

### Standards of Machines

The machine fulfils all relevant and valid **EN/ISO-Norms** (2006/42/EC) and today's current requirements with regard to operating safety and **CE** conformity.

### Repkon offers following machines for the Production of Leaf Spring

- Material preparation line including fully automated hydraulic shear
- Center hole punching cell, including induction heating, presses and part automation
- Preheating furnaces for parabolic and eye-forming machines, Natural gas or LPG powered
- Water jet de-scaling units
- Parabolic leaf spring taper rolling machines
- Leaf straightener machines
- Combined or separate edge cutting&punching presses
- Complete air-linker production cell, including bending&punching presses
- Induction heaters for eye-forming machines
- Eye forming machines
- Fully automated heat treatment lines, including austenitisation furnace, quenching bath and tempering furnace
- Pre-loading machines, load and stroke controlling by visual graphics
- Load test machines, computer controlled
- Cyclic lifetime/fatigue test machines
- Complete loading & un-loading automation system by using industrial robots or gantry type manipulators
- Complete painting line with robotic painting operation and curing furnaces

### Complete Leaf Spring Assembly Lines consists of;

- Grinding machines for eye holes
- Drilling&reaming machines for eye holes
- Simultaneous special grinding machines for both eye holes side faces
- Leaf straightening & re-bending machines
- Bush assembly machines
- Multilayer leaf assembly and fixing machines
- Various assembly line conveyors
- Various operator controlled manipulators



**REP KON MACHINE & TOOL INDUSTRY AND TRADE INC.**

**PLANT**  
BALIBEY MAHALLESİ, FABRİKA SOKAK, NO:1 34980 SİLE, İSTANBUL / TÜRKİYE  
PHONE: +90 216 739 59 06 (pbx) FAX: +90 216 739 59 14 E-MAIL: repkon@repkon.com.tr

[www.repkon.com.tr](http://www.repkon.com.tr)

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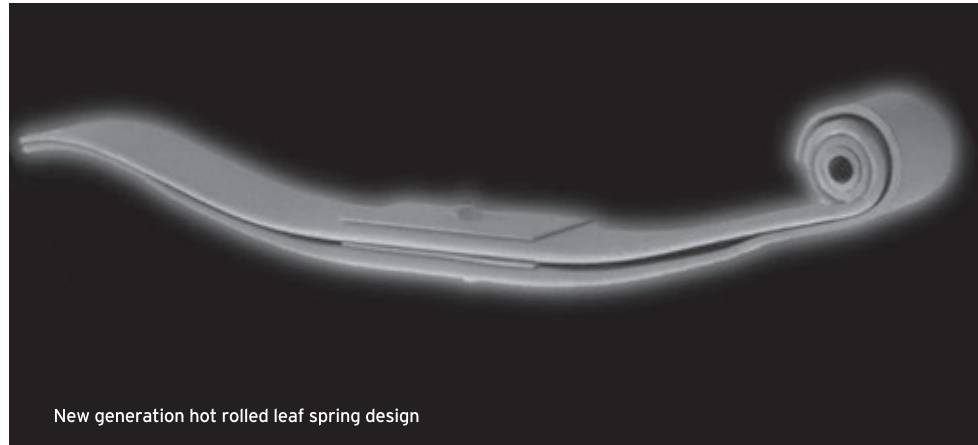
**40** YEARS  
OF QUALITY

## NEW GENERATION PARABOLIC LEAF SPRING PRODUCTION LINES

**REP KON**

*..setting flowforming 'free'.*

## NEW GENERATION HOT ROLLED PARABOLIC LEAF SPRING PRODUCTION



Parabolic leaf springs are replacing the conventional springs in vehicles. The new design combines an extra reduction in weight, a tremendous decrease in production costs with better spring characteristics.

### Use of parabolic leaf springs introduces improvements, such as ;

- Weight reduction up to 30% which is an added value to overall payload capacity
- Service life increase by a factor of 2 to 5
- Improvement of vibration absorption characteristics, making it possible to increase the life of transmission, suspension and joint parts and improve conditions for the driver
- Decrease in vehicle center of gravity height, thus; improving overall vehicle dynamics and stability
- Reduction in fuel consumption and an increase in tire lifetime.

### TECHNICAL DATA

#### Input Material

51CrMoV4, 50CrV4, 55Cr3, SAE 5160H, 55SiCr7, 60SiCr7, 65SiCr7, 60Si2Mn

#### Production Capabilities

Width of spring leaf	max. mm : 140 min. mm : 50
Thickness of spring leaf	max. mm : 60
Length of spring leaf	max. mm : 2.200
Rolling length	max. mm : 1.400
Decrease in thickness / pulling distance	max. 1/3 of thickness

#### Material Tolerances After Rolling

Width	(related to preform material)	mm : +1
Thickness	between each predefined segments of parabolic rolled leaves	mm : ±0,15

## EYE FORMING MACHINE FOR LEAF SPRING PRODUCTION



The Servo-Hydraulic REPKON E100 Series Eye Forming Machine is used for hot forming of all types of eye combinations, including closed/open, cylindrical/oval, straight/cranked, on parabolic springs or on flat spring. Developed REPKON Eye Forming Machine performs combined scarfing (angular edge cutting), forming and cranking units in one chuck of a single machine.

### APPLICATION CAPABILITIES FOR DULY USE

REPKON E100 Series Eye Forming Machine is controlled by Siemens Simotion Control System via operator control panel. The Machine is preferably used for mass production with continuous three shifts.

### TECHNICAL DATA

#### Production Capabilities

Width of spring leaf	max. mm : 160	min. mm : 40
Max. thickness in the eye forming section	without cranking mm: 30	with cranking mm: 25
Cutting length of the spring leaf	max. (mm) : 2.400	
Interior eye diameter	max. mm: 128	min. mm: 15
Max. cranking distance for cranked eyes	mm: 33,5	

#### Production Capacity

Closed eyes on main leaves	pieces/h : 120-150
Open eyes on second leaves	pieces/h : 120-200



The following types of spring leaf eyes can be produced.

