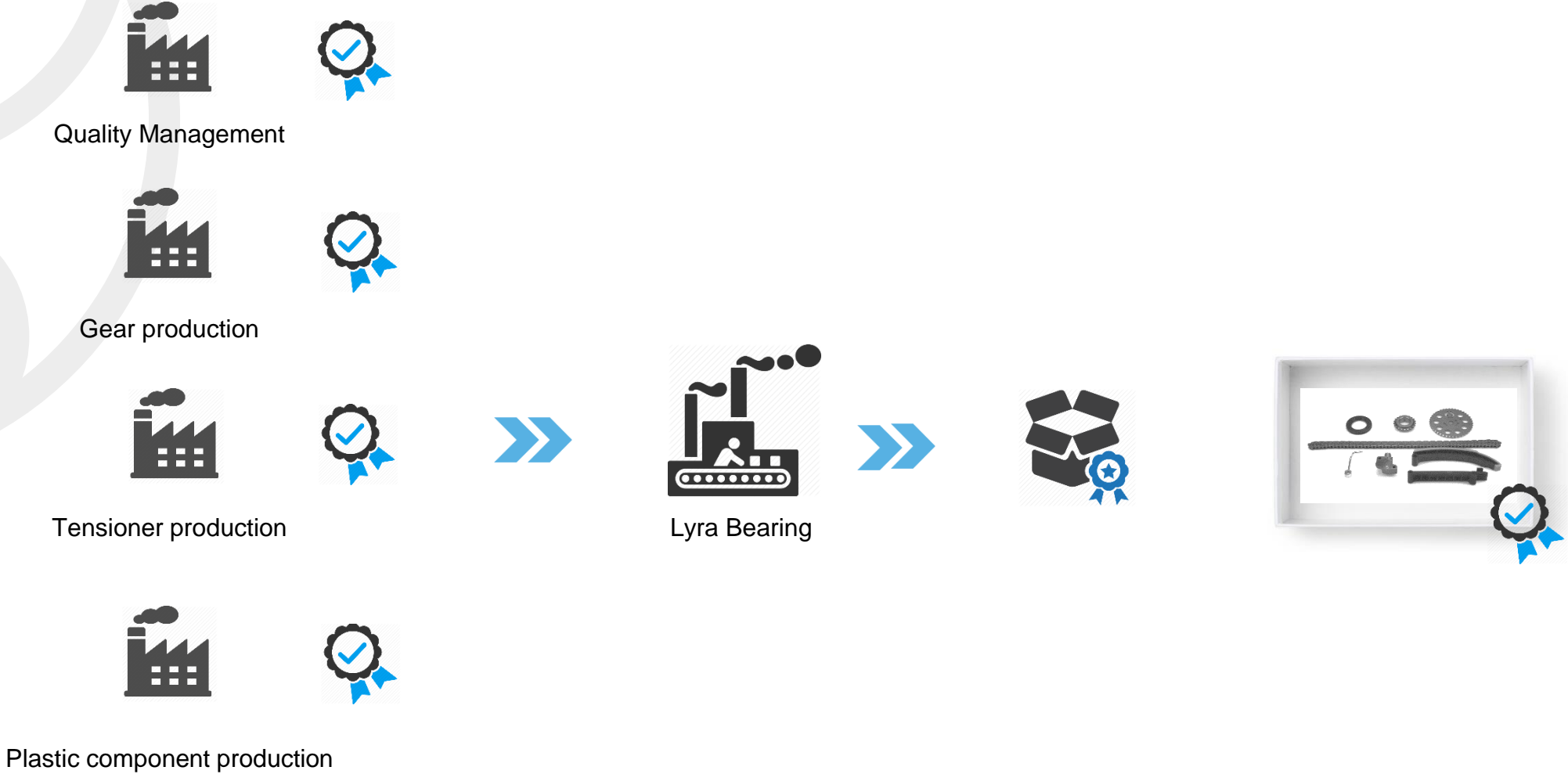




# Quality Management

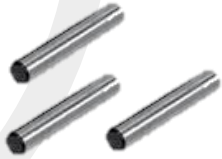
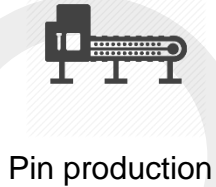
Marco Ricco

# Process



# Chain production




Certification

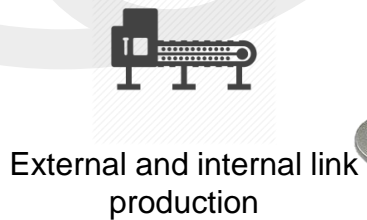


Every 2 hours on 8-10 pcs of production:  
**- Dimensional checks**



Chrome-plating in rotary barrel\*

Every 100 Kg product / 5 pieces checked:  
**- Dimensions**   
**- HV Hardness**   
**- Roughness** 



Every 2 hours on 8-10 pcs of production:  
**- Dimensional checks**



Every 100 Kg product / 5 pieces checked:  
**- Dimensions**   
**- HV Hardness**   
**- Roughness** 



Chain assembly

\*Rotary barrel: This chrome-plating process allows an even distribution of **Cr** on all pins.

# Chain production

Certification



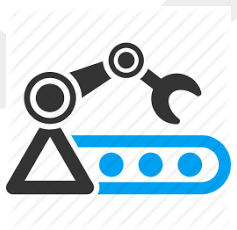
Measuring equipment:

Mitutoyo

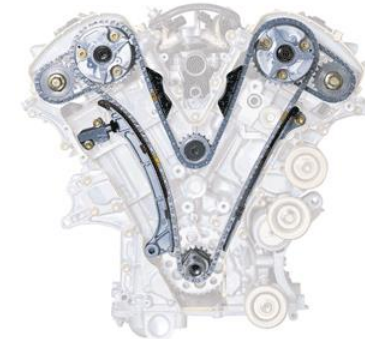


Every 2 hours on 8-10 pcs of production:  
- Check of resistance to pressure on pin rivets

Dynamic test (200 hours) or based on Customer requirements:  
- Chain elongation



Chain assembly



200 hours or **Based on Customer requirements**



Oil 15W40



Oil is filtered, not changed



Report showing elongation % every 20 hours.

# Chain production

Certification



**Teeth with induction  
hardening**

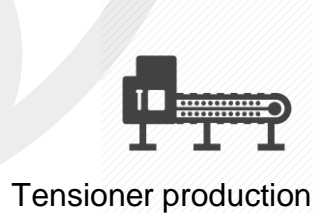


Every 2 hours on 8-10 pcs of production:




- **Dimensions** 
- **HV Teeth Hardness** 

# Tensioner production

Certification



Every 2 hours on 8-10 pcs of production:

- **Dimensions** 
- **HV Teeth Hardness** 
- **Roughness** 



Pin

20% of every supply:

- **Torsion test**



Spring

Every 2 hours on 8-10 pcs of production:

- **Dimensions**
- **HV Teeth Hardness**



Tensioner body

Check based on Customer requirements:

- **Check of pressure loss, if any**



# Plastic component production

Certification



Plastic component production



Every 2 hours on 8-10 pcs of production:

- **Dimensions**



100 % of production:

- **Surface finish**



# Checks Performed at Our Premises

Certification



Checks on incoming goods



Based on **AQL II** Standard:

- **Dimensions**



100 % of production:

- **Checks on kit composition after assembly**





# Tests Performed by Third-party Certified Laboratories

References



Tests performed once a year



- Tensile test \*
- Microhardness test (all components of the chain) **UNI EN ISO 18265:2008**
- Micrographic examinations **UNI EN ISO 17639:2013**
- Dimensional controls **Average obtained from three measurements**
- EDS Microanalysis
- Chemical analysis **Test method: ASTM E1019-11, POI88, MTI8**



Tests performed on every supply

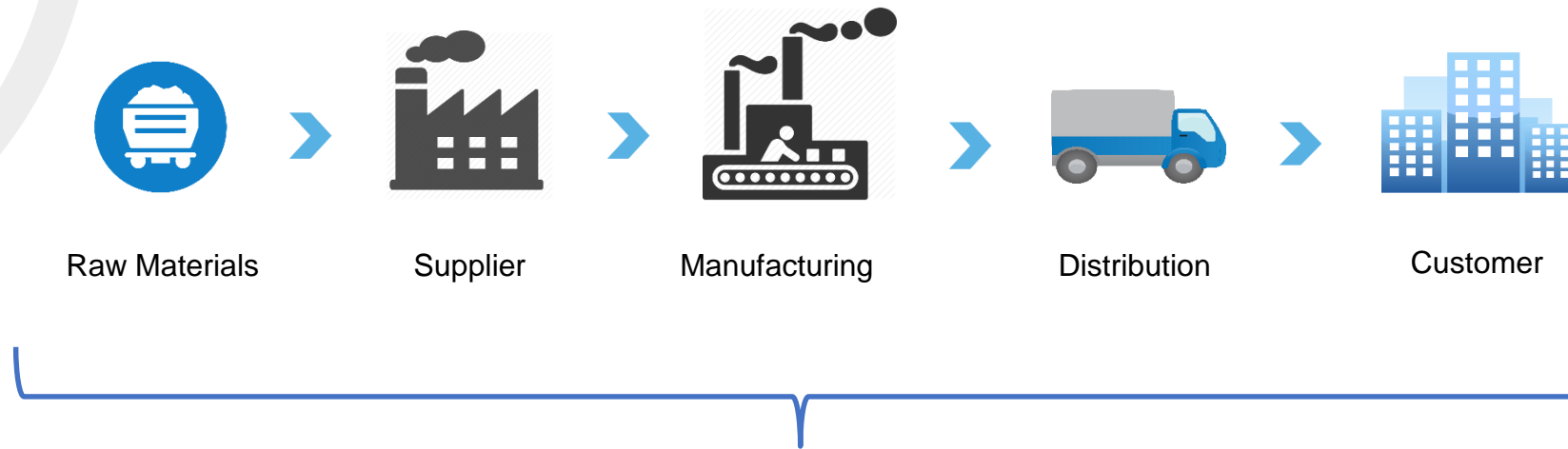


- Microhardness test (pin of chain) **In section 0,02 mm from the surface**

# Chain PPAP – Document lists

No	PPAP file types
1	Sales product design record
2	Design failure mode and consequence analysis ( <b>DFMEA</b> )
3	Process flow diagram
4	Process failure mode and consequence analysis ( <b>PFMEA</b> )
5	The control plan
6	Measurement system analysis ( <b>MSA</b> )
7	Full size report
8	Material and performance test results
9	Initial process capability study
10	Qualified laboratory documents
11	The parts are guaranteed ( <b>PSW</b> )

# Quality management



Lyra Bearing is ready to introduce/adapt any **control procedure** according to Customer's needs.

*Grazie*  
*Thank you*



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