



Efficiency that works.  
**ENGEL automation**



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**ENGEL**  
be the first.



## Efficiency that works. ENGEL automation

### **With the power of experience.**

**Straight ahead. And efficient. As a linear robot from ENGEL.** That's how we solve your automation tasks. Drawing on our extensive experience, ENGEL has been highly successful on the market for over 30 years with its own automation systems. Including a high degree of competency.

ENGEL automation experts work for you in sales companies worldwide – and **in its own competence centres.** This is where our extensive know-how in the area of robots & more is effectively implemented.





## Expertise in complex technology. ENGEL automation system

**The range of tasks assigned to ENGEL automation goes far beyond linear robotics.** Do you need complex, highly integrated production cells, in which several injection moulding machines produce, linear robots interact perfectly with industrial robots, and numerous processing stages are included - such as quality control using state-of-the-art camera technology, marking and packaging tasks? No problem. The specialists at ENGEL automation system will handle the overall concept and implementation of your demanding projects. And they will ensure that all parts are precisely coordinated and mesh seamlessly into one another.

**In the service of efficiency.** For premium parts quality, stable processes and increased overall productivity.

# veni.vidi.viper.

ENGEL viper. The powerful linear robot

**Maximum stability, impressive dynamics and maximum user-friendliness.** The new ENGEL viper combines all of these things with ease: it saves weight thanks to its innovative design using laser-welded steel sections and convinces users with a substantially higher load-bearing capacity.

**More efficiency thanks to intelligence.** Thanks to clever software such as vibration control, or mass identification, it automatically reduces structure-borne vibration, even with longer axis dimensions, and optimises its movements and dynamic values to achieve better efficiency. The impressive results: ultra-fast cycle times and maximum productivity accompanied by low energy consumption.



## viper series

### ENGEL viper 6

**Nominal load-bearing capacity:** 6 kg  
**X-axis:** 300/400 mm  
**Y-axis:** 400/600/800/1,000 mm  
**Z-axis:** 1,040 – 2,960 mm  
**Rotary axes:** B-/C-pneu

### ENGEL viper 12

**Nominal load-bearing capacity:** 12 kg  
**X-axis:** 400/600 mm  
**Y-axis:** 400/600/900/1,200 mm  
**Z-axis:** 1,040 – 2,960 mm  
**Rotary axes:** B-/C-pneu, (B-servo)

### ENGEL viper 20

**Nominal load-bearing capacity:** 20 kg  
**X-axis:** 500/700 mm  
**Y-axis:** 800/1,000/1,300/1,500 mm  
**Z-axis:** 1,400 – 6,200 mm  
**Rotary axes:** A-/B-/C-pneu, A-/B-/C-servo

## The benefits.

01

### Lightweight but powerful



- Uncompromising design
- Optimum dynamics
- Highest load-bearing capacity

02

### More intelligence



- Mass identification
- Vibration control
- Efficiency control

03

### Even greater convenience



- Compact drive technology
- Simple operation
- Flexible installation

## The range of application.

**The ENGEL viper has met the mark.** Although it has only been on the market for a few months, its high performance capability and operating efficiency have won over customers who would still have purchased it even without a new ENGEL machine.

ENGEL viper  
on an ENGEL injection moulding machine

ENGEL viper  
on an injection moulding machine of another manufacturer

ENGEL viper  
as a replacement for an older robot

### ENGEL viper 40

**Nominal load-bearing capacity:** 40 kg  
**X-axis:** 700/900/1,200 mm  
**Y-axis:** 1,000/1,300/1,600/1,900 mm  
**Z-axis:** 1,880 – 8,120 mm  
**Rotary axes:** C-pneu, A-/B-/C-servo

### ENGEL viper 60

**Nominal load-bearing capacity:** 60 kg  
**X-axis:** 1,000/1,300/1,500 mm  
**Y-axis:** 1,400/1,800/1,600/2,200/2,600 mm  
**Z-axis:** 1,880 – 8,120 mm  
**Rotary axes:** C-pneu, A-/B-/C-servo





## Lightweight but powerful

### Laser-welded steel construction.

For weight optimisation

- Higher flexural strength per unit of length compared to aluminium ensures exact positioning
- Significantly higher working load than comparable handling devices
- Space-saving guide arrangement means compact footprint

### Wide range of possible combinations.

Due to extensive standard options

- Dual tower
- Double robot
- Mirrored variants (operator side, non-operator side)



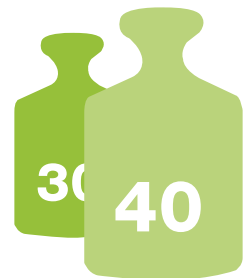


## More intelligence

### mass identification.

The robot **detects the working load automatically within a cycle.** And adapts the dynamic values accordingly. Which means:

- The robot moves faster when it has less to carry. **Benefit to you: shorter cycle times.**
- The robot moves slower when it has more to carry than normal. This protects the mechanical components, **thus ensuring a long robot service life.**



### efficiency control

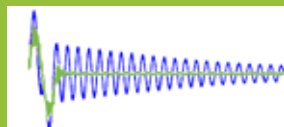
The robot optimises the acceleration and speed values upon request. **And it minimises robot waiting times.**

- Take-off starts „just in time“
- Freely selectable waiting period in take-off position
- Avoidance of unnecessary stress for mechanism and drive train
- Assurance of a long service life
- Reduced energy consumption, resulting in up to 25% lower energy costs

### vibration control

- Avoidance of structure-borne vibration
- Increased path and positioning accuracy
- Significantly shorter take-off times
- Patent pending

**no vibrations**  
are good vibrations





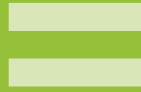
## Even greater convenience

### Drive technology. State of the Art.

- Space-saving compact control cabinet
- Multiturn absolute encoder
- No referencing after switch-on
- No limit switches, no cams
- Drive diagnosis directly on control unit
- Optional central lubrication – linear axes are lubricated path-dependently

### 50 % less air consumption.

The operator can easily set the vacuum system on the control unit. This eliminates the need for manual adjustment on the robot, for which purpose ladders or other climbing aids are needed. **The new pneumatic system cuts air consumption by 50 %.**



## Everything under control.

With the ENGEL RC 200 robot control unit.

### Robot control = machine control

Do you consider the ENGEL CC 200 machine control unit to be simple to operate, clearly arranged and logically structured? You will be delighted with the ENGEL RC 200 robot control unit. Because the RC 200 is completely integrated into the CC 200. **Advantage to you: only one data management system. A considerably increased productivity thanks to synchronised movements.**





## Easy. ENGEL RC 200



*The user-friendly Wizard system issues clear instructions to the system adjuster for quick and easy programming of the robot.*

### It speaks all languages. Thus saving programming time.

A state-of-the-art control unit needs to keep on top of highly complex processes. While providing for quick and simple programming. The ENGEL RC 200 fulfils this requirement to perfection. It speaks the language of the system operator, who receives succinct instructions from the **new, user-friendly Wizard** and is comfortably guided through the individual robot sequences.

**It also speaks the language of the system adjuster.** That means simple automa-

tion tasks can be performed cost-effectively without additional programming personnel. Furthermore, set-up times can be significantly reduced.

However, if complex control tasks are to be performed, the system programmer can discharge them **quickly and efficiently** with the advanced view of ENGEL RC 200. And with its clear-cut, ergonomic controls the robot control provides for a more efficient and safer design of the human/machine interface.



# XYZ & ABC

**under control.** With the ENGEL RC 200 robot control unit.

# Full Integration.

Not only on the surface.

# 1, 2, 3, 4, 5, 6

**under control.** With the ENGEL RC 200 robot control unit.

Presented for the first time at the K 2010 trade fair in Düsseldorf: a 6-axis industrial robot was completely integrated into the ENGEL RC 200 robot control. **Once again, ENGEL was true to its motto: Be the first!**





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