NEYA

by XS

PASSION changes everything



GIORGIO·BORMAC s.r.l.

NEYA

Derived from the Hindi word *"NAYA"*, that means "new", "novelty", "innovation", "*NEYA*" is the name given to the new generation of centrifuges developed in synergy by *REMI* and *GIORGIO BORMAC.*

The big experience of a historical manufacturer as *REMI*, combined with the Italian style and design of *GIORGIO BORMAC*, make a perfect combination in developing products with performance and characteristics suitable to all the operational requests.

It is with these premises that we are pleased to present the new project *"NEYA"*!

NEYA…a new concept… a new project… a new generation!

PASSION
changes
everything


2006


2011


2013



2016

NEW ROTORS AND ACCESSORIES

FIRST LETTER

A= Fixed angle rotor
S= Swing out rotor
B= Bucket
SB= Swing out rotor + Buckets (KIT)
L= Lid of bucket
I= Insert for bucket
C= Cushion
RE= Reductor
T= Tube
PCR= PCR rotor
HE= Hematocrit rotor

*MIDDLE NUMBERS**

1° NUMBER= maximum number of tubes
2° NUMBER= capacity of tubes (ml)

LAST LETTER

F= Falcon® tube included or suitable for conical bottom tube
P= Plastic round bottom tube included
G= Glass round bottom tube included
R= Suitable for round bottom tube
X= Extra metal bucket (long version)

** Only for reductors (RE), the middle numbers identify the capacity reduction (ml)*
In case of only one middle number, it represents the capacity (ml)
For PCR and hematocrit rotors, the middle numbers represent
rispectively number of PCR strips, number of capillaries and their length (mm)

A 32-15 N
Fixed angle rotor for 32 tubes 15 ml

S 4-175
Swing out rotor for 4 buckets 175 ml

B 16-5/7
Aluminum carrier for 16 tubes 5/7 ml

SB 4-175
Kit composed by swing out rotor S 4-175 and 4 buckets B 175 of 175 ml

I 4-15R
Insert for 4 round bottom tubes 15 ml

RE 50-15F
Reductor from 50 ml to 15 ml conical bottom

B 50XF
Metal bucket 50 ml extra version with 50 ml Falcon® tube included

NEYA 8

MAX CAPACITY

4 X 175 ml

MAX SPEED

6.000 rpm

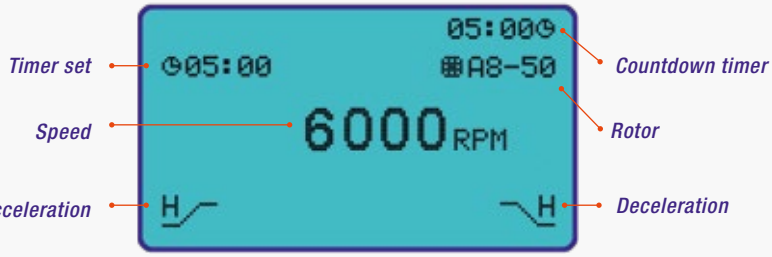


- *Automatic rotor detection,*
- *Check the presence of accessories and rotor compatibility with maximum speed*
- *Safety speed limiter function*
- *Controlled by microprocessor*
- *Backlit color LCD display with simultaneous visualization of all parameters*
- *Digital adjustment of acceleration and deceleration levels*
- *Compact sizes to optimize the space in laboratory*
- *Stainless steel internal bowl with optimal height for loading and unloading of samples*
- *Imbalance detection system with automatic stop function*
- *Automatic locking system of the lid*
- *Safety opening of the lid in case of absence of electric power*
- *Brushless motor, maintenance free and no deposits*
- *Construction in accordance with European directives*

working cycle



Alarm signal



FEATURES

	NEYA 8
Maximum capacity	4 x 175 ml (swing out) - 6 x 100 ml (fixed angle)
Maximum speed	4.500 rpm (swing out) - 6.000 rpm (fixed angle)
Setting RPM	Yes
Setting RCF	-
Display RCF	-
Timer	00:30 ÷ 99:50 (mm:ss) and continuous mode
Date and Time	-
Acceleration levels	L-M-H (Low - Medium - High)
Deceleration levels	L-M-H (Low - Medium - High)
Spin function	-
Programs	-
Indication of rotor	Yes
Noise level	55 dB
Directive / Standard	IEC 1010-1 ; IEC 1010-2-020
External dimensions WxDxH/Weight	450 x 590 x 330 mm / 40 Kg
Height of access to the chamber	275 mm
Voltage / Power	220 ±10% V 50 Hz / 450 W
Part number	**40100302**



Low speed rotor for all NEYA models



Optimal height for load and download of samples

NEYA 10R

MAX CAPACITY

4 X 175 ml

MAX SPEED

6.000 rpm

PROG

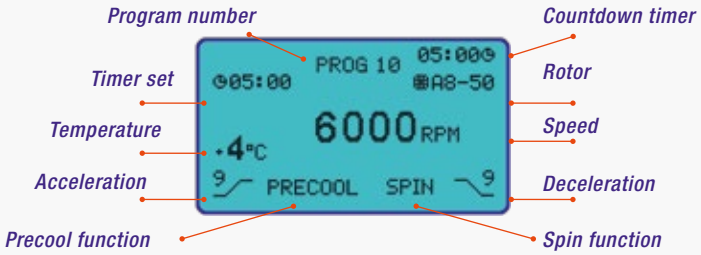
10 prog.

refrigerated



Refrigerated *centrifuge NEYA 10 R*

- *Automatic rotor detection,*
- *Check the presence of accessories and compatibility with maximum speed*
- *Backlit color LCD display with simultaneous visualization of all parameters*
- *Stainless steel internal bowl with optimal height for loading and unloading of samples*
- *Safety speed limiter function*
- *10 storable programs with protection function*
- *Setting of speed in RPM and RCF*
- *Short Spin function and precool function (NEYA 10R)*
- *Temperature range from -10°C to +40°C (NEYA 10R)*
- *Controlled by microprocessor*
- *Digital adjustment of acceleration and deceleration levels*
- *Imbalance detection system with automatic stop function*
- *Automatic locking system of the lid,*
- *Safety opening of the lid in case of absence of electric power*
- *Brushless motor, maintenance free and no deposits*



FEATURES	NEYA 10	NEYA 10R
Maximum capacity	4 x 175 ml (swing out) - 6 x 100 ml (fixed angle)	
Maximum speed	4.500 rpm (swing out) - 6.000 rpm (fixed angle)	
Setting RPM	Yes	
Setting RCF	Yes	
Display RCF	Yes	
Timer	00:30 ÷ 99:50 (mm:ss) and continuous mode	
Date and Time	Yes	
Acceleration levels	0÷9 (0 = min - 9 = max)	
Deceleration levels	0÷9 (0 = min - 9 = max)	
Temperature range	-	-10 ÷ +40°C / +14 ÷ +114°F
Precool function	-	Yes
Display temperature	-	Yes (°C and °F)
Spin function	Yes	
Programs	10 programs with protection function	
Indication of rotor	Yes	
Noise	55 dB	55 dB
Directive / Standard	IEC 1010-1 ; IEC 1010-2-020	
External dimensions WxDxH/Weight	450 x 590 x 330 mm / 40 Kg	730 x 640 x 330 mm / 70 Kg
Height of access to the chamber	275 mm	
Voltage / Power	220 ±10% V 50 Hz / 450 W	220 ±10% V 50 Hz / 750 W
Part number	**40100312**	**40100332**



Ventilated centrifuge NEYA 10



Visual signal of end of centrifugation

NEYA 16 R

MAX CAPACITY

4 X 175 ml

MAX SPEED

16.000 rpm

PROG

10 prog.

refrigerated



Refrigerated *centrifuge NEYA 16 R*

- *Automatic rotor detection,*
- *Check the presence of accessories and compatibility with maximum speed*
- *Backlit color LCD display with simultaneous visualization of all parameters*
- *Stainless steel internal bowl with optimal height for loading and unloading of samples*
- *Safety speed limiter function*
- *10 storable programs with protection function*
- *Setting of speed in RPM and RCF*
- *Short Spin function and precool (NEYA 16R)*
- *Temperature range from -10°C to +40°C (NEYA 16R)*
- *Controlled by microprocessor*
- *Digital adjustment of acceleration and deceleration levels*
- *Imbalance detection system with automatic stop function*
- *Automatic locking system of the lid,*
- *Safety opening of the lid in case of absence of electric power*
- *Brushless motor, maintenance free and no deposits*



Standby



Centrifugation cycle



Program protection



Alarm signal

FEATURES	NEYA 16	NEYA 16R
Maximum capacity	4 x 175 ml (swing out) - 6 x 100 ml (fixed angle)	
Maximum speed	4.500 rpm (swing out) - 16.000 rpm (fixed angle)	
Setting RPM	Yes	
Setting RCF	Yes	
Display RCF	Yes	
Timer	00:30 ÷ 99:50 (mm:ss) and continuous mode	
Date and Time	Yes	
Acceleration levels	0÷9 (0 = min - 9 = max)	
Deceleration levels	0÷9 (0 = min - 9 = max)	
Temperature range	-	-10 ÷ +40°C / +14 ÷ +114°F
Precool function	-	Yes
Display temperature	-	Yes (°C and °F)
Spin function	Yes	
Programs	10 programs with protection function	
Indication of rotor	Yes	
Noise	55 dB	55 dB
Directive / Standard	IEC 1010-1 ; IEC 1010-2-020	
External dimensions WxDxH/Weight	450 x 590 x 330 mm / 40 Kg	730 x 640 x 330 mm / 70 Kg
Height of access to the chamber	275 mm	
Voltage / Power	220 ±10% V 50 Hz / 450 W	220 ±10% V 50 Hz / 750 W
Part number	**40100322**	**40100342**



Ventilated centrifuge NEYA 16



High speed rotor for NEYA 16 and 16R

SWING OUT ROTORS

4

I 4-15F



Set of 4 pieces
P/N 40100632

For conical bottom tubes like Falcon®

Max tubes for insert 4

Max tubes for rotor 16



Capacity 15 ml
Ø max. 16,5 mm
H max. 120 mm

3

I 7-10



Set of 4 pieces
P/N 40100622

For collection tubes Vacutainer®

Max tubes for insert 7

Max tubes for rotor 28



Capacity 10 ml
Ø max. 16 mm
H max. 114 mm



2

I 7-5/7



Set of 4 pieces
P/N 40100612

For collection tubes Vacutainer®

Max tubes for insert 7

Max tubes for rotor 28



Capacity 5-7 ml
Ø max. 13 mm
H max. 116 mm

1

I 12-2



Set of 4 pieces
P/N 40100602

For microtubes Eppendorf®

Max tubes for insert 12

Max tubes for rotor 48



Capacity 1,5-2 ml
Ø max. 10,6 mm
H max. 42 mm

SB 4-175

Kit composed by swing out rotor ***S 4-175***, 4 buckets ***B 175*** and 4 Biosafe lids ***L 175***

Maximum capacity	**4x175 ml**
Maximum speed	4.500 rpm
Maximum acceleration	3.600 xg
Part number	**40100502**



S 6-96 MP

Swing out rotor
for microplates

Max plates for tray 3
Max plates for rotor 6

Max speed: 3.200 rpm
Max acceleration: 1.950 xg

Part number: 40100522

Supplied complete with 2 trays

S 4-175

Swing out rotor
for aluminum carriers

Max speed: 4.500 rpm
Max acceleration: 3.600 xg

Codice: 40101502





5

I 4-15R



Set of 4 pieces
P/N 40100642

For round bottom tubes

Max tubes for insert 4

Max tubes for rotor 16



Capacity 15 ml
Ø max. 17 mm
H max. 110 mm

6

I 1-50 SF



Set of 4 pieces
P/N 40100682

For conical bottom tubes like Falcon®

Max tubes for insert 1

Max tubes for rotor 4



Capacity 50 ml
Ø max. 29 mm
H max. 116 mm

7

I 1-50 R



Set of 4 pieces
P/N 40100662

For round bottom tubes

Max tubes for insert 1

Max tubes for rotor 4



Capacity 50 ml
Ø max. 30 mm
H max. 110 mm

8

I 1-100



Set of 4 pieces
P/N 40100672

For round bottom tubes

Max tubes for insert 1

Max tubes for rotor 4



Capacity 100 ml Ø
max. 45,5 mm
H max. 102 mm

Direct insertion of bottles

It is possible to insert flat bottom plastic bottles with 175 ml capacity without reductors



T 175 Flat bottom plastic bottle175 ml with lid
Part number 40003492

Aluminum carriers for swing out rotor S 4-175 (set 4 pcs.)









	B 2-50F	B 2-50R	B 7-15F	B 7-15R	B 12-10	B 14-5/7	B 16-5/7
For tube	50 ml conical	50 ml round	15 ml conical	15 ml round	10 ml	5/7 ml	5/7 ml
Max tubes for carrier	2	2	7	7	12	14	16
Max tubes for rotor	8	8	28	28	48	56	64
Part number	40101532	40101582	40101542	40101592	40101552	40101562	40101572

FIXED ANGLE ROTORS

For high capacity

All the rotors are supplied without metal buckets. The metal buckets are sold singolarly and complete of tube.

A 32-15 N



Fixed angle rotor 37°
n. tubes for rotor 32
Max speed: 5.200 rpm
Max acceleration: 4.020 xg
Part number: 40100802

For tube of 15 ml

Metal bucket model	B 15F	B 15G	B 15P	RE 15-5/7
				
Tube type				Reductor for Vacutainer® tube ***5/7 ml*** **short 75 mm** long 100 mm
Ø x H mm	16,5 x 120 *type Falcon®*	17 x 110 *glass*	17 x 102 *plastic*	13x75 - 13x100
Bottom	conical	round	round	round
Part number	**40101002**	**40101012**	**40101022**	**40101292**

A 8-50



Fixed angle rotor 37°
n. tubes for rotor 8
Max speed: 6.000 rpm
Max acceleration: 4.800 xg
Part number: 40100812

For tube of 50 ml

Metal bucket model	B 50XF	B 50XG	B 50XP	RE 50-15F	RE 50-15R	RE 50-10
						
Tube type	 *type Falcon®*	 *glass*	 *plastic*	Reductor for tube of **15 ml** type **Falcon®**	Reductor for tube of **15 ml round**	Reductor for tube of **10 ml Vacutainer®**
Ø x H mm	29 x 116	30 x 110	30 x 100	16,5 x 120	17 x 110	15,5 x 114
Bottom	conical	round	round	conical	round	round
Part number	**40101032**	**40101042**	**40101052**	**40101322**	**40101332**	**40101342**

A 6-100



Fixed angle rotor 37°
n. tubes for rotor 6
Max speed: 5.000 rpm
Max acceleration: 3.330 xg
Part number: 40100822

For tube of 100 ml

Metal bucket model	B 100G	B 100P	RE 100-50F	RE 100-50R	RE 100-15F	RE 100-15R
						
Tube type	 *glass*	 *plastic*	Reductor for tube of **50 ml** type **Falcon®**	Reductor for tube of **50 ml round**	Reductor for tube of **15 ml** type **Falcon®**	Reductor for tube of **15 ml round**
Ø x H mm	45,5 x 104	45,5 x 104	29 x 116	30 x 110	16,5 x 120	17 x 110
Bottom	round	round	conical	round	conical	round
Part number	**40101092**	**40101102**	**40101352**	**40101362**	**40101372**	**40101382**

FIXED ANGLE ROTORS

For high speed

A 6-50



Fixed angle rotor HIGH SPEED *34°*
n. tubes for rotor 6
Supplied with Biosafe lid
Max speed: 9.500 rpm
Max acceleration: 10.050 xg
Part number: 40100862

For tube of 50 ml

Metal bucket model	***B 50XF***	***B 50XG***	***B 50XP***	***RE 50-15F***	***RE 50-15R***	***RE 50-10***
						
Tube type	 *type Falcon®*	 *glass*	 *plastic*	Reductor for tube of **15 ml** type **Falcon®**	Reductor for tube of **15 ml round**	Reductor for tube of **10 ml Vacutainer®**
Ø x H m	29 x 116	30 x 110	30 x 100	16,5 x 120	17 x 110	15,5 x 114
Bottom	conical	round	round	conical	round	round
Part number	**40101032**	**40101042**	**40101052**	**40101322**	**40101332**	**40101342**



A 12-5

Fixed angle rotor 45°
For Eppendorf® tubes 5 ml
n. tubes for rotor 12
Supplied with Biosafe lid
Max speed: 14.000 rpm
Max acceleration: 20.380 xg
Part number: 40100832



A 24-2

Fixed angle rotor 45°
For Eppendorf® tubes 1,5/2,0 ml
n. tubes for rotor 24
Supplied with Biosafe lid
Max speed: 15.000 rpm
Max acceleration: 21.000 xg
Part number: 40100842



A 36-05

Fixed angle rotor 37°
For Eppendorf® tubes 0,5 ml
n. tubes for rotor 36
Supplied with Biosafe lid
Max speed: 15.000 rpm
Max acceleration: 21.000 xg
Part number: 40100852

RE 2-05

Reductor for microtubes of 0,5 ml for rotor A 24-2. Set of 24 pieces.
Part number: 40101262

RE 2-02

Reductor for microtubes of 0,2 ml for rotor A 24-2. Set of 24 pieces.
Part number: 40101272

RE 05-02

Reductor for microtubes of 0,2 ml for rotor A 36-05. Set of 36 pieces.
Part number: 40101282



PCR 4-8

Fixed angle rotor 45°
For PCR strips of 8 tubes
n. strips for rotor 4
Supplied with Biosafe lid
Max speed: 15.000 rpm
Max acceleration: 21.000 xg
Part number: 40100872

SELECTION GUIDE FOR CENTRIFUGE AND ROTOR

In the following pages useful guides for choice of centrifuge, rotor and accessories suitable for different applications are provided.

In the various table-guide, icons and symbols are used to semplify their reading.

For the right comprehension it is necessary to verify the performance of individual accessories.

	S 4-175  *4 x 175 ml* max 4.500 rpm max 3.600 xg	***S 6-96 MP***  *6 x 96 deep wells* max 3.200 rpm max 1.950 xg	***A 32-15 N***  *32 x 15 ml* max 5.200 rpm max 4.020 xg	***A 8-50***  *8 x 50 ml* max 6.000 rpm max 4.800 xg	***A 6-100***  *6 x 100 ml* max 5.000 rpm max 3.330 xg
NEYA 8  *max 6.000 rpm*	✓	✓	✓	✓	✓
NEYA 10  *max 6.000 rpm*	✓ PROG	✓ PROG	✓ PROG	✓ PROG	✓ PROG
NEYA 10R  *max 6.000 rpm*	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F
NEYA 16  *max 16.000 rpm*	✓ PROG	✓ PROG	✓ PROG	✓ PROG	✓ PROG
NEYA 16R  *max 16.000 rpm*	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F

max 6.000 rpm

Centrifuge
with maximum speed 6.000 rpm

max 16.000 rpm

Centrifuge High Speed
with maximum speed 16.000 rpm

PROG

Centrifuge Professional
with 10 programs

°C °F

Centrifuge Refrigerated
-10 ÷ +40 °C / +14 ÷ +104 °F

A 6-50	A 12-5	A 24-2	A 36-05	PCR 4-8	
					
6 x 50 ml max 9.500 rpm max 10.050 xg	*12 x 5 ml* max 14.000 rpm max 20.380 xg	*24 x 2 ml* max 15.000 rpm max 21.000 xg	*36 x 0,5 ml* max 15.000 rpm max 21.000 xg	*4 strip of 8 PCR* max 15.000 rpm max 21.000 xg	
–	–	–	–	–	
–	–	–	–	–	max 6.000 rpm
–	–	–	–	–	
✓ PROG	✓ PROG	✓ PROG	✓ PROG	✓ PROG	
✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F	✓ PROG °C °F	max 16.000 rpm

SELECTION GUIDE FOR ACCESSORIES

		S 4-175		S 6-96 MP	A 32-15 N	A 8-50	A 6-100
		 4 x 175 ml max 4.500 rpm max 3.600 xg		 6 x 96 deep wells max 3.200 rpm max 1.950 xg	 32 x 15 ml max 5.200 rpm max 4.020 xg	 8 x 50 ml max 6.000 rpm max 4.800 xg	 6 x 100 ml max 5.000 rpm max 3.330 xg
		buckets B 175	other carriers				
Microtubes 0,2 ml		-	-	-	-	-	-
Microtubes 0,5 ml		-	-	-	-	-	-
Microtubes 1,5-2 ml		48 with inserts I 12-2	-	-	-	-	-
Microtubes 5 ml		-	-	-	-	-	-
Collection tubes 5/7 ml		28 with inserts I 7-5/7	64 with carriers B 16-5/7	-	32 with reductors RE 15-5/7 RE 15-5/7	-	-
Collection tubes 10 ml		28 with inserts I 7-10	48 with carriers B 12-10	-	32 with metal buckets B 15P	8 with reductors RE 50-10	-
Round bottom 15 ml		16 with inserts I 4-15R	28 with carriers B 7-15R	-	32 with metal buckets B 15P o B 15G	8 with reductors RE 50-15R	6 with reductors RE 100-15R
Conical bottom 15 ml		16 with inserts I 4-15F	28 with carriers B 7-15F	-	32 with metal buckets B 15F	8 with reductors RE 50-15F	6 with reductors RE 100-15F
Round bottom 50 ml		4 with inserts I 1-50R	8 with carriers B 2-50R	-	-	8 with metal buckets B 50XP o B 50XG	6 with reductors RE 100-50R
Conical bottom 50 ml		4 with inserts I 1-50SF	8 with carriers B 2-50F	-	-	8 with metal buckets B 50XF	6 with reductors RE 100-50F
Round bottom 100 ml		4 with inserts I 1-100	-	-	-	-	6 with metal buckets B 100P o B 100G
Flat bottom bottle 175 ml		4 direct insertion	-	-	-	-	-
Microplates		-	-	6 microplates of 96 deep wells	-	-	-
PCR strips		-	-	-	-	-	-

A 6-50	A 12-5	A 24-2	A 36-05	PCR 4-8
				
6 x 50 ml max 9.500 rpm max 10.050 xg	***12 x 5 ml*** max 14.000 rpm max 20.380 xg	***24 x 2 ml*** max 15.000 rpm max 21.000 xg	***36 x 0,5 ml*** max 15.000 rpm max 21.000 xg	***4 strips of 8 PCR*** max 15.000 rpm max 21.000 xg
-	-	24 with reductors RE 2-02	36 with reductors RE 05-02	-
-	-	24 with reductors RE 2-05	36 direct insertion	-
-	-	24 direct insertion	-	-
-	12 direct insertion	-	-	-
-	-	-	-	-
6 with reductors RE 50-10	-	-	-	-
6 with reductors RE 50-15R	-	-	-	-
6 with reductors RE 50-15F	-	-	-	-
6 with metal buckets B 50XP o B 50XG	-	-	-	-
6 with metal buckets B 50XF	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
	-	-	-	4 strips of 8 PCR direct insertion

SELECTION GUIDE FOR ACCESSORY

Only for swing out rotor S 4-175



KIT SB 4-175



Swing rotor S 4-175

Type / Brand	Bottle/ REMI	Round / REMI	Round / REMI	Conical / Falcon®		Round / REMI		Round / REMI		Conical / Falcon®
Max volume (ml)	**175**	**100**	**100**	**50**		**50**		**50**		**15**
Material	Plastic	Glass	Plastic	Plastic		Glass		Plastic		Plastic
Tube diameter (mm)	56,5	45,5	45,5	29		30		30		16,5
Total height (mm)	97	102	100	116		110		100		120
Bucket/carrier	***B 175***	***B 175***	***B 175***	***B 175***	***B 2-50F***	***B 175***	***B 2-50R***	***B 175***	***B 2-50R***	***B 175***	***B 7-15F***
Insert		***I 1-100***	***I 1-100***	***I 1-50SF***		***I 1-50R***		***I 1-50R***		***I 4-15F***	
N° tubes insert/carrier	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**1**	**2**	**4**	**7**
N° tubes for rotors	**4**	**4**	**4**	**4**	**8**	**4**	**8**	**4**	**8**	**16**	**28**
Hole diameter (mm)	57	46	46	29,5	29,5	30,5	30,5	30,5	30,5	17	17
Hole depth (mm)	92	65	65	76	85	74	85	74	85	76	45
Insert/carrier height (mm)	99	77	77	80	90	80	90	80	90	79	88

Inserts for bucket B 175

Buckets or carriers for rotor S 4-175

Aluminum carriers for swing out rotor S 4-175









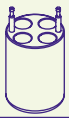
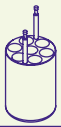
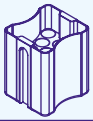
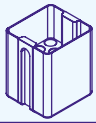
	B 2-50F	B 2-50R	B 7-15F	B 7-15R	B 12-10	B 14-5/7	B 16-5/7
For tube	50 ml conical	50 ml round	15 ml conical	15 ml round	10 ml	5/7 ml	5/7 ml
Max tubes for carrier	2	2	7	7	12	14	16
Max tubes for rotor	8	8	28	28	48	56	64
Maximum speed	4500 rpm	4500 rpm	4500 rpm	4500 rpm	4500 rpm	4500 rpm	4500 rpm
Maximum acceleration	3600 xg	3600 xg	3600 xg	3600 xg	3600 xg	3600 xg	3600 xg
Part number	**40101532**	**40101582**	**40101542**	**40101592**	**40101552**	**40101562**	**40101572**

* Inside carrier B 16-5/7 it is not possible to put tubes with height (without cap) less than 60 mm. Refer to below table in the section “hole depth”.








Round / REMI		Round / REMI		Collection tube / Becton Dickinson-Terumo - Sarstedt		Collection tube / Becton Dickinson-Terumo - Sarstedt		Collection tube / Becton Dickinson-Terumo - Sarstedt		Microtube/ Eppendorf®
15		**15**		**10**		**5-7**		**5-7**		**2**
Glass		Plastic		Plastic		Plastic		Plastic		Plastic
17		17		15,5		12,5		12,5		10,6
110		102		114		116		81		42
B 175	***B 7-15R***	***B 175***	***B 7-15R***	***B 175***	***B 12-10***	***B 175***	***B 14-5/7***	***B 175***	***B 16-5/7***	***B 175***
I 4-15R		***I 4-15R***		***I 7-10***		***I 7-5/7***		***I 7-5/7***		***I 12-2***
										
4	**7**	**4**	**7**	**7**	**12**	**7**	**14**	**7**	**16**	**12**
16	**28**	**16**	**28**	**28**	**48**	**28**	**56**	**28**	**64**	**48**
17,5	17,5	17,5	17,5	16	16	13	13	13	13	11
76	45	76	45	75	44	56	38	56	60	34
80	88	80	88	70	88	59	88	59	63	39

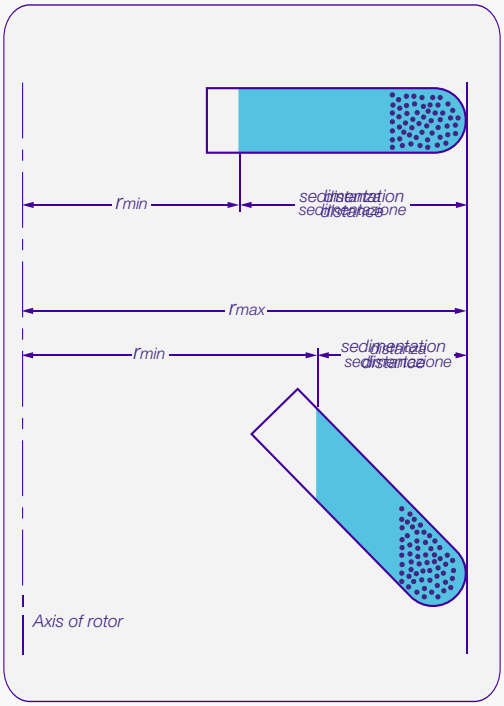
CENTRIFUGING

Centrifuges are instruments used in many laboratories to separate particles in liquid solutions or liquids with different density, applying on them an artificial centrifugal force.
Use of centrifuges permits developing a much higher force than earth gravity force, thus accelerating the process of separation and sedimentation.

Swing out rotors (with variable angle)

During centrifugation the tubes go in perpendicular position referred to axis of rotor.
As a consequence the sedimentation distance and time are greater, but separation borders are perpendicular to the tube and more net.
The swing out rotors are generally used to centrifuge big quantities of sample with medium speed.

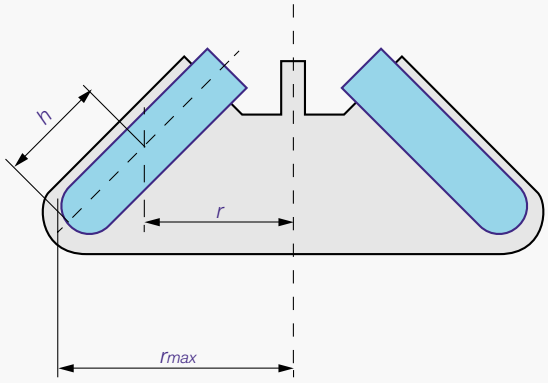




Angular rotors (with fixed angle)

The oblique angle of tubes reduces sedimentation distance, thus reducing the necessary time for separation, but borders are inclined respect to the tube and less net.
The fixed angle rotors are generally used to centrifuge minor quantities of sample with high speed





The simplified formula to calculate RCF is:

RCF = (n/1000)² x r x 11,18

n = speed (rpm) and **r** = radius in cm

Calculation of centrifugal force

Generally the performance of a centrifuge is specified based on of the maximum achievable speed. However the speed represents only approximately the real force developed into the sample that generates the separation.
This force is expressed like relative centrifugation force (RCF). Its value indicates how many times the centrifugation force exceeds the natural gravity acceleration “g”.
Observing the lateral formula it is clear that RCF is directly proportional to the axis of rotor and linked to the square of speed. It means that, for example doubling the radius, the RCF doubles, and it quadruples with doubling the speed.
As a consequence the performance of centrifuges should be compared only on RCF values.

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