



# *Radial riveting technology*

- *The world's market leader for riveting machines*
- *High-quality process*
- *Efficient and at the same time gentle deformation*
- *Innovative Process-Control*



*...joining is our business*

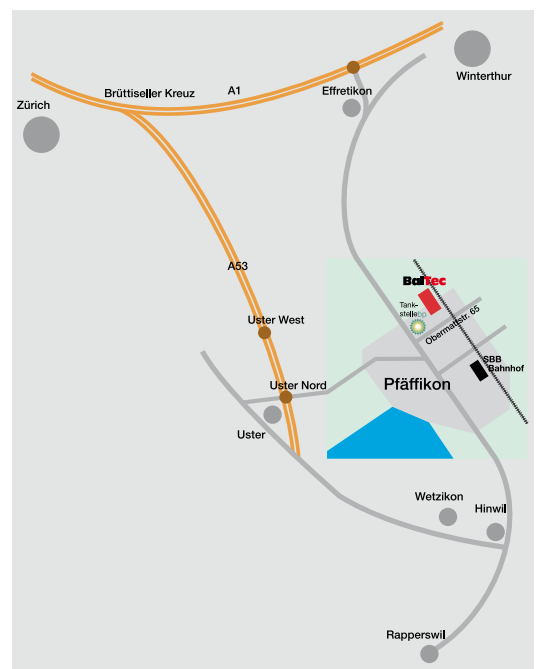


## *Welcome at BalTec!*

BalTec Maschinenbau AG, founded in 1983, specializes in the manufacture of riveting systems for fastening technology. The company, with a workforce of about 50, has marketing, engineering and service companies in Switzerland, Germany, England, France, and the USA.

In addition, we have about 40 distributors around the world who advise customers locally. BalTec maintains its position as a riveting technology leader through continuous innovation, today and in the future.

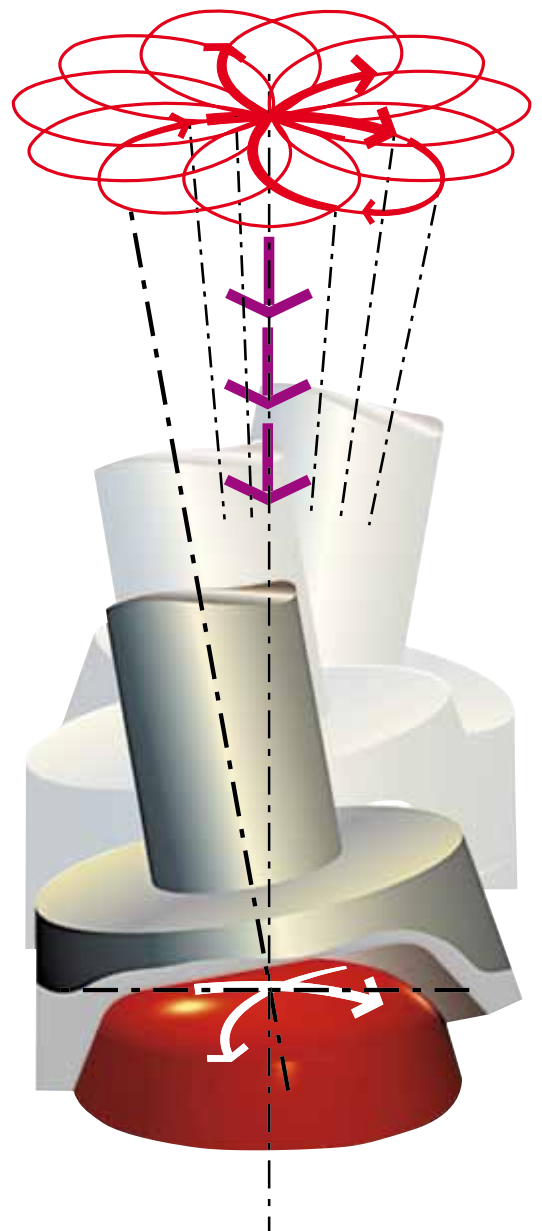
Visit us at [www.baltec.com](http://www.baltec.com)





## *BalTec Radial Riveting process – the rose-petal principle*

- The forming tool describes a rose-petal path. In doing so a flowing, gentle deformation with the least possible force is obtained.
- Excellent surface structure of the riveting
- Low component loading
- Long life cycle of machines and tools
- Economically optimal for the whole machine life (TCO)



BalTec steers



steering fork



## *The complete workstation consists of:*

- Riveting unit with drive motor
- Stable cast stand and pedestal
- Vertical adjustment and clamping
- Machine controller
- Complete compressed air maintenance unit for pneumatic models or hydraulic unit for hydraulic models
- Machine lamp
- Two-hand operation



radial riveting machine RN 281 with RC-20

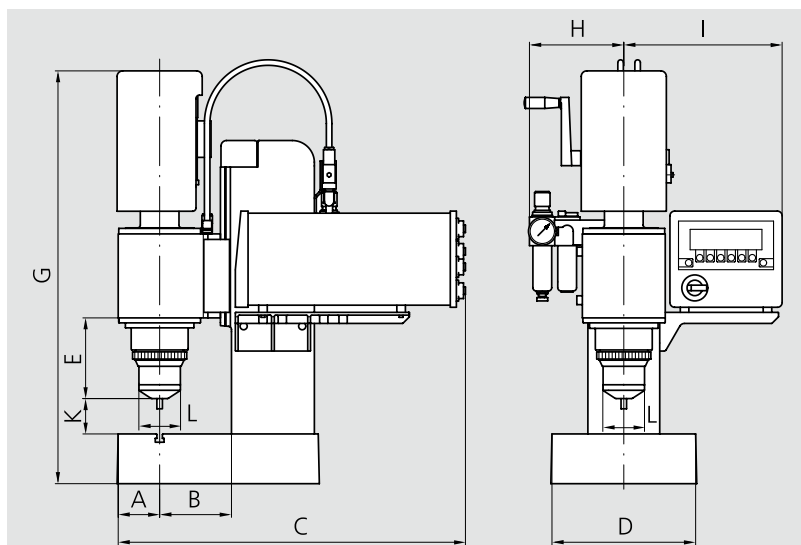




## Dimensions und weights

Model	A	B	C	D	E	G	H	I	K	L	kg
RN 081	75	75	–	150	58–83	528–625	162	–	42–139	∅ 75	45
RN 181/RN 181 red.	75	130	594	260	126–156	702–858	171	287	69–225	∅ 75	75
RN 231	75	130	594	260	146–186	722–868	171	287	39–185	∅ 75	90
RN 281	120	185	662	320	167–207	832–982	192	308	78–228	∅ 125	170
RN 331	125	220	707	350	208–258	951–1145	210	322	78–272	∅ 125	260
RN 381	125	180	667	350	198–248	947–1149	–	322	87–289	∅ 125	320
RN 481	only available as RNE (see page 6) and RNS (see page 12)										

technical changes reserved



## Performance of each model

Model	081	181	181 red.	231	281	331	381	481
Rivet shank <sup>1</sup> max. ∅ in mm	4	6	2	8,5	12	16	20	30
Air pressure in bar	2–6	2–6	2–6	2–6	2–6	2–6	–	–
Hydraulic pressure in bar	–	–	–	–	–	–	10–65	145
Riveting force <sup>2</sup> in kN	2,3	6	1,5	12	17	33	40	100
Working stroke in mm	2–25	5–30	5–30	5–40	5–40	5–50	5–50	5–90

<sup>1</sup> Steel 370 N/mm<sup>2</sup> (St. 37), <sup>2</sup> max. riveting in kN

technical changes reserved

## BalTec moves



movable hinges



## For each application the appropriate sized machine

- The optimum range of sizes enables their riveting performance to be fully utilized.
- All riveting units may be installed in special machines, rotary indexing tables or transfer installations – in any desired orientation.
- The riveting force is generated hydraulically or pneumatically, depending on the model.



radial riveting units RNE 081

RNE 181/RNE 181 red.

RNE 231

RNE 281

### Performance of each model

Model	081	181	181 red.	231	281	331	381	481
Rivet shank <sup>1</sup> max. Ø in mm	4	6	2	8,5	12	16	20	30
Air pressure in bar	2-6	2-6	2-6	2-6	2-6	2-6	-	-
Hydraulic pressure in bar	-	-	-	-	-	-	10-65	145
Riveting force <sup>2</sup> in kN	2,3	6	1,5	12	17	33	40	100
Working stroke in mm	2-25	5-30	5-30	5-40	5-40	5-50	5-50	5-90

<sup>1</sup> Steel 370 N/mm<sup>2</sup> (St. 37), <sup>2</sup> max. riveting in kN

technical changes reserved



### Dimensions und weights

Model	A	B	C	D	E	F	G	kg
RNE 081	416–441	132	112	58–83	75	115	ø 75	20
RNE 181/RNE 181 red.	528–558	173	142	126–156	110	126	ø 75	30
RNE 231	578–618	185	142	146–186	110	150	ø 75	45
RNE 281	633–673	211	160	166–206	125	172	ø 125	60
RNE 331	718–768	275	180	208–258	160	230	ø 125	110
RNE 381	705–755	200	180	198–248	120	160	ø 125	80
RNE 481	899–989	271	196	296–386	160	222	ø 180	180

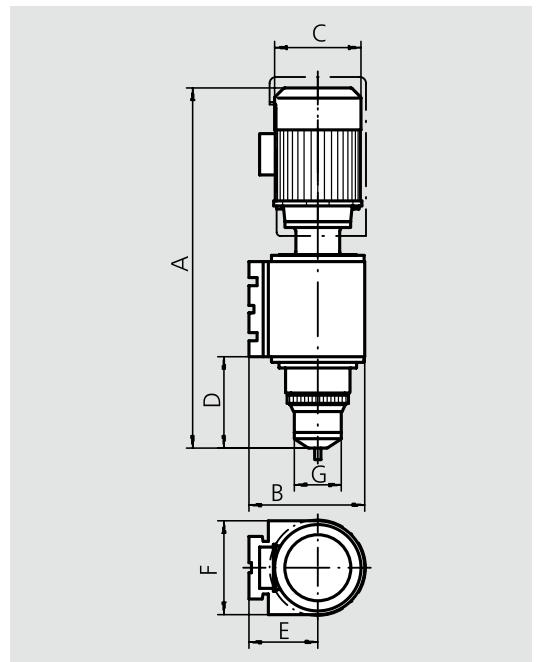
technical changes reserved



RNE 331

RNE 381

RNE 481

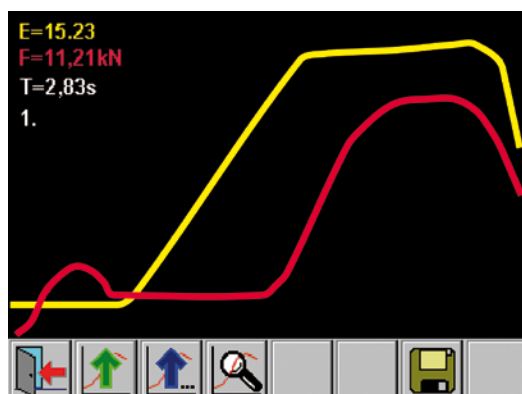


BalTec gives security

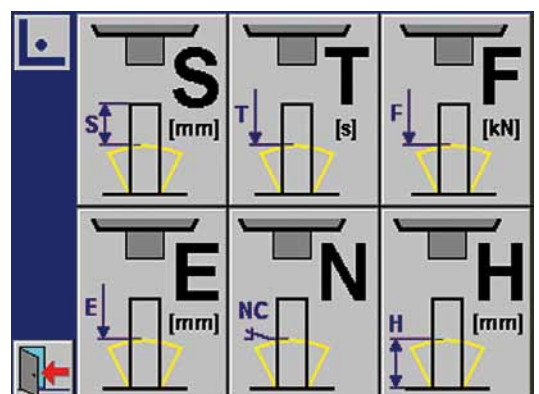


## Process-Control The decisive advantage

- Process-Control allows you to maintain a predefined degree of quality in a cost-effective manner
- Process analysis tracks the quality of the riveting process
- All process data are automatically evaluated and stored and are available in various formats
- Less scrap and reworking costs
- For the proof of process capability and product liability
- You will gain the confidence of your customers sustainingly!



Riveting curves HPP-25



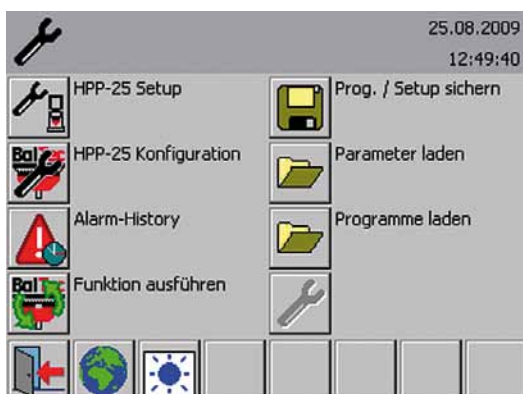
Riveting mode selection HPP-25





## High Performance Package HPP-25 Cutting-edge riveting process monitoring

- Easy touchscreen operation
- 6 control parameters available
- Rivet start detected after 2 mm of form tool travel
- Ethernet and USB interfaces
- Integrated data logger
- Newest generation of processor: faster data recording and analysing
- Displays status in-/outputs: easier start-up and error diagnostics
- Integrated recording of the riveting curve: easy riveting process analysis
- PC-Software (optional) with backup, diagnostics and logger functions



Setup HPP-25

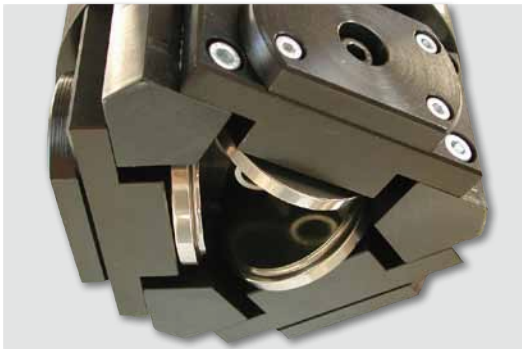
BalTec is energized



electrical plug



## Accessories and options



### **Roller burnishing head**

- Perfect for large diameters and thin walls
- With the roller burnishing head you can achieve the form you require using thin-walled tubes without the tubing wall bulging or collapsing.



### **MRX – multiple riveting head**

- Within a certain area you can carry out several riveting operations simultaneously. The riveting positions may lie at different heights.
- MRX1 (for RN 081, 181, 231)  
Distance between tools in mm: min. 8, max. 70
- MRX2 (for RN 281, 331, 381)  
Distance between tools in mm: min. 15.5, max. 85
- MRX3 (for RN 281, 331, 381)  
Distance between tools in mm: min. 15.5, max. 120



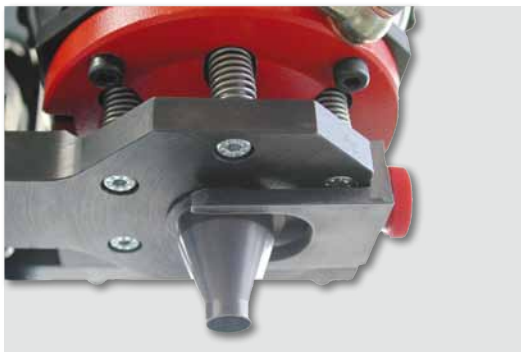
### **FSG – Finger guard device**

- Highest security and moreover faster and flexible
- Both hands are free, the riveting is initiated by foot switch
- There is no need of a fixation nor a sliding table



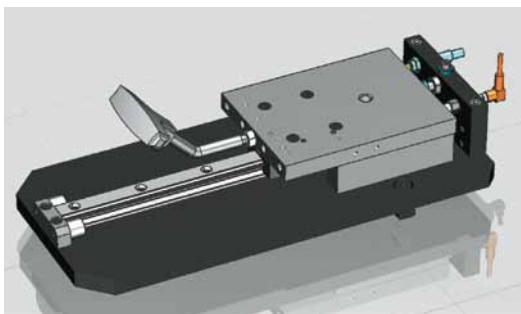
### ***Riveting machine control RC-20***

- Basic control for all machines
- Machine and program configuration by means of setup function
- Menu operation with softkeys
- Counter for total stroke, operation hours, total hours



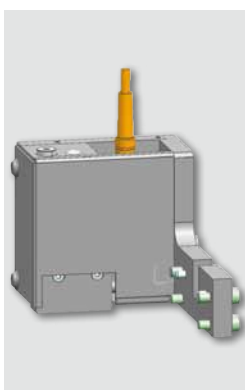
### ***Pressure pad***

- To secure the work pieces firmly in the workholder
- To join or to pretension before the riveting
- Pretension forces of the hold-down device are client specific, between 0.1 to 20 kN possible
- Pressure pads are manufactured corresponding to the workholder



### ***Sliding table***

- For inserting work pieces outside the riveting station
- With initiator as an option, to control the sliding table in the riveting station
- Manually or pneumatically operable sliding table available



### ***NHE – riveting stroke limit switch unit***

2 assembly sizes available, scanning sensor operates as hold-down device on basis of workpiece, pretensioning force between 20 to 300 N

Versions:

- NHE-E; to control the constant closing head height, also with external control
- NHE-U; projection measurement, autocompensation, in connection with process-controller HPP-25
- NHE-H; to control the constant closing head height, with projection measurement and autocompensation, in connection with process-controller HPP-25





BalTec opens



window fittings



## CNC coordinate riveting



### Module 4

RNC 231 riveting machine as complete and autonomous workstation

### Module 1

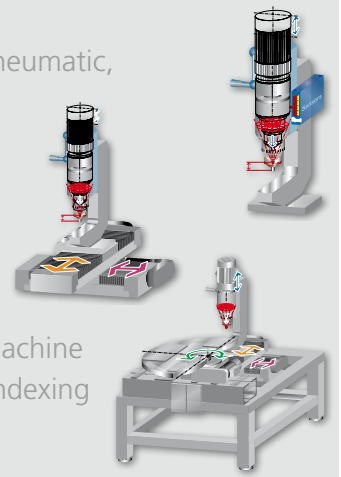
BalTec radial riveting unit, electro-pneumatic, at C-stand

### Module 2

Coordinates riveting unit with X, Y traversing units

### Module 3

Basic coordinates riveting station, machine frame heavy welded construction, indexing table and X, Y traversing units



This automatic, individually configurable riveting machine doubles or triples throughput even in small to medium runs. According to the required riveting force, 4 different riveting units can be applied.

### Technical data of the CNC coordinate riveting machine

<b>Riveting range</b>	X axis travel	[mm]	300**			
	Y axis travel	[mm]	200**			
	X/Y axis speed	[mm/s]	12000			
<b>Indexing table</b>	Table Ø	[mm]	870**			
	Number of stations, option		2/4			
	Slew time for 90°	[s]	1,5*			
	Clamping weight max.	[kg]	4x9			
<b>Coordinate riveting station</b>			<b>RNC 181</b>	<b>RNC 231</b>	<b>RNC 281</b>	<b>RNC 331</b>
	Diameter handled	[mm]	6	8,5	12	16
	Riveting force max. 6 bar	[kN]	6	12	17	33
	Tool stroke	[mm]	10–30	10–40	10–40	10–50
<b>Machine controller</b>	Machine controller (for Module 4): variable menu display on Window panel PC, process controller integrated (HPP-25)					
<b>Operation</b>	Key switch for set-up modes, cycle start with two-hand-, foot-switch or PLC interface					
<b>Installation data</b>	Overall weight	[kg]	840	850	900	1000
	Rated power	[kW]	3,4	3,5	3,7	4,2
	Line voltage	[V]	400 ± 10%			
	Frequency	[Hz]	50/60 ± 1%			
	Compressed air	[bar]	6			

\*With reduced clamping weight on order, also with shorter switching time / \*\*Other axis travel on request / \*\*\*Other table diameter on request  
technical changes reserved





## Further models



RNR pneumatic rotary indexing table



RNS stand model



RNL long stroke



RND double riveting machine

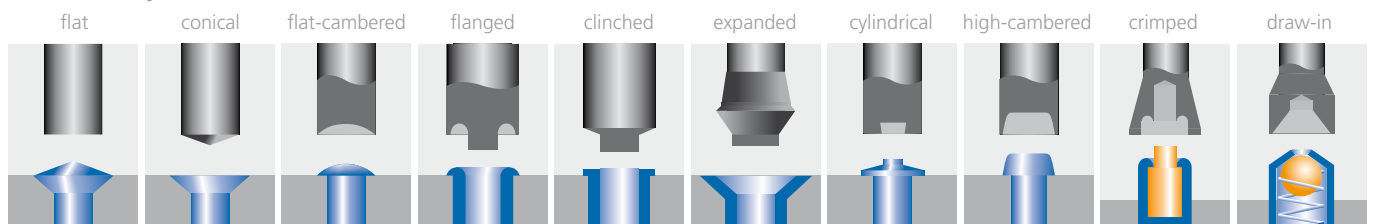


RNE side fitted motor

For detailed information please ask for our separate flyers

## Forming tools

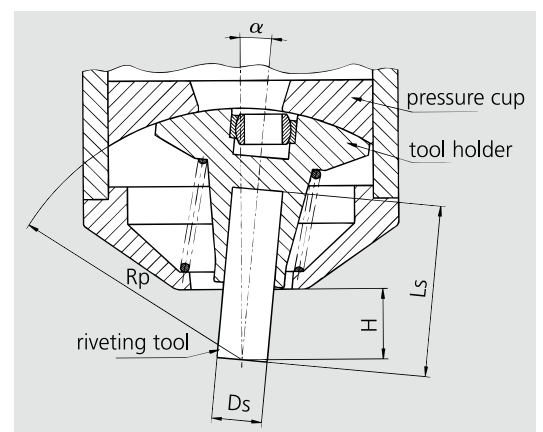
### Main tool profiles



Models	Radius	Tool length	Free height	Shank diam.	Angel of inclination
RN/RNE	Rp	Ls	H	Ds	$\alpha$
081, 181, 231	65	39	18	10	6° 02'
	80	54	33	10	4° 47'
	100	74	53	10	3° 44'
	120	94	73	10	3° 04'
	132	106	85	10	2° 46'
281, 331 381	100	68	28	20	5° 37'
	116	84	44	20	4° 47'
	132	100	60	20	4° 10'
	148	116	76	20	3° 41'
	170	138	98	20	3° 10'
	191	159	119	20	2° 49'
	240	208	168	20	2° 13'
481	148	100	45	30	6° 15'
	196	148	93	30	4° 38'
	240	192	137	30	3° 45'
	290	242	187	30	3° 04'

The tool length (Ls) and the radius of the holder (Rp) result from your desired free height (H).

All machines are fitted as standard with tool holder and pressure cup.



technical changes reserved

BalTec takes hold



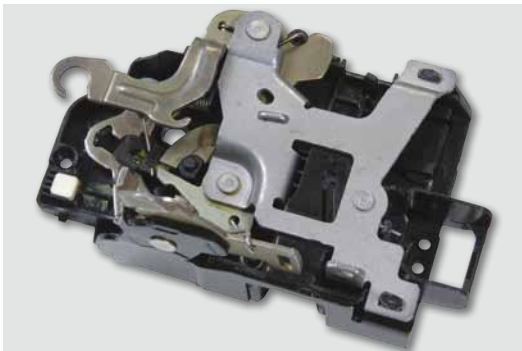
door holder



## Applications

BalTec offers solutions for different branches. Here you find a small range of high-quality joints:

### Automotive



locking system



hinge for luggage space



brake pad piston



striker



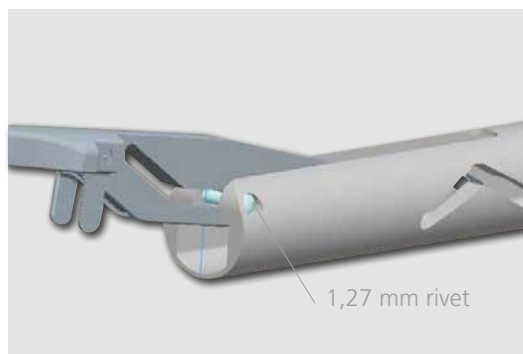
drive coupling



seat belt buckle



### *Medical device Industry*



dissection instrument



surgical device

### *Fitting Industry*

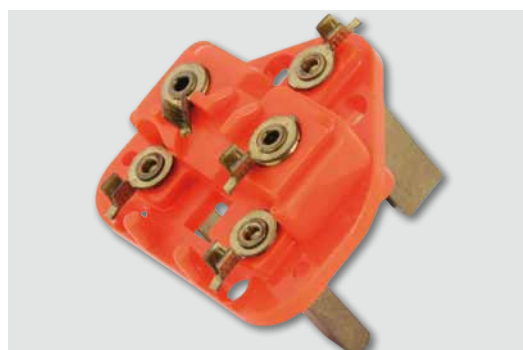


fitting for folding bed



kitchen fitting

### *Electrical and household appliances*



electrical plug



peeler





#### Distributors:

##### Germany

BalTec Maschinenbau AG

Postcode areas 6, 7, 8, 94, without 83  
Tel. +49 (0)175 1816 132

Postcode areas 0, 1, 2, 39, 9, without 9  
Tel. +49 (0)175 4068 342

##### England/Ireland

BalTec (UK) Ltd.

Reading, Berkshire RG6, 4UT/England  
Tel. +44 (0)1189 311-191

##### USA/Canada/Mexico

BalTec Corporation

Canonsburg, PA 15317 USA  
Tel. +1 (0)724 873 5757

##### France

BalTec France

FR-91070 Bondoufle  
Tel. +33 (0)1 69 47 12 00

#### Distributors in:

Australia

Austria

Belgium

Belorussia

Brazil

Bulgaria

Canada

China

Columbia

Croatia

Czech Republic

Denmark

Egypt

Estonia

Finland

Germany

Hungary

India

Indonesia

Iran

Ireland

Italy

Japan

Korea

Latvia

Lithuania

Luxembourg

Malaysia

Mexico

Netherlands

Norway

Philippines

Poland

Portugal

Romania

Russia

Singapore

Slovakia

Slovenia

South Africa

Spain

Sweden

Thailand

Turkey

Ukraine



**BalTec Maschinenbau AG**  
**Obermattstrasse 65**  
**CH-8330 Pfäffikon**  
**Switzerland**

Tel. +41 (0)44 953 13 33

Fax +41 (0)44 953 13 44

E-Mail: [baltec@baltec.com](mailto:baltec@baltec.com)

Internet: [www.baltec.com](http://www.baltec.com)

*Your contact:*