

TESTIMONIAL ON THE WORK PERFORMED · 1 YEAR 4 MONTHS IN SERVICE

Plant and vehicle fleet: scheduled overhaul replaced by treatment without teardown

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PRODUCT**XADO RVS**

Treatment of assemblies
without teardown, under normal
operating conditions

TREATED OBJECTS**Plant equipment fleet**

Machine tools · forging and
pressing tooling · hydraulic
systems and pumps ·
compressors · bearings ·
vehicle engines and
transmissions

DOCUMENT TYPE

Company testimonial
signed and stamped

EQUIPMENT AND VEHICLES**TREATED ASSEMBLY****CONDITION AT START OF WORK**

Forging and pressing equipment

Punch and die

Worn tooling in production use

Metal-cutting machine tools
1K-62, SVAAGL-250, 6S-140

Bearings, clearances

Clearances worn out, shortage of
replacement bearings

Machine tools with diamond
attachments

Diamond tooling

Loss of working characteristics

Hydraulic systems, oil pumps
LF-18, G12-32

Pump unit

Drop in pressure and delivery

Piston compressors 55-V,
turbocompressors K250-61-2

Compressor unit

Drop in output and pressure

Bearings 5-36236, 436203K,
436208, 36210

Rolling elements and raceways

Worn; replacements scarce and
costly

Vehicles RAF, UAZ, GAZ, ZIL,
KAMAZ

Engine, transmission

Cylinder-piston group wear,
mechanical noise in transmission

Priority was given to equipment whose repair and operation are relatively costly; the work was carried out without taking the machines out of service.

Results after the operating period

↑ **2-3×**

service life of production equipment

↓ **6-15 %**

electricity consumption of 55-V and K250-61-2 compressors

↓ **15 %**

fuel consumption of the company vehicle fleet

Production equipment

ASSEMBLY	RESULT
Forging and pressing tooling	Punch and die durability higher by 4-6×
Piston compressors, turbocompressors	Output and pressure restored; electricity consumption lower by 6-15 %
Hydraulic systems, oil pumps	Pump pressure and output restored
Bearings in machine tools	Clearances were taken up under normal operation — purchase of scarce bearings was not required
Diamond attachments of machine tools	Working characteristics fully restored
Bearings removed for repair	Restored separately on test rigs — the need to buy them was eliminated

Treatment performed with XADO RVS without teardown of the assemblies; results recorded by the company after operating its equipment fleet.

Company vehicles

PARAMETER	RESULT
Fuel consumption	Lower by 15 % and more
CO ₂ in exhaust gases	Lower by 2.5-3.0×
Smoke opacity	Reduced after restorative repair of the engines
Compression and oil pressure	Restored without teardown of the engines
Transmission noise	Mechanical noise disappeared as a result of compensating wear of bearings and gears — the overhaul of the vehicles was cancelled

Conclusions of the company

The management of JSC "KharP" recorded: RVS technology makes it possible to selectively compensate wear at the points of friction and contact of parts through the formation of new metal-ceramic coatings at those points.

1. The technology does indeed allow worn assemblies and mechanisms to be restored without teardown under normal operating conditions, which is economically beneficial for the company.
2. The technology effectively allows scheduled repairs to be replaced by scheduled preventive treatment.
3. The presence and properties of metal-ceramic coatings on the friction surfaces lead to a significant increase in the service life of production equipment by **2-3x**.
4. Owing to reduced friction losses during operation, savings of more than **10 %** in electricity and more than **15 %** in fuel are achieved.



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The results relate to the production equipment and vehicles of JSC "KharP" treated in 1996–1997; on other machinery and under different operating conditions the figures may differ. The document is a company testimonial, not a measurement report. The original testimonial with signature and stamp is published in full and available for download. RVS is an obsolete XADO designation, the zero-generation compounds; the current product generation is revitalizants.