

## Assembly Guide

# TORCHMATE® CLASSIC 5 x 10 Water Table



Shown with customer-supplied slats

For Product #:  
TMS-023-0510-01



Keep your consumable supply up-to-date.

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866-571-1066 to talk to a  
Technical Support Representative

Hours of Operation:  
6:00 AM to 4:00 PM (PT) Mon. thru Fri.  
(0600 to 1600)

### After Hours:

Send a detailed email message to:  
[support@torchmate.com](mailto:support@torchmate.com)  
A Technical Support Representative will  
contact you the following business day.

For service outside the USA:  
Call 775-673-2200 or send an email to  
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[www.torchmate.com](http://www.torchmate.com)

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**LINCOLN**  
**ELECTRIC** | **Cutting  
Systems**  
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The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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# Assembly Guide

## **TORCHMATE<sup>®</sup> CLASSIC 5 x 10**

### **Water Table**

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# Statement of Warranty

Lincoln Electric Cutting Systems equipment is designed and built with quality in mind. However, your overall satisfaction with our products generally can be increased by proper installation ... and thoughtful operation on your part.

## 30 Day guarantee

If Buyer is not satisfied with the performance of the Goods within 30 days from the date the Goods were shipped from the Seller, Buyer may return the Goods in the original carton(s) for a full refund less Shipping, Handling, Damages and Freight Charges. All sales become final after this 30 day period. Buyer should determine the satisfactory performance of the Goods by using the software, and inspecting and bench running the motors and/or accessory items. Any items to be returned for full refund must be in new, unused (except for bench testing), and saleable condition at the sole determination of the Seller. Items that, in the Seller's judgment, have been used or modified in any way, or kits that have been partially or fully completed will be subject to a restocking fee to be determined by the Seller. A return merchandise authorization number (RMA) must be obtained by the customer prior to any return. Shipments of returned items not marked with a valid RMA will be refused.

## Warranty

Electronics and motors are warranted by their manufacturer to the original purchaser for 12 months from the date of Torchmate, Inc.'s sale invoice. Mechanical components are standard industrial parts and are not warranted except by their respective manufacturers. If any of the warranted items are found by Seller to be defective, such Goods will, at Seller's option, be replaced or repaired at Seller's cost. No defective goods are to be returned without written authorization of seller. The sole purpose of the stipulated exclusive remedy shall be to provide the Buyer with free repair and replacement of defective Goods in the manner provided herein. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as the Seller is willing and able to repair or replace defective Goods in the prescribed manner. The foregoing warranty is in lieu of all other warranties, express or implied, including those of merchantability or fitness for any purpose not expressly set forth herein. No affirmation of Seller, by words or action, other than as set forth in this Section shall constitute a warranty. Seller's warranty does not apply to any Goods which have been subjected to misuse, mishandling, misapplication, neglect (including but not limited to improper maintenance), accident, improper installation, modification (including by not limited to use of unauthorized parts or attachments), or adjustment or repair performed by anyone other than Seller or one of Seller's authorized agents. When returning products to Seller packaging must be adequate or all warranty is null and void. Buyer will pay for the cost of Shipping to and from the Seller for all warranty repairs.

Before returning any goods, please contact  
**Lincoln Electric Cutting Systems Technical Support**

Monday through Friday from 6 AM to 4 PM (06:00 to 16:00), Pacific Time Zone

Toll Free: 1-866-571-1066

International: 775-673-2200

Fax: 775-673-2206

Email: [support@torchmate.com](mailto:support@torchmate.com)



Any claim by Buyer with reference to the Goods sold hereunder shall be deemed waived by the Buyer unless submitted in writing to seller within the earlier of (i) thirty (30) days following the date Buyer discovered or by reasonable inspection should have discovered, any claimed breach of foregoing warranty, or (ii) 12 months following the date of shipment. Any cause of action for breach of the foregoing warranty shall be brought within one year from the date the alleged breach was discovered or should have been discovered, whichever occurs first.

Seller's liability (whether under the theories of breach of contract or warranty, negligence, or strict liability) for its Goods shall be limited to repairing or replacing Goods found by Seller to be defective, or at Seller's option, to refunding the purchase price of such Goods or parts thereof.

In no event shall seller be liable for consequential damages arising out of or in connection with this agreement, including without limitation, breach of any obligation imposed on seller hereunder. Consequential damages shall include without limitation, loss of use, income or profit, or loss sustained as the result of injury (including death) to any person, or loss of or damage to property (including without limitation property handled or processed by the use of the goods). Buyer shall indemnify seller against all liability, cost or expense which may be sustained by seller on account of any such loss, damage, or injury.

Upon buyer's receipt of shipment, Buyer shall immediately inspect the Goods. Unless Buyer provides Seller with written notice of any claim for shortage, overcharge, or damage of Goods within ten (10) days from invoice date, such Goods shall be deemed finally inspected, checked and accepted by Buyer and no allowances shall be made thereafter. In absence of shipping and packaging instructions, Seller shall use its own discretion in the choice of carrier and method of packing. Seller shall not be responsible for insuring shipments unless specifically requested by Buyer and any insurance or special packaging so requested shall be at Buyer's expense and valuation.

Title to any Goods sold and risk of loss of such Goods passes to Buyer upon delivery by Seller to carrier and any claims for losses or damages shall be made by Buyer directly with carrier.

- A. In addition to the rights and remedies conferred upon Seller by law, Seller shall not be required to proceed with the performance of any order or contract if the Buyer is in default in the performance of any order or contract with Seller, and in case of doubt as to Buyer's financial responsibility, shipments under this order may be suspended.
- B. No delay or omission by Seller in exercising any right or remedy provided for herein shall constitute a waiver of such right or remedy and shall not be constituted as a bar to or a waiver of any such right or remedy on any future occasion.
- C. The sale of Goods shall be governed by the laws of the State of Nevada. Seller agrees to comply with all applicable laws of the United States.

The invalidity or unenforceability of any one or more phrases, sentences, or sections shall not affect the validity or enforceability of the remaining portions of this Agreement.

Limitation of liability

Disclaimer of consequential damages

Acceptance and transportation

Title and risk of loss

General conditions

Severability

# Welcome to Torchmate

## Welcome Letter

To the newest member of our Torchmate Family:

Thank You! Thank you for putting your faith and trust in Torchmate. When you purchased your Torchmate CNC Cutting System, you purchased more than just a machine. You purchased a team. The Torchmate team was built with the goal in mind of helping you get the most value out of your automation investment.

For some, this Torchmate CNC Cutting System purchase is their first endeavor into the world of automation. Others may consider themselves seasoned automation experts. No matter which category you fall into it is important that you realize that investing in a Torchmate is unlike any other machinery purchase you have made. We consider your success our success as well as your challenges our challenges.

The Torchmate product line is designed to be simple, reliable and accurate. While there is no “Easy” button on your new system, I can promise that you will get out of it what you put in. Operating any machinery is a skill and does have a learning curve.

## Call us for help



The first and perhaps most important item we want to give you today is the Torchmate Technical Support Hotline: [866] 571-1066. This number is toll free for those within the United States. For those outside the United States, use the following telephone number: [775] 673-2200.

There is a dedicated professional support staff available Monday – Friday from 6 AM to 4 PM [06:00 to 16:00], Pacific Time Zone, to assist you in any way that they can. We pride ourselves on offering free, unlimited telephone support for your machine and all we expect in return is communication, understanding, and patience. We are here for you as long as you need us.

Please don't be a stranger. If you have questions or problems, call us. No matter how trivial your issue may seem it is not trivial if it cuts into your productivity. Call, Call, Call! We are here for you! Thank you again for putting your trust in us. We will do our best to not let you down.

Sincerely,

The Torchmate Technical Support Team  
Lincoln Electric Cutting Systems

*The year was 1979. After spending his childhood working with metal and hot rods, William (Bill) Kunz, Sr. began selling his first shape-cutting machine. He called it the "Torchmate."*

*Bill had read about pantograph flame-cutting machines in an automotive magazine, so he set out to bring this technology to hobbyists and small shop owners like himself. His fundamental idea? Find a way to lower the \$1,400 cost (a big investment 30 years ago) down to just \$400—thanks to the first Torchmate Pantograph Machine Kits.*

*Torchmate sold thousands of pantograph machines over the next 18 years, and the company's objective has remained steadfast: cutting technology should not be limited only to the metal-working elite.*

*Not content to rest on his laurels, Bill launched Torchmate's line of CNC (Computer Numerically Controlled) Cutting Machines in the late 1990s. The pantograph evolved into an automated, two-axis cutting table featuring a rugged yet precise plasma torch.*

*Following the same fundamental idea from the company's founding, the Torchmate tables brought major cost reductions, allowing plasma cutting (which had been expensively out of reach for most shops) to be widely affordable. The cut quality, increased production, and precise replication were also highly appreciated capabilities of the new machines.*

*In early 2001 and with the help of Kunz's son, Bill Jr., the company unveiled the Torchmate 2, which used an extruded aluminum gantry. It cut customer fabrication time from 40 hours down to just 16. Adding a third axis expanded functionality into the Routermate, which cuts wood, plastic, foam, and other materials using a router / drill, in 3-D.*

*Then came the Torchmate 3, with its strong aluminum-extrusion frame that assembles in less than a day—and a price point under \$10,000.*

*The most recent new Torchmate products include the large Torchmate X table and, more recently, the revolutionary new Growth Series: the Torchmate 2x2, 2x4, and 4x4 CNC Systems.*

*In 2011, the Kunz' family vision was realized when Lincoln Electric, the venerated welding products company from Cleveland, Ohio, acquired Torchmate. To bring world-class metal cutting equipment to its customers world-wide, Lincoln Electric Cutting Systems will continue to create, sell, and support Torchmate products in Reno, NV.*



[www.torchmate.com](http://www.torchmate.com)

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**ELECTRIC**

**Cutting  
Systems**

# Technical Support

Call, Fax, or Email

When building the table, if a question or concern arises or a part is missing, please contact Torchmate technical support.

Technical support will also help you with operating the CNC system, and troubleshooting problems.

Technical support is available Monday through Friday from 6:00 AM to 4:00 PM (06:00 to 16:00), Pacific Time Zone.



Toll Free: 1-866-571-1066

International: 775-673-2200

Fax: 775-673-2206

Email: [support@torchmate.com](mailto:support@torchmate.com)

Call us for Consumables, or visit our web store

[www.TorchmateStore.com](http://www.TorchmateStore.com)



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# Safety Information

Please read this section thoroughly

[www.torchmate.com](http://www.torchmate.com)

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# Safety First

Lincoln Electric Cutting Systems equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation ... and thoughtful operation on your part.

## WARNING

**DO NOT INSTALL, OPERATE, OR REPAIR THIS EQUIPMENT WITHOUT READING THE SAFETY WARNINGS CONTAINED THROUGHOUT THIS MANUAL**

Think before you act— and be careful.

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH.  
KEEP CHILDREN AWAY.  
IF YOU WEAR A PACEMAKER, CONSULT WITH YOUR DOCTOR BEFORE OPERATING.

Read and understand the following safety highlights. For additional safety information it is strongly recommended that you purchase a copy of "Safety in Welding & Cutting - ANSI Standard Z49.1" from the American Welding Society, P.O. Box 351040, Miami, Florida 33135 or CSA Standard W117.2.

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.

## Electric shock



1. ELECTRIC SHOCK can kill.
  - 1.1 The electrode and work (or ground) circuits are electrically "hot" when the power source is on. Do not touch these "hot" parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.
  - 1.2 Disconnect the power source before performing any service or repairs. When the power source is operating, voltages in excess of 250 volts are produced. This creates the potential for serious electrical shock - possibly even fatal.
  - 1.3 Insulate yourself from work and ground using dry insulation. Wear dry gloves and clothing. Take extra care when the work place is moist or damp.
  - 1.4 Always be sure the work cable makes a good electrical connection with the metal being cut or gouged. The connection should be as close as possible to the area being cut or gouged.
  - 1.5 Ground the work or metal to be cut or gouged to a good electrical (earth) ground.
  - 1.6 Maintain the plasma torch, cable and work clamp in good, safe operating condition. Repair or replace all worn or damaged parts. Replace damaged insulation.
  - 1.7 Never dip the torch in water for cooling or plasma cut or gouge in or under water.
  - 1.8 When working above floor level, protect yourself from a fall should you get a shock.
  - 1.9 Operate the pilot arc with caution. The pilot arc is capable of burning the operator, others or even piercing safety clothing.
  - 1.10 Also see Items 4.3 and 6.

2. ARC RAYS can burn.

- 2.1 Plasma Arc Rays can injure your eyes and burn your skin. The plasma arc process produces very bright ultraviolet and infrared rays. These will damage your eyes and burn your skin if you are not properly protected.
- 2.2 Use safety glasses and a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when performing or observing plasma arc cutting or gouging. Glasses, head-shield, and filter lens should conform to ANSI Z87.1 standards.

| Arc Current   | Minimum Shade No. | Suggested Shade No. |
|---------------|-------------------|---------------------|
| Less than 20A | 4                 | 4                   |
| 20A-40A       | 5                 | 5                   |
| 40A-60A       | 6                 | 6                   |
| 60A-300A      | 8                 | 9                   |
| 300A-400A     | 9                 | 12                  |
| 400A-800A     | 10                | 14                  |

- 2.3 Use suitable clothing including gloves made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
- 2.4 Protect other nearby personnel with suitable non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

3. FUMES AND GASES can be dangerous.

- 3.1 Plasma cutting or gouging may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When cutting or gouging, keep your head out of the fumes. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.
- 3.2 Use an air-supplied respirator if ventilation is not adequate to remove all fumes and gases.
- 3.3 When plasma cutting or gouging on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required.
- 3.4 Additional precautions are also required when cutting [zinc] galvanized steel or materials containing or coated with any of the following:

|          |           |        |           |          |
|----------|-----------|--------|-----------|----------|
| Antimony | Beryllium | Cobalt | Manganese | Selenium |
| Arsenic  | Cadmium   | Copper | Mercury   | Silver   |
| Barium   | Chromium  | Lead   | Nickel    | Vanadium |

Arc rays



Fumes, gases, and dust



- 3.5 The operation of plasma cutting or gouging fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment, and the specific procedure and application involved. Worker exposure levels should be checked upon installation and periodically thereafter to be certain levels are within applicable OSHA PEL and ACGIH TLV limits. For information on how to test for fumes and gases in your work place, refer to publications section of this manual.
- 3.6 Do not use plasma cutting or gouging equipment in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products. Remove all sources of these vapors.
- 3.7 Gases used for plasma cutting and gouging can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- 3.8 Read and understand the manufacturer's instructions for this equipment and follow your employer's safety practices.
- 3.9 This product, when used for cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects
- 3.10 Some dust created by routing, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Avoid prolonged contact with this dust. Wear protective clothing and wash exposed areas with soap and water. Allowing dust to get into your mouth, eyes, or lay on the skin may promote absorption of harmful chemicals.

Some examples of these chemicals are:

- Lead from lead-based paint.
- Crystalline silica from bricks and cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber (CCA).

- 3.11 Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

### Fire or Explosion



4. Cutting flame and sparks can cause FIRE OR EXPLOSION.
  - 4.1 Fire and explosion can be caused by hot slag, sparks, oxygen fueled cutting flame, or the plasma arc.
  - 4.2 Have a fire extinguisher readily available. Provide a fire watch when working in an area where fire hazards may exist.
  - 4.3 When not cutting or gouging, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
  - 4.4 Be sure there are no combustible or flammable materials in the workplace. Any material that cannot be removed must be protected.
    - 4.4.1 Sparks and hot materials from cutting or gouging can easily go through small cracks and openings to adjacent areas.

- 4.4.2 Avoid cutting or gouging near hydraulic lines.
- 4.4.3 Do not cut or gouge tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been "cleaned." For information purchase "Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances", AWS F4.1 from the American Welding Society (see address above).
- 4.4.4 Vent hollow castings or containers before heating, cutting or gouging. They may explode.
- 4.5 Do not add fuel to engine driven equipment near an area where plasma cutting or gouging is being done.
- 4.6 Connect the work cable to the work as close to the cutting or gouging area as practical. Work cables connected to the building framework or other locations away from the cutting or gouging area increase the possibility of the current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- 4.7 Hydrogen gas may be formed and trapped under aluminum work pieces when they are cut underwater or while using a water table. DO NOT cut aluminum alloys underwater or on a water table unless the hydrogen gas can be eliminated or dissipated. Trapped hydrogen gas that is ignited will cause an explosion.
- 4.8 Read and follow NFPA 51B "Standard for Prevention During Welding, Cutting and Other Hot Work", available from NFPA, 1 Batterymarch Park, PO box 9101, Quincy, Ma 022690-9101.
- 5. CYLINDER may EXPLODE if damaged.
  - 5.1 Use only compressed gas cylinders containing the correct gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc., should be suitable for the application and maintained in good condition.
  - 5.2 Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.
  - 5.3 Cylinders should be located:
    - Away from areas where they may be struck or subjected to physical damage.
    - A safe distance from plasma cutting or gouging, arc welding operations and any other source of heat, sparks, or flame.
  - 5.4 Never allow any part of the electrode, torch or any other electrically "hot" parts to touch a cylinder.
  - 5.5 Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
  - 5.6 Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
  - 5.7 Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202.

#### Cylinder Explosion



## Safety First (continued)

### Electrical power



6. FOR ELECTRICALLY powered equipment.
  - 6.1 Turn off input power using the disconnect switch at the fuse box before working on the equipment.
  - 6.2 Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer's recommendations.
  - 6.3 Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

### Plasma arc



7. PLASMA ARC can injure.
  - 7.1 Keep your body away from nozzle and plasma arc.
  - 7.2 Operate the pilot arc with caution. The pilot arc is capable of burning the operator, others or even piercing safety clothing.

### Electric and magnetic fields



8. ELECTRIC AND MAGNETIC FIELDS may be dangerous
  - 8.1 Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Cutting or gouging current creates EMF fields around torch cables and cutting machines.
  - 8.2 EMF fields may interfere with some pacemakers, so operators having a pacemaker should consult their physician before cutting or gouging.
  - 8.3 Exposure to EMF fields during cutting or gouging may have other health effects which are now not known.
  - 8.4 All operators should use the following procedures in order to minimize exposure to EMF fields from the cutting or gouging circuit:
    - 8.4.1 Route the torch and work cables together - Secure them with tape when possible.
    - 8.4.2 Never coil the torch cable around your body.
    - 8.4.3 Do not place your body between the torch and work cables. If the torch cable is on your right side, the work cable should also be on your right side.
    - 8.4.4 Connect the work cable to the workpiece as close as possible to the area being cut or gouged.
    - 8.4.5 Do not work next to cutting power source.

9. AUTOMATIC OPERATION

- 9.1 Any CNC machine may begin to operate automatically without warning. Only a trained individual familiar with the software, machine, and computer system should operate this equipment.
- 9.2 Keep the immediate area around the CNC machine clear of materials that may cause interference. Keep area clear of bystanders.
- 9.3 All untrained persons should not work on or near a CNC machine. Do not leave the CNC machine unattended while power is on to any electronics.

10. NOISE

- 10.1 Noise can cause permanent hearing loss. CNC operation, plasma arc cutting, plate marking, routing, and drilling can cause noise levels that exceed safe limits. You must protect your ears from loud noise to prevent permanent loss of hearing.
  - 10.1.1 To protect your hearing from loud noise, wear protective ear plugs and/or ear muffs. Protect others in the workplace.
  - 10.1.2 Noise levels should be measured to be sure the decibels (sound) do not exceed safe levels.
- 10.2 For information on how to test for noise refer to the publications section of this manual.

11. HEAVY PARTS

- 11.1 Parts of CNC machines are heavy. Also, material you are cutting may be heavy. Use caution when lifting or moving them. To avoid injury, get someone to help you, or use a mechanical lifter. When using a mechanical lifter, follow all the manufacturer's safety guidelines.
- 11.2 Review the Occupational Safety & Health Administration (OSHA) technical manual Sect. 7, Ch 1.5. See the publications section that follows.

12. FLYING DEBRIS

- 12.1 Metal cutting and marking operations create waste that can fragment and fly. Make sure you have proper eye protection and that everyone close to the CNC operations has proper eye protection, too.
- 12.2 Review the ANSI Z87.1 requirements. See the publications section for additional information.

Automatic operation



Noise



Heavy parts



Flying debris



## Safety First (continued)

### Pinch & crush points



#### 13. PINCH AND CRUSH POINTS

- 13.1 Pinch and crush points are those normally moving parts of machinery, like CNC machines, that can pinch, capture, crush, or sever parts of your body. Be aware of hazardous pinch and crush points.
- 13.2 Don't repair or adjust the machine with the controls on.
- 13.3 When the end of a CNC machine's travel creates a "hard stop," it creates a crush point. Keep fingers and hands away from this.
- 13.4 Do not stack or store any additional items in contact with the machine. These could create additional pinch or crush points, or could create a falling hazard.

### Rotary Tools



#### 14. SHARP ROTARY TOOLS

- 14.1 Routing and drilling use high-speed rotating bits and cutters with sharp edges. Keep clear of bits when in use.
- 14.2 Turn the router, spindle, or drill off when changing bits. Be careful of the sharp edges.

### Hot Material



#### 15. HOT MATERIAL

- 15.1 Plasma cutting uses an electric arc that can reach temperatures of 45,000°F (25,000°C). Oxygen-fuel cutting flames can be up to 6,330°F (3,500°C). Any parts and scrap will be very hot after cutting. Use extreme care.
- 15.2 Use tongs and wear protective gloves when handling recently cut material. Also, consider other devices for safe hot material handling.
- 15.3 It is safest to let material cool completely before handling.

### Mechanical Drives



#### 16. MECHANICAL DRIVES

- 16.1 High-speed mechanical drives made of gears, belts, and or drive screws are used by CNC machines. Keep clear of them during operation.
- 16.2 Do not attempt to service, adjust, or otherwise touch these components while the machine is on.
- 16.3 Secure any loose clothing and cables to prevent entanglement.

### Pressurized Air Lines



#### 17. AIR LINES UNDER PRESSURE

- 17.1 Some tools use compressed air or gases. Often flexible tubing (lines) bring the high-pressure air or gas to the machine. Inspect these lines periodically. Repair or replace damaged lines.
- 17.2 Hot sparks, flying debris, other objects, or vehicles can melt, burn, or puncture these lines. Check them for punctures, burns, or other damage or defects that could cause failure.
- 17.3 Check the routing of the lines to keep them away from traffic and from underfoot.



Refer to the following standards or their latest revisions for more information:

- OSHA, SAFETY AND HEALTH STANDARDS, 29CFR 1910, obtainable from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
- ANSI Standard Z49.1, SAFETY IN WELDING AND CUTTING, obtainable from the American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126
- NIOSH, SAFETY AND HEALTH IN ARC WELDING AND GAS WELDING AND CUTTING, obtainable from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
- ANSI Standard Z87.1, SAFE PRACTICES FOR OCCUPATION AND EDUCATIONAL EYE AND FACE PROTECTION, obtainable from American National Standards Institute, 1430 Broadway, New York, NY 10018
- ANSI Standard Z49.2, FIRE PREVENTION IN THE USE OF CUTTING AND WELDING PROCESSES, obtainable from American National Standards Institute, 1430 Broadway, New York, NY 10018
- AWS Standard A6.0, WELDING AND CUTTING CONTAINERS WHICH HAVE HELD COMBUSTIBLES, obtainable from American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126
- NFPA Standard 51, OXYGEN-FUEL GAS SYSTEMS FOR WELDING, CUTTING AND ALLIED PROCESSES, obtainable from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
- NFPA Standard 70, NATIONAL ELECTRICAL CODE, obtainable from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
- NFPA Standard 51B, CUTTING AND WELDING PROCESSES, obtainable from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
- CGA Pamphlet P-1, SAFE HANDLING OF COMPRESSED GASES IN CYLINDERS, obtainable from the Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202
- CSA Standard W117.2, CODE FOR SAFETY IN WELDING AND CUTTING, obtainable from the Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3
- NWSA booklet, WELDING SAFETY BIBLIOGRAPHY obtainable from the National Welding Supply Association, 1900 Arch Street, Philadelphia, PA 19103
- ANSI Standard Z88.2, PRACTICE FOR RESPIRATORY PROTECTION, obtainable from American National Standards Institute, 1430 Broadway, New York, NY 10018

## Other Important Publications

[www.torchmate.com](http://www.torchmate.com)

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- Technical support will also help you with operating the CNC system, and troubleshooting problems.
- Torchmate technical support is available Monday through Friday, from 6 AM to 4 PM (06:00 to 16:00), Pacific Time Zone.



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 International: 775-673-2200  
 Fax: 775-673-2206  
 Email: [support@torchmate.com](mailto:support@torchmate.com)

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# Receiving and Preparation

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# Preparations before assembly

When installing a Torchmate CNC Cutting System in your workshop, there are preparations you can make to influence the productivity and ease of use of the machine—as well as the safety of the operator. The main factors to prepare for include the physical layout and placement of the machine in the shop and the availability of power, compressed gas or air (or both), and ventilation.

## Space

- When preparing to install the Torchmate CNC Cutting System, provide sufficient space for efficient operation. This includes considering the room to safely load and unload the material being cut, and storage for the raw materials and finished products.
- If your system is too far from your material storage or from the stations where additional operations may be performed, it reduces your overall efficiency. A good goal is to arrange a balance between space and efficiency.
- Consider placing the equipment in an area that can handle any expansion, as needed.
- Orient the machine with the Y-axis cable carrier against a wall:



## Electrically-powered modules

- The following components of the system must be supplied with power.
  - CNC Control box
  - Plasma power supply (possibly a separate purchase)
  - Computer (possibly a separate purchase)
  - Air compressor (separate purchase)

## Power distribution panel circuits

- Always consult with your electrical service provider or a qualified electrician to ensure that each circuit meets the equipment's requirements for power and EMI—and is safe to operate.

## Shielding and Grounding

- Many pieces of shop equipment can generate enough high frequency electromagnetic and radio waves to interfere with the operation of the CNC Control box or the computer or both. Consider installing a ground rod near the Torchmate CNC Cutting System to help reduce electromagnetic interference (EMI).
- Always consult with your electrical service provider or a qualified electrician regarding electrical code requirements in your local area for grounding rods and other measures you can take to reduce EMI. For additional information, see the "Shielding and Grounding.pdf" file located on your USB drive, or search Torchmate.com for "EMI."

- Plasma operations and the oxyfuel processes require compressed gas supplies. These may require the placement of gas cylinders, regulators, and lines in the space near the CNC cutting system.
- Leave adequate space for moving empty and replacement cylinders and for safe placement of pressurized and flammable gases well away from the operation of the cutting torch.
- Recognize that smoke and dust are created by the cutting processes. Plan to remove it and to provide a supply of clean air.

Compressed  
air and gas

Fumes and smoke



The Lincoln Electric Modular Extraction Hood removes dust and smoke.



The Lincoln Electric Mobile Welding Fume Extractor with Filtration can also be positioned near the cutting area.

- If you know the types of materials and the thicknesses you will be cutting, you can plan to keep a good stock of consumables on hand. This will avoid machine downtime and the scramble to obtain replacement consumables on short notice.
- To order consumables, just call Torchmate Parts Support—or visit our store website.

Consumables

Toll Free: 1-866-571-1066  
 International: 775-673-2200  
 Fax: 775-673-2206  
 Email: [parts@torchmate.com](mailto:parts@torchmate.com)  
[www.TorchmateStore.com](http://www.TorchmateStore.com)



# Receiving your shipment

Your Torchmate 5 x 10 Classic Series Water Table will arrive in a shipping crate. Please take the time to check your shipment as soon as it arrives. Inspect carefully for freight damage. Check for missing parts. Contact Torchmate Technical Support for any issues or concerns.

## Receiving shipping crates and cartons

- Your Torchmate 5 x 10 Classic Series Water Table is carefully packaged and should arrive in good condition. However, even with the best of precautions, damage during shipping can happen. You can ensure your new product will be ready to use as soon as possible, if you inspect it immediately when it arrives.

## Inspect for shipping damage

- Check the crates. If you find any damage, inform the freight company, and contact Torchmate Technical Support.
- As soon as possible after delivery, carefully inspect your shipment. Look for dented, bent, or broken parts. Immediately contact Torchmate Technical Support if any damage is found.

## Crates and weights

- The crate containing the water table components weighs about 1000 lbs.
- Take care to observe safety procedures when moving and unpacking these crates.



## Check for missing parts

- Check that all parts have arrived and that your shipment is complete as soon as possible using the parts checklists on the following pages. If you have purchased the optional water table, check these parts as well. Although we carefully pack your shipment, there is a small possibility that some component or quantity does not correspond to the parts list.
- The parts checklist is arranged in the order of assembly.

## Technical Support

- Contact Torchmate Technical Support should you find any damage or missing parts. The sooner you call, the sooner any problems can be resolved.
- If you are not sure about something, call us.
- If you have a question about something, call us.



### TECHNICAL SUPPORT

Toll Free: 1-866-571-1066

International: 775-673-2200

Fax: 775-673-2206

Email: [support@torchmate.com](mailto:support@torchmate.com)









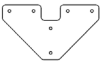





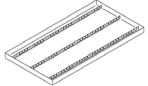




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On the next few pages, the parts included in your Torchmate 5 x 10 Classic Series Water Table shipment are listed in the order you assemble them. To make it easier to complete the assembly of your cutting system, you can lay out the received parts in this order as you check them against this list.

| ☑ | Qty. | Label | Part  | Description   | Part Number                          | Step                          |
|---|------|-------|---|---|--------------------------------------|-------------------------------|
|   | 8    | A     |    | Water table leg, bolted,                                    | TMS-130-0004-23                      | 1                             |
|   | 8    | K     |    | Leveling foot, 1/2-13<br>Deluxe 4"                          | TMS-448-0004-01                      | 1                             |
|   | 16   | E     |    | Water table gusset, 45-deg                                  | TMS-130-0004-32                      | 2                             |
|   | 240  | L     |    | Screw, 5/16-18 X 3/4 SHCS<br>(INCLUDED IN PART KIT)         | TMS-410-0016-12<br>(TMS-130-0004-45) | 2, 3, 4, 5, 6,<br>7, 8, 9, 10 |
|   | 240  | M     |    | Lockwasher, 5/16 high collar<br>(INCLUDED IN PART KIT)      | TMS-413-0501-16<br>(TMS-130-0004-45) | 2, 3, 4, 5, 6,<br>7, 8, 9, 10 |
|   | 16   | G     |    | Water table gusset,<br>180-deg                              | TMS-130-0004-34                      | 3, 7, 9                       |
|   | 18   | B     |    | Water table cross brace,<br>length, 40.563"                 | TMS-130-0004-31                      | 4, 7, 9                       |
|   | 8    | F     |    | Water table gusset, 45-deg<br>relieved                      | TMS-130-0004-33                      | 5                             |
|   | 8    | H     |   | Water table gusset, 180-<br>deg relieved                    | TMS-130-0004-35                      | 5                             |
|   | 4    | C     |  | Water table shelf support,<br>60.875"                       | TMS-130-0004-30                      | 6                             |
|   | 4    | D     |  | Water table cross brace,<br>width, 64.875"                  | TMS-130-0004-29                      | 8                             |
|   | 16   |       |  | Drop in T-bolt<br>(INCLUDED IN PART KIT)                    | TMS-440-0024-01<br>(TMS-130-0004-45) | 11                            |
|   | 4    | I     |  | TM Legacy joining bracket                                   | TMS-130-0004-36                      | 12                            |
|   | 16   |       |  | T-bolt<br>(INCLUDED IN PART KIT)                            | TMS-410-5016-10<br>(TMS-130-0004-45) | 12                            |
|   | 1    | J     |  | Water table water pan<br>assembly 5 x 10 bolted             | TMS-130-0004-44                      | 13                            |
|   | 1    | 1     |  | TFP-AR small table 3/4<br>plumbing (water release<br>valve) | TMS-459-0010-01                      | 13                            |
|   | 1    | 1     |  | PTFE thread-sealant tape<br>(recommended)                   | <i>[separate<br/>purchase]</i>       | 13                            |

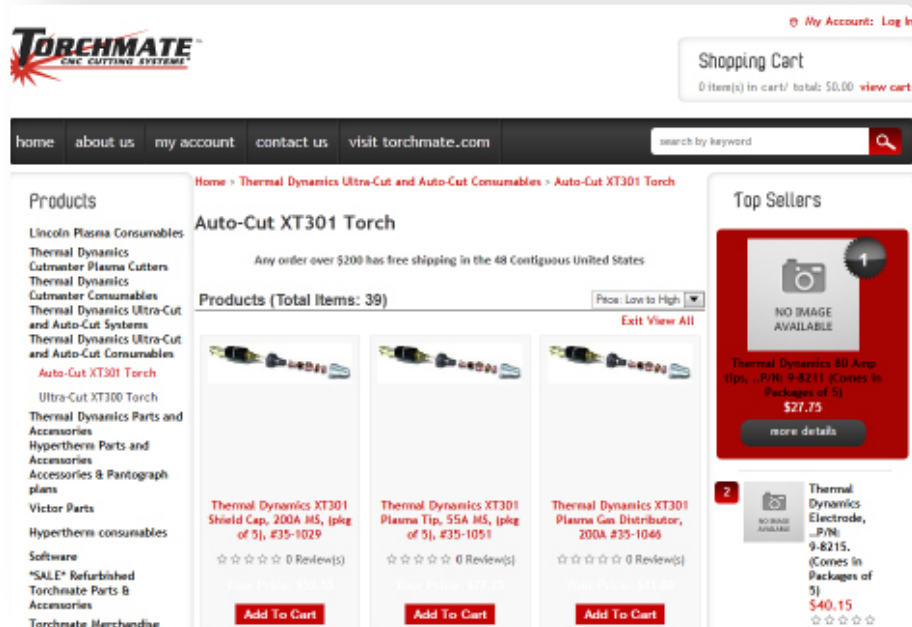
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- When building the table, if a question or concern arises or a part is missing, please contact Torchmate Technical Support.
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# Assembling the water table

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# Assembly overview

In the following pages, you will find steps that you can use to assemble the Torchmate 5 x 10 Water Table. The water table controls fumes, smoke, and sparks during plasma or oxy-fuel cutting and supports the material being cut on a sturdy, level surface. Multiple steps are required for assembly. Steps near the end will differ slightly if you are adding the water table to an existing cutting table or assembling a new cutting table.

## Basic assembly steps

- The cutting table is assembled in a series of easy steps.
  - Step 1: Add leveling feet to legs
  - Step 2: Add gussets to corner legs
  - Step 3: Add gussets to middle legs
  - Step 4: Assemble sides with legs and cross braces
  - Step 5: Add horizontal gussets to sides
  - Step 6: Add shelf supports to one side
  - Step 7: Add shelf support gussets and cross braces
  - Step 8: Add water pan width support cross braces
  - Step 9: Add water pan mid-width gussets and cross braces
  - Step 10: Add the second side
  - Step 11: Level table and tighten all screws
  - Step 12: Position water table inside pre-built cutting table (if necessary)
  - Step 13: Add joining brackets and attach to cutting table
  - Step 14: Lower water pan into table and add slats

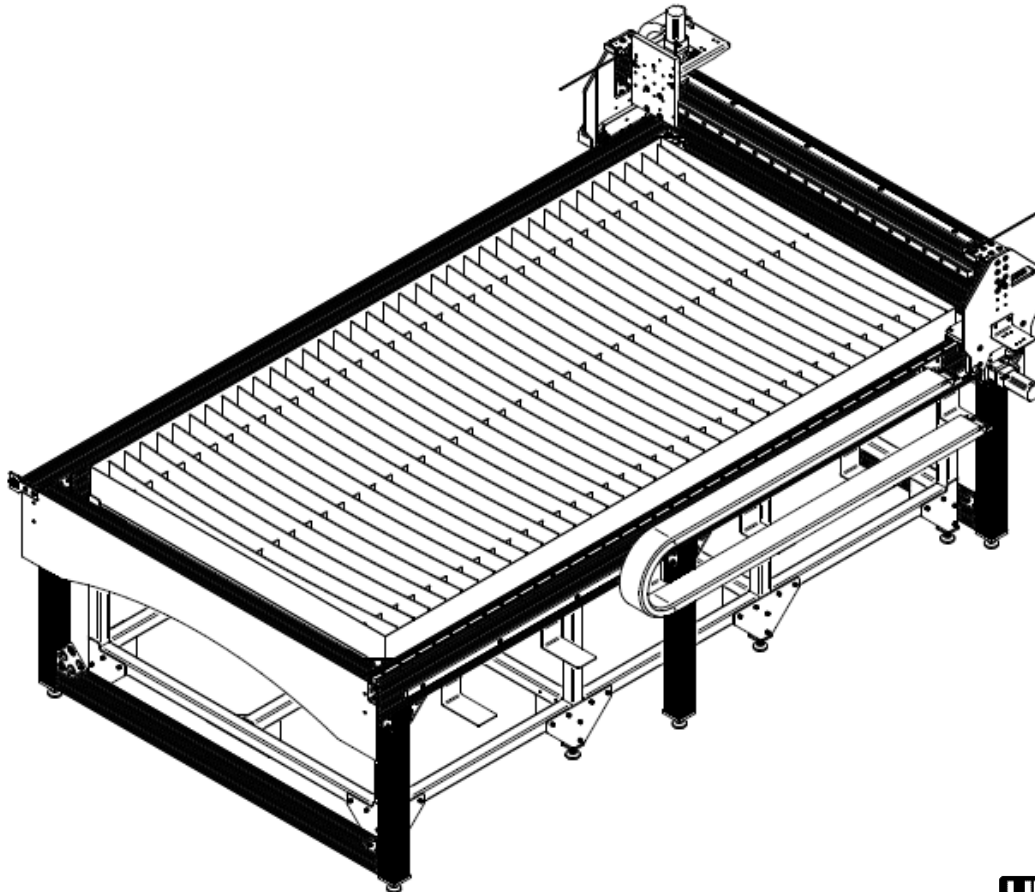
Completed  
5 x 10 Water Table



1000 lbs  
455 kg



- The completed CNC cutting table, including the water table, is sturdy and heavy-duty, so that it can precisely and accurately move the torch, support your material, and support the weight of the water in the water table reservoir.
- After being removed from the crate, the weight of the 5 x 10 Water Table is 1000 lbs (455 kg), before adding water.
- Whether full or empty of water, **do not** drag the cutting table when moving it to a new location.
  - If you drag the CNC cutting table / water table, you can damage it and get it out of square.
- **Do not** try to move the cutting table without help. When you must re-position the water table (and its CNC cutting table) or move it to a new location, drain all the water and use the proper equipment to carefully lift it. In some instances, it will be better to carefully disassemble the table and re-assemble it in the new location.



Weight of completed  
5 x 10 Water Table





The combined CNC  
table and water  
table should not  
be moved without  
careful planning for  
disassembly.



## Step 1: Add leveling feet to legs

The 5 x 10 Water Table holds the material you will cut with your CNC cutting table, as well as the water that will help with fume control and sparks. For optimum performance, the material must be level, so you will level your table with adjustable feet in a later step. In this step, you thread the feet onto the legs.

### Required parts / components

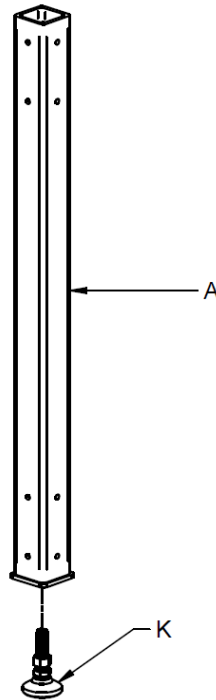
| Qty | Label | Part  | Description                     | Part #          |
|-----|-------|---|---------------------------------|-----------------|
| 8   | A     |  | Water table leg, bolted         | TMS-130-0004-23 |
| 8   | K     |  | Leveling foot, 1/2-13 Deluxe 4" | TMS-448-0004-01 |

### Instructions

- On each of the water table legs, thread a leveling foot in so that about half the threads are still showing.
- When it is time to level the table, you will have maximum up and down adjustment.
- Take note of the lock nut, that will be used to secure the level position of the foot.





### Illustration

Repeat for 8 legs



## Step 2: Add gussets to corner legs

The 5 x 10 Water table relies on gussets to connect the cross braces to the legs for strength and durability. In this step, you thread screws through washers and the gussets, into the corner legs. There are 4 corner legs that get these gussets.

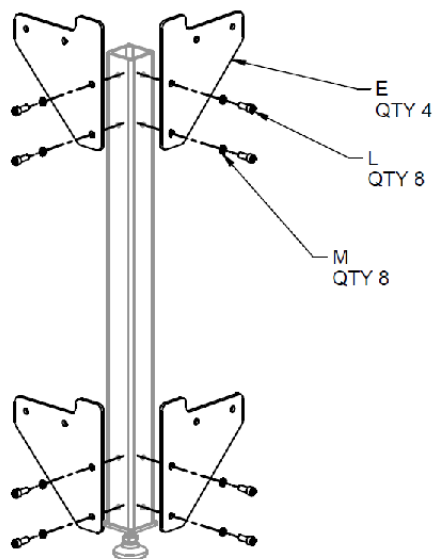
| Qty | Label | Part  | Description                  | Part #                                 |
|-----|-------|---|------------------------------|--|
| 4   |       |  | Leg with leveling foot       | From Step 1                            |
| 16  | E     |  | Water table gusset, 45-deg   | TMS-130-0004-32                        |
| 32  | L     |  | Screw, 5/16-18 X 3/4 SHCS    | TMS-410-0016-12<br>(From hardware kit) |
| 32  | M     |  | Lockwasher, 5/16 high collar | TMS-413-0501-16<br>(From hardware kit) |

Required parts /  
components

- Perform this assembly on a flat, level surface.
- Insert each screw through a washer and through a hole near the vertical edge of the gusset.
- Thread the screws into the threaded-holes in the corner leg.
- The screws will be fully tightened later, during leveling, so for now, tighten them only lightly.
- Attach the gussets to each of the four corner legs.

Instructions

Repeat for 4 legs


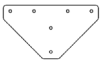




Illustration

## Step 3: Add gussets to middle legs

The 5 x 10 Water table uses additional gussets to connect the cross braces to the middle legs. In this step, you thread screws through washers and the gussets, into the middle legs. There are 4 middle legs that get these gussets.

Required parts /  
components

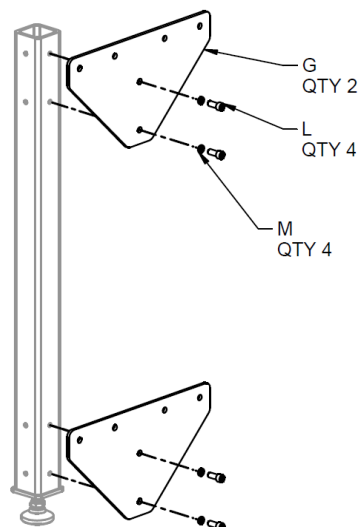
| Qty | Label | Part  | Description                                    | Part #          |
|-----|-------|---|--|-----------------|
| 4   |       |  | Leg with leveling foot                         | From Step 1     |
| 8   | G     |  | Water table gusset, 180-deg                    | TMS-130-0004-34 |
| 16  | L     |  | Screw, $\frac{5}{16}$ -18 X $\frac{3}{4}$ SHCS | TMS-410-0016-12 |
| 16  | M     |  | Lockwasher, $\frac{5}{16}$ high collar         | TMS-413-0501-16 |

Instructions

- Perform this assembly on a flat, level surface.
- Insert each screw through a washer and through a hole near the center of the gusset.
- Thread the screws into the threaded-holes in the middle leg.
- The screws will be fully tightened later, during leveling, so for now, tighten them only lightly.
- Attach the gussets to each of the four middle legs.






Illustration

Repeat for 4 legs



## Step 4: Assemble sides with legs and cross braces

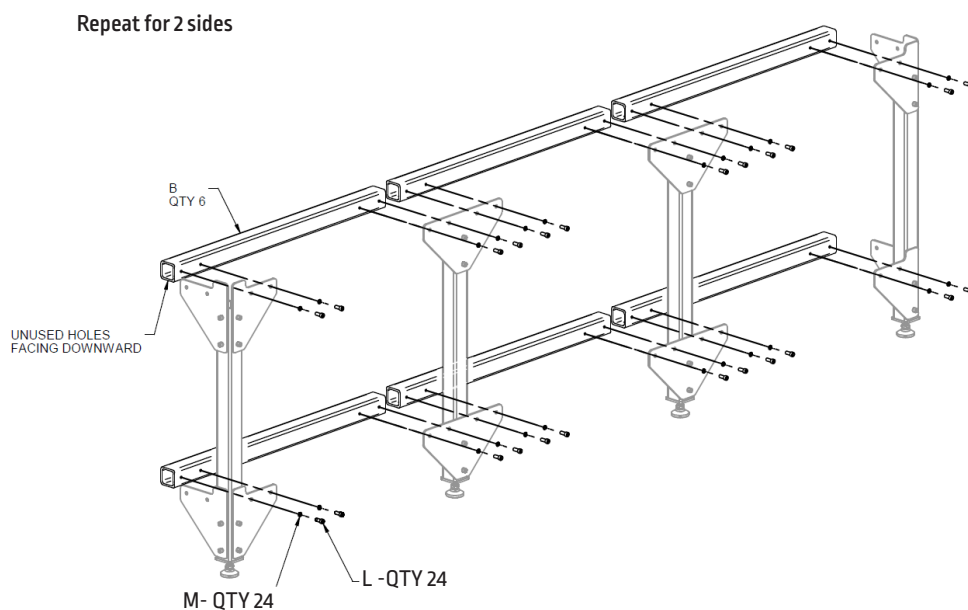
In this step, you assemble the 5 x 10 Water table sides by screwing cross braces to the legs. Thread screws through washers and the gussets, into the cross braces. There are 6 cross braces per side and 2 sides.

| Qty | Label | Part  | Description                                    | Part #          |
|-----|-------|---|--|-----------------|
| 4   |       |  | Corner leg                                     | From Step 2     |
| 4   |       |  | Middle leg                                     | From Step 3     |
| 12  | B     |  | Water table cross brace, length (40.562")      | TMS-130-0004-31 |
| 48  | L     |  | Screw, $\frac{5}{16}$ -18 X $\frac{3}{4}$ SHCS | TMS-410-0016-12 |
| 48  | M     |  | Lockwasher, $\frac{5}{16}$ high collar         | TMS-413-0501-16 |

Required parts / components

- Perform this assembly on a flat, level surface.
- Insert each screw through a washer and through a hole near the horizontal edge of the gusset, and then into a corresponding hole in the cross brace.
- Check that the unused holes in the cross braces face downward and that the corner gussets are oriented in the same direction.
- The screws will be tightened later, during leveling, so for now, tighten them only lightly.
- Attach the six cross braces to form each of the two sides.

Instructions

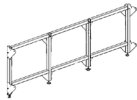

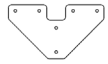




Illustration

## Step 5: Add horizontal gussets to sides

Horizontal gussets, which have relief notches for the legs, are used to support additional cross bracing that connects the 5 x 10 Water Table's sides. This step attaches these gussets to the horizontal cross members of the sides.

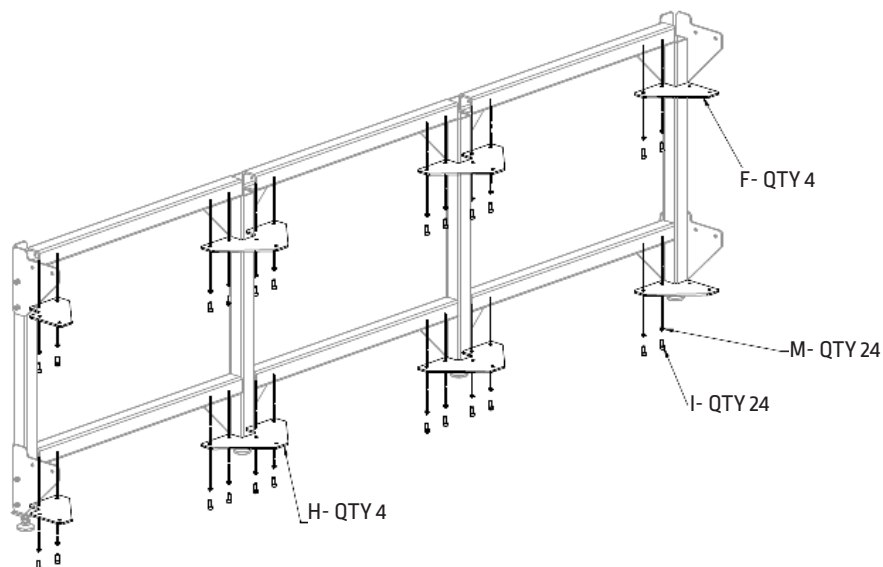
### Required parts / components

| Qty | Label | Part  | Description                                    | Part #          |
|-----|-------|---|--|-----------------|
| 2   |       |  | Assembled table side                           | From Step 4     |
| 8   | F     |  | Water table gusset, 45-deg relieved            | TMS-130-0004-33 |
| 8   | H     |  | Water table gusset, 180-deg relieved           | TMS-130-0004-35 |
| 48  | L     |  | Screw, $\frac{5}{16}$ -18 X $\frac{3}{4}$ SHCS | TMS-410-0016-12 |
| 48  | M     |  | Lockwasher, $\frac{5}{16}$ high collar         | TMS-413-0501-16 |

### Instructions

- Perform this assembly on a flat, level surface.
- Insert each screw through a washer and through a hole near the edge of the gusset, and then into a corresponding hole in the cross brace.
- Orient the corner leg gussets to match the other gussets in the corner, and orient the middle leg gussets toward that same side.
- The screws will be tightened later, during leveling, so for now, tighten them only lightly.
- Attach four corner gussets and four middle gussets to each of the two sides.

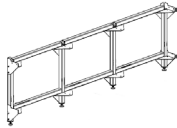



### Illustration





## Step 6: Add shelf supports to one side

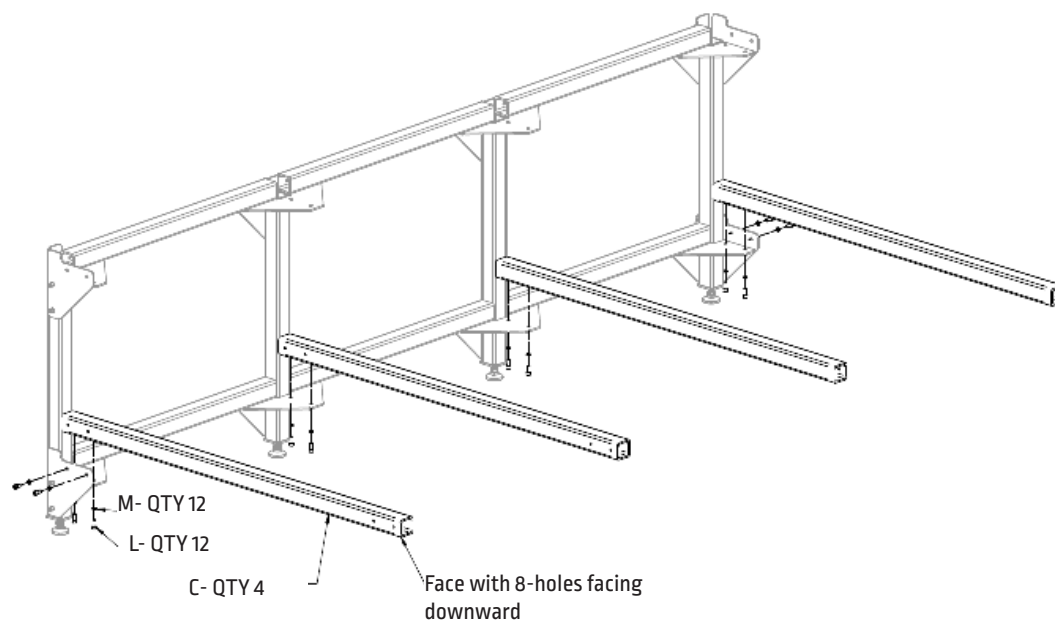
Shelf supports form the lower layer of bracing for the 5 x 10 Water Table. This step attaches the shelf supports to the lower horizontal gussets on just one of the sides. They will be attached to the other side in a later step.

| Qty | Label | Part  | Description                        | Part #          |
|-----|-------|---|------------------------------------|-----------------|
| 1   |       |  | Assembled side                     | From Step 5     |
| 4   | C     |  | Water table shelf support, 60.875" | TMS-130-0004-30 |
| 12  | L     |  | Screw, 5/16-18 X 3/4 SHCS          | TMS-410-0016-12 |
| 12  | M     |  | Lockwasher, 5/16 high collar       | TMS-413-0501-16 |

Required parts / components

- Stand the side up and provide support for it during this assembly step. Be careful during this step to ensure the side does not fall over. Some assistance will be helpful.
- Insert each screw through a washer and, from below, through a remaining hole in the gusset. Thread each screw into a corresponding hole in the shelf support.
- The screws will be fully tightened later, during leveling, so for now, tighten them only lightly.
- Attach all four shelf supports to this side.

Instructions



Illustration

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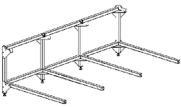
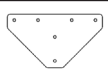



**Cutting  
Systems**

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## Step 7: Add shelf support gussets and cross braces

The shelf supports are strengthened with additional cross bracing and gussets, forming the lower layer of bracing for the 5 x 10 Water Table. This step attaches the gussets to the center of the shelf supports and adds the additional cross bracing. The shelf supports will be attached to the other side in a later step.

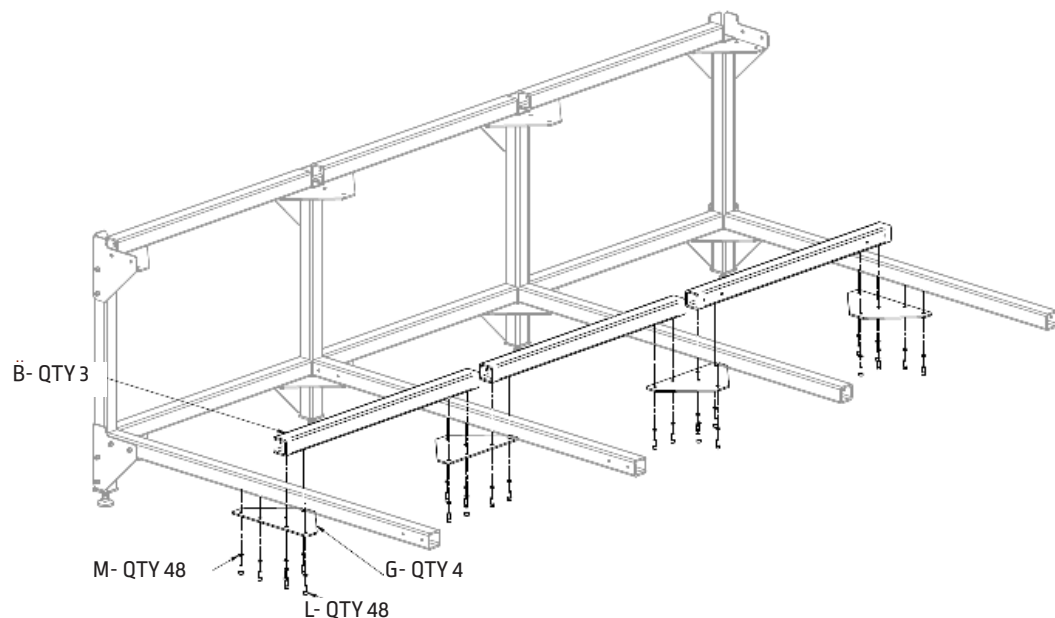
### Required parts / components

| Qty | Label | Part  | Description                               | Part #          |
|-----|-------|---|---|-----------------|
| 1   |       |        | Assembled side                            | From Step 6     |
| 4   | G     |        | Water table gusset, 180-deg               | TMS-130-0004-34 |
| 3   | B     |  | Water table cross brace, length (40.563") | TMS-130-0004-31 |
| 48  | L     |        | Screw, 5/16-18 X 3/4 SHCS                 | TMS-410-0016-12 |
| 48  | M     |        | Lockwasher, 5/16 high collar              | TMS-413-0501-16 |

### Instructions

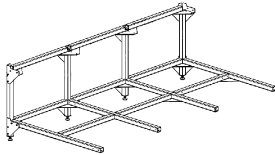



- For each of the four gussets, on each of the shelf supports, for each hole aligned with the shelf support, as illustrated below, insert screws through washers, through the gusset hole, and then into a corresponding threaded hole in the shelf support.
- After the gussets are secured, add the cross braces to the gussets.
- The screws will be tightened later, during leveling, so for now, tighten them only lightly.

### Illustration



## Step 8: Add water pan width support cross braces

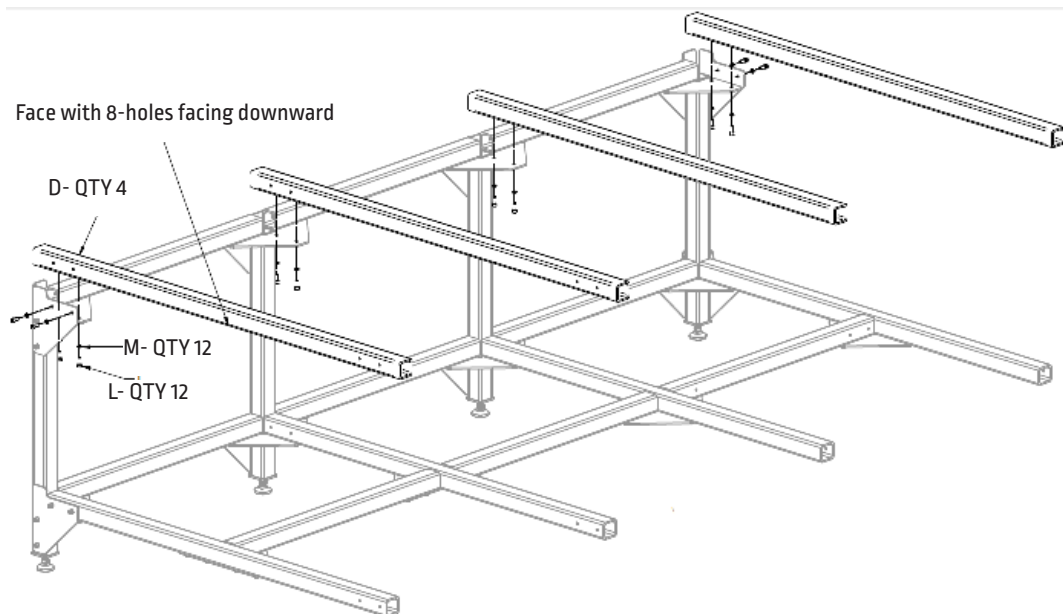
The water pan width cross braces for the 5 x 10 Water Table are installed in this step. These cross braces support the weight of the water pan, its slats, and the water in the pan. Attach the cross braces to the horizontal gussets. The water pan cross braces will be attached to the other side in a later step.

| Qty | Label | Part  | Description                                    | Part #          |
|-----|-------|---|--|-----------------|
| 1   |       |  | Assembled side                                 | From Step 7     |
| 4   | D     |  | Water table cross brace, width, 64.875"        | TMS-130-0004-29 |
| 12  | L     |  | Screw, $\frac{5}{16}$ -18 X $\frac{3}{4}$ SHCS | TMS-410-0016-12 |
| 12  | M     |  | Lockwasher, $\frac{5}{16}$ high collar         | TMS-413-0501-16 |

Required parts / components

- For each water table cross brace, insert two screws through two washers, through the horizontal gussets, and into the threaded holes on the bottom of the cross brace.
- For each of the outer two water table cross braces, insert two screws through two washers, through the vertical gussets, and into the threaded holes on the side of the cross brace.
- The screws will be tightened later, during leveling, so for now, tighten them only lightly.

Instructions

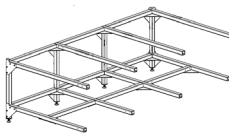
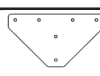
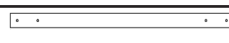




Illustration

## Step 9: Add water pan mid-width gussets and cross braces

The water pan cross braces are strengthened with additional lengthwise cross bracing and gussets, forming the upper layer of bracing for the 5 x 10 Water Table. This step attaches the gussets to the middle of the water pan cross braces and adds the additional lengthwise cross bracing.

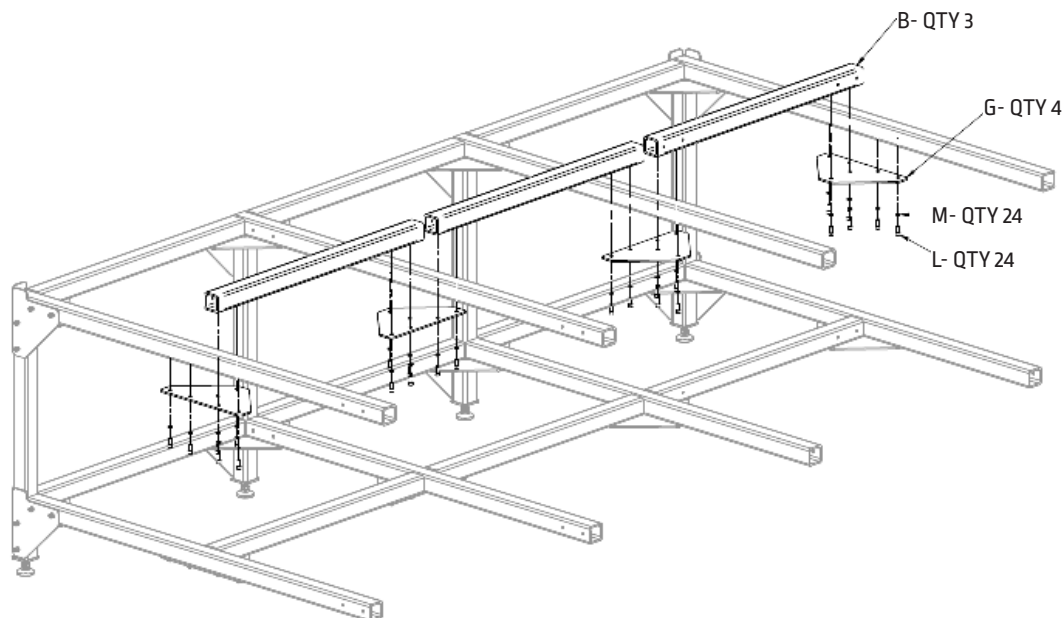
Required parts / components

| Qty | Label | Part  | Description                              | Part #          |
|-----|-------|---|--|-----------------|
|     |       |  | Assembled side                           | From Step 8     |
| 4   | G     |  | Water table gusset, 180-deg              | TMS-130-0004-34 |
| 3   | B     |  | Water table cross brace, length, 40.563" | TMS-130-0004-31 |
| 24  | L     |  | Screw, 5/16-18 X 3/4 SHCS                | TMS-410-0016-12 |
| 24  | M     |  | Lockwasher, 5/16 high collar             | TMS-413-0501-16 |

Instructions

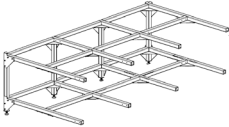
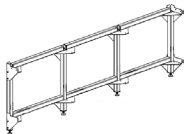


- For each of the four gussets, on each of the water pan cross braces, for each hole aligned with the shelf support, as illustrated below, insert screws through washers, through the gusset hole, and then into a corresponding threaded hole in the water pan cross brace.
- After the gussets are secured, add the cross braces to the gussets.
- The screws will be tightened later, during leveling, so for now, tighten them only lightly.

Illustration



## Step 10: Add the second side

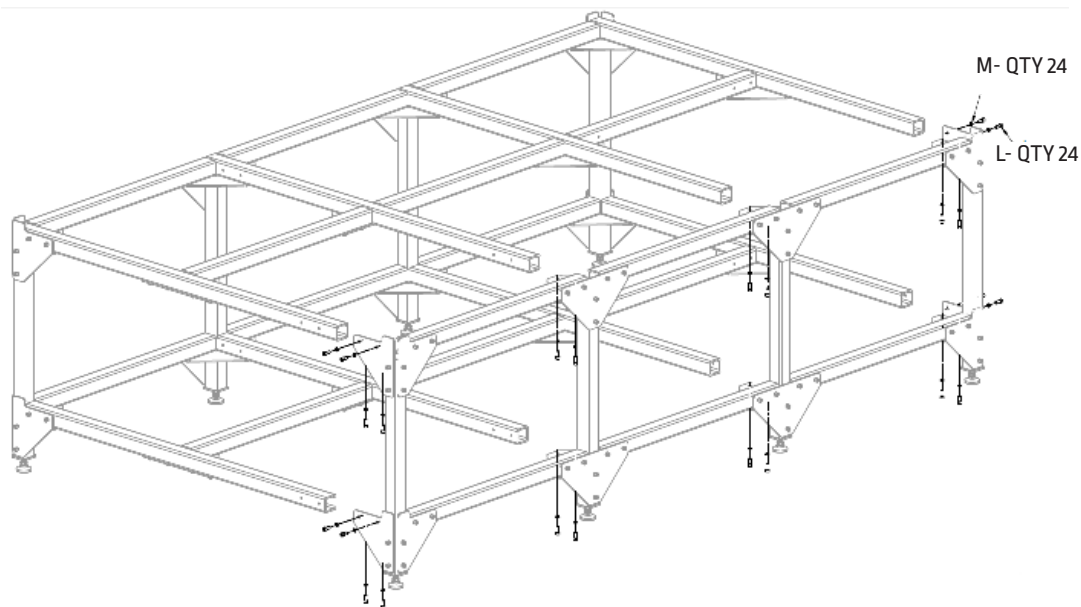
With the water pan cross braces and the shelf cross braces completed, and the add additional lengthwise cross bracing attached, this step attaches the second side of the 5 x 10 Water Table, completing the basic framework structure.

| Qty | Label | Part  | Description                  | Part #          |
|-----|-------|---|------------------------------|-----------------|
| 1   |       |  | Assembled side               | From Step 9     |
| 1   |       |  | Assembled side               | From Step 5     |
| 24  | L     |  | Screw, 5/16-18 X 3/4 SHCS    | TMS-410-0016-12 |
| 24  | M     |  | Lockwasher, 5/16 high collar | TMS-413-0501-16 |

Required parts / components

- Stand the second side up and provide support for it during this assembly step. Be careful during this step to ensure the side does not fall over. Some assistance will be helpful.
- By inserting screws and washers from below, attach the upper horizontal gussets to the water table width cross braces and the lower horizontal gussets to the shelf support cross braces. Use additional screws and washers from the side to attach the outer cross braces to the vertical gussets on the corner legs.
- The screws will be tightened later, during leveling, so for now, tighten them only lightly.

Instructions



Illustration

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
**Cutting  
Systems**

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## Step 11: Add joining brackets and attach to cutting table

When the 5 x 10 Water Table is joined to the CNC cutting table, there can be no independent movement between the two which could reduce cut accuracy. The 5 x 10 Water Table is supplied with brackets for joining it to the CNC cutting table. Depending on the type of CNC cutting table, you may use drop in T-nuts and bolts to secure the brackets to the CNC Cutting Table.

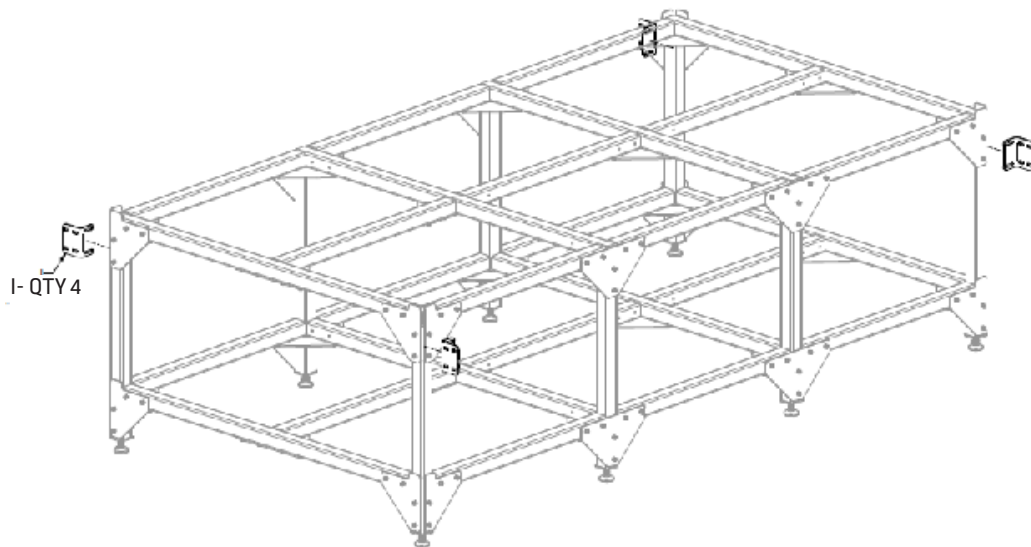
Required parts / components

| Qty | Label | Part  | Description               | Part #                                  |
|-----|-------|---|---------------------------|---|
| 1   |       |  | Assembled water table     | From Step 11                            |
| 4   | I     |  | TM Legacy joining bracket | TMS-130-0004-36                         |
| 8   |       |  | T-bolt                    | TMS-410-5016-10                         |
| 8   |       |  | Drop in T-nut             | TMS-440-0024-01<br>(From hardware pack) |

Instructions


- Remove the screws and washers from the 5 x 10 Water Table in the positions indicated in the illustration, and use the screws and washers to attach the joining brackets as shown.
- Use drop in T-nuts to fasten the brackets to the CNC cutting table.

Illustration



## Step 12: Level table and tighten all screws

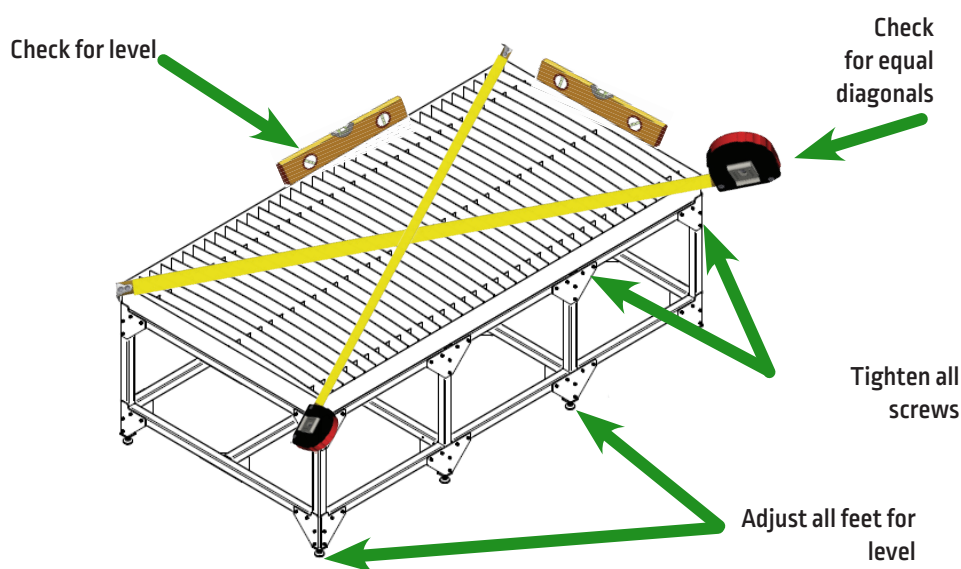
During assembly, you left the screws only partially tightened so that the table could be adjusted so that it is level and square. In this step, you will level and square your 5 x 10 Water Table. Use a spirit level to ensure the water table support braces and the side cross braces are level. Use a tape measure to ensure that the diagonal corners are the same distance apart. Then, tighten all the screws.

| Qty | Label | Part  | Description           | Part #       |
|-----|-------|---|-----------------------|--------------|
| 1   |       |  | Assembled water table | From Step 12 |

Required parts / components

- Use a spirit level to check the level of the side and end cross members of the water pan supports. Adjust the leveling feet to obtain level on all cross members.
- Use a tape measure to check the diagonal "square" of the table from corner to corner. Adjust the cross member positions, then tighten all the screws.
- Double-check level, squareness, and screw tightness.

Instructions





Illustration

## Step 13: Position water table inside cutting table

If you are assembling your 5 x 10 Water Table before assembling your CNC cutting table, simply build the cutting table around the water table. If the CNC cutting table is already built, you need to disassemble one end of it to get the 5 x 10 Water Table inside, as described generally in this step.

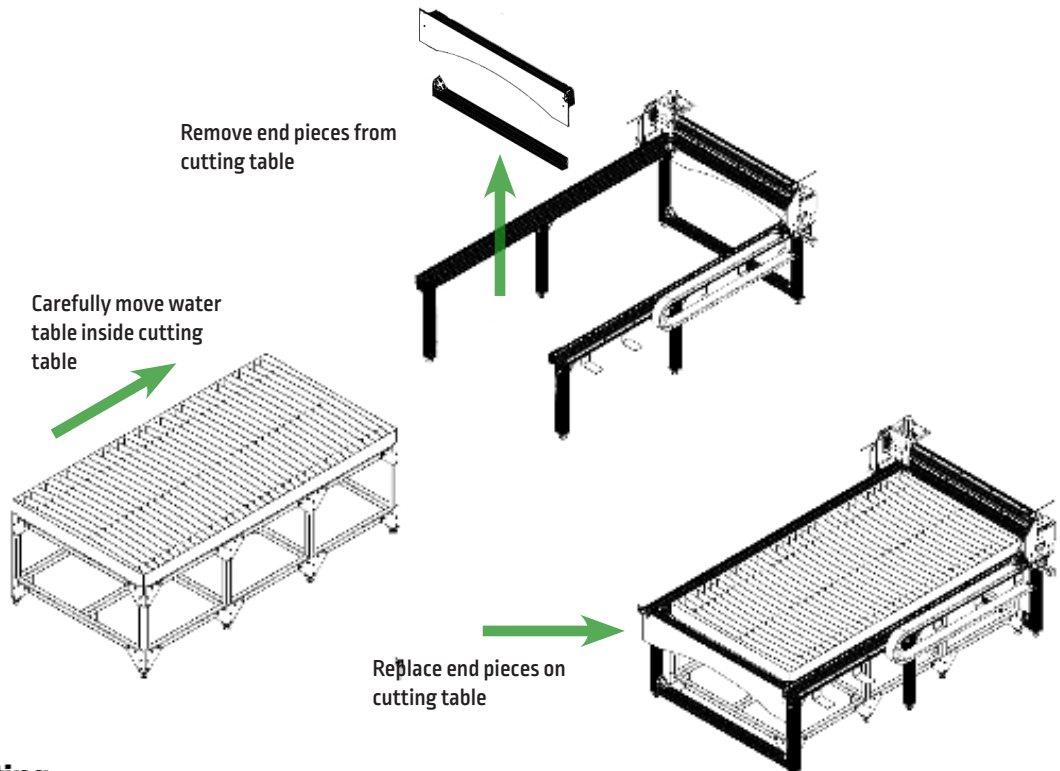
### Required parts / components

| Qty | Label | Part  | Description                                   | Part #                 |
|-----|-------|---|---|------------------------|
| 1   |       |  | Assembled water table                         | From Step 10           |
| 1   |       |  | Previously assembled cutting table (optional) | From previous purchase |

### Instructions

- If you have not yet built your CNC cutting table, this will be your next step. Build it around the 5 x 10 Water Table.
- If your CNC cutting table is already built, the details of this step will depend on the type of CNC cutting table.
  - The step requires moving either the 5 x 10 Water Table, the CNC cutting table, or both. These tables are heavy. Be careful moving them.
  - Avoid sliding the tables across the floor. Should the feet catch, the table members could bend which can make alignment difficult or impossible.
  - Remove one end of the CNC cutting table and move the 5 x 10 Water Table inside.

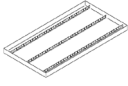


### Illustration





## Step 14: Install drain valve in water pan

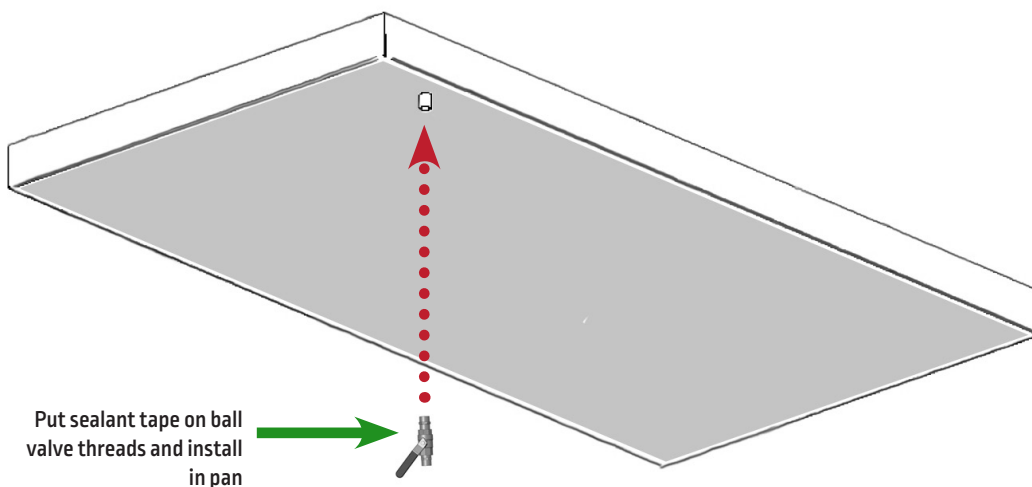
The water pan is shipped without the drain valve installed. In this step, tighten the valve into the threaded port in the water pan. Use some teflon thread-sealant tape.

| Qty | Label | Part  | Description   | Part #                     |
|-----|-------|---|---|----------------------------|
| 1   | J     |  | Water table water pan assembly 5 x 10 bolted          | TMS-130-0004-44            |
| 1   |       |  | TFP-AR small table 3/4 plumbing (water release valve) | TMS-459-0010-01            |
| 1   |       |  | PTFE thread-sealant tape (recommended)                | <i>[separate purchase]</i> |

Required parts / components

- Wrap the ball valve threads with teflon tape from your toolbox.
- Tighten the ball valve into the threaded drain port in the pan bottom.
- After the pan is in place within the cutting table, close the valve, and fill the pan with water.

Instructions


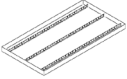



Illustration

## Step 15: Lower water pan into table and add slats

With the 5 x 10 Water Table frame now assembled, this step places the water pan into the frame. The pan simply lowers into place. Here is also where you will add material support slats to the water pan (you must provide your own slats from local stock). Finally, fill the water pan with coolant.

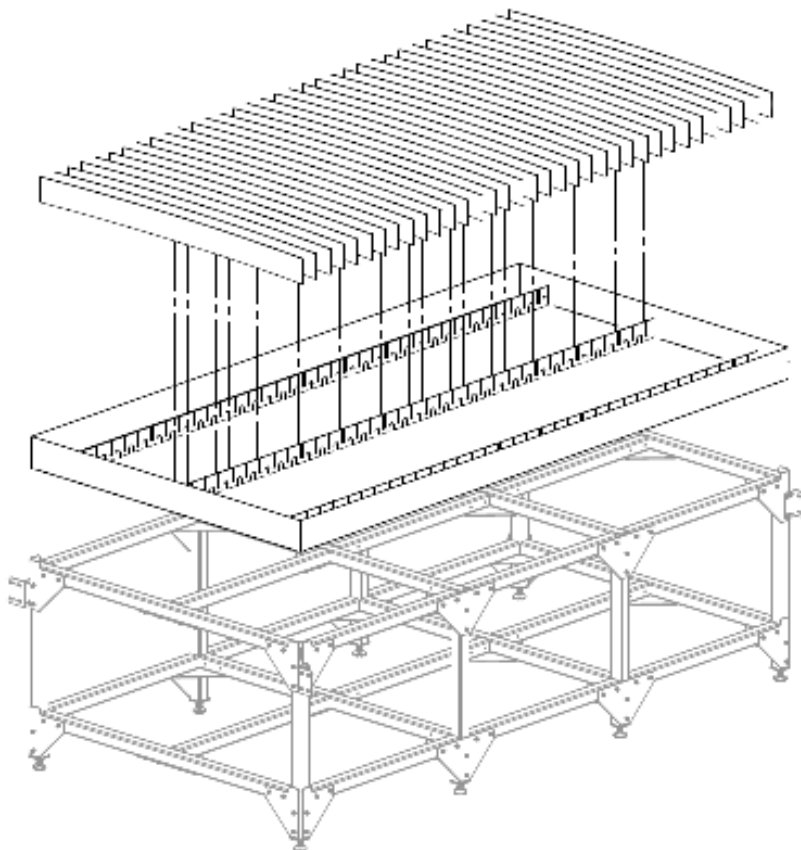
### Required parts / components

| Qty | Label | Part  | Description                                     | Part #   |
|-----|-------|---|---|--|
| 1   |       |  | Assembled water table                           | From Step 13   |
| 1   | J     |  | Water table water pan assembly with drain valve | From Step 14   |
| 42  |       |  | Slats, 64" x 2" x $\frac{3}{16}$ "              | <i>Cut from local stock</i><br>(not supplied with product) |

### Instructions


- With some help, lower the assembled water pan into the leveled and squared frame.
- Cut material support slats from  $\frac{3}{16}$ " stock. You will need 42 slats 64" x 2".
  - The slats will be bowed slightly when you insert them into the slat holder brackets. The curvature provides additional stability and strength.
- With the table in the desired location, fill the water pan with premixed coolant before cutting.

### Illustration



## Recommended maintenance

Your Torchmate 5 x 10 Water Table should give years of trouble free service if you follow the recommended maintenance. The anti-corrosive additive component of the water-based coolant must be changed from time to time in order to retain the rust-preventive capabilities.

| Qty | Label | Part  | Description                    | Part #                              |
|-----|-------|---|--------------------------------|-------------------------------------|
| 1   |       |  | Assembled table with water pan | From Step 15                        |
|     |       | Liquid or powder  | Rust inhibitor additive        | <i>Obtain from the manufacturer</i> |

Required parts / components

- Use a good quality rust-inhibitor designed for plasma tables.
- Follow the recommendation of the rust inhibitor manufacturer for how often to replace or replenish the additive.
- Drain the water pan. Dispose of the spent coolant according to the local environmental rules.
- Fill with water, mixing in the correct amount of additive.

Instructions



Illustration

Call, Fax, or Email

When building the table, if a question or concern arises or a part is missing, please contact Torchmate technical support.

Technical support will also help you with operating the CNC system, and troubleshooting problems.

Technical support is available Monday through Friday from 6:00 AM to 4:00 PM (06:00 to 16:00), Pacific Time Zone.



Toll Free: 1-866-571-1066

International: 775-673-2200

Fax: 775-673-2206

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