

Power transmission solutions and high quality to price ratios

Frans Odendaal, SKF product manager for Power Transmission, argues that the quality to price ratio of SKF-branded components and solutions is the lowest available, either making equivalent quality products more expensive, or similarly priced products inferior with respect to material and manufacturing quality.

Heading up the Power Transmission product line at SKF, Frans Odendaal says that SKF strives to offer a complete and integrated range of high quality drive components and kits, including belts, chains, couplings, pulleys, sprockets, bushings and bearings.

“Power transmission solutions are required in virtually every industry to enable machinery to keep running smoothly,” he says. “We believe that, by choosing SKF power transmission products, clients are investing in high quality, high performance solutions that will enable their machinery to run more efficiently with less frequent failures.

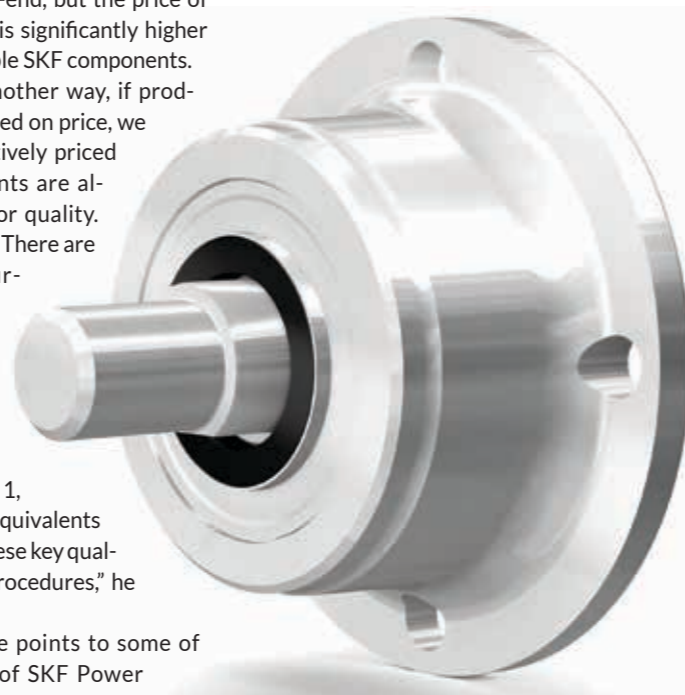
“In addition, we are able to offer Tier 1 quality products at prices normally associated with lower Tier equivalents,” he tells *MechChem Africa*. “We have never been box movers,” he continues. “For us, the SKF brand represents quality, but we do not believe that any of our competitors can better our quality to price ratio. While our quality is not in question, there are other brands that are also perceived as high-end, but the price of these top-end brands is significantly higher than quality-comparable SKF components.

“Looking at this another way, if products are compared based on price, we believe that comparatively priced competitor components are almost always of inferior quality. And we can prove this. There are different manufacturing procedures and standards involved in producing Tier 1 and Tier 2 transmission chain, for example. Our brand ticks the requirements for Tier 1, while similarly priced equivalents tend to skip some of these key quality manufacturing procedures,” he explains.

As evidence, he points to some of the key features of SKF Power Transmission chain components – inner and outer link plates, pins, bushings and rollers – and the associated manufacturing processes.

“A key mistake people make when comparing different drive component options is they look at catalogue entries for load and power ratings. But it is seldom that a chain, for example, will fail due to load. The life of a quality component is more directly related to its wear resistance, and it is the more subtle aspects of material and design that govern a product’s wear life.

“SKF’s published load ratings are exceptionally conservative as well, but with respect to life, the materials used, the sealing and lubrication



The SKF Agri Hub is a virtually maintenance-free, unitised, sealed bearing unit that is greased and sealed for life. Due to its high stiffness, the risk for disc tilt is minimised, which further improves machine reliability.

solutions and the robustness of the designs matter much more,” Odendaal says.

Solutions for the agricultural industry

As part of an innovation drive across SKF’s EMEA region, SKF South Africa is working on a number of new market offerings for the Agri industry to simplify and reduce the seasonal refurbishment costs of farm equipment,” Odendaal informs *MechChem Africa*.

All farm equipment has to endure harsh conditions: mud, dust and debris; extreme

heat and cold; rain and runoff; corrosive chemicals; and long periods of inactivity followed by intense periods of work. In addition, rising fuel costs and new environmental regulations and hygiene standards complicate machine requirements.

“SKF has long provided agricultural solutions for all types of farming equipment, which strive to achieve high reliability at low ownership and operating costs. These offer farmers a simpler and more cost effective way to keep equipment such as tillers, planters and harvesters working when they are most needed,” he says, adding that components are available for different equipment brands and SKF agricultural solutions, including new initiatives, will offer the same high quality and lower cost promise that runs across the entire SKF range.

While the Corona Virus pandemic continues to force lock-downs across the globe, the farming community needs to carry on producing the food the world needs. “While we will be working much more remotely, we will continue to strive to understand and support our customers’ needs and to develop safe ways of reacting to the new normal imposed on us by the pandemic,” Odendaal assures.

“We have a fantastic network and we can do a lot of our work remotely and online. Our modern condition monitoring systems, for



SKF’s published load ratings for its chain and other power transmission products are exceptionally conservative, but the materials used, the sealing and lubrication solutions, and the robustness of the designs matters much more.

example, enable us to remotely monitor customer equipment from safe offsite locations so that we can react quickly to emergencies.

“We know that there are some hard times ahead, but we are determined to emerge from them stronger and wiser,” he concludes. □

SKF’s Tier 1 quality chain

Inner and outer link plates: The shape of the inner and outer plates on SKF chains have been adapted to a wider waist link plate design. This provides increased fatigue strength. By subjecting the raw material to a series of cold rolling processes and stringent thickness controls, the plates achieve uniform thicknesses, which are critical to a smooth running chain. The plate’s endurance and strength is fully optimised via through hardening, shot peening and an aperture ball-burnishing process.

Pins: Pins are made from alloy steel that has been case hardened in rotary furnaces. These furnaces provide an even heat for a consistent and uniform case depth, which helps to resist damage from shock loads and provide maximum wear resistance.

Bushings: Cold rolling provides a uniform wall thickness, which is extremely important in achieving a precise and consistent pitch. Precision curling units offer a uniform bushing roundness, inside and out, for an optimum bushing-link plate fit. The case hardening process provides the bushing with a wear-resistant case and a tough, impact resistant core. After heat treatment,

the bushings are precision ground to improve service life.

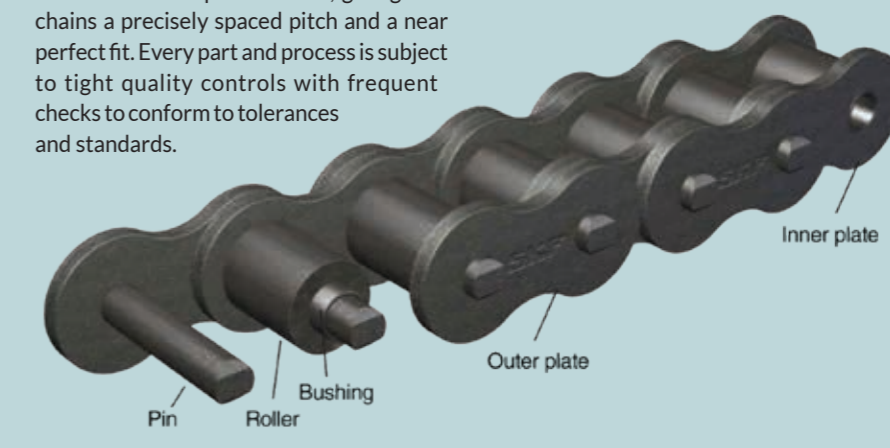
Rollers: SKF chains use solid rollers that are cold-drawn from bar stock to improve fatigue strength and resist the damaging effects of shock loads. All rollers go through a hardening process to improve wear resistance and increase service life. To reduce cracking, the rollers undergo shot peening, which significantly improves fatigue strength.

The assembly process: The automated assembly process rejects parts that do not meet tolerance specifications, giving SKF chains a precisely spaced pitch and a near perfect fit. Every part and process is subject to tight quality controls with frequent checks to conform to tolerances and standards.

The assembled chains are then pre-stressed. This running-in of the chain not only avoids elongation, but it also improves the chain’s fatigue resistance.

The final lubrication process provides SKF chains the lubricant they need for initial start-up. The lubricant also protects the chain against corrosion to significantly prolong shelf life.

Connecting links: These links are used to connect two ends of a chain together. Both the spring clip and cotter pin type can be disassembled and replaced easily. The riveted type provides a very strong link and has a similar fatigue strength to the other links in the chain. □



Field-testing of the SKF Agri Hub confirms that farmers can save as much as a half-hour of maintenance per day, per machine, compared to conventional bearing arrangements that require daily re-greasing.