

## 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

in 90° increments

(infinite 360° position w/ optional swivel plate)

180° in 90° increments (3 positions)

Gearbox Position Adjustment

### 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

5 amps @ 120V / 2.5 amps @ 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  
with hand wheel

24.0 inches

609.6 mm

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 Overhang	10 inches (254.0 mm)	10	0.020 inches (0.508 mm)	5 inches (127.0 mm)	14 in/min (355.6 mm/min)
82inch (2082.8mm) 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)
82inch (2082.8mm) 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.

# 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.



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.

# 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**



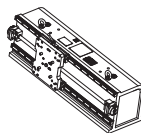
## 2. Gantry Kit

- 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**

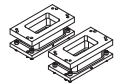


## 4. Shipping Container

- 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**

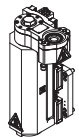
## 5. RAM Riser Assembly

- 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**



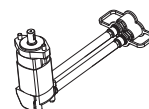
## 7. Tooling (for inch CATV milling head assy)

- 50 Taper**
- CAT50, 4 Inch (101.6 mm) Face Mill w/ Inserts **103034**
  - CAT50, 5 Inch (127.0 mm) Face Mill w/ Inserts **103035**
  - CAT50, 6 Inch (152.4 mm) Face Mill w/ Inserts **103036**
  - CAT50, 8 Inch (203.2 mm) Face Mill w/ Inserts **103038**
  - CAT50, 10 Inch (254.0 mm) Face Mill w/ Inserts **103040**
  - Carbide Inserts **47229**

## 8. Spindle Hydraulic Motors

Motor Displacement		Max Spindle Speed		Hydraulic Motor PN	
in <sup>3</sup>	cm <sup>3</sup>	@ 50 Hz Mains Power	@ 60 Hz Mains Power	60 Series	ISO 16028
6.2	101.6	668	805	63164	69497
8.0	131.1	468	564	53459	69498
9.6	157.3	386	465	53458	69499
11.9	195.0	311	375	46950	69500
14.9	244.2	249	300	46375	69501
18.7	306.4	198	239	46549	69502
24.0	393.3	156	188	46550	69503
29.8	488.3	124	149	48968	69504

Minimum speed is 10% of the maximum speed



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

# 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



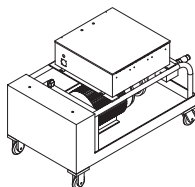
## 11. Hydraulic Power Unit

HP2500, 208 - 230 Volts				
Cordset/hose length		Quick Connect Style		PN
Feet	Meters	60 Series QD	ISO 16028 CE	
20	6	✓		90284
50	15	✓		84559
100	30	✓		90264
20	6		✓	90276
50	15		✓	90277
100	30		✓	90285

HP250, 380 - 415 Volts				
Cordset/hose length		Quick Connect Style		PN
Feet	Meters	60 Series QD	ISO 16028 CE	
20	6	✓		85691
50	15	✓		90265
100	30	✓		90270
20	6		✓	90286
50	15		✓	90287
100	30		✓	90289

HP2500, 460 Volts				
Cordset/hose length		Quick Connect Style		PN
Feet	Meters	60 Series QD	ISO 16028 CE	
20	6	✓		85716
50	15	✓		90271
100	30	✓		90272
20	6		✓	90290
50	15		✓	90291
100	30		✓	90292

HP2500, 575 Volts				
Cordset/hose length		Quick Connect Style		PN
Feet	Meters	60 Series QD	ISO 16028 CE	
20	6	✓		85796
50	15	✓		90273
100	30	✓		90275
20	6		✓	90293
50	15		✓	90294
100	30		✓	90944



## 12. Stand Alone Feed Control

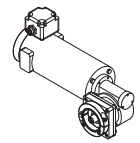
(Stand Alone Control Panel & Pendant with Cables) **NOTE:** Not needed if using a CLIMAX Hydraulic Power Unit

Voltage	Cable Length	PN
120V	20 ft (609.6 cm)	95573
	50 ft (1524.0 cm)	95574
	100 ft (3048.0 cm)	95575
230V	20 ft (609.6 cm)	106752
	50 ft (1524.0 cm)	106753
	100 ft (3048.0 cm)	106754

## 13. Electric Feed Assembly

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

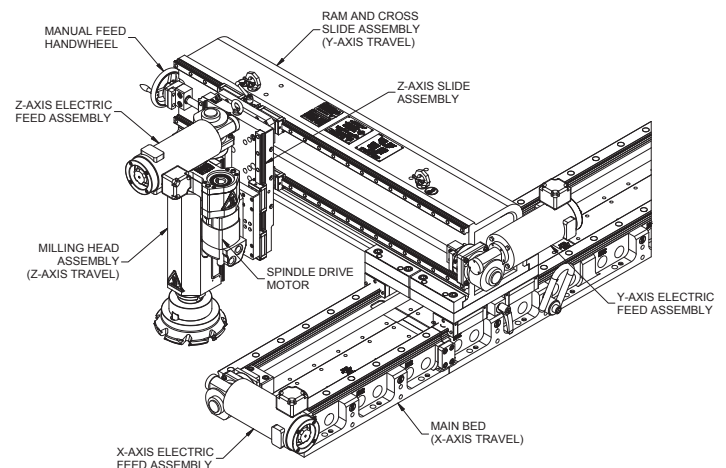
Voltage	Cable Length	PN
120V	20 ft (609.6 cm)	64684
	50 ft (1524.0 cm)	66310
	100 ft (3048.0 cm)	66311



## 14. Z-Axis Power Feed Adapter

Z-Axis Feed Adapter Kit - I Axis 40 Taper

64856

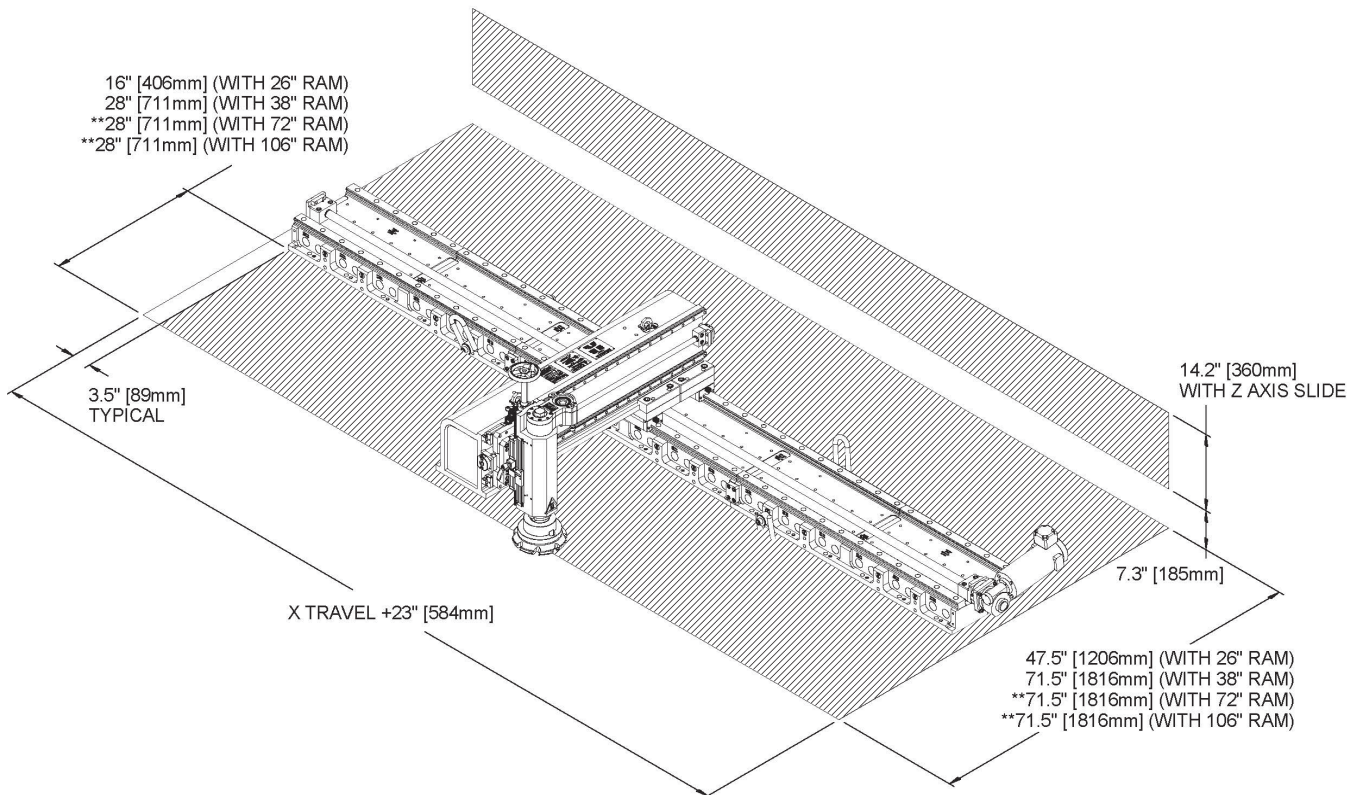


**NOTE:** Drawings are for reference only, are not to scale, and may not represent actual product.

# OPERATIONAL DIMENSIONS

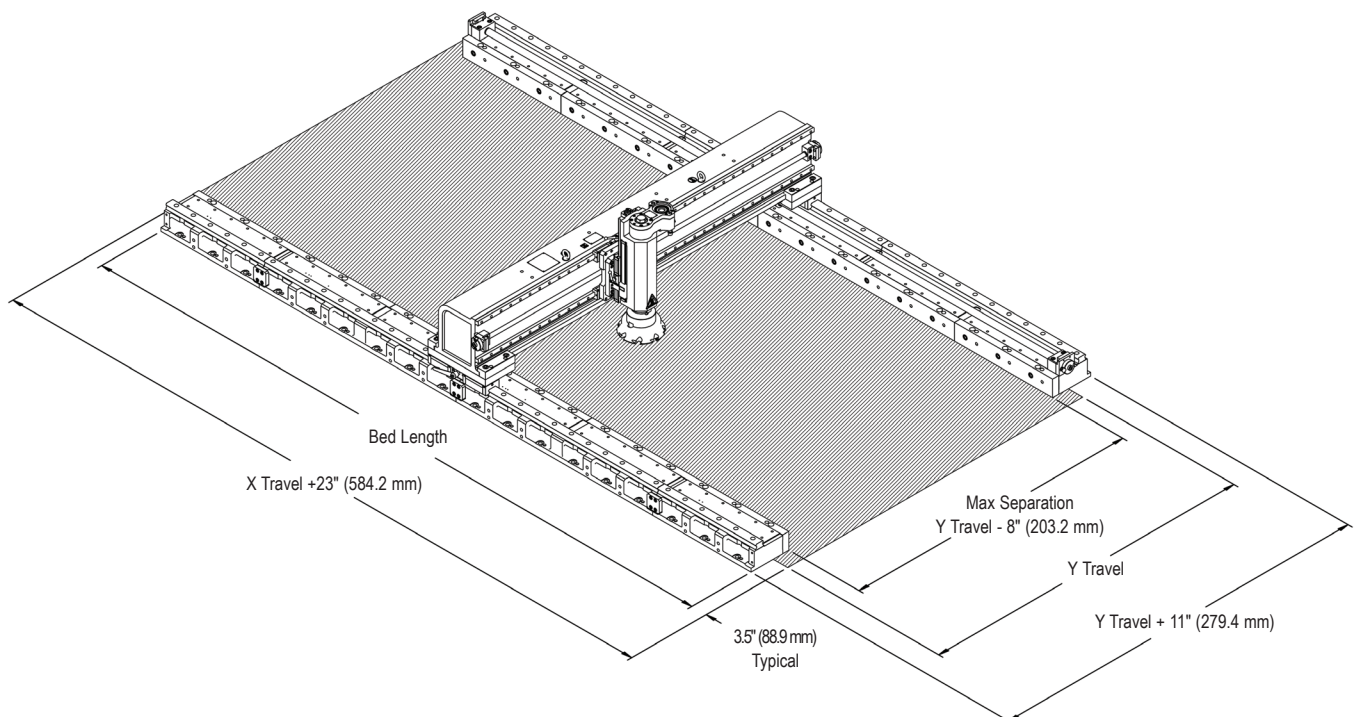
Dimensions in Inch (mm)

## Milling Area Dimensions - LINEAR MILLING



\*\* RAM AT MAXIMUM RECOMMENDED OFFSET  
 DIMENSIONS TO CENTER OF THE TOOL

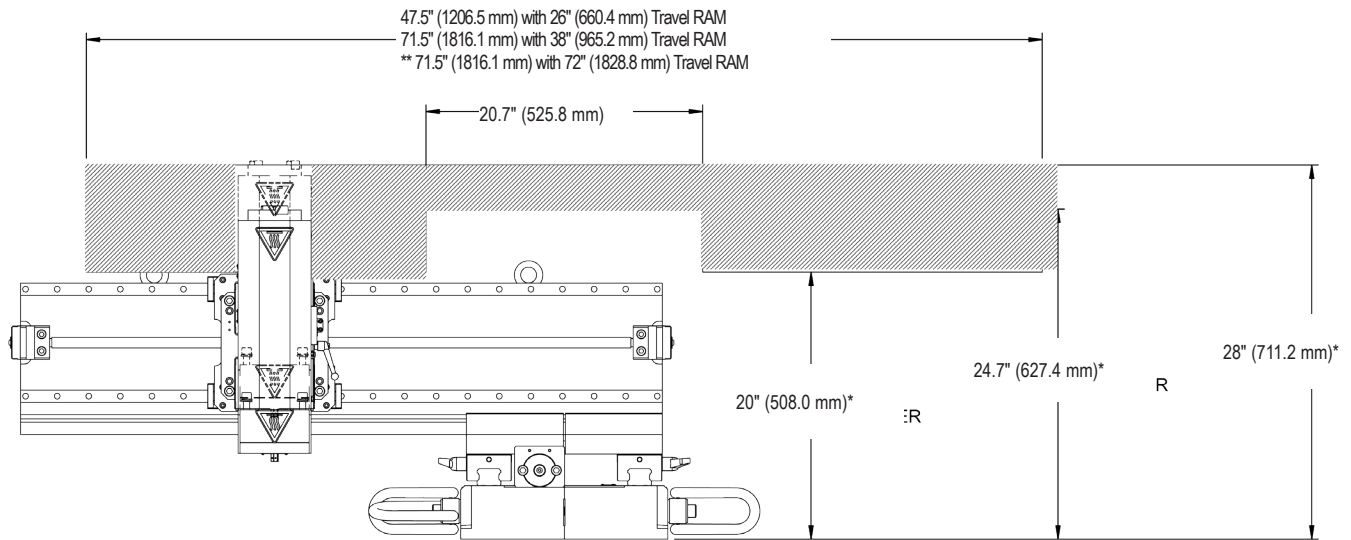
## Milling Area Dimensions - GANTRY MILLING



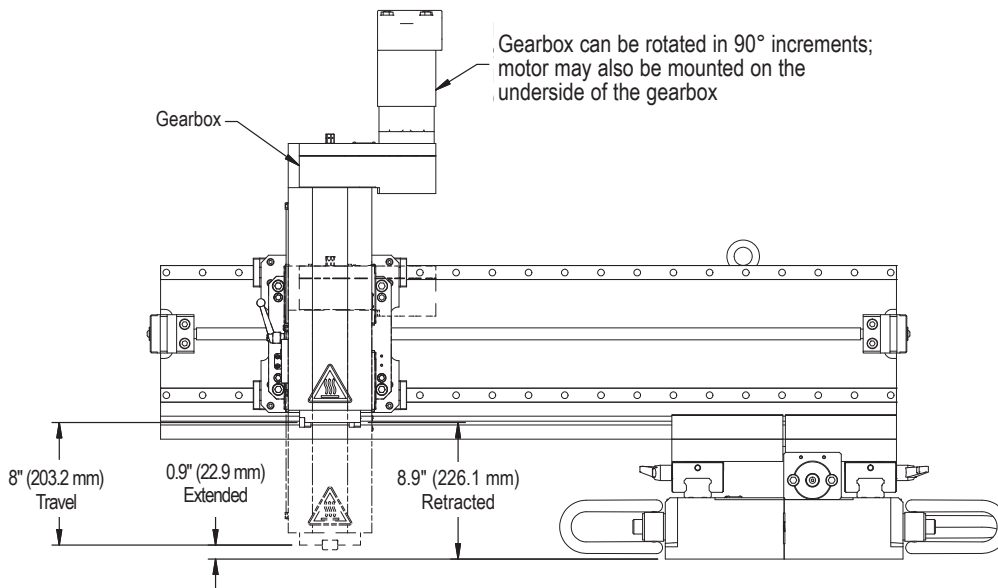
# OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

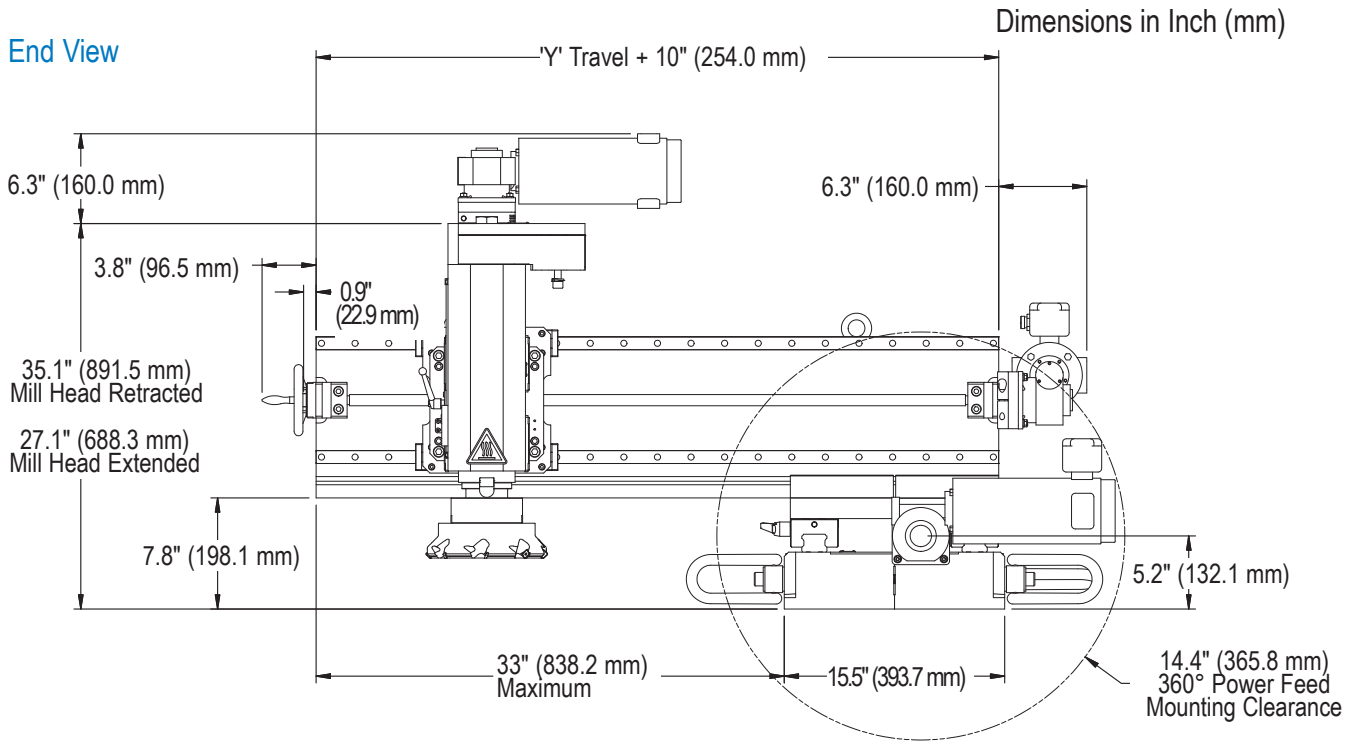
## Inverted Milling Area



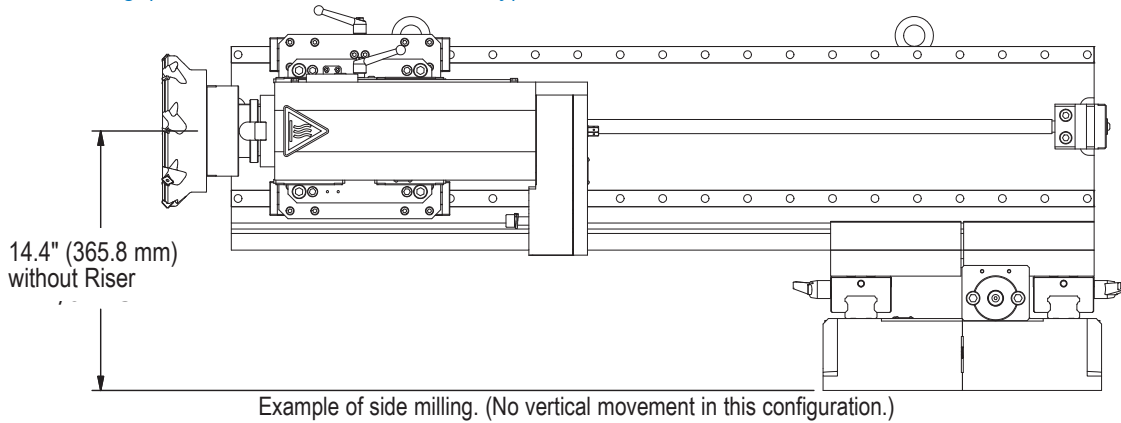
## Spindle Travel



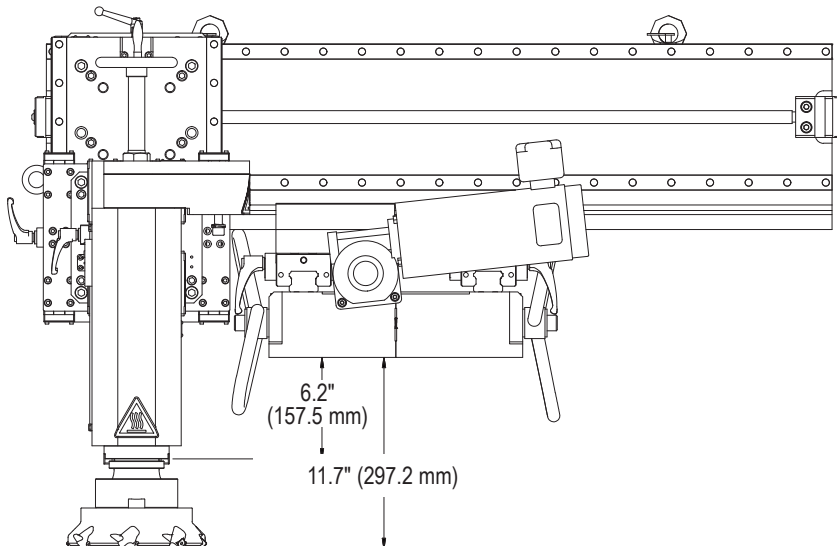
# OPERATIONAL DIMENSIONS



## Side Milling (Without Z-Axis Slide Assembly)



## Milling (With Z-Axis Assembly in Lowest Position)

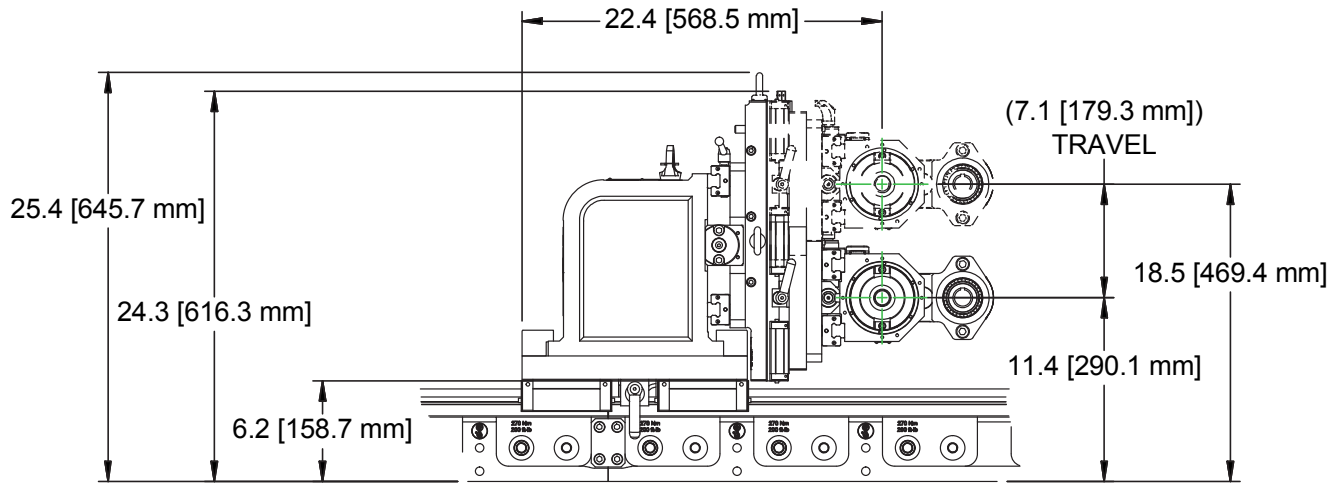




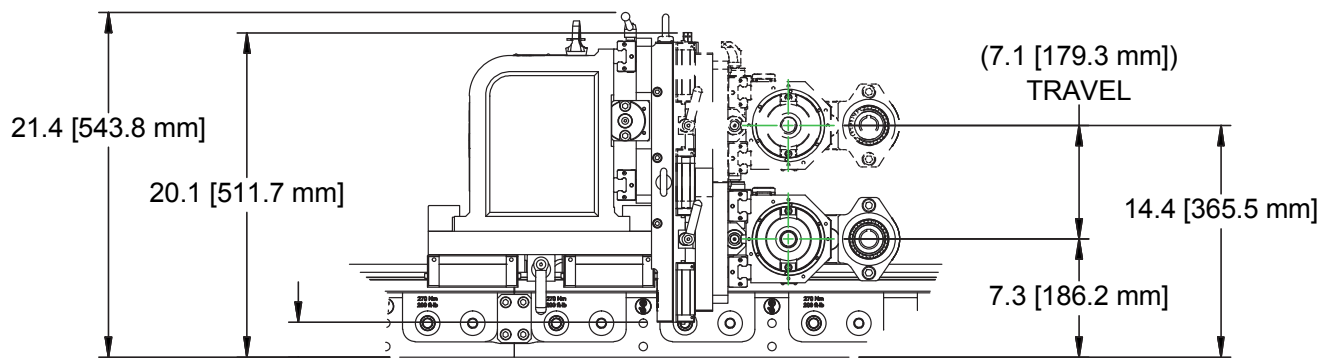
# OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

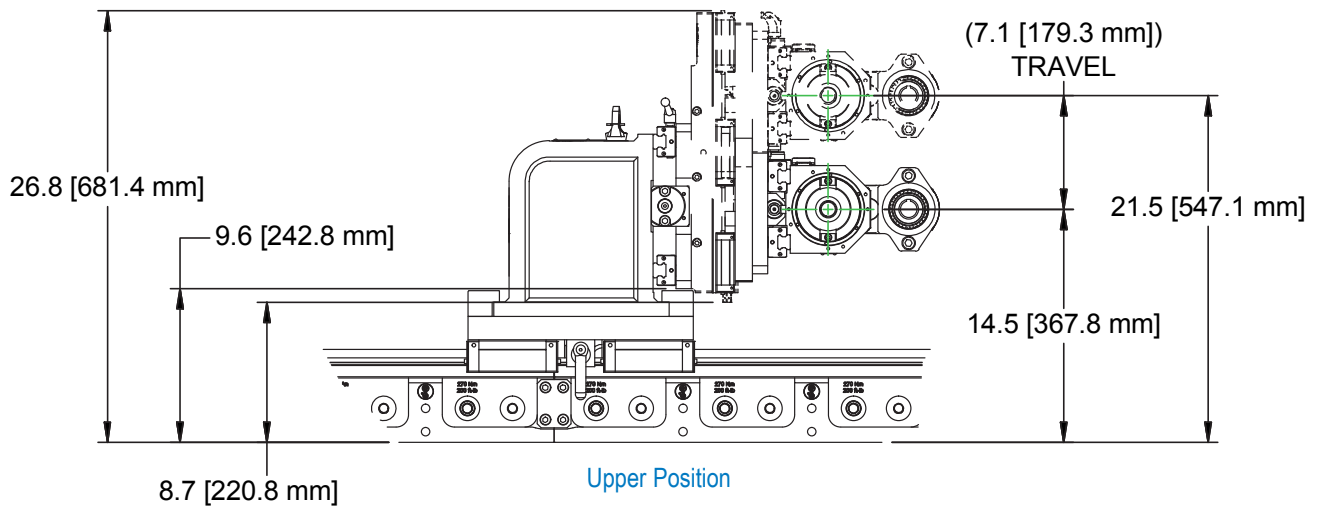
## Machining Ranges (Tool Center Travel) Using Z-Axis Slide Assembly



Middle Position



Lower Position

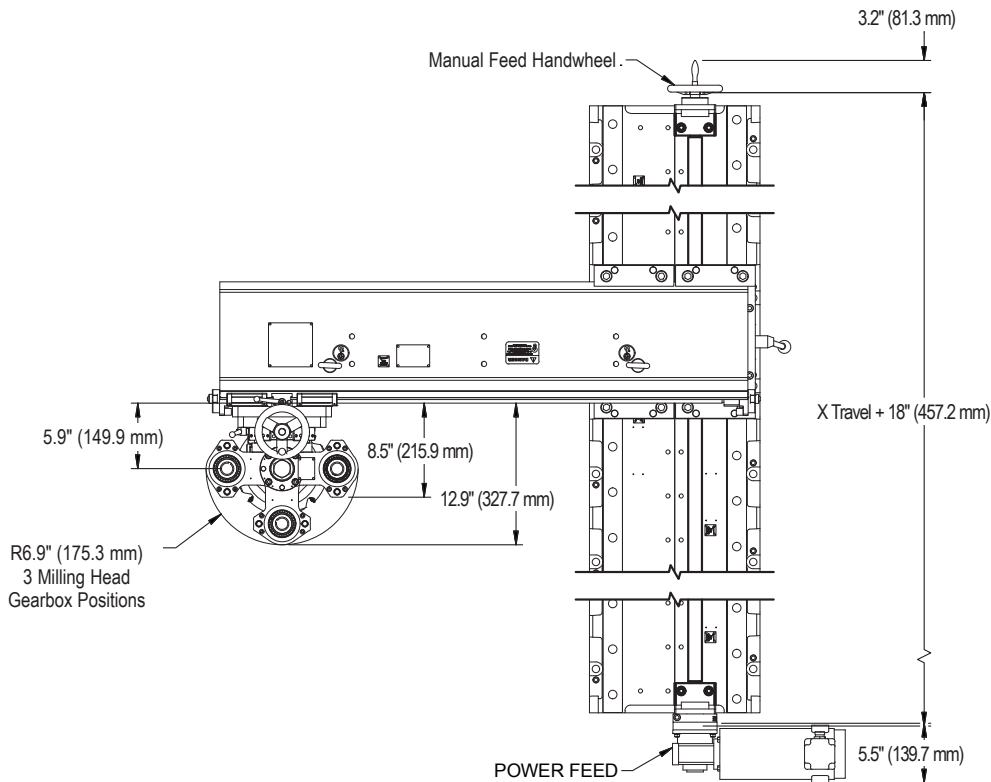


Upper Position

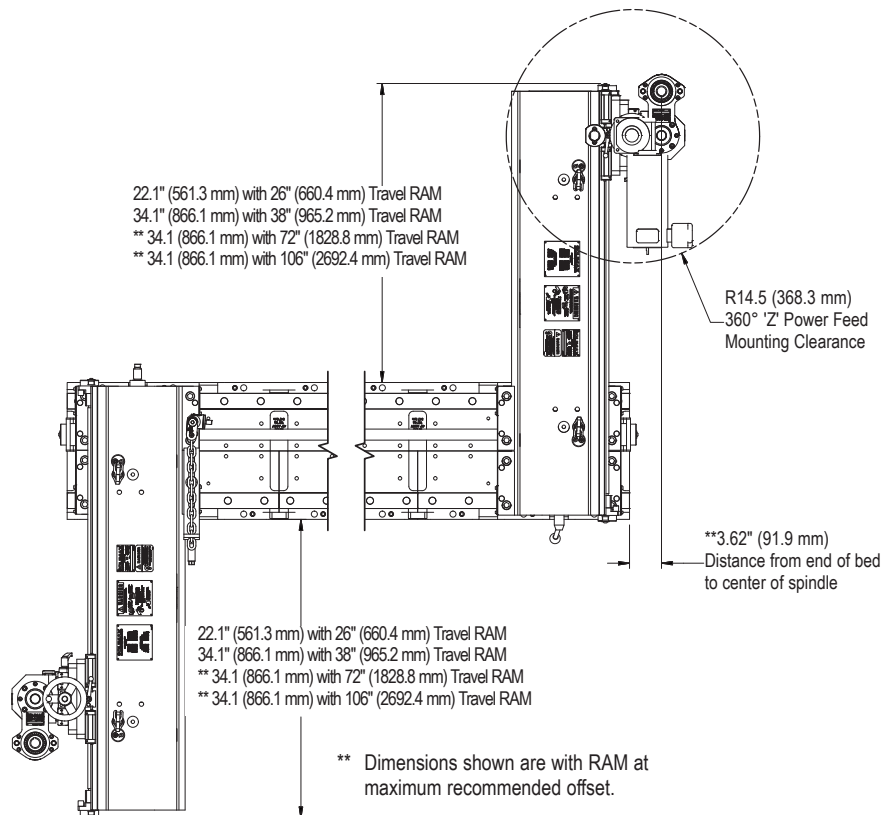
# OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

## Overhead View - Standard Offset



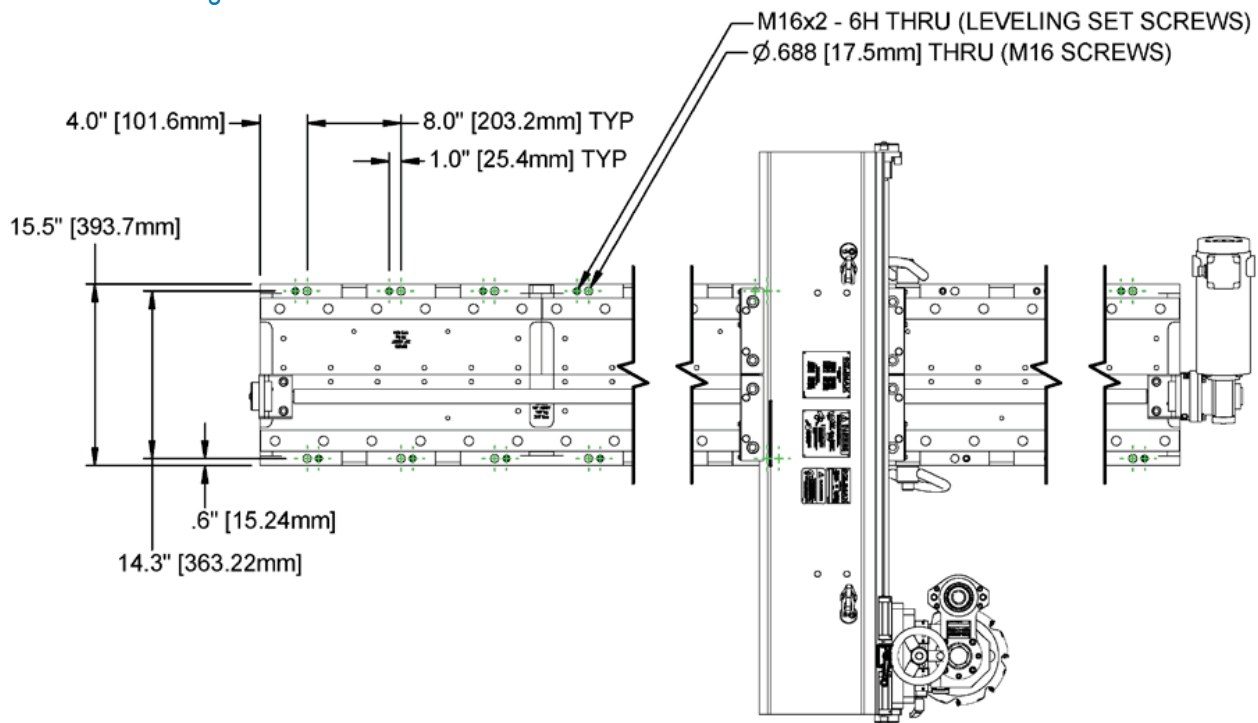
## Overhead View - RAM at Maximum Recommended Offset



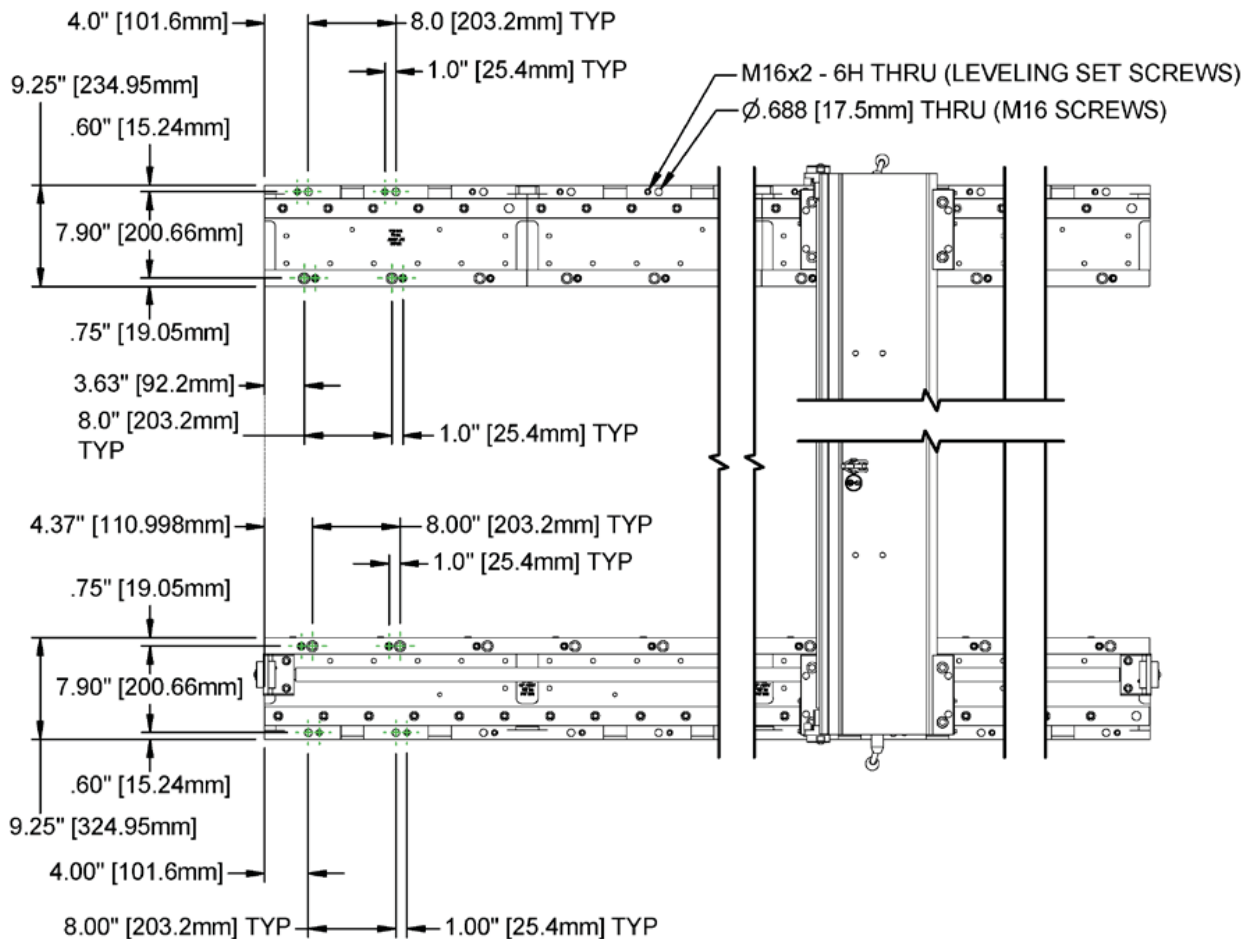
# OPERATIONAL DIMENSIONS

Dimensions in Inch (mm)

## Standard Mounting Pattern



## Gantry Mounting Pattern



# OEM OPERATIONAL TRAINING

## Backed by 60 Years of Experience

CLIMAX pioneered the concept of portable machine tools in 1964. Since that time, CLIMAX has grown to become the world's largest provider of innovative on-site machining solutions.

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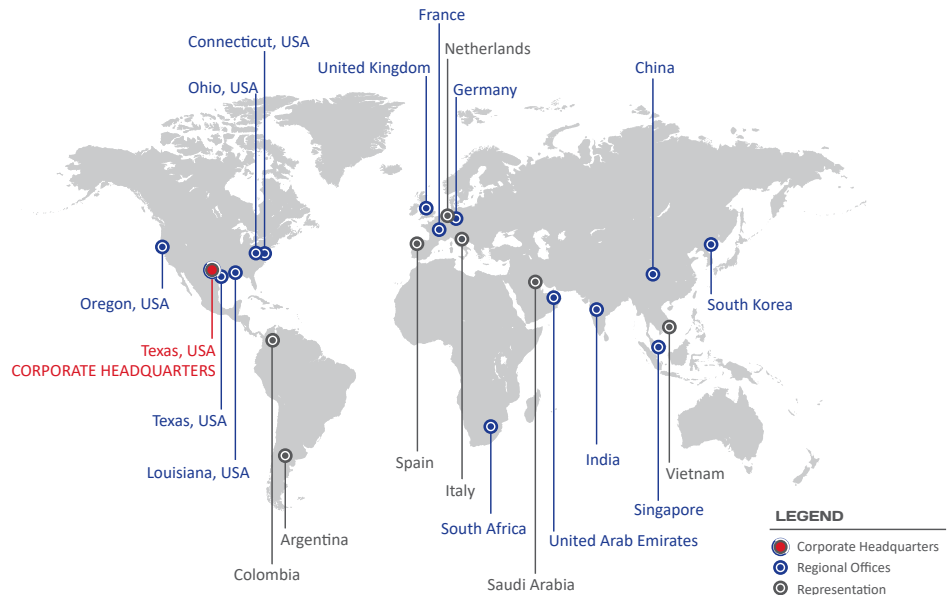
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