



# FOUNDRY TOOLS & SUPPLIES

*Freeman offers the industry's largest selection of hard-to-find tools and supplies designed for demanding foundry environments.*

**86-89**



Mold Alignment Dowels

**91-93**



Core Box Vents & Accessories

**96**



Freeman-Palmer Pattern Plates

**97-98**



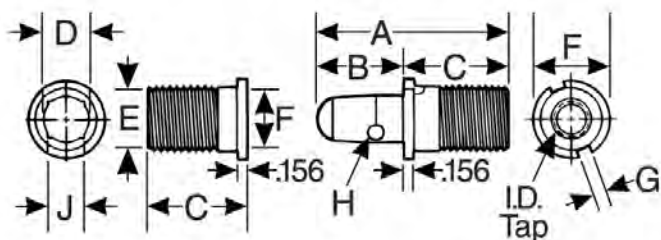
Foundry Tools & Other Supplies

# CORE BOX ALIGNMENT DOWELS

## Freeman Husky Dowels

- ▶ Precisely machined for accuracy
- ▶ Threaded for easy installation & removal
- ▶ Hardened for long life
- ▶ Black oxide treatment prevents rust

A Freeman exclusive, the No. 55 Husky Dowel is widely considered the strongest threaded body steel dowel available. Its blackened body prevents rust for a long, heavy duty life. The pin body and bushing body have the same outside diameter, enabling boxes to be booked for fast, accurate installation.



SKU	Description	Dowel Dimensions										
		A	B	C	D	E	F	G	H	J	Threads I.D.	Threads O.D.
164020	Male Pin - Standard	1¾"	1⅜"	—	⅝"	—	1⅜"	⅜"	⅜"	—	½" - 13	1⅜" - 20
164025	Male Pin - Long	2¼"	1⅞"	—	⅝"	—	1⅜"	⅜"	⅜"	—	½" - 13	1⅜" - 20
164030	Male Pin - Extra Long	3"	2⅞"	—	⅝"	—	1⅜"	⅜"	⅜"	—	½" - 13	1⅜" - 20
164035	Female Bushing	—	—	1⅜"	⅝"	1⅜"	1⅜"	—	—	½"	—	1⅜" - 20
164040	Complete Set - Standard (25/box)	164045 Complete Set - Long (25/box)		164050 Complete Set - Extra Long (25/box)								

## Freeman Husky Dowels Installation Tools



- 164525 (A) Drill 3/4" diameter
- 164530 (B) Reamer 49/64" diameter
- 164515 (C) Counterbore
- 164520 (D) Tap with Pilot 1 3/16" - 20
- 164545 (E) 1" Socket 1/2" Drive
- 164510 (F) Pin Wrench with Cross Pin
- 164560 (G) Cross Pin for Wrench
- 164540 (H) Socket 5/8" X 12-Point Socket, 1/2" Drive
- 164535 (I) Square Drive Bit
- 164550 Socket Wrench Handle - 10 5/8" long, 1/2" Drive (not shown)
- 163780 Replacement Counterbore Cam w/Set Screw

### New Packaging

All Freeman dowels now feature sturdy packaging with specially fitted inserts that keep sets together and provide proper storage.

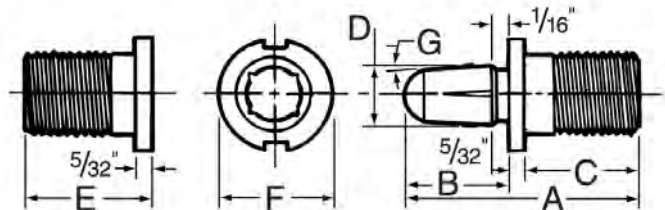


# CORE BOX ALIGNMENT DOWELS CONTINUED

## Master Sure-Lock (True-Line) Steel Dowels

- ▶ Threaded for easy installation and removal - dowel may be extracted even if the pin is broken
- ▶ Ideal for small to medium sized jobs
- ▶ Hardened for long life
- ▶ Black oxide treated to prevent rust

This popular heavy-duty steel dowel system is the most specified alignment system in the industry. Master Sure-Lock (True-Line) Dowels are a Freeman exclusive design manufactured to exacting standards.



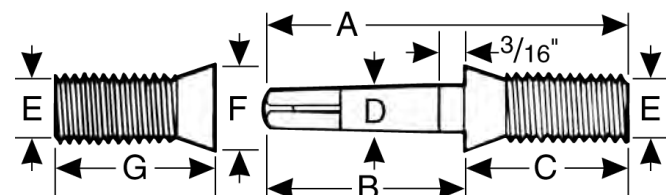
				Dowel Dimensions								
	Dowel Complete	SKU Male Pin	Female Bushing	Size	A	B	C	D	E	F	G	Threads
Regular	166100 (50/box)	166140	166120	1	1 1/4"	1 7/32"	9/16"	1/4"	2 3/32"	9/16"	1 1/2°	3/8" - 24
	166105 (50/box)	166145	166125	2	1 11/32"	5/8"	9/16"	5/16"	2 3/32"	5/8"	3°	7/16" - 20
	166110 (50/box)	166150	166130	3	1 1/2"	1 1/16"	2 1/32"	3/8"	1 3/16"	1 1/16"	2 1/4°	1/2" - 20
	166115 (50/box)	166155	166135	4	1 19/32"	25/32"	2 1/32"	1/2"	1 3/16"	1 3/16"	4°	5/8" - 18
Long	—	166160	166125	2	2 1/32"	1 1/4"	1 3/16"	5/16"	2 3/32"	5/8"	4°	7/16" - 20
	—	166165	166130	3	2 1/2"	1 3/8"	3 1/32"	3/8"	1 3/16"	1 1/16"	4°	1/2" - 20
	—	166170	166135	4	2 11/16"	1 9/16"	3 1/32"	1/2"	1 3/16"	1 3/16"	4°	5/8" - 18

Pins and bushings sold individually; or together in box quantities (number of sets per box noted above).

## Freeman Square-Head Steel Dowels

- ▶ Precisely machined for accuracy
- ▶ Square head design for easy installation & removal
- ▶ Hardened for long life
- ▶ Black oxide treatment prevents rust

The familiar square head of these dowels remains one of the best methods of offering a sturdy bearing surface for the inserting wrench to grasp. Dowels frozen in threads by foundry use can be removed with adjustable wrenches. All parts of one size are interchangeable, so changes in pin length or bushing length are possible without completely reworking the job. Offering good wear resistance and high strength, these dowels are commonly used for aluminum, gray iron, brass or plastic pattern equipment and are especially useful for shell mold and hot box pattern equipment.



				Dowel Dimensions								
	Dowel Complete	SKU Male Pin	Female Bushing	Size	A	B	C	D	E	F	G	Drill Tap
Regular	161005 (50/box)	161025	161045	1	1 1/4"	1 7/32"	2 3/32"	1/4"	3/8"	1/2"	2 3/32"	1 9/64" 3/8" - 24
	161010 (50/box)	161030	161050	2	1 11/32"	5/8"	2 3/32"	5/16"	7/16"	9/16"	2 3/32"	1 1/32" 7/16" - 20
	161015 (50/box)	161035	161055	3	1 1/2"	1 1/16"	1 3/16"	3/8"	1/2"	5/8"	1 3/16"	1 3/32" 1/2" - 20
	161020 (50/box)	161040	161060	4	1 19/32"	25/32"	1 3/16"	1/2"	5/8"	3/4"	1 3/16"	1 7/32" 5/8" - 18
Long	—	161065	161085	1	2 1/4"	1 1/4"	1"	1/4"	3/8"	1/2"	3 1/32"	1 9/64" 3/8" - 24
	—	161070	161090	2	2 1/4"	1 1/4"	1"	5/16"	7/16"	1 7/32"	1"	1 1/32" 7/16" - 20
	—	161075	161095	3	2 1/4"	1 1/4"	1"	3/8"	1/2"	5/8"	1"	1 3/32" 1/2" - 20
	—	161080	161100	4	2 1/4"	1 1/4"	1"	1/2"	5/8"	3/4"	1"	1 7/32" 5/8" - 18
*Extra Long	—	161110	*	3	3"	2"	1"	3/8"	1/2"	—	—	1 3/32" 1/2" - 20
	—	161115	*	4	3"	2"	1"	1/2"	5/8"	—	—	1 7/32" 5/8" - 18

\*Standard or long bushings can be used. Pins and bushings sold individually or together in box quantities (number of sets per box noted above).



# CORE BOX ALIGNMENT DOWELS CONTINUED

## Steel Dowel Installation Tools

Our drills, reamers, counterbores, and taps are top-quality tools made of high-grade tool steel for long lasting performance and proper dowel installation. Please note which tools are designed for the Master Sure-Lock (True-Line) or Freeman Square-Head dowels.

Description	SKU/Dowel Size			
	#1	#2	#3	#4
Drill Bit for both styles	163620	163625	163630	163635
Reamer for both styles	163560	163565	163570	163575
Counterbore for Master	163761	163766	163771	163776
Counterbore for Freeman	163580	163585	163590	163595
Tap for both styles	163600	163605	163610	163615
Wrench for Freeman	163540	163545	163550	163555
Slotted Wrench for Master	163740	163745	163750	163755
Milled Wrench for Master	163720	163725	163730	163735

## Steel Dowel Installation Guide

**1 Drilling** – Using the appropriate sized drill bit, drill a hole deep enough to allow the pin and pilot of the tap (step four) to reach its proper depth (the exact depth will vary depending on which size dowel you are installing).

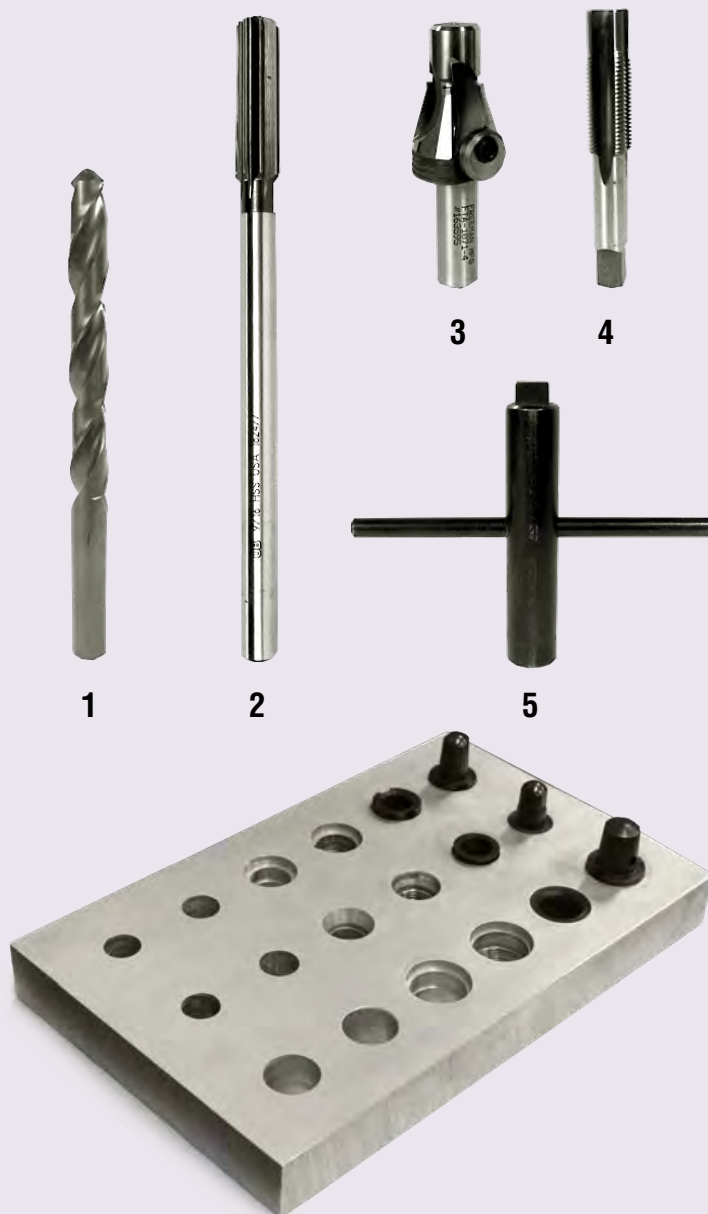
**2 Reaming** – Use the appropriate reamer to make the previously drilled hole smooth and precise in dimension.

**3 Counterboring** – Next you must counterbore the hole. This tool is designed with a pilot end to perfectly align itself in the center of the reamed hole before boring a perfect concentric bevel or shoulder. In order to prevent boring too deep, the counterbore has an adjustable cam with a set screw (SKU #163780), allowing you to manually set the depth of your counterbore.

**4 Tapping** – This tap is also designed with a pilot end to precisely cut the threads in the hole. With a tap wrench attached, you can manually turn the tap to create the threads.

**5 Install Pin and Bushing** – You now have an accurate, precise hole ready for installation of the dowel pin or bushing. Each style of dowel requires its own specially designed set of wrenches or sockets for easy installation.

**NOTE:** Each style of dowel has its own counterbore to accommodate the differences in how the dowel sets below the surface. Both Husky dowels and Sure-Lock (True-Line) dowels have square shoulders while the Square-Head dowels have beveled shoulders. If you are using a CNC machine, the cam should be unnecessary.



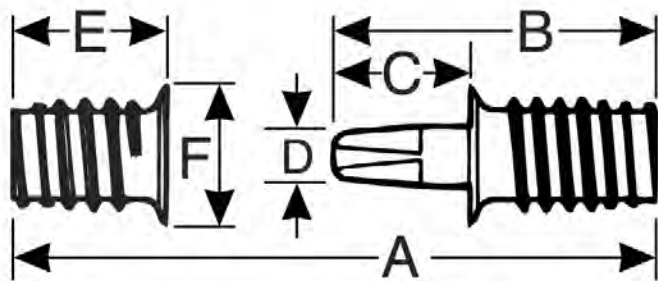
# CORE BOX ALIGNMENT DOWELS CONTINUED

## Freeman Square-Head Brass Dowels & Installation Tools

- ▶ Coarse, sharp threads and square-head design offer easy and secure installation
- ▶ Precisely machined for accuracy
- ▶ Solid brass prevents rust

These Brass Dowels are used for hardwood and softwood pattern equipment, plasters and plastics. The square head provides four wide flat areas that fit perfectly into the wrench, ensuring accuracy and control when installing both the pin and

bushing. The large contact surface of the male dowel withstands the strain of removing without stripping. The wrench covers the entire pin of the male dowel down to the flange of the dowel. This eliminates the difficulties of squaring the wrench to the dowel and the work when inserting.



SKU					Dowel Dimensions						
Dowel Set	Male Pin	Female Bushing	Wrench Tool	Size	A	B	C	D	E	F	Drill Bit Size
162005 (100/box)	162040	162075	163505	1	1 <sup>1</sup> / <sub>16</sub> "	5 <sup>1</sup> / <sub>8</sub> "	9 <sup>1</sup> / <sub>32</sub> "	1 <sup>1</sup> / <sub>64</sub> "	1 <sup>1</sup> / <sub>32</sub> "	9 <sup>1</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>16</sub> "
162010 (100/box)	162045	162080	163510	2	2 <sup>7</sup> / <sub>32</sub> "	4 <sup>9</sup> / <sub>64</sub> "	1 <sup>1</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>16</sub> "	2 <sup>7</sup> / <sub>64</sub> "	2 <sup>3</sup> / <sub>64</sub> "	1 <sup>1</sup> / <sub>4</sub> "
162015 (100/box)	162050	162085	163515	3	1 <sup>1</sup> / <sub>32</sub> "	1 <sup>5</sup> / <sub>16</sub> "	2 <sup>7</sup> / <sub>64</sub> "	7 <sup>1</sup> / <sub>32</sub> "	3 <sup>3</sup> / <sub>64</sub> "	2 <sup>7</sup> / <sub>64</sub> "	5 <sup>1</sup> / <sub>16</sub> "
162020 (50/box)	162055	162090	163520	4	1 <sup>1</sup> / <sub>32</sub> "	1 <sup>9</sup> / <sub>64</sub> "	1 <sup>7</sup> / <sub>32</sub> "	1 <sup>9</sup> / <sub>64</sub> "	3 <sup>9</sup> / <sub>64</sub> "	3 <sup>9</sup> / <sub>64</sub> "	7 <sup>1</sup> / <sub>16</sub> "
162025 (50/box)	162060	162095	163525	5	1 <sup>1</sup> / <sub>16</sub> "	1 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>32</sub> "	1 <sup>3</sup> / <sub>32</sub> "	2 <sup>3</sup> / <sub>32</sub> "	2 <sup>3</sup> / <sub>32</sub> "	9 <sup>1</sup> / <sub>16</sub> "
162030 (50/box)	162065	162100	163530	6	1 <sup>1</sup> / <sub>8</sub> "	1 <sup>4</sup> / <sub>64</sub> "	5 <sup>1</sup> / <sub>64</sub> "	3 <sup>5</sup> / <sub>64</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1 <sup>5</sup> / <sub>16</sub> "	3 <sup>1</sup> / <sub>4</sub> "
166330 (20/box)	166365	166400	*	7	2 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1 <sup>3</sup> / <sub>16</sub> "	1 <sup>3</sup> / <sub>16</sub> "	1 <sup>3</sup> / <sub>16</sub> "	1"

\*To install the Size 7 Pin, use a standard 5/16" hex wrench. To install the Size 7 Bushing use SKU #163536. This is a 5/16" square drive bit requiring a 5/16" 12 point socket for installation (not included). Pins and bushings sold individually; or together in box quantities (number of sets per box noted above).

## OTHER CORE BOX ALIGNMENT DOWELS

### Malleable Iron Dowels

These dowels are most commonly used to properly align very large core box halves, split patterns and loose pieces made from wood. Available in three sizes.

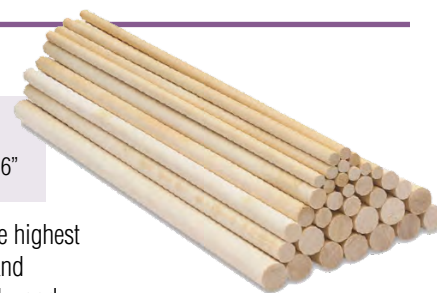


SKU	Description	Pin Diameter	Base Diameter
026210	Pin	1/2"	2"
026220	Pin	3/4"	2 1/2"
026230	Pin	1"	2 1/8"
026205	Bushing	1/2"	2"
026215	Bushing	3/4"	2 1/2"
026225	Bushing	1"	2 1/8"

### Wood Dowels

- ▶ Standard 36" lengths
- ▶ Exact Diameters from 1/8" to 6"

These dowels are made of the highest grade birch, finished round and smooth from straight grained wood.



### Foundry Locators

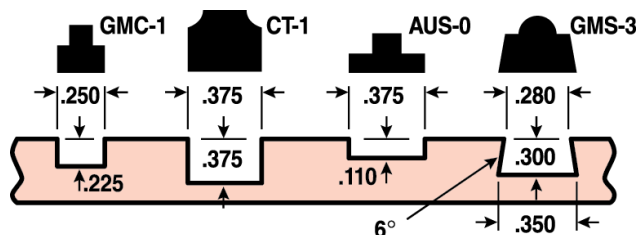
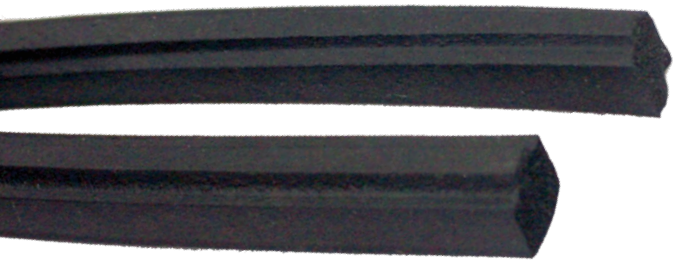
- ▶ Diameters from 0.125" to 0.750"
- ▶ Injection molded for accuracy
- ▶ Round or oblong shapes

Foundry Locators are yellow, high-density polystyrene alignment pins used to precisely position foundry cores. They help to improve the accuracy and quality of complex, multiple-core

castings. Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for complete details and part numbers.



# SEALS, CLAMPS & ACCESSORIES



## Dike-O-Seal Preform Strip

- ▶ Can be installed and secured without adhesive
- ▶ Corners can be machined at 45° to the intersecting grooves
- ▶ Seal can be set in groove without cutting and bonding ends
- ▶ Available in 20 and 40 Shore A

This product provides an effective seal in core boxes and gassing plates. To quickly put the core box into production, bond into channels with Freeman F-Bond Adhesives (page 81).

SKU	Description	Hardness (Shore A)	Mfg No.	Length
177105	Preform Strip	20	GMC-1	50'
177115	Preform Strip	20	AUS-0	50'
177125	Preform Strip	20	GMS-3	50'
177140	Preform Strip	20	CT-1	50'
177110	Preform Strip	40	GMC-1	50'
177120	Preform Strip	40	AUS-0	50'
177130	Preform Strip	40	GMS-3	50'
177146	Preform Strip	40	CT-1	50'
177142	Preform Strip – 1/8" Round	20	1/8" R	50'
177143	Preform Strip – 1/4" Round	20	1/4" R	50'
177148	Cutter For GMS-3 Strip			

Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for other designs.

## Shalco Blowplate Gasket

These high heat resistant (500°F) silicone rubber

gaskets are designed to be used for sealing shell-core and hot-box coremaking equipment. Reinforced with 26 gauge perforated steel, they provide a positive seal between the core box and the blowplate thus eliminating the escape of curing gases, air, and sand.

SKU	Length	Width	Thickness
177205	24"	24"	3/16"

## Striptube

This hollow, round, 60A neoprene rubber gasket material is an effective seal in foundry core boxes and gassing plates. Striptube is easily compressed and not affected by gasoline, naptha, or kerosene.

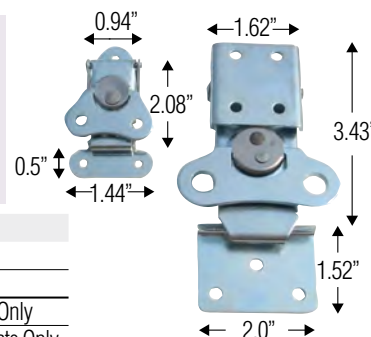
SKU	Diameter	Length
033475	1/8"	10'
033482	3/16"	10'
033484	1/4"	10'
033486	5/16"	10'



## Link-Lock Fasteners

- ▶ Ideal for securing core box halves during molding
- ▶ Positive locking, springless latching and heavy-duty construction
- ▶ Compact and flat-closing

SKU	Description
408255	#3 Light Duty Set
408256	#2 Medium Duty Set
408255P	#3 Light Duty Keeper Plate Only
408256P	#2 Medium Duty Keeper Plate Only



## Peerless Core Box Clamps

- ▶ Parts sold individually - all 3 required for complete set
- ▶ Heavy gauge steel for long life
- ▶ Center section brings core box parting line together
- ▶ Two sizes for various jobs

SKU	Description
177500	Left Bracket 2"
177502	Right Bracket 2"
177504	Centerpiece 2"
177508	Left Bracket 3"
177509	Right Bracket 3"
177510	Centerpiece 3"
177511*	Core Box Clamp Cable

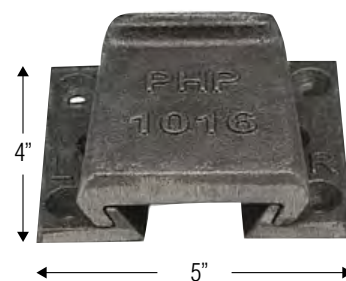
\*Cable may be attached to centerpiece and core box to prevent accidental loss.



## PHP Ductile Iron Core Box Clamps

- ▶ Parts sold individually - all 3 required for complete set
- ▶ Cast ductile iron for long life and durability
- ▶ Center section brings core box parting line together

SKU	Description
177517	Left Bracket 4"
177518	Right Bracket 4"
177516	Centerpiece 4"



## Dike-O-Lastic Ejector Buttons

Ejector Buttons are ideal for contributing to clean draws on deep pockets or cavities on match-plates or core boxes. Diameters are from 1/4" to 2 3/4". Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for complete details and part numbers.





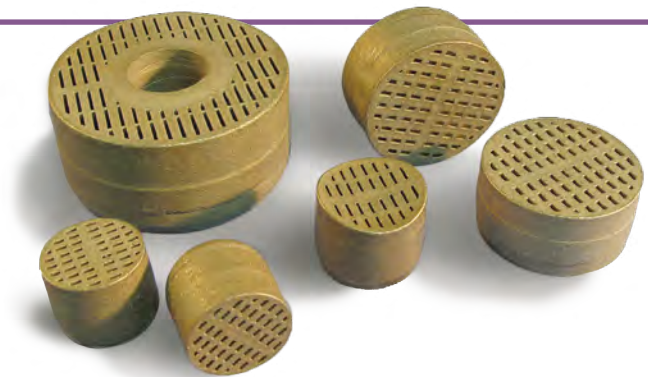
# CORE BOX AIR RELEASE VENTS

## VENTISTAMP CORE VENTS

► Designed for maximum durability and performance, these high-quality investment-cast core vents were developed for high-production applications where standard slotted vents would traditionally be used.

- One piece construction – no screens or foils to break
- Extremely flat head surface allows less imperfection in core
- Middle of vent diameter is 0.005" oversized – tight installation prevents movement
- Tapered slots less likely to clog with sand and binders
- Top of vent diameter is 0.003" undersized – prevents deformation of the slots
- Metric or Imperial sizes available

Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for complete details and part numbers.



### Zanatta Vents

- Height: 5/16"
- Brass alloy offers high wear resistance
- For sand with 60-80 AFS fineness
- Options:**
  - Slot Widths 0.2 mm to 0.45 mm tapered 20°
  - Diameters from 3/16" to 1 3/4" (3 mm to 45 mm)



### Maxvents

- Brass alloy offers high wear resistance
- For sand with 60-80 AFS fineness
- Options:**
  - Slot Widths 0.008" (0.2 mm) or 0.018" (0.45 mm) tapered 30°
  - Diameters from 3/16" to 1 3/4" (3 mm to 45 mm)
  - Heights 5/16" or from 6 mm to 12 mm



### Meltvents FS

- Slot Width: 0.12" (0.3 mm)
- Options:**
  - Diameters from 3/16" to 1" (3 mm to 25 mm)
  - Heights from 8 mm to 10 mm
  - Stainless steel or carbon, offering high wear resistance and versatility with a wide variety of binder systems



### Meltvents KT

- Resistance to high temperature and higher thermal conductivity compared to Stainless Steel alloys, allowing accelerated cooling processes
- Options:**
  - Slot Widths from 0.10 mm to 0.40 mm
  - Diameters from 3/16" to 5/8" (3 mm to 20 mm)
  - Heights 8 mm or 10 mm



## SHALCO CORE VENTS

► Shalco Super Vents are self-cleaning and feature an opening rate of more than 43%. Compared to an average of 13% for slotted vents and 30% for screen vents, Super Vents are more effective and efficient. They also prevent clogging, allowing for continuous operation of a core molding machine during no-bake molding.

Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for complete details and part numbers.

### Super Vents

- Slot Width: 0.010"
- Options:**
  - Diameters from 1/4" to 1"; 3 mm to 16 mm
  - Heights either 1/4" or 5/16"; 6 mm or 8 mm
  - With or without support bar
  - Metric sizes available online



## Standard Core Vent Selection Guide

### #1 – Material

- Brass is soft, therefore easier to contour, remove from the core box, and clean
- Steel offers greater wear and temperature resistance, and provides uniform heating and cooling with steel core boxes
- Aluminum is popular for Styrofoam molding applications

### #2 – Style

The “opening rate” (amount of space provided) varies by vent style. Slotted vents average about 13% and can be machined to contour with the core box surface. Screen Vents average about 30% and are primarily used in flat areas of the core box.

### #3 – Slot Width/Screen Mesh

The slot width or mesh size required is determined by the sand mesh size used in your core making process. The slot width or mesh opening must not be greater than the sand mesh in order to hold the sand in the core box while allowing air to escape.

### #4 – Dimensions

- Diameter is determined by the size of the area requiring venting and the number of vents preferred in the particular location on the core box
- Height is based on the shoulder depth created by the step drill (insert drill)
- Head Thickness affects the ability to contour the vent to the tool surface – a thicker head allows for more contouring and a thinner head is less likely to clog with binders

*These guidelines do not include Shalco Super Vents or Ventistamp vents, both of which offer unique advantages superior to most standard brass and steel vents.*

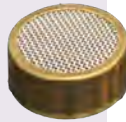
## STANDARD SCREEN CORE VENTS

### Type K, Screen – Brass

- ▶ High venting area with corrosion-resistant, nickel-copper alloy (monel) screen

#### Options:

- ▶ Meshes in 24, 35, 40, and 50
- ▶ Diameters from 1/8" to 1"
- ▶ Heights from 1/4" to 1/2"
- ▶ Support bars in 1/2" and larger diameter vents

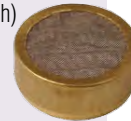


### Type 150L, Lectromesh – Brass

- ▶ Excellent for flat surfaces or finer sands
- ▶ Mesh: 150 over 25 LM (Lectromesh)

#### Options:

- ▶ Diameters from 1/8" to 1"
- ▶ Heights from 1/4" to 5/16"
- ▶ Support bars in 1/2" and larger diameter vents



### Type LM, Lectromesh – Brass

- ▶ Thin, flat screen prevents clogging

#### Options:

- ▶ Meshes of 25 or 40
- ▶ Diameters from 1/8" to 1"
- ▶ Heights from 1/4" to 1/2"
- ▶ Support bars in 1/2" and larger diameter vents



### Type G, Screen – Brass

- ▶ Thin, flat screen prevents clogging
- ▶ Mesh: 60 x 70

#### Options:

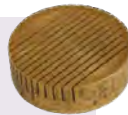
- ▶ Diameters from 1/8" to 1"
- ▶ Heights 1/4" or 5/16"
- ▶ Support bars and additional 14 mesh in 1/2" and larger diameter vents



## STANDARD SLOTTED CORE VENTS

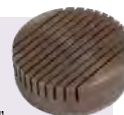
### Type D, Slotted – Brass

- ▶ Head Thickness: 0.093"
- #### Options:
- ▶ Slot Widths from 0.10 to 0.030"
  - ▶ Diameters from 1/8" to 1"
  - ▶ Heights of 1/4" or 5/16"



### Type C, Slotted – Steel

- ▶ Head Thickness: 0.093"
- #### Options:
- ▶ Slot Widths of 0.010" to 0.020"
  - ▶ Diameters from 1/8" to 1"; 8 mm - 16 mm
  - ▶ Heights from 1/4" to 5/16"; 10 mm



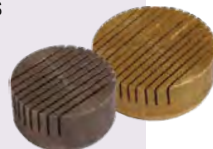
### Type T, Taper Slotted – Brass

- ▶ Self-cleaning tapered slots diverge towards underface, preventing sand clogging
  - ▶ Slot Width: 0.012"
  - ▶ Head Thickness: 0.080"
  - ▶ Height: 5/16"
- #### Options:
- ▶ Diameters from 1/8" to 1"



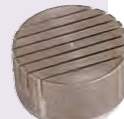
### Type XD, Slotted – Brass or Steel

- ▶ For mounting on and contouring to extremely irregular surfaces
  - ▶ Head Thickness: 0.156"
- #### Options:
- ▶ Diameters from 1/8" to 1 1/4"
  - ▶ Heights of 5/16" or 3/8"
  - ▶ Slot Widths from 0.010" to 0.015"



### Type AD, Slotted – Aluminum

- ▶ Well-suited for aluminum molds
- #### Options:
- ▶ Diameters from 1/8" to 1/2"
  - ▶ Heights from 1/8" to 1/4"
  - ▶ Slot Widths of 0.010" or 0.014"
  - ▶ Head Thicknesses of 0.093" or 0.156"



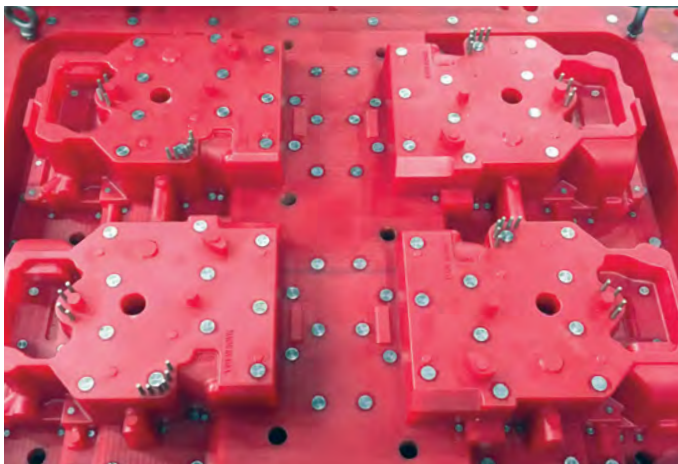
### Vilsum Metric – Nylon

- ▶ Highly recommended for blow squeeze machines, v-process, and cold box and CO2 sand systems
  - ▶ Slot Width: 0.4 mm
  - ▶ Height: 7 mm
- #### Options:
- ▶ Diameters from 6 mm to 20 mm





# CORE VENT ACCESSORIES



Vent Plugs are used to seal vent holes.

## Vent Plugs

- ▶ Sold by the bag (100 vents/bag)
- Options:**
  - ▶ Diameters from  $\frac{3}{16}$ " to 1"
  - ▶ Heights from  $\frac{1}{4}$ " or  $\frac{3}{8}$ "
  - ▶ Aluminum, Brass, and Steel

Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for complete details and part numbers.



## Freeman Core Vent Wax

Freeman Brown Core Vent Wax is used to vent oil sand cores of curved or irregular shape. The wax is placed in critical locations in the sand as the core is molded. The wax dissipates when the core is baked, leaving a clean vent of high permeability. Available in full round and half round shapes. *Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for complete details and part numbers.*



SKU	Description	Diameter	Radius	Approx. Length	Net weight (lb.)
086001	Full Round	$\frac{1}{32}$ "	—	2300'	1
086002	Full Round	$\frac{1}{16}$ "	—	875'	1
086003	Full Round	$\frac{3}{32}$ "	—	325'	1
086004	Full Round	$\frac{1}{8}$ "	—	800'	4
086006	Full Round	$\frac{3}{16}$ "	—	350'	4
086008	Full Round	$\frac{1}{4}$ "	—	195'	4
086012	Full Round	$\frac{3}{8}$ "	—	85'	4
086016	Full Round	$\frac{1}{2}$ "	—	50'	4
086020	Full Round	$\frac{5}{8}$ "	—	30'	4
086117	Half Round	—	$\frac{3}{8}$ "	41'	4
086118	Half Round	—	$\frac{5}{16}$ "	75'	4
086119	Half Round	—	$\frac{3}{16}$ "	150'	4
086120	Half Round	—	$\frac{1}{8}$ "	340'	4
086121	Half Round	—	$\frac{1}{8}$ "	600'	4

## Insert Drills for Core Box Air-Release Vents

These drills allow for quick vent installation. This tool rough drills, relief drills, and reams to correct depth with concentricity. A complete drill consists of drill bit and collar.



SKU	Shank Diameter	Drill Diameter
033301	$\frac{1}{8}$ "	$\frac{1}{8}$ "
033302	$\frac{3}{16}$ "	$\frac{3}{16}$ "
033303	$\frac{1}{4}$ "	$\frac{1}{4}$ "
033304	$\frac{5}{16}$ "	$\frac{5}{16}$ "
033305	$\frac{3}{8}$ "	$\frac{3}{8}$ "
033306	$\frac{7}{16}$ "	$\frac{7}{16}$ "
033307	$\frac{1}{2}$ "	$\frac{1}{2}$ "
033308	$\frac{1}{2}$ "	$\frac{9}{16}$ "
033309	$\frac{1}{2}$ "	$\frac{5}{8}$ "
033310	$\frac{1}{2}$ "	$\frac{3}{4}$ "
033311	$\frac{1}{2}$ "	$\frac{7}{8}$ "
033312	$\frac{1}{2}$ "	1"



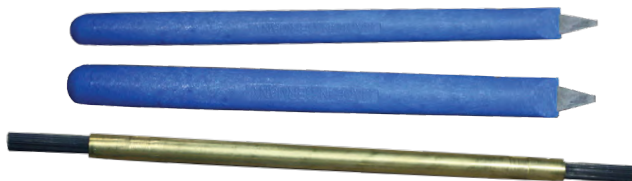
Freeman Core Vents

## Freeman Vent Cleaners

Made with a tapered spring steel blade and a durable injection

SKU	Description	Total Length
032996	$\frac{7}{16}$ " Blade with Plastic Handle	6 $\frac{1}{4}$ "
032997	$\frac{3}{4}$ " Blade with Plastic Handle	6 $\frac{1}{2}$ "
033330	Screen Vent Cleaner with Handle	8"

molded plastic handle, these tools are ideal for cleaning sand and binder from slotted core vents. The Screen Vent Cleaner has steel wire bristles at each end and measures  $\frac{1}{4}$ " in diameter with  $\frac{7}{8}$ " long steel wire bristles.



# MOLD ALIGNMENT HARDWARE

## FREEMAN BUTTONS & INSTALLATION TOOLS

### Freeman Concentric Mold-Lock Buttons

These buttons provide the easiest and most economical means of reducing scrap rate of castings due to mold shift.

- ▶ One-piece construction for easy installation
- ▶ Exceptional heat and wear resistance
- ▶ Concentric design to prevent button misalignment

SKU	Size	Plate Thickness	Hole Diameter
165200	Small	1/2"	1 1/2"
165202	Small	5/8"	1 1/2"
165204	Small	3/4"	1 1/2"
165206	Small	1"	1 1/2"
165208	Large	1/2"	2"
165210	Large	5/8"	2"
165212	Large	3/4"	2"
165214	Large	1"	2"



### Freeman Match-Lok Buttons

These buttons are a simple and economical way for eliminating mold shift on flat metal pattern plates. They are precision machined from aluminum, which ensures accurate and positive matching between cope and drag halves.

SKU	Diameter	Height	Qty/Bx
165005	1"	0.254"	100
165010	1 1/2"	0.254"	50
165013	2"	0.254"	1



### Installation Tools

#### Installation Instructions

1. Drill the hole through the plate.
2. Ream the hole.
3. Counterbore the hole using the correct diameter cutter.
4. Select the proper rivet length for the thickness of the plate.
5. Place the rivet through the button and the reamed hole, with the head of the rivet on top of the button.
6. Using the staking tool,peen the portion of the rivet that extends into the counterbored area to secure it in place.

#### Rivets

SKU	Plate Thickness	Diameter	Qty/Box
165015	3/8"	13/32"	100
165020	1/2"	17/32"	100
165025	5/8"	21/32"	100
165030	3/4"	25/32"	100
165035	1"	1 1/32"	100

#### Installation Tools

SKU	Description
165040	Drill — 1/64"
165045	(C) Reamer — 5/16"
165050	(D) Staking Tool
165055	(A) Counterbore (1" Buttons)
165060	(A) Counterbore (1 1/2" Buttons)
165065	(A) Counterbore (2" Buttons)
165070	(B) Replacement Pilot for Counterbores

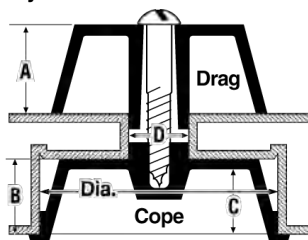


# ADOLF INSERTS & INSTALLATION TOOLS

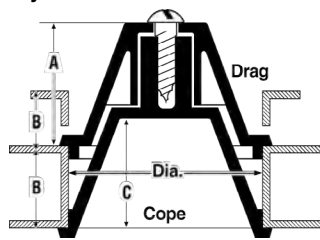
Adolf's plastic injection molded alignment cope and drag inserts provide a quick and simple method to ensure accurate alignment of mold halves.



Style "A"



Style "B"



## Adolf Cope and Drag Inserts

**Style "A"** inserts are installable on matchboards one above the other, or separated on cope and drag plates or molding boxes.

- ▶ Two parts (one drag, one cope)
- ▶ ABS plastic
- ▶ 1½" to 3½" diameters

SKU	Dimensions					Mfg. No.
	Dia.	A	B	C	D	
165150	1.5"	0.50"	0.50"	0.437"	0.375"	1.5A
165151	2"	0.75"	0.625"	0.531"	0.50"	2A
165152	2.5"	1.25"	0.625"	0.531"	0.50"	2.5AA
165153	2.5"	1.25"	1"	0.906"	0.50"	2.5A
165154	3.5"	1.25"	1"	0.906"	0.50"	3.5A

**Style "B" Zero Tolerance Inserts** are specifically designed for accurate alignment of matchplates used with green sand only.

- ▶ Zero clearance on diameter ensures perfect alignment
- ▶ Easily identified by gray color
- ▶ 1½" to 2½" diameters

SKU	Dimensions				Mfg. No.
	Dia.	A	B	C	
165159	1.50"	0.875"	0.5-1.125"	0.75"	1.5BOT
165160	1.75"	1.125"	0.625-1.125"	1"	1.75BOT
165161	2.50"	1.125"	0.75-1.125"	1"	2.5BOT

**Style "B"** halves telescope together and interlock at the parting lines of the plate. They are designed for matchplates, matchboards, and automatic molding machines.

- ▶ Non-sticking, acid resistant plastic
- ▶ Installable in plates of various thicknesses
- ▶ 1½" to 2½" diameters

SKU	Dimensions				Mfg. No.
	Dia.	A	B	C	
165156	1.50"	0.875"	0.5-1.125"	0.75"	1.5B
165157	1.75"	1.125"	0.625-1.125"	1"	1.75B
165158	2.50"	1.125"	0.75-1.125"	1"	2.5B

1.5B = ½" or thicker plate

1.75B = ⅝" or thicker plate

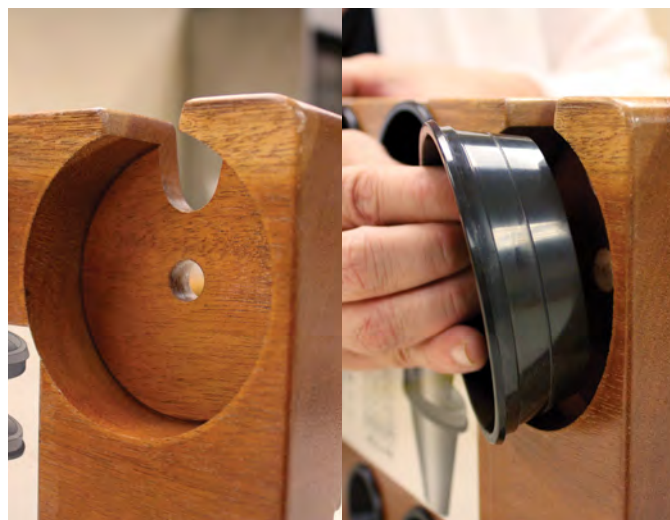
2.5B = ¾" or thicker plate

## Installation Tools for Adolf Cope and Drag Inserts

Adolf installation tools are specially designed for quick, easy and precise cutting of the required holes necessary to install these buttons. Designed for use on wood only.

SKU	Description	Diameter	Mfg. No.
165162	Cutter for use w/standard ⅜" Drill	1½"	1.5CU
165163	Cutter Holder with ½" Pilot & ¾" Shank (Blade not included)	¾"	0.75CH
165164	Blade	1½"	1.5CB
165165	Blade	1¾"	1.75CB
165166	Blade	2"	2CB
165167	Blade	2½"	2.5CB
165168	Blade	3½"	3.5CB

Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for metal cutting tool information.





# FREEMAN PALMER PATTERN PLATES

## CAST ALUMINUM CHAINLOCK PLATES FOR AUTOMATIC MACHINES

Produced using permanent mold casting methods for maximum hardness, minimum deflection, maximum wear resistance and longer life, these plates feature:

- Certified aluminum only
- Flat, parallel, and uniform thickness
- Uniform density for maximum machinability
- Chainlock segments are  $\frac{5}{8}$ " wide at the base and located  $\frac{1}{4}$ " inside the flask line, providing maximum usable area while still maintaining good anti-shift properties

Plates can be special ordered with characteristics to the right. Minimum order quantities may apply. Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), or contact our Customer Service department at (800) 321-8511 for complete details, part numbers, and cut-to-size and offset styles.

- Drilled
- Short
- No Chainlock
- Chainlock (Sides Only)
- Chainlock (Ends Only)
- Chainlock (Corner Only)

### Plates for Hunter Machines

#### Hunter 10

- ▶ Thickness:  $\frac{1}{2}$ ",  $\frac{5}{8}$ ",  $\frac{3}{4}$ "
- ▶ Flask Size: 14" x 19"
- ▶ Overall Size: 16 $\frac{1}{2}$ " x 22" or 17 $\frac{1}{2}$ " x 26"

#### Hunter 18

- ▶ Thickness:  $\frac{1}{2}$ "
- ▶ Flask Size: 18" x 20"
- ▶ Overall Size: 21 $\frac{1}{4}$ " x 23 $\frac{1}{4}$ "

#### Hunter 20

- ▶ Thickness:  $\frac{5}{8}$ " or  $\frac{3}{4}$ "
- ▶ Flask Size: 20" x 24"
- ▶ Overall Size: 23 $\frac{3}{8}$ " x 27 $\frac{1}{8}$ "

#### Hunter 32

- ▶ Thickness: 1"
- ▶ Flask Size: 30" x 32"
- ▶ Overall Size: 34 $\frac{1}{8}$ " x 36 $\frac{1}{8}$ "



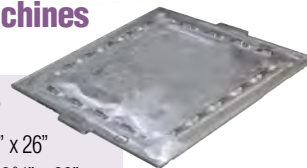
### Plates for Beardsley & Piper Machines

#### B&P 2016

- ▶ Thickness:  $\frac{1}{2}$ ",  $\frac{5}{8}$ ",  $\frac{3}{4}$ "
- ▶ Flask Size: 16" x 20"
- ▶ Overall Size: 18 $\frac{1}{2}$ " x 22 $\frac{3}{8}$ "

#### B&P 2620

- ▶ Thickness:  $\frac{3}{4}$ "
- ▶ Flask Size: 20" x 26"
- ▶ Overall Size: 22 $\frac{3}{4}$ " x 30"



### Plates for Roberts Sinto Machines

#### FBM-I

- ▶ Thickness:  $\frac{1}{2}$ " or  $\frac{5}{8}$ "
- ▶ Flask Size: 14" x 19"
- ▶ Overall Size: 17" x 22"

#### FBN-2S

- ▶ Thickness:  $\frac{5}{8}$ "
- ▶ Flask Size: 20" x 24"
- ▶ Overall Size: 23 $\frac{1}{4}$ " x 27 $\frac{1}{4}$ "

#### FBM-2T

- ▶ Thickness:  $\frac{3}{4}$ "
- ▶ Flask Size: 20" x 24"
- ▶ Overall Size: 23 $\frac{1}{4}$ " x 27 $\frac{1}{4}$ "

#### FBO-III

- ▶ Thickness:  $\frac{5}{8}$ " or  $\frac{3}{4}$ "
- ▶ Flask Size: 20" x 24"
- ▶ Overall Size: 23" x 26"

#### FBO-II

- ▶ Thickness:  $\frac{1}{2}$ " or  $\frac{5}{8}$ "
- ▶ Flask Size: 14" x 19" or 16" x 20"
- ▶ Overall Size: 17 $\frac{3}{4}$ " x 27 $\frac{1}{2}$ " or 19 $\frac{1}{16}$ " x 27 $\frac{1}{2}$ "

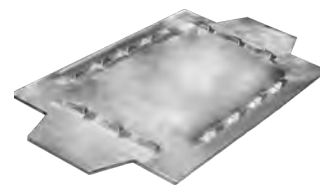
#### Other

- ▶ Thickness:  $\frac{3}{4}$ "
- ▶ Flask Size: 20" x 24"
- ▶ Overall Size: 24 $\frac{5}{8}$ " x 26"

## CAST ALUMINUM CHAINLOCK PLATES FOR NON-AUTOMATIC MACHINES

Designed to fit most jolt and jolt squeeze machines, these plates are cast in permanent molds to ensure flatness, uniform thickness, and durability. Other thicknesses and sizes are available on request. Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), or contact our Customer Service department at (800) 321-8511 for complete details and part numbers.

- ▶ Thickness:  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ ", or  $\frac{3}{4}$ "
- ▶ Flask Width: 12" to 20"
- ▶ Flask Length: 12" to 20"
- ▶ Overall Width: 14" to 22"
- ▶ Overall Length: 19" to 27"



## MATCH-LOK MAGNESIUM (DOWMETAL) PLATES

These highly accurate Freeman Palmer Match-Lok Pattern Plates feature urethane mold locks for use on Hunter automatic molding machines. Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), or contact our Customer Service department at (800) 321-8511 for complete details and part numbers.

#### Hunter 10

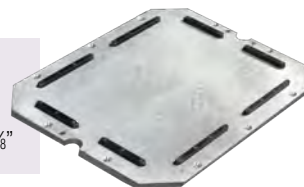
- ▶ Thickness:  $\frac{1}{2}$ "
- ▶ Flask Size: 14" x 19"
- ▶ Overall Size: 16 $\frac{1}{2}$ " x 22" or 17 $\frac{1}{2}$ " x 26"

#### Hunter 20

- ▶ Thickness:  $\frac{5}{8}$ " or  $\frac{3}{4}$ "
- ▶ Flask Size: 20" x 24"
- ▶ Overall Size: 23 $\frac{3}{8}$ " x 27 $\frac{1}{8}$ "

#### Hunter 32

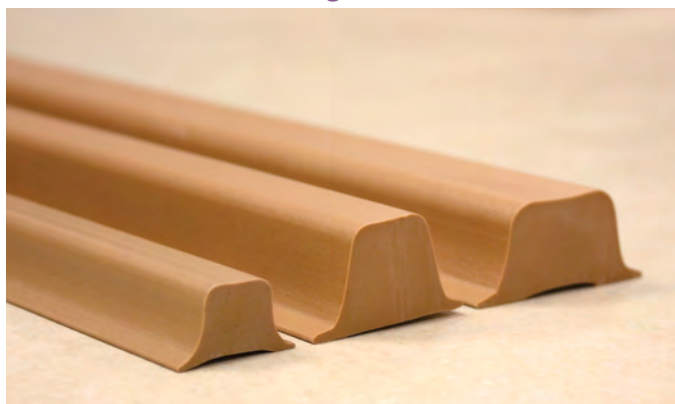
- ▶ Thickness: 1"
- ▶ Flask Size: 30" x 32"
- ▶ Overall Size: 34 $\frac{1}{8}$ " x 36 $\frac{1}{8}$ "



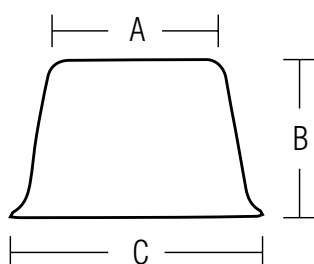
Guaranteed flatness  $\pm 0.005$ " in any one foot, guaranteed thickness tolerance of 0.0010" in any one plate.

# FOUNDRY SPECIALTY TOOLS & SUPPLIES

## Flex-Gate Flexible Gating



Flex-Gate is a strong flexible plastic that can be used in place of wood gating on pattern plates. Flex-Gate can be easily cut with a knife and fastened to the plate with nails, screws, or glue. Its concave base holds it securely on the pattern plate. Because of its strength, Flex-Gate does not break or tear, allowing the runner to be removed and reused.



Dimensions	#8 (SKU #176003)	#16 (SKU #176004)	#20 (SKU #176005)
A	1/2"	5/8"	1"
B	1/2"	3/4"	3/4"
C	5/8"	1/2"	1 1/4"
Length	36"	36"	36"

## Slicks and Trowels

These slicks and trowels are hand-constructed from quality steel and designed for hand custom molding operations. They are available in a variety of sizes and shapes. *Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), or contact our Customer Service department at (800) 321-8511 for complete details and part numbers.*



## Mouth Spray Can

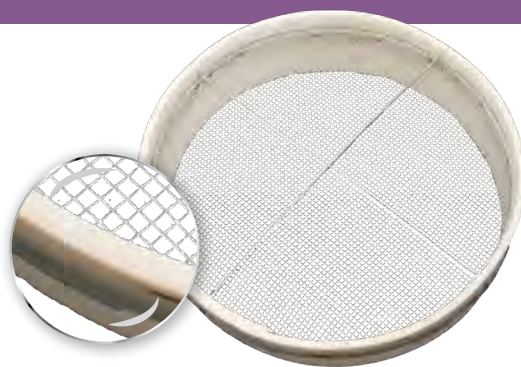
These cans made of heavy brass are used to spray liquid partings, light washes or similar materials. Any air nozzle can be used.

Available in Pint sizes (SKU #176880) or Quart sizes (SKU #176885).



## Paste Bulb

This durable 14 oz. container is used to dispense glue in core bonding applications. (SKU #176860)



## Hand Riddles

Freeman Hand Riddles are used for the fine sifting of foundry sand onto the mold surface. This ensures uniform coverage to prevent casting defects. These riddles are made from galvanized wire screen and heavy gauge plastic rims for long life. Each riddle is 18" in diameter.

SKU	Mesh	Wire Diameter	Size Opening
176849	#1	0.080	0.920
176820	#4	0.035	0.215
176838	#5	0.035	0.165
176839	#6	0.035	0.132
176830	#8	0.028	0.097
176831	#10	0.017	0.083
176832	#12	0.018	0.066
176833	#14	0.020	0.051
176834	#16	0.018	0.045

## Lance Pyrometer

The Lance Pyrometer is designed to accurately measure the temperatures of non-ferrous molten metals to within 2%. It features an easily replaceable meter, 36" long immersion thermocouple, 8" Protected Marshall Tip and Fahrenheit-Centigrade analog meter read-out. The temperature range for this pyrometer is 0°F to 2,350°F.

SKU	Description	Mfg. No
176721	Lance Pyrometer	MT 400
176723	Replacement Thermocouple w/Tip	for MT 400

## Bench Rammer

This 14" long Bench Rammer is made of hard maple with an oil finish and designed with one wedge shaped end and one 3 1/2" -diameter cylindrical end. (SKU #176754)



## Abrasive Core Files

Easily clean foundry cores with these 20 grit flat files made of a strong, fiberglass-reinforced, silicon carbide abrasive resin bond material. Available in thicknesses from 1/8" to 1/2", widths of 1" or 2", and lengths from 8" to 12".

*Please see our website, [www.FreemanSupply.com](http://www.FreemanSupply.com), for complete details and part numbers.*



# FOUNDRY SPECIALTY TOOLS & SUPPLIES CONTINUED



## Leather Fillet & Accessories

This fillet is manufactured using the highest grade of leather, allowing for greater flexibility, faster fabrication and increased wear resistance. Larger diameters contain multiple slits on the underside to allow for easy installation. White or Gold Wood Glue may be used with this product. Sold in full bundles.

### SEE ALSO

Product	Page #
Fastweld 10	78

SKU	Fillet No.	Radius	Feet/Bundle
023105	1/2	1/32"	100
023110	1	1/16"	100
023115	1 1/2	3/32"	100
023120	2	1/8"	100
023125	2 1/2	1/32"	100
023130	3	3/16"	100
023135	4	1/4"	100
023140	5	5/16"	100
023145	6	3/8"	100
023150	7	7/16"	100
023155	8	1/2"	100
023160	10	5/8"	100
023165	12	3/4"	100
023170	14	7/8"	50
023175	16	1"	50

## Cleveland Vibrators

Linear shock action vibration makes the SA-EP the most powerful continuous-duty vibrator available for its size. It is ideal for use on matchplates in jolt-squeeze operations. It also features low air consumption and variable frequency.



SKU	Description	Piston Diameter	Vibrations/min. @ 60 psi
176900	SA-EP Vibrator	1/2"	16,000
176901	SA-EP Vibrator	3/8"	14,100
176902	SA-EP Vibrator	3/4"	12,700
176903	SA-EP Vibrator	1"	11,000
176904	SA-EP Vibrator	1 1/4"	7,600
176899	SA-EP 3/4" Spring Only	—	—
176906	SA-EP 3/8" Swivel Only	—	—

## Dux-Bak Non-Silica Dry Parting and Parting Bags

This 6" x 10" Parting Bag is made of a special cloth for dusting Dux-Bak Non-Silica Dry Parting powder onto a pattern. Dux-Bak Non-Silica Dry Parting is available in quantities of 1 lb. through a 500 lb. drum.

SKU	Description	Size
054400	Non-Silica Dry Parting	Pound
176870	Parting Bag	Each

## Freeman Malleable-Iron Rapping Plates

Freeman Rapping Plates are cast malleable inserts that enable a foundryman to easily remove wooden patterns or loose pieces from the molding sand. Designed to be installed flush on the parting line, each plate has a threaded hole for inserting an eye bolt or a draw rod.



SKU	Size	Width	Length	Round Style
026005	1	5/8"	1 1/2"	
026010	5	3/4"	1 5/8"	
026015	6	3/4"	2 1/4"	
026020	8	7/8"	2 1/4"	
026025	9	1"	3"	
026030	10	1"	3 1/2"	
026035	11	2 1/4"	2 1/4"	
026040	12	1 1/4"	3 3/4"	
026045	14	1 1/4"	4 1/2"	
026050	16	2 3/4"	2 3/4"	
026055	17	3"	5 1/2"	

SKU	Size	Diameter	Thickness
026074	1	1 1/4"	3/8"
026076	2	1 3/4"	1/2"
026078	3	2 3/8"	9/16"
026080	4	3"	5/8"

## Disamatic Urethane Wipers & Brass Keepers

These replacement urethane wipers and brass keepers are pre-drilled for the Mark IV Disamatic.

SKU	Description
177211	Disa Urethane Wiper Blade
177212	Brass Keeper



## Sprayon Blue Layout Fluid

This is a fast-drying, non-flaking, non-etching layout fluid that will not crack or peel. Its smooth, non-glare finish allows for clear, precise scribe lines. Offered in 12 oz. cans (SKU #038082).

