

# Micro Refrigerated Centrifuge



3740  
3700



#### Model 3740

#### Remarkable multi-purpose model

4x50/15mL conical tubes with swing rotor and plate rotor can be used.

Maximum Speed – 15,000rpm

Maximum RCF – 22,140xg

Rotors available – 15 types

#### Model 3700

#### Standard model

Standard micro refrigerated centrifuge in function and value.

Maximum Speed – 15,000rpm

Maximum RCF – 22,140xg

Rotors available – 12 types

The appearance of 3740 is almost same as the one of 3700.

**One-touch rotor function enables to exchange rotors easily.**

**50mL conical tubes can be used at more than 20,000 xg.**

**2 types of bioshield rotors are certified as biohazard-proof with the CAMR standards.**

**Model 3740 can be used for fixed angle rotors, swinging bucket rotors and plate rotors.**

- Memory flashing function for easy spin-down automatically by memorizing the duration of spin-down operations.
- Precooling function enables rotor to reach low temperature before centrifuging.
- Centrifuge can be operated by setting RCF (xg).  
The g-sec value (integrated RCF value) can be measured and setting operation with this value is possible.
- Conforms to International Safety Standard IEC61010-2-020.
- Equipped with an automatic rotor identification when a rotor is simply placed on the drive shaft.
- Numerous detectors ensure safe and reliable operations. If problem is detected, operation will stop immediately.
- The temperature of sample is kept at 4°C when the ambient temperature is 25°C. See the table of rotors for details.

Model	3740	3700
Maximum Speed	15,000rpm	
Maximum RCF	22,140xg	
Maximum Capacity	228mL	
No. of rotors available	15	12
Control System	Microprocessor control (brushless motor) / Speed, RCF, Time, g.sec value, Temp, Acceleration/Deceleration (3 levels), 5 memory channels.	
Dimensions	37(W) x 50(D) x 79(H) cm	Refrigerant R134a
Weight	81kg	80kg

## Multi Rotor MF-2236

■ 3 types of buckets can be used with this rotor.  
It helps saving cost and time of centrifugation.

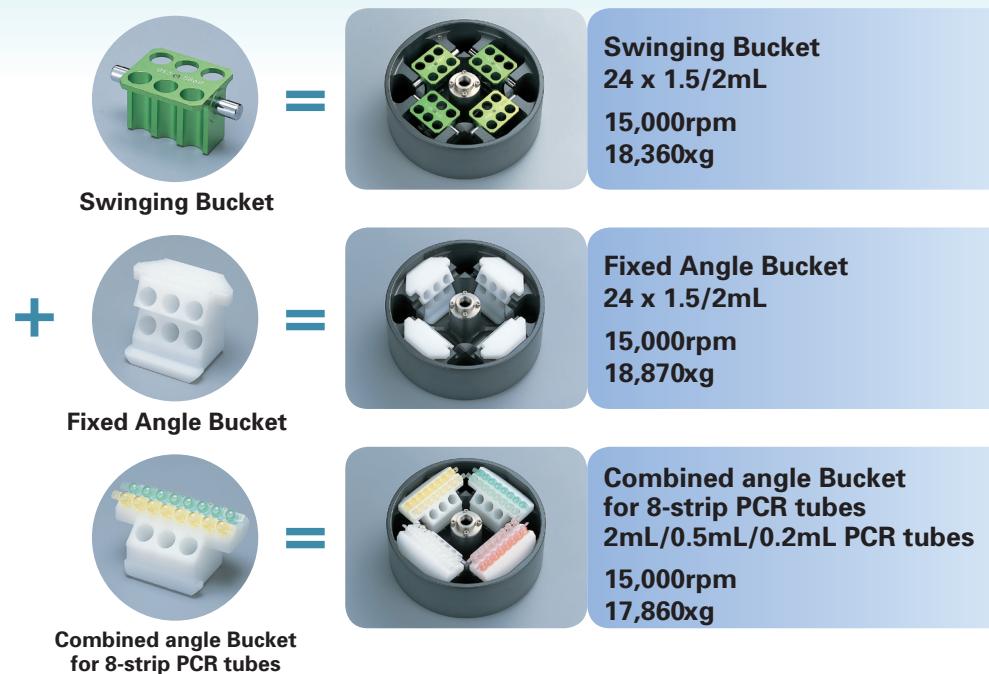
### ■ High Speed Centrifuging

Maximum speed : 15,000rpm

Maximum RCF : 18,870xg



MF-2236 Rotor



### Multi Rotor MF-2236

	Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Bucket Code No.	Tube rack Adaptor Code No.
				Maximum rpm	Maximum RCF xg		
	<b>Swinging Bucket</b>	24 x 1.5/2mL	9.5~11.0 x 36~42	15,000	18,360	053-5860	—
		24 x 0.5mL	7.0~7.9 x 25~34		15,090		055-7590
		24 x 0.2mL PCR *	5.9~6.3 x 20~24		11,820		055-0500
	<b>Fixed Angle Bucket</b>	24 x 1.5/2mL	9.5~11.0 x 36~42	15,000	18,870	053-2000	—
		24 x 0.5mL	7.0~7.9 x 25~34		16,100		055-7590
		24 x 0.2mL PCR *	5.9~6.3 x 20~24		13,330		055-0500
	<b>Combined Angle Bucket</b>	8 x 0.2mL 8-strip PCR	5.9~6.3 x 20~24	15,000	17,860	053-6000	—
		12 x 1.5/2mL	9.5~11.0 x 36~42		15,600		—
		12 x 0.5mL	7.0~7.9 x 25~34		13,330		055-7590
		12 x 0.2mL PCR *	5.9~6.3 x 20~24		11,320		055-0500

\* 0.2mL PCR tubes may not be used at maximum speed since they may not be resistant enough.

The temperature of sample is kept 4°C at maximum speed of rotation for all rotors (when the ambient temperature is 25°C).

## Bioshield rotor

AF-2730 and AF-5004CS rotors are certified as biohazard-proof with the CAMR standards.

Samples will not leak out from the rotor even if tubes break.

These rotors can be used for inspections of BSE, SARS and so on.



### AF-2730

30 x 1.5/2mL

4 types of tubes (1.5/2mL, 0.5mL, 0.2mL PCR) can be used without adaptors.

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-2730	30 x 1.5/2mL	9.5~11.0 x 36~42	14,000	20,820	—
	14 x 0.5mL	7.0~7.9 x 25~34		17,530	—
	14 x 0.2mL PCR *1	5.9~6.3 x 20~24		16,430	—
	30 x 0.5mL	7.0~7.9 x 25~34	14,000	18,850	055-7590
	30 x 0.2mL PCR *2	5.9~6.3 x 20~24	14,000	16,870	055-0500



### AF-5004CS

4 x 50mL conical tube

Various tubes can be used with adaptors.

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-5004CS	4 x 50mL Conical tube	30 x 117 *3	12,000	14,970	—
	4 x 15mL Conical tube	17 x 121	12,000	14,490	055-1250 055-1280
	4 x 14mL	15.6~16.6 x 96 *4	12,000	13,850	055-0550
	4 x 12mL	15.7~16.4 x 102~105 *5	12,000	14,330	055-1120
	4 x Millipore Amicon Ultra-15	29.7 x 121	6,930	4,990	—
	4 x Sartorius Vivaspin 20	30 x 117	7,590	6,000	—

## Fixed angle rotor for conical tubes



### AF-5004CH

4 x 50mL conical tube

15,000rpm/RCF 22,140xg  
Cap support structure which  
prevents 50mL conical tubes  
from breaking is applied  
(patented).

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-5004CH	4 x 50mL Conical tube	30 x 117 *3	15,000	22,140	—
	4 x 50mL Round Bottom tube	26.4~28.7 x 98~115 *6	15,000	20,880	055-1110
	4 x 15mL Conical tube	17 x 121	15,000	21,130	055-1250
			12,000	13,520	055-1280
	4 x 14mL	15.6~16.6 x 96 *4	15,000	20,120	055-0550
	4 x 12mL	15.7~16.4 x 102~105 *5	15,000	20,880	055-1120
	4 x Millipore Amicon Ultra-15	29.7 x 121	7,130	5,000	—
	4 x Sartorius Vivaspin 20	30 x 117	7,810	6,000	—
	4 x Millipore Amicon Ultra-4	17.3 x 124	8,930	7,490	055-1250 055-1280
	4 x Sartorius Vivaspin 2/6	17 x 122~126	9,230	8,000	055-1250 055-1280



### AF-5004CA

4 x 50mL conical tube

50mL conical tube with  
large cap is available.

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-5004CA	4 x 50mL Conical tube	30 x 117 *3	12,000	14,170	—
	4 x 15mL Conical tube	17 x 121	12,000	13,520	055-1250 055-1280
	4 x 14mL	15.6~16.6 x 96 *4	12,000	12,880	055-0550
	4 x 12mL	15.7~16.4 x 102~105 *5	12,000	13,360	055-1120
	4 x Millipore Amicon Ultra-15	29.7 x 121	7,130	5,000	—
	4 x Sartorius Vivaspin 20	30 x 117	7,810	6,000	—
	4 x Millipore Amicon Ultra-4	17.3 x 124	8,930	7,490	055-1250 055-1280
	4 x Sartorius Vivaspin 2/6	17 x 122~126	9,230	8,000	055-1250 055-1280

**⚠ Rotor has prescribed operating life cycle, after that the rotor must be replaced.  
For more details, please contact us.**

\* The number of times allowed for autoclaving is limited. For more details, please contact us.

\*1 14 x 0.2mL PCR and 14 x 0.5mL tubes can be used together with outside 30 tube holes.

\*2 0.2mL PCR tubes may not be used at maximum speed since they may not be resistant enough.

\*3 The following 50mL conical tubes can be used: the diameter of the cap is within 36mm and the brands of the tubes are Iwaki, Greiner, Corning, Sarstedt, Sumitomo, VWR, BD Falcon, Fisher, Labcon, Nunc etc.

\*4 Falcon tubes (catalogue no.352059) are available.

\*5 Nalgene tubes (catalogue no.3110-0120/PPCO, 3117-0120/PC) can be used.

\*6 Nalgene tubes (catalogue no.3110-0500/PPCO, 3110-9500/PPCO, 3117-9500/PC) and stainless steel tubes (code no.052-6910) can be used.

## Micro rotor



### AF-2018

18 x 1.5/2mL

Quick acceleration:  
6 seconds (3740)  
9 seconds (3700)

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm *1	Maximum RCF xg	
AF-2018	18 x 1.5/2mL	9.5~11.0 x 36~42	15,000	20,630	—
	18 x 0.5mL	7.0~7.9 x 25~34	15,000	18,110	055-7590
	18 x 0.2mL PCR *2	5.9~6.3 x 20~24	15,000	15,850	055-0500

Autoclavable (121°C) \*

### AF-2724A

18 x 1.5/2mL

Quick acceleration:  
6 seconds (3740)  
9 seconds (3700)

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm *1	Maximum RCF xg	
AF-2724A	24 x 1.5/2mL	9.5~11.0 x 36~42	15,000	20,630	—
	12 x 0.5mL *3	7.0~7.9 x 25~34		16,850	—
	12 x 0.2mL PCR	5.9~6.3 x 20~24		14,840	—
	24 x 0.5mL	7.0~7.9 x 25~34	15,000	18,360	055-7590
	24 x 0.2mL PCR *2	5.9~6.3 x 20~24	15,000	16,100	055-0500

Autoclavable (134°C) \*

### AF-2236

24 x 1.5/2mL, 12 x 0.5/0.2mL PCR

4 types of tubes (1.5/2mL, 0.5mL, 0.2mL PCR) can be used without adaptors.  
RCF more than 20,000xg is effective for BSE tests.

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm *1	Maximum RCF xg	
AF-2236	36 x 1.5/2mL	9.5~11.0 x 36~42	15,000	21,880	—
	12 x 0.2mL PCR *3	5.9~6.3 x 20~24		18,360	—
	36 x 0.5mL	7.0~7.9 x 25~34		15,340	—
	36 x 0.2mL PCR *2	5.9~6.3 x 20~24	15,000	19,620	055-7590
				16,100	055-0500
				17,360	055-0500
				13,840	055-0500

Autoclavable (134°C) \*

### AF-2048A

36 x 1.5/2mL, 12 x 0.2mL PCR

4 types of tubes (1.5/2mL, 0.5mL, 0.2mL PCR) can be used without adaptors.  
Caps of 1.5/2mL tubes can be placed in the same direction which is useful for experiments.

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740		Adaptor Code No.
			Maximum Speed rpm *1	Maximum RCF xg *4	
AF-2048A	48 x 1.5/2mL	9.5~11.0 x 36~42	12,000	15,780	—
				14,010	—
	48 x 0.5mL	7.0~7.9 x 25~34	12,000	14,330	055-7590
				12,560	055-7590
	48 x 0.2mL PCR *2	5.9~6.3 x 20~24	12,000	12,880	055-0500
				11,110	055-0500

Autoclavable (121°C) \*

### AF-2048A

48 x 1.5/2mL

Useful for centrifuging large number of samples

**⚠ Rotor has prescribed operating life cycle, after that the rotor must be replaced.  
For more details, please contact us.**

\* The number of times allowed for autoclaving is limited. For more details, please contact us.

\*1 The temperature of sample is kept 4°C at maximum speed of rotation for all rotors (when the ambient temperature is 25°C).

\*2 0.2mL PCR tubes may not be used at maximum speed since they may not be resistant enough.

\*3 12 x 0.2mL PCR and 12 x 0.5mL tubes can be used together with outside 24 tube holes.

\*4 Maximum RCF of outside 24 tube hole is the upper value and the maximum RCF of inside 24 tube hole is the lower value in the table.

The temperature of sample is kept 4°C at maximum speed of rotation for all rotors (when the ambient temperature is 25°C).

## Fixed angle rotor (5mL)



### AF-512

12 x 5mL

Highly recommended when the capacity of 2mL tube is not enough.

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-512	12 x 5mL	15 x 59 *1	15,000	20,880	—

Autoclavable (121°C) \*

## Fixed angle rotor (middle size)



### AF-1408A

8 x 14mL

Falcon round bottom tubes (dual-position snap cap) are available.

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-1408A	8 x 14mL	17 x 75~100 *2	12,000	14,330	—

Autoclavable (121°C) \*

## AF-5004RA

4 x 50mL

10mL anti-biohazard sealing adaptors (code no. 055-4280) can be used.



Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-5004RA	4 x 50mL	28.5~29.0 x 102~115*3	15,000	21,880	—
	4 x 12mL	15.8~16.4 x 103~110*4	15,000	20,630	055-7410
	4 x 10mL	16.0~16.3 x 79~92 *5	15,000	20,630	055-4280 *6

Autoclavable (121°C) \*

## AF-3806A

4 x 50mL

10mL anti-biohazard sealing adaptors (code no. 055-4280) can be used.



Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740/3700		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-3806A	6 x 38mL	25.0~25.6 x 87~103*7	15,000	21,880	—
	6 x 30mL	25.4~25.7 x 87~102.6*8	15,000	21,880	—
	6 x 10mL	16.0~16.6 x 72~82 *9	15,000	19,370	055-4570

Autoclavable (121°C) \*

## AF-3806A

6 x 38mL

**⚠ Rotor has prescribed operating life cycle, after that the rotor must be replaced.  
For more details, please contact us.**

\* The number of times allowed for autoclaving is limited. For more details, please contact us.

\*1 Biobic 5mL sampling tubes and Watson 5mL mega tubes can be used.

\*2 Falcon round bottom tubes (Catalogue no.352006, 352018, 352059) are available.

\*3 Nalgene tubes (catalogue no.3110-0500/PPCO, 3110-9500/PPCO, 3117-9500/PC, 3114-0050/FEP, 3115-0050/PSF, 3118-0050/PC, 3119-0050/PPCO, 3137-0050/PSF, 3138-0050/PC, 3139-0050/PPCO) and stainless steel tubes (code no.052-6910) can be used.

\*4 Nalgene tubes (catalogue no.3110-0120/PPCO, 3117-0120/PC) are available.

\*5 Nalgene tubes (catalogue no.3114-0010/FEP, 3115-0010/PSF, 3118-0010/PC, 3119-0010/PPCO) are available.

\*6 055-4280 sealing adaptors can be used for anti-biohazard.

\*7 Nalgene tubes (catalogue no.3110-0380/PPCO, 3117-0380/PC) are available.

\*8 Nalgene tubes (catalogue no.3114-0030/FEP, 3115-0030/PSF, 3118-0030/PC, 3119-0030/PPCO, 3138-0030/PC, 3139-0030/PPCO) can be used.

\*9 Nalgene tubes (catalogue no.3118-0010/PC, 3114-0010/FEP, 3115-0010/PSF, 3119-0010/PPCO) can be used.

The temperature of sample is kept 4°C at maximum speed of rotation for all rotors (when the ambient temperature is 25°C).

### **Plate rotor** (only for model 3740)



Rotor Name	Nominal Capacity	Plate size mm	3740		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
PF-206	2 x PCR plate	86(W)×128(D)×52(H)	4,000	1,790	—
	6 x Micro-plate *1				
	2 x Deepwell-plate				

PF-206

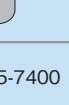
2 x PCR plates

6 x Micro-plate

2 x Deepwell-plate

These stainless-steel buckets are chemically resistant.

## **Swinging bucket rotor** (only for model 3740)

Tube					
<b>Nominal Capacity</b>	<b>24 x 1.5/2mL *2</b>	<b>16 x 5~10mL blood collection tube/15mL *3</b>	<b>4 x 7~10mL blood collection tube/15mL glass *4</b>	<b>4 x 7~10mL blood collection tube/15mL glass *4</b>	<b>8 x 7~10mL blood collection tube/15mL glass *4</b>
Tube size (mm) diam. x length	9.5~11 x 36~42	12~17 x 65~105	12~17.2 x 86~110	12~17.8 x 87~110	12~17.2 x 86~110
Maximum Speed rpm	4,000	4,000	4,000	4,000	4,000
Maximum RCF xg	2,410	2,410	2,540	2,500	2,520
Bucket Code No.	053-4800	053-4930	053-4910	053-4990	053-4900
					
Autoclavable (121°C) *	Adaptor Code No.	—	—	—	—
<b>SF-240</b> Max 4,000 rpm Max 2,610 xg				 055-7400 *5  024-0159 (Rubber cushion)	

Tube							
Nominal Capacity	4 x 15mL conical tube x 4	4 x 15mL conical tube	4 x 15mL conical tube	8 x 15mL conical tube	4 x 50mL glass	4 x 50mL conical tube	4 x 50mL conical tube
Tube size (mm) diam. x length	17×121	17×121	17×121	17×121	27~37×95~110	30×117	30×117
Maximum Speed rpm	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Maximum RCF xg	2,580	2,590	2,590	2,580	2,540	2,610	2,610
Bucket Code No.	053-4910	053-5010	053-0040	053-4900	053-4990	053-0040	053-5010
							
Autoclavable (121°C) * <b>SF-240</b> Max 4,000 rpm Max 2,610 xg	—	055-1280	055-1280	—	—	—	—

**⚠️** Rotor has prescribed operating life cycle and years of operation, after that the rotor must be replaced. For more details, see [Maintenance](#).

For more details, please contact us.

\* The number of times allowed for autoclaving is limited. For more details, please contact us.  
\*1 Test the strength of plates before centrifuging. The bottom and lower part of plate might be damaged.

\*1 Test the strength of plates before centrifuging. The bottom and lower part of plate might break.

\*2 A variety of tube adaptors are available with this rotor. For more details, please contact us.

\*2 A variety of tube adaptors are available with this rotor. For more details, please contact us.  
\*3 5-10mL blood collection tubes which can be used are Insepack II by Sekisui, venoject II by Terumo, Neo tube by Nipro and Vacutainer by BD.

The tubes for flow cytometry are available.

\*4 7-10mL blood collection tubes which can be used are Insepak II by Sekisui, venoject  
\*5 Sealing caps and o-rings are equipped with buckets. These are autoclavable at 121°C

## Specifications

### Model 3740/3700

Maximum Speed • 15,000rpm (3740/3700)  
Maximum RCF • 22,140xg (3740/3700)  
Maximum Capacity • 228mL  
Control system • Micro-processor control (Brushless motor)  
Speed, RCF, Time, g-sec, Temperature, Acceleration & Deceleration, 5 channel memories  
Abnormality detected display • Lid open, Imbalance, Over speed, abnormally high temperature, Abnormal rotor setting, Function for detecting an occurrence of electrical abnormality in motor, inverter, lid interlock, speed sensor and temperature sensor.  
Acceleration / Deceleration • Three-level switching; Rapid, Slow and Super Slow  
Speed setting and indication • Digital display, in 10rpm steps  
RCF setting and indication • Digital display, in 10xg steps  
Integrator setting and indication • Digital display, From 1.00 to  $9.99 \times 10^6$  g · sec  
Timer setting and indication • Digital display, with Hold and Memory Flashing  
from 1 sec. to 100 sec., in 1 sec. increment setting and indication.  
from 100 sec. to 990 sec., in 10 sec increments setting, in 1 sec. increments indication.  
from 1 min. to 100 min., in 1 min. increment setting and indication.  
from 100 min. to 990 min., in 10 min. increments setting, in 1 min. increments indication.  
Temperature setting and indication • Digital display, 1 °C increments setting and indication  
from -20°C to 40°C  
Power requirements • Single phase AC110V±10%, 115V±10%, 50/60Hz, 15A  
Single phase AC220V±10%, 230V±10%, 50/60Hz, 10A  
Rated voltage and Rated current • 3700: 110/115V 8.5A, 220/230V 4.4A  
3740: 110/115V 10/9.6A, 220/230V 5.3/5.1A  
Power consumption and Heat output • 3700: 110/115V 720W 2.6MJ/h, 220/230V 780W 2.8MJ/h  
3740: 110/115V 830W 3.0MJ/h, 220/230V 890W 3.2MJ/h  
Dimensions, weight • 370(W) x 500(D) x 790(H) mm, 80kg (3700), 81kg (3740), height with opened lid 119cm<sup>※1</sup>  
Certificates of conformity • IEC 61010-2-020  
CE Marking (AC220V and 230V version)

(※1) Not including projections.

All specifications and external appearance are subjects to change without notice.

\* Use only rotors, adaptors and tube racks made by KUBOTA. Do not attempt to use rotors, adaptors or tube racks made by other manufacturers.

\* Follow all instructions in the relevant Instruction & Service Manual when operating centrifuges.

## Kubota has acquired ISO 9001 and ISO 13485 certification.

### Precautions for use

Products in this catalogue are designed for use only by people who have the requisite technical knowledge, and must always be used with considerable care and only for their intended purpose. People who do not have adequate technical knowledge or training should only use the products under appropriate supervision by someone with expert knowledge, or else accidents are likely to occur.



Please immediately stop using the products in any of the cases listed on the right.

- The rotor or buckets appear to be damaged or corroded.
- When the replacement period (years of operation; operating lifetime) of a rotor has passed.
- The equipment emits a burning smell or becomes abnormally hot.
- You receive a weak electric shock when you touch the equipment with your bare hands.
- When any other abnormality or indication of failure is noticed.

### IMPORTANT

If any of the cases listed at the left occurs, immediately turn off the power, disconnect the power cable plug or connecting terminals from the main power outlet, place a "Do not use" sign on the unit, and contact the nearest branch of Kubota Corporation.



### Safety Precautions

To use the equipment safely, be sure to read the instruction manual carefully before you start operations.

Do not misplace the instruction manual. Keep the instruction manual nearby so that you can refer to it whenever necessary.

- The term of supplying spare parts for repair is 7 years after discontinuation of production (except spare parts which we are unable to procure).
- This catalogue is not for distribution in the USA, Canada and Mexico as products shown are not for sale in these countries.

**KUBOTA CORPORATION**

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