

The method to increase the mechanisms' lifetime several times by simply adding restorative compounds to oils and greases.



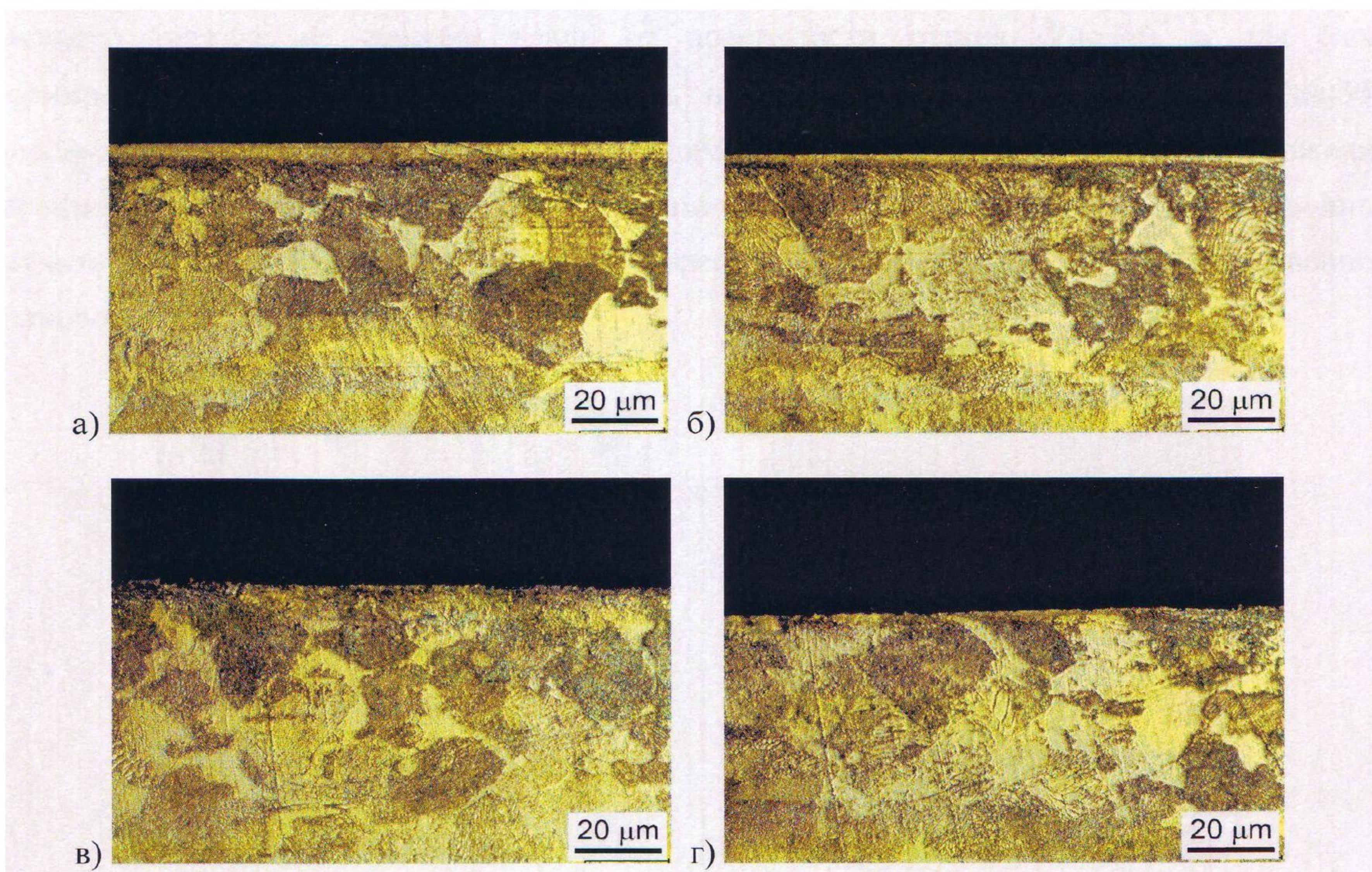
By using ANTI-WEAR TECHNOLOGIES (AWT) compounds for oil and grease you can restore worn-out metal friction surfaces and improve their quality, thus significantly increasing the operating life & reliability of the mechanisms and improving their performances (e.g. reducing vibrations and operating temperature).

AWT compounds make the maintenance process easier and increase its efficacy, significantly lower maintenance costs, improve the mechanisms' reliability.

Here and onward we refer to the actual contact surface, the spot of touch; only where the friction is present.

AWT compounds are based on fine mineral powder. The layer they form consists mostly of carbon and increases the hardness of the friction surfaces several times, so we call it a Diamond-Like Carbon layer, or DLC.

You need only to add a small amount of the tribological AWT compound to oil or grease — in most cases, without disassembling the mechanism, during the exploitation process — for the layer to form.



*The treatment results in smoother friction surfaces, their roughness is reduced.
The two top photos are examples of a treated surface, the two bottom ones are untouched.*

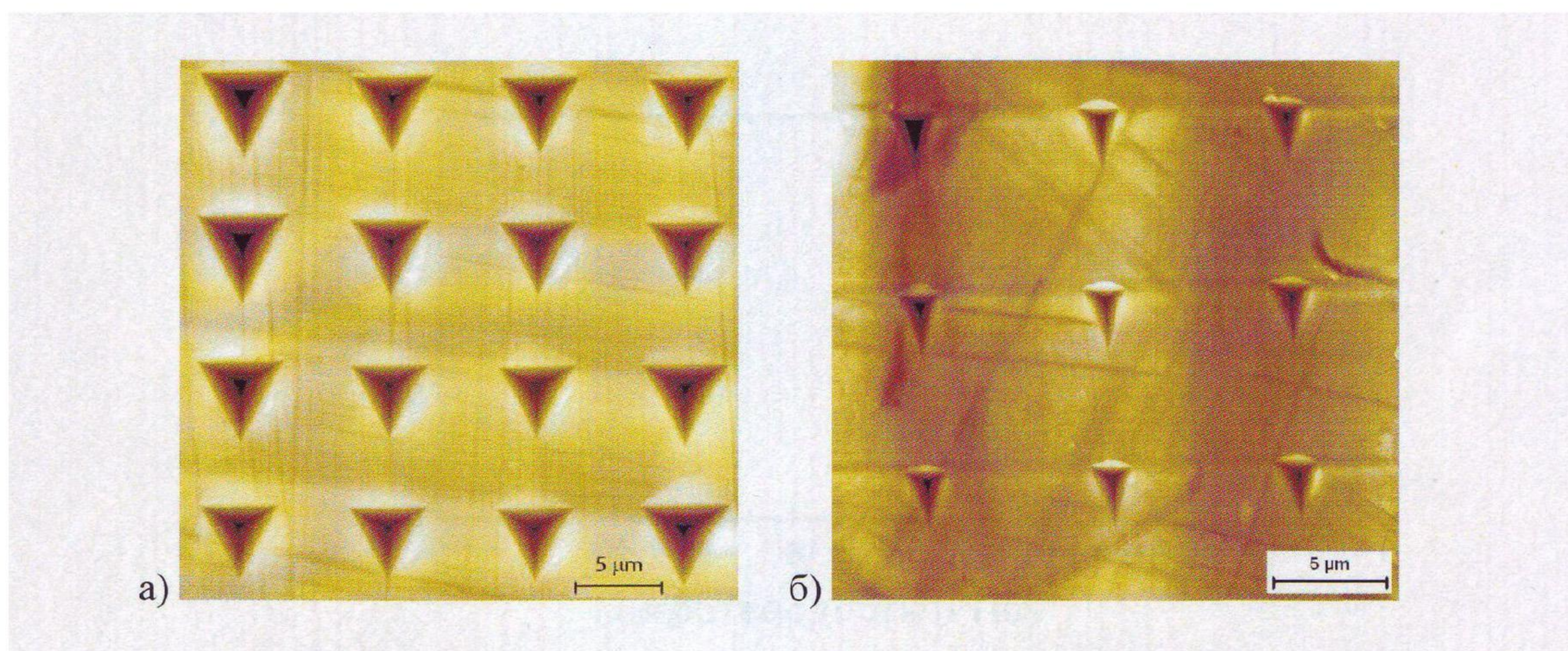
AWT treatment is applicable to:

- IC engines
- compressors
- hydraulic pumps and motors
- transmissions and industrial reducers
- slide, ball, rolling bearings
- etc.

The compounds can be used on both new mechanisms and mechanisms whose performances had already started to worsen during exploitation. Improvement in performances and electrical energy economy will be present in both cases.

The main objectives for using AWT compounds are increasing the operating life of a mechanism several times and increasing the in-between service intervals.

These are achieved thanks to AWT compound being able not only reliably to protect from wear, but also to renew worn-out mechanisms by restoring metal friction surfaces with the DLC layer.



AWT treatment results in harder friction surfaces.

The microhardness increased 5 times, going from 2,5GPa to 12,5GPa. Nevertheless, the surface stayed elastic.

The layer possesses such characteristics as:

- same linear thermal expansion with the metal of the backing; the layer doesn't come off when it heats and cools,
- resistant to abrasives and all types of corrosion,
- endures temperatures up to 1,300°C (2,370°F),
- is dielectric,
- prevents hydrogen embrittlement of the friction surface,
- can be renewed with additional treatments as it wears out.

Treatment with AWT compounds results in:

- lesser coefficient of friction,
- reduced roughness of the friction surfaces,
- increased microhardness of the friction surfaces,
- larger actual contact surface.

Improved quality of the friction surfaces positively impacts the performances of the mechanisms. Some of the effects include:

- reduction in operating temperature (where it is caused by friction),
 - decrease in vibration levels (where they characterize the quality of the friction surfaces),
 - economy of the electrical energy/fuel,
 - significant decrease in the amount of wear products in the oil (metal sawdust),
 - reduced oil consumption,
 - reduced amount of CO&CH harmful emissions in exhaust gases.
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By periodically renewing the layer (once every 2,000-5,000 working hours) you will keep performances of the mechanisms on the optimal level.

Using AWT compounds the operating life of the mechanisms increases several times.

The use of AWT compounds pays off economically through a significant decrease in the number of breakdowns and repair-related downtime, a significant increase in the operating life, and a reduction in energy/fuel consumption.

This technology is still not being used in existent oils and greases, so at the present, AWT compounds have to be added on-site, by your workers. This has its benefits, as logistics would be much more difficult if we were talking about big amounts. The amount of our compound needed for a treatment is measured in milliliters.

ANTI-WEAR TECHNOLOGIES

Mironov Alexander

Tel: +381 63 70 39 717

E-mail: antiwear.laboratory@gmail.com

LinkedIn: www.linkedin.com/company/anti-wear-technologies