# Component List for MARK 2 of Legion

|  |  |  |  |
| --- | --- | --- | --- |
| Component | Quantity | Price per Unit (Rs) | Total Price (Rs) |
| MG99s 180 Degree Servo | 12 | 189 | 2268 |
| Arduino Nano | 1 | 293 | 293 |
| ESP32Cam with programmer | 1 | 1199 | 1199 |
| Nano Expansion | 1 | 179 | 179 |
| UBEC SWITCH (5V 3AMP) | 1 | 496 | 496 |
| L298N Motor driver | 1 | 284 | 284 |
| N20 DC Geared Motor with wheels | 4 | 516 | 2064 |
| 18650 Rechargeable Cell | 3 | 295 | 885 |
| 18650 Rechargeable Cell Holder | 1 | 149 | 149 |
| 16 channel Servo driver | 1 | 540 | 540 |
| Total Cost |  |  | 8357 |

Additional Requirements

* On off Switch
* Jumper wires
* 3d printed parts and screws
* Antenna for esp32cam (optional)
* Ultrasonic sensor (optional)
* Faith (Compulsory)

Amazon Links For the component (Price or component may be Different use your BRAIN)

12 X MG99s 180 Degree Servo

: <https://www.amazon.in/Digital-Gears-180°-Rotation-Airplanes-Helicopters-Pack/dp/B0CBMV1RGM/ref=sr_1_4?crid=DS6UM7TO7TCL&dib=eyJ2IjoiMSJ9.gsIwP0FZ_ynRjYAy3LY-lwEpQLO9WYkQDKRJBSf3uV9iHCB2bqO3dSaLnqgXOispJSwWp918hp2LtKmsguANecfjjdnFMcI5Km_-i6wgeWZ6gBxl5xIlLk11NyBa0-vFAfAS_Ow4o1VNdpOjxMRnWdQQo6zAgAlXlC13NaO-75OOEw7-qejtVtC9zuGgcaMpx8ZJG507RzabPAa1mW6YzjYGllxj_ESSCwc9TuIvjfAhrqjoOSVbeXBf6a6jlx9l2Aq7SJ4I94nEQSldhfr4_Ing01bRUSkesOmOi6u1H1BD0gS_1NldbJJWhSYbD2YMCyR43Fsn14fe1e9RW6LuXNimXdcUpq0Nf9_NtPuyXr4.0VStfd7wadzGoixJIKSlDUGHsjpPy6wrPN0ggZozOFg&dib_tag=se&keywords=mg99+servo&qid=1740650734&s=industrial&sprefix=mg99+servo%2Cindustrial%2C239&sr=1-4>

1 X Arduino nano

: <https://www.amazon.in/Robocraze-Improved-Version-Arduino-Soldered/dp/B077TJ8FCF/ref=sr_1_2?crid=3LM6XNUB2WLZV&dib=eyJ2IjoiMSJ9.H_q0qDuSGXoYRGA2oLLh23F1zmHUuga5kCGltzAUagB-E0YkCaXN3eQb2yWSNc5SL-XCt0G0k8gGi06zPTh8yZu9NrPIYAemQlKI5WbsLZmXfSgLYRl9RxUC0BjTx_XPTw58-eTRZC59zYE-PHUyuQo32mgy86fBFECDTXFLIBCjbai0Br9p1J_Ctc3wDeH7X2OynBeKooGUQ3POjDjtPS45ZgUlXDl_onIqon7ZTR-AkMqk9QgyOUK80OK8NYX7A0NEC5rA9l1VLV-CUhiqD0jasfu7ao1nP4-5wf4qYNtRRL15RDA-fF1TphWnEhjfz7T7n24lr4QP7ZN1QrwqVz-KqhC-IKeQ6UGhxXP1mh8._KqQyTowW2_sQEF70iawUk6t12XlqFSQx_e65aONZus&dib_tag=se&keywords=arduino+nano&nsdOptOutParam=true&qid=1740650830&s=industrial&sprefix=arduino+nano%2Cindustrial%2C235&sr=1-2>

1X ESP32Cam with programmer

: <https://www.amazon.in/RoboThings-Camera-Module-Development-Bluetooth/dp/B098JQDKW3/ref=sr_1_5?crid=1F6ZZPZOB6I9Y&dib=eyJ2IjoiMSJ9.51hlx9sljHzZdAGGxihYD6rClOuENGVP4LNAuB_na8_ijzay6PeOIMSLy0qws36uUwEjIErlz7fLKiFVRwtMeUnKHoNEuYrmhLpTlgR2xJe34bcrFDfC0z5SuBPIo_saohKe0w_YXpPm5nTWIqVlBRuU4m3glmYJxATKPP2ONjMkW19kLDIgjCVQzzq0aVfXxXI2j8Q44BsZ3x8tFnT_SJ6asZslETCB7KgmC0agPbOCEMW6xhMYu9mbT0qII0EtweIXXkaWidEiLUxmg8NWezO94nhGJdlCRfWeE6U7Cg2exTKpDaUJZkQO2kTZEmJQHtWX-WxmbbjfSgduAMgMPx1tS1SvZfjz3yK477vDhNc.YeDmxZQZ4drHegPPCzaSLOPb4NXlWfjKoU6Xn_v3usE&dib_tag=se&keywords=esp32+cam&qid=1740650908&s=industrial&sprefix=esp32cam%2Cindustrial%2C241&sr=1-5>

1 X Nano Expansion (you can also create a custom nano expansion PCB board)

https://www.amazon.in/Robocraze-Expansion-Adapter-Breakout-IO-Expansion/dp/B0941694M5/ref=sr\_1\_1?crid=XLEOEE157K8D&dib=eyJ2IjoiMSJ9.t-fMbOCFQ5KzHuPxxt1b0n2kXf7bLtno6KNABosC0v53vWZVCccrGaFxeKddNf6y0jAzCZ8y8I1c24vvgmS9rkCrevY6\_INxcPm-QTW\_kVAw2HuOHmMXkLXtU2fXy4YMkG0bgk2JWbIdCeOkuK3deUZIemSFYd4YhGpTqmKhT0njyPxDGb8au\_zgxSKnsp9-DzqIBc5c5yZA2vUnXdPc-oczKl9diXJ4tDcMiX940pvzPtBQ6YPj7yrNJRzDTbAvLTZt-k-XGpGwsuJMZEfyy2y48Bm7-cHLzqjQD56bo0ad0W-yIkNO1YIeRricPIW1ltmk6JO1YntM2vBPoreFRuS3GiAWFbxeY4cr3tYkMVc.K8OPyHShYjN4ZnuPlwTmM8S9AhwtBdgugBoAMsRyGEg&dib\_tag=se&keywords=arduino+nano+expansion&qid=1740651049&s=industrial&sprefix=arduino+nano+expansio%2Cindustrial%2C243&sr=1-1

1 X UBEC SWITCH (5V 3AMP)

<https://www.amazon.in/Robocraze-Switch-Mode-Regulator-Multi-Rotor-Indicator/dp/B0DP54JVJY/ref=sr_1_1?crid=2SKCFMAIK1U43&dib=eyJ2IjoiMSJ9.royiMkm49ph_2ShA3F-RmVbpbb1LU8Vnpg8m0LNCjIBrKwDc5TSmInmQmsfQoqDFQRNkkPdpqaj8yZkhX4moR1Esahv-mGjp3Zn0Uj_oq4d2yJyuSsxuGdT5fps0Nfjk1DO0pn6AGzY4pspcaViH0_DExRCB4W5lPWuAL_wL7aY3a7QY-FykhF5LuxP07wLGNn922MUVCf89PJYLp-1YyWOl-I9owsS3nKo2Ml1vCFhzIEs1NepMzCG1gjsUjjIzUoKiCwyRIePJOnJmcQ5VLOmvO03pFFvLJ1PnxnmojssjXjzVxsHeQDQPeHD382zxBE7y814z2r4i5GJFwErNFq3uSjUqrGB_JHpTcdn3GV8.Bodhb3Crj7lSKrpRUsU7nUFlDfJusGwFOLwN-kOi4-0&dib_tag=se&keywords=ubec+switch&qid=1740651142&s=industrial&sprefix=ubec+switch%2Cindustrial%2C212&sr=1-1>

1 X L298N Motor driver

https://www.amazon.in/REES52-Controller-Module-Stepper-Arduino/dp/B072JWDK9B/ref=sr\_1\_6?crid=MK1PS1F65ZBM&dib=eyJ2IjoiMSJ9.Uh5nNb5JReFNdjCL2RpYdVZg0k2iY2VOZeFj5Q9kHUyPK6vS9V1epRuEO6oSOqBEC0abNl1yDoIIIsJW\_zORwifNQubDtFvu1pGopTqRjYdoIA5XF5z0v6j0Nng5sdMe-HawkLPdsmpi9a7u1-tNz5OUIGRfT5j2gWEaL3IA2gWiHnB5bWeS-j2I-wnlszHpDOzb1-d7-vX8PMzfArvt\_9k5JDsGI7z0qFvYpTS5lSruW151whaQsaTQ7MXki-vE\_b\_ee24vj2SsYDm7B48zdvaAxc2VDAAGvRYLljuEejV2m2ZkjhCUZgY2orzE87JbE-6FTioF8PynC5xcytn25Uba-fsr8Ce7tShjKg-mt\_h27VJVW\_qLULDtp30sOQd11f2Q6f7UB6BtCrA7RwFJc7IWpiAGbokdSibG5WoMPTkmj0Yfis4TOvHzEOX08iQG.Agnp82T953exuJolux18GjE7ZETuhCqcNePYrNkEPSE&dib\_tag=se&keywords=l29n+motor+drive&qid=1740651209&sprefix=l29n%2Caps%2C209&sr=8-6

4 X N20 DC Geared Motor with wheels

https://www.amazon.in/Electron-Pack-Pcs-N20-3-7V/dp/B0CR8NHFWP/ref=sr\_1\_2?crid=12P8XET20QHC3&dib=eyJ2IjoiMSJ9.Br4mN7PwbBTc9BHjw\_kU-7Jjm2wwOkGWwu\_YbzcR\_\_C3w9tJyLVIT5OBIyYO6LfNcl\_GjeUrV2dPlGdpEaTawI46RPo1UOyJSc2W4NDIQxlDFvG7jjx2yKiHbIpsEtDiM\_p-JODPTYPpQWZX4gpIIe0fhHk\_qAXe8PIfQQGmsYXkCMJopzePaIKVevfFWszJ0\_RDgbDtx\_QlQoGHOuiDZYjyYUuALSx1CViccRHQn8aRvLinTNE1ABOWC1BVj6hLCQc0Z8b2CAAcGFAkptRfQcS8s3lVrQefAm428KqlepRlfJ73k9aJrAR0lSa9N-PG3W-tty5wCdKcHnCkT\_aYWmschNv1QhSQQTrZKchgzsapdRZOf73ncgsxf0k298k6mYuubvbGAMmdOwKaCoc6zKbn-D9we\_4389GvpRzvZQjr8vgJktq9Tdm-6H6H6ky6.XgI6ZlnfhrVnJp5yt8QjwY2BgrtUQO7Uh5\_aFUHIZpc&dib\_tag=se&keywords=n20+dc+motor&qid=1740651268&sprefix=n20+dc+%2Caps%2C214&sr=8-2

3 X 18650 rechargeable cell  
<https://www.amazon.in/CONSONANTIAM-Capacity-Rechargeable-Batteries-Bluetooth/dp/B0DV5QTN5C/ref=sr_1_7?crid=29HB6IICAGCN6&dib=eyJ2IjoiMSJ9.PUB1X32yaxKUwnGITamNUtVwicQV9FqPAx0x7iAkXiLWHKNi9S_rT5Y5fB5CA2zYLaVIQ9zwrr_gH64ll7iCwmnoO9uAGTzj3Izr1btWXgNP0OyyNAgmRDrIKtmGUw1wAgQmBOrSCjjm8kA-PZn7__zMqwwaFayN94ox0Uu0NfUXEq5sugqcYKdmm3kxFj3tXhN11gf80h09tNN-HQo6Je_5_5NrbqE9TTFCkCV6BLU.XmGWLBppJBBKzbYUo5lFvLAMJ94fT0Ccv3NnvO90EEg&dib_tag=se&keywords=3%2BX%2B18650%2Brechargeable%2Bcell&qid=1740651394&sprefix=x%2B18650%2Brechargeable%2Bcell%2B%2Caps%2C253&sr=8-7&th=1>

1 X 18650 rechargeable cell holder

<https://www.amazon.in/Electronic-Spices-Battery-Holder-Lithium/dp/B0B76KCLVF/ref=sr_1_3?crid=2RMHEWS620NQT&dib=eyJ2IjoiMSJ9.avU6A2pipJ6EqJcSG-gARUY9NAhDs3WN4wS3P0OFEVP9a-WLgY1go8hC5yI4_m3n2374KkoHBASYq6EiiVPIqrADgy_zaq3SmpyI3hNPsHRONvsh-A90Y_mevOCDU29fNFzM2PbBuP6CgwAWO0R45wVmg87qFAGDDE2-ZddDeSXB5ysP2KPyLHg2brEm05aoA3XYu8myEZ4-uNE1W-NQi00rCQ5pDGWK77WdVlMf-m4.5KRqR2ARRGouml3n-W8aysjH0PgEXmr0ZinEu58f180&dib_tag=se&keywords=3%2BX%2B18650%2Brechargeable%2Bcell%2Bholder&qid=1740651470&sprefix=3%2Bx%2B18650%2Brechargeable%2Bcell%2Bholde%2Caps%2C217&sr=8-3&th=1>

1X 16 channel Servo driver

https://www.amazon.in/TECHTONICS-PCA9685-16-Channel-12-Bit-Interface/dp/B09Y28RRH3/ref=sr\_1\_4?crid=1BJI5GJRU4RCA&dib=eyJ2IjoiMSJ9.BQd1k6Y5\_7CN50L648RmXj2aoKX8xLHafURI8vbdqt2EbD0ErVTA4AkWwbyLHjg4TCugDUHMHXkMjAcuMQ1Jb2ccCcbbRZxKV3SQ-z0H8QswJSxpFgJi510ygD6mrqm6DyCE60NpXgNbR3VAhQZGWDVLNDnGkBTb7UhlYWyuUlYIBnazmPUPtPdo4doMA6XgcQZWzfR8zwBr\_RSMoJqNyUYaxW7SH3loJUy8ahgwbXbWLChgTMT2PelScrGsUaZtn7Tjg5w4m2qYzmq-2kXCAI-Yl2Uw9cGFIao3lfsRzEpDd-tFH6xF5G8SUQPPIl3HvrIEplrtqE4-N37WbJaU\_vYSkGBX1ncf3jDE7dpMppIC4KUb9XFKIg3rqi6dXX3dmdXqVFK3GUZuwyx\_dnXQlCEuppQM3cldjrKfoR7WsEHpIVj9mpt8bP74c6hcgtoj.hSHqvzExRhVzwkCJiqBul2A6ObPU6IoxTl8ln-RlwHw&dib\_tag=se&keywords=servo+driver&qid=1740652126&sprefix=servo+drive%2Caps%2C242&sr=8-4