



THE DRUCKER CO.



Operator's Manual

Models **614D**
Laboratory Centrifuge
Rev 1.0



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DESCRIPTION:

Intended Use:

The Drucker model 614D is a dual speed, high-performance laboratory centrifuge designed for the separation of laboratory fluid samples. Maximum speed with a full load of (6) 15mL test tubes is 3,500 RPM at the high speed setting.

Supplied Equipment:

The following items are supplied with each model 615 centrifuge:

1. One (1) six-place fixed angle rotor.
2. Six (6) 75mm test tube holders
3. Six (6) 100mm test tube holders
4. Six (6) 125mm test tube holders
5. One (1) operator's manual.

Features:

Important features of the Model 614D centrifuge include the following:

- Dual speed operation, (3,500 RPM and 1750 RPM), for multiple applications)
- Lid safety switch that cuts power to the motor if the lid is opened during operation.
- Brushless, AC motor.
- Cool-Flow^R air flow design that prevents overheating of samples.
- Heavy gauge steel cabinet construction for safety and durability.
- Clear Polycarbonate lid for safe observation of samples and optical calibration of speed.
- Timed operation from 1 to 30 minutes.

SPECIFICATIONS:

General specifications for the Model 614D Centrifuge

Max. Speed	3,500 RPM
Max. Force (RCF)	1,520 x g
Low Speed	1,750 RPM
Low Speed Force (RCF)	380 x g
Maximum capacity six-place	90 ml. (6 x 15 ml)
Overall Dimensions:	
Height with Lid Closed	8.5 in. (21.59 cm.)
Width	11.0 in. (26.67 cm.)
Depth	12.5 in. (31.12 cm.)
Centrifuge Motor	1/30 P.S.C. AC Motor
Protection Breaker	4 Amp. Resettable
Timer	Mechanical; 1 to 30 minutes
Max. Power Requirements	120 Watts
Voltage	120 Volts
Frequency	60 Hz
Weight (Including Rotor and (6) tube shields)	18.5 lbs.

REPLACEMENT PARTS:

<u>Part No.</u>	<u>Description</u>
7724079	Foot, rubber
7760002	Power cord
7751069	Switch, lid safety
7722029	Timer, mechanical, 30 minutes
7724145	Knob, timer
7714102	Pawl, latch, lid
7714103	Knob, latch, lid
7712313	Lid, clear
7724071	Hinge, friction
7732206	Seal, lid gasket
7786047	Rotor, 1936 six-place polymer
7735044	115V A.C. Dual Speed Motor
1525	Test Tube Cushions for 10mL test tubes

Installation and Operation

Performance / Calibration:

Maximum speed depends on the incoming line voltage and the load being spun. A line voltage of 115 Volts is required to achieve the speeds described in this manual. If the unit is running 10% slower than specified, it should be returned to your dealer or The Drucker Company for repair.

Environmental Conditions: The 614D centrifuge is not intended for outside use or for use in extreme environmental conditions. Any use other than the manufacturer's suggested usage may impair the protection provided by the unit.

Installation and Set up:

External Packaging and Inspection: Carefully examine the centrifuge and document any damage that can be attributed to mishandling. A signed inspection report should be furnished by the shipping company.

The Drucker Company is *Not Responsible* for transit damage.

Setup Procedure: Unpack the centrifuge and inspect for obvious damage; place the centrifuge on a hard, stable surface. *Note:* A bench top clearance height of 23 inches (min.) is required to open the centrifuge lid.

Failure to provide adequate space for ventilation can cause damage to the samples plus overheating and premature failure to the centrifuge.

- 1 Unlatch and open the lid; remove any protective shipping material, literature, tube cushion packages, etc., that may have been shipped inside the centrifuge.
- 2 Spin the rotor by hand; check for free and level rotation. If the rotor spins evenly, continue on to step 3.
- 3 Close and latch the lid. Verify that the timer is "OFF". Plug the line cord into an approved electrical outlet. Be sure the outlet is always within reach as the line cord is the means of emergency disconnection.
- 4 Turn power on to the unit by setting the time to (5) minutes. The rotor should start spinning smoothly with no excessive noise.
- 5 Listen to the sound of the centrifuge; a smooth whirring sound should be heard. If there are any loud and unusual sounds, stop the centrifuge immediately. ***Do not proceed!*** Call your Authorized Dealer or the Drucker Company.

Safety:

Model 614D Lid Safety Switch: During operation, the lid is secured to the top of the cabinet by a latching knob and pawl system. When the knob is rotated clockwise, the pawl grips the underside of the top opening and prevents the lid from opening. A mechanical stop positions the pawl and prevents it from rotating completely. When rotated to the stop position, the pawl makes contact with a micro-switch mounted underneath the cabinet top. ***Unless contact is made by the pawl with this safety switch, the centrifuge will not start or continue in operation.*** If an attempt is made to open the lid while the centrifuge is in operation power will be cut to the motor.

Temperature Control:

The model 614D centrifuge has a unique molded-in air channel that circulates ambient room air through the rotation chamber to cool the samples. This air is then exhausted out through the base to cool the motor.

Care And Preventative Maintenance:

With proper care and maintenance The Drucker **614D** centrifuge will provide years of laboratory service. For proper care, the following steps should be taken:

1. **Provide Adequate Ventilation:** For cooling purposes the model 614D draws air in through the rear of the lid and exhausts this air through holes in the base. The centrifuge should be placed on a hard smooth surface for good air circulation.
2. **Always Spin Only Balanced Loads:** Make certain that all tube shields are filled with equal weight sample or equivalent weight water filled tubes. The **614D** has a unique counter balanced motor mounting design which, along with its all steel construction and rubber suction feet, produces excellent vibration dampening. However, out-of-balance loads may break glass test tubes and may produce unsatisfactory separation results. Proper sample balancing will improve sample separation and extend the life of the centrifuge.
3. **Keep the Tube Shields Clean:** Small glass fragments left in the tube shield after a tube breakage may adhere to the next test tube inserted in that shield; When this tube is handled, these fragments may puncture protective gloves and lacerate the operator's fingers or hand. Fragments left may also provide stress points on subsequent tubes and result in additional breakage. If a tube breakage occurs carefully remove the tube shield; properly dispose of the sample and tube fragments; thoroughly clean both the inside and outside of the tube shield; insert a new tube cushion (if necessary) and replace the tube shield in the rotor.

Care And Preventative Maintenance (cont'd):

4. Clean The Inside Of The Centrifuge: The 614D centrifuge is designed with an easy entry into the rotor chamber to permit cleaning. Every six months, or whenever there is a tube breakage that allows samples to enter the rotor chamber area, it is advisable to clean the inside of the centrifuge.

- a) Remove the rotor by unscrewing the locking nut on the motor shaft.
- b) Disinfect and clean the inside of the centrifuge.
- c)

CAUTION: For cleaning, Do Not Fully Submerge the centrifuge In Water or use an excessive amount of cleaning solution as this may cause permanent damage to the electrical components.

5. **Motor and Electrical Maintenance:** The motor of the 614D is a brushless induction type; It should not need servicing for the life of the centrifuge. The electrical components are selected for high reliability and should not need service. **If any of these parts should fail they must be repaired or replaced by a qualified service technician.**