

**WAKAMA<sup>®</sup>**  
**ENGINEERING**

**®**evolution of Products

# tion of Products

## HAKAMA<sup>®</sup> ENGINEERING

Through engineering competence and process orientation we develop new ways for our clients to successfully withstand the global competition.

### **Project management**

All engineering projects at HAKAMA ENGINEERING are dealt with methods of up to date project management. Our project managers control all project related processes integrating external partners, too, regardless of location. You are able to profit of an existing competence network in electronics, pneumatics, synthetic material etc. at any time.

### **Simultaneous engineering**

Digital product design is based on virtual computer models. Because of that validating of product functions, design and ergonomics as well as the optimal assembling or maintainability can be accomplished at the workstation. Time-studies for the assembly as well as feasibility studies help to save time and to reduce expenditure.

# evolu



## Know-how

Competitiveness, international presence, longstanding knowledge of the industry and the capability as general service contractor make HAKAMA a preferred partner for feasible, easy to apply product solutions in the manufacturing industry.

Our engineering team enjoys informing you - and this privately and individually. Due to our product variety for different customer branches we can surely offer an individual solution!

Reach your goal faster by means of engineering solutions from the productions specialist.







**Delivery  
Product design**



**Execution  
Project**

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**Finished  
Product**



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## ENGINEERING

### ■ Project planning

- Understanding objectives and wishes
- Ideas and free-hand sketches
- Consultancy in choosing material and surface quality
- Generation of product ideas
- Definition of variants
- Design engineering with standard price and rough schedule

### ■ Development stage

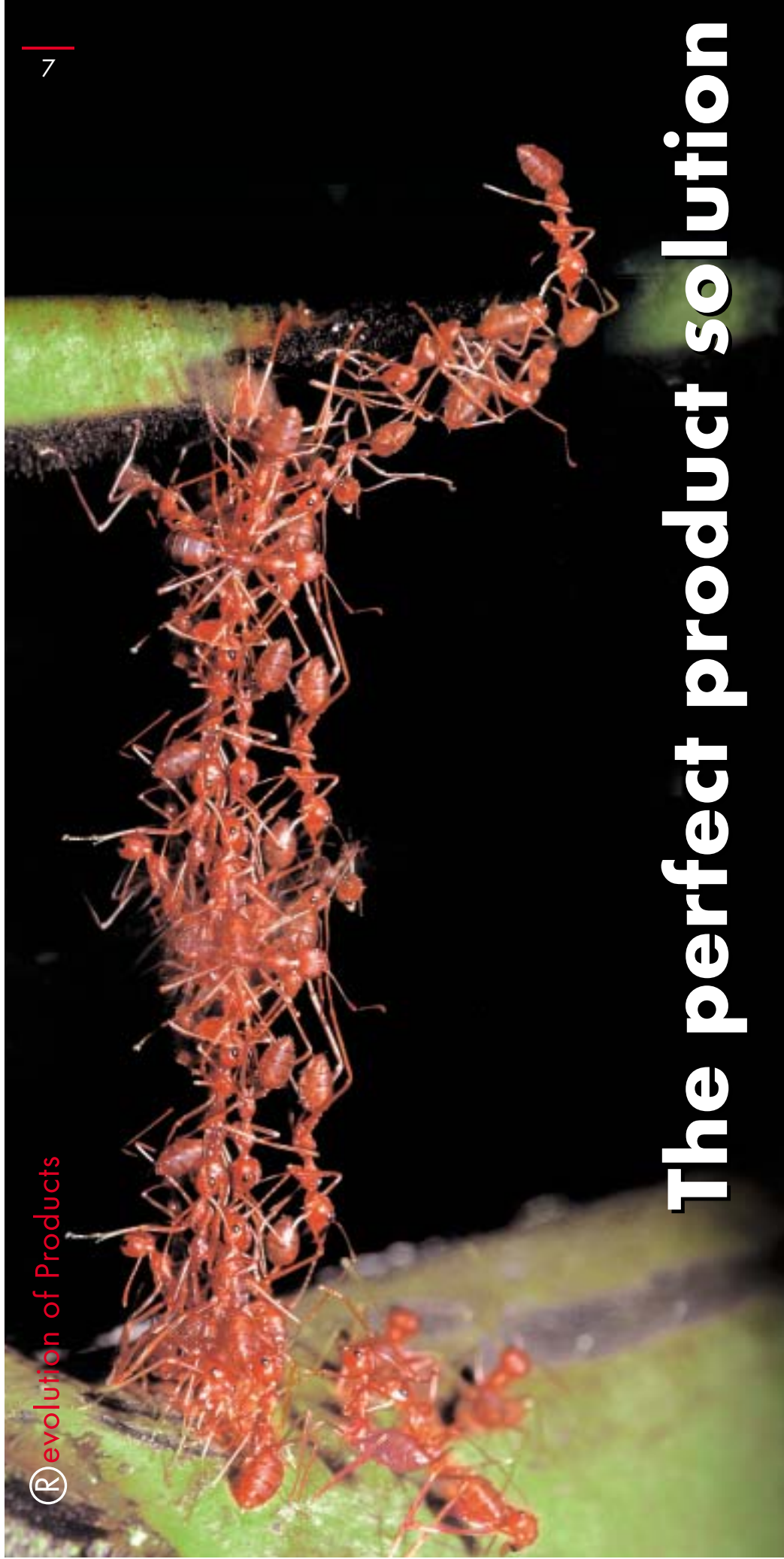
- Definition of material and surface quality
- Designation of product structure  
(Different components / third party treatment)
- Generation of the product solution
- Production designs
- Value analysis and detailed offer

### ■ Testing and Validation

- Detailed schedule
- Prototype in serial production
- Test of prototypes
- Continuous process of improvement
- Production preparation for serial production

### ■ Realisation

- Pilot lot / serial production
- Production and assembling
- Logistics and Services



# The perfect product solution



# Readiness to go into production

## Course Engineering project

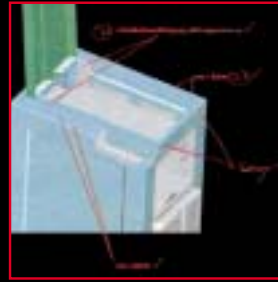
- Design objective  
Customer



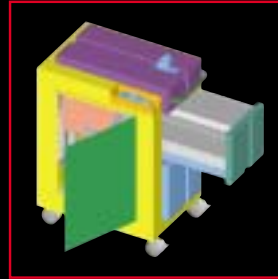
- Initial approaches  
for a solution



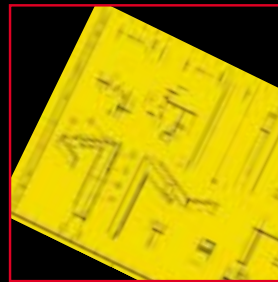
- **Solutions in detail**



- **Consideration of external components**



- **Production design**



- **Production**  
(Prototype / serial production)



- **Mounted assembly**



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## ENGINEERING

### Your benefit

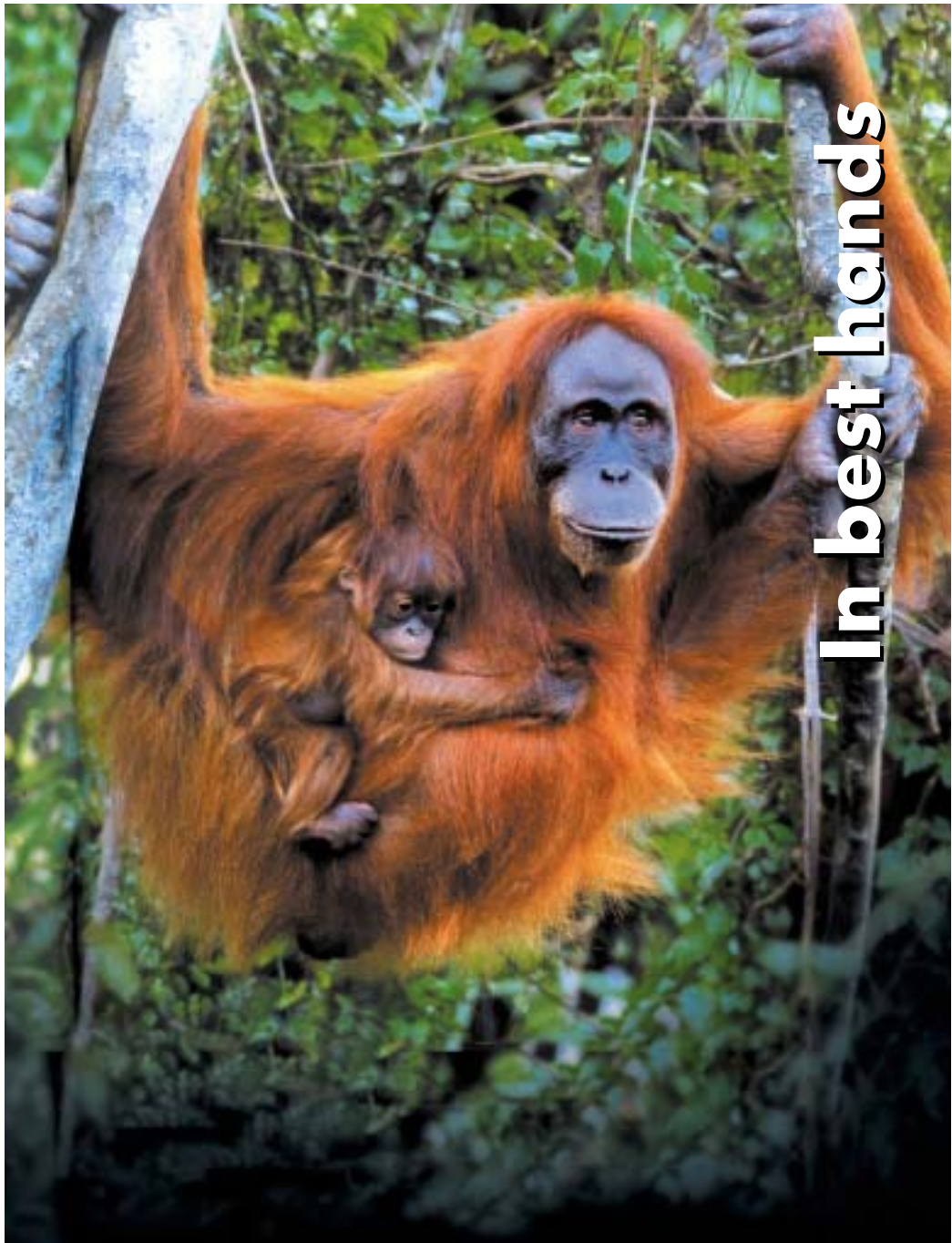
- Your design objective will be met to 99%.
- Our unsurpassable "Know-how in sheet metal".
- Only one counterpart for the complete product solution.
- Feasible perfect realizations right from the beginning.
- Feasibility comes to the fore.
- Our preparation and assistance with the evaluation of external components.
- Fast prototype production.
- The product solution can be adapted to external production.
- High understanding for your technology.





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# Individual product solutions



In best hands

# HAKAMA<sup>®</sup> ENGINEERING

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