



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

### 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 perfectly 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 follows:

- Stirring
- Kneading
- Mixing
- Granulating

- Coating
- Polishing
- Milling
- Sieving
- Homogenising
- Filling
- Dosing

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 23 Nm. The unit features variable electronic speed control between 20 and 400 rpm. A digital dial regulates the speed. A special setup mode limits the rotations per minute to 20 rpm to ensure safe installation of the attachments.

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

The AR 403-S is similar to the AR 403 but has a different drive train for higher torque transmission.

Available options:

- Foot switch
- USB interface for print-out
- IQ / OQ documents



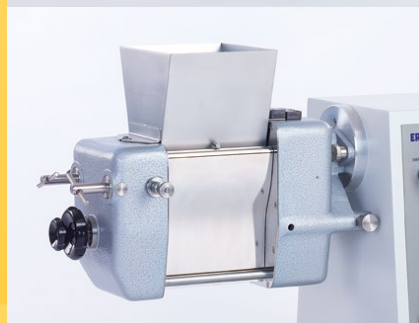
## Main benefits of the modular ERWEKA method:

- Small footprint
- Constant product quality - improve production
- Economical capital cost - one drive, many attachments
- High quality - Made in Germany
- Safety interlocks and protection guards\*

(\*) not required for all attachments

# Technical Specifications

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



# ERWEKA

# AR 403 Attachments

## ERWEKA UG Version 2 (Universal Gear)

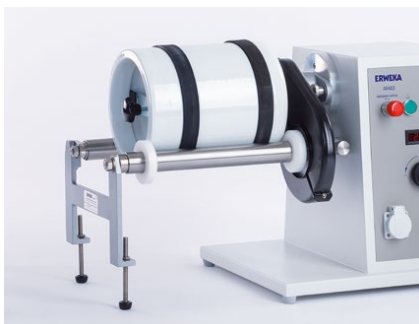


The new universal gear uses a modernised CNC machined aluminium design for improved durability. It is required for adjusting the angle of operation (0-80°) and reduction of speed (1:6).

The UG is required for the operation of

- Ball mills (KM)
- Cube Mixer (KB 15/20/30/S)
- Double Cone Mixer (DKM)
- Pelletizer (GTE)
- Coating pan (DKE/DKS)
- Polishing drum (PT)

## ERWEKA KM (Ball Mill)



The Ball Mill is used for grinding crystalline materials and for mixing dry, or under certain circumstances, moist materials. The drum is available with 0.5, 5 or 10 l volume.

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

mill, a drive support is needed, which is optionally available in a lengthened version for the simultaneous use of two mills of the same size (KM 5 l or KM10 l volume, working capacity max. 40%).

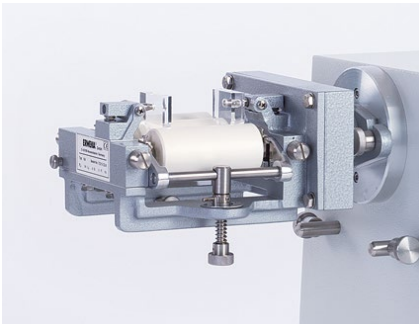
The small Ball Mill KM 0 (with 0.5 l volume, working capacity max. 40% and made of stainless steel) is attached to the drive unit via the ERWEKA Universal Gear UG.

## ERWEKA CM (Conical Mill)



The CM is designed for homogenization of dry products to a specified particle size, reduction of oversized particles to the desired size and milling of agglomerates back to the initial size. A set of shims to adjust the clearance between the rotor and screen (0.5 mm to 3.0 mm) is supplied. It allows a flow rate of up to max 40 kg/h with a rotor speed of 0 - 1200 rpm. An safety interlock helps to prevent injuries.

## ERWEKA SM/SMS (Three Roller Mill)



The three roller mill is used 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 adjust-

able by one screw. The mill has an output of 2 to 15 kg/h depending on the consistency of the product to be produced.

## ERWEKA KB (Cube Mixer)

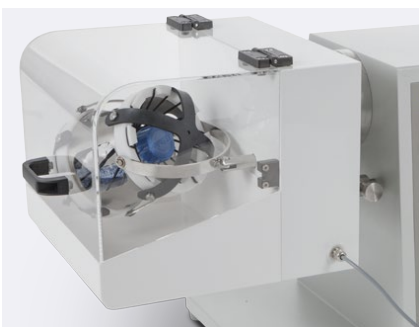


The Cube Mixer uses a tumbling motion to produce a homogenous blend within a short time. The mixing action is assisted by three stainless steel rods positioned inside the cube. The device is attached to the drive unit via the ERWEKA Universal Gear UG, which permits operation at various angles for optimal 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 glass, 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 glass, 11 l volume, 40 % working capacity
- **(KB 30 S)** cube mixer made of stainless steel, 11 l volume, 40 % working capacity

## ERWEKA 3D Mixer



**NEW!**

The new 3D Mixer is a powerful mixer for mixing of different materials, such as powders and fluids. The mixer rotates following the principal of an oloid (by Paul Schatz).

Due to its innovative holding-mechanism, the mixer can hold different sized containers (diameter of up to 120 mm and a height of 230 mm). The mixers' housing is made of steel and high quality plastics. The transparent cov-

er is connected to the emergency stop and helps prevent injuries.

The speed can be easily adjusted from the main drive unit AR 403. The transmission is built into the 3D Mixer and allows up to 30 RPMs.

## ERWEKA DKM (Double Cone Mixer)



The double cone mixer allows mixing of free flowing powders and granules.

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

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

# AR 403 Attachments

## ERWEKA RM (Drum Hoop Mixer)



Drum hoop mixer with diagonal placement of the drum within the hoop, available with 5 and 10 liter volumes. 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. As an option, an extended drive support for

simultaneous use of two mixers of the same size is available in lengthened version (RM 5 or RM 10 litre volume, working capacity max. 40%).

Ball mill drums are available as optional accessories.

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



The laboratory high speed mixer operates with the plough-share principle for mixing of powders, granules and other products of fibrous nature.

Different quantities can be mixed homogeneously in only a few minutes.

The mixing drum (5 liter volume, working capacity max. 70%) offers a removable cover

and can be rotated upside down for charging and emptying. A safety 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 VB-3 (V-Mixer)



The mixer VB-3 uses V-shaped stainless steel vessel for gentle mixing of solid well flowing materials (bulk materials).

The rotary motion of up to 140 RPM results in an even more homogenous mixture of possible and suitable sensitive materials. It is equipped with three capacious openings for easy filling, emptying and cleaning.

Volume of mixing container: 3 liter, recommended working conditions: minimum 0.2 liter to maximum 2 liter and 10-140 RPM.

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

## 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 from stainless steel. Optionally an electric heated bowl DER or a double jacket bowl DB for heating and cooling by water are available.

An emergency stop helps to prevent injuries.

## 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 speeds 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. A thermostatically controlled heating jacket (LK 5 DER) for the kneading vessel is available as an optional extra.

An emergency stop helps to prevent injuries.

## 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 employed sieve mesh.

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 width 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.

An emergency stop helps to prevent injuries.

## ERWEKA TG 2000 (Double Roll Crusher)



Double roll crusher 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. All parts coming into contact with the product

are made of stainless steel. The maximum capacity of the double roll crusher is 20 kg/hour.

An emergency stop helps to prevent injuries.

# AR 403 Attachments

## 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 Ø, according to EP, made of phosphorbronze
- **VS/S ditto.**, sieves made of stainless steel.

- **PS/S Sieves set** with 4 stainless steel sieves 20 cm Ø according to EP

Other sieve sets according to EP are available on request.

## ERWEKA GTE (Pelletizer)



The pelletizer GTE (300 mm diameter) is attached to the AR 403 via the universal gear UG which enables the operator to adjust the operating angle to the optimal 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 liquid, 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 DKE/DKS (Coating Pan)



The universal gear is required to attach the coating pan to the motor drive. This allows adjusting the angle of the pan and getting an optimal result from the coating process.

An infra red radiator 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 diameter opening for observation of the polishing process and addition of the polishing agent during the production process.

The polishing drum has 2 l volume with a working capacity of max. 40%.

The device is attached to the drive unit via the ERWEKA Universal Gear UG, which permits operation at various angles for optimal results.



## ERWEKA HO/HHO (Homogeniser)



The homogeniser is used for homogenising fluids, both oil-in-water or water-in-oil emulsions. The media is filled into the upper bowl. Then a stainless steel piston presses the injected fluids through a ring nozzle into a valve, therefore homogenising the emulsion.

The volume of the stainless steel hopper is 1,5 liter. The HHO is equipped with a heated hopper whereas the HO/UA offers a circulation and filling unit.

## ERWEKA FDF (Filling- and Dosing Liquids)



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

The dispense volume is easily adjustable. 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.

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 filling nozzles 6 mm and 8 mm o.d.. Filling nozzles with different diameters are available on request. The FDF can be operated with a foot switch.

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



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

The standard unit has a dosing range of 10-200 ml. Quick removal of the pump and hopper (19 liter volume) 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.

The FDS can be operated with a foot switch.

## 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 mould in both axes. All parts coming into contact with the product are made of stainless steel. Casting moulds are available on customers request.

# Technical Data All-Purpose Equipment

Unit	Type	Volume max.	Capacity Output max.	VT required	UG required	Liquids	Salves / 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 %		■			■	■		
3D Mixer	3D Mixer					■		■			
Drum hoop mixer	RM 5	5 l	40 %					■	■		
	RM 10	10 l	40 %					■	■		
Double Roll Crusher	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					■					
Pelletizer	GTE				■					■	
Planetary Stirrer	PRS	5 l	60 %			■	■	■			
Polishing drum	PT	2 l	40 %		■						■
Salve filling machine	FDS	19 l	1.000/h			■	■				
Suppository moulding machine	SG 4W	5 l	65 %								
Three Roller Mill	SM		15 kg				■				
	SMS		15 kg								
Vibration Sieve	VS			■				■			
	VS/S			■							
	PS/S			■							
Wet granulator	FGS		30 kg					■			
Conical mill	CM		30 kg					■	■		
V-Mixer	VB-3	3 l	2 l					■	■		
Y-mixer	YB 5	5 l	1,5 l					■	■		

# Tablet Press

## EP-1



The EP-1 is the ideal desktop tablet press for R&D purposes. 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 die is filled with powder or granule, the material compressed and the tablet ejected continuously.

The compression force of up to 3 tons and the filling depth of up to 17mm are easy to adjust.

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

### Technical Data & Options

- One station for production of round and oblong dosage forms
- Max. diameter 20 mm or length/width 15 x 24 mm
- Max. filling depth 17 mm
- Adjustable speed
- Every part coming into contact with sample out of stainless steel (AISI 316) or hard chrome-plated
- Max. 4 000 tablets per hour
- Dimensions: 400 x 440 x 620 mm
- Weight: 150 kg
- Emergency Stop

#### Options

- Load cell and software for analysis of instrument results
- 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 and 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 115V 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.

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

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

v. 2.2.07.15

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