

# SKF Autobalancing Unit

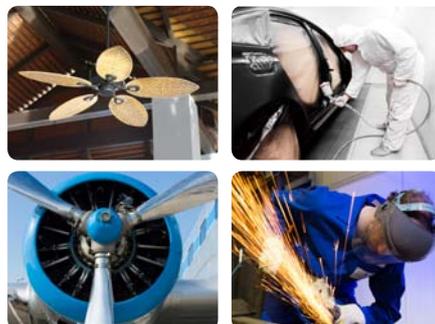
Automatically cutting vibration levels in diverse applications

Reducing vibration in applications with a once-per-revolution imbalance can help extend service life, cut operating costs, and make operation more ergonomic. But achieving such reductions can be a challenging proposition.

Solutions that focus on adjusting application components don't address the root cause of the vibration. Active automatic balancing systems are effective but require vibration measuring sensors, numerical algorithms and an external power source, making them more complicated and costly.

The SKF Autobalancing Unit offers a far simpler, more cost-effective mechanical solution – one that's already cutting imbalance-induced vibrations dramatically for a range of applications from major OEMs.

Compact and always customized to the application, the unit features steel balls that move freely within an oil-filled housing. When imbalance occurs, the free-moving balls create a counterforce within a fraction of a second that significantly reduces vibration levels.



Limiting imbalance-induced vibrations enables several functional and bottom-line benefits for end-users and OEMs. Operations with portable power tools become safer and more comfortable, particularly for professional end-users. For OEMs, the SKF Autobalancing Unit's compact size opens up design downsizing possibilities that can also reduce manufacturing costs.



## Product features

- High precision unit
- Sturdy ring
- Closed unit
- Greased for life

## Benefits

- Reduced vibration and noise
- Longer application service life
- Lower operating costs
- Lower manufacturing costs
- Design downsizing possibilities
- Increased ergonomics
- Minimized risks for end-users

## Typical applications

- Portable power tools:
  - Angle grinders
  - Other handheld tools
- Home appliances:
  - Washing machines
  - Fans
  - Pumps
  - Compressors
  - Electric motors
- Aircraft propellers
- Optical storage drives
- Any application with a once-per-revolution imbalance

## Field and lab-tested functionality

The SKF Autobalancing Unit has undergone extensive testing by SKF and independent research laboratories. In application tests ranging from washing machines to aircraft propellers, results demonstrate that the unit reduces vibration substantially.

In angle grinders, the SKF Autobalancing Unit cut vibration levels in the typical machine by 50-70% (Fig. 1). These levels make operation safer and more ergonomic, and can help manufacturers avoid working time documentation requirements mandated by EU 2002/44/EC.

These same independent tests on angle grinders also determined that the SKF Autobalancing Unit extends cutting disc life by 50% and increases grinding disc life by 100%, both of which reduce operating costs.

## Complete customization support

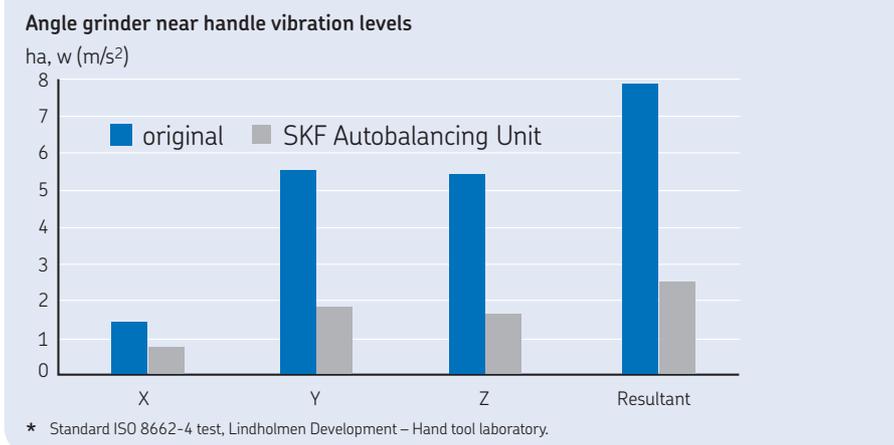
Because many applications with a once-per-revolution imbalance operate at different speeds and with different rotor dynamic behaviour, effective balancing solutions demand customization. The SKF Autobalancing Unit delivers tailor-made solutions for every project, rather than offering standard, off-the-shelf products.

SKF Engineering Consultancy Services experts work closely with OEM development teams to optimize the unit's design and performance to meet specific application requirements. Project support services include engineering, prototyping and testing. Following internal testing and verification, SKF proceeds with sample manufacturing for customer testing.

## Operational features

- Housing:
  - Retains balls and fluid
- Balls:
  - Function as balancing weights
- Fluid:
  - Ensures stability
  - Reduces noise
  - Minimizes friction
  - Resists corrosion

Figure 1



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