

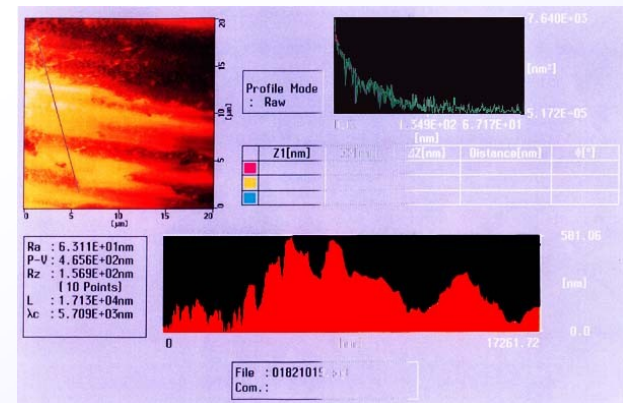
RVS-Tec Oy



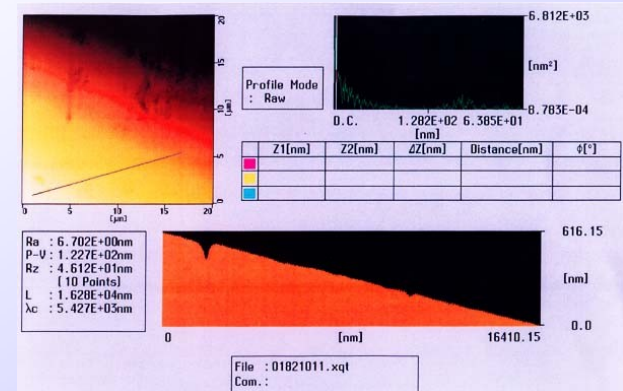
## WHAT IS RVS TECHNOLOGY?

- ❑ RVS Technology® is a new unique method for protection and restoration of mechanical wear.
- ❑ The method basis on an atom exchange reaction activated by the friction and movement energy of the mechanism and activators in the RVS -compound.

Before RVS treatment

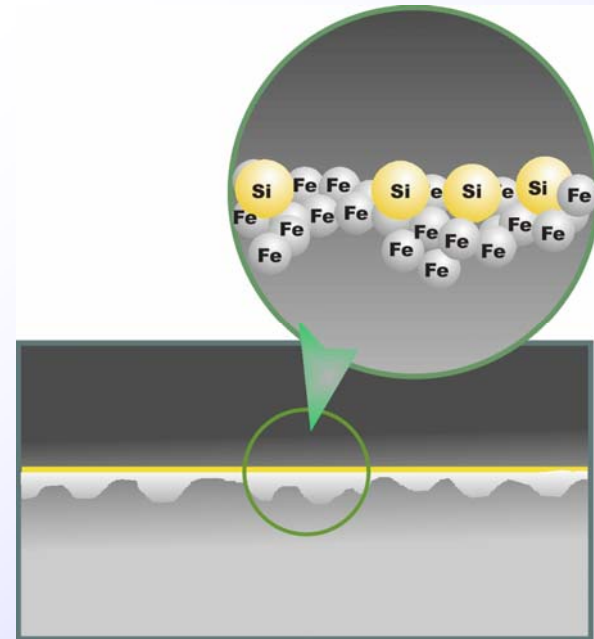


After RVS treatment



## WHAT IS RVS TECHNOLOGY?

- ❑ The reaction produces new molecules which create a new metal ceramic surface structure on ferrous friction contact zones.
- ❑ The born structure is totally integrated into the rest of the metal. The thickness of the structure depends on the wear rate.
- ❑ The new surface becomes very even, hard and resistable against wear and it's friction coefficient drops to fractions of the original.



## **ECONOMICAL & ECOLOGICAL BENEFITS!**

- ❑ RVS Technology provides significant economical and ecological benefits to the owners and endusers of various mechanical devices:**
  - ❑ It is widely applicaple** in industry and transportation.
  - ❑ Savings will be achieved** by improved reliability, prolonged life cycle and maintenance periods and by reduced consupction of energy and lubricants.
  - ❑ The cost efficiency improves and the environmental strain reduces.**

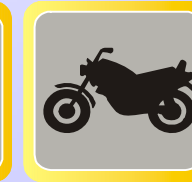
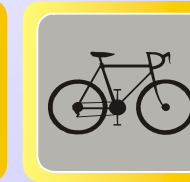
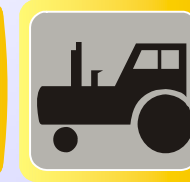
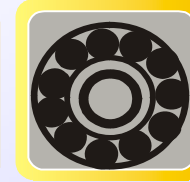
## WIDELY APPLICABLE!

**□ RVS Technology is applicable for the following mechanical components and devices and much more:**

**□ gears(transmissions)**

**□ bearings of all kind**

**□ piston and cylinder groups (combustion engines, hydraulics, compressors etc.)**



# RVS-Tec Oy



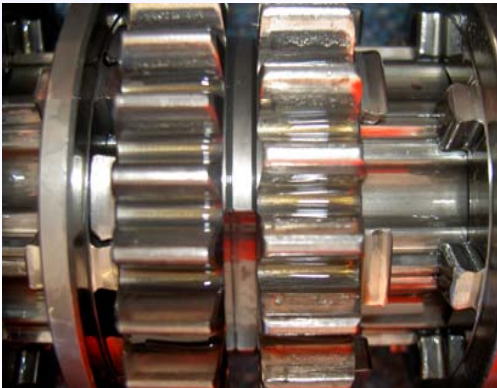
Motor racing, whole range



Cars, trucks, busses, wheel loaders, agriculture equipments etc.



Motorbikes, mopeds, grass clippers etc



Industry maintenance and services; gears, bearings, pumps, kompressors etc.



Ships, power plants, wind mills etc.



Boat engines, drift gears, clutches etc.

## **BENEFITS TO CLIENTS**

- Prolonged life cycle of components (30-70%)**
- Reduced replacement demand of costly spareparts as wear process almost stops**
- Reduced number of expensive down times and maintenance hours / days**
- Improved predictability of mechanism function**

## **BENEFITS TO CLIENTS**

- Reduced energy & fuel consumption (5-20%)**
- Reduced emissions - Reduced environmental strain (10-50%)**
- Reduced vibration & noise level (10-50%)**
- Reduced need/Prolonged life cycle of lubricants (30-50%)**

## **BENEFITS TO CLIENTS**

- Possibility to use less expensive lubricants with less additives**
- Less corrosion problems**
- Survival of the mechanism in case of accidental lubricant loss!**
- These are all significant competition elements for the Transportation and Industry!**

## **PROVEN & TESTED**

**RVS Technology has been proved and tested with excellent results in hundreds of different kind of mechanisms in industry, transportation and other technological segments:**

- ❑ Fraunhofer Institute, Stuttgart, Germany, Dec 2003.** Fraunhofer is the leading accredited R & D Center in Germany (Vehicle test).
- ❑ Swedish Polytechnic, Vaasa, Finland, Spring 2002.** (Vehicle test financed by the Foundation of Finnish Innovations).
- ❑ Rautaruukki Steel, Raahе, Finland, Autumn 1999.** Rautaruukki is the leading steel company in Finland (Transmission test).

## TEST RESULTS

### FRAUNHOFER TEST:

- ❑ Average Metal Ceramic material growth in cylinder walls(restoration) **5 microns**
- ❑ Roughness of the Cylinder Walls after treatment 1,2 Ra (6,6 Ra) = **1/5,5**
- ❑ Average Cylinder Compression increase in TUV test **12 %**
- ❑ Engine Function without engine oil (smooth, normal temp) at least **1 hour**

## TEST RESULTS

### SWEDISH POLYTECHNIC:

<input type="checkbox"/> Compression improvement	5,8 – 10,2 %
<input type="checkbox"/> Compression loss decrease	4,8 – 6,6 %
<input type="checkbox"/> Average Power loss improvement	17,9 %
<input type="checkbox"/> Engine Power improvement (maximum)	4,0 %
<input type="checkbox"/> Drive Wheel Force improvement max/average	10,2 / 9,0 %
<input type="checkbox"/> Traction Force improvement (maximum)	10,3 %

## TEST RESULTS

### RAUTARUUKKI STEEL (Transmission test)

<input type="checkbox"/> Energy Consumption decrease	6,25 %
<input type="checkbox"/> Total Vibration decrease	37,1 %
<input type="checkbox"/> Total Acceleration change (increase)	50,0 %
<input type="checkbox"/> Total Envelope change (decrease)	55,0 %

## MEDIA TESTS & ARTICLES

- ❑ **Sixteen articles in Technical and Commercial Magazines of which 3 tests**
  - ❑ **VM Magazine, the leading motor sport magazine in Finland.** Test in a Suzuki rally car. Power increase 3,6 %.
  - ❑ **Mobilisti, the leading magazine in the Classic Car segment.** Empiric test, very good results.
  - ❑ **Kaliber Magazine, the leading magazine in Shooting&Gun segment.** A test done by the Chairman of the Finnish Gunsmith Association. Fantastic results and a good article.
  
- ❑ **One test program on the Finnish TV Channel 2 (non commercial channel)**
  - ❑ **160 km drive without engine oil** in a test controlled by the TV stuff, Camera and the sealed engine.

## **ONGOING and COMING TESTS & TRIALS**

### **ABB + SKF + RVS, Helsinki, Finland**

- Axle – Bearing test on a Generator, November 2004 – October 2005
- Goal: Study RVS protection and restoration of electrocorrosion caused by residual current going through the Axles and Bearings

### **YAMAHA MARINE ENGINES, Japan**

- Starts in October, 2005

### **HELSINKI CITY TRAMWAYS**

- Treatment of Tramway Rails, since 07.09.2005
- Goal: 1) To overcome noise emissions in the curves, 2) To reduce the annual amount of grease used from 4500 kg to 1500 kg, 3) To reduce the wear of rails and tramwheels.

## TRANSPORTATION REFERENCES

- Helsinki City Transport
- Helsinki City Tramways
- Helsinki Airport Taxi
- Tampere City Transport (the second City in Finland)
- China Railways
- Chita (St. Petersburg) Railways
- Singapore Bus Service (SBSTransit)

## **PRODUCT LIABILITY**

- The Manufacturer warrants that the quality of the Products meet with the following technical specifications and documents**
  - Technical Conditions “Repairing and Restoration Compound, in form of gel, Technical Conditions, TU 0254-001-489556425-2003”**
  - Safety Data Sheet for RVS Technology Gel**
- Product Liability Insurance**
  - Annual coveridge 1,6 Million Euros**