

# MCS-UC3- - -

GEARBOX MODEL (X AXIS)  
 VC-T-120 \_\_\_\_  
 RATIO: \_\_\_\_\_

GEARBOX MODEL (Y AXIS)  
 VC-T-120 \_\_\_\_  
 RATIO: \_\_\_\_\_

GEARBOX MODEL (Z AXIS)  
 VC-T-120 \_\_\_\_  
 RATIO: \_\_\_\_\_

FOR DIRECT DRIVE OPTION WITH MMK  
 (NO GEARBOX) CHECK HERE: \_\_\_\_\_

MOTOR INFORMATION (X AXIS)  
 MANUFACTURER: \_\_\_\_\_  
 MODEL: \_\_\_\_\_

MOTOR INFORMATION (Y AXIS)  
 MANUFACTURER: \_\_\_\_\_  
 MODEL: \_\_\_\_\_

MOTOR INFORMATION (Z AXIS)  
 MANUFACTURER: \_\_\_\_\_  
 MODEL: \_\_\_\_\_

SENSOR INFORMATION X-AXIS:  
 HOME-QTY \_\_\_\_ 244-\_\_\_\_\_  
 EOT-QTY \_\_\_\_ 244-\_\_\_\_\_  
 SENSOR INFORMATION Y-AXIS:  
 HOME-QTY \_\_\_\_ 244-\_\_\_\_\_  
 EOT-QTY \_\_\_\_ 244-\_\_\_\_\_  
 SENSOR INFORMATION Z-AXIS:  
 HOME-QTY \_\_\_\_ 244-\_\_\_\_\_  
 EOT-QTY \_\_\_\_ 244-\_\_\_\_\_

(SEE T-SLOT SENSOR KIT SHEET  
 FOR PART NUMBER CONFIGURATION)

APPROVED: \_\_\_\_\_  
SIGN & PRINT

DATE: \_\_\_\_\_

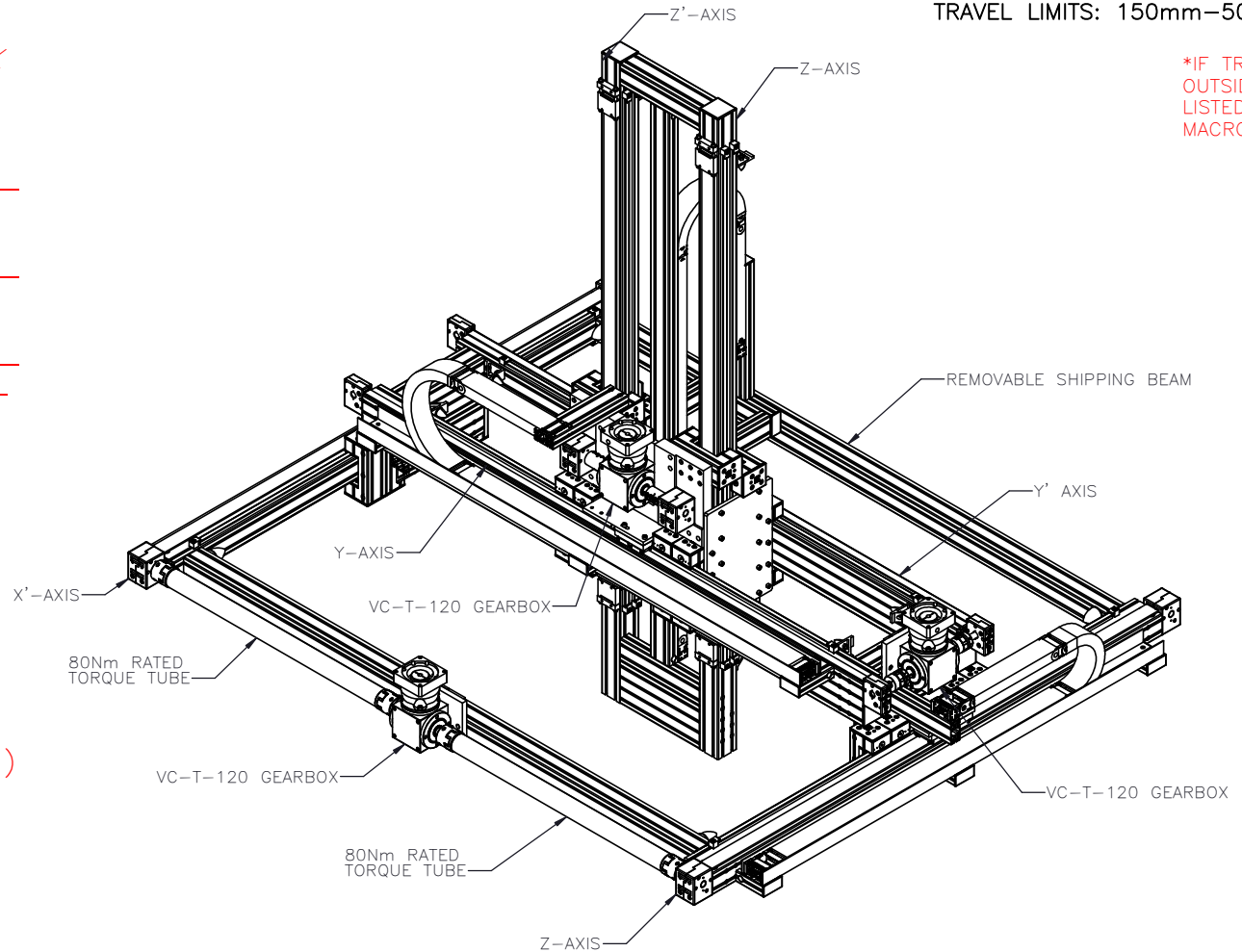
PO:REFERENCE#: \_\_\_\_\_

**ENTER Z-AXIS TRAVEL**  
 TRAVEL IN INCREMENTS OF 25mm  
 TRAVEL LIMITS: 150mm-1000mm

**ENTER Y-AXIS TRAVEL**  
 TRAVEL IN INCREMENTS OF 25mm  
 TRAVEL LIMITS: 150mm-3000mm

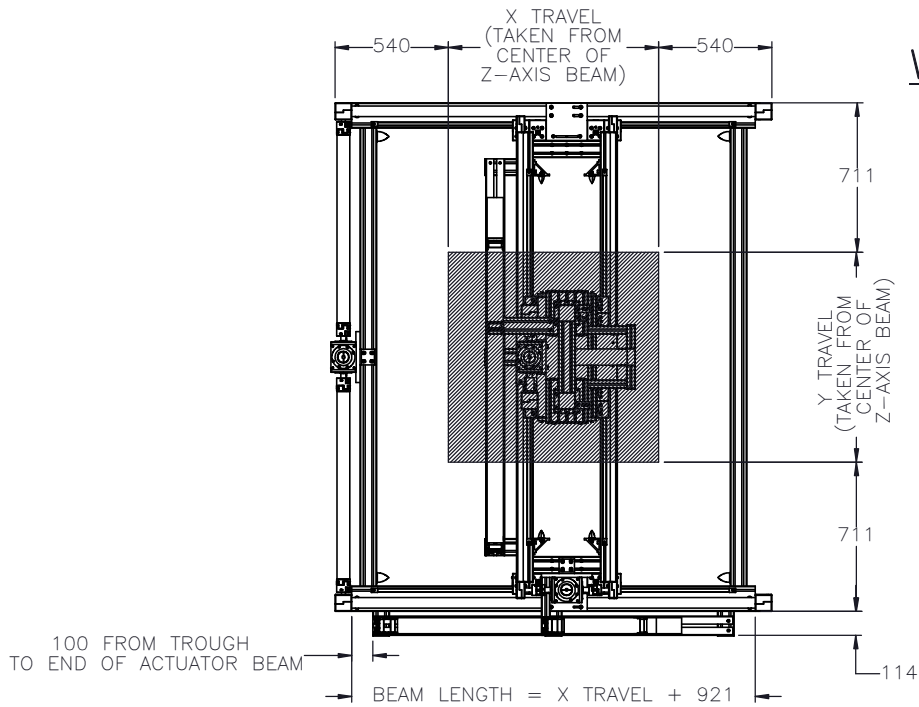
**ENTER X-AXIS TRAVEL**  
 TRAVEL IN INCREMENTS OF 25mm  
 TRAVEL LIMITS: 150mm-5050mm

\*IF TRAVEL IS  
 OUTSIDE LIMITS  
 LISTED, CONTACT  
 MACRON\*

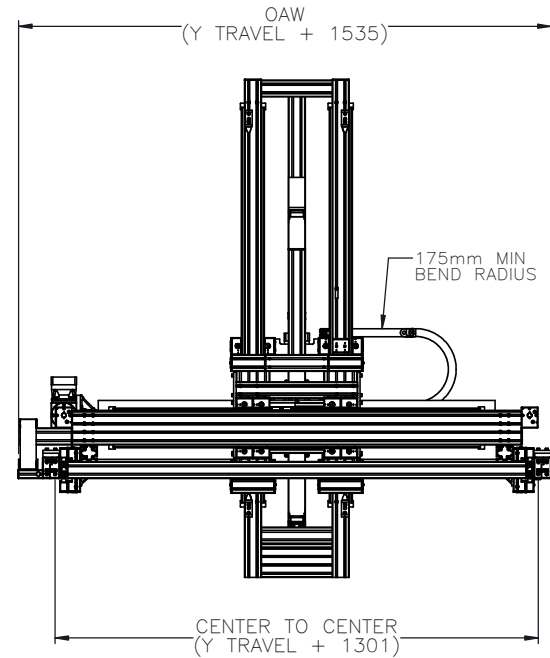
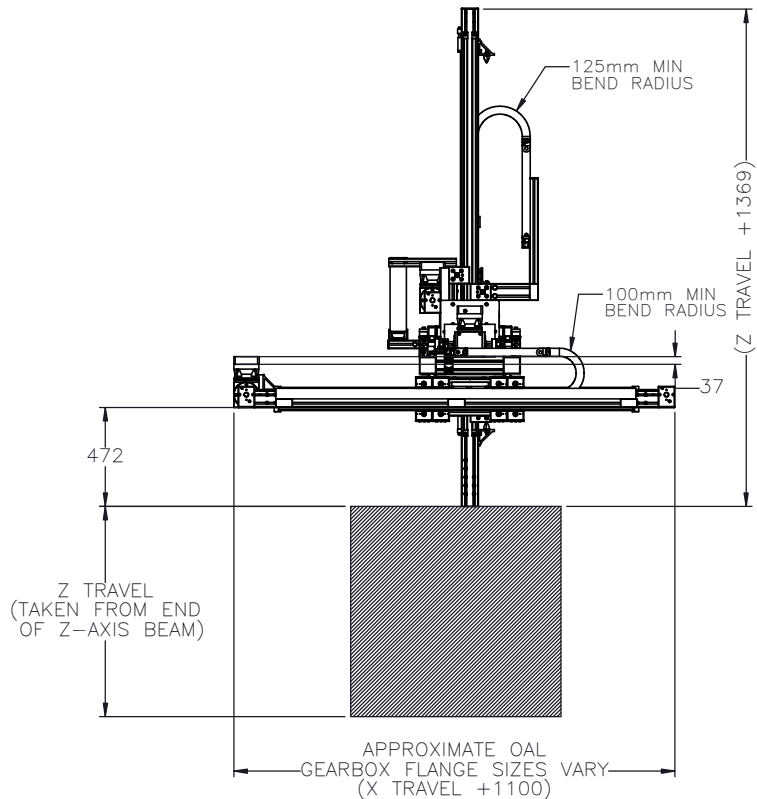
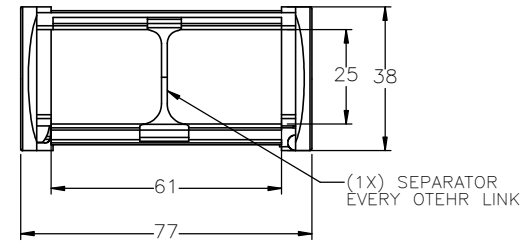


|  |   |  |   |                             |
|--|---|--|---|-----------------------------|
|  | DRAWN BY: AW      DATE: 11/10/2021<br>CHECKED BY: --      DATE: DD/MM/YYYY<br>LAST SAVED BY: awong      DATE: 8/11/2023 | MATERIAL:  | TITLE:  |                             |
|  | UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>TOLERANCES UNLESS NOTED:<br>OTHERWISE:                  | FINISH:<br>.XX ± .254<br>.XXX ± .127<br>ANG ± 0°30'  | <b>MACRON UC3-XYZ<br/>         GANTRY</b>       |                             |
|  | SURFACE FINISH <input checked="" type="checkbox"/>  | BREAK ALL SHARP EDGES<br>DIMENSIONAL LIMITS APPLY AFTER FINISHING<br><b>THIRD ANGLE PROJECTION</b> | SHEET: 1 OF 6<br>PART NUMBER: MCS-UC3-X-X-X-120 | SCALE: 1:1    SHEET SIZE: C |

# WORK ENVELOPE AND GANTRY FOOTPRINT



CABLE TRACK CROSS SECTION (SAME FOR ALL AXES)

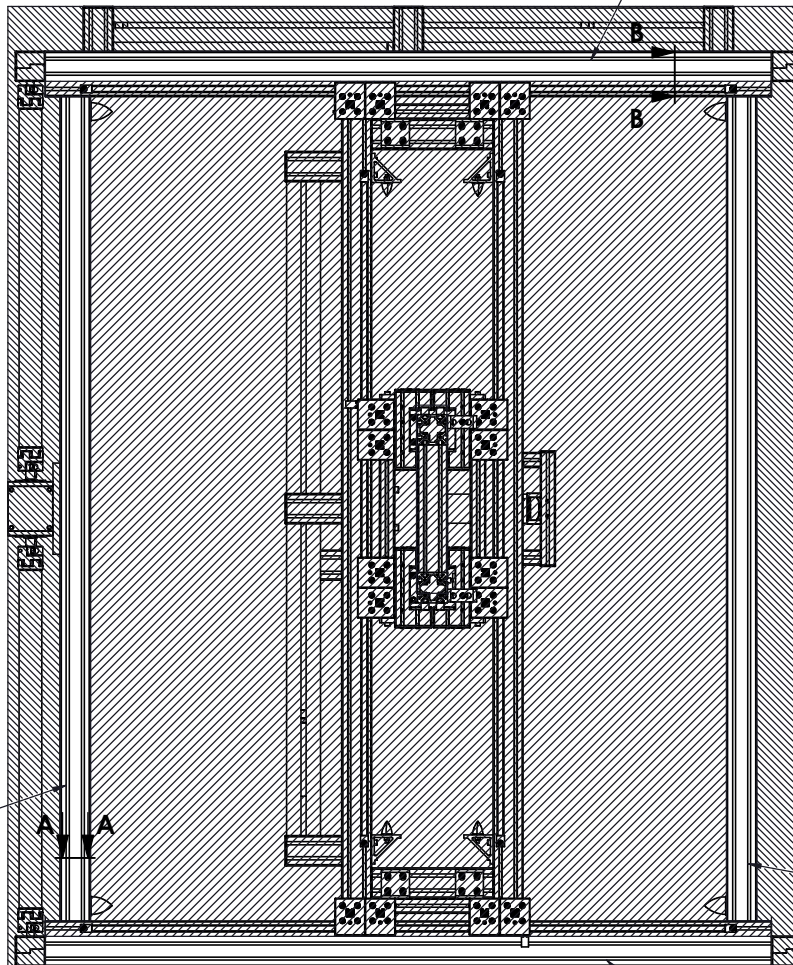


|                            |   |   |                          |   |   |
|----------------------------|---|---|--------------------------|---|---|
| <p>MACRON DYNAMICS INC</p> | DRAWN BY: AW<br>CHECKED BY: --<br>LAST SAVED BY: awong  | DATE: 11/10/2021<br>DATE: DD/MM/YYYY<br>DATE: 8/11/2023 | MATERIAL:<br><br>FINISH: | TITLE:<br>MACRON UC3-XYZ<br>GANTRY  |   |
|                            | UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>TOLERANCES UNLESS NOTED OTHERWISE:<br>.XX ± .254<br>.XXX ± .127<br>ANG ± 0°30'  |   | SURFACE FINISH: 63       | SCALE: 1:1<br>SHEET SIZE: C   |   |
|                            | THIS DRAWING IS THE PROPERTY OF MACRON DYNAMICS. ANY REPRODUCTIONS SHALL BE FOR QUOTATION, MANUFACTURING OR PURCHASING PURPOSES ONLY. RELEASE OF DRAWINGS TO OTHER CONCERNS DOES NOT CONSTITUTE LICENSING IN ANY WAY. INFORMATION CONTAINED HEREIN IS PROPRIETARY AND CONFIDENTIAL. |   |                          | BREAK ALL SHARP EDGES<br>DIMENSIONAL LIMITS APPLY AFTER FINISHING<br>THIRD ANGLE PROJECTION | SHEET: 2 OF 6<br>PART NUMBER: MCS-UC3-X-X-X-120 |
|                            |   |   |                          |   | REV: C  |

# GANTRY MOUNTING FEATURES

## BOTTOM VIEW

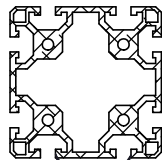
(2x) T-SLOTS AVAILABLE  
SUGGESTED MOUNTING AREA



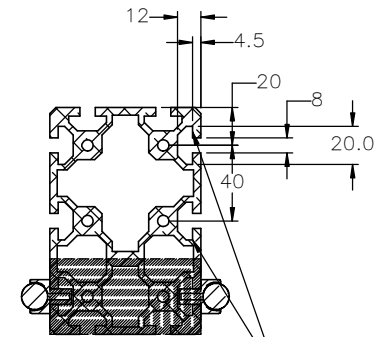
(2x) T-SLOTS AVAILABLE

(2x) T-SLOTS AVAILABLE

(2x) T-SLOTS AVAILABLE  
SUGGESTED MOUNTING AREA




(2x) T-SLOTS AVAILABLE



SECTION B-B

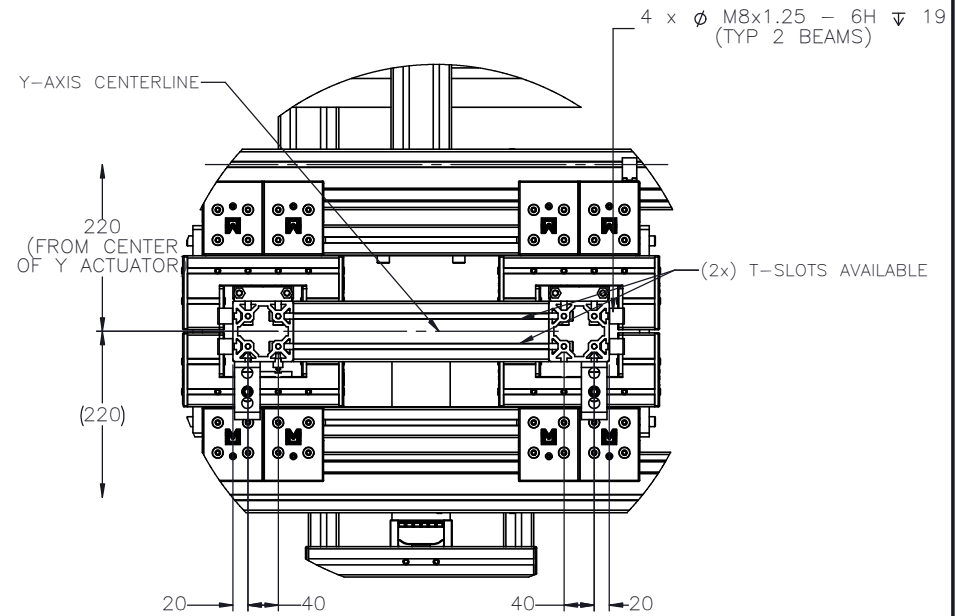
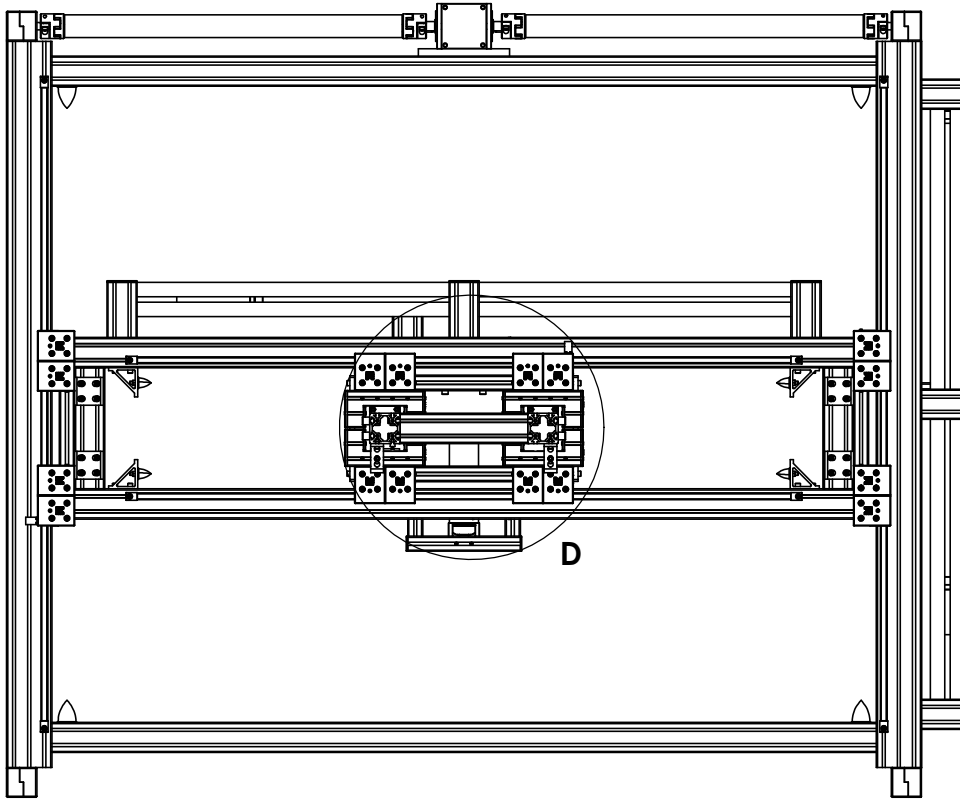
AVAILABLE T-SLOTS  
(T-SLOT DIMS  
TYPICAL ALL BEAMS)

|   |   |  |   |               |
|---|---|--|---|---------------|
| <br><b>MACRON DYNAMICS INC</b> | DRAWN BY: AW      DATE: 11/10/2021  | MATERIAL:  | TITLE:<br><b>MACRON UC3-XYZ<br/>                 GANTRY</b> |               |
|   | CHECKED BY: --      DATE: DD/MM/YYYY  | FINISH:  |   |               |
|   | LAST SAVED BY: awong      DATE: 8/11/2023   | UNLESS OTHERWISE SPECIFIED: .X ± .762<br>DIMENSIONS ARE IN MILLIMETERS: .XX ± .254<br>TOLERANCES UNLESS NOTED: .XXX ± .127<br>OTHERWISE: ANG ± 0°30' | SCALE: 1:1  | SHEET SIZE: C |
|   | SURFACE FINISH: 63<br>BREAK ALL SHARP EDGES<br>DIMENSIONAL LIMITS APPLY AFTER FINISHING<br>THIRD ANGLE PROJECTION | SHEET: 3 OF 6<br>PART NUMBER: MCS-UC3-X-X-X-120  | REV: C  |               |


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# BOTTOM VIEW

# CART MOUNTING FEATURES



DETAIL D  
SCALE 1 : 5

|   |  |  |   |              |
|---|--|--|---|--------------|
| <br><b>MACRON DYNAMICS INC</b> | DRAWN BY: AW      DATE: 11/10/2021   | MATERIAL:  | TITLE:<br><b>MACRON UC3-XYZ<br/>                 GANTRY</b> |              |
|   | CHECKED BY: --      DATE: DD/MM/YYYY   | FINISH:  |   |              |
|   | LAST SAVED BY: awong      DATE: 8/11/2023  | UNLESS OTHERWISE SPECIFIED: .X $\pm$ .762<br>DIMENSIONS ARE IN MILLIMETERS: .XX $\pm$ .254<br>TOLERANCES UNLESS NOTED: .XXX $\pm$ .127<br>OTHERWISE: ANG $\pm$ 0°30' | SCALE 1:1   | SHEET SIZE C |
|   | THIS DRAWING IS THE PROPERTY OF MACRON DYNAMICS. ANY REPRODUCTIONS SHALL BE FOR QUOTATION, MANUFACTURING, OR PURCHASING PURPOSES ONLY. RELEASE OF DRAWINGS TO OTHER CONCERNS DOES NOT CONSTITUTE LICENSING IN ANY WAY. INFORMATION CONTAINED HEREIN IS PROPRIETARY AND CONFIDENTIAL. | SURFACE FINISH 63<br>BREAK ALL SHARP EDGES<br>DIMENSIONAL LIMITS APPLY AFTER FINISHING<br><b>THIRD ANGLE PROJECTION</b>  | SHEET 4 OF 6<br>PART NUMBER MCS-UC3-X-X-X-120               | REV          |

# MOTOR SIZING WORKSHEET

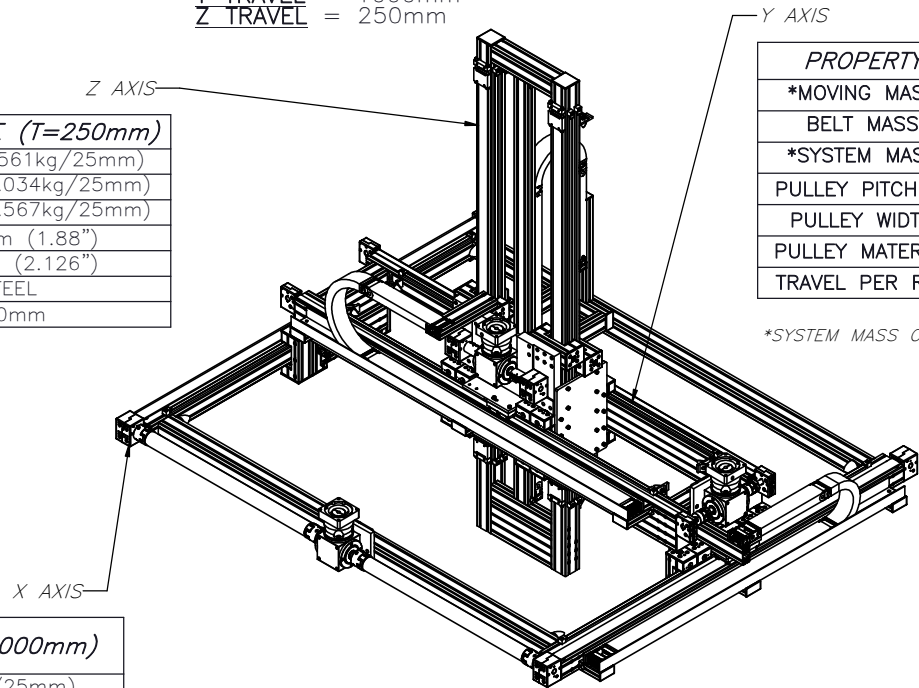
(INCREMENTAL ADDERS REFER TO MASS PER TRAVEL LENGTH)

BASE TRAVELS USED:  
 X TRAVEL = 1000mm  
 Y TRAVEL = 1000mm  
 Z TRAVEL = 250mm

| PROPERTY            | BASE VALUE (T=250mm)    |
|---------------------|-------------------------|
| MOVING MASS         | 38.43kg(+0.561kg/25mm)  |
| BELT MASS           | 0.0952kg(+0.034kg/25mm) |
| SYSTEM MASS         | 105.22kg(+0.567kg/25mm) |
| PULLEY PITCH $\phi$ | 47.75mm (1.88")         |
| PULLEY WIDTH        | 54.0mm (2.126")         |
| PULLEY MATERIAL     | STEEL                   |
| TRAVEL PER REV      | 150mm                   |

| PROPERTY            | BASE VALUE (T=1000mm)  |
|---------------------|------------------------|
| *MOVING MASS        | 39.05kg(+0.058kg/25mm) |
| BELT MASS           | 1.074kg(+0.017kg/25mm) |
| *SYSTEM MASS        | 88.36kg(+0.886kg/25mm) |
| PULLEY PITCH $\phi$ | 47.75mm (1.88")        |
| PULLEY WIDTH        | 28.9mm (1.14")         |
| PULLEY MATERIAL     | STEEL                  |
| TRAVEL PER REV      | 150mm                  |

\*SYSTEM MASS OF Z AXIS NEEDS TO BE ADDED TO THIS



| PROPERTY                     | BASE VALUE (T=1000mm)                                |
|------------------------------|--|
| **MOVING MASS                | 34.93kg(+0.092kg/25mm)                               |
| BELT MASS                    | 1.044kg(+.034kg/25mm)                                |
| PULLEY PITCH $\phi$          | 47.75mm (1.88")                                      |
| PULLEY WIDTH                 | 54.0mm (2.124")                                      |
| PULLEY MATERIAL              | STEEL  |
| ***TORQUE TUBE LENGTH (EACH) | 996mm  |
| TORQUE TUBE $\phi$           | 60mm   |
| ***TORQUE TUBE MASS (EACH)   | 1.485kg(+0.036kg/25mm)                               |
| TORQUE TUBE MATERIAL         | ANODIZED ALUMINUM ELASTOMER STYLE COUPLINGS WITH HUB |
| TRAVEL PER REV               | 150mm  |

X TRAVEL = \_\_\_\_\_ mm  
 Y TRAVEL = \_\_\_\_\_ mm  
 Z TRAVEL = \_\_\_\_\_ mm

NOTE: ALL SUPPLIED MASSES DO NOT INCLUDE CUSTOMER COMPONENTS (MOTORS, CABLES, ETC)

|                                   |         |       |
|-----------------------------------|---------|-------|
| GEARBOX MASS (ADD TO SYSTEM MASS) | VCT-140 | 8.0kg |
|-----------------------------------|---------|-------|

\*\*SYSTEM MASS OF Y-AXIS NEEDS TO BE ADDED TO THIS

\*\*\*BASE VALUE WITH CENTER DRIVE AT Y TRAVEL = 150mm

|   |   |                  |  |
|---|---|------------------|--|
| TOTAL SYSTEM MASS   | $(X \text{ TRAVEL} \times .0231) + (Y \text{ TRAVEL} \times .0494) + (Z \text{ TRAVEL} \times .0238) + 291.096 = \text{kg}$   |                  |  |
|   | DRAWN BY: AW  | DATE: 11/10/2021 | MATERIAL:  |
|   | CHECKED BY: --  | DATE: DD/MM/YYYY |  |
|   | LAST SAVED BY: awong  | DATE: 8/11/2023  | TITLE: MACRON UC3-XYZ GANTRY                         |
|   | UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>TOLERANCES UNLESS NOTED OTHERWISE:<br>.X $\pm$ .762<br>.XX $\pm$ .254<br>.XXX $\pm$ .127<br>ANG $\pm$ 0°30' |                  | FINISH:  |
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|   | BREAK ALL SHARP EDGES<br>DIMENSIONAL LIMITS APPLY AFTER FINISHING<br>THIRD ANGLE PROJECTION   |                  | SHEET 5 OF 6<br>PART NUMBER MCS-UC3-X-X-X-120<br>REV |

# SPECIFICATIONS

|                                       |                           |
|---------------------------------------|---------------------------|
| Sensor Type                           | Inductive                 |
| Sensor Size                           | Fits all 8mm wide T-Slots |
| Operating Voltage                     | 10–30 VDC                 |
| Voltage Drop Across Conducting Sensor | ≤1.8 V at 100 mA          |
| Number of Conductors (AWG)            | 3x26 AWG                  |
| Temperature Range                     | -40°C to 105°C            |

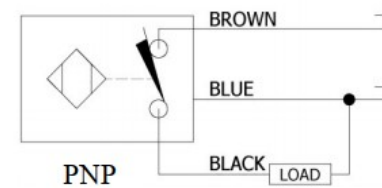
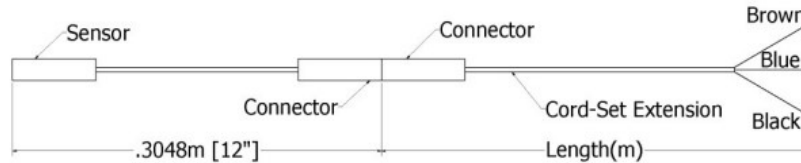
# Part Number Configuration

## 244-\_-\_-\_-\_-

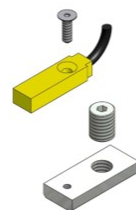
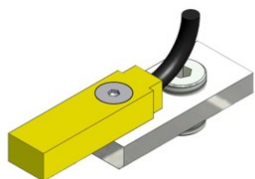
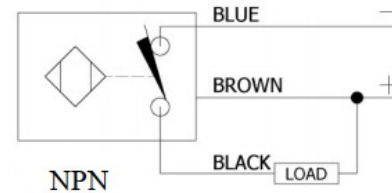
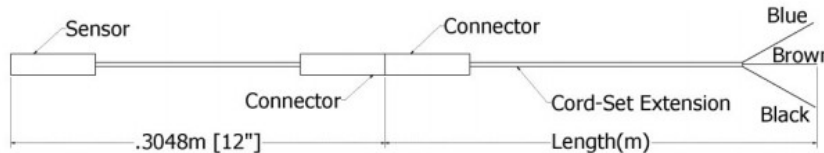
|            |          |    |        |
|------------|----------|----|--------|
| PNP or NPN | NC or NO | 02 | Meters |
| PNP or NPN | NC or NO | 06 | Meters |
| PNP or NPN | NC or NO | 12 | Meters |

Example: PNP, normally closed, cord-set extension length 6 meters = 244-PNP-NC-06

### PNP Diagrams



### NPN Diagrams



KIT INCLUDES – SENSOR, CORDSET EXTENSION, AND MOUNTING HARDWARE

|   |  |   |           |                             |
|---|--|---|-----------|-----------------------------|
|   | DRAWN BY: AW<br>CHECKED BY: --<br>LAST SAVED BY: awong                                   | DATE: 11/10/2021<br>DATE: DD/MM/YYYY<br>DATE: 8/11/2023 | MATERIAL: | TITLE:                      |
|   | UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS NOTED OTHERWISE: | .X ± .03<br>.XX ± .010<br>.XXX ± .005<br>ANG ± 0°30'    | FINISH:   | SCALE: 1:1<br>SHEET SIZE: C |
| SURFACE FINISH: 63<br>BREAK ALL SHARP EDGES<br>DIMENSIONAL LIMITS APPLY AFTER FINISHING<br>THIRD ANGLE PROJECTION | SHEET: 6 OF 6<br>PART NUMBER:  | REV:  |           |                             |

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