PRO-CRAFT®

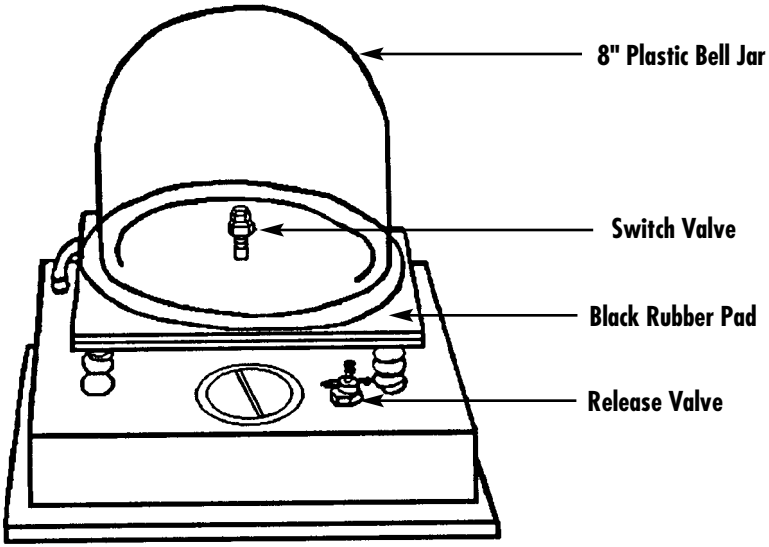
by Grobet

VACUUM MACHINE FOR INVESTING & CASTING

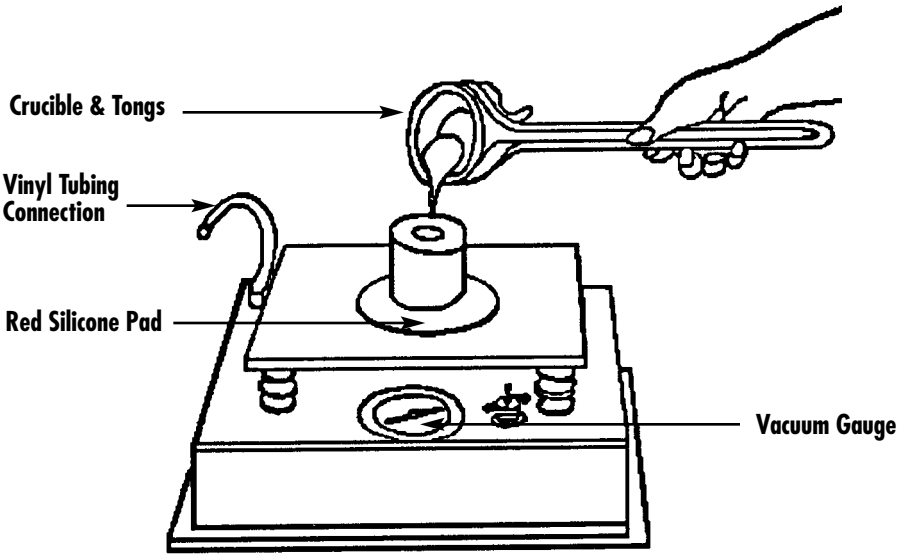
No. 21.805G – 110 volt
No. 21.805GX – 220 volt
No. 21.806G – Table only without pump

OPERATING INSTRUCTIONS

INVESTING



CASTING



WARNING

Improper use or connections may cause electrical shock hazards. Read and follow the instructions carefully and take precautions to avoid electrical shock hazards. Be sure that all associated devices are properly grounded before energizing circuits.

The normal operating temperature will cause certain external portions of the pump to be hot to the touch. Do not touch the pump housing or motor during operation.

CAUTION

This machine was designed to eliminate the air bubbles in the investment and assist in the casting of molten metals in burned-out flasks.

- Read and follow instructions before starting.
- Wear SAFETY GOGGLES.
- Avoid unintentional starting. Make sure the line cord switch on the pump motor is "off" when plugging in.
- Have a damaged or worn cord replaced or repaired immediately by a qualified electrician.
- Replace brittle or cracked vacuum tubing.
- Never leave equipment running unattended.

SPECIFICATIONS

- 110 volts A.C. — 60 Hz.
- 220 volts A.C. — 50 or 60 Hz.

BEFORE USING YOUR VACUUM PUMP

(If using a Pro-Craft pump, refer to the manual for complete instructions and maintenance. If using another brand pump, refer to that manufacturer's instructions.)

Note on Motor Voltage Connections:

In all cases, motors are designed for operating voltages plus or minus 10% of the normal rating. Single voltage motors are supplied fully connected and ready to operate.

Check to make certain the voltage and frequency at the outlet match the specifications on the pump motor decal. Check the ON-OFF switch to be sure it is in the OFF position before you plug the pump into an outlet. Check to be certain the gas ballast valve is closed. Remove and discard the exhaust plug from the end of the pump's handle.

SETTING UP

Mount the vacuum casting table on a bench of a height convenient for the easy manipulation of flasks, crucible and tongs, and investment mixing bowls. Fasten the casting table to the bench top with screws for rigidity.

Locate the pump securely on the bench, beneath or on the same level, close to the casting table. Connect the 1/2" I.D. vinyl tubing between the vacuum connection of the pump and that of the casting table. Connect to correct voltage receptacle with the switch "OFF".

The table contains two brass valves – one (the switch valve) atop the vacuum table for use with the bell jar – the other (the release valve) adjacent to the vacuum gauge. Each is opened by a counter clockwise rotation of the top, a turn or so.

SETTING UP

The black rubber pad is used with the bell jar. The hole in the pad goes over the switch valve which projects above the table. The central hole in the table is sealed by the rubber pad when the bell jar is in use. The red silicone rubber pad is used when casting. The hole in this pad is aligned with the hole in the table. The mold flask is placed centrally over this hole, and the switch valve is closed.

OPERATION

I. Vacuuming Investment

The rubber bowl containing the mixed investment is placed on the vacuum table on top of the black rubber pad. **The switch valve at the top center of the table is turned counterclockwise to open.** The release valve to the right of the gauge should be tightly closed. The bell jar is then placed over the bowl and the pump is turned on. As the investment starts to boil, hit one corner of the vacuum table sharply to help release air bubbles. After 1 minute the release valve is opened to release the vacuum and the pump is turned off. The investment is then poured into the flask containing the wax impressions, placed under the bell jar, and with the switch valve open and the release valve closed, the pump turned on. When investment begins to boil and the vacuum gauge reads 25" of mercury or above, rap the vacuum table sharply and repeatedly, and allow to vacuum for 1 minute. Open release valve, turn off pump, remove flask and tap its side several times with the spatula or brush handle, to release any bubbles which may still be trapped.

Caution: Continue to run pump while the bell jar is under vacuum. Otherwise the pump oil will run into the hose towards the vacuum table.

II. Vacuum Assist Casting

Vacuum assist casting is a simple, safe and efficient method of casting metal articles. The vacuum machine creates a vacuum at one end of the flask which pulls the air and gases from the mold, at the same time molten metal is poured into the sprue opening. The molten metal quickly flows to all parts of the mold before it begins to solidify.

OPERATION

A vacuum assist casting is accomplished after completing the investing and burnout procedure. **The switch valve at the top center of the table is turned clockwise to close.** After burnout, the flask is placed on top of the red silicone rubber pad on the casting table, sprue hole side up. The flask temperature should be between 550° and 750°F. The center of the flask should be directly over the hole in the middle of the vacuum table and rubber pad.

The flask should have even edges to insure a proper seal with the silicone pad. You can test for a proper seal by turning on the pump. The gauge should indicate from 20 to 25 inches of vacuum. If a good seal is not indicated, press down on the flask by laying tongs across the top. If a good seal is indicated, the metal is melted in the crucible and poured into the sprue opening in the flask. After pouring, the flame of the torch is left on the button of metal for a few seconds. The vacuum is then released and the pump turned off.

The flask is allowed to cool on the vacuum table. The flask with the cast article is then removed from the table and the article is removed, cleaned and finished.

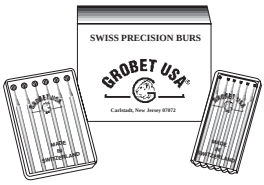
PUMP MAINTENANCE

Run the pump occasionally if idle for long periods.

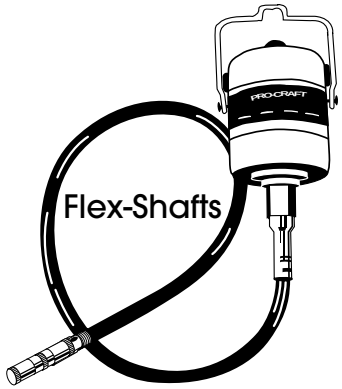
PLATE MAINTENANCE

1. Do not force the valves. Use gently.
2. Use care to prevent molten metal from running into the vacuum tubing. This can happen if the investment in the flask is too thin walled and is torn out by the vacuum as pouring is undertaken. Have a minimum of 1/2" of investment below the mold cavity.

LOOK FOR THESE PRODUCTS

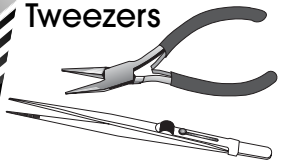


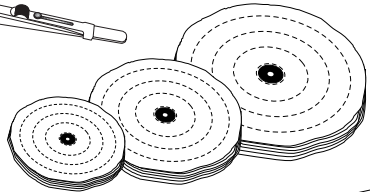
German Burs

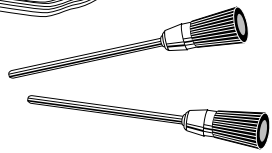


Flex-Shafts

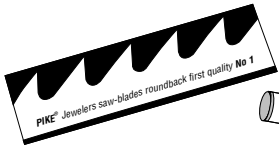
Pliers
and
Tweezers

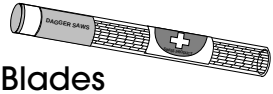






Dixcel® Brushes and Buffs





Swiss Saw Blades

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