

# DESMA

*automation*

FOR YOUR PROCESS

THE SOLUTION



ENGINEERED, RELIABLE, FLEXIBLE –

AUTOMATED FOOTWEAR MANUFACTURING



## Automation and robots:

Wherever quality, productivity and economic feasibility are the main points of interest, automation and robots are a must. Also – and especially – when producing shoes they can increase production and quality by up to 30%, decrease unit cost and open horizons for innovative solutions and thus for completely new possibilities. Robots can, for example, spray release agent and glue precisely and reproducibly, roughen uppers and position pick & place method lasts, sole parts, steel soles or studs, remove shoes, boots or soles, trim sole edges or guide pouring heads.

**CHRISTIAN DECKER**

MANAGING DIRECTOR

**KLAUS FREESE**

MANAGING DIRECTOR

We believe in a policy of uncompromising quality in the fields of design, manufacturing, distribution and maintenance.



# Reproducible, reliable, robust, flexible

## paying their way

No matter if you deal with direct soling or production of soles, work with Polyurethane (PU), thermoplastic materials (TP), or rubber (RU) DESMA will always offer customized automation - fulfilling the needs of your individual shoe production. If you need a single robot workplace or a highly automated production line, new production equipment or flexible robot integration into your existing production system, DESMA will support you. We offer expert advice, workforce training, equipment installation. And of course, give immediate help and remote diagnosis around the globe.

## ROBOT FOR SPRAYING RELEASE AGENT

*Easy demoulding and best quality when processing PU*



DESMA robots for spraying release agents in Polyurethane (PU) processing employ electrostatic spray technology as well as without electrostatic. The release agent is applied precisely to the area where it is needed. Consumption of the release agent is minimized – no matter if it is based on water or wax, silicone or others. Adhesion of the injected PU to the mould is systematically prevented. Demoulding is eased, damaging of the finished soles avoided. The low consumption of release agent leads to a longer operating life of the moulds. Investment in robots for spraying release agent is recovered soonest by reduced consumption of release agent.

- > LOWEST CONSUMPTION OF RELEASE AGENT
- > HIGH PRODUCT QUALITY
- > LONG-OPERATING LIFE OF MOULDS
- > 24/7 OPERATION

## ROUGHING ROBOT

*Automatic roughing for the most varied combinations of uppers and soles*



Only roughing enables the glue or the injected sole material to be bonded optimally to the upper, and shoes are nearly as individual as their owners. Every upper material has to be worked with different speed; contact pressure of the tools have to be adjusted individually. The DESMA roughing robot's force is carefully controlled. Its roughing head with rotating tool is pivoted at the wrist. The contact force is variable within the contour. If you want to roughen narrowly above the sole edge or broadly in the toe cap area the DESMA roughing robot will offer you the best solution no matter if you roughen immediately in front of the clamping unit or offline.

- > HIGHEST FLEXIBILITY
- > OPTIMUM BONDING OF THE SOLE TO THE UPPER
- > ROUGHING REPRODUCIBLY AND PRECISELY

# APPLICATIONS AROUND THE SHOE

## ROBOTIC APPLICATIONS



**MOULD**



SPRAYING RELEASE AGENT



PICK & PLACE



**UPPER**



SIDEWALL ROUGHING



LASER ROUGHING



SPRAYING PRIMER/CEMENT



**SOLE**



CEMENTING  
(spraying)



**SHOE**



PICK & PLACE



TRIMMING

## DESMA SOFTWARE



**DEScom**<sup>®</sup>



**DEScan**<sup>®</sup>



**DESident**<sup>®</sup>



**DESMA GRC**<sup>®</sup>

## GENERAL AUTOMATION DEVICES



TRANSPORTING



INDUSTRIAL ENGINEERING



QUALITY CHECK



COMMUNICATING

# DESMA GRC®

## PROGRAMMING ROBOTS COULD HARDLY BE EASIER

*Graphical Robot Control (GRC): Hightech with straightforward operator guidance*



**Graphical Robot Control (GRC)** has been developed by DESMA especially for the needs of the shoe industry. Combining highest user friendliness with most modern control technology it requires lowest programming efforts without any interruptions of production.

Simple operation is ensured by a graphical touch screen, logical icons and intuitive program sequencing, without requiring too much programming knowledge from the operator. Operating the system can be achieved after an extremely short training time – anywhere in the world: the system offers a broad variety of languages. Only those production parameters are visualized which are necessary for shoe production.

**DESMA GRC®** communicates directly with DEScom® the higher level robot program system. Programme figures are very quickly transferred. Offline control and offline programming enable alterations and program changes without any interruption of production. Additionally, the new generation offers higher operating speed and individual axis can be moved faster. Memory is updated automatically and dynamically. Having only the currently needed modules in the robot memory accelerates program execution dramatically. Of course, programs – such as roughing – can be corrected without having to shut down production.

- > STRAIGHTFORWARD OPERATOR GUIDANCE
- > GRAPHICAL ICONS
- > TELESERVICE



# DEScom®

## BECAUSE TIME IS MONEY

*Data administration and robot programming within running production*



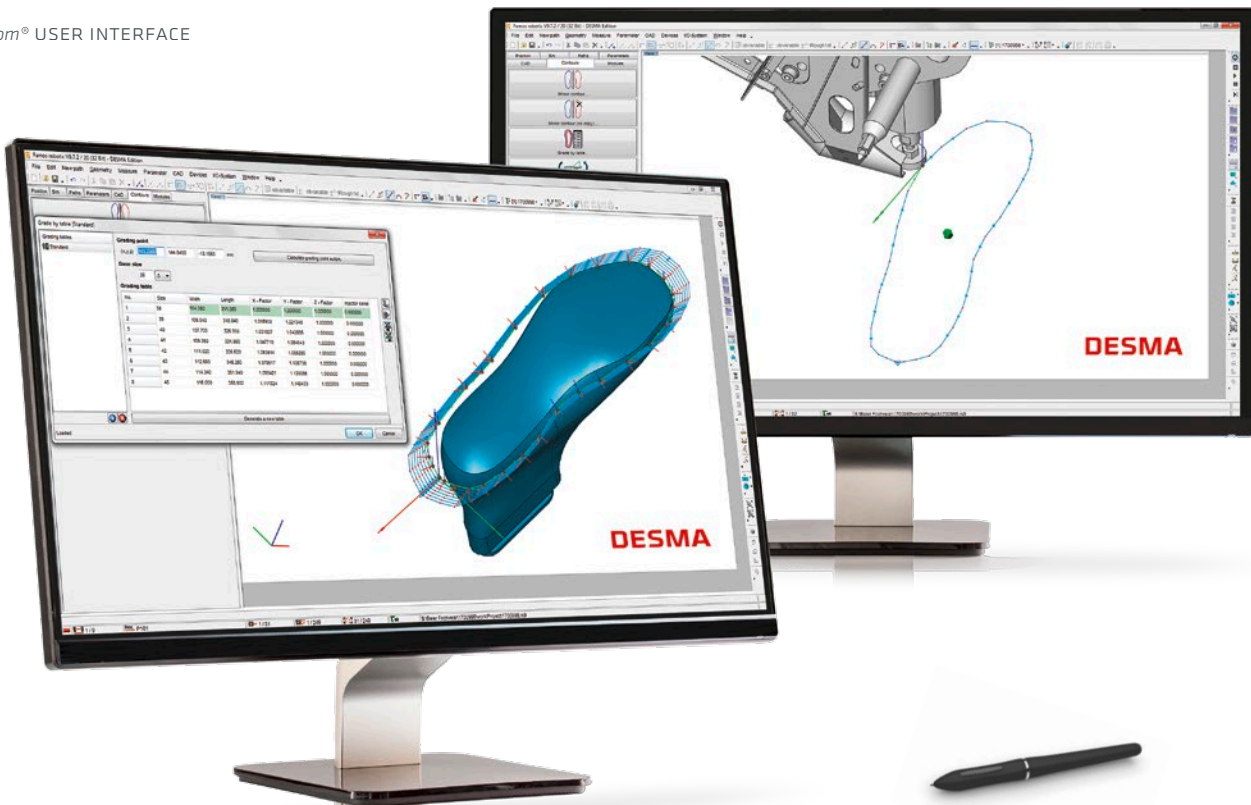
No company will make profit with production downtime. So **DEScom®** was developed – our special software for programming DESMA robots. Structured as a “kit”, this offline programming system was especially designed to meet the needs of the shoe industry and to improve economic viability. Perfectly matched to one another, **DEScom®** and **GRC®** offer a time saving alternative to conventional teach-in systems and thus lower costs. Combining programming and simulation not only saves extensive programming times but also reduces machine downtime to a minimum.

**DEScom®** supports the otherwise complicated implementation of new programs or process improvements, such as generating or modifying roughing contours and administrating programs. Data backup, data remote administration and direct migration of CAD data from mould production are further advantages.

And all this works on a standard PC with windows user interface and useful standard modules, such as grading, mirroring and offline functions.

- > EASY AND QUICK PROGRAM CREATION
- > CAD-BASED PROGRAMMING
- > SAFE AND CENTRAL DATA ADMINISTRATION

DEScom® USER INTERFACE



## PICK & PLACE ROBOTS

*Wide range of applications for automated production*

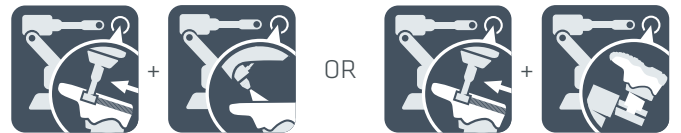


DESMA pick & place robots can be applied in many ways, in many fields of production. They optimize the material flow in production logistics – and above all: they work accurately and thus provide highest economic viability and top quality. Even special-purpose solutions for your specific production needs can be implemented using them.

- > INCREASE IN ECONOMIC VIABILITY AND QUALITY
- > HIGHLY AUTOMIZED PRODUCTION
- > CUSTOMER ORIENTED SPECIAL-PURPOSE SOLUTIONS

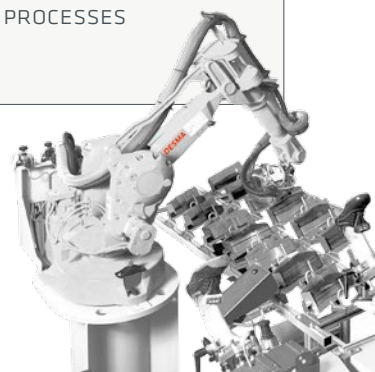
## COMBI ROBOT

*The DESMA multitalent: e.g. roughing and spraying or roughing and placing of steel soles*



The combi robot is a multifunctional machine. It is always ready for the required process. It masters two production steps, and so combines perfectly economic viability and minimum required space. When there are longer cycle times, e.g. with sole material with longer demoulding time, the use of a combination head for roughing and glue spraying could provide an ideal solution. You only need to invest in a single robot which first roughs the upper with highest precision and then subsequently, in the second cycle, sprays glue with the same precision.

- > HIGH ECONOMIC VIABILITY
- > FLEXIBILITY WITH DIFFERENT PROCESSES
- > MINIMUM REQUIRED SPACE



## ROBOT CELLS

*Automation in all relevant areas of production*



2 STATION ROUGHING CELL

Imagine this as your start into automation: At one of your cycle tables or in a cell you integrate one or more robots into the production process, thus relieving your workers from stressful or monotonous production steps. Simultaneously you improve economic viability, reproducibility and quality – especially with complicated types of shoes. Secured production units care for the best protection of your workforce and the environment. There are still many operational steps in the shoe industry waiting to be automatized and so the list of possibilities for the application of robot cells is long:

- at a indexing table with e.g. 6 stations for roughing uppers & spraying glue
- at an automated conveyor belt with a user-defined number of robots
- in a unique customized solution – completely according to your needs

- > FLEXIBLE POSSIBILITIES OF APPLICATIONS (INDEXING TABLE, CELL, STAND ALONE)
- > HIGHER EFFICIENCY
- > BETTER WORKS SAFETY AND QUALITY

## LASER CELL

*DESMA Laser Technology – Design and Quality*



CONTACT-FREE ROUGHING

MARKING & INSCRIBING

SOLE DESIGN AND CONTOUR

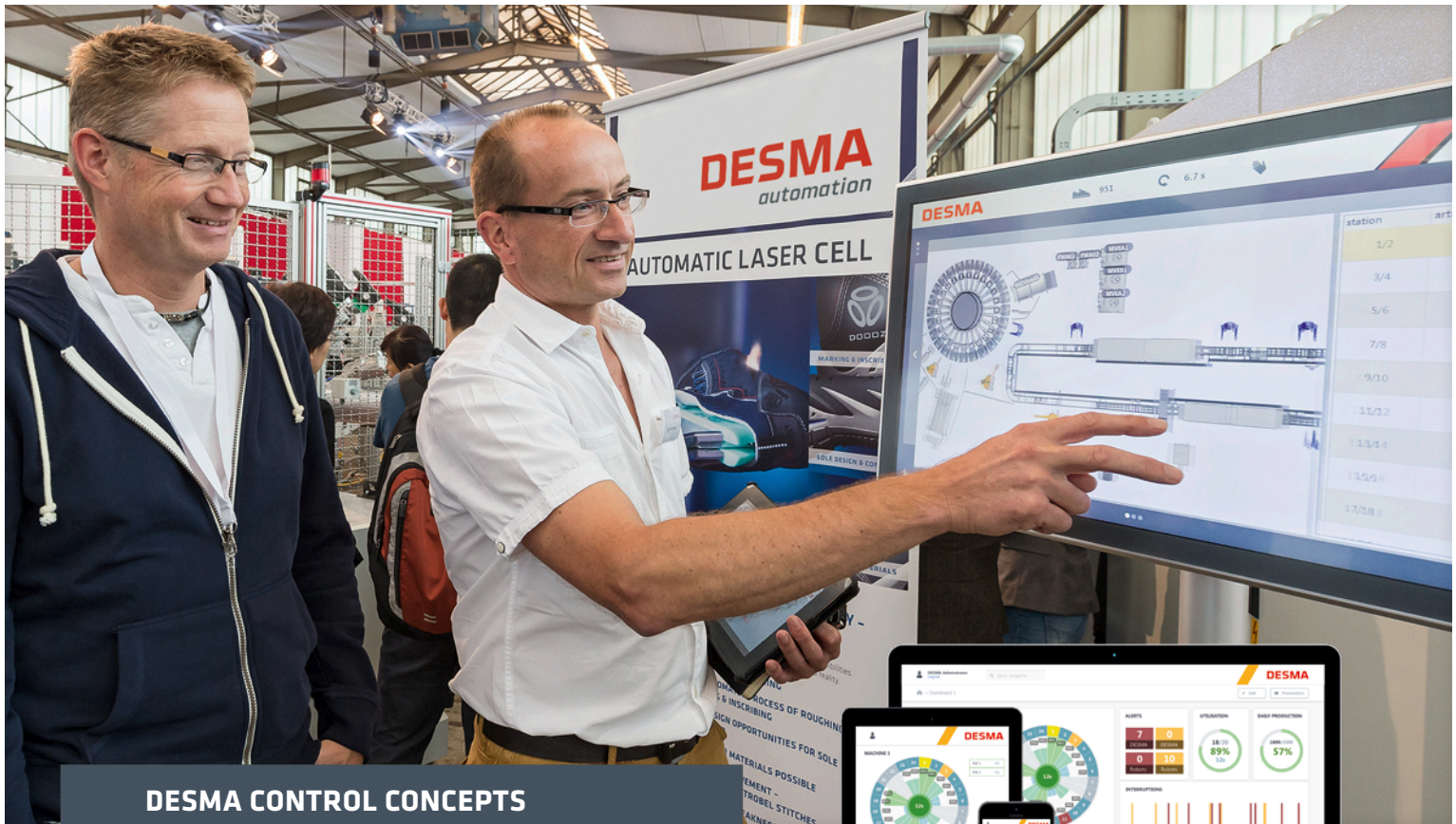
NEW UPPER MATERIALS

DESMA laser technology for perfect roughing upper offers new design opportunities in the direct soling technology.

The Automatic Laser Processing Cell can be integrated into the present production, also in combination with mechanical roughing and as standalone solution.

- > ONE AUTOMATED PROCESS OF ROUGHING, MARKING AND INSCRIBING
- > NEW DESIGN OPPORTUNITIES FOR SOLE AND CONTOUR
- > QUALITY IMPROVEMENT – NO CUTTING OF STROBEL STITCHES
- > NO MATERIAL WEAKNESS SPECIFIED BY MATERIAL TREATMENT

## EASY OPERATION



### DESMA CONTROL CONCEPTS

- > **INTELLIGENT TECHNOLOGY**  
DESMA machines are equipped with the most modern control concepts. Control systems are designed especially for the DESMA processes, enabling almost all demands in manufacturing to be met. DEScan® control systems offer highest transparency and flexibility.
- > **MOST MODERN CONTROLS**  
All data sets may be stored in DEScan® and quickly called up at mould change. Injection data is also thus stored. Using a scanner, stored machine data can be retrieved and automatically applied to the appropriate tool.

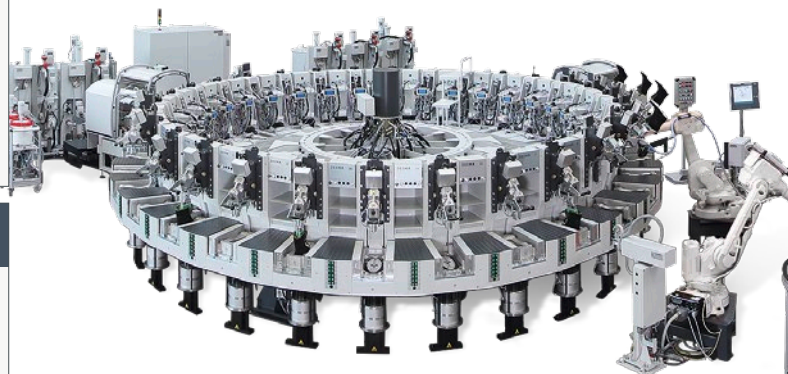


### SMART SHOPFLOOR

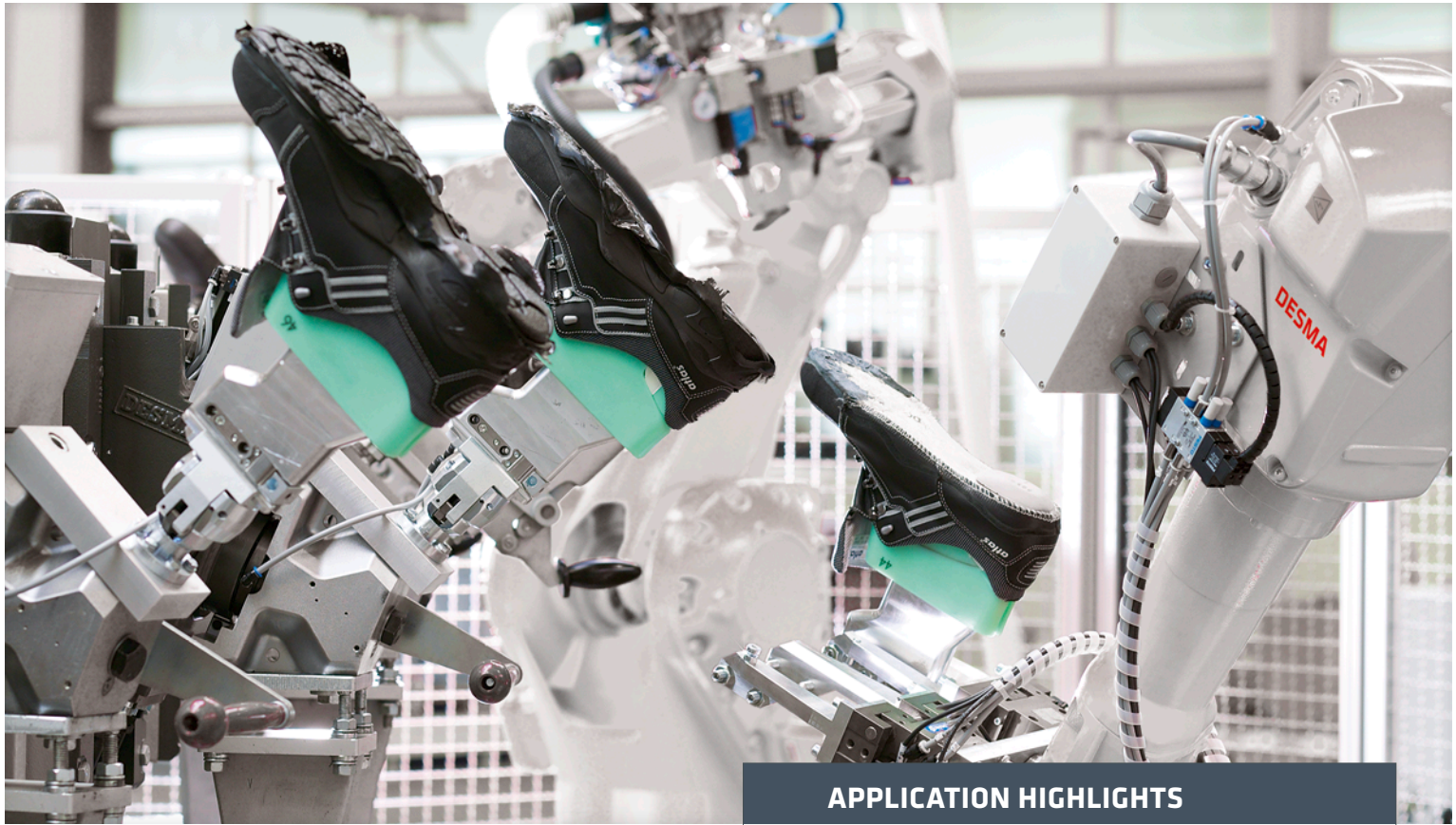
Always in touch

### DESCAN® MACHINE CONTROLS

- > HUMAN MACHINE INTERFACE (HMI)
- > GRAPHICAL OPERATOR TOUCH SCREEN
- > LONG-DISTANCE MAINTENANCE AND DIAGNOSIS
- > TELESERVICE VIA INTERNET



## AUTOMATION – FIT FOR THE FUTURE



### APPLICATION HIGHLIGHTS

- > REDUCTION IN OPERATING COSTS
- > IMPROVEMENTS IN PRODUCT QUALITY
- > BETTER WORKING CONDITIONS
- > INCREASE IN PRODUCTION PERFORMANCE
- > INCREASE IN MANUFACTURING STABILITY
- > REDUCED MATERIAL INPUT

At the centre is the person, whose capabilities are expanded by DESMA automation. This includes a network of individual production units connected via interfaces as well as the compilation and management of large data sets. The production of shoes occurs via automated material guiding and integrated robots.

### DESMA amir® SYSTEM

automated material supply with integrated robots



**HIGHEST EFFICIENCY AND BEST QUALITY**

# About DESMA

**DESMA:** Your leading technological partner in the areas of:

**Polyurethane mixing technology**

| > Manual, automatic and robot guided polyurethane mixing heads – self-cleaning – are characterised by convenient operation and high reliability.



**Automation technology**

| > Robotic applications, DESMA software and certain automation devices are also suitable in PU processing in the areas of release agent application, handling and complex contour work.



**Moulds**

| > DESMA has always placed especial emphasis on a highly professional mould shop; our customers receive complete solutions from one source including shoe prototyping.



**Rotary tables**

| > Since 1950 DESMA has been successfully producing rotary tables for the shoe industry. The programme ranges from 4 station to 60 station rotary tables for the processing of Rubber, PU, TPU and other thermoplastics.



**Customer Service Center**

| > DESMA engineers work in closest co-operation with customers and materials suppliers to achieve the best solutions.



## SAFE IN DESMA'S HANDS

**Worldwide service and training**

| > DESMA supplies efficient and economical production systems of highest quality, reliably and fast, to manufacturers worldwide. Global service is ensured not only by our HQ in Germany but also by DESMA agents all over the world.

**Highest quality**

| > All DESMA machines are "Made in Germany."

**Longlife products**

| > DESMA products are characterised by a long lifetime: an investment in your future.

**Spare parts**

| > DESMA guarantees customers a fast spare parts service worldwide: Our principle: Short ways – short reaction times.



QR CODE FOR MORE INFO

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