

CENTRIFUGES PROJECT

# NEYA

by **X5**

*PASSION  
changes  
everything*



**GIORGIO·BORMAC**  
s.r.l.

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  
respectively 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

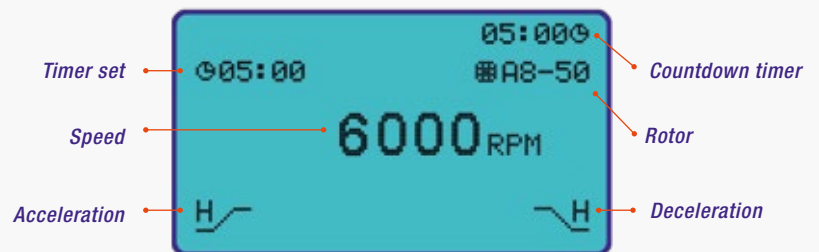


- Automatic rotor detection,
- Check the presence of accessories and rotor compatibility with maximum speed
- Safety speed limiter function
- Controlled by microprocessor
- Backlit color LCD display with simultaneous visualization of all parameters
- Digital adjustment of acceleration and deceleration 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 50Hz / 450 W                           |

**Part number**

**40100302**



Low speed rotor for all NEYA models



Optimal height for load and download of samples

# NEYA 10<sup>R</sup>

## MAX CAPACITY



4 X 175 ml

## MAX SPEED



6.000 rpm



10 prog.

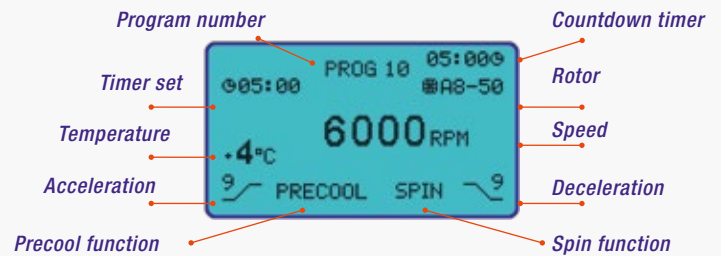


refrigerated



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                      | <b>40100312</b>                                   | <b>40100332</b>            |



Ventilated centrifuge NEYA 10



Visual signal of end of centrifugation

# NEYA 16<sup>R</sup>

## MAX CAPACITY



4 X 175 ml

## MAX SPEED



16.000 rpm



10 prog.



refrigerated



- 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

Refrigerated centrifuge NEYA 16 R



Standby



Centrifugation cycle



Program protection



Alarm signal

## FEATURES

| 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

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

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



## 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**



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

Set of 4 pieces  
P/N 40100642

6

**I 1-50 SF**



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

Set of 4 pieces  
P/N 40100682

7

**I 1-50 R**



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

Set of 4 pieces  
P/N 40100662

8

**I 1-100**



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

Set of 4 pieces  
P/N 40100672

**Direct insertion of bottles**

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



**T 175** Flat bottom plastic bottle 175 ml with lid  
Part number 40003492

**Aluminum carriers for swing out rotor S 4-175**



|                              | <b>B 2-50F</b> | <b>B 2-50R</b> | <b>B 7-15F</b> | <b>B 7-15R</b> | <b>B 12-10</b> | <b>B 14-5/7</b> | <b>B 16-5/7</b> |
|------------------------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|
| <i>For tube</i>              | 50 ml conical  | 50 ml round    | 15 ml conical  | 15 ml round    | 10 ml          | 5/7 ml          | 5/7 ml          |
| <i>Max tubes for carrier</i> | 2              | 2              | 7              | 7              | 12             | 14              | 16              |
| <i>Max tubes for rotor</i>   | 8              | 8              | 28             | 28             | 48             | 56              | 64              |
| <i>Part number</i>           | 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 singularly 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          |                            |                   |                     | Reducer for Vacutainer® tube 5/7 ml short 75 mm long 100 mm |
| Ø x H mm           | 16,5 x 120<br>type Falcon® | 17 x 110<br>glass | 17 x 102<br>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          |          |          |          | Reducer for tube of 15 ml type Falcon® | Reducer for tube of 15 ml round | Reducer 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          |            |            | Reducer for tube of 50 ml type Falcon® | Reducer for tube of 50 ml round | Reducer for tube of 15 ml type Falcon® | Reducer 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 tubes of 50 ml

| Metal bucket model | B 50F            | B 50G     | B 50P       | RE 50-15F                               | RE 50-15R                        | RE 50-10                               |
|--------------------|------------------|-----------|-------------|---|----------------------------------|--|
|                    |                  |           |             |   |                                  |  |
| Tube type          | <br>type Falcon® | <br>glass | <br>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        | 40101062         | 40101072  | 40101082    | 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 simplify their reading.

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

|   | <b>S 4-175</b><br><br>4 x 175 ml<br>max 4.500 rpm<br>max 3.600 xg | <b>S 6-96 MP</b><br><br>6 x 96 deep wells<br>max 3.200 rpm<br>max 1.950 xg | <b>A 32-15 N</b><br><br>32 x 15 ml<br>max 5.200 rpm<br>max 4.020 xg | <b>A 8-50</b><br><br>8 x 50 ml<br>max 6.000 rpm<br>max 4.800 xg | <b>A 6-100</b><br><br>6 x 100 ml<br>max 5.000 rpm<br>max 3.330 xg |
|---|--|---|---|--|--|
| <b>NEYA 8</b><br><br>max 6.000 rpm    | ✓  | ✓   | ✓   | ✓  | ✓  |
| <b>NEYA 10</b><br><br>max 6.000 rpm  | ✓<br>PROG  | ✓<br>PROG   | ✓<br>PROG   | ✓<br>PROG  | ✓<br>PROG  |
| <b>NEYA 10R</b><br><br>max 6.000 rpm  | ✓<br>PROG   | ✓<br>PROG    | ✓<br>PROG   | ✓<br>PROG   | ✓<br>PROG   |
| <b>NEYA 16</b><br><br>max 16.000 rpm | ✓<br>PROG  | ✓<br>PROG   | ✓<br>PROG   | ✓<br>PROG  | ✓<br>PROG  |
| <b>NEYA 16R</b><br><br>max 16.000 rpm | ✓<br>PROG   | ✓<br>PROG    | ✓<br>PROG   | ✓<br>PROG   | ✓<br>PROG   |



max 6.000 rpm

Centrifuge  
with maximum speed 6.000 rpm



max 16.000 rpm

Centrifuge High Speed  
with maximum speed 16.000 rpm



Centrifuge Professional  
with 10 programs



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

**A 6-50**



6 x 50 ml  
max 9.500 rpm  
max 10.050 xg

**A 12-5**



12 x 5 ml  
max 14.000 rpm  
max 20.380 xg

**A 24-2**



24 x 2 ml  
max 15.000 rpm  
max 21.000 xg

**A 36-05**



36 x 0,5 ml  
max 15.000 rpm  
max 21.000 xg

**PCR 4-8**






















4 strip of 8 PCR  
max 15.000 rpm  
max 21.000 xg

|   |   |   |   |   |                   |
|---|---|---|---|---|-------------------|
| - | - | - | - | - |                   |
| - | - | - | - | - | <br>max 6.000 rpm |
| - | - | - | - | - |                   |

|           |           |           |           |           |                    |
|-----------|-----------|-----------|-----------|-----------|--------------------|
| ✓<br>PROG | ✓<br>PROG | ✓<br>PROG | ✓<br>PROG | ✓<br>PROG |                    |
| ✓<br>PROG | ✓<br>PROG | ✓<br>PROG | ✓<br>PROG | ✓<br>PROG | <br>max 16.000 rpm |

# SELECTION GUIDE FOR ACCESSORIES

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



**A 6-50**

**6 x 50 ml**  
max 9.500 rpm  
max 10.050 xg

**A 12-5**

**12 x 5 ml**  
max 14.000 rpm  
max 20.380 xg

**A 24-2**

**24 x 2 ml**  
max 15.000 rpm  
max 21.000 xg

**A 36-05**

**36 x 0,5 ml**  
max 15.000 rpm  
max 21.000 xg

**PCR 4-8**

**4 strips of 8 PCR**  
max 15.000 rpm  
max 21.000 xg

|  |                        |                                 |                                  |                                       |
|--|------------------------|---------------------------------|----------------------------------|---------------------------------------|
| -  | -                      | 24<br>with reductors<br>RE 2-02 | 36<br>with reductors<br>RE 05-02 | -                                     |
| -  | -                      | 24<br>with reductors<br>RE 2-05 | 36<br>direct insertion           | -                                     |
| -  | -                      | 24<br>direct insertion          | -                                | -                                     |
| -  | 12<br>direct insertion | -                               | -                                | -                                     |
| -  | -                      | -                               | -                                | -                                     |
| 6<br>with reductors<br>RE 50-10            | -                      | -                               | -                                | -                                     |
| 6<br>with reductors<br>RE 50-15R           | -                      | -                               | -                                | -                                     |
| 6<br>with reductors<br>RE 50-15F           | -                      | -                               | -                                | -                                     |
| 6 with<br>metal buckets<br>B 50XP o B 50XG | -                      | -                               | -                                | -                                     |
| 6 with<br>metal buckets<br>B 50XF          | -                      | -                               | -                                | -                                     |
| -  | -                      | -                               | -                                | -                                     |
| -  | -                      | -                               | -                                | -                                     |
| -  | -                      | -                               | -                                | -                                     |
| -  | -                      | -                               | -                                | 4 strips of 8 PCR<br>direct insertion |

# SELECTION GUIDE FOR ACCESSORY

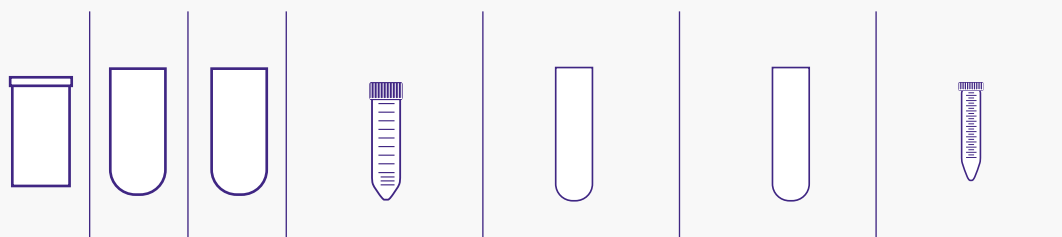
Only for swing out rotor S 4-175



KIT SB 4-175



Swing rotor S 4-175



| Type / Brand       | Bottle/<br>REMI | Round /<br>REMI | Round /<br>REMI | Conical /<br>Falcon® | Round / REMI | Round / REMI | Conical /<br>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                     |       | I1-100 | I1-100 | I1-50SF |         | I1-50R |         | I1-50R |         | I4-15F |         |
| 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>B 2-50F</b> | <b>B 2-50R</b> | <b>B 7-15F</b> | <b>B 7-15R</b> | <b>B 12-10</b> | <b>B 14-5/7</b> | <b>B 16-5/7</b> |
|------------------------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|
| <i>For tube</i>              | 50 ml conical  | 50 ml round    | 15 ml conical  | 15 ml round    | 10 ml          | 5/7 ml          | 5/7 ml          |
| <i>Max tubes for carrier</i> | 2              | 2              | 7              | 7              | 12             | 14              | 16              |
| <i>Max tubes for rotor</i>   | 8              | 8              | 28             | 28             | 48             | 56              | 64              |
| <i>Maximum speed</i>         | 4500 rpm       | 4500 rpm       | 4500 rpm       | 4500 rpm       | 4500 rpm       | 4500 rpm        | 4500 rpm        |
| <i>Maximum acceleration</i>  | 3600 xg        | 3600 xg        | 3600 xg        | 3600 xg        | 3600 xg        | 3600 xg         | 3600 xg         |
| <i>Part number</i>           | 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® |
| <b>15</b>    | <b>15</b>    | <b>10</b>  | <b>5-7</b>   | <b>5-7</b>   | <b>2</b>              |
| Glass        | Plastic      | Plastic  | Plastic  | Plastic  | Plastic               |
| 17           | 17           | 15,5   | 12,5   | 12,5   | 10,6                  |
| 110          | 102          | 114  | 116  | 81   | 42                    |

| <b>B 175</b>   | <b>B 7-15R</b> | <b>B 175</b>   | <b>B 7-15R</b> | <b>B 175</b>  | <b>B 12-10</b> | <b>B 175</b>   | <b>B 14-5/7</b> | <b>B 175</b>   | <b>B 16-5/7</b> | <b>B 175</b>  |
|----------------|----------------|----------------|----------------|---------------|----------------|----------------|-----------------|----------------|-----------------|---------------|
| <b>I 4-15R</b> |                | <b>I 4-15R</b> |                | <b>I 7-10</b> |                | <b>I 7-5/7</b> |                 | <b>I 7-5/7</b> |                 | <b>I 12-2</b> |
|                |                |                |                |               |                |                |                 |                |                 |               |
| <b>4</b>       | <b>7</b>       | <b>4</b>       | <b>7</b>       | <b>7</b>      | <b>12</b>      | <b>7</b>       | <b>14</b>       | <b>7</b>       | <b>16</b>       | <b>12</b>     |
| <b>16</b>      | <b>28</b>      | <b>16</b>      | <b>28</b>      | <b>28</b>     | <b>48</b>      | <b>28</b>      | <b>56</b>       | <b>28</b>      | <b>64</b>       | <b>48</b>     |
| 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.

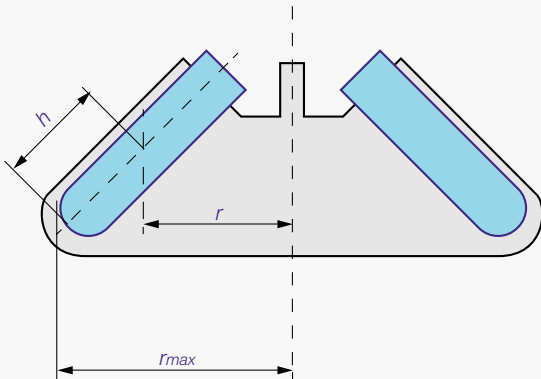
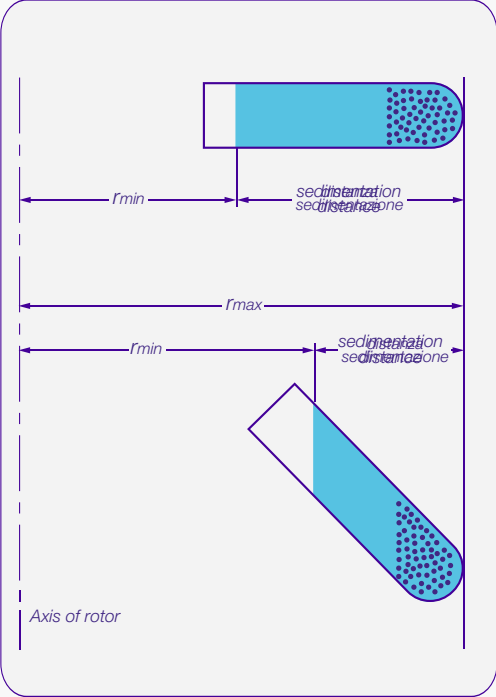
The swing out rotors are generally used to centrifuge big quantities of sample with medium speed.



## 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:

$$RCF = (n/1000)^2 \times r \times 11,18$$

**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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