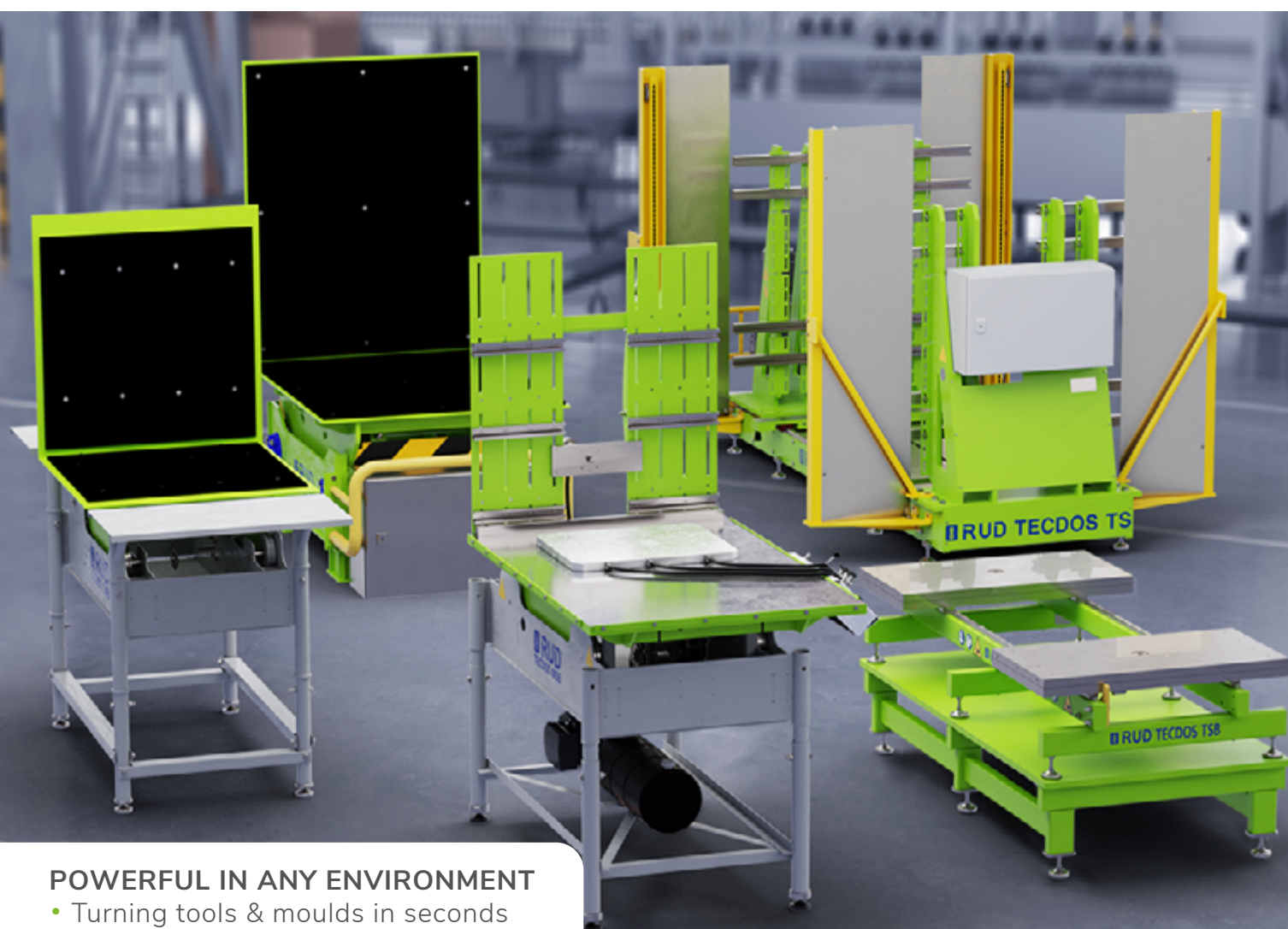


RUD MOULD HANDLING SOLUTIONS

PROFESSIONAL & PROGRESSIVE



POWERFUL IN ANY ENVIRONMENT

- Turning tools & moulds in seconds
- Easy, safe, & ergonomic operation
- For different types & sizes of moulds

Figures may differ from
the standard version.

MOVING,TURNING,OPENINGANDMAINTAINING TOOLS SAFELY

Our goals: Process optimisation, increasing occupational safety as well as improving the ergonomics of your employees.

Heavy tools and moulds need to be regularly moved, turned, opened and inspected in toolmaking, maintenance and production. Conventional procedures involving overhead cranes, slings and improvised aids are often time-consuming, labour-intensive and associated with risks to staff, tools and infrastructure.

RUD MOLD HANDLING SOLUTIONS support a controlled and ergonomic tool-handling process, from maintenance and functional testing through to turning, opening, closing and tilting heavy tools.

MAKING WORK SAFER

Carefully controlled movements and appropriate safety measures reduce the risks involved in handling heavy tools and moulds.

SIMPLIFYING PROCESSES

Tools can be moved, opened, turned or serviced directly on the relevant solution. This helps to reduce the need for additional transport and handling operations.

PROTECTING TOOLS AND INFRASTRUCTURE

Guided processes reduce the risk of damage to tools, machinery, factory floors and crane systems.

Can be used in a huge variety of manufacturing sectors:

Automotive | Medical technology | Consumer goods | Plastics mechanical engineering | Operating technology | Electrical/electronics manufacturing | Packaging industry



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RUD MOULD HANDLING SOLUTIONS in use:



1. FIND THE RIGHT SOLUTION FOR YOUR PROCESS

Whether it's maintenance, turning, opening, or tilting: The right solution depends primarily on the work step, the mold weight, the mold size, and the desired level of automation.

Solution	Function	Load capacity (tool weight)	How to use			Portable or fixed	Turn	Open & Close	Tilting	Testing	Typical application
TECDOS MSB 	Maintenance and testing	up to 2.000 kg	Cordless screwdriver or electric motor	Compressed air, depending on the hydraulic/ electrical specifications		can be moved by forklift	✓	✓	-	✓	Centralised tool maintenance and functional testing
TECDOS TMB 	Turning and maintenance	up to 2.000 kg	Cordless screwdriver or electric motor	Cordless screwdriver; Expert with electric motor		can be moved by forklift	✓	-	-	-	compact turning and servicing area
TECDOS TM 	Turning heavy tools	5.000 to 64.000 kg	electric, two-hand operation or with remote control	Electricity		can be moved using a forklift or crane	✓	-	-	-	heavy tools, moulds and special components
TECDOS TSB 	Manual Opening and closing	up to 2.500 kg	manual,	-		can be moved using a forklift or crane	-	✓	-	-	small to medium-sized moulds and tools
TECDOS TS 	opening and closing	5.000 and 10.000 kg	electric, two-hand operation or with remote control	Electricity		stationary	-	✓	-	-	Heavy-duty injection moulding and press forming tools
TECDOS TST 	Open, close and tilt	5.000 and 10.000 kg; tilting up to 6.000 kg	electric, two-hand operation or with remote control	Electricity		stationary	-	✓	✓	-	combined maintenance and positioning processes

2. RUD TECDOS MSB

CONSTRUCTION AND DIMENSIONS

Technical Highlights

- **Compressed air bearing tabletop:**
For safe opening of tools.
- **Hydraulic unit:** For testing the core pulls and functions.
- **Modular design:** Enables customisation and retrofitting of individual test units.
- **Extended test options:**
With integrated units such as hydraulic units, leak tests and flow measurements, it is possible to test all the important functions of a mould.



Maintenance
and testing

Mold size in mm	Maximum height of the Mold in mm	Maximum movable Mold mass	Maximum Mold Mass
600 x 500	600	1.000 kg	2.000 kg

ADVANTAGES

- **Reduction of production risks:** The risk of downtime and rejects is reduced in both in-house and contract manufacturing.
- **Plannable production:** Comprehensive testing prior to production prevents unexpected production downtimes.
- **Efficient solution for skills shortages:** Minimal training time and centralised maintenance enable immediate productivity.
- **Time and resource savings:** Centralisation of tools and materials reduces travel and waiting times, as all maintenance work is carried out centrally in one place.
- **Safety:** Labelling of safety-relevant points ensures safe operation.

Typ		Workbench in mm	Clamping plate with T-slots in mm	Adjustable working height in mm	Air-supported support plate in mm	Hydraulics	Weight
RUD TECDOS MSB	Operation with a cordless screwdriver	1200 x 800	800 x 800	880 x 1100	496 x 396	without	approx. 500 kg
RUD TECDOS MSB	Operation with a cordless screwdriver	1200 x 800	800 x 800	880 x 1100	496 x 396	with	approx. 550 kg
RUD TECDOS MSB Expert	Operated by an electric motor	1200 x 800	800 x 800	880 x 1100	496 x 396	without	approx. 590 kg
RUD TECDOS MSB Expert	Operated by an electric motor	1200 x 800	800 x 800	880 x 1100	496 x 396	with	approx. 625 kg

3. RUD TECDOS TMB

CONSTRUCTION AND DIMENSIONS

Turning injection moulds by up to **90 degrees at their center of gravity**.

For **flexible and safe working**, the turning device can be held in any swivelled position.

Thanks to its **adjustable height**, the TECDOS TMB, can be easily integrated into existing workshop processes.

RUD TECDOS TMB Expert: The drive is carried out by means of an electric motor. This enables fast and convenient operation without the need for manual tools.

Additional: Tabletop
PE plates for damping and increasing safety.

Additional: Storage surface
400 mm x 780 mm
For easy storage of your accessories and tools.

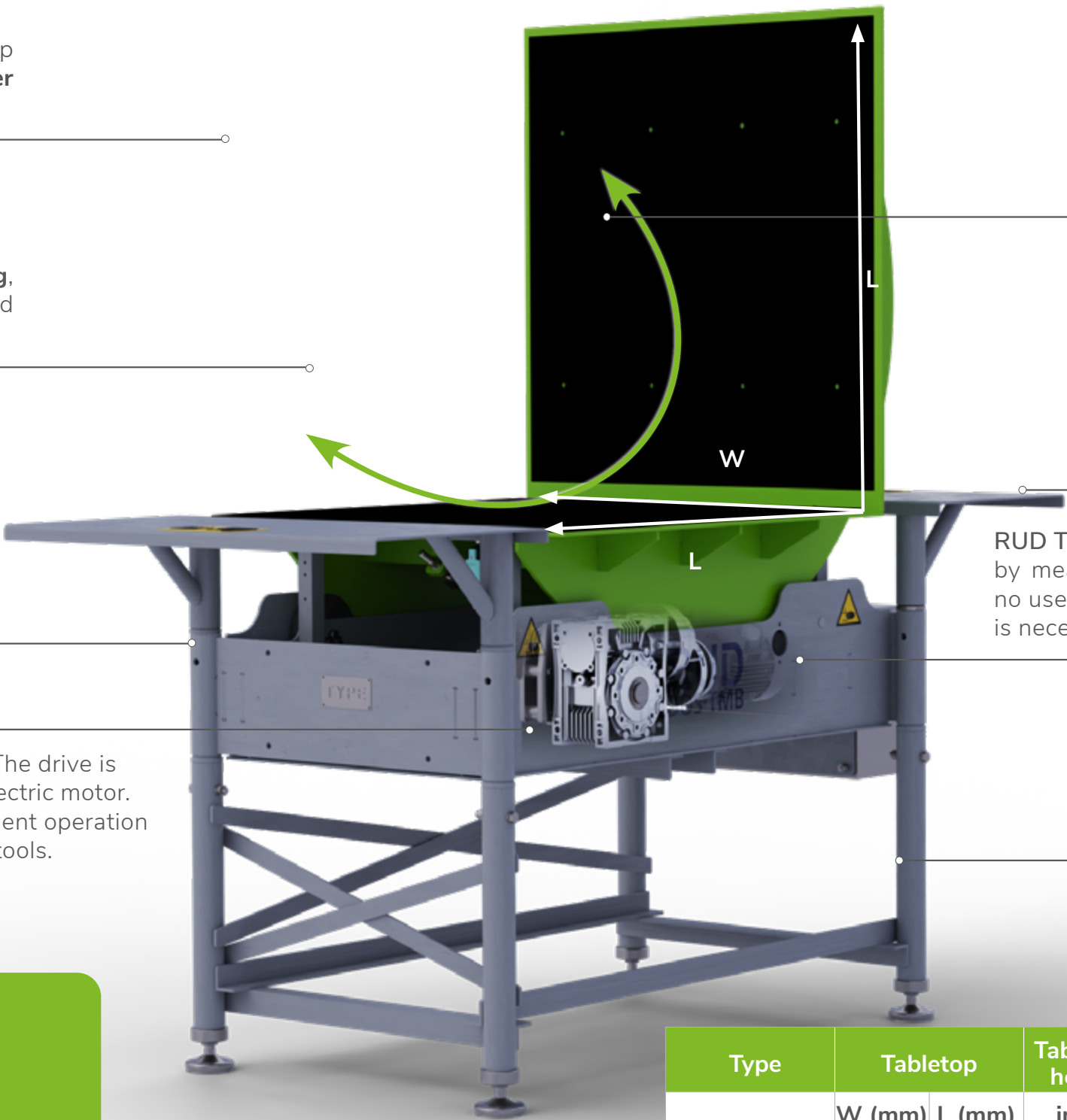
RUD TECDOS TMB Basic: The drive is carried out by means of a **cordless screwdriver**. Therefore, no use of electrical, pneumatic or hydraulic power is necessary.

Easy **movable** via forklift.

Safety for man and machine

ADVANTAGES

- Ergonomic working on injection moulds
- Optimisation of mould handling processes
- Direct turning process without time-consuming disassembly of tubes, connections, and other components
- Avoidance of damage to injection moulds, machines, and infrastructure



Type	Tabletop		Table top height	Load-bearing capacity	Weight approx.	
	W (mm)	L (mm)	in mm	in kg	in kg	
TMB 08/08-2,0	800	800	860 + 5	2,000	280	Operation with cordless screwdriver
TMB 08/08-2,0 Expert	800	800	860 + 5	2,000	290	Operation with electric motor

4. RUD TECDOS TMB & MSB

4.1 OPTIONAL COMPONENTS

RUD TECDOS MSB:
+49 7361 504 1457
mouldhandling@rud.com



RUD TECDOS TMB storage surfaces

- Lateral storage surfaces
- For easy storage of your accessories
- Makes it easier to work and mount moulds and tools on the TECDOS TMB



RUD TECDOS TMB platforms

- Polyethylene table plate
- With adjustable recesses



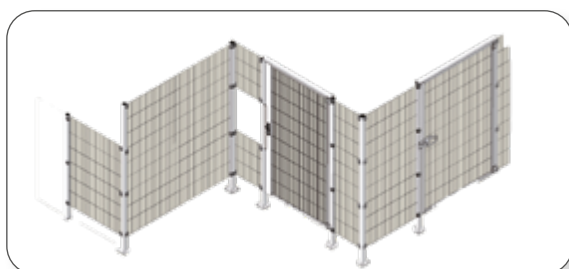
RUD TECDOS TMB drawer

- High-quality drawer
- Storage of accessories
- Required accessories and tools are always within reach



RUD TECDOS screwdriver

- Screwdriver for uncomplicated driving of the TECDOS MSB and TMB
- Screwdriver makes handling TECDOS MSB and TMB easy



RUD TECDOS MSB protective fence

- Total protection of the operator and the TECDOS MSB



5. RUD TECDOS TM

5.1 CONSTRUCTION AND DIMENSIONS

Type	Table surface		Table top height	Load-bearing capacity	Approx. unit weight
	W (mm)	L (mm)	in mm	in kg	in kg
TM 08/10-5	800	1,000	542	5.000	600
TM 08/13-10	800	1,300	670	10.000	1.080
TM 13/13-10	1,300	1,300	670	10.000	1.180
TM 15/18-16	1,500	1,800	900	16.000	2.850
TM 20/20-20	2.000	2,000	1.000	20.000	3.850
TM 20/23-25	2,000	2,300	1060	25.000	4.860
TM 25/25-32	2,500	2,500	1.320	32.000	8.120
TM 25/25-40	2,500	2,500	1.320	40.000	8.120
TM25/30-64	2,500	3,000	1.510	64.000	13.700

Turning injection moulds by up to **90 degrees at their center of gravity.**

Safe turning by avoiding a tipping point

The **low table height** allows maintenance of your mould directly on the TECDOS TM

Tabletop
Optional: PE plates for damping and increasing safety

Guard bracket
(optional)

Easy movable via crane or forklift

ADVANTAGES

- Increased safety at work
- Ergonomic working on injection moulds
- Optimisation of mould handling processes by shortening handling times and the time an operator needs to be on the job
- Direct turning process without time-consuming disassembly of tubes, connections, and other components
- Avoidance of damage to injection moulds, machines, and infrastructure

5. RUD TECDOS TM

5.2 OPTIONAL COMPONENTS

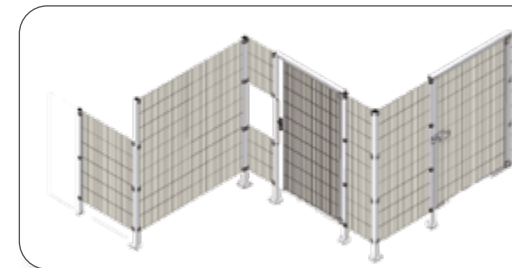
RUD TECDOS TM:
+49 7361 504 1457
mouldhandling@rud.com



RUD TECDOS TM guard bracket

Hoop design provides distance protection for the operator

- For the front zone
- For the rear zone



RUD TECDOS TM protective fence

- Complete protection of the operator and the TECDOS TM
- An alternative to the light curtain – can also be installed together



RUD attachment points

- RUD VLBG-Plus load ring
- Optimised load-bearing capacity: captive exchangeable attachment points
- Bracket adjustable in direction of force



RUD TECDOS TM working platform

- For attaching attachment points and lashings safely
- Custom working platform configurations
- Stationary safety enclosures or mobile working platforms available



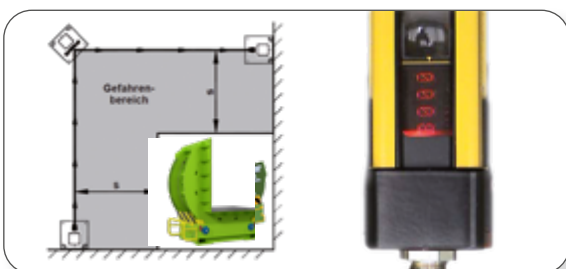
RUD TECDOS TM operator devices

- Standard: Two-hand operator device
- Optional: Radio control system
- Can be operated safely outside the danger zone



RUD TECDOS TM plate

- Polyethylene table plate
- With adjustable recesses



RUD TECDOS TM light curtain

- Stops inadvertent or unauthorised entry to the danger zone
- Protects operators at or near the TECDOS TM



6. RUD TECDOS TSB

6.1 CONSTRUCTION AND DIMENSIONS

Manually guided and controlled opening of moulds

Maintenance and repair directly on the TECDOS TSB.

Movable mounting plate
Can be rotated 360°, for direct maintenance of the mould half

Levelling feet
For levelling the uneven hall floor.

Safety for man and machine



Easy movable via crane or forklift

Fixed mounting plate
Can be rotated 360°.

ADVANTAGES

- Direct opening and closing without time-consuming disassembly of tubes, connections, and other components
- Optimisation of mould handling processes
- Avoidance of damage to injection moulds, machines, and infrastructure

Typ	Plates		Total size		Table top height	Load-bearing capacity	Weight approx.
	W (mm)	L (mm)	W (mm)	L (mm)	in mm	in kg	in kg
TSB 06/12-2,5	600	300	600	1.200	310	2.500	300
TSB 08/16-2,5	800	400	800	1.600	310	2.500	300

6. RUD TECDOS TSB

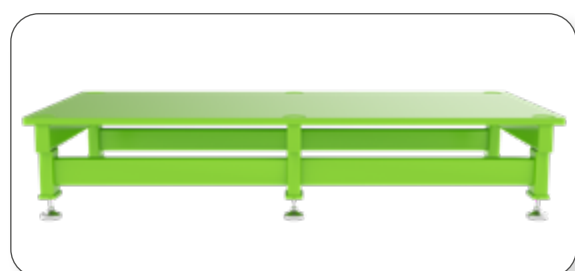
6.2 OPTIONAL COMPONENTS

RUD TECDOS TSB:
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mouldhandling@rud.com



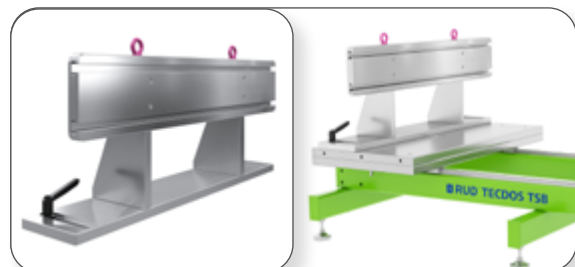
Magnetic holders

- Components, workpieces and moulds can be fastened easily and flexibly



Undertable

- Undertable specially developed for ergonomic work



Fix bracket

- Fastening of the mould halves
- Supports opening and closing
- Flexible positioning of the mounting brackets



7. RUD TECDOS TS

CONSTRUCTION AND DIMENSIONS

Safe and time-saving opening and closing of mould halves at the touch of a button.

Clamping plates for securing the tools ensure that the tool halves open and close with a precise fit.

The support surface allows for ergonomic maintenance of your tool directly on the TECDOS TS.

Adjustable feet for levelling out the uneven hall floor.



Safety light curtain and Guard brackets (optional)

Improving workplace safety with a safety curtain and safety guard (optional)

The image shows a RUD TECDOS TS Expert

ADVANTAGES

- Continuous guided and controlled movement of mould halves
- Ergonomic maintenance of injection moulds
- Optimisation of mould handling processes by shortening handling times and the time an operator needs to be on the job
- Direct opening and closing without time-consuming disassembly of tubes, connections, and other components
- Less downtime due to maintenance work
- Avoidance of damage to injection moulds, machines, and infrastructure

Type	Mounting plate		Clear span in mm	Table top height in mm	Load-bearing capacity in kg	Approx. unit weight in kg
	W (mm)	L (mm)				
TS 09/15-5	900	900	1.500	270	5.000	2.000
TS 13/19-10	1.300	1.300	1.900	380	10.000	2.300
TS 13/19-10 Expert	1.300	1.300	1.900	380	10.000	3.600

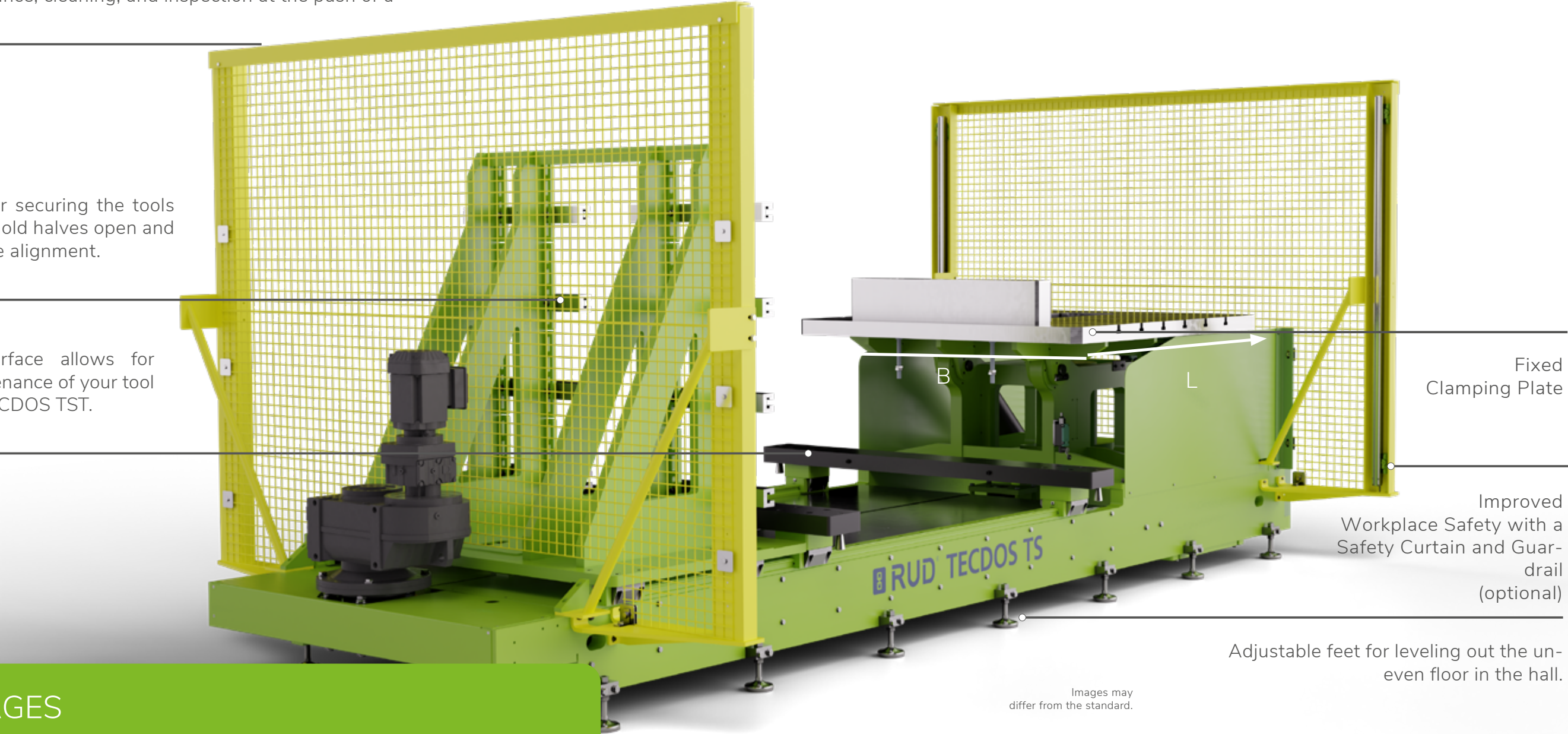
8. RUD TECDOS TST

DESIGN & DIMENSIONS OF RUD TECDOS TST

Opening tools, closing tools, swiveling tool halves, and positioning for maintenance, cleaning, and inspection at the push of a button.

Clamping rails for securing the tools ensure that the mold halves open and close with precise alignment.

The support surface allows for ergonomic maintenance of your tool directly on the TECDOS TST.



Improved Workplace Safety with a Safety Curtain and Guardrail (optional)

Adjustable feet for leveling out the uneven floor in the hall.

Images may differ from the standard.

ADVANTAGES

- Less crane handling
- Faster maintenance and inspection
- Improved ergonomics in the tool room
- Reduced risk of tool damage
- Increased workplace safety through a controlled and secure process
- Ergonomic access for maintenance and cleaning
- Standardized procedure instead of improvised tools
- Opening, closing, and tilting in a single machine with a 10-metric-ton lifting capacity for heavy tools and a 6-metric-ton tilting mechanism for tool halves

Type	Mounting plate		Table top height	Load-bearing capacity	Maximum weight of one half of a tool for the tilting mechanism	Approx. unit weight
	B (mm)	L (mm)	in mm	in kg	in kg	ca. in kg
TST 13/19-10	1.200	1.115	464	10.000	6.000	5.000

9. RUD TECDOS TS & TST

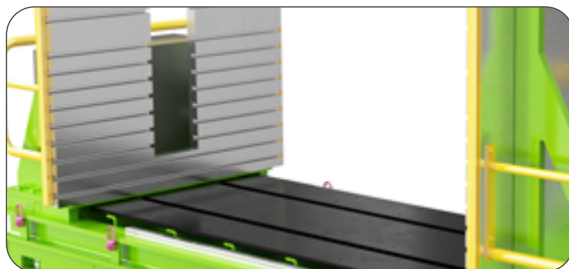
OPTIONAL COMPONENTS

RUD TECDOS TS:
+49 7361 504 1457
mouldhandling@rud.com



RUD TECDOS guard bracket

Hoop design provides distance protection for the operator



RUD TECDOS TS mounting plate

- For easy tool attachment
- Other mounting plates are optionally available



RUD TECDOS operator devices

- Two-hand operator device
- Radio control system
- Safe operation outside the danger zone



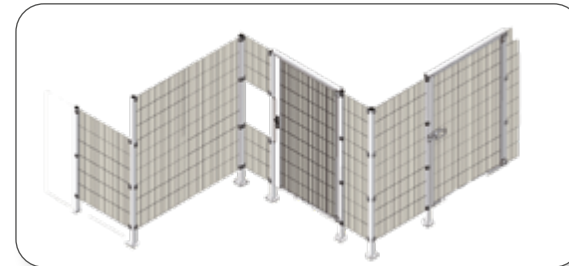
RUD TECDOS light curtain

- Stops unauthorised or inadvertent entry to the danger zone
- Protects operators at or near the TECDOS TS and TST



RUD TECDOS TS attachment points

- RUD VLBG-Plus load ring
- Optimised load-bearing capacity: captive exchangeable attachment points
- Bracket adjustable in direction of force



RUD TECDOS protective fence

- Complete protection of the operator and the TECDOS TS and TST
- An alternative to the light curtain – can also be installed together



10. COST-EFFECTIVENESS MEETS WORKPLACE SAFETY



Up to 50 minutes
Time saving per tool

Less staff members

Reduced crane/
handling time

Improved Workplace
Safety

Less tool damage
thanks to safe handling

Quick Return on
Investment

Parameters	Assumption
Tools serviced per week	5
Time saved per tool	50 min
Staff involved in the current process	2
Internal hourly rate per employee	50 €/h
Crane / handling time saved per tool	20 min
Internal hourly rate for crane/handling	80 €/h
Basis for calculation	48 working weeks per year

Potential savings per year	
Time saved by staff	ca. 20.000 €
Reduce crane/handling time	ca. 6.400 €
TOTAL POTENTIAL SAVINGS	ca. 26.000 €/Jahr

Note: This calculation is a hypothetical example. The actual ROI depends on the customer's process, the number of tools serviced, processing time, staffing, hourly rates, and current handling costs.

Not included: Potential additional benefits resulting from fewer injuries, less tool damage, improved ergonomics, and reduced reliance on cranes.

11. RUD TECDOS IN USE

Cool move for rotor hubs

The RUD Tecdos TM turning table has been in operation at ENERCON since April 2021. Nacelles and rotor hubs for the entire ENERCON portfolio are produced here: from the EP1 platform to the EP5 platform, and in the future ENERCON's e-nacelles will also be manufactured there. After painting, the large-volume cast bodies of the rotor hubs enter the assembly line, where the inner workings are fitted to them. This is where the compact turning table from RUD comes into play.

ENERCON: Process optimization in intralogistics

This is because the rotor hub has to be turned within the assembly line at the factory. With a weight of up to 65 tons and correspondingly large dimensions, this is a truly mammoth task in the intralogistics process. „We used to turn the hubs with two overhead cranes. That could take up to two hours,“ explains Keno Claassen, who is responsible for the procurement of operating resources in the competence center. „With the turning table from RUD, we now manage the turning process in just a few minutes,“ Claassen continues. The RUD Tecdos TM thus reduces the logistics effort in the plant, for an optimized process in the production and assembly of the rotor hubs.

Special design: Support surfaces

The rotor hubs have a diameter of up to 3.5 meters and the supporting surface of the turning table in the standard version is 2.5 m x 3.5 m (W x L). Together with the Y-shape of the hub and a support angle that does not correspond exactly to 90°, these were not optimal conditions for a stable turning process. The solution: special supports that can be attached to the RUD Tecdos TM and that are perfectly adapted to the three different hub sizes. This is because the rotor hubs not only have different sizes, but also different angles - 5 degrees, 3.5 degrees and 2.5 degrees - which had to be taken into account when designing the support surfaces.

RUD Tecdos TM protects the infrastructure and the health of the employees

By using the turning table from RUD, ENERCON not only benefits from process optimization and time savings in the manufacturing plant in Aurich. Because the indoor cranes are no longer required for turning the rotor hubs, which weigh several tons, the RUD Tecdos TM also protects the entire intralogistics infrastructure. The cranes can therefore take over other tasks. A plus for the employees: For them, the turning process is particularly ergonomic and safe with the help of the RUD Tecdos TM.



Bild: RUD

12. SERVICE CONCEPT

Service No.:
+49 (0)36074-36642

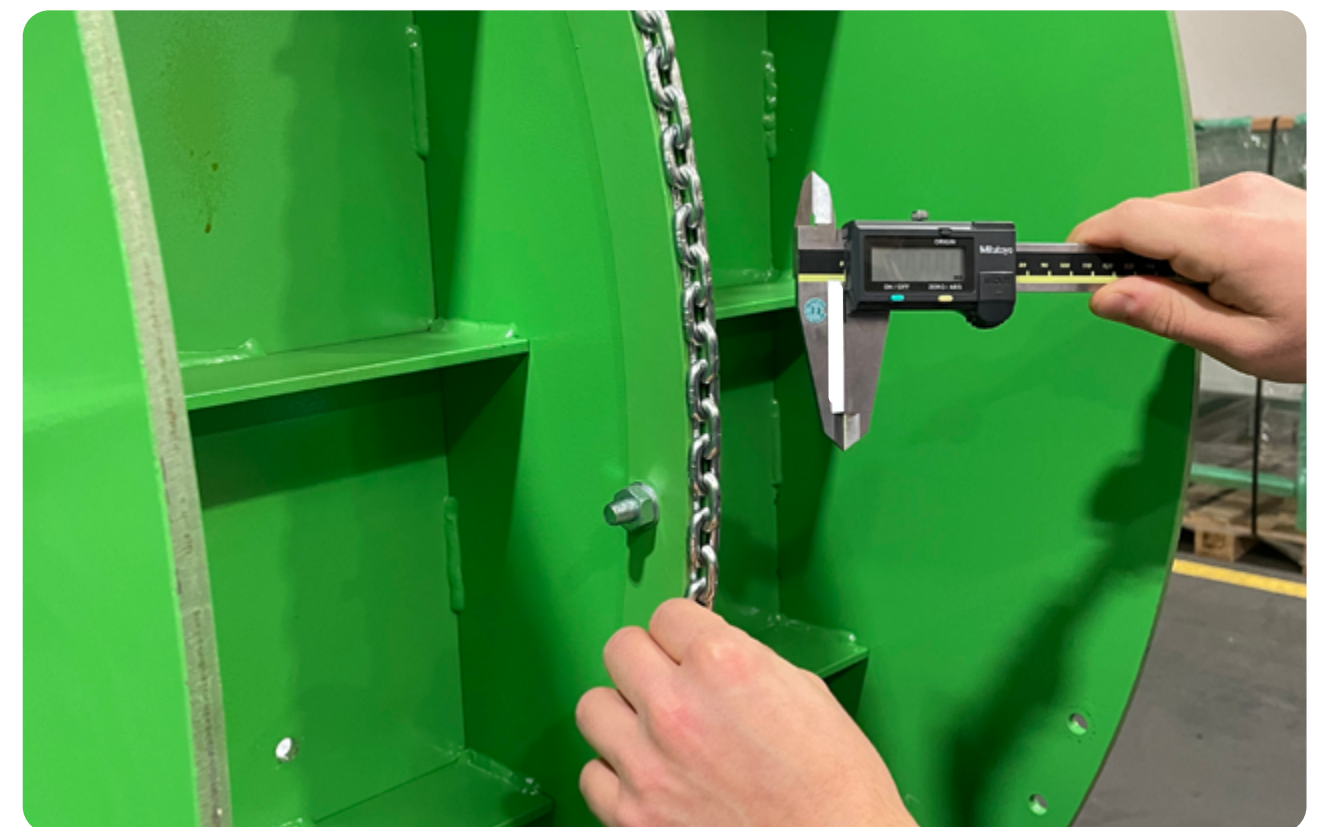
Mail: mouldhandling@rud.com

Scope of service



Customer benefit:

- Checkbook-tested RUD product
- Inspection of attachments by qualified personnel
- Warranty extension up to a maximum of 5 years with regular inspection by RUD Service
- User training, advice and inspection report



13. ERGONOMIC & SAFE

Service No.
+49 (0)36074-36642

Mail: mouldhandling@rud.com

Ergonomic work

Injection-formed tools and moulds weighing several tons can be turned, opened, and closed safely, economically, and quickly, using RUD MOULD HANDLING SOLUTIONS. Handling heavy, easily damaged tools is made easier, protecting your staff in industrial workplaces and helping prevent serious damage to joints and backs.

Customer benefit:

- **Time savings:**
More efficient work processes due to simple and fast handling of tools and moulds
- **Ergonomic working:**
Reduced stress on joints and spine due to effortless movement of tools and moulds weighing several tons
- **Injury prevention:**
Minimizing the risk of injury through ergonomic design, lifting devices and special handles
- **Protection of expensive tools & moulds:**
Prevents damage from improper skewing
- **Employee Safety:**
Provides a safe working environment and minimizes the risk of accidents



Safe work

Normal turning and rotating as well as opening and closing operations conceal enormous risks for the operator. Not only can handling them cause damage to expensive moulds if they are not pulled in a straight line, but the health of staff can also be put at risk. Using RUD MOULD HANDLING SOLUTIONS guarantees that all kind of objects, no matter what shape, can be moved easily and safely.





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RUD Conveyor & Drives



RUD MOULD HANDLING SOLUTIONS

Cool moves for heavy tools and moulds: Handling moulds has never been so safe, efficient as well as budget- and processoptimised as with the RUD TECDOS TMB, the RUD TECDOS TM, and the RUD TECDOS TS.



RUD conveyor technology

Combinable components and individual parts for conveyor technology, conveyor systems, and mining. RUD offers you perfectly coordinated systems and components for horizontal, vertical, and ascending conveyors.



RUD TECDOS drive technology

The RUD TECDOS team develops and produces drive solutions for rotating, lifting, moving or telescoping. In addition to the components range, TECDOS OMEGA and PI-GAMMA drives are also available as complete system drives.



RUD industrial chains

RUD components are the first choice worldwide for leading hoisting equipment manufacturers. We also offer a wide range of round link chains for different industries and areas, such as food, fishing, and awnings.