

KOMATSU

Genuine Parts

Genuine undercarriage parts

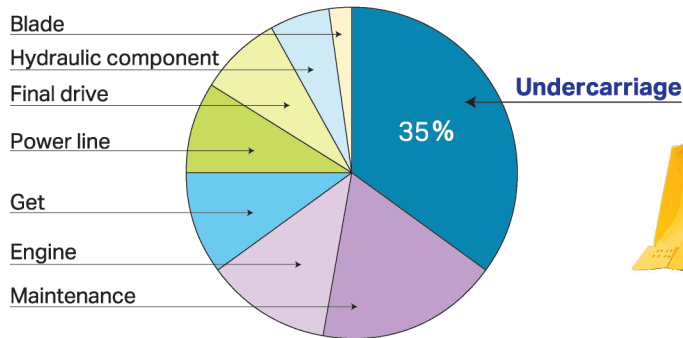


Undercarriage overview

Approximately 35% of the repair costs are for undercarriage !

*Differences may occur depending on jobsite and work conditions.

■ Total maintenance cost per bulldozer



Genuine UC video

Overview of Komatsu genuine undercarriage

Features of each component

Genuine Komatsu undercarriage parts suitable for customer jobsites with optimal shapes and thorough manufacturing management.

■ Total maintenance cost per bulldozer ■

High level of quality is possible through many years of improvements in materials, shapes, and manufacturing processes.

■ Proven durability ■

Data from on-site usage is fed back to the product, enabling superior durability.

■ Track link

By optimizing the track link tread and overall hardness, durability has been improved and strength against impacts has been improved. Dust seal is installed between the track link and the bushing to prevent dirt from entering.



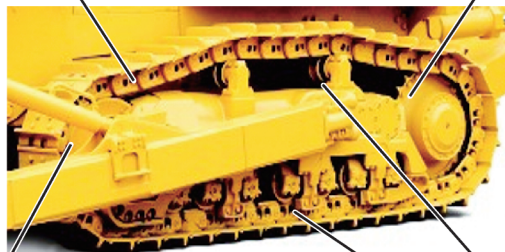
■ Sprocket teeth

Sprocket teeth are deeply hardened using Komatsu's unique heat treatment and have excellent durability and impact resistance.



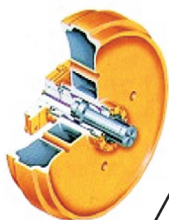
■ Track shoe

A variety of track shoes are available to suit customer needs and suit any working condition. Choosing the right track shoes is very important and will lead to improved machine performance and undercarriage life.



■ Idler

Heat-treated tread has excellent wear resistance and increased durability.



■ Rollers

Track / carrier rollers are specially heat treated and have excellent durability. Additionally, a floating seal prevents dirt from entering.



Track link assy

The following track links are available for bulldozers and excavators.

*There are two types of track links.

Oil sealed track links Bulldozer

Adopted for bulldozers with high travel ratio, and structure with high lubrication performance. (Oil lubrication is used to prevent pitch elongation due to wear between pin and bushing.)

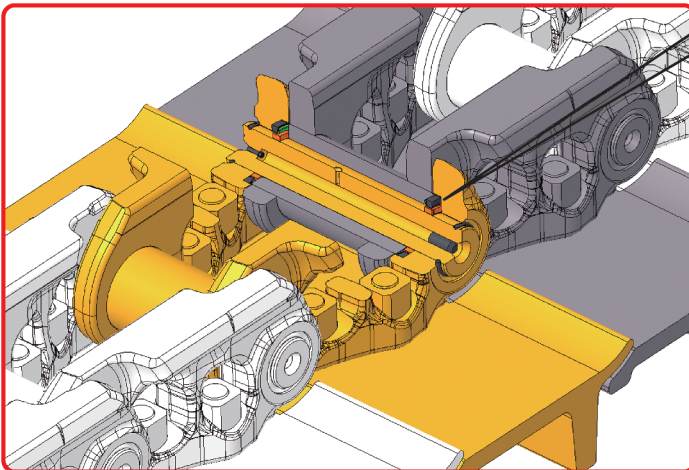
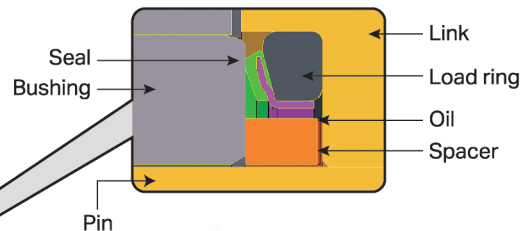
Grease sealed track links Hydraulic excavator

Adopted for hydraulic excavators with low travel ratio. (Simple structure)

(1) Oil sealed type

Links with oil filled in the gap between pin and bushing. Since the oil is sealed with Komatsu's uniquely developed seal, it suppresses the link pitch from elongating for a longer period of time compared to grease sealed type.

*As long as there is no oil leakage, link pitch elongation will not occur.



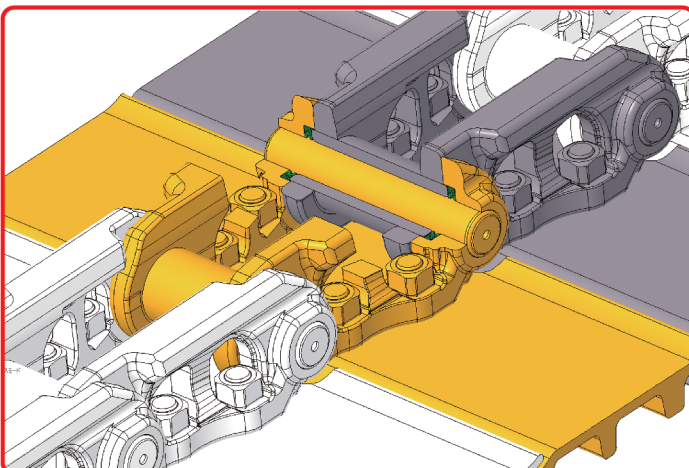
■ Oil sealed type

Oil is filled in the center of pin and passes through the vertical hole of pin, lubricating between pin and bushing.

(2) Grease sealed type

Links with grease filled in the gap between pin and bushing. As the grease gradually disappears, wear progresses between pin and bushing, leading to elongation of link pitch.

*If the running ratio is low after the grease is depleted, kinking may occur due to rust.



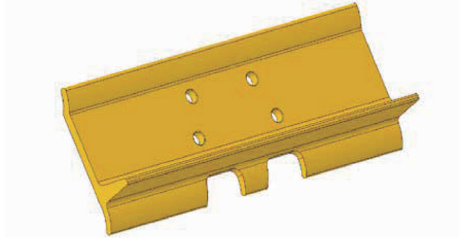
■ Grease sealed type

Grease is filled between pin and bushing during assembly.

Shoe plate

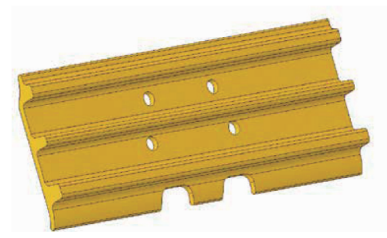
Single grouser shoe

The sharp shape of the grouser allows it to dig into the soil well and provide great traction. Mainly used for bulldozers.



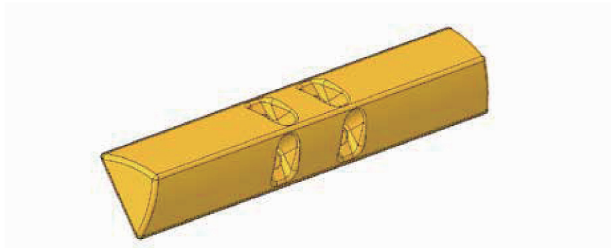
Triple grouser shoe

The grouser's low height reduces traction, but it doesn't disturb the ground and provides a comfortable ride. Mainly used for hydraulic excavators.



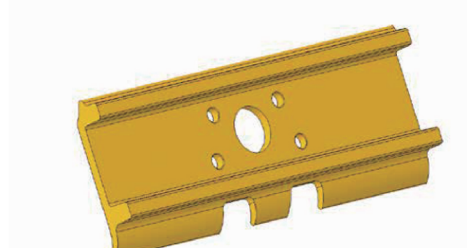
Swamp shoe

Komatsu's unique arc shoe has a large ground contact area and provides greater buoyancy. Mainly used in swampy and soft ground.



Double grouser shoe

Delivers greater traction force than triple grouser shoes. Moreover, it has lower turning resistance than single grouser shoe.



Rubber shoe (Integrated type)

Rubber shoe are suitable for driving on paved roads and will not damage the road surface. Rubber shoe are characterized by lower noise and vibration compared to Iron shoe.



Rubber pad shoe (Assembly type)

Rubber pad shoe has low noise and vibration, and is ideal for both the operator and the environment. By combining the maintainability of Iron shoe and flexibility of rubber shoe, it is possible to drive easily and smoothly even on paved roads.











Track link assy assortment

Products	Features	Bulldozer	Hydraulic excavator
STD	Compatible with a wide range of Jobsites from construction to quarry	○	○
GC	Used exclusively for general construction to pursue economic efficiency	○	○
HD	Significantly improved durability for heavy loads such as stone loading	○	○
SWR shoe	Significantly increases wear life of shoe grouser	○	○

*SWR Shoe : Super wear resistance shoe

Undercarriage components explanation and advantages

Part name	Product description	Superiority
Bushing 	Component that connects links, and the outside part receives impact and wear from sprocket, while the inside part receives wear from pin.	Komatsu unique heat treatment technology provides an excellent balance of quality with wear resistance and impact resistance on the outside and inside of bushing.
Link 	Just like a bicycle chain, link chain allows for rotational movement. Component that receives impact and wear due to contact with track roller, carrier roller, and Idler.	Komatsu unique heat treatment technology makes it resistant to wear, chips, and cracks, and has excellent durability.
Sprocket segment teeth 	Attached to the rear of track frame and transmits traction force to link chain when moving forward or backward. Component that receives impact and wear due to mesh with Bushing.	Sprocket surface is specially processed to have a deep hardened layer, which also improves strength and durability.
Track roller 	Attached to the bottom of the trackframe, supporting the entire weight of the machine and guiding link chain. Component that receives impact and wear due to contact with links. <Single flange roller / Double flange roller>	Komatsu unique heat treatment technology provides an excellent wear resistance and durability. In addition, Komatsu unique seals provides excellent protection against dirt and sand intrusion and oil leakage.
Carrier roller 	Attached to the top of the track frame, supporting the weight of Track and guiding link chain. Component that receives impact and wear due to contact with links.	
Idler 	Attached to the front of track frame, reversing the movement of link chain toward sprocket. Component that wears out due to contact with links.	
Shoe bolt 	Component that fixes shoe plate to link chain. Shoe bolt may come loose due to driving conditions, etc.	Compared to commercially available one, Komatsu shoe bolt are harder and less likely to break. By managing the tightening condition, the structure that prevents shoe bolt becomes difficult to loosen.
Recoil spring assy 	Built into track frame, absorbing shocks applied to the front with spring. Component that adjusts the tension of track by putting in and taking out grease.	Recoil spring with excellent durability and shock absorption are adopted.

Operating conditions and major wear factors

The wear speed of undercarriage parts varies depending on the operating conditions of machine and the soil conditions of jobsite. Proper operation and maintenance will extend the life of each part.

Critical variables that affect undercarriage life

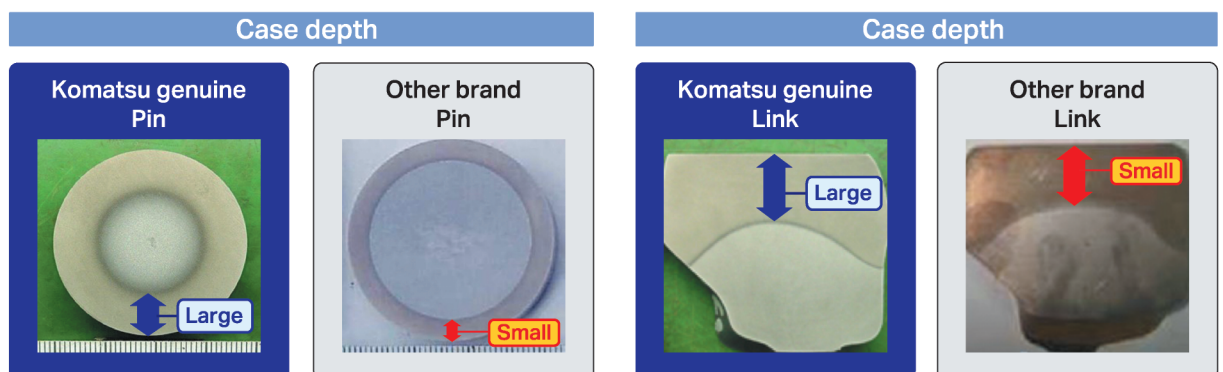
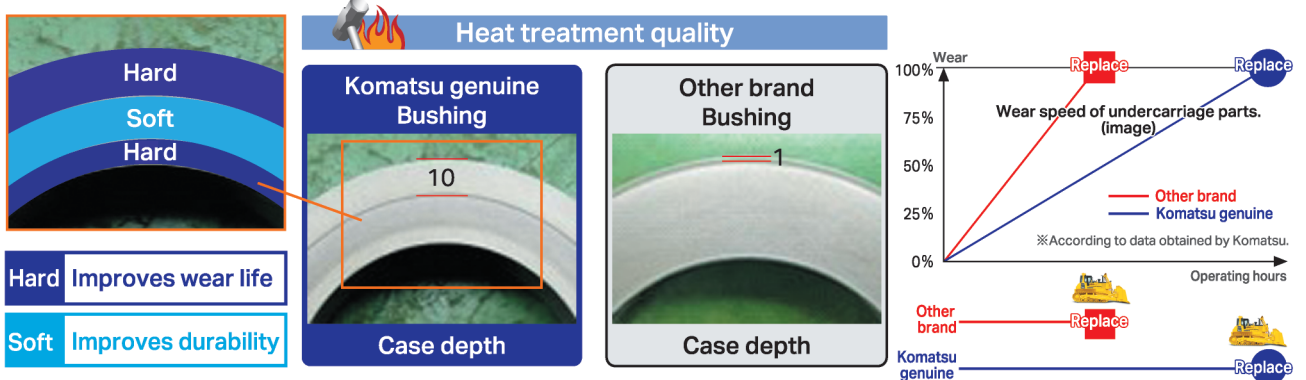
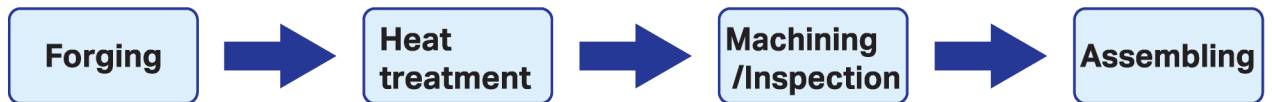
Factor		Shoe wear	Link pitch elongation	Bushing wear	Sprocket wear	Link wear	T/Roller wear	Idler wear	C/Roller wear
Operation	Machine speed	○	○	○	○	○	○	○	○
	Shoe slipping	○							
	Long distance dozing		○	○	○				
	Traveling on slope					○	○	○	○
Maintenance	Track tension		○	○	○	○	○	○	○
	Packing sands			○	○	○		○	○
Ground condition	Contained high silicon (SiO ₂)	○	○	○	○	○	○	○	○
	Soil ground (Splashed soil)		○	○	○				
	Rocky ground	○				○	○		
	Clay soil ground					○	○	○	○

Increased component strength using Komatsu heat treatment technology

Advantage points

Quality standards are centrally managed using Komatsu unique heat treatment technology certification system.

Undercarriage production process



*This is an example of other companies' products that we investigated.

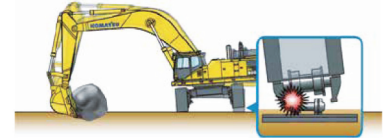
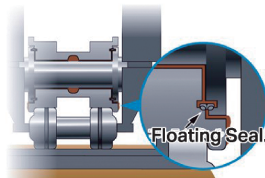
Points for extending the life of undercarriage components

Point 1

- Avoid long-term high-speed driving**
 When running at high speed for a long time, the lubricating oil sealed in track roller (T/R) may expand due to high heat and may leak from the floating seal.
- Driving operations that extend lifetime**
 Please take 15 minutes break after every 2 hours of driving.
 <In case of driving for 2 hours or more>

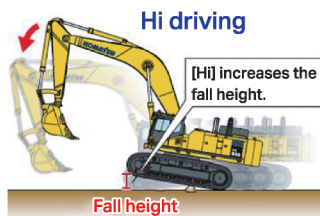
Point 2

- Thoroughly work with the rear of track constantly in contact with the ground**
 If performing excessive excavation work that causes the rear of track to lift up : When the rear of track falls from the side of the machine, roller guard or track roller (T/R) flange may hit links hard and cause damage.



Point 3

- Recommendation of "Lo" driving**
 Every time going over uneven roads surface (the upward load on the machine body increases), significantly shorten the life of frame, rollers, Idler, sprocket, and links.
 <Reason for recommending Lo driving>
 [Hi] has a longer distance to run, so the fall height will be greater than [Lo].
 Since the speed is high, the impact when falling is also large.



Point 4

- Cleaning track frame (carrier roller section) after work**
 If mud accumulates on carrier roller, it will prevent carrier roller from rotating and cause uneven wear, so remove the mud as shown in the figure below.
 If the accumulation continues for a long time, the mud will harden, making it difficult to remove it.
 Cleaning after work is recommended.

If mud accumulates at the bottom of carrier roller, carrier roller (C/R) will not rotate and uneven wear will occur.

Remove the mud around carrier roller.



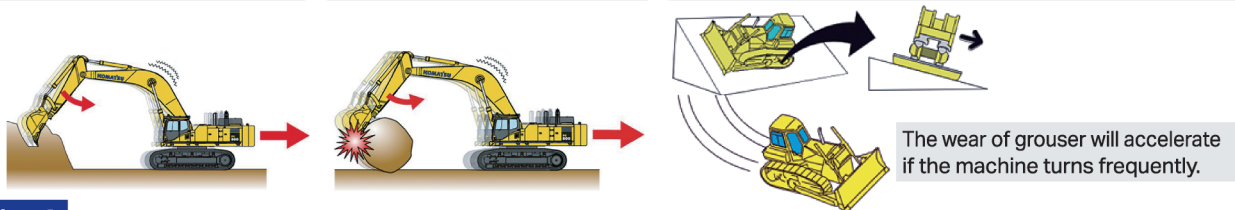
Point 5

- Avoid shoe slip**
 When shoe grouser reaches wear limit, its ability to dig into the ground becomes weaker and traction force is reduced.

Move large rocks using driving force

Excavation using driving force

Grouser wear accelerates when operating on rocky ground where shoe slips are likely to occur.



Point 6

- Adjustment and maintenance of proper track tension**
 If link pitch elongates and the track tension is insufficient, track may meander during driving, damage to track roller flange, and abnormal wear of sprocket teeth.



Your Komatsu partner:

KOMATSU

<https://www.komatsu.jp/en>

