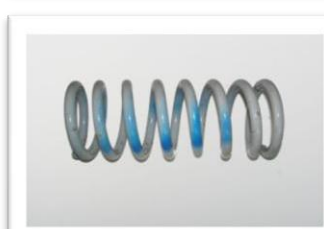




ООО «Кинешма Аутомотив Компонентс»

г. Кинешма





ООО «Кинешма Аутомотив Компонентс» г. Кинешма

About company

LLC KAC is one of the leading manufacturers of automotive components in Russia whose activity started in 2004.

The company is supplying its products to the biggest assembly plants located in Russia, Europe (France, Great Britain, Czech), Asia, South America. Currently around 60% of KAC total sales counts for export.

Key products:

- brake caliper pistons
- suspension springs,
- stabilizer bars,
- ball studs,
- products for oil and gas and construction industry.





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Achievements

- 2014 г. – nominated by LLC «UAZ» as main supplier of stabilizers 3162-2906016-01 and 2360-2916016-01 for UAZ Patriot.
- 2015 г. – nominated by PJSC «AUTOVAZ» as a main supplier of stabilizers 2190- and 21928-2906010-02 for Lada Granta, Kalina II and Datsun . Certified to ISO/TS 16949:2009 (DQS, German).
- 2016 г. – double increase of pistons delivery volumes to ZF TRW.
- 2018 г. – start of series deliveries of brake caliper pistons to Great Britain. Audit for conformance to IATF 16949:2016 has been passed successfully.
- 2019 г. – nomination for deliveries of the front stabilizer link assembly 2190- and 21928-2906010-02 to PJSC «AUTOVAZ».
- Nominated by ZF Group for deliveries of brake caliper pistons for Volkswagen group MQB.
- **Nomination for deliveries of cold coiled springs for UAZ Profi 2020.**



2190-2906010-02



21928-2906010-02



3162-2906016-01



2360-2916016-01



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Our partners



ZF TRW Active
and Passive Safety
Technology



PJSC
«AUTOVAZ»



LLC «AZ GAZ»
LLC «PAZ»



LLC «UAZ»



GM - AVTOVAZ
«GM- AVTOVAZ»



JSC «VIS»



LLC «BZAK»



LLC «NACHALO»



LLC «AMT»



LLC
«AUTOSTANDART»



LLC «KRONA-
AUTO» (Ukraine)



Fenox Global Group
(Belarus)



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Проект

Modernization of suspension spring and front stabilizer bar manufacture for both passenger and commercial vehicles.

I. Development of suspension spring manufacture by introducing of cold forming technology

II. Development of production of front stabilizer bar with three-dimensional configuration

III. Switching to purchase of domestic rolled metal for manufacturing of cold formed springs and bars after introduction of heat treatment technology for coiled and bar-type rolled metal with specified spring properties by the largest Russian steel mills.



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Prerequisites for the project implementation

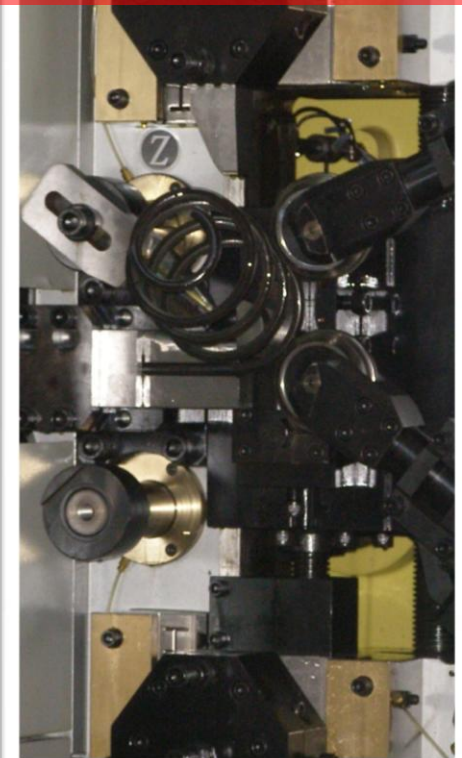
External	Internal
Strong market potential. Total market volume – up to 15 000 000 of Euro . Annual growth is more than 8% ;	Russian manufacturer
Localization program – to increase the degree of local assembly in the territory of Russia;	Automotive market experience is more than 30 years
Increasing in the presence of foreign brands and readjusting of domestic plants for assembly of car foreign brands	Advanced production capability and high-skilled staff
Distribution of springs and bars with three-dimensional configuration both for foreign and domestic car brands	Geographical location and transportation accessability (by land and waterway);
Absence of domestic suppliers of such products for an assembly lines of assembly plants	Имеющиеся площади и лимиты энергоресурсов на 100% покрывают потребность нового производства
-	Manufacturing space and energy resources limits cover 100 % of new production demands



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Pilot lot manufacturing of suspension spring on cold forming machine

TK-5200

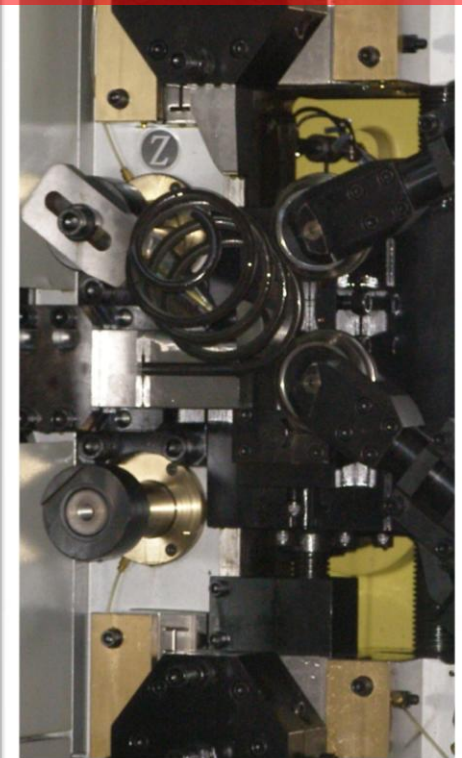




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Pilot lot manufacturing of suspension spring on cold forming machine

TK-5200





ООО «Кинешма Аутомотив Компонентс» г. Кинешма

Manufacturing equipment for cold formed springs production

Coiling of spring



**Automated cold coiling
module TK-5200**

Put into operation

Low-temperature tempering



**Through-type furnace for low-
temperature tempering**

Put into operation

Shot-peening treatment



**Shot- peening machine for
suspension spring**

Put into operation



ООО «Кинешма Аутомотив Компонентс» г. Кинешма

Manufacturing equipment for cold formed springs production

Surface treatment



Automatic installation of
surface treatment with zinc
phosphate coating

Put into operation

Paint coating of springs



Powder coating line

Put into operation

Powder paint polymerization



Dryer

Put into operation



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Project progress

Period	Step
<i>July 2019</i>	Cold formed spring production has been implementing since July 2019.
Important!	The products are made of imported rolled metal with specified spring properties. Rolled metal doesn't have decarburized layer during delivery which ensure spring resistance over 1 000 000 compression cycles . This property is confirmed by relevant tests.
<i>October 2019</i>	Installation works and starting-up of painting line with prior surface treatment (zinc phosphate) were completed
<i>November 2019</i>	Painting complex works in a normal operation mode
Important!	The new painting complex with prior surface treatment enables to achieve resistance in the salt spray chamber for more than 750 hours. The automatic line is also designed for coating of stabilizer bars with complex three-dimensional configuration.
<i>February 2020</i>	Adjustment works of through-type furnace for low-temperature tempering are under way.
<i>July 2020</i>	The automatic line for the production of springs by cold forming method is fully launched and works in a normal operation mode. The sorting machine is currently being shipped by the supplier and is in transit.



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Launch of new painting line with prior surface treatment





ООО «Кинешма Аутомотив Компонентс» г. Кинешма

Launch of new painting line with prior surface treatment





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Automatic line for cold-formed springs production





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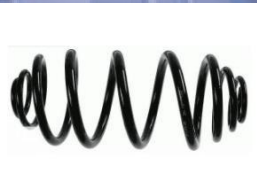
Automatic line for cold-formed springs production



Suspension springs produced by cold coil method

I. Design type and parameters

New production



«Miniblock»



With curl of
dead coil



With side load

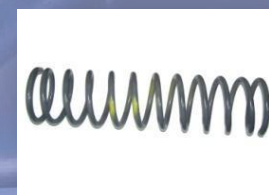


«Barrel shaped»

An ongoing production



Conical



Cylindrical

General parameters

Parameter	Parameter value
Rod diameter	9-20 mm
Spring diameter	70-200 mm
Spring lenght	up to 600 mm



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Suspension springs produced by cold coiling method

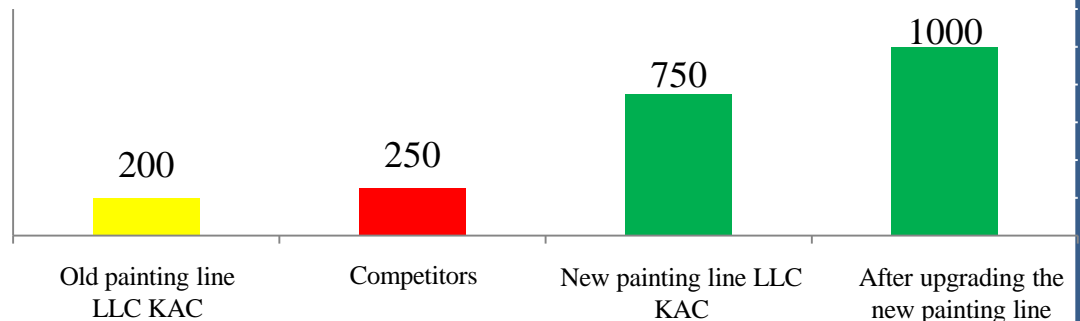
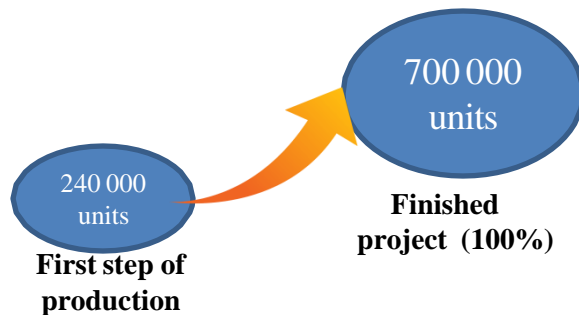
II. Advantages and planned production volumes



- Low price of finished part compare with international manufacturers
- Wide load-resistance range
- Part weight is lighter
- Painted surface resistance in salt spray cabinet is not more than **750 hrs.**

Resistance in salt spray will be 750 hrs. After additional installation work of cataphoretic upsetting line in 2020, resistance will be **1000 hrs.**

Planned volumes

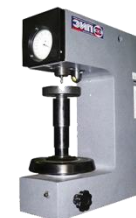




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Laboratory equipment

Equipment name	Purpose	Country
Portable Coordinate measuring machine Space Plus 1.8	Measurement of geometric dimensions geometric relationship of complex parts	Russia
Spectrometer DFS-500	Chemical composition of metal	Russia
Portable ultrasonic hardness device TKM 459M	Metal microhardness test	Russia
Semi-automatic device for hardness measuring of metals and alloys by the Brinell method TB-5004	Metal microhardness test	Russia
Device for measuring of hardness of metals and alloys by the Super-Rockwell method TRS 5009-01	Metal microhardness test	Russia





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Laboratory equipment

Equipment name	Purpose	Country
Microhardness tester mhp - 160	Metal microhardness test	Germany
The vertical metallographic microscope EC METAM PB-23	Metal microstructure test	Russia
Large photomicroscope of reflected light NEOPHOT 32	Metal microstructure test	Germany
3D scanner Creaform HandySCAN 700	Reverse engineering and geometry inspection	France
Salt spray cabinet ASCOTT S450 IS	Corrosion resistance test	Great Britain
Pull test machine ИР-5057-50 0-50 кН	Tensile testing	Russia



Manufacturing equipment for stabilizer bar production

Rod heating



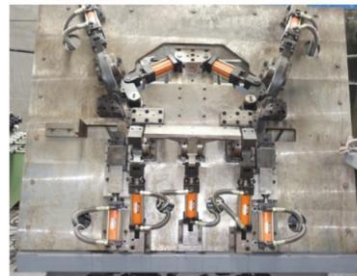
Slot furnace HFC
for rod heating

Rod ends heating



Through-type furnace for
heating of rod ends

Bending and quenching



Automatic bending
module

Will be supplied soon

Bar tempering



Through-type furnace for
medium-temperature
tempering

Operative equipment



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Технологическое оборудование для изготовления штанг стабилизатора сложной пространственной формы

Shot-peening treatment



Shot- peening machine
for stabilizer bars



Paint coating



Powder coating line with prior
surface treatment

Operative equipment



Assembly and inspection

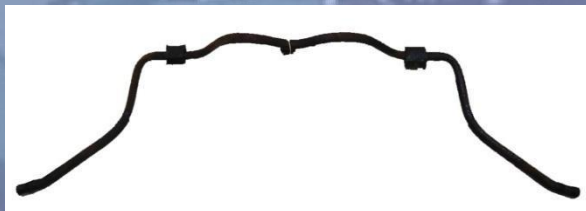
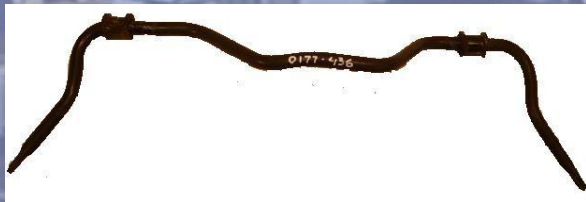


Assembly stand for stabilizer
bars

Operative equipment

Front stabilizer bar with three-dimensional configuration

New production



Operative production



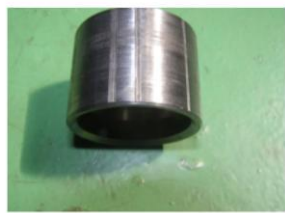
General parameters

Parameter	Parameter value
Rod diameter	20-35 mm
Bar length	up to 1 200 mm
Type of bar end	flat and cylindrical

Stabilizer link production technology



Base metal rolling (tube)



Ring



Bushing



Butt welding



Arc-welding



Zinced link



Link assembly



Stabilizer assembly with
pads and links



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Introduction of bunt and bar metal rolling heat treatment with specified spring properties.

Cold forming technology
Base rolled metal: steel rod for mechanical
spring FDSiCr acc. to EN 10270 , model
54SiCr6

European suppliers



SWISS STEEL



Asian suppliers

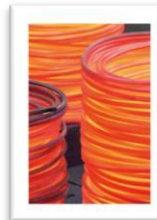


Working on introduction of this technology with
another domestic plants.

Potential Russian suppliers



МАГНИТОГОРСКИЙ
МЕТАЛЛУРГИЧЕСКИЙ
КОМБИНАТ





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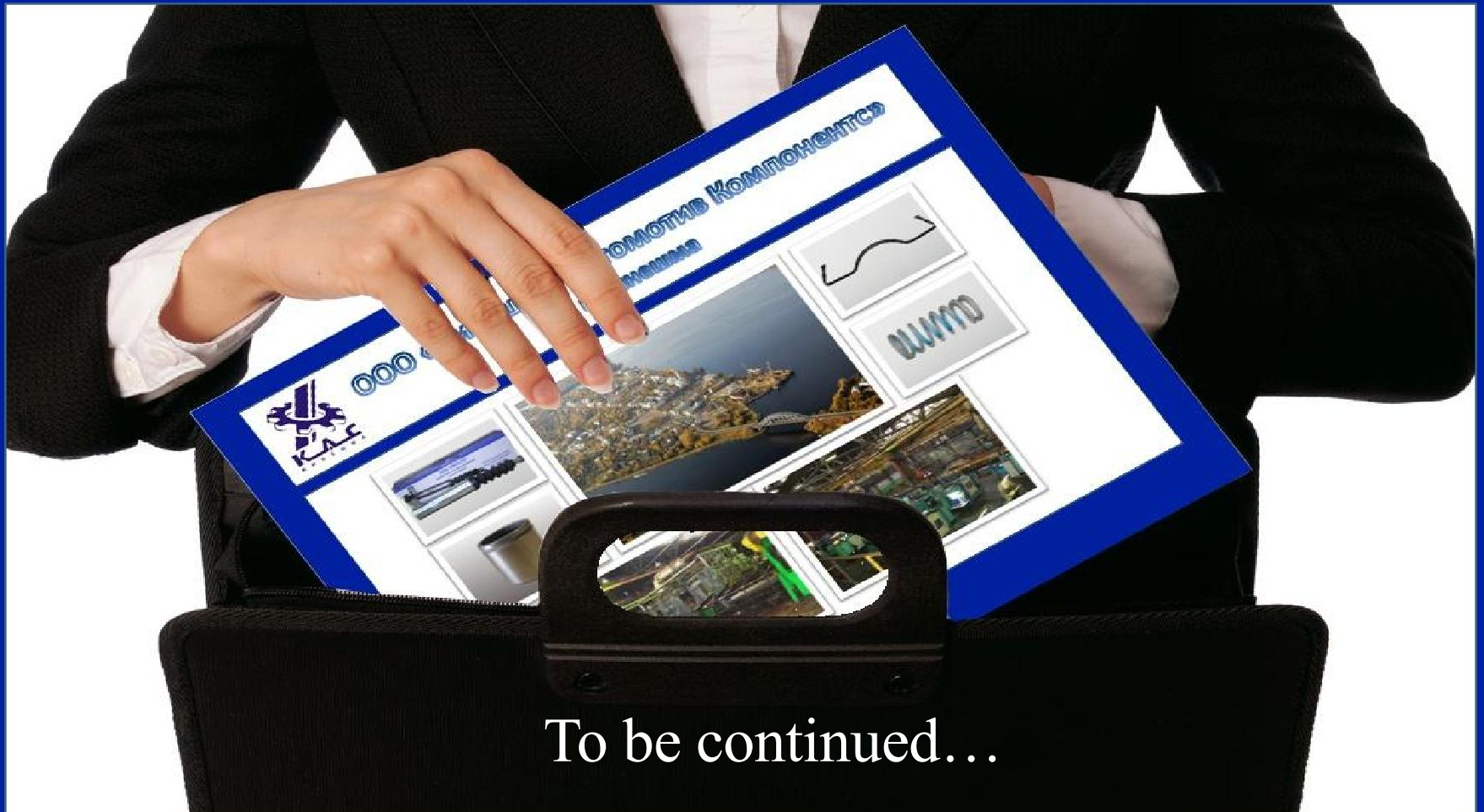
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To be continued...