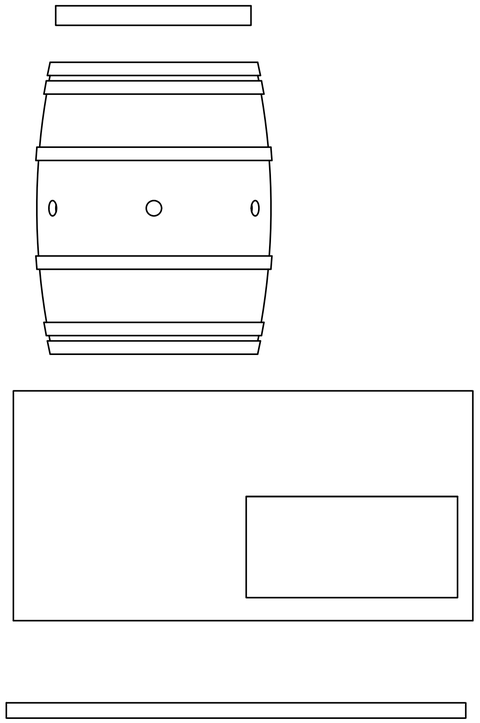
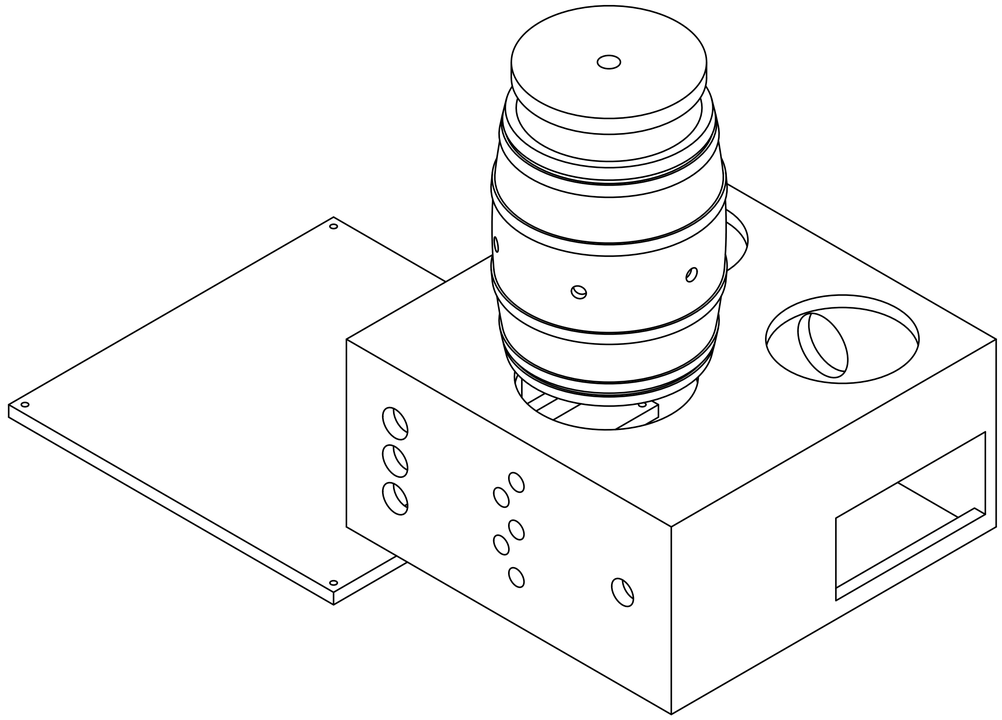
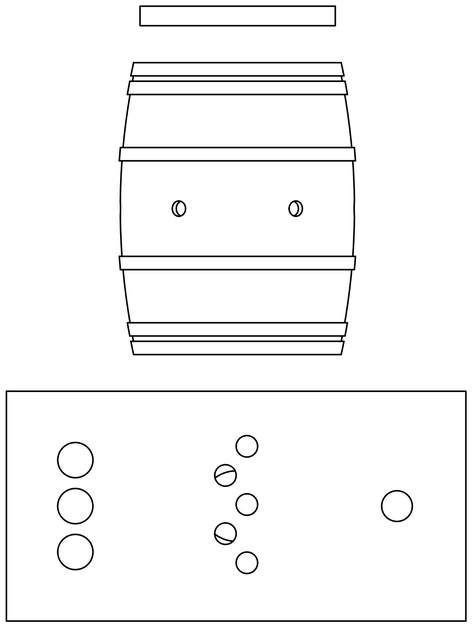
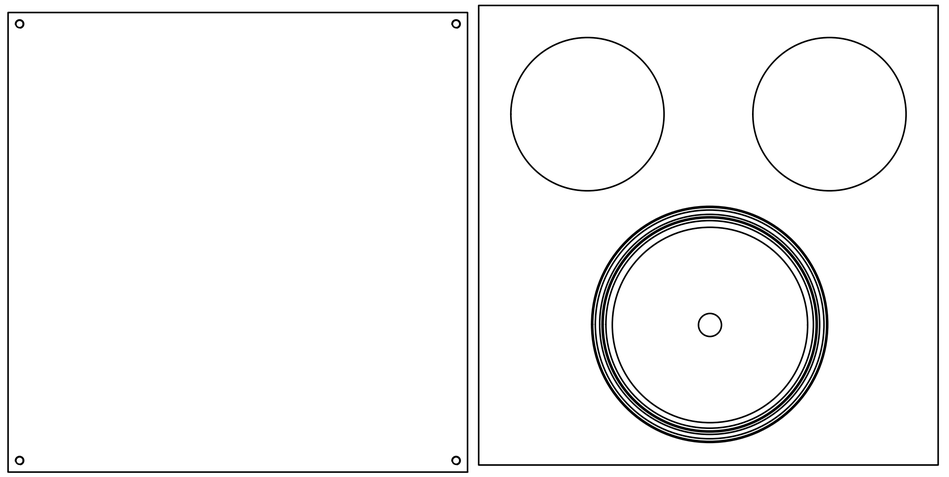
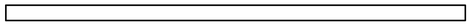




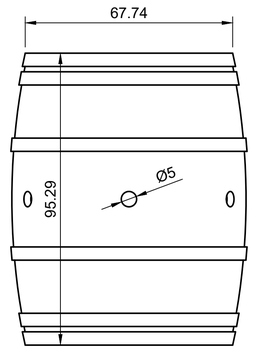




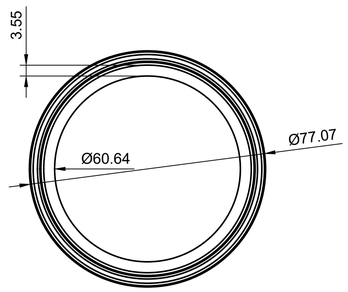


Dept.	Technical reference	Created by	Approved by
		The DK Crew 4/22/20	
		Document type	Document status
			Completed
		Title	DWG No.
		Music Box Enclosure	
		Rev. 5	Date of issue 5/29/20
			Sheet 1/4

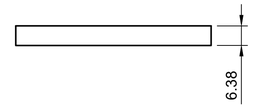
Front View of Barrel



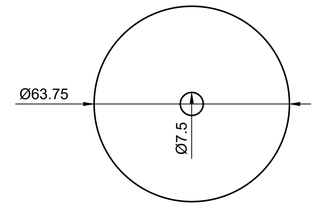
Top View of Barrel



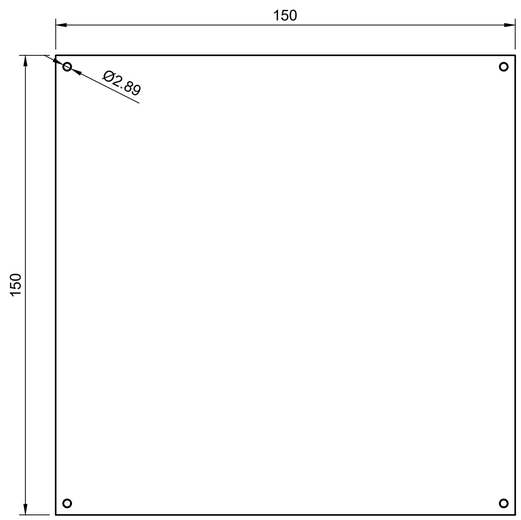
Front View of Spinning Platform



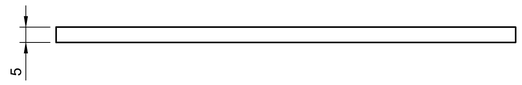
Top View of Spinning Platform



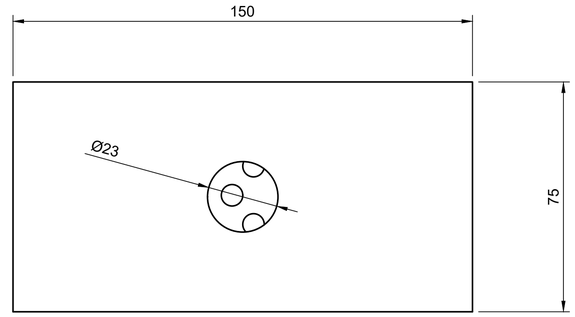
Top View of Bottom Cover



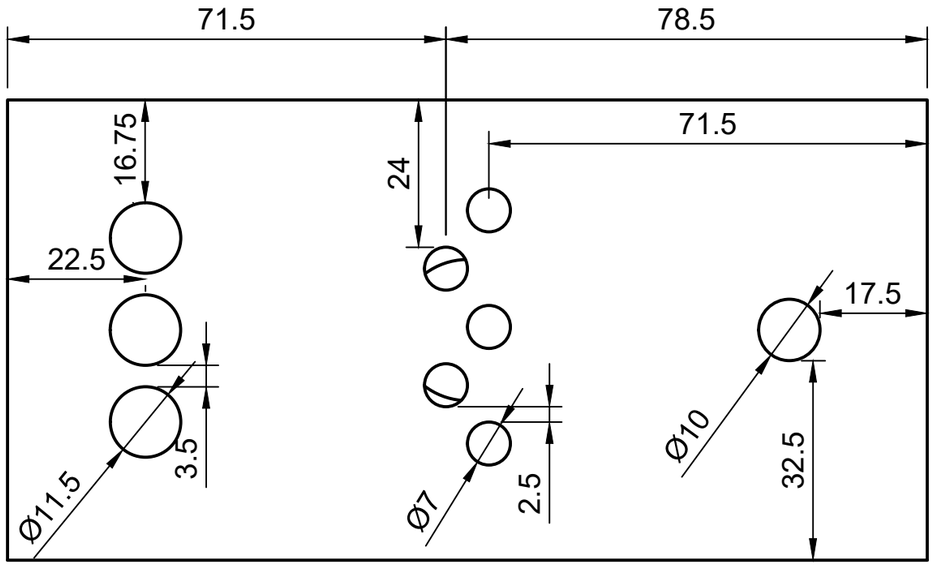
Front View of Bottom Cover



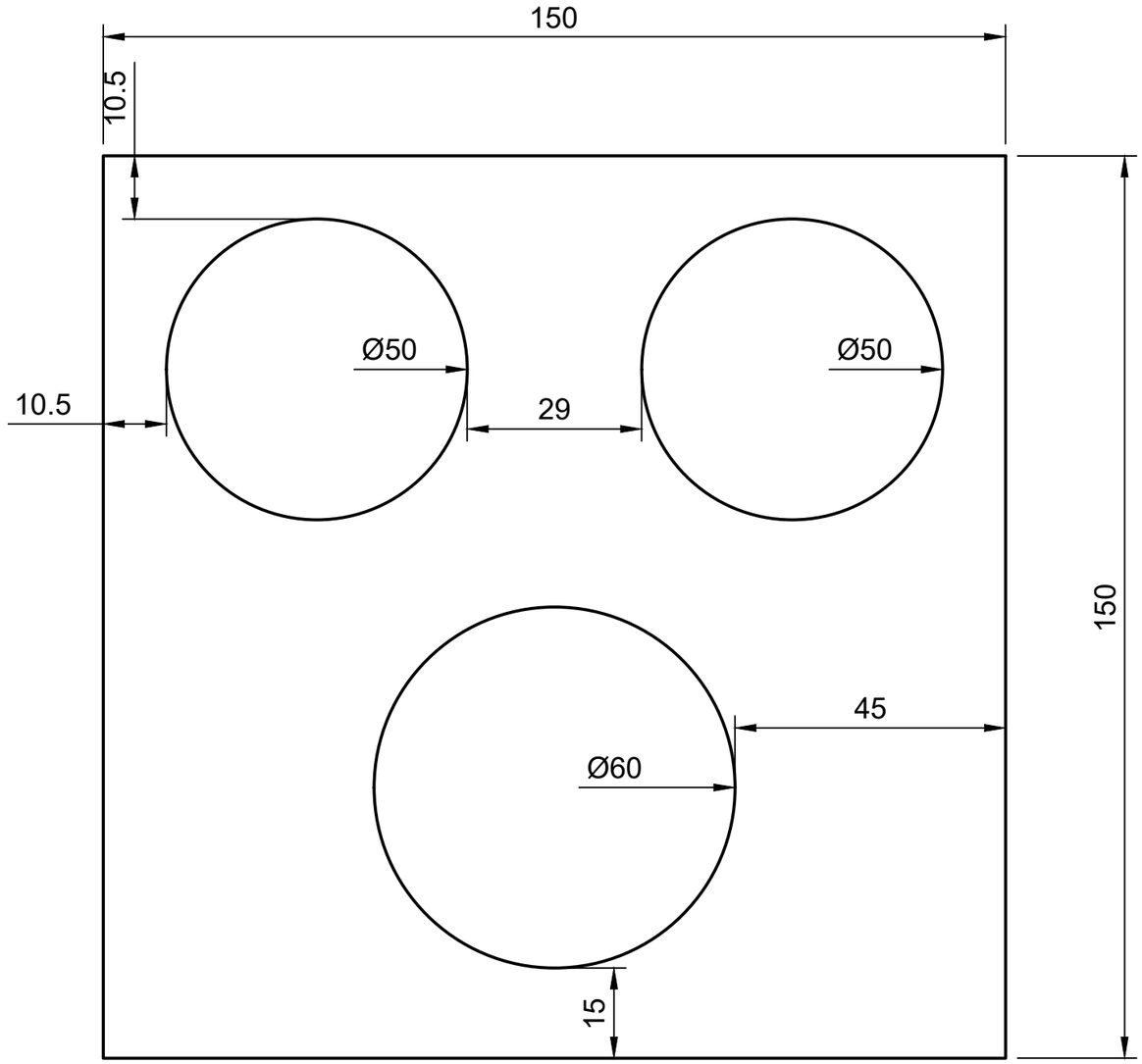
Back View of Main Enclosure



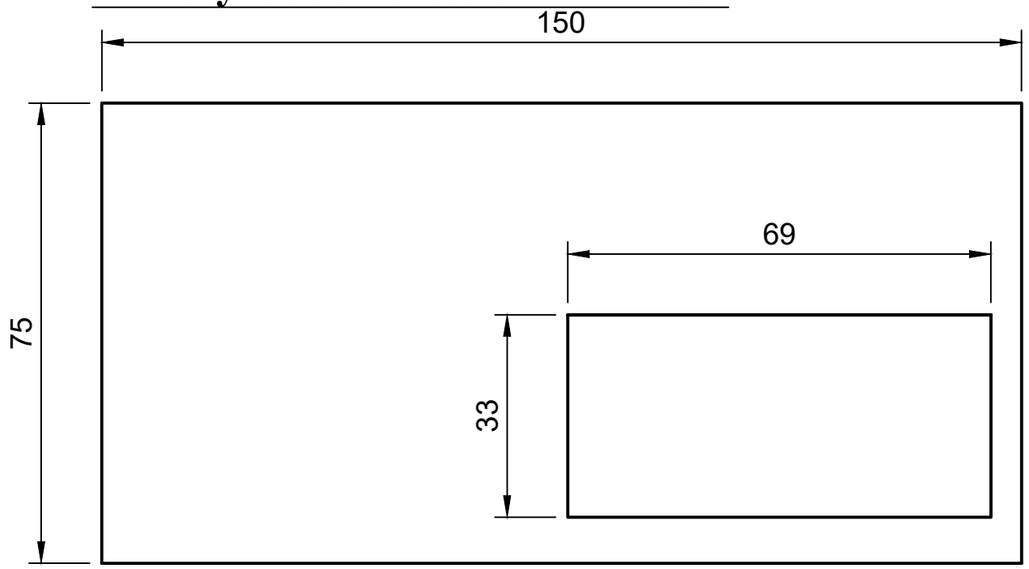
Front View of Main Box



Top View of Main Box



Battery Cover View of Main Box



Proposed methodology:

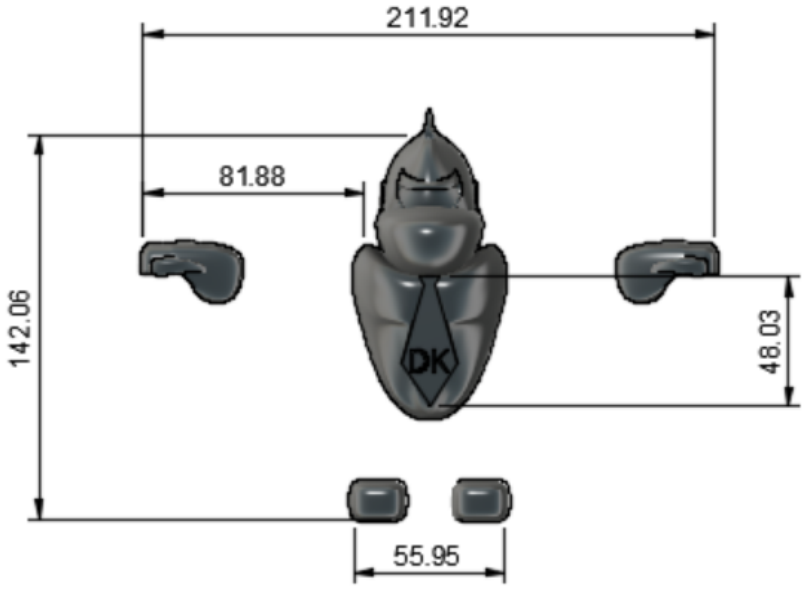
Each part of the box can be 3d printed separately and painted, then the barrel and main box can be JB welded together.

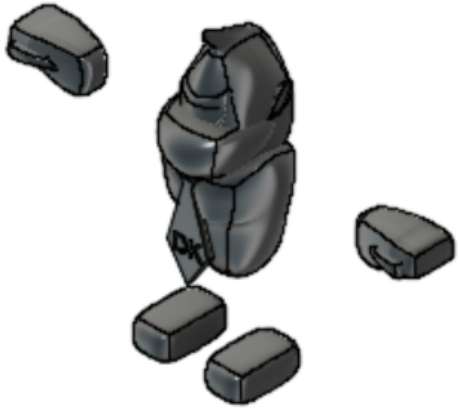
Connecting platforms for components (motor, PCB, battery holder, etc) can be made from separate materials (thin metal, plastic, possibly cardboard) and either JB welded or superglued into place. All components are adhered to the box walls in some fashion.

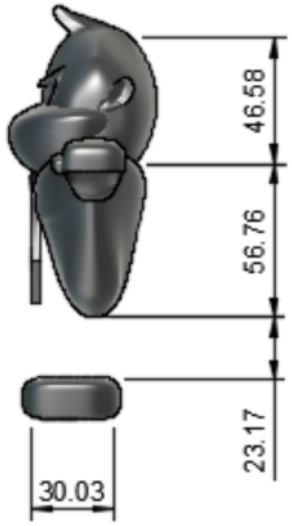
If the motor interferes too much with the LEDs a drive shaft extension can be made and printed for the motor to sit in the main enclosure.

The boards that will go in the box are: the PCB is 76 by 76 mm, the Arduino is 69 by 53 mm, the microSD card is 25 by 45 mm. These cards can easily fit in the area of the bottom cover and adhered in whatever way is most convenient while all other components are adhered to the enclosure through some feature of the enclosure.

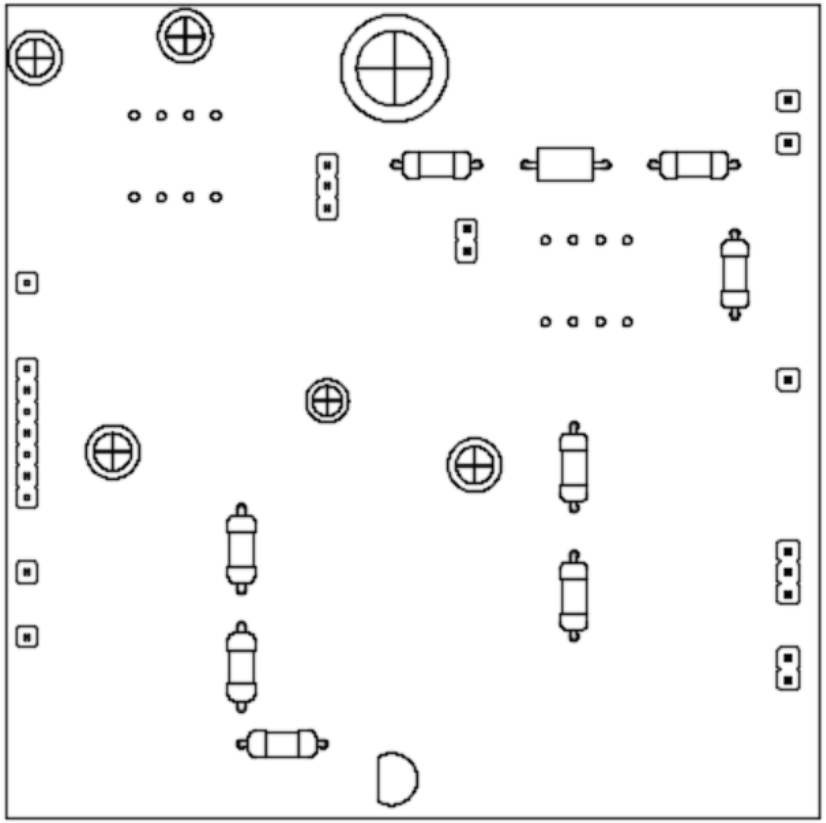
Vertical distance in the main enclosure is also easily cleared since the speakers are the only component with significant vertical size (30 mm) and rigid placement. All other components have smaller vertical heights and if needed can be maneuvered to accommodate wiring and other components.

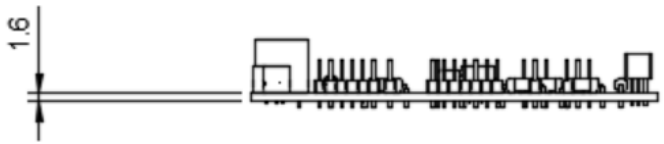


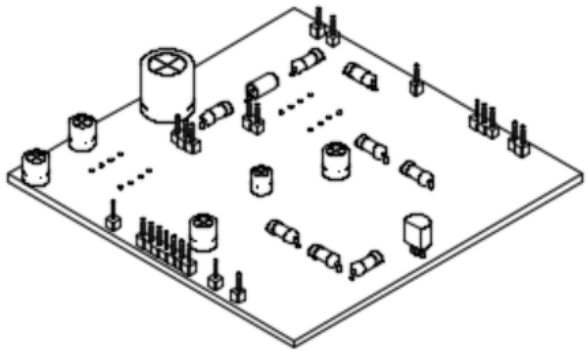


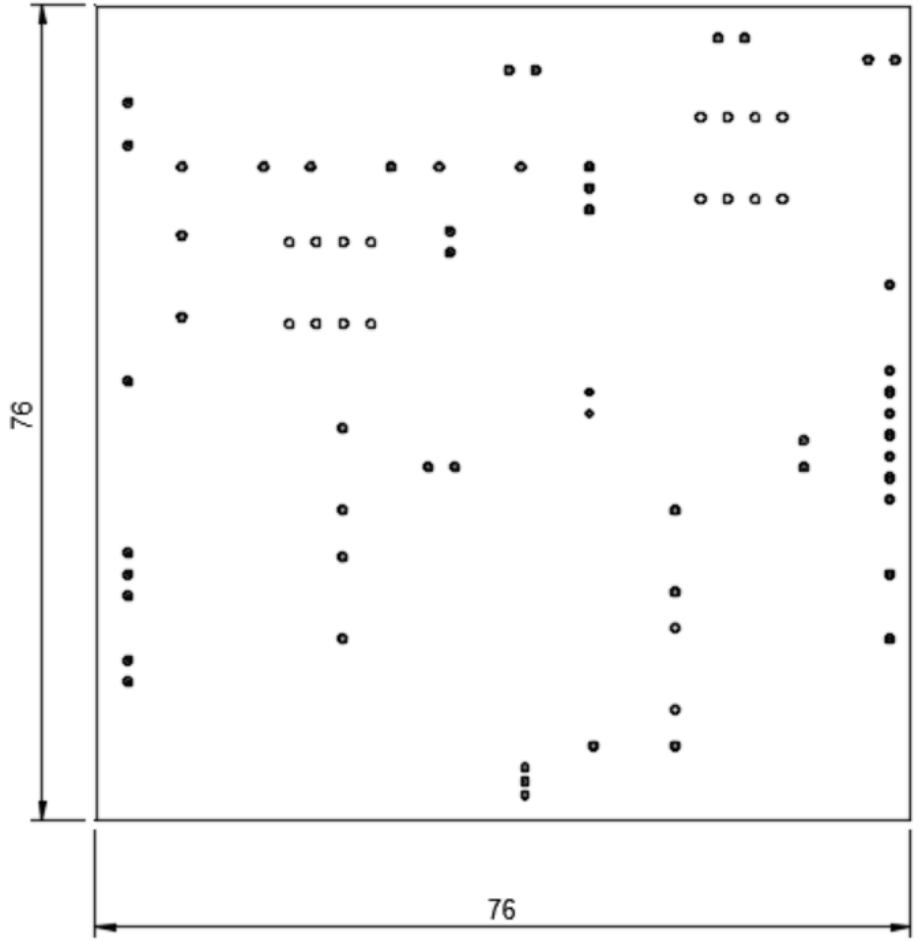


Dept.	Technical reference	Created by: Benjamin Hillen 4/22/2020	Approved by:
		Document type:	Document status:
		Title: **Donkey Kong Figurine**	DWG No.
			Rev. / Date of issue / Sheet: 1/1

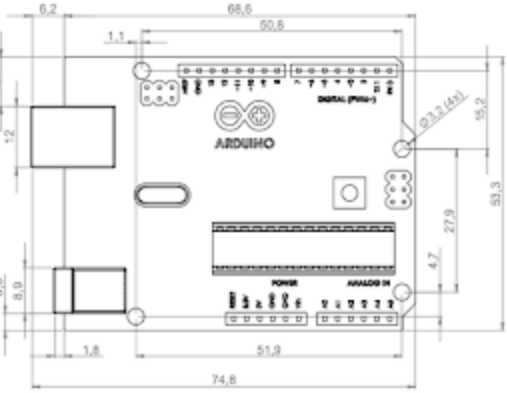


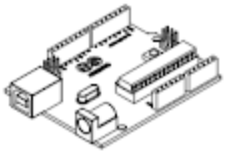


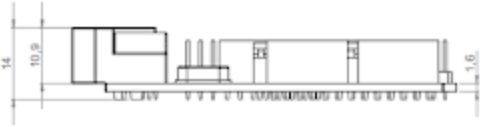




Dept.	Technical reference	Created by Benjamin Hillen 5/29/2020	Approved by
		Document type	Document status
		Title Musicbox	DWG No.
			Rev. / Date of Issue / Sheet 1/1







Material			Tolerances +/- 1% unless specified
American projection	Scale	2:1	File:
	Measurements	mm	Y:\work\maglev\kicf\Arduino poster\resources\arduino-u
	Date	28-8-2013	Arduino.skdrw
Gregor van Egdom	Project		Sheet name (page)
			Sheet1 (1/1)
Creative technical problem solver *www.gregorvanegdom.nl*	Arduino		A3

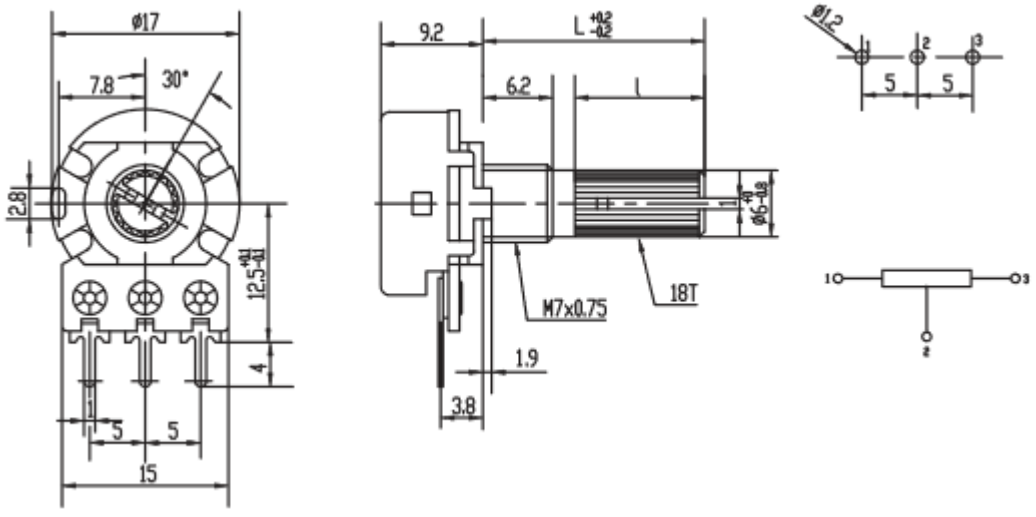
16mm Rotary Potentiometer Information

Mechanical specifications:

Total rotation angle: 300°±5°
Rotation torque: 2 ~ 20mN.m (20 ~ 200gf.cm)
Shaft stop strength: 6Kgf.cm
Push pull strength: 60N
Rotary life: 10000 cycles
Click position: Center detent or 10,20,40, position clicks

Electrical specifications:

Total resistance: 5KΩ ~ 2MΩ
Resistance taper: A, B, C
Resistance tolerance: ± 20%
Rotational noise: ≤ 47 m V
Residual resistance: R ≥ 250KΩ 0.1% max.of total resistance
250KΩ> R> 10KΩ 20 Ω max
10KΩ ≥ R 10 Ω max
Tracking error: 0 ~-40dB 3 dB
Rated wattage: Curve B: 0.125W; Other than B: 0.063 W
Max, operating voltage: Curve B: 200 V; Other than B: 150 V
Dielectric: AC500V, 1 minute
Insulation resistance: More than 100MΩ at DC500V



LED Information

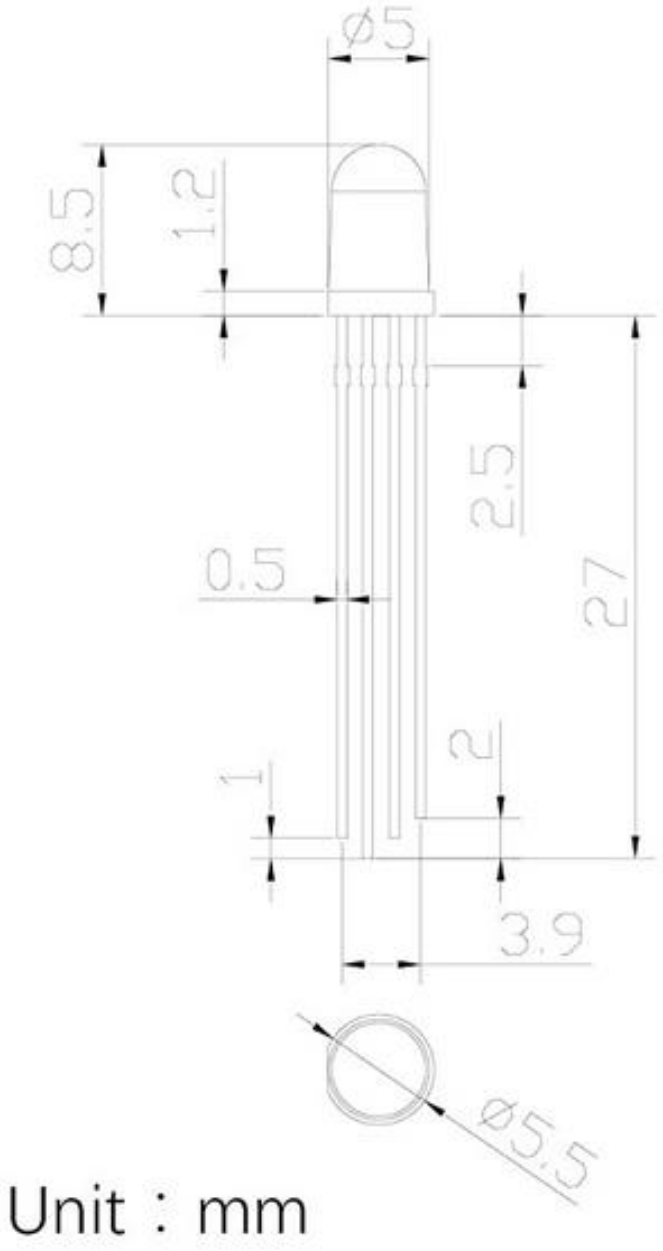


Fig 1: Dimensions of each LED

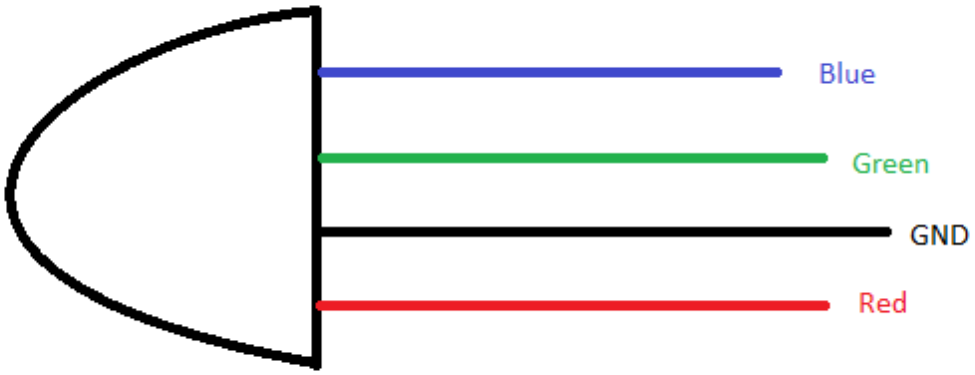


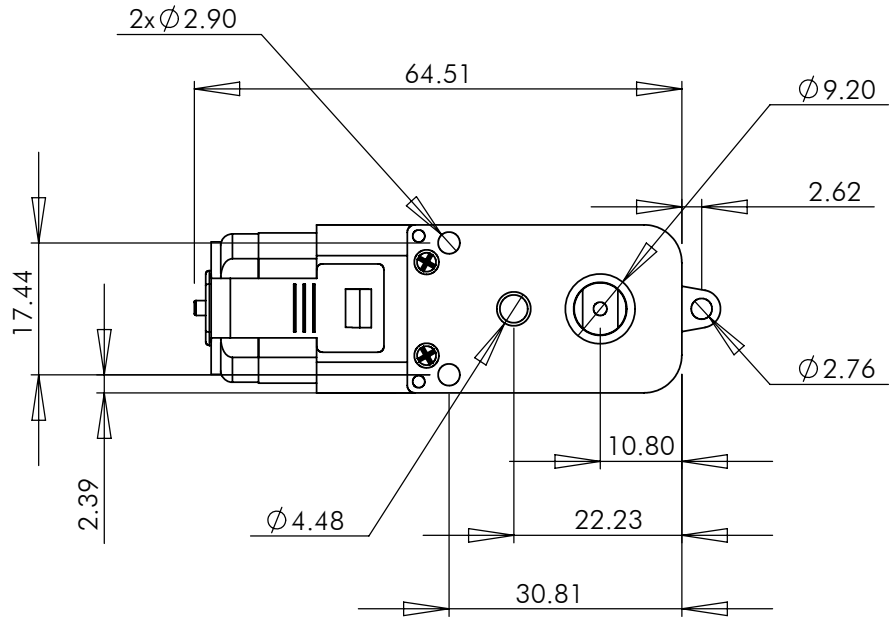
Fig 2: LED Pin Guide

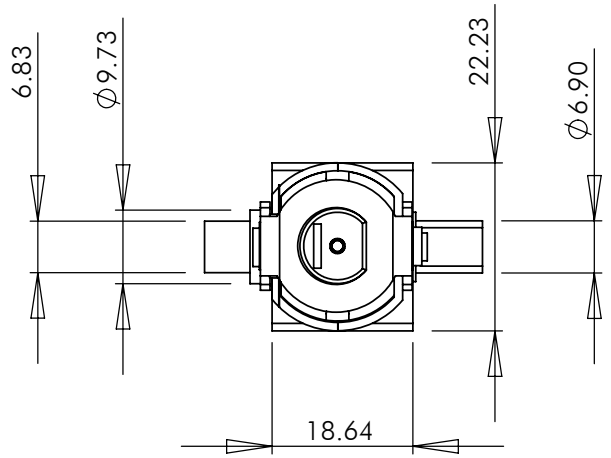
Pararmeter	Symbol	Red	Green	Blue	Unit
Forward current	I_F	20	20	20	mA
Peak forward current (Duty Cycle=$\frac{1}{10}$, 10KHz)	I_{PF}	30	30	30	mA
Reverse current (V_R=5V)	I_R	10	10	10	μA
Operating temp	T_{OPR}	-25~ 85	-25~ 85	-25~ 85	℃
Storage temp	T_{STG}	-30~85	-30~85	-30~85	℃
Peak Emission Wavelength	λ PH	625	520	467.5	nm

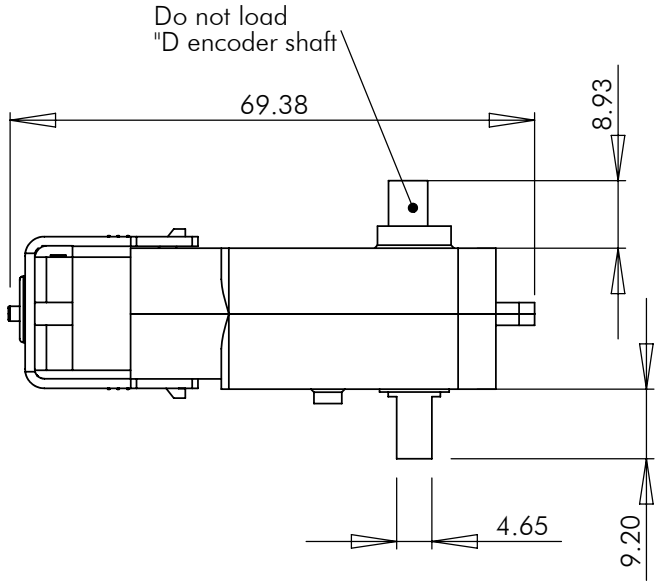
Fig 3: LED Maximum Ratings

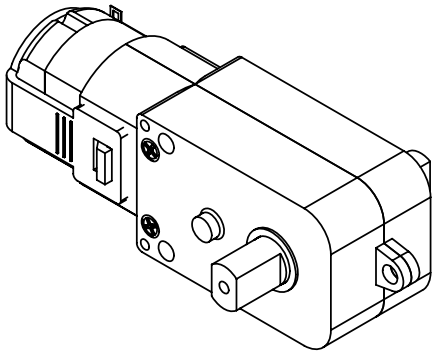
ITEMS	Color	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Red	V_F	I_F=20mA	1.8	2.0	2.2	V
	Green			3.0	3.2	3.4	
	Blue			3.0	3.2	3.4	
Luminous Intensity	Red	I_V	I_F=20mA	– – –	– – –	800	mcd
	Green			– – –	– – –	4000	
	Blue			– – –	– – –	900	
Wavelenength	Red	$\Delta\lambda$	I_F=20mA	620	623	625	nm
	Green			515	517.5	520	
	Blue			465	466	467.5	
Light Degradation after 1000 hours	Red	-4.68% ~ -8.27%					
	Green	-11.37% ~ -15.30%					
	Blue	-8.23% ~ -16.81%					

Fig 4: Typical Electrical & Optical Characteristics









Note:
Dimensions may fluctuate due to manufacturing tolerances.

Rev.	Date	Revision Details

DIMENSIONS ARE IN mm
TOLERANCES:
FRACTIONAL ± 1mm
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ± 0.5
THREE PLACE DECIMAL ± 0.12

MATERIAL

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	DDG	Feb2306
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ENG APPR.		
MFG APPR.		
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SIZE	DWG. NO.	REV.
A	GM3_Metric	

SCALE: 1:1 | WEIGHT: | SHEET: 1/1