

# Pan-Tilt Head Parts List

Table 1 - Document History			
Revision	Initials	Date	Description
Rev 1	AWD	6 <sup>th</sup> Feb 2022	Document created
Rev 2	AWD	15 <sup>th</sup> Feb '22	Added foam sheet
Rev 3	AWD	19 <sup>th</sup> Feb '22	Added 'Hall Effect Pan Mount' Added 3x additional M3 Hexagon Nut – SS Added 3x additional M3x6 Hex Cap Head – SS
Rev 4	AWD	19 <sup>th</sup> Mar '22	Removed 2x 'Hall Effect Pan Mount' Removed 2x M3 Hexagon Nut – SS (FX1) Removed 2x M3x6 Hex Cap Head – SS (FX9) Removed 2x Hall Effect Sensors (SEN1)

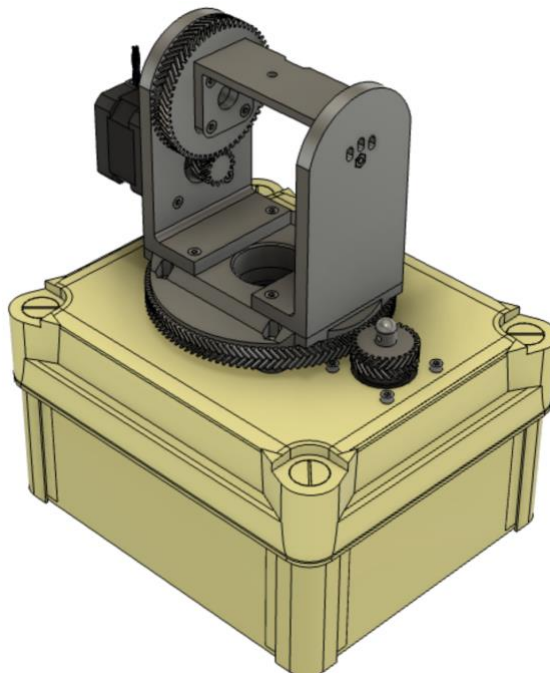


Figure 1 - Render of Pan-Tilt Head Assembly





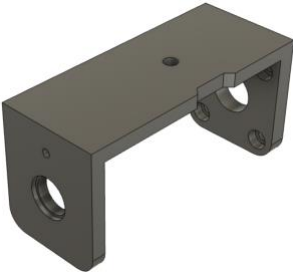

Table 2 – 3D Printed Parts				
Part Number	Image of Part	Description of Part	Quantity	GitHub Link
3DP-1		Tilt Gear – 60 teeth	1	<a href="#">Click here</a>
3DP-2		Tilt Pinion – 15 teeth	1	<a href="#">Click here</a>
3DP-3		Pan Gear – 108 teeth	1	<a href="#">Click here</a>
3DP-4		Pan Pinion – 27 teeth	1	<a href="#">Click here</a>
3DP-5		Firing Mech Bracket	1	<a href="#">Click here</a>

Table 2 – 3D Printed Parts				
Part Number	Image of Part	Description of Part	Quantity	GitHub Link
3DP-6		Tilt Gear and Stepper Support	1	<a href="#">Click here</a>
3DP-7		Firing Mech Bracket Support	1	<a href="#">Click here</a>
3DP-8		Hall Effect Pan Mount	1	<a href="#">Click here</a>

<b>Table 3 – Off-The-Shelf Parts</b>				
<b>Part Number</b>	<b>Qty</b>	<b>Description</b>	<b>Manufacturer</b>	<b>MFN PN</b>
FX1	11	M3 Hexagon Nut – SS	Accu	<a href="#">HPN-M3-A2</a>
FX2	4	M4 Hexagon Nut – SS	Accu	<a href="#">HPN-M4-A2</a>
FX3	4	M4 Hexagon Nut Nyloc - SS	Accu	<a href="#">HNN-M4-A2</a>
FX4	4	M4x8 Pozi Pan Head - SS	Accu	<a href="#">SPP-M4-8-A2</a>
FX5	4	M4x6 Pozi Pan Head - SS	Accu	<a href="#">SPP-M4-6-A2</a>
FX6	8	M3x16 Hex Cap Head - SS	Accu	<a href="#">SSCF-M3-16-A2</a>
FX7	2	M3x12 Hex Cap Head - SS	Accu	<a href="#">SSCF-M3-12-A2</a>
FX8	4	M3x8 Hex Cap Head – SS	Accu	<a href="#">SSCF-M3-8-A2</a>
FX9	5	M3x6 Hex Cap Head – SS	Accu	<a href="#">SSCF-M3-6-A2</a>
FX10	2	M3x5 Cup Point Grub - SS	Accu	<a href="#">SSU-M3-5-A2</a>
BR1	2	3x10x4mm Flange Bearing	Sourcing Map	<a href="#">F623ZZ</a>
BR2	1	75x75mm Lazy Susan Bearing	Stiles & Bates	<a href="#">LS75S</a>
MTR1	1	NEMA17 42x42x34mm	OMC Stepper Online	<a href="#">17HS13-0404S1</a>
MTR2	1	NEMA17 42x42x39mm	OMC Stepper Online	<a href="#">17HS15-1504S-X1</a>
MAG1	2	2x2mm Neodymium Magnet – 0.15kg Pull - Cylindrical	First4magnets	<a href="#">F412SH-20</a>
SEN1	6	Hall Effect Sensor	Allegro Microsystems	<a href="#">OH3144E</a>
DRIV1	2	A4988 Stepper Motor Driver	ARCELI	<a href="#">A4988</a>
MCU1	1	Arduino Nano Every	Arduino	<a href="#">ABX00033</a>
BOX1	1	Enclosure 164x105x192mm	Schneider Electric	<a href="#">NSYTBS191610H</a>
FOAM1	1	Grey Foam Sheet 22.5cm x 30cm	Hobbycraft	<a href="#">6583621003</a>