

Investment casting

# SPRUE GUIDE

We do our utmost to ensure that your work is cast achieving the highest possible finish & resolution but there are manufacturing technicalities that have an affect on this. One of the main areas to consider when investment casting is the sprue - both the 'Lead Sprue(s)' & 'Runner(s)'.

**LEAD SPRUE** = The main sprue that is attached to the investment casting tree

**RUNNER** = A connecting or structural sprue added to give support to an object. These can run off the Lead sprue and do not usually need to be as large

Sprues are typically added by hand but when working with wax, especially with delicate parts, there is a greater risk of breakages. Rapid Prototyping Services have always advised that a sprue is best added at the CAD stage and printed on the model. This essentially gives you control of sprue location, ensures fine detailing is protected & allows Runners to be added to the most fragile of parts. Below are examples of the types of sprues required depending on the geometry/design of the part:

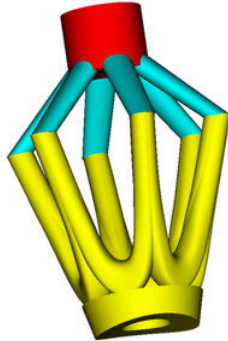
**1 STANDARD SHANK**



**LEAD** ◦ Ø3mm sprue x 2mm length  
(Note: The heavier the shank / the larger diameter (Ø) the sprue)

**RUNNER** ◦ Min Ø1mm sprue to hold opening square.

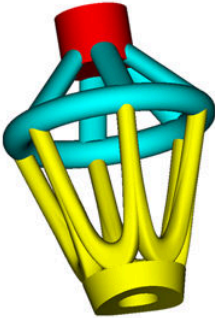
**2 SETTING Ø0.8mm CLAW**



**LEAD** ◦ Ø3mm sprue x 2mm length.

**RUNNER** ◦ Smaller diameter sprue to run into the tips of the claws.


**3 SETTING Ø0.6mm CLAW**



**LEAD** ◦ Ø3mm sprue x 2mm length.

**RUNNER** ◦ Smaller diameter sprue to run into the tips of the claws.  
◦ For delicate claws add a Ø1mm runner (Doughnut shape as shown) to hold the tips of the claws.

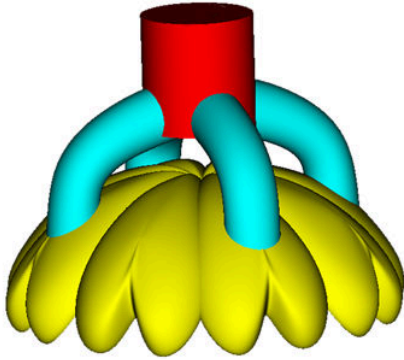
**4 NAMETAG**



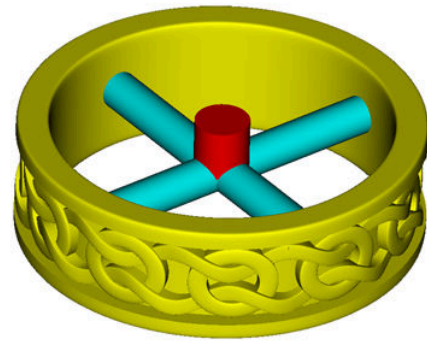
**LEAD** ◦ Depending on nametag size, this should range between Ø3 - Ø4mm tapering into job as shown.

**RUNNER** ◦ Add Runner(s) to fragile detail. Runner diameter (Ø) depends on Runner length:

- 0.5-3mm = Ø0.8mm
- 3-6mm = Ø1mm
- 6-10mm = Ø1.5mm

**5****SMALL BASKET**

- LEAD** ◦ Ø3mm sprue x 2mm length  
**RUNNER** ◦ Ø1.5mm sprue network to run into part.

**6****WEDDER - #1 SPOKE SPRUE**

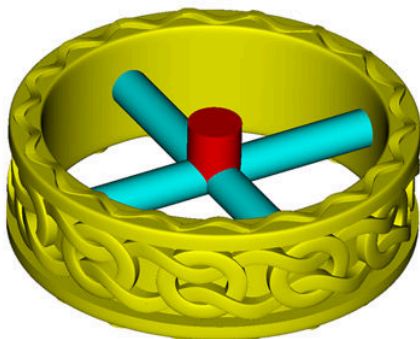
- LEAD** ◦ Ø3.5mm sprue x 2mm length  
 (Note: The heavier the shank / the larger diameter (Ø) the sprue)  
**RUNNER** ◦ Ø2.5mm spokes running into side walls.

**7****WEDDER - #2 LOOP SPRUE**

- LEAD** ◦ Ø3.5mm sprue x 2mm length  
 (Note: The heavier the shank / the larger diameter (Ø) the sprue)  
**RUNNER** ◦ 3.5mm wide x 2.5mm oval ring, cupping around outer rails.

**8****WEDDER - #3 EDGE SPRUE**

- LEAD** ◦ Ø3.5mm sprue rounded into edge of shank. Protect detail to retain sharpness of design

**9****DETAILED WEDDER**

- LEAD** ◦ Ø3.5mm sprue x 2mm length  
 (Note: The heavier the shank / the larger diameter (Ø) the sprue)  
**RUNNER** ◦ Ø2.5mm spokes running into side walls.

**IMPORTANT NOTES:**

- Sprue sizing is dependant on job. Scale Lead prue(s) & Runner(s) so they look in proportion to the images shown. The size should not be reduced and may need to increase.
- Round sprues advised - no square cross sections unless absolutely necessary.
- We will remove these sprues as close to the job as possible after casting so you're not charged for unwanted metal (Note: this is within reason as some sprues will require a piercing saw to remove).
- Measurements to be used as a guide only.

**CONTACT US FOR ASSISTANCE:**

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