HURCO®

GETTING STARTED

with Your Turning Center

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INSTALLATION CHECKLIST

Use this checklist as a guide to properly prepare your Hurco machine for final installation:

Task

TABLE OF CONTENTS

List of Figures

List of Tables

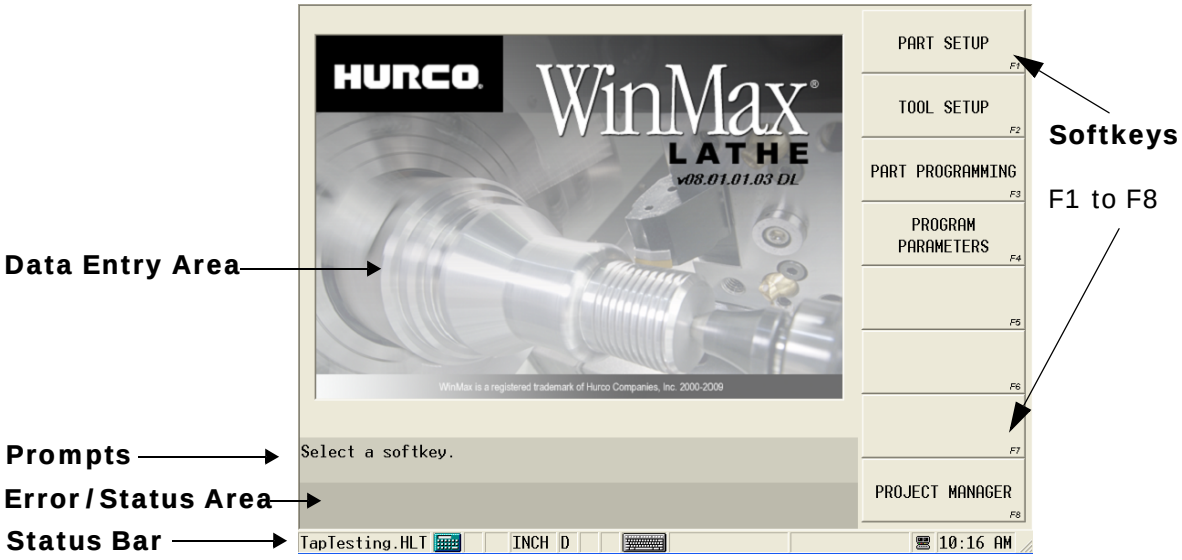
USING THIS MANUAL

This documentation uses several conventions to explain the safety features and emphasize key concepts. These conventions are described in this section.

Additional information is available on the machine's Documentation CD.

Sample Screens

Sample screens in this documentation were taken from a WinMax Lathe single-screen control. All screens are subject to change. The screens on your system may vary slightly. The sample screen here illustrates softkeys and includes a software version.



Softkeys

Softkeys are located on the side of the screen. You can set the softkeys to appear on either the right or left side of the screen. Refer to the *Getting Started with Your WinMax Lathe* for information about making this selection. Softkeys may change upon field entries or other softkey selection. References to softkeys in the documentation appear with the softkey's corresponding F-key. For example, the Part Setup softkey from the Input screen above is referenced as the PART SETUP *F1* softkey.

Screen Areas

The screens are divided into the following areas, in addition to the row of softkeys:

Data Entry

The data entry area is located on the opposite side of the screen from the softkeys. Available softkeys may change even when the text and data entry area does not.

Fields in the data entry area display or receive information. Refer to *Using the Touchscreen,* on page ix for information on entering information in fields.

Prompts and Error/Status Area

The bottom portion of the screen is reserved for prompts, program status and error messages.

Prompts provide help on data entry selections based on the field with the blinking cursor.

Errors and status messages occur anytime the status or error occurs. They are not based on the field with the blinking cursor. These messages provide machine information to the operator.

Error messages may also stop and/or prevent machine operation until the cause of the error is corrected.

Status Bar

The status bar contains

- The name of the open, selected program.
- A calculator icon—select the icon to display a working, on-screen calculator.
- Units of measure (Inch or Millimeters)—select the units of measure in the status bar to toggle between Inch and Metric.
- Programming mode (R for Radius; D for Diameter)—select the programming mode in the status bar to toggle between Radius and Diameter.
- A yellow icon—indicates the feed hold is on when visible.
- A red icon—indicates the Emergency Stop button has been pressed when visible.
- A keyboard icon—select the icon to display a working on-screen keyboard.
- The current time.

Console Buttons and Keys

References to console buttons and keys appear in bold text throughout the documentation. For example, the Start Cycle button appears as the **Start Cycle** button and the Manual key appears as the **Manual** console key in text.

Refer to the *Getting Started with Your WinMax Lathe* for information about console buttons and keys, in addition to other information about using softkeys and the pop-up text entry window.

Using the Touchscreen

The console has a touchscreen for entering programming data. To make a selection, tap the screen on a softkey, field, or drop-down list using the stylus attached to the side of the console or another suitable pointing device.

Printing

To print part or all of this manual from the CD, select **File / Print**. Be sure to review the **Print Range** selections and make the appropriate choice for pages. Select **Properties / Paper / Quality** and adjust the **Tray Selection / Paper Source** if necessary.

Printing to a Post Script printer provides the best results.

Icons

This manual may contain the following icons:

Caution/Warning

The operator may be injured and the machine severely damaged if the described procedure is not followed.

Hints and Tricks

Useful suggestions that show creative uses of the WinMax features.

Important

Ensures proper operation of the machine and control.

Troubleshooting

Steps that can be taken to solve potential problems.

Where can we go from here?

Lists several possible options the operator can take.

Table of Contents

To assist with onscreen viewing, this icon is located on the cover page. Click the icon to access the Table of Contents (TOC).

You can also access many of the same TOC entries from the Adobe Reader bookmarks located on the left side of the PDF page.

USING AND PRINTING THE HELP

Hurco provides documentation for using WinMax software on a control or desktop in two formats: on-screen Help and PDF. The information contained in both formats is identical.

On-screen Help contains information about the current screen. If Help is not available for a screen, a Welcome screen appears with access to the Table of Contents, Index, or Search functions.

- To view the on-screen Help directly on a Hurco control, select either the Help console button or the F console key followed by the 1 key (F1).
- To view the on-screen Help on the desktop software, select either the Help icon in the menu bar or the F1 key on your keyboard.

PDF files are available on the hard drive. These files can be copied from the hard drive to a USB memory device and transferred to a PC for viewing and printing.

Using the On-screen Help

On-screen Help provides information about using WinMax. The Help is context-sensitive to the screen level. Press the console Help button to display the Help topic for the current screen. The following list describes Help functions:

- Buttons in the upper left-hand corner of the Help screen are used to move through Help topics and print screens.
  - Use the **Hide** button to hide the navigation pane.
  - Use the **Back** button to return to the previous Help screen.
  - Use the **Print** button to print the current dispalyed Help topic, if a printer is attached and configured. See *Printing the Help* for more information about printing.
- Use the arrow buttons to move between pages within a Help topic and to move through topics.
- Use the **Contents** tab for a list of information sorted by subject:
  1. Select the “+” to expand the topic and view sub-topics.
  2. Select the topic to display it.
- Use the **Index** tab to show the Help index:
  1. Quickly scroll to an index topic by typing the topic in the box at the top of the index.
  2. Select a topic and the Display button to view the topic.
- Use the **Search** tab to search the Help for a word or phrase:

1. Type the search word(s) into the text box at the top of the pane.
2. Select the List Topics button. A list of topics that contain the search word(s) is displayed.
3. Select a topic and the Display button to view that topic.

- Use the **Favorites** tab to save Help topics for quick access:
  1. Select the Add button at the bottom of the pane to add the current topic.
  2. Select a topic from the Favorites list, and select the Display button to view it.
     - Select a topic from the Favorites list, and select the Remove button to remove it from the list.

Printing the Help

The WinMax On-screen Help is also provided in PDF format for easy printing. The information contained in the PDF files is identical to the on-screen Help. The PDF files may be copied to a floppy disk or USB memory device to be transferred to a PC for printing. Here are the steps to access the PDF files:

1. From the Input screen, select the PROJECT MANAGER *F8* softkey.
2. Select the FILE MANAGER *F7* softkey.
3. In the left-hand pane, navigate through the folders:
   - For WinMax Lathe on a machine, the path is D:\Hurco\Hurco Lathe\hlp.
   - For WinMax Desktop on a PC, the path is C:\Program Files\Hurco\Hurco Lathe\hlp.

   The PDF files will appear in the right-hand pane.

   ⇨ The SHOW ALL FILE TYPES field in User Interface Settings must be set to YES (default is NO) in order to see the PDF files in the directory. Access the SHOW ALL FILE TYPES field in Auxiliary Mode, Utilities/ User Preferences/ User Interface Settings.
4. Highlight the PDF file(s) in the right-hand pane, and select the COPY *F2* softkey.
5. Ensure that your media is loaded (either a floppy disk in the disk drive or a USB memory device in the USB port), and navigate to the proper location in the left-hand pane of the DISK OPERATIONS screen (either the floppy drive A: or the USB port E:). Highlight the desired location.
6. Place the cursor in the right-hand pane and select the PASTE *F3* softkey to paste the PDF file(s) to the desired location.

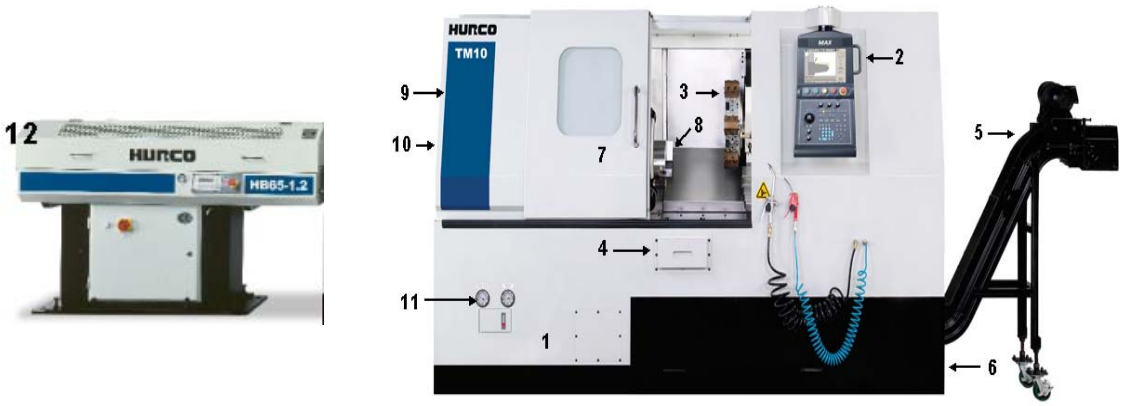
You may now remove your media and load the PDF file(s) onto a PC for printing.

SITE PREPARATION

The following topics are covered in this section:

Machine Overview

Before using the machine, you should become familiar with its components. Because of European Committee (CE) requirements, Hurco machines sold in Europe may differ from those sold elsewhere. The figure below identifies some of the easily recognized components of a machine. The location of some components may differ on other models.



1	Machine Frame or Base	**7**	Enclosure Door
2	Console	**8**	Spindle
3	Turret	**9**	Power cabinet (rear)
4	Parts Catcher option	**10**	Communications panel (side)
5	Conveyor option	**11**	Tailstock and chuck gauge options
6	Coolant Drip Tray	**12**	Bar Feeder option

Figure 1–1. Bar Feeder next to a TM10 Turning Center with the WinMax Lathe Max Console and Options

Hurco machines are available with several hardware and software options.

⇨ Information about options is available from Hurco or your Hurco distributor.

Turret

Hurco turning centers use a turret to hold tools. Each tool is manually inserted into the turret.

Tools in the turret are described and programmed during Tool Setup. Refer to the *Getting Started with WinMax Lathe Manual* for programming information.

Parts Catcher

The optional Parts Catcher catches a part after it has been cut. The door on the parts catcher can be opened so you can take a part out while the next part is being cut. Refer to the *WinMax Lathe Options Manual* for information about this option.

Conveyor

An optional conveyor is available for moving the scrap pieces of metal out of the machine. Chips that are not flushed out of the machine collect in the chip conveyor tank. Refer to the *WinMax Lathe Options Manual* for information about this option.

Coolant Drip Tray

The coolant drip tray is located under the machine. This removable tray collects the coolant as it drips during machine operation.

Tailstock and Chuck Gauges

The optional tailstock supports long pieces of stock while the spindle is turning and the piece is being cut. The tailstock touches the loose end of the stock, on the right-hand side, while the chuck holds the stock at the other end. Refer to the *WinMax Lathe Options Manual* for information about these options.

Bar Feeder

The optional bar feeder pushes stock into the spindle, through hole in the left side of the machine. As the stock is cut, the feeder replaces it with a new piece as necessary. You can program a tool with a Bar Feed Block to automatically push stock to a fixed position. Refer to the *WinMax Lathe Options* manual for information about this option.

Preparing the Site

❒ Prepare the site.

To avoid problems when the equipment arrives for installation, Hurco recommends the site be prepared. Specific site preparation information is provided in this manual.

Review the following:

- Capacity of the floor to support machine weight.
- Capacity of forklift or crane.
- Overhead and door clearances.
- Plant obstructions on the way to machine location.
- Code requirements for utility services.
- Space to allow efficient operation, considering full axes travel and future servicing access requirements.
- Use of internal personnel for management of installation.
- Proximity of compressed air and proper electrical service.

⇨ Additional information about the coolant system and its component parts may be found in the *Maintenance and Safety Manual*.

Foundation Supporting the Machine

❒ Ensure the foundation and floor are capable of supporting the machine's weight.

The foundation must be able to support the weight of the machine, and should be constructed of continuous concrete (reinforced is best). The thickness and consistency of the concrete must be compatible with industry standards for supporting machine weight. Actual requirements will depend upon the physical properties of underlying soil. A local civil engineer must be consulted if soil conditions are questionable.

Machine Weight

Approximate weights for the specified machines appear below, in metric and English measurements. Shipping weights include the shipping pallet, cover, and packaging.

Machine Model	Shipping Weight	Operating Weight
TM6	3440 kg	3180 kg
TM8	4200 kg	3950 kg
TM10	5402 kg	5002 kg
TMM8	4230 kg	4000 kg
TMM10	5400 kg	5000 kg
TMX8	6300 kg	5900 kg
TMX8MYS	7000 kg	6600 kg
TMX8MYS	7000 kg	6600 kg

Table 1–1. Turning Center Machine Weight, Metric

Machine Model	Shipping Weight	Operating Weight
TM6	7584 lb	7011 lb
TM8	9259 lb	8708lb
TM10	11909 lb	11028 lb
TMM8	9325 lb	8819 lb
TMM10	11905 lb	11023 lb
TMX8	13890 lb	13000 lb
TMX8MY	15400 lb	14520 lb
TMX8MYS	15400 lb	14520 lb

Table 1–2. Turning Center Machine Weight, English

Machine Dimensions

The following figures are a guide to the dimension tables that follow. The machine pictured below does not represent a specific model. Use these tables, in metric and English measurements, and the illustrations as a guide for shipping, operating, and servicing dimensions. All dimensions are approximate.

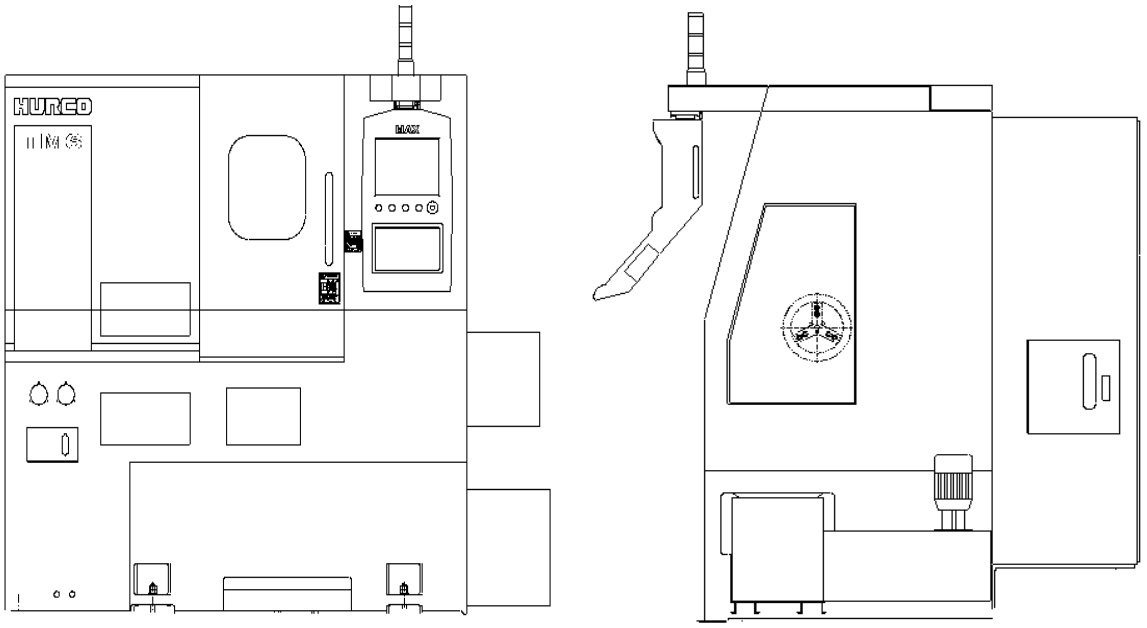


Figure 1–2. Operating Dimensions—Front and Side Views

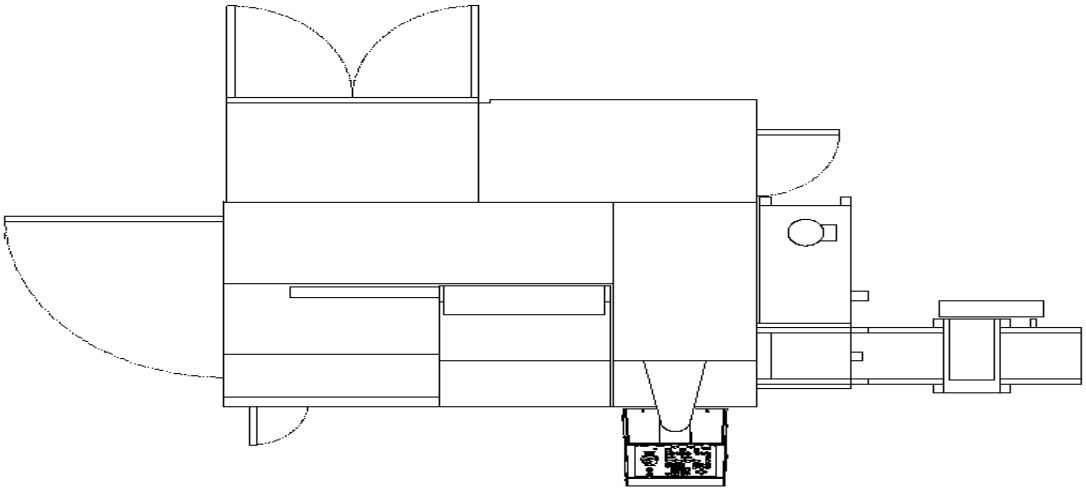


Figure 1–3. Operating Dimensions—Top Views

Shipping Dimensions

These dimensions are with the machine under its shipping cover and on its shipping pallet.

❒ Ensure there is a clear route from the loading dock to the machine location.

⇨ When moving a machine, be sure to allow adequate space for maneuvering. If door and ceiling clearances appear to be close to approximate machine dimensions, measure the machine first before attempting to move it.

Machine Model	Shipping Dimensions		
	Width	Depth	Height
TM6	2300 mm	1960 mm	2000 mm
TM8	2950 mm	2300 mm	2018 mm
TM10	3300 mm	2300 mm	2010 mm
TMM8	2950 mm	2300 mm	2618 mm
TMM10	3300 mm	2300 mm	2010 mm
TMX8	3510 mm	2300 mm	2103 mm
TMX8MY	3510 mm	2300 mm	2391 mm
TMX8MYS	3510 mm	2300 mm	2391 mm

Table 1–3. Approximate Shipping Dimensions, Metric

Machine Model	Shipping Dimensions		
	Width	Depth	Height
TM6	90.6 in	77.2 in	78.7 in
TM8	116.0 in	90.6 in	79.4 in
TM10	129.9 in	90.6 in	79.1 in
TMM8	116.0 in	90.6 in	79.4 in
TMM10	129.9 in	90.6 in	79.1 in
TMX8	138.2 in	90.6 in	82.8 in
TMX8MY	138.2 in	90.6 in	94.1 in
TMX8MYS	138.2 in	90.6 in	94.1 in

Table 1–4. Approximate Shipping Dimensions, English

Operating and Servicing Dimensions

Machine operating and servicing dimensions are listed in the following sections. Allow additional space around the machine for servicing and safe operation. Leave room for removing the coolant tank and the chip conveyor(s), whose dimensions are the approximate maximum machine width.

❒ Ensure there is adequate space for machine door clearances.

Machine Operating Dimensions

Machine Operating Dimensions are measured with doors closed and console mounted.

Machine	Height	Width		Depth	
		Enclosure Only	With Conveyor	Enclosure Only	With Max Console
TM6	2120.0 mm	2050.0 mm	3100.0 mm	1418.0 mm	1790.5 mm
TM8	2120.0 mm	2663.0 mm	3744.0 mm	1630.0 mm	1927.5 mm
TM10	2158.0 mm	3055.0 mm	4288.0 mm	1748.0 mm	1968.5 mm
TMM8	2120.0 mm	2850.0 mm	3931.0 mm	1631.0 mm	1928.3 mm
TMM10	2158.0 mm	3155.0 mm	4388.0 mm	1748.0 mm	1973.3 mm
TMX8	2180.0 mm	3380.0 mm	4617.0 mm	1936.6 mm	3033.0 mm
TMX8MY	2542.5 mm	3380.0 mm	4226.0 mm	2037.0 mm	2759.0 mm
TMX8MYS	2542.5 mm	3380.0 mm	4226.0 mm	2037.0 mm	2759.0 mm

Table 1–5. Operating Dimensions (Enclosure Doors Closed), Metric

Machine	Height	Width		Depth	
		Enclosure Only	With Conveyor	Enclosure Only	With Max Console
TM6	83.5 in	80.7 in	122.1 in	55.8 in	70.5 in
TM8	83.5 in	104.8 in	147.4 in	64.2 in	75.9 in
TM10	85.0 in	120.3 in	168.8 in	91.7 in	77.5 in
TMM8	83.5 in	112.2 in	154.8 in	64.2 in	75.9 in
TMM10	85.0 in	124.2 in	172.8 in	68.8 in	77.7 in
TMX8	85.8 in	133.1 in	181.8 in	76.2 in	119.4 in
TMX8MY	100.1 in	133.1 in	174.3 in	80.2 in	108.6 in
TMX8MYS	100.1 in	133.1 in	174.3 in	80.2 in	108.6 in

Table 1–6. Operating Dimensions (Enclosure Doors Closed), English

Machine Servicing Dimensions

Machine servicing dimensions are measured with all doors open.

Machine	Width		Depth
	Enclosure	Enclosure with Chip Conveyor	Enclosure with Max Console
TM6	3098.8 mm	3852.8 mm	2173.5 mm
TM8	3518.0 mm	4600.0 mm	2267.0 mm
TM10	3898.0 mm	5131.0 mm	2327.5 mm
TMM8	3705.0 mm	4786.0 mm	2267.0 mm
TMM10	3998.0 mm	5231.0 mm	2477.5 mm
TMX8	4213.4 mm	5450.0 mm	3033.0 mm
TMX8MY	4283.4 mm	5329.4 mm	3048.1 mm
TMX8MYS	4283.4 mm	5329.4 mm	3048.1 mm

Table 1–7. Servicing Dimensions (Enclosure, Cabinet Doors Open), Metric

Machine	Width		Depth
	Enclosure	Enclosure with Chip Conveyor	Enclosure with Max Console
TM6	122.0 in	151.7 in	85.6 in
TM8	138.5 in	181.1 in	89.2 in
TM10	153.5 in	202.0 in	91.6 in
TMM8	145.9 in	188.4 in	89.2 in
TMM10	157.4 in	205.9 in	97.5 in
TMX8	165.9 in	214.6 in	119.4 in
TMX8MY	168.7 in	209.8 in	120.0 in
TMX8MYS	168.7 in	209.8 in	120.0 in

Table 1–8. Servicing Dimensions (Enclosure, Cabinet Doors Open), English

Electrical Service Requirements

❒ Ensure there is appropriate power availability and the voltage requirements are met.

Become familiar with the following Electrical Service requirements:

- On-site wiring must comply with all applicable electrical codes.
- Dedicated, grounded 3-phase AC power is required to prevent high/low voltages, spikes, surges, and noise.
- The AC power source must match the voltage specifications on the machine electrical cabinet.
- Wiring to the machine must be capable of supplying continuous specified amperage.
- Failure to provide the required power parameters may affect safety, machine performance, and the warranty.
- A Hurco-certified Service Engineer must supervise final electrical connections to the machining center.

Always disconnect machine power before working with electrical connections.

Incoming Service KVA Requirements

Full load KVA is provided in the Serial Identification Plate located on your machine. Incoming Service KVA is specified at 125% of the full load KVA. Fuse sizes should be based on the Incoming Service KVA. Use the table and the calculations below to calculate service fusing.

Machine	Spindle Speed (RPM)	Full Load (KVA)	Incoming Service Requirements (KVA)
TM6	6000	13	16
TM8	4800	17	21
TM10	3000	18	23
TMM8	4800	22	28
TMM10	3000	24	30
TMX8	4500	60	75
TMX8MY	4500	60	75
TMX8MYS	4500	70	87

Table 1–9. Service KVA Requirements

Calculating Service Fusing

❒ Ensure adequate service fusing is available.

First, determine your incoming AC Voltage, 3 Phase service.

Use the Service KVA Requirements table to calculate the service fusing for your machine.

For 3-phase power, the equation is $P_{3\Phi} = \frac{I}{\sqrt{3xE}}$.

For example, to calculate the fuse current where incoming service KVA ($P_{3\Phi}$) is 50 KVA and Input Voltage (E) is 230 VAC:

$$I = \frac{P_{3\Phi}}{E \times \sqrt{3}} = \frac{50,000VA}{230Vx1.732}$$

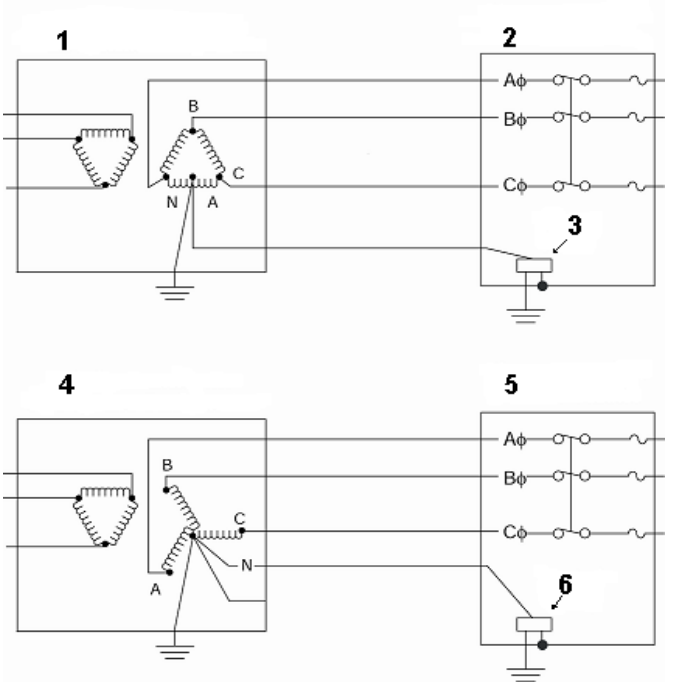
$$I = \frac{50,000VA}{398V} = 126A$$

⇨ Run an electrical power line of adequate length and gauge to the machine's location to reach the connections in the power cabinet. Final connections must be supervised by a Hurco-certified Service Engineer.

Recommended Isolation Transformer Configuration

❒ Ensure transformer requirements are met.

If a transformer is required and the machine was not equipped with one, the customer is responsible for providing a transformer. Contact your Hurco distributor for details. The transformer must meet Hurco's machine-operating voltage requirements. Use one of the configurations shown in the figure below. Hurco recommends the Wye configuration. It is the customer's responsibility to have a qualified electrician connect the transformer to the power source.



1	Delta System Configuration
2	Disconnect Switch in Power Cabinet—Delta
3	Neutral (SPG)—Delta
4	Wye System Configuration
5	Disconnect Switch in Power Cabinet—Wye
6	Neutral (SPG)—Wye

Figure 1–4. Delta and Wye Transformer Configurations

Grounding Equipment

The electrical and electronic control systems of the machining center are interconnected, terminating at the single point ground (SPG) terminal.

- The SPG must be properly connected to the ground circuit of the AC power source. The SPG is located inside the machine power cabinet.
- The SPG provides only one conducting path between the machine and external ground, preventing an unwanted ground loop (ground differential voltage).
- The grounding conductor must be sized to conform to all applicable electrical codes. However, Hurco recommends that the size of the neutral conductor (when applicable) be at least the size of the phase (current carrying) conductors.

Compressed Air Requirements

❒ Ensure compressed air is available.

TMM turning centers and turning centers equipped with the optional parts catcher or the optional auto door require compressed air. A continuous supply of clean and dry air is essential for proper machine operation, and must be connected to the machine as described here.

Compressed air for use by the machine must conform to these specifications:

- 5 CFM at 80 - 100 PSI or 0.14 M^3/min at 6-8 bar.
- Air humidity: 2º C (35º F)
- Use a minimum 1/2” (13 mm) diameter (trade size) pipe, or an equivalent 3/4” (19 mm) diameter hose supply line to the machine. This will supply the required air volume.
- Install a drip leg in the line ahead of the FRL unit. The drip leg will help remove the moisture in the air supply, making the filter last longer.
- Do not use quick-coupler type fittings at the connection to the FRL unit or in the supply line to the machine because these fittings restrict the air supply.

Recommended Operating Temperature

❒ Ensure operating temperature requirements are met.

Hurco machines that are not equipped with the air conditioning option may be operated in ambient temperatures up to 35ºC (95ºF), and in relative humidity (non-condensing) up to 95%. Set up the machine away from external heat sources, such as direct sunlight and heating vents.

⇨ Linear positioning accuracy of the machine was set at the factory for an ambient temperature of 68ºF (20ºC). Continual operation at higher or lower temperatures may necessitate adjustment of the leadscrew map.

MACHINE ARRIVAL

The following topics are covered in this section:

Inspecting for Damage Before Unloading

❒ Inspect the machine for damage.

All Hurco equipment passes a quality control inspection before being shipped. However, damage may occur during shipment. Hurco strongly recommends that the machine equipment be inspected for damage before unloading.

- Before unloading the machine from the shipping carrier, or after placing the machine onto its foundation, check whether the shock meter sensor is tripped. If the sensor is tripped in either case, the ball bearings will be dislodged from the spring(s). This sensor is located on the casting in the rear of the machine.
- Examine the machine for structural damage.
- Note any shipping damage to the machine on the shipper's bill of lading. If damage occurs after the machine is placed onto its foundation, the responsibility is that of the machine rigger. It is the customer's responsibility to file a damage claim in either case.
- Photograph any equipment damage for your records.

⇨ Hurco-certified Service personnel can help determine the cost of repairing any damages that occurred during shipment, or during or after placement onto its foundation.

Unloading the Machine

❒ Unload the machine.

Unload the undamaged machine from the shipping container, using a forklift that can handle the machine's size and weight.

Forklift Capacities

❒ Ensure an appropriate forklift or crane is available.

Make sure the forklift you use to unload the machine is rated to hold the machine weight, and is equipped with fork tines long enough to fully support the machine. Refer to the table in the section titled *Machine Weight,* on page 1 - 5. The table below lists the Fork Tines Length recommendations.

Fork Tines Length	mm	in
TM6	1828	72
TM8	1828	72
TM10	1828	72
TMM8	1828	72
TMM10	1828	72
TMX8	1828	72
TMX8MY	1828	72
TMX8MYS	1828	72

Table 2–1. Fork Tines Length Recommendations

The forklift must be rated to hold the machine weight, and the machine must be correctly positioned on the fork tines before lifting.

Unload the machine and position it as described below. If the recommended method is not workable, use a professional rigger who has experience moving machining centers.

Unloading the Machine from Shipping Carrier

Follow these steps to unload the machine:

1. Use a forklift at the front or rear of the machine to remove the machine from the shipping pallet.
   - Position the forklift under the heaviest part of the machine, at the front of the TM6, TM8, TMM8, and TMX machines.
   - Position the fork lift at the rear of the TM10 and TMM10 lathes, because of the placement of the pallet for these machines.
2. Move the machine on its shipping pallet to a location next to the final installation site.
3. Set the machine down, allowing enough space around the machine to later lift it away from the shipping pallet.
4. Unpack the equipment:
   a. Remove the outer covering and all boxes attached to the pallet.
   b. Remove the flood coolant tank and all other packaged items from the shipping pallet.
   c. Remove the nuts and washers that attach the machine to the shipping pallet.
   d. Remove any options kits, such as the optional chip conveyor, from the shipping pallet.
   e. If the machine model includes a separate transformer, remove the transformer from the shipping pallet and move it to the rear of the area where the machine will rest.
5. Verify that all equipment has arrived and is unloaded.
6. Follow the procedures in the next section to lift the machine for final installation.

Moving the Machine into Final Position

❒ Position the machine onto the foundation.

After unpacking the equipment, use a forklift or a crane to lift the machine from its shipping pallet for final installation. Inventory your shipment after it is placed next to the final installation site.

⇨ Do not remove the orange shipping supports inside the enclosure. If you discover any damage, contact your Hurco representative and the freight company immediately.

Lifting the Machine

Use a fork lift to lift the machine,

- positioned in the front of the TM6, TM8, TMM8, or TMX machines.
- positioned at the rear of the TM10 or TMM10 machines.

Or use a crane and lifting brackets installed in the front and rear of the machine.

Using a crane requires a total of 3 or 4 lifting brackets. Contact your Hurco distributor to order the brackets.

Machine	Crane Lifting Bracket(s) Part Number
TM6	804-0801-089 (1 required) 804-0801-090 (2 required)
TM8	804-0801-089 (1 required) 804-0801-090 (2 required)
TM10	804-0801-089 (1 required) 804-0801-090 (1 required) 804-1001-074 (2 required)
TMM8	804-0801-089 (1 required) 804-0801-090 (2 required)
TMM10	804-0801-089 (1 required) 804-0801-090 (1 required) 804-1001-074 (2 required)
TMX8	004-0801-071 (kit)
TMX8MY	004-0801-071 (kit)
TMX8MYS	004-0801-071 (kit)

Table 2–2. Crane Lifting Bracket Part Number

⇨ If the chip conveyor option is included, remove the chip conveyor before lifting the machine.

Lowering the Machine onto its Foundation

After lifting the machine from its shipping pallet, position the machine over the spot where the machine is to be installed.

1. Lower the machine to within 150 to 250 mm (6 to 10 inches) of the floor. Do not set the machine down.
2. Position the foot pads directly beneath the leveling bolts.

   All leveling bolts—including the center ones—must be used in rough leveling to evenly support the machine.

3. Lower the machine slowly onto the footpads.
4. Adjust the leveling bolts to half travel.
5. Lower the machine onto the footpads.
6. Torque all bolts evenly.

❒ Rough-level the machine.

Rough-level the machine following these guidelines:

1. Adjust the leveling bolts to rough level the machine.
2. Once the machine is resting on all foot pads, remove the forklift (or crane).

Leveling the Machine

Once the machine is rough leveled, contact your full service distributor or Hurco to have a Hurco-certified Service Engineer visit and finish the leveling. Place the flood coolant tank, tubing, and pump motor near the machine base for installation by a Hurco-certified Service Engineer.

After the service engineer has leveled the machine, it is the customer's responsibility to check and maintain this level (using the initial leveling specifications obtained at installation). Check machine level each month for the first six months after installation, and then once every six months.

START-UP PREPARATION

The following topics are covered in this section:

Pre-Installation Requirements

❒ Review the pre-installation requirements.

After you have completed the following requirements, contact your full service distributor or Hurco's customer service department. When you call, give the date that you completed pre-installation, and your machine serial number (stamped on the data plate attached to the electrical cabinet door).

- All machine equipment is located at the final installation site.
- Machine positioned for installation, on a suitable foundation that will bear its weight.
- Machine rough-leveled.
- Utilities made available.
- All lubrication levels checked.
- Hydraulic fluid levels have been checked.
- Flood coolant tank, tubing, and coolant pump motor placed near the machine base.

A Hurco-certified Service Engineer will visit your site and prepare the machine for start-up.

The customer agrees to furnish, at no charge to Hurco, the materials and personnel necessary to assist the Hurco-certified Service Engineer in testing and inspecting the machine.

⇨ It is the customer's responsibility to provide tooling, coolant, and appropriate lubrication and hydraulic fluid.

❒ Schedule an appointment for a Hurco-certified Service Engineer to prepare the machine for start-up.

Gathering Materials

Please have these materials on hand when the Hurco-certified Service Engineer arrives:

- Tooling Equipment
- Boring Bars
- Inserts
- Additional Chuck Jaws
- Collets for the optional collet chuck, if applicable.
- Spindle Liners for doing bar work
- Straight Shank Colllet Chucks for small drills
- Tension/Compression Tap Holder
- Additional boring sleeves if needed

Service Visit

The Hurco-certified Service Engineer performs these tasks:

1. Inspects the machine level and makes required adjustments.
2. Checks and connects electrical service to the machine.
3. Installs the control console.
4. Measures voltages in the electrical cabinet and the control enclosure, and makes adjustments, if needed.
5. Installs the flood coolant tank and coolant pump motor.
6. Installs covers and enclosures.
7. Checks fans and pumps for proper operation.
8. Checks all axes for calibration and correct limit switch operation.
9. Tests all options installed.

Programming Training

❒ Attend a Hurco Training class for machine operators.

Learn how to create part programs in minutes on the easy-to-use control.

Hurco offers hands-on training classes to demonstrate the powerful programming capabilities of its controls. Every customer will gain an advantage by attending training classes.

For additional information, or to register for a Training class, contact your local Hurco office or distributor, or go to Hurco's website at **www.hurco.com**.

MACHINE AND SOFTWARE OPTIONS

Hurco Turning Centers are available with the following machine and software options:

⇨ Contact Hurco or your Hurco distributor for details about purchasing machine and software options.

Machine

- **Bar Feeder**—the optional bar feeder loads stock into the enclosure. Refer to the *WinMax Lathe Options* manual for information about this option.
- **Conveyor**—an optional conveyor is available for moving the scrap pieces of metal out of the machine and into a trash receptacle. Refer to the *WinMax Lathe Options* manual for more information.
- **Parts Catcher**—the optional Parts Catcher catches a part after it has been cut. The door on the parts catcher can be opened so you can take a part out while the next part is being cut. Refer to the *WinMax Lathe Options* manual for information about this option.
- **Tool Setter**—the optional tool setter calibrates the tools relative to the axes and allows you to check tool dimensions and check for wear. Refer to the *WinMax Lathe Options* manual for more information.
- **Tailstock**—the optional tailstock balances long pieces of stock at one end. A footswitch activates the device. Refer to the *WinMax Lathe Options* manual for information about this option.
- **Collet Chuck—**the optional collet chuck holder holds the stock inside the chuck. A footswitch activates the device. Refer to the *WinMax Lathe Options* manual for information about this option.
- **Washdown Gun**—the optional washdown gun is available for spraying coolant inside the enclosure to clean the machine. Refer to the *WinMax Lathe Options* manual for information about this option.
- **Air Gun**—the optional air gun is available for cleaning chips out of the work piece and machine.
- **Hydraulic Cylinder Switches**—these optional hydraulic cylinder switches indicate whether the chuck is clamped or unclamped. These switches are adjustable depending upon the work piece and chuck settings.
- **Oil Skimmer**—the optional oil skimmer removes oil from the coolant, extending the life of the coolant.
- **Mist Collector**—the optional mist collector creates a vacuum within the machine to collect coolant mist. This option deposits the liquid coolant back into the machine, improving the shop air quality and decreasing the coolant consumption.

Software

The WinMax Lathe Max control contains software used to process data and display screens in much the same manner that personal computers use software programs. As with other software systems, WinMax Lathe has additional software options that can be purchased for the system.

- **Max Classic Package**—includes 256 MB ram, 2GB hard drive, 3.5” floppy disk, NCPP Option with the NC Productivity Package software for producing smaller, more powerful, and easier to maintain NC programs and 2D Verification graphics. Refer to the *Getting Started with WinMax Lathe* manual for more information about 2D verification graphics.
- **DXF Option**—allows you to convert an AutoCAD™ DXF file into a set of conversational data blocks. Refer to the *WinMax Lathe Options* manual for details.
- **UltiNet Package**—includes the interface cable and UltiNet software. UltiNet connects your control to your Local Area Network (LAN) so you can communicate with other Hurco CNCs and PCs in your shop or office. Refer to the *WinMax Lathe Options* manual for details.
- **Rotating Bar Feed**—allows the spindle to rotate at a programmed RPM while feeding stock. Refer to the Bar Feed data block section in the *WinMax Lathe Options* manual for details.
- **3D Graphics**—provides solid rendering, three-dimensional graphics with dynamic rotation. The 3D graphics are standard for the Live-Tooling Turning Centers. Refer to the *Getting Started with WinMax Lathe* manual for more information about 3D graphics.
- **Rigid Tapping**—allows you to tap the same hole multiple times, keeping the tool’s orientation with previously cut threads. Refer to the *WinMax Lathe Conversational Part Programming* manual for details.
- **Ultipocket**—adds special milling routines for machining pocket boundaries with islands. This option is only available with Live-Tooling Turning Centers. Refer to the *WinMax Lathe Options* manual for details.

RECORD OF CHANGES

704-0214-104, February 2010, ECN 16538

Revised by: K. Gross

Approved by: J. Bryan, J. Hennke, D. Skrzypczak, February 2010

Changes

704-0214-104: Updates based on the introduction of the TMX Series turning centers and these technical specifications:

- TMX8—757-4002-548, Rev A.
- TMX8MY—757-4002-558, Rev A.
- TMX8MYS—757-4002-559, Rev A.

704-0214-103, May 2009, ECN 16508

Revised by: K. Gross

Approved by: J. Bryan, J. Hennke, D. Ornelas, D. Skrzypczak, May 2009

Changes

704-0214-103 rB: Updates based on revisions to rA and revised technical specifications:

- TM6—757-4002-358, Rev J.
- TM8—757-4002-359, Rev L.
- TM10—757-4002-360, Rev J.
- TMM8—757-4002-415, Rev G.
- TMM10—757-4002-430, Rev F.

704-0214-103 rA: Updates based on technical specifications:

- TM6—757-4002-358, Rev H.
- TM8—757-4002-359, Rev K.
- TM10—757-4002-360, Rev H.
- TMM8—757-4002-415, Rev G.
- TMM10—757-4002-430, Rev F.

704-0214-102, November 2007, ECN 16334

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Changes

Updates based on machine and software updates through v2.0.01 and the introduction of Live-Tooling (TMM Series) machines.

704-0214-101, 05/25/05, ECN 15866

Revised by: K. Gross

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Changes

New manual release.

INDEX

S

T

U

V

W