Components and Systems

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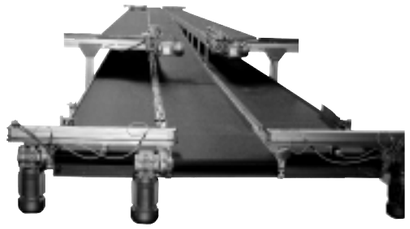
MONTAGETECHNIK

Orbital riveting technology

Conveyor technology – Flexible assembly systems – Workpiece carriers – Transport systems



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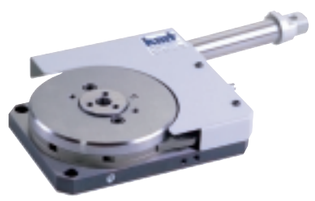
Presses and Rotary indexing tables



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Orbital riveters
Assembly systems
Small conveyors
Rotary indexing tables
Multiple spindle heads

Connection Technology
Orbital Riveters

- Your specialist for reliable connections ✓

Welcome.

For many years now, we have been developing innovative and successful solutions for our partners in the assembly and automation technology sector.

Uncompromising support, sound knowledge, unsurpassable quality and a self-confident approach in addressing challenges are the key to our success.
Assisted by a well-tried network of specialists, we offer holistic solutions from one source.
This makes us both flexible and cost-efficient.

Profit from our experience.

Your success is our mission.

We thrive on new
and interesting challenges.

Marc Heiter
Chief Executive Officer

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Areas of Application

Your specialist for reliable connections

Examples

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Automobile supplier industry:
Airbag, belt tensioner, safety belt, ignition lock, steering column, steering wheel, car seat, CD and cassette drives, motor auxiliaries, convertible hood mechanics, exhaust gas regulation valve, door locks, hinges, fittings, motor bearings, cigarette lighter, instrumentation, rollers, boot and bonnet hinges, attachment systems in vehicles, exhaust pipe fittings, windscreen wipers, shifter pegs, horns, ABS motors, fuse boxes, clutches, brakes, dynamos, etc.

Lock, construction fitting and furniture industry:
Locks, hinges, window fittings, door fittings, pullouts, castors, gas fittings, handcuffs, loudspeakers, gutters, etc.

Electrical industry:
Connections, switches, sockets, relays, fuses, razors, plugs, electrical motors, automatic circuit breakers, lighting, force sensors, condensers, electrical boiler connection terminals, switch blades for high voltage.
As well as a variety of other applications, e.g. for use in medical technology or optical and precision industries, etc.

Aerospace industry:
Turbine elements, security technology, undercarriage components, hydraulics, installation material, mounting elements, etc.

Sport equipment and household appliance industry:
Ski bindings, ski stoppers, sports shoes, bicycle technology, helmets, golf shoes, bicycle chains, aviation, water sport, tin openers, kitchen appliances, mixers and grain mills, gears, etc.

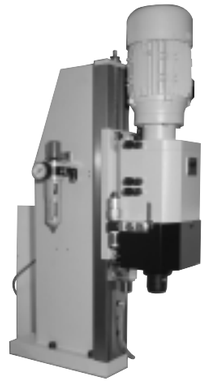
In our well equipped laboratory, we determine the best possible rivet connection for your components. Many rivet connections have already been manufactured and tested in our laboratory during the prototype phase of product development.

Orbital Riveters

TNE 250

TNE 750

TNE 2000



TN 750 with bases for rotary indexing tables

Your advantages

- ❏ for high-speed riveting, extra fast feed, spindle speed 1360 rpm or 2800 rpm on request
- ❏ for use as a shaft riveting unit with centering collar or as standard unit (rear fixation)
- ❏ not restricted to a specific position, can also be used overhead
- ❏ stepless force adjustment via pressure setting
- ❏ standard version with end position damping and feed speed setting
- ❏ maintenance-free
- ❏ with stroke limiting ring (stepless return stroke setting)
- ❏ standard stroke 40 mm optional 80 mm or 100 mm, other possibilities on request
- ❏ for 2 rivet processes:
  rotational or radial orbital riveting units also used for crimping and curling

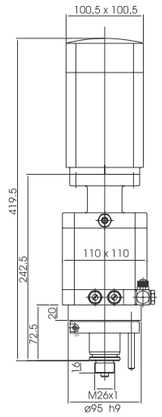
Modular construction ✓
Thanks to their modular construction, all mechanical and control-related components can be combined as desired.

High flexibility ✓
Thanks to their modular construction, our systems can be easily adapted to the requirements on hand. High flexibility is guaranteed - Modular construction permits flexible usage!

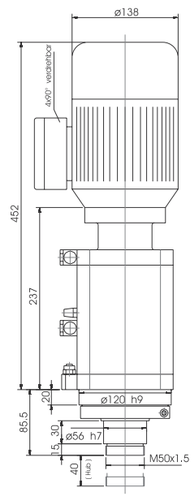
Service-friendly ✓
Easy to operate and service-friendly are just two of the standard features of our products. Speedy on-site service whenever needed goes without saying!

Quality control ✓
For monitoring production and quality assurance, the units can be equipped with our well-proven force/displacement control!!

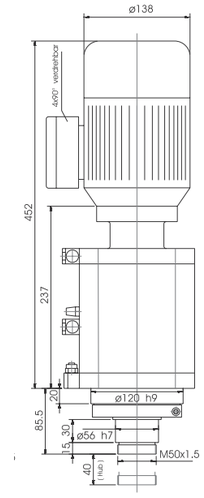
Technical data



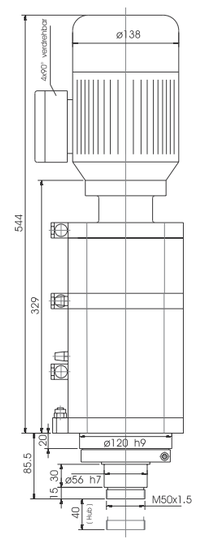
TNE 250



TNE/TNEF 750*
TNE 450



TNE/TNEF 1250*
TNE 650



TNE 2000

Data of riveting units	**TNE 250**	**TNE/TNEF 750**	**TNE/TNEF 1250**	**TNE 2000**	**TNE 450**	**TNE 650**
Riveting force at 6 bar:	Step I 2,8 kN	Step I 4,5 kN	Step I 6,5 kN	Step I 6,5	Step I 4,5 kN	Step I 6,5 kN
		Step II 7,5 kN	Step II 12,5 kN	Step II 12,5		
				Step III 19,4		
Weight:	13 kg	19/23 kg	23/27 kg	27 kg	19 kg	23 kg
Rivet diameter:	ST 37 = 2,5 mm	ST 37 = 7,5 mm	ST 37 = 12,5 mm	ST 37 = 16,5	ST 37 = 4,5 mm	ST 37 = 6,5 mm
Standard stroke:	50 mm	40 mm	40 mm	40 mm	100 mm	100 mm
Integrated fine adjustment:		o	o			

Electrical data						
Voltage: **	400 / 230 V	400 V, 50 Hz three-phase	400 V, 50 Hz three-phase	400 V, 50 Hz three-phase	400 V, 50 Hz three-phase	400 V, 50 Hz three-phase
Current consumption:	0,72/1,25 A	1,2 A	1,2 A	1,2 A	1,2 A	1,2 A

Pneumatic data						
Minimum pressure:	2 bar	2 bar	2 bar	2 bar	2 bar	2 bar
Operating pressure:	2 - 7 bar	2 - 7 bar	2 - 7 bar	2 - 7 bar	2 - 7 bar	2 - 7 bar
Air consumption:						
Step I	ca. 2,0 l	3,57 l	6,23 l	6,23 l	5,18 l	9,17 l
Step II		5,18 l	9,17 l	9,17 l		
Step III				12,2 l		
Compressed air supply:	Maintenance unit without oiler					

Data of riveting units	**TN 250**	**TN/TNF 750**	**TN/TNF 1250**	**TN 2000**	**TN 450**	**TN 650**
Height / Width / Depth:	830/160/270	860/250/480	860/250/480	1000/300/450	860/250/480	860/250/480
Weight:	32 kg	82,5/86,5 kg	85,5/98,5 kg	135 kg	82,5 kg	85,5 kg
Adjustable in height:	o	o	o	o	o	o
Throat depth:	80 mm	100 mm	100 mm	150 mm	100 mm	100 mm
Standard colours:			Bordeaux, light grey, mignonette green			
Other RAL colours available						

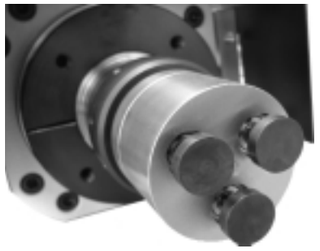
* Height with integrated fine adjustment: Standard + 90 mm
** Other motor voltages on request

TNE = Orbital riveting unit
TNEF = Orbital riveting unit with integrated fine adjustment
TN = Orbital riveter comprising orbital riveting unit and base

Dimension and design details subject to change!

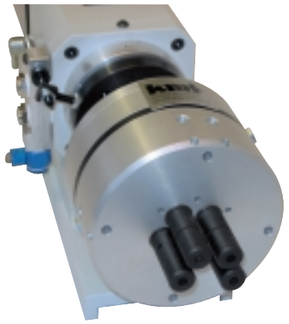
Orbital riveters - Multi-spindle heads

Riveters



Roller head

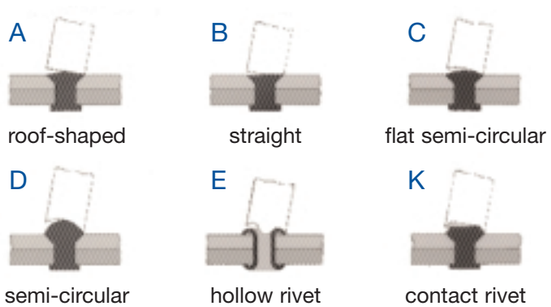
2-spindle
orbital head



4-spindle
orbital head

7-spindle
orbital head

Rivet examples
Rivet/rivet head shapes



Progressive modular conception ✓

Controls

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Control ST 1
for standard, uncomplicated riveting

- ❏ main switch with emergency-off
- ❏ pilot lamp, automatic mode, fault indicator
- ❏ preselection switch - rivet force, step I and II
- ❏ preselection switch - automatic / manual mode
- ❏ preselection switch - rivet/stroke time
- ❏ Actuation of riveting process
  - – foot-operated switch

  optional:
  - – 2 hand start
  - – external actuation
  - – sliding device

Control ST 2
for high-quality automatic and manual riveting

- ❏ simple menu-guided operation of all functions via display
- ❏ positioning in 0.01 mm or 0.01 bar increments
- ❏ up to 6 mm stroke range
  (depending on measuring system (e.g. laser) 10 mm also possible)
- ❏ 1 - 10 bar pressure range

Same features as ST 1 plus:
- ❏ stroke monitoring with measured value display
- ❏ or alternative pressure monitoring with measured value display
- ❏ part counter
- ❏ service menu
- ❏ installed software – pressure or displacement

Rivet machines with sliding
device and ST 2 control

Control ST 3
for top quality-monitored automatic and manual riveting

- ❏ with automatic realization of rivet parameters: unfinished rivet length, force/displacement curve
- ❏ identification system in work stroke
- ❏ automatic positioning and monitoring of rivet displacement
- ❏ compressive force monitoring during forming

Same features as ST 2 plus:
- ❏ software pressure and stroke monitoring
- ❏ 3x analogous processing
- ❏ storage of up to 10 different riveting programs on request

optional
- ❏ parallel interface for data output
- ❏ external actuation via I/O or BUS
- ❏ serial RS 485 interface
- ❏ storage of more than 10 different riveting programs for different parts
- ❏ data remote maintenance via modem
- ❏ Profibus
- ❏ rivet protrusion measurement via sensor
- ❏ graphics representation of rivet parameters
- ❏ SPC

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The guarantee for a future-proof investment ✓