



Tile Application System



Operating Instructions

SYMTOOL
SYSTEMS

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Warnings for the safe
use of this tool are
included in this manual.

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EMPLOYER'S RESPONSIBILITIES



COMPLIANCE WITH THE SAFETY WARNINGS AND ALL INSTRUCTIONS INCLUDED WITH THIS TOOL AS SHIPPED FROM THE MANUFACTURER IS THE RESPONSIBILITY OF THE USER.

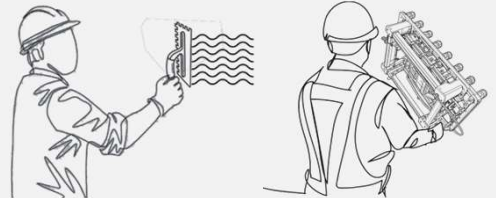


THIS MANUAL MUST BE AVAILABLE TO ALL PERSONS ASSIGNED TO USE THIS TOOL. TRANSLATIONS OF THIS MANUAL IN OTHER LANGUAGES ARE AVAILABLE FOR WEBSITE DOWNLOAD.



READ AND UNDERSTAND ALL OF THE INSTRUCTIONS HEREIN. THIS IS ESSENTIAL FOR BOTH OPERATOR SAFETY AND THE PROPER OPERATION OF THE TOOL AND ITS ACCESSORIES.

COORDINATE CREW RESPONSIBILITIES TO ENSURE OPTIMAL WORK-FLOW FOR PROJECT EFFICIENCY AND WORKER SAFETY.

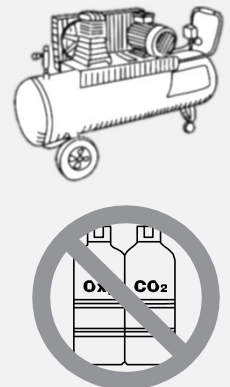


SAFETY WARNINGS

The use of safety equipment is essential. Always wear ANSI Z87.1 safety glasses with permanently attached side shields. Always wear hard-toe protective footwear with non-skid soles. Hard hats and hearing protection should be worn in the appropriate conditions. Failure to follow these instructions may result in injury.



Only use compressed air from a compressor when operating the tool. Never use any other source of compressed gas when operating this tool. Ensure that all hoses connecting the tool to the compressor are sound and not leaking. Ensure that all connectors on air lines being used are tightly fitted and not leaking.



SAFETY WARNINGS – CONT'D



Do not operate the tool when under the influence of drugs, alcohol or medication. Do not operate the tool when tired. Stay alert and use common sense when operating the tool. Be aware of others working adjacent to you.

Always use a compressor that either meets or exceeds the requirements laid out in the Technical Specifications section of this manual. Failure to do so may result in the tool malfunctioning.

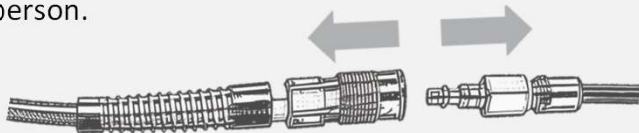


Use only clean, dry compressed air at the recommended pressure. Check the filter on the compressor daily and clean or replace when dirty or clogged. Drain the compressor daily.



Never use the tool if any of the switches, controls, suction cups, plugs or connectors on the tool are loose, broken or malfunctioning.

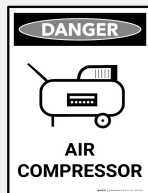
Disconnect the tool from the compressed air source before cleaning the tool, when connecting or disconnecting an Array Module and when moving the tool from a work area. Disconnect the tool from the air source before handing it off to another person.



Use only replacement parts supplied or recommended by SYMTOOL. Failure to do so may result in damage to the tool. Do not modify the tool without prior authorization by SYMTOOL.



Compressors used to supply compressed air to this tool must comply with requirement ANSI/ASME B1-1995 (US) "Safety Standard for Air Compressor Systems".



Hoses used with this tool must have a minimum rating of 150 psig (10.3bar) or 150% of the maximum pressure produced within the system, whichever is the greater.

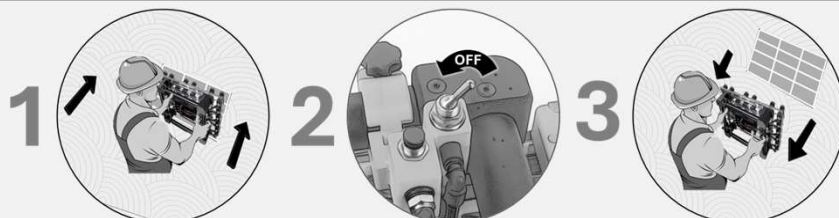
All hoses used with this system must have couplings such that, when disconnected, all air pressure is removed from the tool.



When operating the tool, always ensure that you are firmly balanced.



Do not release vacuum from the suction cups before the tile being held by the tool is firmly embedded in adhesive on the target wall or floor.



SAFETY WARNINGS – CONT'D

Never work above other persons or allow other persons to work or position themselves below the active tile placement area.

An accidental loss of suction can result in tiles falling and potentially causing serious injury.



Do not prepare adhesive in proximity to air compressor. Dust can quickly overwhelm compressor air filter causing overheating, fire, or compressor explosion.

Follow air compressor manufacturer's instructions to inspect filter for dust buildup daily, and clean filter per manufacturer's instructions as needed.



AIR COMPRESSOR WARNING – FIRE OR EXPLOSIVE HAZARD

Failure to keep air compressor's air intake unobstructed or failure to routinely inspect and clean compressor's air filter can cause overheating of air compressor leading to fire or explosion.



Maintain awareness of air hose position to mitigate potential tripping hazards.

SYSTEM OVERVIEW



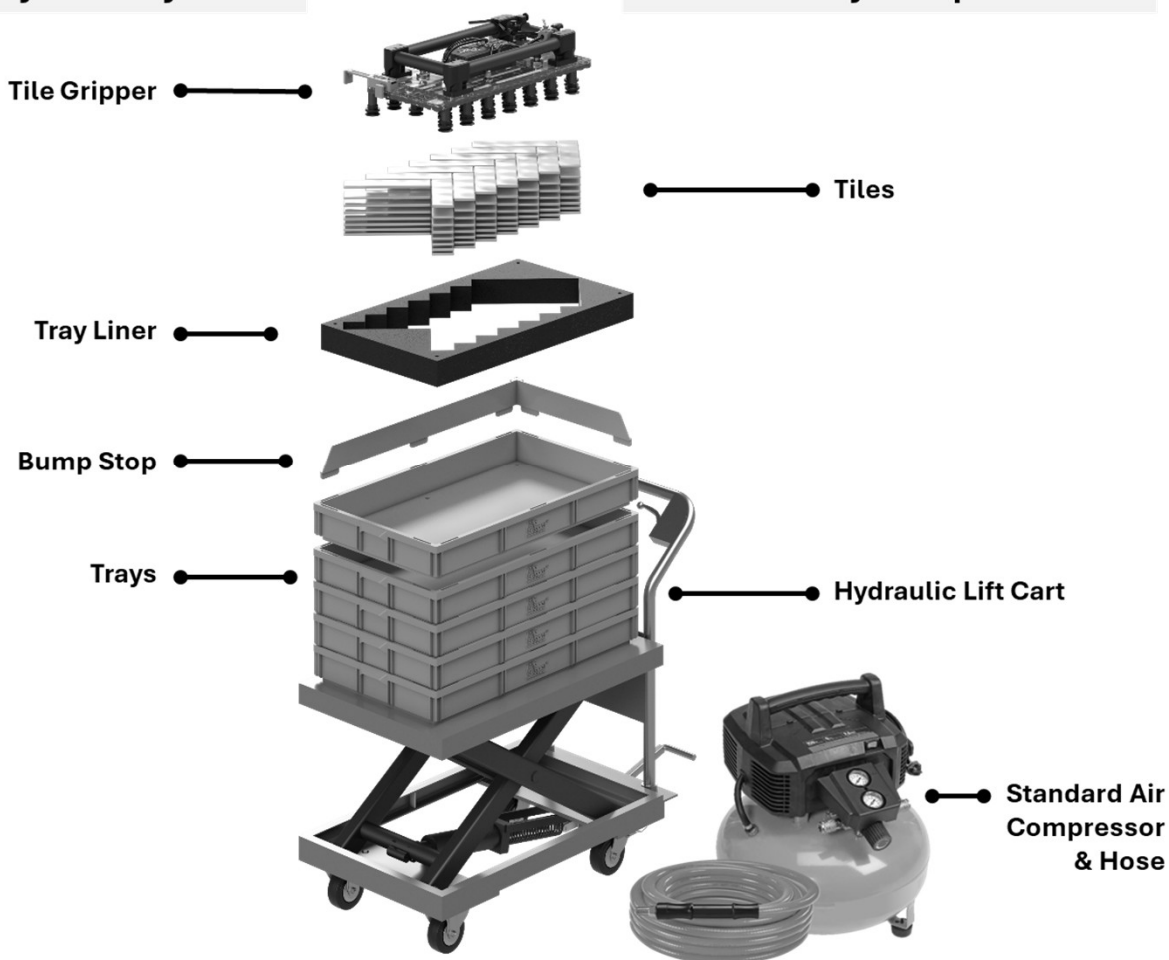
Familiarize yourself with the components of the System. This manual covers system components provided by Symtool Systems. For third party components, refer to documentation supplied by the respective manufacturer.



Pattern-Oriented Tile Installation System (POTIS)

From Symtool Systems

Third Party Components



KEY CREW FUNCTIONS

Depending upon crew size and scope of job, these roles may be consolidated or divided accordingly among team mates to maximize crew efficiency

Tray Replenishment

Ensures that the Tile Gripper operator always has a steady supply of tiles to pick and place.

Thinset Application

Stays just ahead of the Tile Gripper operator in applying adhesive to target surfaces.

Tile Gripper Operation

Aligns the tool to the trayed tiles, activates suction, places and sets the tile firmly using the vibration feature, and releases tiles.

Spot Checking

Follows the Tile Gripper operator to address any instances of lippage, minor tile position adjustments, etc.

OPERATING INSTRUCTIONS

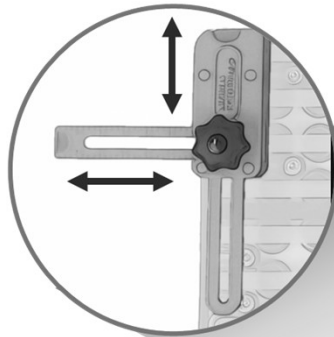
Tile Gripper



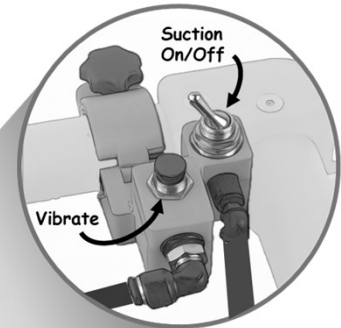
Familiarize yourself with the **Safety Warnings** before using the Tile Gripper



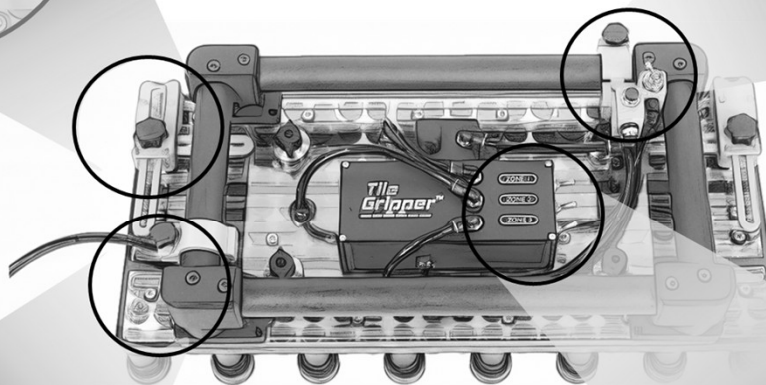
Familiarize yourself with the controls on the Control Module.



**Alignment to Bump Stop
Guide Arms**

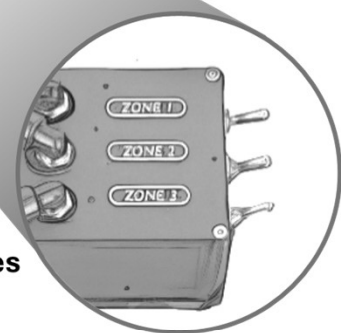


**Activation Control
Switches**



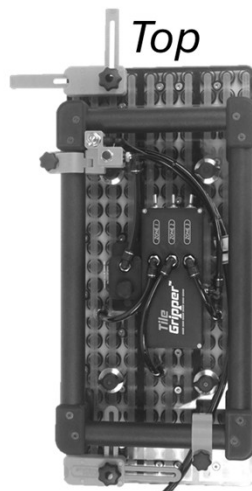
Hose Clamp

**Zone
Control Toggles**

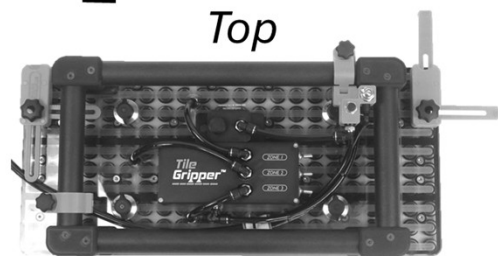


Portrait vs Landscape Mode

Tile Gripper can be operated in either orientation. In Landscape Mode, the Tile Gripper logo will not be upside-down. In Portrait Mode, the logo will read from bottom to top. Distinctions are made between the two modes throughout this manual



Portrait Mode



Landscape Mode

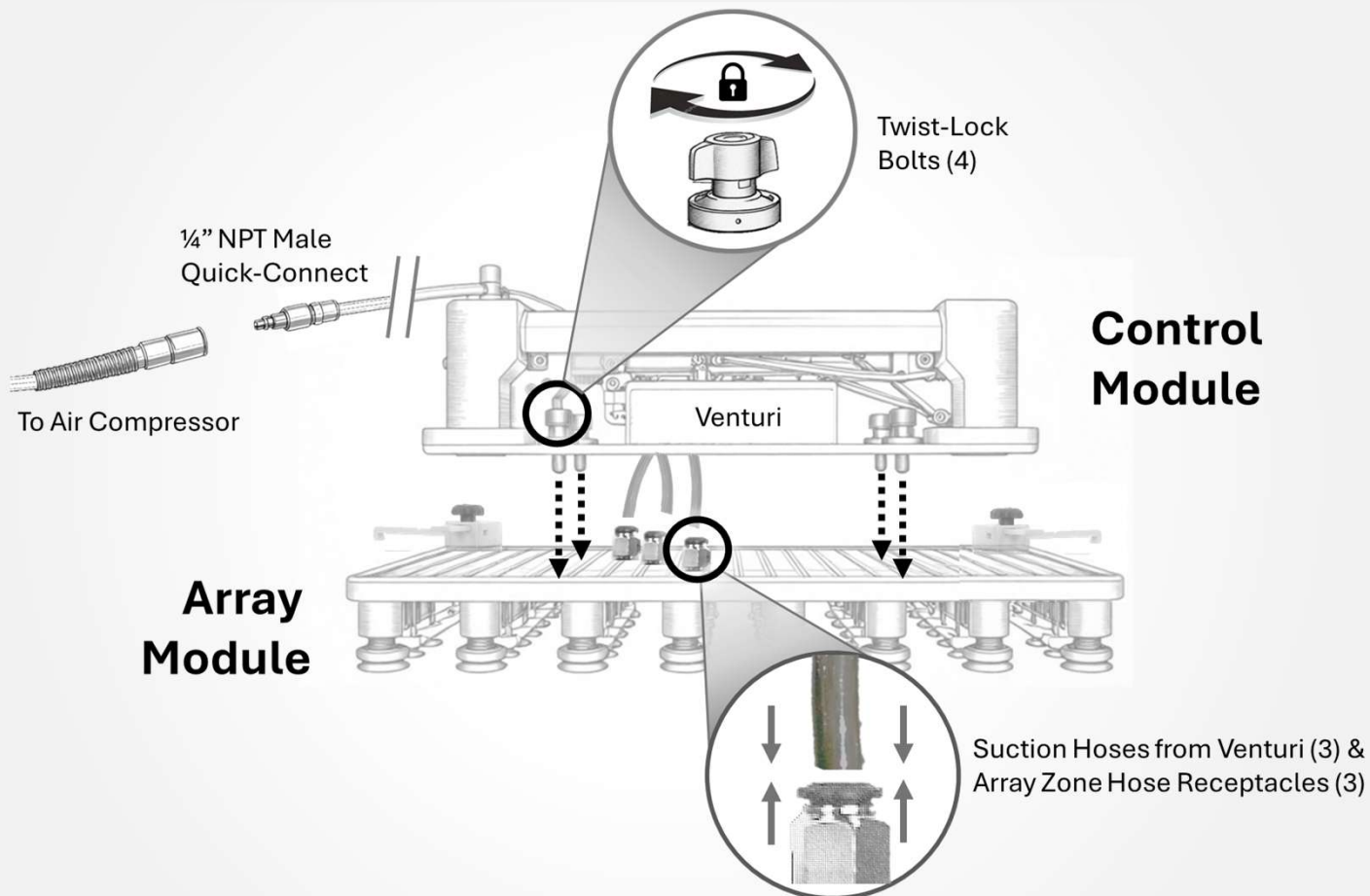
OPERATING INSTRUCTIONS – CONT'D

Tile Gripper



Select the appropriate Array Module as instructed by the Symtool Software Adviser. Make sure the selected Array Module has been preconfigured with Plugs and Suction Cups according to the Array Patterning instructions. See Plug and Cup Configuration instructions later in this manual.

Attach the Control Module to the Array Module. Center the four Module Connectors of the Control Module above those on the Array Module, gently press them home and turn the quick-lock handles clockwise to lock the modules together. Then, connect the 3 hoses from the Venturi block to the Suction Hose Receptacles.

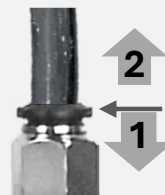


Ensure arms of Alignment Guides are fully extended before joining or separating the Control and Array Modules



To Attach Hoses to receptacles, push in firmly until seated

To Detach Hoses, Slide plastic ring down, then pull hose from receptacle

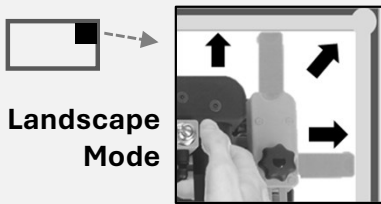
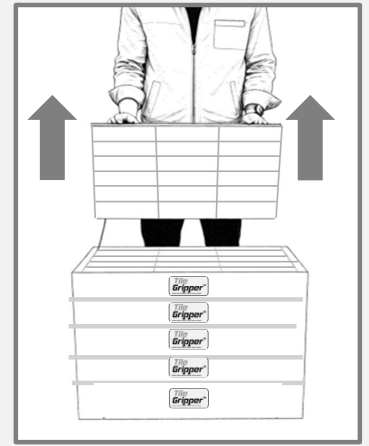
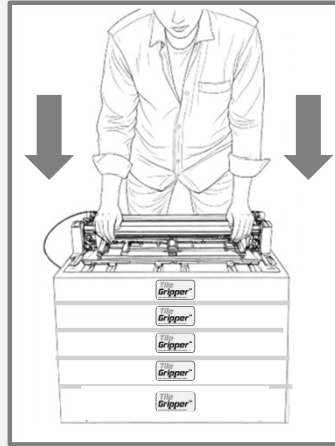
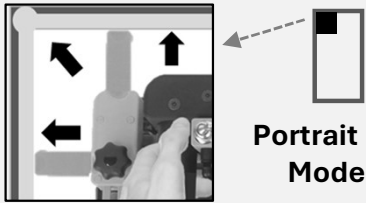


Pro Tip: A Venturi is a specially engineered chamber with no moving parts that converts *positive* air pressure, such as from an air compressor, into *negative* air pressure (suction) by leveraging basic principles of aerodynamics. It receives air supply from an air compressor, but outputs one or more channels of suction. It is key to understanding Tile Gripper's core functionality.

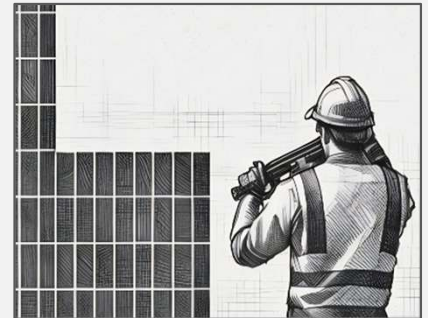
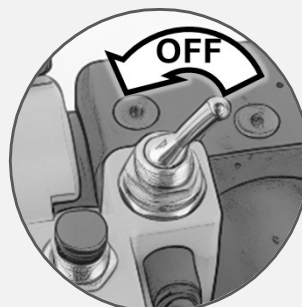
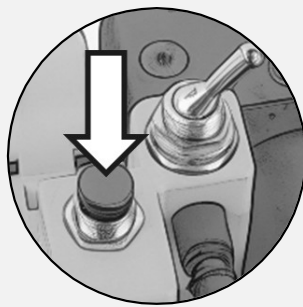
OPERATING INSTRUCTIONS

Tile Gripper Basic Operation

Depending upon whether you are using Tile Gripper in Portrait vs Landscape mode, Align the Tile Gripper's protruding guide arms with the appropriate corner of the tray's bump stop. Slide the Tile Gripper down onto the top layer of tiles in the dispensing tray or crate and press down firmly on the Gripper handles to "spread" the suction cups. Activate the Vacuum Switch. The top layer of tiles will now be firmly attached to the Gripper.



Remove the Gripper with the attached tiles from the dispenser and carry it to the setting location. Align and Press the tiles into the adhesive; briefly activate the Vibrator by depressing the button for 1 – 2 seconds; then de-activate the Vacuum Switch and remove the Gripper from the tiles.



Repeat the operation until all the tile is installed.

Tile Gripper Suction Zones



To deactivate a zone of suction cups, such as when you are approaching a perimeter wall (in Portrait Mode) or ceiling/floor (in Landscape Mode) and only wish to pick up a subset of the rows or columns of tiles, first determine which Zone(s) (**1, 2 or 3**) is to be deactivated and then move the applicable venturi switch(es) into the "OFF" (Down) position. To re-activate the zone, move the switch into the "ON" (Up) position.

See chart below of which Suction Ports are associated with each Zone.

Tile Gripper Suction Zones – Cont'd

The suction ports governed by the Zone Controls are along the alphabetic axis rows only

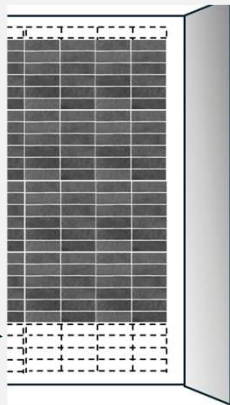
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
A																								ZONE 1
B																								
C																								
D																								ZONE 2
E																								
F																								
G																								ZONE 3
H																								
I																								
J																								

When tiling, perimeter cuts are almost inevitable. But mastering Tile Gripper's Zone controls can limit the need for manual placements. **Typical Examples:**

Landscape Mode Example

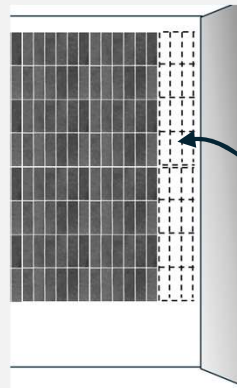
Only ZONE 1 Active

Only ZONES 2 & 3 Active

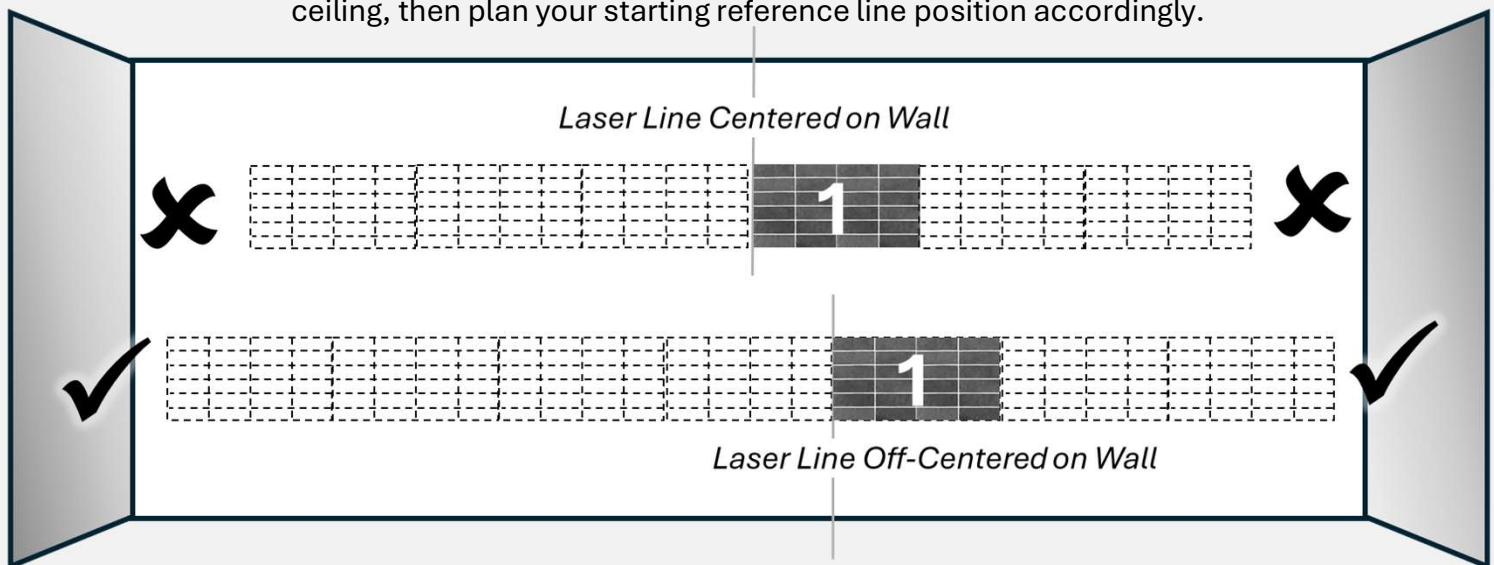


Portrait Mode Example

Only ZONE 3 Active



ProTip: To make the most of Tile Gripper™ to complete a field, and to minimize manual tile placement at wall perimeters, also consider that positioning your reference or laser line on the **center** of the wall **may not be as efficient** as positioning the laser line **off-center** horizontally or vertically when making your first Tile Gripper™ placement. Treat the **width or height of the pattern** as it sits in the tray as the unit of width or height to calculate the number of Tile Gripper™ placements needed from wall to wall or from floor to ceiling, then plan your starting reference line position accordingly.



Swapping Suction Cups and Plugs



Before attempting to swap Suction Cups or Plugs, first disconnect Tile Gripper from the Air Compressor



Familiarize yourself with the following components. Note the presence of rubber O-rings on each component. Do not install these components if an O-ring is not present. Gently hand-tighten when installing and use an Allen wrench to remove as needed.



Suction Cup



Suction Cup Extension



Suction Cup Hand-Tightened to Extension

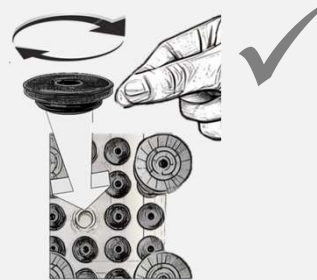


Plug

To deactivate a suction cup, use the long end of the Allen wrench, and slip through the cup into the extension. Turn counter-clockwise. **DO NOT GRASP** the soft part of the cup to remove.



Replace the cup and Extension with a plug by hand-tightening. **Do not overtighten!** Over-tightening either a plug or an Extension /suction cup combination may over-compress the sealing "O" ring and cause a vacuum leak. Firm hand tightening will seal the cup or plug to the module.



Pro Tip:

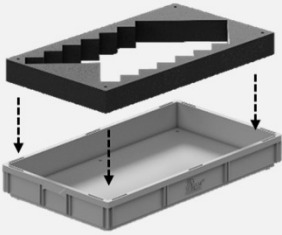
Periodically it will become necessary to substantially re-arrange suction cups and plugs when you have completed one project and are preparing to start another of a different tile size, grout line, and pattern. When you order and receive new Tray Liners for a new job, they will be accompanied with matrix instructions detailing where suction cups and plugs need to be positioned for the new job, with each cup being assigned an address, such as, "A4 = Cup" or "C7 = Cup". Every suction port of the array that does not have a suction cup must have a plug -- or suction will be lost.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
A																						
B																						
C																						
D																						
E																						
F																						
G																						
H																						
I																						
J																						

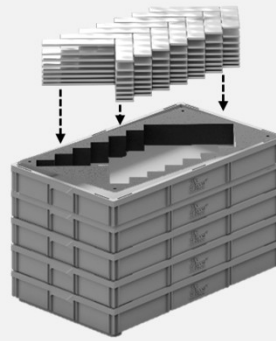
You will find that the alpha and numeric characters defining the rows and columns are engraved around the underside perimeter of the clear Array Plate.

OPERATING INSTRUCTIONS

Dispensing Trays



Place the Tray Liner(s) as determined by the Symtool Software Adviser on the bottom of the tray(s). Your Tray Liners may or may not come with integrated grout line spacers, depending upon the pattern you ordered.

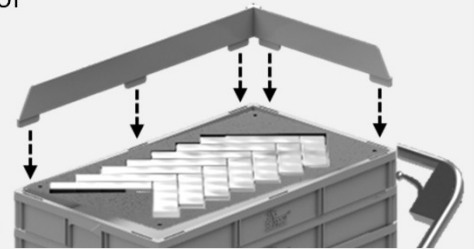


Fill the tray(s) with up to eight layers of tiles each, depending upon tile thickness. Do not add layers that exceed the height of the Tray Liner or its Tray.

Stack the trays on a hydraulic lifting cart. Six trays loaded with eight layers of tiles each, will contain approximately 100 sq. ft. of tiles.

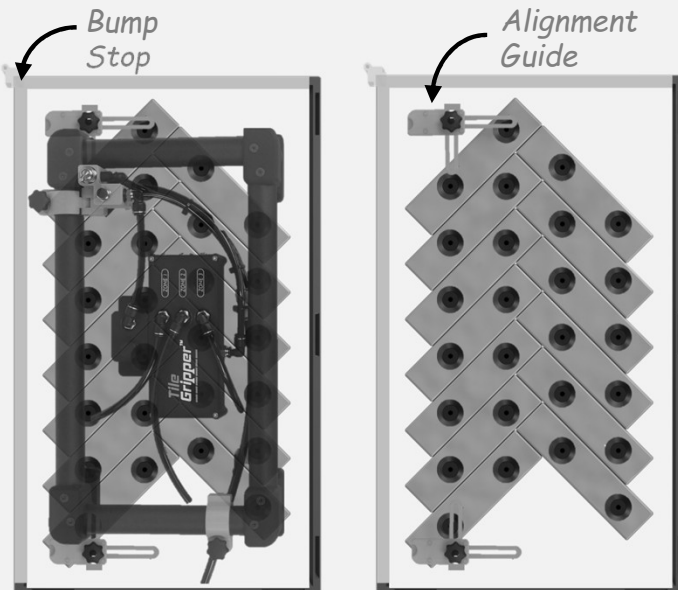


Attach the Bump Stop to the top tray by fully inserting the tabs of the Bump Stop into the slots on the frame of the Tray. The Bump Stop may be installed on either opposite corner.



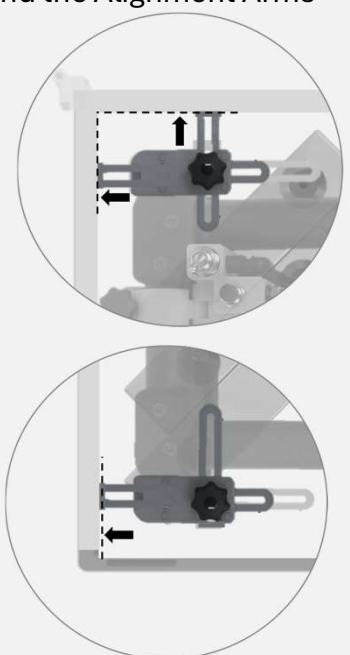
Setting Up the Alignment Guides

With the Bump Stop still in place, set the Tile Gripper onto the top layer of tiles such that the suction cups are in the optimal position to cleanly grasp all tiles. No portion of any suction cup should make contact with, or cross, a grout line.



Without moving the Tile Gripper from its optimal tile-grasping position, loosen the thumbscrew holding the alignment arms in place by turning it counter-clockwise. Extend the Alignment Arms until they meet the inner perimeter edges of the bump stop. Then firmly hand-tighten the thumbscrew.

You will now be able to pick up the layers of tile with suction cups perfectly aligned to the tile every time, by using the Bump Stop & Guides as a grasping registration tool.



Setting the Alignment Guides – Cont'd



If you find it impossible to place the Tile Gripper onto the top layer of tiles without one or more suction cups crossing a grout line, check the following:

- Make sure you are registering Tile Gripper into the correct corner.
- Verify that you have positioned the cups according to the matrix listing provided that corresponds to the Tray Liners.

Using the Plotter Tool

For some jobs where the pattern has no irregularities, such as a stacked bond pattern with no offsets, **and** the tile contains lugs (self-spacers that automatically create the grout line), you may avoid ordering Tray Liners from Symtool Systems and instead fill the trays directly by registering the tile against the appropriate corner. The Plotting Tool is a rigid plastic sheet you may then place upon the top layer so as to mark where you should optimally arrange the suction cups to pick up that pattern.

1. Determine if you will be installing tile using Tile Gripper's Landscape Mode or Portrait Mode. Then orient a tray accordingly and populate it with tile, registering the tile to the appropriate corner shown. Fill the tray until the top layer of tile sits slightly above the feed tray height.

Set the Plotter sheet onto the top layer of tiles and slide it left-to-right and forward-backward until all tiles have sound suction cup coverage.

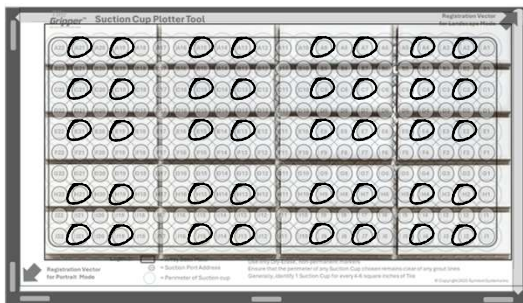
Landscape Mode



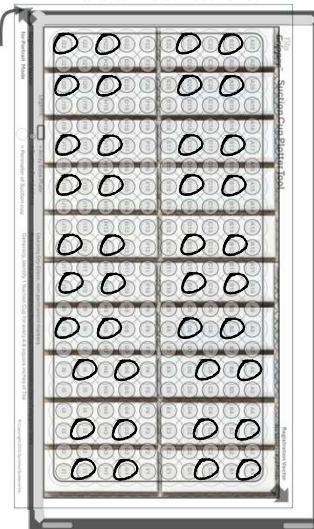
Portrait Mode



Landscape Mode



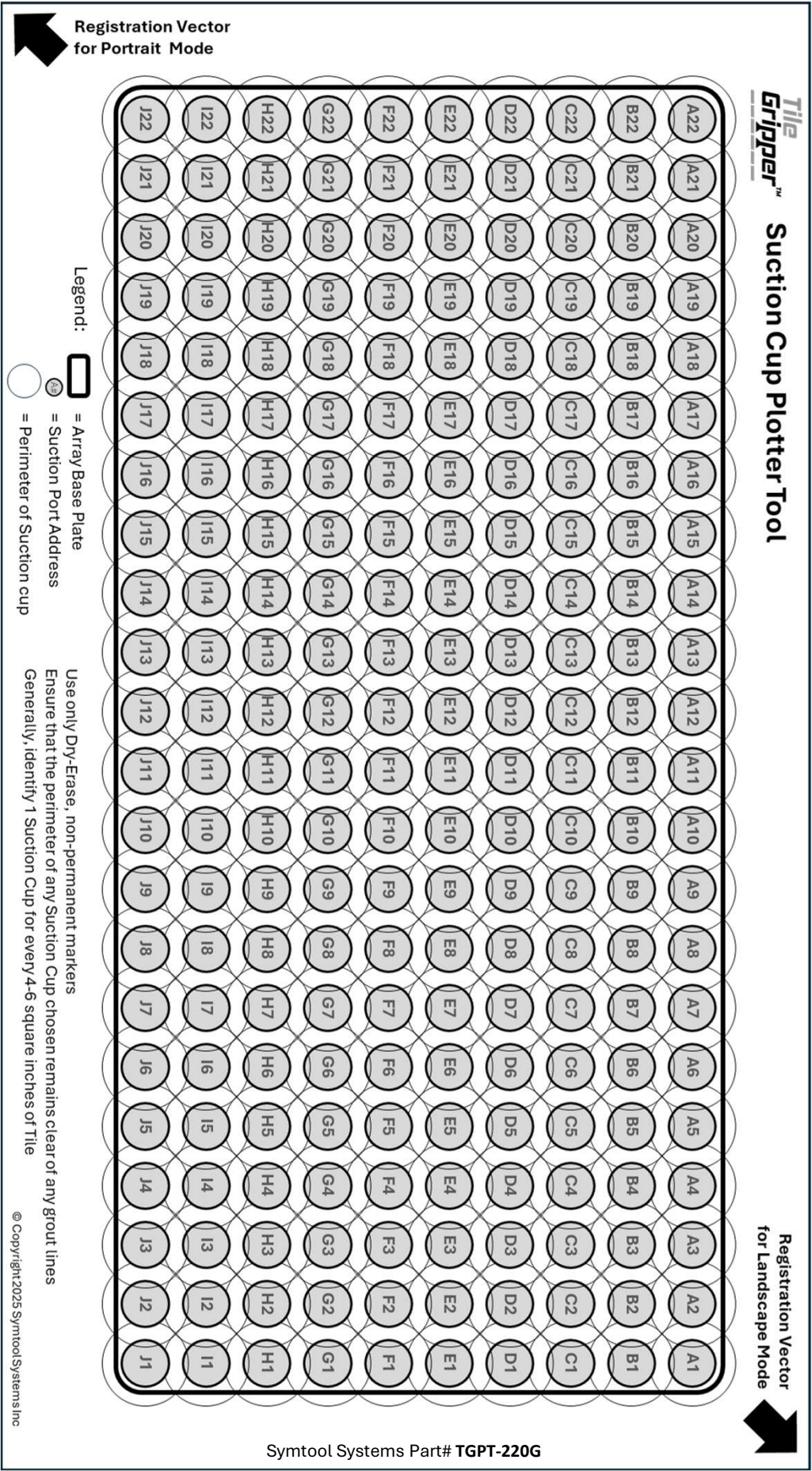
Portrait Mode



Using a dry-erase marker, circle the addresses of the suction ports that optimally cover the pattern of tiles.

Make sure no suction cup's perimeter crosses any grout lines.

Use this list to guide your reconfiguration of the Array's suction cups and plugs to optimally grasp the pattern from the trays.



MAINTENANCE

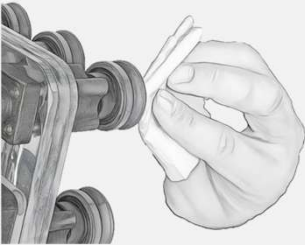


Any repairs not covered in this manual should not be attempted and the tool should be returned to SYMTOOL SYSTEMS for repair by trained, qualified technicians.

Cleaning



Before cleaning, ensure that the Tile Gripper is detached from the Air Compressor.

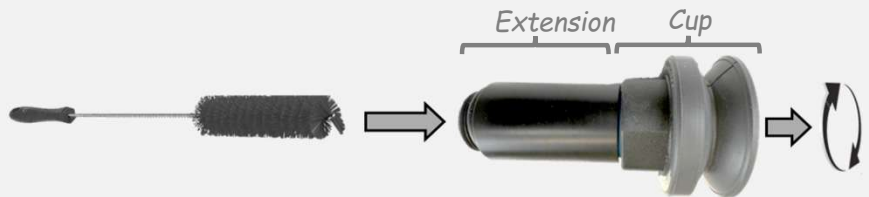


The tool should be wiped down after each use with a damp sponge or cloth. Dust on the surfaces of the modules should be removed by gently wiping them down with a damp sponge or cloth. **Do not use chemical solvents.** Thinset residue accumulating on the faces of the suction cups should be removed by gentle wiping with a damp sponge or cloth.

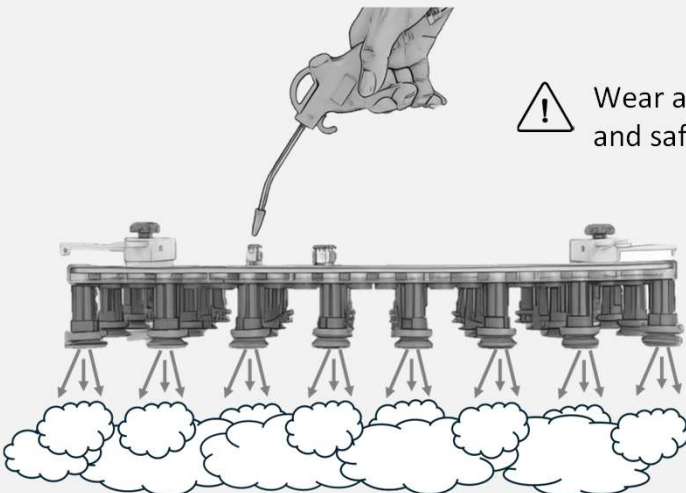
Do not use metal and other sharp objects to unblock cups or remove debris from the face of cups.



Any build-up of dust or tile adhesive on the suction cups should be removed immediately. If a suction cup suffers a blockage, unscrew the cup and Extension from the Array Module and use the provided tube brush or a damp cotton bud (Q-Tip) to push the blockage down from the screw end of the Extension with a twisting motion.



Sometimes dust may accumulate in the vacuum passages inside the Array Module. We suggest blowing this dust out with compressed air, well away from the air compressor. Use your air compressor's blow gun fitting to force air into each of the three **Zone** receptacles.



Wear a dust mask and safety goggles.

Do not blow compressed air into the venturi chamber, its hoses, or any other venturi opening.



Do not soak this tool or attempt to clean it by suctioning liquids.



TECHNICAL SPECIFICATIONS

Physical Specifications	Product	In Travel Case
Length	11-1/2" (572 mm)	32.5" (826 mm)
Width	10-3/8" (155 mm)	21" (533 mm)
Height	6-1/8" (263 mm)	12.3" (312 mm)
Weight (unloaded)	15 lbs 11 oz (7.12 kg)	41lbs 6 oz (18.8 kg)

Control Module	
Selectable Suction Zones	3
Air Coupler Standard	¼" NPT Male Quick-Connect
Operating Environment	50° to 120° F / 10° to 49° Celsius
Operating Pressure	85 PSI/5.5 Bar (MIN) 110 PSI/7.6 Bar (MAX)
Air Consumption (min.)	2.0 CFM
Weight	7 lbs 4 oz (3.29 Kg)

Array Module	
# of Vacuum Ports	220 (10 x 22 grid)
# of Port Plugs Included	220 G3/8 male threaded
# of Suction Cups Included	40 flat cups G3/8 male threaded
Suction Cup Diameter	1-3/8" (35 mm)
Suction Cup Spacing	1" on center (2.54 cm)
Weight	8 lbs 7 oz (3.83 Kg)

Trays	Exterior	Interior
Length	29" (727 mm)	28" (710.4 mm)
Width	17" (431.8 mm)	16" (406.4 mm)
Height	3.5" (88.9 mm)	3" (76.2 mm)
Weight	Unloaded: 4.6 lbs (2 kg)	
Composition	ABS	
Weight	8 lbs 7 oz (3.83 Kg)	


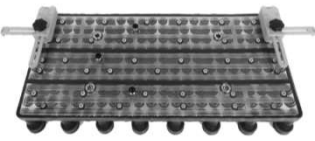








TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	POTENTIAL SOLUTION
Tile Gripper won't pick up tiles at all	Weak or no suction	Check venturi Zone switches are in the "ON" (Up) position
		Check vacuum hoses are correctly attached to the both the Venturi Block and the array plate receptacles.
		Check the compressor air hose is correctly attached at the compressor and to the gripper and is not leaking compressed air.
		Check that the air compressor is functioning correctly and supplying 120 PSI at no draw.
		Check for blocked suction cups. Clean as necessary.
		Check for slits in suction cups.
		Ensure that all Suction Cups, Suction Cup Extensions, and Plugs are securely hand-tightened but not overtightened.
		Ensure that any recently swapped Suction Cups, Suction Cup Extensions, or Plugs were installed with their respective rubber O-rings in place.
		With the air compressor attached and suction disengaged on the device, listen for air sounds from the array module and all air hose connection points. It is normal for air to escape from the venturi chambers when suction is engaged.
		Make sure Suction Cups are not misaligned or are crossing grout joints.











If you have identified a clearly damaged component, you may attempt to repair the unit yourself using only Symtool Systems authorized spare parts while following the instructions accompanying the replacement part(s).

If checking all of the above does not work, return the Gripper to a Symtool Systems or its Authorized Repair Agency for repair.

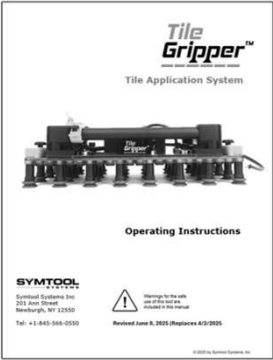

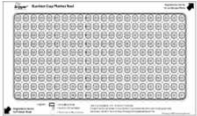



SPARE PARTS

ITEM	ITEM#	DESCRIPTION
	TGCM-3Z03	Tile Gripper Control Module - Replacement Includes: Handle Module / Three (3) Integral Venturis with integrated vibration unit / (4) Twist-Lock bolts Does not include items swappable from the original unit such as Control Switches Clamp-on Assy, Hose Clamp Assy, Hoses
	TGAM-220G	Complete Tile Gripper Array Module Includes: 220 Port Universal Array. Includes (40) Suction Cups, (200) Threaded Plugs, & (2) two-axis Adjustable Registration Guides
	TGAP-220G	Replacement "Base Plate only" for Standard Array Module (if broken by user or failure of vacuum seals or port threads). Shipped without Cups, Plugs, or Registration Guides.
	TGDT-1628	Universal Pattern-Oriented Dispensing Tray
	TGBS-1628	Replacement Bump Stop for Standard Trays
	Custom	Replacement of an existing Tray Liner (Provide original Part Number when reordering). If you need to order an entirely new Tray Liner design, visit www.tilegripper.com
	TGTC-N963	Replacement Hard Shell Equipment Case
	TGSC-F35M	Standard 35mm Flat Suction Cup
	TGSC-B35M	Special Order 35mm Bellows Suction Cup - for special tile needs (i.e., quarry tile, abrasive tile, fluted tile, etc.) – Contact Sales.
	TGEF-3834	Standard Cup Extension G38 -34 mm

SPARE PARTS – CONT'D

ITEM	ITEM#	DESCRIPTION
	TGPP-38DE	3/8 Male Threaded Port Plug with O-ring
	TGHR-1472	¼" Hose Replacement Coil - 5-foot length. Can be cut to desired lengths.
	TGHR-3272	5/16" Hose Replacement Coil – 5-foot Length
	TGHC-3214	Replacement Hose Clamp Assembly
	TGAS-STVB	Replacement Activation Toggle Switch & Vibration Button clamp-on Assembly
	TGAG-AGA3	Replacement Alignment Guide Assembly
	TGAG-1611	Replacement Alignment Guide Arms (set of two)
	TGTS-CSW	Replacement Thumb Screw for Operator Control Switches Module and Alignment Guides Modules
	TGTS-HCA	Replacement Thumb Screw for Hose Clamp Assy
	TGSR-38BK	Replacement Sealing Ring (O-ring) for Standoff or Plug
	TGSR-38BU	Replacement Sealing Ring (O-ring) for Suction Cup

SPARE PARTS – CONT'D

ITEM	ITEM#	DESCRIPTION
	TGSD-UMEN: English TGSD-UMSP: Spanish TGSD-UMFR: French TGSD-UMPG: Portuguese TGSD-UMIT: Italian TGSD-UMGM: German TGSD-UMJP: Japanese TGSD-UMKR: Korean TGSD-UMAR: Arabic	System Documentation - Operation Manual.
	TGDM-EXBK	Dry Erase Marker for Ruled Plotting Tool Sheet
	TGPT-220G	Ruled Plotting Tool Sheet - Rigid plastic sheet for guiding cup placement for jobs not requiring Tray Liners
	TGAW-8MM	8MM Allen Wrench for Removing Plugs
	TGAW-4MM	4MM Allen Wrench for Removing Suction Cups
	TGSB-14N3	Plug Cleaner Tool - Nylon tube brush for dry-cleaning suction cup openings



LIMITED WARRANTY CERTIFICATE

Symtool Systems Inc. ("Symtool Systems") hereby warrants to the original retail purchaser that the following products associated with its Pattern-Oriented Tile Installation System (POTIS) are free from defects in material and workmanship under normal use and service, for the specified periods from the original date of purchase:

- Tile Gripper® Tool – One (1) year
- POD (Pattern-Oriented Dispensing) Trays – Sixty (60) days
- POD (Pattern-Oriented Dispensing) Crates – Sixty (60) days
- POD (Pattern-Oriented Dispensing) Tray Pattern Inserts (Pattern Matrix Bases) – Sixty (60) days

During the applicable warranty period, Symtool Systems will, at its sole discretion, repair or replace any product or part found to be defective in material or workmanship after evaluation by an Authorized Symtool Systems Service Center. Warranty service is subject to the terms, exclusions, and limitations set forth in this certificate.

To obtain warranty service:

1. Proof of Purchase: A dated sales receipt or equivalent documentation is required.
2. Return of Product: The product must be returned to an authorized Symtool Systems Warranty Service Center.
3. Approval: Upon inspection and approval, Symtool Systems will repair or replace the product or components.

Additional Terms:

- Replaced parts are deemed part of the original product and follow the original warranty period.
- Shipping and freight charges are the responsibility of the tool owner.

Exclusions:

This warranty does NOT cover:

- Normal wear items (e.g., O-rings, suction cups)
- Damage from misuse, abuse, accidents, improper storage, shipping, or unauthorized repairs

The warranty is void if:

- There is evidence of abuse, neglect, improper storage, modification, or overpressure.
- Air pressure exceeded the maximum stated in the Operator's Manual.

THIS WARRANTY IS THE ONLY EXPRESS WARRANTY ON THIS PRODUCT.

This warranty gives you specific legal rights. You may also have other rights which vary by state.



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Symtool Systems Part# **TGSD-UMEN**