3-Axis Linear and Gantry Milling

The Climax LM6200 Linear/Gantry Milling Machine revolutionizes both the capabilities and functionality of portable mills. Four main features makes this one of the best milling machines on the market today:

1. Extremely rigid, modular bed design.
2. Powerful, precise machining.
3. Innovative configuration options allow setup for both Linear AND Gantry Milling in one machine.
4. Reduced Friction Rail Technology.

Rigid, Modular Design

- Unique modular bed design allows shorter bed sections to be combined to fit the length of the work area without losing rigidity.
- Unique bed length section design provide superior rigidity across the entire bed length.
- Connection plates and fasteners optimized to provide the ultimate in rigidity, even when bed is extended by 2 or 3 times the original length.

Powerful, Precise Machining

- Features heavy duty spindle design and a choice of Hydraulic Power Units - a 25 Hp (18.6 kW) HPU allows use of cutter heads of up to 10 inches (254.0 mm) in diameter.
- Milling can be done in any axis, with a milling head that can rotate 360° with an optional swivel plate for optimal spindle flexibility. An optional Z-axis slide assembly can be used for side milling and to increase the stroke needed for drilling or extended milling operations.
- Fast, aggressive milling in horizontal, vertical, or inverted applications.
- Provides reliable, precise milling to meet tight machining tolerances in both linear and gantry mill configurations.

Flexible Configuration & Operation

- Innovative design allows machine to be configured for traditional linear milling, or simply split the rails lengthwise to configure for gantry milling!!
- Electric feeds can be mounted on the X, Y or Z axis.
- Machining capabilities include milling, drilling and even boring.

Reduced Friction Rail Technology

- Reduced friction rail system allows extremely smooth, continuous, and non stick-slip travel.
- Precisely machined and aligned rails with advanced lubrication make machining applications smooth and efficient.
- Low friction system reduces maintenance costs and extends product life.
- Precision ball screws in X, Y and Z- axis assemblies allow precise location of milling head.

SPECIFICATIONS

Operating Ranges:

	Bed		Ram	
	Travel	Length	Travel	Length
LM6200 Model	32 inches (812.8 mm)	48 inches (1219.2 mm)	26 inches (660.4 mm)	36 inches (914.4 mm)
	56 inches (1422.4 mm)	72 inches (1828.8 mm)	38 inches (965.2 mm)	48 inches (1219.2 mm)
	80 inches (2032.0 mm)	96 inches (2438.4 mm)	72 inches (1828.8 mm)	82 inches (2082.8 mm)
	104 inches (2641.6 mm)	120 inches (3048.0 mm)	106 inches (2692.4 mm)	116 inches (2946.4 mm)
	128 inches (3251.2 mm)	144 inches (3657.6 mm)		
	152 inches (3860.8 mm)	168 inches (4267.2 mm)		
	176 inches (4470.4 mm)	192 inches (4876.8 mm)		

	US	Metric
Spindle Assembly:		
Milling Head Spindle with #50 Taper	NMTB or CATV	NMTB or CATV
Spindle Drive	Hydraulic	Hydraulic
Axial Tool Head Travel	8 inches	203.2 mm
Milling Head Gearbox Ratio	1 : 1	1 : 1
Tool Head Position	in 90° increments (infinite 360° position w/ optional swivel plate)	in 90° increments
Gearbox Position Adjustment	180° in 90° increments (3 positions)	
Electric Feed		
Drive Power	Modified Baldor GP3303 1/2 HP DC gear motor	
Gearbox Reduction	20 : 1	20:1
Feed Rate	0.5 - 24 in/min	12.7 - 609.6 mm/min
Power Input Requirements	0.37 kW @ 120V or 230V	
Overall Dimensions		
Bed (overall length)	Bed Length + 2.5 in.	Bed Length + 63.5 mm
Ram (overall width)	Ram Length + 2.5 in.	Ram Length + 63.5 mm
Height without hand wheel	24.0 inches	609.6 mm
with hand wheel	32.1 inches	815.3 mm

TEST DATA

All test cuts performed with a 25Hp (18.6 KW) HPU and a 18.7 cu in. (306.4 cu cm) hydraulic motor in A-36 steel

Orientation	Cutter Diameter	Inserts	Depth of Cut	Width of Cut	Feed Rate
Horizontal Overhang	10 inches (254.0 mm)	10	0.020 inches (0.508 mm)	10 inches (254.0 mm)	14 in/min (355.6 mm/min)
Horizontal Overhang	10 inches (254.0 mm)	10	0.060 inches (1.524 mm)	10 inches (254.0 mm)	1 in/min (25.4 mm/min)
Vertical Overhung	10 inches (254.0 mm)	10	0.020 inches (0.508 mm)	5 inches (127.0 mm)	14 in/min (355.6 mm/min)
82 inch (2082.8 mm) Gantry	8 inches (203.2 mm)	8	0.050 inches (1.27 mm)	8 inches (203.2 mm)	1 in/min (25.4 mm.min)
82 inch (2082.8 mm) Gantry	8 inches (203.2 mm)	8	0.075 inches (1.91 mm)	4 inches (101.6 mm)	1 in/min (25.4 mm/min)
Drilling	1.5 inch (38.1 mm) superdrill	n/a	2 inches (50.8 mm)	n/a	Spindle RPM: 250
Boring	2.5 inch (63.5 mm) Criterion Boring Head	n/a	2 inches (50.8 mm)	n/a	Spindle RPM: 425
Side Milling w/ Z-Axis Slide	5 inches (127.0 mm)	6	0.100 inches (2.54 mm)	5 inches (127.0 mm)	10 in/min (254.0 mm/min)
Below the bed milling w/ Z-Axis Slide	5 inches (127.0 mm)	6	0.065 inches (1.65 mm)	5 inches (127.0 mm)	6 in/min (152.4 mm/min)

Flatness (Machine setup & flatness measurements performed with a Hamar laser)					
Configuration	Cutter Diameter	Inserts	Material	Area	Total Flatness
Linear Milling	8 inches (203.2 mm)	8	A-36 Steel Plate	4.0 x 48.0 inches (101.6 x 1219.2 mm)	0.002 inches (0.051 mm)
Gantry Milling	8 inches (203.2 mm)	8	A-36 Steel Plate	8.0 x 48.0 inches (203.2 x 1219.2 mm)	0.002 inches (0.051 mm)

All dimensions should be considered reference. Contact your Climax Representative for precision dimensions. Specifications are subject to change without notice. There are no systems or components on this machine that are capable of producing hazardous EMC, UV or other radiation hazards. The machine does not use lasers nor does it create hazardous materials such as gasses or dust.

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TOOL CONFIGURATIONS

Easy Conversion from Linear to Gantry Milling

The Climax LM5200 and LM6200 Milling Machines can be easily reconfigured to perform Linear or Gantry Milling. Below is a step by step overview of the conversion steps from traditional linear milling to gantry milling.

1 Linear Mill set up for overhead milling.

2 Separate main bed and RAM.

3 Split the bed & saddle pictured above into two separate rails for Gantry Milling as pictured below.

4 Reattach RAM to saddle and rails for a complete Gantry Mill.

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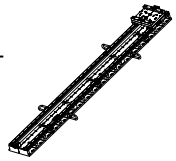
TOOL CONFIGURATIONS

Configure your LM6200 in 14 steps:

1 Select a Base Unit
2 Select a Gantry Kit
3 Select a RAM Assembly
4 Select a Shipping Container
5 Select a Riser Assembly
6 Milling Head Assembly
7 Select Tooling
8 Select a Spindle Hydraulic Motor
9 Z-Axis Slide Assembly
10 Select a Milling Head Swivel Assembly
11 Select a Hydraulic Power Unit (HPU)
12 Select Hoses and Pendant Cable Assemblies
13 Select a Stand Alone Feed Control
14 Select a Feed Assembly
15 Select a Z-Axis Feed Adapter

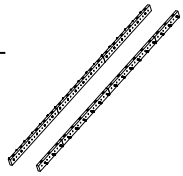
To generate the correct part number for the machine you require, simply select the part number needed in each step as appropriate, and contact your Climax representative.

1 Base Unit



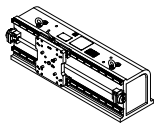
Base Unit, 32 Inch (812.8 mm) Travel, Bed Length 48 Inch (1219.2 mm)	**66279**
Base Unit, 56 Inch (1422.4 mm) Travel, Bed Length 72 Inch (1828.8 mm)	**66280**
Base Unit, 80 Inch (2032.0 mm) Travel, Bed Length 96 Inch (2438.4 mm)	**66281**
Base Unit, 104 Inch (2641.6 mm) Travel, Bed Length 120 Inch (3048.0 mm)	**66282**
Base Unit, 128 Inch (3251.2 mm) Travel, Bed Length 144 Inch (3657.6 mm)	**64238**
Base Unit, 152 Inch (3860.8 mm) Travel, Bed Length 168 Inch (4267.2 mm)	**66283**
Base Unit, 176 Inch (4470.4) Travel, Bed Length 192 Inch (4876.8 mm)	**66284**

2 Gantry Kit



Gantry Kit For 32 Inch (812.8 mm) Travel, Bed Length 48 Inch (1219.2 mm)	**64973**
Gantry Kit For 56 Inch (1422.4 mm) Travel, Bed Length 72 Inch (1828.8 mm)	**64974**
Gantry Kit For 80 Inch (2032.0 mm) Travel, Bed Length 96 Inch (2438.4 mm)	**64975**
Gantry Kit For 104 Inch (2641.6 mm) Travel, Bed Length 120 Inch (3048.0 mm)	**64976**
Gantry Kit For 128 Inch (3251.2 mm) Travel, Bed Length 144 Inch (3657.6 mm)	**64831**
Gantry Kit For 152 Inch (3860.8 mm) Travel, Bed Length 168 Inch (4267.2 mm)	**64977**
Gantry Kit For 176 Inch (4470.4) Travel, Bed Length 192 Inch (4876.8 mm)	**66288**

3 RAM Assembly

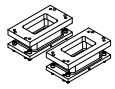


RAM Assembly 26 Inch (660.4 mm) Travel, Length 36 Inch (914.4 mm)	**72584**
RAM Assembly 38 Inch (965.2 mm) Travel, Length 48 Inch (1219.2 mm)	**72585**
RAM Assembly 72 Inch (1828.8 mm) Travel, Length 82 Inch (2082.8 mm)	**72586**
RAM Assembly 106 Inch (2692.4 mm) Travel, Length 116 Inch (2946.4 mm)	**72587**

4 Shipping Container

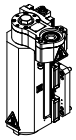
Wooden Crate for 32 Inch (812.8 mm) Travel Bed	**65078**
Metal Container for 32 Inch (812.8 mm) Travel Bed	**65397**
Wooden Crate for 56 Inch (1422.4 mm) Travel Bed	**65079**
Metal Container for 56 Inch (1422.4 mm) Travel Bed	**65398**
Wooden Crate for 32 Inch (812.8 mm) or 56 Inch (1422.4 mm) Travel Bed w/ Long RAM	**65080**
Metal Container for 32 Inch (812.8 mm) or 56 Inch (1422.4 mm) Travel Bed w/ Long RAM	**65399**
Wooden Crate for 80 Inch (2032.0 mm) Travel Bed	**65080**
Metal Container for 80 Inch (2032.0 mm) Travel Bed	**65399**
Wooden Crate for 104 Inch (2641.6 mm) Travel Bed	**65081**
Metal Container for 104 Inch (2641.6 mm) Travel Bed	**65400**
Wooden Crate for 128 Inch (3251.2 mm) Travel Bed	**65082**
Metal Container for 128 Inch (3251.2 mm) Travel Bed	**65401**
Wooden Crate for 152 Inch (3860.8 mm) Travel Bed	**65083**
Metal Container for 152 Inch (3860.8 mm) Travel Bed	**65402**
Wooden Crate for 176 Inch (4470.4) Travel Bed	**66293**
Metal Container for 176 Inch (4470.4) Travel Bed	**66294**

5 RAM Riser Assembly



Riser Assembly 1 Inch (25.4 mm)	**64720**
Riser Assembly 3 Inch (76.2 mm)	**64721**
Riser Assembly 5 Inch (127.0 mm)	**64722**
Riser Assembly 7 Inch (177.8 mm)	**64723**

6 Milling Head Assembly

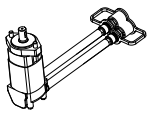


Inch #50 Taper NMTB	**62282**
Inch #50 Taper CATV	**62734**
Metric #50 Taper NMTB	**62644**
Metric #50 Taper CATV	**62735**

7 Tooling (for inch NMTB milling head assy)

50 Taper	
#50, 4 Inch (101.6 mm) Face Mill w/ Inserts	**47383**
#50, 5 Inch (127.0 mm) Face Mill w/ Inserts	**47384**
#50, 6 Inch (152.4 mm) Face Mill w/ Inserts	**47385**
#50, 8 Inch (203.2 mm) Face Mill w/ Inserts	**47386**
#50, 10 Inch (254.0 mm) Face Mill w/ Inserts	**56175**
Carbide Inserts	**47229**

8 Spindle Hydraulic Motors



Hydraulic Motor Assemblies		Speed		
		Min Spindle RPM	Max Spindle RPM	
in^3	cm^3	@ 2 gpm (7.57 l/ min)	@ 20 gpm (75.7 l/ min)	Part Number
6.2	101.6	74	805	63164
8.0	131.1	55	564	53459
9.6	157.3	41	465	53458
11.9	195.0	32	375	46950
14.9	244.2	25	300	46375
18.7	306.4	22	239	46549
24.0	393.3	17	188	46550
29.8	488.3	9	149	48968

NOTE: Drawings are for reference only, are not to scale, and may not represent actual product.

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TOOL CONFIGURATIONS

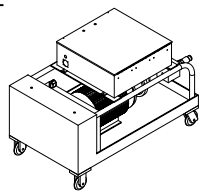
9. Z-Axis Slide Assembly _____

7 inch (177.8 mm) Travel **74100**

10 Milling Head Swivel Assy _____

Milling Head Swivel Plate Assembly **63250**

11 Hydraulic Power Unit _____



25 HP

200V-208V	**65127**
230V	**65118**
380V-415V	**65128**
460V	**65126**
575V	**65129**

12 Pendant Cable & Hose Assemblies

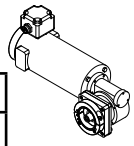
Hose and Cable Kit ¾ x 20 ft (609.6 cm)	**65157**
Hose and Cable Kit ¾ x 30 ft (914.4 cm)	**65161**
Hose and Cable Kit ¾ x 50 ft (1524.0 cm)	**65164**
Hose and Cable Kit ¾ x 100 ft (3048.0 cm)	**65167**

13 Stand Alone Feed Control _____

(Stand Alone Control Panel & Pendant with Cables)
NOTE: Not needed if using a Climax Hydraulic Power Unit

Voltage	Cable Length	Part Number
120V	20 ft (609.6 cm)	53398
	50 ft (1524.0 cm)	53399
	100 ft (3048.0 cm)	53400
230V	20 ft (609.6 cm)	53401
	50 ft (1524.0 cm)	53402
	100 ft (3048.0 cm)	53403

14 Electric Feed Assembly _____



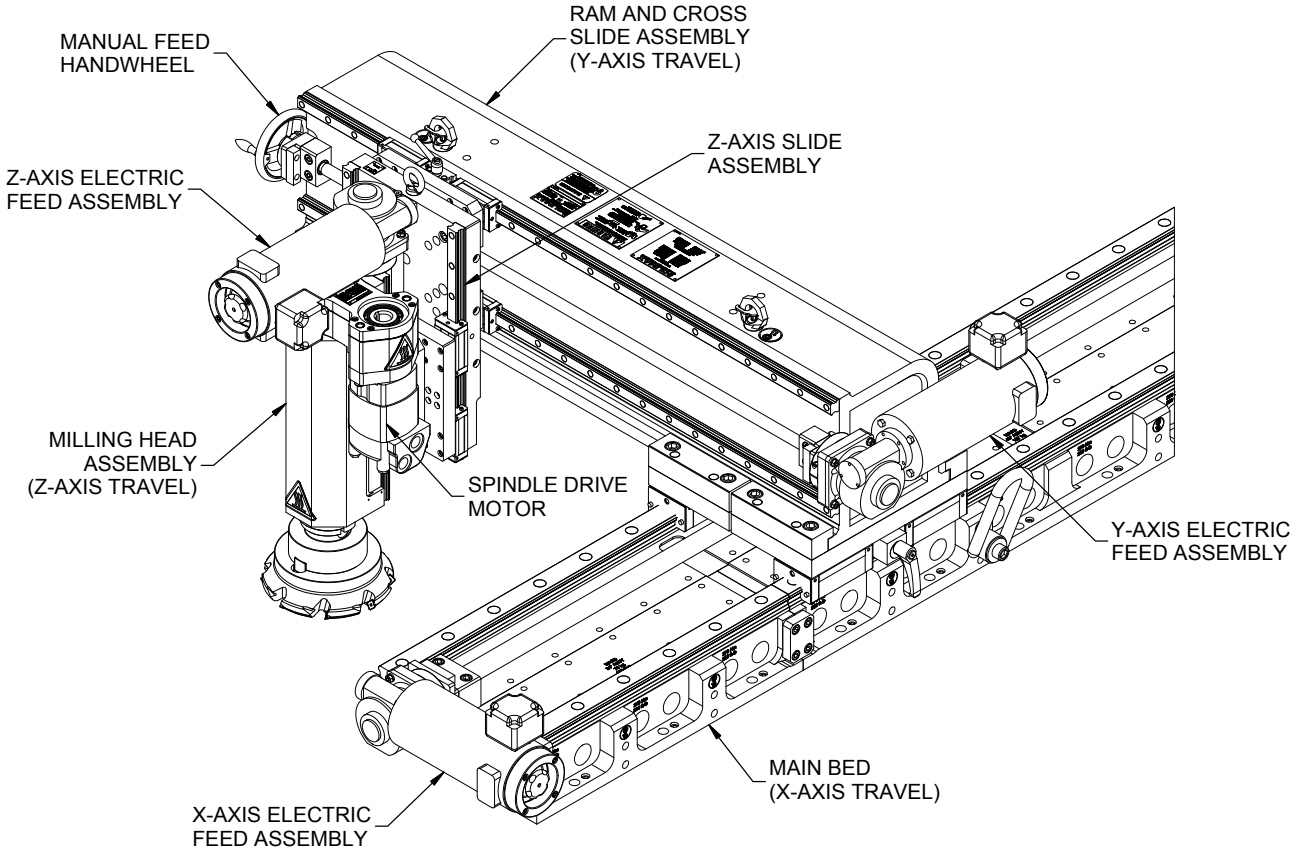
NOTE: 230V Feeds not for use with Climax Hydraulic Power Units

Voltage	Cable Length	Part Number
120V	20 ft (609.6 cm)	64684
	50 ft (1524.0 cm)	66310
	100 ft (3048.0 cm)	66311
230V	20 ft (609.6 cm)	64743
	50 ft (1524.0 cm)	66312
	100 ft (3048.0 cm)	66313

15 Z-Axis Power Feed Adapter _____

Z-Axis Feed Adapter Kit - I Axis 40 Taper **64856**

NOTE: Drawings are for reference only, are not to scale, and may not represent actual product.



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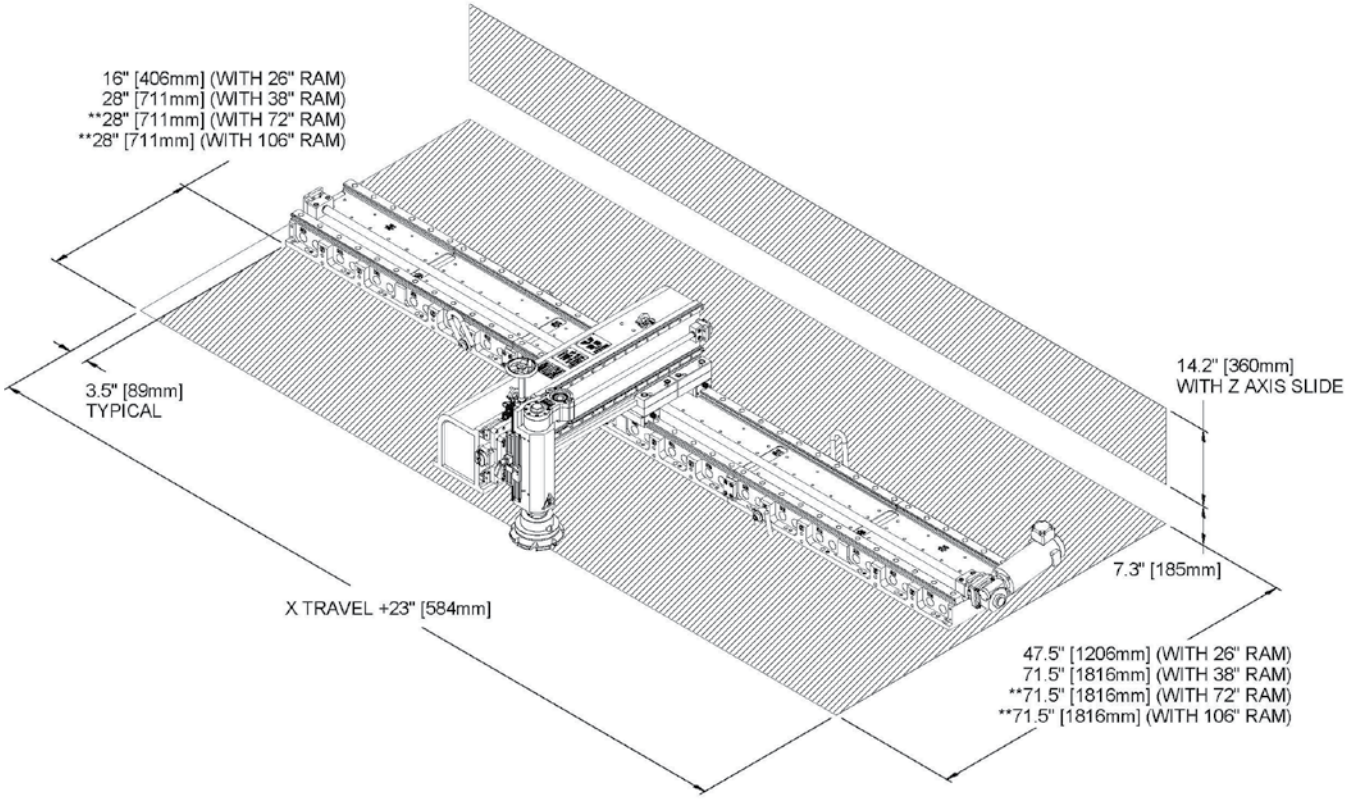
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

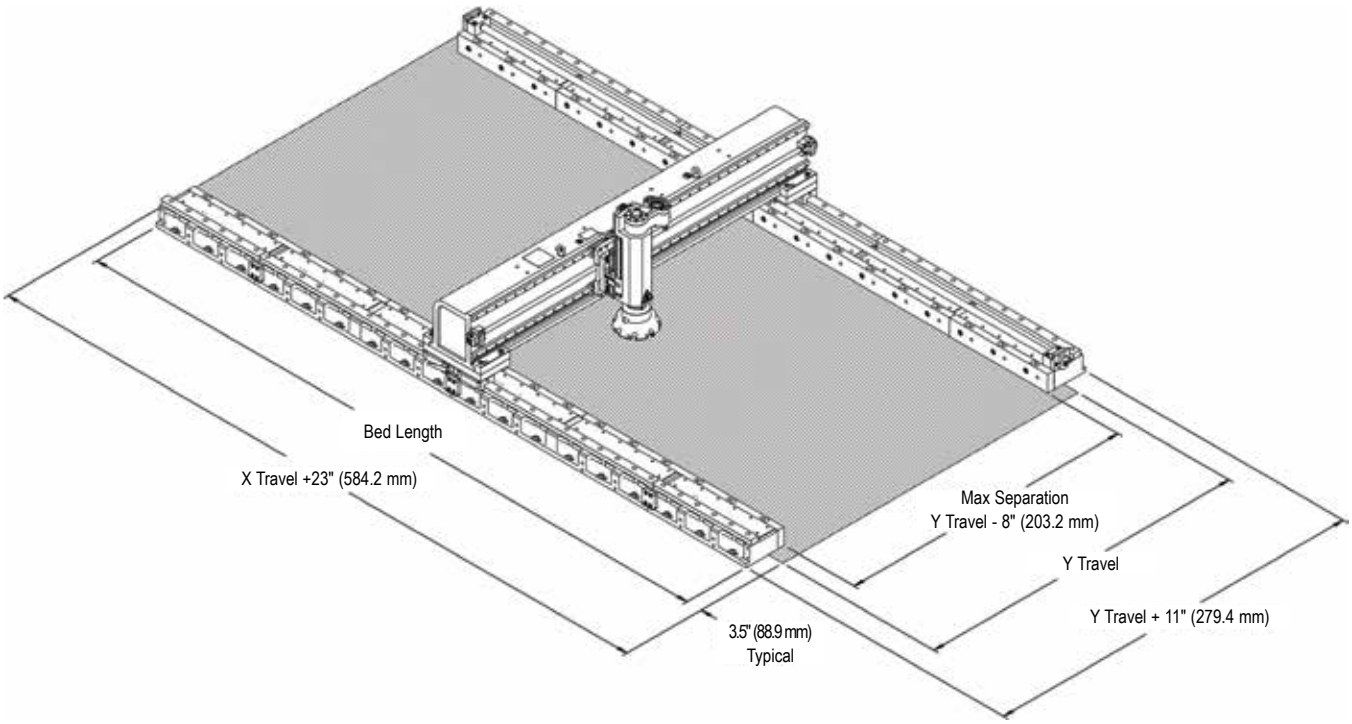
Milling Area Dimensions - LINEAR MILLING



** RAM AT MAXIMUM RECOMMENDED OFFSET

DIMENSIONS TO CENTER OF THE TOOL

Milling Area Dimensions - GANTRY MILLING



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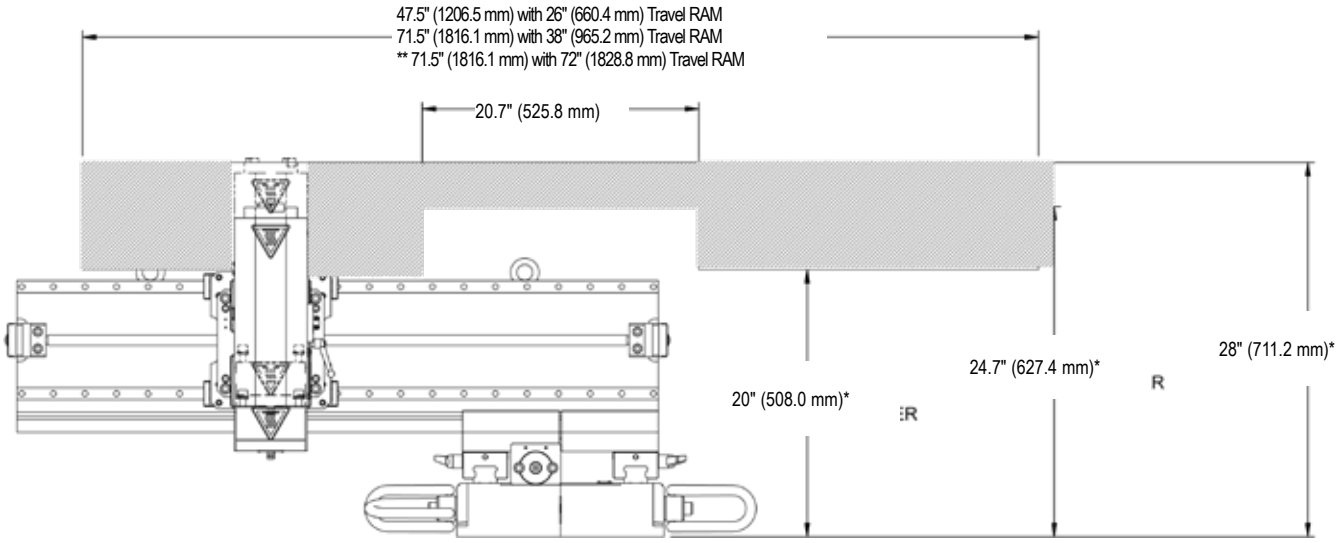
OPERATIONAL DIMENSIONS

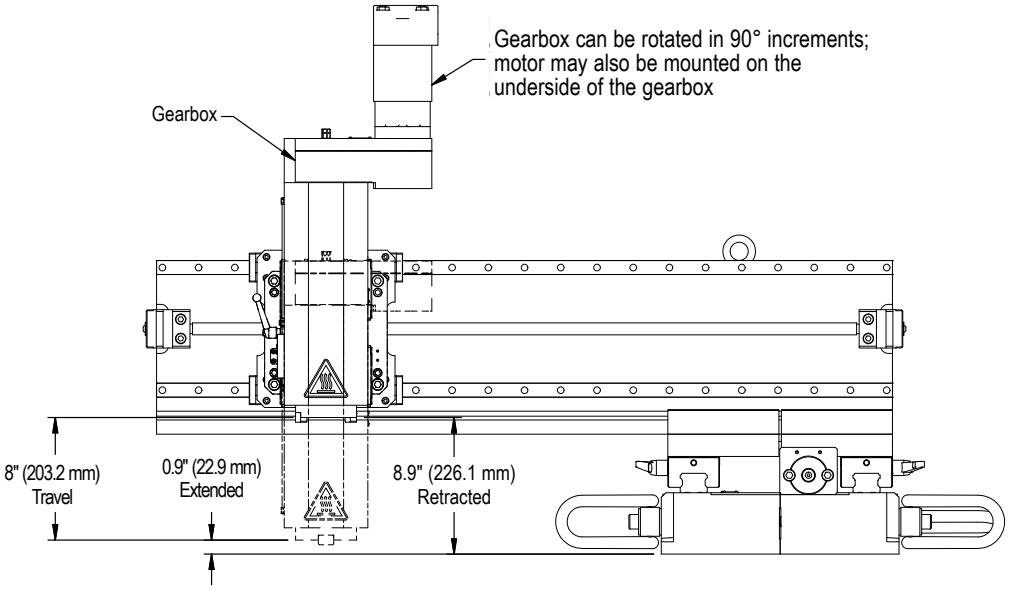
Dimensions in Inch (mm)

Inverted Milling Area



* Without riser assembly. 5" (127.0 mm) required to clear bed assembly.
** Dimensions shown are with RAM at max recommended offset.

Spindle Travel



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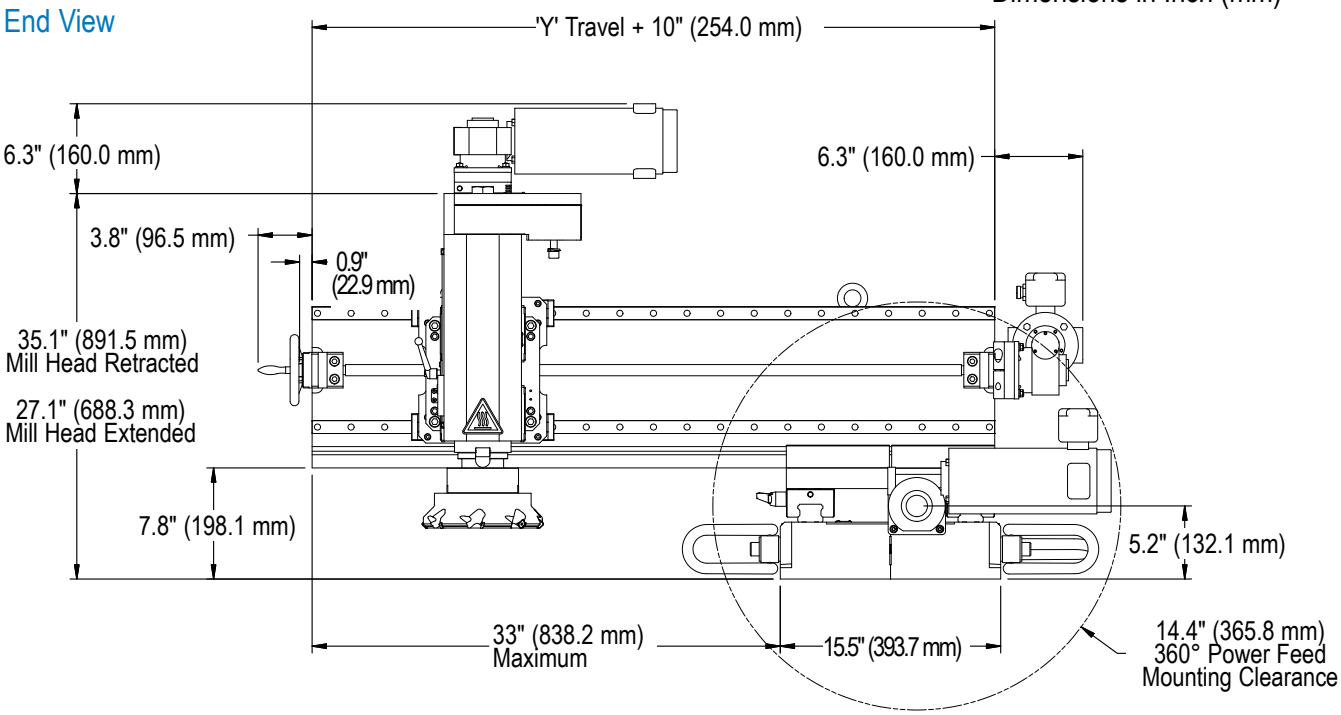
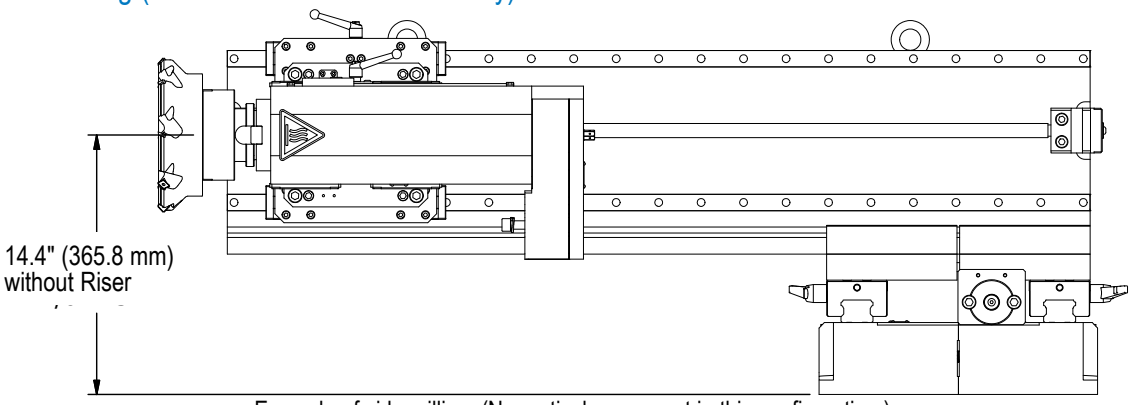
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

End View

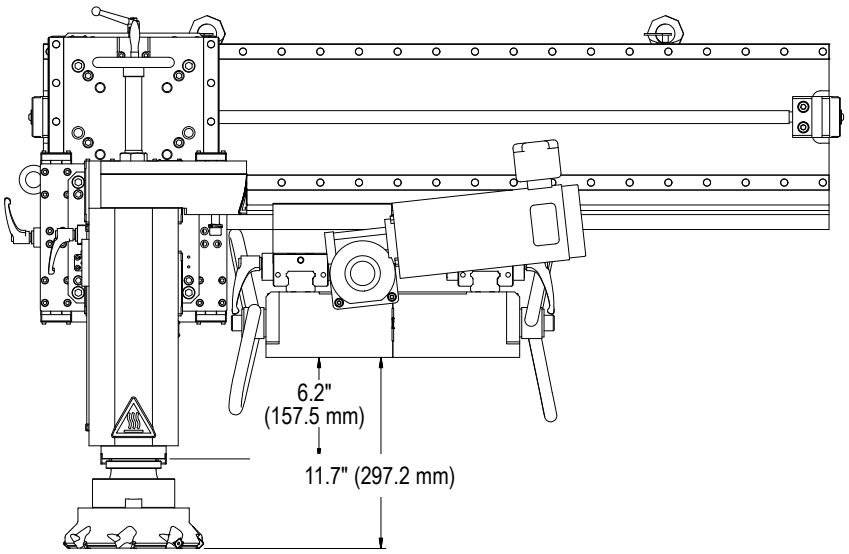


Side Milling (Without Z-Axis Slide Assembly)



Example of side milling. (No vertical movement in this configuration.)

Milling (With Z-Axis Assembly in Lowest Position)



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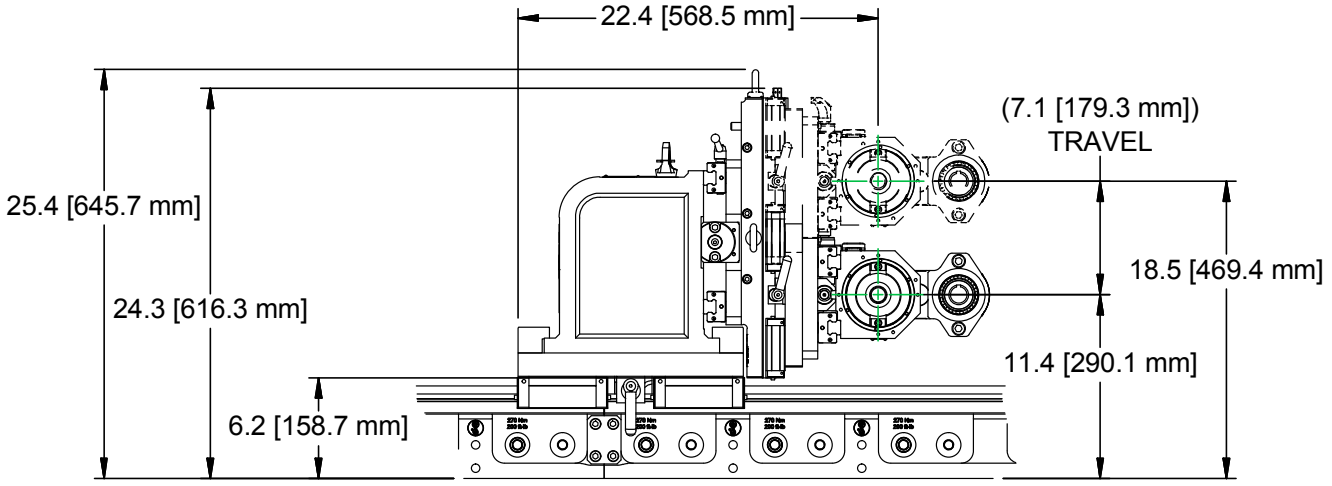
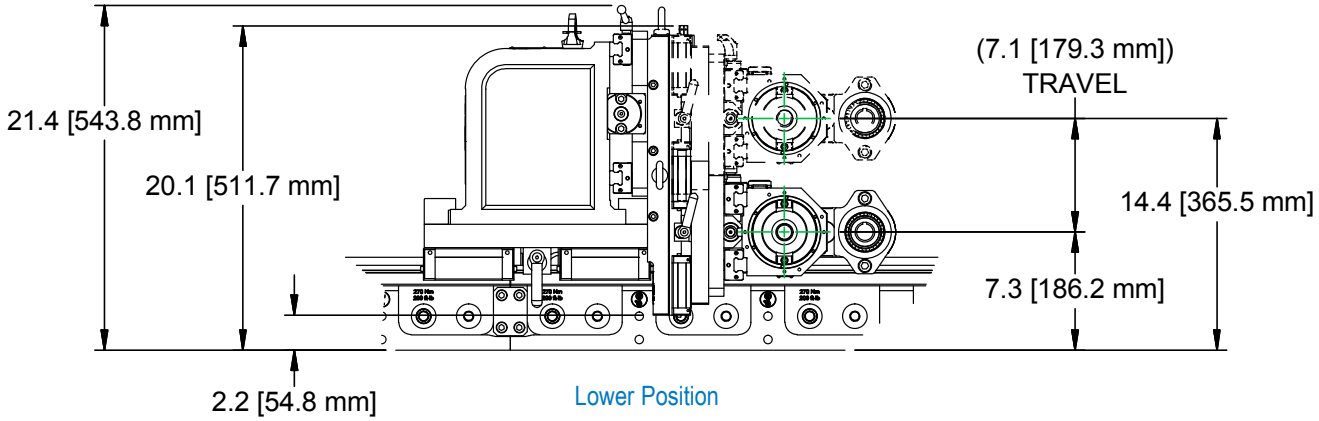
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

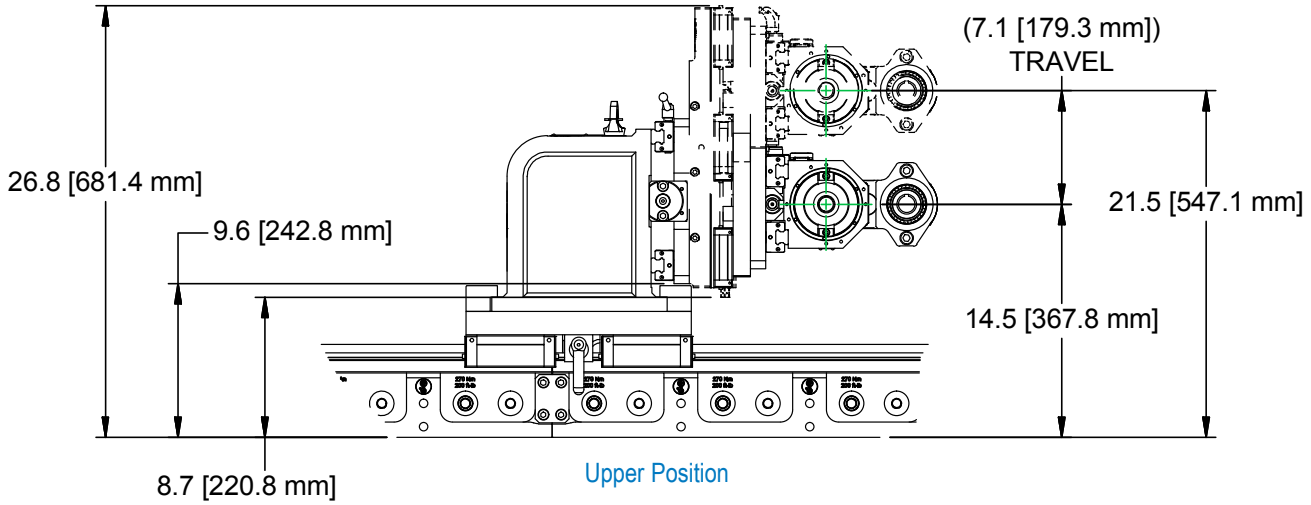
Machining Ranges (Tool Center Travel) Using Z-Axis Slide Assembly



Middle Position



Lower Position



Upper Position

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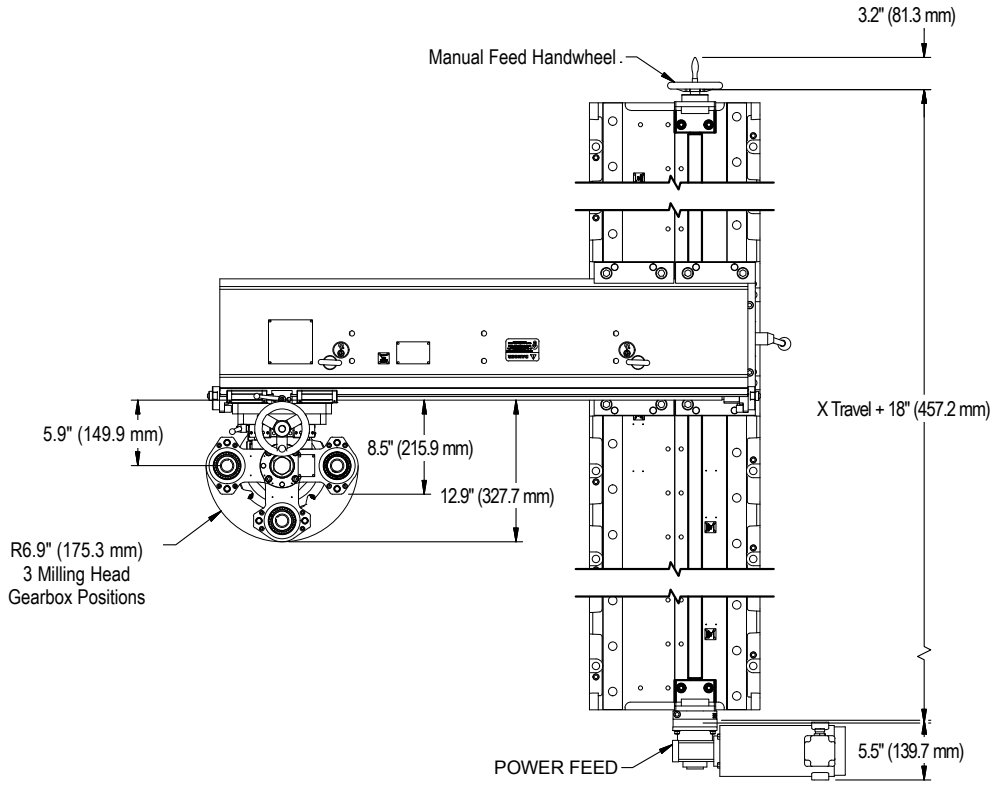
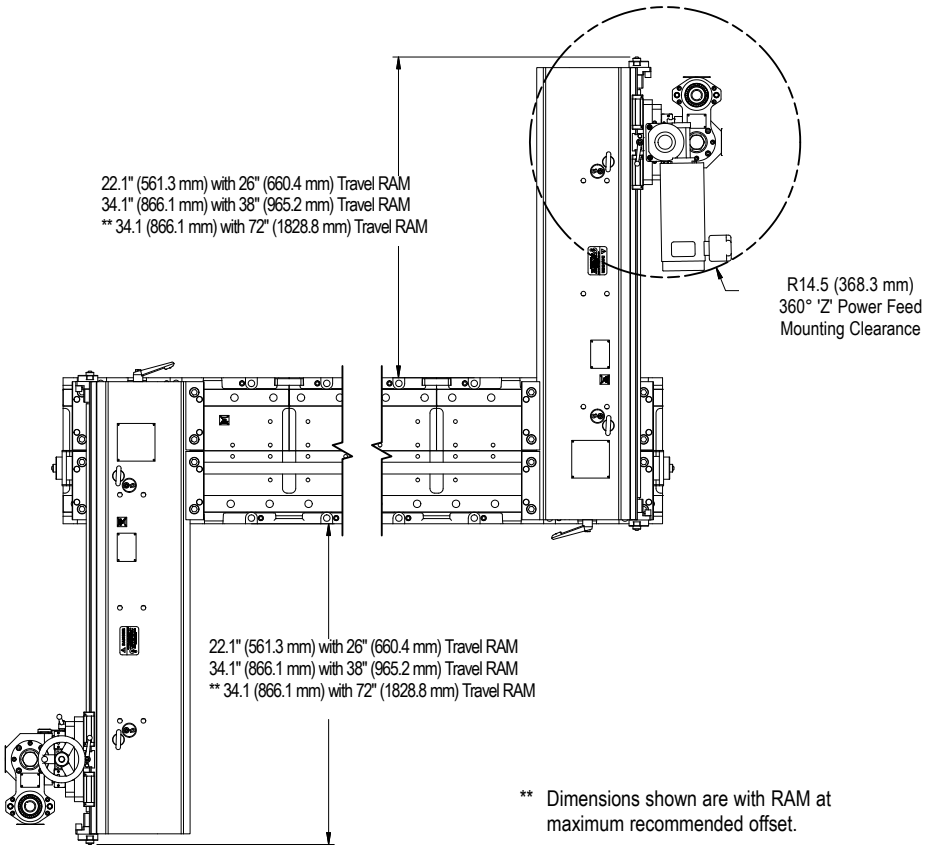
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

Overhead View - Standard Offset



Overhead View - RAM at Maximum Recommended Offset



** Dimensions shown are with RAM at maximum recommended offset.

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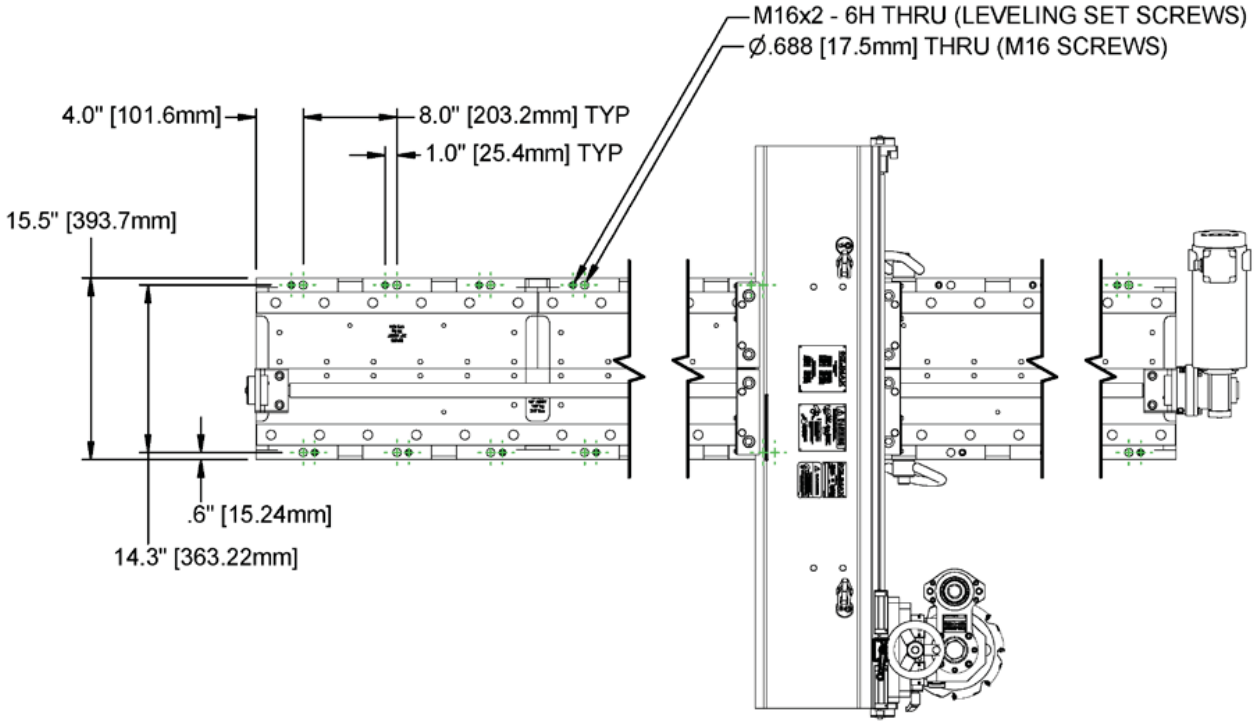
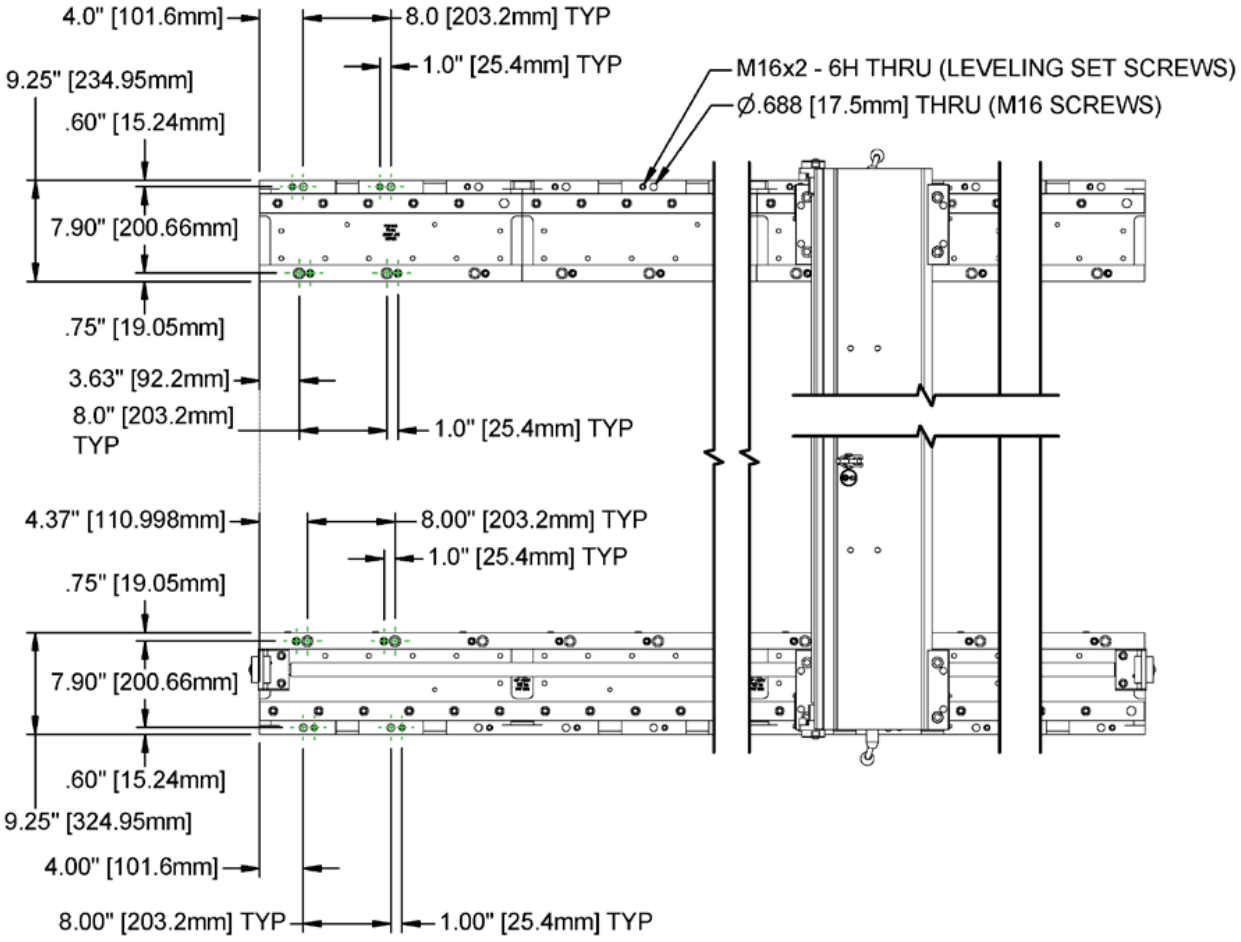
OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

Standard Mounting Pattern



Gantry Mounting Pattern



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