

DISSOLVING

MIXING

EMULSIFYING

HOMOGENIZING

SUSPENDING

DISPERSING

GASSING

**YTRON**  
PROCESS TECHNOLOGY



# YTRON-Y



## The YTRON-Y Principle

**YTRON-Y** creates a pure axial jet stream. It rapidly and homogeneously mixes, without aeration, liquids and viscous products.

Vortex formation, normally associated with conventional agitators, is eliminated.

### Disadvantages of Conventional Agitators

Radial flow pattern (rotational flow)

Non-uniform and incomplete mixing

Vortex formation, strong aeration, (Result: Oxidation, change of colour, problems with the heat transfer etc.)

Sedimentation

Floating

Incomplete mixing of the vessel contents

Dead zones around the area of the baffles

Local shear forces, long process times

Side entry: Product contacts the seal directly

### Advantages of YTRON-Y Jet Mixing Turbine

Axial flow pattern

Homogenous mixing

No air entrainment

No sedimentation

No floating of product on the surface

Rapid mixing of entire container contents

No baffles / flow deflectors required  
flow deflectors are integrated in stator

Low shear due to short residence time in the YTRON-Y mixing head. Rotor in contact with the flowing product only. Rapid process time.

Side entry: Air cushion prevents product from contacting the mechanical seal surfaces at the top of the shaft.



## Advantages of YTRON - Y Jet Mixing Turbine

- The YTRON-Y mixing head creates a directed jet stream, without rotation, into the body of the product, without creating a vortex
- The rotor-stator principle, in combination with the integrated flow deflectors, prevents any rotational stream being formed
- The robust construction means that it does not require bearings or seals in the immersed part and therefore involves no hygienic risk
- The sealing of the shaft is selected according to the requirements. A radial seal ring, single or double acting mechanical seal (-1 to 10 bar) or an aseptic mechanical seal, flushed with condensate, are available
- Drive motor from 0,25 to 55 kW are available in the standard motor program
- The modular system allows the choice of the best mixing technology for each individual application

## Conventional agitator

with shaft turning freely, without stator and stator tube.

1

At start-up, the solids are initially lifted from the bottom of the container.



2

The predominantly radial forces are unable to keep the solids in suspension. Within a short time, the first vortex reaches the rotor blade.



3

The radial flow causes the components to separate. Because of this design, homogenous mixing without air entrainment is impossible.

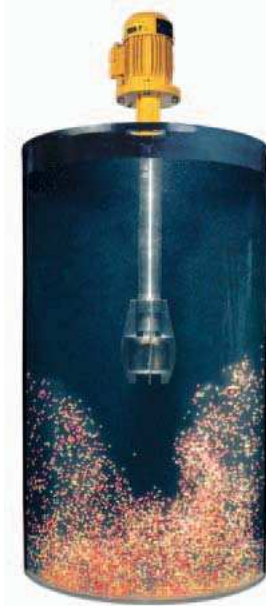


## YTRON-Y Jet Mixing Turbine

with integrated flow deflectors.

1

Instantly after the starting the YTRON Y, the solids are lifted off the bottom of the container by the jet stream directed towards the bottom of the container.



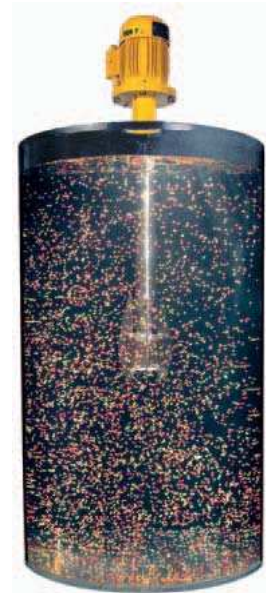
2

The solid particles are homogeneously suspended in full within seconds, with no sedimentation and without air entrainment.



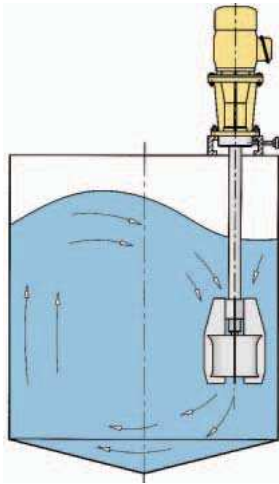
3

The stator, with integrated flow deflectors, creates a long, directed jet stream, without rotation, to the bottom of the container. The jet stream ensures that the product is completely homogenous.

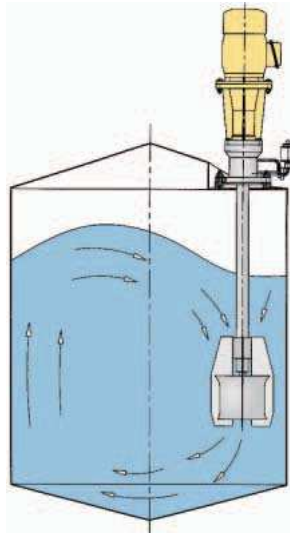




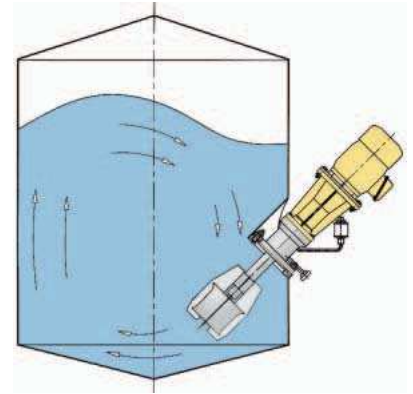
## YTRON-Y Installation Possibilities



Vertical installation in an open vessel.  
CIP option available



Vertical installation in a closed vessel  
Design with tank flange.  
CIP and SIP options available



Side-entry in closed vessel.  
Design with tank flange.  
CIP and SIP options available

The vertical installation into a mixing vessel is normally positioned off-centre. This ensures liquids are mixed within seconds without air entrainment.

A side entry installation below the liquid level makes the YTRON-Y suitable for vertical cylindrical tanks with more than 10 metres height. Even in this case an additional bearing in the immersed section is not required.

Apart from the standard types of installation shown above, the YTRON-Y is also available as a portable unit. For example:  
Laboratory model with a desk top stand, a production unit on mobile hoist or an installation with a static hoist.





YTRON-Y in an Open Vessel  
Application: Ceramic Glazes



YTRON -Y installed on mating Flange  
of an Open Container  
Application: Suspension of Abrasive Polish

YTRON-Y in Tank-flange Construction,  
installed in a Closed Vessel  
Application: Shampoos and Shower Gel  
and similar Toiletry Products

YTRON -Y in Side Entry Tank-flange  
execution below Liquid Level  
Application: Fermented Milk for Fromage  
Frais Production (100.000 litres capacity)





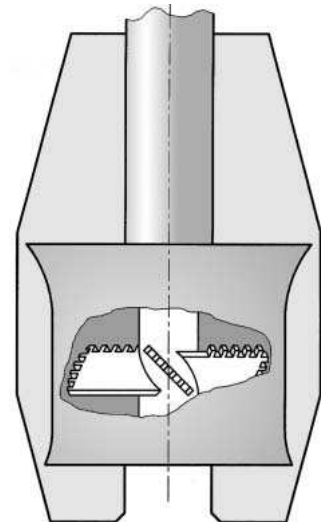
## The YTRON-Y HS Principle

With the HS rotor, products are sheared in a defined way in a batch. The effect is comparable to one of a conventional high shear unit with the added advantages of YTRON-Y directed jet.



### Important advantages of YTRON-Y HS

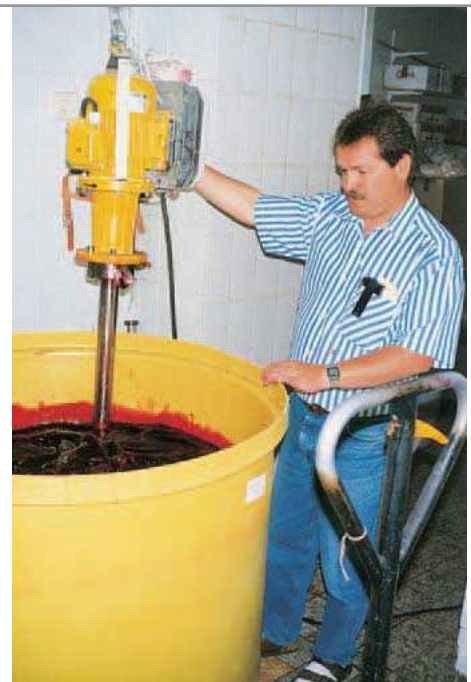
- Construction without bearings or seals in the product area
- Pure axial flow jet stream
- No sedimentation, no vortexing
- Homogenous mixing
- Uniform flow pattern over the entire surface of the container
- Shaft protected by the stator tube, the rotor covered by the stator. This means the operator is not exposed to rotating parts



One important point: The HS-rotor is available as a spare part for existing YTRON-Y units. Please let us have your machine number to receive a quote.



YTRON -Y HS in Tank-flange Construction  
Application:  
Suspending of  
Thickener Compounds



YTRON - Y HS on a Lift  
over an open Container  
Application:  
Dissolving of a Mix of various  
Minerals including Stabilizers

# YTRON-Y

Model	0	II	III
Power (kW)	0.25	0.55...2.20	0.75...9.00
Rotor Ø (mm)	25...50	70...140	80...240
Rotor speed (1/min)	1,000...5,000	500...3,000	500...3,000
Process	Batch	Batch/Conti	Batch/Conti
ByPass Ø max. (mm)	25	40	80

Model	IV	V
Power (kW)	2.20...22.00	5.50...55.00
Rotor Ø (mm)	100...330	130...370
Rotor speed (1/min)	500...3,000	500...3,000
Process	Batch/Conti	Batch/Conti
ByPass Ø max. (mm)	100	100

According to the application, special construction deviating from standard are available.



YTRON-Y in the Pharmaceutical Industry  
Application: Tablet Coating Solutions

YTRON-Y ByPass in the Brewing Industry  
Application: Suspending of Diatomaceous Earth  
CO<sub>2</sub> inerting for a Continuous Discharge  
of the Product.







The YTRON® range is not mass produced

YTRON® equipment and systems are carefully selected for your individual application. We therefore kindly ask you to provide as detailed as possible a description of your application containing for example:

- Components to be processed
- Viscosity at the beginning and at the end of the process
- The specific gravity (bulk density when adding powders)
- Overall dimensions and shape of the mixing vessel
- Minimum and maximum filling levels of products to be processed
- Working temperature
- Other details that may be relevant

The capacities indicated in this brochure are related to certain applications under standardised conditions. They are not necessarily valid for all products or processes.

The standard materials for the product contact parts are:

- Material 1.4301 / AISI 304
- Material 1.4571 / AISI 316 Ti
- Material 1.4435 und 1.4404 / AISI316 L

Special materials such as 1.4539, Hastelloy etc. are available on request

Fittings can be delivered various types such as  
DIN 11851, DIN 11864, SMS, DS, RJT, Clamp, Flange etc.

We reserve the right to alter the design without previous notice in the interest of development.

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