



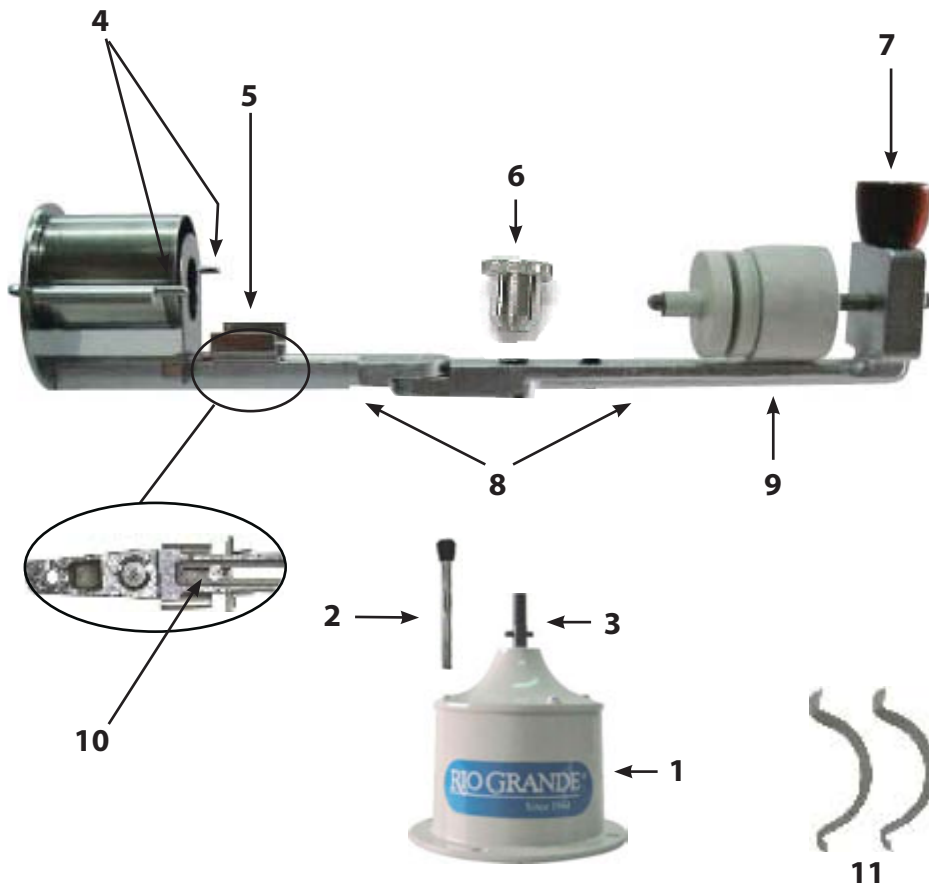
6" Centrifugal Casting Machine

#705-020/00

7500 Bluewater Road NW
Albuquerque, NM 87121 USA
Rio Grande: 800.545.6566
www.riogrande.com

6" Centrifugal Casting Machine

Maximum flask diameter: 4"
 Maximum flask length: 6"
 Shipping weight: 25 lbs. (11.4 kgs.)

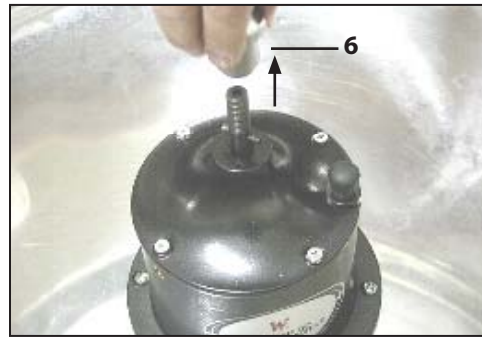


1	Base	7	Wood handle
2	Spring locker bar	8	Casting arm
3	Main shaft	9	Weights
4	Flask cradle holding arms	10	Set-screw for crucible holder
5	Crucible holder	11	Flask cradles
6	Hold-down nut		

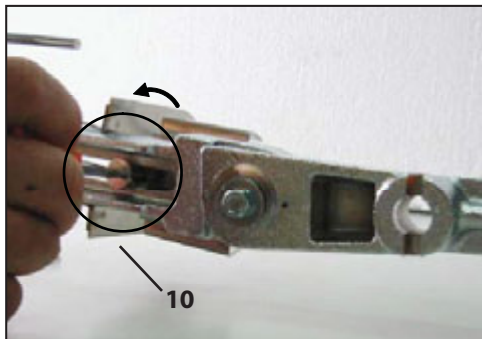
Initial Set-Up for the Casting Machine



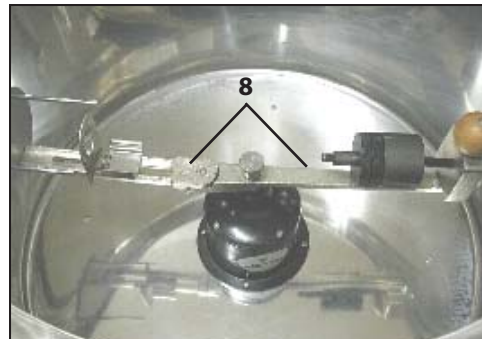
1. Attach the base (1) to your benchtop or workstation using four screws.



2. Unscrew the hold-down nut (6) and remove the casting arm.



3. Tighten the set-screw (10) from the bottom of the casting arm directly into the crucible cradle. This screw holds the crucible cradle and casting arm. The crucible holder should still move freely (as needed).



4. Place the casting arm (8) on the base.



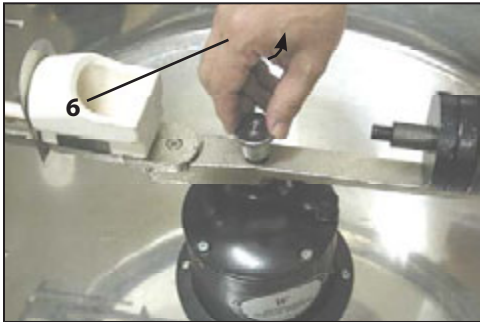
6. Place the crucible on the crucible holder (5).



5. Tighten the hold-down nut (6) to secure the arm to the base.

Preparing for Casting

The weight of the flask and the counterbalance weights must be balanced before casting.



1. Loosen the hold-down nut (6) to free the arm from the base for balancing.



2. Place your invested flask on the appropriate flask cradle (4).



3. Fill the crucible with the appropriate amount of metal.



4. Adjust the counterweights (9) until the arm is balanced.

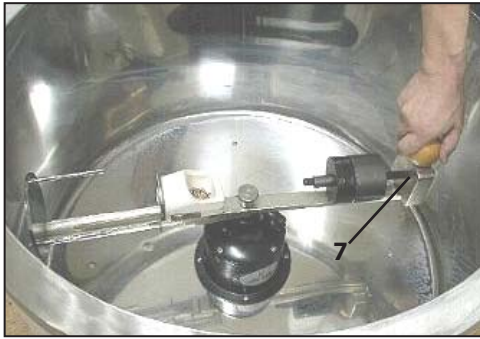


5. Tighten the hold-down nut (6).

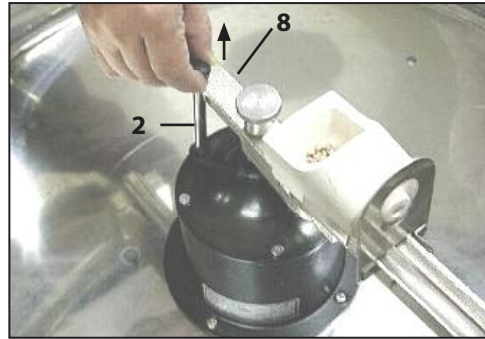


6. Remove the flask.

Casting



1. Use the wood handle (7) to turn the casting arm clockwise 3–3½ turns.



2. Pull the spring loader bar (2) up to stop the casting arm (8).



3. Fill the crucible with the appropriate amount of metal for the flask.



4. Use a torch to melt the metal.

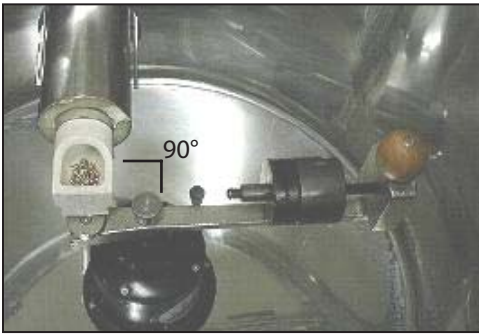


5. Place the flask on the flask cradle (4). Be sure the holes of the crucible and flask hole line up exactly. You will need to use the cradle sized for the diameter of the flask you will be casting (see Casting Usage, page 7).



6. Push the crucible forward to the flask using high-temperature gloves or flask tongs. Use extreme caution: crucible is very hot.

Casting (*continued*)



7. Place the casting arm at a 90° angle (as shown).



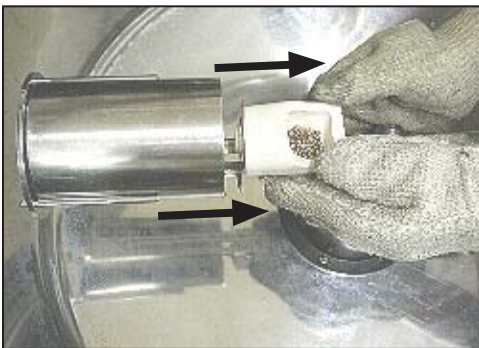
8. Heat the metal until it is ready for casting.



9. Hold the wood handle (7) and turn the casting arm counter-clockwise to allow the spring locker bar (2) to drop.



10. Quickly release the wooden handle and remove your hand and torch simultaneously to start the centrifugal motion.

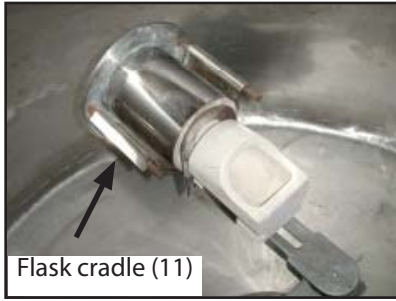


11. Wait for the casting arm to completely stop spinning, then pull the crucible back from the flask. Use tongs (or gloves, as shown), as the crucible is still very hot.



12. Remove the flask from the unit with tongs and follow the appropriate cooling and quenching procedures for your metal.

Cradle Usage



Important:

Verify that the alignment of the flask and crucible holes is correct, both vertically and horizontally, to ensure a clean and safe pour.

The unit is supplied with one 3" and one 3½" flask cradle. The casting arm itself is designed to hold a 4" flask cradle (see top right). For 4" diameter flasks, place the flask between the side pins on the casting arm, without a cradle.

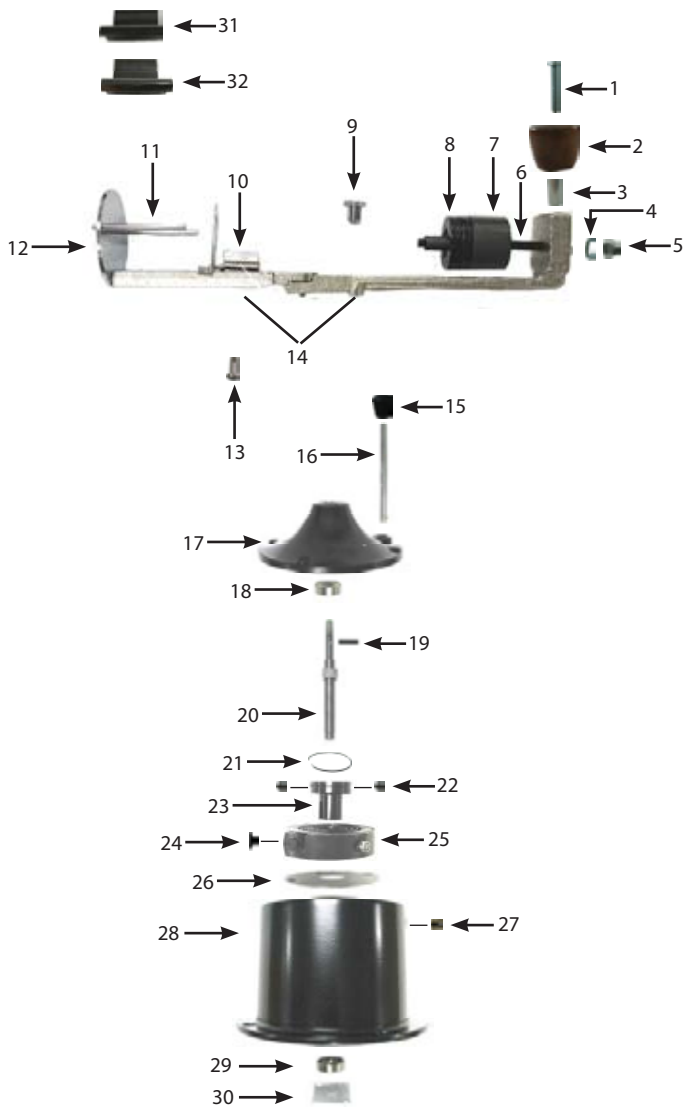
Safety Information

1. Always wear safety glasses, high-temperature gloves and a safety or high-temperature apron when operating this equipment.
2. Do not put your hands into the machine before it has completely stopped.
3. The crucible and flask are extremely hot; use extreme caution when working on or around this equipment.
4. During torch melting, pay close attention to your surroundings and ensure others are aware of the heat and motion of this equipment.
5. Use a casting shell to protect you and your surroundings in case of an accidental spill.

Troubleshooting

Problem	Possible causes	Remedy
You turn the casting arm clockwise more than three turns, but the unit will not spin properly.	The spring is broken.	Replace with a new spring (see parts list).
	The screw that holds the spring is broken.	Replace with a new piece of the spring and stabilize it with the screw (see parts list).
During casting, the casting arm seems loose or wobbly, or the unit makes a great deal of noise.	The four hold-down screws are loose.	Tighten the screws.
	The casting arm is not balanced.	See "Preparing for Casting" on page 4 to re-balance.
	The bearing is broken.	Replace with a new bearing (see parts list).
You spin the casting arm clockwise more than three turns, but the spring is loose.	The metal ball stabilizing the spring is loose.	Contact the Rio Grande repairs team at 800.545.6566.
	The tip of the spring is broken.	Replace with a new spring (see parts list).

Replacement Parts List



	Part	Manufacturer's Part Number
1	(2) Screw 5/16"	YSC-093
2	Wood ball handle	0146-041
3	Hand knob liner	0146-041-1
4	Spring washer 1/2"	YSW-007
5	Weight center adjustable screw-locking nut	YNU-014-A
6	Weight center adjustable screw	0146-052
7	Weight	0146-037
8	Weight	0146-038
9	Hold-down nut	0146-034
10	Crucible cradle	0146-030
11	Flask cradle holding arms	0146-029
12	Flask holding plate	0146-001
13	Set-screw for crucible cradle	0146-007
14	Casting arm	0146-031
15	Rubber head for spring locker bar	0146-035
16	Spring locker bar	0146-036
17	Cover lid	0146-013
18	Ball bearing (#6201)	0146-014
19	Spring locker pin	0146-010
20	Main shaft	0146-015
21	Spring wire	0146-017
22	Steel ball	0146-016
23	Shaft holder	0146-018
24	Spring clamp bolt	0146-048
25	Heavy-duty spring	0146-019
26	Spring plate	0146-021
27	Set-screw	0146-022
28	Base	0146-024
29	Ball bearing (#6202ZZ)	0146-025
30	Bearing cover	0146-026
31	3" flask cradle	0146-039
32	3 1/2" flask cradle	0146-040