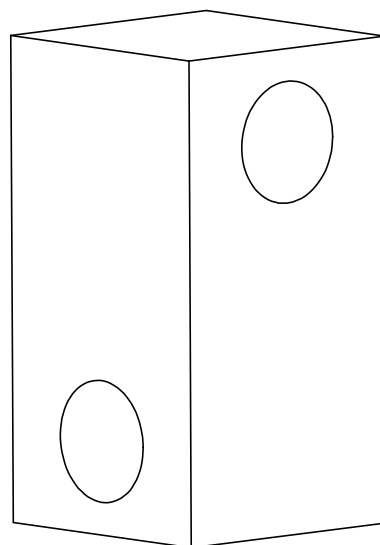


Units: MMGS

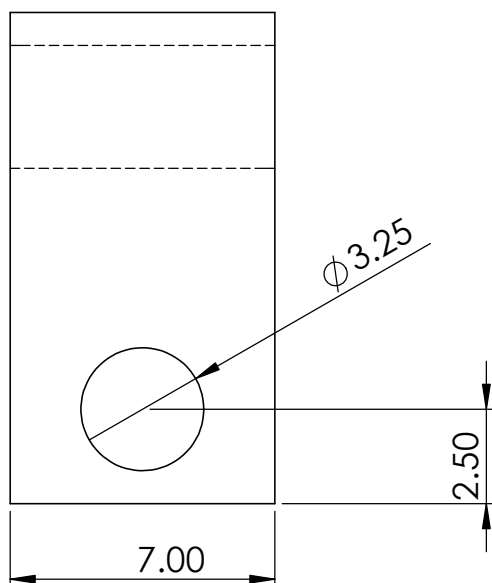
Scale: 2:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023		
COMMENTS:			DRAWING NAME:	
Universal joint top			Mechanical Details Drawing	
QUANTITY	2 of 13	SIZE	DWG. NO.	SHEET
		A	SS01-MO01	4 of 6

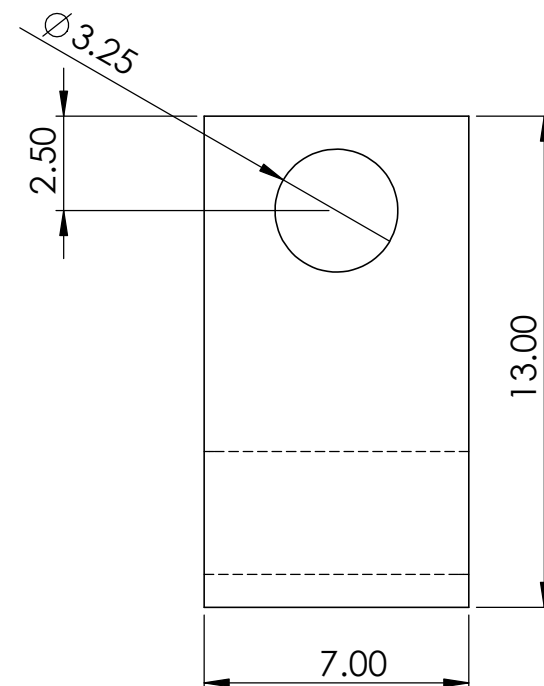
Isometric View



Side View



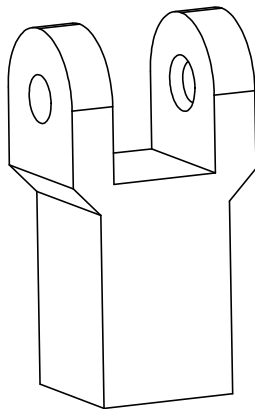
Front View



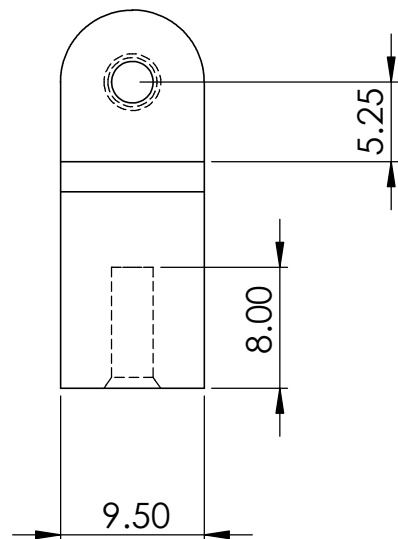
Units: MMGS Scale: 5:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023	DRAWING NAME:	
COMMENTS:			Mechanical Details	
Universal joint middle connector			Drawing	
QUANTITY	3 of 13	SIZE	DWG. NO.	SHEET
		A	SS01-MO01	4 of 6

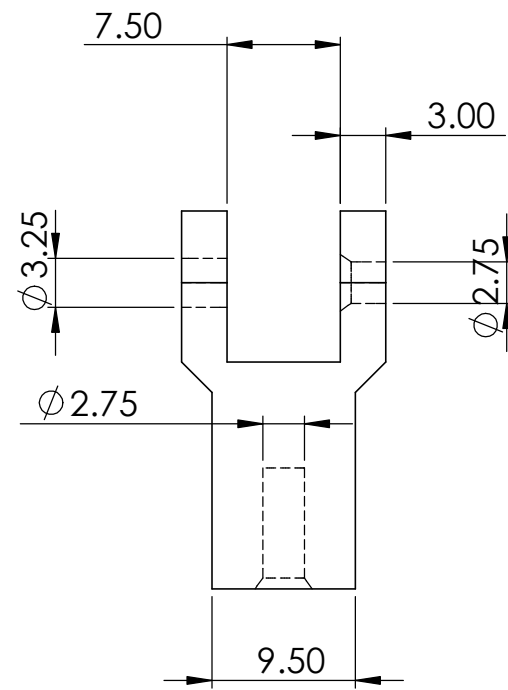
Isometric View



Side View



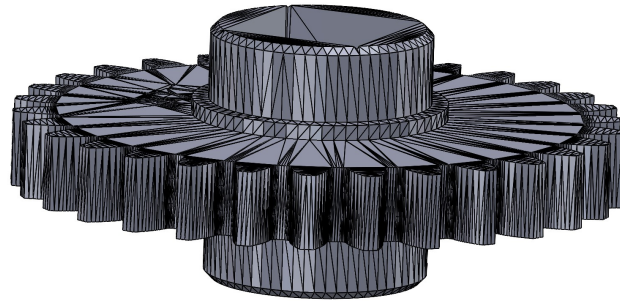
Front View



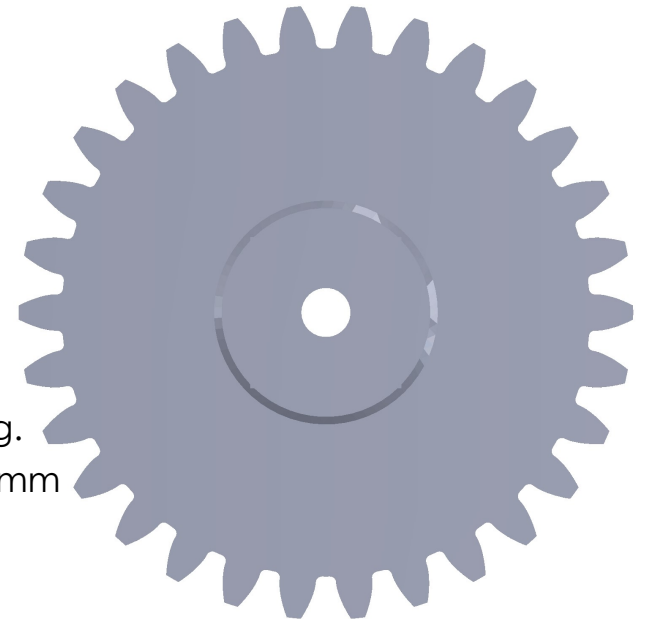
Units: MMGS Scale: 2:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023		
COMMENTS: Universal joint output			DRAWING NAME: Mechanical Details Drawing	
QUANTITY	4 of 13	SIZE	DWG. NO. A SS01-MO01	SHEET 4 of 6

Isometric View (STL from FM Gears)

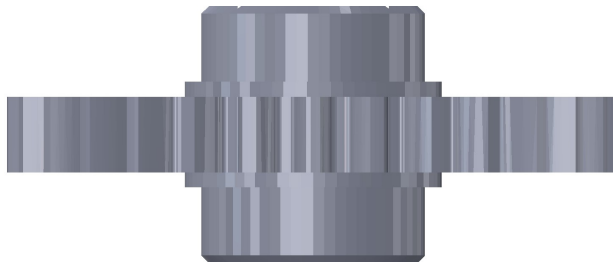


Top View



Side View

Journal diameter: 14.8 mm

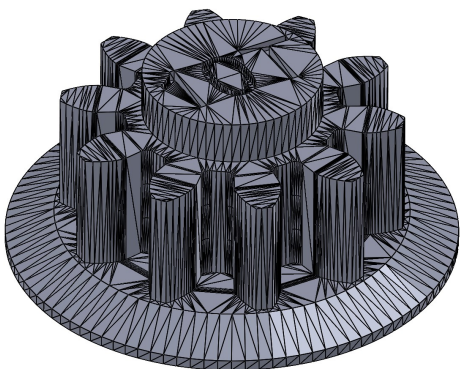


Module: 1.27
Thickness: 5.00 mm
Teeth: 30
Pressure angle: 20 deg.
Root fillet radius: 0.40 mm

Units: MMGS Scale: 2:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023	DRAWING NAME:	
COMMENTS:			Mechanical Details	
STL of the 30 tooth spur gear			Drawing	
QUANTITY	5 of 13	SIZE	DWG. NO.	SHEET
		A	SS01-MO01	4 of 6

Isometric View (STL from FM Gears)

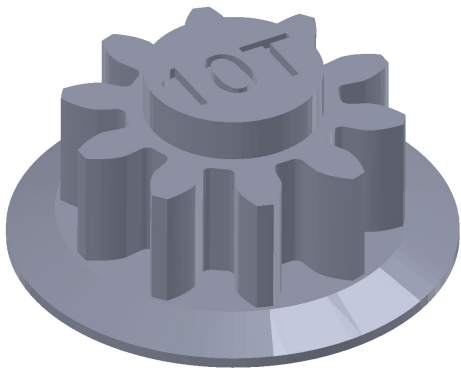


Front Side View



Module: 1.27
Thickness: 5.50 mm
Teeth: 10
Pressure angle: 20 deg.
Root fillet radius: 0.40 mm

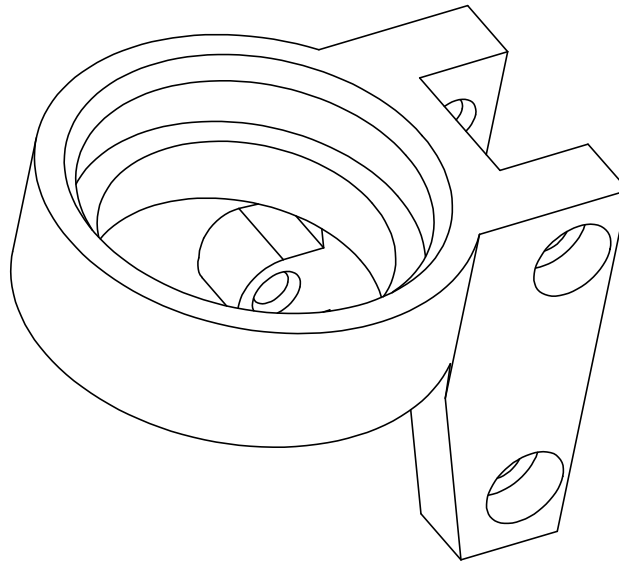
Isometric View



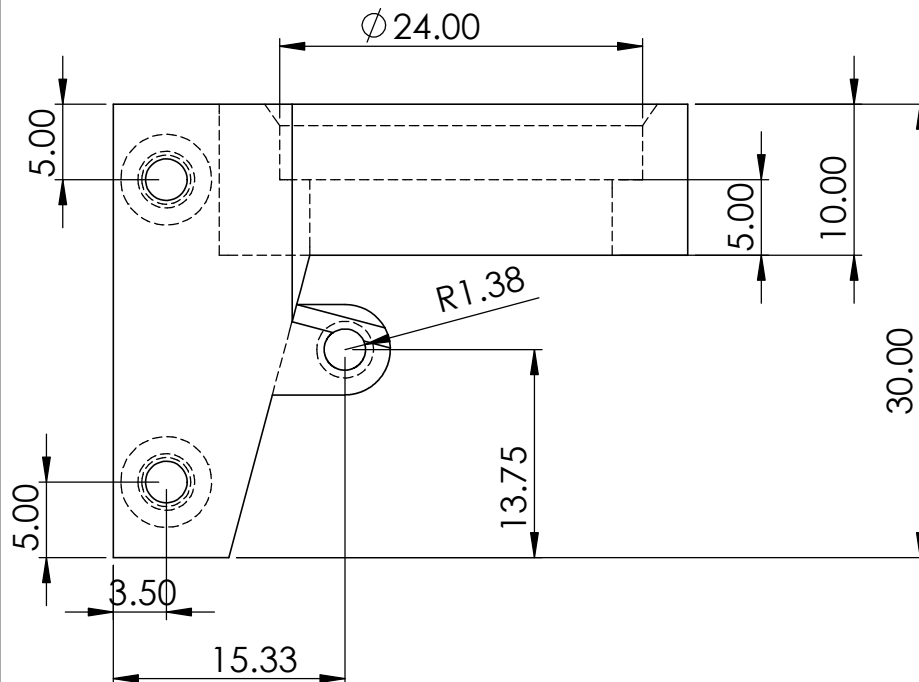
Units: MMGS Scale: 3:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023		
COMMENTS: STL of the 10 tooth pinion			DRAWING NAME: Mechanical Details Drawing	
QUANTITY	6 of 13	SIZE	DWG. NO. A SS01-MO01	SHEET 4 of 6

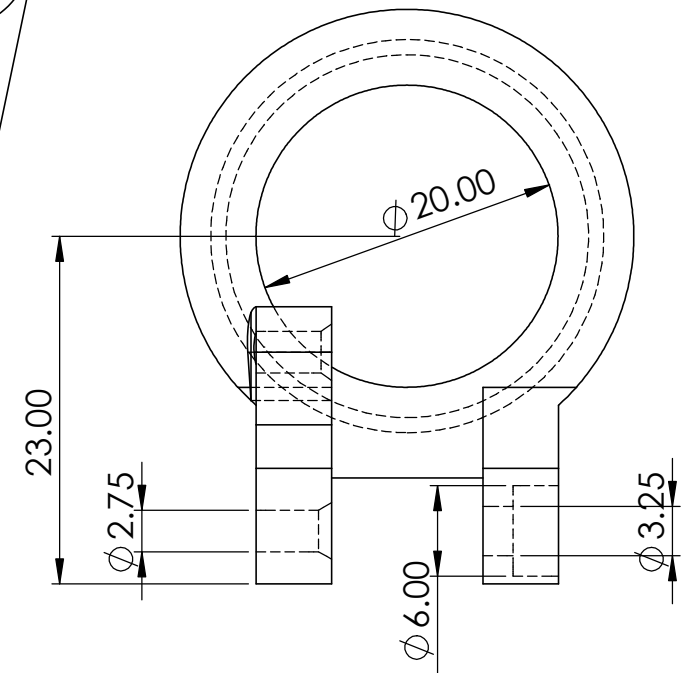
Isometric View



Side View



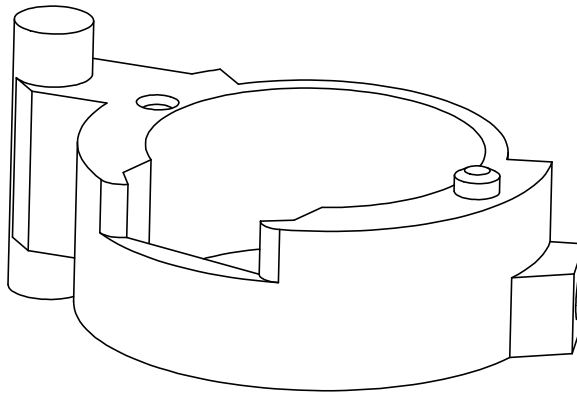
Bottom View



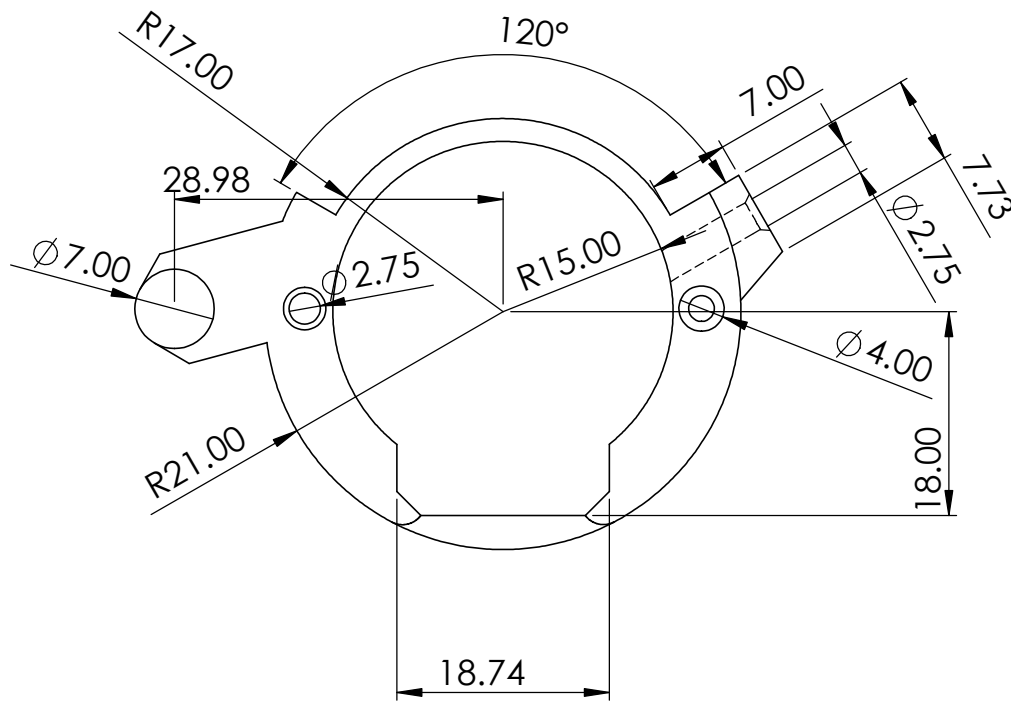
Units: MMGS Scale: 2:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023	DRAWING NAME:	
COMMENTS:			Mechanical Details Drawing	
Bearing block				
QUANTITY	7 of 13	SIZE	DWG. NO.	SHEET
		A	SS01-MO01	4 of 6

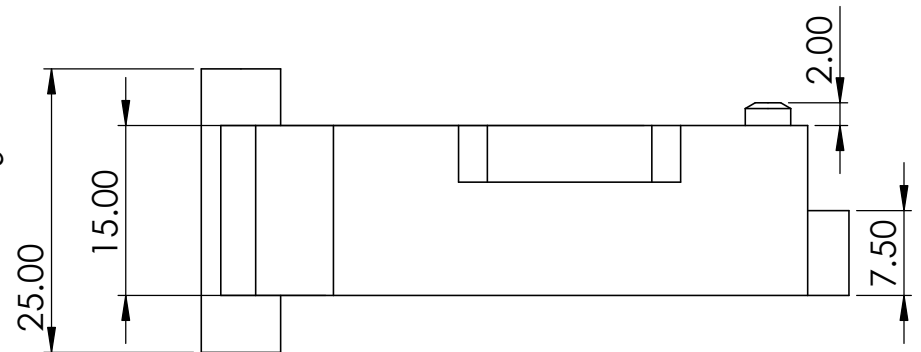
Isometric View



Top View



Front View

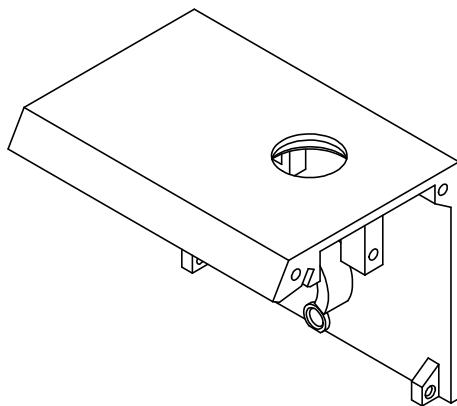
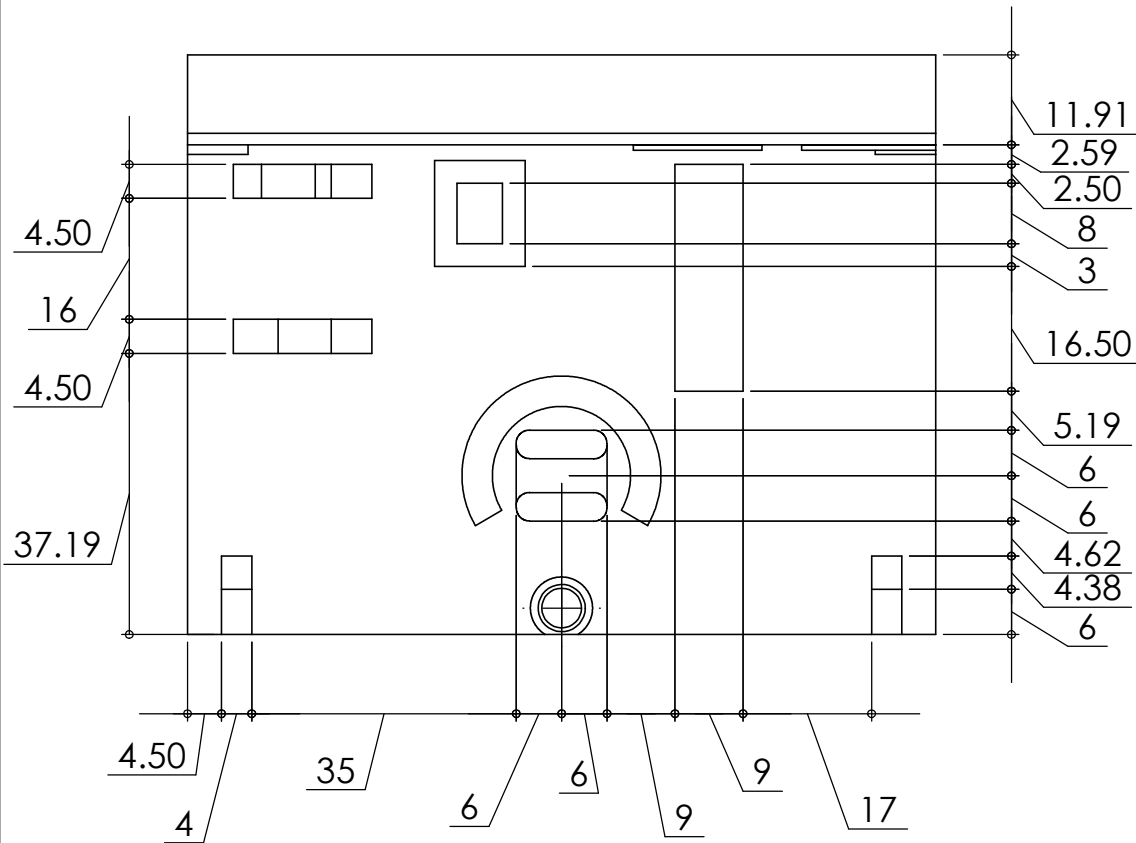


Units: MMGS

Scale: 1.5:1

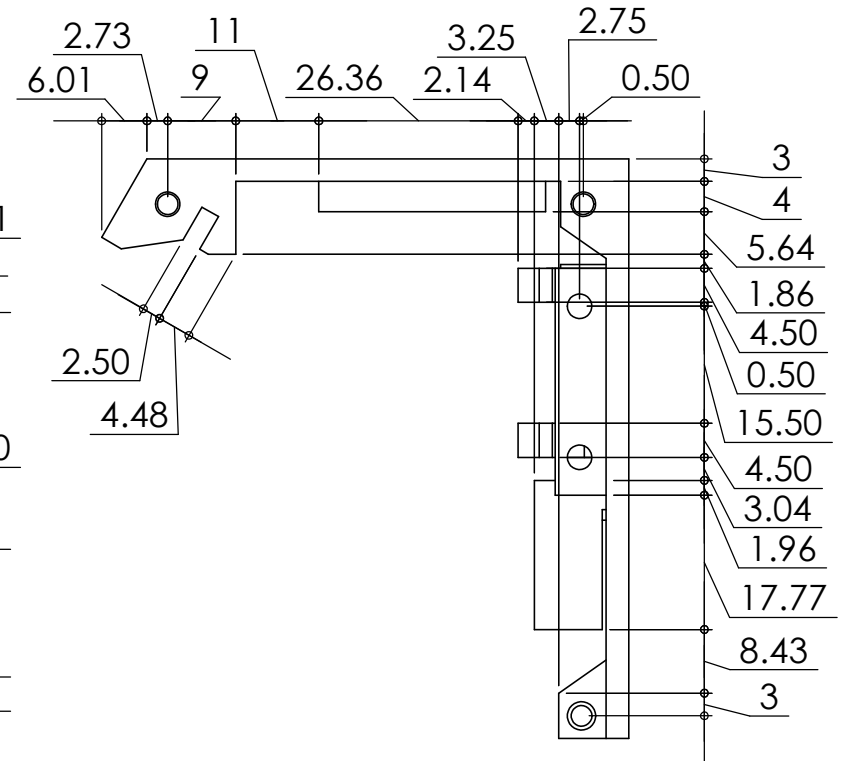
DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
TU	2	4/5/2023	DRAWING NAME:	
COMMENTS:			Mechanical Details Drawing	
Stepper motor swinging mount				
QUANTITY	8 of 13	SIZE	DWG. NO.	SHEET
		A	SS01-MO01	4 of 6

Front Side View



Isometric View

Rear Side View

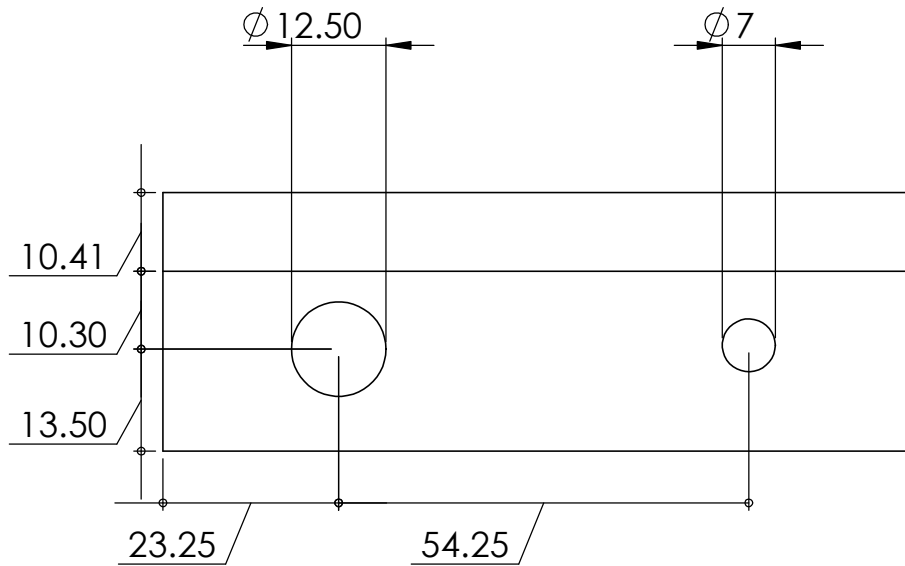


Units: MMGS

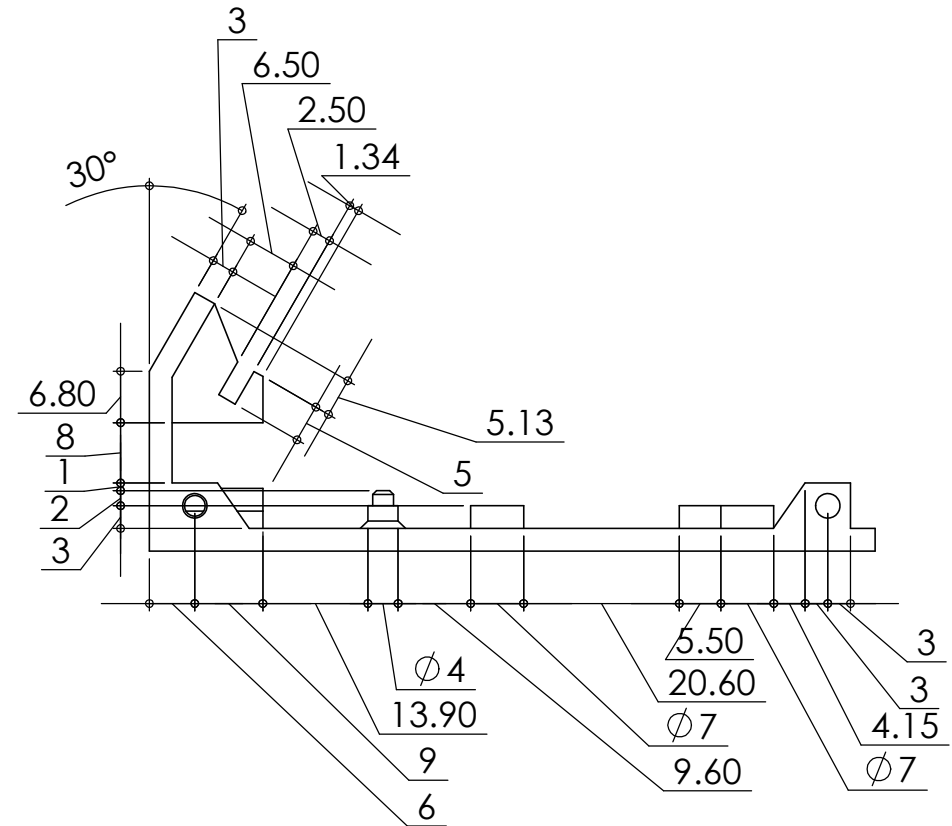
Scale: 1:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY		
JS	2	4/5/2023	DRAWING NAME:		
COMMENTS:			Mechanical Details		
TOP SHELL			Drawing		
MECHANICAL DESIGN					
DRAWINGS					
QUANTITY	9 of 13	SIZE	DWG. NO.	SHEET	
		A	SS01-MO01	4 of 6	

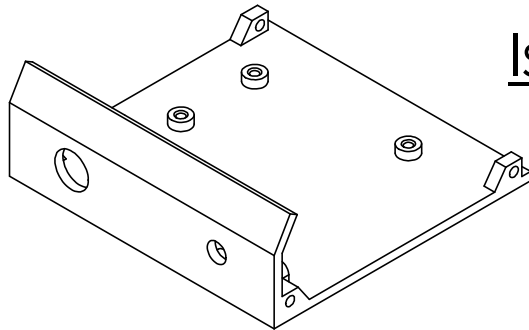
Front View



Right View



Isometric View

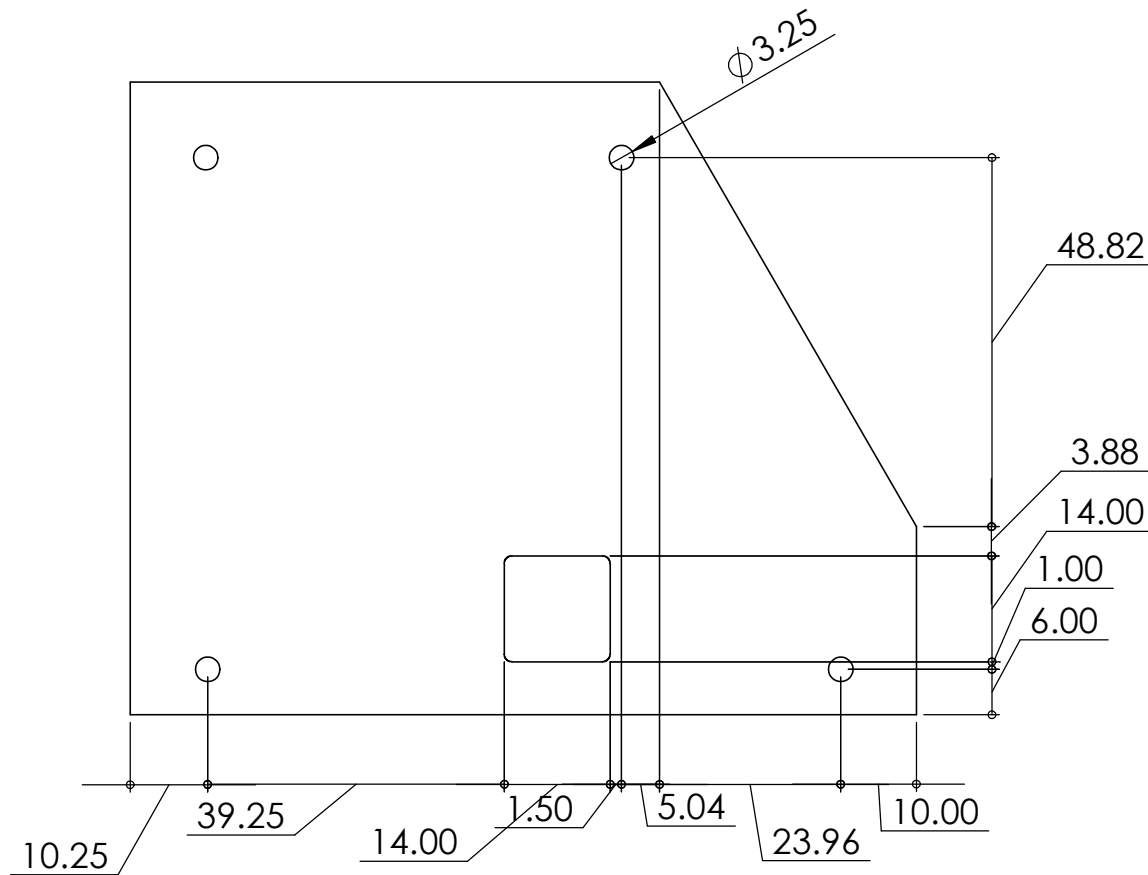


Units: MMGS

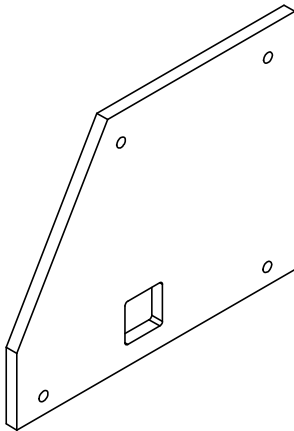
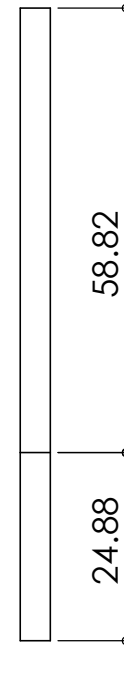
Scale: 1:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
JS	2	4/5/2023	DRAWING NAME:	
COMMENTS:			Mechanical Details	
MAIN ASSEMBLY			Drawing	
BOTTOM SHELL				
QUANTITY	10 of 13	SIZE	DWG. NO.	SHEET
		A	SS01-MO01	4 of 6

Left View



Front View



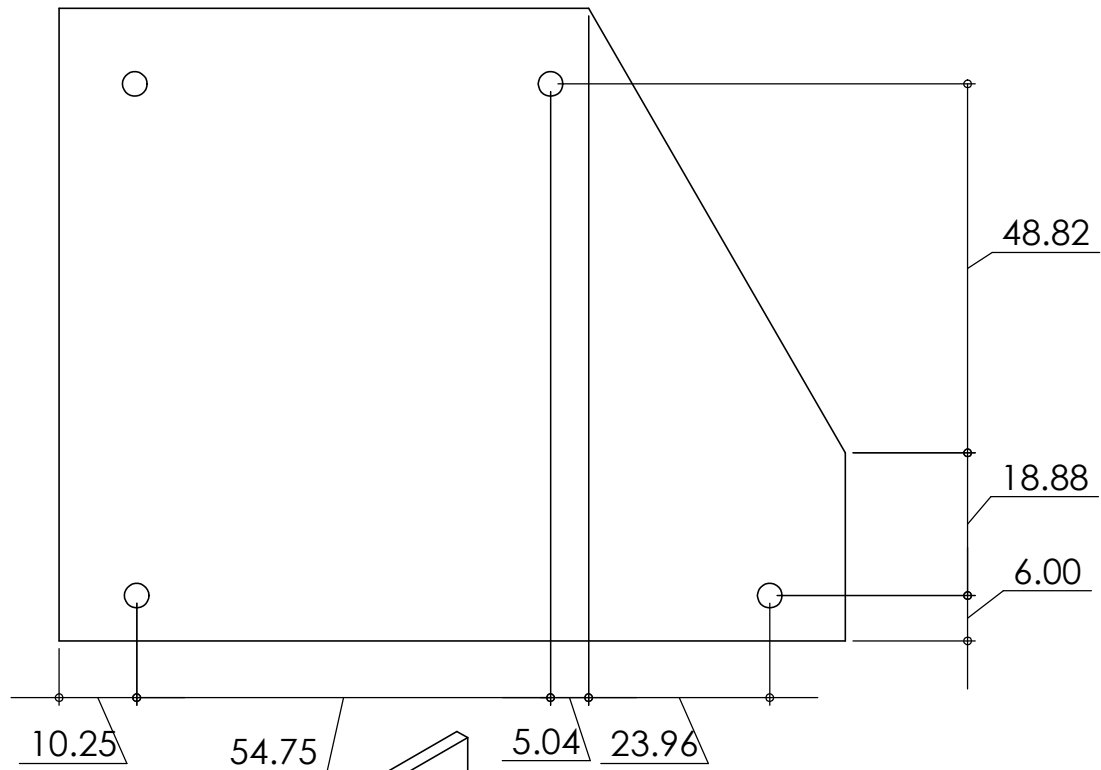
Isometric view

Units: MMGS

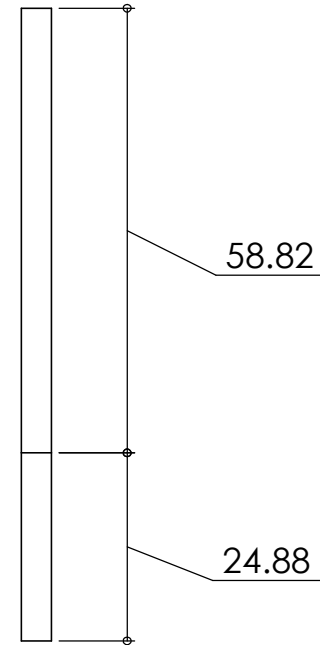
Scale: 1:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
JS	2	4/5/2023		
COMMENTS: MAIN ASSEMBLY RIGHT PLATE			DRAWING NAME: Mechanical Details Drawing	
QUANTITY	11 of 13	SIZE A	DWG. NO. SS01-MO01	SHEET 4 of 6

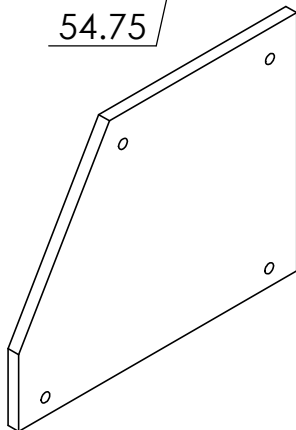
Left View



Front View



Isometric view

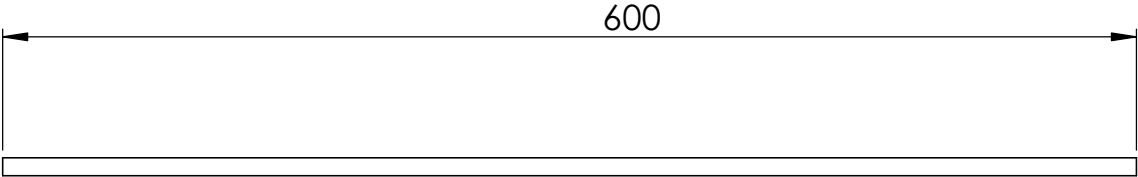


Units: MMGS

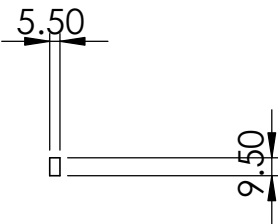
Scale: 1:1

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY	
JS	2	4/5/2023	DRAWING NAME:	
COMMENTS:			Mechanical Details Drawing	
MAIN ASSEMBLY LEFT PLATE				
QUANTITY	12 of 13	SIZE	DWG. NO.	SHEET
		A	SS01-MO01	4 of 6

Front View



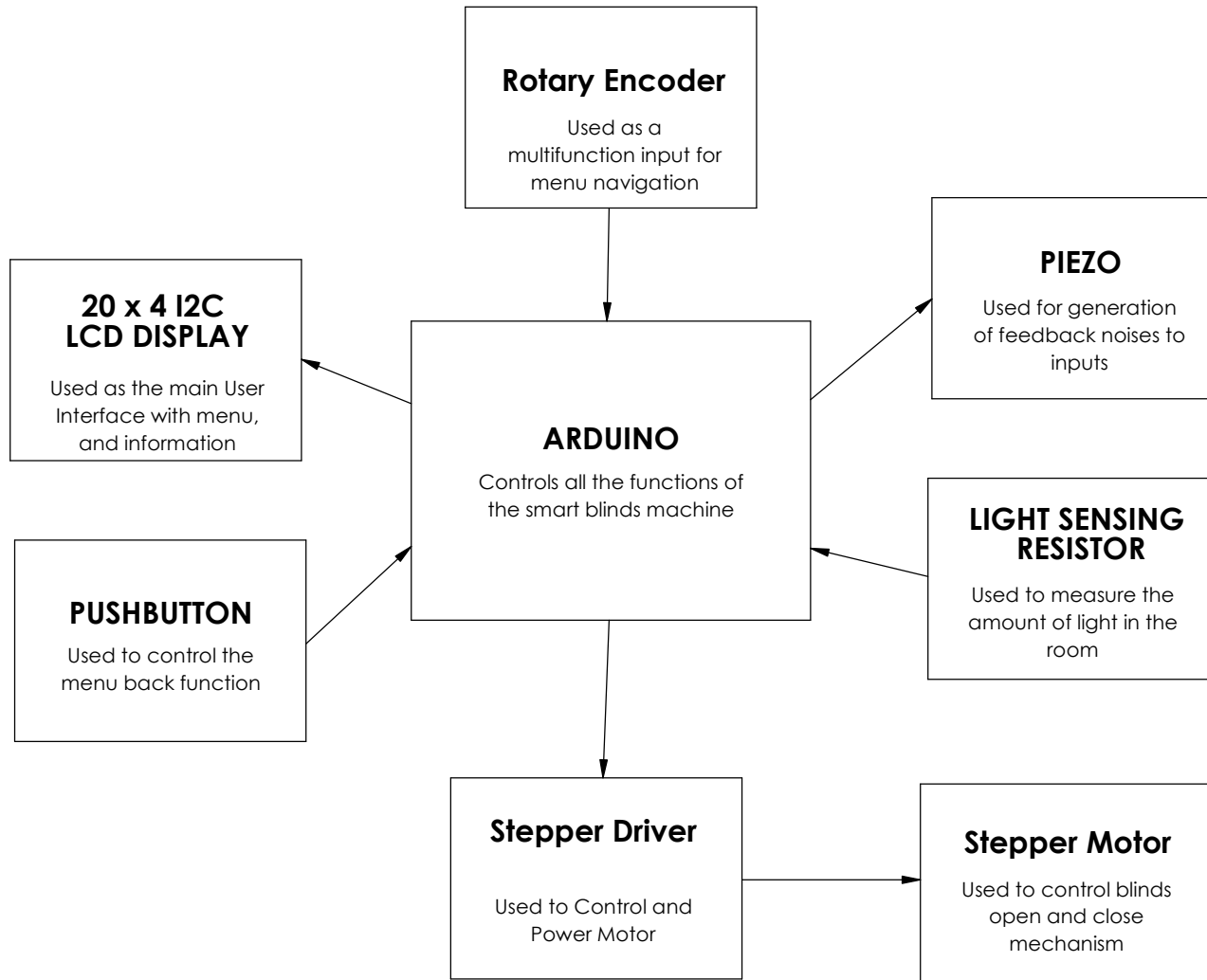
Top View



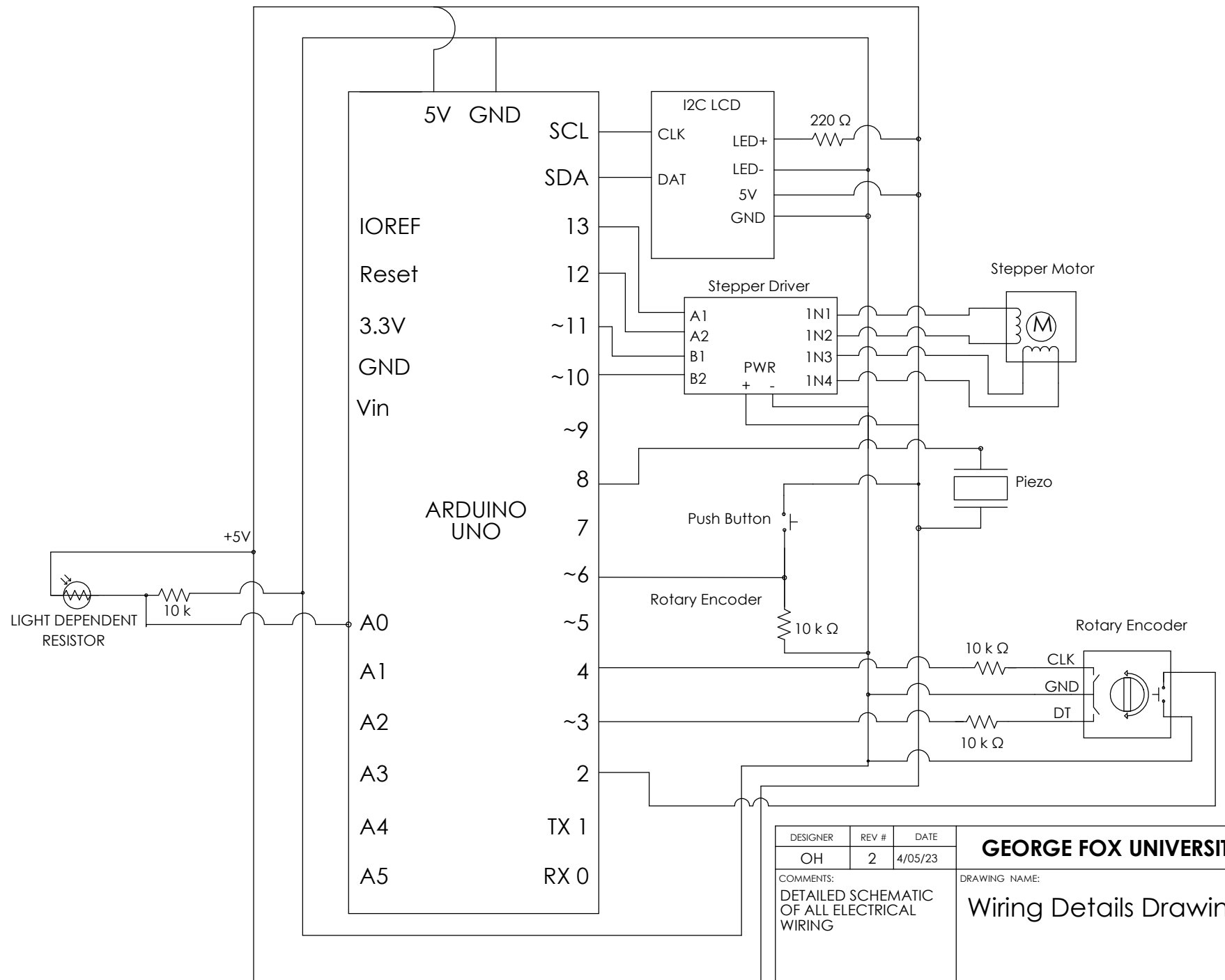
Units: MMGS

Scale: 1:6

DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY		
JS	2	4/5/2023			
COMMENTS: ROTATING ARM			DRAWING NAME: Mechanical Details Drawing		
QUANTITY	13 of 13	SIZE A	DWG. NO. SS01-MO01	SHEET 4 of 6	



DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY		
OH	2	4/05/23			
COMMENTS: HIGH LEVEL DESCRIPTION OF ELECTRICAL SYSTEM			DRAWING NAME: Electrical Overview		
QUANTITY			SIZE A	DWG. NO. US01-EO01	SHEET 5 of 6



DESIGNER	REV #	DATE	GEORGE FOX UNIVERSITY		
OH	2	4/05/23			
COMMENTS: DETAILED SCHEMATIC OF ALL ELECTRICAL WIRING			DRAWING NAME: Wiring Details Drawing		
QUANTITY			SIZE	DWG. NO.	SHEET
			A	US01-WD01	6 of 6