

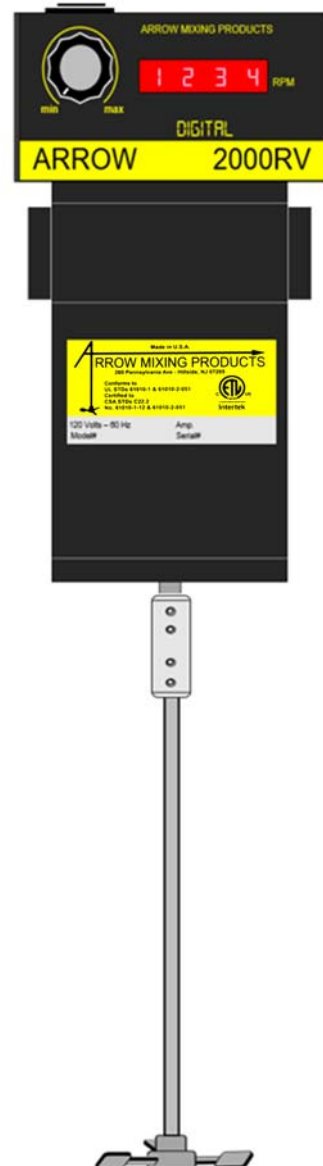


Arrow
ENGINEERING
Mixing Products

260 PENNSYLVANIA AVE., HILLSIDE, NJ 07205
TEL: 908-353-5233 -- FAX: 908-353-8362
EMAIL: info@arrowmixingproducts.com
Website - <http://www.arrowmixingproducts.com>



Arrow 2000RV DIGITAL



OPERATING INSTRUCTIONS

EN

Conforms to
UL STDs 61010-1 & 61010-2-051
Certified to
CSA STDs C22.2
No. 61010-1-12 & 61010-2-51



OPERATING INSTRUCTIONS

1. Set variable speed control knob (A) to min.
2. Set power switch (B) to "off" position
3. Plug in unit into outlet specified on label (E)
4. Set power switch (B) to forward or reverse
5. Slowly turn variable speed control knob (A) clockwise to desired speed
6. When switching between forward and reverse mode, it is important to lower the speed to zero before switching

SHUT-DOWN INSTRUCTIONS

1. Set variable speed control knob (A) to min.
2. Set power switch (B) to "off" position
3. Unplug unit from outlet

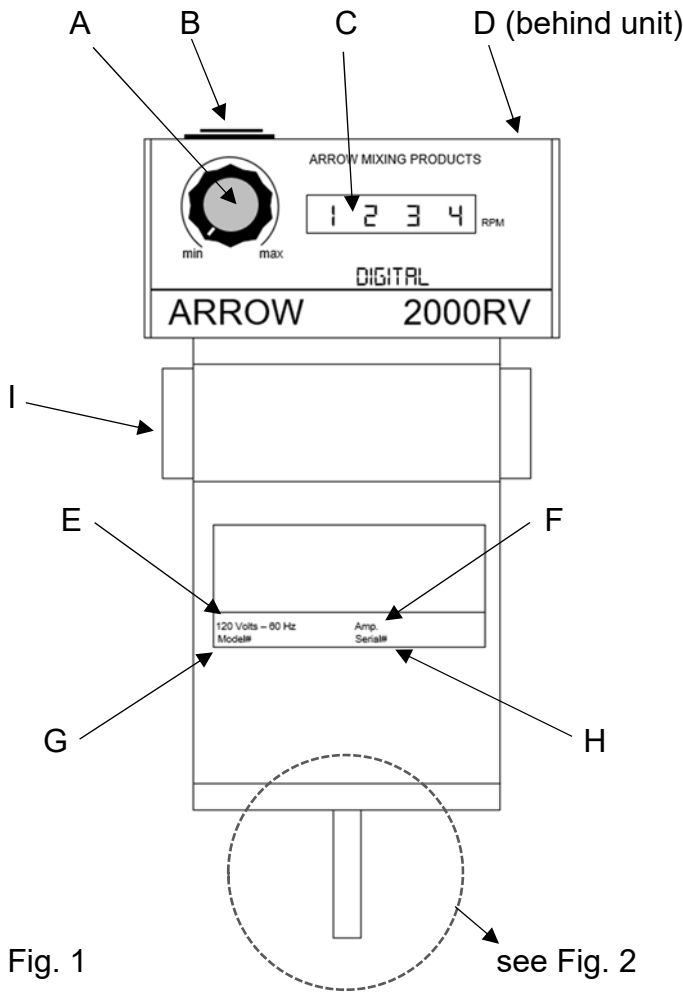


Fig. 1

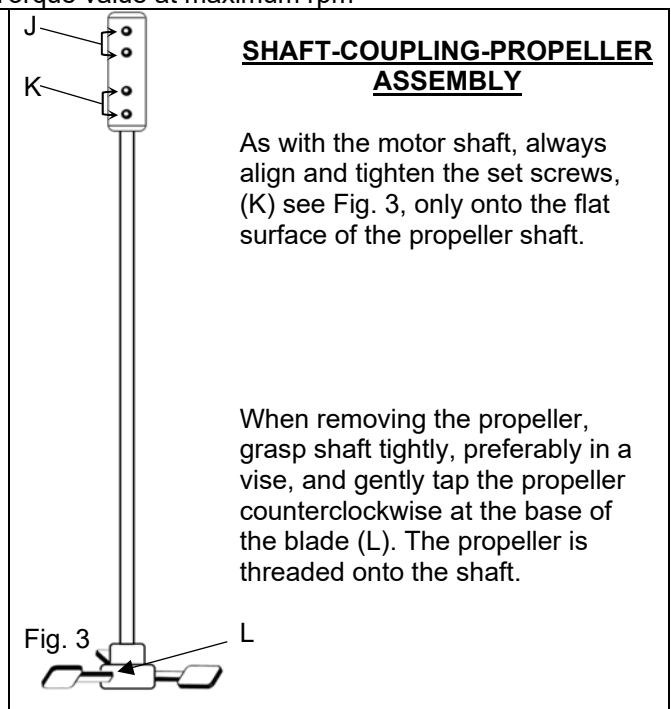
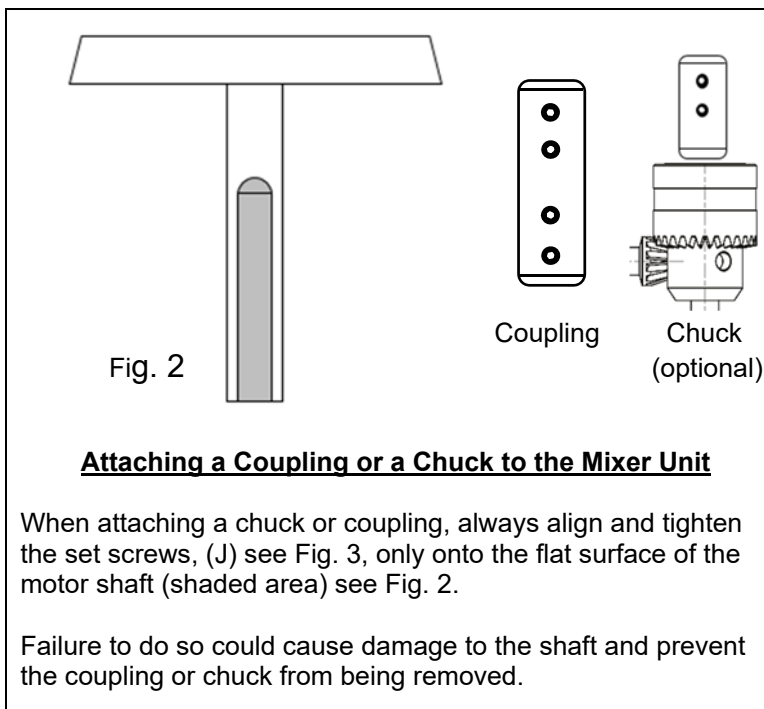
see Fig. 2

- A) Variable Speed Control Knob
- B) Forward / Off / Reverse Power Switch
- C) Digital Speed Display (rpm)
- D) Manually Resettable Circuit Breaker (behind unit)
-Gently Press Button on Back to Reset Breaker
- E) Voltage and Cycle Requirements for Unit
- F) Amperage Draw of Unit
- G) Model Number
- H) Unique Serial Number of your Unit*
- I) Motor Brush Housing (x2)

Motor Spec	1/9 HP – 120 vac 60 hz
Speed Range	0-2000 rpm
Torque Constant**	3.5 in-lb / 56 in-oz
Shipping Weight	11 lbs. / 5 kg
Shipping Dimensions	16" x 14" x 9"

* Please reference this serial number (H) when ordering replacement parts

** Torque value at maximum rpm



SAFETY INSTRUCTIONS

Read the operating instructions in full before starting up and follow the safety instructions.

- Keep the operating instructions in a place where it can be accessed by everyone.
- Ensure that only trained staff work with the instrument.
- Follow the safety instructions, guidelines, occupational health and safety and accident prevention regulations.
- Because the options for combining products, tools, stirring vessel, experiment and medium are nearly endless, user safety cannot be ensured simply with design requirements on the part of the product. For this reason, it may become necessary for users to take other precautionary safety measures. For example, glass apparatus or other stirring vessels that are sensitive to mechanical stress can be damaged or shattered by an imbalance, increasing the speed too quickly or too little distance between the stirring element and the stirring vessel. Users can suffer serious injury from glass breakage or from the freely rotating stirring element.
- Uncontrolled reactions can be triggered by mixing the heated material insufficiently or by the energy generated by selecting a speed that is too high. In case of these and other increased operational hazards, users must take additional appropriate safety precautions (e.g. shatter protection). In any case, when using critical or hazardous materials in your processes, **Arrow** recommends using additional appropriate measures to ensure safety in the experiment. For example, users can implement measures that inhibit fire or explosions or comprehensive monitoring equipment. Furthermore, users must make sure that the **OFF** switch of the **Arrow** product can be accessed immediately, directly and without risk at any time, and above all, in case of fault.

⚠CAUTION If main power switch cannot be accessed at all times, an additional **EMERGENCY STOP**, switch that can be easily accessed, must be installed in the work area.

- Only process media that will not react dangerously to the extra energy produced through processing. This also applies to any extra energy produced in other ways (e.g. through light irradiation).
- Do not operate the instrument in explosive atmospheres, with hazardous substances or under water.
- The instrument is not suitable for manual operation.
- The high torque developed by the **2000RV digital** requires particular care in the choice of stand, cross sleeve and anti-rotation element for the agitating vessel.
- Set up the stand in a spacious area on an even, stable, clean, non-slip, dry and fireproof surface.
- You must ensure that the stirring element is securely clamped in the coupling or chuck.

⚠WARNING When using a chuck, make sure to remove the chuck key from the chuck before turning on the device.

- Use stirring shaft protective equipment!
- The agitated vessels used for stirring have to be secured. Consider on a good stability of the entire structure.
- Protect the instrument and accessories from bumping and impacting.
- Check the instrument and accessories beforehand for damage each time you use them. Do not use damaged components.
- Always switch the mains switch in the **OFF** position or disconnect the power before changing stirring element and fitting allowed accessories.
- The instrument can only be disconnected from the electrical outlet supply by pulling on the plug. Do not pull on the cord to disconnect power.
- The socket for the electric cord must be easily accessible.
- The electrical outlet must be grounded (protective ground contact).
- The voltage stated on the label (see Fig. 1-E) must correspond to the electrical outlet's voltage.
- Please observe the permitted speed for the stirring element. Never set at higher speed.
- Make certain that the unit is set at the lowest speed before turning the power switch on; otherwise, the unit will immediately begin running. Gradually increase to required speed.
- Pay attention when setting the speed to any imbalance of the stirrer tools and possible spraying of the medium to be stirred.

⚠WARNING Never operate the instrument with the stirrer tools rotating freely. Ensure that parts of the body, hair, jewelry or items of clothing cannot be trapped by the rotating parts.

⚠WARNING The operation of a free rotating shaft end is dangerous, therefore, for safety reasons, only insert the stirring tool into the upper edge of stirring vessel with the motor off. When finished, turn the motor off before lifting the stirring tool out of the vessel.

⚠WARNING Wear your personal protective equipment in accordance with the hazard category of the medium to be processed. Otherwise there is a risk of:

- splashing of liquids
- projectile parts
- body parts, hair, clothing and jewelry getting caught.

⚠NOTICE Beware of the risk of:

- flammable materials
- glass breakage as a result of mechanical shaking power.

⚠NOTICE Reduce the speed if:

- the medium splashes out of the vessel because the speed is too high
- the instrument is not running smoothly
- the instrument begins to move around because of dynamic forces
- an error occurs.

⚠WARNING Do not touch rotating parts during operation!

- There may be electrostatic activity between the medium and the output shaft which could cause a direct danger.
- It is important to note that the surfaces of the motor and certain parts of the bearing may get very hot during operation.

- Avoid knocking and impacting on the lower end of the shaft and the chuck gear teeth. Even minor, invisible damage can lead to imbalance and uneven shaft action.
- Ensure that the stand does not start to move.
- Imbalance of the output shaft, the chuck and in particular the stirring tools can lead to uncontrolled resonant vibrational behavior of the instrument and the whole assembly. Glass apparatus and stirrer containers can be damaged or shattered by this. It can cause injury to the operator, also can damage the rotating stirring tool. In this case, exchange the stirring tool for one without imbalance or remedy the cause of the imbalance. If there is still imbalance, return it to the dealer or the manufacturer along with a description of the fault.
- If the instrument is operated above its capabilities, the reset button will trip.
- The machine must only be opened by trained specialists, even during repair. The instrument must be unplugged from the power supply before opening. Live parts inside the instrument may still be live for some time after unplugging from the power supply.

⚠NOTICE Covering or parts that are capable of being removed from the unit without accessory equipment have to be reattached to the unit for safe operation in order to prevent, for example, the ingress of fluids, foreign matter, etc.

CORRECT USE

• Use:

For mixing/stirring liquids with low to high viscosity by using various stirring tools.

Intended use: Stand device (Motor Shaft downward).

• Range of use (indoor use only):

- Laboratories – Schools -Pharmacies
- Universities - R&D and Production Facilities

The safety of the user cannot be guaranteed:

- If the instrument is operated with accessories that are not supplied or recommended by the manufacturer
- If the instrument is operated improperly or contrary to the manufacturer's specifications
- If the instrument or the printed circuit board are modified by third parties.

MAINTENANCE

• Motor Brushes

Motor brushes eventually wear out and need to be replaced. Frequency will vary depending on usage. For a tutorial on how and when to replace brushes, visit: <https://www.youtube.com/watch?v=Sp8L6DED1lg> or follow this QR code.



• Cleaning

Motors can be wiped down with a damp cloth. Avoid spraying liquids directly onto the motor.

• Warranty

All units come with a one-year warranty against manufacturing defects. Opening or modifying the motor will void the warranty.

NOTE:

Arrow Mixing Products offers repair and maintenance on all equipment. An RMA must be requested, or downloaded from our website, and included with all returns. Arrow will inspect the unit and call or email you with a quote before any work is done.