

Flexpin Bench-top Centrifuge

**LC-200/220/230**

# Flexpin



**Small Footprint**

**Quick Start/Stop**

**Large Capacity**

**Safe Operation**

# Flex-Spin Drive created new

## Easy-Mount Rotors

Tomy offers a wide selection of Easy-Mount Rotors for the Flexpin Bench-top centrifuges. These rotors install and remove with the turn of a knob and the selection covers most of the commonly used centrifuge labware.

## Flex-Spin Drive

The Flex-Spin Drive features a flexible motor shaft that equalizes minor imbalances without damaging the centrifuge or triggering the imbalance protection system. This allows excellent tolerance for minor difference in sample volumes.

## Superior Imbalance Protection

Tomy has developed a unique concept in imbalance protection based on the kinetic energy generated by the entire rotational system including the motor, rotor, buckets and adapters. This system, with its expanded inputs, is capable of detecting a severe imbalance within a few seconds after the centrifuge is started.

## Higher Speeds for Microplates

The TS-38LB rotor and B438-96 buckets spin four 96-well microplates at 4,200 rpm generating 3,100G – sufficient for microplate based ethanol extractions of DNA.



## High-Speed Fixed Angle Rotor

The TLA-11 Fixed Angle Rotor is a high-speed rotor that takes up to six 35 to 50 ml conical centrifuge tubes, and generates up to 9,600G. The maximum speeds will depend on the tube manufacturers' specifications.



## Flat Tabletop

No Chamber Gasket on the tabletop provides easy sample load.



## Rotor Specifications

●For swing-out rotors only must be balanced by eye. Fixed angle rotor must be balanced properly.

●All rotors, buckets, tube racks and adapters are sold separately. Rotors are shown on below with buckets, tube racks and adapters for example only.

Rotor	Bucket	Tube Rack	Capacity (ml × places)	Adapter	Tube Material	Maximum Speed (rpm)	Relative Centrifugal Force (G)	Rotor Compatibility				
								LC-200	LC-220	LC-230		
TS-4LB	S4096-02	—	Microplate×4 *1	—	—	1,800	510	○	○	○		
	7115-08	—	15×32	—	PP (C·F) ·PET (C) ·G	3,500	2,380	×				
					PS (F)	3,000	1,750					
	7015-08	—	15×32	—	G	3,500	2,190					
					PP (C·F) ·PET (C)	3,100	1,720					
	7050-02	—	50×8	—	—	3,500	2,150					
					IW9330-050						PP (C·F) ·PET (C)	
	7015-06	—	15×24	—	A1500-04	G	3,600	2,320				
					—	PP (C·F) ·PET (C)	3,100	1,720				
	TS-7LB	7150-01	—	50×4	—	IW9330-050	PP (C·F)	5,000	4,670	○	○	○
						PET (C)	4,300	3,450				
		7050-01	—	50×4	—	A1500-04	G	5,000	4,670			
						—	PP (C·F) ·PET (C)	4,000	2,810			
		*2 BH50-01	—	—	50×4	—	PC ·PPCO (N)	4,000	2,950			
		HS	—	10×16	—	PC ·PPCO (N)	3,500	2,140				
		SC-2	—	—	8×4	—	—	1,600	420			
		7215-06	—	15×24	—	—	G	3,600	2,430			
						PP (C·F) ·PET (C)	3,000	1,690				
		B407	0705-FA10P	—	FACS Tube 5×40	—	PP (F)	3,100	1,670			
0705-10P	—		Veno-Ject II Tube 5ml 5×40	—	PS (F)	2,800	1,360					
TS-33LB	B433	—	250×4	352090 (F)	PC ·PPCO ·HDPE (N)	*3 4,800	*3 4,350	○				
			225×4		PP (F)							
			175×4									
			3350-TC01P	50×4	—	PP (C·F)	*3 4,800				*3 4,300	
			3350-G01P	50×4	—	PET (C)	*4 4,300				*4 3,450	
						G	*3 4,800				*3 4,150	
			3315-TC04P	15×16	—	PP (C·F)	*3 4,800				*3 4,300	
						PET (C)	*4 4,300				*4 3,450	
			3315-G07P	15×28	—	PS (F)	3,100				1,790	
						G	*3 4,800				*3 4,150	
			3314-04P	14×16	—	PET	*3 4,800				*3 4,150	
			3305-07P	—	—	PAXgene Blood RNA Tube 2.5×28	PP (F)				4,000	2,990
Veno-Ject II Tube 5ml 5×28	PS (F)	2,700				1,360						
3307-07P	—	—	Veno-Ject II Tube 7ml 7×28	PET	2,700	1,200	○					
—	—	—	PET	2,600	1,200							
Bucket Cap Kit B433 *7 HS			—	—	—	—	—					

## Various Rotors



TS-4LB



TS-7LB



TS-33LB



TS-38LB



TS-39LB



TS-40LB



TLA-11

# centrifuge standard.

Flexpin Bench-top Centrifuge  
**LC-200/220/230**

## Safety Devices

- 1 Imbalance Detector
- 2 Scatter Containing Lid System
- 3 Rotor Identification System
- 4 Lid Interlock System
- 5 Lid Detector
- 6 Overspeed Detector
- 7 Motor Overheat Detection
- 8 Overcurrent Detection
- 9 Circuit Detector

The operation panel is easy to use and read.

※The indicator lights as shown differ from actual operation.



Programmable memory stores are provided.

Speeds are programmable in RPM or g values.

Common Jog-Dial and digital display simplify the control panel.  
3 Acceleration and Deceleration steps (LC-220/230) ※2 Deceleration steps (LC-200)

Rotor	Bucket	Tube Rack	Capacity (ml × places)	Adapter	Tube Material	Maximum Speed (rpm)	Relative Centrifugal Force (G)	Rotor Compatibility		
								LC-200	LC-220	LC-230
TS-38LB	B438	3850-04P	50×16	—	PP (C·F) ·PET (C)	3,500	2,380	×	×	○
		3850-N04P	50×16	—	PC·PPCO (N)	3,500	2,380			
		3850-02P	50×8	—	G	3,500	2,380			
		3815-10P	15×40	—	PP (C·F) ·PET (C)	3,500	2,380			
		3815-16P	15×64	—	G	3,500	2,370			
		3806-EK20P	Eiken Tube No.1 6×80	—	PS	3,500	2,330			
		3810-N20P	10×80	—	PC·PPCO (N)	3,500	2,270			
		3805-FA16P	FACS Tube 5×64	—	PP (F)	3,500	2,080			
				—	PS (F)	2,800	1,330			
		3802-EP24P	Shionogi Tube 4×64	—	PS	3,500	2,080			
	—			PP	3,500	1,780				
	B438-96	—	Microplate×4 ※1	—	—	4,200	3,100	×	×	○
	B438-29	—	—	—	PC·PPCO·HDPE (N)	4,200	3,650			
				3124-0010 (N)	PC (N) ※5		3,590			
352090 (F)				PP (F)	3,650					
※2 B438-5002BH HS	—	—	50×8	PP (C·F) ·PET (C)	4,000	3,310				
			15×8	PP (C·F) ·PET (C)	2,900	1,740				
※2 B438-1507BH HS	—	—	15×28	PP (C·F) ·PET (C)	4,000	3,310				
				PS (F)	2,900	1,740				
TS-39LB	S-439	3950-05P	50×20	—	G	3,100	2,070	×	×	○
		3915-20P	15×80	—	G	3,100	2,070			
		3950-CF05P	50×20	—	PP (C·F) ·PET (C)	3,100	2,110			
		3915-CF12P	15×48	—	PP (C·F) ·PET (C)	3,100	2,060			
					PS (F)	2,900	1,810			
		3925-FN01P	250×4	3124-0010 (N)	PC·PPCO·HDPE (N)	3,100	2,050			
					PC (N) ※5		2,020			
					PP (F)		2,050			
		3914-30P	Eiken Tube No.1 6×120	—	PS	3,100	2,050			
3912-35P	Shionogi Tube 4×140	—	PS	3,100	2,050					
S3996-01	—	Microplate×4 ※1	—	—	1,500	410				
TS-40LB	B240-96D	AS40-96D	Deepwell Plate×2 ※1	—	—	4,500	3,010	×	○	○
※6 TLA-11	—	—	—	—	PP (C)	9,000	9,600	○	○	○
					PP (F)	8,900	9,390			
					PET (C)	5,500	3,590			
					PC·PPCO (N)	9,000	9,600			
					PP (C)	9,000	9,600			
					PP (F)	7,100	5,980			
					PET (C)	5,500	3,590			
PS (F)	3,900	1,800								

### Definition of abbreviated terms:

•Check the tube material before centrifuging. Some tube types cannot be run at the maximum speed of the rotor. For additional information, please contact us.  
 ※1 Before use, ensure that microplates are compatible with the centrifuge. ※2 Sealing Bucket ※3 The numerical value is LC-230 ※4 The numerical value is LC-220/230  
 ※5 NALGE NUNC 250ml tube (Cat. No. 3123-0250) ※6 Do not load different type of tubes at the same time. ※7 A rotor becomes sealed bucket specifications by optional [Bucket Cap Kit B433]  
 •Tube Materials: G=Glass, PC=Polycarbonate, PS=Polystyrene, PE=Polyethylene, HDPE=High Density Polyethylene, PPCO=Polypropylenecopolymer, PP=Polypropylene,  
 PET=Polyethylene Terephthalate, C=Corning (Registered Trademark of Corning in the U.S.A.), F=Falcon (Registered Trademark of Becton Dickinson in the U.S.A.),  
 N=NALGENE (Registered Trademark of NALGE NUNC in the U.S.A.)  
 This bucket with HS mark, which has been tested and certified by the Health Protection Agency (HPA), UK to be compliant with the International Standard (Annex AA of the IEC 61010-2-020),  
 meets requirements for biohazard safety.  
 The bucket with HS mark adopted a hermetically sealed structure equivalent to HS buckets designed and tested in accordance with the International Standard (Annex AA of the IEC 61010-2-020) to offer excellent sealing performance.

## Specifications

Model		LC-200	LC-220	LC-230
Maximum Speed		9,000rpm		
Maximum RCF		9,600G		
Maximum Capacity		1,000ml (250ml×4 places)		1,200ml (15ml×80 places)
Speed Control		Microprocessor		
Drive System		Flex-Spin Drive System		
Data Entry		Jog Dial		
Speed	Display/Display Range	Digital / 0 to 9,990rpm		
	Setting Range	300 to 9,000rpm		
	Control Precision	Setting Speed ±50rpm		
Force	Display/Display Range	Digital / 0 to 9,990G		
	Setting Range	10 to 9,600G (Less than 300G:Units of 10G, More than 300G:Units 100G)		
Time	Display/Display Range	Digital / 0 to 99 minutes or Continuous		
	Setting Range	1 to 99 minutes or Continuous		
	Precision	Within 0.1% or 1 second		
Other Function		3 Acceleration and Deceleration steps (LC-220/230)/2 Deceleration steps (LC-200), Rotor Speed Automatic Setting with BART Code, Previous Setting Memory, 5 Memory Stores (LC-220/230)/2 Memory Stores (LC-200)		
Safety Devices		Imbalance Detector, Scatter Containing Lid System, Rotor Identification System, Lid Interlock System, Lid Detector, Overspeed Detector, Motor Overheat Detection, Overcurrent Detection, Circuit Detector		
Protection against electric shock		Class I		
Required Environment		Room Temperature: 6 to 35°C, Relative Humidity: 30 to 85%		
Dimensions		420W×528(projection 95)D×337H mm	440W×544(projection 95)D×362H mm	484W×582(projection 95)D×365H mm
		Height to the chamber: 300 mm	Height to the chamber: 325 mm	Height to the chamber: 328 mm
Net Weight		Approx. 46 kg	Approx. 50 kg	Approx. 54 kg
Power Required		110/120V, 15A, 50/60Hz 220/230/240V, 10A, 50/60Hz		
Consumptive Electric Power		470 W	600 W	730 W
Accessories Included		Operator's Manual, Rotor Nut, Warranty Card, Customer Card, BART Code Table		

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