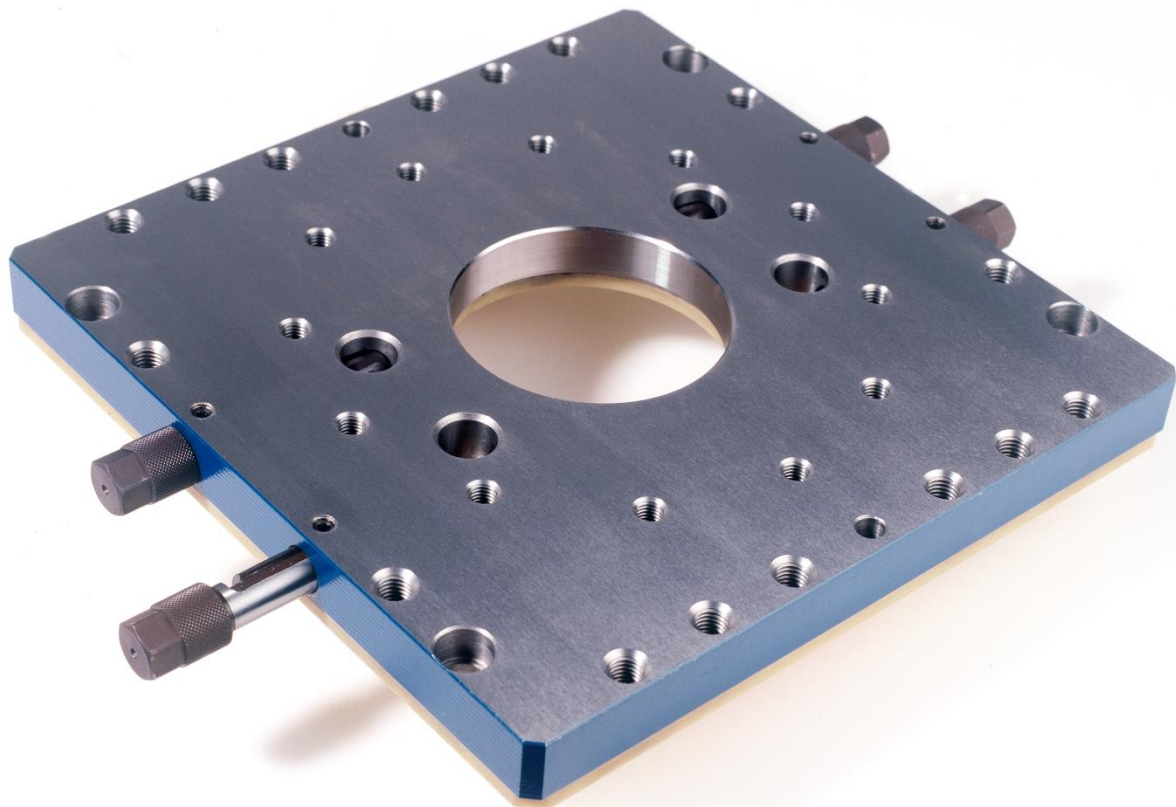


The quick, manual Wörner clamping system



Operating instructions

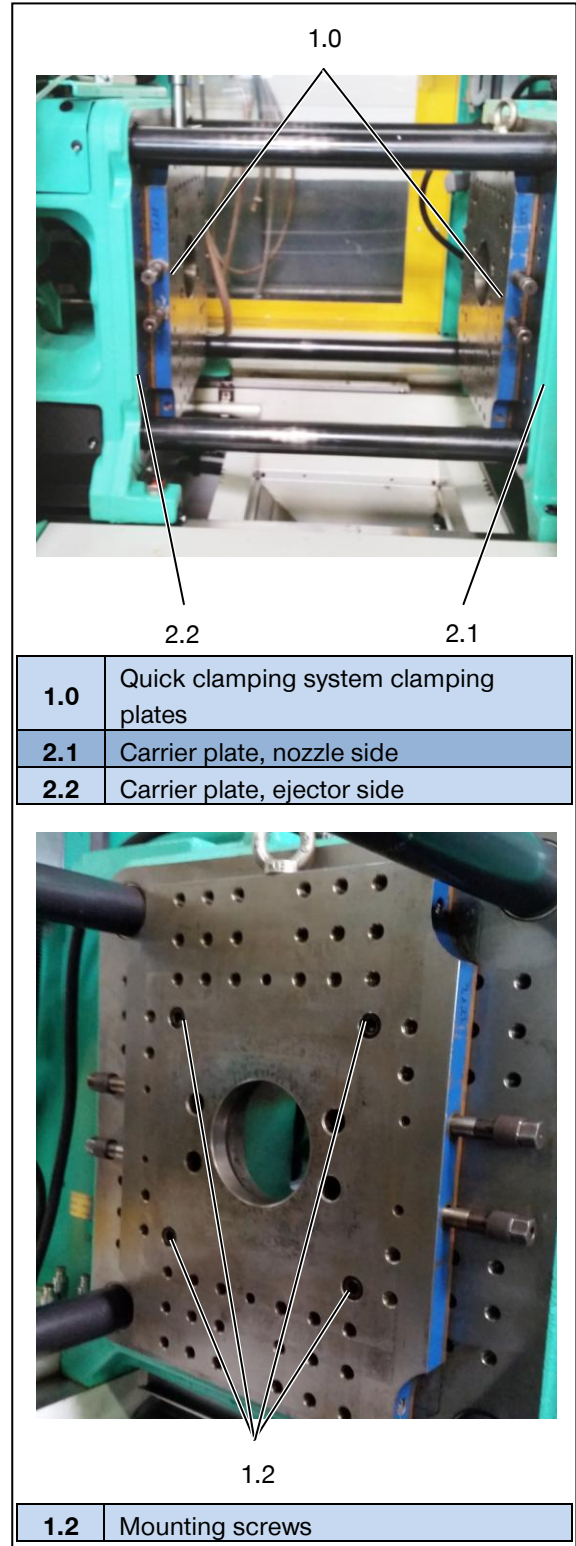
V1.0/08-2015

Contents

1. Description of the system.....	3
1.1. Proper use.....	5
1.2. Foreseeable misuse.....	5
1.3. Scope of delivery	5
2. Assembly.....	6
2.1. Installation of the clamping system	7
2.2. Installation of the mold	9
3. Maintenance.....	13
3.1 Changing mounting screws	13
3.2 Lubricating the clamping eccentrics	14
3.3 Checking the clamping eccentrics	15
4. Technical data *	16
5. Options	17
5.1 Thermal insulation panel	17
5.2 Transport system	18

1. Description of the system

The quick clamping system consists of 2 clamping plates(1.0). These clamping plates are mounted in injection molding machines on the nozzle side and ejector side carrier plates (2.1, 2.2).



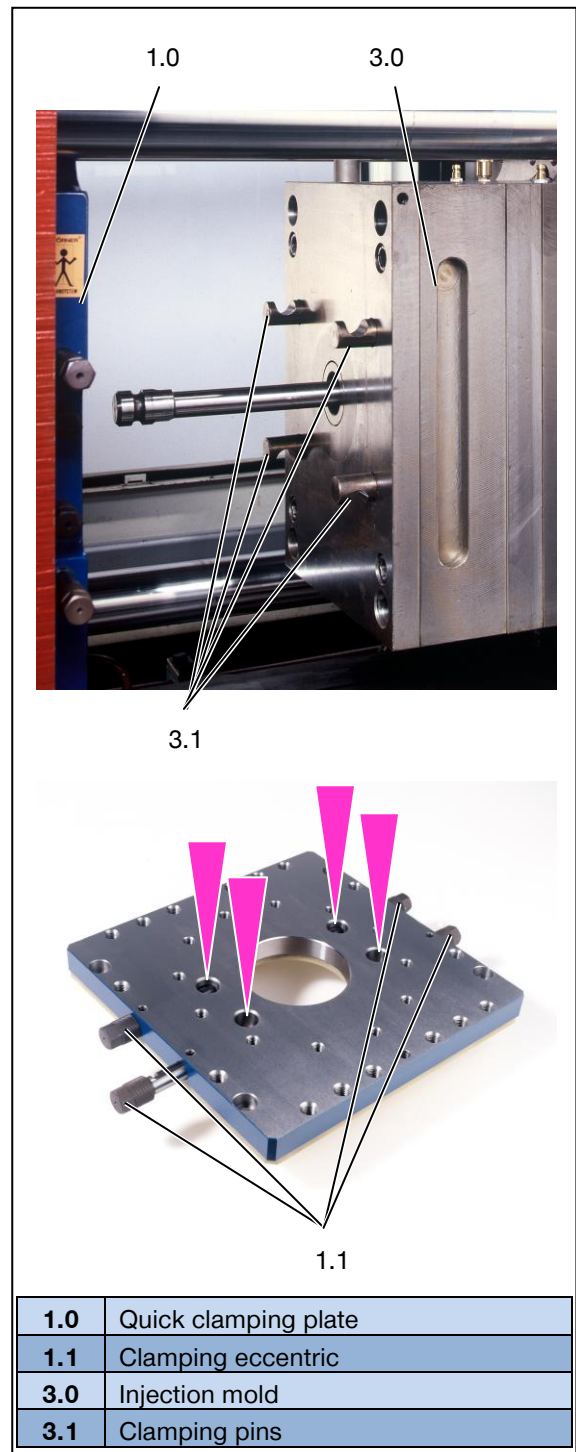
The geometry of the tool holder and the assembly equipment are manufactured according to the machine type of the customer.

The individually adapted quick clamping system ensures quick and secure mounting and loosening of forming molds in injection molding machines.

As a result, the time required for setup work is reduced significantly.

When changing the mold, the mold **(3.0)** with the clamping pins **(3.1)** is inserted into the fastened quick clamping plate **(1.0)** on the carrier plate of the machine.

During this process, the clamping pins mesh with the clamping eccentric **(1.1)** fitted with a guide.



1.1. Proper use

The quick clamping system may only be used within the specified parameters for the defined use and respective mold and/or machine types. The respective applicable parameters and geometries are to be taken from the product catalog.

1.2. Foreseeable misuse

The clamping system may not be used outside of the applicable parameters for the respective mold and/or machine types. Modifying the geometries of the components or applying additional equipment to the machine is considered non-intended use.


Using the quick clamping device as a load-securing device is prohibited.

WÖKU does not assume any responsibility for any unauthorized modifications to the quick clamping system.

1.3. Scope of delivery

The scope of delivery for a quick clamping device includes:

- 2 ready-to-install quick-clamping plates with installed clamping eccentrics
- 1 Centering ring
- 1 System key
- Screws for fastening the quick clamping plates to the machine

	INFORMATION
	<p>Important information for handling the product. Modifications to the scope of delivery in accordance with the listing in the product catalog is possible at any time upon consultation</p>

2. Assembly

	WARNING
	<p>Non-compliance may result in serious injuries or death.</p> <p>The working space in injection molding machines is confined. Molds used in injection molding may be very heavy. There is a risk of crushing fingers and hands.</p> <ul style="list-style-type: none"> ➤ Wear safety gloves ➤ Use suitable hoisting devices



	WARNING
	<p>Non-compliance may result in serious injuries or death.</p> <p>Molds used in injection molding may be very heavy. There is a very high risk of injury in the event the machine is transported improperly.</p> <ul style="list-style-type: none"> ➤ Use suitable hoisting devices ➤ Use lifting equipment with sufficient load capacity ➤ Do not use and immediately replace damaged lifting equipment.

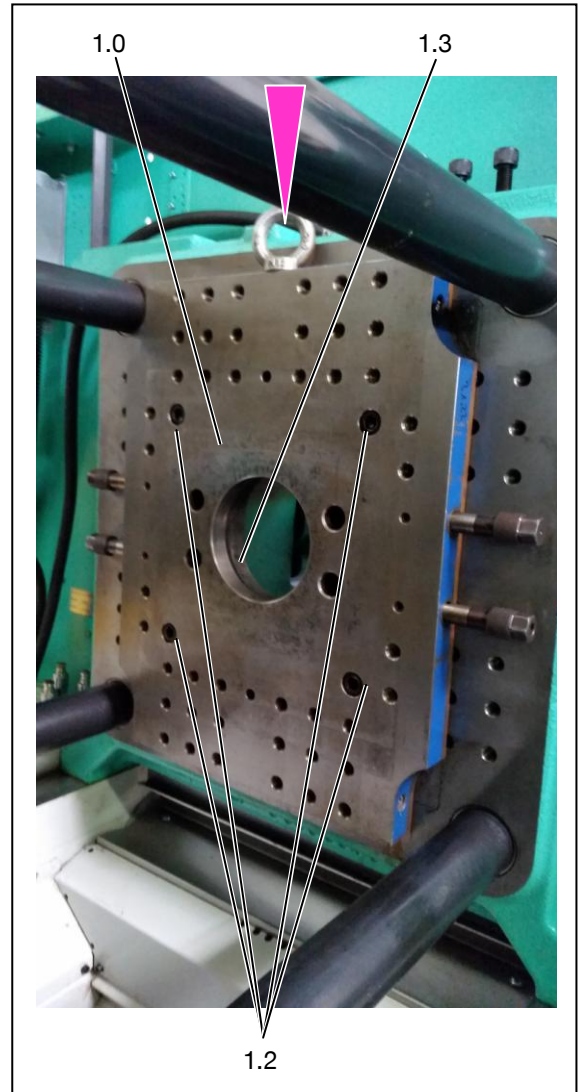


	CAUTION
	<p>Non-compliance may result in minor to serious injuries.</p> <p>Injection molding machines and molds can have hot surfaces, which may be bare metal in some cases. There is a risk of burning fingers, hands and arms.</p> <ul style="list-style-type: none"> ➤ Wear safety gloves



2.1. Installation of the clamping system

- Run the machine open and lift the clamping plate (1.0) into the machine using a suitable hoisting device.
- Secure the clamping plate to the carrier plate of the nozzle side using the centering ring (1.3) and then fasten it using screws(1.2).



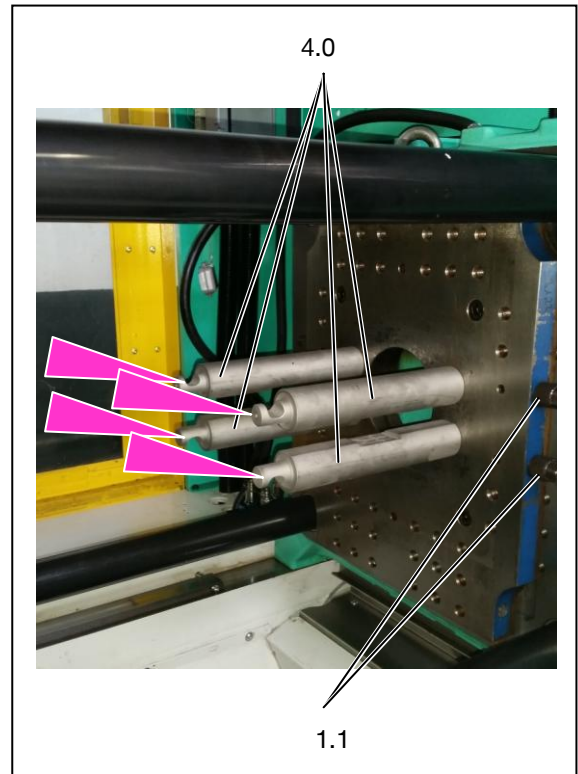
INFORMATION				
	Important information for handling the product.			
	Note the tightening torque for the individual screws!			
	▶ See also http://www.schrauben-normen.de			
	Size/quality	8.8	10.9	12.9
	M8	24.9 Nm	35.1 Nm	42.1 Nm
	M10	49.5 Nm	69.5 Nm	83.4 Nm
	M12	86.3 Nm	121.4 Nm	145.6 Nm
M16	215.0 Nm	302.3 Nm	362.8 Nm	
M18	296.2 Nm	416.6 Nm	499.9 Nm	


Operating instructions (Original: German 06.08.2015)

WÖKU quick clamping system

- Insert four installation aids **(4.0)** into the installation holes
- Clamp the installation aids using the clamping eccentrics**(1.1)**
 - ⇒ Refer to the arrow on the box wrench
 - ⇒ Maximum tightening torque: 30 Nm
- Attach the second clamping plate to the free clamping mandrel of the installation aid

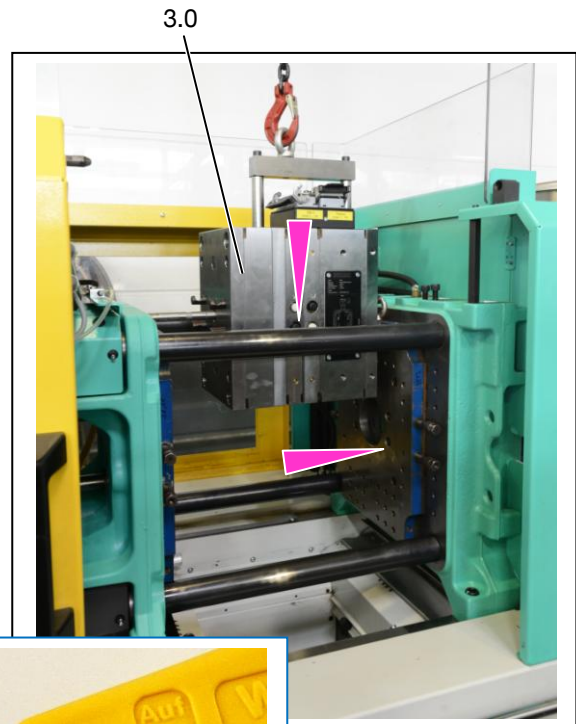
- Run the machine closed and fasten the second clamping plate to the ejector side using screws**(1.2)**.
- Open the machine again
- Open the clamping eccentric **(1.1)** again
- Remove the installation aids.



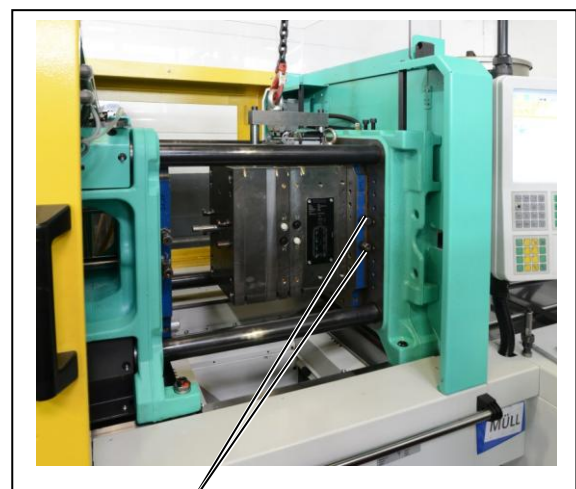
	INFORMATION
	<p>Important information for handling the product.</p> <p>The installation aids are not included in the scope of delivery.</p> <ul style="list-style-type: none"> ⇒ Installations aids can be purchased separately from WÖKU. ⇒ Installations aids can be loaned from WÖKU.

2.2. Installation of the mold

- Run the machine open
- Lift the injection mold (**3.0**) into the machine using a crane.
- Pull back the clamping eccentric (**1.1**) far enough that the clamping pins are able to be inserted into the holes in the clamping plate completely
- On the nozzle side, insert the injection mold with the clamping pins into the holes of the quick clamping plate
 - ⇒ The injection mold must lay flat on the clamping plate

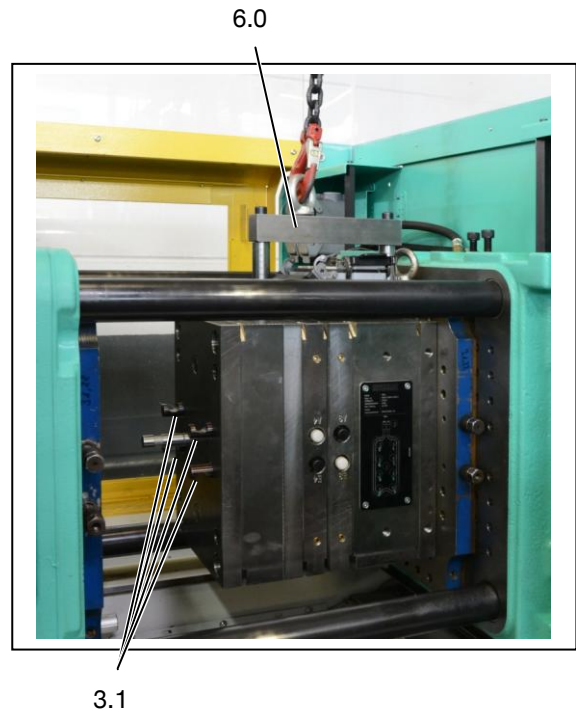


- Turn the clamping eccentric (**1.1**) and push it in completely
- Clamp the clamping eccentric
 - ⇒ Refer to the arrow on the box wrench
 - ⇒ Maximum tightening torque: 30 Nm

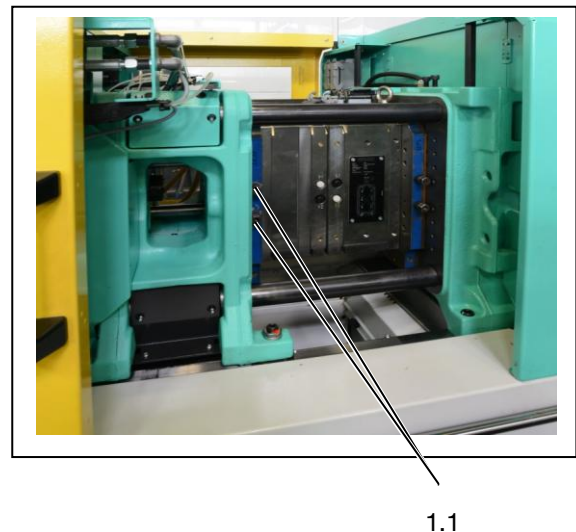


1.1

- Unhitch the hoisting device
- Disassemble the transport device(6.0)



- Pull back the clamping eccentric (**1.1**) on the ejector side far enough that the clamping pins are able to be inserted into the holes in the clamping plate completely.
- Run the machine closed,
- On the ejector side, insert the injection mold with the clamping pins (**3.1**) into the holes in the quick clamping plate
⇒ The injection mold must lay flat on the clamping plate
- Turn the clamping eccentric and push it in completely
- Clamp the clamping eccentric
 - ⇒ Refer to the arrow on the box wrench
 - ⇒ Maximum tightening torque: 30 Nm

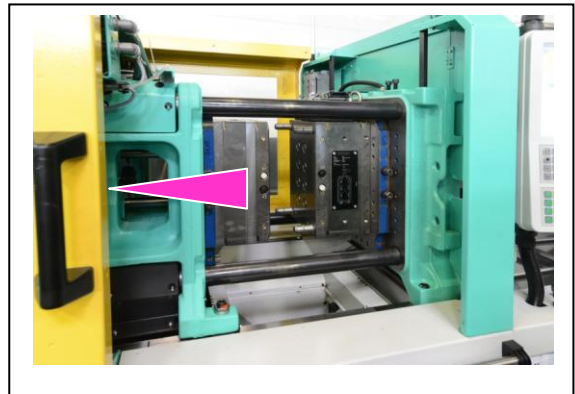


	NOTICE
	<p>Non-compliance may result in property damage.</p> <p>Never run the machine open after assembly of the injection mold if the transport device (6.0) is still installed on the injection mold.</p> <p>⇒ Damage to the mold</p> <p>⇒ Damage to the unit</p>

Assembly of the ejector coupling

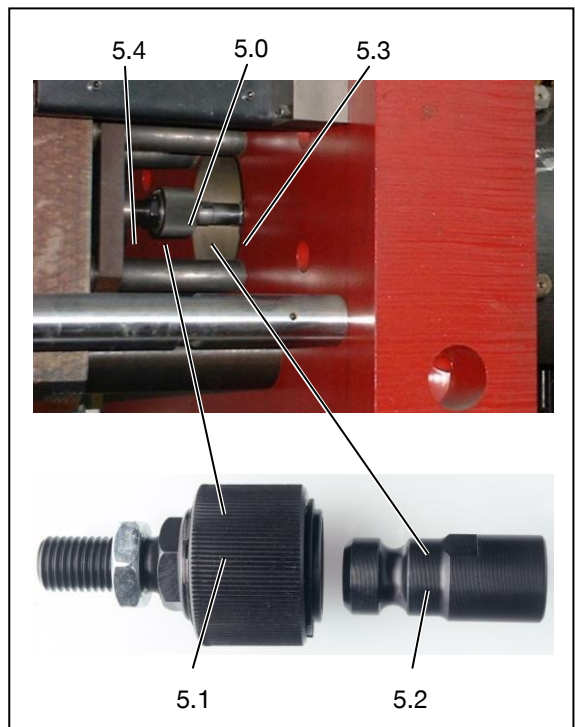
	NOTICE
	<p>Non-compliance may result in property damage. Only carry out the ejector coupling after assembly of the injection mold and only when the machine is open ⇒ Damage to the unit</p>

- Run the machine open
⇒ The injection mold opens



The coupling connects the machine-side part of the ejector (**5.4**) to the ejector rod (**5.3**) in the injection mold.

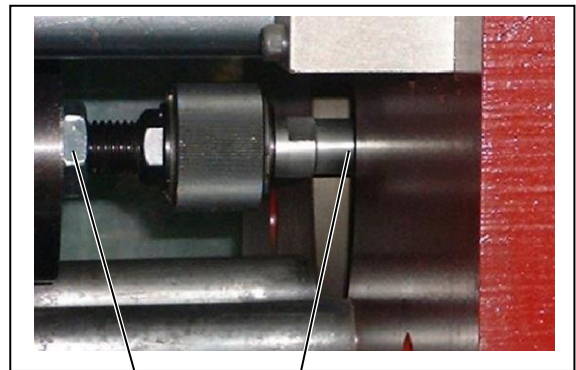
The ejector coupling (**5.0**) consists of the coupling sleeve (**5.1**) and the coupling head (**5.2**)



Operating instructions (Original: German 06.08.2015)

WÖKU quick clamping system

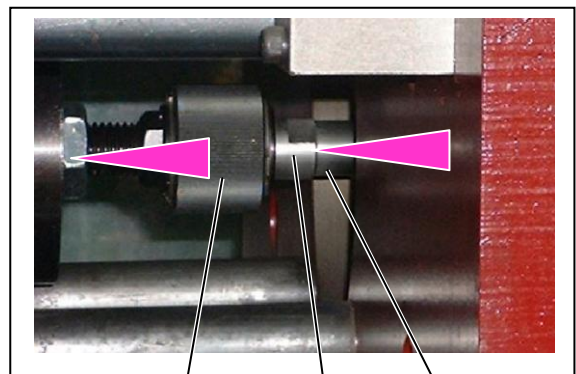
- Push the ejector rod (5.3) towards the injection mold
- Screw the coupling head (5.2) onto the ejector rod
- Screw the coupling sleeve (5.1) into the machine-side mount for the ejector (5.4)



5.4

5.3

- Pull back the clamping ring on the coupling sleeve (5.1)
- Push the coupling rod (5.3) with the coupling head (5.2) into the coupling and allow it to lock in place



5.1

5.2

5.3



INFORMATION

Important information for handling the product.

To disassemble the mold and to disassemble the quick clamping device, follow the steps in reverse order.



NOTICE

Non-compliance may result in property damage.

- ▶ Never run the machine open if the clamping eccentrics are open on the nozzle side and the ejector side
 - ▶ Never simultaneously loosen the clamping eccentrics on the machine side and nozzle side.
- ⇒ **Severe damage to machines or molds**

3. Maintenance

		Interval	Maintenance work
3.1	Mounting screws	Yearly	Replace screws
3.2	Clamping eccentric	Twice a year	Lubricate
3.3	Clamping eccentric	Yearly	Check and deburr if necessary

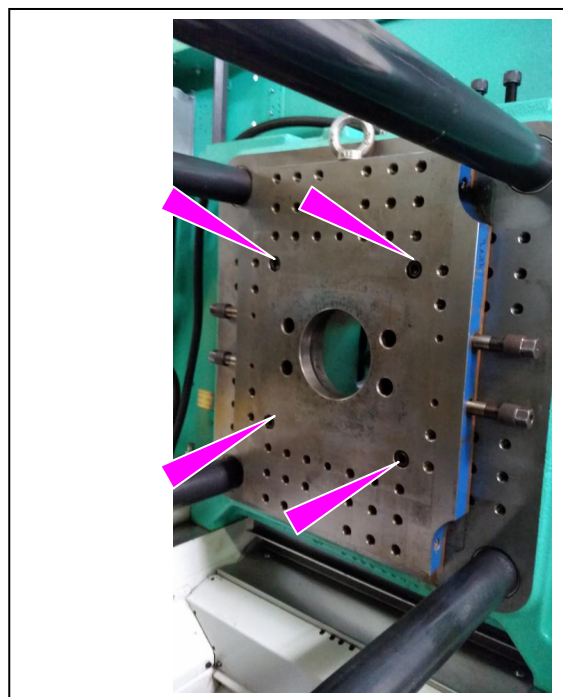
3.1 Changing mounting screws

These screws should be replaced regularly due to the thermal load on the mounting screws.

Interval: Yearly

Note:

- Use the screw grade of at least **8.8**
- Refer to the table in Chap. 2.1 for the tightening torque

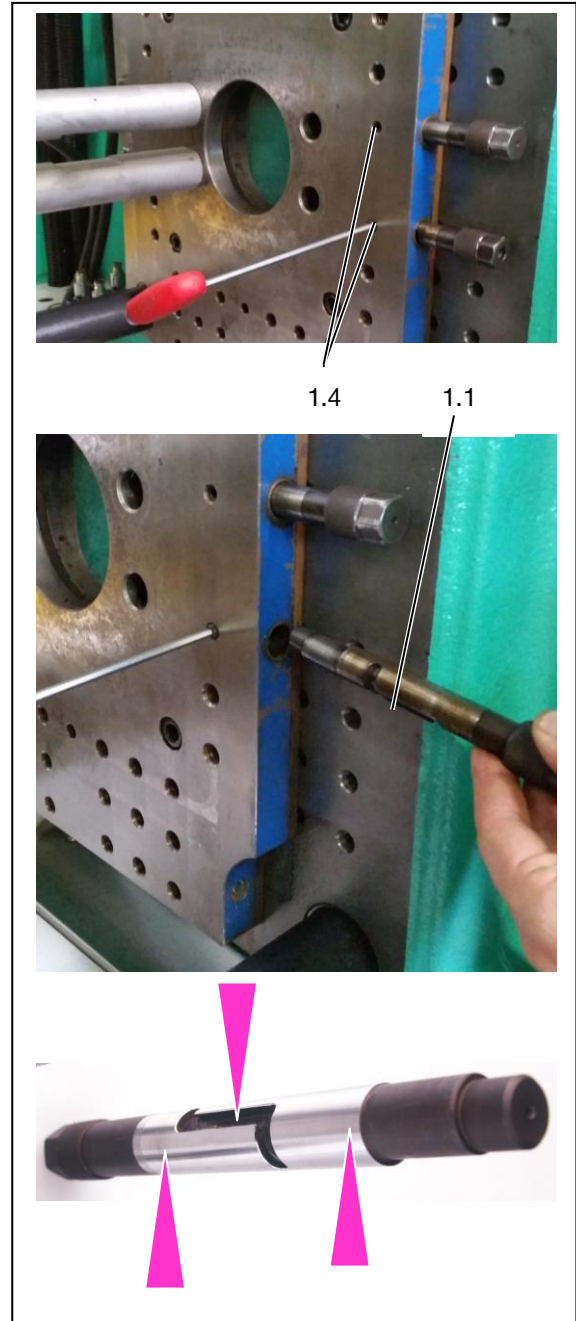


3.2 Lubricating the clamping eccentrics

The ease of movement in the clamping eccentric is necessary to securely clamp the injection molds

Interval: twice a year

- Unscrew the guide screw (1.4) as far as possible so that the clamping eccentric (1.1) can be pulled out
- Lubricate the guide groove and sliding surface with heat-resistance grease



INFORMATION

Important information for handling the product.

Lubricant recommendation: RENOLIT HLT 2

Base: Lithium soap base, synthetic basic oil (polyalphaolefin),
water-resistant, squeeze-stable, protected against corrosion, highly resistant to thermal stresses

3.3 Checking the clamping eccentrics

The clamping eccentrics (1.1) are subject to high mechanical stress.

Movement of the guiding screw (1.4) in the guide groove can lead to warping or the formation of burrs.

This impairs the mobility of the clamping eccentric as a result.

- Remove the clamping eccentric as described
- Carefully check the guide groove with your finger
- In the event that burrs have formed, carefully smooth the edges of the guide groove using a whetstone



NOTICE

Non-compliance may result in property damage.

When smoothing the edges of the guide groove, it is important to not damage the surrounding sliding surface of the clamping eccentric.

⇒ **Damage to the unit**

⇒ **Malfunction**

4. Technical data *

Quick change plate:

Size 1			Size 2			Size 3			Size 4			Size 5		
mm	x	mm	mm	x	mm	mm	x	mm	mm	x	mm	mm	x	mm
220	x	220	300	x	300	400	x	400	400	x	550	Double mold mount		
300	x	196	300	x	350	400	x	500	400	x	650	Selectable system size		
300	x	250	350	x	400	400	x	550	400	x	700	750	x	750
300	x	250	300	x	500	500	x	550	500	x	650	750	x	900
			350	x	350	Double mold mount			500	x	700	750	x	1100
			350	x	450	400	x	400	600	x	800	750	x	850
			400	x	400	400	x	500	600	x	600	850	x	850
			400	x	520	500	x	550	650	x	900	850	x	1000
			500	x	500	500	x	700	650	x	650	850	x	1000
			Horizontal/vertical mold installation			500	x	400	Double mold mount			850	x	1250
			300	x	300	500	x	700	400	x	550	950	x	1000
			300	x	350	Movable nozzle			400	x	550	950	x	1200
			350	x	350	400	x	300				950	x	1450
			400	x	400	500	x	500						
			500	x	500	450	x	350						
						520	x	400						
						400	x	500						

Clamping pins

- for Ø 20 mm, for system size 55 x 155 mm
- for Ø 25 mm, for system size 136 x 200 mm

Clamping plates for small molds

Clamping eccentric

- Series 22, for clamping pins Ø 20
- Series 23, for clamping pins Ø 25
- For double system size
- For blowing machines

	INFORMATION
	<p>Important information for handling the product. Additional accessories can be found in the WÖRNER quick clamping system catalog.</p>

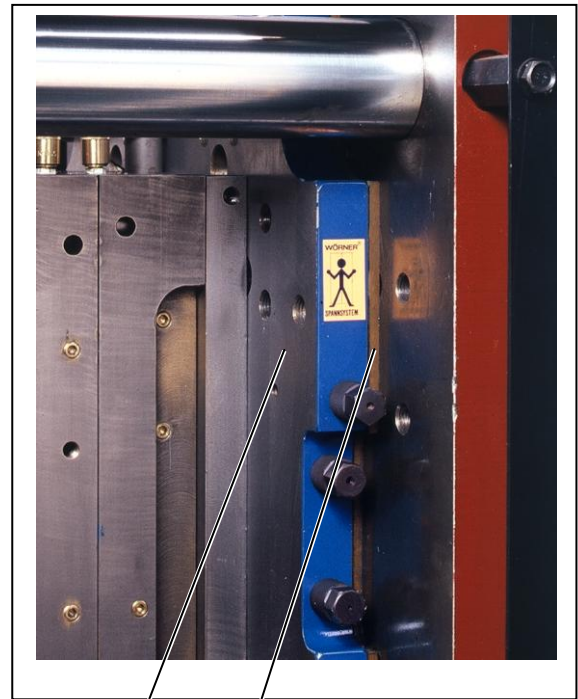
*) Subject to technical modifications

5. Options

5.1 Thermal insulation panel

A thermal insulation panel is used for thermal separation of the machine and injection mold.

- During assembly of the quick clamping plates **(1.0)**, suitable thermal insulation panels **(6.0)** have to be installed at the same time.
- The heat insulation plates have to be installed on the nozzle side and the ejector side.



1.0

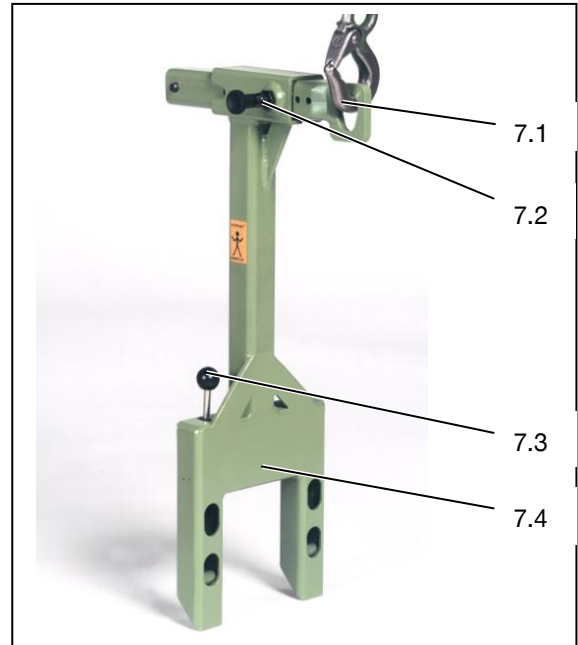
6.0

INFORMATION	
	<p>Important information for handling the product.</p> <p>The thickness of the quick clamping plates is reduced accordingly so that the entire mounting dimension increases only by 1 mm when simultaneously ordering of thermal insulation panels. The thickness of the thermal insulation panels is 6 mm.</p> <p>30 mm thick quick clamping plates are reduced to a 25 mm ► mounting dimension: 31 mm 35 mm thick quick clamping plates are reduced to a 31 mm ► mounting dimension: 36 mm</p>

5.2 Transport system

A special attachment system (**7.0**) for cranes is available for transporting the injection molds.

7.1	Crane lug
7.2	Load compensation
7.3	Interlock
7.4	Carrying fork



- Attach the crane hooks to the crane lug (**7.1**)
- Position the transport frame in front of the injection mold
- Adjust the load compensation (**7.2**) according to the weight of the injection mold
 - ⇒ To do so, pull the handle
 - ⇒ Slide out or push in the load arm accordingly
 - ⇒ Lock the load arm by releasing the handle
- Place the transport frame onto the clamping pins (**3.1**) using the carrying fork
- Lock the carrying fork on the clamping pins using the lever (**7.3**)
- Carefully lift the injection mold into the machine from above.

