

# Operating Manual



**VRC 601 edrive**

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## Chapter B 1

## Basic Information

### 1.1 Intended Use

Injection molding machines of types VRC 601 must exclusively be used for the filling of molds with various kinds of plastic materials.

Other uses will be deemed a violation of the intended use and exempt U. Kolb GmbH from being held liable for injuries and damage to persons and/or property.

Strictly observing the safety instructions and notes issued by U. Kolb GmbH is also mandatory and forms part of the intended use provisions to be adhered to.

Examples for uses which will violate the intended use provisions:

- Operation with switchboard door open
- Processing of unsuited plastics or similar materials
- Operation in hazardous, explosive atmospheres
- Operation after structural modifications without having obtained U. Kolb GmbH's prior approval
- Disregard of the safety instructions and notes
- Disregard of safety and operating instructions, EHS requirements or accident prevention regulations or other applicable legal provisions and requirements
- Use, installation, operation or repair of the machine/unit other than prescribed or work performed by unqualified personnel

### 1.2 Remaining Hazards

In the design of the machine all has been done to safeguard the personnel against potentially dangerous situations but there are still remaining hazards the operators must be aware of, for example

- Danger of injuries due to moving components
- Burning hazards caused by hot system components such as, for example, heated hoses, mold base or injection head. Surfaces like that will still be hot for some time after the machine has been switched off
- Burning hazards due to hot adhesives when installing heated hoses
- Breathing in potentially harmful fumes
- Movements of hydraulically or pneumatically driven plant components
- Electric charges remaining in components even after the machine has been switched off

### 1.3 Machine Configuration

The low-pressure injection molding machine developed by U. Kolb GmbH comprises the closing module and the extruder module. The extruder module comes with extruder screw diameters of 25 and 32 mm. The closing module with sliding table has been designed to perform closing powers of up to 100 kN (adjustable).

## 1.4 Extruder Module VRC 425 / 432

The material is molten in the extruder and fed to the injection head through (optionally available) heated hoses.

The injection head is pneumatically moved up to a molding die designed to have one or several cavity inserts.

The molding process is carried out based on program parameters stored in a programmable logic control system (PLC). The PLC system also monitors various operational states of the molding machine.

## 1.5 Shuttle Module VRC 601

The material will be molten inside the extruder. The extruder is pneumatically moved on a shuttle directly up to a molding die, designed to have one or several cavity inserts.

The molding process is performed based on program parameters stored in the programmable logic control system (PLC). The PLC unit monitors as well various operational states of the molding machine.

## 1.6 Series VRC 425 / 432 / VRC 601

Overview of the modular machine components

Machine components	VRC 4xx	VRC 60x
Extruder	X	X
Pneumatics		X
Heated Hose (OPTION)	X	
Injection Valve	X	X
Mold Holder and Closing System		X
Jokabsafety Safety PLC		X
Insevis - S7	X	X
Touchscreen 7 "	X	X
Control Software V1.4	X	X
VRC - 425	Extruder Screw Diameter 25 mm	
VRC - 432	Extruder Screw Diameter 32 mm	
VRC - 601		Clamp Force 100 kN

## 1.7 Important Elements of a VRC 601



### Switch Area 1:

- S 1 . Door lock
- S 2 . Alarm / acknowledgment
- S 3 . Emergency Stop

### Switch Area 2:

- S 4 . Open Mold in Setup Mode
- S 5 . Key-Switch
  - 0 – Production Mode
  - 1 – Setup Mode
- S 6 . Control Voltage ON / OFF
- S 7 . Opening Injection Valve in Purge Mode
- S 8 . Heating ON
- S 9 . Unlock Table
- S 10 . Two-Hand-Control
- S 11 . Main Switch

## Remarks

### Description

Display/Touchscreen  
Feeding Device  
Extruder-Module

### Function

Data Entry / Setup-Mode  
Feeds the granulate  
Liquefy Plastic Material for Molding Process

S 3 Emergency Stop  
S 5 Key-Switch  
S 6 Control Voltage  
S 10 Two-Hand-Control

Shut down the machine in emergency situations  
Select setup mode / production mode  
Initial safeguard  
Activate the molding process



**Attention! Using the molding machine in violation of what has been stipulated in this document may result in injury, fatalities and/or damage of the machine and accessories.**

***The machine has been designed as a single-operator workplace and by providing a two-hand control system safeguarded to prevent injuries when closing the molding die.***

***The operator must ensure no other persons are staying in the immediate access area of the closing mechanism when the die is closed.***

***Serious injuries are possible!***

***Permanent physical harms possible!***