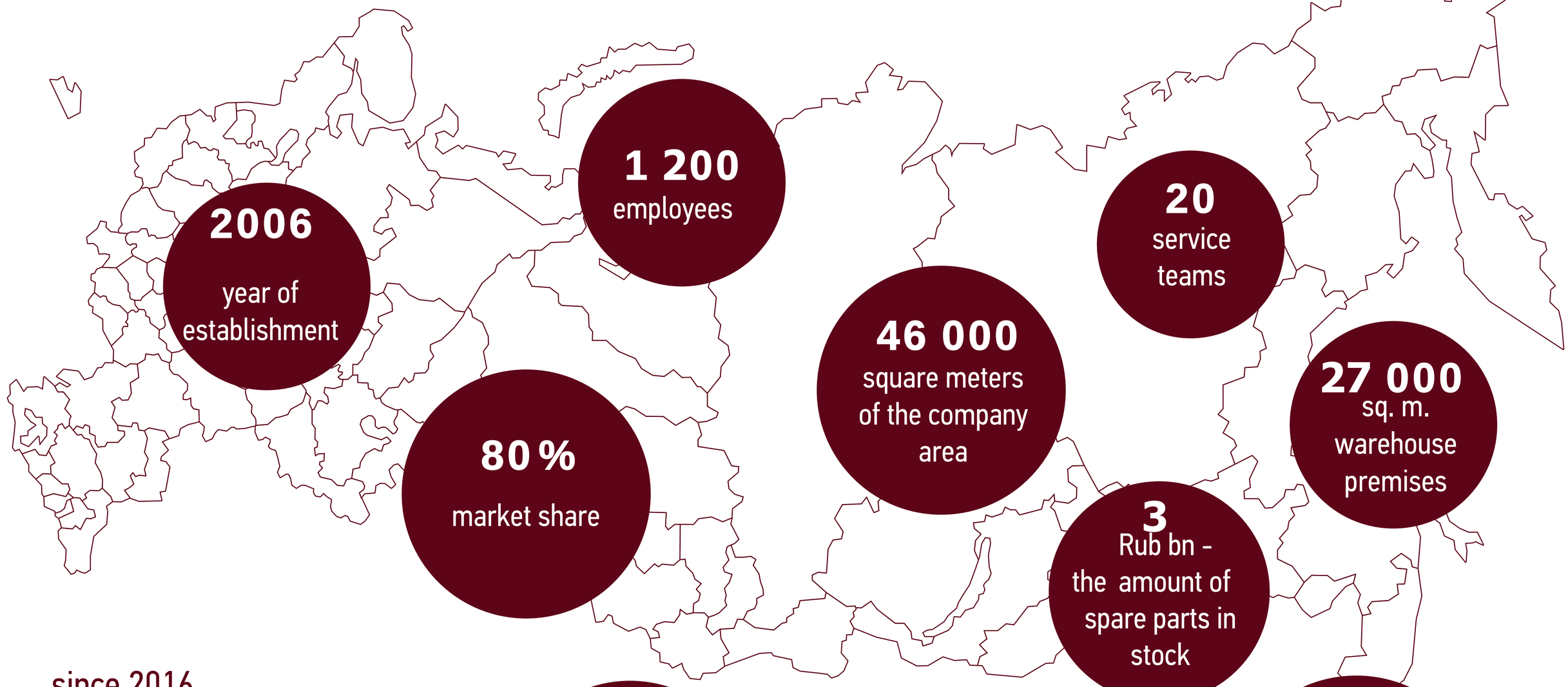
PROFESSIONAL

MINING AND CONSTRUCTION ATTACHMENTS

Professional by numbers

35 regional representative offices and warehouses in Russia and Kazakhstan

50 countries that import our goods



2006 year of establishment

1 200 employees

80 % market share

46 000 square meters of the company area

20 service teams

27 000 sq. m. warehouse premises

3 Rub bn - the amount of spare parts in stock

since 2016

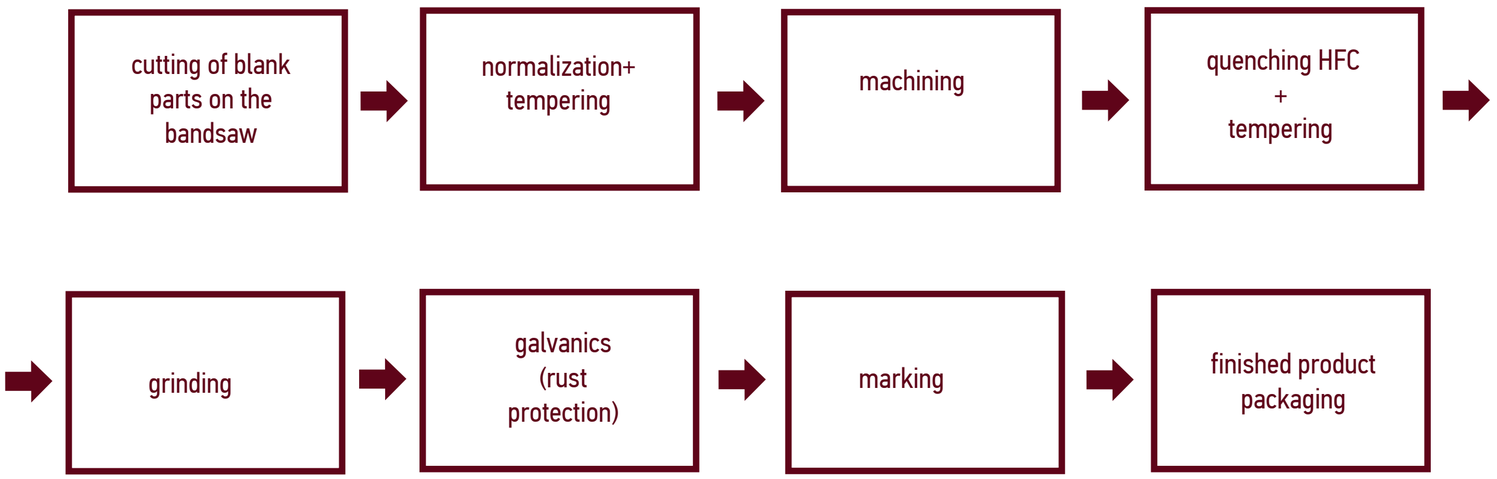
21 100 axles,pins and bushings were manufactured!

35 000 square meters – area of production premises

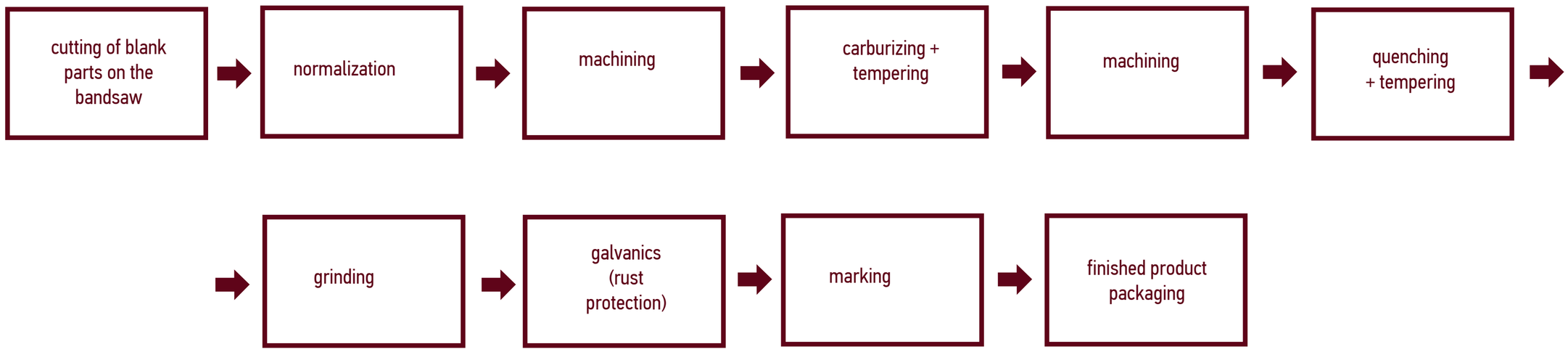
34 cubic meters - capacity of the biggest bucket

20 000 items of spare parts available in stock

Pins production manufactuing steps



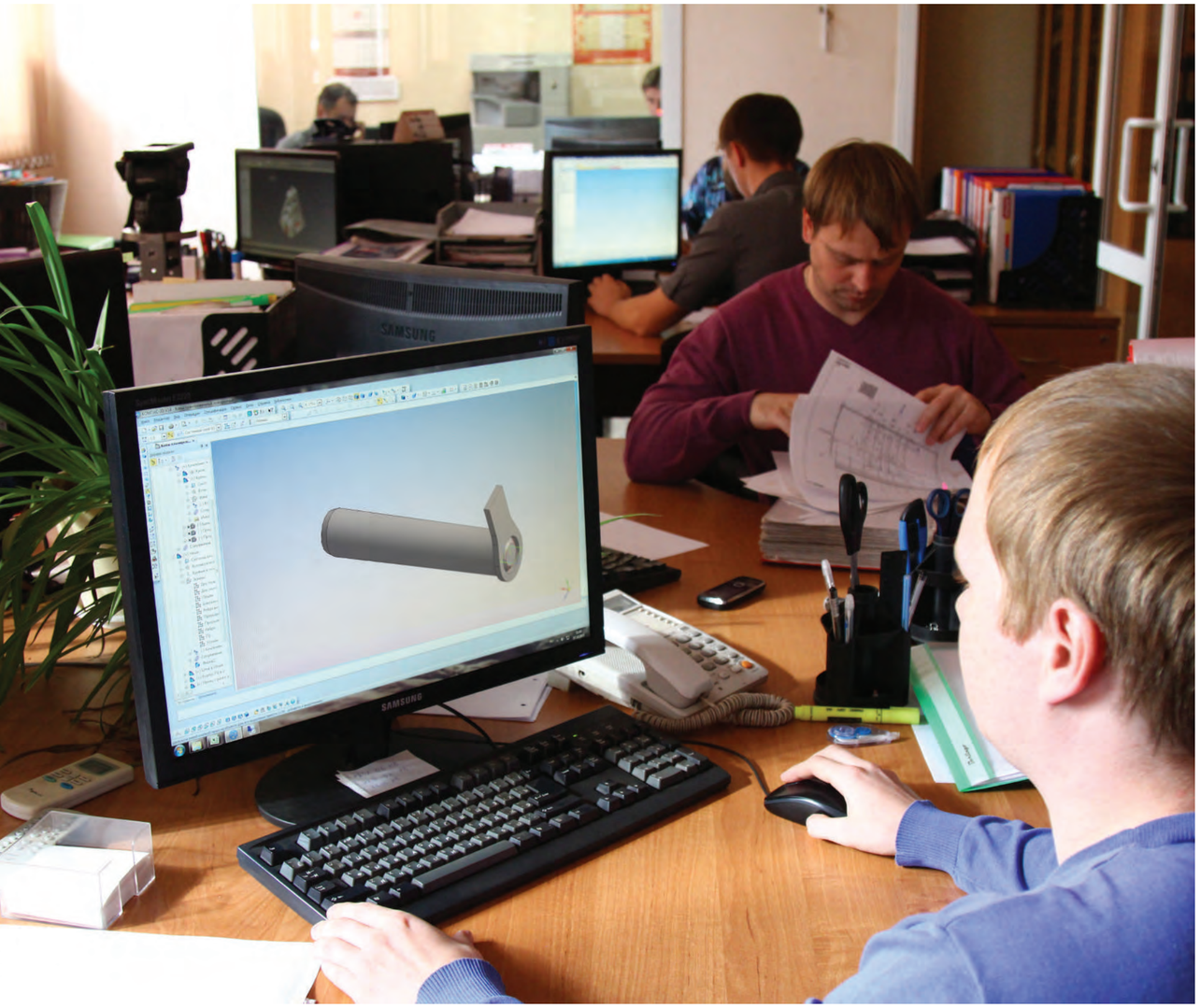
Bushings production manufacturing steps

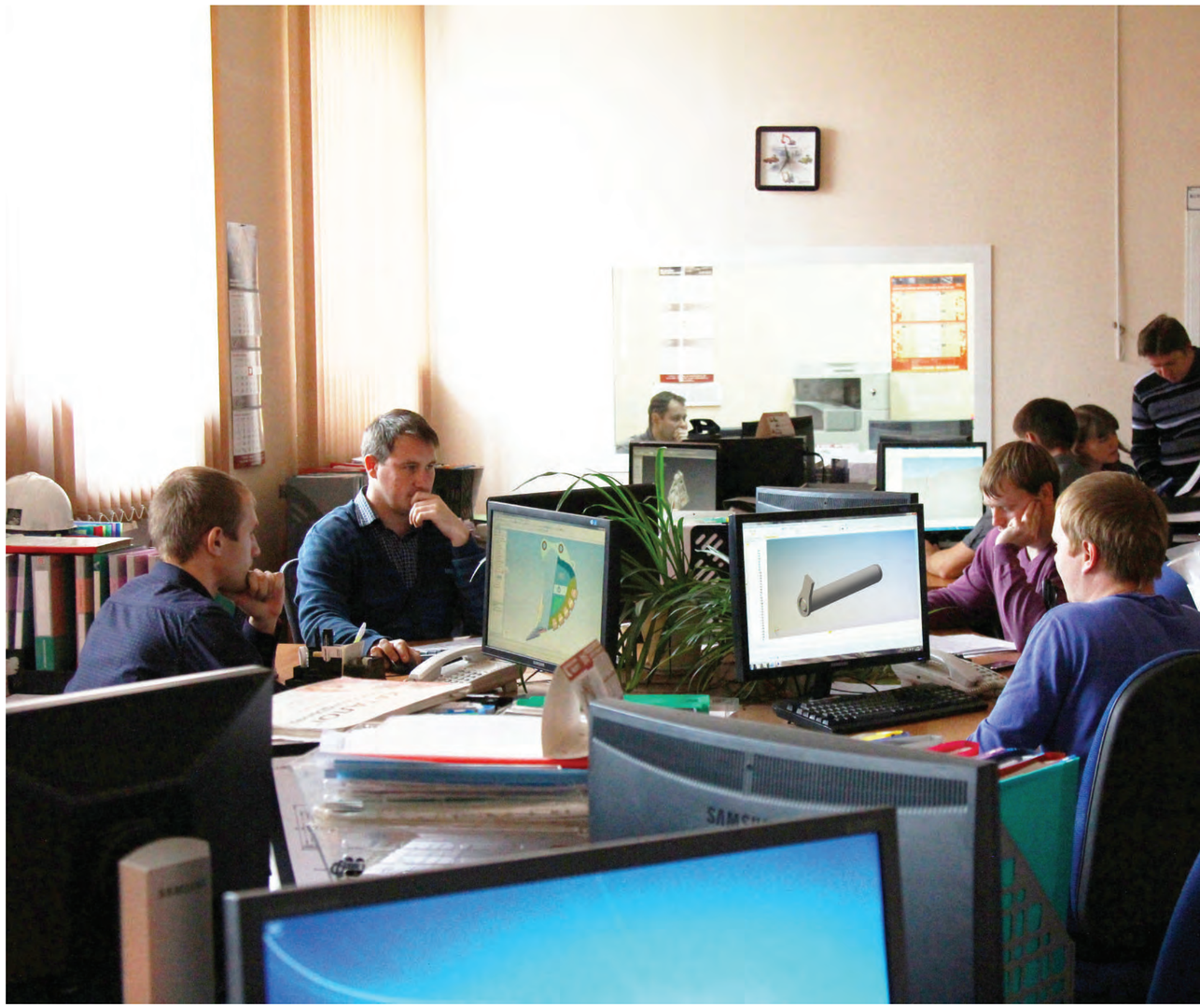


Quality control is carried out at all stages of production

1. Designing

- Design-engineering Depatment - 36 people.
- Using and applying modern 3D modeling software
- Readiness to come to any part of Russia to make the necessary measurements.





2. Blank parts preparation

Blank parts for further axles, pins and bushings` production

Bandsaw machines "PETRA", "PEGAS","SAR 331 SA GDS", "FMB-2"

Axles, pins

- **40X steel** is used to manufacture fingers and axles for construction-class excavators with an operating weight up to 75 tons
- **40XH2MA steel** is used to manufacture fingers and axles for "Mining" class excavators with an operating weight of 75 tons or more

Bushings

- **20Xsteel is used to** manufacture bushings for construction-class excavators with an operating weight up to 75 tons, **.**
- 20XH3 is used to manufacture bushings for Mining class excavators with an operating weight of 75 tons or more, .

The main suppliers of steel are: **Ural Steel** (Russia), **Metallurgical Plant named after Serov** (Russia), **Krasnyj Octyabr`** (Russia). Modern bandsaw machines allow to cut blank parts в размер according to all necessary dimensional allowances/tolerances.

3. Thermal improvement, normalization, blank parts cementation/carbonization

Quenching furnaces

Carbonization complex

Axles, pins

By thermally improving workpieces for axes and fingers, the ductility property and impact toughness of steel increases while maintaining high hardness and strength. The steel structure is stabilized while its uniformity/ homogeneousness is achieved.

Bushings

Cementation is carburization of the blank parts ` surface for bushings.
During normalization process, the structure of the steel is stabilized; the necessary mechanical properties are achieved.

4. Machining

Multipurpose machine Doosan (Korea)

Doosan high-precision turning and boring complexes allow to obtain accuracy of up to 0.005 mm, and perform several operations in one set-up, which increases the speed of production.

On theese complexes the following operations are carried out:

- Turning
- Boring
- Blank parts cutoff turning
- Grooving for greasing/lubricant

5. Final quenching and tempering of products

Surface hardening by HFC + Tempering

During the hardening process using HFC method (High Frequency Current) the part is placed inside the inductor connected to the sources of HFC. Hardened parts are characterized by a very uneven structure, that is why, they are always subjected to additional heat treatment – tempering. Tempering of steel softens the effect of hardening, reduces or removes residual stresses/residual afterstrain.

As a result of hardening by HFC method and tempering of steel, a high hardness of the pin surface is achieved while maintaining a viscous and strong core. Also the advantages of this method include high productivity.

HFC ins tallation

Bulk hardening + Tempering

During heat treatment (heating to temperatures above the lower critical point of steel and exposure at a given temperature followed by rapid cooling) steel gains martensite structure and as a result it becomes solid.

Subsequent tempering is carried out to transfer the steel to equilibrium state.

Finally, due to these processes, steel gains a high hardness index with the necessary margin of viscosity and ductility property.

Quenching furnaces

6. Grinding

Grinding machine

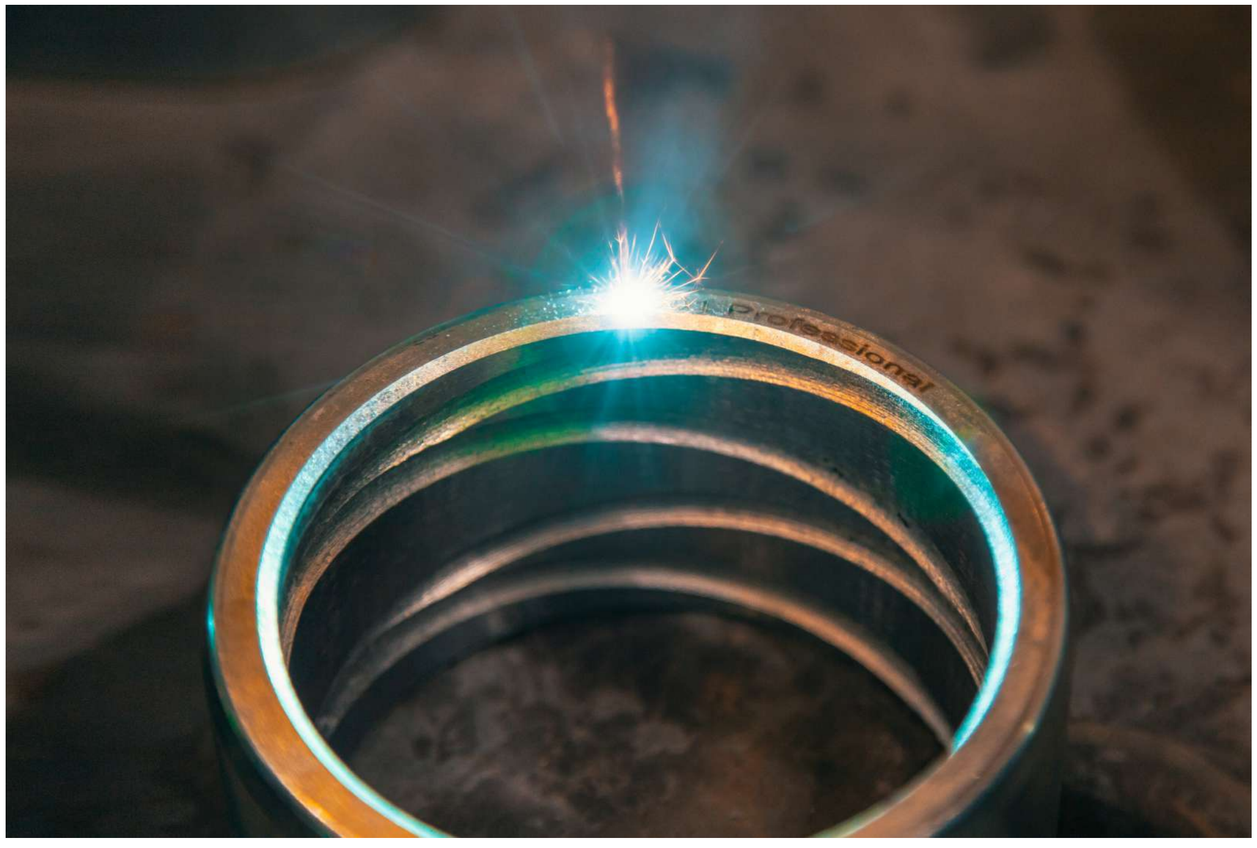
Grinded axles, pins, bushings

Grinding of parts is the technological process of blank parts processing , which follows after rough operations and hardening, and as a result smoothness and cleanliness of finished products ` surfaces are ensured.
The grinding operation is unique. Its technology allows the processing of materials with high hardness index (up to 70 HRC).

7. Galvanics (rust protection)

Each of our products is covered with a layer of zinc a few microns thick.
Axes, pins, bushings that have been processed using this technology are corrosionproof (they can be resistant to corrosion) for a long time.

8. Pins and bushings Marking



Each product is marked with the identification reference part number and manufacturer name - "Professional"

9. Finished product packaging

The finished product comes to the warehouse and is packed here.

Laboratory quality control

РЕГИСТР
ИСО 9001

СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р

РЕГИСТР СИСТЕМ КАЧЕСТВА

ОРГАН ПО СЕРТИФИКАЦИИ СИСТЕМ МЕНЕДЖМЕНТА КАЧЕСТВА
ООО «ЭКОСЕРТ»
127018, г. Москва, ул. Сущевский вал, д. 9, стр. 1
№ РОСС RU.0001.13ИФ93

К № 29783 Выпуск 2. СМК сертифицирована с сентября 2012 г.

СЕРТИФИКАТ СООТВЕТСТВИЯ

Выдан **Обществу с ограниченной ответственностью «Профессионал»**
РФ, 153043, Ивановская область, город Иваново, улица Коллективная, дом 3Б

НАСТОЯЩИЙ СЕРТИФИКАТ УДОСТОВЕРЯЕТ:
система менеджмента качества

применительно к разработке, проектированию, изготовлению, реализации, поставке, сервисному, гарантийному и послегарантийному обслуживанию навесного рабочего оборудования и запасных частей для дорожно-строительной и карьерной техники

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ ГОСТ ISO 9001-2011 (ISO 9001:2008)

Регистрационный № РОСС RU.ИФ93.К00552

Дата регистрации 12.10.2015 **Срок действия до 12.10.2018**

Руководитель органа по сертификации систем менеджмента качества **Е. А. Сальникова**

Председатель комиссии **А. Е. Лиханов**

Учетный номер Регистра систем качества № 24505

© ОПЦИОН

Independent Testing Laboratory of 9 people (located on the territory of the company "Professional" Ltd) constantly conducts input control of bar sections production process at all stages (compliance with declared dimensions, product hardness test after thermal processing and so on).

All products are given a factory warranty of 6 months

Why is “Professional" Ltd the best option/top choice among suppliers of pins and bushings?

- The ability to produce pins and bushings for excavators from 3 to 500 tons.
- Large purchase amount of rolled metal products at **minimum prices**, which makes our products cheaper than competitors ones.
- Our own design and engineering Department allows us to design and manufacture a product of any complexity size and dimentions.
- The use of modern equipment allows us to achieve maximum accuracy with minimum production time.
- We have our own thermal section.
- Strict observance of TECHNOLOGICAL PROCESSES.
- Galvanic covering ensures CORROSION RESISTANCE
- **The Independent testing laboratory** monitors all stages of the technological process.

PROFESSIONAL

MINING AND CONSTRUCTION ATTACHMENTS

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