

# OS-300 EL / OS-300P EL

2025

## Pilot-Smart Overhead Stirrer

EN

Mixing Solutions | Process Technology

Miccra-MIX  
LABORATORY TECHNOLOGY



Driving and stirring technology for  
PHARMA | FOOD | COSMETICS | CHEMICALS | AUTOMATION

V1.1



3  
year warranty

Ideal choice for laboratory stirring and mixing. They are sufficient for samples of various volumes and viscosities. The fully verified laboratory technology has been further optimized: All "Smart Series" overhead stirrers are now equipped with touchscreens for intuitive operation and enhanced functions. The more optimized speed range is suitable for all laboratories.



volume (H<sub>2</sub>O)  
300 L



Speed range  
30-1500rpm  
15-750rpm



Torque  
330 Ncm  
720 Ncm



Safety lock



CW/CCW  
rotation



Programming



Timer



Electric  
lifting



Exter.  
Temp.  
probe

**Features:**

- Equipped with a high-performance brushless motor
- Power range from 500W
- Superior speed control: **PRECISE CONTROL OF ±1rpm;**
- Min. speed can be reached 1.5 rpm**
- Compact structure, lightweight and easy to operate
- Strong overload capacity
- Long service life
- Smooth and quiet operation
- Stirring paddles are penetrable, accommodating stirring shafts of various lengths

**Smart function:**

- 7-inch touch screen for intuitive operation, easy to use even with gloves
- Clear display: speed, torque, time, temperature, program
- Timer function
- It allows for 6-step programming, with each step setting the corresponding speed, time, and forward/reverse rotation requirements.
- Forward and reverse rotation settings to adapt to different types of samples
- External temperature sensor: measures sample temperature and can set a maxi.temperature limit for the sample (external temperature sensor optional)
- Screen lock: locks the screen to prevent accidental operation

**External connections:**

- RS232 and USB interface supported
- Additional configurations are available upon request.

**Stirring elements:**

- A wide variety of stirring elements, offering solutions for various fluids.
- Multiple sizes are available to match different containers, achieving the ideal processing effect.

Pilot		OS -300EL	OS -300P EL
Input	W	500	500
Output	W	425	425
Volume (H <sub>2</sub> O)	L	300	300
Viscosity Max.	mpas	100,000	150,000
Torque Max.at stirring shaft	Ncm	330	720
Speed range	rpm	30-1500	15-750
Chuck range diameter	mm	0.5-16	0.5-16
<b>Motor</b>			
Brushless DC		●	●
Permissible ON time		100 %	
Speed adjustment (Stepless)		●	●
Speed setting accuracy		±1rpm	
<b>Screen display</b>			
7" TFT Touch Screen		●	●
Timer		99h59min59sec	
6-step programming		●	●
Temperature display and setting		yes	
<b>Smart Function</b>			
Torque display		●	●
Reverse Rotation		●	●
Wifi Interface			
RS232/USB Interface		●	●
Overhead LED lighting			
Hollow shaft (push-through - when stopped)		●	●
Electric lifting		●	●
Stroke		650mm	
Overload/overheat/over-current protection		●	●
Protection class according to DINEN 60529		IP42	
<b>Power requirement</b>			
Voltage/Frequency		230 V AC , 50/60 Hz	
<b>Others</b>			
Dimensions(WxHxD)-include EL stand		800x 800 x 900mm	
Weight		80 kg	
Product ID		81 60	81 62

Subject to change without notice.

● Yes, Standard

Overhead stirrers have a constant torque throughout the entire speed range. They can also perform short - term overload stirring. The overhead stirrer is an ideal choice for repetitive stirring processes.

# Stirring elements

The Geometric Shape of the Stirring element /// The Key to Successful Mixing

## Advantages:

- A wide variety of types
- Complete range of sizes
- Compatible with various fluids: low to high viscosity

## How to choose:

- Based on the characteristics of the sample: volume capacity, viscosity
- Based on the container: it is necessary to match the container size
- Based on the speed: low - high speed
- Based on the shear rate: low - high shear

For an overhead stirrer to achieve excellent results, the key lies in the correct selection of the stirring elements (paddle).

Depending on the type of the stirring paddle, different flow directions will be generated in the medium during operation. They also vary in terms of speed and the suitability for media with different viscosities. The stirring process is quite complex. The challenge lies in understanding laminar flow and turbulent flow, while also taking into account criteria such as the type of paddle used, the viscosity and density of the mixed substances, or the type of container. Selecting the appropriate stirring paddle can avoid unexpected shear forces.

### Propeller (3-bladed)



Viscosity Ranges: VL-L  
Axial Flow  
Diameters(mm): 50, 80, 120, 150

### Propeller (4-bladed)



Viscosity Ranges: VL-L-M  
Axial Flow  
Diameters(mm): 30, 40, 50, 80, 100, 150

### Turbine stirrer



Viscosity Ranges: VL-L-M  
Axial Flow  
Diameters(mm): 30, 50, 70

### Centrifugal stirrer



Viscosity Ranges: VL-L  
Axial Flow  
Diameters(mm): 60, 100

### Dissolving stirrer



Viscosity Ranges: VL-L-M-H  
Axial Flow  
Diameters(mm): 30, 50, 80, 100

### Anchor stirrer



Viscosity Ranges: M-H  
Tangential Flow  
Diameters(mm): 45, 70, 100, 150

### Paddle stirrer



Viscosity Ranges: M-H  
Tangential Flow  
Diameters(mm): 50, 70

### Spiral stirrer



Viscosity Ranges: M-H  
Axial Flow  
Diameters(mm): 45, 70, 100, 150

### Spiral-belt stirrer



Viscosity Ranges: M-H  
Axial Flow  
Diameters(mm): 50, 70, 100, 120

### Jet-flow stirrer



Viscosity Ranges: VL-L-M  
Jet-flow  
Diameters(mm): 60, 80, 100, 120

## Viscosity Ranges

Viscosity Classification	(mPa·s)
Very Low (VL)	0-100
Low (L)	100-1,000
Medium (M)	1,000-10,000
High (H)	10,000-1,000,000

## Sample Viscosity Reference

Sample	mPa·s
Water	1
Kerosene	10
Lubricant Oil	100
Glycerin	1,000
Shampoo	3,000
Refined Honey	7,000
Moisturizing Cream	8,000
Honey	10,000
Chocolate Syrup	25,000
Ketchup	50,000
Toothpaste	70,000
Asphalt	100,000



We can also customize solutions according to your requirements.

