

# MCS-HBG-50---S

GEARBOX MODEL (X AND Y AXIS)  
 MPG-084-         MRG-084-          
 MPG-114-         MRG-114-          
 RATIO:                                 

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

MOTOR INFORMATION (X AND Y AXIS)  
 MANUFACTURER:                                   
 MODEL:                                 

MOTOR INFORMATION (Z AXIS)  
 MANUFACTURER:                                   
 MODEL:                                   
 (\*Z AXIS IS DIRECT-DRIVEN)

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-        

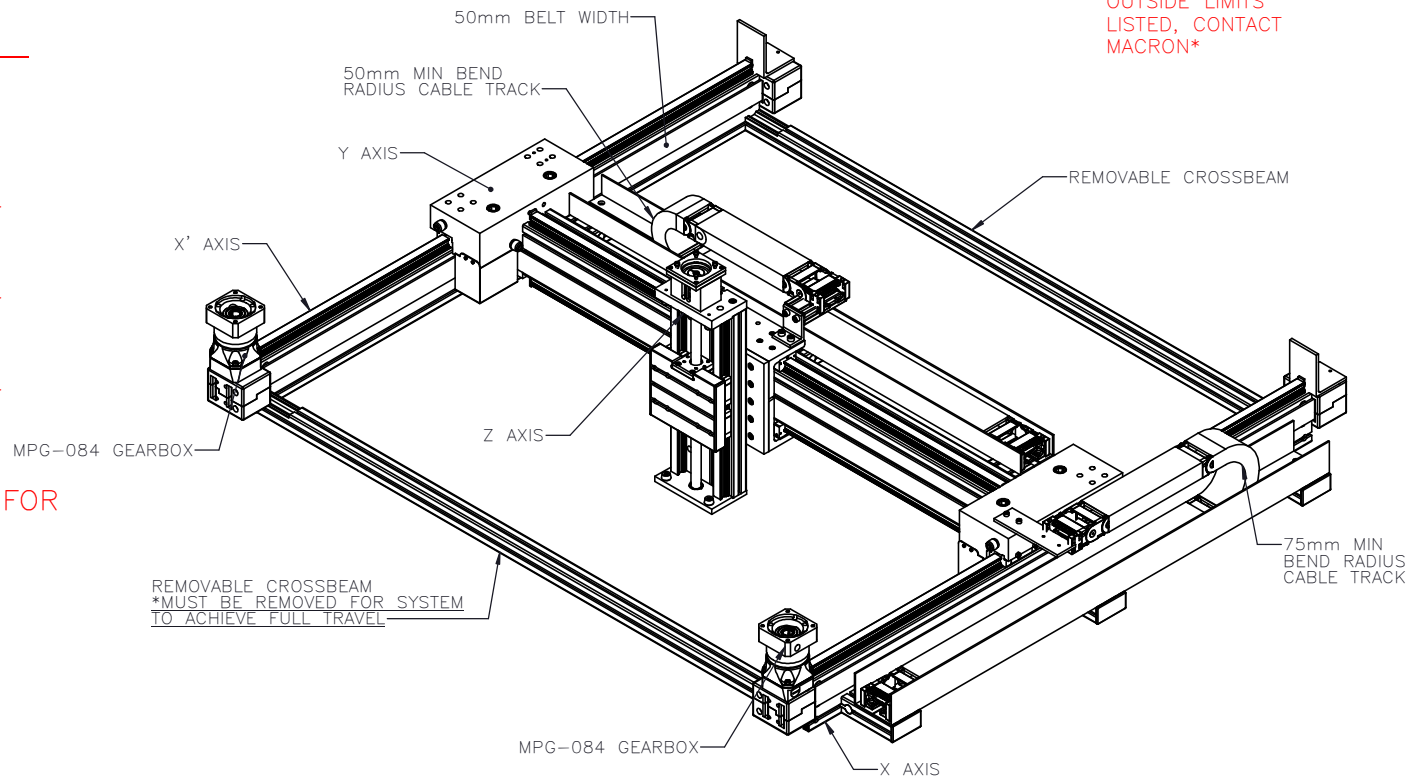
(SEE T-SLOT SENSOR KIT SHEET FOR  
 PART NUMBER CONFIGURATION)

ENTER Z-AXIS TRAVEL  
 TRAVEL IN INCREMENTS OF 25mm  
 TRAVEL LIMITS: 150mm-550mm\*

ENTER Y-AXIS TRAVEL  
 TRAVEL IN INCREMENTS OF 250mm  
 TRAVEL LIMITS: 250mm-1000mm\*

ENTER X-AXIS TRAVEL  
 TRAVEL IN INCREMENTS OF 250mm  
 TRAVEL LIMITS: 250mm-2000mm\*


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



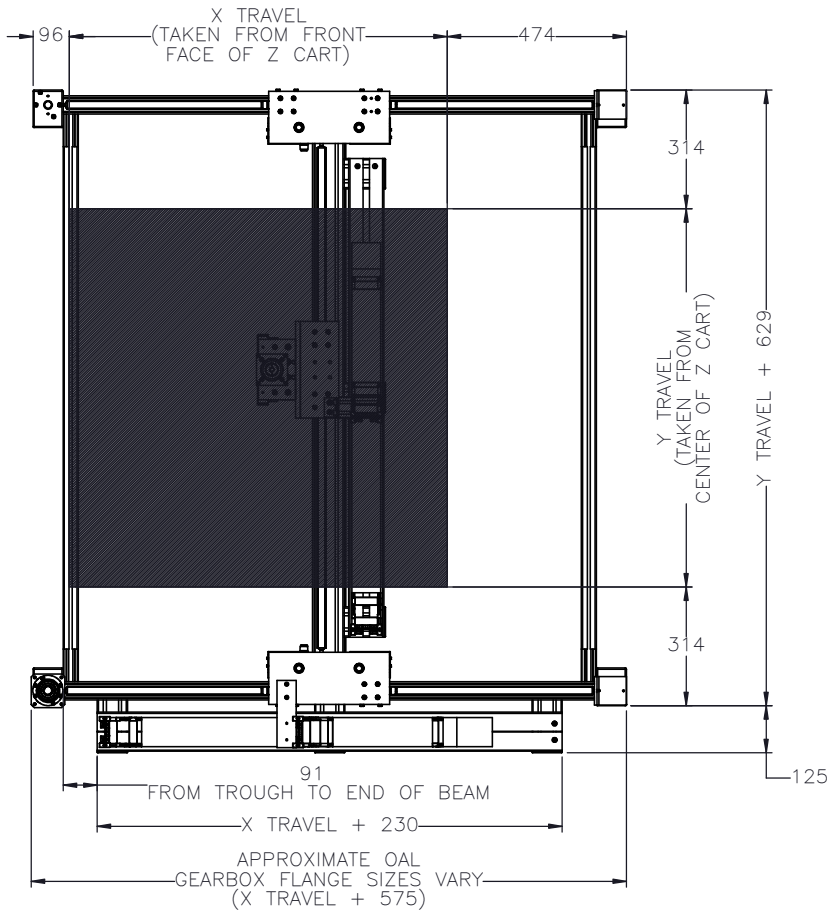
APPROVED:                                 

DATE:                                 

PO:REFERENCE#:                                 

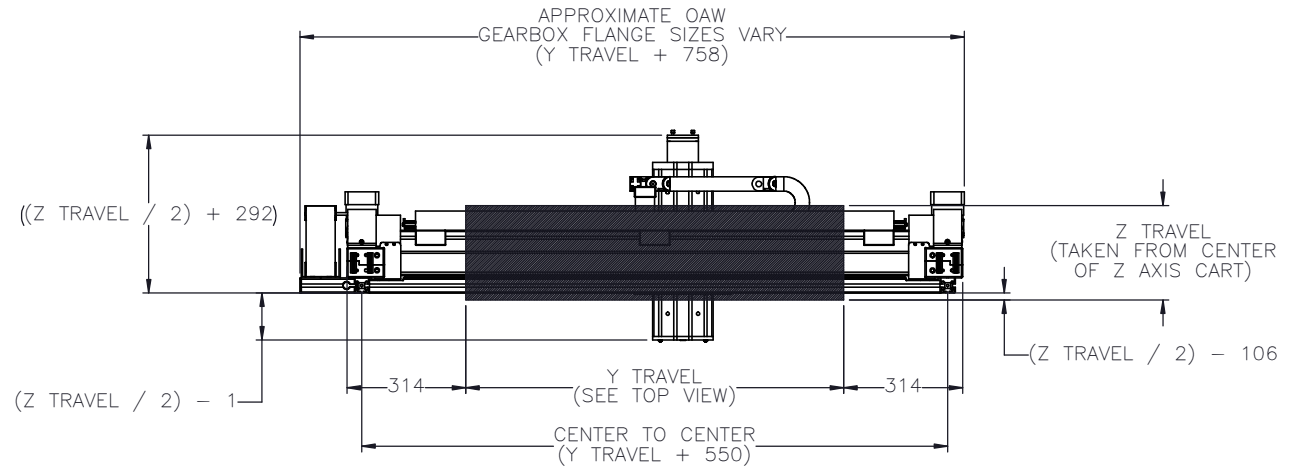
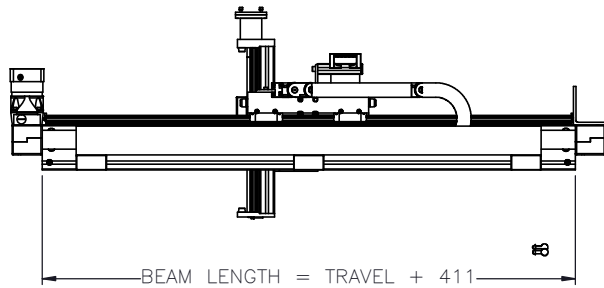
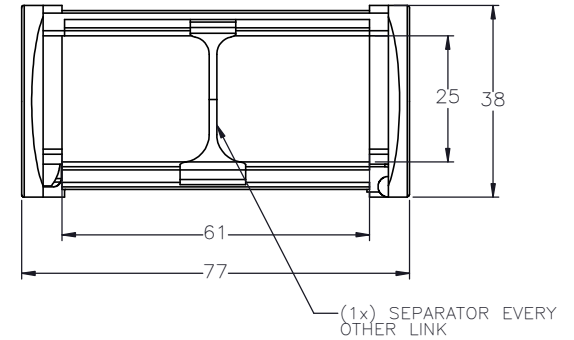
 <b>MACRON DYNAMICS INC</b>	DRAWN BY: <b>AW</b> DATE: <b>9/18/2023</b>	MATERIAL:	TITLE: <b>HBG-50 XYZ GANTRY</b>
	CHECKED BY: <b>--</b> DATE: <b>DD/MM/YYYY</b>	FINISH:	
	LAST SAVED BY: <b>awong</b> DATE: <b>11/13/2023</b>		
	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS. TOLERANCES UNLESS NOTED OTHERWISE: .XX ± .254 .XXX ± .127 ANG ± 0°30'		
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 <input checked="" type="checkbox"/> BREAK ALL SHARP EDGES DIMENSIONAL LIMITS APPLY AFTER FINISHING <b>THIRD ANGLE PROJECTION</b>	SHEET: <b>1 OF 7</b> PART NUMBER: <b>MCS-HBG-50-X-X-X</b>	SCALE: <b>1:1</b> SHEET SIZE: <b>C</b>

# WORK ENVELOPE AND GANTRY FOOTPRINT



\*\*ALL X-TRAVEL DIMENSIONS GIVEN ARE  
BASED ON THE CUSTOMERS REMOVAL  
OF "REMOVABLE SHIPPING BEAMS" \*\*

CABLE TRACK CROSS SECTION  
FOR BOTH X & Y AXIS



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CHECKED BY: --	DATE: DD/MM/YYYY	
LAST SAVED BY: awong	DATE: 11/13/2023	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS TOLERANCES UNLESS NOTED OTHERWISE:		FINISH:
.X ± .762	.XX ± .254	
.XXX ± .127	ANG ± 0°30'	

SURFACE FINISH ✓

BREAK ALL SHARP EDGES  
DIMENSIONAL LIMITS APPLY AFTER FINISHING  
THIRD ANGLE PROJECTION

SHEET

2 OF 7

PART NUMBER

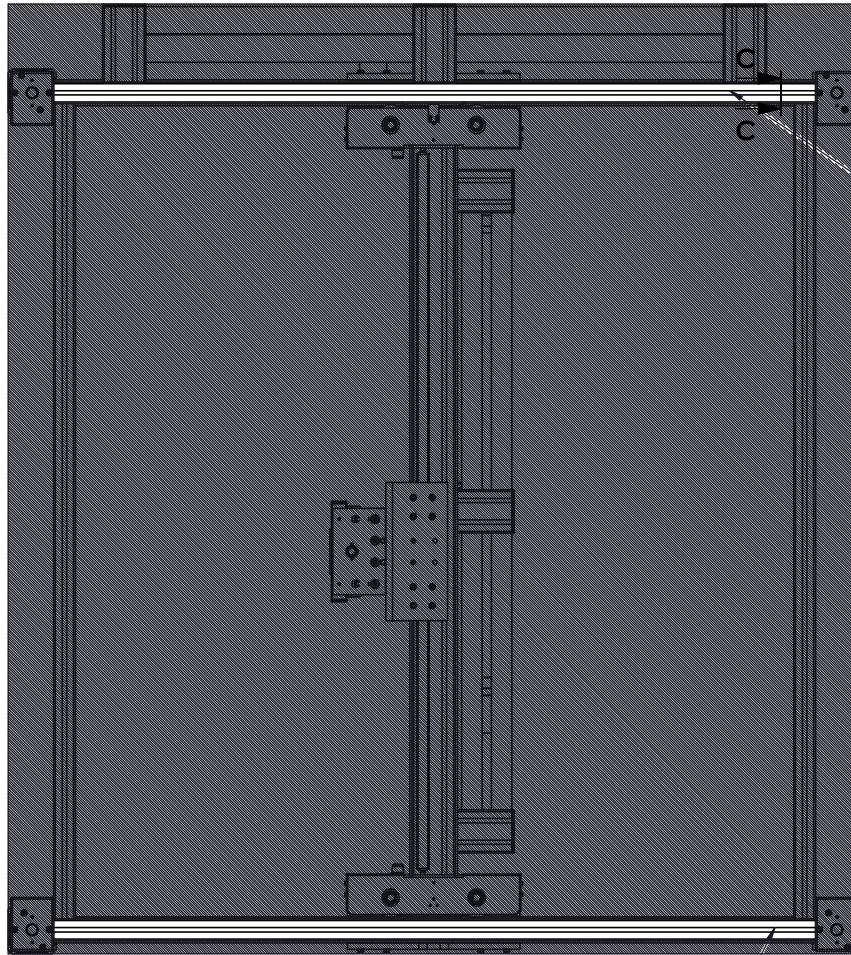
MCS-HBG-50-X-X-X

TITLE:  
HBG-50 XYZ  
GANTRY

SCALE 1:1 SHEET SIZE C

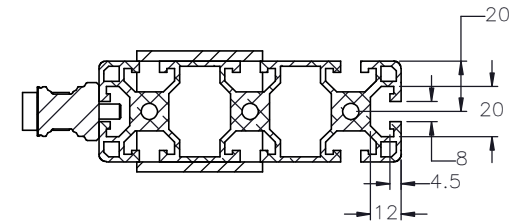
REV

# GANTRY MOUNTING FEATURES




(1x) T-SLOT AVAILABLE  
SUGGESTED MOUNTING AREA

(1x) T-SLOT AVAILABLE  
SUGGESTED MOUNTING AREA



SECTION C-C

 <b>MACRON DYNAMICS INC</b>	DRAWN BY: <b>AW</b> DATE: <b>9/18/2023</b>	MATERIAL:	TITLE: <b>HBG-50 XYZ                  GANTRY</b>	
	CHECKED BY: <b>--</b> DATE: <b>DD/MM/YYYY</b>	FINISH:		
	LAST SAVED BY: <b>awong</b> DATE: <b>11/13/2023</b>	UNLESS OTHERWISE SPECIFIED: .X ± .762 DIMENSIONS ARE IN MILLIMETERS: .XX ± .254 TOLERANCES UNLESS NOTED: .XXX ± .127 OTHERWISE: ANG ± 0°30'	SCALE: <b>1:1</b> SHEET SIZE: <b>C</b>	
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BREAK ALL SHARP EDGES DIMENSIONAL LIMITS APPLY AFTER FINISHING <b>THIRD ANGLE PROJECTION</b>				

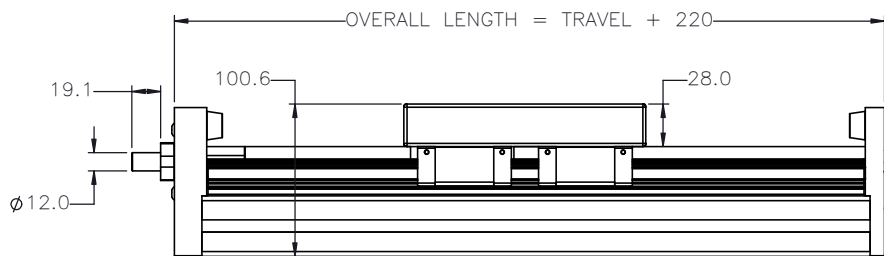
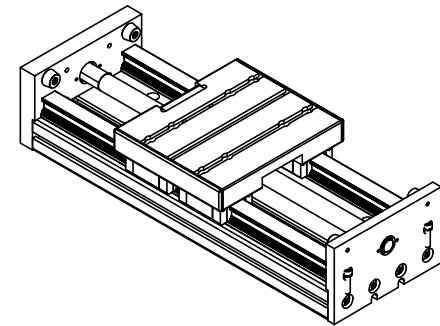
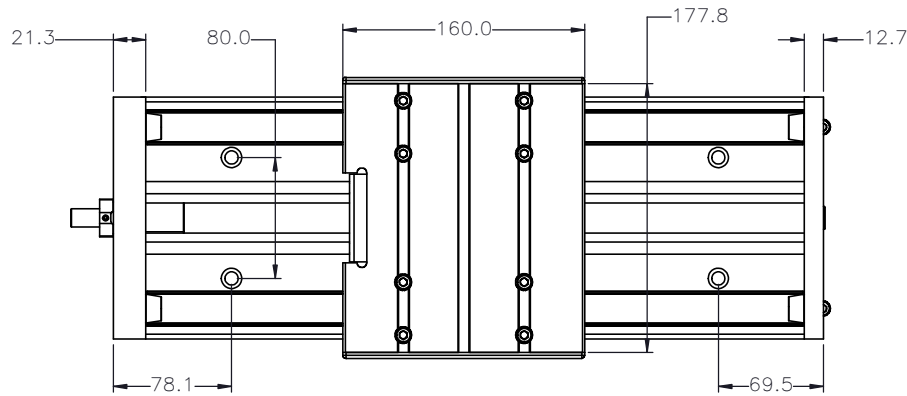
# Z-AXIS SCREW TABLE SELECTION

MSA-DRT-N---

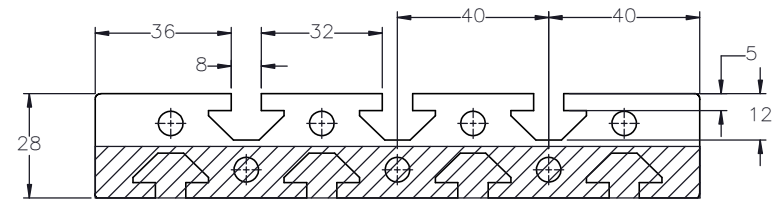
**ENTER Z-AXIS TRAVEL**  
TRAVEL IN INCREMENTS OF 25mm  
TRAVEL LIMITS: 150mm-550mm\*


**SELECT MOUNTING OPTION**  
A01 = NO MOTOR MOUNTING KIT  
AM1 = MOTOR MOUNTING KIT REQUESTED

**SPECIFY BALL SCREW LEAD TYPE**  
05 = 5mm PITCH  
10 = 10mm PITCH  
20 = 20mm PITCH



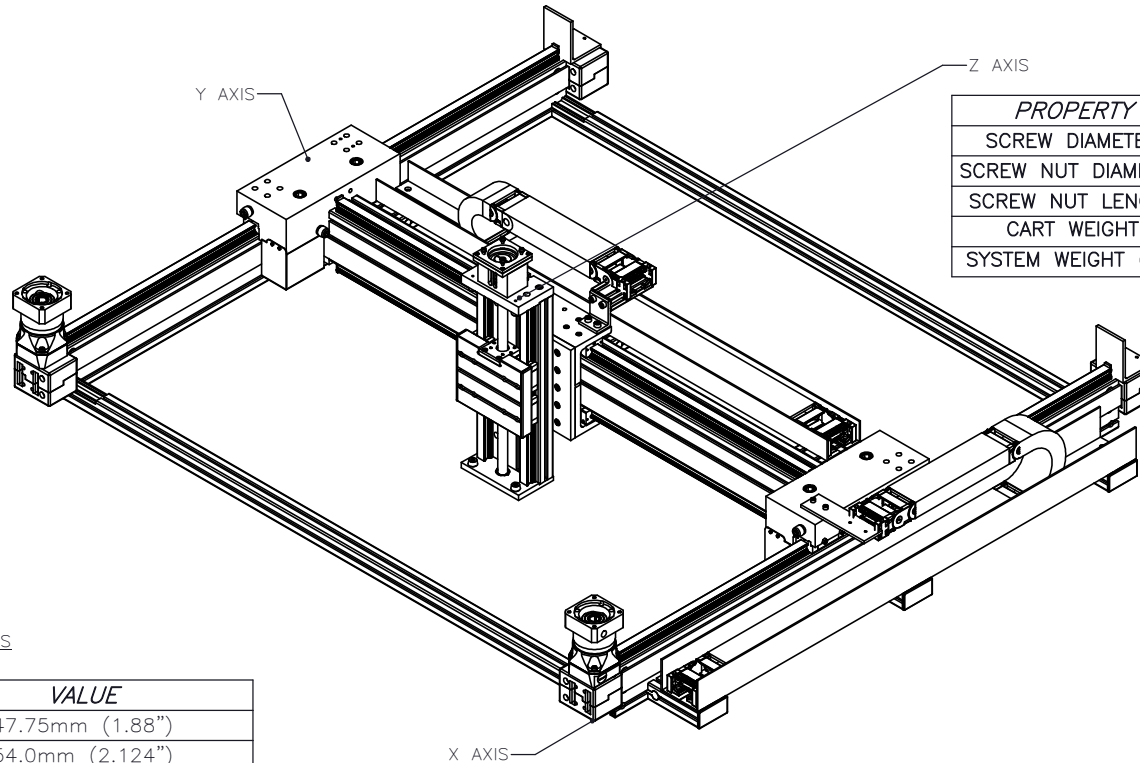
CART TOP MOUNTING FEATURES



 <b>MACRON DYNAMICS INC</b>	DRAWN BY: AW      DATE: 9/18/2023	MATERIAL:	TITLE: <b>MACRON DUAL RAIL SCREW TABLE</b>
	CHECKED BY: --      DATE: DD/MM/YYYY	FINISH:	
	LAST SAVED BY: awong      DATE: 11/13/2023	UNLESS OTHERWISE SPECIFIED: .X ± .762 DIMENSIONS ARE IN MILLIMETERS: .XX ± .254 TOLERANCES UNLESS NOTED: .XXX ± .127 OTHERWISE: ANG ± 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: <input checked="" type="checkbox"/> BREAK ALL SHARP EDGES DIMENSIONAL LIMITS APPLY AFTER FINISHING <b>THIRD ANGLE PROJECTION</b>	SHEET: 4 OF 7      PART NUMBER: MCS-HBG-50-X-X-X

# MOTOR SIZING INFORMATION

(INCREMENTAL ADDERS REFER TO MASS PER TRAVEL LENGTH)



PROPERTY	VALUE
SCREW DIAMETER	20mm
SCREW NUT DIAMETER	36mm
SCREW NUT LENGTH	55mm
CART WEIGHT	3.26 kg
SYSTEM WEIGHT (kg)	(TRAVEL IN METERS x 18) + 8.3

X & Y AXIS

PROPERTY	VALUE
PULLEY PITCH $\phi$	47.75mm (1.88")
PULLEY WIDTH	54.0mm (2.124")
PULLEY MATERIAL	STEEL
TRAVEL PER REV	150mm
BELT WIDTH	50mm (1.97")
ULTIMATE TENSILE STRENGTH OF BELT	4600 LBS (204470 N)
RECOMMENDED BELT RUNNING LOAD	1150 LBS (5118 N)

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)	MPG-084	2.3kg
	MPG-114	5.8kg
	MRG-084	5.6kg
	MRG-114	15.0kg

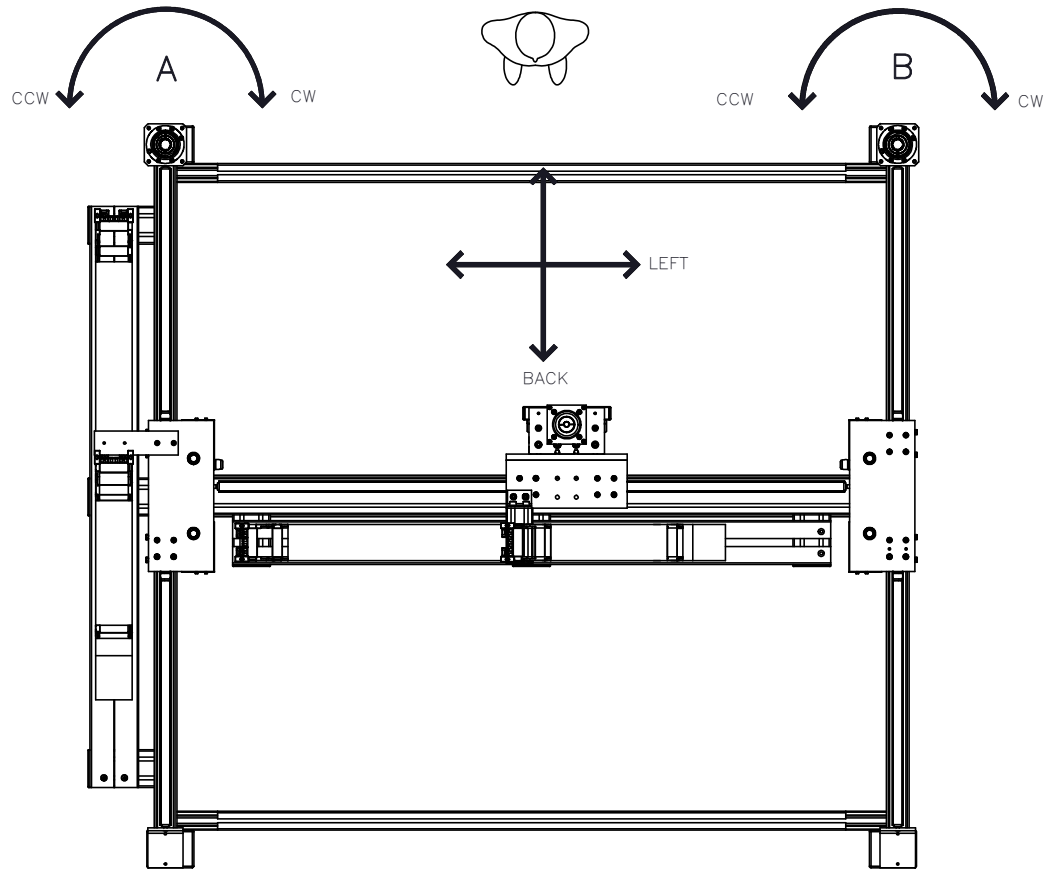
TOTAL BELT MASS	$(X \text{ TRAVEL} \times .0012) + (Y \text{ TRAVEL} \times .0006) + .92 = \text{kg}$
TOTAL MOVING MASS	$(X \text{ TRAVEL} \times .0022) + (Y \text{ TRAVEL} \times .0179) + (Z \text{ TRAVEL} \times .0179) + 65.6 = \text{kg}$
TOTAL SYSTEM MASS	$(X \text{ TRAVEL} \times .0196) + (Y \text{ TRAVEL} \times .0233) + (Z \text{ TRAVEL} \times .0179) + 89.67 = \text{kg}$

 <b>MACRON DYNAMICS INC</b>	DRAWN BY: AW      DATE: 9/18/2023 CHECKED BY: --      DATE: DD/MM/YYYY LAST SAVED BY: awong      DATE: 11/13/2023	MATERIAL:	TITLE: HBG-50 XYZ GANTRY
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS TOLERANCES UNLESS NOTED: .XX ± .254 .XXX ± .127 OTHERWISE: ANG ± 0°30'	FINISH:	
	SURFACE FINISH <input checked="" type="checkbox"/> BREAK ALL SHARP EDGES DIMENSIONAL LIMITS APPLY AFTER FINISHING <b>THIRD ANGLE PROJECTION</b>	SHEET: 5 OF 7      PART NUMBER: MCS-HBG-50-X-X-X SCALE: 1:1      SHEET SIZE: C	

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# MOTOR DYNAMICS

(ASSUMES MOTORS ARE ROTATING AT SAME ANGULAR VELOCITY)



ROTATIONAL DIRECTION		Y-AXIS CART MOVEMENT
PULLEY A	PULLEY B	
CW	CW	LEFT
CW	CCW	BACK
CCW	CW	FRONT
CCW	CCW	RIGHT

PULLEY ROTATION AND Y-AXIS CART MOVEMENT ARE WITH RESPECT TO THIS GANTRY VIEW

 <b>MACRON DYNAMICS INC</b>	DRAWN BY: AW      DATE: 9/18/2023	MATERIAL:	TITLE: MACRON H-BOT GANTRY
	CHECKED BY: --      DATE: DD/MM/YYYY	FINISH:	
	LAST SAVED BY: awong      DATE: 11/13/2023	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS. TOLERANCES UNLESS NOTED OTHERWISE:	SCALE: 1:1      SHEET SIZE: C
	SURFACE FINISH <input checked="" type="checkbox"/>	BREAK ALL SHARP EDGES DIMENSIONAL LIMITS APPLY AFTER FINISHING THIRD ANGLE PROJECTION	SHEET: 6 OF 7      PART NUMBER: MCS-HBG-50-X-X-X

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# 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

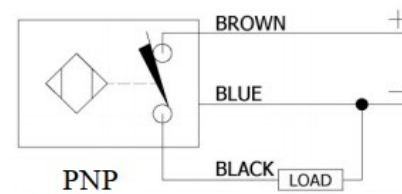
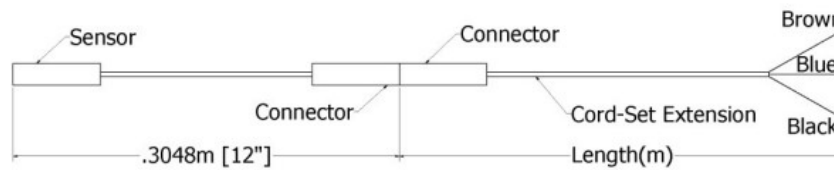
# Part Number Configuration

## 244- - - - -

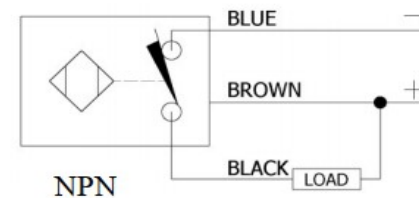
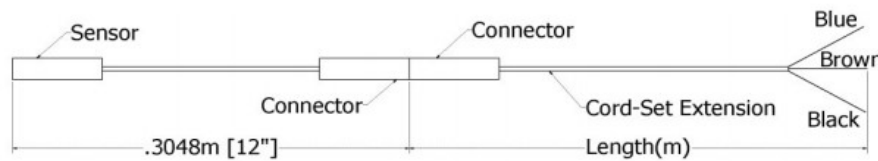
PNP or NPN	NC or NO	02	Meters
PNP or NPN	NC or NO	06	Meters
PNP or NPN	NC or NO	12	Meters

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

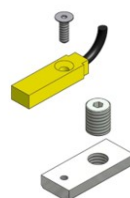
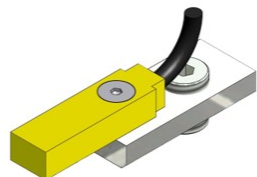
### PNP Diagrams




### NPN Diagrams



KIT INCLUDES – SENSOR, CORDSET EXTENSION, AND MOUNTING HARDWARE



 <b>MACRON DYNAMICS INC</b>	DRAWN BY: AW      DATE: 9/18/2023 CHECKED BY: --      DATE: DD/MM/YYYY LAST SAVED BY: awong      DATE: 11/13/2023	MATERIAL:	TITLE:
	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS. TOLERANCES UNLESS NOTED OTHERWISE: .X ± .762 .XX ± .254 .XXX ± .127 ANG ± 0°30'	FINISH:	T-SLOT SENSOR KIT
	SURFACE FINISH <input checked="" type="checkbox"/> BREAK ALL SHARP EDGES DIMENSIONAL LIMITS APPLY AFTER FINISHING <b>THIRD ANGLE PROJECTION</b>	SHEET: 7 OF 7 PART NUMBER: SENSOR CALL-OUT	SCALE: 1:1