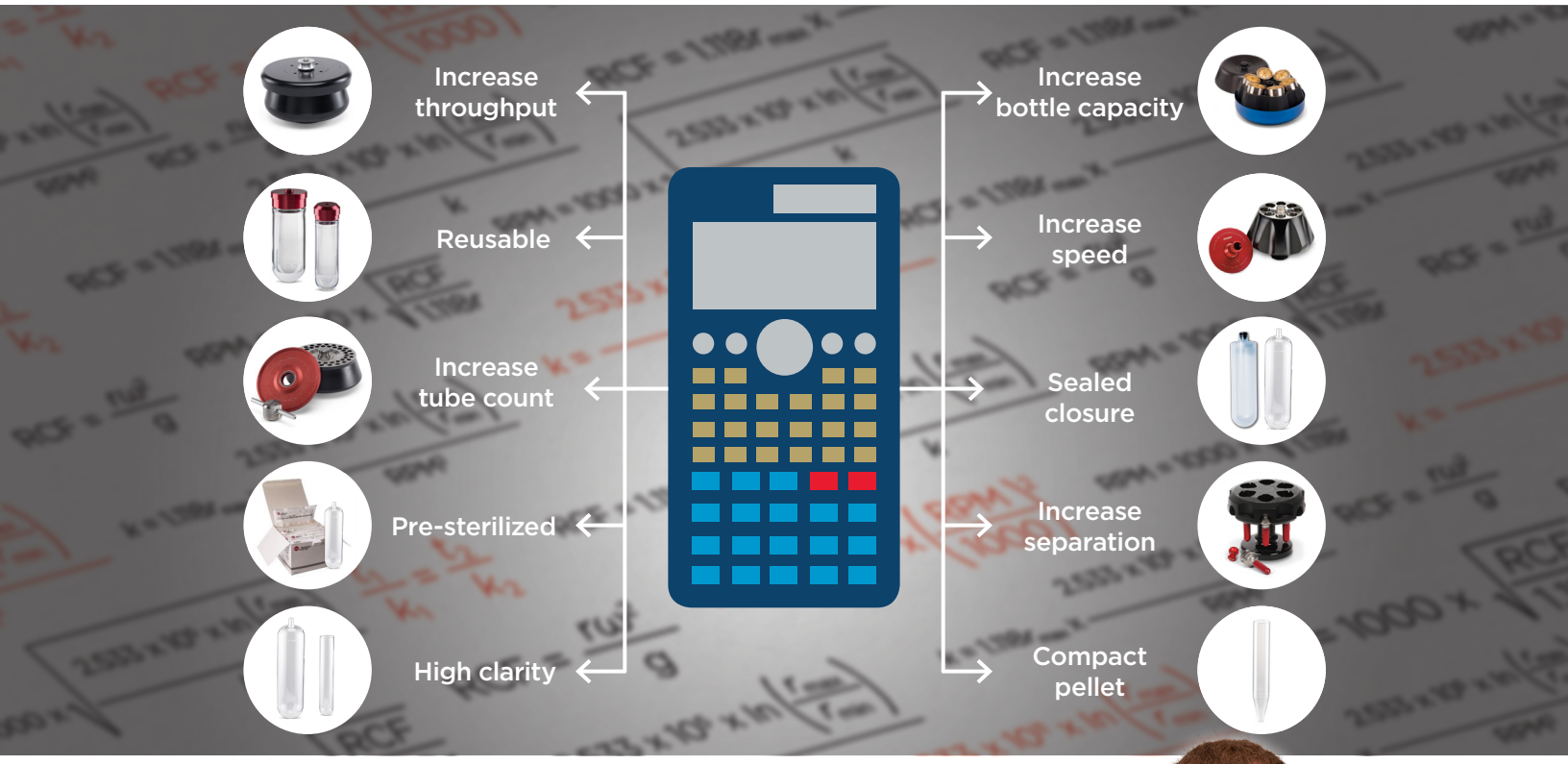
In this issue: Learn about RPM, RCF, *k*-factor, and protocol transfer tools

Issue | 003



How can I transfer an existing centrifugation protocol to a new rotor, bottle, or tube?

Protocol transfer is a common occurrence when scaling up a process to higher volume or improving efficiency by increasing speed. Though the process of going through a series of calculations to transfer an existing protocol can be a daunting and time-consuming task, Beckman Coulter offers convenient software tools and online solutions to facilitate seamless protocol transfer.

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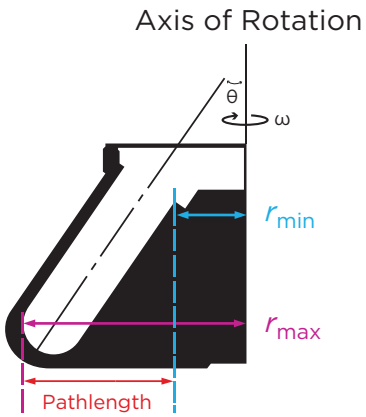
Simplify Protocol Transfer

Speak the Same Language – RPM vs. RCF

Depending on the source, a centrifugation protocol may be described in units of RPM (revolutions per minute) or RCF (relative centrifugal field) – RCF is also known as *g*-force (x *g*) and is typically reported for the maximum radius (r_{max}). RCF and RPM can be interconverted using the rotor radius, though transferring a protocol to a new tube, bottle, or rotor requires additional information on the existing and new setups.



Equate *g*-Force with Performance – *k*-Factor

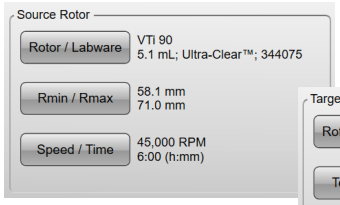
Switching from one rotor or tube to another often changes the r_{min} and r_{max}, and the maximum *g*-force does not capture efficiency. A metric called the *k*-factor considers pathlength and RCF to represent pelleting efficiency. The *k*-factor also accounts for run time and offers simple protocol conversions when using different rotors, tubes or bottles, adapters, and fill volumes.

Simplify Protocol Transfer – Available Tools

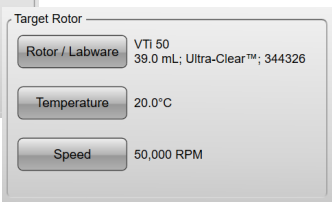
Properly transferring a centrifugation protocol requires more than simply matching RPM or RCF values, and tracking down rotor and tube dimensions can be a tedious process. Optima XPN ultracentrifuges include eXpert simulation software, including a streamlined tool for switching to new rotors or tubes. Additionally, the online rotor calculator offers pre-loaded specs to simplify protocol transfer.

Protocol Transfer with Optima eXpert Software

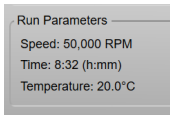
1. Input Current Protocol



2. Input New Setup



3. Output New Protocol



Summary

Moving a centrifugation protocol to a new setup can be a chore to calculate by hand. Beckman Coulter offers tools to save you time and simplify protocol transfer. Click **here** to check out the rotor calculator tool, or visit **beckman.com/spINSIGHTS** to explore other topics.

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Rotor specifications as of September 1, 2019.

For Beckman Coulter's worldwide office locations and phone numbers, please visit Contact Us at **beckman.com**

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