

B310 Drop-Thru Mold Bundle

- DT300 Tripod Base • C100 Foot Casting Mold •
- DT310 Circle-Square Drop-Thru Ring •



Highest Position - Creates a vase 5" (13 cm) high

Middle Position - Creates a vase 4 3/8" (11 cm) high

Lowest Position - Creates a vase 3 3/4" (9.5 cm) high

Drop-Thru Process Overview

Cast a glass disk in the C100 Foot Mold then create a two layer flat design disk. Place the DT300 Tripod Base into your kiln, set the cast glass foot disk into the centering cup, then position the DT310 Circle-Square Drop-Thru Ring on the Tripod base by choosing one of the 3 available height options (see images above). Place your flat fused design disk on the Drop-Thru Ring and set your controller to the Drop Forming Schedule (page 4).

The kiln will reach drop temperature in approximately 4 hours, allow the glass to soak for 20 minutes then open the peep hole (or open the kiln) to look for the drop. Stay close and monitor the glass-drop progress, as soon as it touches the cast glass foot, advance the kiln controller to initiate the cool down segment. Then allow the controller to complete the rest of the firing schedule. The next day open the kiln to admire your masterpiece.

Register Your B310 Drop-Thru Mold and Get this eProject for FREE

Go to the www.joyoffusing.com website then click on *Register Your Mold*. Fill in the short information form and we'll send you a link to download the eProject Pattern for the Square Tunnel Funnel Vase shown here.

An eProject includes a PDF eBook with step-by-step instructions and the full-size pattern drawing (that you can print on your desktop printer). Registration is easy and the reward is worth it - so what are you waiting for?



MUST READ SECTION! - Separation of Glass and Mold

The first step, as always, is to prepare the ceramic molds with the appropriate mold release separator. The Drop-Thru Mold System includes an open casting mold plus the 2 piece Drop-Thru Mold. Glass casting requires a relatively high temperature and this higher temperature increases the tendency for the glass to stick to the ceramic mold. Glass stuck to the mold is never good and that's why it is extremely important to use the appropriate mold separator.

There are two general categories of mold release separators that can be used on ceramic molds. One is a ceramic powder-type separator (aka shelf primer or kiln wash) and the other is boron nitride. The only separator that we use for all the molds in our studio, both ceramic & stainless steel, is ZYP Lubriccoat because it contains a high concentration of boron nitride. It comes in a convenient spray can (like spray paint) and works fabulously on ceramic molds for casting or shaping glass. New ceramic molds require 2 coats of ZYP with only a 20 minute drying time between coats. For subsequent firings, simply remove the loose powder from the surface with a soft bench brush then apply only one spray coat, allow 20 minutes to dry, then it's ready to go.

Warning: You will find other brands of boron nitride spray available however these generally have a much lower concentration of boron nitride solids as compared to ZYP. If you choose to use one of the lower concentration brands of boron nitride spray, you would need to apply 8 to 12 coats to a new mold to get a similar coverage and even then the result may still be unsatisfactory.



For more information about Mold Release Strategies see the FAQ section on our website www.joyoffusing.com

Important Note About Kiln Temperature Variations

Experienced fusers know that pyrometers and digital controllers are calibrated differently for every kiln. The temperatures in the schedules in this booklet (and also in our book Joy of Fusing) were carefully researched to be the average temperature for Fire-brick kilns manufactured for glass fusing. The reality is the temperature in your kiln is likely to be 5° to 20° higher or lower than our schedules and if you have a Rigid-fiber kiln the difference could be 25° to 60° or more. That is why it is extremely important for you to know your kiln and the best way to do that is to create a Fusing Level Sample Set. The process and schedules to create one of these 6 tile sets is on pages 24-29 in our book Joy of Fusing. This book is available to purchase as a printed book or in eBook format for download at: www.joyoffusing.com. For more information, as well as other tips and tricks, see the FAQ section on our website www.joyoffusing.com

Cast the Foot Disk

Use the C100 Foot Casting Mold to create the 2 7/8" (7.3 cm) diameter cast glass disk using our 'Scrap Casting' technique. An all clear glass foot is classic but a mixture of clear with a complimentary color from your design can also be very effective. Use mosaic nippers or a glass cutter and breaking pliers, to break the scrap glass into randomly shaped shards from 1/4" to 3/4" (6mm to 20mm).

Prepare the C100 Foot Casting Mold using ZYP Lubricat (see page 2) then place the Foot Mold on a digital kitchen scale and zero the tare weight. Now, place your glass shards in the mold until it weighs 95 to 105 grams (depending on how thick you would like the foot to be).

Place the shard-filled Foot Casting Mold into the kiln then set your kiln's digital controller to fire the CS1 - Scrap Casting Schedule, shown at right. Please read the Important Note about Kiln Temperature Variations on page 2.

Create a Two-layer, Flat Design Disk

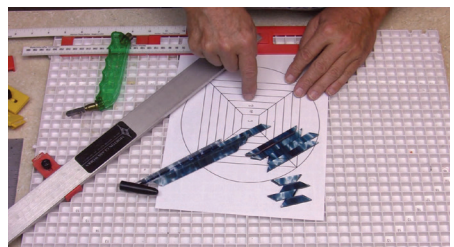
First go to www.joyoffusing.com to register, download then print the full size drawing for this project. This Square Tunnel Funnel Vase is 2 layers thick. Start by cutting 1 clear glass disk 7 3/8" (18.7 cm) in diameter. Next cut and shape the strips for the design layer according to the full-size pattern. Now, carefully assemble the design layer on a prepared kiln shelf. When it is exactly the way you want it, place a few drops of fusers glue on the glass pieces around the perimeter edge, then place the clear glass disk on top to cap the design layer.

Note: The Circle-Square Drop-Thru ring can accommodate a design disk from 6 1/4" to 7 3/4" (16 to 20 cm).

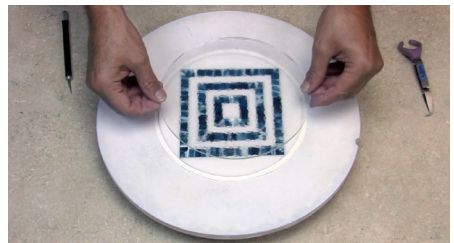


Filling the C100 casting mold using a digital scale

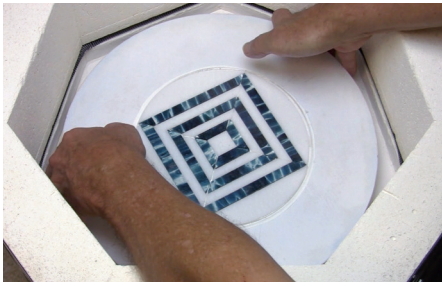
CS1 - Scrap Casting Schedule				
Segment	#	Degree/Hour	Target Temp	Minutes
Primary Heat	1	300°F - 165°C	1250°F - 675°C	30
Intention Heat	2	300°F - 165°C	1470°F - 800°C	45
Drop to Anneal	3	Full/AFAP	950°F - 510°C	90
Slow Cool	4	100°F - 53°C	600°F - 315°C	0
Power Off	5	Kiln Off	Room Temp	~



Cutting the glass sections for the tunnel design



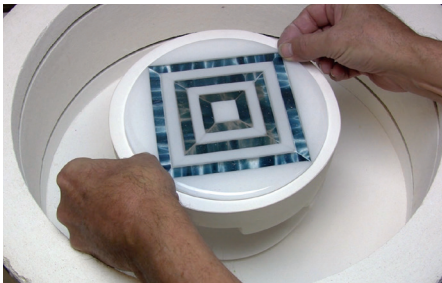
Assembling the design on a prepared kiln shelf



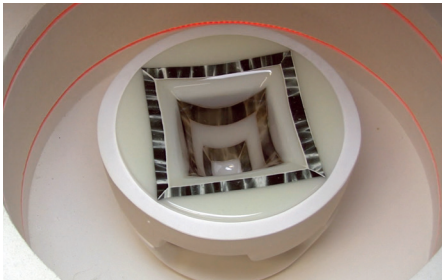
Place the assembly in your kiln and fuse fire

FS5 - Full Fuse Schedule

Segment	#	Degree/Hour	Target Temp	Minutes
Primary Heat	1	350°F - 190°C	1150°F - 635°C	30
Intention Heat	2	300°F - 165°C	1425°F - 775°C	10
Drop to Anneal	3	Full/AFAP	950°F - 510°C	60
Slow Cool	4	125°F - 67°C	700°F - 370°C	0
Power Off	5	Kiln Off	Room Temp	~



Position the flat blank on the Drop-Thru mold



Hot glass inside the kiln - the drop just touched

DTS - Drop-Thru Forming Schedule

Segment	#	Degree/Hour	Target Temp	Minutes
Primary Heat	1	300°F - 190°C	1050°F - 635°C	30
Intention Heat	2	300°F - 165°C	1250°F - 677°C	30-45
Drop to Anneal	3	Full/AFAP	950°F - 510°C	90
Slow Cool	4	125°F - 67°C	200°F - 95°C	0
Power Off	5	Kiln Off	Room Temp	~

Load and Fire

Place the shelf with your glass design into your kiln and fire it using the FS5 - Full Fuse Schedule.

Drop-Thru Glass Forming

This final step is similar to a slump firing, but you must actively observe the drop and be prepared to advance the controller to the next segment as soon as the drop has touched the cast glass foot. Find the 'skip-step' instructions in your controller's manual then conduct a practice run. Start your kiln using any firing schedule then follow the instructions to advance the schedule from segment 1 to segment 2, then from segment 2 to segment 3 - it's really easy.

Now use a small level to ensure your kiln is sitting level then place the Tripod Base in your kiln directly on the kiln floor. Place your cast glass foot disk into the centering cup, then position the Circle-Square Drop-Thru Ring on the Tripod base by choosing one of the 3 available height options (see images on page 1). Now place and carefully center your flat fused design disk on the Drop-Thru Ring. Set your controller to the Drop-Thru Forming Schedule, then set the controller's alarm to sound when the kiln reaches 1250°F (677°C). If your kiln has a peep-hole, rotate the mold assembly until you get the best view of the cast foot disk. Now close the lid and turn on the kiln.

The kiln will reach the Drop-Thru target temperature and the alarm will sound in approximately 4 hours. Allow the glass to soak for 20 minutes then look through the peep hole (or open and close the kiln quickly) to check for any drop. Stay close and monitor the glass-drop progress every 5 minutes or so. The moment the drop touches the cast foot, advance the kiln controller to the cool down segment. Then relax and allow the controller to complete the rest of the firing schedule.