

# THERMOFORMING ACCESSORIES



TOOLINGTECH GROUP

## TRIM TOOL COMPONENTS

### Cone Locator Cartridges



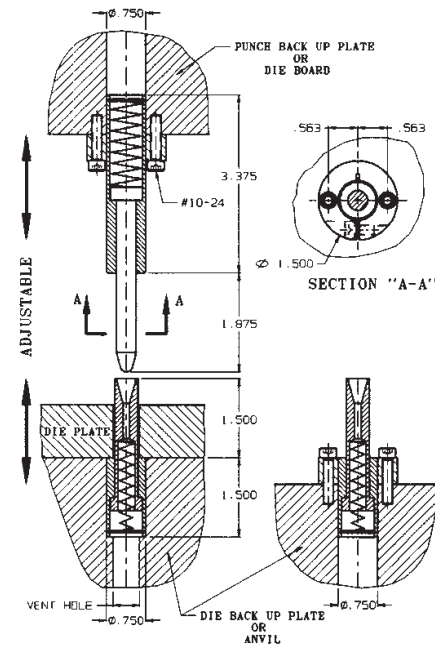
**PDSP75** Male cone locator cartridge

**PDSP76** Female cone locator cartridge

Cone locator cartridges are used to register the formed shot. Secondary operations such as trimming, filling and heat sealing, all require accurate registration when the web exits from the mold. These alignment devices can be added to punch and die trim tools, steel rule die boards or any tooling that requires precise registration.

Hardened steel male and female spring pins are housed in bronze bushing cartridges designed for easy installation. Cartridges slide to adjust for height and then lock into their proper position.

These cartridges will capture the shot in advance of the intended operation. The male cartridge, with its stronger spring, will provide positive directional placement of the captured shot.



### Precision Trim Alignment

Male/Female cone locator cartridge sets capture and align web in advance of punch and die engagement to insure precise trimming.

## FORM TOOL COMPONENTS



### Silicone Extruded Cord

#### Ideal For Pressure Box and Mold Base Seals

Silicone rubber cord seals are extruded from durable 70-durometer material and are available in double seal "H" extrusion, "A" extrusion, or round stock to meet your specifications. The special "H" seal is especially suited for use on pressure boxes. Its use creates a double seal that eliminates blowouts and forms to tighter compression which provides positive sheet gripping, and eliminates squeal. The "A" and "O" sealing cords have a variety of applications. See "Seal Application Recommendation" chart below. "O" Cord silicone rubber seals are available in 1/8", 3/16", 0.210", 1/4", and 5/16".

### Seal Application Recommendation

Component Description	Seal Application			Cord Type		
	Form Air	Vacuum	Water	O	H	A
Plate to plate	X	X	X	X		X
Clamp plate to sheet	X			X	X	X
Clamp plate to pressure plate	X			X		X
Pressure box to sheet	X				X	
Stripper plate to mold base		X		X		X
Mold to mold base		X	X	X		

### Mounting Collars



**PDSP73-1** Standard round mounting collar fits SP75-SP76

**PDSP73-3** Rectangular offset mounting collar fits SP75-SP76

### Scrap Chopper Bars



**PDCHP6** 6-inch Chopper Bar

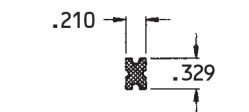
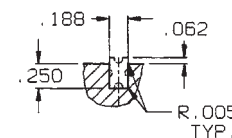
**PDCHP7** 7-inch Chopper Bar

**QUALITY...** Segen "Scrap Chopper Bars" are manufactured from heat-treated tool steel (RC58-60) and precision ground on all six surfaces to within .0005" tolerance.

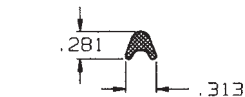
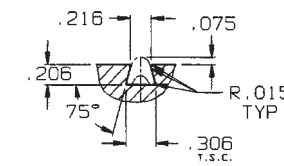
**LONGER LIFE...** Four usable precision ground cutting edges!

**LESS DESIGN NEEDED...** Standardized 6" and 7" Scrap Chopper Bars will combine to accommodate your width requirements.

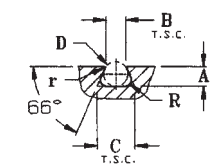
### Silicone Rubber Seal Applications



**PDEH316** "H" Cord



**PDECA313** "A" Cord



"O" Cord Silicone Rubber Seal

Catalog #	D	A ± .001	B ± .002	C	R	r
PDEC125	1/8	.101	.103	.193	.032	.010
PDEC188	3/16	.151	.155	.290	.032	.015
PDEC210	.210	.169	.173	.324	.032	.015
PDEC250	1/4	.201	.206	.385	.063	.015
PDEC312	5/16	.260	.250	.481	.094	.020

## FORM TOOL COMPONENTS

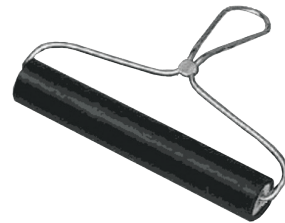
### RC-860 Rapid-Cycle Heat Sink Compound

Thermoforming is about heat. The primary objective is heating and cooling the plastic as fast as possible. Available in convenient 5 oz. tubes. Segen's special thermoforming compound is a silicon-based Zinc Oxide that dramatically increases thermal transfer rates when applied between the mold and cooling plate. That means faster cooling molds, increased shots-per-minute and increased profits!



### RC-R60 Rapid-Cycle Applicator Roller

Hard rubber 6" wide applicator roller spreads a uniform coating of heat sink compound over thermal contact area.



**PDSP51** – Male index button designed and contoured for strength. Provides positive indexing in a limited space. Face mounted with #6 cap screw and located with .125 dowel. 3/8" wide by 3/4" long by 1/4" high.



**PDSP52** – Designed to straddle mold cooling lines and mold joints in index direction. Mounted into 1/4" deep slot with #8 cap screws to form an impression 1/2" wide by 1/4" high. Back of button is tracked and vented.



**PDSP53** – Designed to straddle mold cooling lines and mold joints in the cross web direction. Otherwise same as PDSP52.



**PDSP54** – Designed to be counterbored and mounted into a stripper plate. Measures 1" diameter, 1/4" deep. Forms impressions 3/8" wide by 1/4" high. Button is tracked, vented and secured with #6 cap screws.

**ACCURATE WEB INDEXING** for your off-line punch and die trimming is ensured by forming strong and rigid impressions into your web with time-saving Segen Index Buttons.

## PEENING HAMMER

### Peening Hammer

#### Renew worn trim tooling, eliminate angel hair and fuzz.

A must for anyone running punch and die or matched-metal trim tooling. This remarkable peening hammer can be used to renew worn tooling without the time and cost associated with pulling the trim tool out of the press. After the first time you "peen back to life" excessive clearance between worn punch and die, this proven tool will have paid for itself!

Saves thousands by drastically reducing downtime associated with tool maintenance.

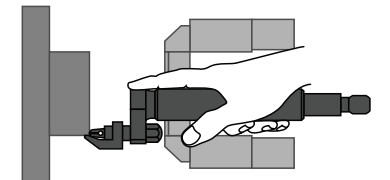
Recondition a worn punch or die so your tooling can be back in operation within minutes. Our peening hammer is shaped and designed to deliver 6,000 blows per minute with the proper force to cause steel to yield and flow in the precise form and direction.



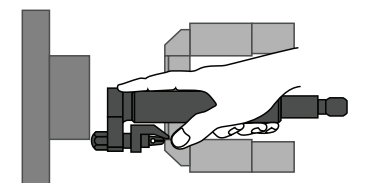
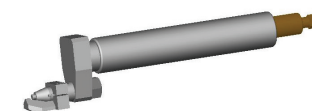
### Peen Matched Metal Tools Inside the Press

**IMPORTANT: Lock Out** machine before starting

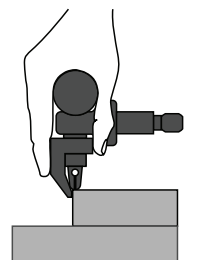
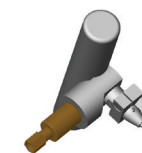
**Mode I:** Shown peening "soft" punch in trim press.



**Mode II:** Shown peening "soft" die in trim press.



**Mode III:** Shown peening with "bench" set up.



### PROFITABLE RESULTS IN ONLY A FEW MINUTES!

- Simple design allows workers to perform a professional peening job
- Assures easy access to hard-to-reach equipment
- Perfectly counter-balanced for improved feel and ease of use
- Special feel-enhancing grip ensures a delicate touch, even in awkward positions

### PEEN WORN PUNCHES AND DIES RIGHT INSIDE YOUR TRIM PRESSES!

- Handle-mounted on/off valve is conveniently positioned for maximum operator control
- Air inlet port receives 1/8 NPT male hose fitting
- Air consumption is 3 cfm

# TITAN SHEET CLAMPS

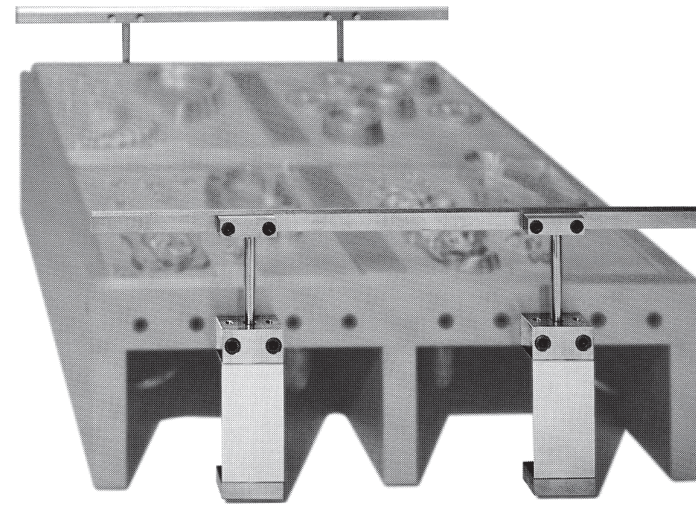
## Titan Sheet Clamps

**Hold hot plastic sheet securely in place during molding.**

Improve part quality, eliminate webbing and assure even plastic distribution by installing Titan Sheet Clamps on your form tools. Our inexpensive, patented sheet clamps install easily on new or existing tooling. Titan Sheet Clamps are gas-spring-actuated, eliminating the need, cost and time to hook up compressed air. Save on design and tool building costs as well.

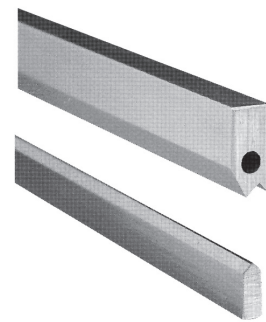
### TITAN'S POSITIVE SHEET CLAMPING...

- Improves part quality
- Eliminates webbing
- Improves sheet distribution
- Reduces cycle time
- Improves sheet stripping
- Fits all sheet widths



Typical Titan Sheet Clamp Installation

### Receiver Bars



#### Receiver Bars

**TSCR24** – 24"  
**TSCR36** – 36"

#### Clamp Bars

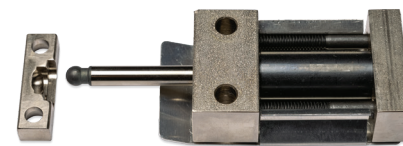
**TSCB24** – 24"  
**TSCB36** – 36"

### Trap plastic sheet between Clamp Bars

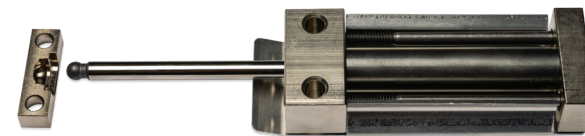
- Made of extruded aluminum
- Bored for water-cooling
- Available in 24" and 36" lengths

### Components

#### Clamp Cylinders



**TSC15** – 1-1/2" stroke



**TSC30** – 3" stroke

# TITAN SHEET CLAMPS

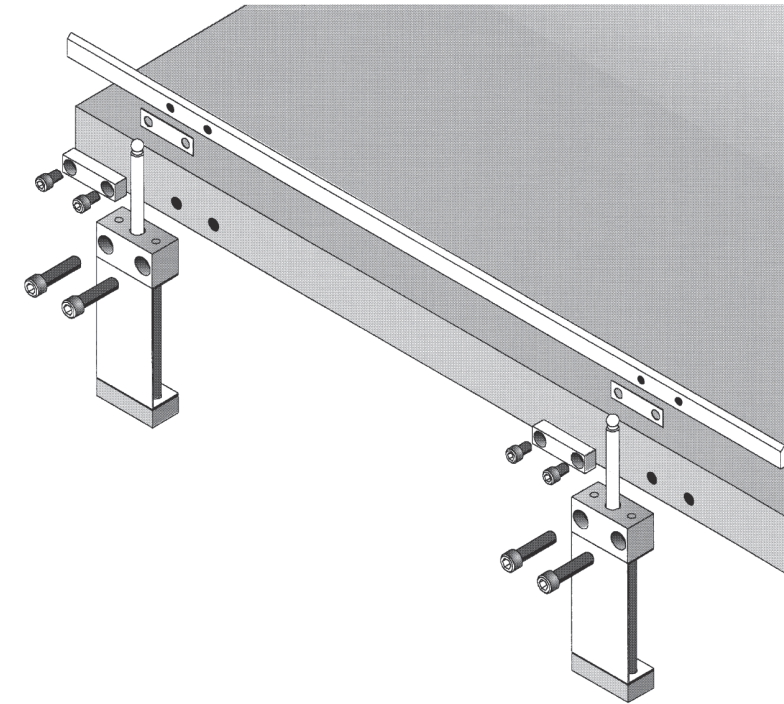
## Titan Sheet Clamps

### Simple Installation

Titan's modular design accommodates all tools and sheet widths. The design allows independent mounting of the clamp cylinders to the tool and clamp bars. The clamp bar and receiver bar are fitted to the tool by cutting them to the tool's length. Cylinders attach to the bar with a ball swivel retainer. This retainer is fastened by adding two tapped mounting holes in the bar. The modular sheet clamping system can be adapted to virtually any thermoforming tool that requires sheet clamping. Titan sheet clamps are easily retrofitted to mold bases and pressure boxes.

The ball swivel attachment allows independent, free clamp bar movement. Clamp bars yield to missed indexes, unformed parts, and double shots, providing positive clamping in adverse conditions.

Positive clamping, simple installation, modular design and free independent movement make Titan Sheet Clamps the sensible, inexpensive answer to your tool's sheet clamping needs.



### Titan Sheet Clamps

Catalog #	Component Name	Stroke	Body Length	Body Width	Height Overall	Force
TSC15	Clamp Cylinder	1 1/2"	3 1/4"	1 7/8"	5 1/4"	75 lbs.
TSC30	Clamp Cylinder	3"	5"	1 7/8"	8 5/8"	75 lbs.
TSCB24	Clamp Bar	NA	24"	1/4"	5/8"	NA
TSCB36	Clamp Bar	NA	36"	1/4"	5/8"	NA
TSCR24	Receiver Bar	NA	24"	1/2"	1"	NA
TSCR36	Receiver Bar	NA	36"	1/2"	1"	NA
TSC15-01	Cylinder Only	1 1/2"	NA	NA	NA	75 lbs.
TSC30-01	Cylinder Only	3"	NA	NA	NA	75 lbs.

## SYNTACTIC FOAM PLUG ASSIST MATERIALS

### Syntactic Foam

Syntactic Foam is a composite tooling material used in the thermoforming industry. This rigid, high-strength composite of epoxy resin and hollow glass microspheres maintains its hardness right up to its specified maximum running temperature and exhibits excellent abrasion resistance.

Available in block, sheet and rod form, Syntactic Foam is easily machined using standard shop tools and offers a lightweight, durable, and cost effective alternative to wood, felt, aluminum and Delrin.

Syntactic Foam plug material is engineered to address problems related to traditional thermoforming tooling such as sticking, deformation and failure. Syntactic Foam plugs exhibit



extremely low thermal conductivity, so they do not draw heat away from the plastic sheet, virtually eliminating the primary cause of plug sticking or fouling. Syntactic Foam plugs are quick and easy to replace and are repairable if subject to minor damage.

Requiring very little warm-up time, Syntactic Foam plugs are dimensionally stable, exceptionally durable and are ideally suited to a wide range of inline, sheet-fed thermoforming applications such as component manufacture within the food and medical packaging, aerospace, and automotive sectors. The materials' versatility also makes it ideal for prototype tooling in many other plastic processes.

**We offer both 350° F (177° C) and 450° F (232° C) Syntactic foam materials to fit a wide range of service temperatures. Please call for help finding the right material for your application.**

### 350° and 450° Syntactic Foam Rods

Catalog #		Size	
350° Foam	450° Foam	Diameter	Length
SFR 3025	SFR 4025	2.5"	24"
SFR 3030	SFR 4030	3.0"	24"
SFR 3035	SFR 4035	3.5"	24"
SFR 3040	SFR 4040	4.0"	24"
SFR 3045	SFR 4045	4.5"	24"
SFR 3050	SFR 4050	5.0"	24"
SFR 3055	SFR 4055	5.5"	24"
SFR 3060	SFR 4060	6.0"	24"
SFR 3090	SFR 4090	9.0"	12"
SFR 3120	SFR 4120	12.0"	12"

### 350° and 450° Syntactic Foam Sheets

Catalog #		Size		
350° Foam	450° Foam	Thickness	Width	Length
SFS 3015	SFS 4015	1.5"	26"	24"
SFS 3020	SFS 4020	2.0"	26"	24"
SFS 3025	SFS 4025	2.5"	26"	24"
SFS 3030	SFS 4030	3.0"	26"	24"

### 350° and 450° Syntactic Foam Block

Catalog #		Size		
350° Foam	450° Foam	Height	Width	Length
SFB 3060	SFB 4060	6"	12"	24"



Block

## THERMOPLASTIC SYNTACTIC FOAM PLUG ASSIST MATERIALS

### Thermoplastic Syntactic Foam Material

Thermoplastic Syntactic Foam is one of the toughest materials available for thermoforming plug assists on the market today. More easily machinable and able to withstand the harshest thermoforming environments, thermoplastic plugs can help produce the most intricate designs with dazzling clarity. The exceptional properties of this material will allow thermoformers to run their machines faster and hotter than ever before, cutting cycle times and increasing productivity.

Machining of this product is practically dust-free. The ease of machinability allows it to be readily tapped for threaded inserts. Our thermoplastic plug material is proven to withstand the most severe operational environments, while providing tough, long-lasting plugs that will need to be replaced less often.

Unlike regular syntactic foam, the thermoplastic material is non-toxic and no dust particles are produced during machining. No special ventilation, personal hygiene or flammability precautions are necessary.

### MAJOR COST-SAVING BENEFITS:

- No plug sticking or fouling
- No plug heaters
- Consistent performance
- Fast plug production
- Reduced warm-up time
- Long plug life
- Simple plug preparation

### Thermoplastic Syntactic Foam Rods

Catalog #	Diameter	Length
SFER020	2.0"	24"
SFER025	2.5"	24"
SFER030	3.0"	24"
SFER035	3.5"	24"
SFER040	4.0"	24"
SFER045	4.5"	24"

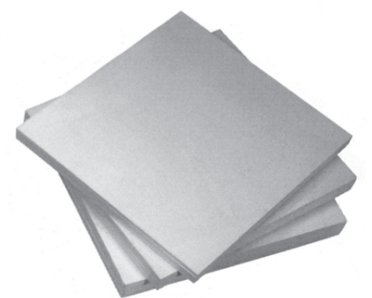
### Thermoplastic Syntactic Foam Sheets

Catalog #	Thickness	Width	Length
SFES010	1.0"	24"	24"
SFES015	1.5"	24"	24"
SFES020	2.0"	24"	24"
SFES025	2.5"	24"	24"
SFES030	3.0"	24"	24"
SFES035	3.5"	24"	24"
SFES040	4.0"	24"	24"
SFES045	4.5"	24"	24"

Rods



Sheet



# METAPOR POROUS MOLD MATERIAL

## Micro-porous, Air-permeable Aluminum Mold Material!

Metapor represents a major breakthrough in material sciences. The aluminum material was custom designed to significantly speed up the manufacture of thermoforming molds and enhance their performance. Thermoform mold manufacturers can now expand their design flexibility and reduce manufacturing costs.

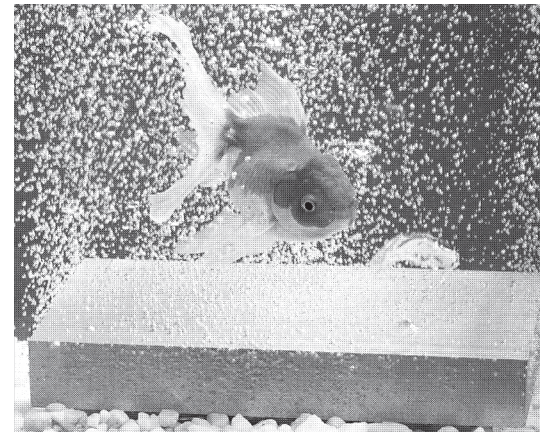
The micro-porous, air-permeable aluminum is ideal for male or female molds, rapid prototyping, bottom inserts, detailed engravings, large flat surfaces and more. The material is easy to machine and cuts faster than aluminum, similar to hard wood. The result is a smooth surface finish.

This revolutionary aluminum mold making material eliminates the need for time consuming venting, tracking and back drilling. The micro-porous, air-permeable material provides even evacuation for high definition thermoforming. The problem of surface mark-off, caused by trapped air is completely eliminated.

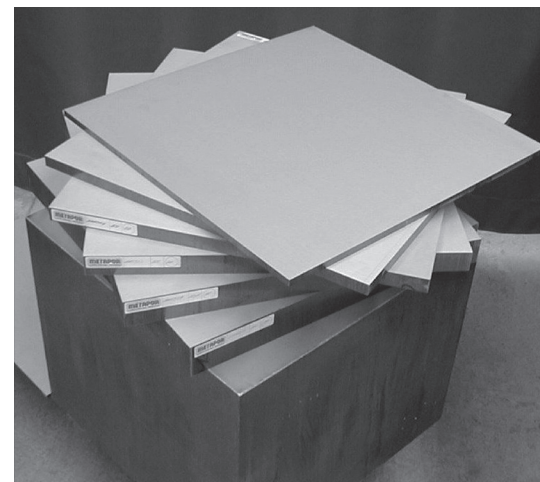
Design flexibility is dramatically enhanced because micro-vents are an integral part of all surfaces. The material's inherent properties eliminate the need to design and manufacture complex venting systems. Metapor offers thermoformers the ability to design and manufacture molds faster and at a lower cost.

## Rapid Part Prototyping

Drastically reduce time to go from part concept to providing your customer with sample thermoformed parts. Metapor is the choice for rapid prototype mold making. Metapor machines and polishes considerably faster than standard aluminum. CNC programming, designing, and machining of complex venting systems are eliminated.



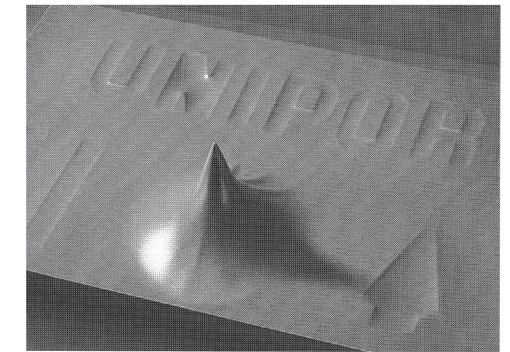
It breathes...



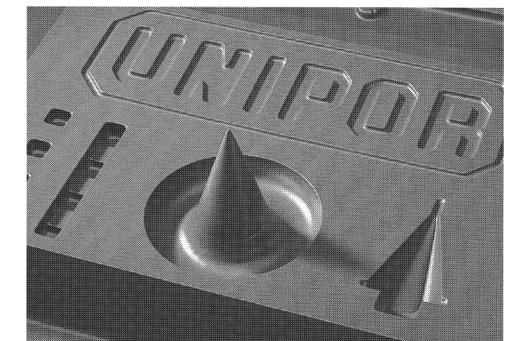
## BENEFITS:

- Rapid part prototyping
- Eliminate venting, tracking and back-drilling
- Reduce mold manufacturing costs
- Eliminate surface mark-off
- Expand design flexibility
- Produce intricate shapes
- Improve finished part quality

We offer a full range of Metapor including the BF-100, HD-100, and HD-210 Aluminum. Let us help you chose the right micro-porous mold material for your job. Please visit our website for specifications or give us a call.



Thermoforming without venting, tracking or backdrilling



## Metapor Mold Material

Catalog #	Dimensions
MP10	500mm x 500mm x 10mm
MP15	500mm x 500mm x 15mm
MP20	500mm x 500mm x 20mm
MP30	500mm x 500mm x 30mm
MP40	500mm x 500mm x 40mm
MP50	500mm x 500mm x 50mm
MP60	500mm x 500mm x 60mm
MP70	500mm x 500mm x 70mm
MP80	500mm x 500mm x 80mm
MP100	500mm x 500mm x 100mm (19.68" x 19.68" x 3.94")
MP400	500mm x 500mm x 400mm (19.68" x 19.68" x 15.75")

Catalog #	Dimensions
MP10HD	500mm x 500mm x 10mm
MP15HD	500mm x 500mm x 15mm
MP20HD	500mm x 500mm x 20mm
MP30HD	500mm x 500mm x 30mm
MP40HD	500mm x 500mm x 40mm
MP50HD	500mm x 500mm x 50mm
MP60HD	500mm x 500mm x 60mm
MP70HD	500mm x 500mm x 70mm
MP80HD	500mm x 500mm x 80mm
MP100HD	500mm x 500mm x 100mm
MP400HD	500mm x 500mm x 400mm



## COMPANY OVERVIEW

Tooling Tech Group builds custom automated systems for assembly, joining and inspection as well as tooling for a variety of applications including thermoform molding, high compression composite molding, blow molding, rotational molding, die casting, and stamping. Industries served include automotive, appliance, lawn and garden, agricultural, aerospace, marine, and off-road vehicle industries, among others. Through organic growth and acquisitions, the company has become the largest tooling provider in the United States with 650+ employees, 13 modern facilities and over 1 million square feet of manufacturing space across four states.

The depth and breadth of our capabilities is achieved through the combined experience of our company units, with each of these companies being in business for 30+ years, providing both extensive industry experience and financial stability that you can rely upon. Our unique differentiator is the ability to provide all tooling services from design to engineering to simulation to machining to fabrication to try-out all within one company. This single source ability can help to streamline your business operations and simplify your life. We take full responsibility for quality, delivery, and cost management of each project starting at concept through “on time, every time” delivery.



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