

Ball screw of High Dustproof

The ballscrew which is applied to particular environment is easily affected by foreign matters like metal and wood dust intruding inside the screw and affecting the lifetime. In order to prevent from this, high dust-proof series accessories are designed. The special groove design of ballscrew can make the internal dust-proof and sealed washer of wiper fully attached the surface of whorl, and achieves the double effect of dust-free and dust-proof.

As the ballscrews comes with specially designed grooves, the highly dustproof seal washer inside the scraper perfectly matches the threads, a feature that ensures the removal of scraps as well as insulation dust.

Type A1: Scrape Wiper

Scrapers specially developed for ballscrews, with a multi-layered contact structure that ensures effective dust removal, with a reduced mounting surface spring, threads are more closely matched, making for a better scraping capacity, the outer ring of the scraper is clamped by a spring. As the scraper gradually wears, the preload of scraper is automatically adjusted. The shaft ends of the ballscrew should not be larger than the root diameter (ψdr). If you have any questions concerning the size of the rest area of ballscrew, please contact **PMI** engineers.

Pioneering Design

Greatly improves dustproof effect

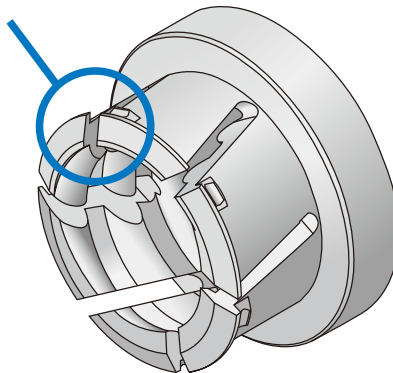
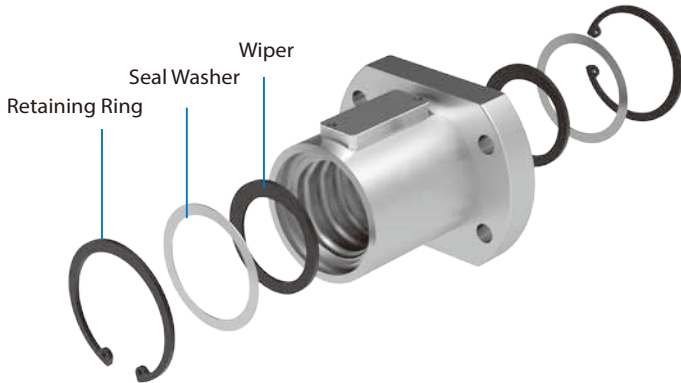


Fig.47 Scrape Wiper

Type A2 : Rubber Seal

Wiper specially developed for ball screws, with a multi-layered contact lips structure that ensures effective dust removal, the contact Gothic arch thread of bulgy shape and the lips interference outside diameter of screw shaft, so the dust can't entry inside of nut. As the ballscrews comes with specially designed grooves, the highly dustproof seal washer inside the scraper perfectly matches the threads, a feature that ensures the removal of scraps as well as insulation dust.



Assembly of rubber seal

Table 23 High dustproof Test Conditions

Specifications	R40-10-FSVE
Running Stroke	300 mm (per cycle)
Motor Speed	150 rpm
Test Environment	Sawdust automatic circulation system
Minimal Size of Dust Particles	below 0.01mm

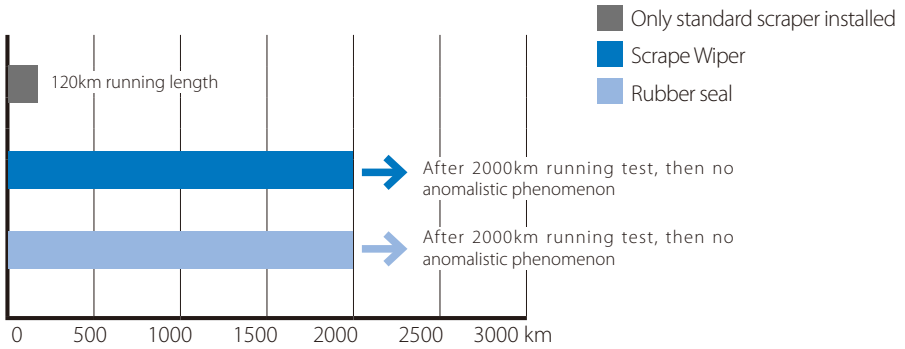


Fig.48 Dustproof performance Comparison

Type A3: Film Seal

The dustproof seals develop focus on general tool machine industrial that doesn't obviously increase of preload torque and temperature rise. Inhibit the grease leakage and scattering achieve cleaner operating environment. Provide the kind of seals that have better strength, service life and prevent fine dust or metal bit into the nut.

Heat generates and preload torque

The preload torque increase only 1~2 kgf-cm with film seals for ballscrew. Compare with non contact wiper, the suppression temperature rise at 1.5~2°C

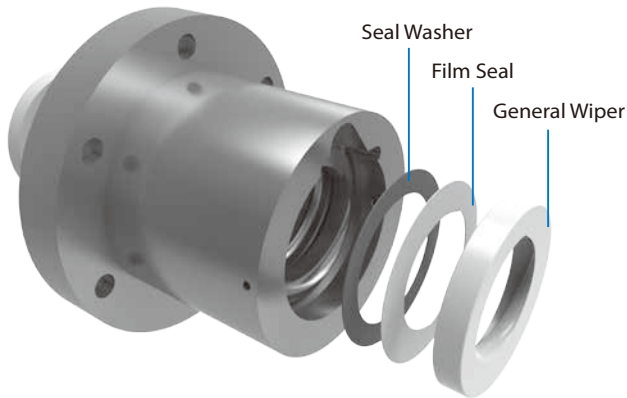


Fig.49 Assembly of a Film seal

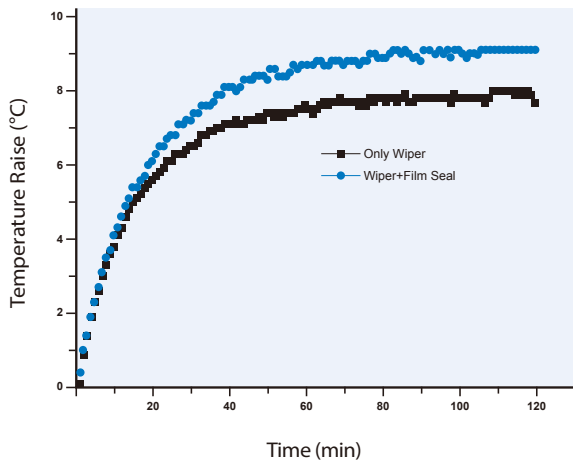


Fig.50 Heat generation comparison

Nomenclature

Example: R 32-10 B2-F S V E-600-700-0.008 A1

A1 (Precision Grade + Scrape Wiper), A2 (Precision Grade + Rubber Seal),

A3 (Precision Grade + Film Seal)

B1 (Rolled grade + Scrape Wiper), B2 (Rolled Grade+ Rubber seal type),

B3 (Rolled grade + Film Seal)

Application of High Dustproof Ballscrew

Woodworking machine, laser processing machines, high accuracy transportation equipment, mechanical arms, and other machines that require a dustproof environment.