The users of air piston compressors in time of exploitation face problems that could be resolved only by repairing.
This happens due to piston ring and crankshaft bushing deterioration.
Problems users of air piston compressors face in time of exploitation:

- Oiled emulsion appearance in compressed air;
- The necessity of adding oil till the necessary level between support manning;
- Increase of time needed for pumping the receiver to maximum pleasure;
- Increase of noise and vibration when compressor is working;
- Appearance of surplus pleasure in crankcase compressor and oil release through the breather.

It is necessary to make major repairs of compressor for good work renewal. This is very expensive, as the replacement of bushes, piston rings, bearings and piston-boss bushes is required after disassemble.
The result is loss of time required for searching for necessary details or buying new compressor and standby.

We, as a maintenance department, have an aim to prolong workability of compressor without problems mentioned above and save our clients' money. We asked RVS-master company to work out a special repair-and-renewal stuff for compressors.

Two goals were set:

- To renew and increase the effectiveness of the operation of a machine;
- To save electricity increasing the speed of pumping the mechanism. And decrease time needed for pumping the receiver to maximum pleasure.

For our goals' realization, our specialists measured operational characteristics of depreciated compressors while testing them. There were two compressors:

- First compressor was depreciated for 60-70%. It required urgent capital repairs. Oil spot in a place where air comes out was measured.

- Second compressor was not so much depreciated and did not require capital repairs. It was chosen for air pumping speed and electricity expenditure measuring.

This compressor's data:
Name- BALMA, block- B600, electrical motor 5,5 kW, receiver- 270 liters, model year 2001. Additional measuring devices were placed before the test:

- Electricity meter kW 7975,6
- Motometer 0,1 moto/hour
- Three phase electricity meter
- Laser temperature measuring instrument
- Stopwatch




Two compressors were tested during one month.

1. First compressor: oil spot in a place where air comes out was measured. It is clearly seen that before the test oil spot was large and greasy (see picture 1). This

is dangerous for air system, as the tubes where from the compressed air comes out become cluttered. Moreover, oil is injected into mechanisms (e.g. tubes) placed behind the compressor (during painting works spots can occur on a painted surface).

It was stated that after RVS-master stuff treatment this oil spot disappeared COMPLETELY. It means that the compression inside the cylinders was completely restored.

Pic.1

1. Second compressor parameters were measured twice before RVS-master stuff treatment and twice after it.

Second compressor basic measures are placed in the table below:

	08.05.09	*21.05.09*		*05.06.09*
Parameters	***Initial parameters***	***Without RVS***	***With RVS***	***With RVS***
Starting current	38,8 A	36 A	34,8 A	34 A
Operating current	6,3 A	6 A	5,8 A	5.8 A
Operating current 9 – 10 bar	9,2 A	9,2 A	9 A	9 A
Time of pumping up to 10 bar	4.50 min	4,43 min	4,17 min	4,13 min
Temperature of 1st cylinder	81 °C	82 °C	80 °C	73 °C
Temperature of 2nd cylinder	66 °C	66 °C	65 °C	65 °C

Second compressor test results show us that after RVS-master stuff treatment the following results were reached:

1. Oil penetration into compressed air-delivery system is eliminated;
2. Compression in cylinder is enlarged;
3. **10%** economy of electricity is reached already after 8.6 hours of work;
4. Compressor pumps 270 liters receiver capacity up to 10 bar 30 seconds quicker.

The following conclusions were made by specialists receiving test results:

1. RVS- master stuffs completely restore air compressor workability, if it is depreciated not more than for 70%;
2. Oil emissions in air stream are eliminated after the treatment;
3. Air system speed of pumping enlarges;
4. Electricity consumption is diminished up to 10%;
5. Time between failures is diminished;
6. Oil expenditure between service cycles is diminished.

Opinion of working group that operates with the air compressors:
Now we include RVS-master stuffs into air compressor maintenance or recommend our clients to make RVS-master stuff treatment once a year or after 500 working hours when changing the oil.

We recommend prolonging workability up to 2-3 times not waiting till compressor will be depreciated and need capital repairing.

You can save not less than 10% of electricity consumption.