



Our All-Purpose Solution

# AR 403

- Ideal for R&D and small scale production in the pharmaceutical, chemical, cosmetic and food industry
- For pharmacy, university and laboratory applications
- Modular design – one drive unit and various attachments for different uses and needs

# ERWEKA

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## AR 403



The ERWEKA All-Purpose system is based on a powerful drive unit available in two versions. The various attachments can be easily and quickly connected by means of a coupling.

The drive unit AR 403 is equipped with a three-phase AC motor.

The sturdy ball bearing worm gear drive is completely maintenance free and provides an output torque of max 30 Nm. The unit features electronic speed control variable between 0 and 400 rpm. A digital dial regulates the speed.

Through permanent nominal/actual adjustment the preselected speed is kept, even under varying load.

The AR 403-S is similar to the AR 403 but has a different drive train. This connection is designed for heavy use.

Available options:

- Foot switch
- USP Interface for print-out
- IQ / OQ / PV documents

## Ideal for R&D and small scale production

Erweka's All-Purpose equipment is ideal for small scale production in the pharmaceutical, chemical, cosmetic and food industries. In addition, it fits perfect into R&D and the development of powder tablets, ointments, crèmes and more.

The modular design is compact, economical and offers a powerful motor drive with a wide

range of easily interchangeable attachments for various purposes.

The different possibilities are as followed:

- stirring
- kneading
- mixing
- granulating

- coating
- polishing
- grinding
- sieving
- homogenising
- filling
- dosing
- tablet production

# Technical Specifications

	AR 403 / AR 403-S
<b>Torque</b>	<b>robust / -S for heavy use</b>
Voltage/ Frequency	230V 50/60 Hz 115 V/60 Hz 127V/60Hz
<b>Width</b>	<b>450 mm</b>
<b>Length</b>	<b>400 mm</b>
<b>Height</b>	<b>440 mm</b>
<b>Weight</b>	<b>30 kg</b>
<b>Motor Type</b>	<b>Three-phase AC motor</b>
<b>Power</b>	<b>750 W</b>
<b>Tropics insulation</b>	<b>class F</b>
<b>RPM</b>	<b>20-400 rpm</b>
<b>Tolerance rpm (coasting)</b>	<b>+/- 1 rpm</b>
<b>Gear type</b>	<b>worm gear</b>
<b>Output</b>	<b>20-400 rpm</b>
<b>Gear max. torque</b>	<b>23 Nm</b>
<b>Efficiency</b>	<b>89%</b>
<b>Timer</b>	
<b>Possible Set Time</b>	<b>hours/minutes</b>
<b>Set Time (max)</b>	<b>9h 59min</b>
<b>Tolerance timer</b>	<b>+/- 1 sec</b>



## Main benefits of the modular ERWEKA method:

- Little lab space needed
- Constant product quality - improved production
- Economical capital cost - one drive, many attachments
- High quality - made in Germany

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## AR 403 Attachments

### ERWEKA UG Version 2 (The Universal Gear)



The new universal gear uses a new aluminium material with modernized look and improved durability. It is required for adjusting the angle of operation (0-80°) and speed.

The UG is required for the operation of

- Coating pan (DKE/S) and for speed reduction (1:6).
- Polishing drum (PT)
- Cube Mixer (KB 15/20/S)
- Pelletiser (GTE)
- Ball mills (KM 0)

### ERWEKA PRS (Planetary Stirrer)



Planetary stirring unit for mixing of creams, ointments, pastes, moist powders and liquids.

This powerful mixing attachment comes with various mixing/ stirring accessories e.g. kneading hook, mixing paddle, whisk and a fluoropolymer scraper for removing any product adhering to the side of the bowl thus ensuring a homogenous mixing in the shortest possible time.

The stirring/mixing accessories and vessel (5 liter volume, working capacity 60%) are made out of stainless steel.

Optionally an electric heated bowl or a double jacket bowl for heating and cooling by water is available.

### ERWEKA LK 5 (Laboratory Kneader)



Laboratory kneader with stainless steel kneading vessel (5 liter volume, working capacity 65%) housing two z-shaped kneading blades running at different speed in opposing directions.

The asynchronous mixing action intensifies and considerably accelerates the kneading process. The kneading vessel is fitted with a plexiglas cover to monitor the kneading pro-

cess. An electro-magnetic cover lock ensures that the power supply to the drive is disconnected immediately when the vessel cover is removed.

A thermostatically controlled heating jacket for the kneading vessel is available as an optional extra.



## ERWEKA VT (Vibration Sieve Shaker)



The Erweka VT operates on the reciprocating cam principle. The vibration intensity can be adjusted by changing the speed of the drive unit.

Available sieve sets include:

- **(VS) Sieve set** with 9 sieves 31 cm  $\phi$ , according to DAB and Pharm. Europe, made of phosphorbronze
- **(VS/S) ditto.**, sieves made of stainless steel.

- **(PS/S) Sieves set** with 4 stainless steel sieves 20 cm  $\phi$  according to DAB 1998, ISO 9044.

Other sieve sets are available on request.

## ERWEKA DKM (Double Cone Mixer)



Double cone mixer for the mixing of free flowing powders and granules.

The arrangement of the mixer in combination with the angle adjustment of the universal gear allows a multi-dimensional mixing process.

The mixing vessel (11,9 liter volume, working capacity 50%) is made of stainless steel.

The ERWEKA Universal Gear UG is needed for connection and allows operation at various angles for optimum efficiency.

## ERWEKA KB (Cube Mixer)



The Cube Mixer uses a tumbling motion to produce a homogenous blend within a short time. The mixing action is assisted by three stainless steel rods strategically positioned within the cube.

The cube mixer is attached to the drive unit via the ERWEKA Universal Gear UG, which permits operation at various angles for optimum efficiency.

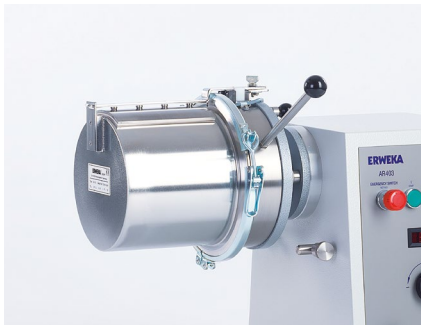
Our cube mixers are available in the following versions:

- **(KB 15)** Cube mixer made of acrylic glass, 3,5 l volume, 40% working capacity,

- **(KB 15 S)** Cube mixer made of stainless steel, 3,5 l volume, 40% working Capacity,
- **(KB 20)** Cube mixer made of acrylic, 8 l volume, 40% working Capacity,
- **(KB 20 S)** Cube mixer made of stainless steel, 8 l Volume, 40% Working Capacity,
- **(KB 30)** Cube mixer made of acrylic, 11 l volume, 40 % working capacity
- **(KB 30 S)** Cube mixer made of stainless steel, 11 l volume, 40 % working capacity

# AR 403 Attachments

## ERWEKA SW 1/S (Laboratory High Speed Mixer)



Laboratory high speed mixer operating on the plough-share principle for the mixing of powders, granules and other products of fibrous nature.

Quantity ratios of 1:100,000 can be mixed homogeneously in only a few minutes. The mixing drum (5 liter volume, working capacity max. 70%) can be rotated through 180 degrees and offers a removable cover for charging and emptying.

An electro-mechanical cover switch ensures that the drive unit AR 403 is switched off when the cover is removed.

All parts coming into contact with the product are made of stainless steel

## ERWEKA RM (Drum Hoop Mixer)



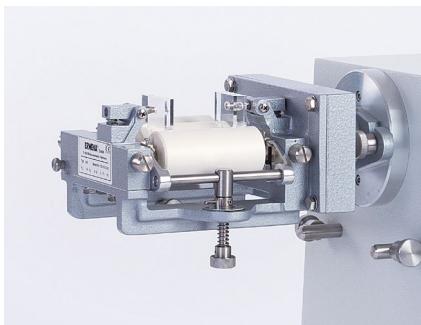
Drum hoop mixer with diagonal placement of the drum within the hoop. The rotation of the hoop itself produces a uniform, three-dimensional displacement of the material to be processed and hence a tumbling mixing action.

The mixer consists of two parts: the drive support and drum hoop with acrylic mixing drum. For using the drum hoop mixer a drive support is needed, which is optional available length-

ened for the simultaneous use of two mixers of the same size (RM 5 or RM 10 litre volume, working capacity max. 40%).

Mixing drums are available with 5 liter and 10 liter volumes. Ball mill drums are available as optional accessories.

## ERWEKA SM/SMS (Three Roller Mill)



Three roller mill for the production of ointments, pastes, creams and similar products.

The rollers are manufactured in porcelain (SM) or stainless steel (SM S). Each roller has a diameter of 50 mm.

The rollers are spring loaded to prevent damage. The space between the rollers is adjustable by one screw.

The mill has an output of between 2 and 15 kg/h depending on the consistency of the product to be produced.

## ERWEKA KM (Ball Mill)



Ball Mill for grinding crystalline materials and for mixing dry, or under certain circumstances, moist materials.

The balls are made of porcelain having a diameter from 30 to 50 mm. The drum is sealed airtight with a lid and is delivered incl. frame for drive unit. Drum and Balls can be sterilized in water. For using the ball mill, a drive

support is needed, which is optional available lengthened for the simultaneous use of two mixers of the same size (KM 5 l or KM10 l volume, working capacity max. 40%). The Ball Mill KM 0 (with 0,5 l volume, working capacity max. 40% and made of stainless steel) is attached to the Drive unit via the ERWEKA Universal Gear. The Drum is available with 0,5, 5 or 10 l volume.

## ERWEKA DKE/DKS (Coating Pans)



The universal gear is required to attach the coating pans to the motor drive.

This allows adjusting the angle of the pan and getting an optimum result from the coating process.

An infra red radiator with fixing rod can be mounted above the pan to accelerate drying if required.

- **DKE**, stainless steel pan, volume 9,5l, max. capacity 30% 275 mm outside diameter.
- **DKS**, stainless steel pan, volume 15.0l, max capacity 30% 350 mm outside diameter.

## ERWEKA PT (Polishing Drum)



Polishing drum to polish coated tablets. The drum is covered with interchangeable felt parts.

The cover has a 120 mm o.d. opening for observation of the polishing process and addition of the polishing agent during the production process.

The Polishing Drum (2 l volume, working ca-

capacity max. 40%) is designed for attachment to the drive u AR 403 nit via the universal gear UG in a similar manner as the coating pan.

## ERWEKA FGS (Wet Granulator)



Wet granulator with oscillating rotor for the production of wet granules.

The granules can be produced in varying sizes depending on the sieve mesh employed.

All parts coming into contact with the product are made of stainless steel. Working capacity is max. 30 kg/h depending on the material

and mesh wide of the sieve used.

The unit is supplied as standard with two sieves 1,0 mm and 1,6 mm MW respectively.

The following mesh sizes are also available: 0.315; 0,63; 0,8; 1,0; 1,25; 1,6; 2,0; 2,5 and 3,15 mm. Other special sieves are available on request.

## ERWEKA TG 2000 (Dry Granulator)



Dry granulator with two driven rollers running in opposing directions from the inside to the outside.

The rollers are 70 mm long and made of stainless steel. They are equipped with teeth to produce a powerful grinding action by forcing the material against a series of braking combs. The ERWEKA TG 2000 fully conforms to the latest safety requirements.

All parts coming into contact with the product are made of stainless steel. Fines produced during granulation are very low (max. 25%) and can be reduced to 15% by careful adjustment of the process.

The maximum capacity of the dry granulator is 20 kg/hour.

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## ERWEKA GTE (Pelletiser)



The pelletiser GTE (300 mm o.d.) is attached to the AR 403 via the universal gear UG which enables the operator to adjust the operating angle to the optimum position during operation.

The material can be fed in manually or continuously. The rotary movement of the pan carries the product to the top of the pan and then flows down the pan in an even stream to the base. By addition of the requisite amount of liq-

uid, this process can be converted into the formation of pellets.

The angle of the pan and the amount of liquid added determines the pellet size. When the pan is full, the pellets will continuously roll over the edge of the pan into a waiting container.

All parts coming into contact with the product are made of stainless steel.

## ERWEKA FDF (Filling- and Dosing Liquids)



The two station dosing and filling unit is suitable for the drop-free filling of all types of liquids.

The dispense volume is easy to adjust. Quick removal of the pumps and valves for cleaning and sterilisation.

The receiving container holder can be easily adjusted to accommodate various sizes.

All parts coming into contact with the product

are made of stainless steel. Maximum output: 1200 fills/hour.

The EWEKA FDF comes without pumps. Optional dosing pumps for filling volume 5 to 30 ml (DP 30) and 20 to 150 ml (DP 150) are available.

The FDF comes with one set of filing nozzles 6 mm and 8 mm o.d.. Filling nozzles with different diameter are available on request.

## ERWEKA FDS (Filling- and Dosing ointments etc.)



Dosing Machine FDS is suitable for filling precise quantities of ointments, creams, emulsions and similar products into tubes, cans, bottles etc..

The standard unit has a dosing range of between 10-200 ml. All parts coming into contact with product are made of stainless steel. Quick removal of the pump and hopper (19 liter volume, maximum capacity 1000 hour) for

cleaning. Filling Nozzles of 2, 4 and 8 mm are part of the standard package.

An additional cylinder unit to accommodate the filling range from 0,5 to 25 ml together with dispense heads with different apertures and special heads for filling tubes are available on request.

## ERWEKA SG 4/W (Suppository Moulding)



The suppository moulding unit SG 4/W is intended for the production of moulded suppositories, lipsticks and similar moulded products.

The mixing vessel (5 liter volume working capacity max. 65%) is located in a warm oil bath fitted with a thermostatically controlled heater adjustable between 20°C and 100°C. Stirring, mixing and melting are achieved in a sin-

gle operation and are not interrupted during the filling process. The moulds to be filled are positioned on a platform below the dispensing nozzle. A hand wheel enables the operator to move the platform and hence the moulds in both axes.

All parts coming into contact with the product are made of stainless steel. Casting Moulds are available on customers request.



## ERWEKA Y5 (Mixer Y5)



Mixer Y5 with Y-shaped mixing vessel for the gentle mixture of solid well flowing materials (bulk materials).

The rotary motion of the mixing vessel makes a particularly homogenous mixture possible and suitable for sensitive materials.

For optimal filling, emptying and cleaning the mixing vessel is equipped with three capa-

cious openings. Volume of mixing container: 5 liter, recommended working conditions: max. 1.5 liter (30%) and 0-40 RPM.

All parts coming into contact with the material are made of stainless steel.

## ERWEKA VB-3 (V-Mixer)



Mixer VB-3 with V-shaped mixing vessel out of stainless steel for gentle mixture of solid well flowing materials (bulk materials).

The rotary motion of up to 140 RPM results in a even more homogenous mixture of possible and suitable sensitive materials. It is equipped with 3 capacious openings for easy filling, emptying and cleaning (mixing materials touch only stainless steel material).

Volume of mixing container: 3 liter, recommended working conditions: max 2 liter and 10-140 RPM.

## ERWEKA HO/HHO (Homogeniser)



For oil-in-water or water-in-oil emulsions. The mixing is done by stainless steel piston.

The volume of the stainless steel hopper is 1,5 liter. The maximum output is 30kg/hour.

The HHO is equipped with a heated hopper whereas the HO/UA offers a circulation and filling unit.

## ERWEKA CM (Conical Mill)



The CM is a product in feed system for application for development in pharmaceutical and food industry, which comminute powdery and free flowing products by a sieve with fixed maximum sizes of impurity-free granule (adjustable 0.3 – 3.0 mm; perforated round holes, grater holes or square holes).

Rotation speed (continuous 60 – 1200 revs/min) and sieve crack (standard 1.5 mm, adjustable 0.5 – 3.0 mm in 0.25 mm steps) can be varied for detailed adjustment of process

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# Technical Data All-Purpose Equipment

Unit	Type	Volume max.	Capacity Output max.	VT required	UG required	Liquids	Saves / Creams	Powders	Granulates	Pellets	Tablets / Dragees
Ball mill	KM 0	0,5 l	40 %		■			■	■		
	KM 5	5 l	40 %					■	■		
	KM D 5	10 l	40 %					■	■		
	KM 10	10 l	40 %					■	■		
	KM D 10	20 l	40 %					■	■		
Coating pan	DKE	9,5 l	30 %		■						■
	DKS	15 l	30 %		■						■
Cube mixer	KB 15	3,5 l	40 %		■			■	■		
	KB 15 S	3,5 l	40 %		■			■	■		
	KB 20	8 l	40 %		■			■	■		
	KB 20 S	8 l	40 %		■			■	■		
	KB 30	11 l	40 %		■			■	■		
	KB 30 S	11 l	40 %		■			■	■		
Double cone mixer	DKM	11,9 l	50 %		■			■	■		
Drum hoop mixer	RM 5	5 l	40 %					■	■		
	RM 10	10 l	40 %					■	■		
Dry granulator	TG 2000		20 kg/h						■	■	■
Homogenizer	HO	1,5 l	30 kg/h				■				
Laboatory high speed mixer	SW 1/S	5 l	70 %				■	■	■		
Laboratory kneader	LK 5	5 l	65 %			■					
Liquid filler	FDF		1200/h		■					■	
Pelletiser	GTE					■	■	■			
Planetary mixer	PRS	5 l	60 %		■						■
Polishing drum	PT	2 l	40 %			■	■				
Salve filling machine	FDS	19 l	1.000/h				■				
Salve mill	SM		15 kg				■				
	SMS		15 kg								
Suppository moulding machine	SG 4W	5 l	65 %				■				
Three-roll-mill	SM		15 kg				■				
	SMS		15 kg								
Vibration Sieve	VS			■							
	VS/S			■							
	PS/S			■							
Wet granulator	FGS		30 kg					■	■		
Conical mill	CM		30 kg					■	■		
Y-mixer	YB 5	1,5 l	40 RPM					■	■		

# Tablett Press

## EP-1



The ERWEKA eccentric single-punch tablet press EP-1 is the ideal tool for R&D and small batch production of round and odd shaped tablets.

The single punch eccentric tablet press EP-1 can manufacture tablets and odd shaped products with a diameter of up to 20mm.

It operates automatically i.e. the tablets are filled, pressed and ejected continuously. The compression force of up to 3 tons and the filling depth of up to 15mm are easily adjusted.

The throughput is maximum 4.000 strokes per hour. All components are either covered with hard chrome, or made of stainless steel AISI 316 or acrylic glass for the front door.

The EP-1 is compliant to GMP and safety regulations.

## Technical Data & Options

- Press speed infinitely variable
- Max. tablet diameter 20mm
- Max. filling depth 17mm
- Max. compression force 3t
- Max. tablet output 4000 tablets/hour
- Net weight 135kg
- Dimensions press L/W/H (mm) 425/385/640
- Dimensions with attachment parts L/W/H (mm) 550/400/800
- Power supply 230V/50-60Hz
- Electrical load 2,2 kVA

### Options

- Measurement and display of compression force
- Data transfer option
- Data logging Software
- Standard data export via RS232 interface
- Support table in stainless steel
- Single punch and die set for round tablets, 4.0 mm to 20.0 mm diameter,
- Single punch and die set for shaped tablets, 4.0 mm to 20.0 mm diameter
- Development of STR 1 or STS 1 single punch and die set
- IQ /OQ documents
- Transformer for EP-1 (from 110V to 230V)



As a world leader in test equipment for the pharmaceutical and life science industry we design, manufacture, install and service the whole range of test equipment for pharmaceutical research and quality control.

ERWEKA's product range can be divided into four different categories. We offer:

- Dissolution testers
- Physical testers
- All-Purpose equipment
- R&D and production equipment

ERWEKA GmbH  
Ottostr. 20 - 22  
63150 Heusenstamm  
Germany

sales@erweka.com  
+49 (6104) 690-30

Technical specifications of the described products are stated without obligation and subject to change at any time.

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