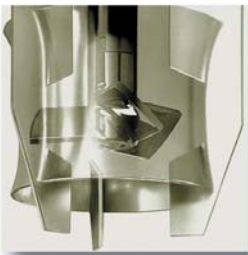
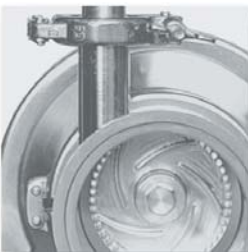


YTRON[®]

PROCESS TECHNOLOGY



YTRON-Y
Jet Mixing Turbine



DISSOLVING

MIXING

EMULSIFYING

HOMOGENIZING

SUSPENDING

DISPERSING

GASSING

YTRON® PROCESS TECHNOLOGY is a medium size manufacturing company specialising in rotor/stator-systems. The fields of application for this technology include the homogenous mixing of liquids, suspending and dissolving of powders of all kinds, as well as a multitude of different dispersing applications.

With over 50 years of experience, the name of **YTRON®** is known throughout process industries as a leader in new developments, and a quality way above the average with total reliability. In the **YTRON®** premises, built in 2009 in Bad Endorf/Bavaria, innovative technologies are developed for a variety of applications throughout industry. These developments are always under the central guideline of the increasingly important aspects of time and energy saving.

YTRON® rotor/stator components are produced using the most up to date machining centres and supplementary components. The Headquarters of **YTRON®**, based in Bad Endorf, include a pilot plant, construction facilities, assembly and quality management.



A continuous and competent development program in our range of products has resulted in **YTRON®** equipment being used in key productions applications. These include the leading international companies in food, cosmetic, pharmaceutical and chemical industries.

YTRON® is represented in over 50 countries. Competent advice and local after-sales service for the customers are our first priority.

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

Advantages of YTRON-Y Jet Mixing Turbine

Axial flow pattern

Homogeneous 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.



Advantages of YTRON -Y Jet Mixing Turbine

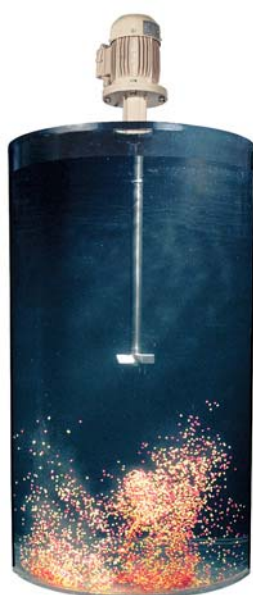
- The YTRON-Y mixing head creates a directed jet stream, without rotation, into the body of the product, without creating a vortex.
- The rotor-stator principle, in combination with the integrated flow deflectors, prevents any rotational stream being formed.
- The robust construction means that it does 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.

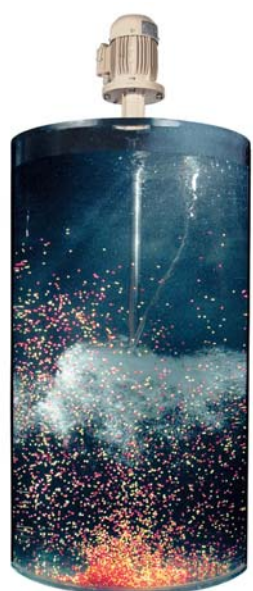
1

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



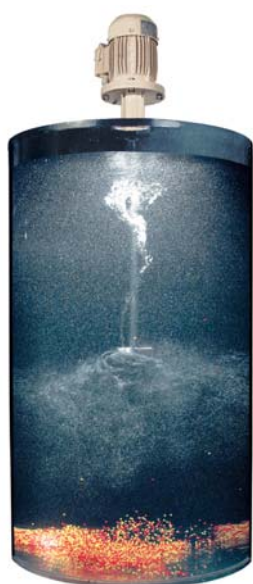
2

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, homogeneous mixing without air entrainment is impossible.

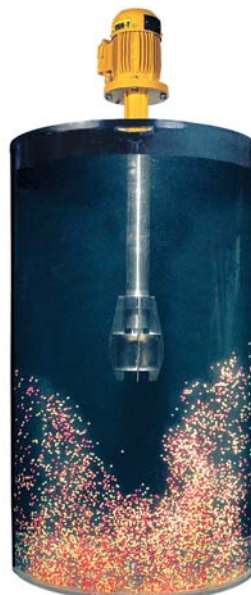


YTRON-Y Jet Mixing Turbine

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.

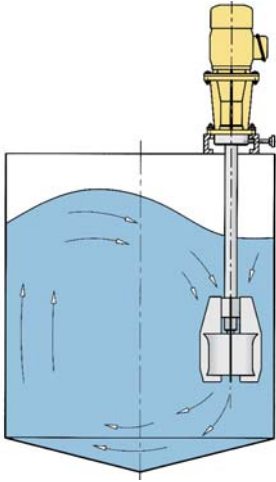


3

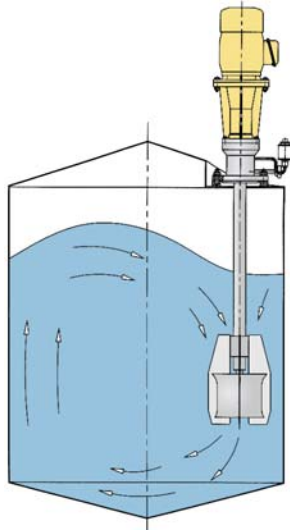
The stator, with integrated flow deflectors, creates a long, directed jet stream, without rotation, to the bottom of the container. The jet stream ensures that the product is completely homogeneous.



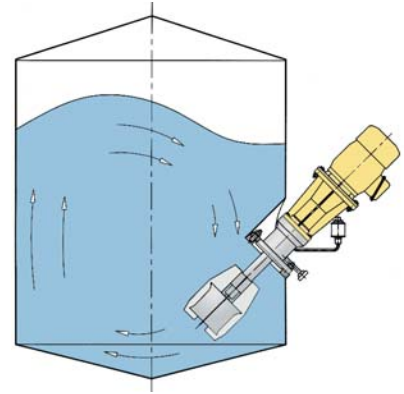
YTRON-Y Installation Possibilities



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 option 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

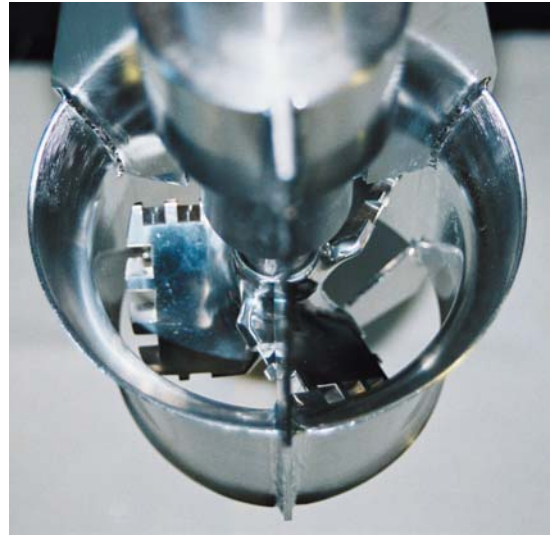
YTRON -Y HS in Tank-flange Construction
Application: Suspending of Thickener
Compounds

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



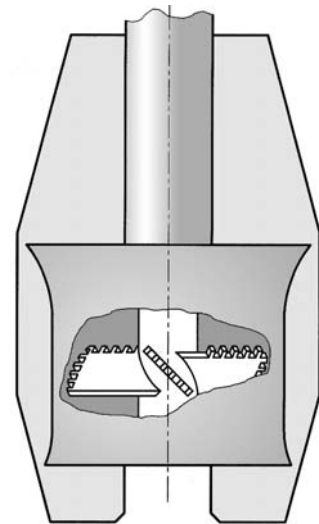
The YTRON-Y HS Principle

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 in the
Pharmaceutical Industry
Application: Tablet
Coating Solutions

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



YTRON-Y ByPass

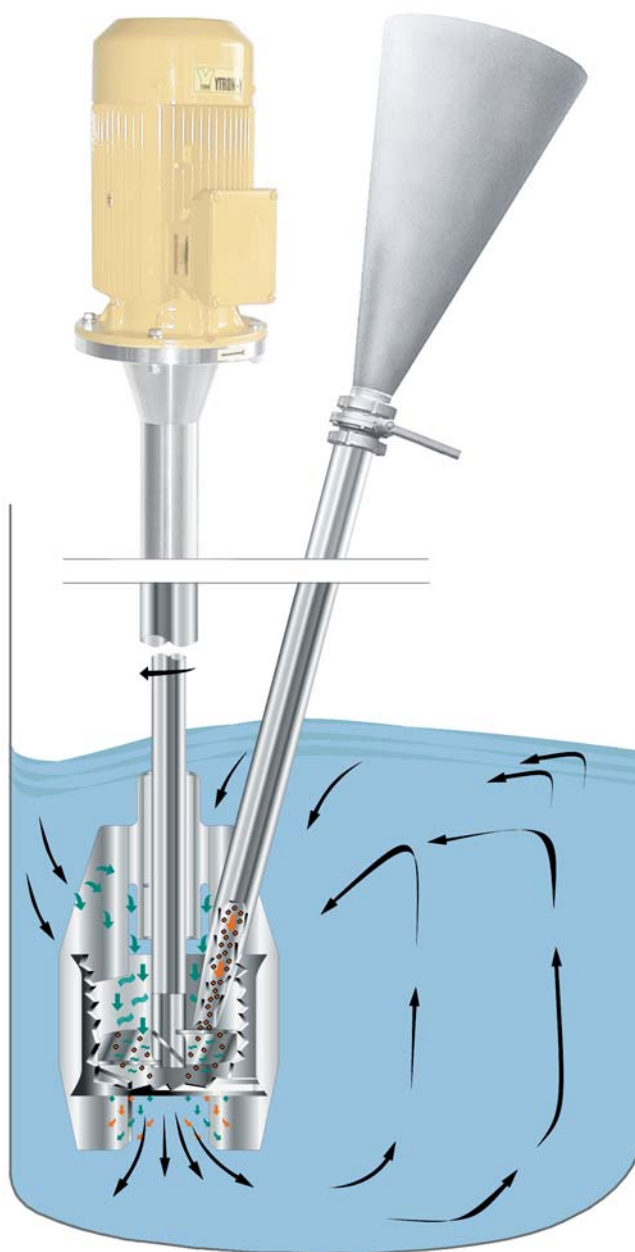


The YTRON -Y ByPass Principle

Free flowing powders without a tendency to stick or form lumps such as Silica, Active Carbon, HPMC, Cocoa, Flour, Carbon Black, can be drawn in below liquid level by the negative pressure created by the rotor/stator system. They are instantly wetted, suspended or dissolved without the formation of lumps.

High viscosity products and those that are difficult to dissolve can be injected directly into the YTRON ByPass. This way an instantaneous dissolution or suspension is achieved.

The directed jet stream homogeneously mixes the product into the entire batch.



Process Order

Once the powder is in the ByPass hopper, silo or BigBag, the YTRON-Y is switched on. The powder valve is opened and the negative pressure created at the YTRON-Y head draws the powder in dispersing it instantly and homogeneously into the liquid. It is not possible for the powder to float on the surface or lay as a sediment on the bottom of the vessel. In order to avoid air entrainment or liquid rising up the ByPass tube, the powder valve is closed once all powder has been sucked in. Once the valve is closed the YTRON-Y can be switched off.

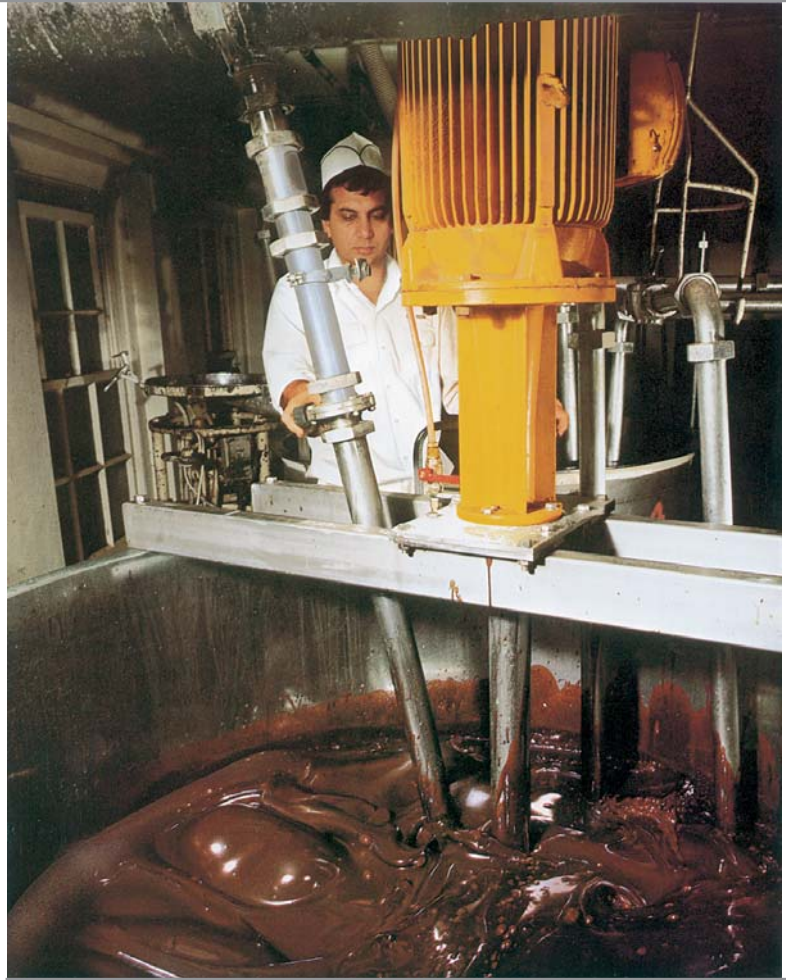
Certain powders with a low bulk density can be sucked directly and dust-free from a bag or other container. In this case, a small amount of air is required to ensure fluidisation of the powder.

YTRON - Y in tank-flange
construction with ByPass, installed
vertically into a closed vessel
Application: Micro-suspending of
Agrochemicals

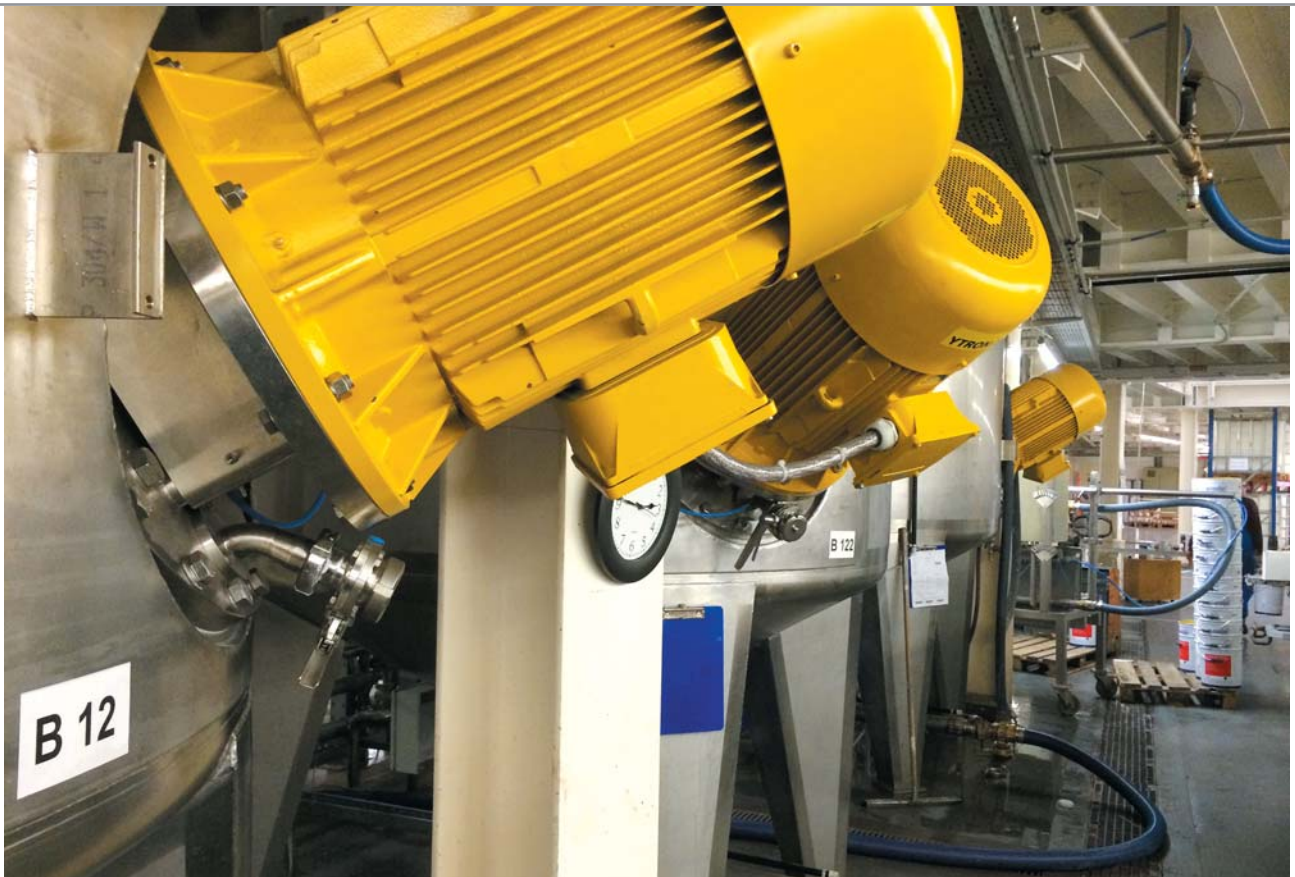


Dust-free incorporation directly
from the bag with YTRON-Y ByPass
Application: Suspending of Silica
for Paints and Colours.

YTRON-Y with ByPass
installed in open vessel
Application: Dust-free incorporation
and suspending of Cocoa Powder
into Glucose Syrup



YTRON-Y side entry version
Application: Coating Industry



YTRON-Y with ByPass
on a Mobile Hoist



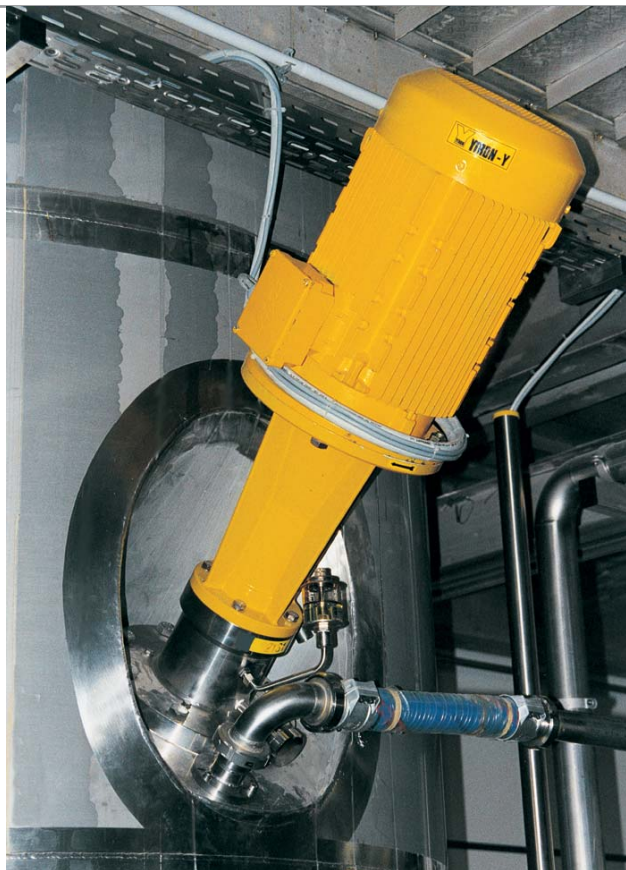
YTRON-Y with ByPass
in Laboratory Design

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	VI
Power (kW)	2.20...22.00	5.50...55.00	up to 90.00
Rotor Ø (mm)	100...330	130...370	up to 500
Rotor speed (1/min)	500...3,000	500...3,000	up to 1,500
Process	Batch/Conti	Batch/Conti	Batch/Conti
ByPass Ø max. (mm)	100	100	150

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



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



YTRON-Y ByPass in the Brewing Industry
Application: Suspending of Diatomaceous Earth
CO₂ 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.



YTRON

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