

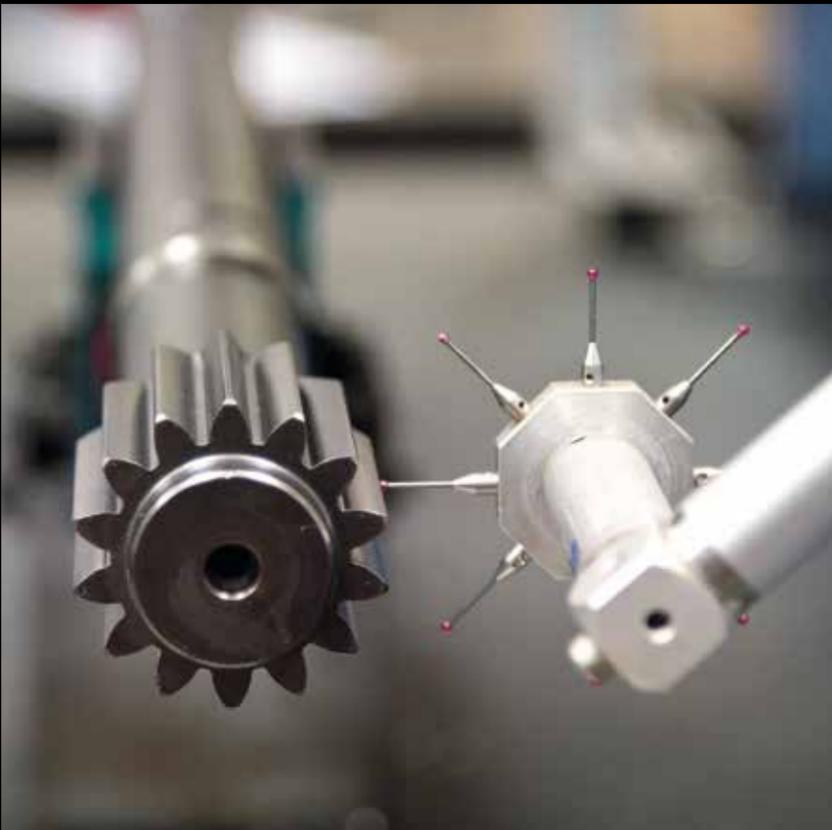


**SAPES**  
DRIVING COMPONENTS



SINCE 1933 WE HAVE BEEN  
DELIVERING QUALITY  
AND RELIABILITY FOR  
THE AUTOMOTIVE MARKET

Since 1933 we started being highly specialized in cold forging and hot forging of driving components for the automotive, the construction machinery and the agricultural vehicles.  
In 1994, in completing our hot forging production lines we added a machining department as well as a heat-treatment section with the quench and temper heat treatment and the induction hardening.  
Our company complies with the UNI EN ISO 9001:2015 and the requirements of IATF 16949:2016.



# THE HISTORY

## 1933: Founding of the company

The engineer Emilio Miglio establishes “Sapes – Società Anonima Prodotti Elettrofucinati e Stampati” (that means “Joint-stock company electric upsetted and forged components”) in Milan. The company bases its technology on the electric upsetting process and produces with economic efficiency and technical merits high-strength bolts, that beforehand were mainly manufactured through the precision machining with automatic turning lathes.

## 1937: Business growth

Strong growth of the company in the production of high strength bolts mainly for the aircraft industry.

## 1943-1946: Standstill

During the Second World War the company is bombarded and the business is interrupted.

## 1947: New beginning in Storo

In 1947 the engineer Miglio restarts the business building a new plant in Storo. In those years a new more economical and effective technology for the production of bolts becomes successful, this is the cold forging. This technology requires very high investments and Sapes, after a long standstill and involved in moving to Storo, is not able to support them. Miglio decides therefore to use the electric upsetting plants to produce items with new designs, as tie rods, ball pins and pushrods. Sapes finds new business opportunities in these markets and gains customers.

## 1954: The next generation

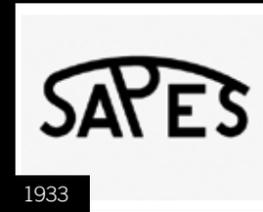
The son Gianfranco Miglio takes over the responsibility in the company.

## 1960: Expansion and diversification

The O.G. Officine Giudicariensi is founded in Storo. The company employs the electric upsetting technology to produce transmission shafts and pinions, items with different functions and of larger dimension than those usually produced by Sapes. Also the plants in O.G. are bigger than those working in Sapes. In the 60s Sapes and O.G. register a positive growth and employ about 180 people.

## 1972: The foundation of Sapes Officine Giudicariensi S.p.A. and the choice for the cold forging

Sapes and O.G. are combined in the Sapes Officine Giudicariensi S.p.A. (later called simply Sapes). Thanks to this operation the former Sapes abandons the previous business and starts to work in the field of cold forging, while the former O.G. goes on to produce hot forged pieces of larger dimension. In the 70s a dynamic development of the company is confirmed. Sapes has a workforce of about 150 people.



1933



1937



1943-1946



1947



1954



1960



1972



1981-1984



1994



2000-2003



2003-2004



2008-2017



2018



2019

## 1981-1984: The crisis

The difficult market situation, in particular of the customers in the fields of engines, motorcycles, tractors, industrial and earth moving vehicles, leads to a fall in sales and the increasing labour costs cause difficulties. The economic crisis has severe consequences on the employment in Sapes.

## 1994: The relaunch

Sapes buys from the family Walterscheid the company Sawam Trasmissioni S.p.A., whose activity is the mechanical machining of hot forged components for the automotive, earth moving and agricultural sectors. Sawam is located in Storo next to Sapes and has a strategic importance because it is able to carry out the mechanical machining, the quench and temper and the induction hardening treatments of the hot forged pieces produced by Sapes.

## 2000-2003: Second plant in Condino

The historical buildings in Storo are not suitable for the development of the whole company, therefore in 2000 Sapes decides to buy in Condino (about 5 km far from Storo) new buildings with a surface of 26.000m<sup>2</sup>. Between 2001 and 2003 the hot and cold forging departments are transferred from Storo to Condino. The mechanical machining, the quench and temper and the induction hardening treatments are still carried out in the plant of Storo.

## 2003-2004: More tie rods with higher quality

Thanks to new investments the productive capacity of cold forged tie rods is tripled. A new highly sensitive control device –integrated in the production line- guarantees the conformity of tie rods to the customer requirements.

## 2008-2017: New investments

Despite the difficult market situation Sapes carries out new investments in all the production departments. A new plant for the production of pushrods grants the doubling of the previous productive capacity with a strong improvement of quality standards. New investments in electrical upsetters, robots and mechanical hands increase the productivity and simplifies the workplace in the hot forging department. In the mechanical machining department Sapes buys new plants and robots in order to improve efficiency and flexibility.

## 2018: New challenges with Ori Martin S.p.A.

At the end of 2018 Sapes is acquired by Ori Martin, an Italian industrial group specialized in the high quality long products steel production. Benefiting from successful fiscal consolidation and from synergies with the new Group, Sapes in 2019 becomes a stronger and more reliable partner for all its customers.

## 2019: The new SAPES S.p.A.

A new corporate image for Sapes that reflects innovation, professionalism and excellence.



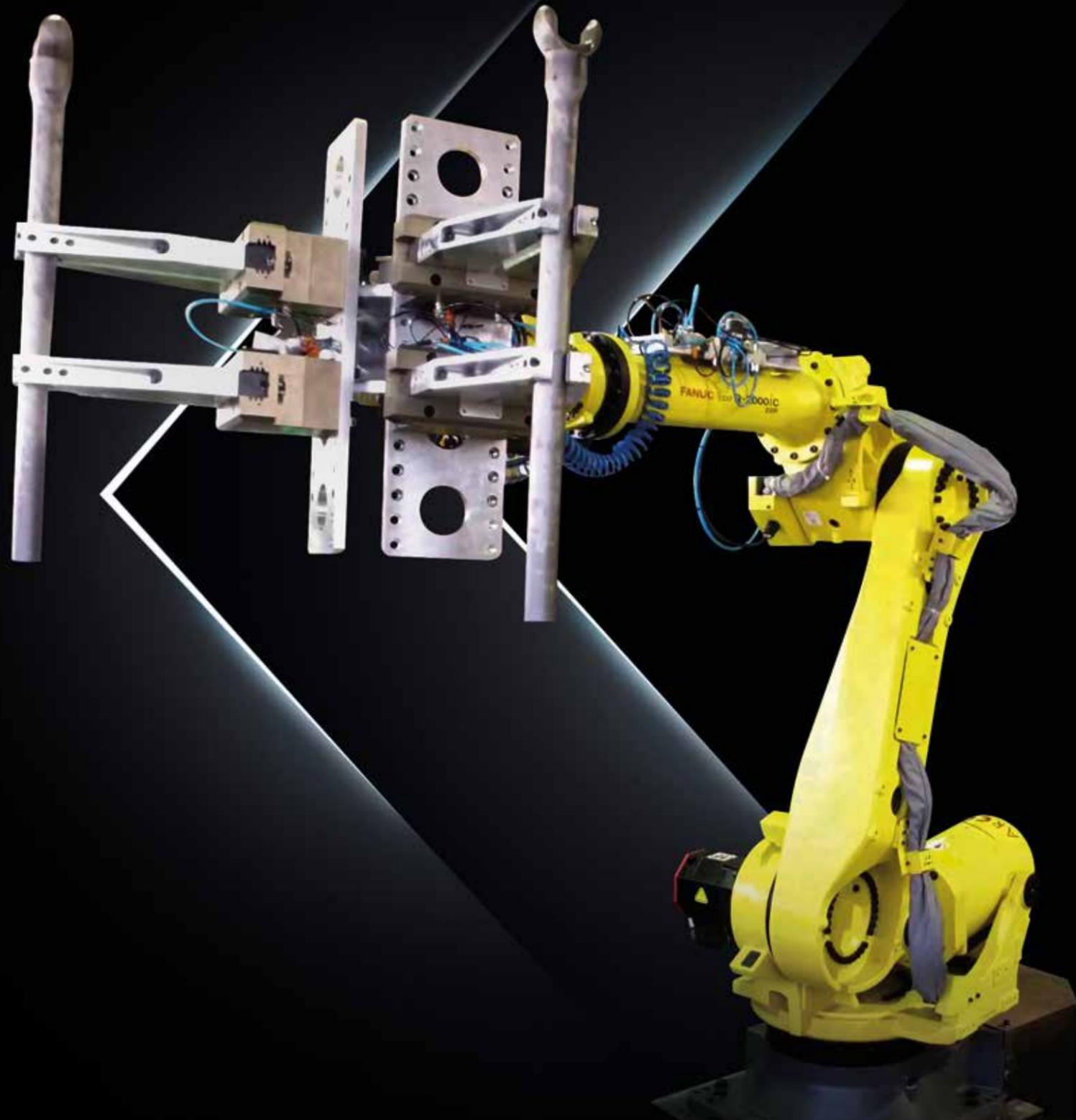
## HOT FORGING PROCESS

Sapes S.p.A. is a company specialized in open-die forging of components with special steel grade for the automotive, agricultural and construction machinery markets.

Thanks to various automated production lines and to a solid internal organization, we ensure the highest quality standards to fulfill the customer's requirements.

Our partnership with customers and our ability to listen to their needs have fostered and strengthened our continuous search for improvement in quality and organization.





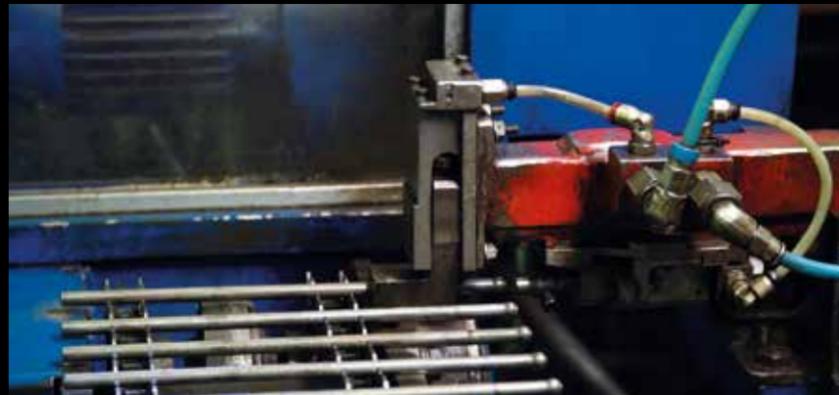
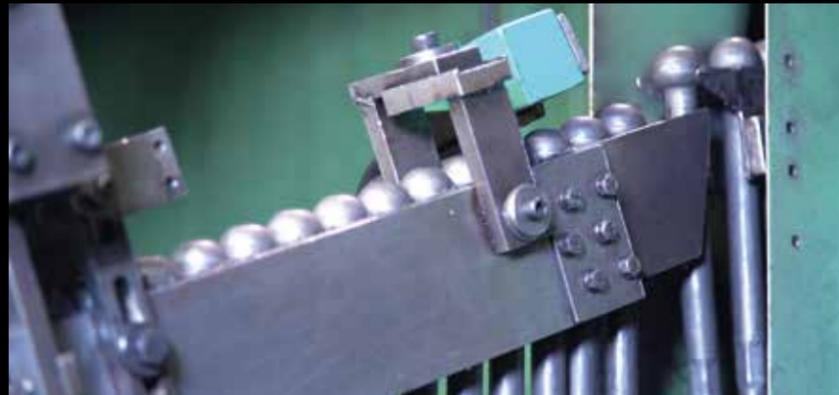
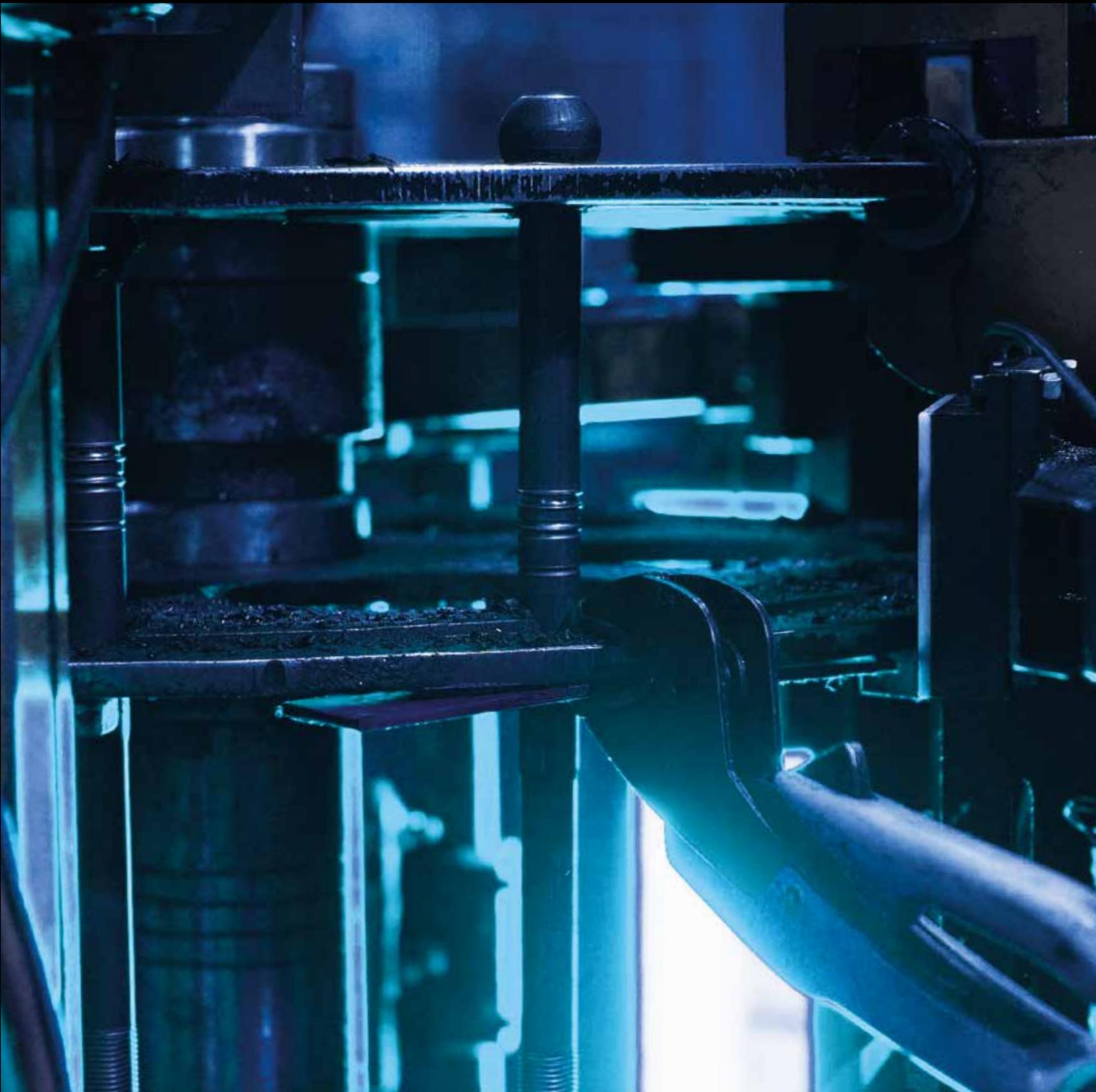
## MACHINING

In 1994 Sapes S.p.A. made the strategic choice to invest in the machining with the purpose of meeting the customer's needs for a more flexible and integrated service.

Today we can supply a highly integrated production cycle which – starting from a steel bar – can provide a completely finished component ready to be assembled into the vehicle.

A dedicated production department allows us to carry out the centering, the turning, the gear cutting, the cold spline rolling, the drilling, the induction hardening and the grinding on our hot forged parts.

Thanks to various automated production lines and to a solid internal organization, we ensure the highest quality standards to fulfill the customer's requirements of the automotive, agricultural and construction machinery markets.



# COLD FORGING

Sapes S.p.A. is equipped with cold forging lines for the production of steering components, as tie rods and ball pins, and of engine components, as pushrods.

Many years of experience and a solid internal organization ensure the highest quality standards on the production of driving safety cold forged components.

Sapes is able to supply tie rods with rolled groove and thread. The product conformity to the customer requirements is guaranteed by a highly sensitive control device integrated in the production line. The company complies with the UNI EN ISO 9001:2015 and the requirements of IATF 16949:2016.

# PRODUCTS RANGE

YOKES SHAFTS



PUSHRODS



RIGID AXLE SHAFTS



TIE RODS and BALL PINS



FLANGED and SUN GEAR SHAFTS



# TIE RODS

## PRODUCTION AREA

Cold forging section

## APPLICATIONS

 Automotive industry

 Transport vehicles

## FUNCTION AND CRITICALITY

It is a basic safety component used in automotive steering systems and from its integrity and functionality depend directly the possibility to operate the steering wheels and consequently the whole vehicle.

## DIMENSIONS

min. length	60 mm.
max. length	335 mm.
max. Ø of the sphere	33 mm.
max. Ø of the wire rod	21 mm.

## MARKET/CUSTOMERS

Major producers like THK and ZF Friedrichshafen.



# PUSHRODS

## PRODUCTION AREA

Cold forging section

## APPLICATIONS

 Transport vehicles

 Agricultural vehicles

 Earth moving equipment

## FUNCTION AND CRITICALITY

This component has the task to operate the valve opening on the large cylinder diesel engines. On the automotive engines it has been replaced by the shifting of the camshaft on the engine head, however until nowadays the system of which it is part results more reliable and is, therefore, preferred on engines which require more extended intervals between different maintenance jobs as on the above listed engines.

## DIMENSIONS

min. length	200 mm.
max. length	417 mm.
max. Ø of the ball	15,2 mm.
max. Ø of the cup	17,6 mm.
max. Ø of the wire rod	12,5 mm.

## MARKET/CUSTOMERS

Major producers like FPT Industrial, MAN, Liebherr, FCA VM Motori and Isotta Fraschini Motori.



# BALL PINS

## PRODUCTION AREA

Cold forging section

## APPLICATION

 Automotive industry

## FUNCTION AND CRITICALITY

It is a basic safety component used in automotive steering systems, and from its integrity and functionality depend directly the possibility to operate the steering wheels and consequently the whole vehicle.

## DIMENSIONS

min. length	60 mm.
max. length	335 mm.
max. Ø of the sphere	33 mm.
max. Ø of the wire rod	21 mm.

## MARKET/CUSTOMERS

Major producers like THK and ZF Friedrichshafen.



# FLANGED AXLE SHAFTS

## PRODUCTION AREAS

Electric upsetting and forging

Mechanical machining

Heat-treatment

## APPLICATIONS

 Automotive industry

 Transport vehicles

 Agricultural vehicles

 Earth moving equipment

## FUNCTION AND CRITICALITY

These components are intended for the drive transmission from the differential housing to the drive wheels. They are very critical items since their breaking causes the locking of the vehicle they are mounted on and they also represent an important safety factor concerning the vehicle itself.

## DIMENSIONS

min. length	120 mm.
max. length	1.750 mm.
max. Ø of the flange	325 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

## MARKET/CUSTOMERS

Major producers like CNH Industrial, Dana Incorporated, Elso, Linamar and MAN.



# RIGID AXLE SHAFTS

## PRODUCTION AREAS

Induction heating and forging  
Mechanical machining  
Heat-treatment

## APPLICATIONS

-  Transport vehicles
-  Agricultural vehicles
-  Earth moving equipment

## FUNCTION AND CRITICALITY

These components are intended for the drive transmission from the differential housing to the drive wheels. They are very critical items since their breaking causes the locking of the vehicle they are mounted on and they also represent an important safety factor concerning the vehicle itself.

## DIMENSIONS

min. length	220 mm.
max. length	1,750 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

## MARKET/CUSTOMERS

Major producers like Dana Incorporated, Elbe and Texelis.



# SUN GEAR SHAFTS AND INPUT SHAFTS

## PRODUCTION AREAS

Electric upsetting/induction heating and forging  
Mechanical machining  
Heat-treatment

## APPLICATIONS

-  Transport vehicles
-  Agricultural vehicles
-  Earth moving equipment

## FUNCTION AND CRITICALITY

These components are being used for the transmission drive (e.g. from the engine to the gear-box). They are very critical items since their breaking causes the locking of the vehicle they are mounted on and they also represent an important safety factor concerning the vehicle itself.

## DIMENSIONS

min. length	220 mm.
max. length	1,750 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

## MARKET/CUSTOMERS

Major producers like CNH Industrial, Gewes and Linamar.



# YOKES FOR CARDAN JOINTS AND DOUBLE UNIVERSAL JOINTS

## PRODUCTION AREAS

Electric upsetting and forging  
Mechanical machining  
Heat-treatment

## APPLICATIONS

-  Transport vehicles
-  Agricultural vehicles
-  Earth moving equipment

## FUNCTION AND CRITICALITY

These components are being used for the transmission of the motion flow between two not aligned axes. They are very critical items since their breaking causes the locking of the vehicle they are mounted on and also represent an important safety factor concerning the vehicle itself.

## DIMENSIONS

min. length	120 mm.
max. length	1,750 mm.
max. Ø of the flange	325 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

## MARKET/CUSTOMERS

Major producers like Dana Incorporated, Elbe, Elso, Gewes, Texelis and Walterscheid.



# PINIONS

## PRODUCTION AREAS

Electric upsetting and forging  
Mechanical machining  
Heat-treatment

## APPLICATIONS

-  Transport vehicles
-  Agricultural vehicles
-  Earth moving equipment

## FUNCTION AND CRITICALITY

These components are intended for the drive transmission between shafts that are 90 degrees apart (e.g. on the input side of the differential case). They are very critical items since their breaking causes the locking of the vehicle they are mounted on and they also represent an important safety factor concerning the vehicle itself.

## DIMENSIONS

min. length	120 mm.
max. length	1,750 mm.
max. Ø of the flange	325 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

## MARKET/CUSTOMERS

Major producers like CNH Industrial and Dana Incorporated.



## PISTONS COMPONENTS FOR TRACK ADJUSTERS



### PRODUCTION AREAS

Electric upsetting and forging  
Mechanical machining  
Heat-treatment

### APPLICATIONS

-  Agricultural vehicles
-  Earth moving equipment

### FUNCTION AND CRITICALITY

These components are being used for the adjustment of track link chains. They are very critical items since their breaking may cause the locking of the vehicle they are mounted on and they also represent an important safety for the vehicle itself.

### DIMENSIONS

min. length	120 mm.
max. length	1.750 mm.
max. Ø of the flange	325 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

### MARKET/CUSTOMERS

Major producers like Sogefi Rejna.

## RODS COMPONENTS FOR TRACK ADJUSTERS



### PRODUCTION AREAS

Electric upsetting and forging  
Mechanical machining  
Heat-treatment

### APPLICATIONS

-  Agricultural vehicles
-  Earth moving equipment

### FUNCTION AND CRITICALITY

These components are being used for the adjustment of track link chains. They are very critical items since their breaking may cause the locking of the vehicle they are mounted on and they also represent an important safety for the vehicle itself.

### DIMENSIONS

min. length	120 mm.
max. length	1.750 mm.
max. Ø of the flange	325 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

### MARKET/CUSTOMERS

Major producers like Sogefi Rejna.

## HYDRAULIC CYLINDERS COMPONENTS FOR TRACK ADJUSTERS



### PRODUCTION AREAS

Electric upsetting and forging  
Mechanical machining  
Heat-treatment

### APPLICATIONS

-  Agricultural vehicles
-  Earth moving equipment

### FUNCTION AND CRITICALITY

These components are being used for the adjustment of track link chains. They are very critical items since their breaking may cause the locking of the vehicle they are mounted on and they also represent an important safety for the vehicle itself.

### DIMENSIONS

min. length	120 mm.
max. length	1.750 mm.
max. Ø of the flange	325 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

### MARKET/CUSTOMERS

Major producers like Sogefi Rejna.

## TWISTLOCKS



### PRODUCTION AREAS

Electric upsetting and forging  
Mechanical machining  
Heat-treatment

### APPLICATION

-  Cargo handling equipment

### FUNCTION AND CRITICALITY

This component has the task to secure shipping containers. It is a rotating device that connects containers to a chassis and it is used in crane spreaders and spreaders for straddle carriers for the handling of containers.

### DIMENSIONS

min. length	120 mm.
max. length	1.750 mm.
max. Ø of the flange	325 mm.
min. Ø of the steel bar	25 mm.
max. Ø of the steel bar	125 mm.

### MARKET/CUSTOMERS

Major producers like ELME Spreader and Helid.



**SAPES S.P.A.**

Registered Office:

Via E. Miglio, 11 - 38089 - Storo (TN) - Italy

Tel.: +39 0465 686100 - Fax: +39 0465 686474

Via Roma, 160 - 38083 - Borgo Chiese (TN) - Italy

Tel.: +39 0465 622066 - Fax: +39 0465 622067

[sapes@sapes.eu](mailto:sapes@sapes.eu)

[www.sapes.eu](http://www.sapes.eu)